

CHAPTER 10.0

RECOMMENDED PLAN AND IMPLEMENTATION REQUIREMENTS

10.1 National Economic Development and National Ecosystem Restoration Plans

10.1.1 Federally Supportable Plans

The language of Section 566 of the Water Resources Development Act (WRDA) of 1999 specifically directs the study to assess flood control through “increasing surcharge flood control storage at the Folsom Dam and Reservoir” and, in a separate subsection, through “levee modification.” Thus, all Folsom Dam enlargement alternatives were compared in Chapter 8.0, “Evaluation and Comparison of Flood Control Alternatives,” to identify the enlargement alternative that best meets planning objectives and has the highest net benefits (benefits minus costs). This is the Federally-supportable Folsom enlargement plan. Similarly, all stepped release plans were compared to identify the Federally-supportable downstream levee plan. The Federally-supportable Folsom enlargement plan is used as a basis for cost sharing a locally-preferred plan involving enlarging Folsom Dam. Similarly, the Federally-supportable downstream levee plan is the basis for cost-sharing stepped release alternatives.

As discussed in Chapter 8.0, the Federally-supportable Folsom enlargement plan is Alternative 3 (Seven-Foot Dam Raise/482-Foot Flood Pool Elevation). This alternative generates the highest net benefits under the *without-project condition advance release* scenario as well as the *no advance release* scenario and the *upper bounds advance release* scenario. Alternative 3 is used as a basis for allocating Federal and non-Federal flood control costs, as shown in the cost-sharing table later in this chapter.

The Folsom enlargement portion of alternative 8, the combination plan, is cost effective and supportable, but the second increment, Stepped Release to 160,000 cfs, would be a 100 percent local responsibility.

10.1.2 National Economic Development Plan

The last reported National Economic Development (NED) Plan was the Detention Dam Plan in the 1996 Supplemental Information Report (SIR). The primary feature of this plan was an 894,000 acre-foot flood control–only reservoir and dam on the North Fork. Another major feature of this plan was levee work along the Lower American River, which is now being accomplished as part of the Common Features Project.

The 545,000 acre-foot flood control dam analyzed in the 1991 Feasibility Report is described in Chapter 4.0, “Plan Formulation and Alternatives Screening.” An updated economic analysis of this detention dam alternative is set forth in Appendix B. The updated first cost would be \$777 million; the total annual cost allocable to flood control would be \$54.7 million. This alternative would generate approximately \$56.8 million in flood damage reduction benefits (with advance release). It would also generate water resource related benefits associated with reducing flood storage requirements at Folsom Dam. These additional benefits were estimated at approximately \$12 million in the 1996 SIR. There would be an additional \$1.5 million in

advance replacement of the Highway 49 Bridge. Although these estimates have not been updated for the present study, the net benefits of an upstream detention dam (545,000 acre-feet) would likely exceed those for any other identified flood control plan. In that case, the upstream detention dam would remain the NED Plan. The optimal size of the dam would depend on further studies aimed at maximizing net benefits.

10.1.3 National Ecosystem Restoration Plan

The National Ecosystem Restoration (NER) Plan consists of the five “best buy plans” at the Urrutia, Woodlake, Bushy Lake, and Arden Bar sites and mechanization of the Folsom Dam temperature shutters at the penstock intake. It maximizes Average Annual Habitat Units (AAHU’s) per dollar spent at each site and for the temperature shutters. The NER Plan and the ecosystem plan formulation process that was followed are described in detail in Chapter 6.0, “Ecosystem Restoration.” The ecosystem restoration study has as its objective increasing the long-term survival of fisheries and wildlife species whose populations rely on aquatic, wetland, and terrestrial habitat of the Lower American River as functioning systems. These riverine habitats existed in abundance before construction of the dam and downstream levee system. These facilities have caused extensive degradation of the ecosystem. The NER Plan seeks to restore some of the degraded Lower American River ecosystem values to previous conditions. The benefits of ecosystem values generated by the selected best buy plans are qualitatively and quantitatively expressed as a combined metric or habitat evaluation procedure (HEP) value of 276.10 AAHU’s in the Lower American River flood plain with implementation of the recommended plans at each of the four restoration sites and 789.3 AAHU’s in the waters of the American River from modernization of the dam’s temperature control shutters. The total first cost of the selected ecosystem restoration plan would be \$27.4 million, and the total annual cost would be \$2.5 million. (Table 10-2)

10.1.4 Optimum Trade-Off Plan

The optimum trade-off plan is the NED Plan, likely an upstream detention dam (545,000 acre-feet), combined with the NER Plan. The Corps Planning Guidance Notebook indicates that the optimum trade-off plan is defined as the plan that returns the greatest excess of benefits over costs with the stipulation that the process of optimization must be both reasonable and practical in seeking to maximize net benefits. The NED and the NER Plans would be additive; they could be combined with no effect on their individual features or benefits. Similarly, Alternative 3, the Federally-supportable Folsom Enlargement Plan and the NER Plan are additive. The Folsom Enlargement Plan is less optimal than the NED/NER Plan because the net benefits are less. To determine cost sharing, the Federally-supportable Folsom Enlargement Plan (Alternative 3)/NER Plan is treated the same as if it were the NED/NER Plan.

10.2 Recommended Plan

The September 2001 Draft Integrated Document presented all Folsom enlargement and downstream levee modification alternatives and the upstream detention measure on an equal basis. No alternative was presented as preferable over the others. In September and October 2001, the document underwent public review to satisfy NEPA, CEQA, and Corps regulations. After public review, the Reclamation Board and SAFCA resolved to support the Seven-Foot

Table 10-1. National Ecosystem Restoration Cost Sharing for Recommended Plan (\$ thousands)

