

3.8 - Hydrology and Water Quality

3.8.1 - Introduction

This section describes the existing hydrology and water quality setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on the City of Morgan Hill Sewer System Master Plan, the City of Morgan Hill Storm Drainage Master Plan, the City of Morgan Hill Urban Water Management Plan, the Preliminary Engineers Report for Wet Utilities prepared by Ruggeri-Jensen-Azar & Associates (RJA), and a Water Supply Assessment prepared by Akel Engineering. The Engineer’s Report and Water Supply Assessment are included in this EIR and Appendix J.

3.8.2 - Environmental Setting

Climate

Morgan Hill is characterized by a Mediterranean Climate, with warm summers, mild winters, and low precipitation. Temperatures in the Morgan Hill area range from an average high of 88.1°F in July to an average low of 37.0°F in December. Rainfall averages 20.96 inches annually. Nearly all precipitation is in the form of rain. General meteorological data for the Morgan Hill area, as measured at the Gilroy weather station, are presented in Table 3.8-1.

Table 3.8-1: Morgan Hill Meteorological Summary

Month	Temperature (°F)		Precipitation (inches)
	Average High	Average Low	
January	59.7	37.2	4.71
February	63.6	40.5	3.79
March	67.3	42.5	3.25
April	72.3	44.3	1.41
May	77.8	48.5	0.40
June	83.7	51.9	0.11
July	88.1	54.1	0.05
August	87.7	54.3	0.05
September	85.5	52.6	0.32
October	78.6	48.0	0.90
November	67.5	41.8	2.22
December	60.1	37.0	3.77
Annual Average	74.3	46.1	20.96
Note: Measurements recorded between 1906 and 2010. Source: Western Regional Climate Center, 2013.			

Regional Hydrology

Morgan Hill is located in the northern most portion of the Central Coast Hydrologic Region of California, within the Pajaro River hydrologic unit and South Santa Clara Valley hydrologic area.

The Central Coast Hydrologic Region extends from southern San Mateo County in the north to Santa Barbara County in the south, covering 11,326 square miles. The region includes all of Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara Counties; most of San Benito County; and portions of San Mateo, Santa Clara, Ventura, and Kern Counties. The Central Coast Hydrologic Region contains diverse topography, microclimates, coastlines, valleys, and communities. Topographically, the extent of the Central Coast region is bound by the Pacific Coastline and the northwest-trending southern Coast Range.

Surface Waters

Major rivers in the northern half of the region (in which the proposed SEQ Area is located) include the San Lorenzo, Pajaro, Salinas, San Benito, Carmel, San Antonio, and Nacimiento Rivers. All rivers within the region drain into the Pacific Ocean.

Within the Central Coast Hydrologic Region, the project site is located within the Pajaro River hydrologic unit. The Pajaro River begins in southern Santa Clara County; spans four counties; and is joined by Pacheco Creek, the San Benito River, and Tres Pinos Creek. The river enters Monterey Bay and the Pacific Ocean west of Watsonville. The Pajaro River watershed is one of the Central Coast region's largest and is well known for its productive agricultural soils and powerful flooding characteristics. Within the Pajaro River hydrologic unit, the project site is located within the South Santa Clara hydrologic sub-area.

Localized Drainage

According to the Morgan Hill General Plan, five creeks traverse Morgan Hill. Coyote and Fisher Creeks drain north to the San Francisco Bay (via the San Francisco Hydrologic Region). Edmunson, Tennant, and West Little Llagas Creeks are located in the Central Coast Hydrologic Region and flow into Monterey Bay.

Three creeks—Tennant, Foothill, and Maple—flow within the SEQ Area and are all tributaries to Coralitos Creek, which drains to the Monterey Bay. Tennant Creek runs in a generally north-south direction mainly along Hill Road. The majority of the creek within the SEQ Area runs in engineered channels, though there are several reaches that are daylighted. Foothill Creek runs in a generally east-west direction and is in its natural condition until its waters are rerouted through an engineered channel at approximately Tennant and Foothill Avenues. Maple Creek occurs in its natural state for a relatively short distance onsite before its flows are rerouted through an engineered channel.

SEQ Area

There is minimal existing storm drain infrastructure in the vicinity of the SEQ Area (including the High School site). The existing storm drain system includes the following:

- 24-inch, 15-inch, and 12-inch pipes west of Condit Road, which provide drainage for the sports field and aquatics center east of Condit Road and existing developed properties east of Condit Road, and
- 42-inch pipes in San Pedro Avenue, which provides drainage for existing residential areas northeast of the SEQ Area.

One Capital Improvement Program project is planned to improve system capacity and service in the SEQ Area:

- Upsize the existing San Pedro Avenue storm drain to 48-inch. This project has not been completed by the City.

All existing storm drains outfall into Madrone Channel north of Tennant Avenue. There is no existing storm drain infrastructure south of Tennant Avenue.

Surface Water Quality

The SWRCB indicates that Coyote Creek is designated as an impaired water body on the EPA Clean Water Act Section 303(d) List of Water Quality Limited Segments. Coyote Creek is affected by diazinon from urban runoff or sewers.

Groundwater

Groundwater information for the Llagas subbasin was obtained from the California Department of Water Resources Bulletin 118. Below is a summary of the relevant information.

Santa Clara County is located at the southern tip of the San Francisco Bay and is divided into three interconnected subbasins that transmit, filter, and store water. It encompasses approximately 1,300 square miles, making it the largest of the nine Bay Area counties. Groundwater is primarily located in unconsolidated gravel, sand, silt, and clay within a series of convergent alluvial fans of streams. Groundwater is transported through the gravelly alluvial fan into the deeper confined aquifer of the central part of the valley. The County's subbasins filter water, making it suitable for drinking and for municipal, industrial, and agricultural uses. In general, the groundwater conditions throughout the County are very good.

