

**WORK PLAN FOR PHASES IV/V/VI/VII****SACRAMENTO RIVER TOXIC POLLUTANT CONTROL PROGRAM****September 12, 2002**

The following work plan is submitted by the Sacramento Regional County Sanitation District (District) as one component of an application for a Fiscal Year 2001 assistance agreement from the U.S. Environmental Protection Agency (U.S. EPA) under the Clean Water Act (CWA). The funds for this project were authorized as a line item under the Departments of Veterans Affairs (VA) and Housing and Urban Development (HUD), and Independent Agencies Appropriations Bill for 2001. The work plan describes the project background, approach, schedule, and budget. It also contains an integrated work plan, which describes how the Phase VII work fits with the work funded under earlier, related assistance agreements, and with the long-range vision for the program.

**BACKGROUND**

Phase I of the Sacramento River Toxic Pollutant Control Program (SRTPCP) was initiated in October of 1995. Phase II was initiated in October of 1996. Phase III was initiated in October of 1997. Phase IV was initiated in April 1999. Phase V was initiated in November 1999. Phase VI was initiated in April 2001. This work plan addresses Phase VII of the program, which is expected to be initiated in November 2001.

**Objectives of the SRTPCP**

The long-term objective of the SRTPCP is to develop and implement a program that will bring the Sacramento River and its tributaries into compliance with appropriate water quality standards for toxic pollutants and thereby protect beneficial uses. This objective is to be accomplished through the following steps:

- . Performing water quality monitoring to assess conditions throughout the watershed, including the attainment of beneficial uses and water quality standards;

- . Developing information used in setting site-specific water quality standards, where appropriate, for the river and its tributaries;

- . Identifying and evaluating alternative control options for improving water quality conditions within the watershed; and

- . Developing and implementing a technically feasible, cost-effective and locally supported program to protect beneficial uses and achieve water quality standards in the river and its tributaries.

The SRTPCP is intended to be a long-term, multi-year program, and its success will require the active participation of the various parties who have a "stake" in the quality of the River and its tributaries (i.e., the "stakeholders").

For that reason, a second objective of the SRTPCP is to assist in the formation and maintenance of a viable organization of watershed stakeholders. It is intended that the stakeholder organization address not only the toxic pollutant-related issues in the watershed, but the broader water quality and watershed issues necessary to protect and enhance surface and ground waters throughout the basin. The broader program to be conducted by this stakeholder organization has been named the Sacramento River Watershed Program. The SRTPCP, then, is one element of the Sacramento River Watershed Program.

### **Congressional Support for the Program**

In 1994, Congress recognized the need to develop a coordinated, technically sound, adequately funded program focussed on achievement of toxic pollutant standards within the Sacramento River basin. As a result, the 1995 Appropriation Bill for the Departments of VA, HUD, and Independent Agencies included the following line item:

"\$500,000 for the Sacramento River Toxic Pollutant Control Program."

This was seed money to initiate "Phase I" of the program (denoting money awarded in fiscal year 1995).

Since then, Congress has continued to support the program. The 1996 Appropriation Bill for the Departments of VA, HUD, and Independent Agencies contained \$1,000,000 (for Phase II of the program); the 1997 Appropriation Bill contained \$900,000 (for Phase III of the program); the 1998 Appropriation Bill contained \$2,000,000 (for Phase IV of the program); the 1999 Appropriation Bill contained \$1,700,000 (for Phase V of the program); the 2000 Appropriation Bill contained \$1,500,000 (for Phase VI of the program), of which \$1,424,900 in federal funding was available for the project; and the 2001 Appropriation Bill contained \$900,000 (for Phase VII of the program), of which \$898,000 in federal funding is available for the project. The District will contribute \$47,263 in local matching funds for the Phase VII project elements.

The District is optimistic about obtaining additional funding for subsequent phases of the SRTPCP. However, this work plan and the accompanying grant application are structured to provide "stand-alone" products that will produce significant benefits in the absence of any additional funding.

### **Interrelationship between the SRTPCP and Other Programs**

The SRTPCP is one of a number of programs intended to address water quality issues within the Sacramento River watershed. The relationship between the SRTPCP, the broader Sacramento River Watershed Program, which it spawned, and these other programs are described below.

#### Sacramento River Watershed Program

The Sacramento River Watershed Program, although initiated with funding provided under the SRTPCP, is much broader in scope than the SRTPCP. The Watershed Program is intended to provide a forum to address a broad array of water quality-related issues within the watershed, including toxic pollutants and water quality management. Additional issues that may be addressed under the broader program include, but are not limited to, habitat, endangered species, flow, drinking water and ground water issues.

#### Sacramento River Toxic Pollutant Control Program

The SRTPCP is intended to address watershed issues related to toxic pollutants, and is one element of the broader Sacramento River Watershed Program. The SRTPCP has as its long-term objective the development

and implementation of a coordinated program to bring the Sacramento River and its tributaries into compliance with appropriate water quality standards for toxic pollutants, and thereby protect beneficial uses. The SRTPCP relies on the stakeholder subcommittees established under the broader Sacramento River Watershed Program for input and guidance. Likewise, the SRTPCP will be conducted in a manner that will facilitate achievement of the broader water quality management goals of the Sacramento River Watershed Program.

#### Tributary Watershed Management Programs

There are a number of watershed management programs underway on various tributaries to the Sacramento River. Representatives from a number of these programs are participating in the Sacramento River Watershed Program through the various Subcommittees, meetings and workshops of the SRWP. A goal of the SRWP is to assist these tributary programs through information sharing and coordinated approaches to monitoring, education and other activities. These tributary programs provide a valuable foundation for the Sacramento River Watershed Program. Beginning in June 1999, the SRTPCP has provided funding to supplement ongoing water quality monitoring in several tributaries in the Sacramento River watershed.

#### Other Ambient Water Quality Monitoring Programs

The water quality monitoring program developed and implemented under the SRTPCP is coordinated with existing major ambient monitoring programs being conducted in the watershed, including programs downstream of the Sacramento Metropolitan Area operating in the Sacramento-San Joaquin Delta and San Francisco Bay. These other programs include, but are not limited to, the National Water Quality Assessment (NAWQA) being conducted in the Sacramento River Basin by the United States Geological Survey (USGS), USGS special studies, the Coordinated Monitoring Program (CMP) being conducted on the Sacramento and American Rivers in the vicinity of Sacramento by the City and County of Sacramento, the Regional Monitoring Program (RMP) being conducted in San Francisco Bay under the direction of the San Francisco Estuary Institute (SFEI), ongoing programs being conducted by the California Department of Water Resources (DWR), the California Department of Pesticide Regulation (DPR), Interagency Ecological Program (IEP), CALFED monitoring and research being performed by the Regional Water Quality Control Board, Department of Fish and Game and University of California at Davis, Sacramento OP pesticide monitoring in Arcade Creek, local watershed program monitoring programs and others. In the future, the SRWP monitoring program will be coordinated with the broader ambient monitoring efforts sponsored by the State Water Resources Control Board and CALFED. Coordination has been accomplished through the active participation of representatives from these programs in the Monitoring, Toxics and Biological/Habitat Subcommittees. The SRTPCP monitoring program has been designed so that it will contribute significantly to the monitoring data necessary to support sound water quality management decisions in the watershed, including data necessary to develop 303(d) lists, total maximum daily loads (TMDLs), waste load allocations (WLAs) and load allocations (LAs) for specific constituents of concern.

#### State Watershed Management Initiative

The Watershed Management Initiative undertaken in California by the State Water Resource Control Board and Regional Water Quality Control Boards is intended to re-direct existing water quality management efforts and resources throughout the State toward a more holistic, watershed management approach. As a result of this initiative, the Central Valley Regional Board, together with other Regional Boards, is implementing a series of watershed management programs. The Sacramento River Watershed Program and the SRTPCP, though initiated independently, are consistent with the basic principles and policies of the State Watershed Management Initiative. Central Valley Regional Board staff integrates their WMI activities with the SRWP.

### State Non-point Source Plan

The SWRCB has recently adopted a Non-point Source Plan for California which will guide management of non-point sources over the next 15 years. The management strategies and specific control measures for OP pesticides and mercury will be coordinated with the management measures identified in the State plan to facilitate funding opportunities.

### **Program Structure**

The SRTPCP has been structured to achieve the basic purposes previously discussed, namely:

- Development of a program to address toxic pollutant issues in the watershed, and
- Development and maintenance of a viable stakeholders organization and working groups to address these and broader water quality-related issues in the watershed, including the development of water quality management strategies.

The latter objective has been achieved through the organization of stakeholders into a general Stakeholder Committee and a series of working subcommittees and working groups under the aegis of the Sacramento River Watershed Program.

Although SRTPCP funds were utilized to initially organize stakeholders and fund essential stakeholder activities (e.g., coordination and facilitation), the resulting stakeholder organization's goals and activities are considerably broader than the limited objectives of the SRTPCP. With the establishment of a broader SRWP, the SRTPCP, as previously stated, is just one element of that program.

The program structures established to accomplish the goals of the SRTPCP and the broader Sacramento River Watershed Program are described below.

### Sacramento River Toxic Pollutant Control Program

The SRTPCP, in order to achieve program goals and execute all assistance agreement-related activities, is organized as follows:

The Sacramento Regional County Sanitation District, as a signatory to the assistance agreement, has ultimate responsibility for conduct of the SRTPCP. The District fulfills this responsibility through the coordinated efforts of its staff and a number of contractors.

The Central Valley Regional Water Quality Control Board is responsible for coordinating stakeholder activities in each Phase, compiling information on pollutants and pollutant sources in Phase I, assisting in the development of water quality management strategies in Phase II, assisting in the evaluation of regulatory criteria in Phase III, and assisting in the development and implementation of management strategies in Phase IV/V/VI/VII. The Regional Board also performs other functions, such as toxicity monitoring support, technical and administrative support to subcommittees, and administration of the contract(s) for the resource center. For the Phase IV/V/VI/VII work, the Regional Board will contract directly with EPA Region IX.

The SRTPCP Grants Subcommittee, a subcommittee of the general Stakeholders Committee, has been formed to coordinate all work being funded under the U.S. EPA assistance agreement for the SRTPCP. The subcommittee is responsible for coordinating the various elements of the SRTPCP

work plan to ensure that the project objectives are achieved within the time frame and budget established in the assistance agreement. The subcommittee is comprised of the District, Regional Board, U.S. EPA Region IX, various contractors performing work under the grant, and other interested parties from the SRWP.

### Sacramento River Watershed Program

The broader Sacramento River Watershed Program (SRWP) is open to all interested members of the community, including private citizens, landowners, local government, local agencies, local watershed groups, trade groups, and state and federal government agencies. The SRWP operates under an informal decision making process, which seeks to achieve consensus where possible. The SRWP is organized as follows:

#### The Stakeholders Committee

is comprised of all interested parties with a stake in the watershed. The committee is responsible for adoption of broad goals for the watershed and, ultimately for decisions with respect to the broader water quality management program. The committee has a number of working subcommittees, which are described below. A collaborative stewardship approach is fostered in the stakeholder committee and subcommittee meetings, and an interest-based approach is utilized to reach consensus on key issues.

The general stakeholders have adopted the following mission statement for the SRWP:

*To ensure that current and potential uses of the watershed's resources are sustained, restored and, where possible, enhanced while promoting the long-term social and economic vitality of the region.*

#### The Monitoring Subcommittee

is responsible for the development and implementation of the water quality monitoring program to be developed under the SRTPCP. The Monitoring Subcommittee has adopted the following long-term goal:

*In coordination with the other subcommittees and the stakeholder committee, develop a cost-efficient and well-coordinated long term monitoring program within the watershed to identify the causes, effects and extent of constituents of concern that affect the beneficial uses of water and to measure progress as control strategies are implemented.*

#### The Toxics Subcommittee

is responsible for matters pertaining to the investigation and management of toxic pollutants in the watershed. The subcommittee has adopted the following long-range goal to guide its activities:

*In conjunction and coordination with the other subcommittees and the stakeholder committee, the Toxics Subcommittee will:*

- *Assess the health of the watershed in relation to toxic constituents of concern;*
- *Identify key problems, opportunities for action, sources of toxic constituents of concern and areas (sub-basins) of concern;*
- *Develop and propose strategies to control toxic constituents of concern; and*
- *Reassess and evaluate, on a periodic basis, the health of the watershed, the key*

*problems and sources identified, and the effectiveness of the control strategies.*

Consistent with its goal to assess the health of the watershed, the Toxics Subcommittee has sponsored educational workshops to address historic and current issues in the watershed. The Toxics Subcommittee provides input into the strategy development work performed in the working groups for mercury and organophosphate pesticides.

#### The Biological and Habitat Subcommittee

has as its goal the integration of biological monitoring into the overall watershed monitoring program for the purpose of protecting biological and ecological resources within the watershed. The subcommittee provides recommendations on biological monitoring to the Monitoring Subcommittee.

The Public Outreach and Education Subcommittee (POES) is responsible for public education and outreach elements of the SRWP. The subcommittee has developed the following goal:

*To facilitate the exchange of information concerning the watershed and to encourage the broadest based participation in the management, protection, and enhancement of the Sacramento River Watershed.*

The short-term objectives of the POES are to develop and implement a watershed-wide outreach program and to develop a long-term education strategic plan for the watershed. The subcommittee has taken the lead in organizing general stakeholder meetings and educational workshops for the SRWP.

The tributaries workgroup provides a forum for coordination of local watershed management projects that are underway or being initiated within the Sacramento River watershed. The workgroup will also serve as a means of exchanging information between individual tributaries programs and the broader Sacramento River Watershed Program.

