

2004 Water Use Efficiency Proposal Solicitation Package

APPENDIX A: Project Information Form

Applying for:

Urban

Agricultural

1. (Section A) **Urban or Agricultural Water Use Efficiency Implementation Project**

- (a) implementation of Urban Best Management Practice, # _____
- (b) implementation of Agricultural Efficient Water Management Practice, # _____
- (c) implementation of other projects to meet California Bay-Delta Program objectives, Targeted Benefit # or Quantifiable Objective #, if applicable

- (d) Specify other: _____

2. (Section B) **Urban or Agricultural Research and Development; Feasibility Studies, Pilot, or Demonstration Projects; Training, Education or Public Information; Technical Assistance**

- (e) research and development, feasibility studies, pilot, or demonstration projects
- (f) training, education or public information programs with statewide application
- (g) technical assistance
- (h) other

3. Principal applicant
(Organization or affiliation):

South Yuba River Citizens League

4. Project Title:

“The Great Water Mystery” School Assemblies and School Water Audit

5. Person authorized to sign and submit proposal and contract:

Name, title

Janet Cohen

Mailing address

216 Main Street

Nevada City CA 95959

Telephone

530-265-5961

Fax.

530-265-6232

E-mail

janet@syrcl.org

6. Contact person (if different):	Name, title.	Carlyle Holmes
	Mailing address.	216 Main Street
		Nevada City, CA 95959
	Telephone	530-265-5905
	Fax.	530-265-6232
	E-mail	carlyle@syrcl.org

7. Grant funds requested (dollar amount): <i>(from Table C-1, column VI)</i>	\$155,150
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8. Applicant funds pledged (dollar amount):	\$161,380
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9. Total project costs (dollar amount): <i>(from Table C-1, column IV, row n)</i>	\$316,530
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10. Percent of State share requested (%) <i>(from Table C-1)</i>	49%
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11. Percent of local share as match (%) <i>(from Table C-1)</i>	51%
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12. Is your project locally cost effective? <i>Locally cost effective means that the benefits to an entity (in dollar terms) of implementing a program exceed the costs of that program within the boundaries of that entity.</i> <i>(If yes, provide information that the project in addition to Bay-Delta benefit meets one of the following conditions: broad transferable benefits, overcome implementation barriers, or accelerate implementation.)</i>	<input type="checkbox"/> (a) yes <input checked="" type="checkbox"/> (b) no
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11. Is your project required by regulation, law or contract? If no, your project is eligible. If yes, your project may be eligible only if there will be accelerated implementation to fulfill a future requirement and is not currently required. <i>Provide a description of the regulation, law or contract and an explanation of why the project is not currently required.</i>	<input type="checkbox"/> (a) yes <input checked="" type="checkbox"/> (b) no
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12. Duration of project (month/year to month/year):	12/05—12/08 (WUE Portion) 3/02—12/08 (Total Project)
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13. State Assembly District where the project is to be conducted:

Portions of districts
2,3,4,5,7,8,9,11,14,15

14. State Senate District where the project is to be conducted:

Portions of districts 1, 2,
4,5,6,7

15. Congressional district(s) where the project is to be conducted:

Portions of districts
1,2,3,4,5,7,10, 11

16. County where the project is to be conducted:

Yolo, Solano, Contra
Costa, Sutter, Nevada,
Yuba, Placer and
Sacramento

17. Location of project (longitude and latitude) **project will occur in multiple counties. Coordinates are for our central office.**

SYRCL is located at
391542N 1210054W

18. How many service connections in your service area (urban)?

N/A

19. How many acre-feet of water per year does your agency serve?

N/A

20. Type of applicant (select one):

- (a) City
- (b) County
- (c) City and County
- (d) Joint Powers Authority
- (e) Public Water District
- (f) Tribe
- (g) Non Profit Organization
- (h) University, College
- (i) State Agency
- (j) Federal Agency
- (k) Other
- (i) Investor-Owned Utility

21. Is applicant a disadvantaged community? If 'yes' include annual median household income.

(a) yes, \$25,754—\$32,858 median household income

(Provide supporting documentation.)

Portions of the target audience for this program are in disadvantaged communities. Please see section B-15f for specific details. There are several communities involved, each with different median income.

B-15c. Statement of Work, Section 1: Relevance and Importance

Statement of Need

“As water use and competition for water have increased during the past several decades, so has conflict among water users.”¹

According to the USGS, Californians used an average of over 38,400 million gallons of fresh water *every day* in 2000². Over 60 percent of this water was surface water which came out of our rivers, lakes and streams,³ putting pressure on aquatic habitats and endangered fisheries resources.

Domestic water use, which includes self-supplied domestic and public supply, makes up a large portion of this off-stream water demand. Across the United States, domestic water use made up 11 percent of the total off-stream demand for water in 2000⁴, and trends show that this demand is increasing. Per capita withdrawals for domestic water use in the United States jumped 53 percent from 1950 to 2000⁵. The increasing demands of domestic water use have put undue pressure on our environment and water supply.

These pressures are extremely apparent in the Bay-Delta ecosystem. The watershed of the Bay-Delta, which stretches far up into the Sierra-Nevada mountain range, is the source of water for millions of Californians. In addition to its importance for water supply, the Bay-Delta watershed supports many runs of endangered and threatened salmonids, both wild and hatchery bred,⁶ whose survival is dependent on having suitable water flows. Its wetlands, shoals, and sloughs also provide important habitat for a variety of plants, birds, and biotic communities.⁷ The growing demand from off-stream uses like domestic water supply has decreased the amount of water available for these important in-stream uses.

Fortunately, with good educational programs, this conflict between in-stream and off-stream water needs can be partially resolved through domestic conservation measures. In 2000, Americans still used an average of 189 gallons of water each day for domestic and public supply uses⁸. By comparison, people living in developed countries with similar technologies and standard of living are dramatically more efficient water users. Spain consumes only 69 gallons per person per day for domestic water use, and other countries even less—France at 43 gallons, Germany at 34 and Belgium, only 30⁹.

¹ CALFED Phase II Report, Page 11

² USGS “Estimated Use of Water in the United States in 2000” Circular 1268, 15 figures, 14 tables (released March 2004, [revised April 2004, May 2004](#))

³ *ibid*

⁴ *ibid*

⁵ *ibid*

⁶ <http://www.nwr.noaa.gov/1salmon/salmesa/pubs/1pgr.pdf>, a website of NOAA Fisheries

⁷ CALFED Ecosystem Restoration Program plan Volume 1, pages 31-46.

⁸ USGS “Estimated Use of Water in the United States in 2000” Circular 1268, 15 figures, 14 tables (released March 2004, [revised April 2004, May 2004](#))

⁹ Lallana, Concha, CEDEX. 2003 *Indicator Fact Sheet: (WQ02e) Water Use in Urban Areas version 01.10.03*. European Environment Agency.

These numbers show that Americans use far more water per capita than necessary, which presents a huge opportunity for improving efficiency. The EPA estimates that by adopting simple behavior changes, Californians could save a substantial amount of water every day¹⁰. Behaviors as easy as running the dishwasher when it's full can save 10-20 gallons a day¹¹. Turning the water off when brushing teeth can save 2.6 gallons of water, and shortening a shower by 5 minutes saves an average of 10 gallons of water¹². The effects of these simple behavior changes can add up to save Californians millions of gallons of water every year.

In order to accomplish this shift in behaviors around domestic water use, it is crucial to educate our communities about the necessity of water conservation. In a *Journal of the American Water Works Association* article "Long-Term Options for Municipal Water Conservation," Grisham and Fleming noted that Public school education is an important means for instilling water conservation awareness¹³.

Many state and regional programs already recognize the importance of education in any water use efficiency program. The California Urban Water Conservation Council lists school education programs as one of 14 Best Management Practices¹⁴ for water conservation. Regional water suppliers such as the Sacramento Storm Water Management Program and Regional Water Authority require their member water agencies to offer school education programs.