Basin Boundaries and Hydrology

The project site is located within the Llagas subbasin of the Gilroy-Hollister Valley basin in the southern part of the County. The Llagas subbasin extends from the groundwater divide at Cochrane

Road in northern Morgan Hill south to the Pajaro River in the south. The Diablo Range bounds the subbasin on the east and the Santa Cruz Mountains on the west. The principal water-bearing formations within the subbasin are the Santa Clara Formation and the valley fill materials.

Groundwater Levels and Quality

Groundwater elevations in the Llagas Subbasin are fairly stable, except during severe drought years. Groundwater quality is considered good; however, nitrate concentrations in excess of federal standards have been found in private wells. All public wells meet federal drinking water standards.

Flood Hazard Areas

As shown in Exhibit 3.8-1, several areas of the SEQ Area are mapped as being within a 100-year flood plain. These areas are associated with the banks and channels of Foothill Creek, Maple Creek, Tennant Creek and Madrone Channel, as well as some low-lying areas near Tennant Creek. The High School site is not located within the 100-year flood plain.

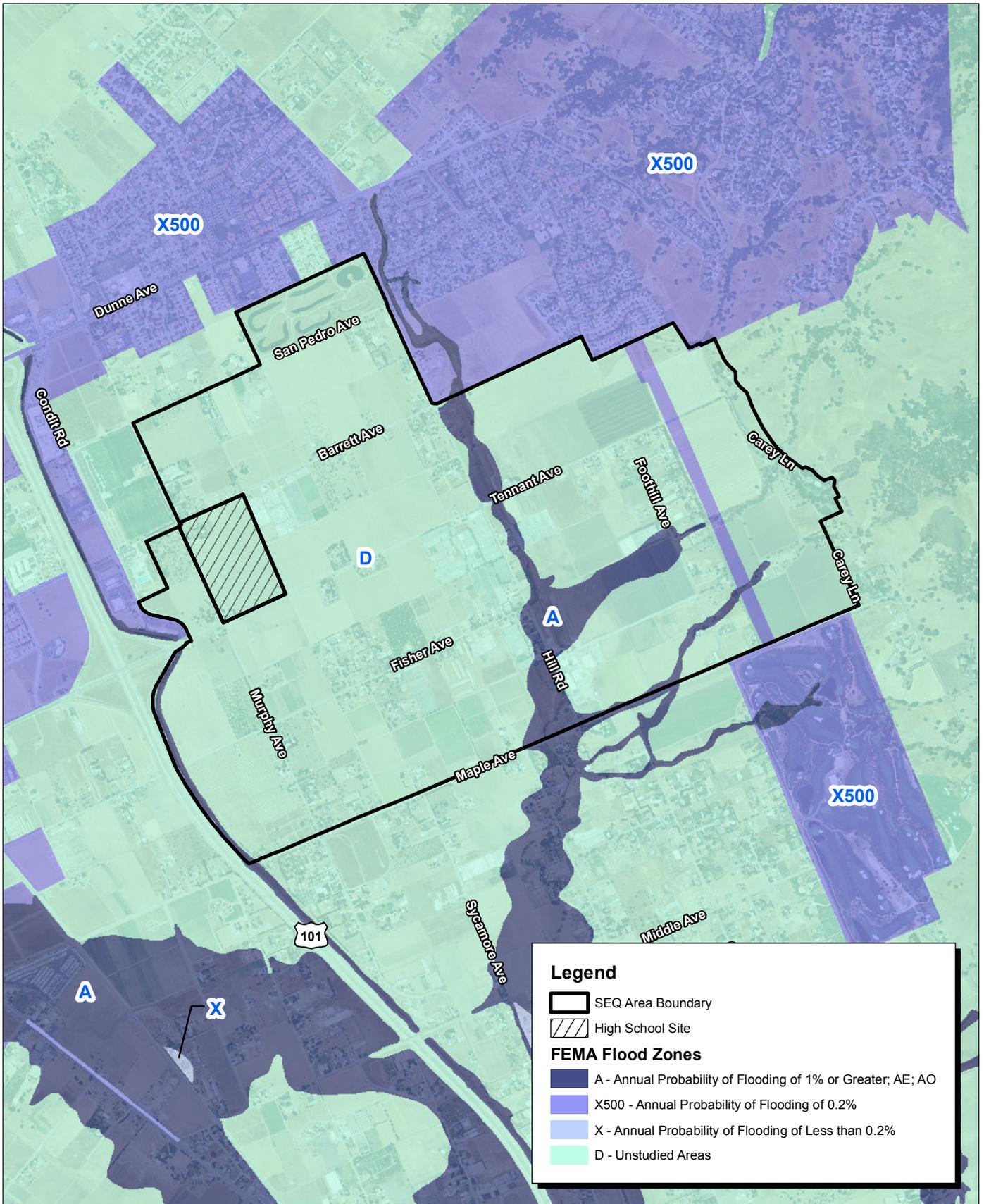
3.8.3 - Regulatory Framework

Federal

Clean Water Act

Section 303 of the Clean Water Act requires states to adopt water quality standards for all surface waters of the United States. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards. See a description of the State Porter-Cologne Water Quality Control Act, below. Standards are based on the designated beneficial use(s) of the water body. Where multiple uses exist, water quality standards must protect the most sensitive use.

