**North San Juan Fire Protection District**
**Proposition 204 Grant**
**2000-2004**

***The Coordinated Yuba Watershed Health Improvement and Monitoring Project***

**State Water Resources Control Board Agreement No. 9-145-250-01**

# Final Report

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**Executive Summary**

In 1998, the North San Juan Fire Protection District designed a proposal for funding through CALFED Ecosystem Restoration Program Proposition 204 monies, generated by the *Safe, Clean, Reliable Water Supply Act* bond measure approved by California voters in the 1996 General Election. Entitled *The Coordinated Yuba Watershed Health Improvement and Monitoring Project*, the program focused primarily on the South Yuba River watershed between Spaulding Reservoir and Englebright Reservoir and encompassed five objectives:

1. Reduce the potential for a large, damaging fire through fuel load reduction activities.
2. Collect data on the physical watershed components in order to complete a comprehensive watershed management plan.
3. Monitor the water quality and watershed conditions using a volunteer-based program to provide continuous evaluation, analysis and data collection.
4. Hold a conference on the historical usage of mercury and its impact on Sierra Nevada watersheds.
5. Provide education and outreach programs to the public regarding environmental issues pertaining to water quality and watershed health in the Yuba Watershed.

Five years later, the effects of the project are still being revealed. To date, this project has resulted in:

Codified partnerships with four agencies/organizations, and a broad web of collaboration with private and agency stakeholders across the watershed

A large volume of scientifically verifiable water quality data collected using accepted quality control measures, providing Upper Yuba River stakeholders with necessary information to make informed management decisions

A model volunteer water quality monitoring program that is being exported to other watersheds

A strong community partnership that fosters awareness of watershed issues and local watershed stewardship

The collection, analysis and compilation of pertinent information to support development of the South Yuba River Comprehensive Management Plan

Better agency interaction and communication with the public around watershed issues.

A thriving children's and youth watershed schools-based outreach program in the County

A well-developed series of educational workbooks for landowners

Prototypes and supporting materials for a variety of fuel reduction and education outreach activities, including one-on-one fire safety consultations and fuel load assessments

Brush clearing of 250.8 acres, reducing fuel load and risk of catastrophic fire in the watershed

Significant increase in capacity in all participating organizations to undertake large coordinated projects

On a larger scale, additional gains have been made:

Capacity and desire for multiple stakeholders to work together collaboratively now exists in the Upper Yuba watershed that did not exist before this project.

Proposition 204 monies have served as seed money to bring more funding and more watershed improvement projects to the area, based on the successful completion of several of the workplan task areas.

Communication between agency/organization stakeholders has been greatly improved, with almost daily information sharing now serving as the normative event.

**Overall Grant Success**

On the large scale, this program was a success. It brought together various players in the Upper Yuba River watershed and helped to build trust and establish strong partnerships between stakeholders. In particular, relationships with agencies experienced profound improvement, and the consequences of these changes will be part of every future watershed project, providing smaller partnering organizations with leveraged resources available only through large state and federal organizations. These resources include nation-wide permitting programs, existing easements and MOUs, and technical and planning expertise. In return, local organizations provide real-person contacts to agency personnel, and help to insure that agency programs are tailored more appropriately to local needs and circumstances.

In the process of completing the various tasks in the workplan, participating organizations developed a strong sense of their capacity to be important actors in the watershed, stakeholders whose actions made a difference. The grant experience also provided participants the opportunity to do some serious self-assessment about what their role in the watershed could and should be.

The state's $710,000 investment in the Upper Yuba River watershed has served to build improvement/management capacity and watershed system understanding in the Upper Yuba River's agency and organization stakeholders while bringing many individual public stakeholders into full partnership in management efforts. Overall levels of citizen participation in public process have increased by a large percentage, as evidenced by the large number of volunteers who participated in the project. In general, the citizenry is much better educated and aware of the watershed issues that impact their home.

The grant could have been still more successful and less politically and administratively stressful had its primary focus been on outreaching to and educating the stakeholder population about the watershed and its integrated parts. The planners of many of the tasks made the error of trying to get on-the-ground work begun before taking the time to establish trust and understanding in the stakeholders whose support and participation was essential. Had this project been mainly about outreach and education, using the water quality monitoring, mercury and fuels reduction tasks as tools to establish baseline information to feed back to all the stakeholders through a variety of methods, engaging them in resource management from the ground up, at least some of the antipathy and apathy encountered in the execution of many of the tasks might have been avoided or at least blunted.

Outreach and education *was* part of the project, but it was not the main focus, and while the science-based tasks (7 & 8) have provided large amounts of high quality, useful data, many of the non-science-based outreach efforts did not connect with their intended audiences on a meaningful level or in meaningful numbers. This failure hampered community buy-in for project

goals, and did not take advantage of the potential to recruit and develop new watershed leaders from successful outreach and education efforts.

**Project Details**

A matrix was designed to explicate the twelve tasks outlined in the scope of work for this project.

**Task 1: Project Management and Administration**

| Task | Product(s) |
|---|---|
| 1.1 | Technical and grant administrative services |
| 1.2 | Quarterly status reports |
| 1.3 | Subcontract awarded |
| 1.4 | Project matrix |
| 1.5 | MOUs developed for partner agencies |
| 1.6 | SWRCB Project Survey |

***Lead Agency***
North San Juan Fire Protection District

***Goal****: Provide all technical and administrative services as needed for contract completion; monitor, supervise and review all work performed; coordinate budgeting and project scheduling to assure that the contract is completed within budget, on schedule and in accordance with approved procedures, applicable laws and regulations*

***Budget***
Original budget: $50,000. Modified to $64,591 in November 2003. The project has been completed within the amended budget.

***Implementation of Activities***
Administrative services were an ongoing procedure through the completion of the contract. The North San Juan Fire District's capacity in this area was heavily impacted by the illness and death of the project's creator and first Project Director, and those impacts have continued to be felt over the life of the project. After the first invoice was submitted, a quarterly invoicing and reporting schedule was negotiated to enable the Project Director to compile and assemble reports and invoices from all partners, and this provided a much more workable arrangement. The task budget was renegotiated, to reallocate funding throughout the tasks to reflect true project costs in November of 2003, after the project had been granted an extension through August 31, 2004.

***Evaluation of Effectiveness***
This task ended up the most challenging of the entire project. The program-both in scope and scale- was larger than anything previously undertaken in the watershed. Templates and procedures for reporting, budget management and record keeping did not exist. All of these pieces of successful implementation were more or less created from scratch, and that process took more time and created additional difficulties and stresses for the Project Directors. After the death of the original Project Director, the Fire District found itself at a complete disadvantage: the individual with project knowledge and the vision and skills to guide it was no longer there. The Fire District struggled with project management until July of 2003,

when a new Project Director was hired. By this time, the bulk of the tasks had been completed, and all that remained was tying up loose ends, project evaluation and final reporting. The reduced effectiveness of the administrative task affected all other areas of the project, and made an already very ambitious undertaking more difficult still. Compounding this was the turnaround time for invoice payment, which was very difficult for both the Fire District as lead agency and our private and smaller organization partners, who did not have the cash flow flexibility to pay for services up front and then wait ninety days for reimbursement.

***Recommendations***

All projects of this size need carefully defined performance measures to keep them on track. After the first Project Director's death, broad-scale project integration and evaluation fell by the wayside. Monthly or quarterly meetings of an oversight committee comprised of many and diverse stakeholders should be established in the future to weigh performance, identify and evaluate missteps and help to plan alternative strategies and actions. This valuable input from "outside eyes" would provide feedback and perception checks that every project in the public arena must have.

