

Tehama-Colusa Canal Authority

Tehama-Colusa Canal Extension

1. Project Description

<i>Project Type:</i>	Conjunctive water management/system improvement
<i>Location:</i>	Yolo County
<i>Proponent(s):</i>	Tehama-Colusa Canal Authority (TCCA) Yolo-Zamora Water District (Y-ZWD), City of Woodland
<i>Project Beneficiaries:</i>	TCCA, in- and out-of-basin users, environment, Delta
<u>Total Project Components:</u>	Canal lining, recharge basin, and all activities associated with the short-term component
<i>Potential Supply:</i>	30,000 acre-feet per year (ac-ft/yr) (includes recharge basin/conjunctive use component)
<i>Cost:</i>	\$140 million
<i>Current Funding:</i>	None
<u>Short-term Components:</u>	Hydrologic and concept reports; begin initial California Environmental Quality Act/National Environmental Quality Act (CEQA/NEPA) and preliminary design
<i>Potential Supply (by 2003):</i>	None
<i>Cost:</i>	\$3 to 4 million
<i>Current Funding:</i>	None
<i>Implementation Challenges:</i>	Potential increased river diversions, water rights, transfers, and groundwater development; environmental impacts of construction
<i>Key Agencies:</i>	U.S. Bureau of Reclamation (USBR), National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), Yolo County, and environmental interest groups

Summary

The Tehama-Colusa Canal (TC Canal) originates at the Sacramento River in Red Bluff, California. The canal extends 111 miles to the south, through Tehama, Glenn, Colusa, and Yolo counties, and terminates about 2 miles south of Dunnigan, California. It delivers

Sacramento River water to more than a dozen water districts in four counties. The initial capacity of the canal is approximately 2,530 cubic feet per second (cfs), diminishing to 1,700 cfs at its terminus.

In 1992, the Central Valley Project Improvement Act (CVPIA) amended the authorizing language of the Central Valley Project (CVP) to allow TC Canal service to Solano and Napa counties and the Colusa Water District, Dunnigan Water District, Yolo-Zamora Water District, and Yolo County Flood Control and Water Conservation District in Yolo County. This evaluation describes a long-term project that would extend TC Canal into Yolo County and develop recharge basins for conjunctive use of surface- and groundwater resources. The proposed short-term component is the preparation of necessary studies to support ultimate implementation.

Figure 13F-1 illustrates the proposed project. TC Canal would be extended 13 miles from Dunnigan to Cache Creek, terminating a few miles northwest of Woodland, California. Ten 40-acre recharge basins would be constructed adjacent to the canal and Interstate 5. Surface water would be delivered to the basins in wet years and off-peak irrigation months, augmenting groundwater aquifers east of the canal. The project would supply a new source of high-quality surface water to the Zamora area, stabilize fluctuating groundwater levels, free up existing groundwater withdrawals for export to the Delta, and mitigate subsidence potential. The project would also offer flexibility for supplying surface water to the City of Woodland, facilitate water exchanges in Cache Creek, and potentially offer flood control benefits to the Colusa Basin Drain.

Short-term Component

The large-scale nature of the proposed project does not lend itself to a short-term component or pilot project that could produce water available for in- or out-of-basin use by 2003. Initial study efforts would include the preparation of hydrologic modeling and project concepts reports, as well as initiation of the NEPA/CEQA process. The estimated cost of these studies would be approximately \$3 to 4 million.

Long-term Component

The primary purpose of this evaluation is to evaluate the potential for this project to provide water supply benefits in the short-term (by end of 2003). As part of this initial evaluation, potential long-term components of the proposed project (defined as any part of the project proceeding past or initiated after December 2003) have been considered on a conceptual level. Further consideration and technical evaluation of long-term component feasibility and cost will occur as the next level of review under the Sacramento Valley Water Management Agreement. Long-term-component project descriptions are included in these short-term project evaluations only as a guide to the reader to convey overall project intent.

TC Canal Extension

The TC Canal extension would follow the natural ground-surface contours from Dunnigan to Cache Creek, approximately 90 feet above sea level. The canal extension would be 13 miles long and convey flow by gravity. For the purposes of estimating quantities and costs, the canal was sized to accommodate a peak flow rate of 1,500 cfs. The canal would be concrete-lined with a bottom width of 26 feet, a depth of 10.5 feet, and 20-foot access roads

on either side. Figure 13F-2 shows the proposed canal cross section. This design balances earthwork quantities and provides a 3-foot freeboard from water surface to the top of the road.

A cursory examination of U.S. Geological Survey (USGS) topographic maps suggests that the new canal alignment would cross nine seasonal creeks between Dunnigan and Woodland; seven are relatively small, two are larger. Culverts or overshot flumes would be installed at the smaller crossings to pass runoff across the canal. At the larger crossings, canal siphons with inlet and outlet structures would be constructed to pass the runoff. The canal would also be equipped with an automated check/spill structure at its terminus and five 48-inch turnouts to serve the recharge basins.

Recharge Basins

Groundwater conditions near Zamora were investigated using California Department of Water Resources (DWR) groundwater data. Figure 13F-3 is a typical DWR groundwater hydrograph. A cursory review of 20 DWR hydrographs indicates that long-term groundwater levels near Zamora have remained relatively constant over the past 4 decades. Water levels declined abruptly during the 1976 to 1977 drought, and again during the 1988 to 1992 drought, but recovered after each dry period. The data suggest that, since 1960, average groundwater levels increased approximately 0.5 foot per year near Dunnigan, remained relatively constant near Zamora, and declined approximately 0.5 foot per year near Woodland. By the late 1990s, groundwater levels were approximately 30 to 60 feet below ground surface along the Interstate 5 corridor.

