HYDROLOGY AND WATER QUALITY STUDY

for the

Amendment to Airport Master Plan

Mineta San Jose International Airport

San Jose, California

October 2019

HMH Engineers, Inc.

9 HYDROLOGY AND WATER QUALITY

Two types of impacts related to water resources are of importance with respect to current operations and future development on the Airport. First, a portion of the Airport is within the 100-year floodplain and is susceptible to flooding under present conditions. Proposed development may exacerbate this problem. Second, the Airport discharges surface runoff into the Guadalupe River. Further development would increase the potential both for onsite flooding and for discharge of degraded or contaminated surface runoff into the river and ultimately into San Francisco Bay. The discussion in this section is based on available City and agency reports and plans, and on independent analysis performed by the consultant. Appendix 9.A contains detailed calculations and assumptions.

9.1 SETTING AND EXISTING CONDITIONS

Climate and Precipitation

The Airport is located within the Guadalupe River Watershed in Santa Clara Valley. The project area is characterized by mild weather consisting of mild winters, warm summers and small daily and seasonal temperature ranges. Average temperatures range from a minimum of 53ºF to a maximum of 85ºF in July and a minimum of 40ºF to a maximum of 59ºF in January.

The rainy season begins October 1 and runs through April 30 with ninety percent of annual precipitation occurring during storm events in the late fall and winter months. The mean annual precipitation at the San Jose Airport rain gage is 13.9 inches with a mean storm event precipitation of 0.512 inches. There are no seasonal construction restrictions for the area.

Surface Water and Flood Control

The receiving water body for the Airport is an engineered channel portion of the Guadalupe River. The Guadalupe River roughly parallels the eastern boundary of the Airport. The Guadalupe River watershed is the second-largest watershed in the Santa Clara Basin and drains approximately 170 square miles into the South San Francisco Bay. Guadalupe River originates in the mountains southeast of the Town of Los Gatos and flows northwest through urbanized areas of San Jose and Santa Clara before it discharges into the Alviso Slough. Prior to reaching the airport, the Guadalupe River receives drainage waters from Guadalupe Creek, Los Gatos Creek, Alamitos Creek, Ross Creek and Canoas Creek which drain tributary areas in the western portion of the City of San Jose. Runoff from the mountainous areas is intercepted by several reservoirs, none of which has space allocated for flood control.

The Airport is adjacent to the lower, relatively flat reach of the Guadalupe River. According to a USGS gage located in Guadalupe River next to the Airport's long-term parking lot, monthly peak flows in the river measured between 2003 and 2018 have peaked at 7,000 cubic feet per second (cfs) during the rainy season and were measured as low as 4 cfs during the dry season which occurred in 2015, the lowest snowpack year of the 2012 to 2015 drought.

Floodplain and Flood Management

The Federal Emergency Management Agency (FEMA) oversees the delineation of flood zones and the provision of disaster assistance. FEMA publishes Flood Insurance Rate Maps (FIRM) that show the expected frequency and severity of flooding by area.

FEMA FIRM Panels 227 and 231 show the expected 100-year flooding for the airport and have an effective date of May 18, 2009. The 100-year flood is the magnitude of a flood expected to occur on the average of once every 100 years based on historical data. The 100-year flood has a one percent chance of occurring in any given year.

A flood control project implemented by the U.S. Army Corps of Engineers between 1992 and 1998 on the Guadalupe River between I-280 and I-880, removed portions of the airport from flood Zone AO. The portions of the airport that were in flood Zone AO prior to the project are now in flood Zone X. Flood Zone X is defined as areas protected by levees from the 1% annual chance flood.

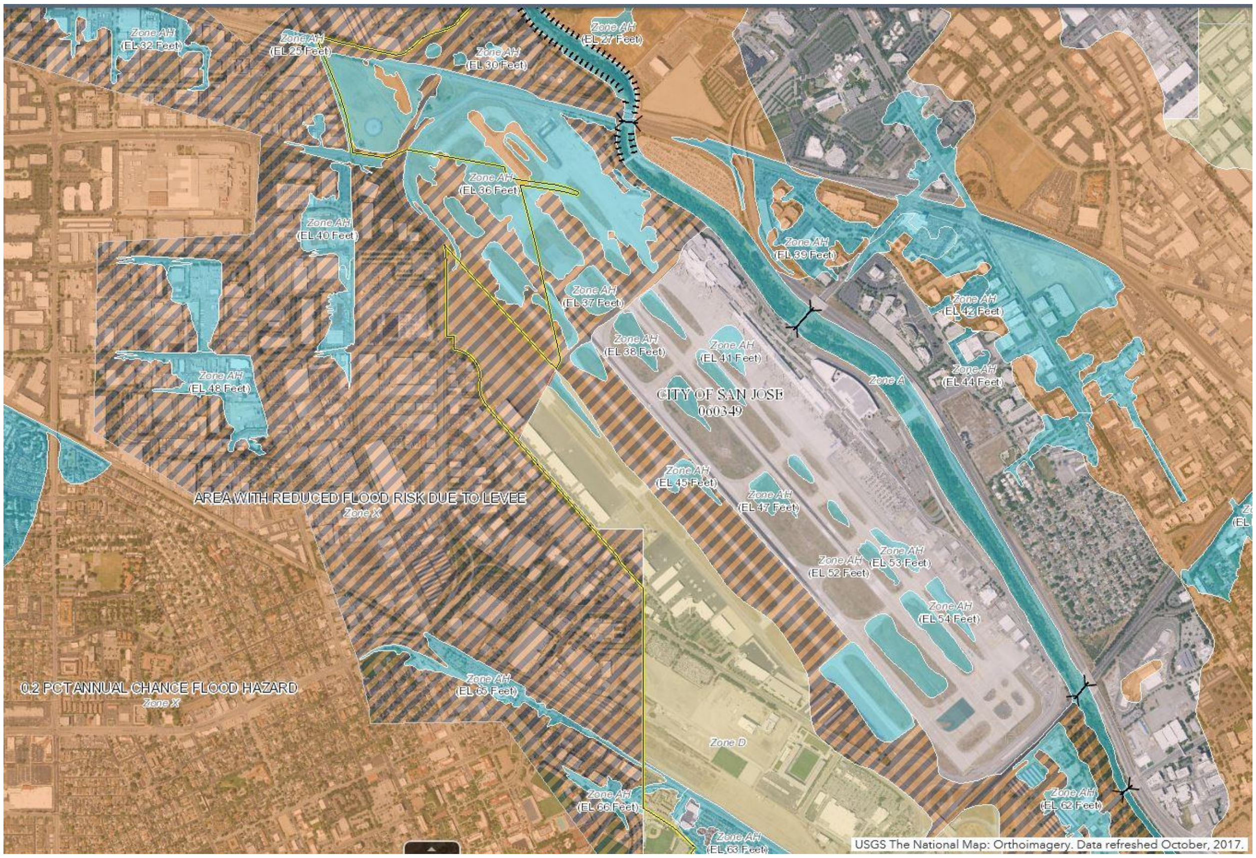


Figure 9.1: Flood Insurance Rate Map (FEMA, 2009)

Even with the improvements mentioned above, the FIRM shows that non-critical areas of the airport are susceptible to flooding during a 100-year storm event. The FIRM shows areas of localized ponding, designated as Flood Zone AH. Flood Zone AH is defined as areas susceptible to flooding between 1 to 3 feet with defined Base Flood Elevations (BFE). These localized ponding zones, shown in Figure 9.1 occur primarily in the unpaved pockets between the runways and taxiways. Zone AH also encroaches on the pavement surface in front of three of the gates at Terminal A. At this location, the pavement elevation ranges between the defined BFE and a foot above the BFE, so risk of ponding is minimal. The Fed-Ex cargo building located in the north end of the site off Ewert Road and the compressed natural gas (GSE) fuel station off of Airport Blvd on the northeast corner of the site are located within Flood Zone AH with a defined base flood elevation of 36’. All other buildings and facilities are located within Flood Zone X and are therefore outside of the 100-year flood plane. Cumulatively, Zone AH covers approximately 20% of the Airport property.

The Santa Clara Valley Water District's Guadalupe Dam Flood Inundation Maps show the effect to the airport in the event that failure of the Guadalupe Dam occurs. If dam failure occurs during non-storm conditions with a normal full pool elevation in the reservoir and normal flow conditions downstream of the dam, expected creek flows range from 50 cfs to 100 cfs with flooding to be contained within the Flood Zone AH areas at the airport. If dam failure occurs during a large storm event with a high pool elevation in the reservoir and high flow conditions downstream of the dam (inflow design flood is equal to probable maximum flood event), flows in the river are expected to range from 7,600 cfs to 8,700 cfs and flooding would be expected to occur around airport terminals, cargo facilities and taxiways but is not expected to occur on the runways.

