

# 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):

**Water Education Foundation**  
\_\_\_\_\_

4. Project Title:

**Project Wet (Urban Focus)**  
\_\_\_\_\_

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

Name, title

Rita Schmidt Sudman,  
Executive Director

Mailing address

717 K Street, Suite 317  
Sacramento, CA 95814

Telephone

916-444-6240

Fax.

916-448-7699

E-mail

rsudman@watereducation.org

6. Contact person (if different):

Name, title.

Mailing address.

Telephone

Fax.

E-mail

7. Grant funds requested (dollar amount):

*(from Table C-1, column VI)*

**\$406,969**

8. Applicant funds pledged (dollar amount):

9. Total project costs (dollar amount):

*(from Table C-1, column IV, row n)*

**\$406,969**

10. Percent of State share requested (%)

*(from Table C-1)*

100%

11. Percent of local share as match (%)

*(from Table C-1)*

N/A

12. Is your project locally cost effective?

*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.*

*(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.)*

(a) yes

(b) no

**See Benefit & Cost Analysis**

11. Is your project required by regulation, law or contract?  (a) yes  
 If no, your project is eligible.  (b) no

If yes, your project may be eligible only if there will be accelerated implementation to fulfill a future requirement and is not currently required.

*Provide a description of the regulation, law or contract and an explanation of why the project is not currently required.*

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12. Duration of project (month/year to month/year):

**December 1, 2005 –  
November 30, 2008**

13. State Assembly District where the project is to be conducted:

**CALFED Target Area**

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

**CALFED Target Area**

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

**CALFED Target Area**

16. County where the project is to be conducted:

**CALFED Target Area**

17. Location of project (longitude and latitude)

**CALFED Target Area**

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

(ii) Incorporated Mutual Water Co.

(iii) Specify \_\_\_\_\_

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

(Provide supporting documentation.)

(a) yes, \_\_\_\_\_ median household income

(b) no

**2004 Water Use Efficiency Proposal Solicitation Package**  
**APPENDIX B: Signature Page**

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form has the legal authority to submit the proposal on behalf of the applicant;

There is no pending litigation that may impact the financial condition of the applicant or its ability to complete the proposed project;

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant;

The applicant will comply with all terms and conditions identified in this PSP if selected for funding; and

The applicant has legal authority to enter into a contract with the State.



Signature

Rita Schmidt Sudman, Exec. Dir.  
Name and title

1/11/05

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

This three-year project will provide water conservation education to approximately **half a million children** living in urban centers within the CALFED regions. The Water Education Foundation proposes to conduct **Project WET (Water Education for Teachers)** training workshops for formal and non-formal educators to teach them how to include high quality water education in their community water conservation outreach programs. **The \$407,000 requested would mean a cost of less than \$.81 per child.**

The Project WET program will be conducted in partnership with urban water districts and municipalities that currently have no school water education outreach programs and need to meet that Best Management Practice (BMP) for their agreement with the California Urban Water Conservation Council.

Project WET is a successful, highly regarded water education program. Project WET is an international, interdisciplinary water science and education program for educators of K-12 students. Developed, field-tested and reviewed by over 600 educators and resource managers, the 91 WET lessons promote critical thinking and problem solving. This grant would allow the program to be available to a much larger group of educators and students, and provide a quality water conservation education program to water districts and municipalities within the CALFED regions which are currently lacking one.

### **Goals:**

1. As a result of our proposed project, **9,000** educators and approximately **one half million students** and their families will have:
  - a greater ability to understand water issues
  - a greater ability to teach about water conservation activities
  - an educational program that will remind students daily of the importance of water
  - increased appreciation of water as a resource, and will adopt conservation behavior early in life
  - increased awareness of water conservation among other family members
  - greater understanding of how individuals can participate in water conservation
2. As a result of this project over **one hundred** urban water districts and municipalities will have the template for an on-going school water education outreach program.

**Needs Statement:** Water will always be a limited resource and there is a critical need to remind the public of the need to conserve water. California is looked to as a model region for unique and critical water problems and collaborative problem solving. The next generation of children must learn these lessons early about the importance of water so that they make behavior changes that they will carry with them throughout their lifetimes.

Many of these Project WET workshops will be sponsored by municipalities and urban water districts who are working toward meeting the terms of the Memorandum of Understanding they have signed with the California Urban Water Conservation Council (CUWCC). Best Management Practice #8, School Education, states:

“Implementation shall consist of at least the following actions:

- a) Implement a school education program to promote water conservation and water conservation related benefits.
- b) Programs shall include working with school districts and private schools in the water suppliers’ service area to provide instructional assistance, educational materials, and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Education materials shall meet the state education framework requirements, and grade appropriate materials shall be distributed to grade levels K-3, 4-6, 7-8, and high school students.”

According to the CUWCC BMP Report Filing Status, in 2001, 88 of 259 districts (38%) reporting had not fulfilled their requirements for BMP #8. In 2002, 78 of 259 districts (30%) failed to meet the standard, but **in 2003, 157 of 269 districts (58%) failed to complete their education outreach requirement.** These percentages are obviously moving in the wrong direction. The Water Education Foundation and Project WET can help these districts fulfill their water education requirements; CUWCC recognizes Project WET as an outstanding program with the elements necessary for water conservation education that will meet BMP standards.

In addition to the needs of the designated entities to educate their constituents about water conservation, the State of California educational system has begun testing students’ achievement in science education. Now science achievement will be measured in 5th and 8th grade, and teachers are looking for ways to incorporate meaningful science lessons into their curriculum. Fifth grade science curriculum includes the hydrologic cycle and weather patterns and eighth grade includes basic chemistry, including molecular structure, pH, density and buoyancy. Besides this State Department of Education requirement, “No Child Left Behind” (NCLB) is a national mandate that requires schools to provide quality professional development to educators. The Water Education Foundation’s education programs, including Project WET, meet the NCLB standards.

In conclusion, California’s water shortages, the need for CUWCC members to institute mandated water conservation education, a focus in formal education to increase science related education, and the need for quality professional development for educators, all support the successful integration of the Project WET model into the CALFED region’s need for water conservation education.

## **B-15d. Statement of Work, Section 2: Technical/Scientific Merit, Feasibility**

The Water Education Foundation proposes to offer a targeted school education program that will train 60 facilitators each of the three years in the program in four regional facilitator workshops. These 60 facilitators will, in turn, each train 25 educators who teach children in grades K-12 in urban areas throughout the state, concentrating in the CALFED solution area. This would result in 1,500 teachers trained in the first year to include Project WET, and specific lessons in water conservation, in their curricula. Each of the 1,500 teachers will then provide a minimum of two lessons in their classrooms related to water conservation. Each teacher will reach an average of 30 children, so that approximately 45,000 children **and their families** will receive information about water conservation in the first year of the program. .

In actuality, many of the Project WET workshop attendees are secondary teachers who see approximately 150 students per day. Park rangers, zoo and aquarium educators, and school district science coordinators also attend workshops; these professional educators see thousands of children each year, so the total number of children could actually be much higher.

The Water Education Foundation would contact water districts or municipalities in the CALFED solution area which, according to the annual BMP report of the CUWCC, have not met their BMP #8 obligation. The districts would be invited to send a staff member to the Project WET facilitator workshop. If no one from the district would be available to participate, the Foundation would seek participation from the local county office of education or school district.

As an incentive to the water district or municipality to participate the first year, some funds from the WUE grant would be used to purchase Project WET Activity Guides for the educators participating in the workshops. The main obligation of the water district the first year would be to sponsor the workshop, provide lunch for the participants and distribute their own water conservation materials. (Generally a cost to the district of less than \$500 per workshop.)

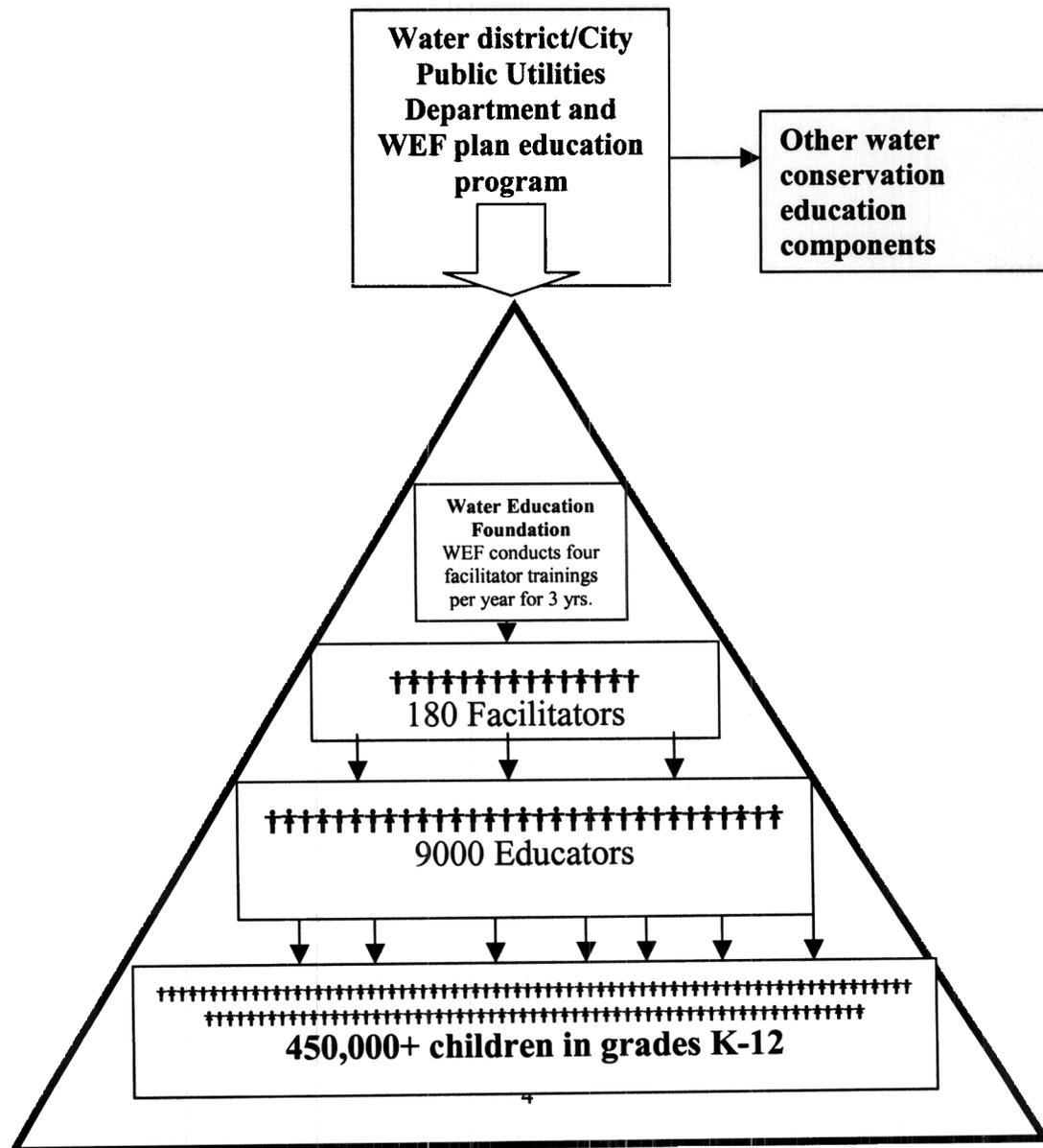
Our experience is that once a water district experiences the positive response of the educators in their community, they will commit resources to continuing a successful Project WET program. (See attached letters of support.) It is assumed that the districts and municipalities will pay for the cost of the WET Guides for workshop participants in subsequent years. Total cost of a workshop, including Guides, is less than \$1,000 per workshop.