MCACES Account	Item	Temperature Shutters			Woodlake			Bushy Lake			Total		
		Federal	Non-Federal	Subtotal	Federal	Non-Federal	Subtotal	Federal	Non-Federal	Subtotal	Federal	Non-Federal	Total
	First Cost ¹												
01	Lands and Damages	0	7	7	0	478	478	0	453	453	0	938	938
02	Relocations	0	0	0	0	0	0	0	0	0	0	0	0
04	Dams	12,846	0	12,846	0	0	0	0	0	0	20,390	0	20,390
06	Fish and Wildlife Facilities	0	0	0	2,332	0	0	5,212	0	0	900	0	900
18	Cultural Resources ²	0	0	0	150	0	150	750	0	750	900	0	900
30	Engineering and Design	1,890	0	1,890	327	0	327	632	0	632	2,849	0	2,849
31	Supervision and Administration	1,557	0	1,557	273	0	273	493	0	493	2,323	0	2,323
	Total First Cost	16,293	7	16,300	3,082	478	3,560	7,087	453	7,540	26,462	938	27,400
	Less Cultural Resources	0	0	0	23	0	23	49	0	49	72	0	72
	Subtotal	16,293	7	16,300	3,059	478	3,537	7,038	453	7,491	26,390	938	27,328
	Adjustment to 65% Federal-35% Non-Federal												
	Cost-Sharing adjustment	-5,698	5,698	0	-760	760	0	-2,169	2,169	0	-8,627	8,627	0
	Subtotal	10,595	5,705	16,300	2,299	1,238	3,537	4,869	2,622	7,491	17,763	9,565	27,328
	Add Cultural Resources	0	0	0	23	0	23	49	0	49	72	0	72
	Total	10,595	5,705	16,300	2,322	1,238	3,560	4,918	2,622	7,540	17,835	9,565	27,400
	Percent Share of NER Plan	65.0%	35.0%	100.0%	65.2%	34.8%	100.0%	65.2%	34.8%	100.0%	65.1%	34.9%	100.0%

¹ Costs are October 2001 price level.

² Cultural Resources are based on recovery costs only.

Dam Raise, 482-Foot Flood Pool Elevation (Alternative 3). Alternative 3 would meet the community's flood control goals. Alternative 3 is the most efficient of the alternatives studied, without building an upstream detention dam.

All increments of the locally preferred plan are feasible and within the Federal interest; therefore, Alternative 3 is put forward as the recommended plan. The Alternative 3 plan is Federally supportable, because there are no increments that require 100 percent local responsibility. The plan is technically complete, effective in achieving flood control and restoration goals, and fully acceptable for implementation. The plan would be efficient as it would produce a large number of benefits for the total project cost.

SAFCA resolved to support and be the non-Federal sponsor for the Woodlake, Bushy Lake, and the Folsom Dam temperature shutters modification increments of the NER plan. Thus, the locally preferred plan is Alternative 3, plus restoration of the Woodlake (Alternative 9.2), and Bushy Lake (Alternative 9.3) sites and modification of the temperature shutters (Alternative 9.5). These three components are separable and could work independently. These restoration plans have been combined to create a complete, feasible, locally preferred plan. The Temperature Shutter alternative was selected because of the important benefits the project would provide for threatened or endangered species in the LAR. The Urrutia project was eliminated from consideration because the land is currently in private ownership and the landowner has not expressed an interest in selling the property at what the local sponsor considers to be fair market value. The Arden Bar restoration site is not being pursued because it is currently being used as the Sheriff's training facility and preliminary discussions on relocating this facility did not yield an acceptable solution. While all of the ecosystem restoration features of the NED/NER Plan are of interest to the non-Federal sponsor, SAFCA has limited financial capability in pursuing ecosystem restoration projects. Given SAFCA's limited budget for these projects and the issues associated with Arden Bar and Urrutia, SAFCA selected Bushy Lake, Woodlake, and the Temperature Shutter Modifications as their locally preferred plan. There is no smaller-scale plan that would have greater net benefits than the locally preferred plan. Furthermore, the draft report was circulated to other local and State agencies responsible for the protection of public trust resources; however, an alternative non-Federal sponsor was not identified for the Arden Bar and Urrutia sites through this process.

10.2.1 Raise Folsom Dam

The Folsom Enlargement component would be the same as described in Alternative 3. Folsom Dam would be raised seven feet and the flood control pool would be increased to 482-feet. These components work together to effectively raise the physical height of the dam from 480.5 feet to 487.5 feet, which includes the parapet wall. Additionally, L. L. Anderson Dam (French Meadows Reservoir) would be modified to accommodate the probable maximum flood (PMF). Plate 5-1 shows the locations of the major structural modifications. Plate 5-2 shows spillway, gate, and top of dam elevations compared with other alternatives.

10.2.2 Replace Spillway Radial Gates

All eight spillway radial gates would require replacement under this plan. The new gates would be approximately 66 feet high, 16 feet taller than the gates under the without-project condition. The top-of-gate elevation would be 484.0 feet.

The existing stop-log structure upstream of each gate would serve as bulkheads to allow Folsom dam to store water above the construction zone while each gate is constructed. By utilizing the existing stoplogs, new gates may be installed one at a time, without affecting dam operation during the summer.

To accommodate the additional height and loading, the existing piers would be extended and strengthened, and new trunnions (pivot points) would be located on the top of the new pier extensions. New trunnion anchorage would be cored and grouted into the pier/dam section to anchor the gate. New hoisting motors and chains, and new catwalks would also be required.

10.2.3 Modify Spillway Bridge Piers

The spillway bridge piers would require modification under this plan. The piers would be raised and extended downstream to anchor the new larger radial gates. Additionally, the piers would be strengthened by installing post-tensioned tendons to anchor the piers to the mass concrete of the overflow section.

10.2.4 Replace Spillway Bridge

The existing eight-span spillway bridge consists of two riveted steel plate girders with a composite concrete deck, each approximately 34 feet wide by 50 feet long. The existing bridge would require removal and replacement due to the higher flood control pool and spillway gates. The new bridge would be a prestressed concrete multiple box girder structure.

10.2.5 Raise Concrete Dam

The concrete portions of Folsom Dam including the spillway area would be raised to accommodate the higher flood control pool. This raise would be accomplished through a combination of raising the dam crest and spillway bridge deck, and constructing a short crest/parapet wall. The new top-of-dam elevation in the concrete section would be 487.5 feet (top of crest/parapet wall). The top of the roadway and bridge deck would be 487.0 feet elevation.

10.2.6 Extend Stilling Basin

Extension of the spillway stilling basin and side walls approximately 60 feet is required to ensure proper stilling basin function and adequate energy dissipation of the larger flows and higher heads of the new design flood and PMF. This component also would include rock excavation, shaping, and stabilization to improve flow patterns in the vicinity of the stilling basin.