Streamlining both the grant amendment/modification process and payment of invoices would make future projects much more appealing to smaller, more grass-roots organizations.

It would be very useful for the Grantor to provide future grantees with samples of:

- Invoicing Forms
- Budget and Progress-tracking Spreadsheets
- Quarterly and Final Reporting Formats
- Samples of evaluation instruments and details about the kinds of information the Grantor needs to return to its funding sources and partners
- Samples of any supporting documentation instruments that would be helpful in managing and evaluating the project.
- References to previous successful grantees to provide additional support and perspective to new grantees.

**Task 2: NEPA/ CEQA Documentation and Permits**

| Task | Product(s) |
|---|---|
| 2.1 | CEQA Documentation needed for Task 3 |
| 2.2 | NEPA documentation and approval needed for Task 3 |
| 2.3 | All needed permits secured |

***Lead Agency***

North San Juan Fire Protection District

***Goal****: Ensure all California Environmental Quality Act and National Environmental Protection Act requirements are fully satisfied*

***Partnerships formed as a result of this Task***
California Department of Forestry (CDF)
Natural Resources Conservation Service (NRCS)

***Budget***
Original budget: $8,839. Modified to $1,475 to reflect the actual costs of task implementation in November 2003.

***Implementation of Activities***
Initial review of CEQA/NEPA requirements suggested that up to ten percent of fuels modification expenditures budgeted for this task might be necessary for CEQA/NEPA compliance. The North San Juan Fire Protection District was able to apply more grant funding to on-the-ground fuels reduction by partnering ourselves with CDF and NRCS to utilize their greater experience in meeting permitting requirements. These early partnerships made this task, originally perceived as dauntingly formidable, one of the most smoothly accomplished of the project. All projects funded by the grant were completed as categorical exemptions through NRCS and CDF programs, saving the project director and partner agencies considerable time, money and stress.

Adopting CDF's Shaded Fuel Break Prescription and having NRCS write the plans and review projects for compliance allowed the Fire District to utilize the categorical exemptions for certain fuel reduction activities held by these agencies.

The district agreed to model distribution of funds for fuels reduction on NRCS' Environmental Quality Improvement Program (EQIP). Funds were to be paid out at the same rate per practice as NRCS EQIP. The District did not compete with the EQIP program and it was easier to explain our program's reimbursement process. This decision also enabled NRCS staff to review Fire District projects more easily.

***Evaluation of Effectiveness***
An early decision to seek help from partners made this task much simpler and less expensive than it was envisioned to be. Working with NRCS and CDF, the Fire District was able to leverage permitting already in place for existing firebreaks, significantly reducing the cost for this task and freeing up funds for use elsewhere in the project. As an added benefit, continuing partnerships were forged and models for future such projects were created.

***Recommendations***
This partnership can serve as a valuable and cost-effective model for similar projects. The Fire District should maintain and develop the partnerships with CDF and NRCS to take advantage of future leveraging and collaboration opportunities.

**Task 3: South Yuba Watershed Habitat Improvement and Fuel Reduction Project**

| Task | Product |
|---|---|
| 3.1 | Principal fuel modification plan and map |
| 3.2 | Participant property owner identification and written agreement to participate |
| 3.3 | Fuel modification plan for each project, including involved landowner notation, treatment techniques, and number of acres involved. |

3.4 Completed Fuel Reduction/ Habitat Improvement Project
- 3.4.1 Fuel mastication
- 3.4.2 Prescribed Burning
- 3.4.3 Hand Cutting

3.5 Public Notification of prescribed burn activities
3.6 Quarterly task reports and invoices
3.7 Final task reporting

***Lead Agency***
North San Juan Fire Protection District

***Goal****: To close the gaps between individual fuel load reduction project areas on public and private lands, providing and demonstrating a wide variety of fuel reduction and management techniques and education to affected stakeholders*

***Partnerships formed as a result of this Task***
California Department of Forestry (CDF)
Natural Resources Conservation Service (NRCS)

***Budget***
Budgeted at $144,058. Task 1 represents 20.3% of the overall project budget of $710,000.

***Implementation of Activities***
The Fire District recruited fuel reduction participants through announcements in the North San Juan Fire Protection District newsletter and workshops held at the North Columbia Schoolhouse Cultural Center. Interested parties were asked to submit a letter to the fire district including information about their properties and what they hoped to accomplish in terms of fuels reduction. Site visits and consultations were made to all interested parties. A number of applicants were discouraged by either the match requirements or the shaded fuel break prescription requirements. A few were fearful of losing their "privacy shield" or being asked to cut down favorite manzanita bushes.

Nineteen applications were approved (comprising nearly all the applicants willing to participate after the onsite consultation). The District did not to offer grant support to individuals already in the pipeline for other grant funding through NRCS and to one property owner interested in the program but whose project would have been so small it would not have been cost effective.

Property owners contracted to complete proposed fuels reduction activities to the acreage total according to the CDF Prescription and NRCS standards and specifications and which stipulated only completed and approved projects would be submitted for reimbursement. Payment to the property owner was to occur only after NSJ Fire was reimbursed by the SWRCB. Property owners were free to hire the contractor of their choice or complete the work themselves, as long as it was to NRCS Standards and Specifications. After signature was obtained on contracts, "before photographs" of the areas where fuels modification was to occur were taken using GPS coordinates and a compass. Work occurred mainly during 2002 with the last projects completed early in 2003. Mastication, Dozer and hand cutting were the means of fuel reduction utilized.

All nineteen approved projects were completed, with fuel reduction reports filed for each. CDF helped the District document the project with GIS. Maps representing the project sites and their acreage are included in the list of attachments for this project.

Completed projects were inspected by NRCS personnel and a representative of the North San Juan Fire Protection District. "After" photos of the project sites were taken according to the previous data coordinates. When completed and approved projects were signed off by NRCS and Fire District personnel, reimbursement invoices were submitted to the SWRCB.

All property owners signed an agreement that reimbursement would be made to them only after NSJ was reimbursed by the SWRCB, but many were troubled by the length of time reimbursement took. Some participants were more able to carry their debt to contractors longer than others. One participant, who along with a handful of others waited up to four months for payment, was very angry and launched a campaign of letters to the Fire District Board of Directors and the editor of the local newspaper claiming mismanagement on the part of the Fire District.

***Evaluation of Effectiveness***

This task was greatly enhanced by the partnership of NRCS and CDF. The goal of the project was to create large, critical fire-safe areas of reduced fuel to protect against catastrophic fire. Fuel load was significantly reduced on 250.8 acres of land, though not in the contiguous pattern originally planned for. Many trees were planted in areas disturbed by the fuel reduction project, providing for good future forest growth and health. An unexpected benefit of the partnership with NRCS was the ability to use NRCS' Environmental Quality Incentive Program (EQIP) as a model for selecting and contracting with program participants. This streamlined the process, alleviating the need for NSJFPD to create its own procedures and leveraged federal dollars into the 204 grant. EQIP standards also served to prevent any double-dipping by program participants and provided clear guidelines to stakeholders for participation.

Outreach efforts to involve and connect with landowners were not as successful as anticipated. There was widespread confusion among community member stakeholders about whether the project should have been undertaken by the Fire District or Nevada County, and stakeholders within the district--unfamiliar with (and uneducated about) watershed based management--were unhappy that the district was doing work outside its boundaries. On top of these challenges, the District and its landowner partners had cash flow problems generated by the grant invoicing and reimbursement process.