### **Phases I, II and III-Objectives and Status**

The primary objectives of Phases I, II and III of the SRTPCP were as follows:

1. To compile and analyze existing information on the sources, effects, extent and control of toxic pollutants within the basin;
2. To develop and implement a basin-wide monitoring program that, in conjunction with existing monitoring programs, will identify the sources and extent of toxic pollutants within the basin;
3. To establish stakeholder committees and subcommittees and expand participation by initiating a public outreach program.
4. To develop recommendations for ongoing long-term implementation of the program.
5. To identify priority water quality issues in the watershed and to formulate a strategic framework to address those issues.
6. To coordinate with the SWRCB regarding statewide procedures for the development of site-specific

objectives.

An interest-based approach has been used in Phases I, II and III to make decisions on work products and other key issues.

Phase I work was completed in September of 1998. Phase II work was completed in December 1999. Work on Phase III was completed in June 2001.

### **Phase IV/V/VI/VII Objectives**

The objectives of the Phase IV/V/VI/VII program are as follows:

1. To conduct the water quality monitoring program, report results and provide data on a publicly accessible database system.
2. To coordinate with other agencies which are monitoring water quality in the Sacramento River watershed and to participate in the development of larger scale monitoring efforts with CALFED, SWRCB and others to coordinate water quality monitoring efforts in the Sacramento-San Joaquin Delta and San Francisco Bay.
3. To formulate water quality management strategies for selected water quality constituents and to perform work to evaluate selected criteria for use by the SRWP as water quality management tools.
4. To support implementation of suitable water quality management strategies for selected constituents of concern, where possible. Broaden stakeholder involvement in the development and implementation of management strategies. Selected constituents of concern include mercury, OP pesticides, drinking water parameters of concern, and unknown toxicity.
5. To expand participation in the SRWP through public outreach and information sharing.
6. To enhance coordination with and support for local watershed management groups.
7. To develop and evaluate institutional options and to implement an institutional framework for the SRWP.

The emphasis of this work is on the development and implementation of water quality management strategies using an interest-based, locally supported approach which emphasizes cost effectiveness and technical feasibility. This work includes the examination of water quality targets and the development of various options or strategies to achieve the targets. These strategies are directly linked to the four fundamental steps which have been established to meet the long term objectives of the SRTPCP.

As of the date of this work plan, the working groups for mercury and organophosphate pesticides have been organized and are implementing the Phase IV/V scope of work. Stakeholder and public outreach activities are continuing. Work has continued in the planning for a long-term institutional structure for the SRWP.

Phase IV/V/VI/VII is scheduled to be completed in June 2004.

## **DETAILED PHASE IV/V/VI/VII APPROACH**

The Phase VII work is planned as an amendment to the previously approved Phase IV/V/VI work plan. The following work plan therefore represents a combination of Phase IV/V/VI and Phase VII work into common tasks.

The combined Phase IV/V/VI and Phase VII work is designed to achieve the Phase IV/V/VI/VII objectives previously described and is divided into four major tasks:

1. SRTPCP Coordination
2. Water Quality Monitoring and Related Activities
3. Water Quality Management
4. Sacramento River Watershed Program

Descriptions of work under each task are presented below. Task descriptions include the work to be performed, the work products to be produced, the parties responsible for the work, and the budget. Budget figures represent a combination of Phase IV/V/VI and Phase VII task allocations. A summary of the schedule and budget for these tasks are provided immediately following this section.

A later section, titled the Integrated Work Plan, describes how the Phase IV/V/VI and VII tasks fit with work funded under Phases I, II, and III.

### **Task 1. SRTPCP Coordination Task 1. Stakeholder Activities Task 1. Stakeholder Activities**

#### Subtask 1a. Coordinate SRTPCP Activities

Description: Participate in SRTPCP Grants, Monitoring and Toxics Subcommittee meetings and activities. Perform follow-up work based on the results of the subcommittee meetings. Respond to stakeholders and public inquiries regarding the SRTPCP. Provide liaison information between these and other subcommittees of the SRWP. Provide meeting recorders at meetings of the SRTPCP Grants, Monitoring and Toxics Subcommittees. Prepare and transmit subcommittee meeting summaries to subcommittee members.

Work Products: Subcommittee meetings. Written summaries of subcommittee meetings. Technical work products supporting subcommittee activities. The time period covered by this Phase IV/V/VI/VII task is from March 1999 through February 2003. The Phase VII funding for this task extends the schedule from March 2002 through February 2003, except as noted below.

Responsibility: The Central Valley Regional Water Quality Control Board will have overall responsibility for subcommittee activities, with assistance from the District's staff and consultants, Larry Walker Associates, Harris & Company and others. Regional Board staff shall attend meetings of the SRTPCP Grants, Monitoring and Toxics subcommittees. Regional Board staff shall take minutes at several SRTPCP Grants meetings per year. Regional Board staff shall coordinate the Toxics meetings and shall

coordinate the Toxicity Focus Group, a subgroup of the Toxics subcommittee. Regional Board staff shall participate in the coordination of stakeholder meetings and workshops, respond to public inquiries, and provide information for use in newsletters. Phase VI funding will cover minutes at four Grants Subcommittee meetings, coordination of four Toxics Subcommittee meetings and attendance at twelve monthly meetings of the Grants and Monitoring Subcommittees. Phase VII funding (starting in March 2002) will cover minutes at two Grants Subcommittee meetings, coordination of six Toxics Subcommittee meetings and attendance at six meetings of the Grants and Monitoring Subcommittees.

Larry Walker Associates shall attend meetings of the Monitoring, Toxics and SRTPCP Grants subcommittees and shall provide technical and administrative support for those subcommittees. Larry Walker Associates shall participate in the coordination of stakeholder meetings and workshops, respond to public inquiries, and provide information for use in program newsletters. Phase VI funding will cover attendance at twelve monthly meetings of the Grants and Monitoring Subcommittees and attendance at quarterly meetings of the Toxics Subcommittee. The funding for LWA for this task shall extend from March 2001 through December 2001. Phase VII funding (starting in January 2002) will cover attendance at six meetings of the Grants and Monitoring Subcommittees and six meetings of the Toxics Subcommittee.

Harris & Company shall serve as recorder and prepare minutes for the meetings of three subcommittees (Monitoring, Toxics and SRTPCP Grants). Phase VI funding shall cover minutes at twelve Monitoring Subcommittee meetings (four of which will be joint meetings with the Toxics Subcommittee) and four Grants Subcommittee meetings. Phase VII funding (starting in March 2002) shall cover minutes at six Monitoring Subcommittee meetings (each of which shall be joint meetings with the Toxics Subcommittee) and two Grants Subcommittee meetings.

District staff shall attend meetings of the Monitoring, Toxics, POES and SRTPCP Grants subcommittees.

The District and its consultants are assisting in this critical task because of the District's interest in, and ultimate responsibility under the U.S. EPA assistance agreement, for the overall success of the program.

**Budget:** \$664,695 total, includes \$239,500 for the Central Valley Regional Board, \$228,000 for Larry Walker Associates, \$114,995 for SRCSD staff, and \$82,200 for Harris and Company.

This budget includes a \$185,895 allocation under Phase VI, with \$69,000 allocated to the Regional Board, \$57,600 allocated to Larry Walker Associates, \$30,895 allocated to the District and \$28,400 allocated to Harris and Company.

This budget includes a \$109,763 allocation under Phase VII, with \$42,500 allocated to the Regional Board, \$25,000 allocated to Larry Walker Associates, \$17,000 allocated to Harris and Company and \$25,263 allocated to the District.

#### Subtask 1b. Facilitate Monitoring Subcommittee Meetings

**Description:** Facilitate Monitoring subcommittee meetings. Assist in the planning of Monitoring Subcommittee meetings.

**Work Products:** Professionally facilitated meetings. The time period covered by this Phase IV/V task is from March 1999 through February 2003. The Phase VII funding shall cover work performed between March 2002 and February 2003.

**Responsibility:** Trained professionals will facilitate the Monitoring Subcommittee meetings. Phase VI funding will cover facilitation for twelve monthly meetings.

**Budget:** \$21,600 total, for the Napa Resource Conservation District under Phases IV and V and an additional \$16,500 allocated to Otis Wollan under Phases VI and VII.

Subtask 1c. Evaluate Institutional, Management and Funding Options for the Monitoring Program and SRWP

**Description:** Using information derived from Phase II and III pertaining to the assessment of potential institutional, management and funding options, assist the SRWP Subcommittees and other SRWP stakeholders in the selection and adoption of a long term framework for the SRWP to support long term water quality monitoring and other needs of the program. Provide analysis of selected options and provide materials to the group to aid in selection of a future framework.

**Work Products:** Targeted outreach meetings shall be held to solicit input on key issues and to identify areas of widespread agreement from the stakeholder group on the future framework for the program. A report shall be prepared which summarizes the key findings of these meetings and which identifies an implementation strategy for the future framework. Phase IV/V funding covers work for the period March 1999 through February 2002.

**Responsibility:** Larry Walker Associates was responsible for the Phase IV portion of the work, including conducting outreach meetings with key stakeholders and development of a progress report summarizing key input and describing a strategy for implementing the future framework. Responsibility for follow-up work (after release of the above described report) will be assigned to Dennis Bowker, SRWP Coordinator. Work will be based on input and guidance from the SRWP Subcommittees and other SRWP stakeholders.

**Work on this task is complete.**

**Budget:** \$60,300 total, including \$30,000 for Larry Walker Associates and \$30,300 for Dennis Bowker. \$10,000 in Phase VI funding is allocated to this task. No Phase VII funding is allocated to this task.

Subtask 1d. Prepare Task Progress Reports

**Description:** Prepare that portion of the semi-annual progress reports to EPA that relates to Task 1.

**Work Products:** Semi-annual progress reports covering Task 1. These reports cover the period from March 1999 through February 2003. Phase VII funding covers work in the period from March 2002 through February 2003.

**Responsibility:** Central Valley Regional Water Quality Control Board.

Budget: \$10,500, total, for the Central Valley Regional Water Quality Control Board. Phase VI funding covers \$3,000 for preparation of two progress reports. Phase VII funding covers \$1500 for preparation of two progress reports.

## **Task 2. Water Quality Monitoring and Related Studies Task 2. Water Quality Monitoring and Related Studies Task 2. Water Quality Monitoring and Related Studies**

### Subtask 2a. Manage Monitoring Program

**Description:** Manage the conduct of the Year 2, 3 and 4 monitoring program to ensure that the work is conducted in accordance with the monitoring plan developed by the Monitoring Subcommittee. Coordinate with managers of other monitoring programs (e.g., the U.S.G.S. NAWQA, Sacramento Coordinated Monitoring Program, San Francisco Bay Regional Monitoring Program, Regional Board, Department of Water Resources, Department of Pesticide Regulation, CALFED and other major monitoring programs). Prepare annual revisions of the Quality Assurance Project Plan, and coordinate review and approval of the plan by USEPA staff. Prepare sampling plans and coordinate field sampling and sample analysis activities. Perform QA/QC review. Review data, approve for entry and place data in an Access database as an intermediate step prior to transfer into the Interagency Ecological Program (IEP) data management system and STORET. Provide technical support for data management in the IEP internet accessible, relational database management system.

**Work Products:** Annual revisions to the Quality Assurance Project Plan to address changes to the Monitoring Program. Development of sampling plans which describe the sampling logistics. Samples collected, analyzed, and reviewed for QA/QC in accordance with the Quality Assurance Project Plan. SRWP program data entered into Access database and thereafter into the IEP database. The time period for the Phase IV/V/VI/VII work extends from June 1999 to June 2003. The Phase VII funding covers work on the Year 5 monitoring program, which will cover the period from June 2002 through May 2003.

**Responsibility:** Larry Walker Associates will have primary responsibility for performance for most of the above tasks, based on input and guidance from the Monitoring Subcommittee. DWR staff will be responsible for development of database tools to facilitate transfer of SRWP monitoring data to the IEP database, maintenance of the database and technical support to the SRWP Monitoring Subcommittee regarding data management issues.

**Budget:** \$ 43,800 total in Year 2 from Phase IV funding (to supplement Phase III funding for Year 2), with \$28,800 for Larry Walker Associates and \$15,000 for DWR (IEP) staff.

\$106,400 total in Year 3 from Phase IV and V funding, with \$86,400 for Larry Walker Associates, \$15,000 for DWR (IEP) staff and \$5,000 for Regional Board staff.

\$65,000 total in Year 4, with \$60,000 for Larry Walker Associates and \$5,000 in for DWR (IEP) staff, taken from Phase VI funding.

\$20,000 total in Year 5 allocated to Larry Walker Associates from Phase VII funding.

Subtask 2b. Conduct Field Sampling

Description: Collect field samples in accordance with the SRWP monitoring plan and deliver them to the appropriate laboratory for analysis.

Work Products: Field samples collected at selected sites for Year 2, 3, 4 and 5 monitoring over a 48-month period extending from June 1999 through May 2003.

Responsibility: Parties to perform sampling will be selected by District, with input from the Monitoring Subcommittee.

Budget: Included in the budget for Subtask 2c.

Subtask 2c. Perform Laboratory Analyses

Description: Perform laboratory analyses on field samples in accordance with the monitoring plans and Quality Assurance Project Plans for Years 2, 3 and 4 and transmit the results of the analyses to the monitoring program managers.

Work Products: Laboratory analyses of field samples collected in Years 2, 3, 4 and 5 under Subtask 2b. Period for analysis of samples extends from June 1999 through September 2003.

Responsibility: Parties to perform laboratory analyses will be selected by the Monitoring Subcommittee with approval of the District. **Laboratory and sampling work for years 1, 2 and 3 are complete.**

Budget: \$200,000 total in Phase IV funding to supplement Phase III funding for Year 2.