Section 402 of the Clean Water Act mandates that certain types of construction activity comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) stormwater program. The Phase II Rule, issued in 1999, requires that construction activities that disturb land equal to or greater than 1 acre require permitting under the NPDES program. In California, permitting occurs under the General Permit for Stormwater Discharges Associated with Construction Activity, issued to the State Water Resources Control Board (SWRCB) and implemented and enforced by the nine Regional Water Quality Control Boards (RWQCBs). The project site is within the boundaries of the Central Coast RWQCB.



Source: NAIP Santa Clara County, CA (2009). FEMA NFHL Data (August 2012).



Exhibit 3.8-1 100-Year Flood Hazard Areas

This General Permit requires all dischargers, where construction activity disturbs one (1) or more acres, to take the following measures:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP), which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving offsite into receiving waters.
2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.
3. Perform inspections of all BMPs.

To obtain coverage, the landowner must file a Notice of Intent with the SWRCB. The notice is required to include the requirements listed above. When project construction is completed, the landowner must file a notice of termination.

Floodplain Regulations

Executive Order (EO) 11988 for Floodplain Management (May 24, 1977) directs all federal agencies to evaluate potential effects of any actions it may take in the floodplain and to avoid all adverse impacts associated with modifications to floodplains. It also directs federal agencies to avoid floodplain development whenever there is a practicable alternative and to restore and preserve the natural and beneficial values served by the floodplains.

The Federal Emergency Management Agency (FEMA) oversees floodplains and administers the National Flood Insurance Program (NFIP) adopted under the National Flood Insurance Act of 1968. The program makes federally subsidized flood insurance available to property owners within communities that participate in the program. Areas of special flood hazard (those subject to inundation by a 100-year flood) are identified by FEMA through regulatory flood maps titled Flood Insurance Rate Maps. The NFIP mandates that development cannot occur within the regulatory floodplain (typically the 100-year floodplain) if that development results in an increase of more than 1 foot in flood elevation. In addition, development is not allowed in delineated floodways within the regulatory floodplain.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 authorized the SWRCB to provide comprehensive protection for California's waters through water allocation and water quality protection. The SWRCB implements the requirement of the Clean Water Act Section 303, indicating that water quality standards have to be set for certain waters by adopting water quality control plans under the Porter-Cologne Act. The Porter-Cologne Act established the responsibilities and authorities

of the nine RWQCBs, which include preparing water quality plans for areas in the region, identifying water quality objectives, and issuing NPDES permits and Waste Discharge Requirements. Water quality objectives are defined as limits or levels of water quality constituents and characteristics established for reasonable protection of beneficial uses or prevention of nuisance. The Porter-Cologne Act was later amended to provide the authority delegated from EPA to issue NPDES permits.

Central Coast Regional Water Quality Control Board

Post-construction requirements for hydromodification control and Low Impact Development (LID) have been established for projects under the jurisdiction of the Central Coast Regional Water Quality Control Board (RWQBC), which includes the SEQ Area. These requirements are intended to provide “at-the-source” solutions to the impacts of development on watersheds and encourage runoff from watersheds to mimic pre-development conditions. The RWQBC requirements focus on infiltration as the primary means to treat runoff from smaller storms for water quality purposes and decrease the amount of runoff to protect watercourses from erosion.

There are several impervious area thresholds that trigger various requirements. Site design and runoff reduction are triggered at 2,500 square feet, water quality treatment at 5,000 square feet, runoff retention at 15,000 square feet and peak management at 22,500 square feet. Site design measures include defining a development envelope, conserving natural areas, concentrating development on less permeable soils, etc. Runoff reduction measures encourage directing runoff to landscaping and LID structural control measures such as bioretention, rainwater harvesting and reuse, pervious pavement, vegetated roofs and soil amendments. Where LID is not feasible, infiltration basins, dry wells, constructed wetlands, etc are encouraged. Runoff retention requires the 95th percentile storm to be retained onsite and infiltrated. The 95th percentile storm is currently defined as 95 percent of all 24-hour storms of depths greater than 0.1 inches. A Stormwater Control Plan is required to demonstrate how this would be accomplished.

Local

City of Morgan Hill

General Plan

The Morgan Hill General Plan establishes the following policies and actions related to water quality and conservation that are applicable to the proposed project:

Community Development

- **CD Policy 21a:** Manage the supply and use of water more efficiently through appropriate means, such as watershed protection, percolation, conservation and reclamation.
- **CD Policy 21b:** Ensure that new development does not exceed the water supply.
- **CD Policy 21c:** Support cooperation among all jurisdictions and agencies pumping water from wells in order to manage the aquifer to preserve the natural ecology of the region, secure the aquifer’s utility as a water resource and ensure the water’s quality.

- **CD Policy 21d:** Encourage the Santa Clara Valley Water District to continue developing programs to assure effective management of water resources, such as well monitoring, percolation of imported water, reclamation and conservation.
- **CD Policy 21e:** Each South County jurisdiction and agency pumping water from wells should be responsible for knowing the demand that its well pumping imposes on the direction of flow of water and how it affects others that are pumping from the same aquifer, in order to prevent adverse impacts on existing groundwater contamination problems.
- **CD Policy 21f:** Protect streambeds and other appropriate percolation areas from encroachment by urban development.
- **CD Policy 21g:** Encourage development of water reclamation facilities where feasible, in order to make reclaimed water available to help meet the growing water needs of the South County region.
- **CD Policy 22a:** Address issues related to flooding throughout the city.
- **CD Policy 22b:** Ensure that those residents who benefit from, as well as those who contribute to the need for, local drainage facilities pay for them.
- **CD Action 22.2:** Require developers of individual projects to mitigate on- and off-site drainage impacts and, where appropriate, install local drainage facilities which would contribute to an eventual area-wide solution to local drainage problems.
- **CD Action 22.4:** Require a storm water management plan for each proposed development, to be presented early in the development process and describe the design, implementation and maintenance of the local drainage facilities.
- **CD Action 22.6:** Require developers of individual projects to provide mitigation of drainage impacts and protection of ground-water quality. Such mitigation may include limiting runoff to pre-development levels and/or complete solutions to local drainage problems in the vicinity of the development or downstream, possibly using detention or retention methods.
- **CD Action 22.8:** Ensure that the level of detention or retention provided on-site is compatible with the capacity of the regional storm drainage system.