The total number of student contacts from the first group of facilitators trained would double in year 2 and triple in year three, resulting in a total in the third year of 135,000 children and their families becoming more aware of water conservation actions they can take in their homes. This total is just the sum of the first group of facilitators. If 60 more facilitators are trained in year 2 and then year 3, **the ultimate total would be approximately half a million student and family contacts**. The structure of this program is commonly referred to as the “train the trainer model”. It is one of the most cost-effective ways to develop a targeted education program, as it works on a pyramid model.

The Water Education Foundation and Project WET have been using the train-the-trainer model for over nine years and have trained over 6,000 educators who report to us that they have annual contact with over three and a half million students. Our successes come from partnering with water districts all over the state which use Project WET as part of their outreach effort. Because all Project WET activities are correlated to the California Department of Education's state subject area standards, they are very popular with California educators. The Water Education Compendium jointly published by the State Departments of Water Resources and Education ranked Project WET as an "A+" program. Water districts and municipalities that use Project WET as part of their education outreach program enjoy the acceptance of WET by the educational community, making it easier for them to include their local water conservation and outreach materials in workshops.

The proposed project period will be from December 1, 2005 through November 30, 2008.

**Three year summary of the total numbers of facilitators, educators and students**



This outstanding program could grow exponentially with the help of CALFED funds.

We have found that if you just give educators curriculum materials they may or may not use them, regardless of the quality of the lessons. However, if you train educators directly, or through facilitators, and actually show them how to work the lessons into what they are already teaching, they are likely to incorporate an education program and use it year after year. Since our materials are correlated to the California State Subject Standards, this increases the likelihood of continued use even more. In addition, because of the competing demands and budgetary constraints faced by educators, we have found that it is very important to offer incentives and free materials to facilitators and teachers who participate in the trainings.

We believe the “train the trainer” mode works the best when you can train facilitators that work in the local community. This empowers them to present water education materials as well as information about your local water resources. We have partnered with 26 different water districts and municipalities in the last two years, using Project WET to meet their water conservation education needs.

Task list and schedule:

**Task 1: Offer a targeted school education program that will train 60 facilitators each of the three years in the program in four regional facilitator workshops. These 60 facilitators will, in turn, each train 25 educators who teach children in grades K-12 in urban areas throughout the state, concentrating in the CALFED solution area.**

December 1, 2005 – November 30, 2008

\$370,310 over 3 years

	<u>End Date</u>
1.1 WEF begins outreach to urban water districts and municipalities. Workshop attendees are told that they will be expected to organize a Project WET workshop within their scope of work for 25 peers.	3/30/06
1.2 First regional facilitator trainings held The Facilitator Trainings: The Water Education Foundation’s proposed program would provide a trainer and copies of the <i>Project WET Curriculum and Activities Guide</i> to each workshop participant. The Foundation’s educators will take the lead in the handling of the logistics of setting up the facilitator training. The training would be eight hours in length and provide training in the Project WET program as well as in facilitation skills.	6/30/06

- 1.3 Outreach begins to school administrators 4/30/06  
Administrators will receive a Project WET Sampler, a packet of information explaining the water conservation education program and an invitation to distribute to science coordinators or other personnel to attend the Project WET training
- 1.4 Second group of facilitator workshops is held in different region of the state. 9/30/06
- 1.5 Project WET teacher training workshops begin in targeted cities. 9/30/06  
Teacher Training:  
Each of the 60 facilitators would arrange to directly educate 25 teachers in their district over the following year. These trainings would take six hours and require a fair amount of up front coordination on the part of the facilitator. Each of the 60 facilitators (and the districts they represent) would provide a copy of the Project WET Activity Guide and an evaluation sheet (sample attached) to each teacher participating in the workshop. The teachers would agree to teach two water conservation lessons to a minimum of 30 students each.
- Evaluation sheets will be returned to the Water Education Foundation for tabulation and data entry. Quality of workshops will be monitored by these evaluations. All workshop participants will become part of the Project WET list serve and receive four seasonal emailed Project WET Gazette newsletters each year. (See attached sample.) Newsletters contain information about water issues, education, professional development opportunities for teachers and educational opportunities for students. This on-going contact and education is one of the hallmarks of an excellent teacher education program (as cited in NCLB).
- 1.6 Teacher workshops continue. 12/10/06
- 1.7 Student training begins in classrooms. 12/10/06  
Student Training:  
Each teacher will incorporate a minimum of two water conservation lessons from Project WET into

their curriculum with a minimum of 30 students. Upon completion of the two activities, each student will receive additional materials from the sponsoring water district or municipality to take home and share with their families. Students will be pounding on their parents' bathroom doors all over the state demanding their parents take shorter showers.

- 1.8 The Water Education Foundation will produce an annual report summarizing the number of workshops conducted, sponsoring agencies, number of educators trained and their grade levels and the number of annual student contacts. (See sample report for 2004.) 1/31/07

Teachers who are trained to use these water education materials tend to continue to use them year after year. (See teacher comments.) Since the Project WET Guide remains in the teachers' curriculum library, this means the investment in trainings is multiplied over subsequent years. In year two, if the same 1,500 educators use the materials with the next group of 45,000 students, the number of families exposed to water education materials is doubled. The initial cost of the training is then spread over 90,000 students, cutting the cost of the original training investment in-half.

In addition, it is anticipated that the water districts/municipalities who sponsored the workshops in year one will continue educating another group of 1,500 educators. The positive responses from educators and increased interest in water conservation should have a cumulative effect on water use efficiency in each urban area.

- 1.9 WEF begins year-two outreach to urban water districts and municipalities. Workshop attendees are told that they will be expected to organize a Project WET workshop within their scope of work for 25 peers. 3/30/07
- 1.10 First year-two regional facilitator trainings held 6/30/07
- 1.11 Outreach begins to school administrators 4/30/07
- 1.12 Second group of year-two facilitator workshops is held in different region of the state. 9/30/07
- 13 Project WET teacher training workshops begin in targeted cities. 9/30/07
- 1.14 Teacher workshops continue. 12/10/07
- 1.15 Student training begins in classrooms. 12/10/07

In year three, if the same 4,500 educators use the materials with their 135,000 students, the number of families exposed to water education materials is tripled.

In addition, it is anticipated that the water districts/municipalities who sponsored the workshops in years 1 and 2 will continue educating another group of 1,500 educators in year 3. The facilitators trained in year 2 will be conducting their second round of workshops, adding another 1,500 educators trained to the original 1,500 for a total of 3,000 educators. The geometric growth of the program is self evident.

- |      |  |           |
|------|--|-----------|
| 1.16 | WEF begins year-three outreach to urban water districts and municipalities. Workshop attendees are told that they will be expected to organize a Project WET workshop within their scope of work for 25 peers.                                 | 3/30/08   |
| 1.17 | First year-three regional facilitator trainings held   | 6/30/08   |
| 1.18 | Outreach begins to school administrators   | 4/30/08   |
| 1.19 | Second group of year-three facilitator workshops is held in different region of the state.   | 9/30/08   |
| 1.20 | Project WET teacher training workshops begin in targeted cities.   | 9/30/08   |
| 1.21 | Teacher workshops continue.  | 11/01/08  |
| 1.22 | Student training begins in classrooms.   | 11/01/08  |
| 1.23 | Contact trained facilitators at least once a year to offer suggestions on implementation, and additional in-depth training in other water education topics like groundwater, water quality, watersheds, wetlands, etc.                         | Annually  |
| 1.24 | Distribute newsletters to trained teachers.  | Quarterly |
| 1.25 | Collect contact information on all workshop participants and will produce annual reports summarizing workshop sponsors, numbers of participants and numbers of annual student contacts. (See sample annual Workshop Summary Report from 2004.) | Annually  |

**Task 2: Project Monitoring & Assessment**

December 1, 2005 – November 30, 2008  
\$16,818 over 3 years

2.1 Monitoring of project progress and deliverables Ongoing

**Task 3: Report Preparation**

December 1, 2005 – November 30, 2008  
\$19,841 over 3 years

2.1 Preparation of all progress reports Quarterly

2.2 Preparation of all financial reports/invoices Quarterly

2.3 Preparation of final report 1/30/08

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

Each facilitator planning a workshop will submit a Workshop Proposal (See sample) and an agenda for the workshop (See sample).

At the conclusion of each workshop, including the facilitator workshops, each participant will fill out an evaluation form. (See sample.) The Water Education Foundation will monitor these evaluations for quality of the workshops and to make sure that they are meeting the standards set out for all workshops. (See “Implementation Standards” sheet.)

Each facilitator will also submit a Workshop Report to the Water Education Foundation (See sample.)

From the evaluations and reports the Water Education Foundation will compile information into an Excel file on the sponsor of the workshop, the facilitator, location of the workshop, number of participants, grade level taught, and annual student contact numbers. This will be formatted into an annual Workshop Summary Report. (See 2004 sample.)

This format of reporting ensures that the Water Education Foundation will oversee the quality of the workshops and compile data on the number of teacher participants and student contacts. We have been using this format successfully for over nine years.

## **B-15f. Qualifications of the Applications and Cooperators**

### Background -The Water Education Foundation

The Water Education Foundation was founded in 1977 with the mission to create a better understanding of water issues and help resolve water problems. The Foundation has developed outreach programs that include briefings, classroom programs, written materials, public television programs, and water tours. The goal of each of these activities is to educate the public and decision makers, while encouraging involvement, support, and interest in discovering long-term solutions to water problems.

A volunteer board of directors includes the representation of the agricultural community, environmental groups, water law, municipal agencies, and Native American tribes. The Water Education Foundation is managed by a very committed staff. Rita Schmidt Sudman, executive director, has been with the Foundation since 1979 and is widely recognized as an expert on water policy and management. Due to this strong leadership, the Foundation has received many prestigious awards for its work, including the Governor's Award for Environmental and Economic Leadership, the national Chevron Conservation Award, the Bureau of Reclamation's highest award in the Water Conservation Awards Program, many Emmy nominations for documentaries and the receipt of two Emmy awards. (See resume.)

The Foundation's Education Director, Judy Maben, has coordinated the school education program for the Water Education Foundation since 1986 and has served as the State Coordinator for California Project WET (Water Education for Teachers) since its inception in 1993. (See resume.) She holds a lifetime credential in science education.

Brian Brown, the assistant Project WET Coordinator, has been an environmental educator for 11 years. Brian is also a credentialed teacher. (See resume.)

Another part time assistant will be hired with grant funds to work on this project.

### Project WET Background Information:

Project WET (Water Education for Teachers) is a high quality, effective K-12 inter-disciplinary program for formal and non-formal educators. Project WET began in 1984 in North Dakota. With the involvement of the US Bureau of Reclamation, the effort was soon begun to replicate this model program for other states. Today, Project WET is a highly respected and utilized education tool in 50 states, Canada, Mexico, the Philippines and through the Peace Corps science education program.