\$630,000 total in Year 3 from Phase IV and V funding, with \$620,000 undefined and \$10,000 to the Regional Board.

\$400,000 in Year 4 and \$30,000 in Year 5 from Phase VI funding

\$286,600 in Year 5 from Phase VII funding, with \$266,600 to an undetermined contractor to perform Year 5 monitoring and \$20,000 to the Regional Board to perform management of bioassessment monitoring.

Subtask 2d. Analyze Monitoring Program Results

Description: Analyze the results of the Year 2, Year 3, Year 4 and Year 5 monitoring programs and prepare draft and final reports which present the key results of the SRWP monitoring program and relevant portions of the USGS NAWQA, Sacramento CMP, San Francisco Bay RMP, Department of Water Resources, Department of Pesticides Regulation, CALFED and Regional Board ambient monitoring programs. The draft reports will be reviewed by the Monitoring Subcommittee and a three-person external peer review committee established by the District and U.S. EPA. A total of two draft reports are anticipated for each annual report. A response to comments will be prepared for each draft and each final report.

Work Products: Annual reports for Monitoring Years 2, 3, 4 and 5 that describe the monitoring program and

presents the key results of the program. A summary of comments and response to comments will accompany each report. Copies of the final reports will be made available to the Sacramento River Watershed Program and the data will be made available in electronic format on the IEP web-site. The first draft report for each monitoring year will be submitted to the Monitoring Subcommittee for review in December of each year. The final report for each year shall be completed by June of the following year. The time period covered by Phase IV/V/VI/VII annual monitoring report preparation extends from June 1999 through June 2003 (Monitoring Years 2, 3, 4 and 5). The Phase VII funding extends the time period from June 2002 through June 2004.

THE ANNUAL REPORT FOR YEAR 2 IS COMPLETE.

Responsibility: Larry Walker Associates will have primary responsibility for performance of these tasks, based on input and guidance from the Monitoring Subcommittee.

**The monitoring reports for years 1, 2 and 3 are complete.**

Budget: \$27,600 total in Phase IV funding for Year 2 to supplement Phase III funding, to Larry Walker Associates.

\$86,800 total for Year 3 in Phase IV and V funding, with \$82,800 to Larry Walker Associates and \$4,000 for Regional Board staff.

\$60,000 for Year 4 in Phase VI funding to Larry Walker Associates.

\$60,000 for Year 5 in Phase VII funding to Larry Walker Associates.

Subtask 2e. Analyze System-wide Impacts on the Delta

Description: Participate in efforts by CALFED, SWRCB and others to develop an integrated monitoring program which includes the SRWP monitoring program, USGS, DPR, Sacramento, CALFED and others in the Sacramento River watershed, monitoring by USGS, IEP, SFEI, Deltakeeper, CALFED and others in the Delta, monitoring by USGS and CALFED and others in the San Joaquin, and monitoring by SFEI, USGS, IEP and others in San Francisco Bay. The objective of this integration effort is to have a monitoring program which provides a comprehensive perspective on water quality and other factors which influence the ecosystem and beneficial uses of the overall system. Available information from other programs will be identified and incorporated into the analysis of data from the SRWP monitoring program.

Work Products: Information in the annual monitoring reports which describes and summarizes key information from other programs. Meetings attended and work products generated for the CALFED CMARP Steering Committee and associated workgroups. Work will be performed in the period from March 1999 through February, 2002.

Responsibility: Larry Walker Associates will have primary responsibility for performance of these tasks, based on input and guidance from the Monitoring Subcommittee. Regional Board staff shall provide input and guidance to Larry Walker Associates.

**Work on this task is complete.**

**Budget:** Total budget of \$45,000 under Phase IV and V funding, with \$ 40,000 allocated to Larry Walker Associates and \$5,000 to Regional Board staff. No Phase VI or VII funding is allocated to perform the activities described under this task. Funding provided under prior tasks will be adequate to complete this task through February 2002.

Subtask 2f. Prepare Task Progress Reports

**Description:** Prepare that portion of the semi-annual progress reports to EPA that relates to Task 2.

**Work Products:** Semi-annual progress reports covering Task 2. Work period for this task extends from March 1999 through June 2004.

**Responsibility:** Larry Walker Associates.

**Budget:** \$10,500, total, for Larry Walker Associates. Phase VI funding covers \$3,000 for preparation of two progress reports. Phase VII funding covers \$1,500 for preparation of two progress reports.

**Task 3. Water Quality Management**

Subtask 3a. Formulate Water Quality Management Strategies

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**Description:** Water quality management strategies will be developed for water quality parameters of concern identified by the SRWP Toxics Subcommittee. The Toxics Subcommittee has selected the following parameters of concern for strategic plan development under this task: Mercury (bioaccumulation) and Organophosphate pesticides.

The Toxics Subcommittee has also indicated that additional attention should be given to drinking water parameters and unknown toxicity to determine whether strategic plans should be developed for these parameters.

Procedures for strategy development include organization and networking with existing management efforts for each parameter, outreach to interested parties, provision of facilitation services to lead interest-based working groups, identification of problems to be addressed and existing regulatory requirements and constraints, collection and evaluation of pertinent data, development of reasonable strategies by the working groups, and implementation of suitable projects to attain management goals. The purpose behind this overall effort will be to demonstrate the success of an interest-based, stakeholder driven effort to meet water quality management goals in the Sacramento River watershed.

Tasks to be performed in the overall effort to develop and implement strategies for mercury and organophosphate pesticides will be as follows. The Phase IV/V/VI/VII work effort will be performed under this overall framework and will comprise most, but not all, of these tasks.

**Work Products:** It is intended that completion of the above tasks will be accomplished in Phases IV, V, VI, VII and later phases of the SRTPCP program. The required reports for the Phase IV/V/VI/VII effort are outlined below. Reports shall document the background, methodology, results, analysis of results and findings for the associated task. Products shall also include participation in meetings of working groups, liaison reports from the working groups to the SRWP subcommittees, and copies of meeting minutes. The work period for these tasks extends from March 1999 through June 2003. Phase VI funding extended the schedule for this task from December 2002 to June 2003. Phase VII funding will not extend the schedule.

**Responsibility:** Larry Walker Associates shall have primary responsibility for performance of tasks on the mercury work and shall be responsible for submittal of work products in accordance with the stipulated schedule. Regional Board staff shall participate in and contribute to the mercury working group with technical and policy input. Regional Board staff assigned to this task shall provide technical review and comments on draft work products.

Department of Pesticide Regulation (DPR) staff shall have primary responsibility for performance of tasks on the organophosphate pesticides work effort and shall be responsible for submittal of work products in accordance with the stipulated schedule for Phases IV and V. Central Valley Regional Board staff shall provide technical and policy input to the organophosphate pesticides working group, shall provide technical review and comments on draft work products, and shall work cooperatively with DPR staff in the execution of other assigned tasks.

Larry Walker Associates shall be responsible for participation in regional efforts to assess the drinking water parameters of concern. See Subtask 3a.3.

**Budget:** Total budget for Task 3a is \$1,936,400: \$1,084,151 for the mercury work, \$812,249 for the organophosphate pesticides work, \$40,000 for work on drinking water parameters of concern.

For the Phase IV/V/VI/VII mercury work, \$549,000 will be allocated to Larry Walker Associates for the preparation of listed technical reports and other deliverables, \$130,000 will be allocated to Regional Board staff, \$140,000 will be allocated for coordination/facilitation of the workgroup, \$68,000 will be allocated for mercury web-site development and maintenance, \$30,000 will be allocated to Department of Fish and Game for mercury monitoring, \$70,000 will be allocated for work contributing to the development of a fish consumption survey, \$25,000 will be allocated for evaluation of control measure effectiveness, and \$37,151 will be allocated to increase funding for mercury source control monitoring, or, alternatively, to use to implement additional monitoring and \$35,000 for work to be determined by the DTMC. A total of \$128,000 is allocated to the mercury tasks for Phase VII, with \$20,000 allocated to Larry Walker Associates for technical support to the DTMC in the period from January 2003 through June 2003, \$20,000 to the Regional Board for assistance to the DTMC in the period from January 2003 through June 2003 and review of technical reports produced by the DTMC, \$35,000 to Harris and Company for meeting facilitation and administration services for the period March 2002 through June 2003, \$18,000 for web-site maintenance for the period through March 2003, \$10,000 for unnamed peer reviewers of DTMC technical reports and \$25,000 for additional tasks specified by the DTMC to be selected from existing list generated by

DTMC which includes technical assistance, additional monitoring, unnamed special studies, and decision support modeling .

For the Phase IV/V/VI/VII organophosphate pesticides work, \$355,000 will be allocated to the Regional Board, \$112,849 will be allocated to the Department of Pesticide Regulation, and \$70,000 to a contractor for computer modeling, \$40,000 will be allocated to the District, \$67,400 will be allocated for facilitation and note-taking of the OP pesticide focus group, \$20,000 to the California Prune Board, \$15,000 to the UC Cooperative Extension, \$12,000 for coordination of the implementation of management practices, \$45,000 for liaison with growers, \$15,000 for the completion of the management strategy report, \$47,500 for tributary monitoring and \$12,500 for peer review of technical reports produced by OPFG. A total of \$117,400 in Phase VII funding is allocated to this work, consisting of \$20,000 to the Regional Board, \$5,000 for facilitation, \$2,400 for notetaking, \$47,500 for tributary monitoring to support management strategy implementation efforts, \$30,000 for computer modeling, and \$12,500 for peer review of monitoring/modeling research reports.

For the drinking water parameters work, \$40,000 will be allocated to Larry Walker Associates under Phase IV and V funding. No Phase VI or VII funding is allocated to this task.

### Subtask 3a.1 Mercury Management Strategy

#### Subtask 3a.1.1. SRWP Working Group.

Description: Form and participate in a SRWP working group on mercury. Seek agreement within the group to adopt a methodology for development and implementation of the strategic plan consistent with the tasks outlined below. Assist in efforts to merge and collaborate with other groups/forums working on mercury in the Sacramento River watershed and Bay/Delta. Assist in the assembly of a network of key stakeholders from the private and public sectors representing major interests projected to be involved in the implementation of a comprehensive strategy. Attend meetings and provide facilitation services to the working group. Provide liaison of information from the working group to the SRWP Toxics and Monitoring Subcommittees. Develop, assemble and distribute education and outreach information to work group participants, including information on regulatory requirements and programs which must be considered in the overall management strategy. Develop and maintain a web site for the mercury working group linked to the SRWP web site.

Work product: Facilitated meetings, meeting agendas, meeting notes, liaison materials to the Toxics Subcommittee, outreach materials and mercury web site. The time period for this task is from March 1999 to June 2003.

Responsibility: Larry Walker Associates shall be responsible to lead development and participation in the SRWP working group for mercury and to provide liaison to other SRWP subcommittees. Meridian Group and Harris and Company shall provide professional facilitation services for the working group. Harris & Company shall be responsible for attending meetings

of the working group, producing meeting notes, and providing administrative support to the Meridian Group. University of California at Davis shall provide services to design, implement and maintain a mercury web site linked to the SRWP web page in coordination with the SRWP Resources Center.

Budget:Phase IV, V and VI funding: Larry Walker Associates (\$84,100), Regional Board (\$30,000), Meridian Group (\$99,540), Harris and Company (\$5,460) and UC Davis (\$50,000).

A total of \$83,000 for Phase VII. The Phase VII total is allocated to Larry Walker Associates (\$20,000), Regional Board (\$10,000), Harris and Company (\$35,000), and website (\$18,000).

#### Subtask 3a.1.2 Goals and Targets.

Description: Identify/develop initial goals and targets for water quality management strategies for mercury. As a first step, identify/develop goals and a range of potential target(s). Consider existing regulatory standards, advisory criteria and other pertinent information in the development of potential target(s). Prepare preliminary report documenting evaluation and development of goals and potential target(s) for the strategic plan.

Work product: Preliminary report (submitted 10/99)

Responsibility: Larry Walker Associates shall be responsible for the preparation and submittal of the preliminary report describing goals and potential target(s). Regional Board shall provide technical review and comment on the report.

**Work on this task is complete.**

Budget:Phase IV and V funding: Larry Walker Associates (\$32,500) and Regional Board (\$10,000). No Phase VI or VII funding is provided for this task.

#### Subtask 3a.1.3 Evaluate targets.

Description: Identify potential studies to be performed to evaluate or refine potential target(s) identified in the above task. Studies to be considered may include development of site specific criteria, standards or other target values to address local conditions. Submit information to SRWP working group to select studies for further consideration. Develop work plans for studies to evaluate/refine targets. Submit work plans to SRWP working group for consideration and evaluation. Select studies to be performed under the direction of the working group. Perform studies to evaluate/refine targets. Prepare report summarizing work performed, results, interpretation of results and recommended adjustments or changes to potential target(s) identified in the previous task.

Prepare report documenting evaluation and identification of a finalized range of potential target(s) for use in development of the strategic plan.

Work product: Status report on target studies (submitted 6/00)

Draft target report to working group and peer reviewers by March 2002. Final target report to working group (submitted by 12/02). The report shall include a range of acceptable targets, target evaluation criteria, summary of sensitive uses and linkage to associated targets, description of the bases for selecting or rejecting possible targets, and bibliography of studies used in the target identification and derivation.

This report and other technical reports completed under this Subtask shall be peer reviewed by experts selected by EPA and the District. Candidate peer reviewers include the national experts on the CALFED Mercury Oversight group.

Responsibility: LWA shall be responsible for preparation of a preliminary report describing potential target evaluation studies and preliminary work plans for such studies, as required. Regional Board staff shall provide technical review and comment on the report.