Public Health and Safety

- **PHS Policy 4a:** Prepare for impacts associated with potential failure of Anderson Dam.
- **PHS Policy 4b:** Prohibit development in floodways and regulate in floodplains to minimize flood damage and be consistent with the federal flood insurance program and Santa Clara Valley Water District regulations.
- **PHS Policy 4d:** Natural streamside and riparian areas should be left in their natural state in order to preserve their value as percolation and recharge areas, natural habitat, scenic resources, recreation corridors and for bank stabilization.
- **PHS Policy 4f:** Minimize disruption of natural riparian areas by flood control projects needed to protect presently existing development by maintaining slow flow and stable banks through design and other appropriate mitigation measures.

- **PHS Policy 4g:** As flooding affects substantial areas of South County, and the flood control projects now being constructed are designed to protect only existing developed and currently planned urban areas, manage land development to mitigate flooding problems and minimize the need for local public funding for additional flood control and local drainage facilities.
- **PHS Policy 4h:** Areas which are developed or planned for development should be protected by the construction of flood control facilities. Development should be managed through advanced planning and design standards to minimize off-site flooding and drainage problems.
- **PHS Policy 4i:** Give highest priority for construction of flood protection facilities as follows: 1) to areas of existing development subject to the highest potential flood damage; 2) to undeveloped areas planned for urban development which would be subject to the highest potential of flood damage; 3) to agricultural lands; and 4) to other undeveloped areas.
- **PHS Policy 4k:** Require developers whose proposed projects would induce downstream flooding to provide mitigation to eliminate the flood-inducing impacts of their projects.
- **PHS Policy 4l:** If development is to be allowed in flood-prone areas, provide flood control facilities or appropriate flood-proofing prior to or in conjunction with development at developers' expense.
- **PHS Policy 4m:** Where other mitigation measures do not solve the flooding problem, permit raising individual foundations (padding up structures) in appropriate situations; however, its use must be restricted in order to minimize the cumulative effects on adjacent areas.
- **PHS Policy 4n:** Require mitigation of any storm water runoff produced by development that occurs beyond that described in the General Plans of the City and County as of 1982.
- **PHS Policy 4o:** Require all local development to provide appropriate mitigation of off-site flooding impacts, including limiting runoff to pre-development levels and/or complete solutions to flooding and local drainage problems in the vicinity of the development, using such methods as detention or retention.
- **PHS Policy 4p:** Require careful consideration of the cumulative effects of development which would drain into the upper reaches of Llagas Creek and other creeks, in order to avoid the need for channelization and consequent destruction of its riparian vegetation and natural habitat.
- **PHS Action 4.4:** Send all subdivisions and private and public project referrals where activity is located near to floodplain areas to Santa Clara Valley Water District for review prior to City approval.
- **PHS Policy 5a:** Protect water quality from contamination, and monitor it to assure that present policies and regulations are adequate. Prohibit such uses as waste facilities, septic systems and industries using toxic chemicals where polluting substances may come in contact with groundwater, floodwaters, and creeks or reservoir waters.
- **PHS Policy 5d:** Continue to monitor groundwater and surface water quality conditions throughout the South County to determine if changes in regulations regarding septic systems and land use are needed.
- **PHS Policy 5j:** Protect properties located in areas that have soils with rapid water percolation from future development in order to ensure existing water quality. Permit development in such

areas according to the City's Hazardous Materials Storage Ordinance section specifically related to high percolation rates.

- **PHS Policy 5I:** In order to provide greater protection of the aquifers which supply drinking water to the South County, give special consideration to the management of contaminants (e.g., hazardous materials, sanitary effluents) in groundwater recharge areas where no protective aquitard layer exists.

Storm Drainage System Master Plan

The City's existing design standards stipulate that areas larger than one acre shall tie onsite drainage into the City's storm drainage system. Ponding basins on private or public property shall be designed for a 24-hour, 25-year storm event if a reasonable outlet is provided (detention). If no disposal, other than evaporation or percolation irrigation, is provided (retention), a 24-hour, 100-year storm shall be used. The procedure is consistent with the Santa Clara Valley Water District Hydrology Procedures manual. Refer to Section 3.14, Utility Systems for further discussion of the Master Plan.

County of Santa Clara

General Plan

The Santa Clara County General Plan establishes the following policies and actions related to water quality and conservation that are applicable to the proposed project:

County Wide Issues and Policies

- **Policy C-RC 5:** An adequate, high quality water supply for Santa Clara County should be considered essential to the needs of households, business and industry.
- **Policy C-RC 6:** A comprehensive strategy for meeting long term projected demand for water should at a minimum include the following:
 - a. Continued conservation and increased reclamation;
 - b. Securing additional sources as supplemental supply;
 - c. System and local storage capacity improvements; and
 - d. Drought contingency planning and groundwater basin management programs.
- **Policy C-RC 7:** Countywide land use and growth management planning should be coordinated with overall water supply planning by the SCVWD in order to maximize dependability of long term water supply resources.
- **Policy C-RC 11:** Domestic conservation should be encouraged throughout Santa Clara County by a variety of means, including reduced flow devices, drought-resistant landscaping, and elimination of wasteful practices.
- **Policy C-RC 12:** More efficient use of water for agricultural irrigation and industrial processes should be promoted through improved technology and practices.
- **Policy C-RC 18:** Water quality countywide should be maintained and improved where necessary to ensure the safety of water supply resources for the population and the preservation of important water environments and habitat areas.

