

FIGURE 3-10
Proposed Solano Irrigation District Improvements

Not to Scale

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Wastewater Collection System

On-Site Collection System

Sanitary sewer gravity lines would be constructed on the project site and within the streets to serve residential and commercial buildings. These gravity lines would flow north towards Peña Adobe Road (see Figure 3-11).

Off-Site Improvements

Two alternative alignments to convey wastewater from the project site to an existing off-site point of connection have been identified. This EIR considers the potential environmental effects of installing either alignment. Figure 3-11 shows the alignment options. Each option is described in more detail below.

Option 1 would require constructing a pump station at the north end of the valley near Peña Adobe Road, and a force main to the top of the ridge. The full build-out of the residential projects would occur over a long period of time. If the pump station option (Option 1) is chosen, it would be required with initial occupancy. The sewage flows generated in the initial phases would be small compared to the capacity of the pump and force main. This would result in a pump station that cycles less frequently, or storage in the force main until enough sewage is generated to push the volume over the top of the ridge. Mechanical elements would be included to accommodate the initial low flows. These could include circulation pumps within a wet-well, or adding raw water to fill up the pump more quickly with larger volumes. The pump station would include two submersible pumps for emergency back-up during peak flows, automatic level controls, SCADA panel, odor control, and an emergency diesel back-up generator. The equipment and controls would be enclosed in a masonry building. The force main would be sized to accommodate peak flows and would be constructed in the Butcher Trail right-of-way. From the ridge, a gravity main would be constructed down the north side of the ridge to the existing connection point on Butcher Trail. The force main and gravity lines would be constructed within the existing paved access road from the Lagoon Valley to the Butcher Trail connection point.

Sewer Option 2 would require a crossing of I-80 at the north end of the valley near Peña Adobe Road, construction of a gravity line parallel to the north side I-80 between the existing creek and the freeway right of way, and another crossing back across I-80 to the connection point in the Butcher Trail. This option would require two crossings under I-80 and Laguna Creek, and acquisition of property or easements for the sewer line along the north side of I-80, outside of the current City limit.

If Sewer Option 2 is constructed, a 20-foot deep, 300-foot-long section of pipeline would need to be installed for the pipeline using jack-and-bore methods under I-80 and Laguna Creek. The line would continue for approximately 1,000 feet across private property. At this point, the line would need to cross Alamo Creek. Jack-and-bore construction would be required to cross the creek without disruption to the creek bed and riparian habitat. The line would continue another 800 feet across private property. The line would cross back under I-80 for 275 feet, approximately 20 feet deep, to the existing sewer main in Butcher Road.

Regardless of the option selected, the sewer system developed for the project and connected to City system at Butcher Road would be dedicated to the City as a public system.

