



Item No. 11(A)

REPORT TO THE CITY COUNCIL

DATE: MARCH 27, 2018

TO: HONORABLE MAYOR AND MEMBERS OF THE CITY COUNCIL

FROM: OCTAVIO HURTADO, HANNA & BRUNETTI, CITY ENGINEER

SUBJECT: CONSIDERATION OF AIRPORT LAYOUT PLAN UPDATE FOR MESA DEL REY AIRPORT

RECOMMENDATION:

It is recommended that the City Council approve the Airport Layout Plan Update prepared by Kimley-Horn.

BACKGROUND:

On August 30, 2016, the Federal Aviation Administration ("**FAA**") offered the City of King a grant to update the Airport Layout Plan (AIP Grant Number 3-06-0113-012-2016) for Mesa Del Rey Airport. On September 13, 2016, the City Council accepted the offer and executed the grant agreement. On December 13, 2016, City Council awarded the professional services agreement to Kimley-Horn. Kimley-Horn has prepared the Airport Layout Plan Update Draft Report dated March 2018. The report was presented to the Airport Advisory Committee on March 12, 2018. There was a consensus among the Airport Advisory Committee to recommend the City Council approve the Airport Layout Plan Update. Kimley-Horn has presented the draft Forecast to the FAA and the FAA has approved the forecast with no changes and preliminary approved the development plan.

DISCUSSION:

Mesa Del Rey Airport is designated as a General Aviation Airport and is included in the Federal Aviation Administration (FAA) National Plan of Integrated Airport Systems and the California Aviation System Plan. This allows the City to receive federal and state grants totaling up to ninety-five percent (95%) of the cost of eligible capital improvements. In order to qualify for these grants, the Airport must periodically update the required planning documents and submit them for approval by the FAA.

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The current ALP was approved by FAA on May 15, 2010. Kimley Horn was retained to revise Airport Layout Plan, a set of drawings that depict existing conditions and proposed capital improvements projects needed to meet the Airport's projected growth. Once the Airport Layout plan is approved by the FAA, the projects included become eligible for federal and state grant funding.

The ALP will be used to develop a five-year Airport Capital Improvement Plan (CIP) which is submitted to the FAA yearly. Actual capital project requests will be made based on actual growth in demand, needed airport improvements, and pavement condition assessments.

The following is a summary of the primary issues that were identified, discussed and addressed in the Airport Layout Plan:

- **Classification of the Airport:** The classification of the airport has an impact on runway dimensions and size of planes allowed. The airport is considered a B-II classification, which was recommended to remain the same.
- **Centerline Separation –** FAA establishes standard separation distances between the runway centerline and other airport facilities For B-II the minimum distance is 240 feet. The existing distance is 200 feet which does not meet the FAA design standards. Three alternatives were considered to present solutions to meet the runway width standards. Alternative Option to Shift the Runway to Northeast was selected as being more feasible with a phased approach to shift Taxiway B at a later project as funding becomes available.
- **Runway Length and Width:** The current width of the Runway is 100 feet. Since the airport is designed as a B-II airport and the standard for a B-II runway is 75 feet, the recommendation is to reduce the width of the Runway by 25 feet to an ultimate 75 feet.
- **Lighting:** The current runway is equipped with medium intensity lighting (MIRL) system. The MIRLs will be updated as part of the Airport Improvement Project this year.
- **Entrance to the Airport:** The current entrance does not allow for vehicle staging. Note: security access gates are no longer FAA eligible projects for grant funding. The recommendation includes to provide 29 parking spaces across the airport for tenants and visitors, reconfigure the vehicle entrance near the FBO.
- **Pavement Maintenance:** The full-parallel taxiway and apron have cracking and extensive weeds. The State Pavement Maintenance Management Plan (PMMP) will more fully address the pavement conditions and recommendations. ALP recommended rehabilitation of apron and taxiway.

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- **NAVAIDs – Navigation Aids (NAVAIDs) assist pilots in locating an airport and safely landing and take-off. The airport has a 2-light Precision Approach Path Indicator (PAPI). As of July 2017, the PAPI was inoperable. The City is currently investigating the issues and will address it during the Airfield Electrical Improvements AIP project that will commence later this year.**
- **Helipad – there is an unlit 75-foot helipad located to the west of the runway along the main apron. This helipad is not registered with the FAA as a public use landing area. This was discussed with the Airport Advisory Committee and consensus was to proceed with registering the helipad and see if the FAA had any issues with the airspace and follow any recommendation made by the FAA.**
- **Daily Tiedown Fees: Currently there is a daily transient parking fee of \$5.00 and monthly parking fees are \$35. The issue is that transient pilots are requested to pay the parking fees by visiting City Hall. Since the airport is not attended by City staff to collect fees. A recommendation was made to include signage and install a collection box located outside of the FBO terminal, and near the entry and exit gates. Another option would be to place restrictions on the pedestrian access gate with a telephone entry box that connects pilots to City Hall to process payment. Other technology would be installing camera systems that would record tiedown activity.**
- **Fuel Pumps – the airport provides Jet-A and 100 Low-Lead (LL) fuel with a 24-hours self-serve fuel pump. The recommendation was made by the consultants to start planning on a back-up system as the pump equipment is aging. Additionally, pilots commented that the screen and key pad can be unreadable at times. It is recommended to replace fuel pumps and pump interfaces, install bollards around the fuel island, and at the end of life of the existing tanks, install aboveground 12,000-gallon tanks for Jet-A and 100 LL.**
- **Runway Protection Zone (RPZ) – The RPZ is currently not fully controlled by the City. Full control of the RPZ is necessary to maintain compatible land uses. The recommendation is to have easements or fee-simple acquisition of the RPZs on both ends of the runway.**
- **GA Terminal & FBO Services: Based on the operations the recommendation is for approximately 900 square foot of additional terminal space be provided by 2036. At a minimum, the following is recommended be provided as corporate aircraft demand increases at the airport:**
 - **Vending Machines outside FBO Terminal (Current demand)**
 - **Public Wi-Fi (Current demand)**
 - **Collection of fees and maintain transient pilot log (Current demand)**
 - **Formalized maintenance service (Current demand)**
 - **Full-service fuel operators during business hours or on an on-call basis**

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- o Ensure local rental car company can quickly provide cars to transient pilots and passengers
- o Provide a conference room or office space with a table
- o Flight planning capabilities, such a computer
- o Aircraft services such as oxygen and trash
- o Overnight hangar storage for transient aircraft

ALTERNATIVES

The following alternatives are provided for Council consideration:

1. Approve staff's recommendations;
2. Make amendments to the Airport Layout Plan Update
3. Do not approve the Airport Layout Plan; or
4. Provide staff with other direction.

COST ANALYSIS

The total project cost is projected at \$180,000. FAA funds eligible projects up to 90% of the cost. The grant approved by the FAA is a total of \$162,000. Caltrans awarded a grant for \$8,100 for the Airport Layout Plan Update. The City will be covering the cost of \$9,900 cost in staff time.

Exhibits:

1. Mesa Del Rey Airport – Airport Layout Plan Update
2. Airport Layout Plan Drawing Set

Prepared by: 
Octavio Hurtado, Hanna & Brunetti, City Engineer

Approved by: 
Steven Adams, City Manager

MESA DEL REY AIRPORT LAYOUT PLAN UPDATE

DRAFT REPORT
March 2018



Prepared For:



Prepared By:



Study Objective

The objective of this Airport Layout Plan (ALP) update for Mesa Del Rey Airport (KIC) is to inventory and evaluate existing conditions and identify future operational demands and facility requirements. This narrative report will focus on the future facility needs and capital improvement plan (CIP).

1. Airport Facilities Inventory

A detailed inventory of all Airport facilities and Airport-related information such as land use, weather conditions, area airspace, and historical aviation activity are important to establish a comprehensive understanding of existing conditions. Information was obtained through on-site visits, discussions with Airport management, review of FAA records, and various local regional planning documents. Inventory data is presented in the following sections:

- Airport Background and Role
- Airport Location and Access
- Airside Facilities
- Landside Facilities
- Airspace
- Regional Airports
- Current Aviation Activity

1.1. Airport Background and Role

The following section provides a brief description of the Airport's history, as well as its role within the state and national setting.

Airport Background

KIC is owned and operated by the City of King, California. KIC was originally constructed to train pilots for the Army Air Corps in 1941 after the land was subleased from the City to Palo Alto Airport, Inc. Army training continued through 1944 and then the US Navy from February to September 1945. During the military activity, five barracks, a hospital, administration building, mess hall, and three hangars were constructed. In November 1949, King City began operating the Airport as a municipal airfield to support the industrial and agricultural industries within Monterey County. It has continued to be operated by King City in this capacity since that time.

Airport Role

From the outset of the planning process, it is important to understand the role of KIC in the national airspace system (NAS), as well as in the state of California. The following sections briefly explain KIC's role in the National Plan of Integrated Airport Systems (NPIAS) and California Aviation System Plan (CASP).

NPIAS

According to the FAA, there are over 19,500 landing areas in the U.S. While most of these are private-use (closed to the public), approximately 5,100 are public-use (open to the public).¹ The FAA's NPIAS identifies approximately 3,300 of these public-use airports as significant to the national air transportation system. The NPIAS is used by the FAA in managing and administering the airport improvement program (AIP) and

¹ FAA National Plan of Integrated Airport Systems, Report to Congress 2017-2021.

supports the FAA's strategic goals for safety, system efficiency, and environmental compatibility. Airports included in the NPIAS are classified as having one of the following roles in the national system:

- **Primary Commercial Service:** Airports that have more than 10,000 passenger enplanements each calendar year
- **Nonprimary Commercial Service:** Airports that have at least 2,500 and not more than 10,000 passenger enplanements each calendar year
- **Reliever:** Airports designated to relieve general aviation congestion at commercial service airports.
- **General Aviation:** Airports included in the national system that are not categorized as commercial service or reliever airports.

Recognizing the unique roles played by general aviation airports throughout the U.S., the FAA published a report titled *General Aviation Airports: A National Asset (ASSET)* in May 2012. The report documented the importance of the general aviation system and further categorized general aviation airports included in the NPIAS based on their level of activity and operational characteristics. Four ASSET categories were introduced to provide policymakers with a better understanding of the vast and diverse nature of the general aviation system. The following describes each of the four ASSET categories:

- **National:** Supports national and state system by providing communities with access to national and international markets in multiple states and throughout the U.S.
- **Regional:** Supports regional economies connecting communities to statewide and interstate markets
- **Local:** Supplements local communities by providing access to intrastate and some interstate markets
- **Basic:** Provides basic aeronautical needs in local economy

KIC is currently listed in the NPIAS as a **general aviation – local** airport.

California Aviation System Plan (CASP)

California Department of Transportation (Caltrans) develops planning guidance to provide a multimodal, interregional transportation network for California. The CASP is the primary mechanism for aviation planning in California as mandated by the State Aviation Act (SAA) in 1989 (Public Utilities Code [PUC] Sections 21701-21705). The CASP encompasses several elements including policy, system needs assessment, and capital improvement plan (CIP).

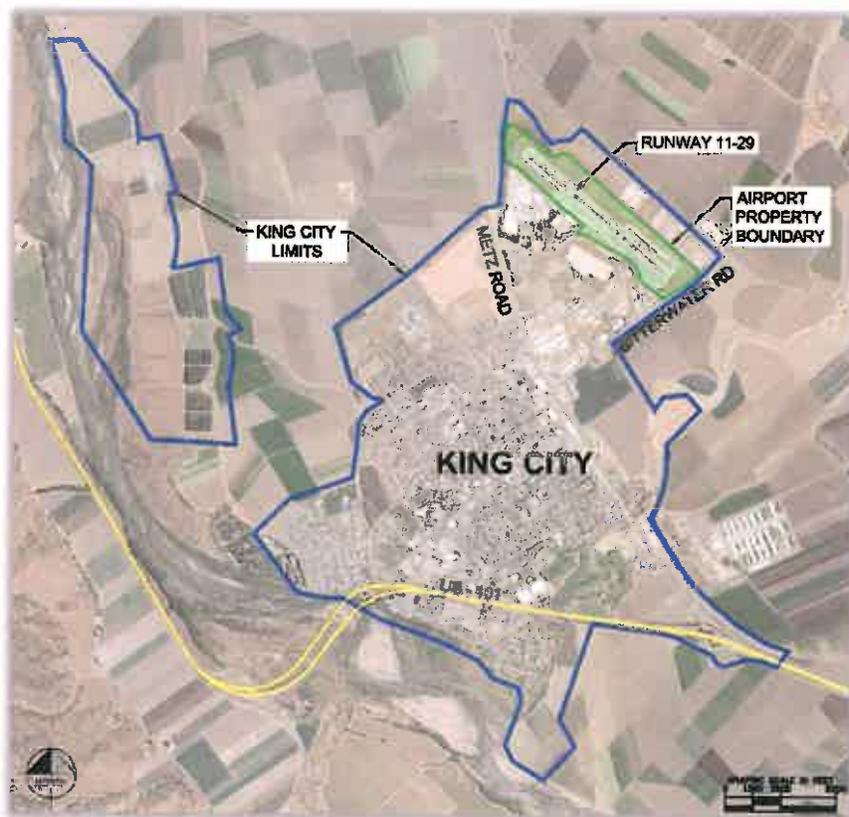
In 1997, the Caltrans Division of Aeronautics added functional classifications to general aviation, including limited-use, community, regional, and metropolitan, to the CASP to better define airport types based on roles in the communities they serve, as well as within the broader aviation system. These classifications help Caltrans justify and award state funding under the California Aid to Airports Program (CAPP). They also form the basis of State-mandated minimum airport facility standards such as runway length, width, and weight limit; navigational and approach lighting aids; and fuel availability. (California Department of Transportation 2010).

The CASP classifies KIC as a **general aviation – community** airport.

1.2. Airport Location and Access

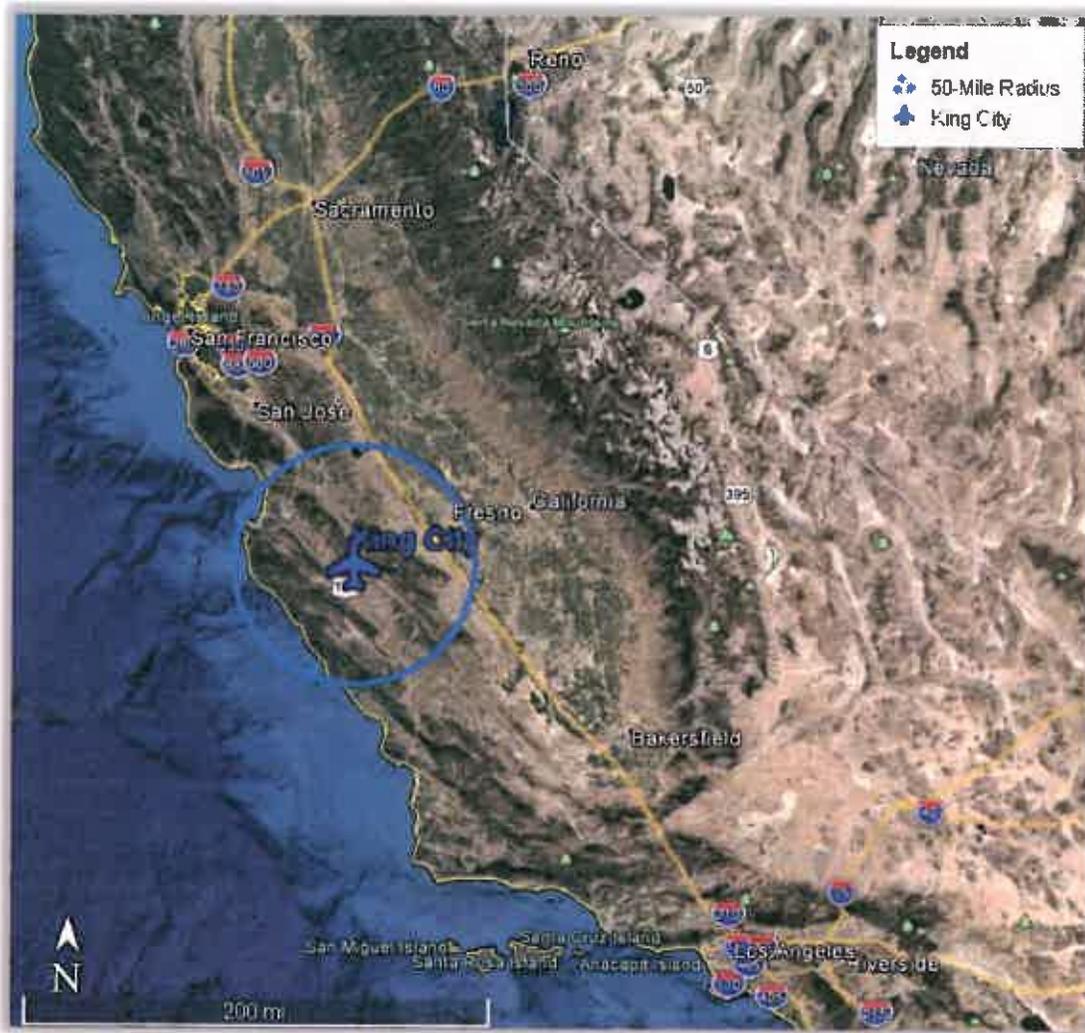
KIC is a general aviation airport located at 374 feet elevation, approximately one mile northeast of King City, California, in the California Department of Transportation (Caltrans) District 5, and envelopes 149 acres. As shown in Figure 1-1, direct access to the Airport is provided by Airport Rd. which is connected by two main roads (Metz Rd. and Bitterwater Rd.) that feeds directly into King City. King City is located directly off U.S. Route 101 which runs from the California-Oregon border to the north to Los Angeles to the south. As shown in Figure 1-2, the Airport is an approximately 50 miles from both Paso Robles to the south and Salinas to the north. The Airport is surrounded by agricultural use to the north, east, and south.

Figure 1-1 – Airport Location



Sources: Google Earth, 2017, Kimley-Horn

Figure 1-2 -- Regional Location



Source: Google Maps, 2017

1.3. Airfield Facilities

Airfield facilities accommodate the takeoff and landing of aircraft and the movement of those aircraft about the airport, including runways, taxiways, and associated navigational aids and signage.

As shown in Figure 1-3, the airfield at KIC is comprised of a single asphalt runway, Runway 11-29, and 35-foot wide, full-length parallel Taxiway A to the west and 35-foot wide, partial parallel Taxiway B to the east. Taxiway A was constructed in 1975 and Taxiway B in 1979. Runway 11-29 is 4,479-feet long by 100-foot wide with visual markings in good condition and medium intensity runway lighting (MIRL). It was last reconstructed in 1987. While the runway pavement is in fair condition, the full-parallel taxiway has cracking and has extensive weeds.

Figure 1-4 – Taxiway A Pavement Condition



Source: Kimley-Horn & Associates, 2017

Climatic and Meteorological Conditions

Climatic and meteorological conditions are important considerations in the analysis and development of aviation-related facilities. Winds, precipitation, and temperature characteristics of an area can influence airport development decisions pertaining to NAVAIDs, runway orientation, and required runway length. The mean maximum daily temperature at the Airport in the average hottest month (August) is 86 degrees Fahrenheit. Average annual precipitation is 11.24 inches. While the Santa Lucia mountains to the west may receive snow, it is rare in King City.

Navigational Aids (NAVAIDs)

NAVAIDs assist pilots in locating an airport and safely and efficiently maneuvering aircraft through landing and take-off in a variety of meteorological conditions. NAVAIDs are any visual or electronic device, airborne or on the ground, that provide point-to-point guidance, position information, or operational data to aircraft in flight. KIC is equipped with a 2-light Precision Approach Path Indicator (PAPI) with a 3-degree glide path and Runway End Identifier Lights (REILs) on Runway 29. As of July 2017, the PAPI was inoperable and being investigated by the City. A segmented circle with lighted wind cone is located on the east side of the airfield. The rotating beacon is located on adjacent City-owned property to the east.

Figure 1-5 – Precision Approach Path Indicator (PAPI)



Source: Kimley-Horn & Associates, 2017

Helipad

An unlit 75-foot by 75-foot helipad is located to the west of the runway along the main apron. It is mainly used by emergency crews during fire season. As of July 2017, the helipad was not registered with the FAA as a public-use landing area.

Figure 1-6 – Helipad



Source: Google Earth, 2017

Table 1-1 provides a summary of the airfield facilities at KIC.

Table 1-1 - Airfield Summary

Runway 11-29	
Runway Length	4,479 feet
Runway Width	100 feet
Runway Surface Material	Asphalt
Runway Lighting	Medium Intensity
Runway Markings	Visual, good Condition
Runway Gradient	0.1%
Taxiway Type	Full and Partial
Taxiway Width	35 feet
Taxiway Lighting	None
Approach Aid	Runway 29 PAPI & REIL
Navigational Aids	Rotating Beacon, Lighted Wind Cone, Segmented Circle

Source: FAA 5010 Master Record, June 2017

1.4. Landside Facilities

Landside facilities support the aircraft, pilots, and passengers, including storage, fuel, services, and vehicle access and parking. Refer to Figure 1-7 through Figure 1-12 for facility locations.

Apron and Aircraft Storage

To the west of the runway, adjacent to the parallel taxiway, is an approximate 603,000 square foot (SF) asphalt apron that contains tiedowns, hangars, the fuel island, and the helipad. The north section of this apron, 315,000 SF, is in fair condition with several cracks and extensive weeds and certain low level sections with evidence of raveling. The south portion of the apron, 288,000 SF, is in good condition with minor cracking. Storm drains have been installed along the entire length of the apron to assist in drainage.

Figure 1-7 – Apron Conditions

North Apron



South Apron



Source: Kimley-Horn & Associates, 2017

There are currently three T-hangar buildings on the apron that are owned by the City. A 14-bay T-hangar is located near the center of the airfield (#12) and a 5-bay (#4) and 4-bay (#5) T-hangar on the north end

of the apron. The City-owned hangars are 100 percent occupied with a short waiting list. Additionally, there is one standalone 1,300 SF T-hangar (#3) and four box hangars that are privately-owned on the north end of the apron. Three of the box hangars (#9, 10, and 11) are 1,500 SF and one is 3,300 SF (#7). These buildings operate on ground leases through the City. Aircraft owners are currently allowed to park their vehicles adjacent to their hangar.

Figure 1-8 – North Hangars



Source: Kimley-Horn & Associates, 2017

On the south end of the airfield, there are three conventional hangars, a paint shop, and an aerobatic training school. Hangar #13 is occupied by Aviation Specialties Unlimited, which operates as the limited service Fixed Based Operator (FBO). The 6,800 SF hangar holds four aerobatic aircraft along with a pilot lounge, restrooms, and office space. This hangar also contains the Tutima Academy, which is a Sean Tucker aerobatic flight school. Hangar #14 is a 2,500 SF paint shop operated by Aviation Specialties Unlimited.

Hangar #15 is approximately 7,700 SF and occupied by Meyer Aviation, a long-term client that supplies fresh market tomatoes. Meyer Aviation now operates Cessna 421 Golden Eagle, but also operates a King Air B200. Hangar #16 is approximately 6,800 SF and occupied by SoilServ Inc. which operates Bell 47 helicopters and Grumman-Schweizer G164B aircraft, for agricultural crop dusting. Hangar #17 is approximately 7,700 SF and occupied by Wilbur-Ellis. Additionally, Wilbur-Ellis accesses their adjacent property via the Perimeter Surface Road near Runway 29. Relevant to the agricultural companies that operate at KIC, per the King City Municipal Code Section 2.30.130, agricultural operations are required to rent a material storage area that is permanently fenced.

Figure 1-9 – South Hangars

Source: Kimley-Horn & Associates, 2017

Rava Ranch Inc. currently leases a 32,062 SF triangular property along Airport Road. While still under review, Rava is looking to relocate a historical military hangar closer to the airfield. With the hangar relocation, Rava would relocate their Cessna CJ3 to KIC.

36 tiedowns are available for based aircraft located north of the fuel island and 16 marked for transient aircraft located south of the fuel island. Daily transient parking fees are \$5.00 and monthly parking fees are \$35.00. Transient pilots are requested to pay parking fees by visiting City Hall.

Figure 1-10 – Transient Tiedowns

Source: Kimley-Horn & Associates, 2017

Table 1-2 provides a summary of storage available at KIC.

Table 1-2 - Aircraft Storage Summary

Figure 3 Number	Storage Type	Owner	SF	Units
3	T-Hangar	Private	1,300	1
4	T-Hangar	King City	6,500	5
6	T-Hangar	King City	5,000	4
7	Box Hangar	Private	3,300	2
8	Box Hangar	Private	1,500	1
9	Box Hangar	Private	1,500	1
10	Box Hangar	Private	1,500	1
11	T-Hangar	King City	15,000	14
12	Conventional Hangar	Aviation Specialties Unlimited	6,800	N/A
13	Paint Shop*	Aviation Specialties Unlimited	2,500	N/A
14	Conventional Hangar	Meyer Aviation	7,700	N/A
15	Conventional Hangar	SoilServ Inc.	6,800	N/A
16	Conventional Hangar	Wilbur-Ellis Co.	7,700	N/A
Hangar Storage Total			48,000	15
	Transient Tiedowns	King City	56,000	36
	Based Aircraft Tiedowns	King City	139,000	16
Tiedown Storage Total				52

Note: *Not available for aircraft storage Source: Aerial Imagery, 2017

Fuel

KIC provides Jet-A and 100 Low-Lead (LL) fuel through 24-hour self-serve fuel pumps near the Airport entrance. Both Jet-A and 100LL are provided via 10,000 gallon underground tanks. The tanks were built in 1998 with anticipated lifespan of 25 to 30 years. The tank has a mechanical spill detection alarm that will alert the City if a loss in pressure between the pump and dispenser is detected. In addition to being double walled, there is also a five-gallon single wall spill receptacle. Several tests are conducted regularly, including an air quality test every three years, an annual hydrostatic test, and a secondary containment every three years. No repairs were noted are necessary by the inspection in the 2017 tests.

While the tanks are in good condition, the pump equipment is aging and has no backup system. The City has had times when the fuel pumps do not work and is not able to provide fuel. Additionally, pilots have commented that the screen and key pad can be unreadable at times.

Figure 1-11 – Fuel Island



Source: Kimley-Horn & Associates, 2017

Vehicle Access

Vehicular access is currently provided off Airport Road in two locations near the fuel island and a pedestrian gate in the same area. Limited parking is available outside of the perimeter fence in a parking lot adjacent to Airport Road. One gate allows access via a security code and the other is locked with a padlock. When vehicles are entering and exiting the security code gate, they can block access along Airport Road due to the limited size of the driveway. The padlocked gate behind the paint shop has a similar issue with a second vehicle trying to enter blocking Airport Road. No public vehicle access is available from the northside of the airfield.

There is space for approximately three to four vehicles near the pedestrian gate and six to seven in the designated parking lot. Aircraft owners and tenant employees currently park near their hangars in non-designated parking spaces.

Figure 1-12 – Vehicle Entrance



Source: Kimley-Horn & Associates, 2017

Fresh Farms Inc, a Rava Ranches Inc. company, is located on a 52-acre property on the southwest side of the Airport between Airport Road and the runway. Additional property is located across Airport Road. Rava Ranches Inc. is a family-owned produce company that began in the 1950's and provides much of the food grown in Monterey County. Rava has secure access to the airfield through a gate on the north apron.

Security

In July 2017, the Transportation Security Administration (TSA) provided updated guidance on security at general aviation airports. The Security Guidelines for General Aviation Airport Operators and Users provides a set of best practices and method for determining when and where these enhancements are appropriate. Functional areas of GA security include personnel, aircraft, infrastructure, surveillance, security plans and communications, specialty operations, and tenants and users. KIC's current security measures include a 6-foot chain link perimeter fence with security access gates, lighting, signage, challenge procedures, locking hangars, and support from local law enforcement. The agricultural aircraft have taken additional steps in securing their aircraft by parking them in a secure property off-airport.

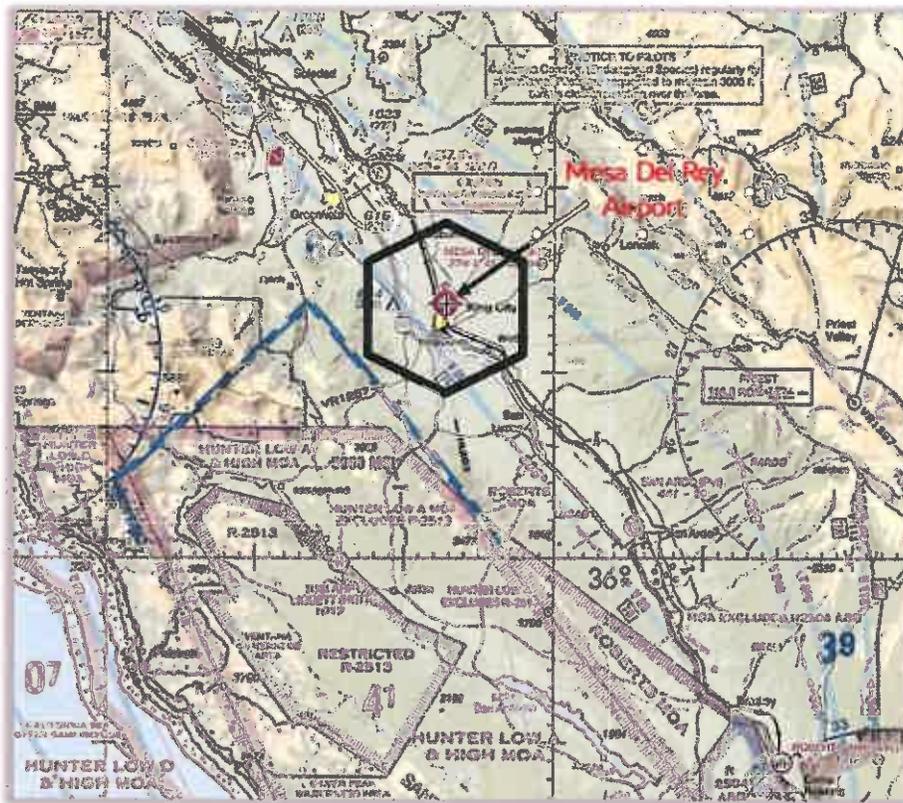
Airport Services

Services are provided at KIC through the FBO, Aviation Specialties Unlimited including the self-serve Jet-A and 100LL fuel, a pilot lounge, restrooms, transient tiedowns, and office space. No formal maintenance provider is located at KIC, but several licensed aircraft mechanics are available to help aircraft in need.

