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A – Inventory of Existing Conditions



Introduction.

The Ketchikan International Airport (KTN or Airport) is in southeastern Alaska on Gravina Island, approximately one mile west of Ketchikan, Alaska. The Airport provides a safe operating environment for all classes of aircraft, including small general aviation aircraft, floatplanes, corporate business jets, and commercial service passenger aircraft and is an important asset for the region and the Ketchikan Borough. The Airport's relative location within the region is illustrated in **Figure A1** and **Figure A2**.

The Airport, including its aviation-related businesses and facilities, represents a significant regional economic asset. Additionally, the Airport also provides benefits for local businesses and industries, promotes tourism, and encourages further business development and expansion throughout the surrounding area.

The last significant planning process for Ketchikan International Airport was an Airport Master Plan completed in 2003. Although the 2003 *Airport Master Plan Update* covered many topics including: airport access, new airport facilities, an apron expansion and completion of the parallel taxiway, this Terminal Area Plan focuses specifically upon the expansion of the passenger terminal building for KTN.

Terminal Area Plan



FIGURE A1 **Airport Location Map**

Terminal Area Plan



FIGURE A2 **Airport Vicinity Map**

Terminal Area Plan : A—Inventory

The *Inventory* chapter presents the basic elements of the Airport’s terminal area. These elements include the physical layout of buildings, aprons, and other on-airport infrastructure. Subsequent chapters detail the Airport’s updated forecasts of aviation activity, the ability of terminal area and terminal building facilities to meet these needs and recommendations for future development.

Ketchikan International Airport Ownership and Operation

Ketchikan International Airport is owned by the State of Alaska Department of Transportation and Public Facilities (DOT&PF). In the State of Alaska, most airports are owned by the State. What is unique about KTN is that the Airport is operated by the Ketchikan Gateway Borough (KGB); not the state and is currently under a lease agreement that will expire in 2027. As part of the terms of the lease, the KGB is required to operate and maintain the Airport as well as perform any maintenance or repairs to the airport landing areas.

Commercial Air Service

Currently, the Airport serves as the primary commercial service airport for the region and is served by five airlines providing commercial air service to 13 destinations during the peak summer travel period. Those airlines and destinations are listed in **Table A1**.

TABLE A1: Commercial Air Service Destinations

	Alaska Airlines	Delta Air Lines/Delta Connection	Island Air Express	Misty Fjords Air
Service Locations	Anchorage, Juneau, Petersburg, Sitka and Wrangell, AK and Seattle, WA	Seattle, WA	Klawock, AK	Prince Rupert, Canada

Source: Ketchikan International Airport

Terminal Area Facilities Inventory

Facilities information was gathered from the 2003 *Airport Master Plan Update*, but information was also gathered through recent on-site observations, interviews and a review of historical airport records. Specific terminal area elements include the physical layout of buildings, runways, taxiways, aprons, and ground access facilities. This chapter also provides detailed discussions on the terminal building functionality and its support facilities, as well as a detailed inventory of access facilities and services. The terminal area inventory elements are also illustrated in **Figure A3**.

Aprons

An airport apron, commonly referred to informally as a ‘ramp’, is an area that facilitates the parking, loading or unloading, refueling, or boarding processes of aircraft. The apron acts primarily as a connection mechanism between the airfield and landside areas of the Airport. Multiple aprons may exist at an airport, with many differing depending upon their primary use or type of aircraft serviced. At KTN, the Commercial Service (CS) aircraft parking apron is adjacent to the passenger terminal building and the cargo hangar (Hangar 1). Although the CS apron has direct terminal access, passengers at some gates must walk along a roped path on the apron to board aircraft. This places pedestrian crossings directly in the path of cargo aircraft being loaded and unloaded during peak times of the day. The General Aviation (GA) Upper Ramp acts as the main aircraft parking apron for GA activity, and is located next to the CS apron. Parking for larger corporate jets or turboprops is common along the section adjacent to Taxiway A, while the apron’s access point near the Airport Service Road includes three large GA hangars. A Lower Ramp for GA services is connected to the Upper Ramp via Taxiway B. The Lower GA Ramp is used largely for parking and contains tie-downs for smaller aircraft. Each of the aprons run parallel to Runway 11/29 and Taxiway A. Direct runway access via Taxiway A can be achieved from the CS apron and Upper GA Ramp.

Passenger Terminal Building

The passenger terminal building at Ketchikan International Airport was opened in 1973 consists of just over 30,000 square feet of space on floors 1 and 2. The terminal is located at the approximate midpoint of Runway 11/29. The two main levels of the terminal contain the major terminal operations. The tower extends to an additional three stories. Arriving passengers enter and exit the terminal building on the ground level through either the north or south vestibules. Airline counters, rental car counters, restrooms and baggage claim are located on the ground level. The second level consists of TSA security screening, passenger departure lounges, boarding gates, the restaurant and bar, and a gift shop. The third, fourth, and fifth levels consist largely of airport authority offices, other administrative spaces and storage. A detailed evaluation of the passenger terminal building and support facility functionality is discussed later in this chapter.

Airport Ferry

Given that Gravina Island has no existing access road or bridge, the Airport currently operates a ferry system that transports passengers from the City of Ketchikan to Ketchikan International Airport, which

Terminal Area Plan : A—Inventory

are located on Revillagigedo and Gravina Island respectively. The Airport Ferry runs every 30 minutes and docks in Ferry Berth 1, the only existing berthing location. Two ferries are operated: M.V. Ken Eichner II and M.V. Oral Freeman. The Ketchikan Gateway Borough is planning the construction of a second ferry berth on both sides of the Tongass Narrows to safeguard against a ferry system failure at one berthing location and ensure airport access during such failure.

Automobile Parking

There is public parking for the terminal along the Airport Service Road. Public parking may also be found on the opposite side of the Tongass Narrows, west of downtown Ketchikan. Two rental car facilities are located west of the terminal building. Parking afforded to the rent-a-car (RAC) businesses consists of both a rental car storage lot and a rental car ready and return (R/R) lot. The entire automobile parking area was repaved and expanded in 2014. The parking area provides for 108 standard parking spaces, 8 handicap parking spaces, 9 rental car ready and return parking spaces as well as 36 rental car storage spaces. The parking areas are accessed exclusively via the Airport Ferry and via Airport Terminal Way, a two-way road that extends from the Airport Ferry to the terminal. This same access road is also the exit from the parking area. Airport Terminal Way eventually merges into the Airport Service Road which passes under the runway via a tunnel and then connects to the Gravina Island Highway.

Other Buildings

Additional buildings located within Ketchikan International Airport property include: Alaska Airlines maintenance facility, three large general aviation hangars (Hangars 2, 3 and 4), Alaska Airlines cargo hangar (Hangar 1), the Airport Rescue and Firefighting (ARFF) building, the Snow Removal Equipment (SRE) building, and the biomass boiler building. The Airport's one FBO service provider, Aero Services occupies office space located adjacent to Hangar 1 and the TSA occupies the office space on the second floor in Hangar 1 due to the lack of sufficient office space within the terminal building.

Ferry Storage Dock

Located southeast of the terminal building and east of the Airport Service Road is a storage dock for the Airport Ferry. The backup ferry, when not in use, is stored here. Also during the hours the Airport is closed, both the M.V. Ken Eichner II and M.V. Oral Freeman are stored here.

Transient Floatplane Dock and Floatplane Pullout

Located almost directly north of the terminal building is a Transient Floatplane Dock consisting of approximately 25,000 square feet. The dock is accessed via a pedestrian walkway.

Located west of the Floatplane Dock is a Floatplane Pullout Ramp used for moving floatplanes to and from the Narrows waterway. Many of the Ketchikan area floatplane pilots utilize aircraft maintenance services at the Airport. The floatplanes must be transported to and from the Airport via the ramp. Floatplanes that use the ramp are typically pulled out of the water and pass behind the commercial service aircraft to reach the aircraft maintenance hangars.

Terminal Area Plan

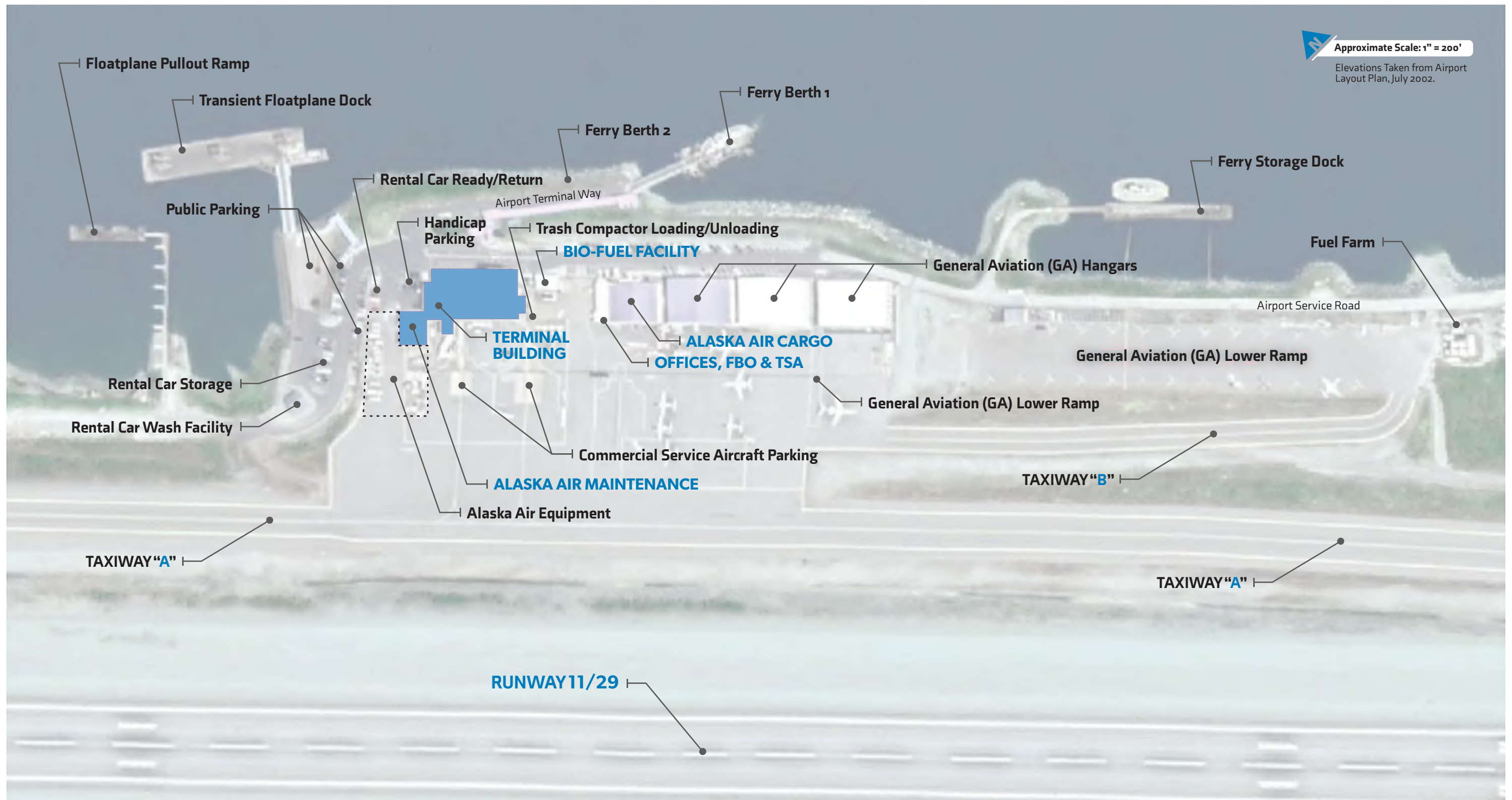


FIGURE A.3 Existing Terminal Area Facilities

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Existing Terminal Building – Functional Issues

In June of 2019 the consultant team met with airport staff, airlines, rental car companies and the Transportation Security Administration (TSA) to discuss the functioning of the terminal, the utilization of everyone's individual spaces in the terminal and what works and does not work. Observations were also made of the airline check-in processes, the security screening checkpoint and the holdroom/departure lounge during peak summertime flights.