Despite different from expected outcomes in some sub tasks, this task was successful. It produced needed preventative fuel reduction, though not necessarily where it was most needed from a strategic firefighting standpoint. Sixteen projects were adjacent to or within close proximity to existing CDF/BLM/USFS Fuel break Projects. Three projects were still in the drainage and in areas with significant need for fuels reduction, but were about a mile outside of the area of priority. They were funded in the absence of other applications.

By the end of the project, the district was receiving requests from multiple landowners to join the project, and neighbors of participants, inspired by the 204 projects, were encouraged to do fuel abatement on their own properties. Continuation of the fuel abatement program is

high on both NSJFPD's and CDF's priority list. Task partners benefited by the exposure to stakeholders, increasing their visibility as "good guys" in the local landscape.

***Recommendations***

Future fuel reduction projects should better fund the outreach component and implement that piece first. More sophisticated outreach and education methods should be employed, and the outreach process should take place well in advance of project implementation. Continued development of visual documentation of the project should help stakeholders understand the benefits and rationale behind such work. NSJFPD should continue to use EQIP as a model, following that program's lead in developing an ongoing, anticipated, regular program that stakeholders are educated about and consider a major resource in achieving both stakeholder and district objectives.

The average fuel reduction project in this task was almost thirteen acres. More than half of the project sites were less than ten acres. Based upon average parcel size treated, the original project goal of targeting small property owners worked less well than expected. In retrospect, parcel sizes along the river canyons tend to be larger, with recent zoning in most of the north San Juan Fire Protection district being forty-acre minimums.

Larger parcel owners seem better able to afford the match required to participate in programs like this. To attract small, low income, or elderly property owners, a more effective technique would be to do without the match and offer outright payment for fuels reduction accomplished. From the perspective of managing such a program larger parcels provide more bang for the buck since essentially the same paperwork and personal contact are required for each project.

**Task 4: Monitoring of Fuel Improvement Sites**

| Task | Product(s) |
|---|---|
| 4.1 | Project Area Monitoring Plan |
| 4.2 | Coordinate Monitoring Program and Activities |
| 4.3 | Purchase Fuels monitoring equipment |
| 4.4 | Select/establish photo monitoring sites for all fuel modification projects |
| 4.5 | Regular monitoring of project sites |
| 4.6 | Necessary monitoring plan amendments |
| 4.7 | Result sharing with private landowners/interested parties |
| 4.8 | Final monitoring report |
| | 4.8.1 Plan effectiveness in detecting project progress toward stated goals |
| | 4.8.2 Plan effectiveness in detecting significant impacts on resources of concern |
| | 4.8.3 Evaluation of monitoring failures |
| | 4.8.4 Effectiveness of chosen project areas in achieving stated objectives and goals |
| | 4.8.5 Lessons learned for future projects |
| 4.9 | Monitoring locations and data inputted into appropriate GIS data base |

4.10 Education workshops to share information generated with all stakeholders
4.11 Quarterly task reports and invoices
4.12 Final task reporting

***Lead Agency***
North San Juan Fire Protection District

***Goal****: To provide monitoring of fuel reduction sites to evaluate efficacy of procedures and methodology, while creating a GIS layer to track and plan for future projects in the region*

***Partnerships formed as a result of this Task***
US Forest Service (USFS)

***Budget***
Original budget: $29,400. Modified to $17,143 in November 2003.

***Implementation of Activities***
The District contracted with one of its firefighters to implement Task 4. The contractor developed a monitoring plan and researched and purchased a GPS unit and digital camera for monitoring the fuel reduction sites that participated in Task 3. This equipment continues to be of use by the District for marking emergency landing zones and documenting accidents and fires, as well as in monitoring this and similar fuel reduction activities.

Four to six photographs were taken at each fuels reduction site from locations marked by GPS coordinates and compass direction before fuels reduction activities were undertaken. The US Forest Service inputted this information into its GIS system and generated project maps. "After" photographs were taken from the same location and direction. This is the first season of re-growth after fuels reduction activities were undertaken, so there is only minor re-growth and management to monitor.

Photo-monitoring photos and data are stored at the North San Juan Fire Protection District Office, and available for use by partners. A map of the project site photo points was created by CDF and copies are stored both at that agency and in the Fire District Office. Data and information are stored in a discreet location, and will be reviewed and updated on a yearly basis. The District will seek continuing funding support for ongoing monitoring of the fuels reduction sites, to develop a bigger and better understanding of the long-term efficacy of such projects.

***Evaluation of Effectiveness***
Though ambitious and well outlined, this task was not executed fully by NSJFPD. A firefighter was contracted to design and conduct the monitoring piece. He developed a plan and commenced a photo-monitoring program but then took other employment prior to the completion of the project. Subsequently the monitoring plan was not fully fleshed out, and did not establish monitoring protocols and goals. The District was not able to replace the original contractor, and complete implementation of this task was not achieved. Final monitoring of the fuel reduction sites is only partially complete, and the final monitoring report is not a practically useful document. The initial site location information is now part of the USFS GIS system, but the data has not been integrated into a larger database or used to create further fuel reduction plans or outreach at this time.

The monitoring timeframe outlined in the proposal was unrealistic. Efficacy of the project could not be accurately determined within the grant's life span, and likely could not be fully known for another ten years, and as the project was written there is no provision for that timeframe.

***Recommendations***
Future projects need to assure that they utilize personnel with adequate skills to implement project tasks. In this case, Task 4 required a much more technical approach to implementation. Neophyte grantees would benefit by guidance from the Grantor about implementation strategies and expectations, as well as technical references and advice.

Grantees should leverage the use of partner resources (from NRCS, CDF or the Yuba Watershed Council) to loan or contract specialists to assure grant objectives are met. These specialists should train any staff the grantee utilizes and provide some oversight and feedback during the life of the project. Data quality and analysis must be assured according to accepted procedures to insure collected data is scientifically valuable. Data storage, management and disbursement should be provided for in the monitoring plan and periodically reviewed, both by the grantee and the specialist.

Collected data needs to be used, or its collection was a waste of time and money. The existing monitoring results, while of questionable scientific value, are probably very useful for outreach and education purposes, particularly in attracting new program participants. The grantee should make use of these materials to develop future programs and recruit future participants in for other fuel reduction activities.

**Task 5: Fuel Reduction by Fire-Safe Consultation**

| Task | Product(s) |
|---|---|
| 5.1 | Identification of target locations for inspections, Map of consultations completed, fire safe areas and non-fire safe areas with narrative evaluation of task effects |
| 5.2 | Educational Handout Materials for residents to increase fire-safe behaviors |
| 5.3 | 150-200 consultations completed |
| 5.4 | Quarterly task reports and invoices |
| 5.5 | Final task report |

***Lead Agency***
North San Juan Fire Protection District

***Goal****: To connect with individual property owners to provide education and planning about fuels reduction to lesson the risk of catastrophic fire in the watershed*

***Partnerships formed as a result of this Task***
Natural Resources Conservation Service (NRCS)
Nevada County Resource Conservation District (NCRCD)
California Department of Forestry (CDF)

***Budget***
Original budget: $3,000, Modified to $6,000 in November 2003.

***Implementation of Activities***

The District hoped to use this task to solicit participation in the Fuels Reduction Project (Task 3). The district trained, in partnership with CDF, four firefighters to present the information to individual stakeholders at their homes and properties. Fire District staff in conjunction with CDF developed a template for the consultations program. They developed their plan with Yuba River Coordinated Resource Management Plan (CRMP) map and their professional knowledge of the area to provide one on one consultations to help property owners in fuel reduction target areas create safety zones around their properties. An outreach effort sent out flyers and information to all district residents and advertised the project repeatedly in the Fire District newsletter, in flyers and at workshops with the goal of reaching 150- 200 stakeholders. The program was designed to be strictly voluntary, and no effort was made to force consultations upon unwilling property owners.