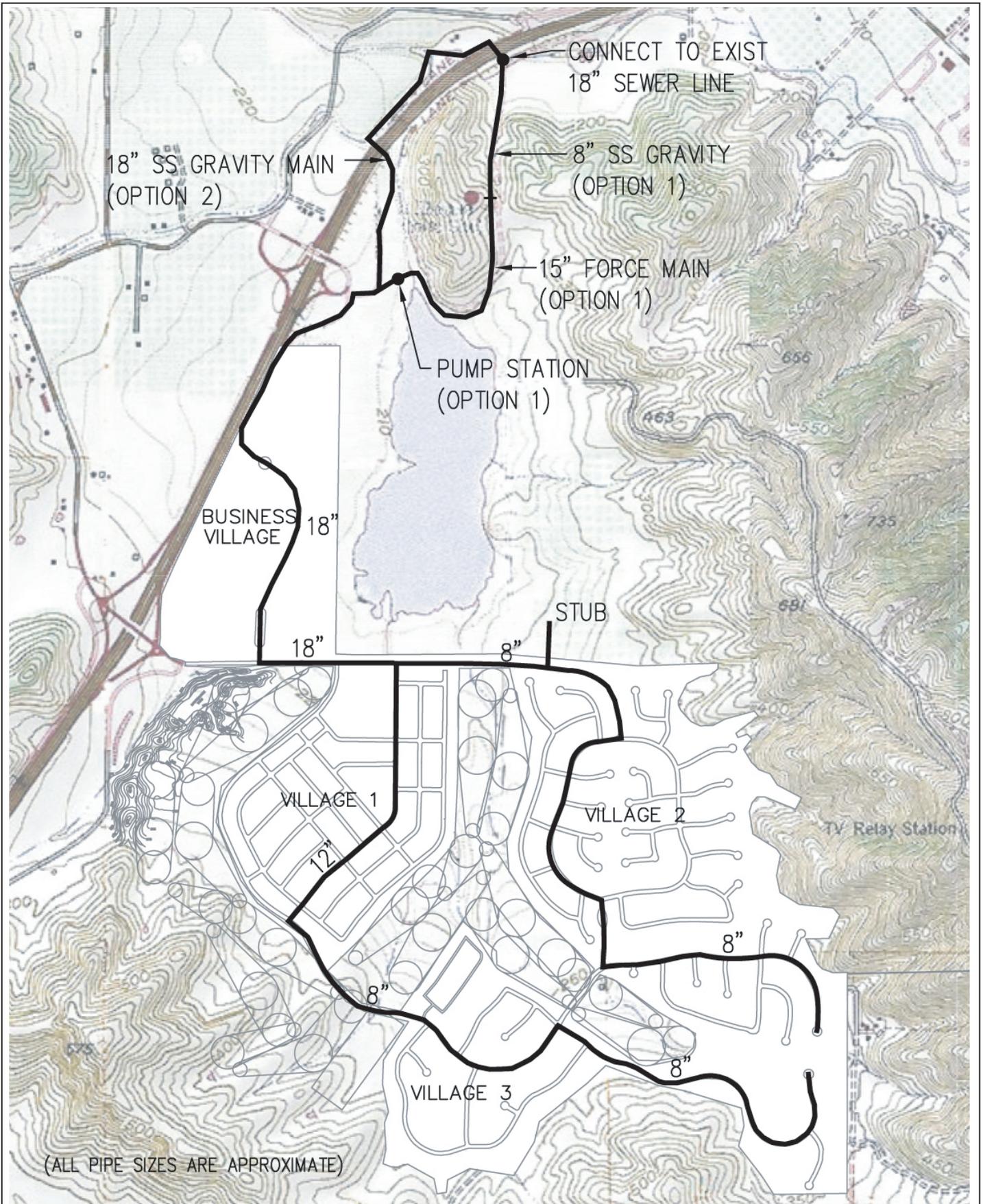


FIGURE 3-11
Sanitary Sewer Main Improvements

10794-00 **Source:** City of Vacaville, 2004

City of Vacaville

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Wastewater Treatment and Conveyance

Wastewater from the Proposed Project would be treated at the City's Easterly Wastewater Treatment Plant. A planned expansion of the plant to accommodate growth throughout the City, including the Proposed Project, will be completed in 2004, prior to project occupancy. Implementation of the residential and business village components of the Specific Plan would require increasing the capacity of two segments of the Elmira Road trunk sewer. These improvements were previously identified in the City's *Development Impact Fee Study* (1992) and are included in the City's Capital Improvement Projects (CIP) planning. The sewer line upgrades would be implemented regardless of whether the Proposed Project is approved. However, if development proceeds in Lower Lagoon Valley, installation of the pipelines would be accelerated.

Storm Drainage

The eastern portion of the Specific Plan area drains through pipelines directly into the lake. The remainder of the project site drains towards the lake but flows in a drainage channel along the western side of the lake. Both the lake and the channel drain by way of the Lagoon Drain into Laguna Creek, which flows into Alamo Creek.

Stormwater Collection

Stormwater detention facilities would be included in the project site to restrict stormwater runoff from the residential and business village areas to 90 percent of pre-development flows into the lake and adjacent drainage channel. Proposed project storm drainage facilities are shown in Figure 3-12. Preliminary analysis indicates approximately 40 to 60 acre-feet of detention storage would be needed for the residential portion of the project. Small water features and ponds throughout the golf course would be used to provide the required amount of storage. The proposed detention features would be designed to serve as a visual amenity for the golf course, create opportunities to preserve and enhance wildlife habitat, and would provide water quality treatment using basin settlement areas to reduce suspended solids in stormwater runoff entering the lake, and ultimately Laguna and Alamo creeks.

Runoff from the proposed business village would be routed to detention basins, swales, or other treatment devices within the business village site prior to discharging into the Bypass Channel. Approximately 1 to 5 acre-feet of storage would be required and provided by these features.

The project would upgrade the existing lake intake pipe structures that would receive flows from the proposed detention ponds. Further, the proposed business village area (Area 2) would be required to provide on-site detention facilities.

The Proposed Project would construct new stormwater drainage systems within the proposed streets, which would consist of catch basins and pipes sized to accommodate the City's hydraulic requirements. The stormwater drainage system would discharge directly into the detention facilities or into the "creeks" throughout the neighborhoods that flow to the detention facilities.

Filtering bio-swales would be used throughout Villages I, II and III to decrease stormwater runoff. For some streets within the Village III, the Proposed Project would install grassy swales along the streets where possible to convey runoff to the storm system.