The passenger terminal building at the Airport was originally constructed in 1973. The structure consists of two primary levels with additional levels in a tower structure on floors three through five. These tower floors consist of airport administration offices, FAA offices and the FAA Flight Services Station, which provides services to pilots and controls traffic in a manner similar to an Airport Traffic Control Tower. The first floor (ground floor) contains passenger check-in and baggage claim, airline operations and checked baggage make-up, rental car counters and a small waiting area for ground boarding. Checked baggage make-up is defined as airline areas and TSA area for loading and screening checked baggage. The second floor includes non-secure passenger waiting areas and concessions, the Security Screening Checkpoint (SSCP), holdrooms/departure lounges for two gates, concessions, and TSA offices. Vertical circulation between the first and second floors is provided via an elevator and a stairway. The gross square footage area of the terminal is approximately 30,600 square feet however, over 4,000 of that square footage is located in the tower floors 3 through 5. On the two levels accessible to the public, floors 1 and 2, there is approximately 26,600 square feet of space. The following sections summarize the results of the meetings and terminal observations with emphasis on the functional issues the terminal experiences during peak summer months.

Terminal Renovations/Construction

The Terminal at KTN opened in 1973. In 2003, the terminal underwent a major renovation. This included upgrading baggage claim by replacing the baggage carousel, the addition of two new ticket counters, moving the concessions to the second floor to expand the first floor holdroom, the reconfiguration of the terminal entries, renovation and expansion of the restrooms, adding an elevator, the addition of Rental Car counters and offices, and upgrading interior finishes. In 2009, interior modifications to the Fire Flight Service were undertaken on the fourth and fifth floor of the tower. In 2012, the TSA screening area was added to the second floor and in 2015, some minor interior upgrades that impacted the north airline ticketing counter area were completed. Finally, in 2019, the Airport completed a roof renovation and interior terminal building remodel.

Passenger Wayfinding and Signage

The terminal has a relatively simple, open plan and - in theory - wayfinding should be simple. However, as the airlines and rental car companies noted, passengers often have trouble locating the stairway to the SSCP. The first floor, when crowded, provides no recognizable circulation lane. Although there is a sign directing departing passengers to security via the stairway, the stairs are not a prominent feature

Terminal Area Plan : A—Inventory

that can be easily seen and recognized. The queue for the RAC counters, when a line is formed, blocks the visual access to the stairs from the southern ticketing counters.

For arriving passengers, there are signs near the SSCP exit to the stairs leading to baggage claim. But as on the first floor, there is no recognizable circulation path. This exit is also not a secure exiting path and a TSA agent must man the door. The wayfinding from the bottom of the stairway to baggage claim is very straight forward as the passengers can see baggage claim as they move down the stairs. Once passengers claim their checked bags, they then exit the terminal using the north or south vestibules which often has conflicting circulation with arriving passengers from the ferry or from the return lot for the rental cars and traffic from the floatplane dock.

Because departing passengers tend to enter the terminal through both vestibules at the north and south ends of the terminal, they may have trouble locating check-in counters as two airlines (Alaska Airlines and Island Air) are located near the south vestibule and Delta Airlines is located near the north vestibule. There is no signage on the exterior of the entrance that would indicate the best entrance for a particular airline.

In reviewing the signage, there is a non-uniformity to the size and color of signs. Some signs carry more visual weight than others and tend to overwhelm the eye making the less impactful signs less recognizable. The location of the vestibules and the airlines check-in counters are illustrated in Figure 4.

Passenger Check-In, Airline Operations and Baggage Handling

As mentioned previously, two check-in counters (ATO counters) are located in a single row near the south vestibule and two check-in counters (ATO counters) are located in a single row near the north vestibule. The passenger circulation and queuing area is inadequate and ticket counter queuing often fills the circulation space and even flows out the vestibule doors at times during peak summer activity.

Island Air and Alaska Airlines occupy the counters at the south end of the terminal. This works well as the two airlines often share connecting passengers. Furthermore, Island Air Express primarily uses Gate A1, the walkout gate, located on the first floor at the south end of the terminal adjacent to the Island Air ticket counters. However, this also means that a portion of Island Air's ticket counter queuing area also serves as a holdroom for passengers. The Airport has installed some seating in this area for Island Air passengers waiting to depart, but it is not adequate and congest the queuing area.

The number of self-service check-in units (kiosks) is limited at present. Delta has two kiosks and Alaska has six kiosks. Delta's are located to the west of their ticket counter with four Alaska's kiosks near the northern most check-in queue and two adjacent to the Alaska southernmost ATO counters. The trend in the industry is to have more self-service kiosks, even at smaller airports such as Ketchikan International Airport. The implementation of kiosks at a specific airport by each airline is highly variable depending on the needs and requirements of the specific carriers. Additional kiosks for Alaska or other airlines would be beneficial but would also require new power and communications access depending on the location

Terminal Area Plan : A—Inventory

of the kiosks. The locations of these kiosks need to have their own area that does not congest queuing and circulation.

The lobby for the ATO counters and kiosks is very shallow. It was observed that many passengers use carts to carry their luggage and fish boxes to the ticketing counter check in. This increases the space that passengers require in the queuing, thus lengthening the queue and creating greater density in the lobby. This density impedes passenger circulation through the lobby. This lobby density also results in frequent, unintended opening of the automatic doors in the vestibule. These doors often remain open which makes it difficult to maintain comfortable temperatures in the lobby, particularly during the winter and summer months. Temperature complaints are often received by the Airport from both tenants and passenger.

As noted, in order to meet TSA requirements for checked baggage screening, the Airport has allocated a significant portion of the first floor for this activity and has screened this area with temporary walls. The TSA currently operates one CT-80 machine but may add a second machine in the near future. The location of the screening area impedes on the baggage claim area and also restricts ticket counter expansion.

The terminal is configured with four individual operational/ATO area. At the time of the Study's inventory, the usage of the three modules was as follows:

- **ATO #1 – Island Air Express with two counter positions.**
- **ATO #2- Alaska Airlines with six counter positions.**
- **ATO #3 – Delta Airlines with two counter positions.**

ATO #1 has its own baggage belt that runs to the back of house. Island Air passenger baggage does not require screening. For ATO #2, the baggage belt runs south behind Alaska's counters and directly to the TSA screening area. At ATO #3 and #4, no baggage belts to TSA screening exists. This is a problem for ATO #3 as Delta Airlines must use a hand cart to transport checked baggage across the terminal to the TSA screening area. This does create a cross circulation issue as the Delta baggage cart competes with passenger circulation.

Each of the ATO modules has a different configuration of offices for ATO support, operations and break areas. The presence of personnel lockers and other types of storage in the baggage make-up area indicates that the operations area is undersized for current airline operations.

The area located outside of the ATO modules is used for GSE storage and occasionally overflow baggage make-up. Alaska Airlines also has a maintenance building located immediately northwest of the terminal. Lighting in this area was recently improved but has been an issue in the past.

Terminal Area Plan : A—Inventory

Passenger Security Screening

The security screening checkpoint (SSCP) is located on the second floor immediately south of the elevator and at the top of the stairwell. The SSCP is only one lane with precheck allowed with a hand card. The SSCP queueing area is inadequate and the queue often backs up in front of the elevator and down the stairs. There is a second-floor concession window for use by employees and non-secure passengers, this window also is blocked when the queue for security extends into this service area. The layout of the checkpoint and number of turns passengers must make, significantly reduces the efficiency and the processing rates of the SSCP. Passengers leaving flights must pass through the security queue if it is of any length. Expansion of the SSCP footprint is limited by the restrooms to the south, the hold room to the west and the exit corridor from the holdroom to the south. It was noted that passengers queueing at the SSCP would also benefit from tables to place carry-on baggage to allow for removing liquids and checking items prior to entering the SSCP.

Passenger Gates and Holdrooms

There are two primary gates on the second floor, Gates B1 and C1. Gate B1 is a walkout gate located at the southwest corner of the terminal adjacent to a stairwell. This means that Alaska Airlines and Delta Airlines passengers with carry-on luggage carry this luggage up a stairwell and again down a stairwell to board a flight. Gate C1 includes a walkway that is owned by the Airport and also includes the only passenger boarding bridge at KTN. The airlines would prefer at least two passenger additional boarding bridges at KTN and potentially three for times when flights are delayed or the Airport experiences irregular operations.

The departure lounges for the two second floor gates have large, comfortable beam seating units. However, the number of usable seats is limited during peak times. As a result, the holdroom areas can be crowded when multiple departures are operating, even though the total area should be adequate for these aircraft. The configurations of the holdroom is also constrained by the location of the gift shop to the south and the restaurant/lounge area to the north. Because of the number and location of the beam seating, north-south circulation is primarily through these seats.

Concessions

As mentioned previously, there are two main concession locations in the terminal. A gift shop located at the south end of the second floor and the restaurant/lounge area located at the north end of the second-floor space. The restaurant also operates a pass-through window to the nonsecure side of the second-floor space where employees and non-secure passengers can order food by use of a phone.

The gift shop space is considered adequate, but the restaurant/lounge concession space and support spaces are very limited and undersized. The food/beverage support is primarily in the adjacent kitchen

Terminal Area Plan : A—Inventory

and prep areas. The concession deliveries to the terminal also have to come into the space through the unsecure side of the terminal and pass through the SSCP during times that the checkpoint is not busy.

Baggage Claim

The baggage claim area at KTN is located between the checked baggage screening area and the ATO #3 and #4 areas and includes one flat plate T-shaped device. This size is adequate for one aircraft deplanement, but when there are delays or overlapping flights during the peak periods, delays occur. The area has limited space for passengers waiting for baggage and when multiple flights overlap, baggage claim becomes congested and impacts terminal circulation and queueing. When these events happen or when an Island Air arrival overlaps with an Alaska Air arrival, the device does not provide adequate baggage claim support.

The input (exterior) side of the claim area also has functional issues. A limited portion of the claim unit has weather protection and ramp congestion in front of the claim unit is an issue. When multiple arrivals occur, only one flight can unload its' baggage carts at a time and delays baggage claim.

Rental Cars

There are two rental car (RAC) companies operating at the Airport. Alaska Car Rental and Budget have individual counters and offices. The location of the counters are visible to passengers when first entering the terminal building but the queuing space for the RAC counters often extends into the path of circulation, disrupting the flow of passenger movement to the baggage claim and the check in counters. The RAC ready car and return (R/R) lot is conveniently located adjacent to the terminal and separate from the public parking area. A detailed layout of the terminal building floor plans, with notes related to functionality, are presented in the following illustrations, *TERMINAL EXISTING 1ST FLOOR* and *TERMINAL EXISTING 2ND FLOOR*.

