Chapter 2
Project Description

Introduction

The Modesto Irrigation District (MID) and the City of Modesto (City) are proposing to perform the Phase Two Expansion of the Modesto Regional Water Treatment Plant (MRWTP) and construct multiple City-side downstream facilities to provide reliable municipal and industrial water supply within the City's service area. This project is referred to throughout this document as either the Phase Two project, proposed project, or simply project, and consists of two major improvement areas as follows:

1. the expansion of the MRWTP and the terminal reservoir/pump station (TR/PS) by MID, which would allow MID to provide an additional 33,600 acre-feet annually (afa) of treated domestic water to the City; and
2. the construction of downstream facilities within the City, including water storage tanks, pump stations, pipelines, and control valves.

Project Area

The project area lies within the Tuolumne and San Joaquin River watersheds in Stanislaus County, California and the downstream facilities are within the City of Modesto Sphere of Influence. The Tuolumne River flows from Don Pedro Reservoir and continues through the cities of Waterford and Modesto, eventually converging with the San Joaquin River.

MID uses water from the Tuolumne River, with Don Pedro Reservoir serving as the primary water storage facility and Modesto Reservoir serving as a smaller offstream holding reservoir. MID provides electric, irrigation, and domestic water service to the greater Modesto area.

Background

In 1990, MID, the City, and the former Del Este Water Company (former Del Este) cooperated to build the MRWTP, pipelines, and terminal reservoir/pump

station to provide a new reliable drinking water supply for Modesto area residents. Except as noted below, all Phase One facilities were constructed and put into operation by 1995. Since then, the City has acquired the former Del Este water system, thereby becoming MID's sole customer for treated water. The portion of the City's water service area that is supplied by MID—including the former Del Este service area—and the MRWTP site are illustrated in Figure 2-1, Location Map.

The plant was designed to be constructed in two phases: the Phase One project, which would treat up to 30 million gallons per day (mgd) annually, and the Phase Two project, in which MID would expand the MRWTP to 60 mgd (annual capacity).[1] Under Phase One MID would construct a storage facility (the Terminal Reservoir), pump station, and transmission pipeline from the MRWTP to the Terminal Reservoir/pump station. Under Phase Two the City would construct additional facilities, including distribution piping and piping to the storage tanks[2], storage, pumping, and control valves. Both the Phase One and Phase Two projects were the subject of a 1990 Environmental Impact Report (EIR) (SCH# 1989020044) (MID 1990). The Phase One improvements have already been constructed.

Phase One facilities included two 5-million-gallon (MG) terminal water storage tanks and pumping facility. The pump station discharges water into the MID transmission system for conveyance to the City's water transmission and distribution system through a number of MID turnouts. Flow control valves and meters are now needed with the expanded facilities.

Two City water storage tanks and pumping facilities, one located in the northern portion and the other in the western portion of the City, were recommended in the *Modesto Domestic Water Project Transmission Facilities Pre-Design: Hydraulic Analysis and Report* (MID 1991) for completion following the Phase One project. Neither of these proposed water storage tanks or pump stations were constructed as part of the Phase One project. Since the 1991 analysis, the City has also determined that a third tank is necessary in the southern portion of Modesto. These tanks would help alleviate low pressure during high-demand periods in the City and enable the City to utilize the full treated surface water supply capacity that would be produced by the Phase Two project.

The environmental setting sections in Chapter 3 of this SEIR describe the current baseline conditions, which include operation of Phase One facilities. The Initial Study/Notice of Preparation (Appendix A) identifies areas of potential environmental impacts, which were further analyzed in Chapter 3, and those that were dismissed from further analysis based on the 1990 EIR.

[1] 30 million gallons per day (mgd) = 33,600 acre-feet per year (afa); these terms are used interchangeably throughout the SEIR document. The 30 mgd and 60 mgd capacities area annual amounts. The plant will have peaking capabilities greater than these capacities to accommodate peak demands.

[2] "Tank pipeline" will be used throughout this document to refer to piping that connects directly to tanks. "Main pipeline" will refer to the larger centralized pipelines.

Proposed Project

The proposed project involves the construction of the MRWTP Phase Two expansion, associated downstream facilities, and a water transfer to supply the MRWTP. MID and the City have determined that, because of the additional level of detail known about the project and the potential for changed conditions since the certification of the 1990 EIR, the preparation of a Subsequent EIR (SEIR) is warranted particularly for the downstream water storage tanks, pipelines, and control valves. This SEIR is limited to information and analysis associated with changes in the project, or the conditions under which the project is undertaken, that could cause the project to result in new or changed impacts other than those identified in the 1990 EIR.

This section discusses the project objectives and need, project facilities, construction and operation, and water transfer that will be part of the proposed project.

Project Objectives and Need

The objectives of the proposed project are to

- provide water treatment and delivery capacity through expansion of MID's existing MRWTP and terminal reservoir/pump station in order to provide existing users with a reliable source of potable water and accommodate future planned development in the City, in accordance with the City of Modesto's Urban Area General Plan (General Plan);
- manage the water resources of MID to provide a safe, reliable and sustainable supply for MID's agricultural and urban customers;
- put MID's water rights to beneficial use for the benefit of the residents of Modesto
- meet peak treated water demands and maintain water line pressures for existing users;
- improve water supply reliability for the City;
- increase operational flexibility and reliability in the City's water transmission and distribution system;
- develop a more comprehensive conjunctive use system for domestic water treatment and delivery, and reduce the City's reliance on groundwater; and
- use environmentally sensitive and cost-effect modes of achieving the above objectives.

The project is needed to provide adequate water supplies that will meet regulatory requirements, provide existing users with a reliable water source, and keep pace with future water demand tied with the City's projected growth. The

City has lost significant potable water production due to discontinued use of a number of wells over the last 15 years. The City's General Plan projects population to grow within the City, from a current population of approximately 206,200 to approximately 400,000 by buildout of the general plan area. The additional 30 mgd from the Phase Two project will provide a portion of the potable water requirements for this projected population increase.

The City currently provides water to its residents through use of groundwater wells and the Phase One project. In recent years, numerous groundwater wells have gone out of production as a result of aquifer contamination, increasing the need for reliance on surface water resources such as those provided by MID. At present, the City is close to its maximum water delivery capacity based on groundwater resources and the Phase One MRWTP capacity. In addition, the system suffers pressure problems as water moves west throughout the City's water transmission and distribution system, creating the need for additional downstream facilities to increase operational flexibility and reliability.

Phase Two Project Facilities

The Phase Two project includes two main components:

1. the expansion of the MRWTP, which would allow MID to provide an additional 33,600 afa of treated domestic water annually to the City; and
2. the construction of downstream facilities within the City, including water storage tanks, pump stations, tank and main pipelines, and control valves.

The MRWTP would continue to be owned and operated by MID; ownership and operation of the downstream facilities is still under discussion, but are assumed to belong to the City. For simplicity, the environmental analysis refers to the above components as "MID" and "City" facilities, respectively. Water from the MRWTP, near Modesto Reservoir, would be conveyed from the MRWTP to the City water system through MID's existing transmission system constructed as part of Phase One and the City's new distribution system constructed as part of Phase Two. The general project location is shown in Figure 2-1, Location Map.

MRWTP Expansion

All expansion will occur on the same parcel as the existing MRWTP. MID is contemplating two options for expanding the MRWTP, as follows:

Conventional Option. The conventional option would essentially mirror the existing facility (Figure 2-2, Modesto Regional Water Treatment Facility Expansion, Conventional Option). Facilities to be constructed would include a new ozone contact basin, a flocculation basin, a sedimentation basin, filters, and a water management basin. The existing lagoons would be converted to drying

beds by rebuilding their current sand bottoms into soil cement or concrete bottoms. New piping would also be constructed to tie into existing facilities.

Membrane Option. The membrane option would involve construction of microfiltration or ultrafiltration (MF/UF) membrane treatment process, which would accomplish a similar result to the Conventional Option outlined above (Figure 2-3, Modesto Regional Water Treatment Facility Expansion, Membrane Option). Filtrate pumping may be required. This option would require less space, produce similar turbidity water, and may reduce sludge generation because the membrane option is anticipated to use smaller amounts of coagulant than under the conventional option. It would still require disinfection and pH adjustment for corrosion control.

