

3.11 Utilities and Service Systems

This section provides an overview of existing utilities and service systems within Solano County, City of Vacaville, and project site, associated regulatory framework, and an analysis of potential impacts that would result from implementation of the Proposed Project. Utilities discussed in this section include wastewater, water supply and delivery, electricity, and natural gas. Service systems for solid waste disposal are also described in this section.

3.11.1 Environmental Setting

Fire and Emergency Services

Fire services and emergency paramedic response in the City of Vacaville are provided by the Vacaville Fire Department (VFD). The Department currently operates out of 4 stations, and has plans to add three additional stations. The closest fire station to the Proposed Project site is Station No. 73, which is located to the northwest of the northern end of the Airport. The Fire Department is equipped with six engines and one ladder truck. The Department also operates six ambulances and a heavy rescue squad for EMS. A mutual aid agreement is maintained with the Vacaville Fire Protection District, which services the unincorporated areas adjacent to the City and with other Solano County fire agencies and the State of California. The Fire Department has a ratio of .74 fire and rescue personnel per 1,000 population, and maintains an adopted standard response time of seven minutes for 90 percent of calls (City of Vacaville, 2010a). In addition to fire suppression, the Fire Department is involved in fire prevention activities including code compliance inspections, plan review and construction inspections, fire investigations and fire and life safety education. In addition to fire rescue and EMS services, the Department also provides a full range of nonemergency, community outreach activities, including business and industry partnership, neighborhood services and youth involvement (Vacaville, 2007). According to the General Plan, the Nut Tree Airport is located in a moderate fire hazard area, the lowest classification (City of Vacaville, 2007a). A small portion of VFD's funding comes from impact fees collected by the City for new development (City of Vacaville, 2010a).

Police Protection

The Solano County Sheriff's Office provides law enforcement and emergency services to the unincorporated portions of Solano County, including the Airport. The Sheriff's Office serves an approximately 850 square-mile area, which includes approximately 22,000 people. There are 118 sworn officers and 265 non-sworn personnel employed with the Sheriff's Office (City of Vacaville, 2010a).

Hospitals

The closest hospital to the Proposed Project site is Kaiser Permanente Vacaville Medical Center, which is located approximately 1 mile to the northeast.

Schools

The nearest elementary school to the Proposed Project site is Edwin Markham Elementary School, which is located approximately .5 mile to the southeast. The closest high school to the Proposed Project site is Vacaville High School, which is located approximately 1.5 miles to the southeast. Both schools are a part of the Vacaville Unified School District.

Parks

The closest park or recreation area to the Proposed Project site is the Centennial Park, which is located less than half a mile to the west of the Nut Tree Airport. Golden Tree Golf Course is also located approximately 0.75 miles to the east, on the east side of Interstate 80.

Water Supply and Storm Drainage

Potable water is supplied within the Vacaville General Plan study area by three sources: the City of Vacaville, Solano Irrigation District (SID), and a small number of private domestic groundwater wells (Vacaville, 2010b). Potable water is provided by the City to users within the city limits via a net-work of existing water mains, transmission mains, reservoirs, groundwater wells, booster pump stations, and treatments plants. Water supply for the City comes from two sources: surface water and groundwater. In total, the current annual allocation from the various sources equates to 42,098 acre-feet per year (AFY). Additional detail about water supply in the City and to the project area is provided in Section 3.9, Hydrology and Water Quality.

Storm drainage maintenance is provided by the City of Vacaville and the Solano County Water Agency (SCWA). Storm water from the project area is discharged in to Ulatis Creek. Additional information and impacts to water supply and storm drainage are provided in Section 3.9. This topic will not be addressed further in this section.

Wastewater

Wastewater service is provided to the project site by the Easterly Wastewater Treatment Plant (WWTP), which is located in the unincorporated town of Elmira just east of the city. The Easterly WWTP has a design flow capacity of 15 million gallons per day (mgd) sanitary base flow (SBF) and 55 mgd peak hour wet weather flow (PHWWF) (Vacaville, 2010b). SBF is defined as the monthly flow in October when infiltration and inflow (I&I) is minimal. PHWWF is defined as the maximum one-hour flow during the wet season. The existing SBF at the Easterly WWTP is approximately 8 mgd. The PHWWF is dependent on baseline sanitary flow conditions, as well as rainfall intensity and preceding rainfall conditions. The measured PHWWF at the Easterly WWTP has exceeded 40 mgd on two occasions in the past ten years: once in December 2005 (42.5 mgd) and once in October 2009 (41.3 mgd) (Vacaville, 2010b). Currently, per State mandates, the City is in the process of designing improvements to the WWTP to meet recently-implemented National Pollutant Discharge Elimination System (NPDES) permit requirements. However, these improvements will not increase or decrease the existing design flow capacities (Vacaville, 2010b).