DWR data also indicate a mild “cone of depression” in the Zamora area attributed to agricultural pumping. As shown on Figure 13F-1, the area bounded by the TC Canal, Colusa Basin Drain, and Cache Creek includes approximately 27,500 acres of agriculture. Assuming an applied water demand of 3.5 acre-feet (ac-ft) per acre, one estimate of pumping is approximately 100,000 ac-ft/yr from this area. Since long-term water levels do not appear to be declining, it may be assumed that the aquifer has reached a state of equilibrium. Agricultural pumping is offset by natural recharge from the Sacramento River, Colusa Basin Drain, Cache Creek, and the Dunnigan Hills.

The depth to groundwater near Zamora and the soil types in the area suggest that Zamora may be a favorable location for artificial recharge. Figure 13F-1 shows ten 40-acre recharge basins adjacent to Interstate 5 and the canal. The purpose of the basins would be to infiltrate surface water from the TC Canal and store it in the aquifer east of the canal. Once infiltration occurs, the groundwater would be available for agricultural pumping.

In theory, artificial recharge would influence the cone of depression near Zamora, resulting in new groundwater gradients that induce less natural recharge from the Sacramento River and Colusa Basin Drain. If less natural recharge occurs from the river and drain, the result would be increased Delta outflow.

The recharge basins would be equipped with groundwater monitoring wells and extraction wells. Extraction wells would pump water back to the TC Canal for delivery to downstream users including the Delta. The monitoring wells would be used to measure and record changing groundwater levels. Recharge rates, volumes, and water levels would be managed

in ways that efficiently use the available resources and do not adversely impact the existing agricultural economy.

The Yolo County Soil Survey (1972) was used to determine soil permeability for the upper 6 to 8 feet at the recharge basin sites (Figure 13F-1). Table 13F-1 contains percolation estimates based on soil mapping units observed in the field. The permeability estimates are based on the most restrictive horizon in the soil profile. These estimates assume that initial surface conditions would be maintained to prevent clogging in the basins. Therefore, the infiltration would be dependent mostly on the physical characteristics of the most restrictive horizon.

Using average percolation rates from Table 13F-1, the maximum combined recharge rate for all basins would be about 8,300 ac-ft per month, operating continuously, or about 100,000 ac-ft/yr. If the basins were operated only during the non-irrigation season and in wet years, a conservative estimate of “firm yield” from the project might be approximately 30,000 ac-ft/yr. In this context, firm yield refers to a managed quantity of water available for use that would not be available in the absence of this project.

TABLE 13F-1
 Percolation Estimates for Select Soils in Yolo County
Tehama-Colusa Canal Authority Tehama-Colusa Canal Extension

Area	Soil Mapping Units	Percolation Estimate (in./hr)
A	Rg	0.2 to 0.6
B	HcA, TaA	0.06 to 0.2
C	Ya, BrA	0.2 to 0.6
D	Yb, Ya	0.2 to 0.6
E	Ya, BrA	0.2 to 0.6

in./hr = inches per hour

Extensive analytical modeling of available surface water supplies in the TC Canal and groundwater conditions in the Zamora area would be required to validate these assumptions. A three-dimensional, finite-element groundwater model is required to simulate mounding and drawdown during prolonged wet and dry periods for various project configurations. For the purposes of this document, however, it is assumed that this project could yield up to 30,000 ac-ft annually.

2. Potential Project Benefits/Beneficiaries

Delta Water Quality

A recharge and recovery project in the Zamora area could be used to improve the quantity and quality of Delta outflow. Surplus water would be stored in the aquifer during wet years and exported to the Delta during dry years. Delta outflow could be managed directly or indirectly using existing agricultural wells or recovery wells at the recharge basins. Continuous groundwater-level monitoring would ensure that the project was operated within the physical limitations of the aquifer and consistent with existing agricultural land uses.

Yolo-Zamora Water District

The TC Canal extension and recharge basins would benefit farmers in the Y-ZWD. District farmers would obtain a new source of high-quality groundwater, and the project would stabilize variable groundwater levels.

City of Woodland

The City of Woodland is a fast-growing suburb of Sacramento. The estimated annual demand for water was 13,000 ac-ft in 1996. Water demand is projected to more than double by 2020. The city currently obtains its water from groundwater pumping. Although the quality of Woodland groundwater is generally good, some municipal wells have reported elevated nitrate concentrations and methyl tributyl ethylene (MTBE) contamination.

Extension of the TC Canal would be beneficial to the city. Figure 13F-1 shows that the terminus of the canal would be located about 2 miles northwest of town. Water from the canal would be supplied to the city by gravity and recharged within its hydrologic zone of influence. TC Canal deliveries to Woodland would offset growing demand in the city, mitigate overdraft and subsidence potential, and be higher in quality than native groundwater.

Yolo County Flood Control and Water Conservation District

The 195,000-acre Yolo County Flood Control and Water Conservation District is located on the north and south sides of Cache Creek near Woodland (Figure 13F-1). The district owns water rights on Cache Creek and reservoirs that feed Cache Creek including Clear Lake and Indian Valley reservoirs. The district diverts water from Cache Creek into three major canals at the Capay Diversion Dam, approximately 16 miles west of Woodland. With the exception of flood spills, little or no surface water currently flows below the diversion dam.

In addition to its surface water facilities, groundwater wells are located throughout the district. In 1989, approximately 136,000 district acres were irrigated. The district estimates that 50 percent of the irrigation demand is met from surface water, and 50 percent is met from groundwater in a normal water year. In extremely dry years, such as 1977, no surface water is available.