Under either option, the existing water intake, pump stations, and pipeline from the MRWTP to the City are of sufficient capacity to accommodate the Phase Two expansion and would require no upgrades. However, an additional pump would be required and installed as part of this project at the current terminal reservoir located on the eastern edge of the City. The pump will be installed and operated within an existing sound-insulated block wall building, and is not anticipated to have any impacts (i.e., noise, traffic, air quality, aesthetics, etc). Therefore, the pump is not further analyzed within this SEIR.

The MRWTP expansion is substantively similar to the Phase Two expansion described in the 1990 EIR.

Downstream City Facilities

Improvements to the City's water transmission and distribution system would consist of three water storage tanks and related appurtenances, including pump stations, tank pipelines to connect the water storage tanks to the City's distribution infrastructure, up to 30 control valves on turnouts, and three main pipelines (Figure 2-4, MRWTP Phase Two Expansion Project). While most of these project components were identified in the project description of the 1990 EIR, they were not subjected to site-specific environmental analysis in that document.

Water Storage Tanks, Pump Stations, and Tank Pipelines

Three water storage tanks are proposed: the North Reservoir, the West Reservoir, and the Southeast Reservoir. Each water storage tank would have an associated pump station and tank pipelines, and would exhibit the following characteristics:

- All water storage tanks would be either above ground steel tanks or partially buried concrete tanks. Aboveground tanks would be up to 35 feet high, and have a diameter of up to 250 feet. Partially buried tanks would have a maximum height of between 10 and 15 feet and a diameter of up to 250 feet. The North and West Tanks would be partially buried or aboveground.

- A 15-to-20-foot paved area around the circumference of each tank would provide vehicle access around the tanks.
- An enclosed pump station building would also be constructed at each tank site. This pump station would be architecturally designed to blend in with other existing buildings in the area, and would house the required pumps and motors, electrical and instrumentation equipment, and standby generator.
- The entire pump station and tank site would be fenced, gated, and locked, and the majority of the site would be paved.
- Storm drainage facilities would be installed to allow all-weather maintenance and vehicle access to the site. Proposed storm drain systems include on-site retention basins to catch any overflow from the water storage tanks, and pumps to empty the retention basins into an MID canal after de-chlorination.
- All lighting on the water storage tank sites would be internally directed to reduce light or glare.
- Block walls and landscaping would be installed to screen the tanks from view and reduce potential noise impacts.
- Standby diesel generators would be installed in acoustically designed and insulated structures outside the pump stations associated with each of the tanks.
- The planting pallete of the landscaping shall reflect species that are native and indigenous to the project area. The species used should include trees, shrubs, and an herbaceous understory of varying heights, as well as evergreen and deciduous types. Plant variety will increase the effectiveness of the screen by providing multiple layers, seasonality, more diverse habitat, and reduced susceptibility to disease. Large shrubs that may be used as part of the landscaping for their density and color are
  - *Heteromeles arbutifolia* (toyon),
  - *Fremontodendron* "Ken Taylor" (hybrid flannel bush),
  - *Ceanothus* "Ray Hartman" (Treasure Island blueblossom), and
  - *Cercis occidentalis* (western redbud).

  Potential tree species that may be used for their height and structure include

  - *Platanus x acerifolia* "Bloodgood" (London plane),
  - *Sequoia semperivirens* "Aptos Blue" (coast redwood), and
  - Quercus suber (cork oak).

Nine potential tank site locations have been identified: three for the north region, three for the southeast region, and three for the west region.

Tank pipelines would be constructed to connect each tank with MID's transmission system. These tank pipelines would vary between 16 and 24 inches in diameter, and the length would vary between 2,400 and 11,000 feet, depending

upon the tank site. Most tank pipelines would be constructed within City street rights-of-way (ROW) and other public lands, with the exception of the M&ET Railroad and Oregon Drive alternatives for the Southern main pipeline, which would cross private property owned by the Mono and Gallo Wineries.

The locations of the nine potential tank sites and associated tank pipelines are shown in Figures 2-5 through 2-8. Further detail related to each tank is given below.

North Tank

This proposed 6-MG water storage tank's primary functions are to serve the existing and future land use areas in the northwestern portions of the City (Figure 2-5, North Tank), and convey water to existing areas in the west portion of the City, east of Highway 99, that have a high concentration of inactive wells. As mentioned above, the North Tank would be either partially buried or aboveground. If the tank were partially buried, it would extend at least 10 feet above the grade depending upon local site conditions related to the groundwater level. Based on the General Plan, potential future land uses in this region are primarily residential and commercial. Three potential locations for the North Tank and three tank pipeline alignments are being considered. Each tank site would be approximately 5 acres and would be located on an area designated as Prime Farmland (California Department of Conservation 2002b).

Tank Sites

Site N-1 is located on the parcel immediately northeast of the intersection of Bangs Avenue and Tully Road, and would be a new parcel, located on the easternmost end of the parcel along Bangs Avenue split from the existing larger parcel. Site N-1 is characterized by agricultural fields, surrounded by orchards to the east, south, and west. This site is designated as BP (business park) on the City's General Plan. Agriculture is the primary land use of the surrounding area.

Site N-2 is located on the parcel immediately southeast of the Bangs Avenue and Tully Road intersection, and would be a new parcel, located on the northeast corner of the parcel, split from the existing larger parcel. The parcel for site N-2 is currently used as an orchard. This site is designated as BP (business park) on the City's General Plan. Agriculture is the primary land use of the surrounding area.

Site N-3 is located approximately one mile east of sites N-1 and N-2, just west of McHenry Avenue along Wells Avenue. The parcel is currently vacant, with two light industrial buildings to the east, a rural residential parcel to the west, and residential housing to the south. The tank would reside on a parcel located at the western end, split from the larger parcel. North of the parcel across Pelandale Avenue is an office and industrial park. The nearest home is approximately 50 yards from the site. This site is designated as RC (regional commercial) on the City's General Plan. Land uses surrounding Site N-3 include light industrial and residential.

Tank Pipeline

The purpose of the North Tank pipeline is to connect the North Tank to MID's transmission system at the turnout connection C9.5 located on Coffee Road.[3] The alignments below describe the pipeline routes to each of the three potential tank sites:

- **Tank Pipeline to Site N-1.** Commencing on Coffee Road, the alignment travels northward along Coffee Road to Claratina Avenue and then progresses westward. At the intersection of Claratina Avenue and McHenry Avenue, the alignment travels north on McHenry Avenue. The alignment then turns west on Bangs Avenue, and travels to proposed Site N-1.
- **Tank Pipeline to Site N-2.** Commencing on Coffee Road, the alignment travels northward along Coffee Road to Claratina Avenue and then progresses westward. At the intersection of Claratina Avenue and McHenry Avenue, the alignment travels north on McHenry Avenue. The alignment then progresses west on Bangs Avenue, and travels to proposed Site N-2.
- **Tank Pipeline to Site N-3.** Commencing on Coffee Road, the alignment travels northward along Coffee Road to Claratina Avenue and then progresses westward along Claratina until the intersection of McHenry Avenue and Claratina, where it enters proposed Site N-3.

West Tank

Currently, the City operates Tank 6, a 2-MG reservoir, and associated tank lines for the conveyance of water to the south Modesto service area. Tank 6 primarily provides storage and water flow to south Modesto but also serves limited portions of western and downtown Modesto. The proposed new 4-MG West Tank would supplement and enhance Tank 6's service area of western and downtown Modesto (Figure 2-6, West Tank). As mentioned above, the West Tank would be either partially buried or aboveground. If the tank were partially buried, it would extend at least 10 feet above the grade depending upon local site conditions related to the groundwater level. Three sites for the location of the West Tank and three tank pipeline alignments are being considered.

Tank Sites

Site W-1 is a parcel to be split from the larger parcel, located immediately adjacent to the western boundary of the existing water storage tank facility site. Access to this site would be through the City's existing tank 6 site off of Carpenter Avenue. Land uses surrounding the site include agricultural and residential, in addition to the existing water storage facility. The nearest home is approximately 50 yards from the proposed new parcel, adjacent to the existing water storage facility. Proposed project activities would not occur on the property of the homeowner but on the new split parcel and on the City's existing tank 6 site. This site is designated as VR (village residential) on the City's General Plan.