The Airport currently has a total of twelve restrooms: four in the arrival/departure facility, two in an office space connected to larger hangars, and six in other corporate hangars in the south T-hangar

area that are staffed by approximately 8 full or part time employees. The Airport is currently served by one eight-inch City sewer line that runs across a portion of Airport property from north to south, and extends into the Nut Tree commercial development area. Utilizing standard generation rates provided in the City of Vacaville's Design Standards for sanitary sewer systems (Section DS 6), it is estimated that the Airport currently generates approximately 561 gpd of wastewater¹ (City of Vacaville, 2007b). The City's Northeast Sector Sewer Master Plan currently assumes build out needs of 20,000 gpd for the Airport (City of Vacaville, 2013).

Solid Waste

Recology Vacaville Solano provides solid and yard waste and recyclable material collection within the City of Vacaville. The California Integrated Waste Management Board (CIWMB) allocated the City of Vacaville with a disposal rate target of 6.5 pounds of waste per person per day. In 2008, the City of Vacaville's disposal rate was 5.5 pounds of waste per person per day, which was well below the CIWMB target.

Recyclable material can also be taken to several drop-off recycling centers throughout town, including the Recology Vacaville Recycling Center at 855½ Davis Street. Recyclable material collected by Recology Vacaville Solano is sent to the Recology Vallejo facility located at 2021 Broadway in Vallejo.

Solid waste collected from Vacaville is deposited at the Hay Road Landfill, located at 6426 Hay Road in Vacaville. Recology Hay Road is the landfill operator. In 2009, the landfill received 126,000 tons of solid waste, of which 48 percent was from Vacaville residents and businesses. The total capacity of the landfill is 37 million cubic yards. The landfill currently has a remaining capacity of approximately 30.4 million cubic yards. It is projected that the landfill will reach capacity in 2077 (CalRecycle, 2010).

3.11.2 Regulatory Setting

State

Three pieces of legislation regarding solid waste have been passed at the state level. The Integrated Waste Management Act, AB 939, emphasizes conservation of natural resources through reduction, recycling, and reuse of solid waste. AB 939 required that all cities and counties divert 25 percent of solid waste stream from landfills by 1995 and 50 percent by 2000. It also requires that all counties/cities conduct a Solid Waste Generation Study and prepare a Source Reduction and Recycling Element (SRRE). In accordance with AB 939, local agencies must submit an annual report to the California Integrated Waste Management Board (CIWMB) summarizing its progress in diverting solid waste disposal. The Proposed Project would be required to comply with the requirements of the County of Riverside's Source Reduction and Recycling Element.

¹ Baseline wastewater rates calculated using City generation rates for office uses (1,500 gpd/acre) and rates for public high schools (30 gpd/student). The latter methodology assumes that use of the school wastewater generation rate is appropriate, as both a school and airport are daytime public-use facilities.

SB 1374, passed in 2002, requires that the annual report submitted to CIWMB also include a summary of the progress made in diverting construction and demolition waste materials. In addition, SB 1374 requires CIWMB to adopt a model ordinance suitable for adoption by a local agency to require 50 to 75 percent diversion of construction and demolition waste materials to landfills. Local agencies are required to adopt construction and demolition diversion ordinances with diversion rates in accordance with SB 1374.

The California Solid Waste Reuse and Recycling Access Act of 1991 (as amended) requires each development project to provide an adequate storage area for collection and removal of recyclable materials.

Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC) regulates hazardous waste in California primarily under the authority of the federal Resource Conservation and Recovery Act (RCRA) of 1976, and the California Health and Safety Code. The DTSC's hazardous waste regulations are contained within CCR Title 22, Division 4.5, Environmental Health Standards for the Management of Hazardous Waste. Regulations set forth through Title 22, Division 4.5, establish standards for the handling, transportation, treatment, and disposal of hazardous waste materials.

Local

Solano County General Plan

The Solano County General plan was adopted on August 5, 2008. The Public Facilities and Services chapter (Chapter 8) of the General Plan provides information and policy guidance to Solano County to ensure that adequate public facilities and services are available now and in the future (Solano County, 2008).

Public Facilities and Services Chapter

The following goals from the *Solano County General Plan's* Public Facilities and Services Chapter are applicable to the Proposed Project:

Policy PF.G-1: Provide adequate public services and facilities to accommodate the level of development planned by the County.

Policy PF.G-2: Ensure that residents throughout Solano County have access to essential public facilities and services.

Policy PF.G-3: Provide effective and responsive fire and police protection, and emergency response service.