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Terminal Area Plan

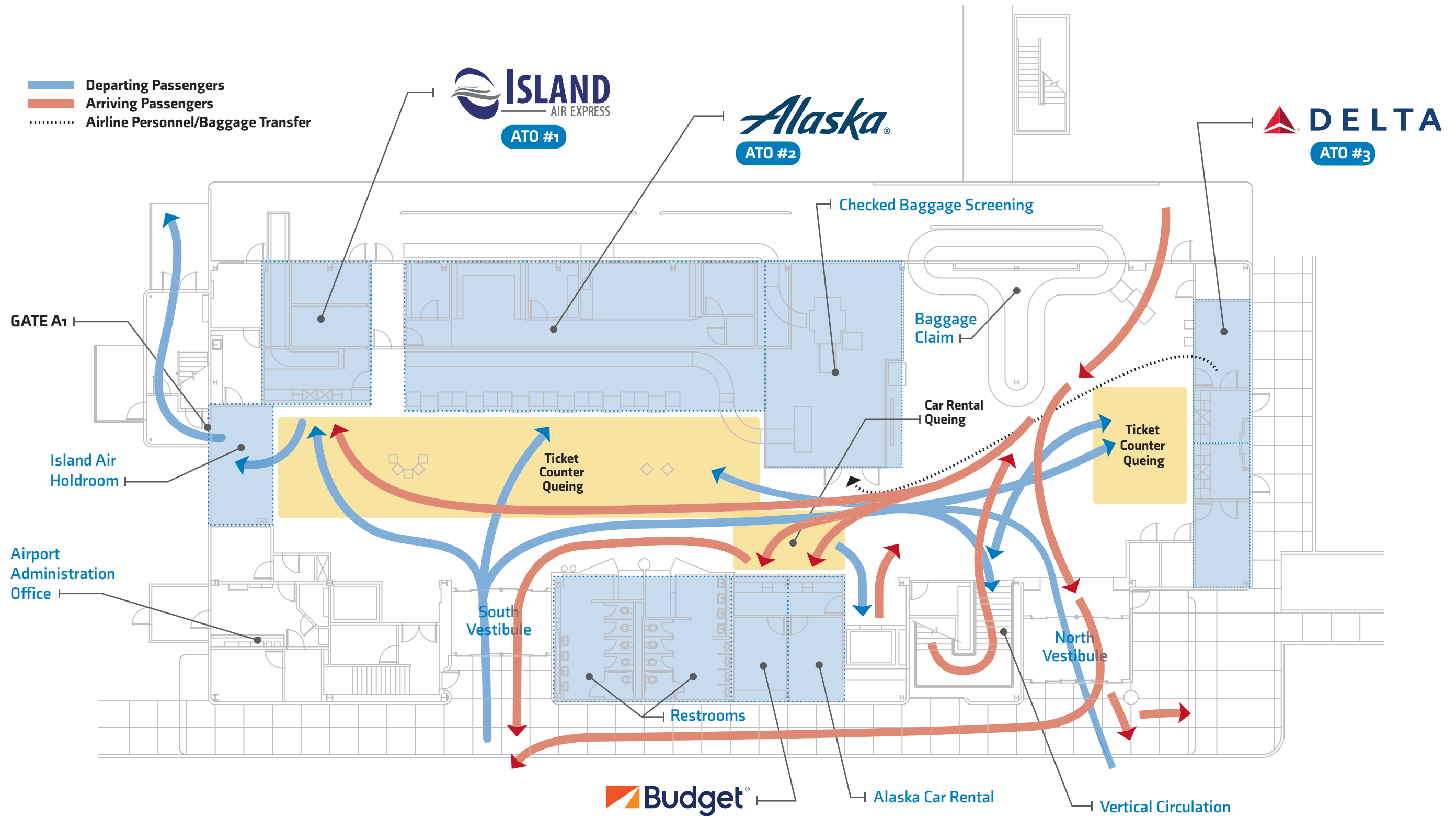


FIGURE A4 First Floor Terminal Building

Terminal Area Plan

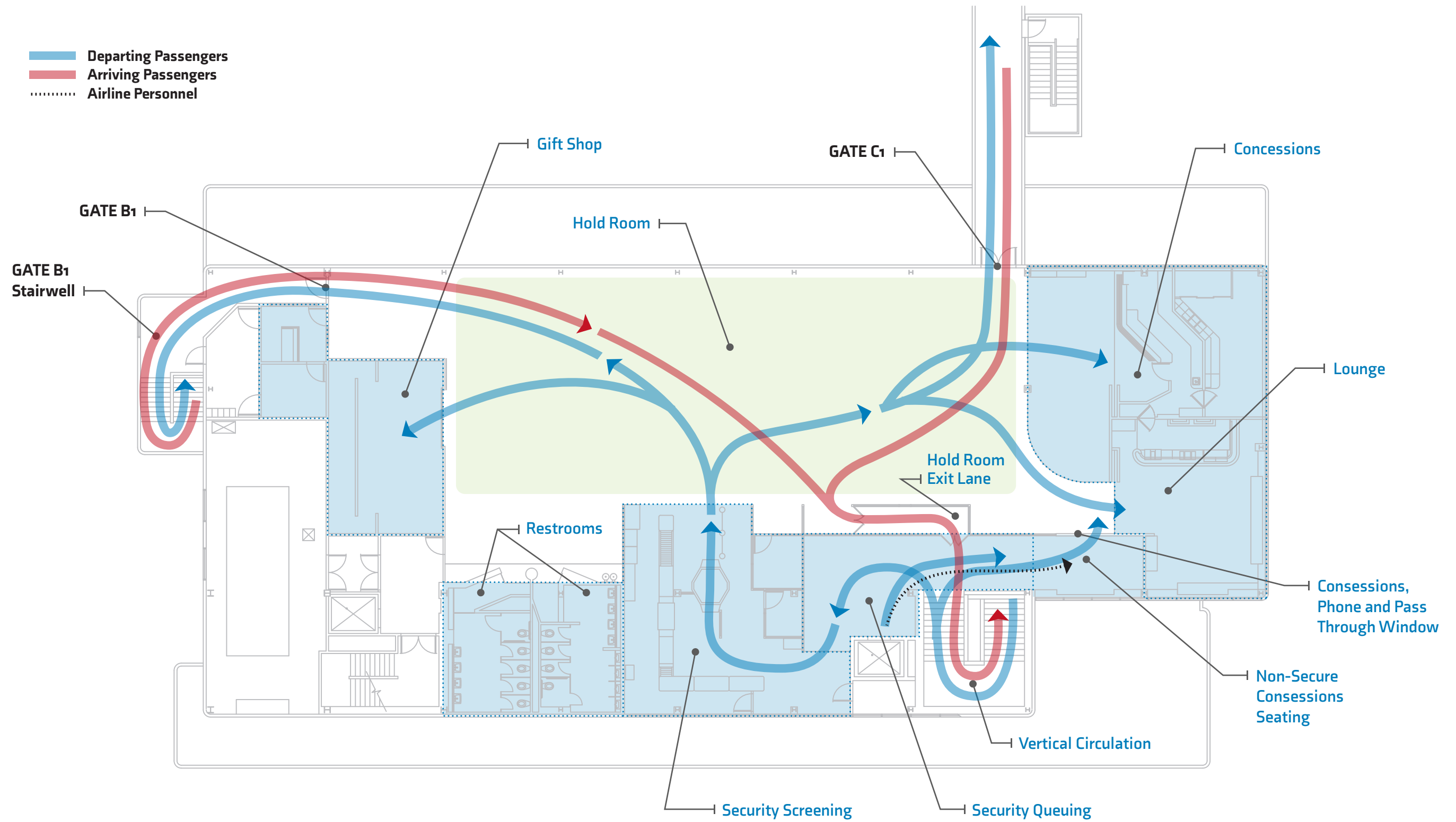


FIGURE A5 Second Floor Terminal Building

Terminal Area Plan : A—Inventory

Table A2 includes information about each of the gates at KTN. In airport terminal planning, gates are typically defined by the largest Airport Design Group (ADG) of aircraft they can accommodate. Most regional jet and narrow body aircraft fall into ADG II or III, depending on wingspan. A small number of narrow body aircraft fall into ADG IV; however, this group primarily includes larger wide body aircraft. ADG II aircraft have maximum wingspans of 79 feet, ADG III aircraft have maximum wingspans of 118 feet and ADG IV aircraft have a maximum wingspan of 171 feet.

Gates A1 and B1 are walk out gates in which passengers must walk on to the apron to board their departing/arriving aircraft. Gate C1 is primarily used by Alaska Airlines and includes a tunnel attached to a passenger loading bridge, therefore passengers would not have to walk out on the apron. Gate C1 is primarily designed for commercial aircrafts or ADG III aircraft.

TABLE A2: KTN GATES INVENTORY

Existing Gate	Primary Airline	Passenger Boarding Bridge	Design Aircraft	Airport Design Group (ADG)
A1	Island Air	No	Cessna Caravan	II
B1	Alaska/Delta	No	B737-800/E-175	III
C1	Alaska	Yes	B737-800	III

Source: Ketchikan International Airport

Inventory of Existing Conditions Summary

The goal of this chapter is to provide general background information pertaining to the terminal area and terminal building at Ketchikan International airport. The *Inventory of Existing Conditions* chapter is vital from the standpoint that the information contained in the chapter will be used as a reference in the analysis and design process, which is required to prepare the terminal area's future development plan.

The next step in the terminal planning process is to formulate forecasts for the quantity and type of future aviation activity expected to occur at the Airport during the forthcoming twenty-year planning period.

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B – Forecasts of Aviation Activity



Introduction.

The importance of assessing future trends relating to airport utilization and operational activity levels is especially significant in the preparation of an Airport Terminal Area Plan. Therefore, the focus of these updated aviation activity projections will be to document and support the future planning recommendations of the Ketchikan International Airport (KTN or Airport) Terminal Area.

The previous KTN Airport Master Plan was completed in 2003 and this forecast element will include a comprehensive update of those previous forecasts in consideration of current industry trends.

Forecast Methodology

Aviation forecasts are time-based projections that are prepared to offer a reasonable expectation of future airport activity based on past trends and future demand. The relationship between current activity and forecast demand is an indicator as to the type and timing of future airport infrastructure, equipment, and service needs, as well as funding resource allocation. The baseline year of the forecast is 2018, using calendar year data that is projected for a 20-year planning period through 2038, identified in 5-year increments, and segmented into three planning phases: 1) 'near-term' (2019-2023), 2) 'mid-term' (2024-2028) and, 3) 'long-term' (2029-2038).

Data from the past eleven years (2008 to 2018) is used as the basis of analysis of historical trends, which includes periods of economic expansion and contraction that help forecasts account for various economic conditions and provides a perspective on the effects of economic change on aviation activity.

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The forecast techniques apply FAA-accepted statistical methods that are quantified using statistical means, including time-series trend, regression, comparative analysis, and market share. This forecast approach is also consistent with FAA Advisory Circular 150/5070-6B, Airport Master Plans guidance and procedural requirements.

Table B1 describes the various data sources that were compiled for reference in the preparation of this chapter.

TABLE B1: Description of Data Sources

Source	Description
FAA Traffic Flow Management System Counts Data (TFMSC)	The TFMSC includes data collected from flight plans. These operations are categorized by aircraft type and can be used to identify trends in the KTN fleet mix. The advantage of the TFMSC data is its degree of detail and insight into the itinerant aircraft users at KTN. A disadvantage of TFMSC data is that it does not include local operations or operations that did not file a flight plan. As such, the utility of TFMSC data is limited to larger aircraft, including scheduled commercial passenger/air cargo, charter operations, and the general aviation users that operate the larger aircraft fleet.
FAA Terminal Area Forecasts (TAF)	The FAA TAF, published in February 2019, provides historical records and forecasts for passenger enplanements, aircraft operations and based aircraft at KTN. These forecasts serve as a comparison for forecasts prepared as part of this planning effort and provide historical information on aircraft activity.
FAA Aerospace Forecast	The Aerospace Forecast 2019-2039 is a national-level forecast of aviation activity. The Aerospace Forecast helps guide local forecasts by serving as a point of comparison between local trends and national trends.
U.S. Department of Transportation (USDOT) T-100 Database	Scheduled, charter passenger, and air cargo airlines fill out the T-100 form monthly. The T-100 database is an online repository of the data recorded on the forms, such as number of passengers, number of seats available, freight transported, aircraft used, and departures performed. The T-100 data documents the operations of passenger and air cargo airlines.

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Source	Description
Socioeconomic Data	Socioeconomic data is provided by data vendor Woods & Poole Inc. (W&P). W&P provides data for gap years in the U.S. Census. Ketchikan, Alaska, is within the Ketchikan Gateway Borough that consists of the cities of Ketchikan, Saxman, and Loring. The Ketchikan Gateway Borough comprises the Ketchikan, AK Micropolitan Statistical Area (MSA). Socioeconomic data referenced in this chapter is primarily sourced from the W&P dataset for Ketchikan Gateway Borough. The dataset provides 11 main data categories with records from 1969 to 2018 and forecast through 2050. Data categories considered include population, employment, earnings and income, and Gross Regional Product (GRP).
Stakeholder Interviews	The Consultant conducted interviews with stakeholders during site visits. Interviews included terminal and airfield tenants, Transportation Security Administration (TSA), and the Fixed Based Operator (FBO). Airlines interviewed were Alaska Airlines and Island Air.
Air Carrier Activity Information System (ACAIS) Database	The ACAIS database includes revenue passenger boardings (i.e., enplanements) and all air cargo data that is reported to the FAA by U.S. scheduled and nonscheduled certificated air carriers, commuter air carriers, and small certificated air carriers, including Foreign flag air carriers. The ACAIS database is collected for a full calendar year and supports the FAA's Airport Improvement Program (AIP) apportionment formula calculations.
Alaska Airport System Plan (AASP)	The mission of the State of Alaska Department of Transportation & Public Facilities (DOT&PF) is to provide for the safe and efficient movement of people and goods across the state as well as delivery of essential services through the development, maintenance, operation, and management of Alaska's airport system. To assist with this mission the Alaska Aviation System Plan (AASP) sets the vision for the Alaska aviation network by addressing Alaska's aviation infrastructure and policy needs.

Source: Documents & Data Compiled by Mead & Hunt, August 2019.

Overview of the Airport Market Area

The Airport Market Area is defined as the geographic region served by Ketchikan International Airport (KTN). Most of the commercial air service demand is focused on the Ketchikan Gateway Borough, consisting of 6,654 square miles, which is also defined as the Ketchikan, AK MSA¹. For the purpose of this TAP, this will be considered the market area for the Airport. This area is presented in **Figure B1**, entitled Airport Market Area.

FIGURE B1: Airport Market Area (Ketchikan Gateway Borough)



Sources: Google Maps and Mead & Hunt, 2019.

¹ The Office of Management and Budget defines Micropolitan Statistical Area (MSA) as a labor market area centered on an urban area with a population of at least 10,000 but fewer than 50,000 people.