The Water Education Foundation, under the sponsorship of the US Bureau of Reclamation: Mid-Pacific Region, is the coordinating agency for California Project WET. Under this beneficial partnership, more than 6,500 educators have been trained and more than three million students have been provided the information and lessons offered by the Project WET curriculum in the last nine years.

Project WET has created a strong reputation as a high quality, effective education program provided to educators who participate in workshops which train them to implement the program effectively. Project WET is correlated to California State Frameworks for Science and History/Social Science, and provides balanced lessons that reflect the variety of water users and issues. Project WET was given an A+ rating by the teachers reviewing materials in the Water Education Compendium. (See attached page.) Project WET is consistent with the realities of problem solving practices in water resources today and prepares students to think critically and work cooperatively.

The Project WET Curriculum and Activity Guide was designed:

- to create a guide that represents the thoughts, needs, and concerns of a vast cross section of grassroots educators and resource managers and is relevant and meaningful to young people.
- to accommodate diverse learning styles with activities that are not only practical but also thought-provoking and engaging.
- to address water from the widest possible angle with Project WET modules and existing regional water education programs bringing local issues into sharper focus.
- to provide educators with a large selection of creative teaching strategies.
- to promote the tenet of "water for all water users."
- to generate enthusiasm for further, more in-depth, study of topics introduced through the activities.

#### INSTRUCTIONAL APPROACH:

Project WET activities are designed to satisfy the goals of educational programs by complementing existing curricula rather than displacing or adding more concepts. Project WET activities provide many opportunities to address curriculum objectives and educational standards. These interdisciplinary activities designed for students in grades K-12 are perfect for use in formal and non-formal education settings. (See attached sample water conservation lesson.)

The pedagogy of Project WET is so effective that university science methods professors of pre-service teachers use it to teach their students how to teach science. Project WET is used by over a dozen California universities as part of their teacher preparation program. (See attached letters.)

The Water Education Foundation is highly respected as a dependable source of information on complicated and important water issues, as well as a source of excellent school education materials. Here are some **quotes from teachers** who have taken Project WET workshops:

- "The book and content standards went directly together. I thought the strategies taught were wonderful and will be very helpful."
- "I thought it was excellent and I have many strategies to use now"
- "The book is terrific"

- “The workshop added to my personal development”
- “I loved the hands-on activities and how they made learning so much fun and comprehensible”

Previous CALFED Water Use Efficiency grant projects:

The Water Education Foundation successfully fulfilled its contractual obligations for a CALFED Water Use Efficiency project (Contract #460000-1602) entitled “Water Use Efficiency: The Water Conservation and Recycling Awareness Initiative.” This project was a comprehensive, multi-media public education campaign which raised the public’s awareness and improved understanding of two water supply stretching strategies: water conservation and recycling. The three primary components of the project were to develop, disseminate and evaluate the following products: 1) Water radio minutes; 2) Layperson’s Guide to Water Conservation; and 3) Conserve Water Educator’s Guide.

Background – California Urban Water Conservation Council (CUWCC)

The California Urban Water Conservation Council (CUWCC) was created to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. The Council's goal is to integrate urban water conservation Best Management Practices into the planning and management of California's water resources.

A historic Memorandum of Understanding was signed by nearly 100 urban water agencies and environmental groups in December, 1991. Since then the Council has grown to over 310 members. Those signing the MOU pledge to develop and implement fourteen comprehensive conservation Best Management Practices (BMPs).

CUWCC creates an annual report listing which districts and municipalities have successfully met their BMPs. CUWCC has a cooperative agreement with the Department of Water Resources, the U.S. Bureau of Reclamation, and the California Bay-Delta Authority to upgrade the Best Management Practices (BMP) reporting database so that it can be used by DWR Office of Water Use Efficiency staff for information on urban water use and cumulative savings for each of the quantifiable BMPs.

The Water Education Foundation’s project will increase the performance of the signatories to the MOU, and increase water conservation practices in urban areas.

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

The Water Education Foundation is highly respected as a dependable source of information on complicated and important water issues and has a strong reputation for successful outreach to constituencies with a broad range of interests. The Foundation’s Project WET program has been

successfully implemented throughout the state since 1996, growing from 289 educators trained the first year to over 1,200 educators annually for the last two years. The Project WET lessons are well received by educators because they are correlated to the State Department of Education's Science and English/Language Arts and History/Social Science Standards.

Many of the facilitators trained are education and community outreach personnel from water districts. These districts recognize that educating children in wise water use can result in life-time habits of water conservation, as well as communicating these standards to students' families. One district, Santa Clara Valley Water District, has been using Project WET as part of its education program. The district has successfully reduced its water use by 25 percent. (See Machado letter.)

The train-the-trainer modality is a highly effective and efficient way of disseminating educational materials. The growth of the program is geometric and once in place, water education lessons are used repeatedly year after year by educators.

The California Urban Water Conservation Council reports annually the successfully completed BMPs of the signatories to their MOU. This encourages districts and municipalities to meet all of their BMPs, including #8, water education outreach. CUWCC endorses the implementation of Project WET as meeting BMP #8 requirements. (See Dickinson letter.) Once a municipality or water district has incorporated Project WET and has personnel trained in its use, they will continue to include water education in their community outreach. (See Smith letter.)

## **B-15h. Innovation**

The Water Education Foundation and Project WET have been using the train-the-trainer model for over nine years and have trained over 6,000 educators who report to us that they have annual contact with over three and a half million students. It is one of the most cost-effective ways to develop a targeted education program, as it works on a pyramid model.

We have found that if you just give educators curriculum materials they may or may not use them, regardless of the quality of the lessons. However, if you train educators directly, or through facilitators, and actually show them how to work the lessons into what they are already teaching, they are likely to incorporate an education program and use it year after year.

Our successes come from partnering with water districts and other agencies all over the state that use Project WET as part of their outreach effort. Because all Project WET activities are correlated to the California Department of Education's state subject area standards, they are very popular with California educators. The Water Education Compendium jointly published by the State Departments of Water Resources and Education ranked Project WET as an "A+" program.

## **B-15i. Benefits and Costs**

### **Benefits:**

Project WET will provide a high quality water education tool to water districts and municipalities needing to reach out to their communities to improve water conservation and inform citizens about wise water use. It is cost effective to make use of a successful program of highly rated water conservation lessons that have already found acceptance in the education community.

There is no need for water districts and cities to invest time and money into “re-inventing the wheel” and developing their own program when Project WET is such an effective tool. Even if water districts have existing materials specific to their own communities, WET will provide access to the educational community because of its reputation.

The “train-the-trainer” modality with its pyramid-like growth is a cost effective way to train educators and students. The Water Education Foundation trains the district personnel, who train the teachers, who work with the children. Rather than paying water district personnel to try to teach in every classroom, why not train the teachers to include the water conservation lessons? They will continue to use them with each new group of students.

Finally, the money requested in this grant will be leveraged by the Water Education Foundation’s investment to set up the statewide network of Project WET over the last nine years, with the help of grants from the U.S. Bureau of Reclamation and the U.S.G.S. This network will continue to provide on-going information about water to every Project WET workshop participant. **The cost of this \$407,000 grant request is less than \$.81 per child.**

### **Costs (3-year project):**

#### **Salary (\$67,950 per year = \$203,850)**

The executive director will oversee the project’s progress, as well as the assessment and reporting in monthly meetings with staff (30 hours per year = 90 hours).

The education director will be the coordinator of the project, doing initial outreach to water districts and municipalities, conducting planning of the facilitator workshops, help with the facilitator workshops and oversee the work of the assistant coordinators (225 hours per year = 675 hours).

The two assistant coordinators will be in charge of communications to participants in all workshops, ordering materials, organizing workshops, helping with workshops, setting up and maintaining database, writing newsletters, and will also do the assessment and reporting (One at 300 hours per year and one at 425 hours per year = 2,175 hours).

The office manager will ship workshop materials to workshop sites and maintain inventory of Project WET Guides. All invoices and accounts receivable will be handled by the office manager (50 hours per year = 150 hours).

The development director will write the required grant reports and administer grant funds (67 hours per year = 200 hours).

**Fringe Benefits (\$22,424 per year = \$67,272)**

Calculated at 33% of salaries and includes all payroll taxes, health and retirement benefits.

**Supplies (\$27,033 per year = \$81,100)**

Materials for workshop, letters and other communication will be photocopied for distribution. Shipping costs are based on the cost of one box of 10 books at approximately \$12.50; we anticipate shipping over 460 boxes. In addition, workshop supplies will need to be shipped to each location.

The Project WET Guide (516 pages, 91 activities for grades K-12) costs are \$15 x 4680 books required for all workshops. Facilitator premiums are calculated at slightly over \$10 each for each of the 180 facilitators. Facilitator binder cost is approximately \$5 for each of the 180 facilitators. Project WET pamphlets (see sample) and sampler booklets will be purchased from the national Project WET office to publicize the workshops and programs.

**Travel (\$2,800 per year = \$8,400)**

Travel expenses are based on air or mileage figures of approximately \$200 per trip, hotel at \$100 per night, and per diem at \$50. For facilitator workshops, two presenters are included in costs. There are 12 facilitator workshops over the three years of the proposal.

**Other Costs (\$15,449 per year = \$46,347)**

**General Expenses (\$14,949 per year = \$44,847)**

Includes pro-rated share of rent, utilities, communications (telephone, fax) network support, desktop supplies, etc.)

**Workshop Costs (\$500 per year = \$1,500)**

Facility rental and equipment costs (\$125 x 12 workshops)

**Total Project Costs: \$135,656 per year = \$406,969**

**APPENDIX C  
PROJECT IMPLEMENTATION COSTS TABLE**

**APPLICANT: Water Education Foundation**

**Project Title: Agricultural Water Use Efficiency Booklet & Workshops**

If using the excel tables on DWR website, complete 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)**

**December 1, 2005 – November 30, 2006**

	Category <i>(I)</i>	Project Costs \$ <i>(II)</i>	Contingency % (ex. 5 or 10) <i>(III)</i>	Project Cost + Contingency \$ <i>(IV)</i>	Applicant Share \$ <i>(V)</i>	State Share \$ <i>(VI)</i>	Life of investment (Years) <i>(VII)</i>	Capital Recovery Factor (Table C-4) <i>(VIII)</i>	Annual costs \$ <i>(IX)</i>
	<b>PERSONNEL</b>								
	Salaries/ wages	67,950		67,950		100%			
	Fringe benefits	22,424		22,424		100%			
	<b>Total Personnel</b>	90,374		90,374		100%			
	<b>SUPPLIES</b>	27,034		27,034		100%			
	<b>TRAVEL</b>	2,800		2,800		100%			
	<b>OTHER</b>								
	General Expense	14,949		14,949		100%			
	Workshop Costs	500		500		100%			
	<b>Total Other</b>	15,449		15,449		100%			
(n)	<b>TOTAL (=a+...+m)</b>	135,657	NA	135,657		100%	NA	NA	
(o)	Cost Share Percentage	NA	NA	NA	(row n, column V/IV) x 100	(100 – row o, column V)	NA	NA	NA

† (Excludes administration O & M costs)

**APPENDIX C  
PROJECT IMPLEMENTATION COSTS TABLE**

**APPLICANT: Water Education Foundation**

**Project Title: Agricultural Water Use Efficiency Booklet & Workshops**

If using the excel tables on DWR website, complete 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)**