City of Vacaville General Plan

The City of Vacaville General Plan (Plan) was adopted in December of 2007 and serves as a comprehensive update of the 1980 General Plan (Vacaville, 2007).

The Public Facilities, Institutions, and Utilities Element (Chapter 5) outlines guiding policies for addresses utilities and public services, community services, cultural facilities and historic resources and school needs and policies and standards for locating new schools. Currently, the City of Vacaville is in the General Plan Update process and it is anticipated that formal adoption of the updated General Plan will occur in 2013.

Public Facilities, Institutions and Utilities Element

The following goals from the *City of Vacaville General Plan's* Public Facilities, Institutions and Utilities Element are applicable to the Proposed Project:

Policy 5.1-G 1. Assess the adequacy of utilities in existing developed areas, and program any needed improvements to coordinate with providing facilities to serve developing portions of the Planning Area.

Policy 5.1-G 4. Plan for public safety facilities for new areas. Maintain comprehensive Hazardous Materials and Emergency Response plans.

Policy 5.1-G 2. Develop a plan and standards for the provision of public services, including fire and police services.

Policy 5.1-G 6. Improve upon and expand waste disposal programs and methods in order to divert a minimum 50 percent of the waste stream from the landfill by the year 2000.

3.11.3 Analysis, Impacts, and Mitigation

Significance Criteria

The significance criteria for the public services analysis are based on the criteria presented in Appendix G of the *CEQA Guidelines*. For this analysis, the Proposed Project would result in significant impacts if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services;
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the project from existing entitlements and resources, or need new or expanded entitlements;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Not comply with federal, state, and local statutes and regulations related to solid waste.

Methodology and Assumptions

The assessment of utilities is based on qualitative analysis of existing services and resources available in the project area as well as a determination of whether the project includes adequate provisions to ensure continued service that meets acceptable standards.

Impacts and Mitigation Measures

Impact 3.11-1: Would the Proposed Project result in substantial adverse physical impacts associated with the need for new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services? (*Less than Significant*)

Phase I Projects and Project Build-out

Build-out of Phase's I through III would result in the construction and operation of almost 20 acres of new development; including new hangars, non-aviation, light-industrial uses, extension of the existing runway and taxiway system, and expansion of the existing aircraft parking apron and multi-use facility.

Fire Protection and Emergency Services

As noted previously, fire protection within the Solano County is provided by the City of Vacaville. All proposed structures shall be constructed in compliance with fire and building codes. As described under Section 3.17.1, the Proposed Project site is located within a moderate hazard area, the lowest classification. Though the Proposed Project would result in the development of a variety of aviation and non-aviation related facilities, it is anticipated that these improvements would cater to existing and future demand, and would not result in an increase to the population served by the City's fire protection and emergency services. As such, the Proposed Project would not result in substantial direct or indirect population growth relative to the City's current population and would therefore not result in a change in the ratio of fire and rescue personnel per 1,000 population. Furthermore, given that the Proposed Project would not result in significant increases in the population, implementation of the Master Plan would not cause VFD to exceed its adopted standard response time of seven minutes for 90 percent of calls. As such, impacts related to fire protection and emergency services are considered less than significant.

Police Services, Hospitals, Schools, Parks

The Proposed Project would not result in substantial direct or indirect population growth relative to the City's current population. Because the Proposed Project would not result in substantial population growth, the generation of new residents or students in the area would not occur. As such the City of Vacaville would not be forced to expand police protection services, and the use of local hospitals, schools, and parks would not increase in a manner that would affect existing facilities, or require the construction of new ones. Furthermore, implementation of the Proposed

Project would not affect service or response time standards, particularly those established for the Solano County Sheriff's Office. Therefore, impacts related to police services, as well as other local services such as hospitals, schools, and parks are considered less than significant.

Mitigation Measures: None required.

Impact 3.11-2: Would the Proposed Project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (*Less than Significant*)

Phase I Projects

Development of the Proposed Project would result in wastewater generated primarily from sanitary flow from proposed hangars, and less than 10 acres of commercial or industrial development. Wastewater would flow into an existing sewer line which is connected to the City of Vacaville's Easterly WWTP, for which wastewater treatment requirements have been established by the CVRWQCB.