However, there are no free in-school education programs on water conservation available in Yolo, Sutter, and large portions of Solano and Contra Costa Counties¹⁵. In Sutter County the Woodleaf Environmental Center, a retreat center for 6th graders, offers a small segment on water conservation for some visiting schools¹⁶. However, this program is only available for one grade level, and because it is not an in-school program, many schools cannot afford the trip.

The only free in-school water conservation program offered to Yolo county schools is a once a year poster contest run by the Water Resources Association of Yolo County¹⁷. The Resources Association sends the materials to the schools, but it does not send any staff person to the schools, and participation is solely dependent on the individual teachers.

In Solano County, Benicia is the only city that offers a free in-classroom water conservation program to all of its schools¹⁸. Vallejo, Rio Vista and the smaller Solano

¹⁰ <http://www.epa.gov/watrhome/you/chap3.html>, EPA website

¹¹ *ibid*

¹² <http://www.h2ouse.org>, California Urban Water Conservation Council website

¹³ Grisham, A., and M. Fleming, 1989. "Long-Term Options for Municipal Water Conservation." *Journal of American Water Works Association*

¹⁴ <http://www.cuwcc.org/memorandum.lasso>, California Urban Water Conservation Council web site

¹⁵ http://bmp.cuwcc.org/bmp/read_only/list.lasso, California Urban Water Conservation Council web site, and E-mail correspondence and phone conversations with staff at Woodleaf Environmental Center, Water Resources Association of Yolo County, Solano County Water Agency, Solano Irrigation District, City of Benicia, and Contra Costa Water District

¹⁶ Conversation with John Hendrickson at the Woodleaf Environmental Center.

¹⁷ Conversation with Donna Gentile at the Water Resources Association of Yolo County

¹⁸ Conversation with Sue Wickam at the City of Benicia

County towns have no in-school water conservation programs available,¹⁹ and the cities of Valencia, Fairfield, Suisun City and Dixon have an extremely limited amount of funding for in-school programs²⁰. Conversations with city personnel in these cities have shown that SYRCL's free in-school assembly program and Water Audits would dovetail beautifully with their existing program by reinforcing its message, while reaching a wider range of schools and avoiding duplicating the delivery method.

The Contra Costa Water District provides several excellent in-school water conservation programs to schools *within* its district, but they get many calls every year from schools outside of their district which have no in-school programs available²¹. These schools are turned away because they are outside the district boundaries²².

An effective education program needs to offer on-site resources requiring a minimum investment of time and money from the teachers that it serves. It also needs to be available to lower income schools with limited access to computer and web-based resources. Resources and web sites that require teachers to train themselves in new curricula or activities often languish on the shelves. Off-site programs that require transportation are not cost-effective for many schools.

The Water Use Efficiency Program offers a great opportunity to fill the need for in-school water conservation education in these counties. By providing effective water conservation education in these four counties, we can create a more water-conscious culture in this portion of the Bay-Delta watershed.

Additionally, if local communities understand the importance of water conservation, CALFED will have more backing for other water use efficiency programs that require broad stakeholder support.

Project Goals and Objectives

In response to the need to reduce per capita domestic water use, SYRCL has developed an in-school assembly program called "The Great Water Mystery." This assembly program changes the attitudes and behaviors of audience members so that they incorporate simple water conservation techniques into their daily habits. (*See "About 'The Great Water Mystery'" below.*)

SYRCL's water assembly programs are one component of SYRCL's larger education program, RiverTeachers, which inspires people throughout our watershed—from the source to the sea—to alter their lifestyles by incorporating awareness of water conservation, pollution prevention, and salmonid conservation into their daily actions. In order to accomplish this goal, RiverTeachers aims to reach students in counties throughout the Bay-Delta Watershed with two free assembly programs, "The Great Water Mystery" and "Journey of the Salmon," as well as involving students in performing school water audits to reduce their school's water use.

¹⁹ *ibid*

²⁰ Conversation with Diane Adis, Cindy Perazzo, and Ursula Heffernon at Solano County Water Agency and Solano Irrigation District

²¹ Conversation with Marianne Hook at the Contra Costa Water District

²² *ibid*

SYRCL has already delivered “The Great Water Mystery” and its partner assembly, “Journey of the Salmon,” to over 43,500 elementary and middle school students in 5 Northern California Counties. SYRCL is currently funded to bring these assemblies to schools in the upper limits of the Bay-Delta Watershed (See Figures 1 & 2). These assemblies are funded through several public-private partnerships that match funding from SYRCL’s membership donations with funding from NOAA Fisheries, the Bureau of Reclamation, the Yuba County Water Agency, Sacramento Stormwater Management Program, and the Regional Water Authority.

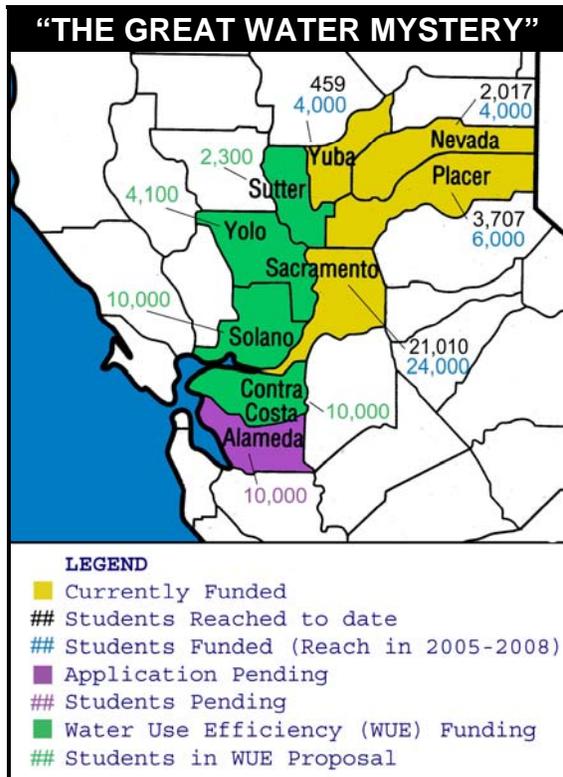


Figure 1

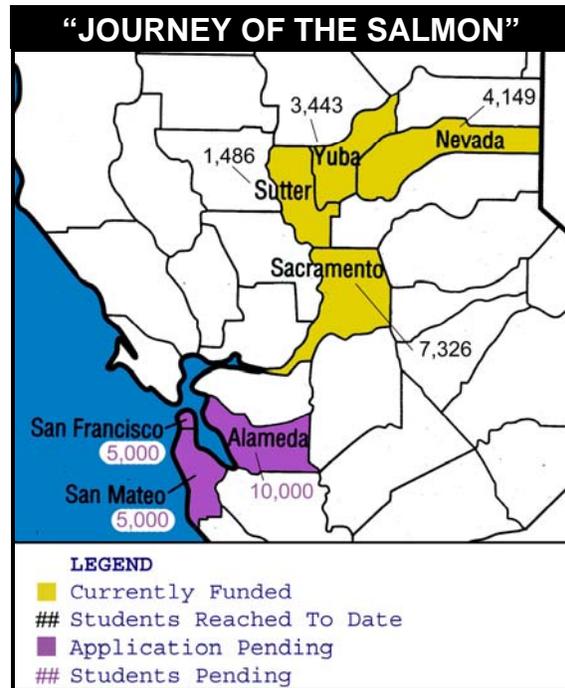


Figure 2

A grant from the Water Use Efficiency Program will allow SYRCL to expand the audience of “The Great Water Mystery” assemblies down the watershed towards the Bay-Delta. Specifically, this funding will bring “The Great Water Mystery” to 20 percent of all of the kindergarten-eighth grade students in Yolo, Solano, Sutter, and Contra Costa Counties who are not within the range of a free in-school water conservation program—a total of 26,400 students over the course of 3 years (See Table 1 for a broad timeline).