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KTN, which is classified as a “Regional” airport in the Alaska Airport System Plan (AASP), is owned by the Alaska DOT&PF and provides a variety of air transportation services and facilities for the Alaska Southcoast region market area. These include scheduled commercial passenger and air cargo service, passenger terminal building, instrument approach capabilities, jet capable runway, local weather station, aircraft storage facilities, seaplane haul-out ramp, and various airport support and maintenance facilities (e.g., ARFF, SRE, and maintenance).

There are also two public use DOT&PF-owned seaplane bases located within the Airport Market Area: Peninsula Point Pullout Seaplane Base and Ketchikan Harbor Seaplane Base. Other seaplane bases located in the vicinity (not owned by the DOT&PF) include Loring Seaplane Base and Murphys Pullout Seaplane Base. These adjacent seaplane facilities can influence the general aviation service market within the area, but it is assumed that KTN will continue to primarily serve the air transportation needs for both commercial service and the larger general aviation users within the region.

Market Area Socioeconomic Trends and Forecasts

The socioeconomic characteristics of an Airport Market Area are often collected during the airport planning process to document the historic and projected growth within the geographic area served by an airport. This information is then typically used as one tool to forecast aviation demand. The types of socioeconomic data that are presented include population, employment, per capita personal income, Gross Regional Product (GRP), and tourism. A summary of historic and projected socioeconomic trends for the KTN Airport Market Area, also known as the MSA, is presented below.

Population

For 2018, the Ketchikan Gateway Borough represented 18.9 percent of the Southeast Economic Region’s² population, ranking second behind the Borough of Juneau. In addition, the Southeast Region has a higher concentration of older Alaskans, age 65 and older, with the Ketchikan Gateway Borough recording 15 percent for this segment.

According to Woods & Poole data, population within the Ketchikan Gateway Borough grew at a compound average growth rate (CAGR) of 0.42 percent between 2008 and 2018. The major driver of population growth comes from natural increases and not in-migration. Population has fluctuated only slightly throughout this period, consisting of years with both minor positive and negative change. For 2018, the estimated population of the Airport Market Area was 13,919.

The Airport Market Area population is projected to grow at a Compound Annual Growth Rate (CAGR) of 0.58 percent per year between 2018 and 2038. By 2038, the Ketchikan Gateway Borough is expected to have a population of 15,616, an increase of 1,697 people over current levels. For comparison, the population growth of the State of Alaska and the U.S. overall is expected to outpace the Airport Market

² The Southeast Economic Region is represented by ten boroughs/cities/census areas: Haines, Hoonah-Angoon, Juneau, Ketchikan, Petersburg, Prince of Whales-Hyder, Sitka, Skagway Wrangell, and Yakutat.

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Area, experiencing CAGRs of 1.02 and 0.88 percent, respectively, between 2018 and 2038. (Woods & Poole Economics 2018).

Table B2 shows historical and forecasted population data for the Ketchikan Gateway Borough from 2008 to 2038.

TABLE B2: Ketchikan MSA Population (2008-2038)

Calendar Year	Population	Percent Change
2008	13,352	---
2013	13,850	3.7%
2018	13,919	0.5%
2023	14,380	3.3%
2028	14,836	3.2%
2033	15,260	2.9%
2038	15,616	2.3%
Historic CAGR (2008-2018)	0.4%	---
Projected CAGR (2018-2038)	0.6%	---

CAGR: Compound Annual Growth Rate

Source: Woods and Poole, 2018

Employment

According to Woods and Poole data, employment in the Airport Market Area grew at a CAGR of 0.52 percent between 2008 and 2018. In 2018, 10,643 people were employed in the Area. Projections indicate a positive employment growth rate of 1.09 percent annually through 2038.

Statistical data for unemployment in the Airport Market Area was derived from the Bureau of Labor Statistics. The unemployment rate (non-seasonally adjusted) for the Airport Market Area in 2018 was 6.0 percent, but recently peaked at 8.7 percent in 2010. Given the seasonal nature of the local economy that is influenced by the tourism and fishing industries, it is important to note the significant variation in the unemployment rate that is experienced throughout the year.

Table B3 presents the total employment and employment per capita for the Airport Market Area. The employment rate has steadily increased between 2008 to 2018 as the MSA population has grown and is reflected in the projected growth of the employment per capita for the 20-year planning period. This is indicative of the region's economic diversity and resilience.

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TABLE B3: Ketchikan MSA Employment (2008-2038)

Calendar Year	Total Employment	Percent Change	Employment per Capita
2008	10,107	---	1.08
2013	10,374	2.6%	1.10
2018	10,643	2.6%	1.16
2023	11,302	6.2%	1.29
2028	11,966	5.9%	1.40
2033	12,610	5.4%	1.46
2038	13,214	4.8%	1.47
Compound Annual Growth Rates (CAGR)			
Historic 2008-2018	0.52%	N/A	0.72%
Projected 2018-2038	1.09%	N/A	1.19%

Employment per Capita: Employed/Total Working Population.

Sources: Woods & Poole, 2018

Industry Mix

According to industry employment data compiled by the *Alaska Department of Labor and Workforce Development*, the employment projections for the State of Alaska and the Airport Market Area by industry between 2016 and 2026 will be led by:

- **Education and Health Services @ 13.4% compared to 12.8% for the Airport Market Area**
- **Leisure and Hospitality @ 9.2% compared to 11.1% for the Airport Market Area**
- **Service-Providing (Includes 4% growth in Air Transportation) @ 5.6% compared to 24.9% for the Airport Market Area**
- **Goods-Producing (Includes 24.4% growth in Agriculture, Forestry, Fishing, & Hunting) @ 2.5% compared to 1.0%³ for the Airport Market Area**

Below is an example of Ketchikan’s unique exposure to each of these industries:

- **Location of PeaceHealth Ketchikan Medical Center (Level IV Trauma Center)**
- **First port for most cruise ships visiting Alaska (recorded 1,073,923 visitors in 2018)**
- **KTN is a regional hub for air transportation jobs (both commercial passenger service and air cargo)**
- **Commercial fishing continues to be an economic mainstay of the local economy (proclaimed as the “The Salmon Capital of the World”).**

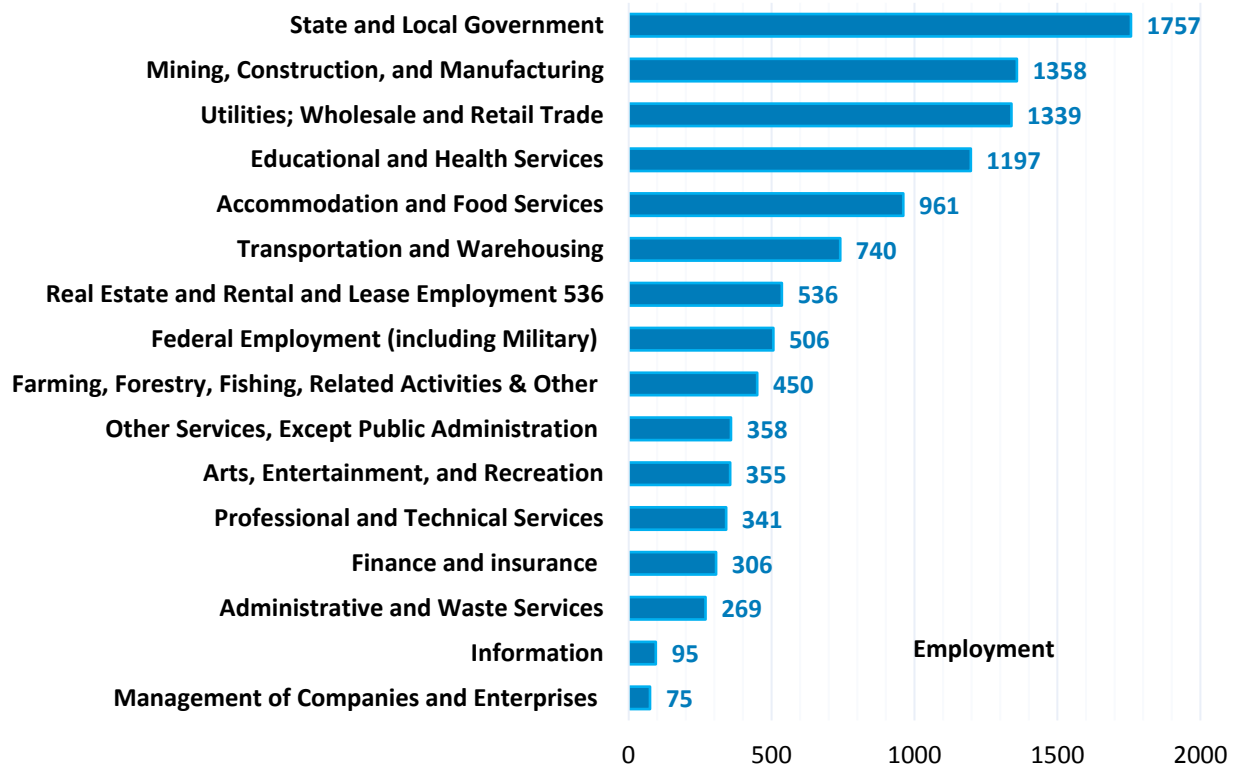
³ Employment data on local fish harvesting is not accurately reflected in statistics due to reporting requirements for self-employed.

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As shown in **Figure B2**, state and local government, mining/construction/manufacturing, utilities/wholesale/retail trade, education and health care, accommodation and food services, and transportation and warehousing were the leading industries within the Airport Market Area in 2018, accounting for just over 54 percent of the jobs. Employment within state and local government positions accounted for most of the jobs in the Airport Market Area at almost 17 percent.

Tables B4 and **B5** show the top industries by employment and sales both historically (2008-2018) and projected (2023-2038). State and local government employment will remain dominant. State and local government employment includes many professions such as public schools, police and fire departments, and all state public junior colleges, colleges, and universities. According to Woods and Poole projections, employment in the health care industry will surpass retail trade beginning in 2023.

FIGURE B2: Airport Market Area Employment by Industry (2018)



Source: Woods and Poole, 2018.

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TABLE B4: Ketchikan MSA Top 5 Industries by Employment and Sales (2008-2018)

Top 5 Industries by Employment								
Rank	2008		2013			2018		
	Industry	Jobs	Industry	Jobs	Δ	Industry	Jobs	Δ
1	State + Local Gov't	1,771	State + Local Gov't	1,795	1.36%	State + Local Gov't	1,757	-2.12%
2	Retail Trade	1,338	Retail Trade	1,163	-13.08%	Retail Trade	1,224	5.25%
3	Health Care	854	Health Care	1,078	26.23%	Health Care	1,096	1.67%
4	Accommodation and Food Services	817	Accommodation and Food Services	783	-4.16%	Accommodation and Food Services	961	22.73%
5	Transportation and Warehousing	747	Transportation and Warehousing	775	3.75%	Transportation and Warehousing	740	-4.52%

Top 5 Industries by Retail Sales								
Rank	2008		2013			2018		
	Industry	Sales (\$M)	Industry	Sales (\$M)	Δ	Industry	Sales (\$M)	Δ
1	Food + Bev Retail	\$60.303	Food + Bev Retail	\$65.862	9.22%	Food + Bev Retail	\$68.886	4.59%
2	General Merchandise	\$54.226	General Merchandise	\$48.348	-10.8%	General Merchandise	\$49.414	2.20%
3	Motor Vehicles and Parts	\$29.593	Clothing + Clothing Accessories	\$38.886	34.23%	Clothing + Clothing Accessories	\$39.707	2.11%
4	Clothing + Clothing Accessories	\$28.97	Restaurants	\$22.599	---	Restaurants	\$26.861	18.86%
5	Building Materials + Garden Equip.	\$22.526	Motor Vehicles + Parts	\$17.911	-39.5%	Non-store Retailers	\$24.934	---

Source: Woods and Poole, 2018.