Wastewater discharge requirements for the facility are based on all applicable state and federal regulations, and include limitations on receiving water. Receiving water requirements include limitations related to temperature, sediments, pH, dissolved oxygen, fecal coli form and other pollutant concentrations, water clarity and color, turbidity, and toxicity. Based on standard rates established by the City of Vacaville, construction of proposed non-aviation land uses, including the proposed office building, and the two general commercial/light industrial facilities is anticipated to generate 18,450 gpd of wastewater.² Furthermore, the addition of the proposed hangar facilities is anticipated to add approximately 240 gpd of wastewater in Phase I.³ In total, Phase I is estimated to add 18,690 gpd of wastewater (see **Table 3.11-1**). As such, wastewater generated by Phase I of the Proposed Project is estimated to result in a conservative increase of two percent over existing conditions (8 mgd), and would not exceed the existing capacity of the Easterly WWTP of 15 mgd. Furthermore, all wastewater diverted to WWTP would be treated to comply with all applicable state and federal regulations; therefore, the Proposed Project would not exceed wastewater treatment requirements, and impacts associated with the proposed development are considered less than significant.

Project Build-out

Phases II and III of the Proposed Project would include the construction of an additional 7.75 acres of aircraft hangars. These types of uses typically do not generate large volumes of wastewater as very few hangars do not include restroom facilities. Therefore, development of the additional hangars in Phases II and III of the Proposed Project is assumed to result in a doubling of the baseline generation of wastewater by hangar restrooms (240 gpd), and as such would not result in a large increase in wastewater generation over baseline conditions. Phase II, however,

² This calculation is based on the City of Vacaville's standard generation rate for office uses (1,500 gpd/acre) and industrial uses (2,000 gpd/acre).

³ Estimated using City rates of 30 gpd/student for school facilities (similar day-time public use facility as an airport), and assumes approximately 8 full time or part time employees.

does include the expansion of the existing arrival/departure facility, which would include a restaurant. Expansion of this facility to include a restaurant could increase wastewater generation by 7,000 gpd; resulting in a total project increase of 26,731 gpd of wastewater above baseline conditions. The estimated increase of 26,731 gpd of wastewater associated with the full build-out of the Proposed Project would not result in an increase of SBF beyond WWTP's current capacity (15 mgd). Furthermore, all wastewater diverted to WWTP would be treated according to all applicable state and federal regulations. Therefore, impacts associated with a potential exceedance of wastewater treatment requirements as a result of the Proposed Project are considered to be less than significant.

**TABLE 3.11-1
WASTEWATER GENERATION CALCULATIONS FOR THE PROPOSED PROJECT**

Facility/Project	Total Acreage	Generation Rate ¹	Qa Generation ²
Baseline Condition			
Administration Building	0.17	1,500 gpd/acre ³	248
Hangar Offices	0.05	1,500 gpd/acre ³	73
Corporate Hangars	2.3	30 gpd/person ⁴	240
<i>Subtotal</i>			561
Phase I			
Professional Office	1.3	1,500 gpd/acre ³	1,950
General Commercial/Light Industrial	5.5	2,000 gpd/acre ⁵	11,000
General Commercial/Light Industrial	2.75	2,000 gpd/acre ⁵	5,500
South Corporate Hangar	5.75	30 gpd/person ⁴	240
<i>Subtotal</i>			18,690
Phase II			
North Hangar Expansion and East Corporate Hangars	4.46	30 gpd/person ⁴	240
Expansion of Existing Administration Building	1.4	5,000 gpd/acre ⁶	7,000
<i>Subtotal</i>			7,240
Phase III			
East Hangar Expansion	2.66	30 gpd/person ⁴	240
<i>Subtotal</i>			240
Baseline + Project Total			26,731

1 Generation rates derived from the City of Vacaville's Sanitary Sewer System Design Standards, Table DS 6-1.

2 Qa = Average dry weather flow.

3 Generation rate for office uses.

4 Generation rate based on rates used for secondary schools (gpd/student), which is comparative as a daytime public use facility.

5 Generation rate for an industrial use.

6 Generation rate for highway commercial use.

SOURCE: ESA Airports, 2013.

Mitigation Measures: None required.

Impact 3.11-3: Would the Proposed Project require or result in the construction of a new sewer connection or water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects or would the wastewater treatment provider which serves or may serve the project have inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (*Potentially Significant*)

Phase I Projects

Phase I of the Proposed Project would include the construction of two hangars that would include bathroom facilities and less than 10 acres of non-aviation industrial development. Connection to existing sewer lines would require the installation of new, on-site sewer line. Required trenching and other construction activities necessary for the installation of the on-site sewer pipe will follow all standard construction BMPs and will therefore not cause a significant environmental impact.

Development of proposed non-aviation facilities would result in the construction of less than 10 acres of industrial or commercial structures. According to the City, the Easterly WWTP is currently operating seven mgd below its current maximum capacity of 15 mgd (City of Vacaville, 2010b). As stated above, the Proposed Project is conservatively estimated to increase the amount of wastewater treated at the Easterly WWTP by two percent in Phase I (18,690 gpd). Therefore the Proposed Project would not cause a substantial increase in the demand for wastewater treatment services, nor would it necessitate the alteration of existing facilities or the construction of new facilities to meet treatment capacity expectations. Therefore, impacts on existing treatment facilities as a result of the Proposed Project are considered less than significant.