Larry Walker Associates shall be responsible for the preparation and submittal of the final report describing goals and potential target(s). A draft of the report shall be circulated to EPA and other working group participants 45 days prior to the comment deadline. Report shall include a summary of comments received on the draft report and a response to comments.

Budget:Phase IV and V funding: Larry Walker Associates (\$50,000), Regional Board (\$10,000). No Phase VI or VII funding is provided for this task.

#### Subtask 3a.1.4 Conceptual Model(s).

Description: Develop preliminary conceptual model(s) to describe fate, transport, sources, and processes affecting ambient levels of mercury in water, sediment and biota, with input from the mercury working group. Submit preliminary conceptual model(s) to working group for evaluation and refinement. Prepare report describing the content of the conceptual model. Based on input received from the working group, refine and/or augment the conceptual model report. The revised conceptual model report shall be used by the working group as an organizational tool for use in modeling efforts, data collection, source assessments and public outreach.

Work product: Preliminary report (submitted 9/99). Final report (submitted by March 31, 2002 as a draft for peer review with other elements of the strategic planning documentation and completed as a draft for public review by December 2002).

Responsibility: LWA shall be responsible for preparation of reports describing conceptual model(s) for mercury to be used by the working group.

Budget:Phase IV and V funding: Larry Walker Associates

(\$44,640), Regional Board (\$10,000). No Phase VI or VII funding is provided for this task.

#### Subtask 3a.1.5 Identify/quantify Sources.

**Description:** Identify and quantify important point and non-point sources of total and methyl mercury, with input from the SRWP working group and utilizing results from the CALFED methylation research and non-point source studies. Collect and summarize key source data and prepare report describing important sources, summarizing available data from SRWP monitoring program, identifying data gaps and outlining steps necessary to collect essential information. Develop preliminary load estimates of sub-watersheds, NPDES discharges and other individual sources for which data is available. Assess total and methyl mercury water column data collected by the Department of Water Resources, Department of Fish and Game and USGS in the Sacramento River and tributaries. Validate that DWR data meets the quality assurance standards, or equivalent, as described in the SRWP QAPP. Use this information to update the load estimates for sub-watersheds and to identify tributaries where more intensive source identification monitoring should be directed.

Develop and manage additional studies to collect necessary source data. The approach to be used is a step-wise analysis, using main stem data to characterize total loadings, data at the mouths of tributaries to characterize loadings from sub-watersheds, and tributary data to identify source areas or specific source inputs within sub-watersheds. To the degree possible, determine the mercury mass loadings from individual sources or source areas, express source loadings as a percentage of the total load for each sub-watershed, and prioritize sources with highest loadings for further analysis. Where possible, using the prioritized list of sources, identify and quantify control measures and their effectiveness for these significant sources using information developed in Subtask 3a.1.13 and 3.a.1.14.

Identify and investigate funding sources for additional total and methyl mercury water column monitoring in tributaries to be used to identify specific sources of mercury in sub-watersheds of the Sacramento River. Develop prioritized summary table of funding sources and steps to be taken to obtain such funding for the Sacramento River watershed. Contact funding parties and take actions to seek such funding, within the budgetary constraints of this task. Alternatively, apply available funding to source investigation monitoring activities.

**Work product:** The primary goal of this task is to identify, quantify and rank the largest mercury sources or source areas in the Sacramento River watershed. Preliminary report of initial findings regarding sources in the watershed (submitted by 1/00) COMPLETED. Draft report (submitted by 1/02) which shall summarize the methods employed to make load determinations, loading results, uncertainty associated with the loading calculations and results of source control evaluations. Final report (submitted 12/02) which incorporates changes resulting from review by the Delta Tributary Mercury Council. Use report review procedure specified in Task 3a.1.3 above.

Responsibility: LWA will prepare report describing and summarizing important source information.

Budget:Phase IV, V and VI funding: Larry Walker Associates (\$88,840), Regional Board (\$20,000), Department of Fish and Game (\$30,000). \$37,151 to an unnamed contractor to either develop information and implement actions to obtain funding for additional tributary monitoring in the Sacramento River watershed to identify specific sources of mercury or to implement additional mercury source investigation monitoring. No Phase VII funding is allocated to this task.

#### Subtask 3a.1.6 Select and Use Analytical Models.

Description: Identify and evaluate existing mathematical models which can be used to quantify the linkage between sources, control actions, and targets. Prepare preliminary report which identifies modeling needs, summarizes and describes existing models, and identifies new or modified models which can be developed to meet fundamental analytical needs. Oversee effort to select and utilize models to perform required analyses.

Develop and employ mathematical models to quantify the linkage between alternative source control actions, fate and transport of mercury, biological uptake and the attainment of targets, within the budget constraints of the program. Perform sensitivity analysis of modeling results using differing input assumptions. Identify uncertainty in model parameters and model results. Prepare report which describes models selected for use by the working group, modeling results, and findings derived from the modeling results regarding source control measure effectiveness, attainability of targets and other information to be used in the development of the strategic plan.

Work product: Preliminary report (submitted by 1/00). Draft report of modeling results (submitted by 3/02). Final report (submitted 12/02). Utilize same draft report review procedures as specified for Task 3a.1.3 above.

Responsibility: LWA will prepare reports identifying and evaluating modeling needs and available models.

Budget:Phase IV and V funding: Larry Walker Associates (\$116,000), Regional Board (\$10,000). No Phase VI or Phase VII funding is provided for this task.

#### Subtask 3a.1.7 Peer and Technical Review of reports.

Description: Specific technical reports shall be reviewed by an independent peer review group selected by the District and USEPA. These reports include the Conceptual Model Report, Target Evaluation Report, Sources Report, and Modeling Report. The Regional Board will also provide technical review of these reports. The date for submittal of these reports for peer review and technical review was 7/22/02.

Work Product: Response to peer review comments and Regional Board comments. (09/02)

Responsibility: LWA will prepare the response to comments. Regional Board will provide technical review of the work product.

Budget: No Phase IV/V/VI funding is provided for this task. Phase VII funding of \$20,000 is provided for this task, with \$10,000 allocated to the Regional Board and \$10,000 allocated to peer reviewers to be determined at a later date.

#### Subtask 3a.1.8 Develop Strategic Plan.

Description: Identify and assess alternative strategies for reaching the range of targets identified in Subtask 3a.1.3, with input from the SRWP working group. Strategies shall consist of various source reduction scenarios, drawing from results from the CALFED program and input from the working group. Evaluate costs, benefits, and effectiveness of alternative mercury control strategies in achieving identified targets. Prepare report describing alternative strategies and summarizing the evaluation of these alternatives. Finalize selection of attainable targets, if possible. Submit report to SRWP working group and assist the group in the selection of an overall strategy to achieve identified targets. Overall strategy shall include consideration and recommendations regarding allocations of responsibilities and funding requirements for implementation of the strategic plan. Prepare final report documenting the rationale and content of the recommended strategic plan.

Work product: Final working group report (12/02). Report shall be distributed to peer reviewers selected by the District and USEPA. Final report shall be peer reviewed with Phase VII funds.

Responsibility: LWA shall be responsible for preparation of a preliminary report describing alternative strategies and the evaluation of the costs, benefits, and effectiveness of those alternatives. Regional Board shall provide technical and policy review and comment on the report.

Budget: Phase IV and V funding: Larry Walker Associates (\$57,920) and Regional Board (\$20,000). No Phase VI or VII funding is provided for this task.

#### Subtask 3a.1.9 Implement strategic plan.

Description: Identify and prioritize implementation projects/actions which are consistent with the strategic plan. Opportunities for early implementation projects shall be identified and evaluated. Prepare annual status reports documenting progress in implementation of the strategic plan, actions completed, dates of actions and proposed changes to the implementation plan based on new information. Annual status reports shall commence upon adoption of the strategic plan by the working group.

Work product: None for Phase IV/V/VI/VII.

Responsibility: None for Phase IV/V/VI/VII.

Subtask 3a.1.10 Effectiveness Evaluation.

Description: Monitor effectiveness of strategic plan implementation activities in achieving the identified goals and targets. Prepare report which describes the monitoring methods, monitoring results and effectiveness evaluation.

Work product: None for Phase IV/V/VI/VII.

Responsibility: None for Phase IV/V/VI/VII.

Subtask 3a.1.11 Revise Plan.

Description: Performance of this task is contingent on the finding that the original plan will not achieve the goals and target(s) of the working group. Identify alternative revisions to the strategic plan as necessary to achieve goals and targets, with input from the SRWP working group. Evaluate costs, benefits, and effectiveness of alternative revisions. Prepare preliminary report describing the alternatives and summarizing the evaluation of the alternatives. Submit the preliminary report to the working group for evaluation. Assist the working group in the selection of a revised strategy, as necessary. Prepare final report to document the rationale and content of the revised strategic plan.

Work product: None for Phase IV/V/VI/VII

Responsibility: None for Phase IV/V/VI/VII.

Subtask 3a.1.12. Fish Consumption Survey

Description: Gather available information and develop a detailed work plan for the performance of a fish consumption survey within a portion of the lower Sacramento River watershed (e.g. below major reservoirs, within lower Sacramento River, Cache Creek, Feather River, American River, Delta waters). To the extent possible, methodology for the survey shall be consistent with the survey approach used in San Francisco Bay area by the Department of Health Services and SFEI and consistent with the procedures which have been employed by OEHHA and USEPA in other locations. Consultation shall be made with the principal investigators for the San Francisco Bay study and Regional Board staff to obtain recommendations for a Sacramento River watershed study. Available information to be gathered shall include fish tissue data, data on intensity of use of fishing areas (e.g. from Marine Recreational Fisheries Statistics Survey, Department of Fish and Game creel surveys, etc). The work plan should describe a study which would provide statistically supportable results, cover a representative number of sites, and cover sites which are useful to the development of the DTMC strategic plan. The work plan should describe methods of data collection, basis for site selection, QA/QC procedures and methods to be used in statistical analysis and data interpretation, an estimated budget and a schedule for performance of the

survey. The work plan shall support the overall purpose of the survey to quantify consumption rates for locally caught fish and to characterize the species and sizes of fish consumed within the selected study area.

After completion of a preliminary work plan, a decision will be reached regarding (a) continued effort to develop a more specific work plan, (b) a field survey of fishing locations, or (c) commencement of the survey. At that point, the allocation of costs to specific tasks and the schedule for continued work will be developed.

Work Product: Work plan for fish consumption survey completed by May 2001. Additional work elements to implement survey.

Responsibility: To be determined. Larry Walker Associates shall coordinate with selected contractor to provide linkage to the target evaluation task and assist in the development of the scope of work.

Budget: Phase VI funding is a total of \$75,000: \$15,000 to contractor to develop work plan for fish consumption survey; Larry Walker Associates (\$5,000); \$55,000 to be determined pending review of work plan and decision on the need for additional information to design or implement survey. No Phase VII funding is allocated to this task.

#### Subtask 3a.1.13 GIS Database

Description: Obtain and consolidate the following existing GIS data layers and information into a GIS data base to be used in mercury source identification and strategic planning activities: SRWP and other important mercury water quality and fish tissue monitoring sites, active flow gaging stations, mercury mine sites, gold mine sites, geothermal sites, wetland areas, land use information, NPDES discharge points, and dam sites. Existing GIS layers prepared by USGS, Department of Conservation, Department of Water Resources and others shall be used to the extent possible. The GIS-based tool will be used for mapping, data display, conceptual and analytical modeling, and database purposes. The GIS database will be designed with the intention of linking to the DTMC mercury website to make the GIS information internet accessible. It is also intended that the format used for the GIS database will be compatible with the standard GIS format used by other parties, including the Regional Board and USGS.

Work Product: GIS data layers representing the above described available information for the Sacramento River watershed (July 2001). Ongoing work to augment and refine GIS database.

Responsibility: Larry Walker Associates

Budget: Phase VI funding: Larry Walker Associates (\$50,000). No Phase VII funding is allocated to this task.

#### Subtask 3a.1.14 Control Measure Effectiveness Evaluation

Description: Perform a literature review and analyze available information pertaining to alternative control measures and the effectiveness of such measures for selected mercury source types. The source types shall be selected as a result of assessment of results and prioritization of sources under Subtask 3a.1.5. These sites may include mercury mine sites, gold mine sites, geothermal sites, NPDES facilities, sediment behind reservoirs, in-stream sediments, erodable sediments, etc. These sites also may include other specific source types identified in the CALFED research in the Cache Creek watershed. The purpose of this task is to develop source-specific information which will be useful, at an individual source, sub-watershed and watershed scale, to estimate localized and regional mercury reductions which may be achieved through control of the subject sources. Work will be coordinated with source identification and source location work described in Subtasks 3a.1.5 and 3a.1.13. Monitoring information will be used to identify sources or source areas. Land use, soil information, source locations and other information from the GIS system will be used in Subtask 3a.1.5 to complete the loading analysis and to assess the sub-regional and regional importance of individual sources.

Work Product: Technical report summarizing the results of the control measure effectiveness evaluation for selected source types and source areas (December 2001).

Responsibility: To be determined.

Budget:Phase VI funding: \$ 25,000 for performance of literature review and report preparation. No Phase VII funding is allocated to this task

#### Subtask 3a.1.15 Phase VII Mercury Tasks

Description: Develop and implement task activities from list pre-established by the DTMC at its meeting of April 10, 2001.

Work Product:All work completed by June 2003.

Responsibility: To be determined by the DTMC.

Budget:Phase VII funding: \$25,000.