1.5. Airspace

Through Federal Aviation Regulations (FARs), airspace classifications have been developed to promote the safe and efficient movement and control of aircraft during flight and approach/departure procedures. Airspace classifications are identified on sectional aeronautical charts published by the FAA's National Aeronautical Charting Office. A graphical representation of the airspace surrounding KIC is shown in **Figure 1-13**. As shown, there are Restricted Areas, Military Operating Areas (MOAs), and aerobatic operations near the Airport. The following sections identify these designated areas in greater detail.

Figure 1-13 - Airspace Classifications Near KIC



Source: FAA Sectional Chart, June 22, 2017

Restricted Areas

Restricted areas contain airspace within which the flight of aircraft, while not wholly prohibited, is subject to restrictions. Restricted areas denote the existence of unusual, often invisible, hazards to aircraft. Examples include artillery firing, aerial gunnery, or guided missiles. Penetration of restricted areas without authorization from the using or controlling agency may be extremely hazardous to the aircraft and its occupants. There is one restricted area located approximately 15 miles southwest of the Airport, Restricted Area R-2513 surrounding Fort Hunter-Liggett.

Military Airspace

A MOA consists of airspace of defined vertical and lateral limits established to separate certain military training activities from instrument flight rules (IFR) traffic. Whenever a MOA is being used, nonparticipating IFR traffic may be cleared through a MOA if IFR separation can be provided by air traffic

control (ATC). Otherwise, ATC will reroute or restrict nonparticipating IFR traffic. Pilots operating under visual flight rules (VFR) should exercise caution while flying within a MOA when military activity is being conducted. Prior to entering an active MOA, pilots should contact the controlling agency for traffic advisories.

There are two MOAs located in the vicinity of KIC, Hunter Low A & High MOA and Roberts MOA. Hunter Low A & High MOA begins approximately five miles south of the Airport. It should be noted that Hunter Low A MOA excludes Restricted Area R-2513. Roberts MOA is located east of Hunter Low A & High MOA, approximately 20 miles south southwest of the Airport.

Aerobatic Operations

Aerobatic flying is a specialized form of flight where the aircraft's performance and attitudes (aircraft's orientation based on the horizon which indicates pitch [fore and aft tilt] and bank [side-to-side tilt]) change rapidly. Upon NOTAM issuance, intensive practice and competitive aerobatic maneuvers are scheduled regularly during daylight hours near the Airport. Pilots are advised to avoid these aerobatic areas entirely along with contacting Flight Service to obtain the exact date, time, and altitude.

Approach and Departure Procedures

KIC does not have instrument approach capabilities, therefore, does not have any published instrument approach or departure procedures.

King City Municipal Code

The City of King City has devised rules and regulations for the Airport that must be followed when operating at the facility while in the traffic pattern and during takeoffs and landings.

Traffic Pattern

According to King City Municipal Code 2.30.230, every aircraft before landing and after takeoff shall be flown in accordance with the traffic pattern. Aircraft traveling faster than one hundred twenty-five miles per hour shall be flown using the outside pattern. Pilots at KIC follow a standard left-hand traffic pattern at an altitude of 1,174 feet MSL.

Takeoffs and Landings

According to King City Municipal Code 2.30.240, the following actions must be followed at the Airport:

- No aeronautical activity shall be conducted at the Airport (or within the air traffic area) except in conformance with current FARs, state law and regulations, and the City municipal code.
- All initial takeoffs shall commence at the end of the runway, unless cleared by the Airport manager.
- Touch-and-go operations shall be permitted only after the pilot has received approval from the Airport manager.

1.6. Regional Airports

There are eight other GA airports within approximately 50 nautical miles (NM) of KIC, as shown in Table 1-3, including the commercial service airport, Monterey Regional. With 20 to 50 miles being considered a reasonable driving distance, aircraft owners and pilots within the valley have a choice of airports to choose from if they are willing to drive. Therefore, these eight airports and the businesses located upon them are competing to accommodate the aircraft storage and flight service needs of those operators.

Each airport has a unique set characteristics as to what they provide in terms of airfield capabilities, fixed base operator services, hangars and aprons, and fueling options. This results in varying levels of based aircraft and annual operations. While a few of the airports are more developed, many of the airports within 50 NM of FAT have runways 5,000 feet or less which is commonly considered the length needed to effectively accommodate corporate jet activity. Out of these eight airports, six provide instrument approach capability and only two have an airport traffic control tower (ATCT).

The airport location, airfield capabilities, services provided, and types and conditions of facilities available directly influence the cost of fuel and aircraft storage at each of these airports. In June 2017 per-gallon fuel prices at these neighboring airports, including both self-service and full-service, ranged from \$4.45 to \$5.89 for 100LL and \$3.48 to \$6.01 for Jet-A. KIC was \$4.89 for 100LL and \$3.50 for Jet-A. Tie-downs typically cost \$22 to \$97 a month for single-engine aircraft, with daily rates ranging from \$5 to \$10. T-hangars, which allow for a single aircraft, ranged from \$115 to \$300 per month. Conventional, or box, hangars ranged from \$200 to \$1,500 per month depending on their size. Space within community hangars that store multiple aircraft with different owners ranged from \$150 to \$200 per month.

Table 1-3 – Regional General Aviation Airport Facilities

Airport	Runways (feet)	ATCT	Best Approach Minimums (DH/VIS)	FBO Services	Fuel	Distance from KIC (NM)	Based Aircraft	Annual Operations
Mesa Del Rey (KIC)	4,479 x 100	No	N/A	Yes	Jet A 100LL	-	29	7,862
New Coalinga Municipal (C80)	5,000 x 100 2,471 x 60	No	N/A	Yes	100LL	40.2	9	2,400
Harris Ranch (308)	2,820 x 30	No	N/A	Yes	100LL	42.7	0	6,700*
Salinas Municipal (SNS)	4,825 x 150 6,004 x 150	Yes	ILS CAT - I (200/1/2 mi)	Yes	Jet A 100LL	35	175	62,973
Hollister Municipal (CVH)	6,350 x 100 3,150 x 100	No	RNAV (GPS) (600/1 mi) circling	Yes	Jet A 100LL	42.2	180	52,600
Watsonville Municipal (WVI)	4,501 x 149 3,998 x 98	No	RNAV (GPS) (600/1 mi)	Yes	JetA 100LL	53.3	372	65,100
Marina Municipal (OAR)	3,483 x 75	No	RNAV (GPS) (300/½ mi)	Yes	Jet A 100LL	41.1	49	40,000
Monterey Regional (MRJ)	7,175 x 150 3,503 x 60	Yes	ILS CAT-I (300-1/2 mi)	Yes	Jet A 100LL	40.9	143	91,422
Paso Robles Municipal (PRB)	6,008 x 150 4,701 x 100	No	RNAV (GPS) (600/1 mi)	No	JetA 100LL	41.1	160	34,675

Sources: Airnav.com (accessed 8/8/2017), FAA Terminal Area Forecast (TAF, 2015 data), Airport IQ 5010 Airport Master Records, FAA Instrument Approach Procedures (Mar.2017), 2013 CASP Inventory Element, specific airport websites

Notes: *based on AirNav per day operations

The following provides a brief description of the eight general aviation airports within 50 miles of KIC. This information was gathered in 2017, from several web-based resources and cursory visual inspection.

Harris Ranch (308) – Harris Ranch is an unattended airport that is privately owned by Harris Farms with a narrow 30-foot wide runway. Harris Ranch is located in the southeastern portion of the City of Hanford, surrounded by agricultural land. 308 is directly adjacent to Interstate 5 at the State Route 198 interchange and access is provided to the Harris Ranch Inn and Restaurant. There are 12 uncovered tie-downs and 100LL fuel is provided through a self-service pump.

Hollister Municipal (CVH) – Hollister Municipal Airport, located approximately 3 miles north of the City Center, is surrounded by industrial buildings to the south and east and by agricultural land to the north and west. There are 80 T-hangars, 97 tie-downs, and 15 transient tiedowns. The FBO provides full-service and self-service pump service for 100LL and Jet A fuel.

Marina Municipal (OAR) - Marina Municipal Airport is located on the northeast edge of the City limits, approximately 2.5 miles north of the Cal State Monterey Bay Campus. The area surrounding the airport is open space with the area to the north and southwest has been designated for future business park

space. There are 40 T-hangars and 200 tie-downs. There is an FBO that provides 100LL and Jet A fuel through a self-service pump.

Monterey Regional (MRY) - Monterey Regional Airport, a commercial service airport, is located approximately 3 miles southeast of downtown Monterey. The airport is owned by the Monterey Peninsula Airport District, and is bounded by the City of Monterey and City of Del Rey Oaks. The airport is surrounded by residential, industrial, commercial, and government buildings in all directions. There are 180 T-hangars provided at the airport. There are multiple FBOs and service providers on the airport.

New Coalinga Municipal (C80) – New Coalinga Municipal is located east of the City of Coalinga and surrounded by agricultural land. The maximum weight of aircraft allowed to operate on the runway is 30,000 pounds, which limits the size of aircraft that can operate at C80. There are 16 T-hangars and 60 tie-downs, with additional property available for development. There is an FBO that provides 100LL fuel through a self-service pump.

Paso Robles Municipal Airport (PRB) - Paso Robles Municipal is located approximately 4.5 miles northeast of the downtown. The airport is bounded by residential property to the east, industrial and government buildings to the south and west, and agricultural lands to the north. There are 140 T-hangars, 20 Tie downs, and 50 transient tiedowns. 100LL and Jet A fuel is provided by the FBO.

Salinas Municipal (SNS) - Salinas Municipal Airport is located approximately three miles west of the downtown area, along Highway 101. Salinas Municipal is bounded by the Salinas Fairways Golf Course to the north, industrial buildings to the southwest and agricultural activity to the east. There are 194 T-hangars, 15 shelters, and 77 tiedowns. The FBO provides full-service and self-service pump service for 100LL and Jet A fuel.

Watsonville Municipal (WVI) – Watsonville Municipal Airport is located approximately 2.5 miles north of the City Center. The airport is surrounded by housing to the north and east and commercial property to the southwest. There are 206 T-hangars, 200 permanent tie-downs, and 40 transient tie-downs. The FBO provides full-service and self-service pump service for 100LL and Jet A fuel.

1.7. Current Aviation Activity

The FAA defines a based aircraft as “an aircraft that is operational and airworthy, which is typically based at an airport for the majority of the year.” Based aircraft are stored at an airport in a hangar facility or tied down on an airport apron area. Based on the current tenant list, as shown in Table 1-4, there are 29 aircraft based at KIC.

Table 1-4 – 2017 KIC Based Aircraft Fleet Mix

Type	Based Aircraft
Single-engine	21
Multi-engine	2
Helicopter	3
Jet	0
Experimental	3
Total	29

Source: Airport management, 2017

GA is a term used to describe all civil aviation activity other than scheduled commercial and military flights. An aircraft operation is defined as either a takeoff or landing. Per the FAA's Terminal Area Forecast (TAF), approximately 7,862 GA operations take place at KIC annually. The type of aircraft operations at KIC are varied, each with their specific importance and economic driver for the region. In addition to personal and recreational flights, the following activities occur at KIC:

Corporate/Business Activity

Business use of GA aircraft ranges from small, single-engine aircraft rentals to multiple aircraft corporate fleets supported by dedicated flight crews and mechanics. GA aircraft use allows employers to transport personnel and air cargo efficiently. Businesses often use GA aircraft to link multiple office locations and reach existing and potential customers. Business aircraft use by smaller companies has escalated as various chartering, leasing, time-sharing, interchange agreements, partnerships, and management contracts have emerged. (National Business Aviation Association, 2014). At KIC, corporate activity is conducted mostly by the agricultural corporations within the region.



Aerial Applicators

Aerial applicators can be a major function of airport operations at facilities located in rural settings. Agricultural spraying is efficient, provides a highly effective means of delivering crop protection products, produces maximum yields, and saves crop land from trampling by surface applicators. In some cases, agricultural aircraft serve as air tankers for wildfire suppression.



The northeast side of the airport property is utilized by various industrial and agricultural companies such as Wilbur Ellis Co., Monterey Wine, San Benito Supply, and the King City maintenance yard. Wilbur Ellis utilizes approximately nine helicopters and fixed wing aircraft with sprayers attachments for agricultural use. They occupy a hangar on the south end for maintenance and utilize the surface transportation road to access their property on the north side of the Airport. Helicopters are stored at their adjacent property within their secured fencing.

Since they have a permanent location on the Airport supported by a hangar maintenance facility, many of the local operations at KIC can be contributed to the aerial applicators. They are operational from March to October with almost daily flights. A support team follows helicopters to provide refueling and other services so the helicopters do not need to return to KIC during the day.

Aerobatics

Aerobatic operations are conducted through the Sean Tucker Tutima Academy, which opened in 2001 at KIC. Flights are conducted for pilots to receive their Aerobatic Performance Training (APT) from one of four instructors. Students can go on to fly aerobatics recreationally, perform at shows, or participate in competitions. The school operates Mondays through Fridays with four aerobatic aircraft, such as Pitts S-2B and S-2C and the Extra 300L. The program runs for a week with approximately eight hours of flight time with one to three students per a session.



Experimental

An experimental type certificate is issued to operate a primary category kit-built aircraft that was assembled without the supervision and quality control of the production certificate holder. Three experimental aircraft are based at KIC, with additional pilots operating periodically, indicative of the type of pilots in the region.



Law Enforcement

According to information provided by Airport management, the California Highway Patrol (CHP) Air Operations Division operates regularly at KIC with both fixed-wing and rotor aircraft. In general, law enforcement operations at airports can generally be attributed to responding to calls in remote areas; conducting search and rescue missions; aerial surveillance and homeland security operations; transporting prisoners; and pursuing criminal suspects by air.



Aerial Wildland Firefighting

Aerial wildland firefighting is a major category of operations at general aviation airports throughout the U.S. Depending on the facility, airports can host, or serve as a suitable alternate for air attack lead aircraft and helicopters. Accommodating airports can host rapid-response services to remote regions in the state. According to Airport management, KIC experiences aerial wildland firefighting operations in



the form of refueling when a fire is nearby. Aircraft typically used are Aero Commanders or Beechcraft King Airs.

Military

Military operations can be hard to determine because the activity is tied to national military needs which are unknown. According to data reported by the Traffic Flow Management System Counts (TFMSC) database (which reports filed flight plans) and the TAF, there were no military operations at KIC in 2016. It is assumed that because of KICs proximity to Fort Hunter Liggett Army, a combat support training center, which is located 17 miles southwest of the airport, KIC experiences light VFR military traffic.



2. Projections of Aviation Activity

The Federal Aviation Administration (FAA) places a high emphasis on the forecasting process due to its relevance to the analysis of future facility needs. Forecasts of aviation activity are used to measure the ability of the airport to accommodate future activity and to guide the type, size, and timing of future developments.

This chapter discusses the findings and methodologies used to project aviation demand at Mesa Del Rey Airport (KIC or Airport). It is important to recognize that there can be short-term fluctuations in an airport's activity due to a variety of unanticipated factors such as local and national economic health, fuel prices, technological advancements, regulatory changes, and market competition. The projections of aviation demand developed for KIC are documented in the following sections:

- Forecast Methodology & Aviation Trends
- Historical Socioeconomic Factors
- Historical and Current Aviation Activity
- Based Aircraft Forecasts
- Aircraft Operations Forecasts
- Critical Aircraft
- Forecast Summary
- FAA Forecast Review and Approval

2.1 Forecast Methodology & Trends

Forecasting of aviation-related demand for an airport requires a general understanding of recent and anticipated state and national trends in the aviation industry. In addition to the socioeconomic factors discussed previously, there are several factors that influence the number of based aircraft and operations that occur at an airport, national economic and aviation-related trends, proximity to other airports, capabilities and condition of facilities, business needs, and several other factors. Some trends in the aviation industry will undoubtedly have a greater impact on KIC than others.

The general aviation industry has experienced significant changes in recent years. Within the U.S., fluctuating levels of general aviation activity have been caused by economic upturns/downturns resulting from the nation's business cycle, increasing costs of aircraft ownership and operation in the form of fuel and maintenance, and recent changes to pilot licensing requirements.

The National Airspace System (NAS) is currently being modernized by the Next Generation Air Transportation System (NextGen), which will impact physical infrastructure at airports as well as flight trends. Initiatives, such as implementation of ADS-B by 2020 which requires equipment be installed on GA aircraft, may impact which pilots choose to fly in which areas. KIC is outside of the ADS-B required area so it is possible that pilots and training schools could relocate to KIC to avoid installing additional equipment on their aircraft.

Since 2000, the FAA noted that operations on the national level declined at an average annual rate of 3.3 percent. As per the FAA Aerospace Forecasts 2017-2037, future national general aviation pilots are projected to decrease -0.1 percent annually while the national general aviation total aircraft fleet is projected to increase 0.1 percent annually.

For this ALP Update, projections of aviation activity were prepared for short-term (2021), mid-term (2026), and long-term (2036) timeframes using 2016 as the base-year. Methodologies used in Sections 2.4 and 2.5 consider historical aviation trends at the Airport and nationwide, demographic characteristics of Monterey County, and local historical socioeconomic data, as discussed in Section 2.2. In addition, demographic data for Monterey County were used to track local trends and conditions that might impact future aviation demand levels. Monterey County was used in place of King City primarily because there is more pertinent socioeconomic data available at the county level.

2.2 Historical Socioeconomic Factors

Regional socioeconomic trends can be used in the planning process to relate future aviation activity levels at KIC to local and regional socioeconomic trends. The analysis examines historical trends of the region's population, employment, and mean household income. Data for Monterey County, the state of California, and their associated Compound Annual Growth Rate (CAGR) over the indicated period are provided for comparison. CAGR calculates a constant rate of change over a given time-period; it dampens the effect of volatility during periods that experience significant change, essentially a "smoothed" annual growth rate. These three historical socioeconomic conditions are summarized by county and state.

The good business climate, high quality of life and site availability are cited as reasons for employers relocating to King City. The development of several new industrial parks, the redevelopment of the City's Town Square, and the expansion of Mee Memorial Hospital contribute to the positive economic outlook of the City. The marketing of new retail stores and the redevelopment of Broadway and other retail shopping areas add to the attractiveness of the continuation of the City's role as retail center for Southern Monterey County. While the tourist trade is concentrated on the Monterey Peninsula, there is an increasing effort to promote inland areas in the County as well. The growing number of wine tasting facilities in the area and the opening of the National Steinbeck Center in Salinas should add to the attraction of inland areas.

According to Woods and Poole Economics, Inc., an independent firm that specializes in long-term county economic and demographic projections, between the years of 2007 and 2016, the CAGR of population in Monterey County was 0.67 percent, as shown in Table 2-1. In that same timeframe, the state of California experienced population growth at a CAGR of 0.95 percent, slightly higher than that of Monterey County. Per the 2010 U.S. Census, King City has a population of 12,874, approximately three percent of the County's population.

Table 2-1 – Comparison of Historical Population Growth Trends

Year	Monterey County	California
2007	412.35	36,331.60
2008	413.69	36,666.40
2009	415.02	37,001.21
2010	416.36	37,336.01
2011	420.11	37,702.63
2012	423.85	38,069.26
2013	427.60	38,435.88
2014	431.34	38,802.50
2015	434.38	39,155.92
2016	437.81	39,549.67
CAGR (2007-2016)	0.67%	0.95%

Note: Population data represented in thousands
 Source: Woods and Poole Economics, Inc.

Error! Reference source not found. summarizes data related to employment in Monterey County and the state of California from 2007-2016. As shown, employment in Monterey County have increased 1.28 percent in the 10-year time frame, which is slightly less than the employment on 1.66 percent in the state of California during the same period. Employment growth was almost twice the population growth (1.28 percent versus 0.67 percent) for Monterey County, showing a strong economy in the region.

Table 2-2 – Historical Employment Growth Trends

Year	Monterey County	California
2007	221.16	19,646.90
2008	221.46	19,699.19
2009	221.77	19,751.47
2010	222.07	19,803.75
2011	226.75	20,362.83
2012	231.44	20,921.91
2013	236.12	21,480.98
2014	240.80	22,040.06
2015	244.51	22,417.83
2016	248.06	22,781.17
CAGR (2007-2016)	1.28%	1.66%

Note: Employment data represented in thousands
 Source: Woods and Poole Economics, Inc.

In addition to the employment growth rates, there are other demographic factors that can significantly impact aviation activity. As stated previously, regional economic factors can play a significant role in the level of activity experienced at an airport. Table 2-3 summarizes historical mean household income for Monterey County and the state of California. It should be noted that data from Woods and Poole Economics, Inc. are reported in constant dollars (year 2016) to adjust for inflation over time.

Mean household income in Monterey County grew at an annual rate of 0.88 percent from 2007-2016. The Monterey County mean household income growth rate is slightly less than the state of California which grew at an annual rate of 1.03 percent in the same time frame.

Table 2-3 – Historical Mean Household Income Growth Trends

Year	Monterey County	California
2007	\$ 140,325.40	\$ 134,027.23
2008	\$ 140,885.71	\$ 134,616.40
2009	\$ 141,446.01	\$ 135,205.56
2010	\$ 142,006.32	\$ 135,794.73
2011	\$ 143,495.74	\$ 138,495.31
2012	\$ 144,985.16	\$ 141,195.90
2013	\$ 146,474.57	\$ 143,896.48
2014	\$ 147,963.99	\$ 146,597.06
2015	\$ 149,940.55	\$ 148,236.93
2016	\$ 151,901.90	\$ 146,913.14
CAGR (2007-2016)	0.88%	1.03%

Source: Woods and Poole Economics, Inc.

These three socioeconomic conditions are summarized in Table 2-4 by county and state. As shown, over the past ten years the lowest growth rate is attributed to the population of Monterey County while the highest growth rate is attributed to employment in the County.

Table 2-4 - Historical Socioeconomics Summary

Year	Population		Employment		Mean Household Income	
	Monterey County	California	Monterey County	California	Monterey County	California
2007	412.35	36,331.60	221.16	19,646.90	\$140,325.40	\$134,027.23
2016	437.81	39,549.67	248.06	22,781.17	\$151,901.90	\$146,913.14
CAGR 2007-2016	0.67%	0.95%	1.28%	1.66%	0.88%	1.03%

Sources: Woods and Poole Economics, Inc., Kimley-Horn

Note: Population and Employment data represented in thousands

2.3 Historical and Current Aviation Activity

The following provides a brief description of the historical and current activity at KIC, including based aircraft and aircraft operations. Historical activity data for KIC have been compiled from sources including the FAA Terminal Area Forecast (TAF), Airport 5010 Master Record, Airport management, and the FAA’s Traffic Flow Management System Counts (TFMSC).

Based Aircraft

The FAA defines a based aircraft as “an aircraft that is operational and airworthy, which is typically based at an airport for the majority of the year.” Based aircraft are stored at an airport in a hangar facility or tied down on an apron area. As shown in Error! Reference source not found., according to the FAA TAF, there were 20 based aircraft at KIC in 2016.

Table 2-5 - Terminal Area Forecast – Based Aircraft

Year	Based Aircraft
2010	30
2011	19
2012	19
2013	21
2014	22
2015	20
2016	20

Source: FAA TAF issued January 2017

For non-towered airports such as KIC, the TAF is an estimate and typically used for planning purposes when other data is not available or reliable. KIC Airport management maintains record of their aircraft based at the Airport. Based on data provided by Airport management, there were 29 based aircraft at KIC in 2016. Table 2-6 summarizes the 2016 KIC based aircraft data categorized by aircraft type.

Table 2-6 - 2016 KIC Based Aircraft Fleet Mix

Type	Based Aircraft	Percentage
Single-engine	21	72%
Multi-engine	2	7%
Helicopter	3	10%
Jet	0	0%
Experimental	3	10%
Total	29	100%

Source: Airport Management Based Aircraft List, 2017

As the 2016 based aircraft fleet mix was determined by the based aircraft tenant list provided by Airport management and a review of the individual aircraft registrations, this data will be used as baseline data for subsequent sections of this Plan. It should be noted that the nine helicopters and fixed wing aircraft that are operated by Wilbur Ellis Co. are not included in the based aircraft total as they are stored in an adjacent property.

Aircraft Operations

A common measure of airport activity is the number of aircraft operations occurring on an annual basis. An aircraft operation is defined as either a takeoff or landing. For example, a touch-and-go operation, where an aircraft lands and takes off without leaving the active runway, typical of training aircraft, counts as two operations.

Aircraft operations are categorized in several ways, one of which is whether the operation is itinerant or local in nature. Itinerant operations are those conducted by aircraft arriving from or departing to an area beyond the airport’s local traffic pattern. Local operations are conducted by aircraft remaining in the local traffic pattern, conducting simulated instrument approaches at the airport, or flying from a practice area within a 20-mile radius of the airport. Touch-and-go training is an example of local activity.

Once categorized as local or itinerant operations, aircraft activity can be further categorized by the nature of the operator. Transient operations do not originate from the airport at which that aircraft is based and are categorized as air carrier (e.g., Commercial Airlines like United, Southwest, JetBlue), air taxi (a small commercial aircraft conducting short flights upon demand like NetJets), general aviation (non-commercial), or military. Local operations are categorized as general aviation or military.

At airports with an ATCT, aircraft operations are tracked and recorded by air traffic control (ATC). Most general aviation airports in the U.S., including KIC, do not have ATCTs. These airports are referred to as non-towered airports and they make up the majority of the airports open to the public. A common industry issue is that these non-towered airports typically do not have readily available records on aircraft operational activity which can impact the accuracy of the operations forecasts.

With no air traffic control tower (ATCT) at KIC, obtaining a definitive count and categorization of aircraft operations is challenging. Like many small general aviation airports, KIC must rely on activity estimates from the FAA, airport users, and Airport management. The FAA TAF is the agency’s official forecast of aviation activity and based aircraft for airports in the National Plan of Integrated Airport Systems (NPIAS). For airports like KIC, the TAF forecasts represent top-down distribution of national level activity with consideration of historic activity trends. These trends are based on data reported by the local FAA Airports District Office (ADO) or the FAA’s Form 5010 Airport Master Record process. Typically for non-towered general aviation airports like KIC, the FAA projects no change in activity until a planning or significant event indicates otherwise. As Table 2-7 indicates, the TAF has consistently estimated 7,862 total annual operations since 2010. Of these total operations, 3,381 are estimated to be itinerant and 4,481 are local.

Table 2-7 - KIC Terminal Area Forecast – Aircraft Operations

Year	Itinerant			Local	Total Operations
	Air Taxi	General Aviation	Military	General Aviation	
2010	0	3,381	0	4,481	7,862
2011	0	3,381	0	4,481	7,862
2012	0	3,381	0	4,481	7,862
2013	0	3,381	0	4,481	7,862
2014	0	3,381	0	4,481	7,862
2015	0	3,381	0	4,481	7,862
2016	0	3,381	0	4,481	7,862

Source: FAA TAF issued January 2017

2.4 Based Aircraft Forecasts

Because there is not an accurate recording of historical activity at KIC, common forecasting methods that rely on historical data such as regression analysis were not used. Instead, trend projection linking based aircraft growth at KIC to the FAA TAF, FAA Aerospace Forecast 2017-2037, and regional socioeconomics were used to project future activity.

TAF Methodology

This methodology uses the FAA TAF to estimate based aircraft at KIC. As stated previously, the FAA TAF estimates flat growth over the planning horizon. Using the FAA TAF methodology, it is projected that there will be 29 based aircraft at KIC from 2016 through 2036.

FAA Aerospace Forecast Methodology

This methodology assumes that based aircraft at KIC will increase/decrease at the same rate as the U.S. national general aviation fleet as projected in the FAA Aerospace Forecast 2017-2037. While the total number of based aircraft in the U.S. is projected to rise over the forecast horizon, growth will not be equally distributed across all aircraft types. According to the FAA Aerospace Forecast, average annual decreases are projected in single-engine (-0.9 percent) and multi-engine (-0.5 percent) aircraft. Growth is projected in jet aircraft (1.9 percent), rotorcraft (1.6 percent), and experimental aircraft (1.0 percent). Using this methodology, KIC’s fleet is projected an overall decrease of 2.0 based aircraft, from 29 in 2016 to 27 by 2036.

Socioeconomic Methodology

Socioeconomic factors of a community do not always impact or reflect aviation-related activity at a nearby airport; however, they can often give direction to the overall health of the local economy and the potential type of aircraft activity that may be occurring at that airport. The socioeconomic methodology analyzes population, employment, and mean household income at Monterey County and assumes that the number of based aircraft at the airport will increase at the same rate as the socioeconomics within Monterey County.

According to data obtained from Woods and Poole Economics, Inc., population, employment, and mean household income are projected to increase at a CAGR of 0.71 percent, 1.22 percent, and 1.39 percent respectively. Using these growth rates, based aircraft at KIC will increase to as low as 34 and as high as 40 by 2036.

Because population, employment levels, and household income indirectly relate to a regions propensity to travel or own an aircraft, an average of the three growth rates was developed, resulting in 36 based aircraft at KIC by 2036.

Table 2-8 displays a summary of the three based aircraft methodologies.

Table 2-8 – Based Aircraft Forecast Summary of Results

Year	TAF Variable	FAA Forecast Variable	Socioeconomic Variable
2016	29	29	29
2021	29	29	31
2026	29	28	32
2036	29	27	36
CAGR 2016-2036	0.00%	-0.31%	1.11%

Sources: FAA Aerospace Forecast 2017-2037, FAA TAF issued January 2017, Kimley-Horn, Woods and Poole Economics, Inc.

Based Aircraft Preferred Methodology

In total, three methodologies were examined to develop forecasts of based aircraft at KIC. The three methodologies generated a range from 27 to 36 based aircraft by 2036. The lowest projection of 27 based aircraft was developed from the FAA Aerospace 2017-2037 methodology which applied the FAA general aviation fleet mix national average throughout the planning horizon. This methodology is not considered

reasonable because the region, while lower than national average, has been identified as one with strong economic vitality which should reinforce aviation activity.

The second methodology compared KIC based aircraft to the FAA TAF. As noted previously, the FAA TAF was deemed incorrect as based aircraft at the Airport were determined to be 29 in 2016 as opposed to the 20 recorded by the FAA TAF. Additionally, because the FAA doesn't have any measurable to estimate based aircraft at KIC, growth at the KIC was "flat-rated," projecting 29 based aircraft in 2016 through 2036. Because of this, the FAA TAF methodology is not the preferred methodology to project based aircraft at KIC.