Individuals wrote letters of interest to the Fire District and all who requested them received consultations. District personnel compiled educational materials to distribute to consultation participants. Unused educational materials remain available at the Fire District headquarters station and are distributed to constituents who express interest in the information on an as-requested basis.

Fewer than 50 consultations were completed, despite repeated solicitation. In an area of approximately 1000 households this number is disappointingly low.

All completed consultations have been mapped and notated, providing a visual reference for the area affected by this project. This map will help the District to direct future fire safe outreach and education efforts, as well as to measure longer term benefits of the practices in relation to relative impacts sustained in fire safe and non fire safe areas in future fire events.

***Evaluation of Effectiveness***

Outreach clearly did not convey the worth of stakeholder participation to the majority of people it was directed toward. Public response to this opportunity was very limited as was attendance at workshops. The Fire District continues to offer consultations on a voluntary basis to interested residents, with hopes that improved and expanded public understanding of the benefits of the service will yield increasing participation.

There was suspicion by some that the project was actually a regulatory lure, and that fines for noncompliance would be levied once the Fire-Safe consultants got on an individual's land and had a chance to look around. A lack of a clear connection to the Fire-Safe Council was probably a hindrance. Nonetheless, this concept is a valuable proactive tool for the District, and continues on a smaller scale, using materials and equipment acquired through the 204 project.

***Recommendations***

In future efforts, this type of project would benefit from the services of an experienced outreach specialist, secured either by contract or through one of the grantee's partners. Working closely with the Fire-Safe Council, the grantee should first develop and implement a creative marketing campaign, enlisting diverse stakeholders like the Board of Realtors, local nurseries and hardware stores, local newspapers and the schools. Outreach should be done well in advance of project implementation, and should continue throughout the life of

the project, with newsletter/newspaper articles regularly being generated to show and tell about satisfied participants. Many examples of these kinds of successful projects exist, and grantees need to seek them out. It would be helpful for the Grantor to share any successful project information from previous grant-funded project with grantees.

Future projects need to incorporate a well-thought out evaluation strategy, developing evaluation instruments for stakeholder participants to use, to enable adaptive management of the project, modifying elements that don't work well and amplifying those that do.

Addition of overall performance measures to future projects would greatly aid grantees and the Grantor in evaluating not just overall success of tasks like this, but also assist in evaluating the methods used to achieve the task.

**Task 6: Fuels Public Education and Outreach Project**

| Task | Product(s) |
|---|---|
| 6.1 | Public Education and Outreach Projects |
| | 6.1.1 Standardized workshop template |
| | 6.1.2 Prepared and Collected written reference materials |
| | 6.1.3 Community Group meetings |
| | 6.1.4 Public outreach about workshops |
| | 6.1.5 Willing landowners to serve as workshop hosts |
| | 6.1.6 Creation of demonstration sites |
| | 6.1.7 Four to six one-day work shops |
| | 6.1.8 Random follow-up telephone evaluations and analysis |
| | 6.1.9 Workshop effectiveness report |
| 6.2 | South Yuba Watershed Habitat Improvement and Fuel Reduction Self Guided Tour |
| | 6.2.1 Sites identified in the San Juan Ridge and/or Round Mountain/Lake Vera to demonstrate fuel reduction techniques and objectives |
| | 6.2.2 Site owner interviews and histories to include as tour materials |
| | 6.2.3 Tour map and supporting material describing each site (250 copies) |
| | 6.2.4 Outreach about tour to all applicable local stakeholders |
| 6.3 | Two to three public presentations about the project |
| | 6.3.1 Public outreach to all applicable local stakeholders |
| | 6.3.2 20-30 minute presentations in the target community |
| | 6.3.3 Quarterly task reports and invoicing |
| | 6.3.4 Final Task Reporting |

***Lead Agency***
North San Juan Fire Protection District

***Goal****: To provide public stakeholder outreach and education about the relationship between fuels reduction and watershed improvement in the Upper Yuba River Watershed*

***Partnerships formed as a result of this Task***
CA Department of Forestry (CDF)
Nevada County Consolidated Fire Department
Natural Resources Conservation Service (NRCS)

***Budget***
Original budget: $19,600. Modified to $21,600 in November 2003.

***Implementation of Activities***
This task was divided into three subtasks. Subtask 6.1 developed a standardized template for a workshop, complete with supporting educational materials for landowners and other stakeholders (some of which was developed in Task 10 of this project). The District utilized standard outreach methods (mail, print, audio and internet media) to garner participation at the six workshops conducted in service of this grant.

Subtask 6.2 identified fuel reduction demonstration sites and created a self-guided tour to highlight them. The sites on the tour were the results of implementation of Task 3, and 250 maps of the project area were produced and made available at the workshops. Regular outreach strategies were employed, but no success measurements were established to track and evaluate performance, and accurate assessment of the success of the project is not available.

The third subtask required two to three public presentations to highlight the work of the grant. Presentations were made to the Nevada County Resource Conservation District Board and at the Nevada County Fire Plan public meeting to share information about the fuel load reduction projects.

A total of six workshops were conducted:

3/18/03, North San Juan Fire Protection District Station #1, North San Juan, 6-8 pm: 5 participants

3/27/03, 49er Fire District Station #84, Nevada City, 6-8 pm: 5 participants

4/12/03, North San Juan Fire Protection District Station #3, North San Juan, 10 am-12 pm: 5 participants

2/24/04, 49er Fire District Station #84, Nevada City, 6-8 pm: 12 participants

2/28/04, North San Juan Fire Protection District Station #3, North San Juan, 10 am-12 pm: 12 participants

3/3/04, North San Juan Fire Protection District Station #1, North San Juan, 6-8 pm: 11 participants

***Evaluation of Effectiveness***
Attendance at the workshops developed for task 6.1 was very low (a total of fifty participants from all workshops) but those who attended provided very positive feedback. Workshop timing may have been an issue, but the spring timing was correct for participants to make strategic use of the information provided. Once the fuels reduction task was up and running and dollars for projects were available, attendance improved, and the District continues to

receive calls from people who did not participate but would like to have the information. At this point, support materials and equipment exist to conduct workshops in the future when appropriate funding can be found.

The tour designed in Subtask 6.2 is still in existence, but no success measurements were established to track and evaluate performance, and accurate assessment of the success of the project is not available. We have gauged interest in the concept by the number of maps from the original print run that were taken and by the number of comments workshop and Fire District staff received about the maps and the tour. From this information, we extrapolate that approximately 25 people may have taken the tour of fuels reduction sites.

The two public presentations developed to implement Subtask 6.3 were very successful and well received. Positive feedback about the project and its goals was generated, and potential private partners for the fuel reduction project were identified.

***Recommendations***

For this task, as in many of the others, future recommendations rest on acquiring adequate expertise to develop the project. The services of an experienced outreach specialist, secured either by contract or through one of the grantee's partners would greatly improve the outcome for this type of project, not just in developing good outreach materials, but also in advising grantees about whom to outreach to and partner with. This project would have been helped with the inclusion of more organizations with similar goals (such as home owner associations and fire safe councils) being involved both in the planning and in the outreach and implementation of the three subtasks.