The TC Canal extension may be beneficial to the district. The district already owns a source of high-quality, low-cost surface water. However, surface water deliveries are not reliable in dry years. This project may offer an opportunity to supply an additional source of high-quality surface water to the district and stabilize surface water deliveries. If the recharge basins near Zamora were equipped with recovery wells, recharged water could be exported to the district, particularly in dry years. Most of the irrigated acreage in the district is located at ground-surface elevations above TC Canal. Therefore, deliveries to district acreage would require pumping, except for small portions of the district near Woodland.

Infrastructure to supply water to the district is not included in this evaluation. However, it is recommended that service to the district be evaluated in more detail.

Other Beneficiaries

Two other potential beneficiaries should be examined in more detail in subsequent studies: (1) extension of service to the USBR Solano Project, allowing additional surface water supplies to the cities of Vallejo, Vacaville, Fairfield, Benicia, and Suisun; and (2) linkage between the Colusa Basin Drain and TC Canal to relieve flood flows in the drain and augment water supplies in TC Canal for recharge.

3. Project Costs

The cost opinions shown, and any resulting conclusions on project financial or economic feasibility or funding requirements, have been prepared for guidance in project evaluation from the information available at the time of the estimate. It is normally expected that cost opinions of this type, an order-of-magnitude cost opinion, would be accurate within +50 to -30 percent. Project costs were developed at a conceptual level only, using data such as cost curves and comparisons with bid tabs and vendor quotes for similar projects. The costs were not based on detailed engineering design, site investigations, and other supporting information that would be required during subsequent evaluation efforts.

The final costs of the project and resulting feasibility will depend on actual labor and material costs, competitive market conditions, actual site conditions, final project scope, implementation schedule, continuity of personnel and engineering, and other variable factors. As a result, the final project costs will vary from the opinions presented here. Because of these factors, project feasibility, benefit/cost ratios, risks, and funding needs must be carefully reviewed prior to making specific financial decisions or establishing project budgets to help ensure proper project evaluation and adequate funding.

Table 13F-2 is a planning-level estimate of project costs. The total project is estimated at \$133 million dollars. Of this total, TC Canal accounts for approximately \$36 million; recharge and recovery facilities account for \$42 million; contingencies and allowances are \$24 million; and engineering, environmental, construction management, and administration costs are \$31 million dollars.

Project costs would be borne by the primary project beneficiaries, including Delta water quality interests, the City of Woodland, and, to a lesser extent, agricultural interests in the Zamora area.

Typical annual operations and maintenance (O&M) costs for a project of this nature would range from 6 to 10 percent of initial capital costs. Annual O&M costs would include power for recovery wells and automated canal structures; recharge, recovery, and water delivery scheduling and implementation; inspection and maintenance of canals, recharge basins, and wells; and data collection and reporting of groundwater levels, water quality, and recharge and recovery rates. Annual operations and maintenance costs would approach \$10 million dollars per year.

TABLE 13F-2
Planning-level Project Costs
Tehama-Colusa Canal Authority Tehama-Colusa Canal Extension

TC Canal	Quantity	Units	Unit Price (\$)	Total Cost (\$ x 1,000)	Assumptions
Land Acquisition	470	Acres	6,000	2,820	13 mi. long x 300 ft wide
Canal Excavation	714,000	Cubic yards	8	5,712	26-foot base, 2:1 slopes, 2 to 20-ft access roads
Canal Embankment	714,000	Cubic yards	12	8,568	balanced cut and fill
Canal Lining	572,000	Square yards	22	12,584	4-inch, non-reinforced
Automated Check/Spill Structure	1	Structure	1,000,000	1,000	
TC Canal Turnouts	5	Structures	200,000	1,000	48-inch motorized valve with SCADA
Creek Crossings (Large)	2	Structures	1,300,000	2,600	five-barrel, 9-ft dia. pipeline siphons
Creek Crossings (Small)	7	Structures	300,000	2,100	culvert or overshot flume
TC Canal Subtotal ->				36,384	
Recharge Basins					
Land Acquisition	800	Acres	6,000	4,800	400 ac of basins
Excavation	1,300,000	Cubic yards	8	10,400	2 ft overburden removal
Embankment	1,300,000	Cubic yards	12	15,600	balanced cut and fill
Distribution Pipe (48 inch)	21,000	Linear feet	288	6,048	
Recovery Wells	20	Wells	200,000	4,000	assume 1,000 gpm each (30,000 ac-ft/yr total)
Monitoring Wells	40	Wells	40,000	1,600	four wells per basin, 100 ft deep each
Recharge Basin Subtotal ->				42,448	
Construction Costs Subtotal				78,832	
Contingencies and Allowances (30%) ->				23,650	
Total Construction Costs ->				102,482	
Environmental Mitigation (5%) ->				5,124	
Engineering, Environmental, Construction Management and Admin. (25%) ->				25,621	
Total Long-term Cost ->				133,000	

SCADA = supervisory control and data acquisition
gpm = gallons per minute

4. Environmental Issues

As noted in Section 2, this project is anticipated to provide benefits in the form of increased water supply, more flexible water management, and improved water quality – all of which could improve the greater Sacramento River ecosystem. Additionally, the project could provide environmental benefits at the reservoir site by providing waterfowl habitat.

Regional benefits in the form of reduced energy consumption could also accrue from project implementation.

Project implementation would also result in impacts to the environment, notably through the conversion of open space to a canal and recharge basins. Construction-related impacts would also occur prior to project implementation. Construction-related impacts would be similar to other, common construction projects that occur near seasonal drainages and waterways. It is likely that the appropriate level of environmental documentation necessary for this project would be an environmental impact statement/environmental impact report (EIS/EIR).