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TABLE B5: Ketchikan MSA Top 5 Industries by Employment and Sales (2023-2038)

Top 5 Industries by Employment								
Rank	2023		2028			2038		
	Industry	Jobs	Industry	Jobs	Δ	Industry	Jobs	Δ
1	State + Local Gov't	1,944	State + Local Gov't	2,131	9.62%	State + Local Gov't	2,512	17.88%
2	Health Care	1,256	Health Care	1,432	14.01%	Health Care	1,749	22.14%
3	Retail Trade	1,252	Retail Trade	1,276	1.92%	Retail Trade	1,324	3.76%
4	Accommodation and Food Services	974	Accommodation and Food Services	983	.92%	Accommodation and Food Services	988	.5%
5	Transportation and Warehousing	767	Transportation and Warehousing	801	4.43%	Transportation and Warehousing	873	8.99%

Top 5 Industries by Retail Sales								
Rank	2023		2028			2038		
	Industry	Sales (\$M)	Industry	Sales (\$M)	Δ	Industry	Sales (\$M)	Δ
1	Food + Bev Retail	\$69.098	Food + Bev Retail	\$69.444	.5%	Food + Bev Retail	\$69.215	-.33%
2	General Merchandise	\$55.486	General Merchandise	\$60.236	8.56%	General Merchandise	\$68.359	13.48%
3	Clothing + Clothing Accessories	\$41.746	Clothing + Clothing Accessories	\$43.993	5.38%	Clothing + Clothing Accessories	\$48.01	9.14%
4	Restaurants	\$28.708	Non-store Retailers	\$31.585	11.89%	Non-store Retailers	\$38.567	22.10%
5	Non-store Retailers ¹	\$28.228	Restaurants	\$30.603	6.60%	Restaurants	\$34.579	13.01%

Source: Woods and Poole, 2018.

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Gross Regional Product (GRP)

GRP is defined as the value of goods and services produced in the MSA and serves as an index for the health of the overall economy. GRP grows as the economy increases and more valuable goods are produced. Growth in GRP will likely coincide with growth in airport passenger and cargo activity. Woods & Poole projections indicate the GRP will grow at a higher rate than the MSA population. This can be explained by the increasing production of high value goods and services and the continued growth of tourism for the region. The historical and projected GRP for the Ketchikan MSA is presented in **Table B6**.

TABLE B6: Ketchikan MSA Gross Regional Product (2008-2038)

Calendar Year	GRP (\$M)	Percent Change	GRP (\$M) per Capita
2008	\$700.661	---	\$.052
2013	\$736.523	5.1%	\$.053
2018	\$753.857	2.4%	\$.054
2023	\$825.533	9.5%	\$.057
2028	\$897.969	8.8%	\$.061
2033	\$972.023	8.3%	\$.064
2038	\$1045.649	7.6%	\$.067
Compound Annual Growth Rates			
2008-2018	0.73%	N/A	0.38%
2018-2038	1.65%	N/A	1.08%

GRP per capita: GRP/Total Population.

Sources: Woods & Poole, 2018

Income

Per capita personal income steadily grew from 2008 to 2018 and is projected to double in growth from 2018 to 2038. Historically, the personal income per capita within the Ketchikan Gateway Borough MSA has been higher than the personal income per capita of the U.S. and the State of Alaska. Future projections indicate the Airport Market Area will continue its trend of remaining higher than the nation and state. The 2018 personal income per capita for the U.S. and Alaska were \$52,920 and \$59,242, respectively. As seen in **Table B7**, the personal income per capita for the Airport Market Area is \$66,318. The MSA is projected to grow at a CAGR of 4.82 percent between 2018 and 2038, surpassing the U.S. (4.73 percent) and Alaska (4.53 percent) growth rates.

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TABLE B7: Ketchikan MSA Personal Income per Capita (2008-2038)

Calendar Year	Personal Income per Capita (\$)	Percent Change (%)
2008	\$51,971	---
2013	\$57,344	10.34
2018	\$66,318	15.65
2023	\$80,754	21.77
2028	\$102,548	26.99
2033	\$131,995	28.72
2038	\$170,207	28.95
CAGR (2008-2018)	2.47%	---
CAGR (2018-2038)	4.83%	---

CAGR: Compound Annual Growth Rate

Source: Woods & Poole, 2018.

Tourism Trends

According to information compiled from the Tourism section of the June 2019 *Alaska Aviation System Plan*, “Alaska provides some of the most unique tourism experiences in the United States” with Southeast Alaska recording the highest number of tourist-related visitors within the State due to the cruise ship industry. Juneau and Ketchikan are two of the primary stops for cruise ships in Southeast Alaska and there were 1,073,923 cruise ship passengers recorded for Ketchikan in 2018. In addition, aviation provides a key role in support of tourism within Southeast Alaska, with visitors accessing KTN directly or via cruise ships, and then utilizing smaller air taxi or charter aircraft to access remote areas for specific tourist-related activities (e.g., wildlife viewing, hunting, fishing, backpacking, etc.). In 2018, there were three air taxi operators at KTN providing year-round scheduled passenger service, with one additional operator scheduling service during the summer months (June – August).

Outdoor recreation tourism is the largest economic driver in the State of Alaska, and it is largely focused on activities related to fishing and wildlife viewing. Within Alaska, tourism accounts for more than \$3.2 billion dollars in annual spending related to outdoor trips, and about one in every ten jobs is tied to trip-related outdoor recreation.⁴ Given the nature of Alaska’s tourism focused economy, travel indicators generally exceed the national average growth rate. Nationwide travel indicators for 2018 showed a 1.9 percent increase in annual domestic travel, which is modest in comparison to the 5.2 percent increase in Alaska’s summer visitor volume.⁵

⁴ The University of Alaska Center for Economic Development. *Economic Development in Alaska, Outdoor Recreation Impacts and Opportunities* (March, 2019), 3. Accessed October 4, 2019. Retrieved from Alaska Travel Industry Association, Research Materials: <https://www.alaskatia.org/Research/OutdoorRecreationImpactsandOpportunities%202019.pdf>

⁵ McDowell Group. *Alaska Visitor Volume Report 2018* (2019), 7. Accessed October 4, 2019. Retrieved from Alaska Travel Industry Association, Research Materials: https://www.alaskatia.org/Research/Visitor%20Volume%20Summer%202018%20Report%202_15_19.pdf

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While cruise ship passengers represent the largest category of summer visitors to Ketchikan, the air market category has grown faster than the cruise ship category. The 2018 Ketchikan Summer Visitor Profile and Economic Impact Analysis notes that out of state summer visitors arriving by air was 32,200 in 2012 and rose to 44,500 in 2017, which represents a 38% increase in this five-year span.⁶ This rate of growth is more than three times that of cruise ship visitors, which only rose by 12 percent during the same period. Passenger traffic at KTN has continued to grow; between 2017 and 2018, summer domestic air passenger traffic at KTN grew by 2.6 percent.⁷

KTN plays an important role in connecting visitors in the air market travel category to fishing lodges and other outdoor recreation activities within the Southeast region during the summer months. The 2018 Ketchikan Summer Visitor profile study estimates that 50 percent of all air travel visitors arriving during the summer months are traveling for vacation/pleasure, 33 percent are visiting friends/relatives, and 17 percent are traveling for business-related reasons.⁸ Among summer visitors to Ketchikan who arrived by air, fishing was the top recreational activity, accounting for participation by approximately 43 percent of those visitors, followed by hiking at 24 percent participation and wildlife viewing at 21 percent.⁹

96 percent of summer visitors traveling by air are domestic travelers, with the majority (73 percent) of those visitors originating from the Western United States.¹⁰ Approximately 33 percent of travelers originate from Washington, followed by California at 13 percent, and Oregon at 6 percent.¹¹

Aviation Activity Profile

The aviation activity profile provides context for historical trends in airport activity and documents the recent changes that have occurred at the Airport. The profile serves as a baseline for the updated forecasts prepared for this planning effort and includes information on commercial passenger and air cargo airline service, general aviation, and military aviation activity.

KTN does not have an Air Traffic Control Tower (ATCT), but commercial airline operations are reported to the U.S. Department of Transportation (USDOT) and ultimately reflected on the

⁶ McDowell Group, *Ketchikan Summer Visitor Profile and Economic Impact Analysis* (2018), 1. Accessed October 4, 2019. Retrieved from Alaska Travel Industry Association Research Materials Website: https://www.alaskatia.org/Research/kvb-visitor-profile-and-impacts-6_10_18.pdf

⁷ McDowell Group, *Alaska Visitor Volume Report, Summer 2018* (2018), 4. Accessed October 4, 2019. Retrieved from Alaska Travel Industry Association Research Materials Website: https://www.alaskatia.org/Research/Visitor%20Volume%20Summer%202018%20Report%20_15_19.pdf

⁸ McDowell Group, *Ketchikan Summer Visitor Profile and Economic Impact Analysis* (2018), 10. Accessed October 4, 2019. Retrieved from Alaska Travel Industry Association Research Materials Website: https://www.alaskatia.org/Research/kvb-visitor-profile-and-impacts-6_10_18.pdf

⁹ *Ibid*, 2.

¹⁰ McDowell Group, *Ketchikan Summer Visitor Profile and Economic Impact Analysis* (2018), 25. Accessed October 4, 2019. Retrieved from Alaska Travel Industry Association Research Materials Website: https://www.alaskatia.org/Research/kvb-visitor-profile-and-impacts-6_10_18.pdf

¹¹ McDowell Group, *Ketchikan Summer Visitor Profile and Economic Impact Analysis* (2018), 25. Accessed October 4, 2019. Retrieved from Alaska Travel Industry Association Research Materials Website: https://www.alaskatia.org/Research/kvb-visitor-profile-and-impacts-6_10_18.pdf

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TAF for KTN. USDOT does not record general aviation operations, thus these local and itinerant operations are estimated on the TAF. The TFMSC does include some data for itinerant general aviation operations that file Instrument Flight Rules (IFR) flight plans but exclude those that do not.

Airline Service

Airline service encompasses scheduled passenger flights, air cargo flights, and non-scheduled charter flights. The following sections describe the airline profile, opportunities for additional air service, passenger enplanements, commercial operations, and air cargo service at KTN.

AIRLINE PROFILE. **Figure B3** identifies the current mainline air carriers and destinations that operate from KTN. These include Alaska Airlines, which provides year-round scheduled service with Boeing 737 aircraft and increased service during the summer season (June – August), and Delta Air Lines, which provides seasonal summer service only with the Embraer 175 and Canadair CRJ 900 regional jets.

KTN also accommodates scheduled service by air taxi airlines (i.e., Island Air Express). These smaller carriers operate a variety of aircraft having nine seats or less and include both fixed wing and floatplane type aircraft. See **Table B8** for details on cities served and aircraft equipage for the KTN scheduled commercial passenger airline service.

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FIGURE B3: KTN Mainline Air Carrier Passenger Service



Sources: Google Maps, and Mead & Hunt, 2019.

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TABLE B8: KTN Scheduled Commercial Passenger Service

Arline	City Destination (Airport Identifier)	Primary Aircraft (Seats)
Year-Round Service		
Alaska Airlines – AS (Air Carrier)	Juneau, AK (JNU)	Boeing 737-700 & 800 (124-159 Seats)
Alaska Airlines – AS (Air Carrier)	Seattle, WA (SEA)	Boeing 737-800 & 900 (159-178 Seats)
Alaska Airlines – AS (Air Carrier)	Sitka, AK (SIT)	Boeing 737-700 & 800 (124-159 Seats)
Alaska Airlines – AS (Air Carrier)	Wrangell, AK (WRG)	Boeing 737-700 & 800 (124-159 Seats)
Island Air Express - I4 (Air Taxi/Commuter)	Juneau, AK (JNU)	Pilatus PC -12 (6 - 8 Seats)
Island Air Express - I4 (Air Taxi/Commuter)	Klawock, AK (KLW)	Cessna C208B (6 - 8 Seats)
Island Air Express - I4 (Air Taxi/Commuter)	Petersburg, AK (PSG)	Cessna C208B (9± Seats)
Seasonal Service 1		
Alaska Airlines – AS (Air Carrier)	Seattle, WA (SEA)	Boeing 737-800 & 900 (159-178 Seats)
Delta Air Lines - DL (Air Carrier)	Seattle, WA (SEA)	EMB 175 & CRJ 900 (76 Seats) ²

Source: USDOT BTS T-100 Data (Obtained August 2019).

¹ KTN seasonal service period: June through first week of September.

² The Delta seasonal service was provided by regional affiliate SkyWest Airlines.

AIR CARGO PROFILE. The scheduled air cargo service at KTN is provided by a combination of Alaska Airlines transporting freight and mail both in the belly compartments of their air carrier passenger aircraft and in dedicated air carrier cargo aircraft (B737-700 freighters), and Alaska Central Express (ACE) operating a fleet of Beech 1900 twin-engine turboprop aircraft. In addition to the daily scheduled passenger flights, the dedicated Alaska Airlines cargo flights are operated twice a day, five days per week, with single flights two days per week. ACE operates a single daily cargo flight six days per week. In addition, air cargo is distributed by the various air taxi/commuter carriers (e.g., Island Air Express) that provide scheduled passenger service to the rural communities and villages in the vicinity of KTN.