Surface Water Management

The Airport occupies approximately 1,050 acres, including a portion of the adjacent river. Airport elevations range from approximately 60 feet above mean sea level (msl) at the southern end to 35 feet above msl at the northern end, with a roughly constant downward slope of 0.2% from south to north for the length of the Airport. Approximately sixty percent of the Airport currently is covered with impervious surfaces. Surface drainage on the Airport is collected by a series of underground storm drains and pipelines that eventually discharge to the Guadalupe River through 16 outfalls. The Airport's storm drain system also serves off-Airport drainage from the west side of Coleman and Martin Avenues in the City of Santa Clara. The storm drain system is completely isolated from the Airport's sanitary sewer system. A retention basin, know as Rocky Pond, and pump are located at the northern end of the Airport. The pump was originally installed to assist Airport drainage during high levels of flow in the river and is also used to dewater the Terminal A parking garage.

In the Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5320-5D entitled "Airport Drainage Design", the FAA recommends a design storm of 5-years for runways and taxiways and 10-years for buildings and facilities. The city of San Jose recommends a 10-year design storm for city storm drain sizing purposes. Based on the above criteria, the entire airport site was analyzed for a 10-year design storm.

According to Santa Clara County's Flood Insurance Study and record drawings received from the Airport, during a 10-year flood event water elevations in the Guadalupe River rise above the Airport's outfalls. Under these conditions, the flapgates on the storm drain outfalls are activated and the only operating storm outlet is the retention basin pump at the north end of the Airport. The overland release path of the airport proper directs the water to the retention basin, known as "Rocky Pond". The storm water is pumped from the retention basin into the Guadalupe River at a rate of 1.5 million gallons an hour (55.7 cfs). Rocky Pond's storage volume is approximately 200,000 cubic feet. The FAA advises that no encroachments shall occur on runways and taxiways (including pavement shoulders) during a 5-year event and that ponding may occur in areas between runways and taxiways to provide temporary storage for runoff exceeding a 5-year storm event. Consistent with FAA recommendation, stormwater run-off in excess of retention basin capacity and the pumping rate is temporary stored in the unpaved areas between the runways and taxiways.

The FAA advises that when the storm drainage system has a drainage area much smaller than that of the receiving stream, the peak discharge from the storm drainage system may be out of phase with the peak discharge from the receiving watershed. A 10-year flood elevation in the creek and 10-year storm runoff is a peak-on-peak scenario that is not an accurate representation of the watershed. Table 6-3 in FAA AC 150/5320-5D, provides a comparison of discharge frequencies for coincidental occurrence for 10-year and 100-year design storms. This table can be used to establish an appropriate design tailwater elevation for a storm drainage system based on the expected coincident storm frequency on the outfall channel.

Based on the FAA and Santa Clara County guidelines, the storm drain system has sufficient capacity if ponding in unpaved areas does not encroach on the runways or taxiways during the 24-hour Design Storm. In the existing condition, the 24-hour run-off flow rate is less than the pumping rate; therefore, it is anticipated that stormwater run-off will be fully drained from the site at the conclusion of the 24-hour Design Storm.

Groundwater

Based on information from the Santa Clara Valley Water District, the depth to first groundwater is expected to be less than 10 feet below surface grade. The groundwater is anticipated to vary with the passage of time due to seasonal groundwater fluctuation, surface and subsurface flows into nearby water course, ground surface run-off and other environmental factors.

Surface Water Quality

Watershed Water Quality

The Regional Water Quality Control Board (RWQCB) Basin Plan lists the Guadalupe River as part of the Guadalupe Watershed in the Santa Clara Basin. The RWQCB Basin Plan identifies existing beneficial uses for this basin as:

- Groundwater Recharge (GWR)
- Cold Freshwater Habitat (COLD)
- Fish Migration (MIGR)
- Preservation of Rare and Endangered Species (RARE)
- Fish Spawning (SPWN)
- Warm Freshwater Habitat (WARM)
- Wildlife Habitat (WILD)
- Water Contact Recreation (REC-1)
- Noncontact Water Recreation (REC-2)

The 2012 California Integrated Report, Section 303(d) List of Water Quality Limited Segments, lists the Guadalupe River as status 5B for diazinon and 5A for mercury and trash. Diazinon is noted as having been moved by the United States Environmental Protection Agency (USEPA) from the 303(d) list in 2006 because of a completed USEPA approved Total Maximum Daily Loads (TMDLs).

A Basin Plan amendment that established New Water Quality Objectives and Total Maximum Daily Loads (TMDLs) and an Implementation Plan for mercury in waters of the Guadalupe River Watershed was adopted by the Regional Water Board in October 2008 and approved by the US Environmental Protection Agency on June 1, 2010. Under this Basin Plan, there are numerous on-going projects which aim at reducing Mercury Levels in the Guadalupe River.

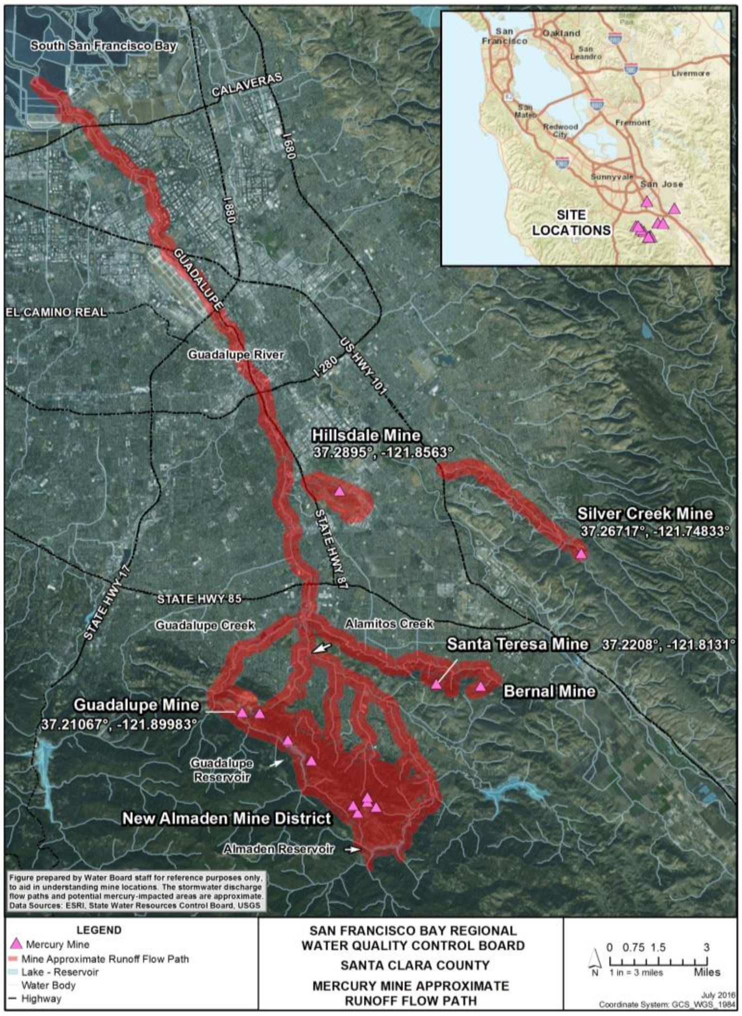


Figure 9.2: Mercury Mine Approximate Runoff Flow Path (San Francisco Bay RWQCB, 2016)

Santa Clara County has issued a fish consumption advisory for mercury contamination in the Guadalupe River Watershed. Mercury concentrations in fish tissue that exceed the U.S. EPA human health mercury fish criterion (0.3 mg/kg), have been measured at numerous creeks and reservoirs in the Guadalupe River Watershed. Elevated mercury concentrations in fish tissue may also pose a threat to wildlife, such as birds, amphibians and mammals. The main source of mercury in the Watershed is the New Almaden Mining District, the largest-producing mercury mine in North America. Other sources include atmospheric deposition from global and local sources, soil erosion from areas not known to contain mines, urban stormwater runoff, seepage from landfills, and Central Valley Project water inputs to Calero Reservoir. Figure 9.2 illustrates the mercury contamination in the watershed.

The Guadalupe River Watershed Mercury TMDL examined this water quality problem and provided a watershed-wide mercury management strategy by means of a Basin Plan amendment that was adopted by the Regional Water Board in October 2008 and approved by the US Environmental Protection Agency on June 1, 2010. In addition to being the primary regulatory means of achieving water quality goals in the watershed, the Guadalupe River Watershed Mercury TMDL will simultaneously reduce the amount of mercury in the Bay in accordance with the San Francisco Bay Mercury TMDL's proposed requirements. The TMDL calls for stakeholders to reduce load to an average of 9.4 kg per year over 20 years by removing mercury laden wastes in the mining and urban areas and implementing other treatment practices. The TMDL target is 0.2 mg/kg annual median.