Future efforts of this type should develop a targeted evaluation instrument for stakeholder participants to use–for workshop attendees, tour participants, and presentation audiences–to assess audience reception of the concepts, track resultant behavioral changes and enable adaptive management of the project, modifying elements that don't work well, and amplifying those that do.

**Task 7: South Yuba River Management Plan Data Collection**

| Task | Product(s) |
|---|---|
| 7.1 | Execute contract with Research Manager |
| 7.2 | Initial Scoping, assessment and evaluation of existing conditions in the South Yuba River Watershed |
| 7.3 | Proposed field data and information collection plan |
| 7.4 | Reviewed Compilation of all existing data and information, determination of gaps and needed information |
| 7.5 | Final field data collection and information collection plan |
| 7.6 | Necessary amendments as needed based on field experience |
| 7.7 | Hires and trained data collector |
| 7.8 | Field data and information collected according to approved plan |
| 7.9 | All data located in one place |
| 7.10 | Final Assessment report |

7.11 Quarterly Task Reports and Invoices
7.12 Final task reporting

***Lead Agency***
CA State Parks

***Goal****: To collect and compile data on the physical watershed components of the South Yuba River watershed, leveraging data collection work done to collect social watershed data through a 1998 CALFED funded project. These two data sets will complete Phase 1 of the South Yuba River Coordinated Watershed Management Plan Project*

***Partnerships formed as a result of this Task***
Yuba Watershed Council (YWC)
Yuba Watershed Foundation (YWF)
Nevada County
US Forest Service (USFS)
US Bureau of Land Management (BLM)
Upper Yuba River Studies Program
U.S. Geological Survey
SYRCL
Friends of Deer Creek
Nevada Irrigation District
Regional Water Quality Control Board

***Budget***
Budgeted at $145,040.

***Implementation of Activities***
This task was contracted to CA State Parks, the Bureau of Land Management and U.S. Forest Service with State Parks as lead agency. It leveraged previous CALFED investments in the watershed by completing the first phase of a coordinated management plan for the South Yuba River and involved partnership with all public land managers in the South Yuba River Corridor. This project built upon existing investments in a larger project, working toward the overall goal to produce a community-based, comprehensive management plan for the California designated and nationally recommended Wild and Scenic South Yuba River. Development of this plan is currently in progress.

Task 7 of NSJFPD's 204 grant-funded project produced the South Yuba River Comprehensive Management Plan *Report on Data Collection*. This document provides reference materials for assigned project staff and the public on a dozen key resource categories.

***Evaluation of Effectiveness***
Completion of this task was successful and the resulting product produced a necessary report on the existing condition of the South Yuba River corridor required by the agency partners.

The process leading to the result was challenging. The lead for this task was a state agency, struggling with California's increasing budget troubles. Scheduling within its own bureaucracy and across the BLM's organizational structure was an ongoing struggle. In the beginning, the project manager was in the midst of an intensive recreation survey, leading to

a delay in the start of the project. This late start, combined with the grantee's original Project Director's untimely death meant that the project manager missed needed guidance about the parameters of the data-gathering task from the Project Director. In the absence of this guidance, the managers interpreted the task outline to serve the larger goals of the Yuba Corridor Comprehensive Management Plan project.

There is a large body of existing data on the South Yuba River. Finding and acquiring the sources of that data and packaging it into a useable and useful format proved to be a continuing challenge of this task. The contract managers from CA State Parks and the US Bureau of Land Management supervising the project interpreted the goals of Task 7 as developing information useful to the management planning process rather than creating a comprehensive listing of data sources and products. While these interpreted goals did not expressly follow the task outline, the products derived from their completion served the needs of the larger project and contributed to better management information about the Yuba River corridor. While the product is well developed and will serve as a useful tool for river managers, the lack of opacity and citizen involvement in the data collection process did not enhance the larger project outreach and education goals.

Despite early difficulties in getting started, the timing of the task performed ended up working to overall advantage of the project, providing continuity with the management and resource teams charged with developing the overall management plan.

***Recommendations***

Timing the larger multi-year, multi-phase project was a challenge. Proposition 204 funding became available concurrently with an extensive recreation survey project on the South Yuba River, which resulted in a delay of the start of the Proposition 204 Task 7 project. If this type of situation arises in the future, a second project manager with primary responsibilities to task should be assigned to ensure that one task does not subsume another.

This part of the project would have benefited by greater integration with the other data collecting tasks, to ensure that standards for data collection and storage were equivalent across all tasks of the project. This task was an opportunity to build trust among public and private stakeholders on the river, and that opportunity was largely missed. In the future, plans need to be developed to capitalize on the project's educational and outreach opportunities and create as much transparency around the process and the product as possible. The Yuba Watershed Council, representing a private/public partnership and as a partner in both tasks, would have been a good choice to insure that cross-task standards and procedures were in place, that information gathered on one task was adequately shared with others, and that the entire process was open and inviting to the public.

**Task 8: Water Quality and Watershed Monitoring Project**

| Task | Product(s) |
|---|---|
| 8.1 | Executed contract with the Yuba RiverKeeper |
| 8.2 | Collaborate with local, state, and federal agencies, conservation organizations and the Sacramento River Watershed Program to: |

8.2.1 Review existing available information to determine aquatic resources of concern, contributing water body factors, known probable contributing sources, safest and most cost-efficient monitoring parameters, locations where parameter measurements will provide useful results
8.2.2 Identification of key groups or organizations for collaboration
8.2.3 Initial assessment and proposed monitoring plan
8.2.4 Proposed monitoring plan approved by contract manager
8.2.5 Written permission from landowners for monitoring volunteers to work or cross their land

8.3 Volunteer preparation
8.3.1 Trainers hired
8.3.2 Training program curriculum prepared
8.3.3 Commitments from key groups to provide volunteers and conduct work
8.3.4 8-12 training programs on approved monitoring protocols

8.4 Purchased water Quality Equipment

8.5 Monitoring Conducted
8.5.1 Monitoring sites established and set up
8.5.2 Monitoring plan implemented

8.6 Monitoring Data stored, evaluated and reported
8.6.1 Plan prepared in collaboration with BLM, USFS and the Yuba Watershed Council for data storage, analysis and reporting

8.6.2 Establishment of facilities, equipment and programs for data storage, analysis and reporting

8.7 Final assessment and monitoring report

8.8 Quarterly task reports and invoicing

***Lead Agency***
South Yuba River Citizens League (SYRCL)

***Goal****: Development of a sophisticated volunteer-based program to monitor the Yuba River and its tributaries, to provide an opportunity to identify present and potential disturbances with aggressive oversight from the RiverKeeper to federal and state agencies, community organizations and neighborhood associations. The data will be scientifically reliable so as to serve to educate the community about the threats concerning water quality, declining and diminishing fisheries and forest health. All data will be compiled with a view to establish current baseline conditions in order to measure change over time.*

***Partnerships formed as a result of this Task***
Yuba Watershed Council (YWC)
UC Davis
CA State Parks Service
US Forest Service (USFS)
US Bureau of Land Management (BLM)
Nevada County Resource Conservation District (NCRCD)
Friends of Deer Creek
Regional Water Quality Control Board
Nevada County Department of Environmental Health
Community Health Services

Nevada Irrigation District
CA Department of Health Services
SWRCB Clean Water Team

***Budget***
Budgeted at $190,824.

***Evaluation of Effectiveness***
The objective of Task 8 was to develop a sophisticated volunteer-based program to monitor the water quality of the Yuba River and it tributaries. The project was an opportunity to identify current and potential disturbances with aggressive oversight from the RiverScience Director of SYRCL to federal and state agencies, community organizations, and neighborhood associations. The data was collected by well-trained volunteer citizen monitors, using protocols designed to be scientifically reliable and then used to educate the community about the threats concerning water quality, declining and diminishing fisheries and forest health. Data collected included stream debris, suspended sediment, turbidity, bed load sampling, macro-invertebrates, vertebrates and microbial populations, pH levels, dissolved oxygen, nitrogen, phosphorus, alkalinity and fecal choliform. Monitoring data was compiled to establish baseline conditions for measurement of change over time.