Implementation of the project would also require issuance of permits from various regulatory agencies. Following is a summary of the likely permitting requirements. Additional permitting requirements may be identified pending further project refinement.

- **State Water Resources Control Board**—Applications for new water rights and changes in point of diversion would be required.
- **Regional Water Quality Control Board**—Large amounts of earthwork would be required for the recharge basins. Depending upon project configuration and location, Water Quality Certification under the federal Clean Water Act may be required for construction.
- **Federal and State Endangered Species Act**—Consultation with state and federal resource agencies (e.g., USFWS, NMFS, CDFG) may be required to protect special-status species and their habitat.
- **U.S. Army Corps of Engineers (COE)**—The project may affect wetland habitat and require a permit for discharge of dredged or fill material pursuant to Section 404 of the federal Clean Water Act.
- **State Lands Commission**—Project would need to consult with State Lands Commission on the public agency lease/encroachment permitting for use of state lands.
- **State Reclamation Board**—The project may be subject to rules regarding encroachment into existing floodways.
- **Federal Emergency Management Agency (FEMA)**—Letters of map revision need to be filed with FEMA for projects that affect Flood Insurance Rate Maps.
- **Division of Safety of Dams (DSOD)**—Design and configuration of the storage basins may require permitting and compliance with Dam Safety due to the height of the retention walls. DSOD is structured within DWR.
- **Advisory Council on Historic Preservation**—Consultation under Section 106 of the National Historic Preservation Act may be necessary if historical resources are affected by construction of the project.
- **California Department of Fish and Game**—If alterations to streams or lakes are required as part of project implementation, a Streambed or Lakebed Alteration Agreement may be required.

- **Local governments and special districts**—Specific agreements for rights-of-way, encroachments, use permits, or other arrangements may need to be made with local entities in the vicinity of the project.

A draft CEQA environmental checklist has been prepared for this proposed project and is included as an attachment to this evaluation. The checklist provides a preliminary assessment of the environmental areas of concern, as well as areas that are not likely to be of concern, associated with this project. The checklist would be finalized as part of the environmental compliance required for project implementation.

5. Implementation Challenges

The project implementation would occur in several incremental stages, each of which would have significant challenges. Many of these challenges would be inherent to any project of this size and complexity. The following lists some of the implementation challenges anticipated to be associated with this project.

Public Perception

Landowners have significant concern regarding possible groundwater overdraft. While the aquifer recharge aspects of this project may go a long way to alleviate these concerns, overdraft likely would remain a concern throughout the various stages of this project from feasibility analysis through construction and very likely continue thereafter. Monitoring and modeling of groundwater levels would not only be an essential part of this project technically, but also politically. Further, public concern accompanies any water delivery project during these water-tight times with regard to whom any project may or, just as importantly, may not benefit. As a result, many counties have passed ordinances and set numerous groundwater management objectives. To that end, the county has set strict guidelines for such water management programs as water transfers that dictate the priority of transfers taking into consideration primarily the intended recipient of the water.

Coordination among Public and Private Entities

Strong coordination would be required among local, state, and federal entities such as USFWS, USBR, and DWR. The governmental agencies would have strong interests associated directly with the project and indirectly as it may affect other interests in the area. It is highly probable that because of the complexity and far-reaching implications of the project competing interest may arise. Reliable communication and integrated coordination would be required to create a successful project.

Coordination between Concurrent Projects

Numerous parties are examining similar projects throughout the valley. To optimize the effectiveness of these projects, coordination between the projects would be required from the onset. The strongest motivation for such an effort is three-fold: (1) to avoid duplication of effort and as a result insufficiently utilize available funds, (2) to avoid the nullification of project benefits through competing projects, and perhaps most importantly, (3) to optimize the benefits of these projects to the watershed.

Lack of Sufficient Groundwater Data

In many areas, there is limited groundwater information available, or the information that is available is unreliable.

Environmental Regulatory Compliance

Extensive environmental documentation, surveying, monitoring, and permitting would be required for this project. Habitat for known Endangered Species Act (ESA)-listed species such as the valley elderberry longhorn beetle and the giant garter snake is present within the project area. Project scheduling would have to reflect environmental regulatory requirements including any limitation on windows of construction.

Land Acquisition

It is probable that land would have to be acquired for the production wells, recharge basins, and conveyance systems. Some landowners may be resistant to the land purchases.

Recharge Basins

Siting of the recharge basins could be politically and environmentally challenging. The basin siting would have to rely heavily on groundwater modeling results, public outreach, and close coordination with environmental interest groups and government agencies (e.g., USFWS).

Surface Water Diversions

Perhaps the most challenging issue related to this project is its requirement for a new source of surface water from TC Canal. Presumably, some surface water is available from the Sacramento River at Red Bluff during periods of high flow and in wet years. However, Sacramento River water is not available in normal or dry years. Therefore, it may be necessary to implement other projects that could provide sources of water for the recharge basins. Examples might include an off-stream storage project (e.g., Sites Reservoir), a conjunctive use project (e.g., Stony Creek), or flood control diversions from the Colusa Basin Drain or seasonal creeks. In the absence of off-stream storage or conjunctive use, it is not likely that this project could be justified from a water rights, environmental, or financial standpoint.

6. Implementation Plan

Extensive engineering and environmental investigations would be necessary to further evaluate this project. Six major tasks are recommended in three phases. Phase 1 corresponds to the identified short-term component of the overall project (Tasks 1.1 and 1.2; portions of Tasks 2.1 and 2.2 could also be initiated in the short term). Implementation phases are recommended and shown in the implementation schedule (Figure 13F-4). The project phases include: **Phase 1** (1.1) Hydrologic modeling report, (1.2) Project concepts report; **Phase 2** (2.1) EIS/EIR, (2.2) Preliminary design, (2.3) Design drawings and specifications; and **Phase 3** (3.1) Construction. The total duration of all engineering, environmental, and construction-related tasks is estimated at approximately 7 years.

