October 26, 2005
Work Plan for Fiscal Year 2006

I. Spawning Gravel Restoration Program, Section 3406(b)(13)

II. Responsible Entities

	Agency	Staff Name	Role
Lead	Reclamation	Ken Lentz	Program Manager
	Reclamation	Jim DeStaso	Activity Manager
	Reclamation	John Hannon	Activity Manager
Co-Lead	FWS	Andy Hamilton	Program Manager

III. Program Objectives for FY 2006

The program objectives are identified below. The source document for these objectives is the text in the CVPIA legislation, P.L. 102-575, Title XXXIV, Section 3406(b)(13).

A. Increase the availability of spawning gravel and rearing habitat for Sacramento River Basin Chinook salmon and steelhead trout.

B. Increase the availability of spawning gravel and rearing habitat for American River Basin Chinook salmon and steelhead trout.

C. Increase the availability of spawning gravel and rearing habitat for Stanislaus River Chinook salmon and steelhead trout.

References to gravel augmentation follow:

CALFED Bay-Delta Program EIS/EIR Ecosystem Restoration Program Plan, Vol. 3 Strategic Plan for Ecosystem Restoration, July 2000, Strategic Goal 2, Ecological Processes, Objective 7 (pages 33 and 42): "Restore coarse sediment supplies to sediment-starved rivers downstream of reservoirs to support the restoration and maintenance of functional natural riverine habitats."

CALFED Bay-Delta Program EIS/EIR Ecosystem Restoration Program Plan, Vol. 3 Strategic Plan for Ecosystem Restoration, July 2000, page A-10: text discusses the loss of salmonid spawning habitat in Central Valley watershed attributable to the loss of gravel recruitment associated with the presence of dams and the actions of gravel

mining.

CALFED Bay-Delta Program Programmatic Record of Decision, Volume 1 - Record of Decision and Attachments 1 Through 4, August 28, 2000, page 19: one of the "Representative Ecosystem Restoration Program actions" is, "Restoring aspects of the sediment regime by relocating in-stream and floodplain gravel mining, and by artificially introducing gravels to compensate for sediment trapped by dams."

CALFED Bay-Delta Program Phase II Report, Final Programmatic EIS/EIR Technical Appendix, July 22, page 111: one of the "Representative Ecosystem Restoration Program actions" is, "Restoring aspects of the sediment regime by relocating in-stream and floodplain gravel mining, and by artificially introducing gravels to compensate for sediment trapped by dams."

The Central Valley Project Improvement Act (CVPIA) Final Programmatic Environmental Impact Statement (PEIS) for the Department of Interior (October 1999) discussed gravel replenishment in the Central Valley watersheds as follows:

CVPIA Final PEIS, page III-35, 4th full paragraph, sentence 2: " dams also blocked recruitment of spawning gravels from upstream sources to the downstream portions of rivers used for Chinook salmon and steelhead trout spawning." (This reference in the text is specifically directed at non-CVP dams. The prior discussion on page III-35 of the impact on salmonids of CVP dams did not include a reference to blocked recruitment of gravel; this is merely an oversight, inasmuch as the discussion above certainly applies to both CVP- and non-CVP dams.)

CVPIA Final PEIS, Attachment F, [Table F-1], pages F-2, F-8, and F-11: the table identified that (page F-2) for the Upper and Middle Sacramento River and tributaries, the action "Spawning and gravel restoration" would have the anticipated benefits of "Increase(d) spawning success and productivityof adult c[C]hinook salmon and steelhead trout"; (page F-8) for the American River, the action "Replenish spawning gravel and/or restore existing spawning grounds and riparian habitat" would have the anticipated benefits of "Increase[d] survival provided by improved instream habitat conditions for spawning of c[C]hinook salmon and steelhjead trout"; and, (page F-10) for the Stanislaus River, the action "Replenish spawning gravel and/or restore existing spawning grounds and riparian habitat" would have the anticipated benefits of "Increase[d] survival provided by improved instream habitat conditions for spawning of c[C]hinook salmon and steelhjead trout".