The socioeconomic methodology combined three variables of socioeconomics within Monterey County: population, employment, and mean household income. As a result of analyzing the economic health of the region, and understanding the economic vitality promotes travel and flying, the socioeconomic methodology was chosen as the preferred methodology to project based aircraft from 2016-2036, as shown in Table 2-9.

Table 2-9 - Based Aircraft Preferred Forecast

Year	Socioeconomic Variable
2016	29
2021	31
2026	32
2036	36
CAGR 2016-2036	1.11%

Sources: Kimley-Horn, 2017

Based Aircraft Fleet Mix Forecasts

At most general aviation airports, the majority of the based aircraft fleet are single-engine piston aircraft with multi-engine, jets, and helicopters comprising the remainder of the fleet. This trend holds true at KIC with 72 percent of the fleet being single-engine, 8 percent multi-engine, 10 percent helicopter, and the remaining 10 percent experimental. KIC is equipped with a 4,479-foot runway, capable of accommodating small corporate jets, however, given the Airport's location and regional demand, it is anticipated that single-engine aircraft will continue to dominate the fleet mix at KIC.

KIC's niche activity of corporate farmers, aerial applicators, aerobatic aircraft, and experimental aircraft is evidence of the importance for these markets within the region. Table 2-10 depicts a projected based aircraft fleet mix scenario by aircraft type and regional demand.

Table 2-10 – KIC Based Aircraft Fleet Mix Growth Scenario

Year	Single-Engine	Multi-Engine	Jet	Helicopter	Experimental	Total
2016	21	2	0	3	3	29
2021	21	2	1	3	4	31
2026	21	2	1	4	4	32
2036	21	3	2	5	5	36

Sources: FAA Aerospace Forecast 2017-2037, Kimley-Horn

The fleet mix growth scenario shown above depicts a steady presence of single-engine aircraft over the planning horizon, slightly different than the national decline projected by the FAA. The projection of single-engine aircraft at KIC can be attributed to both the county's high mean household income, which assumes that the region surrounding KIC is less likely to be affected by the high general aviation operating costs, and the FAA's rollout of ADS-B requirements. By 2020, it will be a requirement for aircraft to have ADS-B compatibility when operating within the Class C airspace surrounding Monterey Peninsula Airport (MRY). There is a possibility that some single-engine aircraft owners and operators based at Salinas Municipal Airport (SNS), Marina Municipal Airport (OAR), and MRV will be reluctant to retrofit their aircraft with ADS-B out instruments. This scenario could warrant the relocation of some of the single-engine aircraft to KIC as operations within local KIC airspace do not require ADS-B compatibility. Multi-engine, jet, and helicopter are also anticipated to increase during the planning period, which can be attributed to the planned development within King City. Rava, an adjacent property owner, intends to relocate a hangar so their aircraft, a Cessna CJ3, may utilize KIC. Additionally, the property to the northeast of the Airport is anticipated to be used by cannabis companies that have expressed an interest in utilizing light jets, such as Dassault Falcons, at KIC when their business is operational.

2.5 Aircraft Operations Forecasts

Three methodologies have been employed to forecast annual operations at KIC from 2016-2036:

- TAF Methodology
- FAA Aerospace Forecast Methodology
- Socioeconomic Methodology

As discussed above, aircraft operations data are not readily accessible because of the lack of an ATCT. Consequently, annual operations data for 2016 was determined from the FAA TAF.

TAF Methodology

As previously noted, the FAA TAF issued January 2017 estimated 7,860 annual operations and has used this estimate for years 2008 through 2045. Using this methodology, growth in annual operations at KIC follow the FAA TAF estimate and stay flat throughout the planning horizon, projecting 7,860 annual operations at the Airport from 2016 through 2036.

FAA Aerospace Forecast – National Hours Flown Methodology

Similar to projecting based aircraft at KIC, a methodology employed for estimating annual operations at the Airport is the FAA Aerospace Forecast – National Hours Flown Methodology. This methodology assumes annual operations at KIC will grow at the same rate the FAA projects the national general aviation hours flown. While the total number of hours flown in the U.S. is projected to rise over the forecast horizon, growth will not be equally distributed across all aircraft types. According to the FAA Aerospace Forecasts 2017-2037, decreases in hours flown are projected in single-engine (-0.9 percent) and multi-engine (-0.1 percent). Growth in hours flown is projected in jets (3.0 percent) and both helicopter and experimental (2.0 percent) each. Assuming KIC aircraft operations follow the FAA's hours flown projections, annual operations will decrease from 7,860 in 2016 to 7,540 in 2036, a 4.0 percent decrease over the planning period.

Socioeconomic Methodology

Similar to projecting based aircraft, annual operations were projected through 2036 using a socioeconomic methodology analyzing three main variables—population, employment, and mean household income. This methodology assumes that annual operations at the Airport will increase at the same rates as the socioeconomics within Monterey County.

As stated previously, data obtained from Woods and Poole Economics, Inc projected population, employment, and mean household income to increase at a CAGR of 0.71 percent, 1.22 percent, and 1.39 percent, respectively. Using these growth rates, annual operations will increase to as low as 9,070 and as high as 10,370 by 2036.

Because population, employment levels, and household income indirectly relate to a regions propensity to travel or own an aircraft, and average of the three growth rates were developed, resulting in a forecast of 9,800 annual operations at KIC in 2036.

Table 2-11 displays a summary of the three aircraft operations forecast methodologies.

Table 2-11 – Aircraft Operations Forecast – Summary of Results

Year	TAF Variable	FAA Forecast Variable	Socioeconomic Variable
2016	7,860	7,860	7,860
2021	7,860	7,670	8,310
2026	7,860	7,540	8,780
2036	7,860	7,540	9,800
Change (%)	0%	-4%	25%

Note: Operations are rounded to nearest ten

Sources: FAA Aerospace Forecast 2017-2037, FAA TAF issued January 2017, Kimley-Horn, Woods and Poole Economics, Inc

Operations Preferred Methodology

Similar to identifying the based aircraft preferred methodology, three methodologies were examined to develop forecasts of annual operations at KIC. The lowest projection of annual operations came from the FAA Aerospace Forecast 2017-2037 methodology which projected the Airport would slowly decrease in operations from 7,860 in 2016 to 7,540 in 2036. This methodology was not chosen as the preferred methodology because the results were unreasonably low, especially when considering the Airport’s location and regional economy.

The FAA TAF methodology resulted in no change in annual operations over the planning horizon. Because the FAA has no measure to project activity at KIC over the planning period, and because the FAA TAF’s based aircraft counts were proven incorrect, it is difficult to justify the FAA TAF methodology as the preferred methodology. As a result, this methodology was not chosen as the preferred methodology.

The socioeconomic methodology, which averaged the growth rates of the population, employment, and mean household income of Monterey, CA was determined to forecast the highest levels of activity at the Airport through the planning horizon. This methodology estimates that the Airport will experience just under 10,000 operations by 2036. Considering the economic health of the region, the Airport’s location to a highly-travelled destination, existing types of activity at KIC, an approximate 2,000 operation increase over the 20-year timeframe was justified. As such, the socioeconomic methodology was chosen as the

preferred methodology to forecast annual operations at KIC. Table 2-12 presents the preferred methodology used to project annual operations at the Airport.

Table 2-12 – Aircraft Operations Forecast Preferred Methodology

Year	Socioeconomic Variable
2016	7,860
2021	8,310
2026	8,780
2036	9,800
Change (%)	25%

*Note: Operations are rounded to nearest ten
Source: Kimley-Horn 2017*

Local/Itinerant Operations

According to the FAA TAF, in 2016 approximately 57 percent of operations were local and approximately 43 percent of operations were itinerant. This split is applied to total operations projections and held constant throughout the projection period, as shown in Table 2-13.

Table 2-13 – Operations Forecast – Local/Itinerant Split

Year	% Local Operations	Local Operations	% Itinerant Operations	Itinerant Operations	Total Operations
2016	57%	4,480	43%	3,380	7,860
2021	57%	4,740	43%	3,570	8,310
2026	57%	5,000	43%	3,780	8,780
2036	57%	5,590	43%	4,210	9,800

*Note: Operations rounded to the nearest ten
Source: Kimley-Horn, 2017*

Aircraft Operations by Type

Nearly all aircraft operations at KIC are categorized by the FAA as general aviation. It should be noted that due to the U.S. Army Base located in proximity of KIC, there is a small number of itinerant military operations projected to occur at the Airport. These operations are unscheduled and are difficult to forecast due to their irregularity. While the FAA TAF does not estimate any military operations at the Airport, it is estimated that approximately two percent of operations at KIC are military, accounting for 160 military operations in 2016. This percentage was held constant throughout the planning horizon resulting in approximately 200 military operations in 2036, as shown in Table 2-14.

Table 2-14 -- Operations Forecast -- Aircraft Operations by Type

Year	Itinerant Operations				Local Operations	
	General Aviation Operations	Military Operations	% Military	Total operations	Civil Operations	Total Operations
2016	4,320	160	2%	4,480	3,380	7,860
2021	4,570	170	2%	4,740	3,570	8,310
2026	4,820	180	2%	5,000	3,780	8,780
2036	5,390	200	2%	5,590	4,210	9,800

Source: Kimley-Horn, 2017

2.6 Peaking Characteristics and Peak Operations Projections

A component in the development of forecasts of aviation demand is the identification of peak activity levels. Understanding peaking characteristics assists in facility and capacity planning.

Although KIC receives a low volume of operations, most general aviation facilities experience inflated levels of seasonal activity. Based on an analysis of general aviation airports with similar activity levels as KIC, it is estimated that the peak month accounts for approximately 12 percent of annual operations. Based on this figure, it is estimated that in 2016, the peak month accounted for approximately 940 operations. The 12 percent peak month estimate was held constant throughout the projection period, and results in approximately 1,180 operations during the peak month in 2036.

Peak Month Average Day (PMAD) activity is calculated by dividing the number of operations projected to occur in the peak month by the number of days in that month, in this case, estimated to be 31 days. PMAD at KIC was determined to account for approximately 30 operations in 2016 and 38 operations in 2036. Table 2-15 below summarizes peaking characteristics at the Airport.

Table 2-15 -- KIC Peaking Characteristics

Year	Annual Operations	Peak Month	PMAD
2016	7,860	940	30
2021	8,310	1,000	32
2026	8,780	1,050	34
2036	9,800	1,180	38

Note: Annual operations and peak month projections rounded to nearest ten

Source: Kimley-Horn

2.7 Critical Aircraft

Facility planning for general aviation airports is impacted by existing and anticipated levels of aviation-related demand, both based and transient aircraft and annual aircraft operations, as well as the size and type of aircraft that currently operate and are projected to operate at an airport.

As defined in FAA Advisory Circular 150/5300-13A, Change 1, the FAA classifies airports by Airport Reference Code (ARC), which identifies the overall planning and design criteria for the airport. The ARC is

assigned based on the size and speed of the largest aircraft that generally records at least 500 operations annually at an airport; this aircraft is known as the airport's "critical aircraft." In some instances, such as at KIC, the critical aircraft isn't identified as a single aircraft type, but a family of aircraft within the same design group. The 2010 ALP identified a Beech King Air B200, a B-II aircraft, as the critical aircraft.

The FAA's TFMSC database was examined to identify aircraft operations by aircraft type. It should be noted that the TFMSC only records flights that filed a flight plan with ATC. Aircraft are not required to file a flight plan and thus may not be counted in this database. The FBO noted that the majority of flights are not conducted with a flight plan as there is typically good weather and no instrument approach. After reviewing the TFMSC database, it was discovered that within the last decade (2007-2016), an annual average of 60 aircraft filed flight plans of B-II (aircraft with approach speeds of 91 to 120 knots and wingspan of 49 to 78 feet) or larger aircraft for KIC. The FBO noted that they observe at least one B-II aircraft a week, and during busier agricultural seasons two or three B-II aircraft a week. This would result in at least 104 operations of B-II aircraft per a year.

Some years in the TFMSC were identified to have greater B-II operations than others, however, without specific information to determine why, it is difficult to explain this data. It is likely that some of the B-II operations are related to the Beech King Airs that are used by the United States Forest Service (USFS) aerial wildland firefighting – Air Attack division. Depending on the location and intensity of wildfires, a different level of operations would be expected in different years. In 2008, the Indians Fire in the Los Padres National Forest resulted in the USFS basing at KIC for a month. Additionally, Meyers Tomatoes, a long-time tenant of KIC, previously based a King Air B200 to fly to between growing locations such as Arizona and Mexico.

As stated previously, two companies intend to utilize KIC within the planning horizon for their corporate jets, the cannabis companies and Rava (Farm Fresh). The cannabis company has indicated that they intend to utilize a Dassault Falcon 20 and Rava a Cessna CJ3. It is assumed that each company would conduct at least five operations per week. It is anticipated that this will account for an additional 520 B-II operations per year. With the 104 B-II operations summed with the anticipated 520 B-II operations from corporate activity, it is estimated that KIC will experience approximately 624 B-II operations per year. As such, consistent with the 2010 ALP, the critical aircraft at KIC is determined to be the B-II family of aircraft, primarily accounting for the Dassault Falcon 20 and Beech King Airs.

2.8 Forecast Summary

A summary of projected aviation-related activity for KIC is presented in Table 2-16.

Table 2-16 – Summary of Forecasts

Category	2016	Projected		
		2021	2026	2036
Total Aircraft Operations	7,860	8,310	8,780	9,800
Local GA Operations	4,480	4,740	5,000	5,590
Itinerant GA Operations	3,380	3,570	3,780	4,210
Total Based Aircraft	29	31	32	36
Single-Engine	21	21	21	21
Multi-Engine	2	2	2	3
Jet	0	1	1	2
Helicopter	3	3	4	5
Experimental	3	4	4	5

Source: Kimley-Horn & Associates, 2017

2.9 FAA Forecast Review and Approval

FAA ADOs or Regional Airports Divisions are responsible for forecast approvals. When reviewing a sponsor’s forecast, the FAA must ensure that the forecast is based on reasonable planning assumptions, uses current data, and is developed using appropriate forecast methods. Additional discussion on assumptions, data, and methodologies can be found in the 2001 FAA Report “Forecasting Aviation Activity by Airport.” After a thorough review of the forecast, the FAA determines if the forecast is consistent with the FAA TAF.

For all classes of airports, forecasts for total enplanements, based aircraft, and total operations are considered consistent with the FAA TAF if they meet the following criterion: Forecasts differ by less than 10 percent in the 5-year forecast period, and 15 percent in the 10-year forecast period.

If the forecast is not consistent with the FAA TAF, differences must be resolved if the forecast is to be used in FAA decision-making. This may involve revisions to the airport sponsor’s submitted forecasts, adjustments to the TAF, or both. A comparison of forecasts of aviation compared with TAF forecasts are presented in Table 2-17 and Table 2-18. These tables are formatted according to guidelines described in the previously referenced report, “Forecasting Aviation Activity by Airport.”

Table 2-17 – FAA TAF Comparison

Based Aircraft	Year	KIC Forecast	TAF Forecast	KIC/TAF % Difference
Base yr.	2016	29	20	45.0%
Projected				
Base yr. +5	2021	31	20	55.0%
Base yr. +10	2026	32	20	60.0%
Base yr. +15	2031	34	20	70.0%
Itinerant Operations	Year	KIC Forecast	TAF Forecast	KIC/TAF % Difference
Base yr.	2016	3,380	3,380	0.0%
Projected				
Base yr. +5	2021	3,573	3,380	5.7%
Base yr. +10	2026	3,775	3,380	11.7%
Base yr. +15	2031	3,990	3,380	18.1%
Local Operations	Year	KIC Forecast	TAF Forecast	KIC/TAF % Difference
Base yr.	2016	4,480	4,480	0.0%
Projected				
Base yr. +5	2021	4,737	4,480	5.7%
Base yr. +10	2026	5,005	4,480	11.7%
Base yr. +15	2031	5,290	4,480	18.1%
Total Operations	Year	KIC Forecast	TAF Forecast	KIC/TAF % Difference
Base yr.	2016	7,860	7,860	0.0%
Projected				
Base yr. +5	2021	8,310	7,860	5.7%
Base yr. +10	2026	8,780	7,860	11.7%
Base yr. +15	2031	9,280	7,860	18.1%

Sources: Kimley-Horn & Associates, 2017 and FAA TAF

If the TAF is updated to reflect the current based aircraft number, as shown in Table 2-18, the based aircraft forecasts would be within the 10 to 15 percent threshold that the FAA prefers.

Table 2-18 – FAA TAF Comparison 2

Based Aircraft	Year	KIC Forecast	TAF Forecast	KIC/TAF % Difference
Base yr.	2016	29	29	0.0%
Projected				
Base yr. +5	2021	31	29	6.9%
Base yr. +10	2026	32	29	10.3%
Base yr. +15	2031	34	29	17.2%

Sources: Kimley-Horn & Associates, 2017 and FAA TAF

3 Facility Requirements and Alternatives

The Facility Requirements involves the analysis of what additional facilities would be required beyond the existing airport infrastructure to accommodate forecasted aviation activity as well as meet Federal, state, and local regulations, including FAA design standards. As there is typically more than one solution available, the alternatives must be evaluated to arrive at the most appropriate development recommendation. The goal of analyzing alternatives is to identify and evaluate all of the alternatives that are designed to meet the current and future needs of all airport users as well as keeping within the strategic vision of the airport sponsor. A final recommended development plan will be developed and illustrated in the Airport Layout Plan (ALP) and estimated costs for the plan are detailed in the Capital Improvement Plan (CIP) in Chapter 4 Financial Plan. Airfield Capacity, airside, and landside components are accounted for in this assessment.

As with all steps of developing alternatives, the evaluation must be tailored to ensure that King City's goals for the Airport are met while still following generally accepted planning practices and Federal and State guidance and regulations. While each alternative will not be explicitly evaluated for the below categories, this list provides a general framework of considerations applied to each alternative when considering a recommended development plan.

- ➔ **Operational Performance:** An airport's functionality as a system including capacity, capability, and efficiency
- ➔ **Environmental Factors:** Considering the potential environmental impacts and if they may be avoided
- ➔ **Financial Feasibility:** Rough cost estimates, preliminary financial feasibility, or return on investment (ROI) analysis
- ➔ **Safety:** Improving the airfield while meeting Federal, State, and local standards, recommendations, priorities, and grant assurances
- ➔ **Engineering:** Considering constraints and feasibility of the design and construction of the project
- ➔ **Public:** Input and agreement from the public and other stakeholders
- ➔ **Access:** Ensuring the development is accessible to users
- ➔ **Future Expansion:** Providing the flexibility to expand in the future

3.1 Airfield Capacity

Airfield capacity refers to the maximum number of aircraft operations (takeoffs and landings) an airfield can accommodate in a specified amount of time (i.e. annually or hourly). The purpose of an airfield capacity analysis is to determine if the existing airfield facilities are sufficient to meet demand or if capacity enhancing changes to these facilities are needed. FAA AC 150/5060-5 *Airport Capacity and Delay* indicates that with a single bi-directional runway, full parallel taxiway, and a fleet mix of predominately aircraft less than 12,500 lbs., KIC can accommodate up to 230,000 total annual operations. It further indicates that the maximum hourly capacity of the airfield is 98 operations during VFR conditions and 59 during IFR conditions. The forecasts presented in Chapter 2 projected 9,800 total annual operations and up to 38 peak hour operations by 2036. Based on this, the existing airfield provides more than sufficient capacity for the planning horizon.

3.2 Airside

Airfield facilities accommodate the takeoff and landing of aircraft and the movement of those aircraft about the airport, including runways, taxiways, and associated navigational aids and signage.

3.2.1 FAA Classifications and Standards

Airport design standards provide direction on how to design airports that promote safe activities. *FAA AC 150/5300-13A, Airport Design* contains extensive information regarding design standards for every airport type. Design standards are included for runways, taxiways, safety areas, as well as many others.

The FAA uses the Aircraft Approach Category (AAC), Airplane Design Group (ADG), of an airport’s design aircraft and the visibility minimums of the runway to classify individual runways. When combined, these three elements comprise the Runway Design Code (RDC); for example, B-II-5000. The design aircraft, identified as part of the forecasting process as a Beech King Air, has at least 500 annual operations at the airport. The AAC is based on the design aircraft’s approach speed. The ADG is based on the wingspan or tail height of the design aircraft, whichever is more restrictive. The visibility is listed as the Runway Visibility Range (RVR) and is based on the lowest approach visibility minimums for that runway. The RDC, minus the visibility component, determines the Airport Reference Code (ARC). According to FAA guidance, the most demanding RDC would be considered the ARC. Table 3-7 - Part 77 Surface Dimensions lists the specifications associated with the RDC from the FAA AC.

Table 3-1 - Runway Design Codes

Runway Design Code (RDC)						
Aircraft Approach Category (AAC)		Airplane Design Group (ADG)			Flight Visibility	
Category	Speed (kts)	Group	Wingspan	Tail Height	RVR (ft)	Approach Minimums (sm)
A	Less than 91	I	Up to 48'	<2 0'	VIS 5000	Visual conditions Not lower than 1 mile
B	91 to 120	II	49' to 78'	20' - < 30'	4000	<1 & > ¼
C	121 to 140	III	79' to 117'	30' - < 45'	2400	< ¼ & > ½
D	141 to 165	IV	118' to 170'	45' - < 60'	1600	< ½ & > ¾
E	166+	V	171' to 213'	60' - < 66'	1200	< ¾
-	-	VI	214' to 261'	66' - <80'	-	-

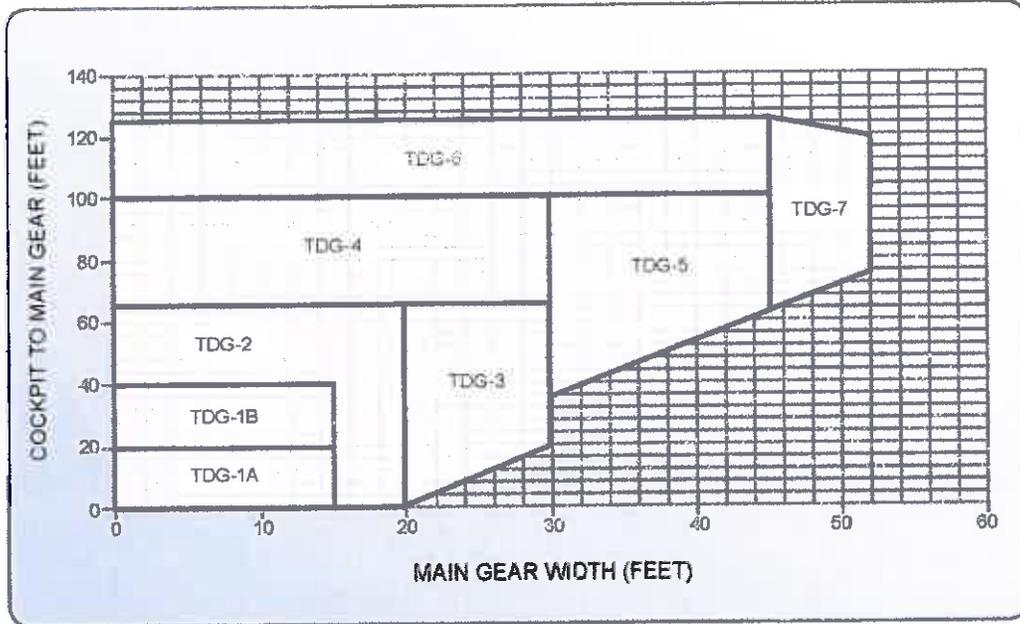
Source: FAA AC 150/5300-13A, Airport Design

The RDC for KIC’s Runway 11-29 is B-II-VIS and is intended to be used by a range of aircraft from small single-engine aircraft to medium sized corporate jets at reduced payloads.

The Taxiway Design Group (TDG) is a classification of the aircraft dimensions as shown in Figure 3-1. Taxiways are designed to allow for oversteering, thus pavement angles and edges (fillets) must provide a large enough margin for safety while turning.

Of the most demanding aircraft projected to operate the Airport, the King Air C90 is classified as a TDG-1A and the Dassault Falcon 20 is classified as a TDG-2. Both full-length parallel Taxiway A and partial parallel Taxiway B are 35 feet wide. This meets the design standard for TDG-2 aircraft and is anticipated to be sufficient throughout the planning horizon.

Figure 3-1 - Taxiway Design Group Measurements



Source: FAA AC 150/5300-13A, Airport Design

Once identified, the RDC and TDG are used to signify the design standards to which the runway and taxiways should be constructed or maintained. A summary of these design standards is provided below and depicted in Figure 3-2. Key design standards include:

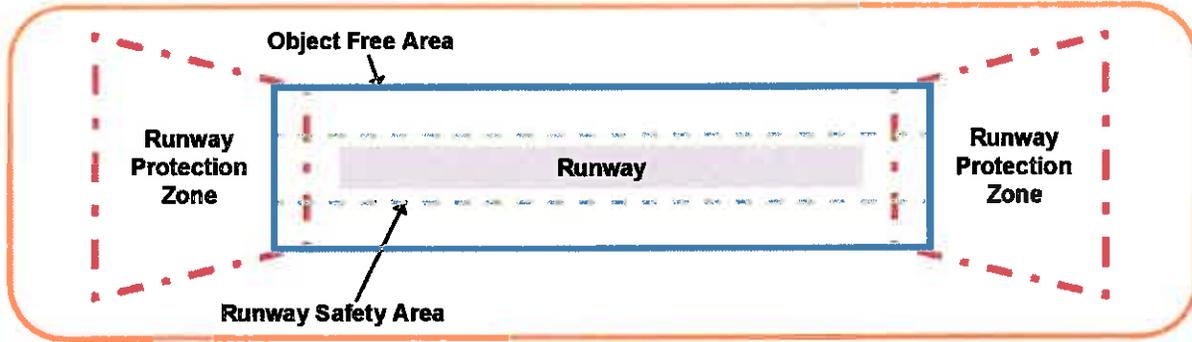
- ➔ **Object Free Area (OFA)** – An area centered on a runway (ROFA), taxiway (TOFA), or taxilane (TLOFA) centerline provided to enhance the safety of aircraft operations by remaining clear of objects (roads, buildings, etc.), except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes. For Runway 11-29, this surface is 500 feet wide and extends 300 feet prior to the landing threshold and 300 feet beyond the departure end of the runway. For TDG-2, the TOFA is 131 feet. Currently the vehicle service road (VSR) near Runway 29 end is located partially within the ROFA; ideally this road would be relocated outside of the ROFA.
- ➔ **Runway Protection Zone (RPZ)** – An area of controlled land use prior to the threshold or beyond the runway end that enhances safety and protects people and property on the ground. Only specific land uses, those that limit crowds of people, are allowed within this area.

For a B-II-VIS, the inner width of the RPZ is 500 feet, the outer width is 700 feet, and the length is 1,000 feet which equates to 13.770 acres of land-use protection. Improving the visibility minimums to not lower than one mile, a RDC of B-II-5000, would have no effect on the RPZ requirement.

For Runway 11-29, the RPZs meet B-II dimensional requirements, but are not fully controlled by the sponsor. For airports such as KIC who are eligible for FAA grant funding, full control of the RPZ is necessary to maintain compatible land use. According to the FAA, airports that do not own the entire RPZ should consider the need to acquire such land if there is any possibility that incompatible land uses, such as residences and places of public assembly, could occur within the RPZ. If land cannot be acquired in fee, airports should obtain easements. As such, it is recommended that KIC gain control of the RPZs on both runway ends by either easement or fee-simple acquisition.

- ➔ **Runway Safety Area (RSA)** – A prepared surface surrounding the runway suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from the runway. The area must be capable of supporting necessary objects and equipment such as navigational aids (NAVAIDs) and snow removal equipment. The existing RSA at KIC meets B-II FAA design standards measuring 150 feet wide, extending 300 feet prior to threshold, and 300 feet beyond runway end.
- ➔ **Taxiway Safety Area (TSA)** – A defined surface alongside the taxiway suitable for reducing the risk of damage to an aircraft deviating from the taxiway. KIC meets the 79-foot TSA for TDG-2.
- ➔ **Building Restriction Line (BRL)** – Indicates where airport buildings must not be located, limiting building proximity to aircraft movement areas. The BRL is typically calculated based on the Part 77 Imaginary Surfaces for a 35-foot high building. As indicated by the 2010 ALP, the existing BRL satisfies FAA design standards and should be maintained throughout the planning horizon.
- ➔ **Centerline Separation** – These are the standard separation distances between the runway centerline and other airport facilities as established by the FAA to ensure operational safety on the airfield.
 - **Runway Centerline to Parallel Taxiway Centerline** – For B-I visual runways, the standard separation distance is 225 feet. For B-II visual runways the minimum distance is 240 feet. The existing distance between the centerline of Runway 11-29 and the parallel taxiways is 200 feet which does not meet FAA design standards for a B-I or B-II runway.
 - **Runway Centerline to Holding Position** – For Runway 11-29, B-II standards for a visual runway are 200 feet. It should be noted that for visibility minimums of not lower than one mile and not lower than $\frac{3}{4}$ mile, the standard is also 200 feet. The markings on the existing taxiway connectors are 125 feet, which is a B-II small aircraft standard, from the runway centerline which does not meet FAA design standards for a B-II runway.
 - **Runway Centerline to Edge of Aircraft Parking Area** – For B-I runways with visibility minimums from visual to as low as not lower than $\frac{3}{4}$ mile, the standard separation distance is 200 feet. For B-II runways with visibility minimums from visual to as low as not lower than $\frac{3}{4}$ mile, the standard separation is 250 feet. The existing distance between the runway centerline and aircraft parking area at KIC is 220 feet which satisfies B-I standards but not B-II standards. Any future parking areas should be placed no closer than 250 feet from the runway centerline.

Figure 3-2 - Key Design Elements



Source: Kimley-Horn and Associates, Inc., 2017

Existing runway safety and setback areas (e.g., OFA, RPZ, RSA) meet FAA design standards and are also projected to accommodate forecasted demand over the planning horizon. However, the airfield has several runway centerline separation discrepancies. Runway centerline to parallel taxiway centerline separation, runway centerline to holding position separation, and runway centerline to edge of aircraft parking area separation fall short of meeting B-II FAA design standards. Further evaluation of the runway centerline separation discrepancies will be addressed in a subsequent section. Table 3-2 presents the FAA design standards for ARCs B-I and B-II with visual and not lower than one mile visibility minimums, as well as the existing airfield dimensions. Cells highlighted in red do not meet FAA design standards for a B-II ARC.

Table 3-2 - Runway Dimensional Standards (ft.)