1.1 Hydrologic modeling report—A modeling effort would be required to evaluate the hydrologic implications of the project. The study would have the following four primary goals: (1) identify the quantity, quality, and timing of water sources for TC Canal and its recharge basins; (2) determine the hydrologic response of aquifers in the Zamora area from simulated recharge and recovery operations; (3) refine fundamental design criteria, such as the size, location, and number of recharge basins, the flow capacity of the TC Canal, and linkages to other project beneficiaries; and (4) estimate the firm yield of the project for Delta export. The estimated cost of this study would be \$1 million dollars, with a 1-year duration.

1.2 Project concepts report—The purpose of the project concepts report would be to refine the design criteria developed in the hydrologic report, identify and locate specific project features, examine alternatives, and estimate costs in sufficient detail to support an environmental assessment/EIR. The project concepts report would build from the initial conclusions and recommendations of the hydrologic modeling report. The project concepts report is estimated to cost \$1 million dollars and require 1 year to complete.

2.1 EIS/EIR—This task would complete the required NEPA/CEQA investigations and documentation. Specific permitting requirements would be addressed. This task of the project is estimated to cost \$2 million dollars and require 2 years to complete.

2.2 Preliminary design—Preliminary design drawings and specifications would be prepared during Phase 4. The preliminary design drawings would include canal plan/profile sheets, recharge basin site plans, distribution/collection piping plans, recovery wells, structures, instrumentation and control diagrams, and flood control facilities at a 10-percent level of completion. Preliminary design would also include aerial photography and mapping, geotechnical and corrosion investigations, detailed environmental surveys, and land-acquisition plot maps. Preliminary design drawings would incorporate environmental mitigation requirements identified during Task 2.1. The estimated cost of this task would be \$4 million dollars and require 2 years to complete.

2.3 Design drawings and specifications—Contract drawings and specifications would be developed from the preliminary designs. The drawings and specifications would provide all necessary detail for bidding and construction. The design task is estimated to cost \$3million dollars and require 2 years to complete.

3.1 Construction and construction management (CM)—Construction oversight would be required to enforce contract requirements and ensure a quality, functional end-product. Typical CM activities include (1) evaluating bids; (2) reviewing, approving, and testing proposed products and materials; (3) observing, photographing, and documenting all aspects of construction; (4) managing changes during construction; and (5) estimating contractor inventories, progress, and progress payments. Construction and CM activities for this facility would require 3 years to complete and cost \$5 million dollars.

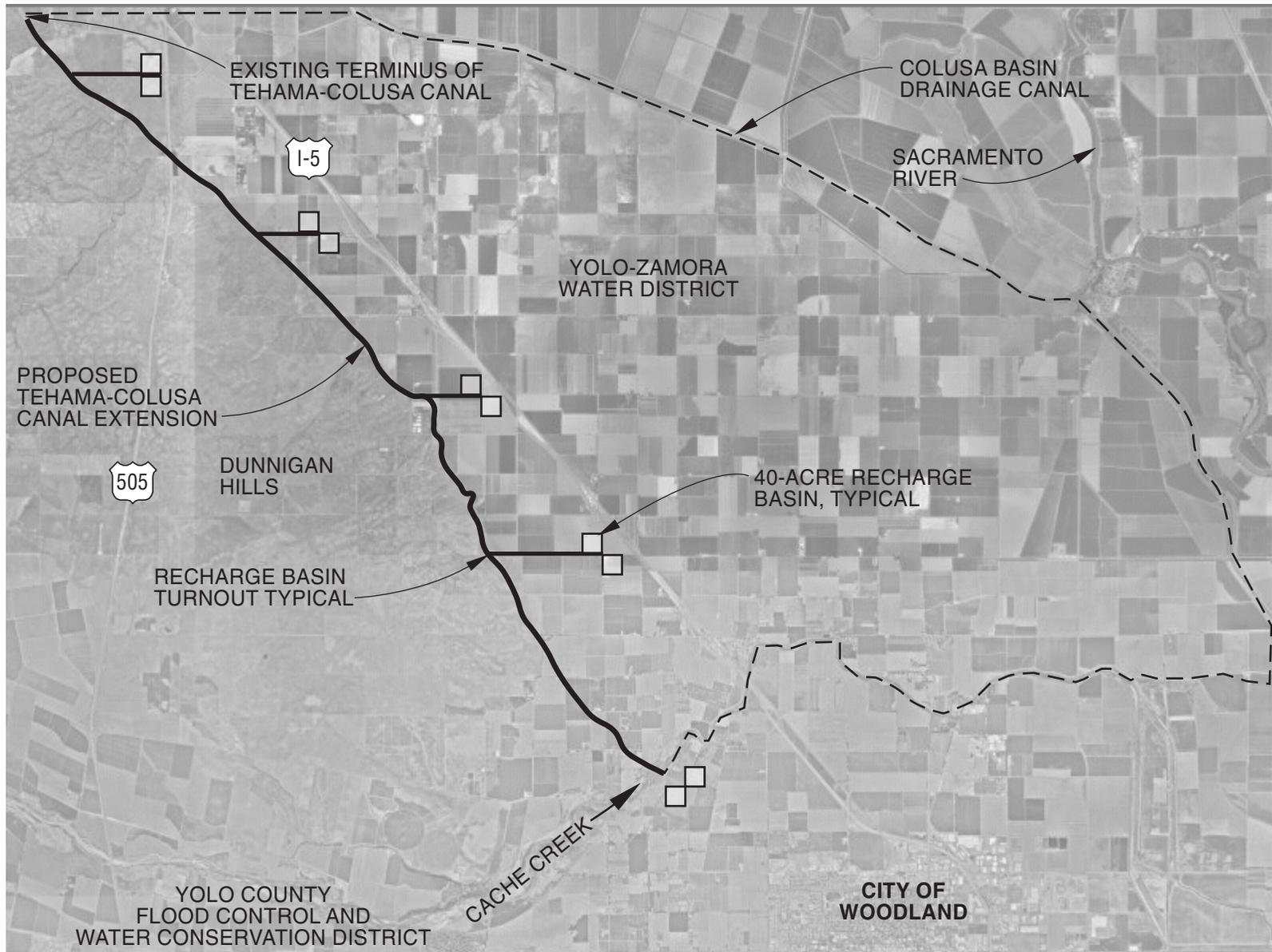
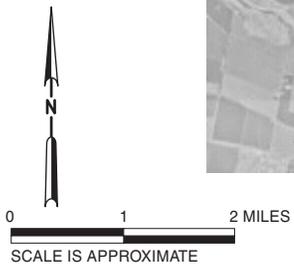


