



4.17

WATER RESOURCES, WATER QUALITY, AND FLOODPLAINS

4.17.1 INTRODUCTION

Key sources of information about water resources and hydrological conditions in the Project study area were summarized in the FEIR and included the *Silicon Valley Rapid Transit Corridor Location Hydraulic Study Technical Report* (Earth Tech, Inc. 2003). During the Preliminary Engineering phase, additional hydrologic and hydraulic analysis studies for water resources were conducted and corresponding reports prepared (see Chapter 13, *Bibliography*). The primary objectives of the studies were to support the Project design such that the Project's trackway is protected from a 100-year flood event, the Project does not exacerbate the upstream and downstream flooding or change local flooding conditions, and the Project does not impact water quality.

4.17.2 ENVIRONMENTAL SETTING

The environmental setting included in the FEIR for weather and climate, groundwater resources, surface water resources, and floodplains remains applicable in the SEIR. Please refer to the FEIR, Section 4.18.2, for this discussion.

4.17.3 REGULATORY SETTING

The regulatory setting included in the FEIR describing the federal Clean Water Act, floodplain management laws and regulations, Porter-Cologne Water Quality Control Act, and several local laws and regulations remains applicable in the SEIR. Please refer to the FEIR, Section 4.18.3, for this discussion.

4.17.4 PROJECT IMPACTS AND MITIGATION MEASURES

Several design changes merit discussion of potential Project impacts to water resources, water quality, and floodplains. These changes include the addition of a box culvert at Berryessa Creek; the addition of impervious surfaces at the Montague/Capitol and Berryessa stations; the addition of two detention basins at the yard and shops facility; the modification of the yard and shops facility footprint; and the relocation or addition of electrical, communication, and other critical facilities along the alignment and within station areas. Also, the FEIR did not include a discussion of pump stations and the collection of groundwater seepage/rainwater during the operation of the BART Extension Project. Therefore, the discussion is provided here.

As stated in the FEIR, VTA has coordinated, and will continue to coordinate, with the Alameda County Flood Control and Water Conservation District, Santa Clara Valley Water District (SCVWD), Alameda County Public Works Agency, Milpitas Department of Public Works, San Jose Department of Public Works, Santa Clara Department of Public Works, and other regulatory agencies to ensure the proper design of drainage facilities, to include appropriate measures for flood protection, and to minimize impacts to pipelines and supporting facilities.

Design Change 9. Berryessa Creek. The FEIR includes the BART alignment passing over Berryessa Creek on a new 100-foot-long bridge. During the Preliminary Engineering phase of the Project, this design was changed to include a new, multi-cell box culvert for Berryessa Creek. BART would pass over the creek on this new structure. This design change is consistent with planned flood control projects by the SCVWD and the U.S. Army Corps of Engineers on Berryessa Creek to provide flood protection from a 100-year flood event in the cities of Milpitas and San Jose. These agency flood control projects are planned to be in place prior to completion of the BART Extension Project, which would mean that the BART trackway alignment near Berryessa Creek from south of Calera Creek to south of Montague/Capitol Station would not require additional flood protection. This area also includes the two retained cut options (long and short) south of Curtis Avenue. If the Berryessa Creek improvements were not completed as planned, appropriate flood protections would be provided.

Design Change 17. Montague/Capitol Station and Design Change 23. Berryessa Station. At the Montague/Capitol Station, new property acquisition would include the areas east and west of Gladding Court to be designated as surface parking and/or future transit facilities. At the Berryessa Station, new property would be acquired to the east of the railroad ROW and north of Mabury Road, also designated as surface parking and/or future transit facilities. These areas are already developed; therefore, the increase in impervious areas at these

stations would be limited and have minimal impact on storm water runoff or groundwater recharge.



As discussed in the FEIR, drainage systems would collect runoff from BART facilities and would be designed to convey the surface flow generated by a 10-year storm event. Compliance with National Pollutant Discharge Elimination System (NPDES) and/or municipal separate storm sewer systems (MS4) permit requirements would be implemented and would include best management practices (BMPs) to reduce pollutants from storm water runoff, as described in the FEIR. To facilitate groundwater recharge, if necessary, engineered methods that either reduce the hardscape or otherwise allow for infiltration would be included in the Project.

Design Change 51. Yard and Shops Facility. Several design changes occurred to the yard and shops facility from the Conceptual Engineering phase to the Preliminary Engineering phase. Two of these changes are applicable to this water resources section: an increase in the facility footprint, and the addition of two detention basins.

During the Conceptual Engineering phase, the yard and shops facility was designed to encompass approximately 59 acres, which would accommodate a start-up fleet of 161 train cars. During the Preliminary Engineering phase, the facility was reconfigured to save space and accommodate the full build out of 240 train cars. Under this configuration, the yards and

shops facility would encompass approximately 69 acres. Because the yard and shops facility would be located on the former UPRR Newhall Yard, as well as on a portion of the Food Machinery Corporation (FMC) manufacturing facility, and possibly a portion of the Arcadia Development Company site, the facility would not add a substantial amount of impervious surface, as it would replace existing development.

The drainage system for the yards and shops facility was also modified and two detention basins were added. One detention basin would be located in the City of San Jose. The other detention basin would be located in the City of Santa Clara. Detention basins serve to detain water temporarily to reduce peak discharges and then slowly release the water to the storm sewer system by gravity flow. Standard components of a detention basin include the basin itself with designated side slopes, a safety fence, an inlet, a low flow outlet, an overflow outlet, an emergency spillway, and various mechanisms for removal of pollutants. Some portions of the yard and shops facility would not discharge to the detention basins and would discharge directly to the storm sewer system through storm drains on the property. Regardless of whether water is released to the storm sewer system through the detention basins or through direct discharge, compliance with NPDES and/or MS4 permit requirements would be implemented and would include BMPs to reduce pollutants from storm water runoff, as described in the FEIR.

Relocation or addition of electrical, communication, and other critical facilities. There are several design changes that include the relocation or addition of electrical, communication, and other critical facilities such as traction power substations, gap breaker stations, train control buildings, and vent shaft openings, as shown on Figure 4.17-1. In accordance with BART Facilities Standards, Release 1.2 (May 2004), these facilities must be located above the 500-year floodplain elevation. This is the largest probabilistic flood used for planning, management, and design; it has a 0.2 percent probability of being exceeded in any given year. Where critical facilities are located below the 500-year floodplain elevations, the facilities would be raised above the 500-year floodplain level.

Pump stations. Pump stations collect groundwater seepage and/or rainwater at the lowest elevation points of the alignment, i.e. in the tunnel bores, in underground stations, in the retained cut segments, and underneath roadways that are reconfigured to pass under the alignment. In cases of emergency, pump stations also collect water discharged from fire hydrant valves. Discharge of the water collected by the pump station would be to either the storm sewer system or sanitary sewer system and would comply with NPDES and/or MS4 permit requirements and/or publicly owned treatment works pretreatment requirements to reduce pollutants.

CONCLUSION

The design changes would not expose people or structures to the risk of flooding; violate water quality standards or waste discharge requirements; create or contribute runoff that would exceed the capacity of existing or planned drainage systems; or provide substantial additional sources of polluted runoff. The design requirements and best management practices related to water resources, water quality, and flood-plains included in the FEIR remain applicable. No mitigation is necessary.



Figure 4.17-1: Design Changes and Locations of Relocated or Added Critical Facilities