Development of Phase I land uses would also result in an increase in the generation of wastewater at the Airport. Construction of proposed non-aviation land uses, including the proposed office building, and the two general commercial/light industrial facilities is anticipated to generate 18,450 gpd of wastewater. Furthermore, the addition of the proposed hangar facilities would add a small number of restrooms to the Airport. Given that hangars do not generate large volumes of wastewater, for the purposes of assessing potential increases, it is assumed that the addition of hangars in Phase I would be similar to the baseline generation of wastewater by hangars currently at the Airport (240 gpd). In total, Phase I is estimated to add 18,690 gpd of wastewater, for a total of 19,251 gpd when considered with baseline conditions (see **Table 3.11-1**). The estimated amount of wastewater generated under Phase I of the Proposed Project, plus baseline conditions, would remain below the 20,000 gpd assumed for the Airport in the City's Northeast Sector Sewer Master Plan; therefore, no additional facilities or expansion of existing facilities would be required to accommodate wastewater generated under Phase I of the Proposed Project, and impacts to existing facilities are considered less than significant.

Project Build-out

As described under Impact 3.11-2 above, project build-out, including Phases II and III of the Proposed Project would result in incremental increases in wastewater from the construction and operation of hangars with bathroom facilities, commercial development, and a restaurant. Full build-out of the Proposed Project, which would include the development of all three phases of development identified in the Master Plan, would connect to existing lines and result in the

generation of approximately 26,731 gpd of wastewater. This would constitute a three percent increase in SBF above current treatment levels (8 mgd) at WWTP. Though the Proposed Project would result in an increase to the daily SBF treated at the Easterly WWTP, this increase would not exceed its current capacity of 15 mgd, and would therefore not require new or expanded water or wastewater treatment facilities to meet treatment capacity expectations. Therefore, the Proposed Project will result in a less-than-significant impact to these existing facilities.

Development of Phases II and III of the Proposed Project would add a total of approximately 18 acres of hangar space to the Airport, plus an expansion to the existing arrival/departure facility. The amount of wastewater generated by the additional hangar space proposed in Phase II and III of the Proposed Project is assumed to be double the baseline condition, as most hangars often do not contain sinks or restroom facilities. The expansion of the arrival/departure facility, however would likely result in an increase to the amount of wastewater generated at the Airport that would result in an exceedance of the 20,000 gpd planned for by the City of Vacaville (see **Table 3.11-1** above). Exceedance of the allotted wastewater capacity planned for in the City's Northeast Sector Sewer Master Plan could result in a potentially significant impact to the City's existing sewer system, and could result in the need to expand or add new sewer pipelines and connections. In order to avoid potential impacts to the City's existing sewer systems, implementation of Mitigation Measure 3.11-1 is required.

Mitigation Measure

Measure 3.11-1: Conduct a Flow Demand Study. Prior to approval of Phase II development projects, or when Master Plan development exceeds 10 acres, the County shall undertake a wastewater study to determine existing and future flows, and identify sewer line improvements required to provide necessary capacity. The study shall be submitted to the City of Vacaville for review.

Impact Significance after Mitigation: Implementation of Mitigation Measure 3.11-1 shall ensure that prior to the development of any land uses that may result in an exceedance of wastewater gpd currently planned for the project site, the County conducts a study to determine the Airport's wastewater generation and future demand. Preparation and submission of this study for review by the City of Vacaville shall ensure that potential impacts to the existing system and appropriate measures are identified. Implementation of this mitigation measure will ensure that potential impacts to the City's existing sewer system are less than significant.

Impact 3.11-4: Would the Proposed Project require the construction of new storm water drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects? (*Potentially Significant*)

Phase I Projects and Project Build-out

Implementation of the Proposed Project would require the connection to the Airport's existing storm water drainage system in order to capture runoff from additional impervious surfaces associated with the proposed hangars and development. The existing storm drainage system drains to Putah

South Canal. As described in Section 3.9, “Hydrology and Water Quality”, construction of the Proposed Project will require a National Pollutant Discharge Elimination System (NPDES) general construction permit, which calls for the preparation of a construction-specific storm water pollution prevention plan (SWPPP). Implementation of this SWPPP will ensure that any potential impacts to water quality as a result of constructing the Proposed Project will be less than significant.

Similarly, implementation of mitigation measures 3.3.1-2 and 3.3.1-2a, as described in Section 3.11, Biological Resources, which calls for pre-construction surveys for burrowing owls and nesting raptors, respectively, would ensure that impacts to biological resources resulting from construction of necessary storm water drainage facilities would be minimized.