FIGURE 13F-1
PROJECT LOCATION MAP
 TC CANAL EXTENSION
 SHORT-TERM PROJECT EVALUATIONS
 SACRAMENTO VALLEY WATER MANAGEMENT AGREEMENT

CH2MHILL
 in association with
MONTGOMERY WATSON HARZA
MBK
SWRI



DESIGN CRITERIA

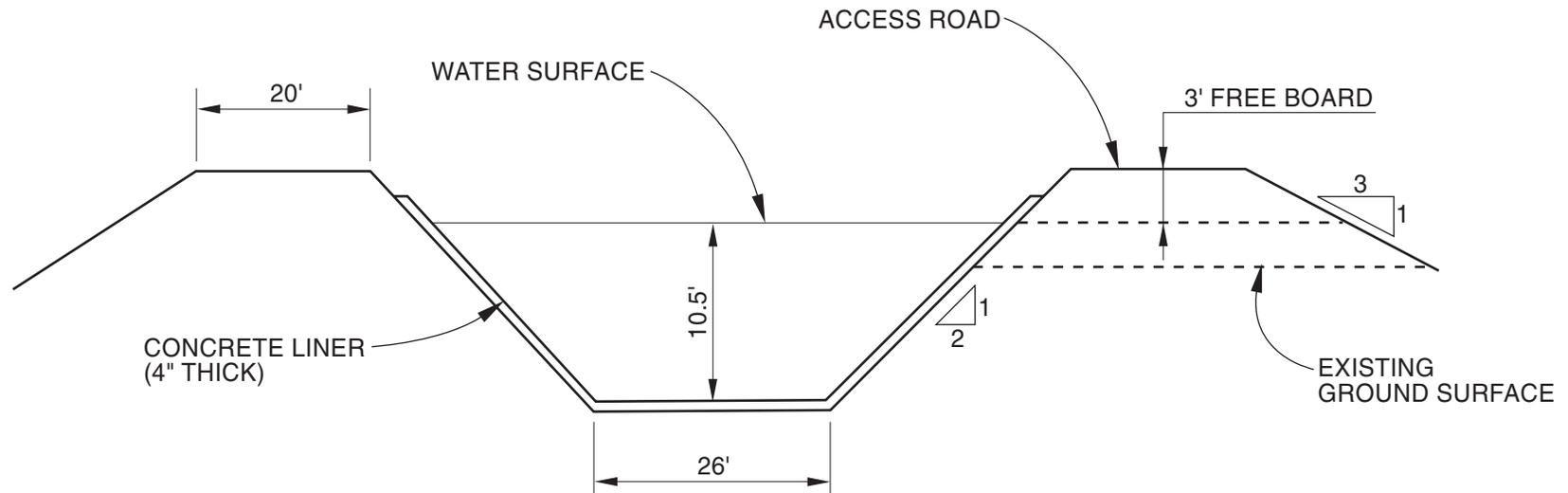
CAPACITY = 1,500 FT³/S

VELOCITY = 3 FT/S

EXCAVATION VOLUME = 94.0 CY/(LINEAL FOOT)

EMBANKMENT VOLUME = 94.0 CY/(LINEAL FOOT)

VOLUME CONCRETE = 8.25 CY/(LINEAL FOOT)