Design Criteria	Existing		B-II	
	Visual	Visual	Not lower than 1 mile	Not lower than ¼ mile
Runway Protection				
RSA Length beyond departure end	300	300	300	300
RSA Length prior to threshold	300	300	300	300
RSA Width	150	150	150	150
ROFA Length beyond runway end	300	300	300	300
ROFA Length prior to threshold	300	300	300	300
ROFA Width	500	500	500	500
Approach RPZ Length	1,000	1,000	1,000	1,700
Approach RPZ Inner Width	500	500	500	1,000
Approach RPZ Outer Width	700	700	700	1,510
Approach RPZ Acreage	13.77	13.77	13.77	49.978
Runway Separation				
To Holding position	125	200	200	200
To Parallel Taxiway/Taxilane ¹	200	240	240	240
To Aircraft parking area	220	250	250	250

Sources: FAA AC 150/5300-13A – Change 1, 2010 ALP

Design Standard Recommendations:

- ➔ DS-1: Acquire control of RPZs (easement or fee-simple land acquisition).
- ➔ DS-2: Taxiway-Runway Separation of 240 feet to meet B-II standards.
- ➔ DS-3: Runway Separation from Hold Line or Position of 200 feet to meet B-II standards.
- ➔ DS-4: Runway Separation from parking of 250 feet to meet B-II standards.
- ➔ DS-5: Relocate vehicle service road (VSR) outside of Runway 29 ROFA.

Alternatives to resolve these deficiencies are provided in Section 3.2.3.

3.2.2 Runway Orientation

A runway is ideally oriented with the prevailing wind, as landing and departing an aircraft into the wind increases lift. FAA planning standards indicate that the primary runway should be capable of operating under allowable wind conditions at least 95 percent of the time. The 95 percent wind coverage is based on the crosswind (i.e., wind speed and direction vector compared to the aircraft’s direction of flight) not exceeding the following:

¹ The runway to taxiway/taxilane centerline separation standards are for sea level. At higher elevations, an increase to these separation distances may be required to keep taxiing and holding aircraft clear of the inner-transitional OFZ.

- ➔ 10.5 knots (12 mph) for small single-engine and light-twin aircraft
- ➔ 13 knots (15 mph) for the larger and heavier turboprop and medium jet type aircraft
- ➔ 16 knots (18.4 mph) for the larger corporate/military jet and narrow-body commercial type aircraft

Larger aircraft have a higher tolerance for crosswind than smaller aircraft due to their size, weight, and operational speed. When crosswinds exceed the allowable tolerance for the aircraft categories using the airport, the availability of a crosswind runway is highly desirable. Without one, arriving aircraft may need to divert to an alternate airport or wait for the wind conditions to change. Below the 95 percent threshold, FAA funding assistance for the development of a crosswind runway may be justifiable.

Wind data were obtained from Salinas Municipal Airport (SNS) as it is the nearest facility with weather information that is available from an automated surface observing system (ASOS). Wind data include hourly observations from 2007-2016. Wind coverage for KIC is identified in Table 3-2 percent wind coverage for all aircraft types under both VFR and IFR conditions. This is considered sufficient for the planning horizon.

Table 3-3 - Runway 11-29 Wind Coverage

	10.5 knots	13 knots	16 knots
All Weather	96.92	98.88	99.83
IFR	99.18	99.67	99.93
VFR	96.23	98.64	99.79

Source: FAA AGIS Website, accessed August 2017

3.2.3 Runway Length and Width

The design aircraft for each runway determines runway length and width requirements. Runway width is based on the RDC as presented in the Runway Design Standards Matrix in *FAA Advisory Circular 150/5300-13A, Airport Design*. *FAA Advisory Circular 150/5325-4B, Runway Length Requirements for Airport Design* describes the process for determining recommended lengths. “Runway Length Curves,” which consider conditions such as airport elevation, average maximum daily temperature, wet or dry conditions, and runway gradient and can be used to determine the recommended length. Additionally, aircraft operating under Federal Aviation Regulations (FAR) Part 135, charter operators may have additional mandates imposed by their company for safety reasons.

The existing runway is 4,479 feet long. Previous airfield planning, including the 2010 ALP, had not planned for a future runway extension. The following assesses the runway length requirements for the current and anticipated critical aircraft, Dassault Falcon 20 and Beech King Air, at KIC:

FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*, prescribes the following design objective:

“The recommended length for the primary runway is determined by considering either the family of airplanes having similar performance characteristics or a specific airplane needing the longest runway. In either case, the choice should be based on airplanes that are forecast to use the runway on a regular basis.”

According to FAA Advisory Circular 150/5000-17 *Critical Aircraft and Regular Use Determination*, “regular use” is defined as 500 annual operations. As described in the previous chapter, the most demanding

grouping of aircraft projected to operate at KIC on a regular basis over the planning horizon are those in the ARC B-II classification with the Dassault Falcon 20 being identified as the critical representative of that group.

Based on the Dassault Falcon 20, which has a Maximum Takeoff Weight (MTOW) of 28,600 pounds, the FAA methodology for aircraft between 12,500 and 60,000 pounds was used to calculate the runway length needs at KIC. It also considers varying useful load factors of 60 and 90 percent which translates into how much fuel and/or cargo the aircraft should carry which ultimately affects the flight range of the aircraft.

With consideration of the Airport elevation (374 feet above mean sea level or MSL), mean daily maximum temperature of the hottest month in King City, CA (86 degrees Fahrenheit), and an effective runway gradient of 0.10 percent, the calculated runway length for the Dassault Falcon 20 at 90 percent useful load is 4,300 feet. Under dry conditions, the calculated takeoff lengths have been increased at a rate of 10 feet for each foot of elevation difference between the high and low points of the runway centerline. For landing under wet conditions, the calculated length requirement has been increased by 15 percent.

Table 3-4 - Runway 11-29 Length Requirements

Airport Data		
Airport Elevation	374 feet MSL	
Mean daily maximum temperature of the hottest month	86°F	
Effective Gradient	0.10%	
Runway Length Recommended for Airport Design		
Dassault Falcon 20	Dry Conditions	Adjusted for Turbojet Landing in Wet Conditions
60 percent useful load	3,700	4,260
90 percent useful load	4,300	4,950
MTOW	4,900	5,640

Source: FAA AC 150/5325-4B, Runway Length Requirements for Airport Design

Based on this evaluation, the existing 4,479 feet of runway length will be adequate for the types of aircraft anticipated to use the Airport including the most demanding aircraft, the Dassault Falcon 20, at 60 percent useful load. To accommodate the Dassault Falcon 20 landing in wet and slippery conditions at 90 percent useful load, the runway length requirements increase to a minimum of 4,950 feet, however, it is assumed that a corporate jet such as the Dassault Falcon 20 is not likely to land at KIC at 90 percent useful load or greater.

The previous ALP developed in 2010 does not depict a future/ultimate runway extension. Considering the existing and anticipated fleet mix at KIC, the Airport should anticipate the operation of mostly less demanding aircraft while maintaining the ability to accommodate corporate aircraft. While an ultimate runway length of 5,000 feet is preferred, the existing length is adequate for the Dassault Falcon 20 to operate at 60 and 90 percent useful load under dry conditions. Therefore, based on the anticipated type of aircraft projected to operate at KIC, a runway extension is not required over the 20-year planning horizon.

The current width of the Runway is 100 feet. The FAA design standard for runway width is based on the RDC of the Runway. The standard width for a B-II runway is 75 feet²; the CASP minimum width is 75 feet

² For visibility minimums lower than ¾ mile, the standard runway width for B-I and B-II runways are 100 feet.

of a GA community airport. As such, KIC's runway is overdeveloped by 25 feet for a B-II runway. Since KIC is designed as a B-II airport, the FAA would likely not fund the maintenance beyond 75 feet, requiring the remaining 25 feet future maintenance to be funded using local and state funding. Acknowledging the fact that the Airport has a runway centerline separation issues, it is recommended that KIC reduce the width of the Runway by 25 feet to an ultimate 75 feet.

Runway/Taxiway Alternatives:

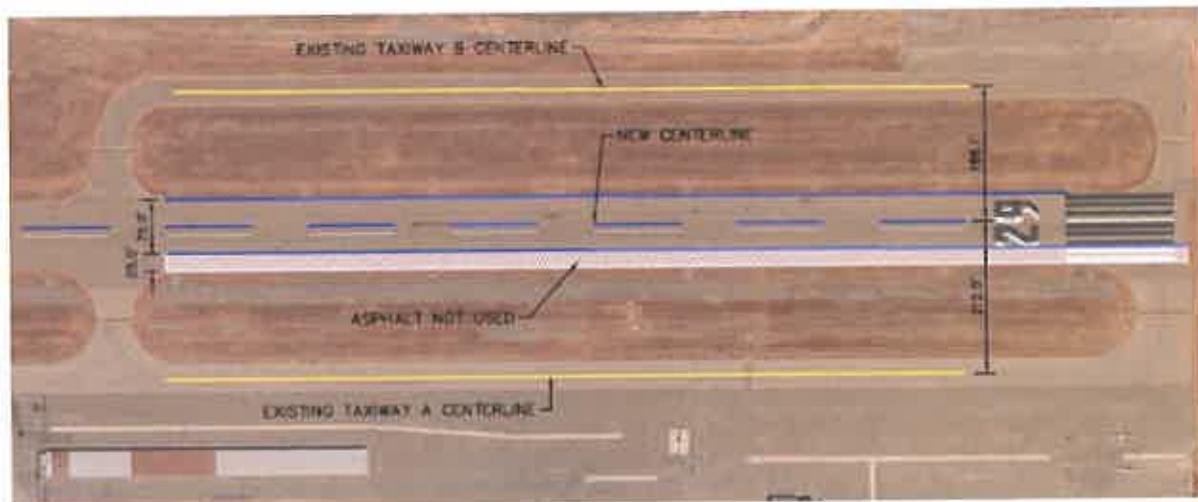
The alternatives below present potential solutions to the runway recommendations listed above and runway-taxiway centerline separation requirements discussed in Section 3.2.1.

- ➔ Alternative R-A: Reduce Runway Pavement for B-II/B-I Standards
- ➔ Alternative R-B: Shift Runway to Northeast
- ➔ Alternative R-C: Shift Taxiways A and B

Alternative R-A - Reduce Runway Pavement for B-II/B-I Standards: This alternative would reduce the runway width to 75 feet by modifying the pavement markings to shift the runway centerline and increase the separation distance between the runway and taxiway centerlines without modifying the physical pavement. While this alternative would be cheaper than other alternatives, it would not provide adequate separation distances for B-II from either Taxiway A or B, as shown in Figure 3-3. The separation would be deficit by 28 feet. As such, this alternative is considered not feasible.

Although, the runway is designated as a B-II, the B-I minimum of a 60-foot wide runway was also reviewed to ascertain that reducing the runway to B-I would not resolve the runway-taxiway centerline separation deficiency.

Figure 3-3 - Reduce Runway Pavement for B-II Standards



Source: Kimley-Horn, 2017

Alternative R-B - Shift Runway: This alternative would provide a runway width of 75 feet and a runway-taxiway centerline separation distance of 240 feet to meet B-II standards by shifting the runway centerline to the northeast. Taxiway B would also need to be shifted as the current deficit would be exasperated by shifting the runway towards Taxiway B. Shifting the runway would also require the associated runway

lighting, PAPI, REILs, and the segmented circle. The perimeter fence near the Runway 11 end would also be relocated to remain outside of the ROFA and wetlands. The location of wetlands near the Runway 11 end would need to be field verified to determine the exact path of the relocated fence. While the RPZ and other safety areas would also shift slightly, no new impacts or obstructions would be expected. Additionally, the VSR would need to be shifted to ensure it remained outside of the ROFA. Ideally, the current VSR would be improved upon to be paved with the realignment. This alternative would maintain the existing apron as is; no pavement or movement areas or infrastructure relocated would be reduced.

This alternative is estimated to cost approximately \$3.66 million³. It is anticipated that all items of the project would be eligible for FAA and State funding. Depending on funding availability, Taxiway B could be completed as a separate phase later, reducing the initial project cost to \$2.69 million. For the total project, the local share would be approximately \$200,000. It would be recommended to complete this alternative during a full depth reconstruction of the runway as the crown would need to be shifted with the relocated centerline.

³ Removal of pavement to reduce runway from 100 to 75 feet wide is a separate cost.

Alternative R-C - Shift Taxiways: This alternative, shown in Figure 3-5, would provide runway-taxilane centerline separation distances of 240 feet to meet B-II standards by shifting the Taxiway A centerline to the southwest and Taxiway B to the northeast. This would require the relocation of T-hangars and associated apron, removal of several tiedowns along the apron, the relocation of the fuel island, and likely the relocation of the storm drainage system to meet the TOFA requirements. This alternative would decrease the available existing and future storage space on the westside of the airfield. The westside of the airfield is more suitable for future development due to the existing vehicle access, utilities, and location of amenities such as fuel and apron space. Additionally, the heliport operations would likely be impacted by shifting the taxiway closer.

This alternative is estimated to cost approximately \$3.72 million. It is anticipated that all items of the project, except for the hangar relocation, would be eligible for FAA and State funding. Depending on funding availability, Taxiway B could be completed as a separate phase later, reducing the cost to \$2.75 million. For the total project, the local share would be approximately \$820,000 as the T-hangar cost would be at the cost of the City.

While it may cost slightly more, this alternative can be implemented in phases which would help spread the cost burden over several years. The additional cost would come from the additional design efforts for separate bid packages, loss of economies of scale from the contractor and supplies, and additional administration to prepare and manage each individual project. Phasing of the project could be sequenced as follows:

- Phase I – Storm Drain Relocation
- Phase II – Shift Taxiway A (North end 1,300 linear feet)
- Phase II – Fuel Island Relocation, Hangar Relocation, and Shift Taxiway A (3,200 linear feet)
- Phase IV – Shift Taxiway B

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Recommendation:

A scoring matrix was developed based on the evaluation criteria and the discussion of each alternative. As there are engineering and cost advantages to completing Alternative R-C Shifting Taxiway, it was displayed as two separate options in Table 3-3. Each component was rated on a one to three scale, with three being the preferred.

As there is no obvious benefit of one alternative over another for operational performance, safety, and access, a score of 3 was given to each. Similarly, no negative environmental impacts are expected so a score of 3 was given to each.

Financial Feasibility was split into two considerations, costs and return on investment, to better review each alternative. As the annual costs are minimized by phasing the taxiway shift, this was ranked the highest. A 2 was given to the runway shift as it is the lower cost of the two alternatives. Regarding the ROI, if the taxiway was shifted, several aircraft storage units (T-hangar and tiedowns) would need to be relocated at the City’s expense. A lower score was applied to this alternative due to this additional expense that the City may not be able to cover. This also resulted in a score of 2 for the taxiway shift in public input based on the City’s and airport users’ comments regarding the loss of this storage.

The phasing of the taxiway shift resulted in a score of 2 for engineering as it would require additional design, bidding, and administrative effort to complete the projects over multiple years. The runway shift was given a 3 over the taxiway shift for future expansion as the taxiway shift reduces the amount of readily developable property on the westside of the airside where the pilot amenities, utilities, and vehicle access currently exist.

Table 3-5 – Evaluation of Runway-Taxiway Alternatives

	Alt. R-B – Shift Runway	Alt. R-C – Shift Taxiway	Alt. R-C – Shift Taxiway (Phased)
Operational Performance	3	3	3
Environmental Factors	3	3	3
Financial Feasibility - Costs	2	1	3
Financial Feasibility - Return on Investment (ROI)	3	1	1
Safety	3	3	3
Engineering	3	3	2
Public Access	3	2	2
Future Expansion	3	3	3
Total	26	21	22

Source: Kimley-Horn, 2017

Based on the evaluation of the runway-taxiway alternatives, it is recommended that the Airport pursue alternative R-B which shifts Runway 11/29 to the northeast. Taxiway B could be shifted as part of a later project approach depending on funding availability.

Runway/Taxiway Recommendations:

R-1: Reduce runway width to 75 feet.

R-2: Shift Runway 11/29 and Taxiway B to the northeast.

3.2.4 Instrument Approach Procedures

The development of an Instrument Approach Procedures (IAP) at an airport can greatly enhance the value of the airport to its users by increasing the accessibility and safety of airport operations. IAPs are published by the FAA for specific runway ends and historically used ground-based navigational equipment. With the advent of NextGen, more and more airports are utilizing Global Positioning System (GPS)-based approaches. Nearly 50 percent of the over 33,000 procedures in the nation are GPS procedures.

The process to develop an IAP can take up to two years and starts with requesting a new procedure through the FAA’s Instrument Flight Procedures (IFP) Information Gateway. The FAA will ensure the airport has the needed information and meets the minimum requirements depending on the type of approach desired. New survey information was collected and submitted to the FAA through the Airport Geographic Information System (AGIS) portal as part of this ALP Update. The CASP lists a GPS/VOR IAP as a minimum for a GA community airport and is desired by the tenants. As such, it is recommended at KIC that a GPS Approach with ¾ to 1 mile visibility be pursued; the requirements for such an IAP are shown in Table 3-4, as well as requirements for an approach with greater than 1 mile visibility. As the visibility minimums are lowered, the requirements increase.

Table 3-6 – IAP Requirements

Item	≥ 1 mile Requirements	¾ to <1 mile Requirements
Height Above Threshold (HATh)	≥ 250'	≥ 250'
TERPS Glide Path Qualification Surface (GQS)	Clear	Clear
TERPS Ch3, Sec3	20:1 Clear (or lighted)	20:1 Clear
Airport Layout Plan (ALP)	Required	Required
Min Runway Length	3,200'	3,200'
Runway markings	Non-precision	Non-precision
Hold Position	Non-precision	Non-precision
Runway Edge Lights	MIRL/LIRL	HIRL/MIRL
Parallel Taxiway	Recommended	Required
Approach Lights	Recommended*	Recommended*
Applicable Runway Design Standards	>3/4SM approach visibility minimums	>3/4SM approach visibility minimums
Threshold Siting Criteria	20:1 Slope	20:1 Slope
Survey Requirement	NVGS	NVGS

Note: *ODALS, MALS, SSALS, and SALS are acceptable⁴

Source: FAA AC 150/5300-13A, Change 1

⁴ Omnidirectional Airport Lighting System (ODALS); Medium Intensity Approach Lighting System (MALS); Simplified Short Approach Light System (SSALS); Short Approach Lighting System (SALS)

Additionally, if an IAP were established at KIC, some of the imagery surface dimensions would increase. As shown in Table 3-7 the approach surface width at the end would increase to 4,000 feet and with a distance of 10,000 feet with a slope of 34:1. Additionally, the radius of the horizontal surface would increase to 10,000 feet.

Once it is determined that KIC can meet these requirements, the IAP must be environmentally cleared through the National Environmental Policy Act (NEPA). This is traditionally done jointly between the FAA and airport sponsor. From there, the funding of the IAP would need to be discussed with the FAA. The FAA Flight Procedures Office will then review the information and make a determination on whether an IAP is feasible and desired by the FAA. If airspace changes are required, a Notice of Proposed Rulemaking (NPRM) would be conducted. If FAA decides to move forward with the IAP, it will be developed and evaluated internally by FAA specialists and then the draft will be released for public comment and coordination. Flight inspection will also take place during this time. If the IAP passes all inspections, the information will be submitted to the National Flight Data Center (NFDC) for publication during the 56-day publication cycle.

The development of an RNAV IAP is a minimum of \$10,000 with an average annual cost of maintenance of \$2,300. These costs are incurred by the FAA to conduct reviews and update publications. These costs can fluctuate based on the availability of NAVAIDs, terrain and obstacles, and the intended use of the IAP.⁵ Periodic surveys, costs of which are incurred by the Sponsor, are required to ensure the obstruction data is accurate.

Fortunately for KIC, there will be no effect on the runway dimensional standard requirements for an IAP with visibility minimums of not lower than 3/4 mile. While an IAP will require additional runway marking, which will be discussed in a future section, it will greatly benefit the operational capabilities of many aircraft, including the most demanding jet of the critical aircraft family, the Dassault Falcon 20.

IAP Recommendations:

- I-1: Develop RNAV GPS IAPs with visibility minimums of not lower than ¾ mile.
- I-2: Update runway markings for non-precision approach. (also N-5)

3.2.5 Lighting, Markings, and NAVAIDs

Lighting, markings, and NAVAIDs increase operational safety in all weather conditions, especially during nighttime and low visibility conditions.

Lighting

The runway is currently equipped with medium intensity lighting (MIRL). A runway lighting design project is being completed in 2018 and will include replacing the lights and conduit, installing pilot controlled lighting, and possibly upgrade to the electrical vault, REIL, and PAPI depending on funding availability. An approach lighting system (ALS) is a configuration of signal lights disposed symmetrically about the runway centerline extended, starting at the landing threshold and extending outward into the approach zone. An ALS can improve visibility minimums but is not necessary to obtain the recommended visibility minimums at KIC of not lower than one mile. Lighting is considered adequate for the planning horizon.

⁵ AOPA Advocacy Briefs – Establishing an Instrument Approach, Accessed November 2017

Markings

KIC does not currently have instrument approach procedures. To land at KIC, pilots use visual cues to safely land the aircraft. As previously recommended, the Airport would benefit from a non-precision instrument RNAV GPS IAP with visibility minimums of not lower than one mile. Different visibility minimums require different surface marking schemes for paved runways. Runways using visual approach procedures require the least stringent markings which include a landing designator and a centerline. Runways using non-precision approaches (and approaches with vertical guidance not lower than $\frac{3}{4}$ statute mile visibility), in addition to the visual approach requirements, require threshold markings, and an aiming point⁶. It is recommended that the Airport provide non-precision instrument runway markings with the development of an IAP. This recommendation is included as I-2 in Section 3.2.4.

NAVAIDs

Runway 29 is currently equipped with runway end identifier lights (REILs) which provide rapid and positive identification of the runway end, but do not improve visibility minimums. As noted in the inventory chapter, the rotating beacon at KIC is located on adjacent City-owned property to the east. Consistent with the previous 2010 ALP, it is recommended that the Airport relocate the rotating beacon to on top of the FBO building – a typical location for rotating beacons at GA airports.

There is currently no weather measurement and reporting system such as an Automated Weather Observing System (AWOS)/Automated Surface Observing System (ASOS) at KIC. The closest systems are over 40 NM to the north and south and not within the same terrain as KIC. Additionally, the CASP lists an AWOS/ASOS as a recommendation for a GA community airport. The development of an IAP, as discussed in Section 3.2.4, would also necessitate a weather system at KIC. KIC would be a candidate for a AWOS Type I or II. A Type I AWOS measures wind speed and gusts, wind direction and variable wind direction, temperature, dew point, altimeter setting, and density altitude. A Type II also includes visibility and variable visibility. A Type III adds sky conditions, cloud ceiling height, and liquid precipitation accumulation; ASOS typically report to the same level as an AWOS Type III.

FAA Order 6560.20C details the siting criteria for sensor placement at airports for an AWOS to ensure the observations are representative of the meteorological conditions affecting the airport. The preferred siting of the cloud height, visibility and wind sensors is adjacent to the runway 1,000 feet to 3,000 feet from the primary runway threshold and between 500 and 1,000 feet from the runway centerline. The wind sensor requires a 500' Clear Area where all obstructions must be at least 15 feet lower than the height of the sensor. Figure 3-6 displays the area the AWOS could be placed at KIC per the FAA Order from the Runway 29 end. The ideal location at KIC is currently populated by industrial land uses and open space. The City will need to reserve a location in this area if an AWOS is to be installed.

⁶ An aiming point is required because the Airport's runway is longer than 4,200 feet.

Figure 3-6 - Siting Area for AWOS



Source: FAA Order 6560.20C

The 2-light PAPI on Runway 29 is currently inoperable. The CASP recommends a VASI/PAPI for GA community airport such as KIC. At the time of this ALP Update, the MIRLs and PAPI were under repair. In addition to repairing the existing PAPI and MIRLs, it is recommended the Airport also install a PAPI and REIL on the end of Runway 11. Operable PAPIs and REILs at both runway ends would increase landing safety and runway visibility at both runway ends, especially for the turbo-prop and jet aircraft expected to use the runway in the near- and intermediate future.

As the Airport accommodates night operations on an infrequent basis, it is recommended to install a mechanism for the pilots to control the MIRLs in an effort to use electricity sparingly, reducing operating costs, as well as ensure surrounding land uses are not impacted by airport lighting. A pilot controlled lighting system is intended to be included in the 2018 runway lighting design project.

Navigation Aid Recommendations:

- N-1: Installation of PAPI on Runway 11.
- N-2: Installation of REIL on Runway 11.
- N-3: Relocation of beacon to airport property.
- N-4: Install mechanism to control lights by pilots.
- N-5: Installation of an AWOS/ASOS.

3.2.6 Taxiway System

The taxiway system provides safe access to and from the runways and landside areas. As discussed previously, taxiways are designed for the TDG but the overall system also needs to be reviewed to ensure there are no "hot spots" that could lead to runway incursions and adequate access is provided to all areas. All airfield movement, including aircraft, pedestrians, and vehicles, must be analyzed. As new taxiway and

taxiway fillet designs were added with the change to *FAA Advisory Circular 150/5300-13A, Airport Design* in 2012, all airfields should be reviewed for compliance. The advisory circular provides the following guidance that requires discussion with frequent users of the airport:

- ➔ Eliminate “judgmental oversteering” to allow pilots to use a consistent taxi method throughout the airport.
- ➔ Design taxiways so nose gear steering angle is no more than 50 degrees.
- ➔ Simplify taxiway intersections by ensuring pilots do not have more than three options at any intersection.
- ➔ Design turns to be 90 degrees when possible to increase visibility.
- ➔ Reduce possibilities of runway incursions by avoiding non-recommended taxiway designs, wide expanses of pavement, and “dual-purpose” pavement; and limiting runway crossings and direct access without turns from an apron to a runway.

According to FAA Advisory Circular 150/5300-13A; Change 1, wide throat taxiway entrances from aprons are not recommended. Such large pavement expanses to an apron may cause confusion to pilots and loss of situational awareness. Wide expanses of pavements also make it difficult to locate signs and lighting where they are easily visible to pilots, especially in low visibility conditions. At KIC, Taxiway A is a full-length parallel taxiway that abuts the apron for approximately 3,300 feet. To mitigate the wide throat entrances, the FAA recommends the implementation of islands.

Islands are an unused paved or grassy area between taxiways, between runways, or between taxiways and a runway. Paved islands are clearly marked as unusable, either by painting or the use of artificial turf. From the air, as well as on the pavement surface, large expanses of pavement can be confusing. To reduce confusion, the Airport should install well-defined no-taxi islands between the apron and Taxiway A to contribute to better situational awareness. Islands can be either grass or paved. If the islands are paved they must be clearly marked as unusable pavement through the installation of artificial turf or by painting the island green and adding taxiway edge markings. Provisions must be made for any necessary lighting and signs. Figure 3-7 displays the approximate size and location of two islands at KIC.

Figure 3-7 – Example of Island on Connector Taxiway



Source: Kimley-Horn, 2017

Taxiway System Recommendations:

T-1: Develop grass or paved islands between Taxiway A and the apron in two locations.

3.2.7 Pavement Conditions

Pavement strength is related to three primary factors:

- ➔ The operating weight of aircraft anticipated to use the airport
- ➔ The landing gear type and geometry
- ➔ The volume of annual operations, by type

Pavement strength is not the same as maximum weight limit. Aircraft weighing more than the certified strength can operate on the runways on an infrequent basis, however frequent activity by heavier aircraft can reduce the useful life of the pavement.

The CASP lists a minimum of fair condition for a GA community airport such as KIC. According to the FAA 5010 Master Record for KIC, Runway 11-29 has a pavement design strength of 62,000 pounds for single-wheel configuration, 80,000 pounds for dual-wheel configuration, and 135,000 for dual tandem-wheel configuration⁷ and is in good condition. The Pavement Condition The airports critical aircraft is the B-II family with the Dassault Falcon 20 representing the most demanding of the group. The Falcon 20 has a dual wheel configuration and an MTOW of 28,600 pounds. While the Falcon 20 is not anticipated to operate at MTOW, it is one of the most demanding aircraft to operate at the Airport on a frequent basis. As such, it is recommended that when the Airport rehabilitates that runway, it ensures the runway strength is capable of handling the Falcon 20 to mitigate the risk of damage to the runway. Continued preventative maintenance will also be needed.

As discussed in Chapter 1, the apron and taxiway pavement are in poor condition in some locations with several linear cracks and raveling. Based on data available, the last pavement rehabilitation was completed in 2003. Tenants expressed the desire for the rehabilitation of the north end of Taxiway A and the north apron to take place first due to the current conditions.

KIC is included in the 2018 Caltrans Airport Pavement Management System (APMS). APMS includes inventory of runway, taxiways, and aprons, assessment of the pavement, data analysis, development of a pavement maintenance and rehabilitation strategy recommendation. The APMS will provide the City with current and projected pavement conditions, projected maintenance/rehabilitation needs and cost, enable KIC to comply with FAA requirements for funding eligibility, provide Caltrans a statewide analysis of pavement conditions, and a prioritized five-year program of pavement projects to guide future pavement funding.

⁷ Based on a 2018 analysis of approximate ground conditions (CBR of 4) and engineering as-builts of the runway. No physical testing was completed as part of the analysis.

Pavement Recommendations:

P-1: Regular weed control of all pavements

P-2: Rehabilitation of apron pavement

P-3: Rehabilitation of Taxiway A

3.2.8 Heliport

As identified in the Inventory Chapter, KIC has an unlit 75-foot by 75-foot heliport located to the west of the Runway along the main apron. The heliport is not currently registered with the FAA, thus has not been reviewed for airspace or procedures. Based on conversations with the USFS, tenants, and the through-the-fence operators, the heliport is not commonly used. The USFS identified that they previously used the heliport irregularly during the previous fire seasons, however, they don't use it anymore.

At this time, it is recommended that the City attempt to register the heliport with the FAA utilizing the FAA 5010-3 - Airport Master Record Form. The FAA will review the application, conduct the proper analysis, and provide feedback to the City. Depending on the FAA determination, the City make continue to use the heliport as is. If dramatic changes are required based on the FAA's analysis such as restriping, removal of obstructions, or required lighting, the City may choose to convert the heliport to helicopter parking or utilize the pavement for another use.

Heliport Recommendations:

H-1: Submit FAA Form 5010-3 to register heliport with FAA.