[3] Note that the North Reservoir would also connect to the North-South main pipeline; variations in the North-South alignment based on tank site are discussed below in the description of the North-South main pipeline. Where the main pipeline and the tank pipeline alignments overlap, only one pipeline would be built and would serve both purposes.

Site W-2 is located adjacent to MID Lateral No. 4, at the west end of Elm Avenue, and is located on the southeast corner of the parcel. The surrounding area is currently under agricultural use with farm houses located on the agricultural parcels. A barn and farmhouse are located approximately 50 yards from the site to the east. This site is designated as BP (business park) on the City's General Plan. Site W-2 would comprise approximately 5 acres and is considered Prime Farmland (California Department of Conservation 2002b).

Site W-3 is located on the northeast corner of the intersection between South Carpenter Avenue and California Avenue, on the panhandle on the northeast portion of the parcel. The site is currently used by Gallo Winery for cultivation of vineyards. Eastern and northern portions of the site are bordered by additional vineyards. The eastern panhandle and southern portions of the site border single-family residential neighborhoods. Landscape screening exists between the nearest residences, which are less than 50 yards from the site. Central Catholic High School is located to the north, while Mark Twain Park and Mark Twain Jr. High School are located to the southeast. Thus, the surrounding land uses are agriculture and residential. This site is designated as R (residential) on the City's General Plan.

Tank Pipelines

The purpose of the West Tank pipeline is to connect the West Tank to the MID trunk line and to distribute water from the West Tank into the City's transmission and distribution system. The West Tank would be fed through one of two possible connection points, depending on the site location chosen. One of these potential connection points is located near Mellis Park at the intersection of Martin Luther King Jr. Drive and California Avenue. The other potential connection point is located at turnout site C16 at the intersection of North Carpenter Road and MID Lateral 4. The alignments below describe the pipeline routes to each of the three potential tank sites.

- **Tank Pipeline to Site W-1.** Commencing at the MID trunk line at the intersection of Martin Luther King Jr. Drive and California Avenue, this alignment progresses westward along California Avenue to Carpenter Road. On Carpenter Road, the alignment progresses southward along Carpenter Road to the existing Tank 6 site and then west through the Tank 6 site to Site W-1.
- **Tank Pipeline to Site W-2.** Commencing at turnout connection C16 at the intersection of Carpenter Road and MID Lateral 4, this alignment progresses north along Carpenter Road to Elm Avenue. The alignment then progresses west on Elm Avenue, to the west edge of parcel APN 007-038-003, travels south within this parcel to the north edge of the easement for MID Lateral 4, and then progresses west to Site W-2.
- **Tank Pipeline to Site W-3.** Commencing at turnout connection C16 at the intersection of Carpenter Road and MID Lateral 4, this alignment progresses south along Carpenter Road to the northern border of parcel APN 030-01-10 (owned by Gallo), and then continues east along the north edge of this parcel to Site W-3.

Southeast Tank

To better serve the demands in the southeastern region of the City, the construction of a 4-MG tank is proposed (Figure 2-7, Southeast Tank). Additional storage is required in this area to alleviate low-pressure conditions in this section of the City during high-demand periods and to assist with water service to the Empire Area and the residential area north of Yosemite Boulevard and south of Dry Creek. Three potential locations for the Southeast Tank and one tank pipeline alignment are being considered. The sites are located approximately 4.5 miles east of downtown Modesto, just south of the intersection of Yosemite Boulevard and Frazine Road/Codoni Avenue.

Tank Sites

Site S-1 is located approximately 1,500 feet east of sites S-2 and S-3. It is situated within a rail-shipping yard, and the site itself is currently unused. The City is currently permitted to maintain existing production wells at this location. The nearest homes are approximately 0.5 mile from the site. This site is designated as I (industrial) on the City's General Plan. Land uses surrounding this site are primarily industrial with minimal commercial or residential uses.

Sites S-2 and S-3 are located adjacent to the MID ROW (Lateral No. 1) between existing industrial buildings south of Yosemite Boulevard. Site S-2 is on a linear parcel running north-south from Yosemite Boulevard, and the tank would be located on the southern portion of the site. Site S-3, immediately to the south, is located on a parcel extending from Garner Road to the west, Leckron Road to the south, and the MID ROW to the north. The tank on Site S-3 would be located on the eastern portion of the site. The land surrounding these sites is industrial. For either of these sites, the tank would be immediately adjacent to the MID canal. The nearest homes are more than 0.5 miles from the site. Both sites are designated as I (industrial) on the City's General Plan. Similar to Site S-1, sites S-2 and S-3 are surrounded by industrial land use with minimal commercial or residential uses.

Tank Pipeline

The purpose of the Southeast Tank pipeline is to connect the Southeast Tank to the main transmission and distribution system at turnout connection C02 along Yosemite Boulevard. All three tank site locations connect to the same point on Codoni Avenue—just to the north of MID Lateral 1. The alignment below describes the pipeline routes to each of the three potential tank sites:

- **Tank Pipeline to Sites S-1, S-2, and S-3.** Commencing at turnout connection C02 approximately 100 ft north of Yosemite Boulevard, the alignment runs south along a dirt road within the MID corridor at parcel APN 009-02-19. At Yosemite Boulevard, the alignment progresses eastward along the north site of the roadway to Codini Avenue. The alignment then progresses south on Codoni Avenue to just north of MID Lateral 1 to connect to Site S-1, S-2, or S-3.

Control Valves

Control valves at MID turnouts and meters are necessary to control flow and/or pressure into the City's transmission and distribution system and to fill the proposed water storage tanks. Therefore, the MID turnouts shown in Figure 2-4 would be equipped with a control valve as part of the proposed project. The control valves would include flow meters and Supervisory Control And Data Acquisition (SCADA) controllers. The locations of the control valves are shown in Figure 2-4.

Each control valve would either require a pit approximately 6 feet deep and 10 feet square, or be located in an aboveground enclosure or building approximately 6 feet high and 10 feet square. Aboveground buildings would use block wall construction and would be surrounding with screening vegetation. The valves would be located within existing streets and other rights-of-way, and would be accessible through a manhole or doorway. Any aboveground buildings would be architecturally designed and painted to blend in with other buildings in the area.

Main Pipelines

In addition to the required infrastructure to fill and pump water from the new tanks, new main pipelines would be necessary to assist in moving the additional supply through the City's distribution system and to maintain adequate pressure throughout the City's transmission and distribution system (Figures 2-4, MRWTP Phase Two Expansion Project and 2-8, Main Pipelines). These pipelines would enhance the City's operational flexibility by allowing treated surface water supplies to be delivered to areas predominantly served by groundwater, and which have experienced declining water quality, reduced water pressure, and loss of well capacity.

Three pipelines would be built: the East-West main pipeline, the North-South main pipeline, and the Southern main pipeline. Seven potential alignments have been identified: two for the East-West pipeline, two for the North-South pipeline, and three for the Southern pipeline. The East-West main pipeline would be approximately 17,200 feet long, the North-South main pipeline approximately 23,900 feet long, and the Southern main pipeline approximately 14,600 feet long. The pipelines would range between 16 and 24 inches in diameter, and would be constructed primarily within existing City ROW. Additionally, pipelines would be constructed, to the extent feasible, in conjunction with any proposed roadway improvements.

East-West Main Pipeline

The purpose of the East-West main pipeline is to convey water to the western part of the City, east of Hwy 99, from the MID trunk line near Coffee Road.

Briggsmore Avenue Alignment
Commencing at the turnout connection C11 at the intersection of Briggsmore Avenue and Coffee Road, this alignment progresses to the west along Briggsmore Avenue to its connection point into the City's main distribution system at the intersection of Briggsmore Avenue and Sisk Road.

Orangeburg Avenue Alignment
Commencing at meter M07 at the intersection of Orangeburg Avenue, MID Lateral 4, and Citrus Drive, the Orangeburg Avenue alignment progresses westward along Orangeburg Avenue to its connection point into the City's transmission and distribution system at Sisk Road.

North-South Main Pipeline

The purpose of the North-South main pipeline is to convey water to the center of the city from the North Tank site.