This funding will also enable SYRCL to pilot and expand a “School Water Audit” as a follow up to “The Great Water Mystery” in 15 of the participating schools (*see “About the School Water Audit” below*). By involving students in a real-life water conservation project and in teaching their peers about water conservation, students will become even more inspired to conserve water in their daily habits and will be extremely familiar with simple ways to do this. These School Water Audits will involve approximately 450 students and 15 teachers in creating a water conservation plan for their school. Through

the water conservation plan, these students will educate the other students and teachers at their schools (approximately 7,050 students and 225 teachers).

In addition to the educational value of the School Water Audits, SYRCL is estimating that the water audit will result in direct water savings of between 50 and 100 gallons of water per day for each participating school. Over the course of a single school year, these savings would add up to between 13,500-27,000 gallons for each participating school.

SYRCL will use the success of these assembly programs and School Water Audits as a demonstration project to leverage money from local water districts and agencies. SYRCL will work to partner with these local agencies to offer free presentations of “The Great Water Mystery” and School Water Audits in future years. This partnership between non-profit organizations and water supply agencies will allow SYRCL to expand the range of this program and will create a model for implementing this type of program on a statewide basis.

<u>TABLE 1—TARGET AUDIENCE NUMBERS AND BROAD TIMELINE</u>				
BLUE = # Students Reached (Funded by SYRCL & Partners)				
GREEN = # Students Reached (Funded by Water Use Efficiency Program)				
	Year 0 (‘02-‘05)	Year 1 (2006)	Year 2 (2007)	Year 3 (2008)
“Water Mystery,” Nevada Co.	3,017	1,000	1,000	1,000
“Water Mystery” Yuba Co.	1,459	1,000	1,000	1,000
“Water Mystery” Placer Co.	6,707	3,000	TBD	TBD
“Water Mystery” Sacramento Co.	33,010	12,000	TBD	TBD
“Water Mystery” Alameda Co. (pending \$\$ not included in cost share)	10,000 (pending)	TBD	TBD	TBD
“Water Mystery” Yolo Co.		4,100	TBD	TBD
“Water Mystery” Solano Co.		10,000	TBD	TBD
“Water Mystery” Sutter County			2,300	TBD
“Water Mystery” Contra Costa Co.			10,000	TBD
School Water Audit Nevada Co.		3 Schools (PILOT)	TBD	TBD
School Water Audit Yolo Co.			3 Schools	TBD
School Water Audit Solano Co.			3 Schools	TBD
School Water Audit Sutter County				3 Schools
School Water Audit Contra Costa Co.				3 Schools

Yolo and Solano County are scheduled during the same year because of the strong ties between the Resource Conservation Districts (RCDs) in these two counties. The RCDs will help SYRCL deliver the Water Audit Portion of the program in these two counties.

ABOUT “THE GREAT WATER MYSTERY”

The goal of “The Great Water Mystery” assembly program is to change the attitudes and behaviors of the audience members so that they incorporate simple water conservation techniques into their daily habits.

“The Great Water Mystery” is an interactive in-school assembly program that uses an engaging mystery story to teach children about water conservation. This presentation uses hilarious audience participation, dramatic slides, exciting demonstrations and fun stories to keep students and teachers enthralled while teaching them to understand the effects that their daily actions have on our water supply.

“Every student should see this presentation. It has a profound message about our water resources.” M. Cleland, 3/4th grade teacher at Isador Cohen

“This was a fantastic program. My students were talking after the assembly about the specifics of the water cycle and how to conserve.” Lindsay Wong, 3rd grade teacher at PS7

“The Great Water Mystery” also teaches about California and National Science Content Standards, such as the water cycle and resource use, which makes it fit extremely well with school curriculum across counties. The presentation is adapted for each grade level, so that the mystery story teaches age-appropriate science concepts for

kindergarten through eighth grade while delivering a powerful message about water conservation.

Evaluation results from “The Great Water Mystery” have shown that because of the correlation to science standards and the minimum effort required from teachers, even teachers who would not otherwise include water conservation education in their classroom are extremely excited about this assembly program. For teachers who are inspired by the presentation, the assembly comes with a supplemental activity packet that gives teachers a fun and easy way to expand on the presentation.

“I was so impressed with the assembly that I immediately contacted the principal at Cordova Meadows to tell him about it.” Mr. Hackbarth, Principal at Blanche Sprentz Elementary

If just 5 percent of the 65,200 students who will see “The Great Water Mystery” assemblies change their behavior to turn the water off while they brush their teeth, they will save 4,346,400 gallons of water per year. If 5 percent of the audience shortens their showers by 5 minutes, they will save 16,717,000 gallons of water per year.

Through these presentations, SYRCL is building a constituency of students who understand the importance of water conservation and who are changing their lifestyles to incorporate simple conservation techniques. Additionally, with the backing of an informed constituency, CALFED’s other water use efficiency programs will have backing from more local stakeholders (see Table 2).

ABOUT THE SCHOOL WATER AUDIT

The goal of the School Water Audit is to build on the water conservation concepts taught in “The Great Water Mystery,” and to deepen students’ commitment to water conservation and their understanding of ways to conserve water in their daily lives. Additionally, each school whose students conduct a School Water Audit Program will save between 50-100 gallons of water per day through a student-designed and implemented Water Conservation Action Plan.

*“My class would LOVE to participate in a School Water Audit program. It would be great for my students to take on the responsibility of a real-life conservation project.”
Steve Darden, 5th grade teacher, Deer Creek Elem.*

As part of the School Water Audit, each participating classroom will learn how to monitor and reduce their school’s water use. After collecting baseline data to document the amount of water currently used by the school, these classrooms will create and implement a Water Conservation Action Plan for their school. Once students have implemented the Action Plan, they collect more data on their school’s water use to document the amount of water saved by their Action Plan. Students will also post the results of their Action Plan on a portion of SYRCL’s web site so that other participating schools can compare methods and water savings.

By participating in a real-life water conservation project and teaching their peers about water conservation, students will become even more inspired to conserve water in their daily habits and will be extremely familiar with simple ways to do this.

*“Based on the outstanding presentations that SYRCL has given at our school in the past, I am extremely excited about participating in a School Water Audit.”
Brian Buckley, Principal of Scotten School*

Water Audits have worked extremely well for schools across the United States. One school in Tennessee published direct water savings of 66.7 gallons of water per day at their school after a student-led School Water Audit²³. Students at a school in Worthing, England saved 1,400 gallons per day through a School Water Audit²⁴! In addition to in-school savings accomplished through a School Water Audit, changes in student behaviors and attitudes

about water use will result in enormous water savings throughout the children’s lives.

There are two distinct audiences for the School Water Audit: the teachers, parent volunteers and students directly participating in the Water Audit program, and the other students and teachers at the school who will be educated by their peers about water use efficiency. The pilot phase of this program will directly involve students and teachers in 15 upper elementary classrooms; approximately 450 students and 15 teachers. Additionally, the students conducting the School Water Audit will educate the other students and teachers at their school; an estimated 7,050 students and 225 teachers (assuming an average school size of 500 students and 16 classrooms).