SYRCL hired a RiverScience Director to oversee the water quality monitoring program and a Contract was executed with UC Davis for technical support and research in 2000. The program began with a series of collaborative meetings with local, state and federal agencies to discuss monitoring sites and parameters. The collaborating agencies and organizations formed the Technical Advisory Committee (TAC) of the Yuba Watershed Council. A detailed monitoring plan was developed by the TAC and submitted to the State Water Resources Control Board for approval. The monitoring plan was approved in the fall of 2000, and the TAC then began work with the SWRCB to develop a Quality Assurance Program Plan (QAPP) to ensure that the data collected was scientifically credible and would be acceptable by local, state and federal regulatory agencies. The YWC also developed a Monitoring and Science Committee, which like the TAC met regularly throughout the duration of the project.

Concurrently with the planning process, the RiverScience Director began recruiting volunteers for the monitoring program via postcard mailings to SYRCL members and by radio/ newspaper advertisements. The first trainings occurred at Bridgeport State Park on the South Yuba River and were taught by a UC Davis Contractor and the RiverScience Director. Additional training sessions included stream walk survey techniques, snow safety, and seminars and animal tracks and the history of Malakoff Diggins State Historical Park. Two new monitor and refresher trainings were offered each project year. Volunteers were matched with site groups and allocated a site each to monitor for one year. Additional volunteers were recruited as part of a Quick Response Team to respond to storm events and other water quality emergencies. Still more volunteers were trained to input data, calibrate equipment, provide oversight on monitoring days and perform other tasks as needed for the project. Volunteers filled out annual evaluation forms gauging their satisfaction with their learning experience and the program as a whole.

With assistance from the SWRCB and the UC Davis Contractor, appropriate equipment for the project was purchased. The RiverScience Director designed storage and calibration and maintenance parameters for all equipment purchased and developed a calibration log.

Detailed instructions were developed for each monitoring group, involving GPS coordinates, and maps. A local water quality-testing laboratory was contracted to test monthly samples and an official Chain of Custody procedure was established with the laboratory for each sample taken.

Monthly water quality monitoring took place on one Saturday per month throughout the duration of the project. The laboratory agreed to be open on the monitoring day of each month for sample collection. Additional monitoring occurred during storm events and when unusual problems occurred, for example during the summers of 2001 and 2002 when Enterococcus bacteria was identified at various sites in the watershed.

Volunteers were supervised regularly by the RiverScience Director and the UC Davis contractor; the RiverScience Director was a regular presence at monitoring sites to ensure that samples were collected and protocols followed correctly. A monthly "Newsflash" was produced to update volunteers about new techniques, upcoming events and other areas of interest. A post-monitoring email was sent to all volunteer monitors to share information about the recent monitoring day as well as unusual occurrences throughout the watershed observed during monitoring.

The SWRCB tested various databases throughout the duration of the project, but ultimately never reached a decision about how they preferred volunteer citizen monitoring programs in the state to store data. This project eventually built its own database in Filemaker Pro, to allow for easier entering and retrieval of data, as well as sophisticated analysis. All data entered into the database was scrutinized and approved by the YWC TAC.

***Evaluation of Effectiveness***

This task was highly successful in process and outcome. It has resulted in an excellent volunteer monitoring program, the development of large quantities of verifiable data for use in effective management of the resource, a strong community partnership committed to local stewardship, and increasing public and stakeholder awareness about the watershed and its challenges. Over 9000 hours of volunteer time was recorded during the life of the project. This project has been able to secure funding for an additional two years of water quality monitoring beyond the initial three-year period, and serves as a model for other programs in California. To date, SYRCL has been contracted to train six other volunteer watershed groups to monitor water quality on their rivers, leveraging the dollars invested in this watershed throughout the state. The new grant includes the writing and design of a series of instructional handbooks for citizen monitoring groups throughout the state. The necessary baseline data collected and analyzed as part of this task has been used by the SWRCB, RWQCB, CALFED, UC Davis, the US Forest Service, and the US Geological Survey for studies and projects occurring throughout the Yuba River watershed.

***Recommendations***

Water quality monitoring in this project was a success story and few recommendations are necessary. The only negative part of this task was the loud dissent generated by a few private

citizens. In this case, the result was more nuisance than serious setback to the project, but that won't always be the case. Developing a successful strategy for dealing with antagonistic private citizens and oppositional agendas would have long-term benefits. From a watershed partnership standpoint, bringing *all* partners to the table in some mode or other tends to be a valuable long-term investment, providing franchise to folks who feel/have put themselves outside of the community partnership being developed. A stakeholder representative watershed group will benefit by hearing from all sides of an issue, and sometimes just letting the disgruntled have the full floor serves to deflate off some of their negative feelings. Going further and helping disgruntled stakeholders find a productive means to participate in watershed efforts compatible with their interests can be a valuable way to make partners out of antagonists. This sort of task provides an opportunity for the Yuba Watershed Council to take a leadership role in bringing (and keeping) all stakeholders at the table.

**Task 9: Sierra Nevada Mercury Assessment and Education Project**

| Task | Product(s) |
|---|---|
| 9.1 | Contract executed with Mercury Education Manager |
| 9.2 | Sierra Mercury Assessment Conference |
| 9.3 | Compiled information on the historical uses of mercury, potential containment plans, health and safety impacts, collection and/or recycling plans, and information gathered at the conference |
| 9.4 | *Sierra Mercury Education and Assessment* workbook |
| 9.5 | 500 copies of work book available to interested stakeholders |
| 9.6 | Quarterly Task Reports and Invoices |
| 9.7 | Final task reporting |

***Lead Agency***
South Yuba River Citizens League (SYRCL)

***Goal****: Work cooperatively with the Yuba Watershed Council and Yuba-Bear Abandoned Mine Lands project to begin educating agencies, private property owners and watershed organizations about the impacts and potential dangers of accumulating mercury on water quality and watershed health; organize, plan and conduct a Sierra Nevada Mercury Assessment conference,*

***Partnerships formed as a result of this Task***
Yuba Watershed Council (YWC)
Yuba-Bear Abandoned Mine Lands (AML)

***Budget***
Budget: $34,300.

***Implementation of Activities***
SYRCL hired a coordinator in early summer, 2001 to organize, plan and conduct a Sierra Mercury Assessment Conference to support this task. The coordinator worked collaboratively with the RiverScience Director and the SWRCB to select speakers to cover various aspects of mercury assessment, hydrology, abandoned mines, chemistry, San

Francisco Bay Delta issues, and historical perspectives. Outreach and publicity was extensive and utilized email lists and mailings to environmental and government agencies, fishing clubs and water sport stores. The conference took place in Nevada City, California, on November 15, 2001. Over 200 people attended from all over California. In addition to the invited speakers, thirteen exhibitors had displays about the issue.

Concurrently with conference planning, a contract was signed with a researcher from UC Davis who compiled a substantial body of papers and research pertaining to mercury in the Sierra. This information was distributed to conference attendees, through SYRCL's web site and in the SYRCL office.