- **Policy C-RC 20:** Adequate safeguards for water resources and habitats should be developed and enforced to avoid or minimize water pollution of various kinds, including:
 - a. erosion and sedimentation;
 - b. organic matter and wastes;
 - c. pesticides and herbicides;
 - d. effluent from inadequately functioning septic systems;
 - e. effluent from municipal wastewater treatment plants;
 - f. chemicals used in industrial and commercial activities and processes;
 - g. industrial wastewater discharges;
 - h. hazardous wastes; and
 - i. non-point source pollution.

Rural Unincorporated Area Issues and Policies

- **Policy R-RC 8:** The strategies for assuring water quantity and quality for the rural unincorporated areas shall include:
 1. Require adequate water quantity and quality as a pre-condition of development approval.
 2. Reduce the water quality impacts of rural land use and development.
 3. Develop comprehensive watershed management plans.
- **Policy R-RC 10:** For lands designated as Resource Conservation Areas (Hillsides, Ranchlands, Agriculture, and Baylands) and for Rural Residential areas, water resources shall be protected by encouraging land uses compatible and consistent with maintenance of surface and ground water quality.
 1. Uses that pose a significant potential hazard to water quality should not be allowed unless the potential impacts can be adequately mitigated.
 2. The amounts of impervious surfaces in the immediate vicinity of water courses or reservoirs should be minimized.
- **Policy R-RC 13:** Sedimentation and erosion shall be minimized through controls over development, including grading, quarrying, vegetation removal, road and bridge construction, and other uses which pose such a threat to water quality.
- **Policy R-RC 14:** Use and disposal of agricultural chemicals, such as fertilizers, pesticides and herbicides, shall be managed to minimize the threat of water pollution.
- **Policy R-RC 15:** Commercial and industrial uses such automobile dismantlers, waste transfer disposal facilities, light industries, uses requiring septic systems, and other uses that have the greatest potential for pollution shall not be located within the vicinity of streams, reservoirs, or percolation facilities where contaminants could easily come in contact with flood waters, high groundwater, flowing streams, or reservoirs. Such uses shall be required to reduce any threat of contamination to an insignificant level as a condition of approval.
- **Policy R-HS 41:** To minimize the likelihood of surface or groundwater contamination, density of development in the rural unincorporated area will be maintained at very low density.

- **Policy R-HS 47:** The long-term viability and safety of surface and groundwater supplies countywide shall be protected from contamination to the highest degree feasible.

3.8.4 - Methodology

MBA analyzed the proposed project's potential to cause adverse impacts on hydrology and water quality utilizing several resources. MBA used the Western Regional Climate Center for meteorology and climate information and the California Department of Water Resources Bulletin 118: Central Coast Hydrologic Region for groundwater information. MBA referenced the City of Morgan Hill General Plan to identify waterways in the project vicinity. MBA reviewed project plans to determine what changes would occur to existing drainage facilities.

3.8.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, hydrology and water quality impacts resulting from the implementation of the proposed project would be considered significant if the project would:

- a.) Violate any water quality standards or waste discharge requirements?
- b.) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?
- c.) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
- d.) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?
- e.) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- f.) Otherwise substantially degrade water quality?
- g.) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h.) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?

Hydrology and Water Quality

- i.) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (Refer to Section 7, Effects Found Not To Be Significant.)
- j.) Inundation by seiche, tsunami, or mudflow? (Refer to Section 7, Effects Found Not To Be Significant.)

3.8.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Water Quality

Impact HYD-1: The proposed project would have the potential to violate water quality standards or waste discharge standards.

Impact Analysis

This analysis evaluates the proposed project impact on water quality and waste discharge standards. The analysis considers individual impacts associated with the implementation of the SEQ Area and the High School site.

SEQ Area (Program Level)

The proposed expansion of the City's Urban Service Area boundary would make 305 acres of the SEQ Area eligible for municipal sewer service. RJA estimated that buildout of the SEQ Area (including the High School) would result in a net increase of 457,000 gallons per day (0.457 mgd) of effluent. Note that this represents a worst-case scenario, as it assumes all SEQ properties build out to their most intense use.

The wastewater treatment plant currently has an average dry weather capacity of approximately 8.5 million gallons per day (mgd) with approximately 3.6 mgd of treatment capacity available for the City of Morgan Hill (42 percent). The City recorded an average dry weather flow rate of 3.9 mgd in 2008. The Sewer System Master Plan projects the City will produce an average dry weather flow rate of 5.2 mgd by the year 2020. An independent study by South County Regional Wastewater Authority estimated the average dry weather flow for the City of Morgan Hill to be between 4.0 mgd and 4.5 mgd by the year 2020. The study projected the total wastewater treatment plant flow between 9.1 mgd and 9.7 mgd by the year 2020 and between 10.7 mgd and 11.6 mgd by the year 2030.