**December 1, 2006 – November 30, 2007**

	Category (I)	Project Costs \$ (II)	Contingency % (ex. 5 or 10) (III)	Project Cost + Contingency \$ (IV)	Applicant Share \$ (V)	State Share \$ (VI)	Life of investment (Years) (VII)	Capital Recovery Factor (Table C-4) (VIII)	Annual costs \$ (IX)
	<b>PERSONNEL</b>								
	Salaries/ wages	67,950		67,950		100%			
	Fringe benefits	22,424		22,424		100%			
	<b>Total Personnel</b>	90,374		90,374		100%			
	<b>SUPPLIES</b>	27,033		27,033		100%			
	<b>TRAVEL</b>	2,800		2,800		100%			
	<b>OTHER</b>								
	General Expense	14,949		14,949		100%			
	Workshop Costs	500		500		100%			
	<b>Total Other</b>	15,449		15,449		100%			
(n)	<b>TOTAL (=a+...+m)</b>	135,656	NA	135,656		100%	NA	NA	
(o)	<b>Cost Share Percentage</b>	NA	NA	NA	(row n, column V/ IV) x 100	(100 – row o, column V)	NA	NA	NA

<sup>1</sup> (Excludes administration O & M costs)

**APPENDIX C  
PROJECT IMPLEMENTATION COSTS TABLE**

**APPLICANT: Water Education Foundation**

**Project Title: Agricultural Water Use Efficiency Booklet & Workshops**

If using the excel tables on DWR website, complete 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)**

**December 1, 2007 – November 30, 2008**

	Category	Project Costs \$	Contingency % (ex. 5 or 10)	Project Cost + Contingency \$	Applicant Share \$	State Share \$	Life of investment (Years)	Capital Recovery Factor (Table C-4)	Annual costs \$
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
	<b>PERSONNEL</b>								
	Salaries/ wages	67,950		67,950		100%			
	Fringe benefits	22,424		22,424		100%			
	<b>Total Personnel</b>	90,374		90,374		100%			
	<b>SUPPLIES</b>	27,033		27,033		100%			
	<b>TRAVEL</b>	2,800		2,800		100%			
	<b>OTHER</b>								
	General Expense	14,949		14,949		100%			
	Workshop Costs	500		500		100%			
	<b>Total Other</b>	15,449		15,449		100%			
(n)	<b>TOTAL (=a+...+m)</b>	135,656	NA	135,656		100%	NA	NA	
(o)	<b>Cost Share Percentage</b>	NA	NA	NA	(row n, column V) / (IV) x 100	(100 – row o, column V)	NA	NA	NA

<sup>1</sup> (Excludes administration O & M costs)

**APPENDIX C  
PROJECT IMPLEMENTATION COSTS TABLE**

**APPLICANT: Water Education Foundation**

**Project Title: Agricultural Water Use Efficiency Booklet & Workshops**

If using the excel tables on DWR website, complete 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)**

**December 1, 2005 – November 30, 2008  
3-Year Budget**

	Category <i>(I)</i>	Project Costs \$ <i>(II)</i>	Contingency % (ex. 5 or 10) <i>(III)</i>	Project Cost + Contingency \$ <i>(IV)</i>	Applicant Share \$ <i>(V)</i>	State Share \$ <i>(VI)</i>	Life of investment (Years) <i>(VII)</i>	Capital Recovery Factor (Table C-4) <i>(VIII)</i>	Annual costs \$ <i>(IX)</i>
	<b>PERSONNEL</b>								
	Salaries/ wages	203,850		203,850		100%			
	Fringe benefits	67,272		67,272		100%			
	<b>Total Personnel</b>	271,122		271,122		100%			
	<b>SUPPLIES</b>	81,100		81,100		100%			
	<b>TRAVEL</b>	8,400		8,400		100%			
	<b>OTHER</b>								
	General Expense	44,847		44,847		100%			
	Workshop Costs	1,500		1,500		100%			
	<b>Total Other</b>	46,347		46,437		100%			
<i>(n)</i>	<b>TOTAL (=a+...+m)</b>	406,969	NA	406,969		100%	NA	NA	
<i>(o)</i>	Cost Share Percentage	NA	NA	NA	$(\text{row n, column V}) / (\text{row o, column IV}) \times 100$	$(100 - \text{row o, column V})$	NA	NA	NA

<sup>1</sup> (Excludes administration O & M costs)

## **A T T A C H M E N T S**

Resumes

Project WET Forms/Materials

Letters of Support

## **Rita Schmidt Sudman**

Ms. Sudman is Executive Director of the Water Education, an impartial and nonprofit organization whose mission is to develop and implement education programs leading to a broader understanding of water issues and to resolution of water problems in the West. She directs the development of *Western Water* magazine, the *Layperson's Guide* series, the Foundation's Colorado River program, public television programs on water, poster maps, tours, press briefings and school programs. Ms. Sudman is a former radio and television reporter and producer and received her master's degree in telecommunications from San Diego State University. She has developed a television production team which has won two Emmys and several regional Emmy nominations for the Foundation's public television documentaries. She serves on numerous boards including the President's Advisory Commission on water for the University of California and the board of Water For People, an international program assisting people in developing countries to obtain safe drinking water. In 2003, she received the *Lifetime Achievement Award* from the Groundwater Resources Association of California in recognition of her efforts on groundwater education.

**JUDY MABEN  
EDUCATION/TOUR DIRECTOR  
WATER EDUCATION FOUNDATION  
STATE COORDINATOR, CALIFORNIA PROJECT WET**

**Judy Maben has coordinated the school education program for the Water Education Foundation since 1986 and has served as the State Coordinator for California Project WET (Water Education for Teachers) since its inception in 1993.**

**Judy holds a lifetime California teaching credential, a Bachelors Degree in Biological Sciences and a Masters in Science Education from Stanford University. She taught science and math at the middle and high school levels for over 12 years and served as a master teacher for California State University at Sacramento's teacher education program. She served as trustee for the El Dorado Union High School District for eight years.**

**Judy has received grants from the California Departments of Education and Water Resources, U.S. EPA, the California State Water Resources Control Board, *National Geographic's* Teachers' Alliance, the National Water Research Institute and the U.S. Bureau of Reclamation to write and distribute water education programs. The materials she has developed for the Foundation include lesson plan units on the geography of California water resources, water science, role playing scenarios to explore water issues, games on pollution prevention, computer software on specific watersheds, and the California groundwater model and lesson module.**

**Mrs. Maben has conducted teacher training sessions throughout the state for 18 years. Judy is frequently asked to be a presenter at science and environmental conferences throughout California, as well as national and international water education conferences. She is a member of the University of Wisconsin's National Best Education Practices Advisory Committee, California Department of Water Resources Education Advisory Committee, the Golden State Environmental Education Consortium, the California Ag in the Classroom Resource Committee, the California Aquatic Science Education Consortium and has served on the advisory committee for the California Water Awareness Campaign since its inception. Judy also served for five years on the National Coordinator's Council for Project WET.**

# D. BRIAN BROWN

P.O. Box 537, Boulder Creek, CA. 95006  
(831) 338-4937

## EDUCATION

**CALIFORNIA CLEAR CREDENTIAL**, *Humboldt State University, Arcata, CA, 1992.*  
Secondary Social Science, Life Sciences, Supplemental Authorization Forestry (K-12)

**CALIFORNIA CLEAR CREDENTIAL**, *Humboldt State University, Arcata, CA, 1992.*  
Multiple Subjects (K-12)

**BACHELOR OF ARTS**, *Humboldt State University, Arcata, CA, 1990.*  
Social Science

**BACHELOR OF SCIENCE**, *Humboldt State University, Arcata, CA, 1990.*  
Forestry, Resource Management Emphasis, Honors Graduate.

## SPECIALIZED WORK EXPERIENCE

**FIELD TEACHER II**, *Camp Campbell Outdoor Science School, Boulder Creek, CA, 1994-2004*  
Outdoor environmental science for Greater Bay Area 5<sup>th</sup> and 6<sup>th</sup> graders. Facilitate interaction of basic environmental concepts, social learning skills and local history with hands-on emphasis. Facilitate growth of leader skills for high school volunteers. Maintain/ restore trail system, forest study areas and vermiculture/ hot compost systems. Supervise other staff and site in Director's absence.

**INTERN COORDINATOR**, *YMCA of the Redwoods, Boulder Creek, CA, 1994-Present.*  
Credential-prep. program for college students and new staff. Emphasis on child development, discipline skills, lesson planning and education philosophy. Facilitate weekly seminars and coordinate guided practice with Camp Campbell Outdoor Science School credentialed teaching staff.

**EDUCATION SPECIALIST**, *Forestry Institute for Teachers, 1993-Present.*  
Assist K-college level educators with translating knowledge of natural resource management into grade level appropriate lessons. Emphasis on constructivist methods and hands-on learning. Facilitate use of environmental education curriculum materials. Steering committee member.

## COMMUNITY SERVICE ACTIVITIES

**Trail Crew Leader**, Federal Job Training Partnership Act (JTPA), Boulder Creek, CA, 1999.

**Elementary/Secondary Facilitator**, Project Learning Tree, CA, 1993-Present.

**Forester Volunteer**, Forest Conservation Days, Saratoga, CA, 1994-1997.

**EarthWatch Volunteer**, Grizzly DNA Census, Glacier National Park, MT, 1998.

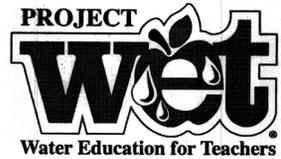
**Santa Claus**, Davison Drugs and charity organizations, Colusa, CA, 1982-1989.

## INTERESTS

National Geographic Society, American History  
Backpacking, Reading, Traveling, Gardening, Beekeeping, Botanizing, Cooking, Composting, Worm Farming

# Workshop Proposal Form

(Submit 2 to 4 weeks before workshop)\*



Name of Contact for Workshop: \_\_\_\_\_

Organization: \_\_\_\_\_

Mailing address (where books will be sent): \_\_\_\_\_  
(No P.O. Boxes please)

City/State/Zip: \_\_\_\_\_ Phone: \_\_\_\_\_

Email address: \_\_\_\_\_

Event Date: \_\_\_\_\_ Date you need books: \_\_\_\_\_

Location of workshop: \_\_\_\_\_ Town: \_\_\_\_\_

Time workshop will start: \_\_\_\_\_ End: \_\_\_\_\_

Organization(s) that will sponsor this workshop with money/time/location:

\_\_\_\_\_

Name(s) & address(es) of other facilitator(s), assistants or resource people:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Proposed no. of participants: \_\_\_\_\_ No. of Guides: \_\_\_\_\_

[NOTE: One activity guide per participant. Guides will be mailed to the above address unless otherwise requested. It is the policy of National Project WET to give guides to only those who attend a six-hour (6 hour) workshop.]

Additional materials you will need for this workshop:

**\*ATTACH A COPY OF THE PROPOSED WORKSHOP AGENDA AND FLIERS TO THIS PROPOSAL AND MAIL IN ADVANCE OF THE WORKSHOP TO:**



WATER EDUCATION  
FOUNDATION

Judy Maben/Judy Knott  
Water Education Foundation  
717 K St., Suite 317  
Sacramento, CA 95814  
(916) 444-6240  
(916) 448-7699 (FAX)  
projectwet@watereducation.org

# Evaluation Form



Thank you for your interest in Project WET! Your responses to the following questions will help us improve the quality of Project WET workshops and services. Please take your time to answer all the questions. Thank you.