3.2.9 Airside Recommendations Summary

The following summarizes the airside recommendations:

- ➔ DS-1: Acquire control of RPZs (easement or fee-simple land acquisition)
- ➔ DS-2: Taxiway-Runway Separation of 240 feet to meet B-II standards
- ➔ DS-3: Runway Separation from Hold Line or Position of 200 feet to meet B-II standards
- ➔ DS-4: Runway Separation from parking of 250 feet to meet B-II standards
- ➔ DS-5: Relocate vehicle service road (VSR) outside of Runway 29 ROFA
- ➔ R-1: Reduce Runway 11-29 width to 75 feet
- ➔ R-2: Shift Runway 11/29 and Taxiway B to the northeast
- ➔ I-1: Develop an RNAV GPS IAP with visibility minimums of not lower than 3/4 mile
- ➔ I-2: Update runway markings for non-precision approach.
- ➔ N-1: Install PAPI on Runway 11
- ➔ N-2: Install REIL on Runway 11
- ➔ N-3: Relocate beacon to airport property
- ➔ N-4: Install a mechanism for pilot controlled MIRLs
- ➔ N-5: Install an AWOS/ASOS
- ➔ T-1: Develop grass or paved islands between Taxiway A and the apron in two locations
- ➔ P-3: Regular weed control of all pavements
- ➔ P-2: Rehabilitate apron pavement
- ➔ P-3: Rehabilitation of Taxiway A
- ➔ H-1: Register the heliport with the FAA utilizing the Airport Master Record 5010-3 Form

3.3 Airspace

Through Federal Aviation Regulations (FARs), airspace regulations and guidance has been developed to promote the safe and efficient movement and control of aircraft during flight and approach/departure procedures. This section identifies potential threats in these areas and offers recommendations for mitigation. The analysis is based off existing conditions at the Airport and is subject to change in the future.

3.3.1 FAR Part 77 Surfaces

The FAA regulation (FAR) Part 77, *Obstructions to Navigable Airspace*, establishes imaginary surfaces around the airfield to determine obstructions to air navigation. These surfaces depend on the available approach procedures to each runway end and can vary in shape, size and slope. Any penetration of these imaginary surfaces, either natural or otherwise, are identified as obstructions and must be evaluated by the FAA to determine if they present a hazard to air navigation. If determined to be a hazard, the obstacle should be removed or altered to mitigate the penetration. If not mitigated appropriately, the obstacle could adversely affect approach and departure minimums and/or procedures.

Part 77 standards are commonly referred to as “Imaginary Surfaces” and include the Primary Surface, Horizontal Surface, Conical Surface, Transitional Surface, and Approach Surface, as shown in Figure 3-8. Dimensions are based on the type of runway and approaches to the runway ends as shown in Table 3-5. These surfaces have been evaluated for penetrations and detailed findings are included in the ALP drawing set.

➔ **Primary Surface**

The surface is longitudinally centered on the runway. The elevation of any point on the surface is the same as the elevation of the nearest point on the runway centerline. For Runway 11-29 the primary surface has a width of 500 feet and extends 200 feet beyond the runway ends. If an IAP was established the surface would have a width of 1,000 feet.

➔ **Approach Surface**

The surface is longitudinally centered on the extended runway centerline and extends outward and upward from the end of the Primary Surface. An Approach Surface is applied to each end of the runway, based on the type of approach available or planned for that runway end and extends at a specific slope to a uniform width and distance. The inner width of the Approach Surface is the same width of the Primary Surface. For Runway 11-29 the existing approach surface extends to a width of 1,500 feet at a distance of 5,000 feet. If an IAP was established the surface would extend to a width of 4,000 feet at a distance of 10,000 feet. The slope is currently 20:1 as there is no IAP, but would increase to 34:1 if an IAP was established.

➔ **Transitional Surface**

This surface extends outward and upward from the sides of the Primary Surface and from the sides of the Approach Surfaces at a slope of 7 to 1 up to the height of the Horizontal Surface.

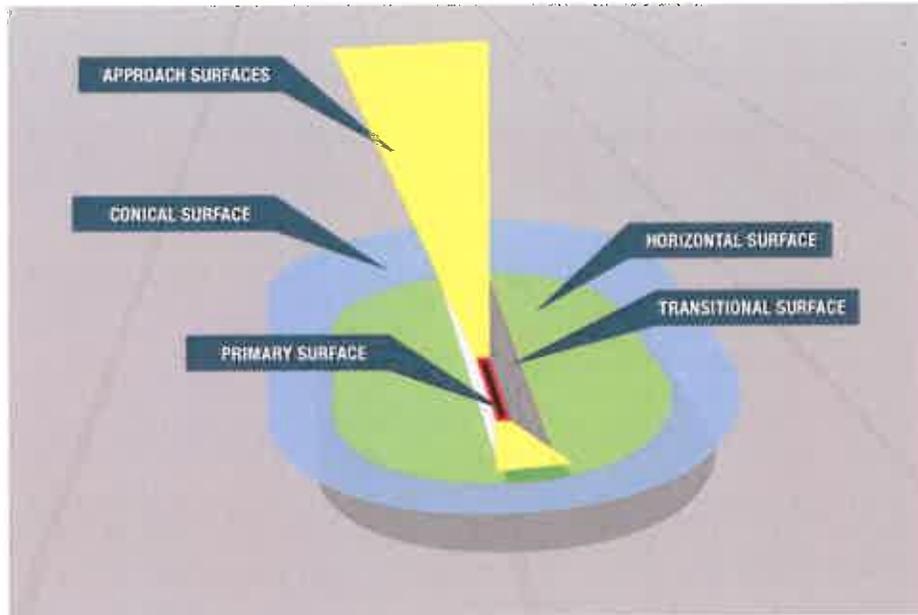
➔ **Horizontal Surface**

This surface is a horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swimming arcs of specified radii from the center of each end of the Primary Surface of each runway and connecting the adjacent arcs by lines tangent to those arcs. At KIC, the Horizontal Surface extends 5,000 feet from the ends of the runways, at an elevation of 524 feet MSL. If an IAP is developed, the horizontal surface would extend to 10,000 feet.

→ **Conical Surface**

This surface extends outward and upward from the periphery of the Horizontal Surface. The Conical Surface extends at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

Figure 3-8 - FAA Part 77 Imaginary Surfaces



Source: Kimley-Horn & Associates, 2016

Table 3-7 - Part 77 Surface Dimensions

Item	Visual Runway	Non-Precision Instrument Runway	
		>3/4 Vis	≤3/4 Vis
Width of Primary Surface and Approach Surface Width at Inner End	500	500	1,000
Radius of Horizontal Surface	5,000	10,000	10,000
	Visual Runway	Non-Precision Instrument Runway	
		>3/4 Vis	<3/4 Vis
Approach Surface Width at End	1,500	3,500	4,000
Approach Surface Length	5,000	10,000	10,000
Approach Slope	20:1	34:1	34:1

Source: www.ngs.noaa.gov/AERO/oisspec.html

There are obstructions within the Part 77 Imaginary Surfaces at KIC compromised mainly of terrain and trees, poles, and fences. This data and recommended disposition will be provided in the ALP on the Airport Airspace Drawing (Sheet 3) and Inner Approach Surface drawing sheets (Sheets 4 and 5).

It should be noted that these sheets provide both existing obstructions and items that would become obstructions if IAP's were established at KIC. For the existing conditions at KIC, there are only three penetrations to the Primary surface, potential ground with no more than two feet of penetration, and one transitional surface penetration, the windsock that is in the segmented circle which is already lit. The remaining penetrations shown on the ALP are for future conditions only.

As the City and the FAA determine the feasibility of IAP for KIC, the obstructions will also need to be considered. General dispositions of obstructions include:

- ➔ Ground – For ground obstructions found within the primary surface, verify with field survey and grade as necessary. Other ground penetrations were found on the hillside within conical surface, these would need to be lighted.

Within the primary surface there appear to be several ground obstructions that penetrate up to seven feet. Pending a field survey of the area, if terrain does penetrate the primary surface, it is recommended that to mitigate the issue, grading be pursued during the next runway or taxiway rehabilitation project.

- ➔ Tree – For trees found on airport property, they should be removed. For tree obstructions found off airport property, arrangements will need to be made with the individual property owners. Removal is the preferred method over tree trimming as it ensures the trees will not regrow to be obstructions. If the owner is only willing to trim the tree, then an easement to return to trim the trees in the future should be obtained.
- ➔ Building – Buildings that are obstructions should be lighted per AC 70/7460-1L - *Obstruction Marking and Lighting*.
- ➔ Road – For obstruction analysis purposes, it is assumed that a 15-foot truck is on the road. For Roads within the primary surface, they will likely need to be relocated or lowered in the future.
- ➔ Fence/Post/Poles/Tank/Windsock – For other physical structures, if they cannot be relocated or removed then they should be lighted per AC 70/7460-1L - *Obstruction Marking and Lighting*. Depending on conditions, reflective markers may be used to reduced costs. Coordination with individual property owners is likely for many of these structures.

3.3.2 Part 77 Obstruction Recommendations:

- ➔ O-1: Following field verification, grade primary surface to ground minor ground obstructions.
- ➔ O-2: Remove or mark obstructions as noted on ALP Drawing Sheet.

3.4 Landside

Landside facilities support the aircraft, pilots, and passengers, including storage, fuel, services, and vehicle access and parking.

3.4.1 Aircraft Storage

Aircraft can be stored a variety of methods including on the apron at a tiedown, in a T-hangar, or some type of large shared hangar. Due to the sun exposure and heat in the Salinas Valley that can damage avionics and fade paint, hangars are reasonably desired for owners that are storing their aircraft at KIC for longer periods. For GA facilities, hangar requirements are based on the number of based aircraft, type and relative value of the aircraft, owner preferences, hangar rental costs, and available space. As summarized in Table 3-5, there are several types of aircraft storage in use at KIC, including T-hangars, conventional hangars, and apron space.

T-hangars are an economical, enclosed storage unit that is primarily used by private GA aircraft. Each aircraft has its own T-shaped area that is used to store the aircraft and provide some office or work space. T-hangars typically require apron space directly in front of the entrance in addition to taxilanes or taxiways to allow the aircraft to be staged prior to operation of the engines. It is assumed that T-hangar space is used for based aircraft only and approximately 10 percent of that space is utilized for office space rather than aircraft storage. As such, there is approximately 25,000 SF available T-hangar storage for based aircraft at KIC, across four T-hangar buildings.

Conventional hangars usually house multiple aircraft in a large open hangar and typically have office space and other amenities such as conference rooms, restrooms, storage area, or lobby. Conventional hangars are sized based on the operator's needs and desires and the size and amount of aircraft that will be stored. Typically, a short-term aircraft parking, or staging, area is located on the apron near the hangar entrance. It is assumed that the available conventional hangar space is used for based aircraft only and 10 to 40 percent of the space is utilized for office and maintenance, depending on the specific use of the hangar. As such, there is currently almost 15,000 SF of conventional hangar space available for based aircraft across eight buildings at KIC.

An aircraft apron is typically one of the largest pavements areas at an airport and serves multiple functions from aircraft storage, staging, and movement and pilot vehicle parking. Designated, uncovered aircraft storage on an apron is referred to as a tiedown. Tiedowns are configured based on the length of stay, the size of the aircraft, staging needs, the ingress and egress of aircraft to the airfield and hangars, and vehicle movements. Various sized aircraft may be parked in on an apron even if they do not fit within the tiedown as marked on the apron. This flexibility allows for tenants to park the specific aircraft that are utilizing KIC on that day. There is 195,000 SF of apron space available including movement areas; 139,000 SF is designated for based aircraft and 56,000 SF for transient aircraft.

Based Aircraft Storage

Based aircraft storage requirements were developed using the based aircraft forecast and the overall footprint of the aircraft types that need to be accommodated. As many of the aircraft at KIC are operated for business purposes a larger percentage desire enclosed storage than may be found at other GA airports of KIC's size. Table 3-8 provides the assumptions utilized for based aircraft. The footprints shown include area that would be necessary for maneuvering aircraft within the storage areas. For planning purposes, experimental aircraft are included with single-engine aircraft.

Table 3-8 – Based Aircraft Storage Planning Assumptions

Aircraft Type	Footprint (SF)	Desired Storage Type	Percentage
Single-Engine	7,900	Paved Tiedown	30%
	2,000	T-hangar	45%
	1,340	Shared Conventional Hangar	25%
Multi-Engine	7,900	Paved Tiedown	5%
	2,500	T-hangar	45%
	2,000	Shared Conventional Hangar	50%
Turboprop / Jet (small)	21,950	Paved Tiedown	5%
	3,000	Shared Conventional Hangar	95%
Helicopter	1,250	Paved Tiedown	10%
	750	Conventional Hangar	90%

Source: Kimley-Horn & Associates, 2017

Transient Aircraft

Transient aircraft storage needs are determined based on projected design day itinerant operations, an assessment of the number of itinerant aircraft on the ground at any one time, the projected percentage of pilots that would desire access to overnight storage, and the overall footprint of the aircraft types. Table 3-6 provides the assumptions utilized for transient aircraft, including maneuvering areas for aircraft.

Table 3-9 – Transient Aircraft Storage Planning Assumption

Aircraft Type	Overnight Stay	Footprint (SF)	Desired Storage Type	Percentage
Single-Engine	25%	7,900	Paved Tiedown	80%
		2,000	T-hangar	0%
		1,340	Shared Conventional Hangar	20%
Multi-Engine	25%	7,900	Paved Tiedown	40%
		2,500	T-hangar	0%
		2,000	Shared Conventional Hangar	60%
Turboprop / Jet (small)	40%	21,950	Paved Tiedown	25%
		3,000	Shared Conventional Hangar	75%
Helicopter	40%	1,250	Paved Tiedown	30%
		750	Conventional Hangar	70%

Source: Kimley-Horn & Associates, 2017

Table 3-10 displays the deficit and surplus of the storage needs by type for based and transient aircraft based on the planning assumptions through the planning period. There is a deficit of T-hangars and conventional hangar space and surplus apron space. The hangar deficit is currently handled by parking aircraft on the apron that would prefer to be stored in a hangar.

Table 3-10 – Total Aircraft Storage Facility Requirements (SF)

	Based Aircraft			Transient Aircraft			Total		
	T-hangar	Shared	Apron	T-hangar	Shared	Apron	T-hangar	Shared	Apron
Available	25,020	14,850	139,000	0	0	56,000	25,020	14,850	195,000
2016 Need	27,000	15,000	75,000	-	4,000	17,000	27,000	19,000	91,000
Deficit/Surplus	(2,000)	-	64,000	-	(4,000)	39,000	(2,000)	(4,000)	104,000
2021 Need	29,000	19,000	83,000	-	3,000	11,000	29,000	22,000	93,000
Deficit/Surplus	(4,000)	(5,000)	56,000	-	(3,000)	45,000	(4,000)	(8,000)	102,000
2026 Need	29,000	20,000	83,000	-	3,000	12,000	29,000	23,000	94,000
Deficit/Surplus	(4,000)	(5,000)	56,000	-	(3,000)	45,000	(4,000)	(9,000)	101,000
2036 Need	32,000	26,000	91,000	-	5,000	21,000	32,000	31,000	112,000
Deficit/Surplus	(7,000)	(11,000)	48,000	-	(5,000)	35,000	(7,000)	(16,000)	83,000

Source: Kimley-Horn & Associates, 2017

Aircraft Storage Recommendations:

AS-1: 7,000 SF, or 3.5 units, of T-hangar space by 2036

AS-2: 16,000 SF of Conventional Hangar space by 2036.

Figure 3-9 displays eight potential development areas at KIC with basic information about each parcel listed in Table 3-11. There are a few basic principles when designing the layout of a new development area:

- ➔ Meets FAA design standards, does not create a new line-of-sight obstruction, or interfere with existing operations of airfield facilities or NAVAIDs.
- ➔ Maximizes available space and considers airside and vehicle access.
- ➔ Fiscally responsible and based on forecasted demand and aircraft types.
- ➔ Allows for future expansion.
- ➔ Consistent with City and Airport goals and plans, including ALP, height hazard and land use zoning, and others.
- ➔ Consider engineering challenges, such as topography, environment, utilities, and drainage when planning for the location and layout.

The City and future developers can utilize TRB’s ACRP Report 113, *Guidebook on General Aviation Facility Planning* as a reference for specific examples and best practices of apron, tiedown, and hangar layouts based on the type of users and aircraft sizes.

Table 3-11 – Aviation Development Area Matrix

Area	Acreage ¹	Current Use	Topography	Vehicle Access	Airfield Access	Utilities	Environmental
1	0.01	Parking	Relatively Flat	Available	Available	Available	None
2	1.1	Open Space	Relatively Flat	Available	Available	Available	None
3	2.6	Open Space ²	Relatively Flat	Available ⁴	Available	Available	None
4	0.83	Open Space	Relatively Flat	Available ⁴	Available	Available	None
5	0.71	Open Space & Tiedowns	Relatively Flat	Via Apron ⁴	Available	Available	None
6	7.9	Open Space	Relatively Flat	Via Apron ⁴	Available	Available	Drainage
7	18.9	Open Space ³	Relatively Flat	Not readily available	Available / Extend Taxiway	Not readily available	None
8	1.7	Open Space	Relatively Flat	Not readily available	Available / Extend Taxiway	Not readily available	None
9	4.2	Tiedowns & Heliport	Existing Apron	Available ⁴	Available	Available	None

Source: Kimley-Horn & Associates, 2017

¹Acreage may change depending on runway/taxiway alternative selected.

²Currently leased by Rava.

³This space is also utilized for vehicle access from the City maintenance yard and the segmented circle. An AWOS may be located within this area and would impact location and heights of buildings (see Section 3.2.5).

⁴Additional vehicle entrance may be beneficial.

3.4.2 GA Terminal and Services

TRB's ACRP Report 113, *Guidebook on General Aviation Facility Planning* provides the following formula for planning the size for a GA terminal building and initial-cost estimating:

$$(\text{peak-hour operations}) \times 2.5 \times (110 \text{ SF}) = \text{building square footage}$$

The 2.5 considers an average number of pilots and passengers per peak-hour operation. This calculation does not consider other needs (e.g., sidewalks, patios, landscaping, and parking) and thus yields merely an estimate of the building footprint. Based on the Forecasts presented in Chapter 2, it is recommended that by 2036 approximately 900 SF of terminal space is provided. Aviation Specialties Unlimited currently provides approximately 850 SF of terminal space that accommodates restrooms, a pilot lounge, and cashier counter. While the current space is fairly adequate for a GA community airport, the current space would not allow for some additional amenities pilots might desire as discussed below.

Figure 3-10 - Interior of GA Terminal



Source: Kimley-Horn, 2017

Depending on the users of the airport, different services may be desired. Corporate operators, such as Net Jets, have a desired set of amenities to consistently serve their aircraft and passengers, including a conference or business center, flight planning facilities, crew lounge, convenient aircraft and car parking, hangar storage, courtesy and rental transportation, fuel, catering and snacks, concierge services, wi-fi, customs and immigration, child entertainment room, and aircraft support services such as a maintenance facility including oxygen, potable water, lavatory, detailing, trash, and wash. Of these items, KIC currently provides self-service fuel, a passenger/crew waiting area, and outdoor aircraft storage and car parking. While not all of these services are necessary at KIC at this time, the list should be reviewed as part of future terminal expansions or during a contract negotiation with the FBO.

It is recommended that, at a minimum, KIC investigate the following services be provided based on increased demand of the airport users:

- ➔ Vending Machines outside of FBO Terminal
- ➔ Full-service fuel operators during business hours or on an on-call basis
- ➔ Ensure local rental car company can quickly provide cars to transient pilots and passengers
- ➔ Providing a conference room or office space with a table
- ➔ Flight planning capabilities, such a computer

- ➔ Public Wi-Fi
- ➔ Aircraft services such as oxygen and trash
- ➔ Overnight hangar storage for transient aircraft
- ➔ Maintenance services as described in Section 3.4.3

GA Terminal Recommendations:

GAT-1: Review expansion of terminal space to accommodate additional services as required.

GAT-2: Review how to accommodate recommended services as need requires them.

3.4.3 Collection of Tiedown Fees

As with many GA airports, KIC has issues with recouping fees from transient users when utilizing transient tiedowns. Currently, users must make a payment at City Hall, about 1.5 miles from the Airport. Because the Airport is not attended by City staff, these fees are difficult to monitor and sometimes go uncollected. There are procedures and equipment that may assist the City and are discussed below.

The City can review the involvement of on-site staff at KIC, such as the FBO. By requesting a more active role by the FBO, pilots could pay by credit card during working hours and the FBO staff could better ensure payments are being collected.

One of the next steps is install a collection box at the Airport and ensure proper signage is installed and visible to pilots. Signage detailing that payment must be paid could be located at the fuel island, at the FBO terminal, and entry and exit gates. A metal container with a mail slot that can be locked should be placed in a central location such as the outside of the FBO terminal with envelopes. Additionally, the signs may provide a number to City Hall to make a payment over the phone. By making it more convenient to make payments it is likely more pilots will comply with the requirement. It should be noted that this method requires the pilot to have cash or a check to make the payment.

Another step the City may take is placing more restricts on the pedestrian access gate. A telephone entry box could connect pilots to City Hall to let them reenter the airfield once they've confirmed they made any necessary payments and provide their aircraft's tail number. A more sophisticated version of this is a Pay-on-Exit machine that provides the pilot a gate code after payment, much like a parking garage. The City would need to determine the number of hours a pilot may park their aircraft before being charged a parking fee, while not discouraging pilots from flying to KIC. Other systems can collect data on the pilot by requiring them to swipe driver licenses upon exit and entry, which can then be matched up collected fees and an invoice sent to those who appear to not have paid. The data would collect a time stamp to determine the number of hours the pilot was at the airport.

Other technologies include installing a camera system that would record activity at the tiedowns or updating the fuel pump interface to include other fees. With a camera system, the City staff would need to review how long pilots stayed at KIC from the video, collect the aircraft tail number (N-number), and match it up to the fees collected. Addresses to send invoices for uncollected fees would require the City to review the aircraft registration through the FAA database. This service could also be outsourced to a private company. An additional benefit of this data collection would be increased operational data such

as number of flights, time of activity, and types of aircraft. By updating the fuel pump interface, an option to pay for parking fees, similar to a car wash, could be added to the selection. This would provide the easiest method for pilots to pay for parking, but still does not ensure that pilots will pay the additional fee.

At this time, it is recommended that KIC install a metal payment box and signage.

Tiedown Collection Recommendations:

TC-1: Install payment box and signage regarding tiedown fees.

TC-2: Review additional methods for more involvement of City or FBO staff to collect tiedown fees.

3.4.4 Aircraft Maintenance

The size of a maintenance hangar will be based on the size of aircraft it is servicing and the number of anticipated aircraft to be conducting maintenance on at a given time. Storage space should be allocated for tools, equipment, parts, offices, restrooms, and breakrooms.

KIC has no formal maintenance facility or personnel as most business tenants complete their own maintenance. Non-business tenants will either complete their own maintenance or fly to another airport for maintenance. Based on conversations with airport tenants, if a pilot is in immediate need of maintenance the tenants will assist, but there is the desire for a formal maintenance operation. The paint shop is operated by Aviation Unlimited mainly for the aircraft of the Tutima Academy, but also completes work for other companies and individuals.

A more formal maintenance operation may be beneficial if KIC wishes to attract more business operations. This may be done by requiring the service through an FBO or contracted with the maintenance operations of the existing tenants. As all hangars are at capacity, an additional hangar would likely be needed to accommodate maintenance requirements.

Maintenance Recommendations:

M-1: Determine if City desires a formalized maintenance service

M-2: Hangar space that can accommodate maintenance for a B-II aircraft as needed

3.4.5 Fuel

The type of fuel an airport needs and the capacity of its fuel facilities is dependent on the aircraft utilizing and projected to operate at the airport in the future. KIC provides a 10,000-gallon tank for each 100 Low-Lead (100LL) and Jet-A, meeting the CASP minimum of providing 100LL for a GA community airport. When fuel delivery is taken into consideration a 12,000-gallon tank can more cost efficient as a standard fuel truck delivery is 8,000 gallons. A 10,000-gallon tank can have a difficult time accepting a full truck unless the tank was almost empty; resulting in a partial delivery which increases the cost per a gallon. As such, when the existing fuel tanks reach their end-of-life, 12,000-gallon tanks are recommended. The current tanks are expected to reach their end of life in 2028.

The fuel pumps at KIC occasionally do not work and there is no backup system. It is recommended that the pumps be replaced and redundant systems be installed for resiliency. Additionally, pilots remarked how difficult it is to read the options on the current pad and electronic screen.

Ideally, fuel truck deliveries would be made to a location outside of the airport movement areas to avoid potential conflicts with aircraft from truck drivers not familiar with the airport and its operations. It is also important to examine the location of the fuel facilities to ensure delivery trucks can access the tanks and aircraft can access the pumps and they are safely protected from tenant vehicles. At KIC, it is recommended that bollards be installed at the four corners of the fuel island to further protect the facility from vehicle movements. The bollards will need to be placed in such a location that they do not interfere with aircraft fueling.

Fuel Recommendations:

F-1: Replacement of fuel pumps and pump interfaces

F-2: Installation of bollards around fuel island

F-3: Installation of aboveground 12,000-gallon tanks for Jet-A and 100LL

3.4.6 Vehicle Parking and Entrances

Industry guidance recommends at least one vehicle parking space for each based aircraft in a conventional hangar and 50 percent of the tiedowns and T-hangars plus a percent a percentage for employees and visitors to the Airport. Municipal Code 17.31.140 *Parking Requirements for M-3* lists at least one space per 2,000 SF of gross floor area. Based on this guidance, KIC should provide 29 parking spaces to accommodate existing tenants and visitors. Due to the distances between the north and south facilities and the different purposes of tenants, such as private pilot versus business, a single parking lot is not recommended for KIC. Currently, there is space for approximately three to four vehicles near the pedestrian gate and six to seven in the adjacent parking lot. This can accommodate visitor parking as well as some owners that utilize tiedowns for their aircraft. Additionally, employees park their vehicles between Hangars 15 and 16. If additional hangar space is desired by these tenants, it is recommended that these vehicles be parked in a designated parking lot, the area behind the existing hangars, or at the south end of the apron. This area could be utilized by a small box hangar or extension of an existing hangar. Designated parking can be identified along the edge of the north apron to ensure there is no conflict between aircraft and vehicles as shown in Figure 3-11.

Access roads and vehicle entrances normally need to provide unimpeded two-way access for rescue and firefighting equipment and airport tenants and visitors. When vehicles are entering and exiting the two gates off of Airport Road, they can block access along Airport Road due to the limited size of the driveways. This staging area is important to allow drivers time to enter the security code as well as wait for the gate to shut upon exiting. A reconfiguration of the vehicle access is recommended.

Vehicle Recommendations:

V-1: Provide 29 parking spaces across the airport for tenants and visitors.

V-2: Reconfigure or relocate airport access gates.

There are several potential locations that a new vehicle entry to the airfield are possible that also assist in providing parking spaces as presented below.

Alternative V-A: This alternative promotes utilizing existing infrastructure and includes maintaining the existing security gate for emergency vehicles and installing a new secure vehicle access gate adjacent to

the FBO terminal. This area is 60 feet wide, which would allow for the existing pedestrian gate to be maintained and the installation of a 20-foot wide, two-way vehicle gate. The existing parking lot would remain with a small road that would allow vehicles to return to Airport Road if they realized they could not open the gate. This configuration would provide approximately 85 feet of staging area between the gate and Airport Road, which would allow multiple vehicles to queue while not blocking Airport Road. This alternative would also allow for vehicles to park near the FBO Terminal along the road. If additional parking is needed the corner lot behind the Terminal and Paint shop may be reviewed for this purpose. A consideration of installing a vehicle road in this location is the reduced ability to expand the GA Terminal to the north. It should be noted that a security access gate is no longer FAA eligible for grant funding.

Figure 3-11 - Vehicle Access Alternative V-A



Source: Kimley-Horn & Associates, 2017

Alternative V-B: This alternative includes a new driveway, gate, and fencing further to the north of the existing gate. There are several locations and configurations within this area that a new secure vehicle access gate could be constructed. The configuration displayed in Figure 3-12 would construction a two-way, 100-foot road with a 90 degree turn to allow vehicles the ability to queue and remain off Airport Road. Alternative V-B would require the relocation of the existing fence and the installation of new pavement and security gate. Although this alternative is further away from the FBO terminal, it provides better access to the north apron which would limit vehicles driving on the apron.

Figure 3-12 – Main Vehicle Access Alternative V-B



Source: Kimley-Horn & Associates, 2017

It is ideal for KIC to have multiple vehicle entrances to provide adequate access while ensuring vehicles do not conflict with aircraft movements. As such, Alternative V-B also addresses the existing vehicle access behind the paint shop. The gate and associated fence behind the paint shop could be repositioned further to the south to allow for 70 feet of staging area as shown in Figure 3-13. This entrance would allow for multiple vehicles to stage or a fuel delivery truck. A method to restrict access, such as a key pad or card reader, would need to be installed at this gate to allow for tenants to access the airfield.

Figure 3-13 – Auxiliary Vehicle Access Alternative V-B



Source: Kimley-Horn & Associates, 2017

Vehicle Entrance Recommendation:

Alternative V-A is recommended at this time to resolve the issue of vehicle staging. If development expanded on the northside of the airfield, Alternative V-B could be investigated to provide quicker and safer vehicle access for that area. Additionally, the entrance area could be made more inviting by installing attractive landscaping utilizing native plants.

3.4.7 Through-the-fence Operations

Through-the-fence (TTF) operations occur when airport sponsors provide access to airside facilities (e.g., runway) to operators that have facilities adjacent to, but not within, airport property limits. TTFs have been controversial as they can interfere with a sponsor's ability to meet its Federal obligations as a federally assisted public use airport⁸. The sponsor needs to ensure that a TTF does not negatively impact the safety of airport operations. The sponsor must also be adequately compensated for the access rights in a manner that does not establish an unfair competitive advantage to the other tenants.

Wilbur Ellis Co., an agricultural business, currently leases Hangar 17 to perform maintenance on their fleet. Their aircraft are stored on a parcel adjacent to the Runway 29 end with a VSR outside of the current RSA. Wilbur Ellis does not allow other aircraft to park within their facility. Aircraft are flown to and from the property to utilize the airfield for takeoffs and landings and to the maintenance hangar while communicating on the airport's radio frequency. Wilbur Ellis does not provide any FBO type services nor maintenance to aircraft that are not within their fleet. By having the aircraft that are equipped with containers of hazardous materials off-site within a locked facility, Wilbur Ellis is better adhering to federal guidance on security of these materials.