South County Regional Wastewater Authority began design of a 3.25-mgd expansion project in 2007–2008, with construction taking place from 2012–2013 through 2014–2015. The increase will bring the total plant capacity to 11.75 mgd, with 4.92 mgd assigned to Morgan Hill. The City has projected the wastewater treatment plant expansion will provide sufficient capacity to accommodate City growth through 2030, with an estimated future population of 54,000. The SEQ Area was not considered a future growth area during the previous General Plan. However, since the population of

the City and SOI is projected to be approximately 45,000 in 2015 when the wastewater treatment plant expansion is complete, the plant should have approximately 17 percent residual capacity for future growth, equal to 0.84 mgd. The project sewer generation (0.46 mgd) for the SEQ Area Urban Service Area (USA) expansion is approximately 55 percent of the anticipated residual capacity. As such, buildout of the SEQ Area would not have the potential to violate water quality standards or waste discharge standards associated with wastewater treatment. (Refer to Section 3.14, Utility Systems for further discussion of wastewater treatment.)

In terms of stormwater quality, future development that occurs within the SEQ Area would have the potential to result in new sources of polluted runoff. Construction and operational activities have the potential to contribute to erosion and sedimentation and release pollutants into downstream waterways. Individual development applications will be subject to project-level CEQA review, as well as federal, state, and local water quality standards.

Furthermore, it should be noted that the SEQ Area soils possess highly permeable characteristics; thus, runoff that ponds within this area infiltrates into the water table relatively quickly. Future development that occurs within the SEQ Area will be required to employ onsite or offsite retention, which would serve to sequester pollutants in soil and avoid discharge into downstream runoff; refer to Impact HYD-3 for further discussion.

Finally, as discussed in Section 3.5, Geology, Soils, and Seismicity, the 454-acre eastern portion of the SEQ Area proposed to be rezoned Open Space (Planned Development), including the 307-acre Chiala programmatic application, is not proposed to be added to the City's Urban Service Area. Instead, this area would be served by septic systems. New septic tanks would be subject to the applicable provisions of the Santa Clara County Code of Ordinances Section B11-60 including having a minimum lot size of 1 acre. Compliance with Section B11-60 would ensure that onsite septic systems do not create adverse water quality impacts.

As such, impacts would be less than significant.

High School Site (Project Level)

RJA estimates that the High School would generate 77,600 gallons per day (0.078 gpd) of effluent and a peak flow of 0.42 cubic feet per second. As previously discussed, the wastewater treatment capacity has approximately 0.84 mgd of residual capacity after the expansion is complete, which would be more than sufficient to accommodate the total sewer generation of the SEQ (0.46 mgd, including the High School). As such, development of the High School would not have the potential to violate water quality standards or waste discharge standards associated with wastewater treatment.

As for stormwater quality, the proposed High School has the potential to result in polluted runoff with construction and operational activities. Development of the High School would require grading and construction activities that would disturb approximately 38 acres. During these activities, there would

be the potential for surface water to carry sediment from onsite erosion and small quantities of pollutants into the stormwater system and local waterways. Small quantities of pollutants have the potential for entering the storm drainage system, thereby potentially degrading water quality.

Construction of the High School would also require the use of gasoline- and diesel-powered heavy equipment, such as bulldozers, backhoes, water pumps, and air compressors. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances would likely be utilized during construction. An accidental release of any of these substances could degrade the water quality of the surface water runoff and add additional sources of pollution into the drainage system.

The NPDES stormwater permitting programs regulate stormwater quality from construction sites. Under the NPDES permitting program, the preparation and implementation of SWPPPs are required for construction activities more than 1 acre in area. The SWPPP must identify potential sources of pollution that may be reasonably expected to affect the quality of stormwater discharges as well as identify and implement BMPs that ensure the reduction of these pollutants during stormwater discharges.

Mitigation Measure HYD-1a is proposed that would require the project applicant to prepare and implement a SWPPP. The implementation of the mitigation measure would ensure that potential, short-term, construction water quality impacts are reduced to a level of less than significant.

Furthermore, the proposed project would increase the amount of impervious surface available for contact with stormwater runoff, thereby creating the potential for additional discharge of urban pollutants into downstream waterways. Leaks of fuel or lubricants, tire wear, and fallout from exhaust contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load runoff being transported to receiving waters. Runoff from sports fields and landscaped areas may contain residual pesticides and nutrients.

Because of the permeable characteristics of the soils within the SEQ Area (including the High School site), RJA has determined that onsite or offsite retention is the most appropriate method of storm drainage management. The use of retention would largely prevent polluted runoff from entering downstream waterways because pollutants would be sequestered in soil. However, because there is the potential for discharge to the City's municipal storm drainage system to occur, Mitigation Measure HYD-1b is proposed that would require the High School project applicant to prepare and submit a stormwater quality management plan to the City of Morgan Hill for review and approval. The plan would require the High School project applicant to document various stormwater quality control measures that would be in effect during operations to ensure that water quality in downstream water bodies is not degraded. The implementation of this mitigation measure would ensure that potential operational water quality impacts are reduced to a level of less than significant.

Level of Significance Before Mitigation

SEQ Area (Program Level)

Less than significant impact.

High School Site (Project Level)

Potentially significant impact.

Mitigation Measures

MM HYD-1a High School Site. Prior to the issuance of grading permits for the proposed High School, the applicant shall prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) to the City of Morgan Hill that identifies specific actions and Best Management Practices (BMPs) to prevent stormwater pollution during construction activities. The SWPPP shall identify a practical sequence for BMP implementation and maintenance, site restoration, contingency measures, responsible parties, and agency contacts. The SWPPP shall include but not be limited to the following elements:

- Temporary erosion control measures shall be employed for disturbed areas.
- No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months.
- Sediment shall be retained onsite by a system of sediment basins, traps, or other appropriate measures.
- The construction contractor shall prepare Standard Operating Procedures for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains.
- BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure.
- In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim erosion control measure throughout the wet season.