Virginia Corridor Alignment[4]
The alignments below describe the pipeline routes from each of the three potential tank sites:

- **Pipeline from Site N-1.** Commencing at proposed tank Site N-1, the Virginia Corridor alignment progresses south on Tully Road to Pelandale Avenue. On Pelandale Avenue, the alignment travels east to the Virginia corridor (the abandoned UPRR corridor) and then south within the corridor to turnout connection point C13, into the City's main distribution system at Coldwell Avenue.
- **Pipeline from Site N-2.** Commencing at proposed tank Site N-2 on Bangs Avenue, the Virginia Corridor alignment progresses south on Tully Road to Pelandale Avenue. On Pelandale Avenue, the alignment progresses east to the Virginia corridor (the abandoned UPRR corridor) and then south within the corridor to turnout connection point C13, into the City's main distribution system at Coldwell Avenue.
- **Pipeline from Site N-3.** Commencing at proposed tank Site N-3 on Pelandale Avenue, the Virginia Corridor alignment progresses west to the Virginia corridor (the abandoned UPRR corridor) and then south within the corridor to turnout connection point C13, into the City's main distribution system at Coldwell Avenue.

Tully Road Alignment
The alignments below describe the pipeline routes from each of the three potential tank sites:

[4] The proposed main pipeline would be consistent with the City's Virginia Avenue Corridor Specific Plan Initial Study/Environmental Assessment (City of Modesto 2003b).

- **Pipeline from Site N-1 and N-2.** Commencing at proposed tank Site N-1 or N-2 on Bangs Avenue, the Tully Road alignment progresses south on Tully Road to Coldwell Avenue. The alignment then progresses east on Coldwell Avenue to its connection point into the City's main distribution system at the intersection of the Virginia Corridor and Coldwell Avenue.
- **Pipeline from Site N-3.** Commencing at proposed tank Site N-3 on Pelandale Avenue, the Tully Road alignment progresses west to Tully Road, then south on Tully Road to Coldwell Avenue. The alignment then progresses east on Coldwell Avenue to its connection point into the City's main distribution system at the intersection of the Virginia Corridor and Coldwell Avenue.

Southern Main Pipeline

The purpose of the Southern main main pipeline is to convey water from the 24-inch diameter trunk line at the intersection of Lapham Drive and Mitchell Road to the downtown core of the City at the intersection of 7th Street and B Street. Due to the location of the Gallo Winery property on Yosemite Boulevard, there are three alternative alignments for this distribution line; two encroach upon Gallo property and one does not.

Yosemite Boulevard Alignment
This alignment does not cross over Gallo property. The alignment begins at the 24-inch diameter trunk line at the intersection of Lapham Drive and Mitchell Road and travels west along Lapham Drive to Empire Avenue, bears south on Empire Avenue to Mono Drive, and then travels west along Mono Drive. At the intersection of Mono Drive and Santa Rosa Avenue, the pipeline progresses north along Santa Rosa Avenue to Yosemite Boulevard, and then travels west on Yosemite Boulevard on the south shoulder of the roadway. Yosemite Boulevard spans Dry Creek with a bridge structure. One option for crossing Dry Creek would be to apply to Caltrans for a permit to hang the waterline from the bridge structure. A more likely option would be to install the pipeline under the creek bed using a bore-and-jack method.

After crossing Dry Creek, the main pipeline continues west along Yosemite Boulevard for a short distance to Morton Boulevard, and then continues south and then west following Morton Boulevard. Morton Boulevard ends at its intersection with 9th Street. The pipeline crosses 9th Street, and would avoid piers and piles from the bridge on 9th Street. On the west side of 9th Street, the pipeline continues west within an access easement along a dirt roadway to B Street. The pipeline then progresses southwest along B Street on the south edge of the roadway to 7th Street. A set of UPRR tracks just before and parallel to 7th Street would be crossed using bore-and-jack methods. The main pipeline then connects into an 18-inch diameter MID trunk main feeding into the downtown water distribution system at the 7th and B Street intersection.

Modesto & Empire Traction (M&ET) Railroad Alignment

Similar to the Yosemite Avenue alignment, the main pipeline for the Modesto & Empire Traction (M&ET) Railroad alignment begins at the 24-inch diameter

trunk line at the intersection of Lapham Drive and Mitchell Road and travels west along Lapham Drive to Empire Avenue, bears south on Empire Avenue to Mono Drive, and then travels west along Mono Drive. At the intersection of Mono Drive and Santa Rosa Avenue, the main pipeline progresses north along Santa Rosa Avenue to the east driveway entrance for the Mono Winery property. M&ET railroad tracks cross through the Mono Winery property and exit the property at this driveway entrance. The alignment for this alternative enters the Mono Winery property at the driveway entrance and runs on a parallel offset on the north side of these railroad tracks. The alignment passes by the front of the main Gallo Winery building.

The M&ET railroad tracks enter the Gallo Winery property from a railroad bridge which spans Dry Creek to the west. One option for crossing Dry Creek would be to obtain permission from the M&ET railroad company to hang the waterline from the bridge structure. A more likely option would be to install the pipeline under the creek bed using bore-and-jack methods. After crossing Dry Creek, the distribution line continues west to Morton Boulevard, and then continues south and then west following Morton Boulevard. Once on Morton Boulevard, the alignment follows the same route as the Yosemite Avenue alignment. As with the Yosemite Boulevard alignment, the main pipeline for the M&ET Railroad alignment connects into an 18-inch diameter MID trunk main feeding into the downtown water distribution system at the 7th and B Street intersection.

Oregon Drive Alignment

Similar to the Yosemite Boulevard alignment, the main pipeline for the Oregon Drive alignment begins at the 24-inch diameter trunk line at the intersection of Lapham Drive and Mitchell Road and travels west along Lapham Drive to Empire Avenue, bears south on Empire Avenue to Mono Drive, and then travels west along Mono Drive to Santa Cruz Avenue. The alignment progresses south on Santa Cruz and then turns west onto Oregon Drive. Oregon Drive is a private road owned by the Gallo Winery to the west of Santa Cruz Avenue. As the alignment travels west on Santa Cruz Avenue, it passes by several winery operations buildings, vats, and tanks and then enters a park area (also owned by Gallo) to the west of the operations buildings. This park area has a fair amount of open space and is well landscaped with various swales, trees, and shrubbery. Dry Creek borders this park area to the west. The main pipeline would be constructed under the creek bed using bore-and-jack installation methods.

To the west of Dry Creek is Beard Brook Park. Upon exiting the west parking lot entrance to Beard Brook Park, the pipeline follows Morton Boulevard westerly to the downtown in a similar manner as the Yosemite Boulevard alignment. As with the other two alternatives, the pipeline in the Oregon Drive alignment connects into an 18-inch diameter MID trunk main feeding into the downtown water distribution system at the 7th and B Street intersection.

Construction

Construction Scheduling

Construction of the project would begin as early as the second quarter of 2006 and would have durations as follows:

Project Component	Approximate Construction Duration
MRWTP Expansion	2–2.5 years
Water Storage Tanks, Tank Pipelines, and Pump Stations	1-1.5 years
Control Valves	6 to 9 months
Main Pipelines	9 to 12 months

Phase Two project downstream facilities would be constructed in two stages, or "tiers." Tier 1 downstream facilities would be constructed concurrently with the MRWTP expansion. Tier 2 downstream facilities would be constructed on completion of the Tier 1 facilities, anticipated to begin in 2007 and continue for approximately 3 years. Tier 1 facilities would include the following:

- The North Tank and associated facilities and pipelines;
- The North-South Pipeline;
- The East-West Pipeline; and
- flow meter and control valve installations located on the MID transmission pipelines.

Tier 2 facilities are as follows:

- The West Tank and associated facilities and pipelines;
- The Southeast Tank and associated facilities and pipelines;
- The Southern Pipeline.

Construction Fencing

MID or the City, as applicable, would require that the construction contractor install temporary fencing to exclude construction personnel and equipment from access to environmentally sensitive areas. This would be specified in the construction contracts.

Construction Methods

MRWTP Expansion, Water Storage Tanks, and Pump Stations

The exact number of workers needed to construct the project would be determined by the contractor and would depend largely on the construction schedule. Types of construction activities typically involved in constructing a project of this nature may include:

- site preparation and earthwork (grading, excavation, backfill);
- concrete delivery, forming, and placement, and rebar placement;
- structural steel work (assembly, welding);
- electrical/instrumentation work;
- masonry construction; and
- installation of mechanical equipment and piping.