The CVPIA Final PEIS incorporated verbatim much of the text in the CVPIA Draft PEIS technical appendices. The text in the CVPIA Draft PEIS that addressed gravel replenishment was unchanged in the CVPIA Final PEIS. The CVPIA Draft PEIS for the Department of Interior (September 1997) discussed gravel replenishment in the Central Valley watersheds as follows:

CVPIA Draft PEIS, Technical Appendix Vol. 3, page II-3, bullet 8: (the bulleted items follow the lead-in sentence, "The following are several major problems in the Sacramento

River that affect anadromous fish: [bullet 8] . . . water storage facilities reduce recruitment of salmon spawning gravel."

CVPIA Draft PEIS, Technical Appendix Vol. 3, page II-24, 2nd full paragraph, sentence 3: "The [CVP] dams also blocked recruitment of spawning gravels from upstream sources to the portions of rivers still available for salmon and steelhead spawning."

CVPIA Draft PEIS, Technical Appendix Vol. 3, page II-26, 5th full paragraph, sentence 1: "Shasta Dam has blocked gravel recruitment for downstream salmon spawning and incubation." (The text continues by discussing pre-CVPIA gravel placement work funded by Reclamation.)

CVPIA Draft PEIS, Technical Appendix Vol. 3, page II-61, 2nd full paragraph, sentences 1-2: "Construction of Shasta and Keswick dams blocked the recruitment of spawning gravels from upstream sources to the upper Sacramento River. Lack of gravel recruitment and increases in the average size of streambed materials have degraded spawning habitat below Keswick Dam to at least Clear Creek."

CVPIA Draft PEIS, Technical Appendix Vol. 3, page III-7 [Table III-3]: This table is a summary of CVPIA Fish Habitat Restoration Actions contained in the PEIS alternatives 1 through 4. The table includes a column entitled "Watershed Compartment" and a column entitled "Habitat Restoration Action" which lists a variety of actions corresponding to the respective watershed. The "Watershed Compartment(s)" for the Sacramento River, American River and Stanislaus River each includes the restoration action "Enhance spawning gravel".

CVPIA Draft PEIS, Technical Appendix Vol. 3, page III-70, paragraph 3, sentences 1 & 3: "CVPIA actions to restore habitat include actions to . . . restore spawning gravel . . . . Restoration of spawning gravel would benefit primarily c[C]hinook salmon and steelhead trout."

CVPIA Draft PEIS, Technical Appendix Vol. 3, page III-106, paragraph 3, sentence 2: This sentence is incomplete. The intended purpose was to identify CVPIA actions under Alternative 1; one of the actions is "restore spawning gravel".

CVPIA Draft PEIS, Technical Appendix Vol. 3, page III-106, paragraph 4, sentence 2: "Restoration of spawning gravel [in the Sacramento River and Tributaries [including the American River]] would increase spawning habitat for c[C]hinook salmon and steelhead trout, potentially reducing mortality caused by nest superimposition."

CVPIA Draft PEIS, Technical Appendix Vol. 3, page III-108, paragraph 3, sentences 2 & 3: Restoration actions on the . . . Stanislaus . . .may include . . . potential restoration of spawning gravels . . . . The actions would benefit spawning and rearing life stages of fall-run c[C]hinook salmon . . . ."

Upper Sacramento River Fisheries and Riparian Habitat Management Plan, prepared for the Resources Agency, State of California, by an Advisory Council established by Senate Bill 1086, authored by Senator Jim nielsen, January 1989, pages 59-63: the report identified a gravel recruitment deficiency in the Upper Sacramento River due to the presence of Shasta Dam, gravel mining activities, etc. that would require a one-time placement of 1,000,000 cubic yards and annual placements of 50,000 cubic yards of salmonid spawning gravel.

IV. Status of the Program

Objective A. Increase the availability of spawning gravel and rearing habitat for Sacramento River Basin Chinook salmon and steelhead trout.

(1) Progress Toward Meeting Objectives. Spawning gravel criteria, in terms of size and presence of relative proportions of various gravel sizes, have been identified and prescribed by the California Department of Fish and Game. All gravel placed in the river must conform to these criteria.