Site Discharge Water Quality

Based on existing activities at the airport, pollutants with the highest potential to be present in stormwater runoff from the site are oils/greases, petroleum hydrocarbons, Total Suspended Solids (TSS) and pH. Other pollutants that may also be present to a much lesser degree include halogenated and non-halogenated solvents, acid and alkaline wastes and sanitary wastewater. These pollutants originate on aprons, runways, and parking lots, in aircraft maintenance and refueling areas and other developed areas. Exhaust from aircraft and motor vehicles contains lead and particulates that settle on paved surfaces and are entrained by runoff. Landscaped areas within and around the airport may contribute fertilizers, herbicides, and pesticides to the runoff. In addition, runoff from properties located in the Cities of San Jose and Santa Clara west of the Airport contribute pollutants typical of urban areas to the Airport's storm water system.

The Airport discharges storm water runoff into the Guadalupe River under a National Pollutant Elimination Discharge System (NPDES) permit authorized by the San Francisco Bay Regional Water Quality Control Board (RWQCB). The Airport's Stormwater Industrial General Permit (IGP) is identified by the permit number CAS 000001. The IGP requires permittees to eliminate non-storm water discharges and develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to limit contact of potential pollutants with storm water. The Airport's SWPPP details a series of Best Management Practices (BMPs) for Airport and tenant facilities, such as ramp sweeping, spill prevention and response, source controls, and employee training. The Airport is responsible for amending the SWPPP periodically or whenever there is a change in construction, operation, or maintenance. The SWPPP was recently amended on November 21, 2018.

The IGP also requires that inspections are performed on a monthly basis and that the SWPPP contain provisions for monitoring storm water discharges for selected water quality indicators. In compliance with these provisions, stormwater samples associated with the Airport's industrial activities are collected at locations on Airport property before discharging into the Guadalupe River. The seven sample locations are located in the Airport's major industrial areas and are representative of runoff from material storage, vehicle and aircraft maintenance and vehicle and aircraft fueling.

Appendix 9.B, Table 1, contains the results of the sampling from October 2016 through February 2019. The Airports California Monitoring Group (ACMG) requires at least two (2) samples per year of qualifying storm events (QSEs) with 1 QSE occurring between July 1 and December 31 and 1 QSE occurring between January 1 and June 30. Two numeric action levels (Level 1 and Level 2) are established in the IGP. If sampling results exceed the numeric action level, a QISP should conduct a facility evaluation and complete the necessary response action reports.

9.2 HYDROLOGY AND WATER QUALITY IMPACTS AND MITIGATION MEASURES

This section identifies six types of hydrologic and water quality impacts associated with the Project Case, evaluates their significance, and identifies mitigation measures to reduce significant impacts to less than significant levels. These six types of impacts are as follows: 1) quantity of stormwater runoff, 2) floodplain risks to structures and people, 3) quality of stormwater runoff, 4) new fuel storage facility adjacent to Guadalupe River, *5)* sediment discharge during construction, and 6) groundwater interception during construction. The section first identifies and analyzes impacts of the Master Plan Update Project Case. The section then identifies and compares impacts of No Project Alternative.

Storm Water Runoff Impact

Presently, approximately 630 acres, which is sixty-percent of the Airport, are covered with impervious surfaces. The airfield projects proposed in the master plan would result in a net increase in impervious area by approximately 21 acres through the extension and re-alignment of taxiways and runways. Terminal Projects and Air Cargo Projects result in a net decrease in impervious area by approximately 4 acres since these projects occur in areas that are already impervious. General Aviation Projects result in a net increase in impervious area by approximately 15 acres through the conversion of the former San Jose State University leasehold site to general aviation use and the expansion of the west side general aviation apron out to the edge of the new parallel taxilane. Aviation support projects result in a net increase in impervious area of 2 acres through the expansion of the fuel storage facility. Overall, the cumulative increase in impervious area resulting from the planned improvements results in approximately 2 percent increase in runoff from the airport site to Guadalupe River over the existing condition.

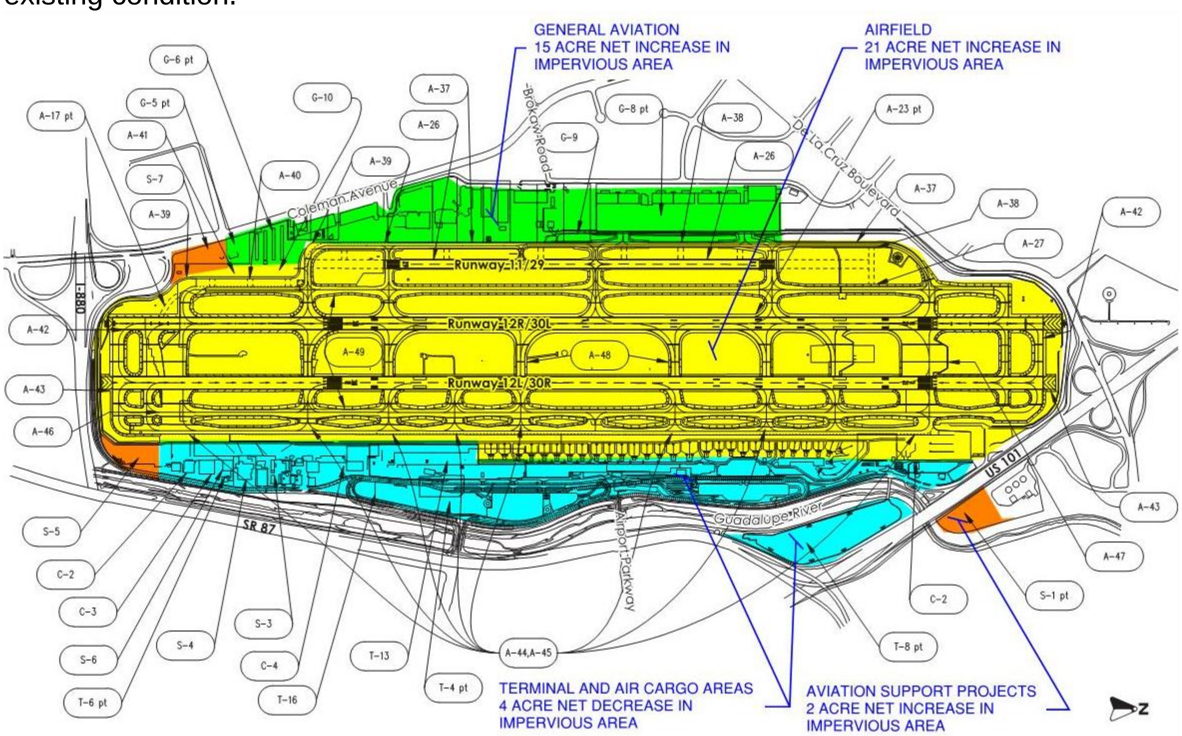


Figure 9.3: Site Map

According to Santa Clara County's Flood Insurance Study and record drawings received from the Airport, during a 10-year flood event water elevations in the Guadalupe River rise above the Airport's outfalls. Under these conditions, the flapgates on the storm drain outfalls are activated and the only operating storm outlet is the retention basin pump at the north end of the Airport. The overland release path of the airport proper directs the water to the retention basin, known as "Rocky Pond". The storm water is pumped from the retention basin into the Guadalupe River at a rate of 1.5 million gallons an hour (55.7 cfs). Rocky Pond's storage volume is approximately 140,000 cubic feet. The FAA advises that no encroachments shall occur on runways and taxiways (including pavement shoulders) during a 5-year event and that ponding may occur in areas between runways and taxiways to provide temporary storage for runoff exceeding a 5-year storm event. Consistent with FAA recommendation, stormwater run-off in excess of retention basin capacity and the pumping rate is temporary stored in the unpaved areas between the runways and taxiways.

The FAA advises that when the storm drainage system has a drainage area much smaller than that of the receiving stream, the peak discharge from the storm drainage system may be out of phase with the peak discharge from the receiving watershed. A 10-year flood elevation in the creek and 10-year storm runoff is a peak-on-peak scenario that is not an accurate representation of the watershed. Table 6-3 in FAA AC 150/5320-5D, provides a comparison of discharge frequencies for coincidental occurrence for 10-year and 100-year design storms. This table can be used to establish an appropriate design tailwater elevation for a storm drainage system based on the expected coincident storm frequency on the outfall channel. The tributary area of the Guadalupe River Watershed compared with the tributary area of the airport is roughly a 100 to 1 area ratio. Based on Table 6-3, a 10-year flood elevations in Guadalupe River combined with a 5-year design storm for the site runoff can be used to represent a 10-year design storm for the Airport, thus called the Design Storm.

In the proposed condition, approximately 280,000 cubic feet of stormwater will pond on-site at the conclusion of the 24-hour design storm. This ponding is expected to be contained within Rocky Pond and the unpaved areas between taxiways Y and Z. The approximate ponding areas are shown in blue in Figure 9.A-2. Refer to Appendix 9A for additional calculations.