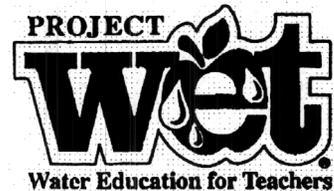
Your Name (optional) \_\_\_\_\_

1. Select only one of the following: Are you currently a teacher of  
K-5 \_\_\_ 6-8 \_\_\_ 9-12 \_\_\_ or a Preservice Teacher \_\_\_ Non-formal Educator \_\_\_  
Other \_\_\_ (explain) \_\_\_\_\_
2. Number of students you reach per year: \_\_\_\_\_ (only leave blank if you see no students at all).
3. How did you hear about this workshop? \_\_\_\_\_
4. Date and location of this workshop: \_\_\_\_\_
5. Were the contents of this workshop appropriate for the grade level you teach?  
YES \_\_\_ NO \_\_\_
6. Were the objectives of the workshop clearly stated?  
YES \_\_\_ NO \_\_\_
7. Were the objectives of the workshop accomplished?  
YES \_\_\_ NO \_\_\_  
Please explain if you replied "no" to either #6 or #7.
8. Did this workshop provide you with strategies to integrate Project WET activities into your curriculum?  
YES \_\_\_ NO \_\_\_
9. Do you plan on integrating Project WET activities into your curriculum or program?  
YES \_\_\_ NO \_\_\_  
Please explain if you replied "no" to either #8 or #9
10. Please provide us with your overall comments about the *Project WET Activity and Curriculum Guide* (include strengths, limitations, comments about specific activities, etc)
11. The best features of this workshop were:
12. This workshop would have been better if:
13. Any other comments, suggestions, requests, and/or concerns (use back if necessary):

# California Project WET Training Workshop

Nov. 6, 2004

Sponsored by the Sonoma County Water Agency



## Let's Get WET!

- 9:30 – 9:45 Registration and Introductions
- 9:45 – 10:00 Icebreaker – Raining Cats and Dogs (page 435)
- 10:00 – 10:15 Workshop overview and Project WET goals, Environmental Education and the California State Standards Correlations
- 10:15 – 12:00 WET Activities
- ◆ Incredible Journey (page 161)
  - ◆ Pass the Jug (page 392)
  - ◆ Dilemma Derby (page 377)
  - ◆ Get the Groundwater Picture (page 136)  
Groundwater Video and Groundwater Model
  - ◆ Water Address (page 122)
- 12:00 – 12:15 Lunch Assignment given: Project WET participants will present an overview of a Project WET activity
- 12:15 – 1:00 Lunch
- 1:00 – 1:15 “Take a Splash into the WET World!” A Book Walk with prizes!
- 1:15 – 1:45 Presentations – Your finds
- 1:45 – 3:15 More WET Activities:
- ◆ Sum of the Parts (page 267)
  - ◆ Water Crossings (page 421)
- 3:15 – 3:30 Other Resources, Evaluations, and Good-bye!

## WHAT WE EXPECT YOU TO DO IN A PROJECT WET WORKSHOP

# PROJECT W.E.T. WORKSHOP IMPLEMENTATION STANDARDS

- Introduce students (participants) to the goals of Project WET.
- Discuss how Project WET has addressed the “reforms in education” (*i.e., integration of subjects, thematic instruction, constructivist pedagogy, applicability to multi-cultural and bilingual education strategies, varied learning styles and content standards*).
- Provide an overview of the Project WET program history and sponsors.
- Six hours of ‘training’ to introduce, practice, plan and apply the program and activities.
- Provide a ‘walk through the guide’ to familiarize participants with the guide and individual activity layouts.
- Demonstrate (model the instructional strategy) and involve participants in at least (5) activities from the guide.
- At least six weeks before program ‘implementation’, submit a Workshop Proposal Form and agenda (demonstrating where you plan to include Project WET in your course of study) to the State Coordinator(s).
- On Completion of the training, submit the Participant Evaluations, the Facilitator Reporting Form and Participant Sign-in/Contact list to the State Coordinator(s).

# Workshop Reporting Form

(Submit after your workshop)\*



Workshop Facilitator: \_\_\_\_\_

Mailing address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_ Phone: \_\_\_\_\_

Event Date: \_\_\_\_\_

Location of workshop: \_\_\_\_\_ Town: \_\_\_\_\_

Organization(s) that sponsored this workshop with money/time/location:  
\_\_\_\_\_  
\_\_\_\_\_

Name(s) & address(es) of other facilitator(s), assistants or resource people:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

No. of participants: \_\_\_\_\_ Length (hours): \_\_\_\_\_

[NOTE: One activity guide per participant. It is the policy of National Project WET to give guides to only those who attend a six hour (6 hour) workshop.]

Your total time (include preparation, travel, PR, instruction in this number) \_\_\_\_\_

Your total expenses (include stipend, gas refreshments, materials, postage, etc.) \_\_\_\_\_

**\*ATTACH COPIES OF THE WORKSHOP EVALUATIONS, SIGN-UP SHEET, AGENDA, AND MAIL TO:**



WATER EDUCATION  
FOUNDATION

Judy Maben/Brian Brown  
Water Education Foundation  
717 K St., Suite 317  
Sacramento, CA 95814  
(916) 444-6240  
(916) 448-7699 (FAX)  
projectwet@watereducation.org

Summary of workshops and Activities -- 2004											
Date	Facilitator	Sponsor(s)	Place of Workshop or Event	# of Participants	# of Non-formal educators	K-5	6-8	9-12	Univer sity	Pre-Service	# of students reached
2003 & 2004	Pam Brigandi & Tish Daly (Donna Bennett)	MWD of OC, NPDES Public Education sub-comm. Cities & Cou. Of Orange	Irvine City Hall, Irvine	24	24						300
01/05/04	Heidi LaMoreaux	Calfed Grant	Sonoma State Univ., Hutchins School	13	1			1		11	500
01/01/04	Darleen Stoner		CSU, San Bernardino	13	3	2	3	1		4	1,980
01/24/04	Teri Engbring	Yolo Basin Foundation	Yolo Bypass DFG Hdqtrs, Davis	13	3	8	2				752
Jan 26 & Feb 2	Jeanine Sidran	Lindsay Wildlife Museum	Lindsay Wildlife Museum, Walnut Creek	15	6	4	1				1,614
01/30/04	Cam Wolff	East Bay Muni. Utility	EBMUD offices, Orinda	17	2	6	2	5			978
02/01/04	Raleigh Philp	Calfed Grant	Pepperdine University	26	3	10	1			12	
02/10/04	Darcy Aston	Santa Barbara Co. Water Agency	Santa Barbara Zoo	10	2	5	2				6,332
02/15/04-02/18/04	Bruce Fisher	Department of Water Resources	Humboldt State University								
02/17/04	Donna Henderson	City of Riverside	Granite Hill Elementary, Riverside	85						85	4,738
02/21/04	Judy Knott	Teach the River	CART, Clovis	20	10	4	4			1	40,422
02/25/04	Pam Brigandi & Tish Daly (Donna Bennett)	Calfed Grant	CSU, Fullerton El Toro Campus	27						22	500
02/27/04	Kathy Machado	Santa Clara Valley Water District	Santa Clara Valley Water Dist.	15	7	7					7,692
03/03/04	Vai Campbell & Tami Stolzenhaler	Soquel Creek Water District	Santa Cruz County Office of Education	22	4	6	2	1			1,544
03/03/04	Pam Brigandi & Tish Daly (Donna Bennett)	Calfed Grant	CSU, Fullerton El Toro Campus	27						24	1,645
03/06/04	David Stronck	*	Math & Science Spring Conf.	12							
03/20/04	David Stronck	Project Pipeline	Alameda Adult Center, Alameda	15		10	5			15	300
03/20/04	Kathy Machado	Calfed Grant	Santa Clara Valley Water Dist.	8		2	1			5	507
03/27/04	Kathy Machado	Calfed Grant	Santa Clara Valley Water Dist.	18						18	528
04/03/04	Kate Breece	Helix WD, Otay WD, Padre Dam WD	Water Conservation Garden, El Cajon	11	1	4	3	3			883

TOTALS AS OF 1,106 132 272 97 48 16 455 213,178  
12/1/04

# Project WET Curriculum and Activity Guide

The Watercourse and Council for Environmental Education  
 c/o Montana State University  
 201 Culbertson Hall  
 Bozeman, MT 59717-0570  
 (406) 994-5392



## COMMENTS

### General Content

“Comprehensive, thorough background information for teachers.”  
 “WET addresses water resources from the widest angle possible, while bringing local issues into sharper focus for students.”  
 “Offers strong cultural connections.”

### Presentation

The text is well laid out with clear, reproducible student pages. “Exceptionally well put together” and “augmented by graphics.”

### Pedagogy

“Objectives are clearly written in behavioral terms.”  
 “Activities are flexible and well designed ...” “relevant and meaningful.”  
 “Assessment strategies are diverse and tied to each lesson.” “A constructivist approach.”

### Teacher Usability

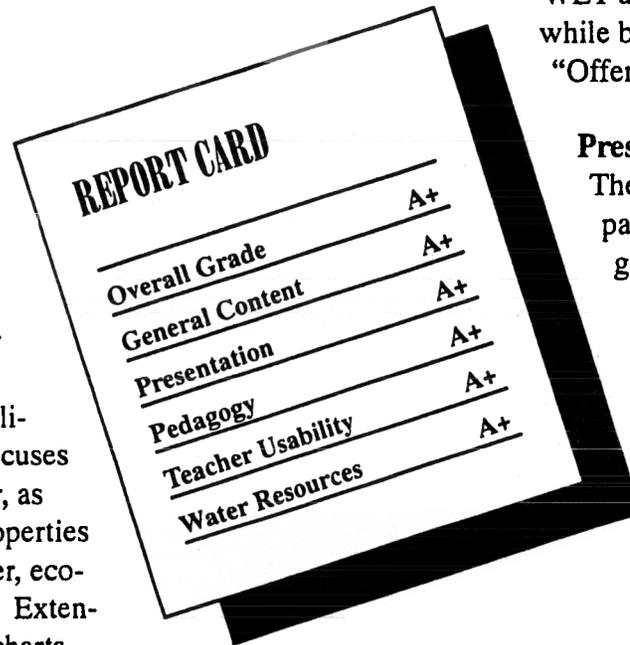
Extremely teacher-friendly! “Materials are easily obtainable, procedures are clear, and the ‘Charting the Course’ section is invaluable.”

### Specific Content on Water Resources

Exceedingly comprehensive coverage.

Only available through training workshop. 1995. 516 p.

Project WET is a national water education program designed to promote awareness, appreciation, knowledge, and stewardship of water resources. This guide reflects these goals in a collection of 91 interdisciplinary activities for K - 12. Content focuses on the human relationship with water, as well as the chemical and physical properties of water, quantity and quality of water, ecosystems, and management strategies. Extensive cross-referencing and planning charts, supplemental resource guide, and glossary are provided.