Three sites have been selected for gravel deposition, based on key habitat location and on ready river access. These sites are all immediately adjacent to the river channel. Gravel is placed on the river bank and into the river channel, and issubsequently distributed downriver by high river flows. The sites are identified as the Keswick Dam site (located on the right bank of the Sacramento River, approximately ¼-mile downriver from Keswick Dam), the Salt Creek site (located on the right bank of the Sacramento River, approximately 2 miles downriver from Keswick Dam) and the Tobiasson site (located on the left bank of the Sacramento River, approximately 1 mile downriver from Turtle Bay toward the southern city limits of the city of Redding.)

The amount of gravel to be placed annually has been estimated to be approximately 50,000 tons. This estimate will be used in lieu of the development of a gravel budget.

A total of 28,250 tons of gravel was deposited at the Keswick site in four years - 1997, 1998, 2000 and 2004; 92,050 tons were deposited at the Salt Creek Site in six years - 1997, 1998, 1999, 2002, 2003 and 2004; and 23,000 tons were deposited at the Tobiasson site in 2000. Post-CVPIA a total of 143,300 tons of gravel has been placed. (Prior to the implementation of the Central Valley Project Improvement Act, Reclamation funded the placement of salmonid spawning gravel downriver from Keswick Dam in 1988 (16,00 tons) and 1989 (8,000 tons).)

Selected cobble was implanted with electronic monitors to follow the downriver movement of gravel. Monitoring was conducted for one season. Field observations indicated the cobble moved varying distances downriver, with the farthest movement to the reach immediately above Anderson Cottonwood Irrigation District Diversion Dam at the City of Redding. No report on this monitoring was generated. Visual anecdotal observations have been similarly been reported of adult salmon spawning in the vicinity of the gravel and of juvenile salmon in large number adjacent to the gravel placement sites. Aerial redd surveys have shown that winter-run Chinook salmon spawning distribution has shifted upstream since gravel introductions began in the upper river near Keswick Dam.

Results showed that 24% of the spawning during the 1987 to 1992 period occurred within

the reaches of spawning gravel placement. Spawning in the same upper river reaches where gravel was placed increased to 54% in the 1993 to 2004 period. In addition 62% of spawning occurred in the upper river reaches during the 2001 to 2004 period. Winter-run Chinook populations have shown population increases during the same time period, although this cannot be attributed directly to the gravel placement.

(2) Specifics of Particular Activities. Spawning gravel is purchased and distributed along the bank of the Sacramento River at any of three sites. Subsequent monitoring activities are performed to determine the incidence of salmon spawning in the vicinity of the gravel placement.

(3) Progress in Meeting Program Objectives. Five principal tasks were identified to meet the program objectives. Three of the principal tasks have been completed - the magnitude of the gravel needs, gravel size criteria, and identification of suitable sites for gravel placement have been completed. The two remaining tasks - gravel placement and subsequent monitoring - are ongoing.

(4) Biological Limiting Factors/Constraints. The lack of sufficient gravel limits the spawning and rearing of salmonids. The distriribution placed adjacent to the river gravel is predicated on sufficient high river flow; the gravel remains generally in the site where it is placed if such flows do not occur. Water of sufficient depth, velocity, temperature and water chemistry must be present to allow successful spawning and rearing.

(5) Integration with Other Programs. Work performed in this objective compliments the objectives in CVPIA Section 3406(b)(1) to double the natural production of anadromous fish. Staff from the California Department of Fish and Game, the United States Fish and Wildlife Service, and the National Marine Fisheries Service are the principal sources of expertise with whom the planning and development of the 3406(b) (13) activities are conducted. Coordination with personnel from these agencies occurs preparatory to developing the annual program activities. The basic intent is to work jointly with existing programs to achieve common goals, such as the close coordination with staff working on 3406(b) (1) activities designed to double the natural production of anadromous fish. This necessarily involves coordination, and to the extent practicable, integration with other ongoing and planned work related to gravel replenishment in the Upper Sacramento, the American and the Stanislaus rivers.