#### Subtask 3a.2 Organophosphate Pesticides Management Strategy

The dates for work products below are approximate. Specific terms for products and their due dates will be provided in the detailed work plan described in Task 3a.2.1 below. The Department of Pesticide Regulation (DPR) and the Central Valley Regional Water Quality Control Board (RWQCB) have joint responsibility of the work products in Phases IV and V, as described below, with RWQCB responsible for technical review and comment on work products; DPR has responsibility for assuring that due dates for all Phase IV and V work products are met. Contractors for Phase VI and VII work are as specified or will be determined by the District.

##### Subtask 3a.2.1 Develop Detailed Scope of Work.

Description: Develop a detailed scope of work that builds upon the framework established in this work plan.

Work product: Scope of Work (6/99)

Responsibility: DPR and RWQCB will develop scope jointly. The scope will be submitted to the SRWP Toxics Subcommittee for review prior to finalization.

**Work on this task has been completed.**

Budget: No Phase IV/V/VI/VII funds have been allocated to this task.

#### Subtask 3a.2.2. Pesticide Focus Group.

Description: Form and participate in focus group to develop a strategy to protect the main stem Sacramento and Feather Rivers from adverse effects of diazinon applied to dormant orchards and other sources. A specific strategy for chlorpyrifos will probably be included, resources permitting. Collaborate with other stakeholder groups, including the SRWP Toxics Subcommittee and others.

Work product: Form group (6/99), hold meetings, meeting agendas, meeting notes, liaison to Toxics Subcommittee.

Responsibility: DPR will be the lead with assistance from the RWQCB; input will be received from the District and the Toxics Subcommittee. District will contract with a facilitator and recorder acceptable to the focus group. The time period for this Phase IV/V task is from March 1999 to February 2001.

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**Work on this task has been completed.**

Budget: For Phases IV and V: DPR, \$20,000; RWQCB, \$25,000; District, \$60,000. No Phase VI or VII funding will be included for this task (see new Task 3a.2.12).

#### Subtask 3a.2.3. Goals and Targets.

Description: Identify/develop a list of goals and targets for diazinon and chlorpyrifos in the Sacramento and Feather River watersheds. Consider existing regulatory standards, advisory criteria and other pertinent information (e.g., Department of Fish and Game's water quality criteria, pesticide registrants' ecological risk assessments, etc.). Prepare a preliminary report documenting the evaluation process and rationale for goals and targets. The report will be prepared by DPR and brought before the focus group for review and comment. The report will also be peer reviewed by experts selected by the focus group, the District, and EPA in Subtask 3a.2.10.

Work product: Draft report from DPR to SRWP (8/1/99)  
Draft Final report from DPR. (12/15/00)

Responsibility: DPR will be the lead with assistance from the RWQCB; input will be received from the District and other focus group members.

**Work on this task has been completed.**

Budget:DPR, \$20,000; RWQCB, \$40,000. No Phase VI or VII funding is provided for this task, which has been completed.

Subtask 3a.2.4. Prepare Monitoring Plan.

Description: Prepare plan for monitoring within Sacramento and Feather River watersheds to characterize contributions of key tributaries to pesticide loading. Identify potential funding sources for implementation of the monitoring plan. This task must be completed in time to allow the monitoring plan to be implemented by December 1999.

Work product: Draft Monitoring Plan from DPR to SRWP (8/99)  
Final Monitoring Plan from DPR with response to comments (01/00)

Responsibility: DPR will be the lead with assistance from the RWQCB; input will be received from the District and other pesticide focus group members.

**Work on this task has been completed.**

Budget:Phase IV and V funding: DPR, \$5,000; RWQCB, \$35,000. No Phase VI or VII funding is provided for this task.

Subtask 3a.2.5. Implement Monitoring Program.

Description: Implement the monitoring program designed under task 3a.2.4 if sufficient resources are obtained. If sufficient resources are not available, implement a reduced monitoring program tailored to available resources. Monitoring will be initiated in time to include the 1999-2000 pesticide application season.

Work product: Conduct monitoring, prepare OP pesticide monitoring data report summarizing historic and monitored surface water data for the Sacramento River and Feather River. Report shall document OP pesticide levels and estimated diazinon loadings from sub-watersheds for the two rivers. The report shall be peer reviewed by experts selected by the focus group, the District, and EPA.

Responsibility: DPR is responsible for preparing the draft and final monitoring reports. RWQCB will assist DPR in implementing the monitoring program and preparing the monitoring report. Draft report shall be completed by 01/01. Final report with response to comments and peer review shall be completed by 6/30/01.

**Work on this task has been completed.**

Budget:DPR, \$5,000; RWQCB, \$35,000. No Phase VI or VII funding is provided for this task.

Subtask 3a.2.6 Identify and Evaluate OP Pesticide Control Measures

Description: Based on information available, describe viable OP pesticide management measures and management strategies that can reduce levels of OP pesticides in the Sacramento and Feather Rivers. Measures may include application methods, timing of application, alternative pest management measures, site improvements to reduce off-site movement, hydraulic manipulations and other controls.

Work Product: Draft report summarizing identified management measures and strategies (12/00). Final report including peer review and response to comments (6/30/01). Plan to promote additional studies by 04/00.

Responsibility: DPR is responsible for preparing the summary of OP pesticide management measures and a plan, if determined necessary, for promoting additional studies on OP pesticide management measures by 04/00. RWQCB shall assist DPR in preparing these documents, with review by the focus group.

**Work on this task has been completed.**

Budget:DPR, \$5,000; RWQCB, \$20,000. No Phase VI or VII funding is provided for this task

Subtask 3a.2.7. Midcourse evaluation.

Description: Evaluate status of project and recommend work plan amendments in preparation of Phase V funding. Provide briefing of findings to OP pesticide focus group.

Work product: Report with recommendations to SRWP (01/00). Article submitted to "Waterways" newsletter (03/00).

Responsibility: DPR will lead with consultation with the RWQCB and the focus group.

**Work on this task has been completed.**

Budget:DPR, \$10,000; RWQCB, \$10,000. No Phase VI or VII funding is provided for this task, which is complete.

Subtask 3a.2.8 Develop Visual Tools.

Description: Develop electronic GIS information to assist in the understanding and communication of pesticide management plan elements. Layers that may be included are the base layer of rivers and watersheds, diazinon use /source data, monitoring information and hydrologic information.

Work Product: Sacramento and Feather River base layer (11/99). Preliminary OP use/source data (01/00). Preliminary monitoring and hydrologic layers (12/00).

Responsibility: DPR will lead with assistance from RWQCB. Input will be received from focus group members.

**Work on this task has been completed.**

Budget:Phase IV and V funding: DPR, \$5,000; RWQCB, \$40,000. No Phase VI or VII funding will be provided for this task, as funding is adequate from prior phases.

Subtask 3a.2.9. Identify/Quantify Sources.

Description: Identify and quantify important regional sources of diazinon, and perhaps chlorpyrifos, to the Sacramento and Feather rivers using existing data. Based on monitoring information from these watersheds and others (i.e., San Joaquin River watershed), evaluate factors that are important in determining the concentrations in the rivers. Using appropriate models, determine how concentrations vary in the Sacramento and Feather Rivers depending on load and flow scenarios. To the extent possible, describe and evaluate effects management practices may have on load contributions to the Sacramento and Feather river watersheds. Compare concentrations and loads to targets and determine reductions necessary for target compliance. In accordance with US EPA policy for peer review of federally-funded projects, the draft report will be provided to experts selected by the USEPA and the District for comment and review.

Work product: Draft report to SRWP (12/00)  
Final report with response to comments and peer review (6/30/02)

Responsibility: Waterborne Environmental will provide modeling services with assistance from the RWQCB; input will be received from the District and other focus group members.

**Work on this task has been completed.**

Budget:Phase IV and V funding: DPR, \$0; RWQCB, \$10,000; modeling contractor (Waterborne Environmental), \$40,000. No Phase VI or VII funding will be provided for this task, as funding from prior phases is adequate.

Subtask 3a.2.10. Evaluate Targets.

Description: Evaluate various targets and goals identified in Subtask 3a.2.3. This evaluation will focus on providing information that explains the basis for individual targets, including the rationale for their use, including, but not limited to, the requirements of the Clean Water Act. If appropriate, studies shall be identified which would refine specific targets. DPR will prepare a report summarizing work performed, including recommendations regarding targets and a comparison of load study results with the targets evaluated.. DPR will present the draft report to the focus group for review and comment. In accordance with USEPA policy for federally-funded projects, the draft report will be provided to experts selected by USEPA and the

District for comment and review.

Work product: Draft report to SRWP (12/00)

Final report with response to comments and peer review (6/30/01)

Responsibility: DPR will be the lead with assistance from the RWQCB; input will be received from the District and other pesticide focus group members.

**Work on this task has been completed.**

Budget:Phase IV and V funding: DPR, \$0; RWQCB, \$25,000.  
No Phase VI or VII funding is provided for this task.

Subtask 3a.2.11. Develop OP Pesticide Management Plan.

Description: Based on existing data, identify and assess management practices and strategies that can be implemented to achieve the range of targets, with input from the focus group. Strategies shall be evaluated for their ability to meet water quality targets in various load/flow scenarios. Evaluate costs, benefits, and pest management considerations of alternative strategies. At a minimum, load reduction goals and management measures to achieve compliance with the Fish and Game criteria must be fully evaluated. Describe methods for promoting/assuring compliance with strategies. Prepare plan for monitoring program that will determine compliance with targets in the Sacramento and Feather River watersheds. Identify funding sources for compliance monitoring. Identify funding sources for compliance monitoring and additional studies on control measures.

DPR, with assistance from the RWQCB, will prepare preliminary report describing alternative strategies and summarizing the evaluation of these alternatives. Data gaps, and prospective sources of funding to fill these gaps, will be identified. The report will be brought before the focus group for review and comment. The report should also recommend, from the range of targets previously identified, considering all the factors, which target the watershed program recommends for the Feather River and Sacramento River. The overall strategy shall include consideration and recommendations regarding allocations of responsibilities and funding requirements for implementation of the plan. In accordance with USEPA policy for federally-funded projects, the draft report will be provided to experts selected by USEPA and the District for comment and review.

Work product: Semi-annual progress reports to focus group

Draft report to SRWP (12/1/00).

Draft report to peer reviewers selected by US EPA and District (3/30/01).

Final report with response to comments and peer review (8/01/01).

Responsibility: The focus group will be the lead with assistance from the RWQCB; input will be received from the District and other SRWP members.

**Work on this task has been completed.**

Budget:Phase IV and V funding: DPR, \$12,849; RWQCB, \$60,000. No Phase VI or VII funding is provided for this task

Subtask 3a.2.12. Pesticide Focus Group Phase VI Coordination.

Description: Participate in focus group to implement a strategy to protect the mainstem Sacramento and Feather Rivers from adverse effects of diazinon applied to dormant orchards and other agricultural lands. Collaborate with other groups, including the SRWP Toxics Subcommittee.

Work product: Hold meetings, meeting agendas, meeting notes, liaison to Toxics Subcommittee. The time period for this Phase VI task is from March 2001 to February 2002.

Responsibility: To be determined; input will be received from the District and the Toxics Subcommittee. District will contract with a facilitator and recorder acceptable to the focus group.

Budget:Phase VI funding: District \$20,000; RWQCB \$15,000; Facilitator \$15,000, Notetaker \$5,000. No Phase VII funding will be allocated to this task.

Subtask 3a.2.13. Contribution of Funds for the proposed CWA § 319(h) project: Implementation of Best Management Practices to Mitigate OP Pesticides Runoff.

Description: The proposed CWA § 319(h) project, Implementation of Best Management Practices to Mitigate OP Pesticides Runoff, was designed to be a vehicle to initiate implementation of the OP Pesticide Management Plan (product of Subtask 3a.2.11). The project will be coordinated through the OP Pesticide Focus Group. At the May 2000 OP Pesticide Focus Group meeting, the group committed \$20,000 of its budget to the project for monitoring to evaluate management practices.

Products associated with the monitoring for the CWA § 319(h) project include preparation of OP pesticide monitoring plans for each year of the project (3 years total), conducting the monitoring, preparation of status reports (quarterly), and a report summarizing the monitoring data.

In October 2001, the group agreed to use the \$20,000 to augment the work of the U. C. Davis Pesticide/Water Quality Team in demonstrating the efficacy of alternative practices for reducing OP runoff. At least one of the U.C. demonstration studies for the winter of 2001-2002 will be conducted within the 319 Project area.

Work product: In-field runoff sampling units will be constructed, placed in an orchard in the 319 Project area, and operated during the winter of 2001-2002 to demonstrate the efficacy of certain orchard site management practices in reducing off-site movement of pesticides. As the project will be coordinated through the OP Pesticide Focus Group, monitoring status reports will be given regularly to the group; and a presentation summarizing Year 1 data will be given to the group (10/02).

Responsibility: Statewide Integrated Pest Management Project, University of California at Davis (Jim Lyons, Acting Director).

Budget:Phase VI funding: \$20,000. No Phase VII funding will be allocated to this task.

Subtask 3a.2.14. UC Cooperative Extension Farm Advisor Assistant for Educational Outreach to the East Indian Grower Community.

Description: Members of the OP Pesticide Focus Group (UC IPM and UCCE farm advisors, Agricultural Commissioner Office representatives from counties in the watershed, and agricultural consultants) have identified some non-traditional stakeholder groups within the watershed that conventional outreach efforts have not reached. Specialized outreach will be needed for these groups. Outreach to the East Indian grower community will be a pilot program for these efforts.

Fred Thomas of CERUS Consulting will be conducting preliminary outreach to this community, funded with early implementation funds from Phase IV/V of the SRWP program. He will meet with community members to identify the elements needed for effective outreach to their community. One goal is to identify an individual from the community for the Farm Advisor Assistant position.