***Evaluation of Effectiveness***

This task was very ambitious, and successfully realized within the capabilities of the budget and timeline. The Sierra Nevada Mercury Assessment Conference was a successful and useful first step in addressing Sierra Nevada mercury issues.

The compiled suite of educational materials used both to support the conference and to provide general mercury education to watershed stakeholders provided good background and support information to conference goers, and serves as an informational starting place for future work in this area.

All information generated by this task was useful in the context of initiating stakeholder awareness of mercury issues, and bringing basic information together. None of it will truly help to address the problems created by abandoned mines and the natural and stimulated mercury in Sierra rivers. Agencies and the science community do not yet have enough solid science to create a workable Mercury Containment Plan.

The failures of this task are not of execution but of conception. Task goals were bigger than available funding and knowledge resources and so impossible to fulfill.

***Recommendations***

Future proposals should be evaluated in relation to technical and financial feasibility. The achievements made in service of this task are more than acceptable on their own and needed no larger addition to make acceptable products for funding.

The mercury issue remains one of serious importance, and the momentum begun with the Sierra Nevada Mercury Conference should not be abandoned. Agency participants at the first conference might be receptive to approach for funding and resources to repeat the event in a logical timeframe, or they might be willing to contribute to continuation of the project in other ways. Both possibilities should be explored.

**Task 10: Coordinated Yuba River Watershed Public Outreach and Education Project**

| Task | Product(s) |
|---|---|
| 10.1 | Water Quality and Watershed Monitoring Outreach Education |
| | 10.1.1 Educational materials to include brochures, flyers, bumper stickers and tee shirts |

10.1.2 5-10 public presentations annually to local community groups
10.1.3 24-Hour Watershed Health Hotline

10.2 Yuba River Watershed Website
10.2.1 Consultant hired to develop website
10.2.2 Site developed
10.2.3 Form and content set
10.2.4 Quarterly updates

10.3 Ecological Management Workbook
10.3.1 Pre-existing and new information compiled
10.3.2 Written and illustrated workbooks
10.3.3 200 copies of workbooks available to interested stakeholders

10.4 Yuba Stormwater and Run-off Education Project
10.4.1 Determination of locations of storm drains leading to Deer Creek and the Yuba River
10.4.2 Coordination with Adopt-A-Watershed Education Coordinator to organize volunteers
10.4.3 Project implemented, storm drains stenciled
10.4.4 500 copies of and educational brochure explaining benefits of the project distributed to local stakeholders

10.5 Adopt-a-Watershed Educational Training Program (8-10 Adopt-A-Watershed teachers trained in Nevada County)

10.6 Quarterly Task Reports and Invoices

10.7 Final Task Reporting

***Lead Agency***
South Yuba River Citizens League (SYRCL)
Yuba Watershed Council (YWC)
North San Juan Fire Protection District (NSJFPD)
Nevada County Superintendent of Schools (NCSOS)

***Goal****: Development of multiple modalities to outreach to the public about the South Yuba River watershed and the 204 project*

***Partnerships formed as a result of this Task***
Friends of Deer Creek
City of Nevada City
Adopt a Watershed (AAW)
Tahoe National Forest
CA Department of Education (CDE)
California Science Project

***Budget***
Originally budget: $68,163. Modified to $65,000 in November 2003.

***Implementation of Activities***
Three different agencies assumed lead responsibilities for completing the five components that comprised this task. SYRCL was responsible for Subtask 10.1, developing an education and outreach program around the work they performed in Task 8. The program was advertised to watershed stakeholders through a variety of media, including bumper stickers,

t-shirts and brochures. Regular public presentations kept stakeholders up to date on data findings and program progress and a 24-Hour Watershed Health Hotline was established for stakeholders to report emergent Yuba River disturbances.

Subtask 10.2 called for a website to serve as a central information source for information, activities and projects throughout the Yuba River Watershed. The YWC was responsible for this task and provided a web administrator to make regular updates and additions. The URL for the site is http://yubawatershedcouncil.org. The site did not monitor visitors but did provide basic information about the project and other watershed activities. The YWC will continue support and maintenance of the site, and NSJFPD will use its own Web Site to make the products developed with support of the 204 grant available to stakeholders on the Internet. Discussions are ongoing about how best to maintain and expand this resource now that grant funding has ceased.

Subtask 10.3 provided for the development of four "ecological management" handbooks to promote individual stakeholder stewardship of the watershed. NSJFPD hired a contractor to write and illustrate the documents and printed 200 copies, which were available at the last three Fuel Reduction Workshops (Task 6), North San Juan Fire Stations and distributed by the NCRCD.

SYRCL was also responsible for completion of Subtask 10.4–the Yuba Storm Water and Run-Off Education Project. The project identified the location of storm drains throughout the watershed and determined those where labeling would be most effective. Previous projects had installed labels in Yuba City and Marysville, leaving only storm drains in the Nevada City area leading to Deer Creek in need of labels. SYRCL coordinated with the Friends of Deer Creek and City of Nevada City to develop an acceptable design, and the labeling project's start was planned to coincide with Nevada City's Earth Day celebration. Volunteers labeled 80 drains on the inaugural day, as well as leafleting all nearby homes with storm drain pollution prevention information. More than 150 school children from local schools participated in the completion of the project. Posters, email notices, radio and local newspapers provided outreach and publicity.

The final piece of the outreach task was aimed at the education of younger stakeholders. Subtask 10.5, contracted to the Nevada County Superintendent of Schools, was designed to launch a comprehensive environmental education program in Nevada County schools. Building from the newly formed Watershed Alliance for Teaching Environmental Responsibility (W.A.T.E.R.) Program, Nevada County Schools hired a coordinator to expand the use of Adopt-A-Watershed practices in the Yuba and Bear River Watersheds with Proposition 204 monies. Three teachers on the WATER team were provided scholarships from AAW to attend its 2000 summer Leadership Institute in Bend, Oregon. The Nevada County team then coordinated three workshops to bring the AAW "Environment as an Integrating Context" approach to County educators. Fifty-three teachers and fourteen community members attended the workshops, which were led by trainers provided by AAW. Curriculum units and kits, along with literature books and environmental science resources were purchased with matching funds to support the program. These materials were combined with existing resources to create a resource center for teachers. An assessment of existing watershed education in the county was completed, and three Nevada County schools adopted

the program, placing the AAW curriculum in eight classrooms at the intermediate and middle school levels, supported by the AAW coordinator.

Stream monitoring teams were set up in four high schools and one middle school class, supplied with equipment purchased by the NCRCD. The SWRCB participated in teacher trainings to support the program. Other service-based learning projects include a high school class taking on restoration of a spring and its riparian corridor and two K-8 schools starting restoration projects on their campuses.

By the numbers, this project involved 18 schools, with 878 students participants, 43 faculty participants, 5 administrative participants and 12 members of the community who volunteered their time.

***Evaluation of Effectiveness***

The Education task was very successful, generating many partnerships and contributions of matching funds and services. It raised watershed awareness and understanding across different populations, legitimizing watershed education and science coordination, involving citizens in hands-on watershed stewardship, and providing support materials to individual stakeholders.

Subtask 10.1 received extensive coverage in the local newspaper and the Sacramento Bee, with a particular boost in publicity occurring with the citizen monitoring involvement in the study of Enterococcus bacteria in the South Yuba River. By the end of the project, the Yuba River Watershed Health and Monitoring Project was extremely well known to the public. Water quality monitoring performed by citizen volunteers is an accepted part of watershed stewardship through the Yuba watershed and has served as a model to other communities.