²³ <http://www.state.tn.us/environment/dca/tp3/pdf/ss-centennial-lw.pdf>

²⁴ <http://www.southernwater.co.uk/pdfs/educationAndEnviro/educationResource/schoolsResources/ChesswoodStudy.pdf>

TABLE 2: CALFED Bay-Delta Benefits (From “Final Programmatic EIS/EIR Technical Appendices: Ecosystem Restoration Program Plan” and “Water Use Efficiency Program Plan,” July 2000)

Cal Fed Goal	Section	Success Indicator
<p>“Reduce existing irrecoverable losses ... will increase the overall volume of useable water”</p> <p>“By reducing losses that currently return to the water system ... CALFED can achieve multiple benefits”</p> <p>“Build on existing water use efficiency programs”</p>	<p><i>CALFED Water Use Efficiency Program Objectives</i></p>	<p>Reducing domestic water use will help reduce existing irrecoverable water losses due to transport and processing.</p> <p>Reducing domestic water use will achieve multiple benefits by making this water available for other uses and improving flow between the point of diversion and the point of reentry</p> <p>This program will expand the range of SYRCL’s existing “Great Water Mystery” assembly programs, and will add a School Water Audit section. It is also consistent with the goals of the California Urban Water Conservation Council.</p> <p>SYRCL’s assembly programs have the potential to increase schools’ involvement in other more time-intensive water education opportunities such as field trips.</p> <p>Investments in education about water conservation can yield real water supply benefits in the short term, which is especially important as CALFED works to implement surface storage and conveyance improvements that will take multiple years to complete.</p>
<p>“Achieve recovery of at-risk native species dependent on the Delta and Suisun Bay ...”</p> <p>“Rehabilitate natural processes in the Bay-Delta estuary and its watershed to fully support ... natural aquatic habitats.”</p> <p>“Protect and/or restore functional habitat types in the Bay-Delta estuary and its watershed ...”</p>	<p><i>CALFED Ecosystem Restoration Program (ERP) Strategic Goals</i></p>	<p>Reduced water demand will improve fish habitat and natural processes in the Bay-Delta estuary by providing increased flow. Species benefited include several that are listed under the Endangered Species Act, such as Central Valley Spring Run Chinook Salmon.</p> <p>Reducing water demand in participating counties will make water available for transfers to other water users, the Environmental Water Account, or to the environment.</p>

B-15d. Statement of Work, Section 2: Technical Merit, Feasibility

SYRCL has a proven track record of implementing our assembly programs in multiple counties. In just over three years, SYRCL has become renowned regionally for its school assemblies, which have already reached over 45,000 students.

The success of the SYRCL's existing program puts us in a unique position to reach students in Sutter, Yolo, Solano and Contra Costa Counties. SYRCL has already built a network of teachers, school administrators, and government agencies that work with schools throughout the Bay-Delta Watershed. SYRCL has also created a highly effective tracking database, mapping system, scheduling protocol, and publicity materials that allow us to efficiently market, track, and present our assembly programs.

After each year of assemblies, SYRCL will use the database of teachers to select the most enthusiastic teachers who will participate in the School Water Audit. The School Water Audit Project will use curriculum from existing successful Water Audit programs such as the Department of Water Resources' "Conservation Connection: Water and Energy Use in California," Sydney Water's "Rainwater Tanks in Schools—Every Drop Counts Water Audit" (www.sydneywater.com.au) and "WET in the City: Water Education for Teachers."

What follows is a list of the detailed project tasks that make up this extensively tested procedure followed by a project timeline showing when these tasks will be completed in each of the participating counties.

DETAILED PROJECT TASKS FOR "THE GREAT WATER MYSTERY"

1. **Administration:** Provide administrative services as needed; review work performed; prepare quarterly reports; and coordinate budgeting and scheduling to assure that the contract is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.
2. **Update Publicity:** Add partner logos to existing publicity & outreach materials.
3. **Update Database:** Import data on county schools into SYRCL's existing database.
4. **Create Map:** Create a map of county schools that links to the database to facilitate efficient scheduling and minimize travel-related costs.
5. **Purchase Equipment:** Laptop computer, LCD projector, & portable slide screen.
6. **Hire and Train Staff:** Recruit, hire, and train an actor with experience in children's theater to present the assemblies as a temporary employee. Hiring a temporary employee living near participating counties will reduce costs associated with travel and lodging. Actor will be provided with a detailed script and given videotapes of current SYRCL staff giving the presentation. (S)he will also have comprehensive rehearsals with SYRCL staff. SYRCL has used temporary employees in this capacity before with tremendous success. The Foothill Theatre Company and our network of current actors will help facilitate the hiring process.
7. **Send Publicity:** Print and send promotional brochure to all elementary and middle schools in the county (through the school mail system if possible to save on postage costs). Publicize assemblies on free web sites, such as www.creec.org, and use SYRCL's network of educators and agencies to publicize assemblies via e-mail.
8. **Schedule Assemblies:** Make follow-up calls to schools and schedule assemblies. Schedule schools that are near each other on the same day to minimize travel costs. Scheduler will also let schools know about the availability of the School Water Audit Programs the following year and will keep note of the most enthusiastic schools.

9. **Send Materials:** Send activity packets, confirmation letter, evaluation forms, student pre- and post- assembly questionnaires, and a return envelope to all participating schools at least two weeks prior to scheduled assembly date.
10. **Deliver Assemblies:** Give assembly presentations at each scheduled school.
11. **Actor Supervision:** SYRCL will communicate with the actor regularly. SYRCL staff will evaluate this employee at least twice in the early stages of their tenure.
12. **Send Thanks:** Send thank you letters to all schools within one week of assembly.
13. **Monitor and Evaluate:** Project staff will compile the results from all evaluation methods into a segment of the Yearly Report. Integrate improvements suggested by these results into program design and delivery.
14. **Yearly Report:** Produce a yearly report, including copies of all materials developed for the project, a statistical analysis of the audience reached, a comparison and analysis of pre- and post- assembly student questionnaire results, copies of project publicity, and a summary of feedback from teacher evaluations.

DETAILED PROJECT TASKS FOR THE SCHOOL WATER AUDITS

1. **Administration:** Provide administrative services as needed; review work performed; prepare quarterly reports; and coordinate budgeting and scheduling to assure that the contract is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.
2. **Recruit Teachers:** Project Staff contacts the most active teachers in the county (as identified during the previous year's assemblies) to invite them to participate in the School Water Audit program. Project Staff works with teacher to ensure that maintenance staff and principal are willing to help with audit and to assess the school water metering system.
3. **Recruit Resource Agencies:** SYRCL will work with local resource agencies to make it easier for schools to receive on-site support as needed and to make it easier to continue this project in future years. This step will only be necessary in Sutter and Contra Costa Counties since the Yolo and Solano County Resource Conservation Districts have already agreed to participate in this program.
4. **Assemble Printed Materials:** Materials will be adapted from successful Water Audit projects and will include a school application form and memo of agreement, curriculum and resource materials, an overview of teacher responsibilities, promotional materials and evaluation forms.
5. **Assemble Audit Materials:** Since conducting the Water Audit requires simple tools (such as a bucket & stopwatch), project staff will create a resource kit for the audit.
6. **Create Web Resources:** Project staff will add a School Water Audit segment to SYRCL's award winning web site that includes all of the printed materials for the program. This web site will also include an interactive segment where students will post the results of their school's water audits and conservation plan.
7. **Host Training Workshop:** SYRCL hosts a two-hour teacher training workshop in the appropriate county. This seminar gives an overview of the program logistics, trains participating teachers in the 4 lesson plans, and coaches teachers in using the interactive web-site. Classroom parent volunteers are welcome to attend this training.
8. **Train Local Resource Agencies:** Agency staff will attend training workshop and meet with SYRCL staff to enable them to coordinate local logistics, site visits, regular check in dates, and awards ceremonies for each School Water Audit in their county.
9. **Provide Technical Assistance:** Project staff will be available to answer questions and provide technical assistance as necessary. Includes the cost of one on-site visit.