This task will be the second phase of this effort, and will be undertaken by the UC Cooperative Extension program. It entails employing a member of the East Indian grower community to assist the educational and outreach activities of the University of California, Area Integrated Pest Management Advisor for Sutter-Yuba Counties, Butte County, Glenn County, Yolo County, and Tehama County (Carolyn Pickel), and through her, the Cooperative Extension Pomology Farm Advisors in the area. Emphasis of this position would be on extending information relative to integrated pest management and water quality issues pertinent to the agricultural producer portion of the East Indian community residing within the Sacramento/Feather River watershed.

SRWP funds will be used to fund a portion of the position. Other identified funding sources are DPR PMA funds, UC IPM funds and the proposed CWA § 319(h) project (Implementing Best Management Practices to Mitigate OP Pesticides Runoff). This position will involve a direct link with the proposed CWA § 319(h) project, including field scouting at the demonstration orchards and coordination of outreach associated with the project to the East Indian grower community. CWA § 319(h) project funds will be used for these efforts from 2/02 through harvest (9/02). This position will also link with multiple ongoing efforts, as well as proposed future efforts, aimed at raising the awareness of major issues involving the use of pesticides and their impacts on water quality. These efforts include those of the Sacramento River Watershed Program, the UC CALFED Pesticide/Water Quality Project, the UC Statewide IPM Project, and various Pest Management Alliance projects.

Work product: Assist with translations, either in language or terminology, for farm calls and walk-in office calls via the UC Cooperative Extension office for Yuba-Sutter Counties; facilitate educational meetings, workshops, and field days that target members of the East Indian grower community; assist with cooperative grower research projects by establishing study plots, collecting data, and entering data for analysis; work with multi-stakeholder interest groups and agencies to facilitate educational and demonstration project efforts; translate into Punjabi, publications, newsletters, and other pertinent information; work with the local East Indian grower

community media (radio, TV and newspapers) to identify and develop educational outreach opportunities.

The time period for this task will be from 11/01 to 10/02 (for the SRWP funded component). Work products for the SRWP funded component include quarterly status report presentations to the OP Pesticide Focus Group summarizing the work conducted and progress made, and participation with the OP Pesticide Focus Group Agricultural Practices Workgroup meetings (attend 4 meetings).

Responsibility: University of California, Area Integrated Pest Management Project; UC IPM Farm Advisor Carolyn Pickel will supervise the farm advisor assistant.

Budget:Phase VI funding: University of California, Area Integrated Pest Management Project, \$15,000. No Phase VII funding will be allocated to this task.

#### Subtask 3a.2.15. Implementation of OP Pesticide Management Plan (Subtask 3a.2.11) - Implementation Coordination.

Description: Coordinate with entities such as commodity groups, Agricultural Commissioners, the NRCS and local Resource Conservation Districts, UC IPM and UCCE Farm advisors, UC SAREP, California Agricultural Production Consultants Association (CAPCA), Association of Applied Insect Ecologists (AAIE), the California Farm Bureau, the Agricultural Council of California, California Association of Family Farmers (CAFF), the Nature Conservancy, academic institutions, DPR, CDFG, and the CVRWQCB to implement management practices identified in Subtask 3a.2.6 and the Management Plan identified in Subtask 3a.2.11. This will involve information exchange and coordination for ongoing studies and demonstration projects being conducted by various agricultural groups. It may also include efforts to obtain additional state funds to further implementation of the Management Plan within the watershed and/or state funds to fill identified data gaps (including, but not limited to, research related management practices and effects on biological communities related to mitigation efforts). Cost sharing programs with growers and universities will also be encouraged. Potential funding sources include, but are not limited to Proposition 13, CALFED, DPR, SWRCB, CVRWQCB, and UC SAREP.

Work product: Coordination with the groups listed above; preparation of grant proposals to fund demonstration projects, monitoring (can include chemical, toxicity, and bioassessment and physical habitat) and research related to data gaps in management practices and effects on biological communities related to mitigation efforts; coordination with the OP Pesticide Focus Group on proposed projects for grant proposals; quarterly status reports to the OP Pesticide Focus Group. The time period for this task will be from 11/01 to 5/02.

Responsibility: Parry Klassen

**Work on this task has been completed.**

Budget:Phase VI funding: \$15,000; No Phase VII funding will be allocated to this task.

Subtask 3a.2.16. Implementation of OP Pesticide Management Plan (Subtask 3a.2.11) - Grower Liaison(s) and Site Identification for Implementation.

Description: Work directly with growers in the watershed and assist with site identification for implementation of the management practices identified in Subtask 3a.2.6 (including application methods, timing of application, alternative pest management practices and site improvements to reduce off-site movement, hydraulic manipulations and other controls) and the Management Plan identified in Subtask 3a.2.11. Focus will be on contact with individual growers or small groups of growers to provide information on practices and the Management Plan, and technical assistance for implementation of management. This work will facilitate the establishment of demonstration sites for the proposed CWA § 319(h) project (Implementing Best Management Practices to Mitigate OP Pesticides Runoff). Grower recruitment can begin once an appropriate drainage basin has been identified by the OP Pesticide Focus Group CWA § 319(h) project team. (The evaluation is currently being conducted, and is based, in part, on information from Subtask 3a.2.5).

A portion of this effort may be an expansion, or next phase, of the outreach effort to be conducted in the fall and winter 00/01 by Fred Thomas of CERUS Consulting, funded with SRWP early implementation funds. Part of this outreach focuses on non-traditional stakeholder groups in the watershed. A goal of subtask 3a.2.16 will be to recruit, to the extent possible, growers from non-traditional groups in the selected drainage basin, along with growers from traditional groups, to participate in the proposed CWA § 319(h) project.

Work product: Meetings with growers; providing technical assistance for implementation of practices; grower recruitment; coordination with the project team for the proposed CWA § 319(h) project; quarterly status reports to the OP Pesticide Focus Group. The time period for this task will be from 11/01 to 7/02.

Responsibility: Gary Obenauf, Agricultural Research Consulting

Budget: Phase VI funding: \$45,000; No Phase VII funding will be allocated to this task.

Subtask 3a.2.17. Evaluation of OP Pesticide Management Practices.

Description: Work will build upon tasks outlined in Subtask 3a.2.6. Evaluation of practices will continue to be refined. Areas of evaluation will include crop specific considerations, costs, efficacy in pest control, and efficiency in reducing OP pesticide loading.

Work product: Continued coordination of the OP Pesticide Focus Group working group on practices (the Agricultural Practices Workgroup); includes meeting coordination, agendas, meeting notes, solicitation of additional participants, liaison reports to the OP Pesticide Focus group; coordination of peer review of the management practices report (product from Subtask 3a.2.6) and preparation of the responsiveness summary; and compiling updated, new or further information from participants, studies and demonstration projects to incorporate into future iterations of the management practices report. Finalized management practices report, including peer review responsiveness summary: 7/1/01. Report to OP Pesticide Focus Group on

newly gathered information on management practices: 3/02.

Responsibility: CVRWQCB

Budget:Phase VI funding: \$20,000. No Phase VII funding will be allocated to this task.

#### Subtask 3a.2.18. Completion of the Water Quality Management Strategy

Description: Work will build upon tasks outlined in Subtask 3a.2.11. Tasks include proofreading and final editing, incorporation of peer review comments into document, and preparation for final printing. Final copy of strategy will be transferred to CD-ROM and posted on SRWP website.

Work product: Final printed and electronic versions of the OP Pesticide Water Quality Management Strategy for Diazinon by 12/31/01.

Responsibility: Mike Oliver, Parry Klassen

**Work on this task has been completed.**

Budget:Phase VI funding: \$15,000. No Phase VII funding.

#### Subtask 3a.2.19. OP Pesticide Focus Group Phase VII Coordination.

Description: Participate in focus group to implement a strategy to protect the mainstem Sacramento and Feather Rivers from adverse effects of diazinon applied to dormant orchards and other agricultural lands. Collaborate with the SRWP Toxics Subcommittee and groups not represented in the SRWP.

Work product: Hold bi-monthly meetings, coordinate meeting agendas, meeting notes, liaison to Toxics Subcommittee. The time period for this Phase VII task is from March 2002 to February 2003.

Responsibility: To be determined; input will be received from the District and the Toxics Subcommittee. District will contract with a facilitator and recorder acceptable to the focus group.

Budget:Phase VII funding: RWQCB \$20,000; Facilitator \$5,000, Notetaker \$2,400

#### Subtask 3a.2.20. Tributary Monitoring

Description: The principal objective of this proposed project is to perform sampling and analysis for up to 5 wet season episodic events in tributaries of the Sacramento and Feather Rivers during the 2001-02 dormant spray season. This effort will support the management strategy implementation efforts of the Sacramento River Watershed Program OP Pesticide Focus Group. The planning and design of this monitoring effort will be coordinated with the Monitoring Subcommittee of the SRWP.

Prior to sampling, a Quality Assurance Project Plan (QAPP) and sampling plan will be prepared and submitted to the Sacramento Regional County Sanitation District and the EPA. Sampling and analytical methodologies will be described in the QAPP. The

QAPP developed will be adapted from the Sacramento River Watershed QAPP. Products associated with the monitoring for the project include preparation of OP pesticide monitoring plans, schedule sampling events, conducting the monitoring, preparation of status reports, analysis of water quality samples performed by an analytical laboratory acceptable to the OP Pesticide Focus Group and a report summarizing the monitoring data.

Work product: To be determined. As the project will be coordinated through the OP Pesticide Focus Group (OPFG), monitoring status reports will be given regularly to the group; and a presentation summarizing data will be given to the group.

Responsibility: To be determined.

Budget:Phase VII funding: \$47,500.

#### Subtask 3a.2.21 Peer Review of Monitoring/Modeling Research Reports

Description: Funding for this project will involve reimbursing peer reviewers for their review and comment on OPFG generated reports. The budget for this subtask is estimated based on the use of three peer reviewers for two reports: Baseline Monitoring in the Feather River Main Canal and Diazinon Exposure Model for the Sacramento and Feather Rivers.

Work Products: Peer review comments of OPFG reports.

Responsibility: To be determined.

Budget:Phase VII funding: \$12,500

#### Subtask 3a.2.22 Identify and Quantify Sources of Diazinon

Description: Identify and quantify important regional sources of diazinon, and chlorpyrifos, to the Sacramento and Feather Rivers using existing data. Based on monitoring information from these rivers, evaluate factors that are important in determining the concentrations in the rivers. Using appropriate models, determine how concentrations vary in the Sacramento and Feather Rivers depending on load and flow scenarios. To the extent possible, describe and evaluate effects management practices may have on load contributions to the Sacramento and Feather River watersheds. Compare concentrations and loads to targets and determine reductions necessary for target compliance. In accordance with USEPA policy for peer review of federally funded projects, the draft report will be provided to experts selected by the USEPA and the District for comment and review.

Work Products: Draft report from Waterborne Environmental to SRWP (6/02).

Final report from Waterborne Environmental with response to comments and peer review (9/30/02).

Responsibility: Waterborne Environmental; input will be received from the District and other focus group members.

Budget:Phase VII funding: \$30,000.

### Subtask 3a.3 Drinking Water Parameters of Concern

**Description:** Work on this task shall include participation in Basin Planning activities sponsored by the Regional Board, the California Urban Water Agencies and CALFED. Tasks shall include attending meetings of a working group that will be formed by the Central Valley Regional Board through funding provided outside the SRTPCP. Work shall include participation in meetings of the work group, liaison of work group information to the Toxics Subcommittee, including distribution of copies of meeting minutes to the Toxics Subcommittee and review/comment on products of the work group.

**Work product:** Meeting agendas, meeting notes, and liaison reports.

**Responsibility:** LWA shall attend meetings of the working group and provide meeting documentation to the Toxics Subcommittee.

**Budget:**LWA, \$40,000, funded under Phases IV and V. No Phase VI or VII funding is allocated to this task. Adequate work has been provided in prior phases to cover work on this task through February, 2002.

### Subtask 3b. Demonstration/Early Implementation Project.

**Description:** Work in this subtask is to be used to fund projects identified to implement management strategies in the Sacramento River watershed. This money may be used in parallel with other funding sources (e.g. CALFED, EQIP, etc.) to leverage the benefits to water quality protection and beneficial use attainment. OP Pesticide outreach tasks have been selected initially for this funding. The development and conduct of a series of grower outreach presentations to traditional groups during the Fall and Winter of 2000/2001 is one part of this work. The non-traditional outreach work described for Fred Thomas of CERUS Consulting in Subtasks 3a.2.14 and 3a.2.16 is also part of this work.

**Work Products:** Projects to improve beneficial use attainment and to create water quality improvement, consistent with water quality management strategies developed under Task 3a. OP pesticide outreach programs are being developed and implemented in Phases IV and V. The outreach presentations to traditional grower groups were developed in Summer and Fall 2000 and will end in (04/01). The outreach to non-traditional grower groups will take place between 1/01 and 12/01.

**Responsibility:** To be determined by the District, with input and guidance by the Toxics Subcommittee and the SRTPCP Grants Subcommittee. Contracts awarded to Parry Klassen of the Coalition for Urban and Rural Environmental Stewardship (CURES) and Fred Thomas of CERUS Consulting.

**Work on this task has been completed.**

**Budget:**Total of \$64,200 in Phases IV and V. Budget is

allocated to Parry Klassen (CURES) (\$45,000) and CERUS Consulting (\$19,200). No Phase VI or VII funding is allocated to this task.

Task 3c.1 Coordination with CALFED Toxicity Studies and Providing Technical Outreach

**Description:** Provide liaison and coordination between CALFED studies to examine causative agents for observed toxicity in the Sacramento River watershed and the monitoring and management activities of the SRWP subcommittees. Provide reports on CALFED study activities and results at monthly meetings of the Toxics and Monitoring Subcommittees. Additionally, provide technical outreach information to the Public Outreach and Education Subcommittee and other SRWP stakeholders.