(6) Status of Completion. Inasmuch as gravel recruitment has been permanently blocked by Shasta Dam, and no alternate source of resupply exists that compensates for this loss, it is anticipated that gravel replenishment will be required on a continuing annual basis. Similarly, the complementary monitoring task should continue as long as gravel placement occurs. The basis for estimating the degree of completion is a comparison of the gravel placed versus that prescribed in Upper Sacramento River Fisheries and Riparian Habitat Advisory Council (1989). Absent the one-time placement estimate of 1,500,000 tons, a comparison of the mean annual placement of gravel conducted by the CVPIA (20,000-plus tons) versus the mean specified in Upper Sacramento River Fisheries and Riparian Habitat Advisory Council (1989) of 75,000 tons, indicates the percent of the gravel replenishment task is approximately 25%.

(7) CALFED Involvement. There is no CALFED involvement in the activities in this

objective.

Objective B. Increase the availability of spawning gravel and rearing habitat for American River Basin Chinook salmon and steelhead trout.

(1) Progress Toward Meeting Objectives. Spawning gravel criteria, in terms of size and presence of relative proportions of various gravel sizes, have been identified and prescribed by the California Department of Fish and Game. All gravel placed in the river must conform to these criteria.

Three sites on the American River downriver from Nimbus Dam were selected based on key habitat location and on ready river access. These sites are identified as Sailor Bar, Lower Sunrise [Bridge] Access, and Sacramento Bar.

Six thousand tons of salmon spawning gravels was placed in the American River in 1999 at these locations identified above above. The substrate at the sites was manipulated prior to gravel placement in order to improve permeability after the gravel was in place. Decisions on further gravel replenishment will be delayed pending completion and subsequent evaluation of the results of the monitoring of the initial gravel placement in 1999.

Monitoring under this program began in 2002 and will continue for the foreseeable future.

Development of a gravel budget was initiated that will be used to determine the amount of gravel required and the locations for gravel placement

(2) Specifics of Particular Activities. Spawning gravel was purchased and configured at three sites in the American River channel. Subsequent monitoring activities are performed to identify the characteristics of the gravel placed and to determine the incidence of salmon spawning in the vicinity of the gravel placement. A gravel budget is currently being developed.

(3) Progress in Meeting Program Objectives. Five principal tasks were identified to meet the program objectives. One of these tasks has been completed - identification of gravel size criteria. The four remaining tasks - the magnitude of the gravel needs, identification of suitable sites for future gravel placement, placement of gravel and subsequent monitoring of the effects of gravel placement - are ongoing.

(4) Biological Limiting Factors/Constraints. The lack of sufficient gravel limits the spawning and rearing of salmonids. Water of sufficient depth, velocity, temperature and water chemistry must be present to allow successful spawning and rearing.

(5) Integration with Other Programs. Work performed in this objective compliments the objectives in CVPIA Section 3406(b)(1) to double the natural production of anadromous fish. Staff from the California Department of Fish and Game, the United States Fish and Wildlife Service, and the National Marine Fisheries Service are the principal sources of expertise with whom the planning and development of the 3406(b) (13) activities are conducted. Meetings with personnel from these agencies are convened and joint field surveys are performed preparatory to developing the annual program activities. The basic intent is to work jointly with existing programs to achieve common goals, such as the close coordination with staff working on 3406(b)(1) activities designed to double the natural production of anadromous fish. The gravel

placement work is intentionally designed to complement the 3406(b)(1) work and the American River Forum work that is conducted in the watershed.

(6) Status of Completion. Inasmuch as gravel recruitment has been permanently blocked by Folsom Dam, and no alternate source of resupply exists that compensates for this loss, it is anticipated that gravel replenishment will be required on a continuing annual basis. Similarly, the complementary monitoring task should continue as long as gravel placement occurs. The gravel budget will be completed in FY06. Future gravel placement might be made at additional sites, depending on the results from the gravel budget that is being developed. The percent completed is estimated to be less than 25 %.

(7) CALFED Involvement. There is no CALFED involvement in the activities in this objective.

Objective C. Increase the availability of spawning gravel and rearing habitat for Stanislaus River Chinook salmon and steelhead trout.