**FIGURE 13F-2
TEHAMA-COLUSA CANAL
EXTENSION TYPICAL SECTION**

TC CANAL EXTENSION
SHORT-TERM PROJECT EVALUATIONS
SACRAMENTO VALLEY WATER MANAGEMENT AGREEMENT

CH2MHILL
in association with
MONTGOMERY WATSON HARZA
MBK
SWRI

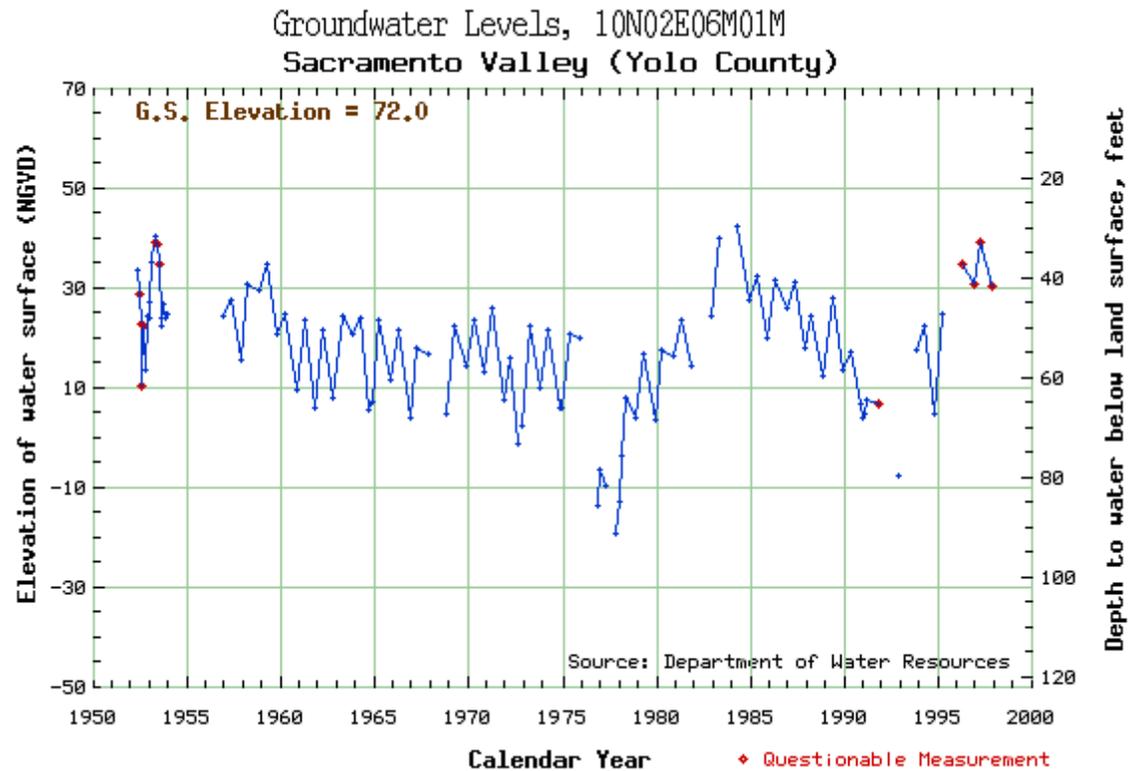


FIGURE 13F-3
TYPICAL DWR HYDROGRAPH
 TC CANAL EXTENSION
 SHORT-TERM PROJECT EVALUATIONS
 SACRAMENTO VALLEY WATER MANAGEMENT AGREEMENT