10. **Assess Students:** Teachers give a short test to evaluate students’ knowledge of and commitment to water conservation (as part of project monitoring & evaluation).
11. **Give Assembly:** To introduce the underlying concepts and get students excited about the School Water Audit project, Project staff visits each participating school to give “The Great Water Mystery” assembly to the classroom conducting the audit.
12. **Give Introductory Lessons:** Each teacher leads two introductory lessons to prepare students for the water audit: one on water availability and conservation, and the second on how to read the school water meter. Curricula for these activities will give students the tools to evaluate their school’s water use and identify potential problems.
13. **Conduct Water Audit:** Project staff visit the school to help students conduct a thorough water audit. The estimated water audit time is two hours. Curriculum for the water audit will include forms for students to completely evaluate their school’s water use and will give them the tools to continue identifying problem areas.
14. **Give Follow-up Lessons:** Each teacher guides their class in two follow up lessons: creating a water conservation plan for their school and implementing that plan. The lesson plan will give students the tools to interpret their findings from the Water Audit and shape them into a concise action plan. In order to implement their action plan, students break into three teams—implementers (who apply conservation measures such as reporting leaks, turning off taps, etc.), communicators (who educate the rest of the school about water conservation), and evaluators (who monitor the results of the conservation plan).
15. **Observe Lessons:** During the pilot test phase of the School Water Audit Program in Nevada County, the program director will observe and evaluate at least one of each of the four lesson plans as they are taught by participating teachers.
16. **Post Results on the Web:** Students post their results on the interactive web site, enabling students from different schools to compare their results.
17. **Assess Students (part 2):** Teachers re-administer assessment test to evaluate changes in students’ knowledge of and commitment to water conservation.
18. **Publicize Results:** Program director publicizes the results on SYRCL’s web site, in SYRCL’s newspaper, and in press releases to local media, giving public recognition to the students and teachers and publicizing the amount of water saved.
19. **Hold Award Ceremonies:** Project staff visits participating classrooms and presents students with a certificate of completion.
20. **Monitor and Evaluate:** Project staff will compile the results from the evaluation methods detailed in Section 3 into a segment of the Yearly Report. Integrate improvements suggested by these results into program design and delivery.
21. **Prepare Yearly Report:** Program director produces the final project report.

TASKS IN BLUE ARE FUNDED BY SYRCL’S COST SHARE (AND ARE NOT BROKEN DOWN IN DETAIL), TASKS IN GREEN ARE FUNDED BY THE WATER USE EFFICIENCY PROGRAM. SEE ATTACHED TIMELINES FOR FURTHER DETAIL

YEAR 0 PROJECT TASK LIST

THE GREAT WATER MYSTERY	DATES	COST
Provide Assemblies for 3,017 Nevada County Students	3/1/02—12/31/05	\$16,100
Provide Assemblies for 1,459 Yuba County Students	1/1/03—12/31/05	\$13,600
Provide Assemblies for 33,010 Sacramento Co students	3/1/04—12/31/05	\$66,880
Provide Assemblies for 6,707 Placer County Students	11/1/04—12/31/05	\$22,400

YEAR 1 PROJECT TASK LIST

THE GREAT WATER MYSTERY	DATES	COST
Provide Assemblies for 1,000 Nevada County Students	1/1/06—12/31/06	\$2,200
Provide Assemblies for 1,000 Yuba County Students	1/1/06—12/31/06	\$2,200
Provide Assemblies for 12,000 Sacramento Co students	1/1/06—12/31/06	\$20,700
Provide Assemblies for 3,000 Placer County Students	1/1/06—12/31/06	\$5,500
Update Publicity	12/1/05—12/31/05	\$100
Update Database with schools from all counties	12/1/05—12/31/05	\$750
Create Map for all counties	12/1/05—12/31/05	\$1,400
Purchase Equipment	12/1/05—12/31/05	\$3,000
Hire and Train Staff	12/1/05—1/31/06	\$5,000
Send Publicity to schools in Yolo & Solano Counties	1/1/06—1/31/06	\$500
Schedule Assemblies in Yolo & Solano Counties	1/1/06—2/28/06	\$7,500
Send Materials to schools in Yolo & Solano Counties	1/1/06—5/31/06	\$300
Deliver Assemblies in Yolo (4,100 students) & Solano (10,000 students) Counties	1/1/06—5/31/06	\$16,000
Actor Supervision	1/1/06—5/31/06	\$1,500
Send Thanks to schools in Yolo & Solano Counties	1/1/06—5/31/06	\$100
Monitor and Evaluate Yolo & Solano County Results	6/1/06—7/31/06	\$2,600
SCHOOL WATER AUDITS	DATES	COST
Recruit Teachers in Nevada County	4/1/06—4/30/06	\$900
Assemble Printed Materials	5/1/06—8/31/06	\$3,000
Assemble Audit Materials	8/1/06—8/31/06	\$100
Create Web Resources	5/1/06—8/31/06	\$2,000
Host Training Workshop in Nevada County	9/1/06—9/30/06	\$1,000
Provide Technical Assistance to Nevada Co. Schools	9/1/06—12/31/06	\$1,600
Assess Students in Nevada County Schools	9/1/06—9/30/06	\$150
Give Assembly to the 3 Nevada County Schools	9/1/06—9/30/06	\$600
Give Introductory Lessons in Nevada County Schools	9/1/06—10/15/06	\$350
Conduct Water Audit in 3 Nevada County Schools	10/1/06—10/31/06	\$1,000
Give Follow-up Lessons in Nevada County Schools	10/15/06—11/30/06	\$350
Observe Lessons	9/1/06—11/31/06	\$500
Post Results on the Web (Nevada County Results)	11/1/06—11/30/06	<i>Students (\$0)</i>
Assess Students (part 2) in Nevada County Schools	11/1/06—11/30/06	\$150
Publicize Results (Nevada County Results)	11/1/06—11/30/06	\$400
Hold Award Ceremonies for Nevada County Schools	12/1/06—12/31/06	\$400
Monitor and Evaluate	12/1/06—12/31/06	\$2,600
OVERALL TASKS	DATES	COST
Administration	12/1/05—12/31/06	\$1,700
Yearly Report	12/1/06—12/31/06	\$700

YEAR 2 PROJECT TASK LIST

THE GREAT WATER MYSTERY	DATES	COST
Provide Assemblies for 1,000 Nevada County Students	1/1/07—12/31/07	\$2,200
Provide Assemblies for 1,000 Yuba County Students	1/1/07—12/31/07	\$2,200
Hire and Train Staff (if necessary)	1/1/07—1/31/07	\$5,000
Publicity to schools in Sutter & Contra Costa Counties	1/1/07—1/31/07	\$500
Schedule Assemblies in Sutter & Contra Costa Co.s	1/1/07—2/28/07	\$7,500
Send Materials to Sutter & Contra Costa Co. Schools	1/1/07—5/31/07	\$300

Deliver Assemblies in Sutter (2,300 students) & Contra Costa (10,000 students) Counties	1/1/07—5/31/07	\$16,000
Actor Supervision	1/1/07—5/31/07	\$1,500
Send Thanks to Sutter & Contra Costa Co. Schools	1/1/07—5/31/07	\$100
Monitor and Evaluate Sutter & Contra Costa Results	6/1/07—7/31/07	\$2,600
SCHOOL WATER AUDITS	DATES	COST
Recruit Teachers in Yolo & Solano Counties	4/1/07—4/30/07	\$1,800
Assembly Printed Materials (printing costs only)	4/1/07—4/30/07	\$500
Host Training Workshop in Yolo & Solano Counties	9/1/07—9/30/07	\$2,000
Train Local Resource Agencies	9/1/07—9/30/07	\$800
Provide Technical Assistance to Yolo/Solano Schools	9/1/07—12/31/07	\$3,200
Assess Students in Yolo & Solano County Schools	9/1/07—9/30/07	\$150
Give Assembly to the 3 Yolo & 3 Solano Schools	9/1/07—9/30/07	\$1,200
Give Introductory Lessons in Yolo & Solano Schools	9/1/07—10/15/07	\$350
Conduct Water Audit in 3 Yolo & 3 Solano Schools	10/1/07—10/31/07	\$2,000
Give Follow-up Lessons in Yolo & Solano Schools	10/15/07—11/30/07	\$350
Post Results on the Web (Yolo & Solano Results)	11/1/07—11/30/07	<i>Students (\$0)</i>
Assess Students (part 2) in Yolo & Solano Schools	11/1/07—11/30/07	\$150
Publicize Results (Yolo & Solano Results)	11/1/07—11/30/07	\$800
Hold Award Ceremonies for Yolo & Solano Schools	12/1/07—12/31/07	\$800
Monitor and Evaluate	12/1/07—12/31/07	\$5,200
OVERALL TASKS	DATES	COST
Administration	1/1/07—12/31/07	\$2,400
Yearly Report	12/1/07—12/31/07	\$690

