

Appendix C

**Significant Impacts and Mitigations, Alternative
A3, Modesto Surface Water Treatment Plant**

Significant Impacts and Mitigations, Alternative A3, Modesto Surface Water Treatment Plant (from Final EIR for the Modesto Surface Water Treatment Plant, 1990)

Impact	Mitigation	MID Facilities	City of Modesto Facilities
Water Resources			
During periods of drought, Project water supply to the treatment plant may be reduced, causing shortages within the domestic water system.	Domestic water conservation and/or water rationing could be applied to reduce the need for project water during times of surface water shortage.	Does not Apply	Applies ¹
	The City and (former) Del Este will continue to construct wells in suitable locations for use in meeting peak summer demands and during drought periods.	Does not Apply	Applies
	During periods of shortage in the surface water supply, carefully planned, conjunctive use of the surface and groundwater supplies would become very important. The three partners in the proposed project should develop coordinated contingency plans for temporarily increasing groundwater pumping to help offset surface water shortage.	Applies	Applies
	As a long range measure to cut domestic water consumption, water conservation measures should be implemented. The cost/benefit of water-meter retrofitting should also be considered. These measures are within the jurisdiction of the City and (former) Del Este.	Does not Apply	Applies
Short-term increase in erosion and consequent water quality degradation during construction	BMPs would reduce erosion and sedimentation.	Applies	Applies
During a severe drought, Project water demands	Mitigation measures listed under Water Supply and Farming which	Applies	Applies

¹ In May 2004, the City Council directed staff to move toward metering water for all residential customers, to develop a plan for metering of the city-owned systems with implementation over a 10-15 year period, to include a CPI increase in the current 218 process for Water for years six and beyond, and to begin the process to charge churches and schools at a metered rate with implementation by January 1, 2005.

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could drawdown the water level in Don Pedro Reservoir by an additional 4 (Phase I) to 10 feet (Phase II).	reduce demand for surface water would correspondingly reduce potential reservoir drawdown.		
As a result of Project implementation, groundwater levels underlying Modesto are expected to rise. Should groundwater rise to sufficiently shallow levels, inundation and/or damage could result.	Groundwater pumping in the project area will be initially limited to an average of 40,000 acre-ft/yr. The well-monitoring activities conducted by the District, the City and (former) Del Este will be coordinated and compiled into a single database. The data on well pumpage and groundwater levels will be reviewed annually. Well pumpage will be adjusted as necessary to assure long-term groundwater levels decline no further. Should groundwater levels rise near the surface, pumpage will be adjusted to assure the average water table levels are maintained no shallower than 15 feet below ground surface. The result of the mitigation will be a stable groundwater level, reversing the trend of groundwater decline before plant construction.	Applies	Applies ²
Reduction in downstream flows in the Tuolumne River- Phase I will not reduce downstream flows. The additional analysis in the FEIR states that sufficient water should be available due to declining agricultural use and conservation measures to supply the project without reducing downstream river flows. According to the DEIR, Phase II would divert about 33% of the summer flow. For 20% of the summer period, Phase II of the project would divert >50% of the streamflow. Reduced flows would result in increased temperature and TDS, and reduced Dissolved Oxygen. Provided that FERC minimum flows are maintained, there should be NS impact to anadromous fish.	Some water would be returned to the river as treated effluent. FERC license minimum flows would be maintained. Summer low flows would not be expected to vary substantially from the pre-project average flows.	Applies	Applies
	Phase II mitigation is not discussed. FEIR analysis indicates no need for mitigation.	n/a	n/a

² Kaiser Modesto Medical Center/Cornerstone Business Park Project Final Environmental Impact Report (August 10, 2004) states “Assuming Modesto continues to limit its groundwater use to 45,625 acre-feet per year, its current share of the municipal safe yield, the City would not contribute to an overdraft of the groundwater basin.” (pg IV.L.15)