10.2.7 3.5-Foot Concrete Wall

As with the concrete dam section, the left and right embankment wing dams beyond the center concrete section would need to be raised. Plate 5-4 shows the section of embankment dams and dikes around the perimeter of the reservoir that would be raised in direct relationship to the dam raise to accommodate higher water storage elevations. The embankments would be raised and expanded with a combination of earthfill and 3.5-foot-high reinforced concrete crest wall. The wall would be designed to absorb wind and wave runup on the waterside of the wall, protect the dike from erosion, allow for inspection of the wall, and allow space for a 20-foot road across the dikes and 25-foot road across the dam. Asphalt pavement would be placed on the crest of the dam to protect the landside top of the dam. Wind and wave runup may be lessened by placing rock revetment on the waterside of the wall, or by forming the wall in a curved concave shape. Mormon Island Dam and Dikes 5 and 7 have an existing impervious core that would be raised. The slurry wall would be constructed on top of the impervious core. It would extend 18 feet to the top of the raised dike at elevation 484 feet and connect to the crest wall foundation. Design details will be decided in the PED phase.

10.2.8 Modify Elevator Tower

The dam elevator tower would require modification under this plan. Tower modifications would include raising the elevator roadway lobby, adding a floor to the top of the tower, relocating the elevator machinery up one floor, and modifying the elevator controls.

10.2.9 Additional Structural Work

The gantry crane would be temporarily relocated from the top of the dam while the spillway bridge is raised. The reach of the upper crane on the gantry would need to be enlarged to handle spillway gate stop logs. Alternatively, the gantry crane could be removed and replaced with a portable crane.

The penstock wheel gates would require that the hydraulic power units and controls be relocated above the flood pool. The penstock inlet temperature shutters would be extended upward commensurate with the physical dam raise.

10.2.10 Borrow Areas and Haul Distances

Two borrow sites have been identified to supply suitable embankment material. A maximum of 90 acres of land would be excavated at the Peninsula site, located between the North and South Forks of the American River. Approximately 75,000 cubic yards of material would be taken from this site. A maximum of 140 acres of land would be excavated at the Mississippi Bar site, located just upstream and northeast of Nimbus Dam. Approximately 675,000 cubic yards of material would be taken from this site. Material would be excavated and barged across Folsom Lake to the dikes and dams. The haul distance and route to the Mississippi Bar borrow site is five miles. From the Mississippi Bar site, material would be trucked using existing roads to Lake Natoma. The material would then be barged across the lake to Willow Creek. During the construction period, the parking area and boat-launching site would be closed

to recreation. From Willow Creek, material would be trucked to Dikes 1–6 and the right wing dam via Folsom Boulevard and Folsom Auburn Road. Material taken to Mormon Island Dam, Dikes 7 and 8, and the left wing dam would be trucked via Blue Ravine Road and Green Valley Road. The borrow sites are shown on Plates 5-5a and 5-5b.

10.2.11 Location of Construction Staging Area

All construction staging areas would be located on the waterside or immediately adjacent to the landside of existing earthen dams and dikes to minimize disturbance of outlying environmental resource areas.

10.2.12 Temporary Construction Bridge

During construction of the dam raise, the top of dam would be closed to daily traffic and a temporary construction bridge and approach roads would be constructed southeast of the dam. The bridge would be aligned to provide an alternate route of transportation across the American River and to ensure that no conflicts occur with existing Folsom Dam operations. The bridge would, for the east approach, merge with the existing Folsom Dam road near the left wing dam abutment. The west approach would connect with Folsom Auburn Road about 300 feet south of the existing intersection. The alignment would require that the south spillway access road be relocated as well as construction of a bicycle underpass to allow users of the existing bike path to cross the road safely. Construction of the bridge is intended to mitigate short-term traffic effects during construction of the dam modifications. After completion of the dam raise, traffic would be routed back over the top of the dam. At the discretion of the Bureau, the bridge could be left in place if a local sponsor is identified to assume the operation and maintenance responsibilities for the bridge. Alternatively, the bridge could be removed upon completion of construction of the project.

10.2.13 Raise Folsom Dam Road East of Dam

Approximately one-third of a mile of Folsom Dam Road southeast of the left wing dam is at an elevation below 480.5 feet. This section of road would be inundated before the reservoir surface reached the operating flood control pool of 482 feet. To keep the road passable while Folsom Dam is under a flood operation, approximately one-third of a mile of road would be raised in place. The alignment would be within project lands, so no new rights-of-way would be required.

10.2.14 Mooney Ridge

This alternative would result in a full flood pool that would inundate the lower portion of 16 lots in the Mooney Ridge subdivision. No habitable structures would be affected. The inundation would be very infrequent and of short duration. Since the dam raise would increase the size of the normal operation reservoir, one of the Corps' acquisition criteria is to acquire adequate interests in lands to accommodate project features and operations. Perpetual intermittent flowage easement is the minimal acquisition that would meet this requirement. In addition to the easement, residential foundations may be deepened and strengthened to prevent sloughing during saturated soil conditions.

Acceptable alternatives to flowage easements are construction of a new dike on existing Federal project lands to protect the backyards, or construct a retaining wall with backfill on the properties, thereby giving the homeowners a flat yard. If, through consultation with property owners, a structural alternative to easements is preferred, this would be funded 100 percent by local interests to the extent that the structural work exceeds the cost of the easements.

10.2.15 Enlarge L. L. Anderson Dam Spillway

L. L. Anderson Dam (backing up French Meadows Reservoir), owned by the PCWA, would be modified so that it would withstand a PMF (Probable Maximum Flood). This would reduce the PMF inflow to Folsom Dam, thereby reducing Folsom Dam safety costs. L. L. Anderson Dam may require dam safety modification through the FERC relicensing process or through review by the State of California Division of Safety of Dams. Any mandated changes to L. L. Anderson Dam would become part of the without project condition and the recommended plan would be adjusted accordingly.

To reduce the PMF entering Folsom Dam, the following dam safety modifications are proposed for L. L. Anderson Dam:

- The existing two-tainter-gate (20 feet wide by 18.5 feet high) ogee crest control structure would be removed.
- A new three-tainter-gate (27 feet wide by 18.5 feet high) ogee crest control structure would be constructed at the entrance to the spillway channel.
- The existing rock excavated spillway channel would be deepened (approximately 23 feet) and extended (approximately 100 feet) to connect to the new control structure as a side-channel spillway.
- The existing downstream spillway escape channel would be widened at two constriction points.