Pipeline Systems and Control Valves

The various pipelines would primarily be installed in existing public ROWs and would be completely buried. The control valves would be located entirely in public ROWs. Isolation valves (used to close segments of a pipeline) would be installed at specific locations to close off segments of the pipeline for maintenance or repair. If necessary, additional construction easements may be acquired from adjacent properties. Pipeline construction would progress at a rate of 175 to 500 linear feet per day, depending upon local conditions.

Staging Areas

Staging areas would be needed to store pipe, construction equipment, and other construction-related material. The precise locations of staging areas are not known at this time and would be determined just prior to construction. Staging areas would likely be established along the pipeline routes where space is available, such as vacant lots, parcels, or parking lots. In some cases, staging areas may be used for the duration of project component construction. In other cases, as pipeline construction moves along the route, the staging area would be moved to minimize hauling distances and avoid disrupting any one area for extended periods. Staging areas would not be located in sensitive-habitat areas. MID or the City, as applicable, would be empowered to approve the locations of the staging areas as part of the contracts for construction of their respective facilities.

Open-Trench Installation

Pipelines would be installed in open trenches typically using conventional cut-and-cover construction techniques. The key steps in the construction process are:

1. surface preparation;
2. trench excavation/shoring;
3. pipeline installation;
4. trench backfilling; and
5. surface restoration.

The main pieces of equipment that may be used are:

- track-mounted excavators
- cranes
- end and bottom dump trucks
- ten-wheel dump trucks
- pavement equipment
- flat-bed delivery trucks
- concrete trucks
- backhoes
- compactors
- front-end loaders
- water trucks
- pile drivers
- forklifts
- compressors/jack hammers

The typical pipeline crew size on site at any one time would be about four to eight workers plus inspectors. Each step in the pipeline construction process is briefly described below.

1. Surface Preparation. This involves removing any structures (such as fences), pavement, or vegetation from the surface of the trench area. Equipment used for this activity may include jackhammers, pavement saws, mowers graders, dozers, loaders, and trucks. Any exclusionary fencing would be installed prior to beginning site preparation.

2. Trench Excavation/Shoring. A backhoe or excavator would be used to dig trenches for pipe installation. In most locations (such as in streets), trenches would likely have vertical sidewalls to minimize the amount of soil excavated and area needed for the construction easement. Soil excavated from the trenches, if of suitable quality, would be stockpiled alongside the trench or in staging areas for later reuse in backfilling the trench, if appropriate. If not reusable, the soil would be hauled offsite for disposal. Disposal options typically include use as graded fill at the treatment plant site, as cover material at sanitary landfills, and as "clean fill" at other yet-to-be-determined sites.

For trenches more than 5 feet deep, shoring is required to protect workers from trench failure and cave-ins. Trench shoring may be generally accomplished by use of one of three support structures:

1. a shield or trench box (a steel-walled box moved along the trench as installation proceeds);
2. speed-shores, which consist of two steel plates braced against opposing trench walls (generally by a hydraulic mechanism); or
3. sheet piling installed with a pile driver or excavator.

Sheet piling is generally used if the shoring must remain in place permanently, or in difficult construction areas. In lieu of shoring, a V-cut trench may be allowable, if space is available.

3. Pipeline Installation. The width and depth of the trench would vary with pipe size and the location along the route, but would generally vary between 3 and 5 feet wide and three times the pipeline diameter deep. Maximum depth would be approximately 6 feet, where a 24-inch pipeline is installed.

Pipeline trenches, in any given location, would be open for 2 to 3 days on average. During construction, vertical wall trenches would be temporarily closed at the end of each workday, either by covering with steel plates or backfill material or by installing fences to restrict access.

Trenching would not be necessary when jack and bore is used. Instead, typical construction would involve directional bores. Construction would involve the excavation of launching and receiving pits at either end of a bored section. The areas required for launching and receiving vary based on the size of the boring equipment, but typically are 30–40 feet square on the launching side and 10–20 feet square on the receiving side. Once bores have been completed, the pipeline would be placed inside the tunnel that has been created.

During pipeline installation, a traffic control plan would be implemented as described below under Environmental Commitment TC-1.

4. Trench Backfill. Dump trucks would be used to deliver imported backfill material to stockpiles near the trenching operation (or jack and bore pit, if necessary). Native soil would be reused for backfill to the greatest extent possible; however, it may not have the properties necessary for compaction and stability. Backfill material would typically be placed in layers around and over the pipe. A vibratory compactor would then compact and consolidate the fill material. This process would be repeated in approximately 6-inch layers until the trench is filled to its original level. The final layer below the surface may consist of crushed aggregate base material of an appropriate depth for areas to be repaved.

5. Surface Restoration. The final step in the installation process would be to restore the surface. Where the pipe is installed in a paved roadway, repaving would be the final step. New asphalt or concrete pavement would generally be placed to match the surrounding road type. For asphalt repaving, a temporary asphalt patch material may be installed to allow traffic to use the roadway immediately after construction. A crew would follow the pipe installation crew and prepare the road surface for repaving. Final repaving may be done after pipe

installations are complete for a whole street or street segment. For unpaved and unlandscaped surfaces, restoration would generally involve replacing the topsoil and replanting with annual grasses, if needed for erosion control. This would also apply to the restoration of jack and bore pits.

Jack-and-Bore Installation

Under the proposed project, jack-and-bore techniques would be used for the crossing of Dry Creek and crossings of railroad tracks, and may also be used at key roadway intersections and utility congestion locations. Jack-and-bore is a trenchless technique for installing underground pipelines without disturbing the ground surface above the pipeline. Powerful hydraulic jacks are used to push pipe from a launch (bore) pit to a receiving pit. As the tunneling machine is driven forward, jacking pipe is added into the pipe string.

Slurry, typically bentonite (an inert clay), is used as a drilling lubricant, and would be processed by separating solids from the slurry and discharging the clear liquid to waterways or storm drains. Groundwater levels in tunneled areas would need to be identified prior to construction to determine the extent of dewatering required at the jack pits. Dewatering of launching and receiving pits may require groundwater pumping, which would be contained on-site and discharged to the sanitary sewer, or alternately discharged to waterways or storm drains. Appropriate National Pollutant Discharge Elimination System (NPDES) permits would be obtained for dewatering and slurry waste operations, as discussed in the *Environmental Commitments* section below.

In general, mobilization and demobilization of equipment for each jack-and-bore section would take approximately 1 month.

Operations

Staffing

MID would operate the expanded MRWTP. As required by law, operators would be licensed by the California Department of Health Services. Typical plant operations involve routing flows; starting, stopping and adjusting pumps, blowers and other equipment; hosing down basins and equipment; reading flow meters and taking water samples for testing; performing laboratory tests and documenting results; and maintaining and repairing equipment. Additional staff at the MRWTP would consist of up to 5 people. The plant would continue to operate 24 hours a day, 7 days a week, with staff continuing to work in shifts.

The City would need to hire one or two additional pump mechanics to properly maintain the new downstream facilities.

Energy Use and Operational Emissions

Electricity would continue to be the primary form of energy consumed at the Phase Two facilities, and would be supplied by MID. Anticipated energy consumption associated with the MRWTP Phase Two Expansion is estimated to be approximately double the facility's current energy consumption, totaling approximately 1.8 million kilowatt-hours (mkw) per year. No additional backup generators would be necessary at the facility.

The pump stations at the water storage tanks would have an energy demand of between 325 and 375 kilowatts (kw) (North Tank), and 225 and 275 kw (West and Southeast Tanks). Backup generators would be provided for the pump stations at the tanks, and would be of sufficient capacity to run the pumps to ensure ongoing operations in the event of a power outage.

The project facilities will be designed to be as energy efficient as possible. The proposed project will not involve any activities involving burning of agricultural material.

Solid Waste Generation

The Phase Two project is not expected to generate a substantial amount of solid waste, with the exception of solids which the MRWTP will extract from the source water during treatment. The Phase Two expansion is anticipated to generate approximately 1.5–2 dry tons of solids per day. This material would be dewatered and temporarily stored at the MRWTP site, then disposed of at a suitable, licensed landfill, consistent with the current practice at the MRWTP.