Passenger Enplanements and Airline Operations

The FAA TAF defines a passenger enplanement as a passenger who boards a scheduled commercial or chartered aircraft with more than nine seats for turboprops (or any number of seats for jet aircraft). The aircraft must be operating under Title 14 Code of Federal Regulations (CFR) Part 121 that applies to air carriers and commercial operators. Passenger enplanements include revenue and non-revenue passengers who paid taxes and passenger facility charges (PFC) for their carriage. Passenger enplanements do not include pilots, flight attendants, and any other members of the airline crew.

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TABLE B9: TAF Airline Classification System

TAF Airline Classification System		
Classification	Air Carrier	Air Taxi
Enplanements	Operated by a mainline carrier	Operated by a regional carrier
Operations	60 or more seats	59 or fewer seats

Passenger enplanements are categorized as air carrier or air taxi/commuter based on the type of carrier that is operating the route. For example, passengers on a Delta Air Lines A320 flown by Delta pilots would be categorized as air carrier enplanements, whereas passengers on a smaller regional jets operated by SkyWest pilots would be categorized as air taxi enplanements. Airline operations are categorized based on aircraft seating capacity. See **Table B9** above for the current airline classification system for enplanements and operations reflected in the TAF.

Enplanements from 2008 to 2018 are shown in **Table B10**. Both air carrier and air taxi/commuter service enplanements at KTN have increased since 2008, reflecting a gain of just under 25,000 and a CAGR of 2.1 percent.

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TABLE B10: KTN Passenger Enplanements

Year	Air Carrier	Air Taxi/Commuter	Total	% Change
2008	105,640	3,874	109,514	N/A
2009	94,981	3,039	98,020	-10.5%
2010	95,671	3,051	98,722	0.7%
2011	99,391	2,798	102,189	3.5%
2012	100,444	2,870	103,314	1.1%
2013	104,639	2,834	107,473	4.0%
2014	105,254	10,203	115,457	7.4%
2015	110,338	13,506	123,844	7.3%
2016	113,084	13,656	126,740	2.3%
2017	115,572	15,108	130,680	3.1%
2018	118,643	15,716	134,359	2.8%
CAGR	1.2%	15.0%	2.1%	N/A

CAGR: Compound Annual Growth Rate

Source: 2018 TAF

Table B11 shows the airline activity levels during the 12-month seasonal periods, broken out by hour, day, week, month, and annual timelines. KTN airline flight activity fluctuates through the year, with summer months experiencing the greatest number of flights. The highest operational and enplanement period occurs during the summer months of June, July, and August, during which Alaska Airlines increases their number of daily flights from 6 to 9 and Delta provides their seasonal single flight daily service.

It should also be noted the Airport's two existing peak-hour flights are a derivative of the year-round "Milk Run" flights (i.e., Flight #'s 64 & 67) that are scheduled in the late afternoon, between 4:40 and 5:35 pm. However, with only two designated narrow-body aircraft parking positions at the terminal building, there are times when the scheduled 4:15 pm Alaska Airlines cargo flight may occupy one of the terminal gate parking positions needed by one of the Alaska air carrier passenger aircraft.

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TABLE B.11: KTN Seasonal Airline Activity Levels (2018)

12-Month Seasonal Period (Month Span)	Arrival and Departure Flights/Operations					
	Peak Hour Arrivals	Peak Hour Departures	Daily Operations	Weekly Operations	Monthly Operations	Seasonal Operations
Spring Season (Mar - May)	2.0	3.0	18	133	532	1,596
Summer Season (June - Aug)	3.0	2.0	26	187	748	2,244
Fall Season (Sep - Oct)	2.0	3.0	18	132	528	1,584
Winter Season (Nov - Feb)	2.0	3.0	18	128	512	1,530

Note: Data reflects 12-Months of 2018 flight schedules.

Source: KTN Airport Flight Schedule Data and USDOT BTS T-100 Data.

Air Cargo

KTN scheduled air cargo data was compiled from information maintained in the U.S. DOT T-100 database and is presented in **Table B12**. As can be noted, air cargo operations have declined at KTN since 2008 at a 3.4 percent CAGR, due primarily to the consolidation of carriers that has occurred within the industry. However, total annual cargo weight handled, which includes both enplaned and deplaned freight and mail, has remained relatively consistent on an annual basis (in the 9,000- to 10,000-ton range) despite a 10-year low of 7,723 tons being recorded in 2013. This compares to similar fluctuations that have been recorded in the U.S. domestic air cargo market over the same period but resulted in a 1.5 percent CAGR for air cargo handled.

As presented in **Table B13**, Alaska Airlines has maintained its role as the leader in total air cargo (both enplaned and deplaned) carried at KTN since 2008, with 95.4 percent of air freight handled in 2018. Alaska Central Express handled the balance of air cargo (i.e., 4.5 percent) for 2018. For the air mail category, Alaska Airlines handled 77.3 percent of the mail, compared to 22.7 percent for Alaska Central Express. Also, as can be expected, most of the air cargo carried by Alaska Airlines (92.2 percent of the freight and 94.1 percent of the mail) was carried by their B737-700 freighter aircraft.

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TABLE B12: Historic KTN Air Cargo Airline Operations and Activity

Year	KTN				U.S. Domestic Market	
	Operations ¹	Total Cargo (Tons)	% Change Operations	% Change Cargo	Revenue Ton Miles (Millions)	% Change
2008	3,570	11,023	N/A	N/A	12,261	---
2009	3,231	10,137	-9.5%	-8.0%	10,275	-16.2%
2010	3,293	10,381	1.9%	2.4%	11,243	9.4%
2011	3,302	10,106	0.3%	-2.6%	10,601	-5.7%
2012	2,997	10,215	-9.2%	1.1%	10,886	2.7%
2013	2,449	7,723	-18.3%	-24.4%	10,996	1.0%
2014	2,733	8,079	11.6%	4.6%	11,226	2.1%
2015	2,877	9,072	5.3%	12.3%	11,636	3.7%
2016	2,943	8,482	2.3%	-6.5%	11,998	3.1%
2017	2,577	8,844	-12.4%	4.3%	13,062	8.9%
2018	2,515	10,007	-2.4%	13.1%	14,182	8.6%
CAGR	-3.4%	-1.0%	N/A	N/A	1.5%	N/A

CAGR: Compound Annual Growth Rate

Source: USDOT BTS T-100 Data and 2019 FAA Aerospace Forecast.

¹Does not include operations by the scheduled air taxi/commuter passenger carriers that also transport mail and freight.

TABLE B13: KTN Air Cargo Operations, Freight, & Mail Breakdown (2018)

Cargo Carrier	Operations	Freight (Tons)	% Freight	Mail (Tons)	% Mail
Alaska Airlines Inc.	1,249	4,144	95.4%	4,379	77.3%
Alaska Central Express	1,264	196.9	4.5	1,285	22.7%
SkyLink Express Inc.	2	2.3	0.1%	---	---
Total	2,515	4,344	100%	5,663	100%

Source: Source: U.S.DOT T-100.

Military Aircraft Operations

KTN does not have any based military aircraft and experiences only limited itinerant training operations, primarily fixed-wing aircraft (e.g., Beech 200 Super King Air, Lockheed C130 Hercules, Boeing FA-18 Hornet, etc.), from various locations in Alaska and the Pacific Northwest. According to itinerant military operations compiled from the 2018 TFMSC, there were only 76 military operations recorded, which is less than the 135 operations that were documented in the TAF.

Military activity is driven by the needs of the U.S. Department of Defense rather than by economic forces. Therefore, for planning purposes, military operations are projected to remain limited at KTN.

General Aviation

General aviation aircraft operations are defined as all civil aviation aircraft activity excluding air carriers and commercial aircraft. For low activity airports that do not have an Airport Traffic Control Tower (ATCT), annual general aviation operations are typically estimated by local airport staff and documented by the FAA in the TAF. Given the relatively low number of general aviation operations that have been recorded for KTN in TAF since 2008, the FAA's 2018 Traffic Flow Management System Counts (TFMSC) for general aviation were compiled and are presented for comparison to the historic TAF in **Table B14**. Since TFMSC data is collected from flight plans, these operations are categorized by aircraft type and can provide insights into the itinerant aircraft users at KTN. However, the TFMSC data does not include local operations or operations that did not file a flight plan, and thus the information on general aviation activity is typically skewed toward users that operate larger and more sophisticated aircraft.

As can be noted, it appears that general aviation aircraft operations have historically been under-reported at KTN, with just under 2,400 operations being recorded for 2018. However, these increased itinerant general aviation operation counts would still only represent about 17 percent of the total operations for KTN in 2018.

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TABLE B14: KTN Local & Itinerant General Aviation Operations

Year	Local	Itinerant	TAF Total	TFMSC Total ¹
2008	410	575	985	1,993
2009	410	575	985	1,799
2010	410	575	985	2,243
2011	410	575	745	2,753
2012	350	395	745	3,514
2013	350	395	745	3,378
2014	350	395	745	2,495
2015	350	395	745	1,896
2016	350	395	745	1,788
2017	350	395	745	1,905
2018 ¹	350	395	745	2,375

Source: KTN 2018 TAF for 2008-2017

¹ General aviation operations compiled from FAA's TFMSC database for KTN.

General Aviation Based Aircraft

The FAA categorizes based aircraft by engine type with the main categories being Single-Engine Piston (SEP), Multi-Engine Piston (MEP), Jet aircraft with turbine engines (includes turboprops and turbojets), Helicopters, and Other which includes experimental sport, glider, and ultralight aircraft. **Table B15** shows the based aircraft records from 2008 to 2018. As of 2018, 60 percent of based aircraft at KTN are categorized as SEP, including one MEP aircraft and one business jet.

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TABLE B15: KTN Based Aircraft

Fiscal Year	SEP	MEP	Jet	Helicopter	Other	Total	% Change
2008	10	1	0	2	0	13	N/A
2009	10	1	0	2	0	13	0.0%
2010	10	1	0	2	0	13	0.0%
2011	10	1	0	2	0	13	0.0%
2012	3	1	1	0	0	5	-61.5%
2013	3	1	1	0	0	5	0.0%
2014	3	1	1	0	0	5	0.0%
2015	3	1	1	0	0	5	0.0%
2016	3	1	1	0	0	5	0.0%
2017	3	1	1	0	0	5	0.0%
2018	3	1	1	0	0	5	0.0%
CAGR	-12.5%	0.0%	N/A	N/A	0.0%	-10.1%	N/A

CAGR: Compound Annual Growth Rate

Source: 2018 TAF

Forecast Resources and Trends

As noted in the *Forecast Methodology* section of this chapter, aviation forecast data for this planning effort has been sourced from various FAA published databases and studies, USDOT airline T-100 reporting forms, and industry publications. A brief description of these FAA publications is presented in the following text.

FAA Aerospace Forecasts

The *FAA Aerospace Forecasts (Fiscal Years 2019 to 2039)* provides aviation industry projections by aeronautical sector. The FAA prepares this document annually to identify the 20-year demands on the nationwide airport and airspace system. This FAA data is used to substantiate forecasting relationships, including recent airline industry trends, the direction of future passenger demand, and challenges to providing services.

FAA Terminal Area Forecast (TAF)

The FAA Terminal Area Forecast (TAF) serves as the official FAA record of aviation activity for airports in the *FAA National Plan of Integrated Airport Systems (NPIAS)*. The TAF, which is developed annually based on the fiscal year from October to September, includes forecasts for airline enplaned passengers, aircraft operations, and based aircraft. The TAF typically lags one to two years in

FAA Terminal Area Forecasts (TAF): The official FAA record of historical and projected airport activity, as prepared annually by the FAA for all airports in the *National Plan of Integrated Airport Systems (NPIAS)*.

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reporting current activity levels, therefore the TAF may not always accurately reflect the snapshot of current activity, nor take into account key airport factors or locally driven forecast events. The TAF used for this forecast was published in February 2019. **Table B16** summarizes the current TAF projections compiled for KTN.

TABLE B16: KTN TAF Summary

Fiscal Year	2018	2023	2028	2033	2038	CAGR
Enplanements	134,359	143,022	154,863	168,934	184,981	1.6%
Operations	12,678	13,460	14,141	14,925	15,804	1.1%
Air Carrier	6,078	6,391	6,941	7,584	8,465	1.6%
Air Taxi	5,720	6,189	6,320	6,461	6,646	0.7%
Itinerant GA	395	395	395	395	395	0.0%
Itinerant Military	135	135	135	135	135	0.0%
Local GA	350	350	350	350	350	0.0%
Local Military	0	0	0	0	0	0.0%
Based Aircraft	5	5	5	5	5	0.0%
Single Engine Piston	3	3	3	3	3	0.0%
Jet	1	1	1	1	1	0.0%
Multi Engine Piston	1	1	1	1	1	0.0%
Helicopter	0	0	0	0	0	0.0%
Other	0	0	0	0	0	N/A

CAGR: Compound Annual Growth Rate

Other: Light sport aircraft, gliders, experimental aircraft, ultralights

Source: FAA TAF, 2019.