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Biology			
There is a potential for significant impact to biological resources if Alternative A is selected, due to the possible disturbance of vernal pools.	The site (A3) will be inventoried using CDFG guidelines for conducting rare plant surveys. If no rare plants or vernal pools are found in surveyed areas, the no significant impacts to biological resources would occur from Alternative A3.	Does not Apply (completed as part of this EIR)	Does not Apply
	If rare plants are identified, the facilities would need to be sited to avoid direct impacts to these plants. A 100-foot buffer would be maintained around any vernal pool discovered on the site. The amount of area draining to the pool should not be appreciably reduced as a result of site grading or stormwater control measures. It is expected that the 30-acre site would provide adequate room to site water plant facilities to avoid vernal pools, if they are present at the site.	Does not Apply	Does not Apply
	Prior to the start of the site preparation, locations of rare plant communities will be flagged and construction crews informed of their locations. If found at the site, vernal pools will be permanently signed or fenced to avoid inadvertent disturbance during plant operation.	Does not Apply	Does not Apply
	A wetland delineation will be required by the Army Corps of Engineers as part of the Section 404 permitting process. The delineation, or wetland survey, will be conducted within the immediate area of the specified treatment plant boundaries and any associated areas that will be affected by construction activities. Siting modifications and/or appropriate mitigation measures would be implemented in accordance with the requirements and recommendations of the Corps.	Does not Apply	Does not Apply
Loss of riparian habitat resulting from the construction of water delivery pipeline across Dry Creek.	Develop mitigation measures in coordination with the Army Corps of Engineers Section 404 process. Such measures could include: onsite restoration of any disturbed habitat (<i>i.e.</i> , revegetation with native or other acceptable species). Offsite purchase and preservation of comparable riparian habitat, and/or protection of adjacent riparian habitat.	Does not Apply	Does not Apply

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Geological			
Liquefaction potential may exist if groundwater is within 20 ft of the surface.	Limit construction to areas where groundwater is more than 20 ft below surface and/or treat potentially liquefiable soils as necessary to ensure adequate foundation.	Applies	Applies
Soils on site have moderate potential for erosion- heavy rainfall during construction could cause erosion and siltation problems.	Employ BMPs	Applies	Applies
Potential for erosion/runoff problems from creation of impermeable surfaces.	Pave only main plant access road. Other access roads and plant areas to be surface with 3-4" crushed rock	Does not Apply	Does not Apply
Archaeological Resources			
Disturbance associated with the construction of the water treatment plant or the pipeline may impact archaeological resources.	A survey will be carried out of all project impact areas by a professional archaeologist, including the plant site and any transmission lines which would be constructed outside the existing District or road right-of-ways.	Does not Apply (completed as part of this EIR)	Does not Apply (completed as part of this EIR)
	An evaluation for National Register eligibility will be made of all cultural properties found which will be affected by the project. In the case of archaeological sites, this evaluation process generally consists of surface collection of cultural materials to determine the type and disturbance of materials, and subsurface testing to determine depth, content, and integrity of the archaeological deposit.	Does not Apply (completed as part of this EIR)	Applies
	Avoidance, protection, or data recovery of those cultural resources determined to be National Register-eligible. Appropriate treatment for any resources found will be formulated in consultation with the California State Historic Preservation Officer (SHPO) and Native American representatives, as necessary.	Does not Apply (completed as part of this EIR)	Applies

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Land Use			
Conversion of agricultural land to urban uses (growth-inducing).	No mitigation discussed. Residential growth currently limited by available sewer lines. Additional sewer lines must be approved by Modesto voters.	n/a	n/a ³
Farming			
Removal of 30 acres of grazing land from production.	No mitigation.	n/a	n/a
Pipeline construction may temporarily disrupt irrigation water supplies to adjacent fields.	The Contractor will provide sufficient warning to irrigators to allow timing for scheduling of irrigation water delivery to avoid irrigation disruptions. To the extent practical, pipeline construction through agricultural areas should occur during the nonirrigation season: October to March.	Does not Apply	Applies
In the event of drought, the amount of irrigation water available to the farmers within the District may be limited. This could result in a reduction in crop productivity.	Conjunctive use of the surface and groundwater supplies can reduce or eliminate the impacts of a drought. A temporary increase in groundwater pumping for both domestic and irrigation supply will be instituted. This will minimize the use of the surface supply. It may also have the effect of temporarily reducing the amount of surface water supplied to the water treatment plant, thereby increasing the surface supply available for agricultural irrigation by reducing the supply of Project water needed for the water treatment plant.	Applies	Applies
	Achieve a voluntary reduction in agricultural water use, through appropriate compensation mechanisms, to help make up for projected surface water shortages.	Applies	Applies
	A study will be undertaken to identify agricultural lands which could be voluntarily taken out of production, temporarily, during a drought.	Applies	Applies

