

Section 3.10 Hydrology and Water Quality

Introduction

This section discusses the environmental setting and effects of the alternatives analyzed in this Supplemental DEIS with regards to hydrology and water quality. Specifically, this section discusses existing hydrology and water quality conditions within the Capitol Expressway Corridor and describes applicable regulations pertaining to hydrology and water quality. The assessment of adverse effects and mitigation measures of the alternatives related to hydrology and water quality are also described. A summary of this information can also be found in the Capitol Expressway Corridor Background Report, which is available from VTA Environmental Programs upon request.

Existing Conditions

FLOODING

Santa Clara Valley is historically subject to frequent flooding events. Flooding was recorded as early as 1889, and major recent flood events occurred in 1982, 1995, and 1997. The Light Rail Alternative Alignment would cross the Federal Emergency Management Agency (FEMA) 100-year flood hazard zone of Silver Creek from approximately Tully Road north to the end of the alignment (Figure 3.10-1) (Federal Emergency Management Agency 1996). Additionally, flooding has occurred along portions of Coyote Creek in 1911, 1917, 1931, 1958, 1969, 1982, 1983, and 1998 (Santa Clara Basin Watershed Management Initiative 2000). However, because of flood hazard protection measures implemented by SCVWD, recent major flood events have not resulted in severe damage to people or structures within this area (Santa Clara Valley Water District 2003). Nevertheless, areas within the SCVWD that require protection from a 100-year flood event still exist.

Environmental Consequences

APPROACH AND METHODS

This assessment evaluates the potential for construction and operational activities under the proposed alternatives to adversely affect the environmental conditions within the Capitol Expressway Corridor with respect to hydrology and water quality. Where applicable, mitigation measures are provided to minimize anticipated adverse effects.

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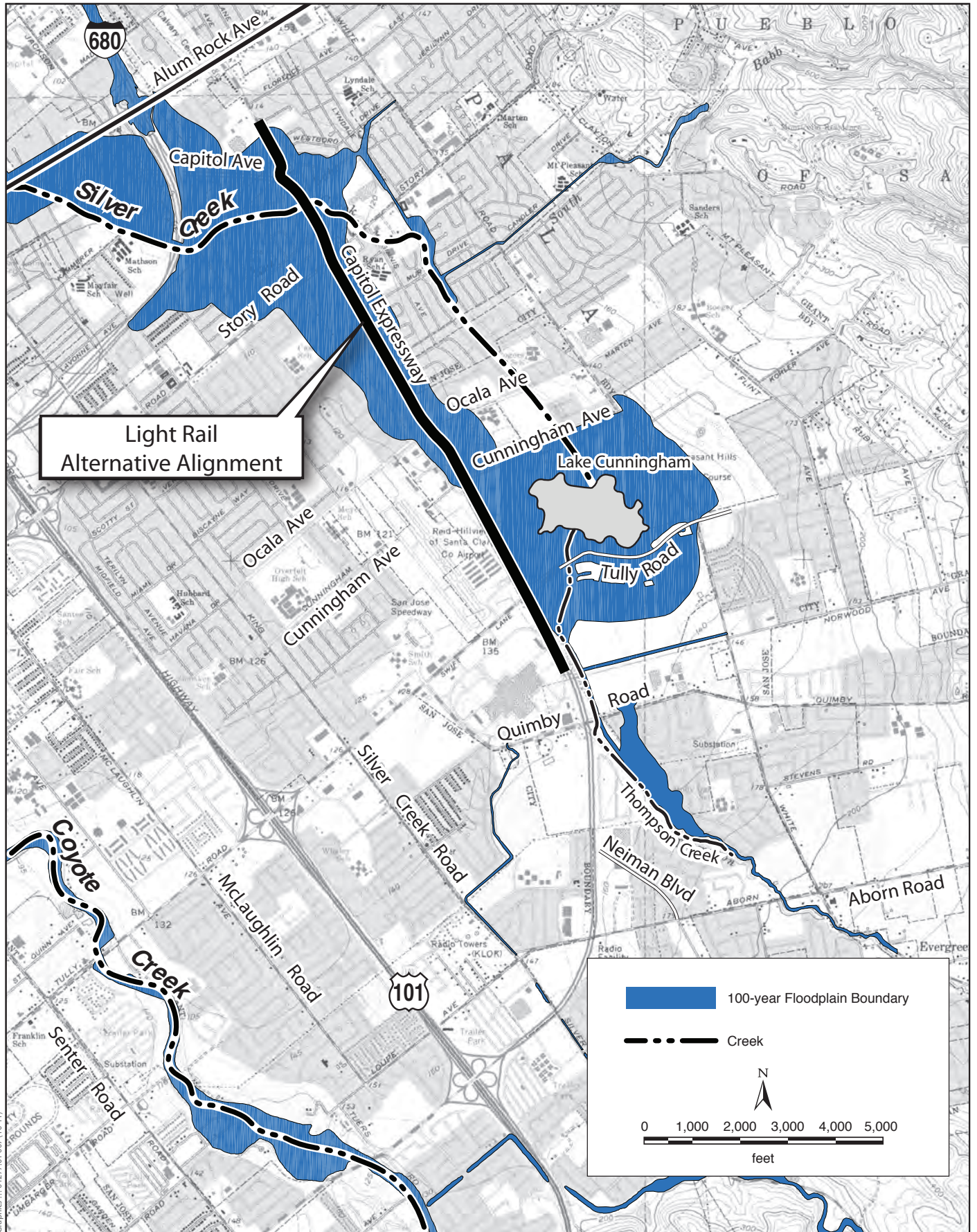


Figure 3.10-1
Watershed Areas and Flood Hazard Zones

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EFFECTS AND MITIGATION MEASURES

No-Build Alternative

The No-Build Alternative is not anticipated to result in any impacts to hydrology or water quality.