KTN TAF ENPLANEMENT BASELINE (2018): The FAA TAF reports 134,359 passenger enplanements for 2018, but this a forecasted value due to the FAA TAF reporting lag. For comparison, FAA’s Air Carrier Activity Information System (ACAIS) reports 135,389 passenger enplanements for 2018 based on actual monthly airline reporting records, therefore, 135,389 will be used as the 2018 baseline for forecasting passenger enplanements.

KTN TAF FORECASTS (2018-2038): The 20-year FAA TAF enplanements are projected to increase a total of 50,622 passengers, from 134,359 in 2018 to 184,981 in 2038, which is an average annual change of 2,531, a 37.7 percent overall growth, and a 1.6 percent CAGR. The FAA TAF forecast is consistent with the historical KTN mean of 2,259 additional passengers per year.

Airline Industry Trends

The *FAA Aerospace Forecasts* provides an assessment of the airline sector. As reported by the FAA, the airline industry is being shaped by four distinct trends: (1) selective capacity expansion; (2) steady

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growth of seats per aircraft, whether through up-gauging or reconfiguring existing aircraft; (3) increasing competitive pressure due to ultra-low-cost carrier expansion; and (4) increasing price discrimination¹² through ancillary revenues and revenue management systems.

Fundamentally, aviation passenger demand is being driven by economic factors. However, the strength of the U.S. economy in recent years, supported by positive financial conditions and a strong labor market, is beginning to slow but still expected to support aviation passenger growth through the planning period. Since 2007, the mainline carrier group has increased capacity by 14.8 percent while carrying 17.8 percent more passengers, due to increasing the seats per aircraft flown (e.g., aircraft up-gauging). In addition, the domestic boarding load factor (BLF) for 2018 returned to 84.7 percent, matching the historic high first reached in 2016, and is projected to rise and peak at over 86 percent in the future.

Quantified by available aircraft seat miles and revenue passengers, the domestic mainline enplanement growth is forecast to increase at 4.6 percent in 2019, then slow to 1.6 percent annually over the remaining forecast period. Both labor and fuel costs will continue to be significant factors governing future U.S. carrier airline industry growth.

KTN Airline Markets and Destinations

Potential Airline Service Events and Market Changes

KTN airline service is expected to continue to expand in response to growing service area passenger demands, emerging markets, and an evolving airline industry. It is expected that KTN Airport Staff will continue to explore new service prospects, including new air carriers, added flight frequency, new destinations, and possible new aircraft types. It is recognized that the introduction of added flight frequency and/or new service destinations would have a significant impact on the KTN airline passenger demand forecasts, and this additional service demand would likely be driven by increased seasonal growth in tourism.

Top KTN Passenger Markets/Destinations

Table B17 lists the top KTN origin and destination (O&D) airline markets. Of the top twenty markets, six are currently served, including Sitka, Seattle, Wrangell, Juneau, Klawock, and Petersburg. These six markets compromise nearly 63 percent of the total passengers and 61 percent of the KTN airfare revenue.

¹²Simply defined as the business strategy of selling largely similar products to different customers at different prices.

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TABLE B17: KTN Top 20 Origin & Destination Airline Markets

Rank	Airport	Passengers Per Day	Total Annual Passengers	Percent of Passengers	Revenues	Percent of Revenues
1	Sitka, AK	99.6	36,354	20.9%	\$4,442,092	18.27%
2	Seattle, WA	84.0	30,660	17.7%	\$6,042,988	24.86%
3	Wrangell, AK	63.6	23,214	13.4%	\$2,329,198	9.58%
4	Anchorage, AK	40.5	14,783	8.5%	\$3,743,296	20.51%
5	Juneau, AK	34.0	12,410	7.2%	\$1,695,745	6.98%
6	Portland, OR	12.9	4,709	2.7%	\$1,025,976	4.22%
7	Klawock, AK	11.1	4,052	2.3%	\$146,386	0.60%
8	Salt Lake City, UT	7.3	2,665	1.5%	\$565,996	2.33%
9	Phoenix, AZ (PHX)	5.7	2,081	1.2%	\$581,848	2.39%
10	Las Vegas, NV	5.1	1,862	1.1%	\$429,842	1.77%
11	Sacramento, CA	4.8	1,752	1.0%	\$421,470	1.73%
12	Los Angeles, CA	4.7	1,716	1.0%	\$448,500	1.84%
13	Petersburg, AK	4.5	1,643	1.0%	\$152,327	0.63%
14	Denver, CO	4.5	1,643	0.9%	\$505,178	2.08%
15	Spokane, WA	4.0	1,460	0.8%	\$284,544	1.17%
16	Boise, ID	3.8	1,387	0.8%	\$295,512	1.22%
17	San Diego, CA	3.6	1,314	0.8%	\$381,740	1.57%
18	Minneapolis, MN	3.2	1,168	0.7%	\$341,014	1.40%
19	Fairbanks, AK	2.9	1,059	0.6%	\$217,242	0.89%
20	San Francisco, CA	2.8	1,022	0.6%	\$258,243	1.06%
Top 20	---	403	146,949	84.7%	\$24,309,139	N/A
Top 5	---	322	117,421	67.7%	\$18,253,319	N/A

Source: KTN Air Service Market Research Report/August 2019 prepared by Mead & Hunt, 2019.

Top KTN Air Service Prospects

According to information compiled for the 2019 KTN Air Service Market Research Report, future expansion of passenger air service to existing and new market destinations is a reasonable forecast prospect. The opportunity for additional flight frequency and service to a new market destination could represent a significant forecast service event, and the potential for additional passenger enplanements. A summary of the potential KTN airline service events that could occur within the 20-year airline forecast planning horizon are presented in the following text.

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INCUMBENT AIRLINES. There are two Part 121 carriers, Alaska Airlines and Delta Air Lines, that provide passenger service to KTN. Alaska Airlines is the largest carrier operating at KTN, and currently represents 79.9 percent of the seats at the Airport. With nonstop service to Juneau, Seattle, Sitka and Wrangell, Alaska Airlines serves most of their markets in the region with year-round service. Anchorage is the largest market without nonstop service from KTN; however, the current daily passenger demand would not support nonstop service on mainline aircraft to Anchorage. If Alaska Airlines were to begin operating regional aircraft to Anchorage such as the ERJ-175, then direct service from KTN would be a possibility.

Alaska Airlines also has seasonal service opportunities with the ERJ-175 regional jet to either the San Francisco Bay Area or Los Angeles Basin. While both markets are not large enough today, they could likely support less-than-daily, seasonal service with growth in demand to a destination market like KTN. In addition, Portland, as the second largest hub for Alaska Airlines, is another market that could potentially be served with regional jet aircraft on a daily or less-than-daily basis during the summer months.

Delta provides summer seasonal nonstop service to their Seattle hub with 76-seat ERJ-175 and CRJ 900 regional jet aircraft. This service operates each year from June to the first week of September and represents just 1.7 percent of the seats at the Airport. The market has historically performed at a very high load factor (e.g., 74 percent for 2018) and could be a potential market for an additional roundtrip or larger mainline-sized aircraft. With Delta being in the market, potential new opportunities for seasonal, less-than-daily service could include any of their hub markets, particularly Minneapolis, Salt Lake City or Los Angeles. Minneapolis would open-up significantly more connecting opportunities for KTN than what is available at Seattle.

POTENTIAL AIRLINES. The 2019 KTN Air Service Market Research Report also reviewed potential air service opportunities from airlines that do not currently serve the KTN market. The airlines that were examined included: American Airlines, Frontier Airlines, JetBlue Airways, Southwest Airlines, Spirit Airlines, Sun Country Airlines and United Airlines. From this analysis, Sun Country Airlines and United Airlines were identified as the current best airline prospects for new air carrier service at KTN.

Sun Country Airlines operates as an ULCC, typically with less-than-daily service between major cities or leisure destinations. With their service in Portland, Minneapolis and Los Angeles, they could be a potential option for service at KTN with less-than-daily, seasonal service, concentrating during the summer on inbound traffic to Ketchikan and during the winter on outbound traffic from Ketchikan to a destination like Las Vegas.

United Airlines is a strong airline on the West Coast, with its dual hubs at San Francisco and Los Angeles. This strength could be an opportunity for service for KTN on a seasonal or less-than-daily basis on larger regional jets like the ERJ-175. If United served KTN to one of its West Coast hubs, then additional service long-term to either Chicago-O'Hare or Denver is a potential for KTN.

Projections of Aviation Demand

This section presents the projections of aviation demand at KTN for the 20-year planning period using various forecast methodologies for consideration. A preferred method is selected for each forecast and the resulting projections are then compared with the FAA TAF projections. Following FAA approval, these forecasts will be utilized to determine the projected future airside and landside facility requirements at KTN.

Passenger Enplanement Forecasts

Forecasts of passenger enplanements serve as the foundation for other commercial service activity projections, and thus provide a basis for determining future requirements for terminal area facilities integral to the accommodation of passengers. The preparation of the KTN passenger enplanement forecast included a review of historical trends and evaluation of multi-variable regression methods to project passenger enplanements. The three methodologies (i.e., scenarios) selected for projecting passenger enplanements at KTN are summarized below and shown in **Table B18** and **Figure B4**. In addition, a straight-line Trend Analysis and the TAF projections are included for comparison.

SCENARIO 1: MULTI-VARIABLE REGRESSION ANALYSES. The regression model tested variables that highly correlated (greater than 0.9) with KTN passenger enplanements over the past ten years. These included the U.S. Gross Domestic Product (GDP), U.S. Commercial Passengers, and MSA Income per Capita. A combination of these individual variables was then evaluated, and the results of the multi-variable regression analyses are presented in **Table B18**. This methodology generated what is determined to be the “High” enplanement forecast scenario for this study, with enplanements increasing at a CAGR of 2.7 percent.

TABLE B18: KTN Enplanement Correlation and Multi-Variable Regression Analyses

Variable	Correlation Coefficient	Adjusted R Squared Value
U.S. Gross Domestic Product (GDP) ¹	0.97	---
U.S. Commercial Passengers ²	0.95	---
MSA Income per Capita ¹	0.91	---
Combined (Multi-Variable Analyses)	---	0.957

Sources: ¹ Woods & Poole 2018, ² FAA Aerospace Forecasts

Scenario 1 “High” Enplanement Forecast Summary:

- **20-Year Change (2019 to 2038): 135,389 to 231,300 Enplanements**
- **20-Year Range: +95,911 Passengers**
- **20-Year Average Annual Change: +4,796 Passengers**
- **20-Year CAGR Change: 2.7 percent**

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Scenario 1 “High” Enplanement Forecast Factors:

- **Based on expanded flight frequencies and potential new destination**
- **Reflects continuance of positive regional and national economic improvements (post 2008 recession recovery)**
- **Consistent with mainline and regional airline industry passenger growth projected by FAA**
- **Includes expansion of local industry in response to increasing tourism-related visitors**

SCENARIO 2: AVERAGE MARKET SHARE OF U.S. DOMESTIC ENPLANEMENTS. The *FAA Aerospace Forecast Fiscal Years 2019-2039* projects that U.S. enplanements will grow at an average annual rate of 1.6 percent through 2039. Between 2008 and 2018, the Airport’s average share of total U.S. enplanements was 0.015 percent. This scenario assumes that KTN will maintain this average share through the forecast period. This methodology generated what is determined to be the “low-range” enplanement forecast scenario for this study, with enplanements increasing at a CAGR of 1.5 percent.

Scenario 2 “Low” Enplanement Forecast Summary:

- **20-Year Change (2019 to 2038): 135,389 to 183,100 Enplanements**
- **20-Year Range: +47,711 Passengers**
- **20-Year Average Annual Change: +2,386 Passengers**
- **20-Year CAGR Change: 1.5 percent**

Scenario 2 “Low” Enplanement Forecast Factors:

- **Based on general maintenance of the seasonal flight frequency**
- **Reflects limited positive regional and national economic improvements (post 2008 recession recovery)**
- **Consistent with mainline and regional airline industry passenger growth projected by FAA**
- **Includes a stagnated expansion of local industry in response to less than expected tourism-related visitors**

SCENARIO 3: SINGLE VARIABLE REGRESSION ANALYSES. As a variation of the Scenario 1 projections, this regression model tested a single variable for the MSA Income per Capita (see in **Table B17** above). This methodology generated what is determined to be the “Medium” enplanement forecast scenario for this study, with enplanements increasing at a CAGR of 2.1 percent.