The existing parapet crest wall would be raised and extended (3.6-foot maximum height, 1,200-foot raise, 1,400-foot extension) to provide adequate freeboard during the PMF event. The excavated material would most likely be stored at the staging area used during construction of L. L. Anderson Dam or near the downstream end of the spillway.

10.3 Environmental Mitigation

Mitigation for impacts to fish and wildlife resources was determined in coordination with USFWS based on recommendations from the draft Coordination Act Report (CAR). Under the U.S. Fish and Wildlife Coordination Act (FWCA), the USFWS is authorized to conduct surveys and investigations “for the purpose of determining the possible damage to wildlife resources and for the purpose of determining means and measures that should be adopted (by the Corps) to prevent the loss of or damage to such wildlife resources.” The reports and recommendations of the USFWS must be made an integral part of any Corps

report that seeks Congressional or other Federal authority to construct a project. Under the FWCA, the Corps is required to give full consideration to the reports and recommendations of resource agencies, and include such justifiable means and measures for wildlife mitigation or enhancement as the Corps finds should be adopted to obtain maximum overall project benefits. The recommendations of the USFWS in their draft CAR are presented and responded to in Chapter 7.0 of the report. Adopted compensatory mitigation measures are discussed below. Chapters 7.0 and 9.0 contain additional information regarding mitigation measures that will be implemented to minimize take of listed species.

Significant project effects result from the permanent loss of habitat as expressed in the HEP analysis. Providing acreage and similar habitat to replace the lost values would mitigate these effects. The Mitigation and Monitoring Plan includes monitoring and adaptive management to achieve mitigation objectives and provide for implementation of remedial actions. A monitoring and adaptive management program will be developed to monitor vegetation around the reservoir over the life of the project. Baseline conditions would be established and updated at ten-year intervals. After major flood events that encroach above the existing maximum flood pool elevation, vegetation would be surveyed and damages attributable to inundation would be mitigated as deemed appropriate using best management practices at the time (priority would be given to replanting on site).

The HEP team evaluated potential mitigation sites and gave consideration to selecting viable sites close to the construction areas. The results of the HEP analysis indicated that 82.64 acres of oak woodland/blue oak-gray pine woodland, 10.3 acres of riparian woodland, and 0.3 acre of seasonal wetland habitat is needed to fully mitigate project effects to the environment. The best land would be lakeside or streamside property because of the hydrologic connectivity that must be present to support riparian and wetland habitat.

Three parcels of Federal land that best fit the necessary criteria were selected. The three parcels total 275 acres and are available as a mitigation site. Of the 275 acres, approximately 93 acres will be used to complete the mitigation requirements. The three parcels are located South, South-East of Mormon Island Dam and Dike 8 on Folsom Lake, and are situated on both sides of Blue Ravine Road, West of the El Dorado, Sacramento County line and North, North-East of Green Valley Road.

Based on the results of the HEP analysis, a qualitative evaluation of the costs and habitat value gained from using the Folsom reservoir site was compared against the costs and potential habitat value gained from purchasing land and creating mitigation on a parcel in the study area. The evaluation indicated that using the proposed mitigation site would be the most cost effective way to provide the habitat values needed for mitigation.

An Incremental Cost Analysis (ICA) was performed on the mitigation components of the project in order to determine and display variations in cost to identify the least-cost plan. The proposed mitigation plan is to mitigate for specific eco-types at the ratios set by the USFWS. Mitigation would be achieved on lands controlled by the Federal Government; therefore, no land-acquisition costs would be incurred. The incremental analysis is provided in Appendix A of Volume II of this report.

Compensatory mitigation sites would include all of the following features:

- Site is currently annual grassland.
- Access and maintenance roads would be provided.
- A well or an alternative water source would be established to provide adequate water.
- A site-specific irrigation system would need to be constructed in order to meet irrigation needs.
- Watering, weeding, and pest control would be provided as needed.
- Plantings would be monitored for a minimum of three years.
- Reports would be made for a minimum of three years.
- Remedial actions would be taken as needed to ensure plant establishment and overall success of the mitigation effort.
- General maintenance and cleanup of the site would be in perpetuity.
- An Operations and Maintenance Manual would be produced once construction is completed.
- Plant cover crop (seed).

Habitat-specific compensatory mitigation of impacts due to implementation of the project are as follows:

- The oak woodland and oak woodland/Blue oak-gray pine woodland compensation sites are comprised of 82.64 acres and the estimated cost is approximately \$2,000,000.
- The oak woodland plantings (64.13 acres) would consist of 100% blue and live oaks, and would be planted at approximately 400 trees per acre.
- For the oak woodland-gray pine woodland (18.51 acres), 90% of the trees planted would be blue and live oak and 10% would be gray pine at approximately 400 plants per acre.
- The riparian component of the compensation site consists of 10.3 acres. This site is currently annual grassland.
- Earthwork would need to be completed in order to facilitate natural seasonal flooding.
- The overstory would be comprised of oaks, willows and cottonwood trees.

- The trees would be planted at a density of approximately 200 trees per acre.
- The understory would be comprised of wild rose and wild grape at a density of approximately 200 plants per acre.

The seasonal wetland component of the compensation site consists of 0.3 acres.

- The wetland would be constructed so that 40% of the area has water 4-9 inches deep in summer.
- Cover crops would be planted on areas disturbed from construction activities.
- The appropriate, self-sustaining wetland species would be planted.
- Until the vegetation is self-sustaining, irrigation, pest control is required.

Impacts to annual grasslands do not require mitigation; however, the following measures would be taken to restore the area:

- Annual grassland areas would be reseeded with native grass seed.
- Areas currently not supporting native grasslands, such as bare ground and roads, would be reseeded with native grass seed if they can support it.
- Disturbed native grasslands would be reseeded.

The project includes avoidance measures to prevent and minimize potential adverse effects on various vegetation types. The measures include:

- Avoid impacts to oak woodland, blue oak-gray pine woodland, riparian and seasonal wetlands, Sierran mixed conifer forest, and montane riparian scrub adjacent to, but outside of, construction easement areas with orange construction fencing.
- Avoid impacts to woody vegetation at all staging areas, borrow sites, and haul routes by enclosing them with orange construction fencing.