Light Rail Alternative

Hydrology and water quality effects related to construction is included in Section 3.18 *Construction*.

Impact: Violation of Water Quality Standards or Waste Discharge Requirements

Implementation of the Light Rail Alternative could result in increased levels of water quality pollutants or other polluted discharges either during construction or during operation at the proposed park-and-ride lots and light rail stations. As a result, there is potential for violation of existing water quality standards or water discharge requirements. This is considered an adverse effect. However, implementation of the following mitigation measure would minimize this effect and ensure that no violations would occur.

Mitigation: HYD-1 – Comply with All Applicable Regulations and Permits Related to Water Quality Control

In implementing the project, VTA shall comply with the federal Clean Water Act, including all National Pollutant Discharge Elimination System (NPDES) permit requirements. VTA shall obtain coverage under the State Water Resources Control Board’s Construction General Permit for Storm Water, Order No. 2009-0009-DWQ (CGP), and shall comply with all applicable requirements. These include temporary construction best management practices (BMPs) related to land grading and disturbance and (after September 2012) permanent water quality post construction standards.

VTA shall require the construction contractor to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to improve water quality during construction. This includes BMPs for erosion prevention, sediment control, waste management, and spill prevention/housekeeping.

If the project continues past September 2012, VTA will implement the CGP post-construction standards for those areas in VTA-owned right-of-way. This includes the requirement for all construction sites to

match pre-project hydrology to help ensure that the physical and biological integrity of aquatic ecosystems are sustained. In addition, a long-term maintenance plan (minimum of five years) shall be developed in accordance with the CGP requirements and will describe the procedures to ensure that the post-construction storm water management measures are adequately maintained.

For those areas in City or County right-of-way, VTA shall implement water quality measures required pursuant to provision C.3 of the Municipal Regional Stormwater NPDES permit (Order No. R2-2009-0074). This permit requires projects that result in the displacement of more than 43,560 square feet (1 acre) of impervious surface to implement treatment BMPs to the maximum extent practicable (MEP). BMPs may include detention/retention units, infiltration structures, swales, sand filters, wetlands, or other low impact development measures that improve water quality.

Impact: Creation or Contribution of Additional Runoff, Including Increasing Additional Sources of Polluted Runoff

Under the Light Rail Alternative, facilities would be constructed that would increase the amount of impervious surface in the Capitol Expressway Corridor area. However, because the corridor is largely urbanized, the additional contribution to runoff under this alternative is considered minimal; therefore, the amount of new impervious surfaces is not expected to exceed the capacity of existing or planned drainage systems. The increase in impervious surface could, however, generate new sources of contamination, including sediment, pesticides, oil and grease, metals, bacteria, and trash. This is considered an adverse effect. Implementation of the following mitigation measures would minimize this effect.

Mitigation: HYD-1 – Comply with All Applicable Regulations and Permits Related to Water Quality Control

This mitigation measure is discussed above.

Impact: Exposure of People or Structures to Flood Hazards

There are FEMA-identified flood hazard zones within the Capitol Expressway Corridor area. Under the Light Rail Alternative, structures may be constructed in these FEMA-identified flood hazard areas, and these structures could impede or redirect flood flows and expose these and other buildings, as well as people using these structures to flood-related hazards. This is considered an adverse effect. However, implementation of the following mitigation measure is recommended to minimize this effect.

Mitigation: HYD-2 – Construct Facilities to Minimize Flood Impacts

Where feasible, VTA shall locate all facilities outside of FEMA identified flood hazard areas. Facilities constructed within a flood hazard area shall be designed and engineered to withstand a 100-year flood event. For facilities with potential to impede or redirect flood flows, a floodplain investigation shall also be completed that identifies the change in flood elevations as a result of the project facilities, and VTA shall file a Letter of Map Revision with FEMA.

Impact: Depletion of Groundwater Supplies or Interference with Groundwater Recharge

Operation of light rail facilities proposed under the Light Rail Alternative would not generate substantial water demand, nor would it be anticipated to interfere substantially with groundwater recharge.

Construction impacts related to depletion of groundwater supply or interference with groundwater recharge are included in Section 3.18 *Construction*.

No adverse effects. No mitigation required.

Proposed Options

The above discussion is inclusive of the Light Rail Alternative options.

CUMULATIVE EFFECTS

No-Build Alternative

The No-Build Alternative would not contribute to cumulative impacts on hydrology and water quality.

Light Rail Alternative

The Light Rail Alternative in combination with other reasonably foreseeable projects could potentially result in cumulative impacts on hydrology and water quality. However, implementation of Mitigation Measures HYD-1 and HYD-2 (refer to Section 3.18 *Construction* CON-9 and CON-10) would minimize the Light Rail Alternative's contribution to adverse cumulative hydrology and water quality impacts.

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