Chemical Use/Hazardous Materials

The treatment of domestic water requires the use of several types of chemicals used as fuels, flocculants (to make suspended particles adhere to each other), and disinfectants. It is anticipated that some or all of the following chemicals will be used in the treatment process or to power equipment and will be stored or generated on the MRWTP site:

- flocculants, including aluminum sulfate, and cationic, anionic, and non-ionic polymers;
- disinfectants, including ozone and sodium hypochlorite;
- corrosion inhibitors, including calcium hydroxide, carbon dioxide and sodium hydroxide;
- diesel fuel; and
- natural gas.

Chemical storage facilities already exist on site, and were designed and built in accordance with the Uniform Fire Code and with concurrence from the Stanislaus County Consolidated Fire Department. Secondary containment of chemicals is provided for all tanks and chemical feed piping. The water storage tanks sites would also store relatively small amounts of either diesel fuel or natural gas for use in their backup power generators. None of the project facilities are anticipated to use asbestos or to disturb known sites of asbestos contamination.

Both the City and MID currently have comprehensive emergency management plans for emergency response to a release or threatened release of any hazardous material used, transported, stored, generated, or handled within their jurisdictions. These plans would be updated to include any new elements of the Phase Two project. In the event of an accidental release, emergency response plans would provide emergency responders with a protocol for containing and disposing of the unintentional release.

Water Transfer

As part of the proposed project, MID has filed a petition with the State Water Resources Control Board (SWRCB) for a water transfer to the City of up to 67,200 afa. This transfer and the associated facilities described above will supply water in support of current and planned growth within the City of Modesto as envisioned in the City and MID's 2000 Urban Water Management Plan (City of Modesto and MID 2000), the City's Urban Area General Plan (City of Modesto 1995a), and the Urban Area General Plan Master EIR (City of Modesto 2003a).

The water to be transferred is currently being used for agriculture and recreation purposes. It is stored in Don Pedro Reservoir and delivered to agricultural land in MID's service area under Water Right License 11058 (Application 14127) issued by the State of California to MID and Turlock Irrigation District (TID). MID has petitioned the SWRCB to transfer a portion of MID's share of water licensed for agriculture and recreation under the MID-TID Joint License 11058, to the City for municipal and industrial use, to be effective from January 1, 2005 through December 31, 2054.

It should be noted that even with the MRWTP Phase Two expansion, the City would be responsible to maintain and expand its water well system as necessary to meet customer demand.

Section 3.4, *Water Resources*, in this SEIR provides more detail on background information regarding the transfer, outlines the current water supply and demand and the projections on which the project is based, and discloses any operational, hydrologic, and water quality changes that would result from the project. Section 3.9, *Biological Resources*, discloses any effects on biological resources. Key information related to the water transfer petition, upon which MID and SWRCB can base their findings, is included in Chapter 6, *Water Transfer Petition Information*.

Use of the 1990 MRWTP EIR

This SEIR is a subsequent document to the 1990 EIR prepared by MID (MID 1990). Impacts and mitigation measures identified in the 1990 EIR are presented in Appendix C, *Significant Impacts and Mitigations, Alternative A3, Modesto Surface Water Treatment Plant (from Final EIR for the Modesto Surface Water Treatment Plant, 1990).* These mitigation measures would apply to the current project where relevant, as identified in Appendix C. While the 1990 EIR addressed the current project, because of the additional level of detail known about the project at this time and the potential for changed conditions since the certification of the 1990 EIR, the preparation of the SEIR is considered warranted to disclose any such changes.

The SEIR substantially updates the previous EIR to disclose any new conditions, such as new rules and regulations, changed physical setting, or changes in the project as proposed, that could lead to new or more severe impacts. In particular, the following issues are addressed:

- **Downstream City facilities.** Most of the downstream facilities were identified in the 1990 EIR, but not subjected to environmental analysis in that document. As such, these components receive an entirely "new" analysis in the SEIR.
- **Growth projections.** Since 1990, the City has adopted a new General Plan with updated growth projections. The SEIR updates the 1990 EIR to reflect the current growth projections, which are lower than those projected in 1990.
- **Water Supply.** Since 1990, the water supply and demand setting has changed significantly, including reduced ability of the City to rely on groundwater as a source. While water supply impacts are anticipated to be similar to or less than those identified in the 1990 EIR, the SEIR verifies this through presentation of updated data.
- **Air Quality.** The United States Environmental Protection Agency (EPA) downgraded the air quality designation of ozone in the San Joaquin Valley Air Basin (which includes the Modesto area) from serious nonattainment to extreme nonattainment.
- **Other changes.** Other changed conditions, including changes in State law, that lead to new or more severe impacts are updated in the SEIR, and are discussed in the relevant technical chapters.

Alternatives to the Proposed Project

As discussed above, nine locations for the water storage tanks and seven alternative main pipelines, as well as a no-project alternative and a delayed alternative are evaluated and serve to fulfill the California Environmental Quality Act (CEQA) requirement for an alternatives analysis for the City's project components. All nine potential tank sites and seven main pipeline alignments are

analyzed in the impact assessment in Chapter 3, and a summary of the findings regarding these alternative tank sites and main pipeline alignments is presented in Chapter 5.

Alternatives associated with the expansion of the MRWTP were previously analyzed in the 1990 EIR, and will not be revisited in this SEIR. These included four main alternatives, several with multiple sub-alternatives. Primary characteristics of the alternatives included alternate treatment plant locations and methods of conveying water from Don Pedro Reservoir to the treatment plant. More detailed descriptions of the 1990 EIR alternatives are located in Chapter 5. Alternative A from the 1990 EIR was chosen and eventually built due to its diversion near Modesto Reservoir, a high quality water source, which required less treatment and fewer miles of open-water laterals than the other alternative plant sites considered in that EIR.

In reviewing the project as currently proposed, no new information of substantial importance has been discovered that indicates that any of the alternatives found to be infeasible in the 1990 EIR would in fact be feasible and would substantially reduce one or more of the current project's significant impacts.

Environmental Commitments

MID and/or the City will implement applicable environmental commitments and mitigation measures from the 1990 EIR during construction and operation of the Phase Two project. Relevant environmental commitments and mitigation measures from the 1990 EIR are presented in Appendix C.

In addition, to reduce or eliminate construction-related effects and enhance the environmental quality of the project area, MID and/or the City will implement the following environmental commitments, as applicable. These measures will be implemented at a site-specific level, as appropriate. These commitments would be enforced through inclusion in contract documents for the construction contractor where appropriate.

General Construction Measures

To reduce or eliminate construction-related effects, the following environmental commitments will be implemented during construction of the proposed project. These measures will be implemented as appropriate, depending on the location of construction and surrounding land uses.

GC-1 Temporary road striping, signing, traffic lighting, and traffic control will be implemented for residential and business areas affected by construction. (City of Modesto facilities)

GC-2 Continuous access and parking provisions will be provided for residences and business areas. (City of Modesto facilities)

GC-3 Existing landscaping that is removed or damaged during construction will be replaced. Areas without landscaping that are disturbed by construction will be allowed to return to a natural vegetated state. Standard erosion control practices will be implemented in compliance with current state regulations to ensure restoration is successful and to minimize soil loss. (City of Modesto and MID facilities)

GC-4 Planned road improvements (e.g., raised medians, turn lanes, street alignments) will be coordinated to minimize disruptions associated with this project and other projects. (City of Modesto facilities)

GC-5 Work area in residential areas will be restricted to the maximum length of open trench for a given segment at any given time (i.e., 200 to 500 feet). (City of Modesto facilities)

GC-6 Dust suppression and cleanup provisions (e.g., street sweeping, sidewalk cleaning, and debris removal) will be implemented, as needed by the City of Modesto. (City of Modesto facilities)

GC-7 Roadway surfaces damaged by construction activities, including hauling operations, will be restored to preexisting conditions. (City of Modesto and MID facilities)

GC-8 A point of contact will be established to handle ongoing public outreach and address construction concerns. Affected residents will be notified prior to onset of construction in their area regarding contact information for this point of contact. (City of Modesto facilities)

GC-9 Fact sheets and public updates to inform the community about progress of the project will be provided. (City of Modesto facilities)

GC-10 Community facilities affected by construction will be restored to preexisting conditions. (City of Modesto and MID facilities)

Pipeline Installation in Intersections

PI-1 For construction of pipelines in certain intersections, jack-and-bore construction techniques will be implemented when warranted. Jack and bore involves tunneling beneath the intersection such that the intersection itself is not adversely affected, as described previously.