At this time, there is not considered to be a conflict with Wilbur Ellis conducting TTF operations at KIC. The City should ensure no future conflicts arise by monitoring activities of Wilbur Ellis and any future operators at KIC.

TTF Recommendations:

TTF-1: Continue to monitor activities from TTF operators

TTF-2: Ensure agreements are up to date with TTF Operators and do not conflict with federal grant assurances

3.4.8 Landside Recommendation Summary

Here is a summary of the recommendations made for landside operations at KIC:

- ➔ AS-1: Construct 7,000 SF, or 3.5 units, of T-hangar space by 2036
- ➔ AS-2: Construct 16,000 SF of Conventional Hangar space by 2036
- ➔ GAT-1: Expand terminal space to accommodate additional services
- ➔ GAT-2: Investigate how to accommodate recommended FBO services
- ➔ M-1: Formalized maintenance service
- ➔ M-2: Hangar space that can accommodate maintenance for a B-II aircraft as needed
- ➔ TC-1: Install payment box and signage regarding tiedown fees.

⁸ More information regarding Grant Assurances related to TTF can be found in Airport Cooperative Research Program (ACRP) Report 114 – *Guidebook for Through-The-Fence Operations*

- ➔ TC-2: Review additional methods for more involvement of City or FBO staff to collect tiedown fees.
- ➔ M-1: Determine if City desires a formalized maintenance service
- ➔ M-2: Hangar space that can accommodate maintenance for a B-II aircraft as needed
- ➔ F-1: Replacement of fuel pumps and pump interfaces
- ➔ F-2: Installation of bollards around fuel island
- ➔ F-3: Installation of aboveground 12,000-gallon tanks for Jet-A and 100LL
- ➔ V-1: Provide 29 parking spaces across the airport for tenants and visitors
- ➔ V-2: Reconfigure or relocate and landscape airport access gates via Alternative V-A
- ➔ TTF-1: Continue to monitor activities from TTF operators
- ➔ TTF-2: Ensure agreements are up to date with TTF Operators and do not conflict with federal grant assurances

3.5 Recommended Development Plan

As listed in Sections 3.2.9 and 3.4.8, there are several facility requirements and opportunities to be included in the recommended development plan, as shown in Figure 3-14. Chapter 4 – Financial Plan provides cost estimates and recommended phasing for these items.

Table 3-12 – Recommendations Shown on Figure 3-14

Figure 3-14	Report	Item
1	DS-2/R-1/R-2	Reduce width and shift Runway 11/29
2	DS-2/R-2	Relocate Taxiway B
3	DS-3	Relocate hold lines
4	DS-5	Relocate and pave vehicle service road (VSR)
5	R-2	Relocate perimeter fence
6	DS-1	Acquire easements for uncontrolled Runway Protection Zones (RPZ)
7	N-1	Install PAPI on Runway 11
8	N-2	Install REIL on Runway 11
9	N-3	Relocate airport beacon
10	N-5	Install AWOS/ASOS
11	T-1	Install green islands on apron
12	H-1	Register Heliport
13	I-1	Develop RNAV GPS Approach (not lower than 3/4 mile)
14	I-2	Update pavement markings to non-precision approach
15	P-2	Rehabilitate apron pavement
16	P-3	Rehabilitate Taxiway A
17	O-1	Grade primary surface to ground minor ground obstructions
18	O-2	Remove or mark obstructions as noted on ALP Drawing Sheet
19	AS-1	Construct 7,000 SF or 3.5 T-hangar spaces
20	AS-2	Construct 16,000 SF of conventional hangar
21	GAT-1	Expand terminal as necessary
22	F-1/F-2	Replace fuel pumps and pump interface and install bollards
23	F-3	Install 12,000-gallon tanks for Jet-A & 100LL
24	V-2	Reconfigure and landscape airport vehicle entrance
25	TC-1	Install signage and collection box for tiedown fee payments

Source: Kimley-Horn & Associates, 2017

There are additional recommendations for KIC that are not necessarily physical attributes shown on Figure 3-14, including:

- ➔ N-4: Install a mechanism for pilot controlled MIRLS
- ➔ P-3: Regular weed control of all pavements
- ➔ GAT-2: Investigate how to accommodate recommended FBO services
- ➔ M-1: Formalized maintenance service
- ➔ M-2: Hangar space that can accommodate maintenance for a B-II aircraft as needed
- ➔ TC-2: Review additional methods for more involvement of City or FBO staff to collect tiedown fees

- V-1: Provide 29 parking spaces across the airport for tenants and visitors
- TTF-1: Continue to monitor activities from TTF operators
- TTF-2: Ensure agreements are up to date with TTF Operators and do not conflict with federal grant assurances

3.6 ALP Drawing Set

Other than the overall narrative report, the ultimate deliverable of this planning effort is the ALP drawing set. The ALP depicts existing airport facilities and proposed developments as determined from the planners' review of the aviation activity forecasts, facility requirements, and alternatives analysis. The plan set can vary in the number and types of sheets included depending on the complexity and requirements of the airport.

This ALP Update includes the following sheets:

- Title Sheet
- Airport Layout Plan
- Airport Airspace Drawing
- Inner Portion of the Approach Surface Drawings
- Land Use Drawing
- Airport Property Map

Title Sheet

This sheet includes applicable information such as the name and location of the airport and sponsor, location and vicinity maps, an index of drawings contained within the set and the date of the set.

Airport Layout Drawing and Data Sheet

The updated ALP sheet depicts existing physical features of the Airport, along with existing and proposed airport facilities, applicable FAA safety and design standards, new topography, property boundaries, and development immediately adjacent to the Airport, and data tables listing key airport data and features will be included. This ALP sheet depicting proposed development at the airport is approved and signed by the airport sponsor and the FAA.

Part 77 Airspace Drawing

The airspace sheet is required to show the plan view of the Part 77 surfaces in its entirety for the ultimate airfield. Surfaces include horizontal, conical, transitional, primary, and approach. Obstructions are identified and listed by type, penetration to the surface in feet, and recommended action or disposition of the obstruction.

Inner Approach Surface Drawing

The inner approach surface sheets contain the plan and profile views of the inner portion of the approach surface to each runway end along with the penetrations based on the Part 77 analysis. Penetrations are identified by location along with type, penetration to the approach surface in feet, and recommended action.

Airport Land Use Drawing (on and off airport)

A land use plan for the area identifies development around the airport, including airfield development areas, general aviation areas, ground access and vehicular circulation system service areas, distinctions between aeronautical and non-aeronautical uses (if any), and local land uses such as public facilities including schools, parks, and hospitals.

Airport Property Map

The property map sheet depicts the control and history of the existing airport property and plans for future land acquisition. This effort was based on existing documentation only and did not include completing new boundary surveys.

4. Financial Implementation Plan

A financial implementation plan translates the recommended development plan from Chapter 3 into a series of projects that comprise the Airport Capital Improvement Plan (ACIP). The ACIP ensures the projects are in line with anticipated available funding, identifies funding sources based on the airport's financial position and role, and provides a plan for funding projects in both the short and long-term time frames. This step is important to ensure the ACIP is realistic as it demonstrates an ability to fund the local share of the project

The following elements are discussed for in this chapter:

- ➔ Funding Sources
- ➔ Airport Capital Improvement Plan (ACIP)

4.1. Funding Sources

Airport sponsors need to review all sources of available funding when identifying, prioritizing, and pursuing project implementation. Innovative and alternative funding sources should be analyzed for applicability and to assist with fulfilling funding needs beyond local sources. This may include Federal, state, regional, local, or private funds, as described below.

4.1.1. Federal

The FAA AIP provides grants to public agencies for the planning and development of public-use airports that are included in the NPIAS through the Airport and Airway Trust Fund. FAA grants typically cover 90-percent of eligible costs for general aviation (GA) such as Mesa Del Rey (KIC). As funding is almost always limited, the FAA determines which projects will be funded based on current national priorities through its national prioritization system. Highest priority is given to projects that improve safety, security, reconstruction, capacity, and standards. There are two basic types of funding available directly to airports: Apportionments (called entitlements) and discretionary. Major entitlement categories consist of primary, cargo, and non-primary—which typically are for GA airports—as well as state apportionment. After all entitlement obligations are met, the remaining funds are considered discretionary.

Non-primary entitlements (NPE) funds are provided annually to KIC. The NPE available to a sponsor is calculated at 20 percent of the total AIP eligible development funding shown on the five-year ACIP, with a cap of \$150,000 annually. This typically results in airports showing a minimum of \$750,000 in project costs on the five-year ACIP. Entitlements may be carried over for up to three years but expire after four years. This is useful when there is no Federal project to complete in a specific year or a larger sum of Federal funds is needed for a project than the annual NPE amount, such as a runway reconstruction. A sponsor can use these grants on most airfield capital improvement projects (e.g., runway rehabilitation, taxiway improvements, drainage improvements, ALP or ALP updates, and navigational aids). Regular operational costs such as training, marketing plans, art installations, mowing, or salaries and some revenue-producing projects, such as parking facilities, are ineligible.

Airport sponsors are obligated through grant assurances once a grant offer is accepted. There are currently 39 grant assurances that range from operating and maintaining the airport in a safe and serviceable condition, not granting exclusive rights, mitigating hazards to airspace, to using airport revenue properly. These assurances typically last 20 years, but their lifespan may depend on the type of

recipient, useful life of the facility, and other conditions. Grant assurances are indefinite when Federal funds are used to acquire land for the airport.

The sponsor should also review current non-FAA Federal grant programs for eligibility on future projects. While not applicable to the ACIP at this time, there are typically grants available for special programs such as treatment of invasive species through the US Fish and Wildlife, historical preservation through the Historical Preservation Fund, or energy rebates through Energy Star.

4.1.2. State Grants

California Department of Transportation's (Caltrans) mission in aviation is to foster and promote the development of a safe, efficient, dependable, and environmentally compatible air transportation system. As such, they provide funding through grants and loans as funds are available. The State funding programs are supported by the Aeronautics Account in the State Transportation Fund which is financed through taxes on fuel.

Annual Credit

Caltrans provides up to \$10,000 annually for each eligible airport. Per Public Utilities Code (21682-21683.2), the Annual Credit is the first priority for distributing available funds. As a GA airport, KIC is eligible for this annual credit.

State Matching Grant

Caltrans provides matching grants up to five percent of the total project cost on a first come, first serve basis to the FAA AIP grants. Grant applications may be submitted once the FAA Grant Offer Letter has been received by the City. As a GA airport, KIC is eligible for this matching and receives this grant annually.

Acquisition & Development (A&D) Grants

A&D Grants provide up to 90 percent for eligible safety, capacity, and security construction projects from \$20,000 to \$500,000. Airport Land Use Compatibility Plans (ALUCP) may also be funded through A&D grants. KIC would be eligible for this program. As this program is funded after state operations, annual credits, and AIP matching grants have been funded, it has not been considered as a funding source in this ACIP. KIC may apply for inclusion for specific projects to assist with funding projects ahead of FAA funding.

California Airport Loan Program

Caltrans provides discretionary loans to eligible airports for construction and land acquisition projects that benefit an airport and/or improve its self-sufficiency. Projects may be a revenue-producing project. The amount of the loan will depend on the funds available and are required to be paid back within 17 years. The interest rate would be the same as State general obligation bonds.

4.1.3. City and Airport Funds

Fund 15, the airport's operating fund, is used for all airport accounting including operation and grant activities. This account, separate from the City's General Fund, allows for tracking of airport revenues to maintain compliance with federal obligations.

The 2016 budgeted and actual operating revenues are shown in Table 4-1. Revenue at KIC is derived from primarily from airport leases, tiedowns and hangar rentals, and fuel sales. Additional revenue is obtained from non-aviation property leases on parcels that were released from aviation activity by the FAA.

Table 4-1 - Operating Revenues

Category	2016 Budget	Percent	2016 Actual	Percent
Fuel Sales	\$2,000	2%	\$ 1,705	2%
Hangar Rents	\$35,000	31%	\$ 33,396	30%
Airport Leases	\$40,000	36%	\$ 41,791	37%
Property Leases	\$25,000	22%	\$ 25,346	22%
Tiedowns	\$500	0.40%	\$ 468	0%
Annual Grant	\$10,000	9%	\$ 10,000	9%
Total	\$112,500		\$112,706	

Source: City of King City, 2016

Table 4-2 shows the budgeted and actual operating expenses at KIC in 2016, including professional services, a portion of City services, utilities, property taxes, insurances, permits, and staff salary. The highest annual expenditure at 31 percent is the salaries and benefits. City services include items such as operating supplies, janitorial, legal, and engineering services. Maintenance, at 23 percent of expenditures, includes testing the fuel tanks annual and budget for general maintenance on the City facilities and equipment at KIC.

Table 4-2 - Operating Expenses

Category	2016 Budget	Percent	2016 Actual	Percent
Salaries & Benefits	\$106,042	57%	\$ 39,909	31%
Utilities	\$5,700	3%	\$ 6,108	5%
Maintenance	\$34,500	19%	\$ 29,700	23%
Property Taxes	\$3,000	2%	\$ 5,961	5%
Regulatory Permits & Licenses	\$20,000	11%	\$ 24,326	19%
Liability Insurance	\$8,000	4%	\$ 10,946	9%
City Services	\$9,100	5%	\$ 10,654	8%
Total	\$186,342		\$ 127,604	

Source: City of King City, 2016

Table 4-3 displays a comparison of the annual total budgeted and actual revenues and expenses at KIC in 2016; KIC is currently operating at a deficit. It is unlikely that the operating revenue could be used to fund capital development.

Table 4-3 - Operating Revenues and Expenses

Category	Budgeted	Actual
Operating Revenues	\$ 112,500	\$112,706
Operating Expenses	\$ 186,342	\$127,604
Difference	(\$73,842)	(\$14,898)

Source: City of King City, 2016

4.1.4. Third-Party or Private Funds

Private funds include parties separate from the City. This is typically a company or an individual looking to partner with or do business at the airport or sometimes aviation advocates hoping to assist the airport. Before accepting private funds, it is recommended to discuss any implications or restrictions with the FAA and FDOT to avoid any potential complications. It is important to note that the airport must still adhere to all federal and state regulations and standards when using these funds.

Funds provided by a third-party such as a developer or a tenant to finance a construction project, like corporate hangars, terminals, cargo facilities, etc. Typically, the third-party would lease the facility for a period of years in lieu of fees as they provided the funding for the project. It is important that the airport sponsor retains ownership of the underlying property if on-airport and the facility ownership reverts to the airport sponsor upon expiration of the lease.

As none of these types of projects are in the current ACIP, private funds are not assumed to be a source of funding in the analysis.

4.2. Airport Capital Improvement Plan

Based on all of the information that is gathered throughout the life of the project, including considerations from the public as part of the stakeholder outreach process, the ACIP consolidates that information and identifies how and when projects will be completed. The FAA considers project funding requests through the CIP process. A three- to five-year CIP is typically created by each airport on a rolling basis and based on the airport's Master Plan recommendations, as available. Each airport typically conducts an annual review to update the CIP based on anticipated plans for project priorities, funding sources, environmental and authority approvals, or estimated costs. As such, a more robust CIP is provided for a three- to five-year period, with the 10- and 20-year Master Plan CIP representing basic planning-level cost estimates and phasing. The short-term CIP may be used for planning and programming funds with the FAA and FDOT and determining which projects may require environmental approvals. It is important that the CIP developed in the implementation plan is realistic and that the sponsor has considered the timing of actions needed to start the project such as relevant and necessary approvals, environmental documentation, and if the local share of funding is expected to be available when needed.

Table 4-4 displays the ACIP, based on Figure 3-14 - Recommended Development Plan, for this ALP Update. The cost estimates are in 2017 dollars and include contingencies, design costs, and construction management costs. The ACIP does not constitute all expenditures the Airport may incur on other projects, maintenance, or operating expenses. Additionally, approval of this ALP does not commit the City to construct any facilities, carry out any improvements, or financially obligate the County to complete the projects as listed.

Current funding allocations for each program and Airport revenues and expenses are assumed to continue through the planning horizon for this effort.

As shown, Table 4-4 displays the ACIP for each planning period with a total of almost \$12 million over the planning horizon. Of this, the City may be responsible for \$3.3 million or more depending on federal eligibility for various components. Based on the review of the operating revenue and expenses in Section 4.1.3, the City will need to look for additional sources of funding to cover the local share. It should be

noted that the price and scope of rehabilitation of the taxiway and apron pavement areas will be refined as part of the upcoming Caltrans Pavement Maintenance Management Plan.

The City should provide adequate lead-time for detailed design, permitting, and construction to ensure that the proposed facilities are operational when warranted by the user demands. It is intended that ACIP be reviewed and updated on an annual basis under guidance of the Sponsor, Caltrans, and FAA to consider the most recent conditions, opportunities, constraints, and desires. Airport development should be based on actual activity rather than a specific timeframe. Environmental approvals through the National Environmental Protection Act (NEPA) and California Environmental Quality Act (CEQA) will be necessary prior to receipt of funding.

Figure 3-14	Item	Cost	FAA		State		Local	
			90%	4.5%	4.5%	5.5%		
18	Remove Tree Obstructions	\$ 50,000	\$ 45,000	\$ 2,250	\$ 2,250	\$ 2,750		
17	Verify and Grade primary surface to ground minor ground obstructions	\$ 5,000	\$ 4,500	\$ 225	\$ 225	\$ 275		
18	Light Obstructions (Buildings, Poles, Tanks, Fences, etc)	\$ 128,440	\$ 115,596	\$ 5,780	\$ 5,780	\$ 7,064		
19	Conventional Hangar Space (100'x100')	\$ 1,300,000				\$ 1,300,000		
21	Expand FBO Terminal	\$ 100,000	\$ -	\$ -	\$ -	\$ 100,000		
23	Installation of 12,000-gallon fuel tanks for Jet-A and 100LL	\$ 390,000	\$ 351,000	\$ 17,550	\$ 17,550	\$ 21,450		
	<i>Long-term Subtotal</i>	\$ 5,484,762	\$ 3,676,286	\$ 183,814	\$ 183,814	\$ 1,624,662		
	Grand Total	\$ 12,154,752	\$ 8,352,227	\$ 417,611	\$ 417,611	\$ 3,384,913		

*Pricing and scope to be refined as part of the upcoming Caltrans Pavement Maintenance Management Plan (PMMP).

Appendix A - Environmental Conditions

Congress passed the National Environmental Policy Act (NEPA) that requires “federal government to use practicable means to create and maintain conditions under which man and nature can exist in productive harmony.” Section 102 of the Act further requires federal agencies to incorporate environmental considerations in their planning and decision-making processes. Due to the FAA’s participation in airport planning and development projects, airport sponsors are therefore required to incorporate environmental considerations into the master planning process.

FAA Order 1050.1E *Environmental Impacts: Policies and Procedures* and the associated *Environmental Desk Reference for Airport Actions* describe the various environmental resources that must be taken into consideration. Though not evaluated to the level of detail required for official agency approval of proposed capital improvement projects, the following provides an overview of the environmental resources and considerations within the environs of KIC. This information helps to identify and evaluate alternative development scenarios, ultimately leading to a recommended development program that is in concert with the community and environment. Further environmental evaluation and agency approval will likely be required for specific development projects prior to design and construction.

1. Air quality

The federal and State governments have been empowered by Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA) to regulate the emission of airborne pollutants and have established ambient air quality standards for the protection of public health. The U.S. Environmental Protection Agency (EPA) is the federal agency designated to administer air quality regulation, while the California Air Resources Board (CARB) is the State equivalent in California. Local control in air quality management is provided by CARB through county-level or regional (multi-county) air pollution control districts (APCD).

The California Air Resources Board (CARB) is the State agency responsible for the coordination and oversight of federal, State, and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA) of 1988. In this capacity, CARB conducts research and sets the California Ambient Air Quality Standards (CAAQS). The Monterey Bay Air Resources District (MBARD) is principally responsible for air pollution control within the Air Basin. On March 15, 2017, the MBARD Board of Directors approved the *2012-2015 Air Quality Management Plan (2012 AQMP)*, which outlines its strategies for meeting the National Ambient Air Quality Standards (NAAQS) for ozone (O₃). According to the AQMP, the North Central Coast Air Basin has obtained attainment status for the National Ambient Air Quality Standards (NAAQS).

According to FAA guidance, an air quality analysis for NEPA purposes would only be required if the airport experienced more than 1.3 million annual enplanements, more than 180,000 general aviation operations, or if the action would increase automobile traffic congestion at off-airport road intersections to a service level of D, E, or F (Federal Aviation Administration, 2007). Based on the location of KIC, the NAAQS attainment status, and the aircraft activity thresholds, future development at the Airport appears to have little potential to adversely affect local or regional air quality.

2. Biological resources (including fish, wildlife, and plants)

Biotic resources include the various types of flora (plants) and fauna (fish, birds, reptiles, amphibians, marine mammals, coral reefs, etc.) in a particular area. Biotic resources also include rivers, lakes, wetlands, forests, upland communities and other habitat types supporting the identified flora and fauna. Several statutes protect the fish, wildlife, and plant resources of the U.S., including the Fish and Wildlife Coordination Act of 1958, the Fish and Wildlife Conservation Act of 1980, the Migratory Bird Treaty Act (MBTA) of 1918, and the Endangered Species Act (ESA) of 1973. The ESA, as amended, was enacted to provide a program for the preservation of *endangered* and *threatened* species and the ecosystems upon which they depend for survival. The ESA requires federal agencies, including the FAA, to implement protection programs for listed species and to use their authorities to further the purposes of the Act.

The United States Fish and Wildlife Service (USFWS), in conjunction with the California Department of Fish and Wildlife (CDFW), has jurisdiction over federal and state listed endangered and threatened species in California. An endangered species is defined by the USFWS as a species in danger of extinction throughout all or a significant portion of its range. A threatened species is defined by the USFWS as a species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

According to CDFW¹, there are 203 threatened, endangered, or protected species found in Monterey County. Of those, Table A-1 lists the threatened and endangered species that have been documented by CDFW as being present within the airport property. The USFWS has not, however, identified any critical habitat for these species near the Airport².

Table A-1 – Monterey County Threatened and Endangered Species

Common Name	Scientific Name	Federal Status	State Status
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	Endangered	Threatened
Bank swallow	<i>Riparia riparia</i>	None	Threatened
Burrowing owl	<i>Athene cunicularia</i>	None	None ³

Source: USFWS IPaC Information for Planning and Conservation

Table A-2 lists 24 protected migratory bird species that, according to the USFWS, could potentially be found in the general location of the airport in Monterey County. This list is based on the known range of the species and does not specifically indicate that they have been observed in the Airport environs.

Prior to development in any undisturbed areas of Airport property, a site inspection by a qualified wildlife biologist may be needed to further evaluate the presence of species of concern or supporting habitat within the project limits.

¹ California Department of Fish and Wildlife California Natural Diversity Database RareFind 5, <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>, accessed August 31, 2017.

² USFWS Critical Habitat Maps, <https://fws.maps.arcgis.com/home/webmap/viewer.html>, accessed August 31, 2017.

³ Burrowing owls are, however, considered Species of Special Concern by CDFW

Table A-2 – Monterey County Migratory Bird Species

Common Name	Scientific Name	Season(s)
Allen's Hummingbird	<i>Selasphorus sasin</i>	Breeding
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Wintering
Black Swift	<i>Cypseloides niger</i>	Breeding
Burrowing Owl	<i>Athene cunicularia</i>	Year-round
California Spotted Owl	<i>Strix occidentalis</i>	Year-round
Calliope Hummingbird	<i>Stellula calliope</i>	Migrating
Costa's Hummingbird	<i>Calypte costae</i>	Year-round
Fox Sparrow	<i>Passerella iliaca</i>	Wintering
Lawrence's Goldfinch	<i>Carduelis lawrencei</i>	Breeding
Lesser Yellowlegs	<i>Tringa flavipes</i>	Wintering
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Wintering
Long-billed Curlew	<i>Numenius americanus</i>	Wintering
Marbled Godwit	<i>Limosa fedoa</i>	Wintering
Nuttall's Woodpecker	<i>Picoides nuttallii</i>	Year-round
Oak Titmouse	<i>Baeolophus inornatus</i>	Year-round
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Breeding
Peregrine Falcon	<i>Falco peregrinus</i>	Year-round
Rufous Hummingbird	<i>selasphorus rufus</i>	Migrating
Rufous-crowned Sparrow	<i>Aimophila ruficeps</i>	Year-round
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Wintering
Short-eared Owl	<i>Asio flammeus</i>	Wintering
Tricolored Blackbird	<i>Agelaius tricolor</i>	Year-round
Western Grebe	<i>aechmophorus occidentalis</i>	Wintering
Yellow-billed Magpie	<i>Pica nuttalli</i>	Year-round

Source: USFWS IPaC Information for Planning and Conservation

3. Climate

The study area for climate change and the analysis of Green House Gas (GHG) emissions is broad because climate change is influenced by worldwide emissions and their global effects. Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other changes in climate such as wind patterns, precipitation, and storms over an extended period of time. Gases that absorb and re-emit infrared radiation in the atmosphere are GHGs. GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). As noted above, per FAA guidance, an air quality analysis for NEPA purposes would only be required if the airport experienced more than 1.3 million annual enplanements, more than 180,000 general aviation operations, or if the action would increase automobile traffic congestion at off-airport road intersections to a service level of D, E, or F (Federal Aviation Administration, 2007). Based on the location of KIC, the NAAQS attainment status, and the aircraft activity thresholds, future development at the Airport appears to have

little potential to adversely affect local or regional air quality. Future projects at the airport would be constructed according to the requirements of the California Building Energy Efficiency Standards and California Green Building Standards which serve as a guide for reducing impacts from local development on the climate.

4. Coastal resources

KIC is outside the boundaries of the Coastal Zone defined by the California Coastal Commission. Therefore, no direct impacts to coastal resources would be anticipated through future development at the Airport.

Storm water runoff generated in King City is collected and then conveyed to the Salinas River which ultimately discharges to Monterey Bay. Soil disturbing activities related to construction on projects over one acre are subject to the provisions of the Construction General Permit enforced by the State Water Resource Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB). The Construction General Permit requires post-construction best management practices (BMPs) to mitigate impacts of increased hardscape on receiving waters which include coastal resources. Drainage analysis and installation of BMPs to protect water quality will be required for individual projects at the airport when required by the Construction General Permit of the local Municipal Separate Stormwater Sewer System (MS4) permit. Additionally, the FAA requires a Storm Water Pollution Prevention Plan (SWPPP) for any project that disturbs more than one acre. Required permits will need to be reviewed during the design process for any future development.

5. Department of Transportation Act, Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 [Title 49, USC Section 1653 (f); amended and recodified in 49 USC Section 303] provides that the Secretary of Transportation (including the FAA) will not approve any program or project that requires the use of publicly owned land from a park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from a historic site of national, state, or local significance.

Section 6(f) of the Land and Water Conservation Fund Act (L&WCFA) [16 USC, Section 4601 et. seq.]; 36 Code of Federal Regulations (CFR) Part 59] prohibits the taking of lands purchased with land and water conservation funds. While the Secretary of Transportation has jurisdiction over Section 4(f) lands, the Department of the Interior and National Park Service have jurisdiction over Section 6(f).

As described in subsequent sections, there are no known historic sites located within ½ mile of the Airport property. There are also no wildlife or waterfowl refuges located in the vicinity of the Airport. Additionally, there are no parks located within ½ mile of the airport. Therefore, development at the airport is not anticipated to impact to Section 4(f) or Section 6(f) lands.

6. Farmlands

The Farmland Protection Policy Act (FPPA) of 1981 authorizes the U.S. Department of Agriculture (USDA) to minimize federal programs' contribution to unnecessary and irreversible conversion of farmland to nonagricultural uses. *Prime farmland*, as defined by the USDA, is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. There are similar classifications for *unique farmlands*, *farmlands of state importance*, and *farmlands of local importance*. According to the FPPA (PL 90-542), lands already committed to urban development or water storage do not meet the definition of prime or unique farmland.

The USDA Natural Resource Conservation Service (NRCS) online Geographical Information System (GIS) classifies the majority of Airport property as “Farmland of State Importance.” Agricultural is a predominant land use within the limits of King City. There are no agricultural operations that occur on airport property. Additionally, the airport property is zoned by the City as Combining Airport District/Heavy Industrial District. Therefore, future development at KIC is not anticipated to impact to farmlands.

7. Hazardous Materials, Solid Waste, and Pollution Prevention

The terms hazardous materials, hazardous waste, and hazardous substances are generally associated with industrial wastes, petroleum products, dangerous goods, or other contaminants. The regulations governing hazardous materials, as it applies to airport development actions, are found in the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Community Environmental Response Facilitation Act (CERFA). These statutes address the use, storage, and disposal of hazardous materials and the environmental threats caused by mishandling these materials. To protect from potentially large clean-up costs and legal liabilities, airport sponsors should (to the extent possible) avoid hazardous waste sites and contaminated property that could affect, or be affected by, an airport development project. According to data provided via Geotracker (State Water Resource Control Board) and Envirostor (Department of Toxic Substance Control), there are no open site assessments located within one half mile of the Airport.

The EPA Oil Pollution Prevention Regulation requires the preparation and implementation of a plan that addresses spills of hazardous materials. Typically referred to as a Spill Prevention Control and Countermeasures (SPCC) Plan ensures a plan is in place to prevent hazardous waste spills, a response if there is a spill, and proper notifications are made in such an event. At KIC, this requirement is placed upon each business tenant.

As agricultural businesses operate at the Airport, the applicability of the Chemical Facility Anti-Terrorism Standards (CFATS) increase. This program uses a tiered risk assessment that requires facilities to maintain standards based on the risk they pose. Agricultural companies such as Wilbur-Ellis take the extra step of securing their chemicals and aircraft on their own facility adjacent to KIC property.

8. Historical, architectural, archeological, and cultural resources

The National Historic Preservation Act (NHPA), as amended, provides for the preservation of cultural resources eligible for inclusion in the National Register of Historic Places (NRHP). Section 106 of the NHPA directs heads of federal or independent agencies that have direct or indirect jurisdiction over a federal or federally assisted undertaking to, “take into account the effect on any district, site, building, structure, or object that is included in or eligible for the inclusion in the National Register.”

The California Register of Historical Resources (CRHR) was established in 1992. The CRHR is an authoritative guide in California used by State and local agencies, private groups, and citizens to identify the State’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change. Eligibility for the CRHR is determined by the California Office of Historic Preservation (OHP) in a formal review process in which a resource is proposed for listing. A resource deemed eligible for the NRHP is typically deemed eligible for the CRHR. Certain resources are determined by the statute to be included in the CRHR, including California properties formally determined

eligible for or listed in the NRHP, as well as State Landmarks and State Points of Interest.