³ Residential growth is also limited by Measures A and M, the Modesto Citizens Growth Management Acts of 1979 and 1995, which address sewer infrastructure capacity and improvements.

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	A total of 23 existing municipal wells located near irrigation laterals could be pumped to the laterals to make up irrigation water shortfalls. The cooperation of the City and (former) Del Este would be necessary since many of these wells would also be pumped to meet peak commercial demands in the summer.	Does not Apply	Applies
	The District will consider drilling additional wells to supply additional irrigation water during periods of water shortages.	Applies	Does not Apply
Transportation			
The construction of the water treatment plant may impact traffic by increasing congestion. Access to the treatment plant site would be via District ROW extending north to the site from Hwy 132. Estimated increase of 20-50 project-related trips per day on Hwy 132 and access roads during construction.	The impacts associated with treatment plant construction will be reduced with the use of truck caution signs, flagmen as required, and adhering to posted speed limits. Any road damage attributable to construction trucks will be repaired by the Contractor.	Applies	Does not Apply
The construction of the water conveyance system may increase congestion, close lanes, and otherwise impact traffic.	A detailed traffic control plan will be developed by the Contractor and submitted to the City of Modesto Public Works, Transportation Division, Stanislaus County Public Works Department, or Caltrans, as appropriate. The plan will include use of flagmen where needed, use of construction warning signs, and use of detour signs.	Does not Apply	Applies
	Construction on congested streets (V/C > 0.70) during peak traffic hours should be avoided if at all possible. In the more congested areas, pipeline construction at night should be considered.	Does not Apply	Applies
	The construction site will be “buttoned-up” daily, following the end of the construction day with use of warning barriers and flashers, proper use of warning signs, and the covering up of any open holes or ditches with temporary pavement or metal street plates.	Does not Apply	Applies
	Disruptions to signalized intersection, traffic signs, or pavement marking and striping will be repainted by the Contractor.	Does not Apply	Applies
	Pavement damage caused by the construction or construction vehicles will be repaired by the Contractor.	Does not Apply	Applies

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Utilities			
No sewer service is available at sites for Alternative A. Septic would be used for the site.	Proper construction of the septic system will keep impacts to groundwater minimal. Septic system will conform to county health code requirements. Standard perc tests and regular cleanout will be carried out.	Does not apply	Does not Apply
The project would generate about one ton of sludge per day during Phase I, and about 2 tons of sludge per day after Phase II is implemented.	Sludge will be disposed of at Fink Road-Crows Landing landfill, which is permitted to accept sludge. The project sludge would not materially reduce the lifespan of the landfill. Sludge should be dewatered prior to hauling to landfill. Sludge should be chemically tested to ensure that it meets the landfill's permit requirements.	Applies	Does not Apply
Air Quality			
Short term increase in dust and emissions levels from construction.	Employ BMPs	Applies	Applies
Operational emissions from plant. Mobile sources: traffic- one delivery truck and 6-10 employee round trips per day.	No mitigation.	n/a	n/a
Stationary sources: Chlorine gas units used in treatment, internal combustion engines serving as back-up power sources, and power plants supplying the treatment plant's power demand.	Chlorination facility will be housed in an airtight room equipped with an alarm, a special ventilation system and an emissions scrubber to control accidental leakages of chlorine gas.	Applies	Does notApply
	A setback area will be provided to increase the area between the treatment facilities and the plant boundary.	Applies	Does not Apply
	Permit from Stanislaus County Air Pollution District would be obtained for backup generators greater than 65 hp.	Does not Apply	Applies