Mitigation Measures

Implement **Measures 3.3.1-2a, 3.3.1-2b, 3.3.1-7, and 3.3.1-8.**

Impact Significance after Mitigation: Implementation of mitigation measures 3.3.1-2a, 3.3.1-2b, 3.3.1-7, and 3.3.1-8 would reduce impacts to special status wildlife and plant species through preconstruction surveys for burrowing owls, nesting raptors, Western Pond Turtles, and special status plant species. Adherence to these measures prior to construction will enable the Lead Agency to implement a variety of avoidance and preservation measures should a special-status species be identified. With implementation of these measures, potentially significant impacts to special-status species would be reduced to a less-than-significant level.

Impact 3.11-5: Would the Proposed Project result in insufficient water supplies from existing entitlements or need new or expanded entitlements? (*Less Than Significant*)

Phase I Projects and Project Build-out

Water is presently provided to Nut Tree Airport by the City of Vacaville. Additional demand for water on-site would result from operation of the proposed hangars, non-aviation commercial or industrial development, and the expanded multi-use arrival/departure facility. Facilities that are anticipated to use water provided by the City include bathroom facilities, non-aviation land uses, the proposed restaurant in the expanded multi-use facility, and landscaping. The 2005 Urban Water Management Plan (UWMP) states that the City of Vacaville has sufficient water supplies to meet its customers’ needs through build-out in a normal, single dry, and multiple dry years (Vacaville, 2005). Because the Vacaville General Plan includes the build-out of the Nut Tree Airport, the UWMP takes into account the construction and operation of the Proposed Project. Therefore, City water supplies are anticipated to be sufficient to support the needs of the Proposed Project, and would not require new or expanded entitlements and impacts resulting in insufficient water supplies are considered less than significant.

Mitigation Measures: None required.

Impact 3.11-6: Would the Proposed Project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs? (*Less Than Significant*)

As described under the Environmental Setting discussion above, solid waste in the project area is transported to the Hay Road Landfill. As of 2010, Hay Road Landfill had approximately 30.8 million cubic yards of remaining capacity with an expected closure date of 2069.

Phase I Projects**Construction**

Construction of the Proposed Project would generate solid waste, including a variety of building materials that can be recycled. New construction would also generate solid waste consisting of metals, plastics and other building materials. It is estimated that construction of the Proposed Project would generate solid waste at the rate of approximately 3.89 lbs./square foot of building construction⁴. Given that the Proposed Project includes an estimated 569,329 square feet (13.07 acres) of total constructed area (e.g., south apron expansion, hangars, taxiway, commercial or industrial development, etc.) in Phase I, a total of 1073.54 tons of construction refuse would be generated over the entire construction period ($569,329 \times 3.89 \text{ lbs./s.f.} = 2,214,689 \text{ lbs.}$, or 1,107.3 tons). This estimate is conservative and reflects no diversion or reuse/recycling of construction waste.

Generation of construction-related debris, as described above, would only comprise approximately 0.87 percent (0.0087) of Hay Road's annual intake. Given the overall low amount of construction and demolition waste estimated to be generated by the Proposed Project, impacts on local landfill resulting from construction of Phase I of the Proposed Project is considered less than significant.

Operation

Types of operational solid waste assumed to be generated by Phase I of the Proposed Project include paper and cardboard materials, food waste, and office supplies (e.g., fluorescent light bulbs, toner cartridges, batteries, etc.). Any hazardous materials generated on site by the Proposed Project through the operation and maintenance of aircraft (e.g., fuels, oils, solvents, etc.) shall not be diverted to any local landfills, but rather would be disposed of in accordance to applicable state and local guidelines.

Potential impacts on local landfills resulting from the operation of the Proposed Project were calculated using the Estimated Solid Waste Generation Rate for transportation, communication, and utilities uses (0.0108 tons/sq ft/yr) and commercial (0.9125 tons/1000 sq ft/yr), as defined by CalRecycle⁵. Given that operation of the Proposed Project would include the use of 136,000 s.f. of hangars and 415,998 s.f. of commercial/industrial development, it is estimated that use

⁴ *Characterization of Building-Related Construction and Demolition Debris in the United States* (Franklin Associates), June 1998, prepared for the U.S. Environmental Protection Agency, Office of Solid Waste (Report No. EPA 530-R-98-0100), Table 4, Estimated Generation of Non-Residential Construction Debris, Page 2-4.