DISCIPLINE EMPHASIS	0	1	2	3
Science				█
History/Social Science			█	
Health		█		
Mathematics			█	
Visual/Performing Arts			█	
Language Arts			█	
Industrial/Vocational Ed.	█			
Foreign Language	█			

# Money Down the Drain



■ **Grade Level:**  
Upper Elementary, Middle School

■ **Subject Areas:**  
Environmental Science, Mathematics

■ **Duration:**  
Preparation time: 30 minutes  
Activity time: 50 minutes

■ **Setting:** Classroom

■ **Skills:**  
Gathering information (collecting data, measuring, calculating); Interpreting (inferring, drawing conclusions)

■ **Charting the Course**  
This introductory activity could be done in conjunction with "Water Meter." Processes and costs involved in delivering clean water to students' homes are addressed in "Reaching Your Limits," and "The Price Is Right." Activities incorporating water conservation could follow this activity ("Easy Street" and "Every Drop Counts"). Other costs of leaks can be explored in "Whose Problem Is It?"

■ **Vocabulary**  
conservation, municipal water system

*Who would pour money down the drain?*

## ▼ Summary

Through observation and simple calculations, students learn that a dripping faucet wastes a valuable resource.

## Objectives

Students will:

- calculate the amount of water wasted by a dripping faucet.
- analyze the financial benefits of fixing leaking faucets.

## Materials

- A dripping faucet or a recording of dripping faucet (optional)
- 3 gallon-sized milk jugs filled with 3 different colors of water. (Put a small pin prick near the bottom of one jug, a slightly larger hole in the second, and a small nail hole in the last. Water should drip rather than stream from the holes. Cover the holes with tape until ready to begin the activity. Use more jugs for larger classes.)
- Copies of *Money Down the Drain Worksheet and Answer Sheet*
- 6 Stopwatches or watches with second hands
- Containers to collect dripping water (at least 1-gallon [3.8-l] capacity each)
- A graduated cylinder
- Calculators (optional)
- A chart showing the local cost per unit of water used (optional)

## Making Connections

Unfortunately, leaking faucets are everywhere. Some students may even have one or more in their homes. Sometimes these are viewed as minor inconveniences rather than the loss of a resource. Fixing a leaking faucet is a small, inex-

pensive, achievable task that can become a first step toward other water conservation measures.

## Background

Plumbing systems are designed to efficiently supply water to and remove waste from homes. Pipes can develop leaks because of the age and quality of materials and construction of a plumbing system, water pressure, and/or the chemical composition of water. One of the most common causes of household leaks is the easiest to fix: replacing a worn-out washer in a faucet.

Sometimes large quantities of water can leak from a faucet or toilet over a day or week. A faucet that drips 160 drops per minute will lose over 6 gallons (22.8 l) of water per day. If a faucet leaks a small stream of water, over 25 gallons (95 l) of water per day may be lost down the drain!

Every drop of water leaking from a faucet is wasted water. To make up for this loss, municipalities are forced to treat more water to meet needs, and homeowners lose money. For example, if a faucet leaks 100 gallons (380 l) per day for 30 days, 3,000 gallons (11,400 l) will be wasted. If the water bill is \$3.50 per thousand gallons (3,800 l) of water consumed, the leak will add \$10.50 to the monthly bill. If the water is heated, financial losses will be even greater!

## Procedure

### ▼ Warm Up

Allow a faucet to leak during a class discussion. Place a container to catch the dripping water. At the end of the discussion or when students notice the dripping faucet, show students the collected water. Ask students how many of them



know where they can find a leaking faucet. Have students share their views about leaking faucets. Do students notice them? Are they worth fixing? Pour collected water on plants.

**NOTE:** If the classroom does not have a faucet, collect an hour's worth of dripping water from any faucet. You could record the sound of a dripping faucet, and play it while you speak.

### ▼ *The Activity*

1. Divide students into six groups. Assign two groups to each milk jug and instruct them to complete the *Money Down the Drain* worksheet and the answer sheet for their jug.
2. Arrange the three milk jugs on a table with collection buckets beneath them. Remove the tape and allow the dripping to begin.
3. After the worksheets are completed, have the two groups who worked on the same jug compare answers. Instruct the groups to share data and complete informa-

tion about the other two jugs. Compare results.

### ▼ *Wrap Up and Action*

Ask students what they thought about the amount of water wasted by the drips. Do they think the amount of money lost was significant? Would they rather have used the money lost down the drain to buy something else? Ask students to list reasons why leaking faucets should be fixed.

Have students calculate how much water is lost from dripping faucets around their home or at school. Ask them to research how to fix leaking faucets or ask a plumber to demonstrate how easily a faucet can be fixed. Have them create posters presenting facts about leaking faucets. City Hall, a grocery store, or the library may post the information.

### **Assessment**

Have students:

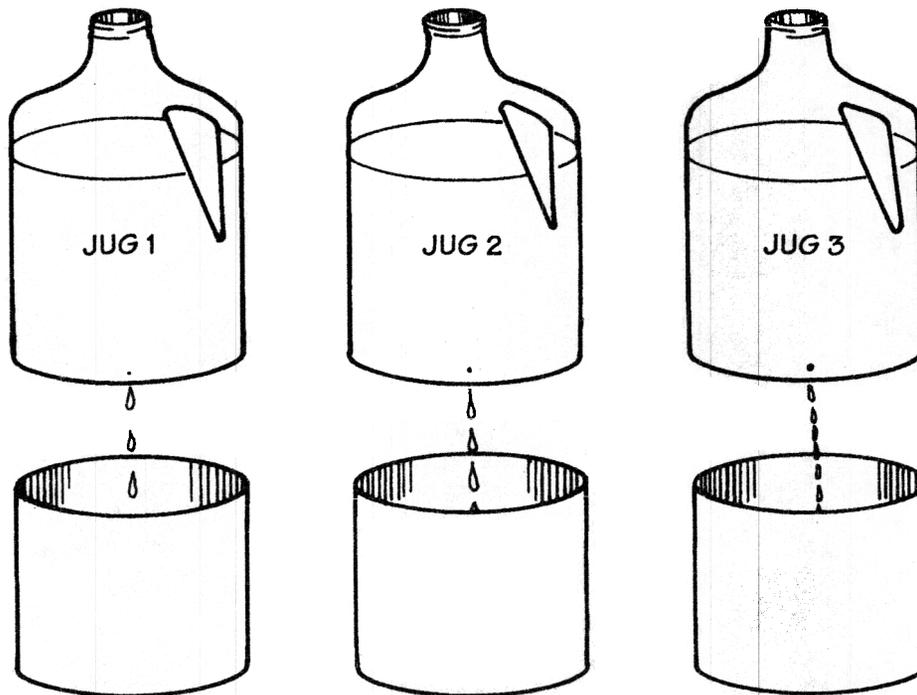
- calculate how much water is lost from dripping faucets (step 2).

- identify financial reasons why leaking faucets should be fixed (step 3 and *Wrap Up*).

### **Extensions**

Many leaks occur even before water reaches the home. The water lines of many communities are over 100 years old and the materials have eroded with age. Unchecked leaks will waste water over many years and in the process cost the water user money. However, underground leaks are expensive to fix because they often require extensive excavations. When designing a water system, project planners will calculate a 10 to 20 percent water loss factor to adjust for unaccountable losses (leaks). This means that a water system must supply 10 to 20 percent more water to a community than needed, to ensure people will have enough water.

The following demonstration illustrates this. Poke holes or cut slices in a small section of a flexible water hose or surgical tubing. Bury



the punctured part of the tube under some sand in a shallow pan. Cut a hole in the bottom of a plastic gallon (3.8 l) jug, attach the mouth of the jug to the top portion of the tube, and seal with duct tape. Constrict the tube a few inches (cm) from where it empties into the container. This creates pressure that exists in water systems, exacerbating water loss in leaking pipes. Measure one gallon (3.8 l) of water and pour into the

inverted jug. Collect the water as it comes out the other end of the tube. Do not tell students about the holes or slices in the tube. Ask students how much water they think will pour out the other end of the tube. The end result should be less than one gallon because some is lost through the leaks. Discuss how this often occurs in city water systems. Have students identify what would ensure that a gallon of water reaches

the other end—pouring more water into the jug!

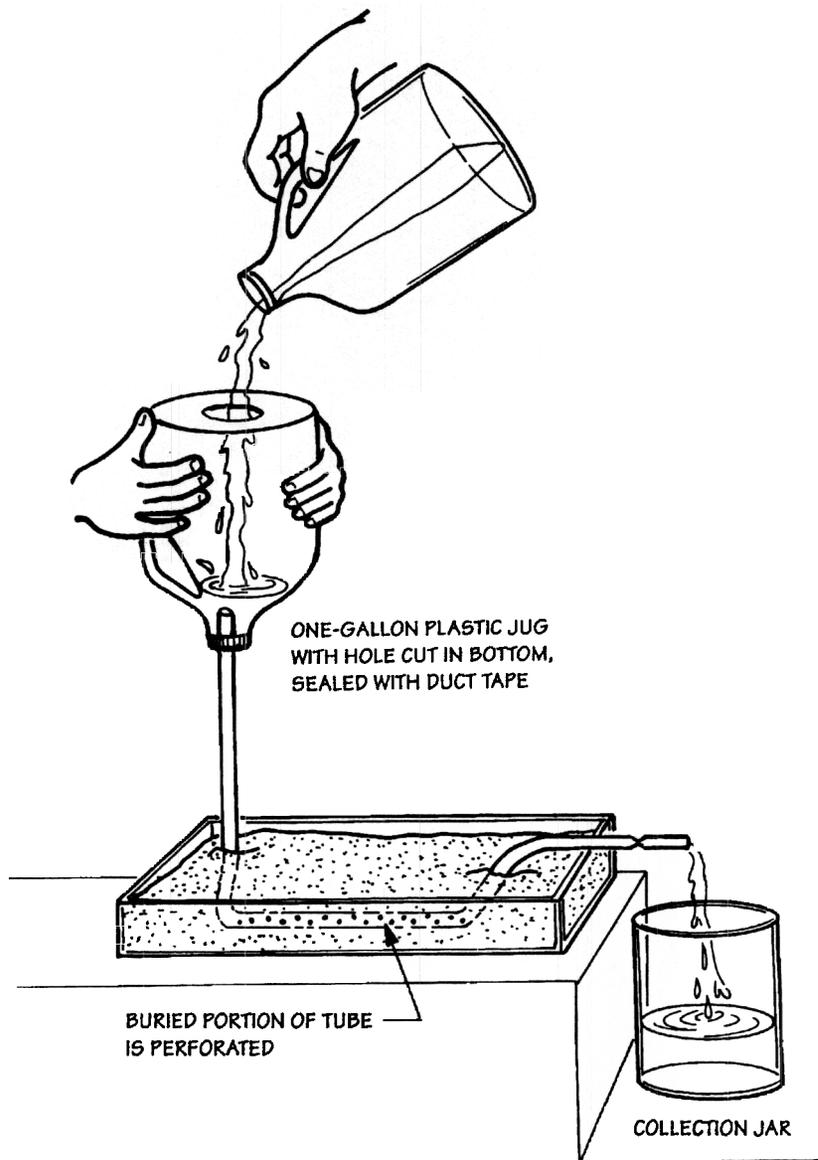
Take a field trip to a local water utility. Have a person at the utility talk about water treatment, its cost, and the problem of municipal water leaks. Have students compare the amount of water leaked during the activity to the amount of water stored in the municipal water tower or storage reservoir.