Air Quality

AQ-1 The project will comply with San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) Regulation VIII to control the generation of construction-related fugitive dust (PM10) emissions during construction activities. SJVUAPCD Regulation VIII is summarized

below in Table 2-1, *San Joaquin Valley Unified Air Pollution Control District Regulation VIII Control Measures for Construction Emissions of PM-10*.

Table 2-1: San Joaquin Valley Unified Air Pollution Control District Regulation VIII Control Measures for Construction Emissions of PM-10

PM10 dust controls required to be implemented at all construction sites:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes shall be effectively stabilized of dust emissions using water or a chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
- When materials are transported off-site, all material shall be covered or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

Source: SJVUAPCD 2002.

AQ-2 MID and/or the City, as applicable, will require all construction contractors employed during any phase of project construction to ensure that diesel and gasoline-powered equipment is correctly tuned and maintained according to manufacturer specifications and California air quality regulations. This requirement will be incorporated into project construction documents (plans and specifications) to ensure that it is contractually enforceable. The project applicant will similarly ensure that all vehicles and other equipment used for operation and maintenance activities once the project is on line are tuned and maintained per manufacturer specifications and current California regulations.

Water Quality Protection Measures

WQ-1 Because the proposed project is anticipated to result in the disturbance of more than 1 acre, coverage under the Central Valley Regional Water Quality Control Board's (RWQCB's) NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit) will be obtained. Obtaining coverage under the General Construction Permit requires that MID and the City obtain permit coverage and prepare a stormwater pollution prevention plan (SWPPP) for their respective portions of the project.

The SWPPP is required to describe the best management practices (BMPs) that will be implemented to control accelerated erosion, sedimentation, and other pollutants during and after project construction. The specific BMPs that will be incorporated into the erosion and sediment control plan and SWPPP will be determined during the final design phase of the Phase Two project, and will be implemented by the construction contractor in accordance with the RWQCB Field Manual. As a performance standard, these measures selected will represent the Best Available Technology that is economically achievable, and will be selected to achieve maximum sediment removal and water quality protection.

At a minimum, the SWPPP shall provide for the following measures during construction:

- regular and thorough street sweeping program;
- detailed Hazardous Materials Spill Prevention Control and Countermeasure Plan (see environmental commitment WQ-2); and
- pavement inspection and repair program.

WQ-2 As part of its NPDES General Construction Permit, a Hazardous Material Spill Prevention Control and Countermeasure Plan will be prepared for the use of construction equipment for the proposed project, and will minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction of the project. This plan will describe storage procedures and construction site housekeeping practices and identify the parties responsible for monitoring and spill response. The measures and monitoring procedures required under the General Construction Permit will minimize the potential for release of hazardous materials to the environment. The City and/or MID, as applicable, will review and approve the Hazardous Materials Spill Prevention Control and Countermeasure Plan before allowing construction to begin. The project proponent will routinely inspect the action area to verify that the BMPs specified in the plan are properly implemented and maintained, and immediately notify the contractor if there is a noncompliance issue and shall require compliance.

WQ-3 The federal reportable spill quantity for petroleum products, as defined in the U.S. Environmental Protection Agency's (EPA's) Code of Federal Regulations (CFR) (40 CFR 110) is any oil spill that (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If a spill is reportable, the contractor's superintendent would notify the Stanislaus County Department of Environmental Resources and the California Department of Toxic Substances Control (DTSC), which have spill response and clean-up ordinances to govern emergency spill response. A written description of reportable releases must be submitted to the RWQCB. This submittal must include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases would be documented on a spill report form.

If a reportable spill has occurred and results determine that project activities have adversely affected groundwater quality in excess of water quality standards, a detailed analysis will be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials (ASTM) standards, and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the City, MID, and/or their contractors will select and implement measures to control contamination, with a performance standard that groundwater quality must be returned to baseline conditions. These measures will be subject to approval by the City and MID.

Noise-Reducing Construction Practices

The following environmental commitments apply to construction activities related to the downstream facilities.

NR-1 The construction contractor will employ noise-reducing construction practices such that noise from construction does not exceed applicable City or County noise ordinance limits. Measures that may be used to limit noise may include but are not limited to:

- locating equipment as far as practical from noise-sensitive receptors, including residences and occupied hospital facilities;
- using sound control devices (e.g., properly operating mufflers) on construction equipment and vehicles;

- using noise-reducing enclosures around noise-generating equipment (i.e., engines), and shrouds or shields around impact tools; and
- limiting the hours of construction activities to the hours indicated in subsection (b) of section 4-9.103 from the City's Noise Ordinance (between 9:00 p.m. and 7:00 a.m., daily and 9:00 p.m. and 9:00 a.m. Saturdays, Sundays, and Federal and State holidays) when work is within 150 feet of residences.

NR-2 The construction contractor will prepare a detailed Noise Control Plan based on the construction methods proposed. This plan will identify specific measurements that will be taken to ensure compliance with the noise limits specified above. The noise control plan will be reviewed and approved by the City/MID before any noise-generating construction activity begins.

NR-3 Prior to construction, the City and/or MID will notify residences along the construction areas of the construction schedule in writing. MID/City will designate a noise disturbance coordinator, who will be responsible for responding to complaints regarding construction noise. The coordinator will determine the cause of the complaint and will ensure that reasonable measures are implemented to correct the problem. A contact telephone number for the noise disturbance coordinator will be conspicuously posted on construction site fences and will be included in the written notification of the construction schedule sent to nearby residents in the identified range. These duties may be delegated to the City's contractor in the project specifications.

Paleontological Resources

CR-1 If paleontological resources are discovered during ground-disturbing activities, the construction contractor shall stop work in that area and within 100 feet of the find until a qualified paleontologist can assess the significance of the find and develop appropriate treatment measures. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection, and may also include preparation of a report for publication describing the finds. The City or MID, as applicable, shall be responsible for ensuring that the recommendations of the paleontologist regarding treatment and reporting are implemented.

Hazardous Materials Phase 1 Site Assessment

HM-1 Prior to constructing project facilities, the City will engage in further investigation of available environmental records of hazardous materials sites to determine whether the project sites pose any risks. For storage tank sites and pipeline alignments, a Phase I site assessment will be

conducted in accordance with ASTM standards, and any recommendations to reduce risks associated with hazardous materials contamination given in that assessment will be implemented to the satisfaction of the appropriate hazardous materials agencies before construction begins. If Phase I assessments indicate the potential for contamination within or adjacent to the tank site or pipeline alignment, Phase II studies will be completed before construction begins. Phase II studies will include soil and groundwater sampling and analysis for anticipated contaminating substances. If soil or groundwater contaminated by potentially hazardous materials is exposed or encountered during construction, the appropriate hazardous materials agencies will be notified. A work plan to characterize and possibly remove contaminants may be required by the appropriate hazardous materials agencies.

HM-2 MID and the City currently have comprehensive emergency management plans for emergency response to a release or threatened release of any hazardous material used, transported, stored, or handled at the MRWTP or City wells. This plan will be updated to reflect the Phase Two project. In the event of an accidental release, emergency response plans would provide emergency responders with a protocol for containing and disposing of the unintentional release.

Construction Screening

CS-1 Construction staging areas for equipment, personal vehicle parking, and material storage shall be sited as far as possible from major roadways, and locations shall be approved by the City or MID as appropriate. The locations of the staging areas shall be reflected in the contract documents.

CS-2 Opportunities for screening staging areas with existing topography and vegetation will be maximized. If chain-link security fencing is placed around such areas, slats or screening of an earth tone or other neutral color should be used unless obstruction of views into the area poses a security concern.

CS-3 Construction work hours will be limited to reduce construction impacts on residences near the selected downstream facilities locations.