(1) Progress Toward Meeting Objectives. Spawning gravel criteria, in terms of size and presence of relative proportions of various gravel sizes, have been identified and prescribed by the California Department of Fish and Game. All gravel placed in the river must conform to these criteria.

Several sites have been selected for gravel deposition, based on key habitat location and on river access. These sites are located in the reach within two miles downriver of Goodwin Dam.

Gravel has been placed by helicopter, by conventional truck hauling and by a sluice delivery technique. One thousand tons were placed in 1997, 1,300 tons in 2000, 500 tons in 2001, 4,000 tons in 2002 and 1,200 tons in 2004.

The amount of gravel to be placed annually has been estimated to be approximately 20,000 tons. This estimate will be used in lieu of the development of a gravel budget.

Comprehensive monitoring began in 2002 and will continue for the foreseeable future.

(2) Specifics of Particular Activities. Spawning gravel is purchased and distributed along the bank of the Stanislaus River at any of several sites. Subsequent monitoring activities are performed to identify the configuration of the gravel placed and to determine the incidence of salmon spawning in the vicinity of the gravel placement.

(3) Progress in Meeting Program Objectives. Five principal tasks were identified to meet the program objectives. Two of these tasks have been completed - the magnitude of the gravel needs and identification of gravel size criteria. The three remaining tasks - identification of suitable sites for future gravel placement, placement of gravel and subsequent monitoring of the effects of gravel placement - are ongoing.

4) Biological Limiting Factors/Constraints. The lack of sufficient gravel limits the spawning and rearing of salmonids. The distriribution of gravel placed adjacent to the river is predicated on sufficient high river flow; the gravel remains generally in the site where it is placed if such flows do not occur. Water of sufficient depth, velocity, temperature and water

chemistry must be present to allow successful spawning and rearing.

(5) Integration with Other Programs. Work performed in this objective compliments the objectives in CVPIA Section 3406(b)(1) to double the natural production of anadromous fish. Staff from the California Department of Fish and Game, the United States Fish and Wildlife Service, and the National Marine Fisheries Service are the principal sources of expertise with whom the planning and development of the 3406(b) (13) activities are conducted. Meetings with personnel from these agencies are convened and joint field surveys are performed preparatory to developing the annual program activities. The basic intent is to work jointly with existing programs to achieve common goals, such as the close coordination with staff working on 3406(b)(1) activities designed to double the natural production of anadromous fish. The gravel placement work is intentionally designed to complement the 3406(b)(1) and CALFED work that is conducted in the same watershed.

(6) Status of Completion. Future gravel placement might be made at additional sites, depending on subsequent needs that will be identified either as a result of ongoing work in this program or from related work under the CVPIA Section 3406(b)(1) (Anadromous Fish Restoration Program). Inasmuch as gravel recruitment has been permanently blocked by New Melones and Goodwin dams, and no alternate source of resupply exists that compensates for this loss, it is anticipated that gravel replenishment will be required on a continuing annual basis. Similarly, the complementary monitoring task should continue as long as gravel placement occurs. A comparison of the mean estimated need of gravel placement (20,000-plus tons) versus the estimate of the mean annual amount placed by the CVPIA (1,000 tons) indicates the gravel replenishment task is approximately 5% completed.

(7) CALFED Involvement. There is no CALFED involvement in the activities in this objective.

V. 2005 Accomplishments

Salmonid spawning gravel was placed at two river bank sites on the Upper Sacramento River for subsequentl dispersal downriver by river flows. A total of 8,500 tons of spawning gravel was placed - 4,250 tons at the Keswick Dam site and 4,250 tons at the Salt Creek site. The annual placement of gravel was completed but annual placements are necessary for the foreseeable future. A contract was executed to initiate a monitoring program to evaluate the benefits of gravel placement in the Upper Sacramento River. This program includes an examination of the geomorphic environmental baseline and biological monitoring. All limiting factors previously identified for the Upper Sacramento River were addressed by the gravel placement and the monitoring activities. Annual gravel placement and monitoring will be required for the foreseeable future.