YEAR 3 PROJECT TASK LIST

THE GREAT WATER MYSTERY	DATES	COST
Provide Assemblies for 1,000 Nevada County Students	1/1/08—12/31/08	\$2,200
Provide Assemblies for 1,000 Yuba County Students	1/1/08—12/31/08	\$2,200
SCHOOL WATER AUDITS	DATES	COST
Recruit Teachers in Sutter & Contra Costa Counties	4/1/08—4/30/08	\$1,800
Assembly Printed Materials (printing costs only)	4/1/07—4/30/07	\$500
Recruit Resource Agencies in Sutter & Contra Costa	4/1/08—4/30/08	\$100
Host Training Workshop in Sutter & Contra Costa	9/1/08—9/30/08	\$2,000
Train Local Resource Agencies	9/1/08—9/30/08	\$800
Technical Assistance to Sutter/Contra Costa Schools	9/1/08—12/31/08	\$3,200
Assess Students in Sutter & Contra Costa Schools	9/1/08—9/30/08	\$150
Give Assembly to 3 Sutter & 3 Contra Costa Schools	9/1/08—9/30/08	\$1,200
Give Intro. Lessons in Sutter & Contra Costa Schools	9/1/08—10/15/08	\$350
Conduct Audit in 3 Sutter & 3 Contra Costa Schools	10/1/08—10/31/08	\$2,000
Follow-up Lessons in Sutter & Contra Costa Schools	10/15/08—11/30/08	\$350
Post Results on Web (Sutter & Contra Costa Results)	11/1/08—11/30/08	<i>Students (\$0)</i>
Assess Students (part 2) in Sutter & Contra Costa	11/1/08—11/30/08	\$150
Publicize Results (Sutter & Contra Costa Results)	11/1/08—11/30/08	\$800
Award Ceremonies for Sutter & Contra Costa Schools	12/1/08—12/31/08	\$800
Monitor and Evaluate	12/1/08—12/31/08	\$5,200
OVERALL TASKS	DATES	COST
Administration	1/1/08—12/31/08	\$1,500
Yearly Report	12/1/08—12/31/08	\$690

B-15e. Statement of Work, Section 3: Monitoring & Assessment

In order to evaluate the effectiveness of this project, SYRCL will adhere to the following Evaluation Plan, which involves collecting data from several sources. All evaluation results will be summarized in the Yearly Reports.

FOR “THE GREAT WATER MYSTERY” SCHOOL ASSEMBLIES

***Goal:** To achieve an increase in student knowledge about the importance of water conservation. Document that at least 5 percent of the participating students plan to change at least one of their daily behaviors, such as teeth brushing, to conserve water.*

SYRCL will use suggestions from the teacher evaluations and the analysis of the student testing results to improve and perfect our assembly program and activity packet to maximize students’ knowledge of and commitment to water conservation.

Teachers: At the end of each assembly, participating teachers will be asked to fill out a written evaluation of the program. This evaluation includes questions about the length, effectiveness, educational value, and curriculum relevance of the assembly. It will also ask teachers to evaluate the accompanying activity packet.

Students: Gains in student knowledge and commitment to water conservation behaviors will be measured through a comparison of pre- and post-assembly test results. Project staff will mail a packet to each participating school 2 weeks prior to each assembly. In addition to extension activities, this packet will include a brief questionnaire to assess student knowledge about and commitment to water conservation. SYRCL will require teachers to have their students complete the questionnaire both before and a few days after the assembly. The results of this questionnaire will allow project staff to quantify increases in students’ knowledge about water conservation and to estimate how many gallons of water will be saved through changes in student behavior.

FOR THE SCHOOL WATER AUDITS

***Goal:** To achieve an increase in student knowledge about the importance of water conservation and methods of conservation. Document that at least 75% of the participating students plan to change at least one of their daily behaviors to conserve water. Decrease water used at each participating school by 50-100 gallons/day.*

SYRCL will use the results of these analyses to improve and perfect our School Water Audit program to maximize students’ knowledge of and commitment to water conservation and to maximize the amount of water saved at each participating school.

Water Use Report Card: As part of the School Water Audit, each participating classroom will collect baseline data to document the amount of water used by the school. After they have implemented a Water Conservation Action Plan, the class will measure their school’s water use again to document their water savings. Students will also post the results of their Action Plan on a portion of SYRCL’s web site so that other participating schools can compare methods and water savings.

Teachers: At the end of each School Water Audit, participating teachers will fill out a written evaluation of the effectiveness of the program, the value and relevance of the lesson plans, the methodology, and the quality of the support they received from project staff. This will be followed by a phone interview with the project director.

Students: Gains in student knowledge and commitment to water conservation behaviors will be measured through a comparison of pre- and post-assembly test results. SYRCL will require teachers to have their students complete the questionnaire both before and

after their class completes the School Water Audit. The results of this questionnaire will allow project staff to quantify increases in students' knowledge about water conservation and to estimate how many gallons of water will be saved through changes in student behavior.

Observations: During the first year of the program, the project director will sit in on at least one of each of the four lesson plans as they are taught by participating teachers. The purpose of these evaluations is to get an observer's perspective on the effectiveness of the lessons and to observe the reaction of the students to the lesson.

Program Director Notes: Throughout the project, the Program Director will keep detailed notes on any changes that need to be made—either to the curriculum or the project procedures.

B-15f. Qualifications of the Applicants and Cooperators

Disadvantaged Communities Served:

All data is from US Census Bureau: 2000 Census data, because later census data was not available for all counties and areas.

In 2000, 80 percent of the statewide annual median household income was \$37,994. "The Great Water Mystery" assemblies and School Water Audits will reach several disadvantaged communities. The target audience that will be funded through Water Use Efficiency monies includes students in Live Oak (annual median household income: \$25,754), Yuba City (\$32,858), and West Sacramento (\$31,718). The target audience that is funded through SYRCL membership donations and partnerships includes students in Yuba County (annual median household income: \$30,460)

Project Manager: SYRCL

SYRCL will be responsible for managing and delivering all aspects of this program except as noted under "Project Partners" below.

SYRCL was formed in 1983 to combat dam threats on the South Yuba River and has a 21-year record of measurable successes. SYRCL's successes include achieving Wild and Scenic status for the South Yuba in 1999, serving as the lead environmental group in the Upper Yuba River Studies Program—a \$10 million CALFED-funded project studying salmon restoration in the Yuba Watershed—and the formation of a water and salmon conservation education program that has reached over 43,500 children since 2002. In 2003 SYRCL won the prestigious California Governor's Award for Environmental and Economic Leadership.

In the three years that our education program has been active, SYRCL has created a database, mapping system, publicity materials, and scheduling protocol that allow us to efficiently market, track, and present our assembly programs. These systems and protocol have already proven extremely effective in delivering assemblies throughout Nevada, Yuba, Sutter, and Sacramento Counties. SYRCL's extensive experience in managing all aspects of an assembly program make us uniquely qualified to implement "Great Water Mystery" Assemblies in Sutter, Yolo, Solano and Contra Costa County.

Additionally, SYRCL has experience implementing more in-depth, hands-on programs such as the School Water Audit. In 2004, SYRCL partnered with the EPA to develop and implement a three-month Science Docent Program in Nevada County that trained 20

community volunteers to teach monthly hands-on water activities to their partner classrooms of 5th grade students. Through this project, SYRCL gained experience recruiting teachers, running trainings sessions, and managing all aspects of a more intensive program of study.

Based on the strength of our assembly programs and their proven results, SYRCL has won contracts with NOAA Fisheries, the Yuba County Water Agency, the Bureau of Reclamation, the Sacramento Stormwater Management Program and the Regional Water Authority to promote water use efficiency and salmon conservation through school assemblies. These agencies have all been extremely satisfied with our work. References and recommendations from any of these agencies are available upon request (please call SYRCL for contact information).