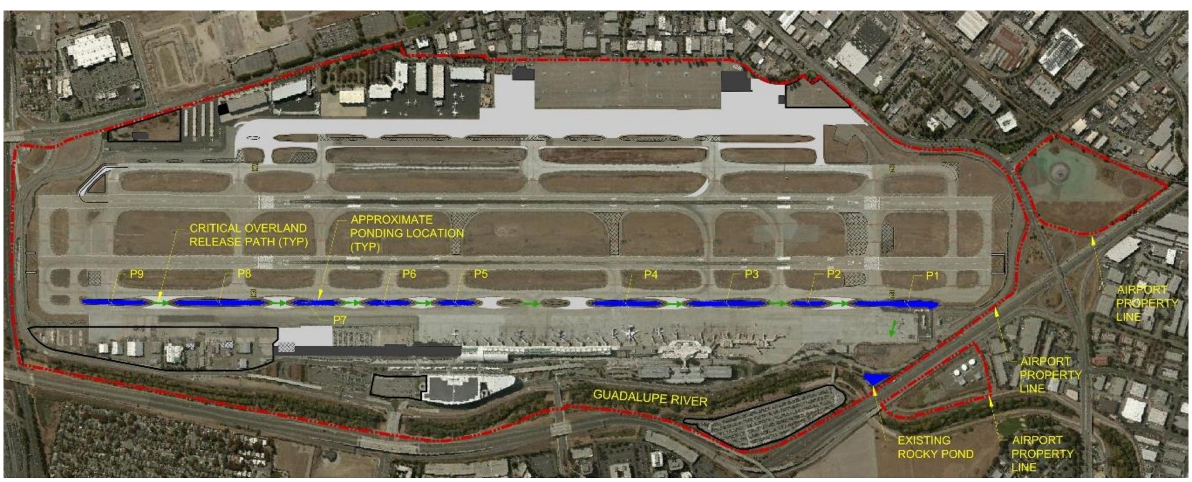


Figure 9.4: Airport Ponding and Overland Release Path

For purposes of this EIR, a hydrologic impact would be significant if a project would cause ponding on runways or taxiways or substantial flooding leading to possible interruption of Airport transportation services.

> ***Stormwater Runoff Impact: Increasing stormwater runoff by 2% by 2037 will not cause ponding on runways in an overland release condition. [LESS THAN SIGNIFICANT IMPACT]***

Floodplain Risks to Structures and People Impact

As outlined in section 9.1.2, approximately 20% of the airport site is within Flood Zone AH. Flood Zone AH primarily affects the airfield and the limits of the localized ponding are contained within existing unpaved pockets between the runways and taxiways. It is anticipated that the boundaries of the Flood Zone AH areas will be affected as the taxiways and runways are re-aligned, widened, narrowed, removed and extended. Based on guidence in FAA AC 150/5320-5D Section 2-2.5, in storm events greater than the design storm, the center 50 percent of runways and the center 50 percent of taxiways serving these runways should be free from ponding. Based on Flood Zone AH areas shown on the FEMA FIRM and the ultimate configuration of the runways and taxiways, this 50 percent guidance will be met in a 100-year flood event.

All of the Master Plan's proposed buidlings and facilities are designated to be within Zone X, which is defined as outside of the 100-year flood zone.

For purposes of this EIR, a hydrologic impact would be significant if a project would cause a public health or safety hazard as a consequence of flooding conditions.

> ***Floodplain Risks to Structures and People Impact: Proposed structures and facilities and the center fifty percent of runways and taxiways are outside of the 100-year floodplain. [NO IMPACT]***

Quality of Storm Water Runoff Impacts

As discussed under the Storm Water Runoff Impact, above, the proposed projects would increase the total runoff at the airport by 2 percent over the existing condition. The proposed improvements would disturb 128 acres which is 12 percent of the total site. Of this disturbed area, 38 acres is new impervious area which directly correlates to the increase in total run-off. Replaced impervious area accounts for 76 acres. This replaced area does not affect total run-off from the site but is subject to storm water treatment requirements per Provision C3 of the Santa Clara Valley Urban Runoff Pollution Prevention Program's (SCVURPPP) Municipal Regional Stormwater Permit (MRP). The remaining 15 acres of disturbed area is area where impervious area will be removed and replaced with pervious area. This area is exempt from stormwater treatment requirements.

In combination with increased aviation activity at the Airport, increased impervious surfaces would collect and release additional contaminants into storm water runoff over the existing condition. The general categories of contaminants resulting from the proposed project would be the same as those identified under current conditions (e.g., pollutants associated with aircraft and automobile exhaust, fluids such as oil and grease, rubber, heavy metals). Under Project

Case development, increased vehicular and aircraft activity levels will contribute proportionally to pollutant loadings. Any attempt to extrapolate increases in specific pollutant concentrations would be speculative. By increasing stormwater runoff volumes, the proposed development could be expected to increase the frequency and degree of contaminants.

For purposes of this EIR, a hydrologic impact would be significant if a project would substantially degrade water quality or groundwater resources. Under the Project Case, increased stormwater runoff would increase total pollutants carried off-site. Greater vehicle traffic and aircraft operations would produce pollutants such as oil and grease, and heavy metals, generally deposited on paved surfaces. Therefore, in the absence of control measures, the Project Case would substantially degrade the quality of stormwater runoff discharged to the Guadalupe River.

> ***Quality of Storm Water Runoff Impact: Expansion of impervious surfaces at the airport, in combination with increased aircraft and ground vehicle operations, would lead to elevated levels of contaminants in storm water discharges and in ground water. Contaminant spills and leaks at proposed project facilities could also reach storm water discharges and groundwater. [POTENTIALLY SIGNIFICANT IMPACT]***

Mitigation Measure for Quality of Storm Water Runoff Impact

Provision C3 of the Santa Clara Valley Urban Runoff Pollution Prevention Program's (SCVURPPP) Municipal Regional Stormwater Permit (MRP) requires that all projects that create and/or replace 10,000 square feet or more of impervious surface must comply with storm water requirements by installing post-construction stormwater controls. Post construction stormwater controls are permanent features included in a project to reduce stormwater pollutants and flow after construction is completed. Interior remodeling projects and routine maintenance or repair projects do not fall under this requirement. The approximately 114 acres of new and replaced impervious area proposed in the Airport Master Plan would be subject to provision C3 stormwater treatment requirements. Since this area is less than 50% of the total site area, only the area disturbed by the project would be subject to treatment requirements.

FAA Advisory Circular 150/5200 33B, dated August 28, 2007, Hazardous Wildlife Attractants On or Near Airports, strongly recommends that stormwater management systems located within 5,000 feet of the airport operations area (AOA) be designed and operated so as not to create above ground standing water. The FAA also states that all vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated. Standing water and vegetation attract wildlife, such as birds, that can pose a hazard to planes. Due to the safety concern and the current FAA advisory, bioretention, flow through planters, green roofs and detention basins are not recommended as treatment methods.

The airport has an existing detention basin "Rocky Pond" which was installed in 1988 and there are existing biotreatment cells at the Signature Flight facilities which were installed in 2015/2016. The FAA advisory circular 150/5200 33B, which advises against such facilities, was released in 2007. The FAA recommends that existing detention basins shall have a maximum detention period of 48 hours after a design storm and remain dry between rain events. For the ultimate condition of the site, the detention basin will drain within 1-½ hours after the design storm and is therefore compliant with the Existing Storm Water Management Facilities section 2.3.1.2 of FAA advisory circular 150/5200 33B. As part of the proposed Master Plan general aviation projects, the existing biotreatment cells at the Signature Flight facilities will be removed.

If soil conditions allow, the FAA encourages the use of underground stormwater infiltration systems. According to SCVWD Guidelines for Stormwater Infiltration Devices (Table A-1 in the C3 handbook), the required vertical separation between an infiltration device and the seasonally high groundwater table is 30 feet for sites with industrial and transportation related uses. Due to the airport's proximity to the Guadalupe River, groundwater levels are expected to be less than 10' deep, which makes infiltration infeasible.

The airport does not qualify for low impact development (LID) treatment credits under provision C.3. The Federal Aviation Administration (FAA) Advisory Circular 150/5200 33A, Hazardous Wildlife Attractants On or Near Airports strongly recommends that off-airport stormwater management systems located within 5,000 feet (the airport operations area (AOA)) of the airport be designed and operated so as not to create above ground standing water. The Site is within the 5,000 ft AOA.

Due to these FAA recommendations and the safety risk hazardous wildlife attractants would create at the airport, it is recommended that an exception be sought from the Regional Water Board to allow non-LID treatment. The non-LID treatment measure recommended for the site is underground detention and media filtration. It is recommended that water is stored underground in culverts or arched chambers. Water should then be treated with a media filter before being metered through an orifice or pump into the storm drain system. The metering of the water should be set at a rate such that post-project discharge to the Guadalupe River does not exceed pre-project discharge rates. Potential locations for these underground treatment facilities are shown in Figure 9.5.