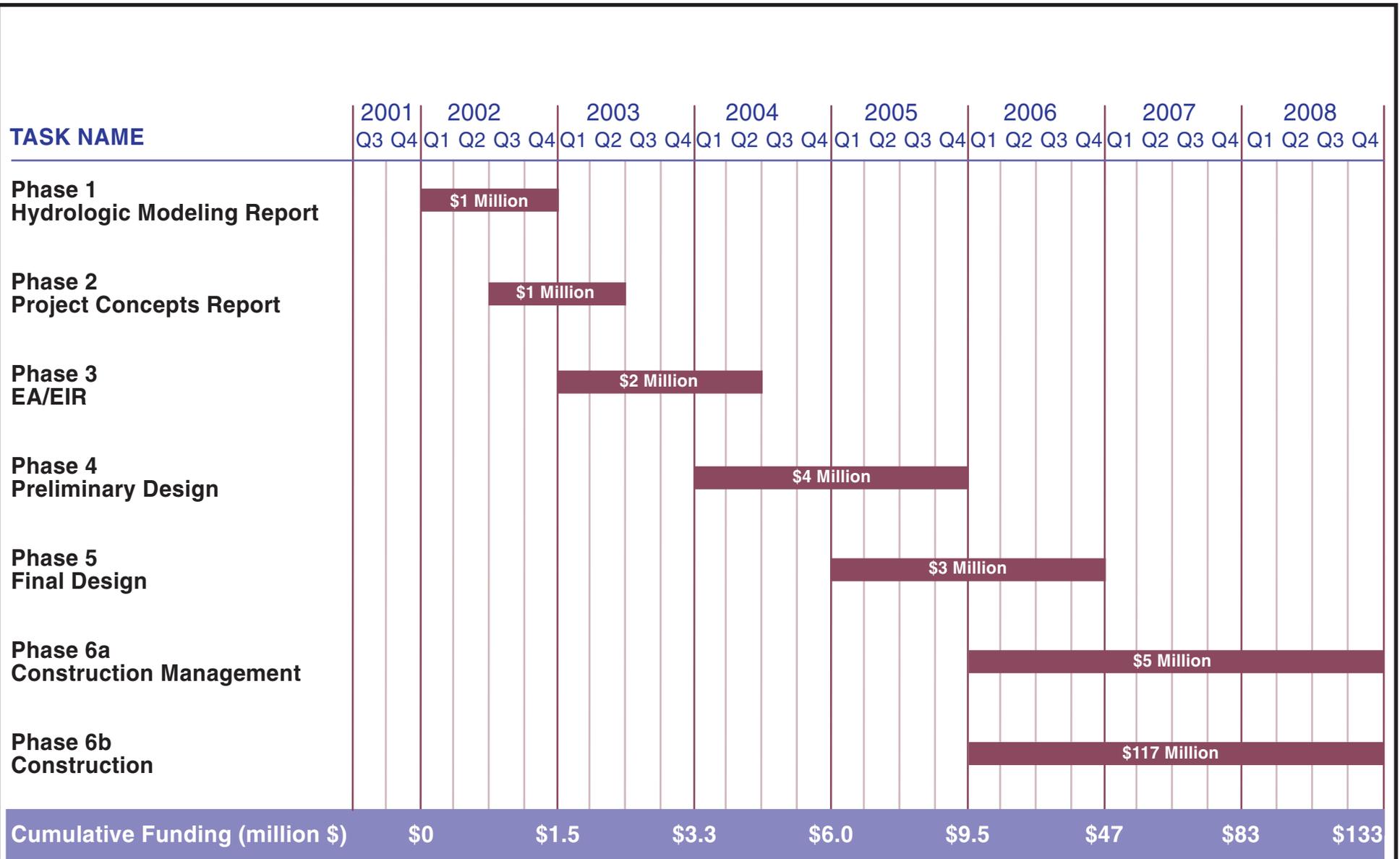


FIGURE 13F-4
PRELIMINARY IMPLEMENTATION SCHEDULE
 TC CANAL EXTENSION
 SHORT-TERM PROJECT EVALUATIONS
 SACRAMENTO VALLEY WATER MANAGEMENT AGREEMENT



**Project 13F—Draft CEQA
Environmental Checklist**

Project 13F—Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

Determination:

(To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

Printed Name

For

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
<u>I. AESTHETICS</u> —Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings? <i>Short-term impacts from increased noise and dust emissions could occur as a result of construction. Mitigation measures implemented for noise and air quality would reduce any impacts to a less than significant level.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>II. AGRICULTURE RESOURCES</u> —Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? <i>This project would include a 13-mile canal extension and ten 40-acre recharge basins. The exact location of the basins are yet to be determined. The canal would extend 13 miles south of the existing terminus to Cache Creek. The recharge basins would be located adjacent to I-5 and the canal. The majority of land around these locations is used for agricultural purposes. The canal and recharge basins may require a permanent conversion of potential Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? <i>See response to II (a) above.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? <i>See response to II (a) above.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>III. AIR QUALITY</u> —Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?</p> <p><i>Increased air emissions could result from construction of the project. Implementation of best management practices (BMPs) during construction would reduce the amount of emissions and reduce the impact to a less than significant level</i></p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).</p> <p><i>See response to III (b) above.</i></p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>d) Expose sensitive receptors to substantial pollutant concentrations?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>e) Create objectionable odors affecting a substantial number of people?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IV. BIOLOGICAL RESOURCES—Would the project:				
<p>a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?</p> <p><i>Known Endangered Species Act (ESA)-listed species such as the valley elderberry longhorn beetle and the giant garter snake are within the area. Additionally, sensitive riparian habitat exists in and around the project site. Potential conversion of habitat could occur as a result of the project, and would have to be mitigated. Additionally, project construction scheduling would have to reflect environmental regulatory requirements including any limitation on windows of construction.</i></p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?</p> <p><i>See response to IV (a) above.</i></p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act, (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</p> <p><i>See response to IV (a) above.</i></p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or, impede the use of native wildlife nursery sites?</p> <p><i>See response to IV (a) above.</i></p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? <i>Removal of vegetation would inevitably be required as part of the project construction and implementation. Mitigation measures would be implemented to replace any vegetation removed for the project, which would attempt to reduce the impact to a less than significant level.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? <i>See response to IV (e) above.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
V. CULTURAL RESOURCES —Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? <i>A significant impact would occur if a cultural resource were to be disturbed by activities associated with project development. In the event that an archaeological resource was discovered, appropriate measures would be undertaken to minimize any impacts</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? <i>See response to V (a) above.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? <i>See response to V (a) above.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries? <i>See response to V (a) above.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VI. GEOLOGY AND SOILS —Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>VII. HAZARDS AND HAZARDOUS MATERIALS</u>				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Construction equipment would require the use of potentially hazardous materials. The potential for significant hazardous material spill would be unlikely because of the limited amount of such materials that would be used onsite. If a spill or release of such materials were to occur, it could potentially be significant unless BMPs were implemented.</i>				
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>See response to VII (a) above.</i>				
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
<u>VIII. HYDROLOGY AND WATER QUALITY—</u>				
Would the project:				
a) Violate any water quality standards or waste discharge requirements? <i>Increases in turbidity would be likely to occur during any potential in-stream construction work. Additionally, there would be a potential for an increase of erosion and sedimentation from construction activity. This could be a significant impact and would require an erosion control plan, and the implementation of BMPs to reduce any impacts to waterways in and around the project area.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted). <i>There are serious concerns about the long-term draw-down of the groundwater table and land subsidence, particularly in dry years. Model development would help in determining the effects of increased groundwater pumping. The impact that groundwater withdrawal would have on existing groundwater supplies is as yet undetermined; however, it is potentially significant because of the complexity of the issue.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? <i>The basins would be gravity fed. Sources to the reservoirs are likely to include runoff from storm events. This would be a beneficial impact to surrounding land owners, because this area is currently susceptible to flooding.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IX. LAND USE AND PLANNING —Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Short-term impacts from increased noise and dust emissions could occur as a result of construction. Mitigation measures implemented for noise and air quality would reduce any impacts to a less than significant level.</i>				
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>See response to IV (e) above.</i>				
X. MINERAL RESOURCES —Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XI. NOISE —Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Short-term noise levels are expected to increase for the duration of construction. These noise increases would be temporary, and mitigation measures would be implemented to reduce any impact to a less than significant level.</i>				
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>See response to XI (a) above.</i>				

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XII. POPULATION AND HOUSING—Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XIII. PUBLIC SERVICES—Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
XIV. RECREATION—Would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
<u>XV. TRANSPORTATION/TRAFFIC</u> —Would the project:				
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>XVI. UTILITIES AND SERVICE SYSTEMS</u> — Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
<u>XVII. MANDATORY FINDINGS OF SIGNIFICANCE</u>				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>