The website created for Subtask 10.2 was not fully utilized as an education and outreach tool, and with no measurement devices in place to track site visits or user satisfaction, the task was not well suited for adaptive management. However, the site remains, and will provide an ongoing opportunity for the YWC to provide stakeholder education and information to Internet users.

Subtask 10.3's "ecological management" handbooks have been well received. Feedback about the workbooks was positive, and the initial print run has nearly been exhausted. Funding sources for additional printings is being researched.

Subtask 10.4–the Yuba Storm Water and Run-Off Education Project created a high visibility program that actively engaged the K-12 education community in larger watershed management strategies. Participating teachers were pleased with the project and reported the children's satisfaction at being able to "make a real difference in their community."

Post Proposition 204 funding, the WATER and Adopt-A-Watershed program (Subtask 10.5) continues in Nevada County. AAW is committed to providing workshop funds and support to the project, and the WATER team remains active in AAW continuing education programs and institutes. The coordinator actively seeks grants and other funding to secure projects and resources and to provide exposure to the program to more schools and students. As a direct result of the investments made in this program, County Schools established the Bridgeport Nature Center at the South Yuba River State Park, which provides a watershed education

venue to schools and community groups. The program has created a County Science Fair and a Community Mapping project. Partnerships with SYRCL and the CREEK network continue to yield valuable technical and volunteer support.

***Recommendations***
This task was generally very successful in achieving its stated goals. Future projects would benefit by including specialists from the target audience or community on the proposal writing and/or development team. Knowledge of specific communities (school, business, etc.) helps to generate necessary buy-in and support and to accelerate the ramp-up progress for projects.

Specific performance measures would help project managers to assess and evaluate their progress and to measure benefits against investments. Specifically, events should have target levels of participation, and instruments to measure participant satisfaction and information gain should be used after most activities. The most successful task projects for this piece were the ones with the greatest level of partner participation, and that model should be implemented whenever possible.

Future projects with this much diversity would be well served by assigning a staff person or entity with coordinator responsibilities to make sure that integration of all watershed education, activity and information is ongoing and automatic. This coordination should include some type of compendium/data base of educators and resource volunteers and their specialties as well as their location and experience.

Development of a watershed education map, highlighting all ongoing watershed education programs and projects, would reveal gaps and surpluses in information, helping stewardship groups to create new projects that address those needs.

**Task 11: Evaluate the Project**

| Task | Product(s) |
|---|---|
| 11.1 | Monitor and review the implementation of activities detailed in tasks 2 through 10 against the actual production conducted within those tasks |
| 11.2 | Evaluate the effectiveness of Task 2 though 9 and prepare and implementation and effectiveness report |

***Lead Agency***
North San Juan Fire Protection District (NSJFPD)

***Goal****: Evaluate and analyze the results and products of the efforts funded by North San Juan Fire Protection District's Proposition 204 grant*

***Partnerships formed as a result of this Task***
South Yuba River Citizens League (SYRCL)
Yuba Watershed Council (YWC)
Nevada County Superintendent of Schools (NCSOS)

CA State Parks
CA Department of Forestry (CDF)
Middle Yuba River Area Citizen's League (MYRACL)
Yuba Watershed Institute (YWI)
Lake Vera/ Round Mountain Homeowners Association

***Budget***
Originally budget: $12,231. Modified to $10,000 in November 2003.

***Implementation of Activities***
The North San Juan Fire Protection District solicited proposals to complete the evaluation portion of this project. The District hired a contractor with a solid background in working at a watershed level and project evaluation in February 2004 and met with her to discuss the scoping and timelines of the project. The contractor began reading and researching all available documentation of the grant's activities and history and developed a format and outline for synthesizing grant information. The Project Director had already planned an evaluation conference for the end of March 2004, and the contractor developed a six-page evaluation instrument for distribution to and completion by all project partners before the event. The contractor developed an agenda for and facilitated the evaluation conference, which took place on March 26, 2004, at the Fire District Headquarters in North San Juan. Thirteen people attended the 9:00 am to 3:00 pm conference.

After the evaluation conference, the contractor wrote a draft grant evaluation and effectiveness report, distributing copies to all conference participants for comments and correction. She collected the responses to the draft, synthesized the information and finalized the document, presenting her findings to the Fire District's Board of Directors on May 18, 2004.

***Evaluation of Effectiveness***
This task was originally planned to be an ongoing part of the project, but did not function as such for multiple reasons. 1) The untimely death of the original Project Director served to disconnect the various tasks from one another and from the project as a whole. In the "emergency response" mode the District found itself in after losing its Project Director, project evaluation fell by the wayside. 2) This project was developed without clear cut performance measures and evaluation criteria, and neither the Fire District or nor its partners had the sophistication when the grant began to realize those items were crucial to accurate measurement and evaluation of their efforts. 3) Understanding of the need for clear performance measures in projects has increased dramatically in the grant world since this proposal was written, and today the grantor would most likely have insisted evaluation criteria be built into the scope and work plan.

Though it did not provide an ongoing measurement of project progress and success for adaptive management purposes--a major loss--the way the evaluation task finally was handled did provide some benefits: The evaluation of the project in hindsight by a neutral party allowed for an unbiased and critical consideration of the project as a whole and of its component parts. As an outsider to the community and the project, the contractor was able to see work plan implementation with fresh eyes, and bring the benefit of her larger experience

base with project work to the 204 grant. It's always easier to objectively evaluate something you have no stake in, and that was the case in this instance

***Recommendations***

1) Future projects should establish clear goals and performance measures to gauge progress and watershed benefit. Note should be taken of success indicators: how many people out of how large a population, attendance change from event to event, measured behavioral change in what percentage of audience, etc.

2) Project evaluation should be an ongoing process, from post-event surveys of participants to monthly evaluation by the overseeing watershed group, to yearly surveys of a statistically valid number of general stakeholders. Evaluations should be tracked, and trends noted and responded to.

3) Full integration of all components of the project should be a major goal, measured and adjusted for on a regular basis.

4) Whenever possible, partner-based oversight for the entire program should be the norm. The more watershed partners involved meaningfully in a project, the more validity it will be granted. Nay Sayers should be brought into the watershed stewardship process and empowered to work towards solutions that meet their interests whenever possible.

5) Good record keeping and information management by the grantee is essential. Simple and complete is better than complicated and disorganized. Files should be kept so that anyone who looks in them can recreate and understand the history of the project. The grantor could offer valuable assistance here by providing samples of good information management systems and references to previous grantees who have mastered this skill.

6) It's important to accurately track the "match" a project engenders: how many volunteer hours at what rate, what amount of agency time (that someone is paying for) at what rate, what equipment for how long at what value, what cash contribution to enhance what task, etc. This demonstrates leveraging of investment, and proves that more people than the grantee are interested in seeing the project accomplished.

## Conclusion

The North San Juan Fire Protection District overcame tragedy and a steep learning curve to implement its Proposition 204 grant project. Despite some visioning and execution difficulties, the project created many valuable products that will have long-term positive ramifications for management of the watershed. The development of cross-organizational partnerships and effective communication networks, involvement of citizen stakeholders in monitoring the condition of the river that sustains them and the collection and coordination of essential data are extremely valuable products generated by the State's investment in this project. Less celebrated but no less valuable is the knowledge of specific areas this grant highlighted that need more work in the future, both in terms of capacity development and general watershed and project-specific outreach and education.