⁵ CalRecycle, Estimated Solid Waste Generation Rates for Industrial Establishments, www.calrecycle.ca.gov/wastechar/wastegenrates/Industrial.htm, last updated June 14, 2011.

of the proposed facilities would produce approximately 1,849 tons of solid waste a year ($136,000 \times 0.0108 \text{ tons/s.f./yr} = 1469 \text{ tons per year}$ and $415,998 \times .00091 = 380 \text{ tons per year}$). This would constitute approximately 1.46 percent (0.014) of Hay Road's annual intake, and would therefore of a less-than-significant impact on the landfill serving the Proposed Project site.

In summary, solid waste generated by either the construction or operation of Phase I of the Proposed Project represents a minor contribution to the existing capacity of area landfills. Based on the low amounts of solid waste generated by the Proposed Project, impacts on area landfill resulting from the Proposed Project are considered less than significant.

Project Build-out

Project build-out, including Phases II and III of the Proposed Project would include similar construction and operation impacts as Phase I. Phases II and III would result in approximately 7.32 acres of hangars, and also likely generate additional food waste through the operation of a restaurant in the expanded multi-use arrival and departure facility. Using the same solid waste rates as above, it is estimated that construction of Phases II and III would generate solid waste at the rate of approximately 3.89 lbs./square foot of building construction. Given that the Proposed Project includes an estimated 319,000 square feet (7.32 acres) of total constructed area (e.g., hangars, commercial or industrial development, etc.), a total of 620.5 tons of construction refuse would be generated over the entire construction period ($319,000 \times 3.89 \text{ lbs./s.f.} = 1,240,910 \text{ lbs.}$, or 620.5 tons). This estimate is conservative and reflects no diversion or reuse/recycling of construction waste. Furthermore, during operation, Phases II and III would result in 3,445 tons of solid waste a year ($319,000 \times 0.0108 = 3,445 \text{ tons per year}$). This would only constitute 2.7 percent of the Hay Road's annual intake. Considered cumulatively, operation of the Proposed Project across all phases of would result in the generation of approximately 3,825 tons of refuse annually; approximately four percent of Hay Road's annual intake. Given the incremental increase in waste estimated to be produced during Phases II and III of the Proposed Project, and the overall low amount of refuse generated at full build-out, as compared to the annual intake of local landfills, impacts to landfill capacity are considered less than significant.

Mitigation Measures: None required.

Impact 3.11-7: Would the Proposed Project comply with federal, state, and local statutes and regulations related to solid waste? (*No Impact*)

Phase I Projects

As described under Impact 3.11-6, construction of the Proposed Project would generate approximately 1,540.4 tons of solid waste and operation of the Proposed Project would generate approximately 1,849 tons/yr. Both the construction and operation of the Proposed Project would be low relative to the landfill capacity. The Proposed Project would also be required to adhere to the policies and regulations set forth in the City and County General Plans and state and federal agencies that regulate solid waste. Given the minimal amount of solid waste anticipated to be generated during construction and operation of the Proposed Project as well as the Airport's

adherence to proper management and waste disposal guidelines, no impacts in terms of compliance with federal, state or local statutes or regulations related are anticipated.

Project Build-out

As described under Impact 3.17-6, construction of the Phases I and II would generate approximately 620.5 tons of solid waste and operation of the Proposed Project would generate approximately 3,445 tons/yr. As with Phase I, the construction and operation of Phases II and III would produce a relatively low amount of waste when compared to the annual intake and remaining capacity at Hay Road Landfill. Given the minimal amount of solid waste anticipated to be generated during construction and operation of the Phases II and III as well as the Airport's adherence to proper local, state, and federal policies and regulations related to the solid waste, no impacts in terms of compliance with federal, state or local statutes or regulations related is anticipated.

Mitigation Measures: None required.

Cumulative Impacts

Impact 3.11-8: Could implementation of the Proposed Project result in a cumulatively considerable impact to public services and utility systems? (*Potentially Significant*)

As described under Impact 3.11-1, the Proposed Project would have a less-than-significant impact on public services such as fire protection, police protection, hospitals, schools, and parks. Payment of development impact fees would potentially go towards future improvements to fire protection and police services such as additional personnel, vehicles, or new facilities. The provision of public services associated with the Proposed Project is consistent with all applicable federal, state, and local laws and regulations that govern the site. Other related projects (as identified in Chapter 2 of this EIR) would result in additional demand for public services. Similar to the Proposed Project, increases in public services for fire, police, hospitals, schools, and parks are funded through development impact fees and property taxes, which are needed to maintain acceptable service ratios as demand increases. Each of the projects identified in Chapter 2 would be required to contribute the appropriate share of fees and taxes to fund any necessary improvements to maintain acceptable levels of service. Therefore, cumulative impacts resulting from the Proposed Project and other development in the vicinity of MIP would not have a cumulatively significant effect on public services.