The State Office of Historic Preservation (OHP) makes determinations of eligibility for listing on the CRHR. There are four sites in King City recognized by OHP as a historical resource; none of which are located on or within one mile of the airport.

9. Natural Resources and Energy Supply

Data provided by the Surface Mining and Reclamation Act of 1975 (SMARA) Mineral Lands Classification (MLC) suggests that the project area is not mapped and may not be a source of significant mineral deposits. The Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) mapping system shows no oil, gas, or geothermal resources within King City. As the project site has no known history of mining activity, there would be no loss of a known mineral resource of value to the region or State. Therefore, development at KIC would not result in the loss of availability of a known mineral resource.

10. Land Use and Zoning

Identifying land use and zoning characteristics in the environs of airports is an important task in the airport planning process because of significant impacts that incompatible development in the airport area can have on the facility's continued operation and development. Working with the relevant planning commissions, counties, and municipalities, or other entities to promote compatible land uses and zoning in the environs of the airport can allow the facility to continue to operate and develop in a matter that minimizes the impacts of the airport and non-compatible land uses.

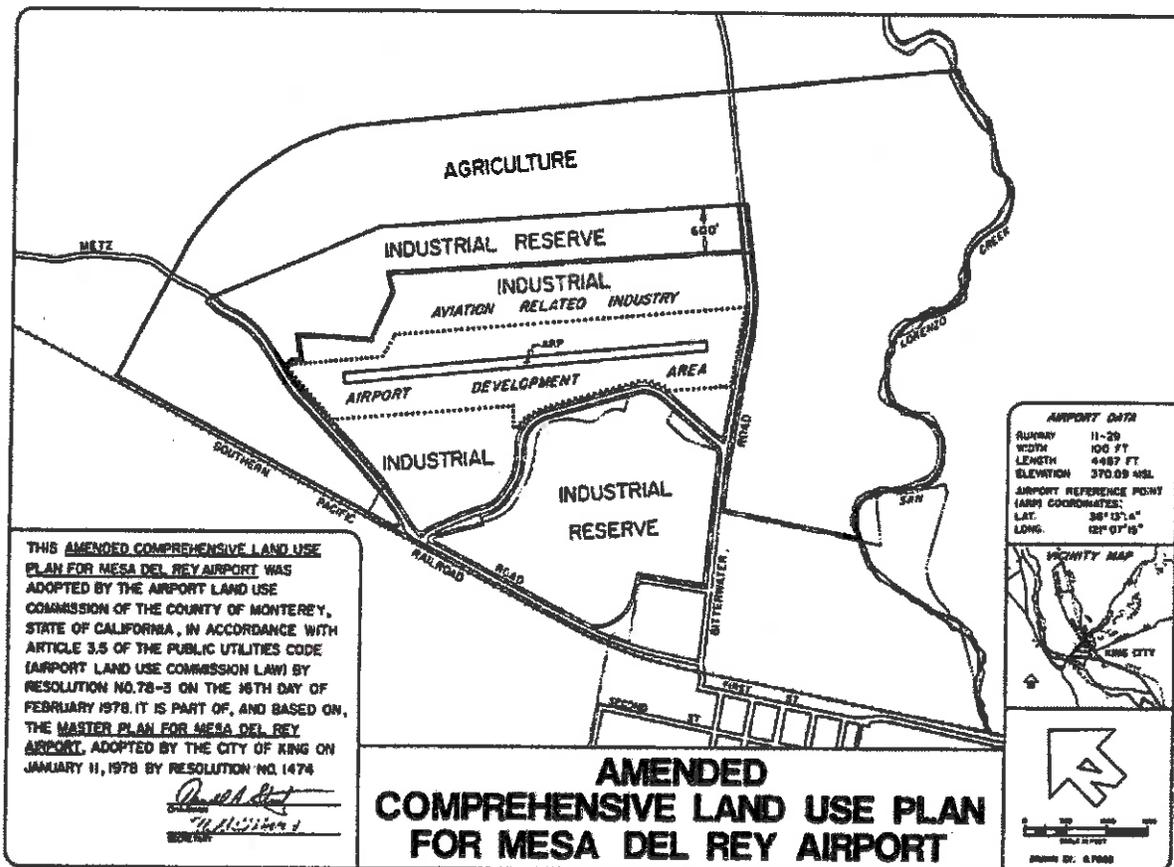
Currently, the Airport is located on the northeast outermost area within King City limits. Land adjacent to the Airport is primarily a planned development district with a small industrial district parcel located along the southwest edge of the Airport property line. The Airport property is designated as a heavy industrial/combining airport district. Another industrial district is located northeast of Airport property, that contains a mixture of uses including City maintenance storage, agriculture businesses, and a cement plant. Additional business and agricultural development (cannabis) is being considered for the land northeast of Industrial Way. The Monterey County General Plan designates the area surrounding the airport for farmland use and requires a minimum of 40 acres per operation.

The property to the south of the airport is subject to the East Ranch Business Park Specific Plan, adopted 2007. The Specific Plan area consists of approximately 107 acres of Industrial and related uses. The Specific Plan permits manufacturing related to food production and packaging, wholesale, warehouse, and limited commercial uses. Residential uses are not permitted within the Specific Plan. All future development in the Specific Plan are will need to analyze potential land use and planning impacts based on the proposed operations. One of the objectives of the Specific Plan is to permit "through-the-fence" operations at KIC. Through-the-fence operations include businesses or individuals that have access to the airport infrastructure from outside airport property, or that utilize airport property to conduct a business but do not rent business space at the airport. Agreements are put in place with these entities to ensure the City, as the airport sponsor, does not violate any Federal grant assurances. TTF at KIC is discussed in Section 4.2 Through-the-fence Operations.

There are no existing or planned land uses surrounding the airport that would hinder growth or development at the airport. Therefore, land use impacts are not anticipated by future development at KIC.

Through the Monterey County Airport Land Use Commission (ALUC), a land use plan for the areas surrounding the Airport was prepared in 1972 which served as a guide for future development. The land use plan identified the existing agricultural and industrial land uses surrounding the airport to be compatible with aircraft activities and recommended these land uses continue to ensure compatibility. The Monterey County ALUC reviews all future developments within the area surrounding KIC to ensure compatible land use continues. The Land Use Plan is set to be updated by the County in the near term.

Figure A-1 – Amended Comprehensive Land Use Plan Map



Source: Mesa Del Rey Comprehensive Land Use Plan (CLUP) 1978

11. Noise and Compatible Land Use

Aircraft noise is generally one of the most prominent concerns for land use around an airport – particularly for neighboring residents. To address this issue, the FAA has adopted a set of noise exposure guidelines to examine the compatibility of land uses in and around an airport relative to existing and projected noise levels. These guidelines are summarized specify the level of noise exposure considered by the federal government to be acceptable for residential, public, commercial, manufacturing, production and recreational land uses.

These guidelines use a decibel-based (dB) measure of cumulative noise exposure called the Day-Night Average Sound Level (DNL or L_{dn}). In simple terms, DNL is the average noise level over any number of days. To reflect the added intrusiveness of nighttime noise events that result from community background noise levels decreasing at night – defined as 10 p.m. - 7 a.m. – those aircraft operations are artificially increased by 10 dB. Generally, all land uses are acceptable in areas with noise exposure less than 65 DNL (i.e. beyond the limits of the 65 DNL contour). Residences, schools, churches and other noise-sensitive land uses are considered non-compatible within the 65 greater DNL contour. Although incompatibility may be perceived by the surrounding community at lower average noise levels, or during a single-event higher noise level, the FAA recognizes the 65 DNL as the significant threshold. Development at the airport is not anticipated to significantly increase the existing aviation activity levels, thus no new impacts to the community are anticipated through future development at KIC.

12. Socioeconomics Characteristics

Regional characteristics of population, employment, and mean household income are key indicators of potential user demand at an airport. Population growth and high levels of employment and household income represent economic vitality which often increases the propensity for general aviation activity as people and businesses can better afford flying activities. As discussed in Section 2.1., population growth in Monterey County is growing at a slower rate than the State of California, however the population maintains a respectable level. Employment is growing at a slight lesser rate than that of the state, however, mean household income for Monterey County in 2016 was \$151,901.00 compared to the state's \$146,913.00. The socioeconomic conditions in Monterey County and the state of California were significant planning factors for this ALP Update.

13. Visual effects (including light emissions)

Airport related lighting facilities and activities can visually affect surrounding residents and other nearby light-sensitive areas such as parks or recreational areas. There are no federal regulations that govern light emissions or visual intrusions outside of those covered by Section 4(f) of the US DOT Act, Section 6(f) of the Land and Water Conservation Fund Act, and Section 106 of the National Historic Preservation Act. The land use surrounding KIC is considered compatible, non-residential, and would not be impacted by airfield lights at the airport. The City is converting the runway lighting to pilot controlled which will further reduce any potential effect on nearby land uses. As such, no new visual effects to the community are anticipated through future development at KIC.

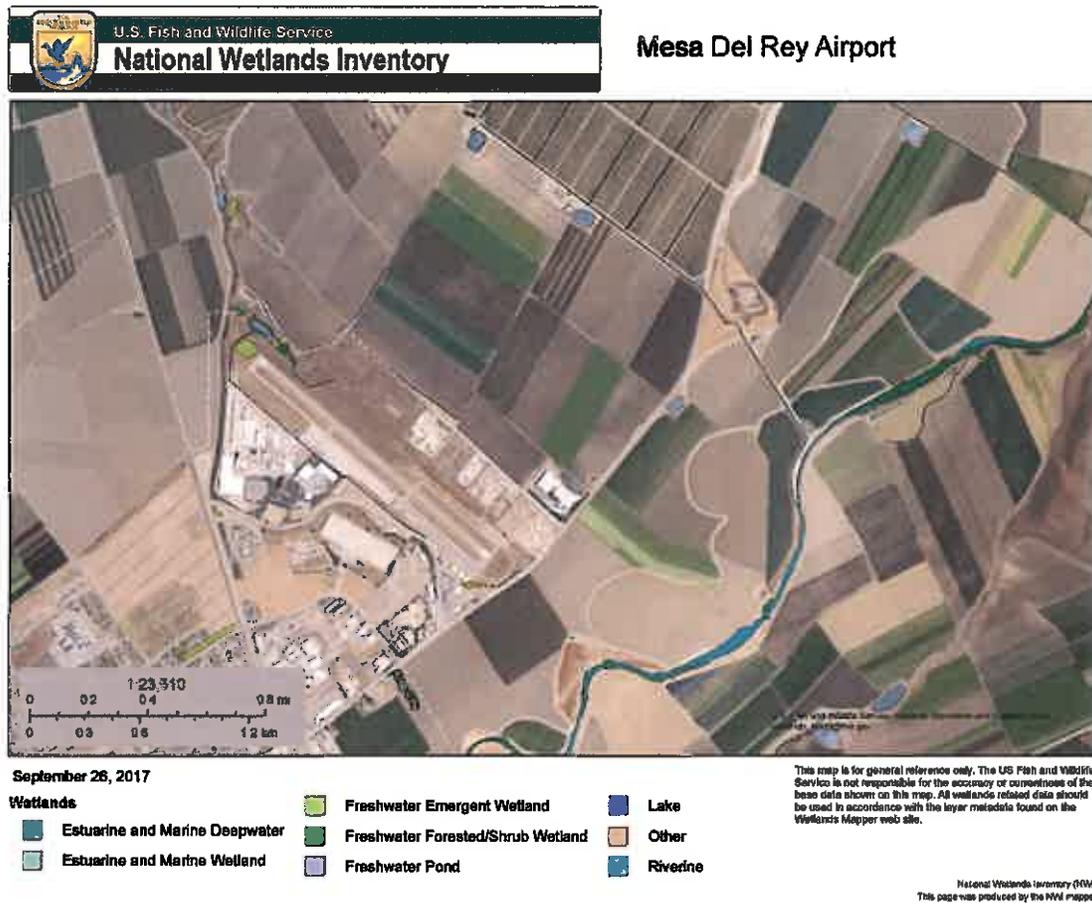
14. Water Resources

According to Federal Emergency Management Administration (FEMA), KIC is not within a floodplain. The San Lorenzo Creek, which is designated a special flood hazard area, is approximately ½ mile to the south, but not expected to impact the Airport.

According to the U.S. Fish and Wildlife Service's National Wetlands Inventory, wetlands are located to the north of the Runway 11 and along the property edge south of Runway 29. While a field survey would be required to verify wetlands, current records confirm wetlands to the north of 1.46 acres across two seasonal freshwater ponds, 1.61 acres forested/shrub wetlands along the edges, and 2.4 acres of freshwater emergent wetlands. A riverine flows from one of the ponds to the open property on the to the north. Additionally, a series of storm drains flow from the apron to these ponds. The wetlands to the south

are 0.68 acres of freshwater emergent wetland. Any development at the Airport will need to ensure there is no conflict with the wetlands.

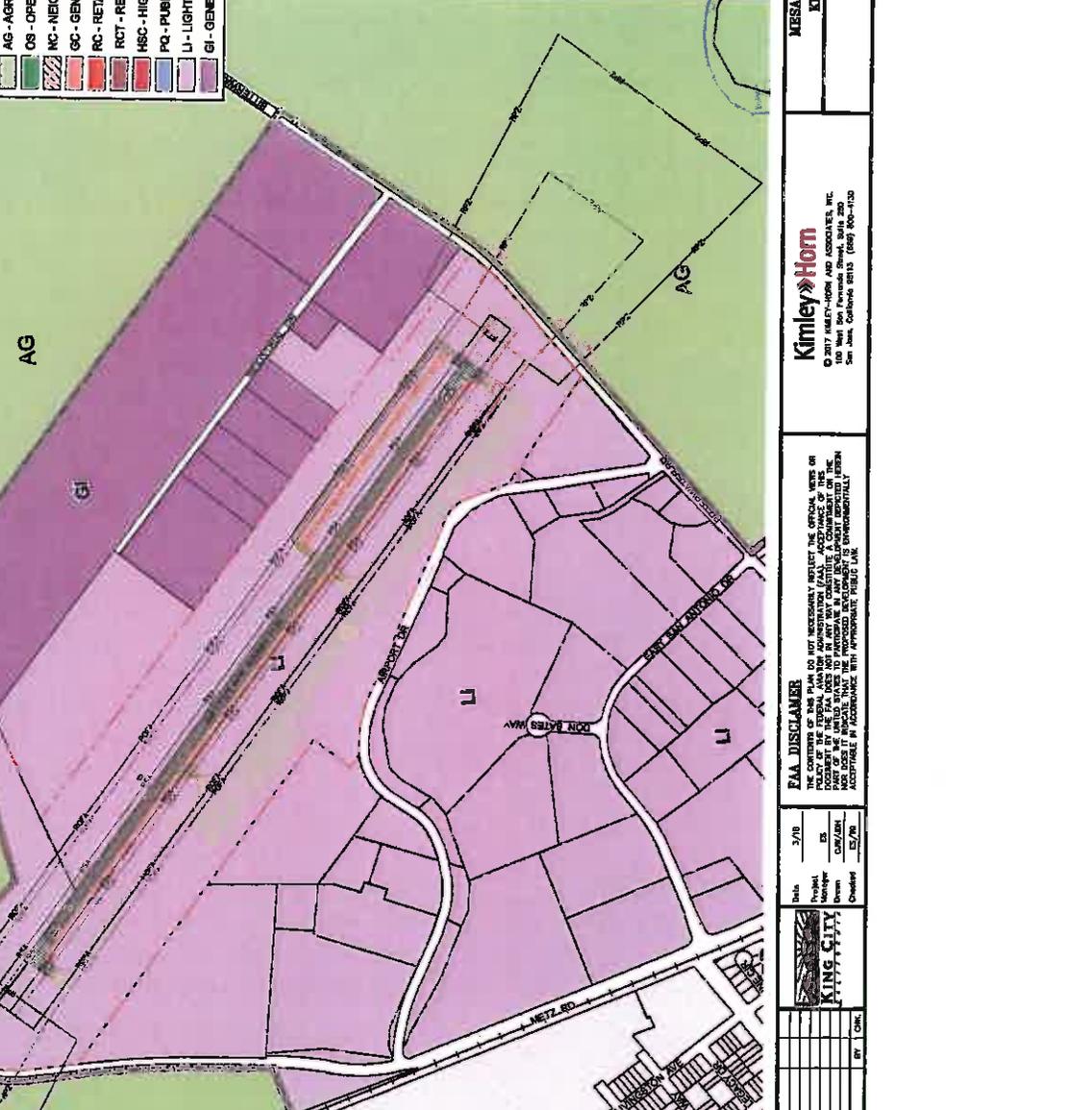
Figure A-2 - Wetlands



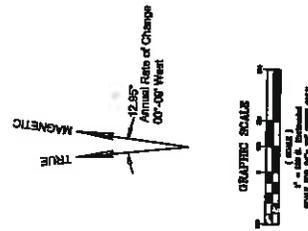
Source: National Wetlands Inventory, USFWS

15. Recycling Program

King City encourages residents and businesses to recycle through the City’s weekly curbside and drop-off programs and notifies businesses that California State Law AB341 requires commercial entities that generate four or more cubic yards of waste per a week to implement recycle programs. The recycling program included used motor oil and filters, appliances, batteries, e-waste, paint, automotive products, and cooking oil. KIC tenants and users are encouraged to participate in the City’s recycling program.



- Legend**
- City Limit
 - Permits
 - Land-Use Designations**
 - LDR - LOW DENSITY RESIDENTIAL
 - MDR - MEDIUM DENSITY RESIDENTIAL
 - PD/MHP - PLANNED DEVELOPMENT / MOBILHOME PARK
 - MDR/MHP - MEDIUM DENSITY RESIDENTIAL / MOBILHOME PARK
 - MHDR - MEDIUM HIGH DENSITY RESIDENTIAL
 - HDR - HIGH DENSITY RESIDENTIAL
 - PD - PLANNED DEVELOPMENT
 - AG - AGRICULTURE
 - OS - OPEN SPACE
 - NC - NEIGHBORHOOD COMMERCIAL
 - GC - GENERAL COMMERCIAL
 - RC - RETAIL COMMERCIAL
 - RC/T - RETAIL COMMERCIAL / TRANSITIONAL
 - HSC - HIGHWAY SERVICE COMMERCIAL
 - PQ - PUBLIC / QUASI PUBLIC
 - LI - LIGHT INDUSTRIAL
 - GI - GENERAL INDUSTRIAL



NOTE

- 1) DATE, REGION, AND LAND USE INFORMATION SHOWN ON THIS MAP IS BASED ON THE MOST RECENT DATA AVAILABLE TO THE CITY OF KING AND MONTGOMERY COUNTY AIRPORT LAND USE COMMISSION.

PROJECT	MESA DEL REY AIRPORT (KIC)
CITY	KING CITY, CALIFORNIA
DATE	3/10
BY	CHK

Kimley-Horn
 CONSULTING ENGINEERS
 100 West 10th Peninsula Street, Suite 200
 San Jose, California 95128 (408) 800-1100

FAA DISCLAIMER
 THE CONTENTS OF THIS PLAN DO NOT NECESSARILY REFLECT THE OFFICIAL MAPS OR DOCUMENTS OF THE FAA. THIS PLAN IS NOT TO BE CONSIDERED A COMMITMENT ON THE PART OF THE FAA. THE FAA DOES NOT WARRANT THE ACCURACY OF ANY INFORMATION PROVIDED HEREIN. THE FAA DOES NOT WARRANT THAT THE PROPOSED AIRPORT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAW.

DATE	3/10
PROJECT	MESA DEL REY AIRPORT
BY	CHK
DATE	3/10

NO.	DATE	REVISION	BY	CHK



KING CITY
C A L I F O R N I A

Item No. 11(B)

REPORT TO THE CITY COUNCIL

DATE: MARCH 27, 2018

TO: HONORABLE MAYOR AND MEMBERS OF THE CITY COUNCIL

FROM: STEVEN ADAMS, CITY MANAGER

RE: CONSIDERATION OF REDUCTION TO DEVELOPMENT IMPACT FEES

RECOMMENDATION:

It is recommended the City Council: 1) adopt a Resolution reducing development impact fees for a three-year period; and 2) direct staff to contract with Revenue Cost Specialists to prepare recommendations for a new land use category in the development impact fee tables for seasonal employee housing and appropriate \$5,500 divided among different development impact fee funds proportionally.

BACKGROUND:

New development impact fees were established in 2010. Fees were based on a study prepared by Revenue Cost Specialists. A professional engineering study is needed to establish development impact fees. They identify future growth potential, assess costs for improvements to infrastructure and facilities that will be needed to accommodate the growth, and then establish fees for development where a nexus can be identified between the improvements and the development.

In February 2016, the City Council approved a strategy that staff successfully coordinated with the other South County cities, which resulted in a roughly 50% reduction in the TAMC development impact fee. In November 2016, the City Council approved adjustments to the City's development impact fees.

When the fees were adjusted in November 2016, they were divided into two categories. The first were those fees designed to fund projects with scopes that have been clearly identified and are a high priority. For those fees, a process was approved to adjust them by the California Construction Cost Index (CCCI) on an annual basis. This index is a good indicator of the increase in infrastructure project costs. Those fees included the following:

**CITY COUNCIL
CONSIDERATION OF ADJUSTMENTS TO DEVELOPMENT IMPACT FEES
MARCH 27, 2018
PAGE 2 OF 4**

- Bridges, Signals and Thoroughfares
- Wastewater Collection System
- Wastewater Treatment Plant
- Law Enforcement Facilities
- Fire Protection Facilities

The second category of fees was those that do not currently have high priority projects identified and defined at this time. These fees are designed to fund projects that will address the impacts of growth, but can be developed over time as growth occurs. Therefore, it was proposed that some of these projects can be either deferred or funded from other revenue sources that will increase from new development, such as property and sales tax. They include the following:

- General Government Facilities
- Public Meeting Facilities
- Aquatic Center Facilities
- Park and Open Space Acquisition
- Storm Drainage Facilities

These fees were reduced by 50% for a three-year period. They are scheduled to return to their prior levels in January 2020 if development profits return to prior levels by that time.

Based on the City's economic development efforts, staff has found the fees are still negatively impacting the feasibility of development needed to address needs and investment in the community. Therefore, additional reductions are recommended at this time.

In addition, staff is preparing a seasonal employee housing ordinance for City Council consideration within the next two months. Staff has also been meeting with local agricultural business owners regarding projects that are being planned. However, these projects may be designed differently from traditional housing. Therefore, it is difficult to apply multi-family housing development impact fee amounts in a way that accurately reflects the impacts of these projects. As a result, staff proposes a new land use category be created.

DISCUSSION:

When the fees were established, an effort was made to include a comprehensive list of potential future infrastructure and facility needs. However, profit margins on development have never returned to levels prior to the recession in King City. The City's fees are particularly high given values and rents for buildings in the community. The fees make construction costs prohibitive because they cannot be adequately recovered through sale or rents that are feasible. Therefore, very little new

**CITY COUNCIL
CONSIDERATION OF ADJUSTMENTS TO DEVELOPMENT IMPACT FEES
MARCH 27, 2018
PAGE 3 OF 4**

development has taken place other than projects vested prior to the 2010 fees taking place. This has created a barrier to meeting the City's housing and commercial needs, economic development goals, and job creation.

It is recommended the following additional fees also be reduced by 50% at this time:

- Bridges, Signals and Thoroughfares
- Law Enforcement Facilities
- Fire Protection Facilities

The highest fee is the Bridges, Signals and Thoroughfares development impact fee. However, when reviewing the projects identified in the fee study, it was determined that the highest cost projects may be eligible for grant funding. Therefore, it is recommended that some of the funding for projects identified in this impact fee come from other funding sources.

This will mean the only fees not reduced will include the following:

- Wastewater Collection System
- Wastewater Treatment Plant

Staff believes reductions in fees for these purposes cannot be justified. The Wastewater Collections System Master Plan and Wastewater Treatment Plant Facilities Plan recently approved include funding needs that far exceed potential development impact fee revenue. Therefore, reductions in potential revenue would result in further increases to customer wastewater rates to pay for these projects.

It is recommended that the prior changes be extended, and these additional reductions be approved, for a three-year period so that all the reductions are scheduled to automatically increase to their prior amounts on April 1, 2021 unless extended at that time. The automatic annual CCCI adjustments are also proposed to be deferred until that time.

In addition, it is recommended to contract for a study to add a land use category to the development impact fee table for seasonal employee housing. Staff has received a proposal from Revenue Cost Specialists, who prepared the original study. Therefore, they can prepare the new category without recreating the original analysis. This is necessary because impacts like traffic will be different for H2A housing projects than traditional apartments. In addition, the definition of a unit needs to be modified since these projects may be designed in a dormitory layout. The scope of work will include preparing a Nexus report, analyze development proposals to determine long-term needs and impacts, amend the land use database to include the seasonal employee housing land use category, recreate the original

**CITY COUNCIL
CONSIDERATION OF ADJUSTMENTS TO DEVELOPMENT IMPACT FEES
MARCH 27, 2018
PAGE 4 OF 4**

fee calculations with the new land use category, and prepare and submit the final report for Council consideration.

COST ANALYSIS:

It is difficult to accurately estimate the financial impact of this item. There will be a substantial loss in total revenue projected from the fees when King City reaches full buildout. However, little development is currently taking place, partially due to the fees. Therefore, the short and medium term impact will hopefully be an increase in revenue. More importantly, sales tax and other revenues will continue to remain stagnant without development of new businesses and housing. It could also negatively impact some cannabis related businesses from proceeding. Therefore, in the long-term, it is anticipated that other revenue sources will more than compensate for the reduction in fees.

The cost for the study to create the new seasonal employee land use category is estimated to not exceed \$5,500. The appropriation is proposed to be spread proportionately through the impact fee funds. Therefore, there will be little impact on the balance of any of the existing funds.

ENVIRONMENTAL REVIEW:

The fees are not considered a "project" for the purposes of the California Environmental Quality Act (CEQA). Staff does not believe the change will impact the City's ability to mitigate impacts from new development and environmental review will be prepared on any new project proposed. Therefore, the fee adjustments do not have the potential for resulting in either a direct physical change to the environment or a reasonably foreseeable indirect physical change in the environment. No further action is required under CEQA for City Council action.

ALTERNATIVES:

The following alternatives are provided for City Council consideration:

1. Approve staff's recommendations;
2. Make changes to specific fee recommendations and then adopt the Resolution;
3. Do not approve staff's recommendations; or
4. Provide staff with other direction.

Prepared and Approved by:



Steven Adams, City Manager

RESOLUTION NO. _____

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF KING
APPROVING REDUCTIONS TO DEVELOPMENT IMPACT FEES**

WHEREAS, the City of King established its current schedule of Development Impact Fees in 2010 based upon a comprehensive Master Facilities Plan prepared by a duly qualified engineer pursuant to State law; and

WHEREAS, the fees are established to fund improvements identified to mitigate impacts attributable to new development, including law enforcement facilities, vehicles and equipment; fire suppression facilities, vehicles and equipment; circulation system (bridges, signals and thoroughfares); storm drainage collection facilities; general facilities, vehicles and equipment; wastewater collection system facilities; wastewater treatment facilities; public use facilities; aquatics center facilities; and park land acquisition and park facilities; and

WHEREAS, the fees were established by an engineering analysis that identified costs of projects and future development potential; and

WHEREAS, on November 22, 2016, the City Council adopted a Resolution establishing an automatic annual adjustment by the Construction Cost Index for California to those fees determined to fund high priority projects, which included Bridges, Signals and Thoroughfares; Wastewater Collection System; Wastewater Treatment Plant; Law Enforcement Facilities, Vehicles and Equipment; and Fire Suppression Facilities, Vehicles and Equipment; and

WHEREAS, the Resolution adopted by the City Council on November 22, 2016 also approved a decrease by 50% for a three-year period to those fees funding projects that have not been identified as a top priority or immediate need, which include Storm Drainage Facilities; General Government Facilities, Vehicles and Equipment; Public Meeting Facilities; Aquatic Center Facilities; and Park and Open Space Acquisition; and

WHEREAS, when combined in their entirety, the overall development impact fee amounts have served as an impediment to development needed in the community to address housing and commercial needs, economic growth, and job creation; and

WHEREAS, to better address the overall needs and quality of life in the community, the City Council desires to now also decrease by 50% the Bridges, Signals and Thoroughfares; Law Enforcement Facilities, Vehicles and Equipment; and Fire Suppression Facilities, Vehicles and Equipment development impact fees; and

WHEREAS, such projects with insufficient funding will either be deferred and/or supplemented with other City funding sources that may increase with future development, including, but not limited to: grants, sales tax, property tax, and cannabis taxes.

NOW, THEREFORE, BE IT HEREBY RESOLVED that the City Council of the City of King hereby approves a decrease of 50% to the Bridges, Signals and Thoroughfares; Law Enforcement Facilities, Vehicles and Equipment; and Fire Suppression Facilities, Vehicles and Equipment development impact fees effective April 1, 2018 through March 31, 2021. Said rates shall thereafter automatically return to their former amounts and increase by the California Construction Cost Index (CCCI) on an annual basis effective every January 1st; and

BE IT FURTHER RESOLVED that the City Council of the City of King hereby extends the 50% reduction approved by the City Council on November 22, 2016 to the Storm Drainage Facilities, General Government Facilities, Vehicles and Equipment, Public Meeting Facilities, Aquatic Center Facilities, and Park and Open Space Acquisition development impact fees

through March 31, 2021. Said rates shall thereafter automatically return to their former amounts and increase by the California Construction Cost Index (CCCI) on an annual basis effective every January 1st.

BE IT FURTHER RESOLVED that the City Council of the City of King hereby approves the Master Fee Schedule set forth in Exhibit A and defers any annual California Construction Cost Index (CCCI) increases to development impact fees through March 31, 2021. All development impact fees shall remain in effect in the amounts set forth in the Master Fee Schedule until April 1, 2021.