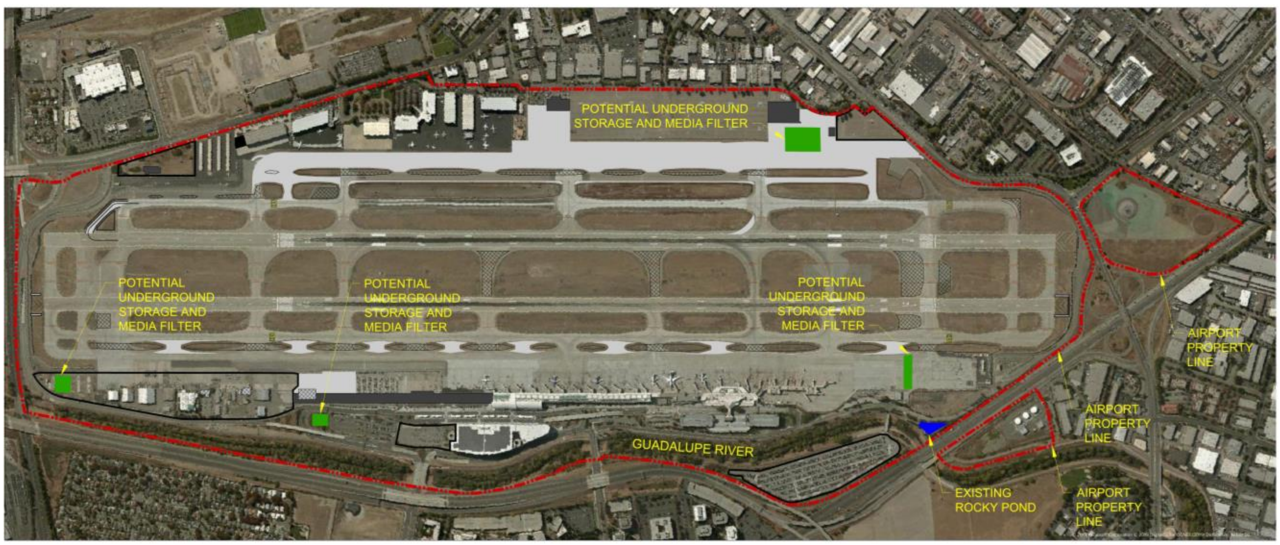


Figure 9.5: Potential Stormwater Treatment Locations

Alternatively, provision C.3.e. of the MRP allows for the construction of an equivalent amount LID treatment at an offsite location within the same watershed or the payment of in-lieu fees as an alternative to building LID treatment on-site. While there is precedence for both options in other areas of California, neither has been previously implemented in the City of San Jose. The Airport is currently working with the City of San Jose's Environmental Services Department and Public Works Department to setup a program for in-lieu payments.

FAA Advisory Circular 150/5200 33A states that if stormwater management facilities must be located within the AOA, it is recommended that these facilities are narrow and linearly shaped, do not contain vegetation that attracts hazardous wildlife and includes physical barriers such as bird balls, wire grids or netting.

The SWPPP represents a detailed plan that addresses typical activities at airports and typical pollutants. These activities include airplane maintenance, vehicle and equipment maintenance and cleaning, fuel storage and transfer areas, airplane servicing, airplane deicing, among others. Pollution management controls fall into seven categories: preventive maintenance, good housekeeping, spill prevention and response, source controls, stormwater management practices, sediment and erosion prevention, and employee training. Specific practices include eliminating or reducing the use of toxic pollutants, covering and appropriately containing storage areas for potential pollutants, and cleaning (sweeping) paved areas where equipment and vehicles are maintained. The Airport should continue to implement the SWPPP, updating the plan to reflect new projects as they are constructed. The plan will have to be amended from time to time, and a construction General Storm Water Permit will be submitted for major elements of construction.

> **Mitigation Measure for Quality of Storm Water Runoff Impact: The installation of permanent treatment measures and the continued implementation of the Airport's Stormwater Pollution Prevention Plan (SWPPP) will reduce the potential for contamination of stormwater and groundwater both on and off-site. [LESS THAN SIGNIFICANT WITH MITIGATION].**

Expansion of Fuel Storage Adjacent to Guadalupe River Impact

The Project Case calls for the expansion of the existing fuel storage facility on a parcel north of US 101 by up to two additional aboveground storage tanks (2 million gallon capacity). The existing facility consists of 3 aboveground storage tanks and has a 2 million gallon capacity. The fuel facility is set back a minimum of 100 feet from the river and, therefore, does not involve any direct encroachment into the riparian corridor of the Guadalupe River.

Water quality impacts could result from a leak or spill. Since groundwater at the site is typically less than 5' from the surface elevation, a leak in the tank could contaminate the groundwater. The proximity to the river and prevalent high groundwater levels (at times as close as several feet below the surface) would require that the proposed fuel farm be designed to ensure that contamination of above- or below- ground surface water would not occur. The Airport has had one significant leak or spill since the Fuel Facility's start of operations in November 2009. This spill occurred in April 2015 was the result of a sewer system backup and did not involve a fuel leak or spill. When the sewage spill occurred, the outfall was sealed which prevented sewage from leaving the site and cleanup operations began the day after the spill occurred.

The fuel cell farm is located outside of the Air Operations Area (AOA) of the airport and is therefore not included in the Airport's primary SWPPP. There is a separate active SWPPP for the fuel cell farm which has a WDID 2 43I022413.

For the purpose of this EIR, water quality impacts would be significant if a project would substantially degrade water quality or groundwater resources. The new fuel storage facility presents the opportunity for degradation of groundwater and/or the surface water quality of

Guadalupe River in the event of a leak or an accidental spill. Therefore, it is considered a significant impact.

> ***Expansion of Fuel Storage Adjacent to Guadalupe River Impact: Expansion of the fuel storage facility adjacent to the Guadalupe River would increase the potential for short-term impacts to the quality of surface water or groundwater in the event of a leak or spill [POTENTIALLY SIGNIFICANT IMPACT].***

Mitigation Measure for Expansion of Fuel Storage Facility Impact

FAA Order 1050.15B, titled "Fuel Storage Tank Systems at FAA Facilities" and dated February 1, 2018, provides direction on the design and management of fuel storage tank facilities. According to the FAA, aboveground storage tanks (ASTs) are preferred to underground storage tanks (USTs) to reduce environmental liability. The FAA stipulates that tank systems must include spill and overfill prevention equipment in accordance with the requirements in 40 CFR Part 280.20 (c) and tank systems must be manufactured with integral secondary containment in which all exterior product pipe is secondarily contained. Secondary containment must be installed to provide a collection and recovery point for leaked product and must be able to contain 110% of the volume of the primary tank. The ASTs should be equipped with a spill catchment basin that is located around the fill pipe to catch drips or spills that occur when the ASTs is being filled.

The proposed fuel cells shall be aboveground storage tanks (ASTs) and be designed in accordance with FAA Order 1050 and 40 CFR Part 280.20 (c), so the potential for leakage to soils and groundwater would be minimal and preventative actions would be in place to stop accidental spills from leaving the site. In addition, the facility would require monitoring systems for detection of leaks from any below-ground infrastructure, including the pipeline extending from the site, under U.S. 101, to the fuel dispensing site on the airfield.

There is an active SWPPP for the fuel cell farm which has a WDID 2 43I022413. The existing SWPPP outlines required preventative maintenance procedures and includes spill and leak prevention and Response activities and procedures. When the fuel storage facility is expanded, the SWPPP should be amended to account for the additional tanks.

> ***Mitigation Measure for Expansion of Fuel Storage Facility Impact: The facility will be designed to meet current requirements for storage of fuel in aboveground tanks and the Storm Water Pollution Prevention Plan (SWPPP) will be amended to cover the new site. Implementation of this mitigation measure will insure that the storage facility is designed to minimize the risk of failure and accidental spills or leaks and that, under normal operation, no pollutants would be discharged with the stormwater. [LESS THAN SIGNIFICANT WITH MITIGATION]***

Sediment Discharge Impact (Construction Impact)

Due to the flat topography of the Airport site, sediment and erosion hazard associated with construction is relatively low. Site erosion potential is increased during demolition and grading operations. Additionally, soils unsuitable for foundations and paved area may be excavated and replaced. Disturbed soils, stockpiles of excavated soil or imported soil, or other loose soil would be subjected to rainfall and erosion. Silt entrained in runoff could then be directed into storm drains and discharged off-site into the Guadalupe River. Construction-related impacts such as erosion and sedimentation relate to the footprint of construction, and to the magnitude of structures.

Based on the historical mercury mine location maps developed by the San Francisco Regional Water Board, the site is located downstream of a mercury mine and is within a mile of the run-off path. The soil on-site may contain mercury. In addition, the soil may contain fuel, metals and pesticides due to the site's usage. More robust and redundant erosion and sediment control measures are required at this site than would normally be used at a similar construction site.

For purposes of this EIR, a water quality impact would be significant if a project would expose sensitive resources, such as the Guadalupe River to substantial sedimentation.