MM HYD-1b High School Site. Prior to the issuance of building permits for the proposed project, the project applicant shall submit a stormwater management plan to the City of Morgan Hill for review and approval. The stormwater management plan shall identify pollution prevention measures and practices to prevent polluted runoff from leaving the project site and comply with Resolution No. R3-2013-0032 of the Municipal Regional Permit.

Pursuant to Central Coast RWQCB requirements, the SWMP must include the retention of the 95th percentile rain event and infiltrate it onsite. The 95th percentile rainfall depth of 1.59 inches was calculated using the 46 years (nonconsecutive) of available daily rainfall data for the Morgan Hill 2 gauge, located less than a mile away from the project site. Assuming that the High School site will be approximately 50 percent impervious, the resulting runoff coefficient is 0.34. This produces a 95th percentile 24-hour rainfall volume of 1.71 acre-feet for the 38-acre site. When multiplied by the 48-hour drawdown regression coefficient of 1.963, the total required volume to be accommodated and infiltrated onsite is 3.35 acre-feet. This shall be incorporated into the site plan. The site resides on permeable B-type soils, so infiltration should be feasible.

LID Development Standards shall also be included in the SWMP including: site assessment measures, site design measures, delineation of discrete drainage management areas and undisturbed and natural landscaped areas.

Examples of stormwater pollution prevention measures and practices to be contained in the plan include, but are not limited to:

- Strategically placed bioswales and landscaped areas that promote percolation of runoff
- Pervious pavement
- Roof drains that discharge to landscaped areas
- Trash enclosures with screen walls
- Stenciling on storm drains
- Curb cuts in parking areas to allow runoff to enter landscaped areas
- Regular sweeping of parking areas and cleaning of storm drainage facilities
- Employee training to inform store personnel of stormwater pollution prevention measures

The project applicant shall also prepare and submit an Operations and Maintenance Agreement to the City identifying procedures and reporting to ensure that stormwater quality control measures work properly during operations.

Level of Significance After Mitigation

SEQ Area (Program Level)

Less than significant impact.

High School Site (Project Level)

Less than significant impact.

Groundwater

Impact HYD-2: The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

Impact Analysis

This impact evaluates the proposed project's impact on groundwater. The analysis considers individual impacts associated with the implementation of the SEQ Area and the High School site.

SEQ Area (Program Level)

The proposed expansion of the City's USA boundary would make 305 acres of the SEQ Area eligible for municipal potable water service. The City of Morgan Hill relies exclusively on groundwater as a municipal supply source. However, the areas proposed to be added to the USA currently rely on groundwater for existing land use activities; therefore, the mere addition of these areas to the USA would not be expected to result in a net increase in groundwater use.

Future development that occurs within the SEQ Area is estimated to consume an average of 610,800 gallons per day. As noted previously, existing land use activities within the SEQ Area rely on groundwater; therefore, not all 610,800 gallons per day would represent "new" demand. However, without detailed information regarding existing groundwater consumption within the SEQ Area, the exact amount of new demand cannot be readily quantified. Regardless, as indicated in Section 3.14, Utility Systems, adequate long-term groundwater supplies are projected to be available to serve future development that occurs within the SEQ Area. As such, development of the SEQ Area is not anticipated to cause groundwater overdraft.

The SEQ Area primarily contains impervious surfaces owing to the existing agricultural and rural residential land use activities. SEQ Area soils possess highly permeable characteristics; thus, runoff that ponds within this area infiltrates into the water table relatively quickly. Future development that occurs within the SEQ Area will be required to employ onsite or offsite retention, which would promote groundwater recharge; refer to Impact HYD-3 for further discussion. As such, development within the SEQ Area would not interfere with groundwater recharge.

Impacts would be less than significant.

High School Site (Project Level)

The proposed High School would be served by the City of Morgan Hill potable water system, which relies exclusively on groundwater. The High School is anticipated to demand an average of 103,500 gallons per day of water. As noted previously, existing land use activities on the High School site rely on groundwater; therefore, not all 103,500 gallons per day would represent "new" demand. As indicated in Section 3.14, Utility Systems, adequate long-term groundwater supplies are projected to be available to serve the High School. As such, development of the High School is not anticipated to cause groundwater overdraft.

Hydrology and Water Quality

The High School site primarily contains impervious surfaces owing to the existing agricultural and rural residential land use activities. The High School site soils possess highly permeable characteristics; thus, runoff that ponds within this area infiltrates into the water table relatively quickly. The High School will be required to employ onsite or offsite retention, which would promote groundwater recharge; refer to Impact HYD-3 for further discussion. As such, development of the High School site would not interfere with groundwater recharge.

Level of Significance Before Mitigation

SEQ Area (Program Level)

Less than significant impact.

High School Site (Project Level)

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

SEQ Area (Program Level)

Less than significant impact.

High School Site (Project Level)

Less than significant impact.

Drainage

Impact HYD-3: **The proposed project would alter the drainage pattern of the area which may result in erosion, siltation, or flooding on- or off-site.**

Impact Analysis

This analysis evaluates the proposed project impact on drainage. The analysis considers individual impacts associated with the implementation of the SEQ Area and the High School site.

SEQ Area (Program Level)

Buildout of the portion of the SEQ Area located within the USA would result in a need for storm drainage infrastructure to accommodate the increase in runoff volume from new impervious surfaces.

The storm drainage system of the City of Morgan Hill comprises a combination of curb and gutter facilities, curb inlets, underground pipelines, and bubblers draining to the nearest creek or to manmade natural retention areas, which flow through the City and are tributary to either Monterey Bay or San Francisco Bay. Existing drainage needs are currently met by the City's existing storm drainage system.