Site Design

SD-1 To reduce visibility from roads and sensitive land uses, the north and west storage tanks and aboveground pressure valve buildings will be placed well away from the site boundaries. These storage tanks and pressure valves will be designed to conform to the existing character of the surrounding land use through use of matching paint colors, fencing materials, and landscaping. The painting palette for each site will be

selected to match the colors and tones of the surrounding neighborhood. Building materials used in the tanks and valves will be selected to match the character of surrounding land uses.

SD-2 To reduce visibility of the structure's height and bulk, partial burial of the north and west water storage tanks and/or control valves will be implemented where feasible. If located in aboveground structures, block wall screening and landscaping will be used.

SD-3 To minimize any effects from introduced light sources and reflected light, all structures and hardware surfaces (with the exception of the southeastern tank) will be finished with paint or other treatments to minimize daytime glare and reflectivity, including components such as grates, railings, piping, roofs, and other metal fixtures. All surfaces affected by the proposed project will be covered with non-glare surfacing.

SD-4 To reduce the effects of night illumination, all lights (with the exception of those at the southeastern tank) will be shielded and directed away from sensitive uses and the sky. Lighting will be internally directed with low-level intensity, sufficient only to detect movement within facility grounds. The quantity of lights used shall be the minimum required for property security to minimize incidental light. The lights shall be focused only where needed (such as building entrances) and should not provide a general "wash" of light on building surfaces. Lights shall be cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light onto adjacent properties and open space. All lights shall provide good color rendering and natural light qualities. Low-pressure sodium and high-pressure sodium fixtures that are not color-corrected shall not be used. The lighting design shall also meet minimum safety and security standards.

SD-5 To ensure compatibility with surrounding land uses, gates and fencing consistent with the neighborhood will be installed around the north and west tanks. Gates and fencing that are visible from public roadways should be similar to those existing in nearby rural residential neighborhoods. Appropriate fencing materials would include block wall construction with adequate landscaping around the perimeter of facility walls. Appropriate gate materials include wood or black wrought iron (or aluminum fashioned to mimic iron).

SD-6 A combination of earth berms, landscaping, and/or tree screening along the perimeter of the north and west tank sites will be provided. Trees can be used for screening purposes. (See *SD-7* regarding landscaping program)

SD-7 A landscaping program will be implemented for the north and west tank sites and aboveground pressure valve buildings. The landscaping program should be developed by a licensed landscape architect in cooperation with the project engineer. The primary goal of the program

should be to guide location, selection, installation, and maintenance of landscaping along public roadways and around new facilities to screen views, minimize exposed surface area, and maintain consistency with the surrounding character. Species selection should reflect and respect the existing mature plantings associated with residences in the area and the remaining native vegetation. The program should mandate maintenance of the landscaping for optimum survivorship, vigor, and appearance, including provisions for irrigation, pruning, mulching, and replacement planting. The owner of the facility will be responsible for maintenance of vegetation on the tank sites.

The plant palette of the landscaping shall reflect species that are native and indigenous to the project area. The species used should include trees, shrubs, and an herbaceous understory of varying heights, as well as evergreen and deciduous types. Plant variety will increase the effectiveness of the screen by providing multiple layers, seasonality, more diverse habitat, and reduced susceptibility to disease. Large shrubs that may be used as part of the landscaping for their density and color are *Heteromeles arbutifolia* (toyon), *Fremontodendron* "Ken Taylor" (hybrid flannel bush), *Ceanothus* "Ray Hartman" (Treasure Island blueblossom), and *Cercis occidentalis* (western redbud). Potential tree species that may be used for their height and structure include *Platanus acerifolia* "Bloodgood" (London plane), *Sequoia sempervirens* 'Aptos Blue' (coast redwood), and *Quercus suber* (cork oak).

Traffic Control Plan

TC-1 The City will require that the contractor prepare and implement a Traffic Control Plan in order to mitigate the project's construction-related traffic impacts. The Traffic Control Plan will ensure that adequate level of service is maintained, or in areas where level of service standards are not being met, that the project will not further degrade level of service. The Traffic Control Plan will also reduce potential safety hazards and other risks associated with construction activities. The contractor will develop and implement a Traffic Control Plan as part of the overall Construction Management Plan, in accordance with City and Caltrans policies. The Traffic Control Plan will be implemented throughout the course of project construction, and will include the following elements to reduce traffic congestion and improve traffic safety along all impacted roadways.

- Ensure internal coordination on the part of the City regarding construction hours of operation and lane closures. Develop a plan for communicating construction plans with transit providers, emergency service providers, residences, and businesses located in the project vicinity, and anyone else who may be affected by project construction.

- Follow all City guidelines for lane closures caused by construction activities.
- Limit lane closures during peak commuting hours to the extent possible. Identify roadway segments or intersections that are at or approaching level of service (LOS) that exceeds local standards, and provide for construction-generated traffic to avoid these locations at the peak periods, either by traveling different routes or by traveling at non-peak times of day. No lane closures will be allowed during peak commuting hours where level of services standards are not currently met.
- Install traffic control devices as specified in the California Department of Transportation's *Manual of Traffic Controls for Construction and Maintenance Works Zones* (California Department of Transportation 1996).
- Require traffic controls in the construction zones, including flag persons wearing bright orange or red vests and using a "Stop/Slow" paddle to control oncoming traffic.
- Require that access to driveways and private roads outside the immediate construction zone be maintained at all times.
- Develop a business notification plan for access to local businesses in and adjacent to the construction zone.
- Provide alternate routes for bicyclists and pedestrians during sidewalk, bike lane, and recreation trail closures.
- Provide notification to the public of temporary closures of roadways, sidewalks, bike lanes, and recreation trails. Require that advance notice signs of upcoming construction activities be posted at least 1 week in advance, so that motorists, bicyclists, and pedestrians are able to avoid traveling through the project area during these times.
- Consult with emergency service providers and develop an access and circulation plan for use by emergency vehicles when lane closures and/or detours are in effect. If lane closures occur, provide advance notice to local fire and police departments to ensure that alternative evacuation and emergency routes are designed to maintain response times.
- Construction warning signs should be posted in accordance with local standards or those set forth in the Manual on Uniform Traffic Control Devices (FHWA 2001), in advance of beginning construction in a particular area and at any intersection that provides access to the construction area;
- Require that written notification be provided to all contractor employees regarding appropriate routes to and from the construction site, and the weight and speed limits on local roads used to access the construction site;

- Specify that signs be posted at all active construction areas giving the name and telephone number or e-mail address of the City staff person designated to receive complaints regarding construction traffic.

Uses of this EIR

As indicated above, the SEIR is an informational document for decision-makers. CEQA requires that decision-makers review and consider the SEIR in their consideration of this project. The City and MID are joint lead agencies responsible for certifying the SEIR. Agencies with subsequent permit review or approval authority over the project are summarized in Table 2-2, *Summary of Local, State, and Federal Discretionary Actions*. These are responsible agencies under CEQA and will use the SEIR as the environmental basis of their decisions.

The SEIR can also be used to approve subsequent downstream facilities. To obtain this approval, a Findings of Conformance would need to be obtained for a subsequent project to confirm that the environmental impact analysis in this SEIR could apply to a subsequent project.

Table 2-2. Summary of Local, State, and Federal Discretionary Actions

Agency	Permit/Review Required
Modesto Irrigation District	Lead agency – project approval
City of Modesto	Lead agency – project approval
California Air Resources Board	Authority to construct
Utility Companies	Drawing review/approvals (utility crossings)
California Department of Fish and Game	Incidental take permit, if state-listed species affected
	Streambed Alteration Agreement, if required
Caltrans	Encroachment Permit (Highway 132 right-of-way)
State Water Resources Control Board	Petition for Water Rights Transfer
Regional Water Quality Control Board	General construction stormwater discharge permit
	Permit under Section 401 of the Clean Water Act, if required
U.S. Army Corps of Engineers	Permit under Section 404 of the Clean Water Act if jurisdictional waters or wetlands affected
U.S. Fish & Wildlife Service	Approval of incidental take permit (under Section 10 of the federal ESA) if potential for effect on listed wildlife species; consultation under Section 7 of the federal ESA if Corps permit required and potential for effect on listed species
State Historic Preservation Office	Possible compliance with Section 106 of the National Historic Preservation Act if Corps permit required and potential for effect on cultural resources.