As described under Impact 3.11-3, the Easterly WWTP has a capacity of 15 mgd, and currently operates approximately seven mgd below its current capacity. As further discussed in Impact 3.11-3 full build-out of the Proposed Project would increase the WWTP's daily intake by approximately five percent, and would therefore have a less-than-significant affect on the wastewater treatment facility. Given the proximity of the projects identified in **Table 2-7**, it is likely that many of them would be served by the Easterly WWTP. The development of these projects would contribute towards the facility's daily capacity to a varying degree, depending on

the nature of the use. However, given that the WWTP is currently operating well below capacity, it is not anticipated that these projects would have a cumulatively considerable impact on the serving wastewater treatment facility. Given the proposed facility's minor contribution to the WWTP's daily wastewater treatment capacity, a cumulatively considerable impact to local wastewater treatment facilities is considered less than significant.

Full build-out of the Proposed Project, however, has the potential to generate wastewater levels that exceed the maximum allotted flow of 20,000 gpd, as identified in the City's Northeast Sector Sewer Master Plan. Cumulative development is considered in the Master Plan and the 20,000 gpd allotment. Exceedance of this planned allotment could result in a significant project impact to the City's existing sewer system, that, when considered with other projects in the vicinity of the Airport, could also have a potentially significant cumulative impact to the City's sewer system as well. In order to avoid potential impacts, implementation of Mitigation Measure 3.11-1 would be required.

Similarly, projects in the vicinity of Nut Tree Airport (as identified in **Table 2-7**) may have a cumulative impact on water supplies in the City of Vacaville. The degree to which these projects may utilize local water supplies varies depending on the use. A background report prepared for the upcoming update to the *City of Vacaville General Plan* indicates that the City has rights to water from several sources, which totals 42,098 acre-feet per year (AFY). According to this background documentation, the City utilizes less than half their total water allocation (as of 2009) (City of Vacaville, 2010c). Though each project identified in **Table 2-7** would require varying amounts of water, depending on the nature of the use, given that the City uses less than half its annual water allocation, it is assumed that the development of these projects would not result in a significant, cumulative effect on the City's water supply. Furthermore, because the City's UWMP has taken into account the full build-out of the Airport, its contribution to the City's annual water usage rates has already been accounted for; therefore, implementation of the Proposed Project would not result in a cumulatively significant impact to the City's water supply system.

Lastly, the Proposed Project is conservatively estimated to generate 3,825 tons of solid waste per year (Impact 3.11-6). Other projects identified in **Table 2-7** would also contribute to the daily and yearly maximum intake to local landfills, which when considered cumulatively, may result in a significant impact on the ability for landfills to serve the area's waste disposal needs. However, the Proposed Project's projected contribution is considered minor (e.g., 0.04 percent of Hay Road's annual intake); therefore, the Proposed Project's contribution to a potential cumulative impact on regional waste disposal needs is considered less than significant.

In conclusion, the Proposed Project's contribution to a cumulatively considerable impact on public services and utility service systems is considered less-than-significant with mitigation.

Mitigation Measure

Implement Measure 3.11-1.

Impact Significance after Mitigation: Implementation of Mitigation Measure 3.11-1 shall ensure that prior to the development of any land uses that may result in an exceedance of wastewater gpd currently planned for the project site, the County conducts a study to determine the Airport's wastewater generation and future demand. Preparation and submission of this study for review by the City of Vacaville shall ensure that potential project impacts to the existing system and appropriate measures are identified. Subsequently, adherence to this measure will ensure that any contribution that the project would have to a cumulative impact to the City's sewer system is less than significant.

3.11.4 References

- Cal Recycle, 2012. *Facility/Site Summary Details: Recology Hay Road (48-AA-0002)*.: www.calrecycle.ca.gov/SWFacilities/Directory/48-AA-0002/Detail/, accessed on October 10, 2012.
- City of Vacaville, 2007a. *City of Vacaville General Plan*, December 2007.
- City of Vacaville, 2007b. *City of Vacaville Sanitary Sewer System Design Standards*, February 13, 2007.
- City of Vacaville, 2010a. *City of Vacaville General Plan Update – Public Services in Vacaville Technical Memorandum*, September 2010.
- City of Vacaville, 2010b. *City of Vacaville General Plan Update – Wastewater System in Vacaville Technical Memorandum*, September 2010.
- City of Vacaville, 2010c. *City of Vacaville General Plan Update – Water Supply and Service in Vacaville Technical Memorandum*, September 2010.
- City of Vacaville, 2013. Personal email communication with Christopher Bailey on February 20, 2013.
- City of Vacaville, 2005. *Urban Water Management Plan*, December, 2005.
- Solano County, 2008. *Solano County General Plan*, November 4, 2008.