10.4 Operation and Maintenance (O&M)

The Bureau would continue to operate and maintain the existing portions of Folsom Dam that it has responsibility for currently. The non-Federal sponsor would enter into an agreement with the Bureau as necessary to facilitate its OMRR&R activities and prevent effects on their respective OMRR&R responsibilities.

As part of OMRR&R for a Folsom Dam raise project, the non-Federal sponsor would provide an Adaptive Management Plan (AMP) that would include actions that would be taken if inundation results in significant loss of vegetation or damage to recreational facilities because of the higher operational flood pool created by the project. Additionally, as part of the AMP, the

local sponsor would periodically conduct surveys of the vegetation along the perimeter of Folsom Reservoir that lies in the higher operational flood pool. Damage to vegetation attributable to the enlarge flood pool (from 474 to 482 feet elevation) would be mitigated by the sponsor.

Operation, maintenance, repair, replacement, and rehabilitation costs of improvement features would normally be the responsibility of the non-Federal sponsor. However, since Folsom Dam is owned by the Federal Government, the OMRR&R would continue to be performed by the Bureau, but a cost-sharing agreement would be negotiated between the non-Federal sponsor and Bureau to pay the portion of the OMRR&R costs related to the new flood control features. At Folsom Dam, the Bureau would inspect completed works.

The OMRR&R costs attributable to ecosystem restoration would be the responsibility of the non-Federal sponsor as part of the cost-sharing agreement. The maintenance costs for Bushy Lake and Woodlake include irrigation, replacement plantings, and noxious weed control. OMRR&R costs for the automated temperature control shutters on Folsom Dam would become the responsibility of the Bureau.

10.5 Real Estate Plan

The Real Estate Plan is provided in Appendix D. It supports the selected plan and addresses both the flood control and ecosystem restoration real estate requirements.

10.6 Ecosystem Restoration

10.6.1 Woodlake Restoration Site

The Woodlake site adjoins the upstream end of the Urrutia site and consists of 283 acres of open space located between river mile (RM) 2 and RM 4. Existing site conditions generally are characterized by an unusually high flood plain that infrequently receives overbank flows. The conceptual restoration plan includes the eradication of nonnative invasive plant species; restoration of the hydrologic interaction between the river and the floodplain; seeding to reestablish native grasslands; and grading to appropriate flood plain elevations and planting reconstructed areas with riparian forest oak woodland, and oak savanna plant species.

The restoration plan for this site consists of: the purchase of land; herbicide/mechanical removal and excavate the seed bank of 60-acres of non-native invasive species; seed 50 acres of grassland; restore connectivity of 5.5 acres; plant 16 acres of riparian forest; plant 25 acres of oak savanna; and plant 16 acres of oak woodland.

10.6.2 Bushy Lake Restoration Site

The 337-acre Bushy Lake site is upstream from Woodlake between RM 4 and RM 5.5. The restoration plan anticipates that Bushy Lake would be hydraulically reconnected to the watersheds that historically fed the lake. These watersheds are now extensively urbanized and produce run-off with variable water quality. Accordingly, the conceptual restoration plan includes a constructed wetland to improve the habitat values with an incidental effect that would

improve the quality of water diverted to Bushy Lake. In addition, the restoration plan calls for the eradication of nonnative invasive plant species combined with the construction of ephemeral side channels planted with emergent wetland plant species and the installation of a pump and delivery system to carry water to Bushy Lake. Further ecosystem restoration includes the creation of an ephemeral channel from the lake to convey high flows to the river; terracing steep banks; and planting riparian forest, oak woodland, and oak savanna plant species on newly graded site areas.

The conceptual restoration plan for this site includes the following measures: purchase 337 acres of land, herbicide/mechanical removal and excavate the seed bank of 20-acres of non-native invasive species, grade floodplain for 18 acres of seasonal wetlands, grade/plant 17 acres of riparian forest, construct 3.75 acres of side channels, terrace 8 acres of steep banks, construct 1.75 acres of outflow channel, install pump and delivery system, plant 70 acres of oak savanna, and create 6 acres of storage wetlands.

10.6.3 Folsom Dam Temperature Shutter Mechanization

The construction of Folsom Dam artificially restricted salmon and steelhead life cycles to the 23-mile Lower American River. Recent biological monitoring indicates that water temperatures in the Lower American River have tended to exceed the temperature regime necessary to sustain existing spawning and rearing salmon and steelhead populations. Maintenance of optimal water temperatures for spawning and rearing depends on the ability of dam operators to deliver coldwater releases to the Lower American River at critical times of the year. Limiting factors include the actual volume of the coldwater pool behind the dam during the warmer summer and fall seasons when coldwater demand is highest combined with the structural features of the dam that provide physical access and release of this coldwater from the reservoir to the Lower American River when needed to provide suitable aquatic habitat for downstream fisheries.

Virtually all the water released goes through the three hydropower penstock intakes. Intake shutters control the elevation and thus the temperature of the water drawn from the reservoir and released to the Lower American River. Currently, the temperature shutters are manually adjusted because of the structural features of the penstocks. This manual operation does not allow for the flexibility and timeliness needed to optimize management of the coldwater pool. An alternatives analysis determined that automation of the temperature shutters would reduce the existing ecosystem problem by increasing the physical and operational capability of the penstocks, thereby optimizing the management of the coldwater pool and allowing for the greatest operational flexibility and responsiveness to the fishery needs year round. Ecosystem Restoration Operation and Maintenance

The OMRR&R costs attributable to ecosystem restoration would be the responsibility of the SAFCA, the non-Federal sponsor, under the terms and conditions established by the cost-sharing agreement. Implementation of the Bushy Lake and Woodlake restoration plans would include irrigation, replacement plantings, and noxious weed control as maintenance costs that would continue until the native habitats are fully established and no longer require these maintenance activities for their long-term survival. In addition, the OMRR&R costs for the

automated temperature control shutters on Folsom Dam would become the responsibility of the non-Federal sponsor.

10.6.4 Ecosystem Restoration Real Estate Plan

The Ecosystem Restoration Real Estate Plan is in Appendix D and is part of the Real Estate Plan, which addresses both the flood control and ecosystem restoration real estate requirements.

10.7 Recommended Plan Accomplishments

The Recommended Plan provides substantial flood damage reduction and ecosystem restoration benefits. Table 10-2 compares costs with benefits. Potential flood damages would be reduced by an average of \$15.9 million per year. The plan reduces the risk of flooding in Sacramento from a 1 in 164 chance in any year to a 1 in 213 chance. In terms of long term risk, the risk of flooding during a 25-year period would be reduced from 14 percent to 11 percent. Although flood control benefits are substantial, the potential remaining (with-project) average annual flood damages would be \$56.9 million.