Continued the monitoring program on the lower American River, documenting the use by salmon, the location of spawning redds, and the quality of treated versus untreated salmon spawning areas. The spawning gravel monitoring program covered two items. 1) Aerial photos documented Chinook spawning locations and redd densities relative to gravel placement sites on three dates throughout the spawning period. 2) Spawning gravel condition monitoring assessed

the suitability of spawning gravels in the gravel addition sites and in other high use spawning areas compared to low use and un-used habitats. Initiated the development of a gravel budget for estimation of the amount of and locations for subsequent gravel placement. The gravel budget is expected to be completed in FY06. All limiting factors previously identified for the American River were addressed by the gravel placement and the monitoring activities. Periodic annual gravel placement and monitoring will be required for the foreseeable future.

Placed 2,500 tons of spawning gravel at two sites in Goodwin Canyon on the Stanislaus River - 1,500 tons at an in-channel stockpile location for flows to distribute the gravel downstream through time and the remaining 1,000 tons at an experimental site. An adaptive management experiment is being conducted at the experimental site to determine gravel size criteria that will provide the best survival for incubating eggs. A peak count of 65 Chinook redds occurred on the site where gravel was placed in 2004 and a peak of 84 redds was counted at the 2002 placement sites. Redds were also mapped on these two sites. Underwater observations verified that fry emergence occurred from the placed gravels and rearing densities were high. Post-project stream bed topography was mapped at the 2004 placement location and pre-project topography was mapped at the 2005 placement sites. Annual gravel placement and monitoring will be required for the foreseeable future. All limiting factors previously identified for the Stanislaus River were addressed by the gravel placement and the monitoring activities.

Program emphasis to date has been on the placement of gravel in or adjacent to the river channels in locations that would enhance salmon and steelhead spawning and/or rearing. Due to limited availability of river access, few sites have been utilized for gravel placement. Gravel has been placed adjacent to the river channel at the Upper Sacramento River sites, directly in the river channel in the Stanislaus River, while the river substrate in the American River has been ripped where clay lenses underlaid riffles and gravels were subsequently placed.

Upper Sacramento River. Beginning in 1997, salmonid spawning gravel has been placed three times at a site on the right bank of the Sacramento River immediately downriver from Keswick Dam, four times at a site on the right bank of the Sacramento River immediately downriver from the confluence with Salt Creek, and once on the left bank of the Sacramento River on the Tobiasson property toward the southern extent of the Redding city limits. Subsequent high river flows dispersed the gravel downriver. Salmon have been visually observed on the restored habitat.

American River. The substrate at three riffles was manipulated and salmonid spawning gravel was subsequently placed at the sites in 1999 according to specifications. Salmon have been visually observed spawning on the restored habitat. Monitoring has been performed, and is ongoing, to determine the usage by salmonids of the gravel placed in the river.

Stanislaus River. Beginning in 1997, salmonid spawning gravel has been placed in the river at three different sites immediately down river from Goodwin Dam. The steep canyon terrain requires extraordinary gravel delivery techniques. Helicopters were used to deposit the gravel directly in the channel on two occasions, and in 2004 a sluice tube was constructed to deliver the gravel to the channel. This work has been supplemented with

gravel delivered by truck to areas adjacent to the channel whereupon it was pushed into the river channel to be subsequently dispersed down river by in river flow. Salmon have been visually observed spawning on the restored habitat. Monitoring has been performed, and is ongoing, to determine the usage by salmonids of the gravel placed in the river.

VI. Tasks, Costs, Schedules and Deliverables

Narrative Explanation of Tasks.

1. Program Management. Reclamation is responsible for the overall lead in program management, but the program direction is coordinated with the FWS agency lead. Program tasks are assigned to the entity(ies) with particular expertise and capability to accomplish the assignments, as identified below.

1.1. Program Management. The Reclamation Program Manager is primarily responsible for development of the work plans, program budget, and all associated management-directed documents. The Program Manager is responsible at the program level for the completion of all necessary environmental compliance documentation, permits, etc., although individual activity managers (i.e. contracting officer's technical representatives) are responsible for obtaining the necessary documentation for their respective activities. The Program Manager will actively seek alternative external funding in support of the program, and will coordinate program activities with external non-CVPIA work.