> ***Sediment Discharge Impact: Construction activities will increase the erosion potential of the site and may result in an increase in mercury laden sediment. [POTENTIALLY SIGNIFICANT IMPACT]***

Mitigation Measure for Sediment Discharge Impact (Construction Impact)

Each phase of the project should have an erosion control plan prepared by the project's Registered Civil Engineer, Qualified SWPPP Practitioner (QSP) or Qualified SWPPP Developer (QSD) which shall include Best Management Practices (BMPs) as specified in the California Stormwater Best Management Practice Handbook for reducing impacts on the City's storm drainage system from construction activities. The erosion control plan should include control measures during the construction period for soil stabilization practices, sediment control practices, sediment tracking control practices, wind erosion control practices and non-stormwater management, waste management and disposal control practices.

> ***Mitigation Measure for Sediment Discharge Impact: Construction activities have the potential to degrade the water quality of local streams. Best management practices during construction will minimize the potential for sediment discharge [LESS THAN SIGNIFICANT WITH MITIGATION]***

Groundwater Interception Impact (Construction Impact)

Since the depth to first groundwater is expected to be less than 10', the projects within the master plan that require excavation for foundations could intercept the shallow groundwater. The general effects of interception would temporarily inundate construction areas and create sumps, leading to potential settlement of the ground surface. Excavations that are inundated with groundwater would require dewatering. Dewatering discharges may contain contaminants and if not properly managed could degrade water quality.

For purpose of this EIR, a water quality impact would be significant if a project would substantially degrade water quality or groundwater resources.

> ***Groundwater Interception Impact: Excavations for foundation construction may be inundated with groundwater which may substantially degrade water quality or groundwater resources if not handled properly. [POTENTIALLY SIGNIFICANT IMPACT]***

Mitigation Measures for Groundwater Interception Impact (Construction Impact)

For project phases that require excavation, the SWPPPs shall include provisions for the proper management of construction-period dewatering activities. At a minimum, all dewatering shall be contained to allow the sediment to settle out and filtered to ensure that only discharges that are under the discharge limits for TSS and turbidity in accordance with the Construction General Permit (CGP) are discharged to the storm or sanitary sewer system as appropriate. In order to discharge dewatering effluent to the storm drain system, it must be analyzed by a State-Certified laboratory for the suspected pollutants prior to discharge. Based on the results of the analytical testing, the Airport shall acquire the appropriate permit/approval from the Water Board prior to discharging the effluent to the storm drain system. Alternatively, the effluent can be discharged to the sanitary sewer system with approval from the City of San Jose.

> ***Mitigation Measure for Groundwater Interception Impact: If proper protocol is followed prior to discharging dewatering effluent, the risk of contaminating surface water quality or ground water resources is minimal. [LESS THAN SIGNIFICANT WITH MITIGATION].***

Hydrology and Water Quality Impacts of the No Project Alternative

The No Project Alternative would not change any of the existing conditions related to storm water runoff, floodplain risks, or quality of storm water runoff. Increased aviation activity at the Airport would increase the potential for discharge of contaminants in surface runoff, although the Airport's SWPPP will continue to be implemented.

Appendix 9.A
HYDROLOGY METHODOLOGY AND RESULTS

The Rational Method was used for calculating the runoff rate at San Jose International Airport. Typically, the Rational Method is used for areas less than 200 acres; however, the method is satisfactory in providing a defensible approximation of runoff at the Airport. The Rational Method equation is:

$$Q = CiA$$

where:

Q = runoff rate, cfs
C = runoff coefficient
i = rainfall intensity, in/hr
A = watershed area, acres

The Airport occupies approximately 1,050 acres, including a portion of the adjacent river. The Guadalupe River accounts for 43.4 acres of the Airport Site. The Vor/Navigation Beacon site (26.6 acres), Fuel Farm (12.5 acres) and Economy Parking Lot 1 (19.8 acres) are hydraulically separated from the rest of the airport site (the Airport proper, 947.7 acres). Surface drainage on the Airport proper is collected by a series of underground storm drains and pipelines that eventually discharge to the Guadalupe River through 16 outfalls. The Airport's storm drain system also serves off-Airport drainage from the west side of Coleman and Martin Avenues in the City of Santa Clara. Off-Airport drainage areas, including the west side of Coleman and Martin Avenues, was not included in the calculations, on the assumption that runoff from that area would not change as a result of the project.

The runoff coefficient reflects the capability of the land surface to convey runoff. Runoff coefficients were determined by taking a weighted average of the runoff coefficient for impermeable surfaces and permeable surfaces. Table 3-1 in the Santa Clara County Drainage Manual (2007) recommends a C value of 0.85 for impervious surface and 0.45 for urban open space.

According to the Airport's active NOI, in it's existing condition 60% of the airport is covered with impervious area. Impermeable surfaces on the site consist of asphalt parking lots, streets and drive aisles; concrete runways, taxiways and loading zones, and roof area. Table 9.A-1 shows the runoff coefficients for the existing condition and Table 9.A-2 shows the runoff coefficient for the proposed site. Impervious areas from the proposed site were provided by the San Jose International Airport on February 20, 2019 and are shown in Table 9.A-7 which is included at the end of this Appendix.

Table 9.A-1: Existing Site Run-off Coefficents

	Area (acres)	Impervious Percent	Pervious Percent	C
Airport Proper	947.7	64%	36%	0.71
Fuel Farm	12.5	32%	68%	0.58
Economy Parking Lot 1	19.8	95%	5%	0.83
Vor/Navigation Beacon Site	26.6	10%	90%	0.49
Guadalupe River	43.4	0%	100%	0.45
Total	1,050.0	60%	40%	0.69

Table 9.A-2: Proposed Site Run-off Coefficents

	Area (acres)	Impervious Percent	Pervious Percent	C
Airport Proper	947.7	66%	34%	0.71
Fuel Farm	12.5	48%	52%	0.64
Long Term Parking Garage	19.8	95%	5%	0.83
Vor/Navigation Beacon Site	26.6	10%	90%	0.49
Guadalupe River	43.4	0%	100%	0.45
Total	1,050.0	62%	38%	0.70

According to the Santa Clara County Drainage Manual (2007), the Santa Clara Valley Water District's Return Period-Duration-Specific (TDS) Regional Equation has been used to establish a relationship between precipitation depth and Mean Annual Precipitation for various return periods. Consistent with City of San Jose guidelines, a 24-hour storm duration was used for the analysis. The following equations from the Santa Clara County Drainage Manual were used to define the rainfall intensity:

$$i = \frac{x_{T,D}}{D}$$

&

$$x_{T,D} = A_{T,D} + (B_{T,D}MAP)$$

where:

$x_{T,D}$ = precipitation depth for a specific return period and storm duration (inches)
T = return period (years)
D = storm duration (hours)
$A_{T,D}$ & $B_{T,D}$ = Regional specific coefficients
MAP = Mean Annual Precipitation (inches)

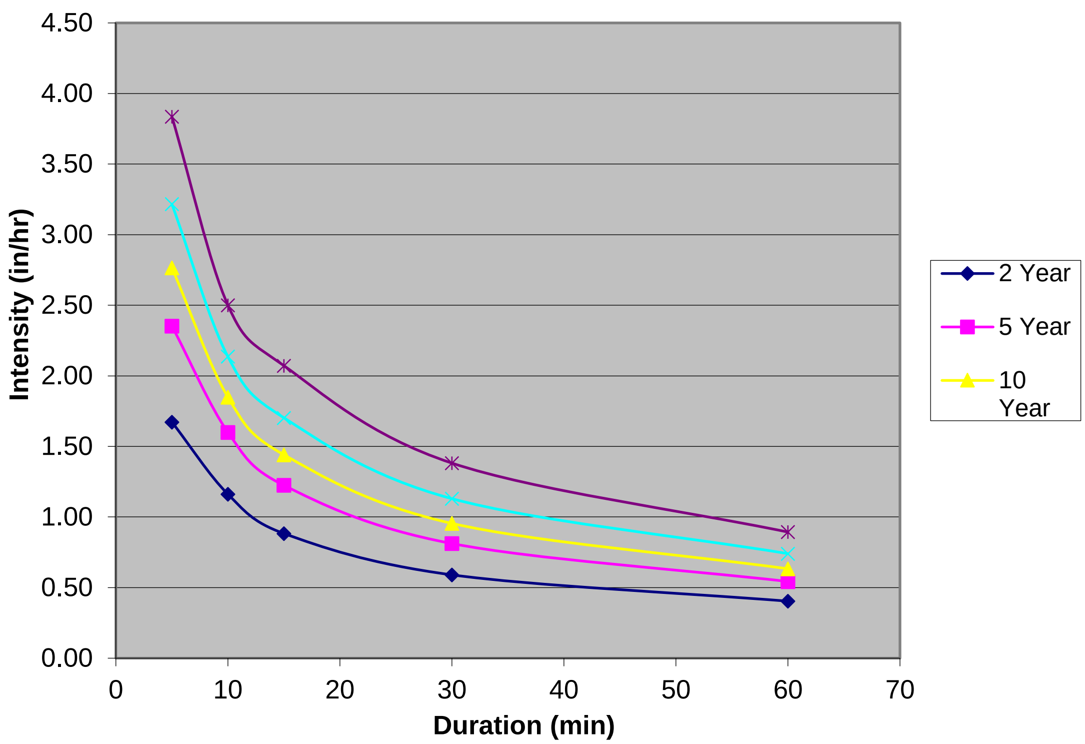
Using the airport's MAP of 13.9 inches, rainfall intensities where obtained for 5, 10, 15, 30 and 60 minute durations and 2, 5, 10, 25 and 100 year design storms. These intensities are tabulated in Table 9A-3 and Figure 9A-1.