Folsom dam's safety deficiency would be corrected. The plan would assure Folsom Dam would hold during a PMF event. Actual benefits include lives saved, reduction in flood damage to property that would otherwise be affected by a dam failure, and avoidance of rebuilding Folsom Dam.

The plan would also restore 620 acres of disturbed habitat at 2 sites within the American River parkway. Thirty-three acres of riparian forest, 26 acres of wetlands, and 111 acres of oak woodland/savannah would be created. Non-native vegetation would be replaced with native plants. Flood plain processes would be restored in some areas. Bushy Lake would be replenished using a more reliable water source.

The ecosystem restoration plan would improve in-stream habitat in the Lower American River for native fish. Lowered water temperatures resulting from temperature shutter modifications would increase survival rates for Chinook salmon and steelhead trout which are species of primary concern. Water draining to the American River at the Bushy Lake site would be of higher quality as a consequence of the wetland restoration.

Rebuilding the Folsom Dam spillway bridge would negate the need for a planned reconstruction or major overhaul of the bridge by the Bureau. Also, construction of new, larger spillway gates would negate the need for the currently on-going Folsom modifications project to replace gates. This would result in a cost savings to that Federal project of about \$38 million.

Finally, the plan offers an opportunity for an improved public crossing of the American River through an upgrade to the temporary construction bridge. This would remain an unrealized benefit, however, unless a local organization was to fund the incremental cost and be responsible for O&M beyond the construction period.

10.7.1 Recommended Plan Cost Sharing

Current Federal regulations require non-Federal participation in financing projects. The following sections outline project cost-sharing requirements in accordance with Section 103 of WRDA 1986, as amended.

Flood Control

The Reclamation Board is the identified non-Federal sponsor for flood control. To determine cost sharing apportionment, costs are first allocated between dam safety and flood control, similar to the cost allocation performed for economic analysis. The non-Federal sponsor would be responsible for only its share of the costs identified for flood control. Dam safety costs would be cost shared between the Federal government (Bureau) and project beneficiaries, including existing water and power customers of the CVP. The separable cost remaining benefits (SCRB) method, typically used for multipurpose projects, was used to allocate costs. Table 10-2 shows the SCRB allocation. The allocation is derived from the without-project least-cost dam safety fix. The Corps has determined that a low cost method to achieve dam safety entails lowering Folsom Dam spillway, constructing of a 3.5-foot parapet wall, and widening L. L. Anderson Dam spillway. The work is described in chapter 2. The Bureau will develop the final dam safety plan and its cost. The Bureau is currently formulating and analyzing dam safety measures and will determine its Folsom Dam safety plan. When the Bureau has finished its analysis of required dam safety work in the latter part of 2002, that cost will be factored into the cost allocation procedures.

Estimates of the Federal/non-Federal cost sharing for the flood control portion of the Recommended Plan is shown in Table 10-3. The total project cost would be \$191.6 million, of this the flood control cost would be \$99.0 million. The Federal share of flood control would be \$64.8 million and the non-Federal share would be \$34.2 million. The remaining costs are attributable to dam safety. Dam safety costs would be cost shared between the Federal government (Bureau) and project beneficiaries, including existing water and power customers of the CVP.

Ecosystem Restoration

SAFCA is identified as the non-Federal sponsor for ecosystem restoration. Table 10-1 contains a summary of cost sharing for the ecosystem restoration. Of the total cost of \$27.4 million, the total Federal share for ecosystem restoration is \$17.8 million. The non-Federal share for ecosystem restoration is \$9.6 million with one exception. The estimated costs and ecosystem restoration benefits of the recommended plan assume that SAFCA will modify the existing Folsom Dam temperature shutters to provide mitigation for SAFCA's Folsom Reoperation Project prior to the implementation of the recommended plan. If SAFCA's mitigation for the Folsom Reoperation Project has not been completed by the time the temperature shutter feature of the recommended plan is constructed, SAFCA should pay the entire portion of the ecosystem restoration cost that is equal to the estimated cost of fulfilling that mitigation obligation under the without-project condition. This will ensure that no part of the Folsom Reoperation Project mitigation cost is funded by the Federal Government as part of the recommended plan.

TABLE 10-2. Recommended Plan Cost & Accomplishments ¹

Economic	First Costs ² (\$ million)	Total Annual Costs (\$ million)	Total Annual Benefits (\$ million)
Flood Control / Dam Safety			
Raise Folsom Dam			
Flood Control	99.0	7.8	19.2 ⁴
Dam Safety	92.6	7.3	N/A ³
Total Flood Control/Dam Safety	191.6	15.1	19.2
	First Costs (\$ million)	Total Annual Costs ⁵ (\$ million)	Benefits (Ave. Annual Habitat Units)
Ecosystem Restoration			
Woodlake	3.6	0.3	29.0
Bushy Lake	7.5	0.6	75.4
Temperature Shutters	16.3	1.6	789.3
Total Ecosystem Restoration	27.4	2.5	893.7
PLAN TOTAL	219.0	17.6	N/A
Reduction in Flood Risk	Without-Project		With-Project
Expected Annual Probability of Exceedance (1 in X chance per year)	0.0061 (164)		0.0047 (213)
Conditional probability of Design Non-Exceedance			
50-year (0.02)	99 percent		100 percent
100-year (0.01)	86 percent		92 percent
200-year (0.005)	48 percent		64 percent
400-year (0.0025)	14 percent		26 percent
Long Term Risk of Exceedance			
10-year period	6 percent		5 percent
25-year period	14 percent		11 percent
50-year period	26 percent		21 percent

¹ Benefits and Risk and Uncertainty figures assume moderate advance release as without-project condition

² Costs are at October 2001 price level

³ Dam safety benefits are not measured in dollars.