1.2. Program Management. The FWS Agency Lead will work closely with the Program Manager in developing the program, and will be the primary point of contact with Reclamation staff involved in program activities. When so directed, the FWS Agency Lead will act as the Program Manager in the absence of the manager.

1.3. Technical Support. Reclamation Regional Office and Area Office staff will provide the necessary technical support as assigned to accomplish program activities. This involves engineering, biological and environmental compliance personnel. An Activity Manager will be identified as appropriate to coordinate implementation of work in that manager's local area of responsibility.

1.4. Contracting Support. Reclamation contracting staff will provide the necessary support to complete all necessary contracts and associated agreements required to accomplish program activities.

2. Gravel Replenishment in the Upper Sacramento River. The Relamation Activity Manager will assess the need for gravel placement, including the amount and the sites at which salmonid spawning gravel would be placed. The manager will be responsible for contract management and completion of all environmental compliance documentation associated with placement of the gravel, including necessary coordination with all regulatory entities, and completion of ongoing monitoring.

2.1. Streambed topography will be measured at all gravel placement sites to determine the effectiveness of the gravel placement.

2.2 Gravel placement. Sites on the Upper Saramento River will be selected for gravel placement at one or more of the sites previously identified, based on the relative supply of gravel at those sites. The criteria for gravel cleaning and sorting, specific locations and timing of placement-related activities will be determined as per criteria approved by FWS and CDFG biologists

3. Gravel Monitoring in the American River. The Program Manager/FWS Agency Lead will coordinate the monitoring of salmonid spawning gravel in the American River with designated staff from the California Department of Fish and Game (CDFG). The Program Manager will coordinate the designation of the contracting oversight lead within Reclamation between the relevant Regional Office and Area Office staffs, and will ensure that the necessary environmental compliance activities are performed. principal tasks to be performed in FY 2006 involves monitoring the salmonid spawning habitat previously constructed in the American River with CVPIA 3406(b)(13) funds and preparation of a gravel budget. A report describing the results of the monitoring activity will be prepared at a future date.

3.1 Preparation of a gravel budget. Work on the he gravel budget was initiatead in FY2005 and will be completed in FY2006. The gravel budget will describe the availability of in-channel gravel and the location of potential sites for subsequent gravel placement. The Activity Manager will incorporate information from the gravel budget into future gravel placement decisions.

3.2 Gravel Monitoring. Monitoring of the gravel placed in 1999 will conclude and a final report will be prepared.

4.Gravel Replenishment in the Stanislaus River. The Program Manager/FWS Agency Lead will coordinate salmonid spawning gravel placement activities in the Stanislaus River downriver from Goodwin Dam with designated staff from CDFG, FWS and Reclamation. The Program Manager will coordinate the completion of the contracting process with Regional Office contracting staff, and will ensure that the necessary environmental compliance activities are performed. The two principal tasks to be performed in FY2006 are described in the following text.

4.1 Gravel Monitoring. An adult salmonid escapement survey will be conducted both within and outside of the gravel placement sites at precise locations to be determined. Streambed topographic maps will be made at all gravel placement sites both before and after gravel placement. Snorkel surveys may be extended depending on the findings of the ongoing work.

4.2 Gravel Placement. Sites on the Stanislaus River will be selected for gravel placement based on the results of monitoring previously conducted. A third site that previously received gravel has also been identified as a candidate location. The criteria for gravel cleaning and sorting, specific locations and timing of placement-related activities will be determined as per criteria approved by FWS and CDFG biologists.