SYRCL has built an organization with unparalleled community support, including 4,500 supporters and 500 active volunteers, which fosters vibrant partnerships among diverse interests, and is nationally regarded as a model of best practices for protecting and restoring a watershed. Our sound management systems and project management experience ensure that our projects are always conducted in a timely and professional way.

Project Partners: Yolo and Solano County Resource Conservation Districts

In years two and three, SYRCL will work with local resource agencies where possible as we expand the range of the School Water Audit Program to four additional counties. Agency staff will attend the School Water Audit training session, led by SYRCL, along with the three participating teachers from their county. Although SYRCL will be ultimately responsible for ensuring that the project flows smoothly, the local Agency staff will help coordinating the logistics, site visits, regular check in dates, and awards ceremonies for each School Water Audit in their county.

Having a local contact person in each county will make it easier for schools to receive on-site support as needed. The Yolo and Solano County Resource Conservation Districts (RCDs) have already agreed to participate in this program. By involving these RCDs, SYRCL is sowing the seeds to continue this project in future years. Through the School Water Audit portion of this program, SYRCL will train four Resource Conservation Districts and 15 teachers how to conduct a school water audit.

B-15g. Outreach, Community Involvement, and Acceptance

Over the past three years, SYRCL has delivered our in school assembly programs to over 43,500 elementary and middle school students in 5 Northern California Counties. To accomplish this, SYRCL has created a database, mapping system, publicity materials, and scheduling protocol that allow us to efficiently market, track, and present our assembly programs.

The main outreach tool that SYRCL uses to publicize our assembly programs is a brochure mailing followed by a personal phone call to each eligible school. Each phone call is logged in a database that, when combined with a map of county schools, allows us to schedule nearby schools on the same day to minimize travel expenses. Because “The Great Water Mystery” assemblies are free, correlated with state science content standards, and require a minimal time commitment from teachers, even teachers who do

not usually include water conservation education in their classrooms participate in and enjoy this program. SYRCL's past experience has shown that we can easily reach 20 percent of the students in a given county using this scheduling protocol.

SYRCL will use the network of teachers created while scheduling these assembly programs to find three motivated teachers in each county who would like to have their classroom participate in performing a School Water Audit. "The Great Water Mystery" assembly programs gain an easy audience with most teachers because they require such a minimal time commitment. However, we have found that there are always teachers that are interested in doing more as a follow up project after the assembly. In order to accommodate these teachers, SYRCL sends a packet of supplemental activity ideas to each participating school, but the School Water Audit program will allow the most motivated teachers to go one step further.

In the first year of the project, SYRCL will pilot test a School Water Audit Program in Nevada County. Through the School Water Audit Program, students will create a Water Conservation Action Plan for their school and collect before and after data to document its effectiveness. Based on the results of similar programs in other areas, we are estimating that each participating school will save between 50-100 gallons of water per day²⁵. Students will post the results of their findings and water savings on a portion of SYRCL's web site, which will publicize the success of the program and allow students from different schools to compare results.

In years two and three, SYRCL will work with local resource agencies where possible as we expand the range of this program to four additional counties. Agency staff will attend a School Water Audit training session along with the three teachers from their county. They will then coordinate the logistics, site visits, and awards ceremonies for each School Water Audit in their county. Yolo and Solano County Resource Conservation District (RCD) staff have already agreed to participate in this program. By involving these RCDs, SYRCL is sowing the seeds to continue this project in future years. Through the School Water Audit portion of this program, SYRCL will train four Resource Conservation Districts and 15 teachers how to conduct a school water audit.

Additionally, SYRCL plans to use the success of these School Water Audits as a demonstration project to leverage money from local water districts and agencies. SYRCL will work to partner with these local agencies to offer free presentations of "The Great Water Mystery" and School Water Audits in future years. This partnership between non-profit organizations and water supply agencies will allow SYRCL to expand the range of this program and will create a model for implementing this type of program on a statewide basis.

SYRCL staff has extensively researched existing water conservation education programs in Yolo, Solano, Sutter and Contra Costa counties²⁶. These water agencies, resource conservation districts, and non-profit agencies are all excited about SYRCL's "Great Watery Mystery" and School Water Audit programs and are willing help publicize them

²⁵ <http://www.state.tn.us/environment/dca/tp3/pdf/ss-centennial-lw.pdf>

²⁶ http://bmp.cuwcc.org/bmp/read_only/list.lasso, California Urban Water Conservation Council web site, and E-mail correspondence and phone conversations with staff at Woodleaf Environmental Center, Water Resources Association of Yolo County, Solano County Water Agency, Solano Irrigation District, City of Benicia, and Contra Costa Water District

through word of mouth. Additionally, in counties with out-of-school water conservation education opportunities, such as the Waterways program in Yolo and Solano counties, SYRCL's in-school assemblies can help build interest among teachers to take advantage of these other more time consuming and costly programs (please see Section 1 for more details on the educational programs available in each of the proposed counties).

There is no known opposition to this proposed project, and we have no reason to expect any. Our "Great Water Mystery" assemblies have been sponsored by a very diverse group of agencies including the Bureau of Reclamation, NOAA Fisheries, the Yuba County Water Agency, Sacramento Stormwater Management Program and more. Additionally, we have directed our attention to the portions of each county that do not have competing in-school water conservation education programs to avoid potential overlap or conflict.

B-15h. Innovation

Resources and web sites that require teachers to review and train themselves in new curricula or activities often languish on the shelves. Off-site programs require motivated teachers to organize the logistics (financing, permission forms, transportation, etc.).

SYRCL's proposed Water Education Program will offer free on-site assembly programs that require minimal time commitment from teachers. It also provides the opportunity for different levels of involvement at negligible cost by offering packets of water conservation activities to all participating teachers. Additionally, for 15 of the most motivated teachers and schools, SYRCL will train the teachers and assist the students in performing a School Water Audit. Through this Audit, students will participate in a real-life water conservation project that will save their school thousands of gallons of water each year and will increase each student's personal commitment to water conservation.

The "Great Water Mystery" assemblies are efficient & innovative because:

- "The Great Water Mystery" is correlated to State Science Content Standards, which makes it relevant for teachers in counties across California.
- Assembly programs require a minimal time commitment from teachers, resulting in an extremely high level of participation from teachers *who would not otherwise include water education* in their classrooms.
- Assembly programs reach students directly and do not *require* teachers to train themselves in new activities or curricula.
- SYRCL will provide an activity packet as a supplement to the assembly. Packets give teachers an extremely easy way to expand on the concepts in the assembly.

The School Water Audits are efficient and innovative because:

- They provide a hands-on, real-life opportunity for students to create change within their school.
- Not only will students be directly involved in saving their school thousands of gallons of water each year, but through their involvement in this project, they will increase their personal commitment to water conservation in the rest of their lives.
- By giving the School Water Audit program after a year of "Great Water Mystery" assemblies, SYRCL will be able to use our existing relationship with the schools to seek out the most committed teachers and schools, ensuring project success.

- Teachers will be more likely to participate in the School Water Audit once they have seen “The Great Water Mystery” assembly since they will have a degree of confidence in the quality of SYRCL’s programs.

This innovative educational approach will be tested, expanded and refined through this project. After this project, these assemblies and water audits will serve as a model for widespread replication throughout the state. SYRCL will use the success of these assembly programs and School Water Audits as a demonstration project to leverage money from local water districts and agencies. SYRCL will work to partner with these local agencies to offer free presentations of “The Great Water Mystery” and School Water Audits in future years. This partnership between non-profit organizations and water supply agencies will allow SYRCL to expand the range of this program and will create a model for implementing this type of program on a statewide basis.