⁴ Includes Folsom Modification Project Surcharge cost savings and advanced replacement of spillway bridge

⁵ Annual Costs from MCACES estimate includes contingency and E&D, S&A costs

TABLE 10-3. Estimated Cost Sharing of Recommended Plan (Seven-Foot Dam Raise/482-Foot Flood Pool Elevation) (\$ millions)

MCACES Account	Item	Costs			Dam Safety	Total
		Fed	Non-Fed	Subtotal		
	First Cost ¹					
01	Lands and damages	\$0.5	\$6.0	\$6.50		
02	Relocations	\$ -	\$2.4	\$2.35		
04	Construction	\$126.9	\$ -	\$126.87		
06	Environmental mitigation	\$4.0	\$ -	\$4.04		
18	Cultural resources ⁴	\$1.4	\$ -	\$1.35		
30	Engineering and design	\$13.1	\$0.4	\$13.46		
31	Supervision and administration	\$23.9	\$0.2	\$24.16		
	Sunk PED Costs	\$12.9	\$ -	\$12.88		
	Total First Cost	\$182.7	\$8.9	\$191.60		\$191.6
		Flood Control			Dam Safety	Total
	Allocation Adjustment ²	\$(92.6)	\$ -	\$(92.6)	\$92.6	\$ -
	Allocation Subtotal	\$99.0	\$ -	\$99.0	\$92.6	\$191.6
	Less Cultural Resources	\$1.4	\$ -	\$1.4		
	Adjusted subtotal	\$97.7	\$ -	\$97.7		
	5% cash	\$(4.9)	\$4.9	\$ -		
	Subtotal	\$92.8	\$4.9	\$97.7		
	Adjustment to 65% Federal -35% Non-Federal					
	Cost sharing adjustment	\$(29.3)	\$29.3	\$ -		
	Subtotal	\$63.5	\$34.2	\$97.7		
	Add cultural resources	\$1.4	\$ -	\$1.4		
	Total	\$64.8	\$34.2	\$99.0	\$92.6	\$191.6
	Percent	65%	35%	100%		
	Percent Cost Share Total Project ³	34%	18%	52%	48%	100%

¹ Costs are October 2001 price level.

² Cost allocated between flood control and dam safety based on the separable cost - remaining benefit (SCRB) method

³ Dam Safety cost portion will be cost shared between the Federal government (BOR) and water users under their existing cost sharing agreements.

⁴ Cultural Resources are based on recovery costs only

NA = Not applicable.

10.7.2 Local Support

Both the Reclamation Board and SAFCA support the flood control portion of the plan that includes the Folsom Dam raise and modifications to L. L. Anderson Dam. The Reclamation Board would be the non-Federal sponsor. SAFCA would be the Reclamation Board's local sponsor as required by State statute. SAFCA also supports and has identified itself as the Corps' non-Federal sponsor for ecosystem restoration responsible for acquisition of LERRDs, the local share of the construction cost, and OMRR&R for Woodlake, Bushy Lake, and the temperature shutter modifications. Sponsorship is evidenced by a letter of intent, displayed in the Pertinent Correspondence Appendix.

This project will require two separate PCA's; one will be for the Reclamation Board's flood control sponsorship and the other will be for SAFCA's ecosystem restoration sponsorship. Additionally, SAFCA will enter into a separate cost-sharing agreement with the Reclamation Board pursuant to State statute for the flood control features of the project.

10.7.3 Local Financial Capability & Willingness to Pay

Once the final report is approved and the project is authorized, construction funds will be requested. The project will be considered for inclusion in the President's budget based on national priorities, economic feasibility, level of local support, willingness of the non-Federal sponsor to fund its share of the project cost, and budgetary constraints that may exist at the time of funding. Budget recommendations will be based on evidence of support by the State of California and SAFCA and their ability and willingness to provide their share of project costs. Once Congress appropriates the Federal share of funds for the project, the Assistant Secretary of the Army (Civil Works) (ASA(CW)) and the non-Federal sponsor will sign a formal project cooperation agreement. This agreement will obligate the non-Federal sponsor to participate in implementing, operating, and maintaining the project according to requirements established by Congress and the Administration.

10.8 Future Actions

Once the final report is approved and the project is authorized, construction funds will be requested. The project will be considered for inclusion in the President's budget based on national priorities, economic feasibility, level of local support, willingness of the non-Federal sponsor to fund its share of the project cost, and budgetary constraints that may exist at the time of funding. Budget recommendations will be based on evidence of support by the State of California and SAFCA and their ability and willingness to provide their share of project costs. Once Congress appropriates the Federal share of funds for the project, the ASA(CW) and the non-Federal sponsor will sign a formal project cooperation agreement. This agreement will obligate the non-Federal sponsor to participate in implementing, operating, and maintaining the project according to requirements established by Congress and the Administration.

10.8.1 Division Engineer's Notice

Now that the final integrated document is complete, the State lead agency will provide responses to any public agency that provided comments on the final report. The lead agency may then certify that the final environmental impact statement (EIS) was prepared in compliance with the California Environmental Quality Act (CEQA). As required by the National Environmental Policy Act (NEPA), the South Pacific Division (SPD) Engineer has issued a notice of completion of the final report, submitted the report to Corps Headquarters and filed the report with the EPA. The Division Engineer's notice of completion will be published in the Federal Register, starting a 30-day public review period. The Corps' Policy Compliance Branch, Policy and Planning Division, HQUSACE will coordinate the public comments, receive comments from affected State and Federal agencies, and complete its own independent review of the final report.

10.8.2 Public Review

The Division Commander shall issue a public notice announcing completion of the feasibility report based upon (1) his/her endorsement of the findings and recommendations of the District Commander, and (2) his/her assessment that the report is in accordance with current policy. The notice shall indicate that the report has been submitted for Policy Compliance review. The notice should normally occur within 180 days of public circulation of the draft report. The notice shall provide for a 30-day period for comments on the report, indicate that comments are to be submitted to the Deputy Commanding General for Civil Works and state, if applicable, that the report's final NEPA document will soon be made available to the public. The notice should not indicate that the public will be notified prior to final action, should HQUSACE materially modify the recommendation contained in the report. The Division Commander shall furnish the public notice to interested parties. A copy of the notice shall be furnished to the Deputy for Policy, Planning, and Legislative Affairs, ASA(CW).

10.8.3 Policy Compliance Review

A policy compliance review is accomplished concurrently with the public review, Corps Headquarters, and the ASA(CW). The normal review period is about 30 days.

Policy compliance and public review comments are consolidated by the Policy and Compliance Branch, HQUSACE, and are furnished to the reporting District Engineer. The District Engineer then addresses and documents these comments for use in the decision-making process.