B. Schedule and Deliverables

#	Task	Start		Deliverable
		Dates	Complete	
1	Program Management	10/01/05	09/30/06	Finalize FY06 Annual Work Plan. All contracts/ agreements in place for activities in the Annual Work Plan. All activities in FY06 Annual Work Plan completed.
1.1	Program Management (USBR)	10/01/05	09/30/06	Finalize FY06 Annual Work Plan. All contracts/ agreements in place for activities in the Annual Work Plan. All activities in FY06 Annual Work Plan completed.
1.2	Program Management (USFWS)	10/01/05	09/30/06	Coordinate activities within FWS and with Program Manager.
1.3	Technical Support (USBR)	10/01/05	09/30/06	All assigned technical activities completed as scheduled.
1.4	Contracting Support (USBR)	10/01/05	09/30/06	All assigned contracting/agreement activities completed as scheduled.
2	Sacramento River Gravel Replenishment	10/01/05	09/30/06	All salmonid spawning gravel placed as scheduled.
2.1	Gravel Monitoring	10/01/05	09/30/06	Conduct monitoring. Complete report of results.
2.2	Gravel Placement	10/01/05	09/15/06	All salmonid spawning gravel placed as scheduled
3	American River Gravel Replenishment	10/01/05	09/30/06	All salmonid spawning habitat monitoring work completed as scheduled. Report of the work will be prepared.
3.1	Gravel Budget	10/01/05	09/30/06	Complete gravel budget calculations. Report prepared.
3.2	Gravel Monitoring	10/01/05	09/30/06	All salmonid spawning gravel monitoring activities completed. Report prepared.
4	Stanislaus River Gravel Replenishment	10/01/05	09/30/06	All salmonid spawning habitat monitoring work completed as scheduled.

		Start		
4.1	Gravel Monitoring	10/01/05	02/28/06	All salmonid spawning gravel monitoring activities completed. Report prepared.
4.2	Gravel Placement	10/01/05	03/31/06	All salmonid spawning gravel placed as scheduled

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C. Summary of Program Costs and Funding Sources

#	Task	Total Cost	RF
1	Program Management	$70,000	$70,000
1.1	Program Management (USBR)	$18,500	$18,500
1.2	Program Management (FWS)	$0	$0
1.3	Technical Support (USBR)	$44,500	$44,500
1.4	Contracting Support (USBR)	$7,000	$7,000
2	Sacramento River Gravel Replenishment	$210,000	$210,000
2.1	Gravel. Monitoring	$60,000	$60,000
2.2	Gravel Placement	$150,000	$150,000
3	American River Gravel Monitoring	$60,000	$60,000
3.1	Gravel Budget	$10,000	$10,000
3.2	Gravel Monitoring	$50,000	$50,000
4	Stanislaus River Gravel Replenishment	$160,000	$160,000
4.1	Gravel Monitoring	$95,000	$95,000
4.2	Gravel Placement	$65,000	$65,000
Total Program Budget		**$500,000**	**$500,000**

D. CVPIA Program Budget

#	Task	FTE	Direct-Salary and Benefits Costs	Contracts Costs	Miscellaneous Costs	Administrative Costs	Total Costs
1	Program Management	0.58	$0	$0	$0	$0	**$70,0000**
1.1	Program Management (USBR)	0.10	$11,000	$0	$	$7,500	$18,5000
1.2	Program Management (FWS)	0.00	$0	$0	$0	$0	$00
1.3	Technical Support (USBR)	0.40	$29,000	$0	$	$15,500	$44,5000
1.4	Contracting Support (USBR)	0.08	$4,500	$0	$0	$2,500	$7,0000
2	Sacramento River Gravel Replenishment	0.00	$0	$210,000	$0	$0	**$210,000**
2.1	Gravel Monitoring	0.00	$0	$60,000	$0	$0	$60,000
2.2	Gravel Placement	0.00	$0	$150,000	$0	$0	$150,000
3	American River Gravel Monitoring	0.00	$0	$60,000	$0	$0	**$60,000**
3.1	Gravel Budget	0.00	$0	$10,000	$0	$0	$10,000
3.2	Gravel Monitoring	0.00	$0	$50,000	$0	$0	$50,000
4	Stanislaus River Gravel Replenishment	0.00	$0	$160,000	$0	$0	**$160,000**
4.1	Gravel Monitoring	0.00	$0	$95,000	$0	$0	$95,000
4.2	Gravel Placement	0.00	$0	$65,000	$0	$0	$65,000
	Total by Category	**0.58**	**$44,500**	**$430,000**	**$0**	**$25,500**	**$500,000**