**Work Products:** Provide liaison information regarding CALFED studies to Toxics and Monitoring subcommittees. Provide technical outreach information to stakeholders. Submit copies of all written liaison and outreach information to the District.

**Responsibility:** Regional Board staff.

**Budget:** \$40,000, to Regional Board, funded in Phases IV and V. No Phase VI or VII funding is allocated to this task. Adequate funding for this task has been provided in prior phases to cover work through February 2002.

Task 3c.2 Coordinate Activities of SRWP Toxicity Focus Group

**Description:** Coordinate activities of SRWP Toxicity Focus Group to develop a strategy to address toxicity of unknown cause. Collaborate with other stakeholder groups, including the SRWP Toxics and Monitoring Subcommittees and others. Participate in development of CALFED proposal to implement the strategy.

**Work Products:** Hold meetings, meeting agendas, meeting notes, liaison to Toxics Subcommittee, coordinate strategy development.

**Responsibility:** Regional Board

**Budget:** \$20,000 to Regional Board allocated from Phase VII funds to cover work from November 2001 through October 2002.

**Task 4. Sacramento River Watershed Program**

Subtask 4a. Coordinate Stakeholder Activities.

Subtask 4a.1. Coordination of General stakeholder meetings.

**Description:** Assist in general stakeholder meeting organization and administration, including arrangements for rooms, food and appurtenances. Note that direct costs for food and supplies (e.g. awards) are not included in the budget for this task.

**Work Products:** Four general stakeholder meetings. The time period

covered by Phase IV/V funding is from March 1999 through February 2001. Phase VI funding extends the schedule from February 2001 to February 2002 and includes one general stakeholder meeting. Phase VII funding extends the schedule from March 2002 to February 2003 and includes one general stakeholder meeting.

Responsibility: Harris and Company

Budget: Harris and Company (\$29,600). Phase VI funding allocation is \$5,800. Phase VII allocation is \$7000. It should be noted that the POES combined the budgets of the general stakeholder meetings and the educational workshops. Therefore the Phase VII funding also covers work for educational workshops in Subtask 4b.2.

Subtask 4a.2. Public Inquiry Responses

Description: Provide point of contact for public inquiries regarding the SRTPCP and SRWP. Receive and respond to telephone, FAX, email and written requests for information from SRWP stakeholders and other interested parties.

Work Products: Communications with stakeholders and other interested parties; distribution of program documents; referrals to SRTPCP task leaders. The time period covered by this Phase IV/V task is from March, 1999 through February 2000.  
COMPLETE

Responsibility: Harris and Company

Budget: Harris and Company (\$8,000), funded under Phase IV. No Phase V, VI or VII funding is allocated to this task, which has been completed.

Subtask 4a.3. Mailings

Description: Copying, assembling, mailing and e-mailing information to subcommittee members and general stakeholders.

Work Products: Mailings to listed participants in the SRWP. The time period for this task under Phase IV/V/VI is from March 1999 to February 2002. Phase VII funding extends the schedule from March 2002 to February 2003.

Responsibility: Central Valley Regional Board.

Budget: Central Valley Regional Board, (\$90,000). Phase VI funding allocation is for \$20,000. Phase VII funding allocation is \$20,000.

Subtask 4a.4.1 Program Coordinator

Description: Duties of the Program coordinator position

would include (1) acting as a spokesperson for the SRWP, (2) responding to questions and requests for information regarding the SRWP, (3) coordinating and communicating with watershed groups within the Sacramento River basin, (4) coordinating and communicating with agencies and organizations (e.g. CALFED, CVPIA, etc.), (5) coordinating with Resource Centers and liaisons, (6) assessing and compiling needs of Sacramento River watershed groups, (7) networking and reviewing information from successful watershed programs in other states, (8) attend SRWP general stakeholder meetings and subcommittee meetings, and (9) providing written materials and editing the newsletter, *Waterways*.

Work Products: Monthly reports of major activities; needs list for Sacramento River watershed programs. The time period for the Program Coordinator task will be four years (March 2000 through February 2004), with Phase VII funding the schedule from March 2003 to February 2004.

Responsibility: Contractor selected by the District. In Phases IV and V the contractor selected was Dennis Bowker.

Budget: Total of \$390,000, under Phases IV/V/VI/VII. Phase VII funding of \$90,000 is allocated to this task.

**Subtask 4a.4.2 Education Coordinator**

Description: The Education Coordinator will provide assistance to the Program Coordinator on various work elements listed in Subtask 4a.4.1. The Education Coordinator will provide emphasis and focus on education and outreach aspects of the SRWP, including serving as the primary contact with the Public Outreach and Education Subcommittee and providing coordination of K-12 educational activities funded under the SRTPCP. Education Coordinator shall also provide written information for inclusion in the newsletter, *Waterways* and shall assist in editing draft versions of the newsletter.

Work Products: Monthly reports of major activities. The time period covered by the task will be from March 2000 to March 2004. Phase VII funds the schedule from March 2003 to March 2004.

Responsibility: Contractor selected by the District. In Phases IV and V the District selected Allen Harthorn.

Budget: Total of \$125,000 for Phase IV/V/VI/VII. Phase VII funding allocation to this task shall be \$20,000.

**Subtask 4a.5. Regional Resource Network**

Description: Establish a regional resource network to assist local watershed groups within the Sacramento River watershed. Functions of the Resource network shall include:

- (a) Development and maintenance of a website linked to the SRWP home page. Website shall include calendar of meetings and events within the sphere of influence of the Resource network, minutes of local watershed meetings, newsletters of local organizations, linkages to related web sites (e.g. watershed

groups and organizations, state and local agencies, etc.). This activity shall be coordinated with the Public Outreach and Education Subcommittee, which is charged with maintenance of the SRWP homepage.

(b) Develop and maintain an electronic resource library for the SRWP, including references and abstracts of publications, articles, reports, conference proceedings, etc. Library shall be linked to appropriate information repositories maintained by others, including CERES, ICE, CALFED, IEP, SFEI, state and federal agencies, colleges and universities, etc. Provide assistance to users, including but not limited to obtaining scientific information and references, water quality data, maps and electronic GIS files, federal and state documents, and contacts with other watershed programs.

(c) Develop and maintain an electronic funding source catalog for use by local groups and entities, describing state and federal documents, funding sources, programs, objectives, application requirements, available funds, application deadlines, points of contact, etc. Provide assistance to users in obtaining funding for local projects.

(d) Provide organizational assistance to local watershed groups, including training and assistance with startup and administration, networking, internet access, planning, GIS applications, monitoring, restoration activities, cost estimating, etc. Implement student intern programs to provide technical assistance with the above activities.

**Work Products:** Products shall include a website aimed at assistance to local programs and entities, an electronic resource library with links to available information sources of interest and benefit to local programs, an electronic funding source catalog, and a training program providing training sessions and technical assistance to local programs. Quarterly status reports documenting activities of the resource center shall be submitted to the Public Outreach and Education Subcommittee (POES) of the SRWP. The time period covered by this task is three years (March 1999 through February 2002). One year of funding for the Resource Center was provided by Phase VI, extending the schedule from February 2001 to February 2002. Phase VII funding for one year is allocated to this task, extending the schedule from February 2002 to February 2003.

**Responsibility:** Contractor selected by the District and the Regional Board, with input from POES. The contractor for Phase IV was CSU Chico. A new contractor was selected to implement the remaining tasks in Phase IV/V/VI/VII.

**Budget:** Total for Phase IV/V/VI/VII of \$375,000. Phase VII funding of \$5,000 is allocated for this task.

#### Subtask 4b. Conduct Public Outreach and Education Program

##### Subtask 4b.1. Newsletter

**Description:** Prepare newsletters in coordination with the Public Outreach and Education Subcommittee and other SRWP subcommittees and members, as appropriate.

Work Products: Nine newsletters. The time period covered by this Phase IV/V/VI task is from March 1999 through February 2002. Phase VII extends the schedule for this task from March 2002 to February 2003 and covers one newsletter.

Responsibility: Harris and Company

Budget: Harris and Company total funding for Phases IV/V/VI and VII is \$65,000. Phase VII funding is \$10,000.

Subtask 4b.2. Education Workshops

Description: Assist in the planning and administration of three education workshops in coordination with the POES and other SRWP subcommittees and stakeholders.

Work Products: Three education workshops (total of three workshop days for Phase IV/V/VI). The time period covered by this Phase IV/V/VI task is from March 1999 through February 2002. A two-day workshop was funded under the Phase IV/V allocation. Phase VI funding extends the schedule from March 2001 to February 2002, and covers one one-day education workshop. This day may be combined with the General Stakeholder meeting to create a single two/day dual purpose meeting in lieu of two separate one-day events. No work on this task is anticipated under Phase VII. See Subtask 4a.1.

Responsibility: Harris and Company

Budget: Harris and Company total for Phases IV/V/VI is \$16,000. No Phase VII funding is allocated for this task.

Subtask 4b.3. Public Outreach and Education Subcommittee (POES) Facilitator/Coordinator

Description: Provide facilitation services and administrative support to assist in the bi-monthly meetings of the POES.

Work Products: Facilitated meetings of the POES. The time period covered by this Phase IV/V/VI task is from March 1999 through February 2002. Phase VII funds the schedule from March 2002 to February 2003.

Responsibility: To be determined by Public Outreach and Education Subcommittee.

Budget: Central Valley Regional Board total for Phases IV/V/VI and VII is \$46,000. Phase VII funding allocation for this task is \$8,000.

Subtask 4b.4. Public Outreach and Education Subcommittee (POES) Recorder

Description: Provide recording services and prepare meeting minutes for the bi-monthly meetings of the POES.

Work Products: Meeting minutes for monthly meetings of the POES. The time period covered by this Phase IV/V/VI task is from March 1999 through February 2002. Phase VII extends the schedule from March 2002 to February 2003.

Responsibility: To be determined by POES.

Budget: District total funding for Phases IV/V/VI was \$14,400. No Phase VII funding is allocated to this task.

Subtask 4b.5. Education Program

Description: Develop and implement an education program to foster knowledge and involvement in stewardship activities in local watersheds. The program should emphasize utilization of existing training curricula and collaboration with existing programs and activities to maximize the benefit of the program within the Sacramento River watershed. Elements of the education program may include:

- (a) Sponsorship and administration of watershed education events in cooperation with other entities and organizations.
- (b) Training programs for teachers to assist them in the incorporation of watershed education in their curricula. Programs should include hands-on field training, with emphasis on water quality assessment and understanding. Training should be performed in partnership with existing programs to augment and improve such activities.
- (c) Training of high school and/or college students as watershed stewardship mentors and the implementation of a broader educational program in which these mentors serve as instructors/leaders for other students. The broad program may include focused projects, stewardship activities, and/or educational seminars. Collaboration with ongoing activities of this type would be encouraged.

Work Products: Products may include organized community events, training programs for teachers, and/or educational programs for students. The time period for Phase IV/V/VI/VII activities on this task is March 2000 to December 2003.

Responsibility: To be determined by District with the input of POES.

Budget: District total for Phases IV/V/VI was \$100,000. No Phase VII funding is allocated to this task.

Subtask 4b.6. Implementation of Strategic Communication Plan

Description: Conduct a public outreach/communication program for the purpose of increasing and maintaining stakeholder

involvement. The program will be conducted in accordance with the recommendations of the strategic outreach plan developed during previous Phases.

**Work Products:** Public outreach materials and outreach meetings throughout the watershed. Written summaries of outreach meetings. The time period for Phase IV/V/VI activities on this task is from March 1999 through February 2002. Phase VII extends the schedule from March 2002 to February 2003.

**Responsibility:** The public education consultant(s), based on input and guidance from the Public Outreach and Education Subcommittee (POES), will be responsible for the development of public outreach materials and the conduct of outreach meetings. Consultant(s) shall be selected by POES. MMC Communications was selected for Phases IV and V.

**Budget:** \$195,000 total for the public education consultant(s) to implement the outreach program in Phases IV/V/VI and VII. Phase VII funding allocation to this task is \$35,000.

#### Subtask 4b.7. Monitoring Compendium Web Site Maintenance

**Description:** Provide technical services to maintain a web site which is linked to the SRWP home page. The site shall provide direct access to the information contained in the 1998 DWR Compendium of Water Quality Monitoring Programs in the Sacramento River Basin and Sacramento-San Joaquin Delta. Information in the compendium describes ongoing water quality monitoring activities in the Sacramento River basin, including parameters monitored, sites, frequency, objectives, data availability, and points of contact. This information will be updated on a regular basis, with major program information updated annually and minor programs updated triennially.

**Work Products:** An interactive web site which is updated and maintained to provide publicly available information regarding current water quality monitoring programs and activities in the Sacramento River watershed. The time period for this task is from March 1999 through February 2000.

**Responsibility:** District. Funding supplements resources provided by Department of Water Resources, Municipal Water Quality Investigations.  
COMPLETE

**Budget:** District (\$10,000), funded under Phase IV. No Phase V, VI or VII funding is allocated to this task, which is complete.

**PHASE IV/V/VI/VII SCHEDULE**

A proposed schedule for Phase IV/V/VI/VII listing anticipated months of starting and completing the project tasks is shown in Table 1. The schedule was based on initiation of the Phase IV/V/VI/VII project in March 1999.