This resolution was passed and adopted this **27th** day of **March** by the following vote:

AYES, Council Members:

NAYS, Council Members:

ABSENT, Council Members:

ABSTAIN, Council Members:

APPROVED:

Mike LeBarre, Mayor

ATTEST:

Steven Adams, City Clerk

APPROVED AS TO FORM:

Shannon Chaffin, City Attorney

KING CITY MASTER FEE SCHEDULE
 Effective 4/1/2018

Fee	Per Unit	Fee	Minimum
Franchise Fees			
PG&E Electric Franchise Fee		2.00%	
CATV Franchise Fee		5.00%	
Refuse Franchise Fee		18.00%	
Cal Water Franchise Fee		2.00%	
City Hall Front Counter Fees			
Bicycle License		\$10.00	
Garage Sale Permit		\$15.00	
Returned Check Charge		\$40.00	
Rebilling Fee		\$5.00	
Copies - Black and White		\$.25 per page	
Copies - Color		\$1.50 per page	
San Antonio Park Vendor Fee	Annual	\$450.00	
Fireworks Sales Application	Annual	\$35.00	
Fireworks Stand Permit	Per stand per year	\$375.00	
Fireworks Stand Inspection outside normal business hours	As required	\$150.00	
Fireworks Sales Stand Deposit	Annual	\$1,000.00	
Public Works Permit Fees			
Staff Time		Actual Cost Plus 5% Administrative Fee	
Encroachment Permit - General		\$375.00	
Encroachment Permit - Electric and Gas Utilities	Annual/Service Improvements	\$5,000.00	
Encroachment Permit - Water Utilities	Annual/Service Improvements	\$7,500.00	
Encroachment Permit - Utilities	Major Trunkline Replacements	Actual Cost	
Administration Services		Actual Cost	
Curb/Sidewalk/Driveway Review		Actual Cost	\$300.00
Encroachment Permit - Sidewalk Repairs Due to Tree Damage		No Charge	

KING CITY MASTER FEE SCHEDULE

Effective 4/1/2018

Fee	Per Unit	Fee	Minimum
Police Department Fees			
Police Special Services			
False Alarm Fee			
	Third false alarm in 12 months	Actual Cost \$200.00	
	Fourth false alarm in 12 months	\$300.00	
	Fifth false alarm in 12 months	\$400.00	
	Additional false alarms in 12 months	\$500.00	
Finger Printing		\$20.00	
Tow Provider Application		\$75.00	
Vehicle Releases		\$150.00	
Immigration Letters		\$20.00	
Citation Sign Offs		\$15.00	
Room Rental		\$25.00	
Special Event Permits	First hour	\$15.00	
DUI Response Charges	Each additional hour	\$27.00	Plus actual cost
Police Reports	Event	\$256.00	
	First three pages	\$15.00	
	Each additional page	\$2.50	
	Maximum charge per report	\$30.00	
	Initial	\$125.00	
	Renewal	\$25.00	
Concealed Weapon Permit			
	1 month to 1 year	\$10.00	
	13 months to 2 years	\$15.00	
	25 months to 3 years	\$30.00	
	Seniors over 60 up to 3 years	\$9.00	
	1 month to 1 year	\$40.00	
	13 months to 2 years	\$50.00	
	25 months to 3 years	\$60.00	
Animal Control Fees			
Licensing Fees (Spayed/Neutered)			
	1 month to 1 year	\$10.00	
	13 months to 2 years	\$15.00	
	25 months to 3 years	\$30.00	
	Seniors over 60 up to 3 years	\$9.00	
	1 month to 1 year	\$40.00	
	13 months to 2 years	\$50.00	
	25 months to 3 years	\$60.00	
Licensing Fees (Not Spayed/Neutered)			

KING CITY MASTER FEE SCHEDULE
Effective 4/1/2018

Fee	Per Unit	Fee	Minimum
Animal Control Fees (Continued)			
Impound Fees (Spayed/Neutered)	First time	\$25.00	
	Second time	\$40.00	
	Third time	\$55.00	
Impound Fees (Not Spayed/Neutered)	First time	\$35.00	
	Second time	\$50.00	
	Third time	\$80.00	
Reclaiming of Impound		\$10.00	
Care and Feeding of Animals (Excludes medical care)		\$10.00	
Dog	Per day	\$20.00	
Cat	Per day	\$63.00	
Late fee for renewal license	25 lbs. or less	\$71.00	
Euthanasia & Disposing of Animal	26-50 lbs.	\$79.00	
	51 - 75 lbs.	\$86.00	
	76 - 100 lbs.	\$94.00	
	101 lbs. or more		
Adoption Charges (Does Not Include Spay/Neuter Surgery)			
Dog		\$10.00	
Cat		\$10.00	
Medical Care			
Surrender Fee		Actual Cost	\$50.00

KING CITY MASTER FEE SCHEDULE
Effective 4/1/2018

	Fee	Per Unit	Fee	Minimum
Community Development Department Fees				
Staff Time				
Annexation			Actual Cost Plus 5% Administrative Fee	\$3,000.00
Appeals			Actual Cost	
City Council			Actual Cost	\$250.00
Planning Commission			Actual Cost	\$250.00
Architectural Review				
New			Actual Cost	\$600.00
Amendment			Actual Cost	\$400.00
Cannabis Cultivation/Nursery/Manufacturing/Testing License				
Application			\$11,000.00	
License		Annual	\$7,500.00	
Certificate of Compliance			Actual Cost	\$300.00
Conditional Use Permit				
Remodel/Change of Use			Actual Cost	\$1,000.00
New Construction			Actual Cost	\$3,000.00
Amendment			Actual Cost	\$650.00
Special Event Use Permit			Actual Cost	\$300.00
Temporary Use Permit			Actual Cost	\$300.00
Mural Permit			Actual Cost	\$300.00
Condominium Conversion			Actual Cost	\$300.00
Development Agreement			Actual Cost	\$650.00
New				
Amendment			Actual Cost	\$5,000.00
Environmental Review			Actual Cost	\$3,000.00
Categorical Exemption			Actual Cost	\$100.00
Environmental Impact Report Admin			Actual Cost	\$500.00
Environmental Impact Report		Residential - Per Lot	Actual Cost	\$2,000.00
		Other - Per Lot	Actual Cost	\$250.00

KING CITY MASTER FEE SCHEDULE
Effective 4/1/2018

Fee	Per Unit	Fee	Minimum
Community Development Department Fees (continued)			
Environmental Impact Report Review			
Negative Declaration Fee		Actual Cost	\$600.00
Mitigated Negative Declaration Fee		Actual Cost	\$800.00
Negative Declaration Fish & Game		Actual Cost	\$100.00
Filing Fee with County Clerk		Actual Cost	
General Plan Amendment		Actual Cost	\$2,000.00
General Plan Consistency Review		Actual Cost	\$300.00
Home Occupation Permit		\$150.00	
Interpretation from City Council of Planning Commission		Actual Cost	\$300.00
Landscaping Plan Review		Actual Cost	\$300.00
Lot Line Adjustment		Actual Cost	\$500.00
Medical Cannabis Cultivation, Nursery, Manufact., Testing License			
Application Fee		\$11,000.00	
License	Annual	\$7,500.00	
Miscellaneous Items			
Fence/Wall Review		Actual Cost	\$100.00
Radius Map and Mailing (Noticing)		Actual Cost	\$250.00
Records Research Fee		Actual Cost	\$100.00
Plot Plan Review			
Major Plot Plan Review		Actual Cost	\$600.00
Minor Plot Plan Review		Actual Cost	\$300.00
Pre Application Review		Actual Cost	\$300.00
Specific Plan and Planned Development			
New		Actual Cost	\$3,500.00
Amendment		Actual Cost	\$1,000.00
Planned Development		Actual Cost	\$1,000.00

KING CITY MASTER FEE SCHEDULE
Effective 4/1/2018

Fee	Per Unit	Fee	Minimum
Community Development Department Fees (continued)			
Sign Permit			
Individual Permanent Sign		Actual Cost	\$300.00
Master Sign Program		Actual Cost	\$462.00
Temporary Sign Permit		Actual Cost	\$100.00
Penalty for No Sign Permit		Actual Cost	\$300.00
Sphere of Influence Amendment		Actual Cost	\$3,200.00
Subdivision		Actual Cost	\$5,000.00
Tentative Tract Map and Parcel Maps			
Vesting		Actual Cost	\$2,000.00
Non-Vesting		Actual Cost	Plus \$30.00 per lot
Time Extensions		Actual Cost	\$2,000.00
Variance		Actual Cost	Plus \$50.00 per lot
Zoning Change Text & Map		Actual Cost	\$300.00
New		Actual Cost	\$750.00
Pre-Zoning Request		Actual Cost	\$2,000.00
		Actual Cost	\$600.00
Building Department Fees			
Staff Time			
Minimum Permit Fee	Per Permit	Actual Cost Plus 5% Administrative Fee	\$100.00
Certificate of Occupancy			\$180.00
Building Permit Fees	2015 International Code Council		110.00%
Plan Check Fees	2015 International Code Council		110.00%
Permit Issuance Fee	Per Permit		\$100.00
Building Permit Training Surcharge	Per Permit		\$15.00
Minor Building, Electrical and Plumbing Permit	Per Permit		\$60.00

KING CITY MASTER FEE SCHEDULE

Effective 4/1/2018

Fee	Per Unit	Fee	Minimum
Building Department Fees (continued)			
Re-Roof Fee			
Buildup, Shingle or Wood Shake		\$170.00	
Concrete Tile, Clay Tile or Metal		\$285.00	
Fence or Wall Over 6 Feet High	Linear foot	\$5.00	
Property Inquiry Fee	Per Inquiry	\$65.00	
Annual Fire Inspection	Per Inspection and One Re-Inspection	\$200.00	
Fire Re-Inspection	Per Inspection After First Two	\$125.00	
Demolition Permit		Actual Cost	\$150.00
Building Moving Fee		Actual Cost	\$350.00
Street Address Change		\$50.00	
Waste Reduction and Recycling Plan Fee	Per Building	\$125.00	
	Per Subdivision	\$300.00	
Recreation Department Fees			
Adult Sports			
Men's Basketball	Season per team	\$420.00	
CoEd Volleyball	Season per team	\$200.00	
	Individual per season	\$18.00	
CoEd Softball	Season per team	\$295.00	
	Individual per season	\$18.00	
Adult Recreation League	Month	\$20.00	
After School Sports Club	Year	\$10.00	
	Drop-in	\$1.00	
	Late Fee - Percentage of Registration	20.00%	
Aquatic Center			
Open Rec Swim			
6 years and under	Day	\$2.50	
6 years and older	Day	\$3.00	
Pass	10 visits	\$25.00	

KING CITY MASTER FEE SCHEDULE
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Fee	Per Unit	Fee	Minimum
Recreation Department Fees (continued)			
Lap Swim (16 years and older)			
Daily	Daily	\$3.00	
Pass	10 visits	\$25.00	
Summer Swim Pass			
Individual	Season	\$75.00	
Family (immediate family up to 4)	Season	\$250.00	
Each individual family member over 4		\$25.00	
Swim Lessons			
Private	45 minutes	\$30.00	
Semi-private	45 minutes	\$20.00	
Group	45 minutes	\$50.00	
Late Fee - Swim Lesson Registration	Percent of registration fee	20.00%	
Summer Day Camp (6-13 year olds)	Day	\$10.00	
	Week	\$50.00	
Basketball - Girls and Boys	Child per season	\$60.00	
	2 children per season	\$100.00	
	3 children per season	\$130.00	
Facility/Amenity Rentals			
Recreation Center	Hour Non-Profit	\$15.00	
	Hour Private	\$55.00	
Security Deposit	Event - Before 5:00 p.m. and no alcohol	\$50.00	
	Event - After 5:00 p.m. and/or alcohol	\$200.00	
Set Up Fee	Day	\$75.00	
Security Fee Per Guard	Hour	\$25.00	
Joint Facility Agreement With Other Public Agencies	Day	\$0	
Concession Stands - Centennial/Arena/SAP	Day Private	\$102.00	
Equipment			
Dunk Tank	Day Non-Profit	\$50.00	
	Day Private	\$60.00	

KING CITY MASTER FEE SCHEDULE
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Fee	Per Unit	Fee	Minimum
Recreation Department Fees (continued)			
Aquatic Complex			
Wade Pool	Hour Non-Profit	\$40.00	
	Hour Private	\$52.00	
Dive Pool	Hour Non-Profit	\$80.00	
	Hour Private	\$100.00	
Lap Pool	Hour Non-Profit	\$80.00	
	Hour Private	\$100.00	
Slide Pool	Hour Non-Profit	\$100.00	
	Hour Private	\$120.00	
Additional Supervision	Hour	Actual Cost	
Field Reservations			
Ballfields w/o Lights - Games/Tournaments	Hour Non-Profit	\$20.00	
	Hour Private	\$25.00	
Ballfields w/Lights - Games/Tournaments	Hour Non-Profit	\$28.00	
	Hour Private	\$30.00	
Ballfields w/o Lights - Practice	Hour Non-Profit	\$3.50	
	Hour Private	\$6.00	
Ballfields w/Lights - Practice	Hour Non-Profit	\$12.00	
	Hour Private	\$20.00	
Soccer-Multi-Sports Fields w/o Lights	Hour Non-Profit	\$20.00	
	Hour Private	\$25.00	
Soccer-Multi-Sports Fields w/Lights	Hour Non-Profit	\$25.00	
	Hour Private	\$30.00	
Use of City Park for Major Events	Day	\$160.00	

KING CITY MASTER FEE SCHEDULE
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	Fee	Per Unit	Fee	Minimum
Recreation Department Fees (continued)				
Shelter/Picnic Reservations				
Picnic Shelters		Day Non-Profit	\$40.00	
		Day Private	\$80.00	
Electricity		Event Non-Profit	\$7.00	
		Event Private	\$12.00	
Park Open Spaces		Day Non-Profit	\$12.00	
		Day Private	\$125.00	
Volleyball Court		Day Non-Profit	\$6.00	
		Day Private	\$30.00	
Raquetball (Access up to four)		Year	\$110.00	
		Quarter	\$30.00	
		Month	\$10.00	
		Day	\$2.00	
Soccer		Child per season	\$60.00	
		2 children per season	\$100.00	
		3 children per season	\$130.00	
Softball - Girls		Child per season	\$60.00	
		2 children per season	\$100.00	
		3 children per season	\$130.00	
Miscellaneous Fees				
Personnel		Hour		Actual Cost Plus 5% Administrative Fee

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Fee	Per Unit	Fee	Minimum
Airport Fees			
T-Hanger	Monthly	\$130.00	
Tie Down	Monthly	\$42.00	
Office Space	Monthly	\$54.00	
Commercial Operators	Monthly	\$54.00	
	Each additional aircraft	\$42.00	
Crop Dusting	Monthly	\$68.00	
	Daily	\$12.00	
Crop Dusting Storage Area	Monthly	\$54.00	
Airplane/Helicopter Transit Fee	Daily	\$8.00	
Vehicle Transit Fee	Monthly	\$22.00	
Major Temporary Staging Operation	Daily	\$200.00	

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	Fee	Per Unit	Fee	Minimum
Impact Fees for Projects Vested as of August 21, 2010				
Law Enforcement Facilities				
Single Family Dwelling		Unit	\$881.22	
Multiple Family Dwelling		Unit	\$249.16	
Mobile Home Dwelling		Unit	\$251.45	
Commercial Lodging Unit		Unit	\$2,130.47	
Commercial		Square foot	\$0.40	
Industrial		Square foot	\$0.01	
Fire Protection Facilities				
Single Family Dwelling		Unit	\$865.22	
Multiple Family Dwelling		Unit	\$692.64	
Mobile Home Dwelling		Unit	\$692.64	
Commercial Lodging Unit		Unit	\$376.03	
Commercial		Square foot	\$0.57	
Industrial		Square foot	\$0.16	
Bridges Signals and Thoroughfares				
Single Family Dwelling		Unit	\$2,181.91	
Multiple Family Dwelling		Unit	\$1,385.26	
Mobile Home Dwelling		Unit	\$1,098.38	
Commercial Lodging Unit		Unit	\$1,160.10	
Commercial		Square foot	\$5.30	
Industrial		Square foot	\$0.87	

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Fee	Per Unit	Fee	Minimum
Impact Fees for Projects Vested as of August 21, 2010 (continued)			
Storm Drainage Facilities			
Single Family Dwelling	Unit	\$521.29	
Multiple Family Dwelling	Unit	\$246.92	
Mobile Home Dwelling	Unit	\$289.22	
Commercial Lodging Unit	Unit	\$181.77	
Commercial	Square foot	\$0.30	
Industrial	Square foot	\$0.25	
General Government Facilities			
Single Family Dwelling	Unit	\$757.79	
Multiple Family Dwelling	Unit	\$757.79	
Mobile Home Dwelling	Unit	\$757.79	
Commercial Lodging Unit	Unit	\$757.79	
Commercial	Square foot	\$0.32	
Industrial	Square foot	\$0.32	
Library Expansion Facilities			
Single Family Dwelling	Unit	\$500.61	
Multiple Family Dwelling	Unit	\$533.76	
Mobile Home Dwelling	Unit	\$494.90	
Commercial Lodging Unit	Unit	-	
Commercial	Square foot	-	
Industrial	Square foot	-	

KING CITY MASTER FEE SCHEDULE
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	Fee	Per Unit	Fee	Minimum
Impact Fees for Projects Vested as of August 21, 2010 (continued)				
Public Meeting Facilities				
Single Family Dwelling		Unit	\$705.21	
Multiple Family Dwelling		Unit	\$754.35	
Mobile Home Dwelling		Unit	\$697.21	
Commercial Lodging Unit		Unit	-	
Commercial		Square foot	-	
Industrial		Square foot	-	
Aquatic Center Facilities				
Single Family Dwelling		Unit	\$697.21	
Multiple Family Dwelling		Unit	\$746.35	
Mobile Home Dwelling		Unit	\$690.35	
Commercial Lodging Unit		Unit	-	
Commercial		Square foot	-	
Industrial		Square foot	-	
Park and Open Space Acquisition				
Single Family Dwelling		Unit	\$3,675.75	
Multiple Family Dwelling		Unit	\$3,932.91	
Mobile Home Dwelling		Unit	\$3,639.17	
Commercial Lodging Unit		Unit	-	
Commercial		Square foot	-	
Industrial		Square foot	-	

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	Fee	Per Unit	Fee	Minimum
Impact Fees for Projects Vested as of August 21, 2010 (continued)				
Total Impact Fees				
Single Family Dwelling		Unit	\$11,152.92	
Multiple Family Dwelling		Unit	\$9,615.32	
Mobile Home Dwelling		Unit	\$8,903.88	
Commercial Lodging Unit		Unit	\$4,762.77	
Commercial		Square foot	\$7.13	
Industrial		Square foot	\$1.66	
Impact Fees for Projects Vested after August 21, 2010				
Law Enforcement Facilities				
Single Family Dwelling		Unit	\$847.64	
Multiple Family Dwelling		Unit	\$134.88	
Mobile Home Dwelling		Unit	\$85.08	
Commercial Lodging Unit		Unit	\$193.50	
Commercial		Square foot	\$0.373	
Industrial		Square foot	\$0.003	
Storage Units		Square foot	\$0.206	
Fire Protection Facilities				
Single Family Dwelling		Unit	\$693.57	
Multiple Family Dwelling		Unit	\$533.80	
Mobile Home Dwelling		Unit	\$351.72	
Commercial Lodging Unit		Unit	\$0.216	
Commercial		Square foot	\$0.160	
Industrial		Square foot	\$0.010	
Storage Units		Square foot	\$0.010	

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Fee	Per Unit	Fee	Minimum
Impact Fees for Projects Vested after August 21, 2010 (continued)			
Bridges Signals and Thoroughfares			
Single Family Dwelling	Unit	\$3,829.42	
Multiple Family Dwelling	Unit	\$2,556.40	
Mobile Home Dwelling	Unit	\$2,003.42	
Commercial Lodging Unit	Unit	\$2,014.31	
Commercial	Square foot	\$4.635	
Industrial	Square foot	\$2.502	
Storage Units	Square foot	\$1.096	
Storm Drainage Facilities			
Single Family Dwelling	Unit	\$1,321.50	
Multiple Family Dwelling	Unit	\$475.00	
Mobile Home Dwelling	Unit	\$526.00	
Commercial Lodging Unit	Unit	\$240.50	
Commercial	Square foot	\$0.452	
Industrial	Square foot	\$0.365	
Storage Units	Square foot	\$0.246	
General Government Facilities			
Single Family Dwelling	Unit	\$582.50	
Multiple Family Dwelling	Unit	\$582.50	
Mobile Home Dwelling	Unit	\$582.50	
Commercial Lodging Unit	Unit	\$161.50	
Commercial	Square foot	\$0.204	
Industrial	Square foot	\$0.204	
Storage Units	Square foot	\$0.204	

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Fee	Per Unit	Fee	Minimum
Impact Fees for Projects Vested after August 21, 2010 (continued)			
Wastewater Collection System			
Single Family Dwelling	Unit	\$2,463.03	
Multiple Family Dwelling	Unit	\$1,458.73	
Mobile Home Dwelling	Unit	\$1,458.73	
Commercial Lodging Unit	Unit	\$552.99	
Commercial	Square foot	\$0.668	
Industrial	Square foot	\$1.002	
Storage Units	Square foot	\$0.362	
Wastewater Treatment Plant			
Single Family Dwelling	Unit	\$4,523.50	
Multiple Family Dwelling	Unit	\$2,679.86	
Mobile Home Dwelling	Unit	\$2,679.86	
Commercial Lodging Unit	Unit	\$1,014.68	
Commercial	Square foot	\$1.227	
Industrial	Square foot	\$1.841	
Storage Units	Square foot	\$0.666	
Public Meeting Facilities			
Single Family Dwelling	Unit	\$946.500	
Multiple Family Dwelling	Unit	\$1,027.000	
Mobile Home Dwelling	Unit	\$980.500	
Commercial Lodging Unit	Unit	-	
Commercial	Square foot	-	
Industrial	Square foot	-	
Storage Units	Square foot	-	

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Fee	Per Unit	Fee	Minimum
Impact Fees for Projects Vested after August 21, 2010 (continued)			
Aquatic Center Facilities			
Single Family Dwelling	Unit	\$343.00	
Multiple Family Dwelling	Unit	\$371.00	
Mobile Home Dwelling	Unit	\$355.00	
Commercial Lodging Unit	Unit	-	
Commercial	Square foot	-	
Industrial	Square foot	-	
Storage Units	Square foot	-	
Park and Open Space Acquisition			
Single Family Dwelling	Unit	\$3,323.50	
Multiple Family Dwelling	Unit	\$3,602.50	
Mobile Home Dwelling	Unit	\$3,442.00	
Commercial Lodging Unit	Unit	-	
Commercial	Square foot	-	
Industrial	Square foot	-	
Storage Units	Square foot	-	
Total Impact Fees			
Single Family Dwelling	Unit	\$18,874.16	
Multiple Family Dwelling	Unit	\$13,421.67	
Mobile Home Dwelling	Unit	\$12,464.81	
Commercial Lodging Unit	Unit	\$4,177.69	
Commercial	Square foot	\$7.72	
Industrial	Square foot	\$5.93	
Storage Units	Square foot	\$2.79	



Item No. 11(C)

REPORT TO THE CITY COUNCIL

DATE: MARCH 27, 2018

TO: CITY COUNCIL

FROM: STEVEN ADAMS, CITY MANAGER

**RE: CONSIDERATION OF AMENDING THE MUNICIPAL CODE TO
AUTHORIZE LICENSES FOR NON-STOREFRONT CANNABIS
RETAIL SALES**

RECOMMENDATION:

It is recommended the City Council provide staff direction regarding whether to prepare an amendment to the current commercial cannabis ordinance authorizing licenses for non-storefront cannabis retail sales.

BACKGROUND:

At the February 27, 2018 meeting, Mayor LeBarre requested and the Council concurred to place this item on a future agenda for discussion, which was done at the March 13, 2018 meeting. At that meeting, Mayor LeBarre proposed the City Council consider directing staff to prepare an ordinance that would allow businesses manufacturing cannabis products in King City to receive orders and payments, typically online, and deliver products directly to a customer's residence. A number of issues were discussed and staff was directed to return with additional information. Three primary issues were identified that were decided required additional information and/or clarification.

DISCUSSION:

Type of License Required

There has been some confusion regarding the type of license that would be necessary in order to approve this type of activity and whether it could already be allowed under the City's current regulations. Originally, a Type 9 License was defined as involving non-storefront retail sales. However, State legislation eliminated Type 9 licenses and incorporated them into a Type 10 license,

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although it is confusing since the State still references Type 9 licenses within some documents.

Currently the King City Municipal Code does not prohibit the creation of an electronic processing center for the purchase of cannabis or cannabis products. However, the retail sale or making available of cannabis and cannabis products are expressly prohibited within the City. Section 17.03.040 states:

(b) Cannabis dispensaries, cooperatives and/or collectives shall be prohibited in all zoning districts within the City. Further, no retail deliveries or dispensing of any cannabis or cannabis product shall be allowed within the jurisdictional boundaries of the City. The establishment, development, construction, maintenance, or operation of a cannabis dispensary, cooperative and/or collective are hereby prohibited, and is not an authorized or conditionally permitted use in any zoning district, even if located within an otherwise permitted use. No person shall establish, develop, construct, maintain, or operate a cannabis dispensary, cooperative and/or collective, and no application for a building permit, use permit, variance, or any other entitlement authorizing the establishment, development, construction, maintenance, or operation of any cannabis dispensary, cooperative and/or collective shall be approved by any officer or employee of the City.

(c) The retail sale, gift, trade, barter or making available of cannabis or cannabis products by two or more persons shall be prohibited in all zoning districts of the City.

(f)(8) a Type 12 licensee/permit holder shall not receive a commercial cannabis permit authorizing the establishment, development, construction, maintenance, or operation of a cannabis dispensary, cooperative and/or collective within the City.

A Type 10 retailer can be either a dispensary and/or a delivery service. A retailer shall have licensed premises upon which commercial cannabis activities are conducted. Previously, the retail sales designation could be either Type 10 retail sales from a physical location or Type 9 retail non-storefront. A storefront dispensary may be closed to the public and includes both direct customer sales and deliveries. A non-storefront dispensary must be located in a brick and mortar licensed building, which is not open to the public. The non-storefront dispensary conducts their sales exclusively by delivery.

It is staff's understanding that it is not Council's intent to allow new standalone businesses exclusively for the purpose of selling cannabis products online, but instead to enable existing cultivation and manufacturing businesses to sell their products directly to the consumer on a non-storefront basis in addition to their

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wholesale business. Therefore, the analysis of the City Attorney's Office has concluded that a Type 12 microbusiness license would be more appropriate to accomplish this goal.

A Microbusiness license allows commercial cannabis business owners to structure their business to vertically integrate. In order to hold a Type 12 Microbusiness license a licensee must engage in at least three of the four following commercial cannabis activities: (1) **Cultivation** (Limited to 10,000 sq. ft. of cannabis canopy), (2) **Manufacturing** (Limited to Type 6, non-volatile, "Manufacturer" means the production, preparation, propagation, or compounding of cannabis or cannabis products either directly or indirectly or by extraction methods, or independently by means of chemical synthesis, or by a combination of extraction and chemical synthesis at a fixed location that packages or repackages cannabis or cannabis products or labels or relabels its container), (3) **Distribution** (Type 11 Distribution, "Distribution" means the procurement, sale, and transport of cannabis and cannabis products between licensees), and (4) **Retail Sales** (Type 10 Dispensary and/or Delivery Service, "Dispensary" means a facility where cannabis, cannabis products, or devices for the use of cannabis or cannabis products are offered, either individually or in any combination, for retail sale, including an establishment (whether fixed or mobile) that delivers, pursuant to express authorization, cannabis and cannabis products as part of a retail sale. "Dispensing" means making cannabis or cannabis products available to, delivering to, or distributing to two or more persons and/or any activity involving the wholesale of cannabis or cannabis products. "Delivery" means the commercial transfer of cannabis or cannabis products to a customer, including the use by a retailer of any technology platform owned and controlled by the retailer.).

Deliveries in King City

Deliveries are currently prohibited in King City. There was discussion at the last meeting whether the proposal for non-storefront retail sales would impact this regulation and whether sales would have to be allowed within the City limits. It is staff's understanding that it is not being proposed to make any changes to delivery restrictions within King City. As a result, deliveries and retail sales would only be allowed outside King City. While everyone recognizes the difficulty in enforcing this provision, staff has determined that the proposed activity could be allowed without any impact on the City's current prohibition of deliveries.

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Sales Tax

One of the key goals of the proposal was to generate sales tax revenues, but there were some issues involved with how sales tax is applied. Staff has contacted HdL Companies, the City's sales tax consultant to confirm what sales taxes the City could expect to receive.

First, it was confirmed that the City would receive the full one cent statewide sales tax amount for each one dollar of sales. To assured this is the case, the orders would have to be both received and filled in King City. If only one of these activities occurred within the City, the sales tax may be placed in the County pool, whereby the City only receives a small portion. The one-half cent local sales tax would not be charged for these purchases.

Second, it was confirmed that sales tax is not charged on sales of cannabis products if the purchaser provides evidence of a valid State issued medical cannabis purchase card. However, there is a process and charge involved to obtain this card. Therefore, the general consensus provided by the City's consultant is that few people are expected to obtain these cards and this will not significantly impact sales tax revenue amount.

Next Steps

No formal decision by Council is requested at this time. The item for consideration is whether to direct staff to prepare an ordinance for consideration. The advantages of structuring Type 12 licenses to allow this activity is that it could generate additional revenue for the City, increase business for local manufacturers, and avoid most of the negative issues associated with storefront cannabis retail businesses. The primary disadvantages are that the dispensing of cannabis products may raise community concerns and it would require staff to develop and implement additional regulations and processes at this time.

COST ANALYSIS:

Since meaningful sales tax revenues would likely not be received until next fiscal year at the earliest, the impact to the current fiscal year budget would be an increased cost to prepare and implement the ordinance and regulations. The cost of implementing the process could be recovered through appropriate application and license fees. However, the legal costs of drafting the ordinance and regulations will likely require an additional appropriation, which could negatively impact the City's year-end balance given other expenses that have been experienced this year.

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One of those major expense categories has been prior work required of the City Attorney's Office to prepare revisions to the City's cannabis regulations. For these reasons, if the City Council decides to proceed, staff recommends no action be taken until an ordinance change request is formally submitted by an applicant or group of applicants. By doing that, under the City's fee structure, staff time involved in preparing Code changes required to issue a permit are charged to the applicant for that permit.

ENVIRONMENTAL REVIEW:

Environmental review and analysis would be prepared as part of the item that would be developed for City Council consideration. No environmental review is required at this time since no action is being made.

ALTERNATIVES:

The following alternatives are presented for Council consideration:

1. Direct staff to proceed in preparing an ordinance for consideration;
2. Direct staff to proceed once an application has been submitted;
3. Direct staff not to proceed;
4. Direct staff to prepare an analysis and provide more information only at this time; or
5. Provide staff other direction.

Prepared and Approved by:



Steven Adams, City Manager