B-15i. Benefits and Costs

Budget Explanation

1. **Rates:**

Principal Project Manager	\$30/hr	225 hours (<i>for state funded portion</i>)
Project Manager	\$25/hr	525 hours (<i>for state funded portion</i>)
Scheduler	\$15/hr	800 hours (<i>for state funded portion</i>)
Assembly Presenter	\$25/hr	1,025 hours (<i>state funded portion</i>)
Audit Technical Staff	\$30/hr	500 hours (<i>for state funded portion</i>)
Administrative Officer	\$18/hr	635 hours (<i>for state funded portion</i>)
2. **Contingency:** For Salaries is calculated at 10%
3. **Benefits:** calculated at 20% include health care and employment taxes.
4. **Major supplies and materials:** Major supplies include a projector screen, a laptop computer and LCD projector, minimal supplies (such as stopwatches and measuring containers) for the School Water Audit Kit, printed publicity materials, and printed activity packets.
5. **Travel Expenses:** 45,560 miles at \$.34 per mile includes the Assembly Presenter’s travel to each assembly, Project Manager’s travel to oversee Assembly Presenter, Project Manager’s travel to give each School Water Audit Training, and local agency staff travel to provide on-site assistance with each School Water Audit.
6. **Cost Share:** Applicant’s portion of the cost share is from membership contributions, fundraisers, and partnerships with the Sacramento Stormwater Management Program, Regional Water Authority, and the Yuba County Water Agency.
Additional cost share for the School Water Audits is figured as a portion of the salaries of the teachers who use their class time to apply the lessons learned during the training (estimated at \$40 per hour for 75 hours over the life of the project).

In-school assembly programs are an extremely effective way to teach thousands of children about water conservation. Not only are they very cost effective, but because they require such a minimal investment of time from teachers, they are an excellent way to reach students whose teachers would not otherwise include any water conservation education in their classrooms. Combining these assembly presentations with school water audits creates the perfect blend between involving a large number of students and allowing for a more in-depth learning process.

If just 5 percent of the 91,600 students who will see assemblies sponsored by the Water Use Efficiency Program (26,400 students sponsored by Water Use Efficiency Program,

65,200 students through SYRCL cost share) change their behavior to turn the water off while they brush their teeth, they will save 4,346,400 gallons of water every year. If 5 percent of the audience shortens their showers by 5 minutes, they will save 16,717,000 gallons of water every year. Teachers who have participated in this program in the past have suggested that the percentage of students changing behaviors may be even higher.

The School Water Audit Section of the program will allow a more in-depth exploration for 15 of the most motivated classrooms. By participating in a real-life water conservation project and teaching their peers about water conservation, students will become even more inspired to conserve water in their daily habits and will be extremely familiar with simple ways to do this.

If 75 percent of the 450 students and 15 teachers who participate in the School Water Audit program change their behavior to turn the water off while they brush their teeth, they will save 330,963 gallons of water every year. If 75 percent of the participants shorten their showers by 5 minutes, they will save 1,272,937 gallons of water every year.

In addition to the educational value of the School Water Audits, SYRCL is estimating that the water audit will result in direct water savings of between 50 and 100 gallons of water per day for each participating school. Over the course of a single school year, these savings would add up to between 13,500-27,000 gallons for each participating school—202,500-405,000 project wide. This estimation of water savings is based on the results of similar projects in other areas²⁷.

The total of anticipated quantifiable water savings are: 4,500,000—16,000,000 gallons of water per year through student behavior changes due to water assembly, 500,000 gallons of water per year through student behavior changes due to participating in the school water audit, and 300,000 gallons of water per year directly saved by changes made through the school water audit. This level of savings is likely to be sustained as students integrate these behaviors into their daily lifestyle. These quantifiable water savings will be monitored according to our monitoring and assessment plan.

²⁷ <http://www.state.tn.us/environment/dca/tp3/pdf/ss-centennial-lw.pdf>

Applicant: South Yuba River Citizens League

THE TABLES ARE FORMATTED WITH FORMULAS: **FILL IN THE SHADED AREAS ONLY**

Section A projects must complete Life of investment, column VII and Capital Recovery Factor Column VIII. Do not use 0.

Table C-1: Project Costs (Budget) in Dollars)

Category (I)	Project Costs \$ (II)	Contingency % (ex. 5 or 10) (III)	Project Cost + Contingency \$ (IV)	Applicant Share \$ (V)	State Share Grant \$ (VI)	Life of investment (years) (VII)	Capital Recovery Factor (VIII)	Annualized Costs \$ (IX)
Administration ¹								
Salaries, wages	\$196,550	10	\$216,205	\$112,650	\$103,555	0	0.0000	\$0
Fringe benefits	\$39,310	10	\$43,241	\$22,530	\$20,711	0	0.0000	\$0
Supplies	\$2,200	0	\$2,200	\$1,200	\$1,000	0	0.0000	\$0
Equipment	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Consulting services	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Travel	\$15,500	0	\$15,500	\$9,000	\$6,500	0	0.0000	\$0
Other	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Total Administration Costs	\$253,560		\$277,146	\$145,380	\$131,766			\$0
Planning/Design/Engineering	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Equipment Purchases/Rentals/Rebates/Vouchers	\$9,000	0	\$9,000	\$6,000	\$3,000	10	0.0000	\$0
Materials/Installation/Implementation	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Implementation Verification	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Project Legal/License Fees	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Structures	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Land Purchase/Easement	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Environmental Compliance/Mitigation/Enhancement	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Construction	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Other (Specify)	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Monitoring and Assessment	\$28,200	0	\$28,200	\$10,000	\$18,200	0	0.0000	\$0
Report Preparation	\$2,080	5	\$2,184	\$0	\$2,184	0	0.0000	\$0
TOTAL	\$292,840		\$316,530	\$161,380	\$155,150			\$0
Cost Share -Percentage				51	49			

1- excludes administration O&M.

Applicant:

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

Table C-2: Annual Operations and Maintenance Costs

Operations (1) (I)	Maintenance (II)	Other (III)	Total (IV) (I + II + III)
\$0	\$0	\$0	\$0

(1) Include annual O & M administration costs here.

Table C-3: Total Annual Project Costs

Annual Project Costs (1) (I)	Annual O&M Costs (2) (II)	Total Annual Project Costs (III) (I + II)
\$0	\$0	\$0

(1) From Table C-1, row (n) column (IX)

(2) From Table C-2, column (IV)

Table C- 4: Capital Recovery Table (1)

Life of Project (in years)	Capital Recovery Factor
1	1.0600
2	0.5454
3	0.3741
4	0.2886
5	0.2374
6	0.2034
7	0.1791
8	0.1610
9	0.1470
10	0.1359
11	0.1268
12	0.1193
13	0.1130
14	0.1076
15	0.1030
16	0.0990
17	0.0954
18	0.0924
19	0.0896
20	0.0872
21	0.0850
22	0.0830
23	0.0813
24	0.0797
25	0.0782
26	0.0769
27	0.0757
28	0.0746
29	0.0736
30	0.0726
31	0.0718
32	0.0710
33	0.0703
34	0.0696
35	0.0690
36	0.0684
37	0.0679
38	0.0674
39	0.0669
40	0.0665
41	0.0661
42	0.0657
43	0.0653
44	0.0650
45	0.0647
46	0.0644
47	0.0641
48	0.0639
49	0.0637
50	0.0634

(1) Based on 6% discount rate.

Applicant: _____

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

Table C-5 Project Annual Physical Benefits (Quantitative and Qualitative Description of Benefits)

	Qualitative Description - Required of all applicants ¹			Quantitative Benefits - where data are available ²	
	Description of physical benefits (in-stream flow and timing, water quantity and water quality) for:	Time pattern and Location of Benefit	Project Life: Duration of Benefits	State Why Project Bay Delta benefit is Direct ³ Indirect ⁴ or Both	Quantified Benefits (in-stream flow and timing, water quantity and water quality)
Bay Delta					0
Local				Not applicable.	

¹ The qualitative benefits should be provided in a narrative description. Use additional sheet.

² Direct benefits are project outcomes that contribute to a CALFED objective within the Bay-Delta system during the life of the project.

³ Indirect benefits are project outcomes that help to reduce dependency on the Bay-Delta system. Indirect benefits may be realized over time.

⁴ The project benefits that can be quantified (i.e. volume of water saved or mass of constituents reduced) should be provided.