There is minimal existing storm drain infrastructure in the vicinity of the SEQ Area (including the High School site). The existing storm drain system includes the following:

- 24-inch, 15-inch, and 12-inch pipes west of Condit Road, which provide drainage for the sports field and aquatics center east of Condit Road and existing developed properties east of Condit Road, and
- 42-inch pipes in San Pedro Avenue, which provides drainage for existing residential areas northeast of the SEQ Area.

One Capital Improvement Program project is planned to improve system capacity and service in the SEQ Area:

- Upsize the existing San Pedro Avenue storm drain to 48-inch. This project has not been completed by the City.

All existing storm drains outfall into Madrone Channel north of Tennant Avenue. There is no existing storm drain infrastructure south of Tennant Avenue.

RJA evaluated the existing storm drainage infrastructure in the SEQ Area and determined that there is limited opportunity to extend existing storm drain facilities in the northern portion of the USA expansion area. Storm drain can be extended in Barrett Avenue and Murphy Avenue to serve the public right-of-way. One or more new storm drain outfalls may be required in the southern portion of the USA expansion area to provide drainage for the Tennant Avenue, Fisher Avenue, and Murphy Avenue right-of-way. Exhibit 3.14-3 depicts the conceptual storm drainage system. Existing soils appear to have favorable infiltration rates. Therefore, individual projects within the SEQ Area should incorporate onsite stormwater retention facilities into the layout to collect and infiltrate runoff. This recommendation is reflected in Mitigation Measure US-3a. With the implementation of this mitigation measure, impacts would be less than significant.

Refer to Section 3.14, Utility Systems for further discussion.

High School Site (Project Level)

Development of the proposed High School would result in the introduction of new impervious surface coverage to the site, which would create a need for storm drainage infrastructure. As previously discussed, there is limited potential for expansion of the City's municipal storm drain system in the SEQ Area (including the High School site). Furthermore, due to the permeable characteristics of the soils within the SEQ Area (including the High School site), RJA has determined that onsite or offsite retention is the most appropriate method of storm drainage management. As such, Mitigation Measure US-3b is proposed requiring the project applicant to retain a qualified engineer to prepare and submit a Drainage Plan that employs the use of onsite or offsite retention to the City of Morgan

Hydrology and Water Quality

Hill for review and approval. With the implementation of this mitigation measure, impacts would be less than significant.

Refer to Section 3.14, Utility Systems for further discussion.

Level of Significance Before Mitigation

SEQ Area (Program Level)

Potentially significant impact.

High School Site (Project Level)

Potentially significant impact.

Mitigation Measures

SEQ Area (Program Level)

Implement Mitigation Measure US-3a.

High School Site (Project Level)

Implement Mitigation Measure US-3b.

Level of Significance After Mitigation

SEQ Area (Program Level)

Less than significant impact.

High School Site (Project Level)

Less than significant impact.

Flooding

Impact HYD-4: The proposed project may place structures or housing within a 100-year flood zone.

Impact Analysis

This analysis evaluates the proposed project's potential to place housing or structures within a 100-year flood hazard area. The analysis considers individual impacts associated with the implementation of the SEQ and the High School site.

SEQ Area (Program Level)

As shown in Exhibit 3.8-1, several areas of the SEQ Area are mapped as being within a 100-year flood plain. These areas are associated with the banks and channels of Foothill Creek, Maple Creek, Tennant Creek and Madrone Channel, as well as some low-lying areas near Tennant Creek. Most of the 100-year flood hazard areas are located in areas contemplated for agricultural or open space use, which includes Sports-Recreation-Leisure uses, by the proposed General Plan Amendments.

Of the properties contemplated to support new development, only the Chiala Planned Development site and the immediate surrounding lands in the eastern portion of the SEQ Area overlap with a 100-

year flood hazard area; all other sites within the SEQ Area are located outside a 100-year flood hazard area. As such, Mitigation Measure HYD-4 requires applicants with properties that overlap with 100-year flood hazard areas to prepare and submit plans demonstrating that either (1) all structures are located outside a 100-year flood hazard area; or (2) structures within a 100-year flood hazard area would be elevated a minimum of 1-foot above the 100-year flood elevation provided a hydraulic analysis demonstrates that the development of the site will not adversely impact the existing 100-year floodplain by increasing 1 percent water surface elevation or increase the lateral extent of the floodplain pursuant to City of Morgan Hill, Santa Clara Valley Water District, and Federal Emergency Management Agency requirements as part of the development application. With the implementation of mitigation, impacts would be less than significant.

High School Site (Project Level)

As shown in Exhibit 3.8-1, the High School site is not located within the 100-year flood plain. This condition precludes the possibility of locating structures within a 100-year flood plain. Impacts would be less than significant.

Level of Significance Before Mitigation

SEQ Area (Program Level)

Potentially significant impact.

High School Site (Project Level)

Less than significant impact.

Mitigation Measures

MM HYD-4 **SEQ Area.** As part of any development application involving property that overlaps with a 100-year flood hazard area, the applicant(s) shall prepare and submit plans demonstrating that either (1) all structures are located outside a 100-year flood hazard area; or (2) structures within a 100-year flood hazard area would be elevated a minimum of 1 foot above the 100-year flood elevation provided a hydraulic analysis demonstrates that the development of the site will not adversely impact the existing 100-year floodplain by increasing 1 percent water surface elevation or increase the lateral extent of the floodplain pursuant to City of Morgan Hill, Santa Clara Valley Water District, and Federal Emergency Management Agency requirements. The City of Morgan Hill shall review and approve the plans prior to issuance of building permits.

Level of Significance After Mitigation

SEQ Area (Program Level)

Less than significant impact.

High School Site (Project Level)

Less than significant impact.