Table 9.A-3: Rainfall Intensities*

Duration (min)	Decimal hours	**2 Year**	**5 Year**	**10 Year**	**25 Year**	**100 Year**
5	0.08	**1.67**	**2.35**	**2.77**	**3.22**	**3.84**
10	0.17	**1.16**	**1.60**	**1.85**	**2.14**	**2.50**
15	0.25	**0.88**	**1.22**	**1.44**	**1.70**	**2.07**
30	0.50	**0.59**	**0.81**	**0.95**	**1.13**	**1.38**
60	1.00	**0.40**	**0.54**	**0.63**	**0.74**	**0.89**

(REF: Santa Clara County Drainage Manual, 2007) *Rainfall intensities are in in/hr

Figure 9.A-1: Intensity - Duration - Frequency Curve



In the Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5320-5D entitled "Airport Drainage Design", the FAA recommends a design storm of 5-years for runways and taxiways and 10-years for buildings and facilities. The city of San Jose recommends a 10-year design storm for city storm drain sizing purposes. Based on the above criteria, the entire airport site was analyzed for a 10-year design storm.

According to Santa Clara County's Flood Insurance Study and record drawings received from the Airport, during a 10-year flood event water elevations in the Guadalupe River rise above the Airport's outfalls. Under these conditions, the flapgates on the storm drain outfalls are activated and the only operating storm outlet is the retention basin pump at the north end of the Airport. The overland release path of the airport proper directs the water to the retention basin, known as "Rocky Pond". The storm water is pumped from the retention basin into the Guadalupe River at a rate of 1.5 million gallons an hour (55.7 cfs). Rocky Pond's storage volume is approximately 140,000 cubic feet. The FAA advises that no encroachments shall occur on runways and taxiways (including pavement shoulders) during a 5-year event and that ponding may occur in areas between runways and taxiways to provide temporary storage for runoff exceeding a 5-year storm event. Consistent with FAA recommendation, stormwater run-off in excess of retention basin capacity and the pumping rate is temporary stored in the unpaved areas between the runways and taxiways.

The FAA advises that when the storm drainage system has a drainage area much smaller than that of the receiving stream, the peak discharge from the storm drainage system may be out of phase with the peak discharge from the receiving watershed. A 10-year flood elevation in the creek and 10-year storm runoff is a peak-on-peak scenario that is not an accurate representation of the watershed. Table 6-3 in FAA AC 150/5320-5D, Figure 9.A-4, provides a comparison of discharge frequencies for coincidental occurrence for 10-year and 100-year design storms. This table can be used to establish an appropriate design tailwater elevation for a storm drainage system based on the expected coincident storm frequency on the outfall channel. The tributary area of the Guadalupe River Watershed compared with the tributary area of the airport is roughly a 100 to 1 area ratio. Based on Figure 9.A-4, a 10-year flood elevations in Guadalupe River combined with a 5-year design storm for the site runoff can be used to represent a 10-year design storm for the Airport, thus called the Design Storm.

Table 9.A-4: Frequencies for Coincident Occurrence (Table 6-3, FAA AC 150/5320-5D, 2013)

Area Ratio	Frequencies for Coincidental Occurrence			
	10-Year Design		100-Year Design	
	Main Stream	Tributary	Main Stream	Tributary
10,000 to 1	1	10	2	100
	10	1	100	2
1,000 to 1	2	10	10	100
	10	2	100	10
100 to 1	5	10	25	100
	10	5	100	25
10 to 1	10	10	50	100
	10	10	100	50
1 to 1	10	10	100	100
	10	10	100	100

Based on the FAA and Santa Clara County guidelines referenced above, the storm drain system has sufficient capacity if ponding in unpaved areas does not encroach on the runways or taxiways during the 24-hour Design Storm.

Peak rainfall intensity is estimated to occur when the total watershed is contributing to the runoff. This is referred to as the watershed's travel time. According to the Caltrans Highway Design Manual (HDM), travel time for shallow sheet flow is estimated by the following equation:

$$T_t = \frac{0.42L^{4/5}n^{4/5}}{P_2^{1/2}s^{2/5}}$$

where:

Tt = Travel time in minutes
L = Length of flow path in feet
S = Slope of flow in feet per feet
n = Manning's roughness coefficient, 0.012 for the airport (HDM Table 816.6A)
P2 = 2-year, 24-hour rainfall depth in inches, 1.66 inches for the airport (NOAA Atlas 14)

When the Airport proper is treated as a single watershed, which is an approximation of the site when the creek are closed, L is approximately 11,300 feet and S is approximately 0.002 ft/ft. When these numbers are imputed into the travel time equation, the result is

$$T_t = 199\ minutes = 3\ hr\ 19\ minutes$$

Intensities and run-off rates were calculated for both the peak condition and 24-hour duration for both the existing and proposed conditions and are shown in Table 9.A-5.

Table 9.A-5: Precipitation Intensity and Runoff Rate (5-Year Design Storm)

	i_{Tt} (in/hr)	Q_{Tt} (cfs)	i_{24} (in/hr)	Q_{24} (cfs)
Existing Site	0.28	185.8	0.08	55.5
Proposed Site	0.28	197.3	0.08	58.9

Based on the FAA and Santa Clara County guidelines referenced above, the storm drain system has sufficient capacity if ponding in unpaved areas does not encroach on the runways or taxiways as a result of the 24-hour Design Storm. The volume of water ponded after a 24-hour Design Storm is calculated as:

$$V_{24} = \left(Q_{24} - Q_p\right)(86{,}400\ seconds)$$

where:

V_{24} = Volume of water ponded after 24-hour Design Storm
Q_{24} = Flow Rate for 24-hour Design Storm run-off
Q_p = Flow Rate of existing pump

This equation models the run-off rates and pump rate as linear as assumes that pumping begins at the start of the storm. In reality, the run-off is parabolic and there is a lag time between the start of the storm and the activation of the pump. However, the linear equation provides an adequate approximation of the overall affect of the storm.

In the existing condition, the 24-hour run-off flow rate is less than the pumping rate; therefore, it is anticipated that stormwater run-off will be fully drained from the site at the conclusion of the 24-hour Design Storm.

In the proposed condition, approximately 280,000 cubic feet of stormwater will pond on-site at the conclusion of the 24-hour design storm. This ponding is expected to be contained within Rocky Pond and the unpaved areas between taxiways Y and Z. Based on the storage volume and pumping rate, the site will be fully drained 1.5 hours after design storm. The approximate ponding areas are shown in blue in Figure 9.A-2 and numerically shown in Table 9.A-6. These areas were determined based on as-built drawings and existing contours provided by San Jose International Airport and assumed proposed grades. The actual conditions of the site could vary.

Table 9.A-6: Ponding Volumes

	Volume (cu ft)
Rocky Pond	140,000
P1	27,400
P2	7,600
P3	20,550
P4	18,250
P5	8,900
P6	10,550
P7	11,100
P8	25,600
P9	16,250
Total	286,200

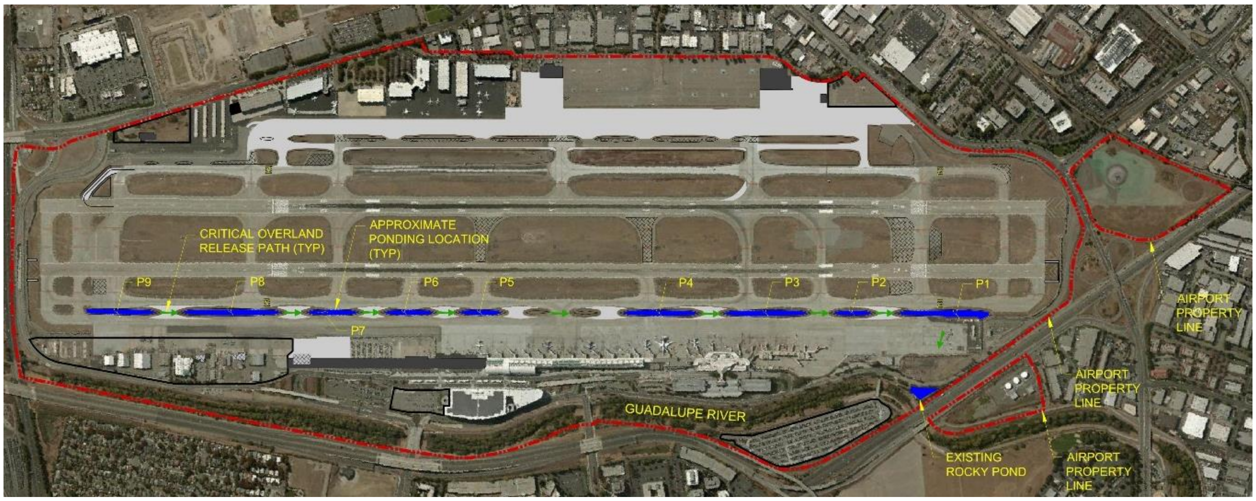


Figure 9.A-2: Airport Ponding and Overland Release Path

Based on the analysis outlined above, the site is shown to have adequate capacity to accommodate the increase in impervious area generated by the Airport Master Plan Projects.