10.8.4 Chief of Engineer's Report

After its review of the final integrated document, including consideration of public comments, Corps Headquarters will prepare a Chief of Engineer's Report. This report will be submitted to the Assistant Secretary of the Army for Civil Works, who, in turn, will coordinate with the Office of Management and Budget (OMB) and submit the report to Congress.

10.9 Implementation Requirements

10.9.1 Preconstruction Engineering and Design

Detailed engineering studies and design efforts for the selected plan will be initiated in October 2002. A project management plan outlining tasks, costs, and schedule from PED through construction will be prepared.

10.9.2 Project Authorization

After the final report is approved and the project is authorized by Congress, funds will be requested in the President's budget as needed to start construction. The project will be considered for inclusion in the president's budget based on national priorities, economic feasibility, level of local support, willingness of the non-Federal sponsor to fund its share of the project cost, and budgetary constraints that may exist at the time of funding. Budget recommendations will be based on evidence of support by the Reclamation Board and SAFCA for flood control and SAFCA for ecosystem restoration and their ability and willingness to provide their share of project costs. After Congress appropriates the Federal share of funds for the project, the ASA(CW) and the non-Federal sponsor will execute a Project Cooperation Agreement. This agreement will obligate the non-Federal sponsor to participate in implementing, operating, and maintaining the project according to requirements established by Congress and the administration.

10.10 Project Cooperation Agreement

Before construction is started, the Federal Government and non-Federal project sponsors will execute a Project Cooperation Agreement (PCA). This contract will define responsibilities of the non-Federal project sponsors for project construction and operation.

This project will require two separate PCA's; one will be for the Reclamation Board's flood control sponsorship and the other will be for SAFCA's ecosystem restoration sponsorship. Additionally, SAFCA will enter into a separate cost-sharing agreement with the Reclamation Board pursuant to State statute for the flood control features of the project.

10.11 Federal and Non-Federal Responsibilities

Federal and non-Federal obligations and requirements will be defined in the PCA that will be signed prior to initiation of construction. The non-Federal funds would not have to be provided until after the PCA is signed.

10.11.1 Federal Responsibilities

Preconstruction engineering and design studies will be accomplished by the Corps. After the project is authorized and a cash contribution, lands, relocations, and assurances are provided by the non-Federal sponsor in accordance with the PCA, the Federal government will construct the project.

The Corps in consultation with the Bureau and the non-Federal sponsor will prepare a water control manual which will be the official water management document outlining the selected water control plan.

10.11.2 Non-Federal Responsibilities

Non-Federal interests have the following responsibilities:

a. Provide a minimum of 35 percent, but not to exceed 50 percent of total project costs allocated to flood control, and provide 35 percent of total project costs allocated to environmental restoration, as further specified below:

(1) Enter into an agreement which provides, prior to execution of the project cooperation agreement, 25 percent of design costs;

(2) Provide, during construction, any additional funds needed to cover the non-federal share of design costs;

(3) Provide, during construction, a cash contribution equal to 5 percent of total project costs allocated to flood control;

(4) Provide all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform or assure the performance of all relocations determined by the Government to be necessary for the construction, operation, and maintenance of the project;

(5) Provide or pay to the Government the cost of providing all retaining dikes, waste-weirs, bulkheads, and embankments, including all monitoring features and stilling basins, that may be required at any dredged or excavated material disposal areas required for the construction, operation, and maintenance of the project; and

(6) Provide, during construction, any additional costs as necessary to make its total contribution equal to at least 35 percent of total project costs allocated to flood control and 35 percent of the total project costs allocated to environmental restoration.

b. Give the Government a right to enter, at reasonable times and in a reasonable manner, upon land which the local sponsor owns or controls for access to the project for the purpose of inspection, and, if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the project.

c. Assume responsibility for operating, maintaining, replacing, repairing, and rehabilitating (OMRR&R) the project or completed functional portions of the project, including mitigation features without cost to the Government, in a manner compatible with the project's authorized purpose and in accordance with applicable Federal and State laws and specific directions prescribed by the Government in the OMRR&R manual and any subsequent amendments thereto.

d. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, which provides that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element.

e. Hold and save the Government free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project and any project-related betterments, except for damages due to the fault or negligence of the Government or the Government's contractors.

f. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project to the extent and in such detail as will properly reflect total project costs.

g. Perform, or cause to be performed, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9601-9675, that may exist in, on, or under lands, easements or rights-of-way necessary for the construction, operation, and maintenance of the project; except that the non-Federal sponsor shall not perform such investigations on lands, easements, or rights-of-way that the Government determines to be subject to the navigation servitude without prior specific written direction by the Government.

h. Assume complete financial responsibility for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Government determines necessary for the construction, operation, or maintenance of the project.

i. Agree that, as between the Federal Government and the non-Federal sponsor, the non-Federal sponsor shall be considered the operator of the project for the purpose of CERCLA liability, and, to the maximum extent practicable, operate, maintain, repair, replace, and rehabilitate the project in a manner that will not cause liability to arise under CERCLA.

j. Prevent obstructions of or encroachments on the project (including prescribing and enforcing regulations to prevent such obstructions or encroachments) which might reduce the ecosystem restoration, reduce the level of protection the project affords, hinder its operation and maintenance, or interfere with its proper function, such as any new development on project lands or the addition of facilities which would degrade the benefits of the project.

k. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public law 91-646, as amended by title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR part 24, in acquiring lands, easements, and rights-of-way, and performing relocations for construction, operation, and maintenance of the

project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act.

l. Comply with all applicable Federal and State laws and regulations, including Section 601 of the Civil Rights Act of 1964, Public Law 88-352, and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled “Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army” and Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), requiring non-Federal participation and implementation of flood plain management plans.

m. Provide the non-federal share of that portion of the costs of mitigation and data recovery activities associated with historic preservation, that are in excess of 1 percent of the total amount authorized to be appropriated for the project, in accordance with the cost sharing provisions of the agreement;

n. Participate in and comply with applicable Federal floodplain management and flood insurance programs;

o. Do not use Federal funds to meet the non-Federal sponsor’s share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is authorized.

p. Inform affected interests, at least annually, regarding the limitations of the protection afforded by the project.

q. Provide and maintain necessary access roads, parking areas, and other public use facilities, open and available to all on equal terms. Provide, during construction, any additional funds needed to cover the non-Federal share of PED costs.