**Table 1. Proposed Schedule for Phase IV/V/VI/VII Tasks**

<b>Tasks</b>	<b>Start</b>	<b>Finish</b>
<b>1 SRTPCP Coordination</b>		
Coordinate Stakeholder Activities	March 1999	February 2003
Facilitate Stakeholder Meetings	March 1999	February 2003
Examine Institutional Options	March 1999	February 2002
Prepare Task Progress Reports	March 1999	February 2003
<b>2 Water Quality Monitoring and Related Studies</b>		
Manage Monitoring Program	June 1999	September 2003
Conduct Field Sampling	June 1999	May 2003
Perform Laboratory Analyses	June 1999	September 2003
Analyze Monitoring Program Results	June 1999	June 2004
Analyze System-wide Impacts on Delta	March 1999	February 2002
Prepare Task Progress Reports	March 1999	June 2004
<b>3 Water Quality Management</b>		
Formulate Water Quality Management Strategies	March 1999	June 2003
Demonstration/Early Implementation Projects	March 1999	December 2002
CALFED Liaison / Technical Outreach	March 1999	October 2002
<b>4 Sacramento River Watershed Program</b>		
Coordinate Stakeholder Activities	March 1999	February 2004
Public Outreach and Education Program	March 1999	December 2003

**PHASE IV/V/VI/VII BUDGET**

A proposed budget for each Phase IV/V/VI/VII task is shown in Table 2, Table 3 and form SF 424.

**Table 2. Proposed Budget for Phase IV/V/VI/VII Tasks**

<b>Tasks</b>	<b>Budgeted Amount</b>
<b>1 SRTPCP Coordination</b>	
Coordinate SRTPCP Activities	\$664,695 <sup>1</sup>
Facilitate Monitoring Subcommittee Meetings	\$38,100
Institutional Options	\$60,300
Prepare Task Progress Reports	\$10,500
<b>Subtotal Task 1</b>	<b>\$773,595</b>
<b>2 Water Quality Monitoring and Related Studies</b>	
Manage Monitoring Program	\$235,200
Conduct Field Sampling	(included in 2c)
Perform Laboratory Analyses	\$1,516,600
Analyze Monitoring Program Results	\$234,400
Analyze System-wide Impacts on the Delta	\$45,000
Prepare Task Progress Reports	\$10,500
<b>Subtotal Task 2</b>	<b>\$ 2,041,700</b>
<b>3 Water Quality Management</b>	
Formulate Water Quality Management Strategies	\$ 1,936,400 <sup>1</sup>
Demonstration/Early Implementation Projects	\$64,200
CALFED liaison/technical outreach	\$60,000
<b>Subtotal Task 3</b>	<b>\$2,060,600</b>
<b>4 Sacramento River Watershed Program</b>	
Coordinate Stakeholder Activities	\$ 1,017,600
Public Outreach and Education Program	\$ 446,400
<b>Subtotal Task 4</b>	<b>\$ 1,464,000</b>
<b>Total Phase IV/V/VI/VII Budget</b>	<b>\$6,339,895</b>

<sup>1</sup>Includes District staff time and expenses.

**Table 3. PHASE IV/V/VI/VII BUDGET  
FOR THE SACRAMENTO RIVER WATERSHED PROGRAM**

**Coordination of Stakeholder Activities**

<i>General Stakeholder Meetings incl. Rooms (Harris)</i>	\$ 29,600
<i>Public Inquiry Responses (Harris)</i>	8,000
<i>Program Coordinator and Education Coordinator</i>	515,000
<i>Pilot Resource Center</i>	375,000
<i>Mailings (CVRWQCB)</i>	<u>90,000</u>
<i>Subtotal</i>	\$1,017,600

**Public Education and Outreach**

<i>Newsletter (Harris)</i>	\$ 65,000
<i>Education Workshops, incl. Rooms (Harris)</i>	16,000
<i>POES Subcommittee Facilitator/Note Taker (CVRWQCB)</i>	46,000
<i>POES Subcommittee Minutes</i>	14,400
<i>Education Program</i>	100,000
<i>Implementation of Strategic Communication Plan</i>	195,000
<i>Monitoring Compendium Web Site Maintenance</i>	<u>10,000</u>

*Subtotal*  
\$446,400

**TOTAL PHASE IV/V/VI/VII SRWP COST**  
**\$1,464,000**

## **INTEGRATED WORK PLAN**

The SRTPCP is a multi-phased program that is planned to progress in logical steps. This section describes the vision for the SRTPCP, the phased approach to accomplishing this vision, and the relationship between Phases IV, V, VI and VII and earlier phases of the program.

### **The SRTPCP Vision**

The goal envisioned for the SRTPCP is the development and implementation of a locally-supported, collaborative program that will bring the Sacramento River and its tributaries into compliance with appropriate water quality standards and thereby protect beneficial uses.

### **The Phased Approach**

The achievement of the SRTPCP vision will require many years of effort. Because of funding considerations, the program has been divided into phases, with a new phase beginning each year. The number of years, or phases, required to achieve stated goals and objectives is dependent on the funding available each year.

The total estimated cost to develop the program is in the range of \$15 million to \$20 million. The largest percentage of this cost is for gathering the water quality monitoring data and other data necessary to make technically sound decisions as to how best to achieve standards and protect beneficial uses.

The general relationship between SRTPCP Phases I, II, III, IV, V, VI, VII and future program phases is presented graphically in Figure 1. The figure shows the four basic elements of the SRTPCP (water quality monitoring, site-specific objectives development, control options evaluation, and control program development) together with supporting elements (program organization and stakeholder activities) and program implementation elements (program implementation and program review).

Phase I of the SRTPCP focussed on getting organized -- setting up the stakeholder organization and the broader Sacramento River Watershed Program, compiling existing information, conducting initial toxicity monitoring, and designing a water quality monitoring program. Phase II elements included maintaining and increasing stakeholder involvement, conducting the water quality monitoring program for a one-year period, identifying priority water quality issues, and formulating a strategic framework to address those issues. Phase III elements include maintaining stakeholder involvement, conducting the water quality monitoring program for a second year, and identifying candidate parameters for strategic plan development, and identifying procedures for the development of site-specific water quality objectives. Phases IV, V, VI, and VII include expanding stakeholder involvement, funding watershed coordinator and education coordinator positions, developing a resource center, funding educational programs, conducting Year 2, 3, 4 and 5 of the monitoring program, developing water quality management strategies for selected parameters of concern, and implementation of identified early implementation/demonstration projects.

**Figure 1. Integrated Phases of the Sacramento River Toxic Pollutant Control Program**

Program Element	Program Phase								
	I	II	III	IV	V	VI	VII	VIII	Ongoing
Program Organization	è	è							
Stakeholders Activities	è	è	è	è	è	è	è	ê	ê
Water Quality Monitoring	è (DESIGN)	è	è	è	è	è	è	ê	ê
Site-Specific Objectives			è	è	è	è			
Control Options				è	è	è	è		
Control Program						è	è	ê	
Program Implementation				è	è	è	è	ê	ê
Program Review									ê

è Present Activity

ê Future Activity

Future phases will continue, and hopefully expand, the water quality monitoring program to pick up additional pollutants and stations. The degree to which monitoring will be expanded is dependent on the funds available for that purpose from the SRTPCP and other programs. In addition, all future phases will include maintenance of stakeholder activities.

Future phases will see an increasing amount of resources being applied to the second and third elements of the SRTPCP, namely the development of appropriate site-specific water quality objectives and the development of management strategies and control options. In Phase VI, work was initiated on the fourth element of the SRTPCP, development of a locally supported control program. In later phases, the control program development will be completed, i.e., there will be local agreement on a program that will bring the

river and its tributaries into compliance with specific standards and protect specific beneficial uses.

Starting in Phase VI, program phases shifted into an implementation mode. In addition to stakeholder activities, activities at that stage will include overseeing program implementation, monitoring to determine the effects of implementation, and periodically updating the program to reflect new information and/or concerns.

During all phases, SRTPCP activities will be coordinated with the activities of the broader Sacramento River Watershed Program. That program, which is being conducted in parallel with SRTPCP, will continue to offer opportunities to address the numerous other issues of concern in the watershed, such as habitat, endangered species, flow, and ground water issues.

### **Relationship of Phases IV, V, VI and VII with Earlier Phases**

Phases IV/V/VI/VII can be related to Phases I, II and III on the basis of budget, schedule and scope of work.

A comparison of the Phases IV/V/VI/VII budgets with the Phase I, II and III budgets is presented in Table 4.

An integrated schedule of Phases I through VII is presented in [Figure 2](#).

Table 4. Integrated Budgets for Phases I, II, III, IV, V, VI and VII

Tasks	Phase I	Phase II	Phase III	Phase IV
<b>1 SRTPCP Coordination</b>				
Coordinate SRTPCP Activities	\$17,040	\$76,880	\$95,694	\$184,463
Facilitate Meetings		\$10,000	\$10,800	\$10,800
Evaluate Institutional Options				\$30,000
Prepare Task Progress Reports	\$3,000	\$3,000	\$3,000	\$3,000
<b>Subtotal Task 1</b>	<b>\$20,040</b>	<b>\$89,880</b>	<b>\$109,494</b>	<b>\$228,263</b>
<b>2 Water Quality Monitoring</b>				
Design Monitoring Program	\$101,790			
Conduct Demonstration Program	\$90,000			
Toxicity Monitoring	\$100,000	(In Mon. Prog)	(In Mon. Prog)	(In Mon. Prog)
Develop Monitoring Plan		\$35,000		
Manage Monitoring Plan		\$72,000	\$72,000	\$77,600
Conduct Field Sampling		(incl. in 2c)	(incl. in 2c)	(incl. in 2c)
Perform Laboratory Analyses		\$454,000	\$500,000	\$405,000
Analyze Monitoring Program Results		\$69,000	\$69,000	\$57,200
Analyze System-Wide Impacts on Delta				\$40,000
Analyze Implementation Options		\$37,000		
Evaluate Regulatory Criteria			\$20,000	
Prepare Task Progress Reports	\$3,000	\$3,000	\$3,000	\$3,000
<b>Subtotal Task 2</b>	<b>\$294,790</b>	<b>\$670,000</b>	<b>\$664,000</b>	<b>\$582,800</b>
<b>3 Water Quality Management</b>				
Compile Existing Information	\$104,000			
Identify Needs	\$24,000			
Prepare Program Report	\$24,000			
Identify Impaired Waters		\$29,000		
Identify Priority Water Quality Issues		\$28,000		
Formulate Water Quality Management Strategies		\$40,000		
a. Formulate Strategies for Mercury				\$353,000
b. Formulate Strategies for OP Pesticides				\$265,000
c. Formulate Strategies for SDWA Issues				\$20,000
Demonstration/Early Implementation Project				\$64,200
CALFED liaison/ technical outreach				\$20,000
Prepare Task Progress Reports	\$3,000	\$3,000		
<b>Subtotal Task 3</b>	<b>\$155,000</b>	<b>\$100,000</b>		<b>\$722,200</b>
<b>4 Sacramento River Watershed Program</b>				
Coordinate Stakeholder Activities	\$45,960	\$142,752	\$123,874	\$384,200
Public Outreach and Education Program		\$50,000	\$50,000	\$185,800
<b>Subtotal Task 4</b>	<b>\$45,960</b>	<b>\$192,752</b>	<b>\$173,874</b>	<b>\$570,000</b>

**Table 4. Integrated Budgets for Phases I, II, III, IV, V, VI and VII (Continued)**

Tasks	Phase V	Phase VI	Phase VII
<b>1 SRTPCP Coordination</b>			
Coordinate SRTPCP Activities	\$184,574	\$185,895	\$109,763
Facilitate Meetings	\$10,800	\$11,000	\$5,500
Evaluate Institutional Options	\$20,300	\$10,000	
Prepare Task Progress Reports	\$3,000	\$3,000	\$1,500
<b>Subtotal Task 1</b>	<b>\$218,674</b>	<b>\$209,895</b>	<b>\$116,763</b>
<b>2 Water Quality Monitoring</b>			
Design Monitoring Program			
Conduct Demonstration Program			
Toxicity Monitoring			
Develop Monitoring Plan			
Manage Monitoring Plan	\$72,600	\$65,000	\$20,000
Conduct Field Sampling			
Perform Laboratory Analyses	\$425,000	\$400,000	\$286,600
Analyze Monitoring Program Results	\$57,200	\$60,000	\$60,000
Analyze System-Wide Impacts on Delta	\$5,000		
Analyze Implementation Options			
Evaluate Regulatory Criteria			
Prepare Task Progress Reports	\$3,000	\$3,000	\$1,500
<b>Subtotal Task 2</b>	<b>\$562,800</b>	<b>\$528,000</b>	<b>\$368,100</b>
<b>3 Water Quality Management</b>			
Compile Existing Information			
Identify Needs			
Prepare Program Report			
Identify Impaired Waters			
Identify Priority Water Quality Issues			
Formulate Water Quality Management Strategies			
a. Formulate Strategies for Mercury	\$370,151	\$233,000	\$128,000
b. Formulate Strategies for OP Pesticides	\$247,849	\$182,000	\$117,400
c. Formulate Strategies for SDWA Issues	\$20,000		
Demonstration/Early Implementation Project			
CALFED liaison/ technical outreach	\$20,000		\$20,000
Prepare Task Progress Reports			
<b>Subtotal Task 3</b>	<b>\$658,000</b>	<b>\$415,000</b>	<b>\$265,400</b>
<b>4 Sacramento River Watershed Program</b>			
Coordinate Stakeholder Activities	\$255,600	\$235,800	\$142,000
Public Outreach and Education Program	\$94,400	\$113,200	\$53,000
<b>Subtotal Task 4</b>	<b>\$350,000</b>	<b>\$349,000</b>	<b>\$195,000</b>

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**Figure 2**

(See Excel Figure [here](#))