## Resources

🍏 Pringle, Laurence. 1982. *Water: The Next Great Resource Battle*. New York, N.Y.: Macmillan.

🍏 Wald, Mike. 1993. *What You Can Do for the Environment*. New York, N.Y.: Chelsea House.

California Department of Water Resources and American Water Works Association. *Water Audit and Leak Detection Guidebook*. 1992. Guidebook may be obtained free from: State of California, Department of Water Resources, Bulletins and Reports, P.O. Box 942836, Sacramento, CA 94236-0001. (916) 653-1097.



# Answer sheet for Jug #

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Record answers to questions 1 and 2 below

	1. Drops per minute			2. Volume of water (ml) collected in 1 minute		
	JUG #1	JUG #2	JUG #3	JUG #1	JUG #2	JUG #3
Reading #1						
Reading #2						
Reading #3						
Total						
Average (Total ÷ 3)						

Record answers to questions 3, 4, 5, 7, 8, 9, 10, and 11 below. Write answer to question 6 below or on another page.

	JUG #1	JUG #2	JUG #3
3. estimate			
4. jug empty			
5. actual time			
7. ml/hour			
8. ml/day			
9. ml/week			
10. ml/month			
11. \$/month			



# Money Down the Drain Worksheet

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**INSTRUCTIONS:** Complete the information for your jug, then meet with other groups to fill in the rest of the data. (NOTE: for simplicity, all measurements are in the metric system.)

Observe the water dripping from the jug and answer the following questions. Record your responses on the answer sheet.

1. **How many drops fall each minute?** (Take three readings and find the average. Skip this question and the next if there is a small stream instead of drips.)

Reading 1: \_\_\_\_\_ drops Reading 3: \_\_\_\_\_ drops

Reading 2: \_\_\_\_\_ drops

Add the above readings and divide by 3 to find the average:

Reading 1 \_\_\_\_\_ drops + Reading 2 \_\_\_\_\_ drops +  
Reading 3 \_\_\_\_\_ drops = \_\_\_\_\_

Total drops ÷ 3 = \_\_\_\_\_ average drops per minute

2. **How much water drips from the jug in a minute?** (Collect one minute's worth of water and measure the volume in a graduated cylinder. Take three readings and find the average.)

Reading 1: \_\_\_\_\_ ml Reading 3: \_\_\_\_\_ ml

Reading 2: \_\_\_\_\_ ml

Add the above readings and divide by 3 to find the average:

Reading 1 \_\_\_\_\_ ml + Reading 2 \_\_\_\_\_ ml +  
Reading 3 \_\_\_\_\_ ml = \_\_\_\_\_

Total ml ÷ 3 = \_\_\_\_\_ average ml per minute

3. **Estimate how much time it will take the jug to empty:**

4. **Calculate the time it will take the jug to empty.** (NOTE: One gallon of water equals 3,785 ml.)

3,785 ml per gallon ÷ average amount of water collected in one minute = minutes for jug to empty:

3,785 ml per gallon ÷ \_\_\_\_\_ ml per minute =

\_\_\_\_\_ minutes for jug to empty

5. **Time how long it takes for the jug to actually empty** (optional) (NOTE: reduced pressure as water level goes down may cause some jugs not to empty completely. Do not shake or squeeze jug, stop timing after the last drop naturally falls): \_\_\_\_\_

6. **How do the answers to 3, 4, and 5 compare to each other?** Write the reasons why they are similar or different (see note in number 5 for suggestions).

7. **If this was a faucet leaking this much water, how much water would be lost in one hour?**

Average amount of water collected in one minute x 60 minutes = ml per hour:

\_\_\_\_\_ ml per minute x 60 minutes = \_\_\_\_\_ ml per hour

8. **How much water would be lost in one day?**

ml per hour x 24 hours = ml per day:

\_\_\_\_\_ ml per hour X 24 hours = \_\_\_\_\_ ml per day

9. **How much water would be lost in one week?**

ml per day x 7 days = ml per week:

\_\_\_\_\_ ml per day x 7 days = \_\_\_\_\_ ml per week

10. **How much water would be lost in one month?**

(For simplicity, assume 1 month equals exactly 4 weeks.)

ml per week x 4 weeks = ml per month:

\_\_\_\_\_ ml per week x 4 weeks = \_\_\_\_\_ ml per month

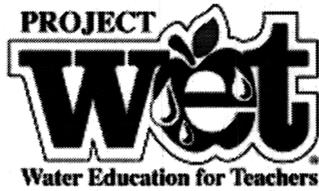
11. **Many people have to pay for their water.** If water costs \$10 for every 200 ft<sup>3</sup>\* (200 ft<sup>3</sup> equals 5,663,369 ml), and if the water dripping from the jug was a real faucet, how much would a person pay each month for this water down the drain?

\_\_\_\_\_ ml per month x (\$10 ÷ 5,663,369 ml) =

\$ \_\_\_\_\_ per month

\*Replace value with actual cost of water for your community, if known.





# California Project WET Gazette

A project of the Water Education Foundation  
Funded by grants from the U.S. Bureau of Reclamation, Mid-Pacific Region and the  
U. S. Geological Survey, California Water Programs  
Volume X, Issue I Winter 2005

## ARTICLES

A Great Journey...

Websites of Interest

More Water Journeys

Just the FACS...

Grants & Scholarships

Winter Workshops

## A Great Journey...

Jack Frost has returned to the Sierra Nevada foothills, making his seasonal artistry evident in the thin white rime highlighting the oak limbs out my window, the delicate crunch of grass under my feet on a quick trek to the mailbox and the glassy crystals I see painted upon the roadside puddles. I take for granted my warm, dry clothes and the heated home I'm able to duck back into to enjoy the show from a comfortable climate. Such are the wonders of life in the 21st Century. But, with New Year's at hand, it's a good time of year to look back and reflect on history and get an appreciation for what we have in the present.

Two hundred years ago to the day that I'm writing this, another American had quite a different perception of his wintry surroundings, as he noted in his diary,

*December 11th. 21 degrees below zero... and getting colder. The Sun Shows and reflects two imigies, the ice floating in the atmospear being So thick that the appearnance is like a fog Despurceing.*

Water played a major role in his journey. A journey that had already led him and his 35 companions 1,500 miles up the Missouri River to this frozen land on the plains of present day North Dakota... barely a quarter of the trek ahead! They had already met a thriving diversity of Native people who did not view these lands as uncharted wilderness; to them it was home. The new year would bring sweltering thunderstorms on the prairie, a near snowy death in the Bitterroot Mountains and months of depressing mists on the Oregon coast. They would follow the waterways through a landscape like nothing any of them had ever seen before- encountering huge bears, herds of bison by the thousands- and enough salmon to make them sick! Its no wonder our rugged frontiersman would be so overcome with emotion that he would write in his diary one year later,

*'Ocean in view! O ! the joy... We are in view of the Ocean, this great Pacific Ocean which we [have] been so long anxious to see...'*

And later carve the following into a nearby tree,

*'William Clark, December 3<sup>rd</sup>, 1805. By Land. From the U States...'*

The journey of Meriwether Lewis and William Clark is a timeless tale of adventure and just one of those highlighted the Project WET activity 'Great Water Journeys' (pgs: 246-253). But what appear as mere guessing games on a quick glance of this activity, are individual springboards teachers may use to

can receive partial or full scholarships to cover the cost of your expedition. Check out:  
[www.earthwatch.org](http://www.earthwatch.org).

The unedited diaries of Lewis & Clark's Corps of Discovery members provide an invaluable tool for teaching History and Language Arts- students are working with primary source materials. But other nuggets of opportunity await teachers in other great water journeys- both in and out of the Project WET guide. Excerpts from the book, '*Guns, Germs and Steel*' by Jared Diamond give excellent reading and evidence trails to follow on the origins and travels of the Polynesians. Every High School student follows the journey of Mark Twain's '*Huckleberry Finn*' down the Mississippi River, but how about riveting your students with these great water journeys:

- ❖ Thor Heyerdahl's voyage from South America to Easter Island on the balsa wood raft '*Kon Tiki*'
- ❖ Caroline Alexander's book '*The Endurance*' recounts Sir Ernest Shackleton's remarkable trek across the Antarctic ice sheet and 600 mile guessing game in a storm ravaged ocean to save every member of his expedition!
- ❖ Nathaniel Philbrick writes of two fantastic voyages. One is '*In The Heart of the Sea*'- the harrowing tale of the Nantucket Whaleship Essex- sunk by a sperm whale thousands of miles from land. His latest is in 'Sea of Glory'- the story of one man's drive to find the 'White Continent' and mutinous scandals that doomed America's greatest mapping expedition of the South Pacific to near oblivion. Both may be the historical inspiration for Herman Melville's story of '*Moby Dick*.'

## WEBSITES OF INTEREST

### **LEWIS & CLARK EDUCATOR'S RESOURCE GUIDE**

<http://www.teachlewis-clark.org/>

The Watercourse, the creative force behind Project WET, has created an array of curriculum and classroom supplemental materials to help students understand the magnitude of the Lewis and Clark expedition in the history of the United States. Teachers will find links to a variety of K through 12 instructional materials on this website. Materials that can be ordered include: elementary and secondary level books, videos, curriculum, various trunks filled with replicated expedition artifacts, National Geographic's GeoKit and links to other sites celebrating the Corps of Discovery bicentennial.

### **U.S.G.S. WATER CYCLE**

<http://ga.water.usgs.gov/edu/watercycle.html>

Fans of Project WET's 'Incredible Journey' (pg: 161) should check out "the most comprehensive website about 'The Water Cycle' anywhere." The site features a wonderful diagram of the water cycle and an in-depth discussion of each of the 15 topics on the diagram. The diagram is available in 36 languages!

### **JOHN SNOW INFORMATION**

<http://www.ph.ucla.edu/epi/snow.html>

This University of California--Los Angeles site has more background information about John Snow's pioneering epidemiological studies, highlighted in the Project WET activity 'Poison Pump' (pg: 93).

### **WATERBORNE DISEASES**

<http://www.waterhealthconnection.org/index.asp>

Super Sleuths may find this site by Water Health Connection interesting for more information about the waterborne diseases in the Project WET activity (pg: 107) of the same name. You can also try one of these sites: <http://www.cdc.gov/ncidod/dpd/parasites/waterborne/default.htm> links you to the Centers for Disease Control or try [http://www.envirohealthaction.org/upload\\_files/dwprimer.pdf](http://www.envirohealthaction.org/upload_files/dwprimer.pdf) for the Physicians for Social Responsibility.

### **FOOD SAFETY FROM FARM TO FORK**

<http://www.cfaitc.org/>

Extend your Project WET 'Super Sleuths' (pg: 107) activity with this 16-page teacher guide on food safety. The activities are designed to give fifth through seventh graders a better understanding of food safety through real-life examples. Through reading, games, puzzles, math problems and science



Oct. 20, 2004

To Whom It May Concern:

This letter is written in full support of Project WET (Water Education for Teachers). The quality of the lessons far exceeds any other environmental education program available. The guide provides a wealth of information on a myriad of water topics. It is set up to provide formal and non-formal educators with the opportunity to provide inquiry based lessons on any water-related topic in a variety of settings and formats. The lessons are well constructed and easy to follow.