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Noise			
Long-term operation of the water treatment plant at Site A3 may increase noise levels at the Modesto Reservoir recreation area.	A 400-foot setback from the northern edge of the site is recommended for the larger pumps in order to minimize noise impacts upon the adjacent recreation area.	Applies	Does not Apply
	An earth berm or wall may be constructed as an additional noise-attenuating barrier.	Applies	Does not Apply
	At any selected site, all larger pumps will be housed in acoustically-insulated structures.	Applies	Does not Apply
	Setbacks of facilities (20-400 feet) from site boundary will ensure acceptable noise levels at adjacent areas.	Applies	Does not Apply
Recreation			
Increased drawdown of Don Pedro Reservoir during drought years will have a negative effect on recreation at the reservoir.	Conservation measures discussed under “Water Supply” will reduce reservoir drawdown and consequent recreational impacts.	Applies	Applies
Reduction of Tuolumne River flows in the summer due to Phase II implementation may impact recreational uses. Analysis in Final EIR indicates that reduction in agricultural use will make enough water available that reductions of Tuolumne River flows will not be necessary, even in Phase II.	River recreation impacts from Alternative D1 are described as unavoidable. No discussion of impacts from Phase II or mitigation-could be no impact due to newly available water that was used for agriculture and due to conservation measures.	n/a	n/a

Impact	Mitigation	MID Facilities	City of Modesto Facilities
Aesthetics			
<p>Plant facilities will sharply contrast with surrounding agricultural land use at Alternative A sites. Site A3 is moderately visible from Hwy 132. Site A3 lies close to the county park at Modesto Reservoir, but intervening topography effectively screens the site from view from the park picnic areas close by.</p>	<p>Earth berms, landscaping and tree screening along the site perimeter will reduce the visual contrast with surrounding areas. Views of the area are not considered high quality; therefore the water treatment plant would not degrade a scenic view.</p>	Applies	Does not Apply
<p>Safety lighting will increase light levels at night. However, the distance to the nearest rural residences reduces this impact to LS.</p>	<p>Lights shall be shielded and directed away from sensitive uses and the sky.</p>	Applies	Does not Apply
Energy			
<p>Increased electrical demand for operation of pumps. Phase I would use approx. 16 million kwh/yr. Phase II demand would increase to 47 million kwh/yr. There is a powerline adjacent to the site, but a new substation may be required. Energy demands for the plant represent 0.08 to 0.23% of annual electrical power use in the MID service area.</p>	<p>Energy efficiency measures.</p>	Applies	Does not Apply
<p>Some natural gas would be required to heat the operations building.</p>	<p>Energy efficiency measures.</p>	Applies	Does not Apply
<p>Increased electrical demand for operation of pumps. Phase I would use approx. 16 million kwh/yr. Phase II demand would increase to 47 million kwh/yr. There is a powerline adjacent to the site, but a new substation may be required. Energy demands for the plant represent 0.08 to 0.23% of annual electrical power use in the MID service area.</p>	<p>The project would contribute to the generation of hydropower, producing up to 0.4 million kwh/yr</p>	Applies	Does not Apply

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Growth-inducing			
<p>Availability of hookups to water transmission pipelines may facilitate growth, if such hookups are cheaper than direct connection to local wells. However, the treatment plant is not growth inducing in and of itself, because water supply is available through wells and adequate water quality could be achieved through wellhead treatment systems. The limiting factor on growth in Modesto is the extension of sewer trunk lines.</p>	No mitigation.	n/a	n/a
Cumulative Impacts			
<p>Increased urban development may reduce groundwater recharge or reduce groundwater quality by increasing impermeable area. However, the project will increase use of surface waters, reducing the need for groundwater pumping and increasing groundwater levels.</p>	No mitigation.	n/a	n/a
<p>Turlock Irrigation District’s municipal water supply scheme may add to flow reductions in the Tuolumne River.</p>	No mitigation.	n/a	n/a