Table 9.A-7: Airfield Project Footprint/Construction Size and Surface (1 of 3)

Project		Land Area Square Feet*	Existing Surface
A-17	Extend parallel Taxiway W south from Taxiway B to Runway 12R-30L (for ADG-III aircraft).	48,800	unpaved
A-23	Widen cross Taxiway J at Runway 12R-30L for higher-speed arrivals exit to west.	26,200	unpaved
A-26	Convert former Runway 11-29 to a new parallel Taxiway V (for ADG-III aircraft) and extend south to Taxiway C and north to a new cross Taxiway V7.	538,300	263,800 paved 274,500 unpaved
A-27	Construct new cross Taxiway V7 from north end of new Taxiway V to Taxiway W (for ADG-III aircraft).	16,000	unpaved
A-37	Close existing Taxiway V and replace with a parallel apron-edge taxilane (for ADG-III aircraft).	243,900	paved
A-38	Construct up to seven new taxiway connectors (V1–V7) between the expanded west side apron (Project G-9) and new Taxiway V (for ADG-III aircraft).	83,500	unpaved
A-39	Mitigate direct access from west side apron to taxiways B, C, & D through pavement marking/painting or removal.	none *(mark/paint only)*	--
A-40	Create up to three new taxiway connectors (W1–W3) between the southwest apron and Taxiway W (for ADG-II aircraft) through pavement marking/painting or removal.	none *(mark/paint only)*	--
A-41	Relocate existing general aviation run-up pad to southwest apron area.	38,700 *(removal)*	paved *(to be removed)*
A-42	Relocate Runway 12R-30L aircraft hold positions on all cross taxiways to current ADG-V aircraft standard.	45,000	paved
A-43	Widen Runway 12L-30R blast pads, and lengthen blast pad at 12L end, to current ADG-V aircraft standard.	14,900	unpaved
A-44	Realign existing cross taxiways B-F, H, J, & L between taxiways Y and Z to mitigate direct access from east side apron to Runway 12L-30R, and rename realigned segments as taxiways Z1–Z8 & Z10.	457,400	unpaved
A-45	Close existing segments of cross taxiways B-F, H, J, & L between taxiways Y and Z through pavement marking/painting or removal (upon completion of Project A-44).	427,800 *(removal)*	paved *(to be removed)*
A-46	Narrow segment of existing cross Taxiway B between Taxiway Z and Runway 12L-30R through pavement marking/painting.	none *(mark/paint only)*	--
A-47	Narrow segment of existing cross Taxiway L between Taxiway Y and Runway 12R-30L through pavement marking/painting.	none *(mark/paint only)*	--
A-48	Close existing segments of cross taxiways F and H between Runway 12R-30L and Runway 12L-30R through pavement marking/painting.	none *(mark/paint only)*	--
A-49	Add pavement markings to existing parallel taxiways W and Y, lateral to the adjacent runway displaced thresholds, to visually denote their use as taxiways.	none *(mark/paint only)*	--

***** Land area sq.ft. = construction sq.ft.

Table 9.A-7: Airfield Project Footprint/Construction Size and Surface (2 of 3)

Project		Land Area Square Feet	Building Square Feet	Existing Surface
T-4	Construct new public short-term parking garage (up to 5,000 spaces) and associated roadway improvements south of existing Rental Car Garage and opposite new Terminal B South Concourse (Project T-13).	500,000	2,500,000	paved
T-6	Remove City office structures at 1311 Airport Blvd.	11,000 *(removal)*	--	paved
T-8	Construct new public long-term parking garage (up to 6,000 spaces) on existing interim public long-term surface parking lot site.	467,000	2,335,000	paved
T-13	Expand Terminal B (South Concourse) to south, including up to an additional 14 air carrier gates and 750,000 sq.ft. of building space, and associated passenger processing facilities (ultimate terminal complex total of up to 42 gates and 1.8 million sq.ft.).	400,000	750,000	paved
T-16.	Construct new multi-story business hotel south of/adjacent to new public short-term parking garage (Project T-4), up to 300,000 sq.ft. in size including up to 330 guest rooms and 300 parking spaces.	200,000	300,000	paved unpaved
C-2	Expand cargo airline facilities at or adjacent to existing east side cargo airline areas, with up to 200,000 sq.ft. of additional ramp, building, and vehicle parking and movement space (cargo airline facility total of up to 500,000 sq.ft.).	200,000	35,000	paved
C-3	Relocate belly-freight facilities to new site(s) on east side of Airport, including up to 150,000 sq.ft. of ramp, building, and vehicle parking and movement space.	150,000	35,000	paved
C-4	Remove existing Air Freight Building and vehicle parking/movement area.	150,000 *(removal)*	--	paved
G-5	Convert former San Jose State University leasehold site at southwest side to aviation support or general aviation facility use.	152,400	50,000	unpaved
G-6	Establish new FBO leaseholds on west side for reconfiguration of general aviation facilities.	none	--	--
G-8	Expand general aviation facilities onto northwest side of Airport.	435,600	150,000	paved
G-9	Expand west side general aviation apron out to edge of new parallel taxilane (Project A-37).	496,300	--	unpaved
G-10	Reconfigure southwest apron tiedown storage facilities (to accommodate Projects A-40, A-41, and G-5).	none	--	--
S-1	Expand fuel storage facility on parcel north of Hwy. 101 by up to two additional tanks and 2.0 million gallons of capacity (total of up to 8 tanks and 4.0 million gallon capacity).	100,000	4,800 *(3 tanks)*	10,000 paved 90,000 unpaved

Table 9.A-7: Airfield Project Footprint/Construction Size and Surface (3 of 3)

Project		Land Area Square Feet	Building Square Feet	Existing Surface
S-3	Relocate/expand airport maintenance facilities at new site(s) on east or west sides of Airport.	none *(part of Project G-5)*	--	paved
S-4.	Expand flight kitchen facilities at existing or new sites on east side of Airport or relocate/expand off-airport.	375,000	125,000	paved
S-5	Relocate/expand airline maintenance/storage facilities at various existing or new sites on east or west sides of Airport.			
S-6	Remove, relocate, or upgrade existing aviation support facilities on southeast side of Airport (1239-1311 Airport Blvd.) at various existing or new sites on east or west sides of Airport.			

Appendix 9.B
STORMWATER DISCHARGE DATA

SAMPLE DATE[a]	PARAMETER	RESULTS[b]	UNITS	METHOD DETECTION LIMIT	REPORTING LIMIT
October 28, 2016	pH	7	SU	1	
	Total Suspended Solids [TSS]	3.5 to 63	mg/L	0.5 to 2.5	1 to 5
	Oil and Grease	<1.5 to 1.8	mg/L	1.5 to 1.8	5.4 to 6.4
March 6, 2017	pH	9	SU	1	
	Total Suspended Solids [TSS]	1.2 to 5.4	mg/L	0.5 to 1	1 to 2
	Oil and Grease	<1.5 to 1.8	mg/L	1.5 to 1.8	5.2 to 6.3
March 1, 2018	pH	6.5 to 7	SU	1	
	Total Suspended Solids [TSS]	4.1 to 36	mg/L	0.59 to 1.7	1.2 to 3.3
	Oil and Grease	<1.4 to 1.5	mg/L	1.4 to 1.5	5.1 to 5.2
November 28, 2018	pH	6 to 7	SU	1	
	Total Suspended Solids [TSS]	3.7 to 20	mg/L	0.53 to 1	1.1 to 2
	Oil and Grease	<1.4 to 4.3	mg/L	1.4	5.1
February 8, 2019	pH	7	SU	1	
	Total Suspended Solids [TSS]	6.3-34	mg/L	0.67-1.3	1.3-2.5
	Oil and Grease	<1.4	mg/L	1.4	5.1

[a]Qualifying Storm Event (QSE) samples could not be collected at Mineta San José International Airport between July 1, 2017 and December 31, 2017 due to many factors, including lack of QSEs, important safety issues related to sample collection, and unfortunate timing of staff turnover.

[b]Range of values from all locations sampled

NOTE:

1. Mineta San José International Airport (Airport) is required to collect one (1) qualifying storm event (QSE) sample from each location per six-month period (Jan 1-June 30 and July 1-Dec 31) because it is a member of the Airports California Monitoring Group (ACMG).

2. New sample locations were identified in 2018, which are reflected in the updated SWPPP, and the new locations are typically surface inflow samples (not outfall samples).

SOURCE: San Jose International Airport Industrial SWPPP