I have had the privilege of training more than 500 educators since 1998. Their comments encourage me to believe the program is both worthwhile and successful. Here is a sampling:

- "Excellent materials!" *(a science teacher who reaches 160-170 students a year)*
- "The hands-on allows me to feel comfortable with the material. This gives me the confidence to try some lessons on my own." *(compliance supervisor reaching 200 students per year)*
- "This was the most comprehensive workshop and very energizing. I'm inspired! Your materials are outstanding—the best!" *(a public education outreach coordinator for integrated Waste Management who reaches 5,600 students a year)*
- "The Project WET manual is an outstanding guidance manual. The presentation and resources made available will be very useful in making future presentations to the children of our future." *(an industrial monitoring inspector who reaches 400 per year)*
- "I loved all of the hands-on activities. Being a teacher, sitting all day is difficult but here we were able to move. Great lessons/activities! Excellent resource guide!" *(a 6<sup>th</sup> grade teacher who reaches 160 students per year)*
- "You have a great program going on. I look forward to future programs you will have to offer!" *(a science teacher who reaches 160-170 per year)*
- "Great job. Well worth it!" *(a Park Ranger who reaches 1000-2000 per year)*
- "Dynamite presentations. I will make sure my friends and colleagues make it to future workshops!" *(a creek education coordinator who reaches 2400 each year)*

The Santa Clara Valley Water District Board of Directors fully supports the education of teachers and demonstrates its support by fully funding Project WET trainings. The board provides space and facilitators for the training, and books and lunch for all participants. Project WET provides a basis for understanding the workings of the natural world. It gives students the motivation they need to be better readers and to learn math. Recent studies show that using the environment as an integrating concept for learning improves overall test scores for students.

I believe that Project WET is a wonderful program. I use the lessons in our educational outreach. We see 35,000 students a year in Santa Clara County. All the lessons are tied to state standards so the teachers really appreciate that added value. Just today I was in a third grade class. The teacher said, "Please come back next year!"

If you have questions about the program or our services, please call me at (408)265-2607 ext. 2331 or email [kmachado@valleywater.org](mailto:kmachado@valleywater.org).

Sincerely,

Kathy Machado  
Education Outreach Coordinator

January 5, 2005

Ms. Debra Gonzalez  
Office of Water Use Efficiency  
Department of Water Resources  
901 P Street  
Sacramento, CA 95814

**RE: Prop 50 WUE Grant Application from the Water Education Foundation**

I am writing this letter to strongly support the grant application of the Water Education Foundation for a Water Use Efficiency Urban Grant to conduct Project WET teacher workshops on water conservation in conjunction with urban water agencies and municipalities.

As Executive Director of the California Urban Water Conservation Council, I have had many opportunities to work with the Water Education Foundation. I have always been impressed by the quality of the materials that Foundation produces and the professionalism of their staff.

Many of the districts who are signatories to our Memorandum of Understanding to conduct Best Management Practices have not met the requirements of Best Management Practice #8:

*"Implementation shall consist of at least the following actions:*

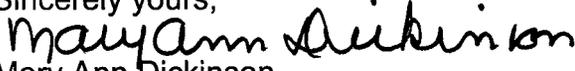
*a) Implement a school education program to promote water conservation and water conservation related benefits.*

*b) Programs shall include working with school districts and private schools in the water suppliers' service area to provide instructional assistance, educational materials, and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Education materials shall meet the state education framework requirements, and grade appropriate materials shall be distributed to grade levels K-3, 4-6, 7-8, and high school."*

The Water Education Foundation proposes to partner with these districts to train their personnel and local educators to use Project WET (Water Education For Teachers), a well respected program. I am familiar with the excellent water education lessons offered in Project WET and am willing to accept its implementation as a way for districts to complete their BMP #8 requirements.

strongly urge you to fund this excellent grant application.

Sincerely yours,

  
Mary Ann Dickinson  
Executive Director



455 Capitol Mall  
Suite 703  
Sacramento  
California 95814

PHONE  
916/552-5885

FAX  
916/552-5877

[www.cuwcc.org](http://www.cuwcc.org)

**IRVINE RANCH WATER DISTRICT**

15600 Sand Canyon Avenue • P.O. Box 57000 • Irvine, California 92619-7000 • (949) 453-5300 • www.irwd.com

Nov. 1, 2004

To Whom It May Concern:

This letter is to convey my experiences with and support for Project WET (Water Education for Teachers.)

Project WET is a nationwide environmental water education workshop for teachers in grades K-12. I became a facilitator and have been coordinating Project WET workshops since 1997. In this age of stringent curriculum content standards and mandated testing programs, we were finding it increasingly difficult for teachers to make time for "extras" such as water education. We have found that Project WET workshops are a very effective way of encouraging teachers to include water education within their existing curriculum through the use of hands-on projects that are aligned with the California standards.

The format of the workshop can be customized to the needs of the hosting water agency. For example, we hold our workshops in a building adjacent to the San Joaquin Marsh and Wildlife Sanctuary that Irvine Ranch Water District operates for urban runoff treatment. This proximity allows us to incorporate a tour of the Marsh within the workshop agenda. In evaluations, teachers consistently rave about the 500+ page Curriculum and Activity Guide that they receive as part of the workshop. When I have been out in local classrooms conducting our regular water education programs, I have been pleased to find that teachers who have been through the workshop have the Project WET have their guides in use and often comment about the program.

I would wholeheartedly recommend Project WET to other water agencies interested in improving their water education programs.

Sincerely,

A handwritten signature in black ink, appearing to read "Marilyn Smith".

Marilyn Smith  
Public Affairs Manager



## MARINA COAST WATER DISTRICT

11 RESERVATION ROAD • MARINA, CA 93933-2099  
Home Page: [www.mcwd.org](http://www.mcwd.org)  
TEL (831) 384-6131 • FAX (831) 384-2479

April 15, 2003

Ms. Judy Maben  
Water Education Foundation  
717 K Street, Suite 517  
Sacramento, CA 95814

Subject: Water Education Workshop, April 12, 2003

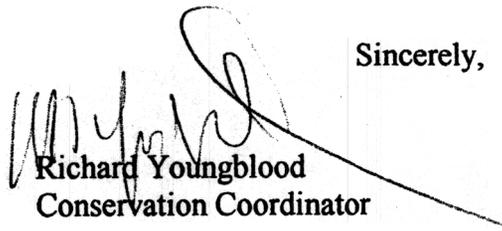
Ms. Maben,

Please accept our appreciation for your wonderful support to our Water Education Program. Your presentation at the April 12, 2003 Water Education Teacher Workshop was the type of quality product that you produce every time. The participants in the workshop were unanimous in their praise of your efforts.

The standard of excellence you have set has assisted us in developing the creditability the program throughout the District. The success of our program is due in no small part to the support you have given.

Thank you once again for helping make our latest teacher workshop successful. We are looking forward to having you participate in our 2003-04 Water Education Program.

Sincerely,

  
Richard Youngblood  
Conservation Coordinator

  
Bill Lovvorn  
Water Education Consultant

California State University, Chico  
Chico, California 95929-0560



Department of Recreation and Parks Management  
\*Community and Commercial Recreation and Tourism  
\*Resort and Lodging Management  
\*Parks and Natural Resources  
\*Therapeutic Recreation

530-898-6408  
Fax: 898-6557  
<http://www.csuchico.edu/>

May 23, 2004

Ms. Judy Knott  
Project WET  
Water Education Foundation  
717 K Street, Suite 317  
Sacramento, CA 95814



Judy and Judy:

Enclosed are the 27 Project WET participant evaluation forms from my latest Project WET workshop. This workshop was incorporated into my RECR/EDCI 251 (Section 01) "Methods and Materials for Environmental Education" class for Spring Semester 2004. Student response to the Project WET materials was great!

As I believe you are aware, my RECR/EDCI 251 class is primarily comprised of future teachers, environmental interpreters, and park rangers (students are predominantly seniors, although we sometimes have a few grad students thrown in). They are "frothing at the bit" for materials to use in their classes and at their nature centers/parks once they become employed. Very few of the courses they take let them leave with quality materials such as Project WET in their hands. By giving the students EE materials now, we help establish a pattern of using environmental materials as a regular part of teaching.

I will be teaching the course again next semester and look forward to another opportunity to open future environmental educator's eyes to the wonders of Project WET!

Everyone in RECR/EDCI "Methods and Materials for Environmental Education" says:

# THANKS!

Sincerely,

A handwritten signature in black ink, appearing to read "Jon".

Jon K. Hooper, Ph.D.  
Professor  
Coordinator, Parks and Natural Resources Mgmt. Option

November 29, 2004

Carolyn Tucker  
Department of Water Resources  
Public Affairs Office-Water Education  
P.O. Box 942836  
1416 9<sup>th</sup> St. -Room 1104-1  
Sacramento, CA 94236-0001

Judy Maben  
Water Education Foundation  
717 K Street, Suite 317  
Sacramento, Ca 95814

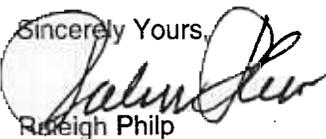
Dear Carolyn and Judy,

On behalf of our teacher candidate students at Azusa Pacific University, we wish to thank you for your generous grant this fall. Thanks to you, each of students enrolled in my Clinical Methods in Teaching Science received a Project WET Curriculum and Activity Guide.

We are in the process of providing these teacher candidates with a 16 hour workshop with Project WET materials as part of the requirement for completing this 3 unit methods course in science. The students are thrilled to receive the resource free especially since the text and other materials for the course are expensive.

I am enclosing a video copy of some of my previous students enjoying and learning from Project WET activities during previous sessions. We can expect the same level of enthusiasm for learning and teaching from the Project WET Curriculum from the students this semester as a result of your most helpful grant to provide the Guides.

On behalf of the University and the students I want to thank you again for this most important grant. The end result will benefit the students that these teacher candidates will teach in the future.

Sincerely Yours,  
  
Raleigh Philp

Adjunct Professor

Cc: Dr. Greg Kaiser-Director  
Brian Brown- Project WET  
Professor John Karns

enclosures



# North Sacramento School District

670 Dixie Avenue, Sacramento, CA 95815  
Telephone (916) 263-8300 - Fax (916) 263-8226  
Web Site - www.nssd.k12.ca.us

## SUPERINTENDENT

Dennis C. Tillett

## BOARD OF TRUSTEES

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January 29, 2003

Water Education Foundation  
717 K Street, Ste. 317  
Sacramento, CA 95814

To Whom It May Concern:

This letter is in support of Project Wet. Last year, fifteen teachers from our district had the opportunity to participate in Project Wet. They received six hours of training, a guide and a number of free items all geared towards enhancing their knowledge of water as a resource. The final piece, and perhaps the teachers' favorite was a field trip for the teachers and their classes to the American River Water Education Center.

I had the opportunity to talk with many of the teachers who took part in this training. Without exception they praised the project. A couple of them said it was the best training they ever had!

Obviously, Project Wet is very worthwhile. Our district was very fortunate to be selected to participate in it

Sincerely

Phyllis Young, Director of Instruction  
North Sacramento School District