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Scenario 3 “Medium” Enplanement Forecast Summary:

- **20-Year Change (2019 to 2038): 135,389 to 206,200 Enplanements**
- **20-Year Range: +70,811 Passengers**
- **20-Year Average Annual Change: +3,541 Passengers**
- **20-Year CAGR Change: 2.1 percent**

Scenario 3 “Medium” Enplanement Forecast Factors:

- **Based on expanded flight frequencies**
- **Reflects moderate, steady regional and national economic improvements (post 2008 recession recovery)**
- **Continued steady growth in tourism within the Airport Market Area**
- **Consistent with mainline and regional airline industry passenger growth projected by FAA**
- **Includes a positive expansion of local industry in response to a steady continuation of tourism-related visitors**

Table B19 and **Figure B4** below presents a summary of the various passenger enplanement forecast scenarios for this study.

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TABLE B19: KTN Passenger Enplanement Projections

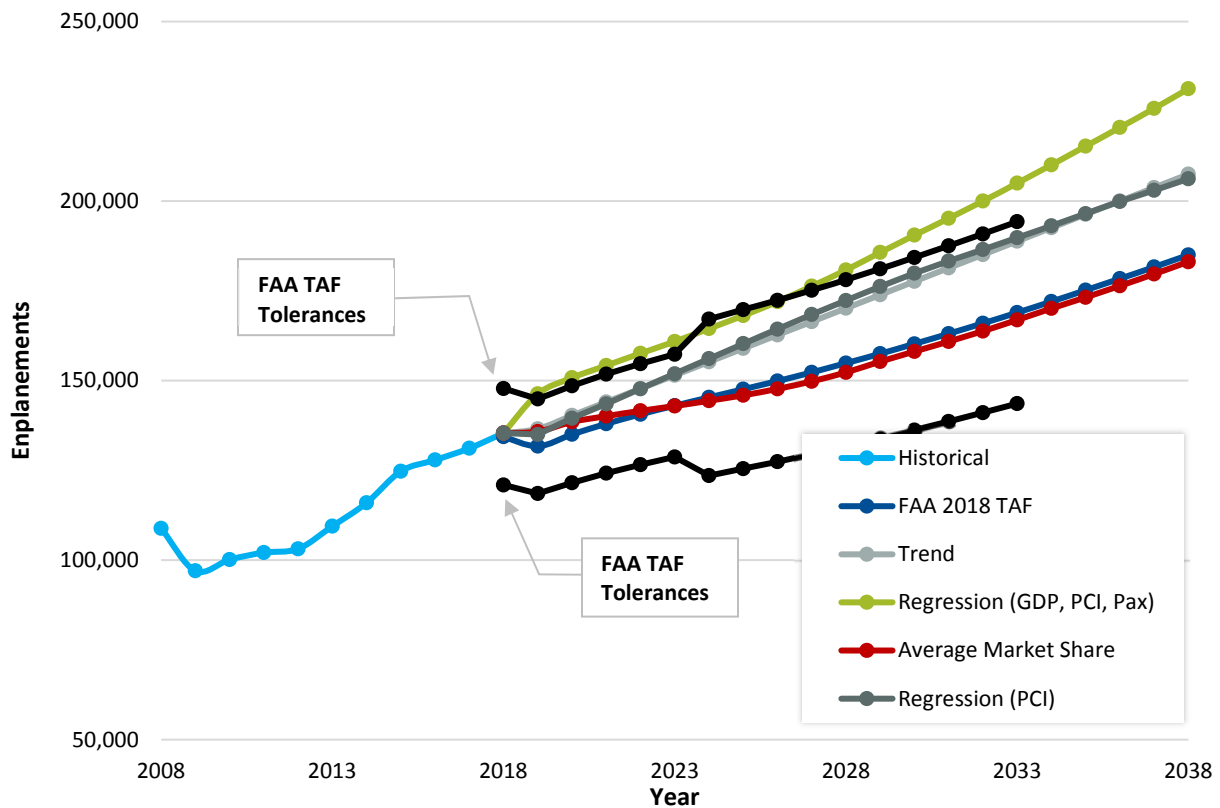
Year	Scenario 1: Multi-Variable Regression Analyses (High)	Scenario 2: Average Market Share of U.S. Enplanements (Low)	Scenario 3: Single Variable Regression Analyses (Medium)	Trend Analysis	Terminal Area Forecasts (TAF)
2018	135,389 ¹	135,389 ¹	135,389 ¹	135,389 ¹	134,359 ²
2023	160,900	142,900	151,900	151,495	143,022
2028	180,800	152,300	172,300	170,164	154,863
2033	205,000	166,900	189,800	188,833	168,934
2038	231,300	183,100	206,200	207,502	184,981
CAGR 2018-2038	2.7%	1.5%	2.1%	2.2%	1.6%
2023 Variation from TAF	12.5%	-0.1%	6.2%	5.9%	---
2028 Variation from TAF	16.7%	-1.7%	11.3%	9.9%	---
2033 Variation from TAF	21.3%	-1.2%	12.4%	11.8%	---

Source: FAA ACAIS, TAF, and Mead & Hunt projections.

Notes: ¹ The 2018 ACAIS data reflects actual calendar year KTN enplanement counts.

² The 2018 TAF data reflects forecast fiscal year (October 2017- September 2018 enplanement counts).

FIGURE B4: KTN Passenger Enplanement Projections



Source: Mead & Hunt

PREFERRED ENPLANEMENT FORECAST METHODOLOGY. The previous section presented enplanement projections from several analytical sources. From these sources, preferred potential future enplanement activity can be established. It is expected that enplanement activity at KTN will fluctuate over the next 20 years; however, Scenario 3 (reflecting a single variable regression analysis for the MSA Income per Capita) has been selected as the preferred enplanement forecast scenario.

This scenario proposes that the Airport’s passenger enplanements will increase at a CAGR of 2.1 percent through the 20-year planning period. This growth rate, which is also consistent with the Trend Analysis, is just slightly lower than the Scenario 1- Multi-Variable Regression methodology and slightly higher than the Scenario 2 – Average Market Share methodology and TAF projections. Scenario 3 also reflects the potential demand for expanded flight frequencies in response to continued steady growth in tourism within the region.

Commercial Service Aircraft Operations

The level of commercial service operations needed at KTN is a derivative function of the aircraft types utilized to accommodate the commercial service enplanement projections presented above. Therefore, when developing the commercial service operations projections, it is critical to know the existing airline fleet mix at the airport and understand how it could change in the future in response to increasing passenger demand. In addition, one of Alaska Airlines' long-time operational models for providing commercial passenger and air cargo service within the state has been the successful "Milk Run" flights. The Milk Run refers to a scheduled (multi-stop) commercial service flight with narrow-body jets to several Alaska communities that would not be able to generate enough daily passengers on an individual basis to support service with these larger aircraft. For example, Alaska Flight #65 begins as a morning departure from Seattle with stops in Ketchikan, Wrangell, Petersburg, and Juneau before finishing in Anchorage.

As noted below in **Table B20**, KTN currently accommodates four of the daily/year-round Alaska Airline Milk Run flights, which are supplemented in the summer season with additional direct flights to Seattle by both Alaska Airlines and Delta. The narrow-body jet departure operations conducted by Alaska Airlines have remained relatively consistent at KTN (at just over 2,300) for the past five years. As for the Air Taxi operators, aircraft departures have fluctuated over the same period, in conjunction with minor changes in the seating capacity of these smaller aircraft. However, as noted previously, air taxi enplanements at KTN have increase 15 percent annually since 2008 and are expected to continue to increase over the 20-year planning period.

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TABLE B20: Historical KTN Commercial Service Aircraft Operations and Boarding Load Factors

	2014	2015	2016	2017	2018
Air Carrier					
Narrow Body Jet Departures	2,356	2,365	2,357	2,314	2,300
Regional Jet Departures	0	114	104	85	88
Average Seats Per Departure	131.1	132.3	134.7	137.3	135.3
Enplanements	105,745	115,461	118,534	120,636	124,640
Through Passengers	96,987	92,166	87,836	95,202	91,723
Total Onboard Passengers	202,732	207,627	206,370	215,838	216,363
Boarding Load Factor (BLF)	65.6%	63.3%	62.3%	65.5%	67.0%
Air Taxi					
Aircraft Departures	3,442	2,184	1,733	1,902	2,860
Average Seats Per Departure	8	9	9	9	7
Enplanements	10,203	9,286	9,347	10,508	10,749
Boarding Load Factor (BLF)	37.6%	48.5%	59.4%	61.0%	53.7%
Total Operations	11,596	9,326	8,388	8,602	10,496

Sources: Total commercial service operations, operations by equipment percentages and average seats per departure - USDOT BTS T-100 Data, Enplanements- ACAIS.

Table B21 summarizes the forecast for airline operational activity based on the preferred Scenario 3 “Medium” enplanement forecast scenario, including annual aircraft operations, seat capacity, and passenger loads. The airline operational forecasts incorporate projected changes in aircraft seat capacity, passenger load factors, and increased daily departures resulting from additional flight frequencies and/or potential new destination service, which are consistent with FAA airline industry benchmarks. Based on these assumptions, commercial service aircraft operations are projected to reach 13,270 by 2038, resulting in a CAGR of 1.2 percent. Despite the increased flights by the 76-seat EMB 175 and/or CRJ 900 regional jets, the average seats per departure is anticipated to increase over the forecast period due to Alaska Airlines’ up-gauging of the Boeing 737 narrow body jets (e.g., replacing a 124-seat B737-700 aircraft with a 159-seat B737-800 or a 178-seat B737-900). The BLF¹³ is also projected to grow as airlines try to keep capacity aligned with demand and add service selectively and cautiously. In addition, air taxi operators handled approximately 7.9 percent of the annual enplanements that were recorded at KTN in 2018, and this percentage split is projected to be maintained through the planning period for this study.

¹³ BLF refers to the total percentage of airline seats that are occupied by a passenger compared to the total number of seats that are available on the aircraft.

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TABLE B21: KTN Commercial Service Aircraft Operation Projections

	2018	2023	2028	2033	2038
Air Carrier					
Narrow Body Jet Departures	2,300	2,300	2,352	2,352	2,716
Regional Jet Departures	88	88	151	176	265
Average Seats Per Departure	135.3	135.3	155.3	154.3	155.0
Enplanements	124,640	139,840	158,621	174,731	189,829
Through Passengers	91,723	102,909	116,729	128,585	139,696
Total Onboard Passengers	216,363	242,749	275,350	303,316	329,525
Boarding Load Factor (BLF)	67.0%	75.1%	70.8%	77.7%	71.3%
Air Taxi					
Aircraft Departures	2,860	3,161	3,502	3,588	3,654
Average Seats Per Departure	7	7	7	8	8
Enplanements	10,749	12,060	13,679	15,069	16,371
Boarding Load Factor (BLF)	53.7%	54.5%	55.8%	56.0%	56.0%
Total Operations	10,496	11,098	12,010	12,232	13,270

Sources: 2018 total commercial service operations, operations by equipment percentages and average seats per departure - USDOT BTS T-100, 2018 enplanements- ACAIS, Forecasts by Mead & Hunt.

Air Cargo (Freight/Mail) and Operations

Alaska Airlines began dedicated air cargo service with converted B737-700 freighters in late 2017 in conjunction with the phase-out of their aging B737-400 combi fleet. The B737-700 freighters offer a maximum payload of 42,000 pounds, which is an increase of 10,000 pounds more than the B737-400 combi. Alaska Airlines also schedules the dedicated freighters similar to the passenger-only Milk Run flights, with stops at KTN, Sitka, and Juneau between Seattle and Anchorage.

In 2018, 2,515 air cargo operations were performed at KTN, which were generally split equally between Alaska Airlines and Alaska Central Express. This equates to 6.9 daily operations by all-cargo carriers. However, due to Alaska Airlines' operation of the B737-700 freighter aircraft and the belly freight cargo capacity of their passenger aircraft, they transported 95.4 percent of freight and 77.3 percent of the mail that is handled at KTN. The balance of the air cargo freight and mail is transported by Alaska Central Express operating the Beech 1900 turboprop aircraft.

In recent years, e-commerce (currently led by Amazon) has been a significant driver of the air cargo market. According to Boeing's *World Air Cargo Forecast 2018-2037*, Amazon accounts for almost half of the e-commerce industry within the U.S. As shown in the **Table B22**, annual operations by all-cargo carriers are projected to remain steady for the first half of the planning period with additional weekly

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flights being added incrementally in 2028 and again in 2038, reflecting a CAGR of 1.1 percent. This compares to a projected CAGR of 2.3 percent for North America air cargo traffic also identified in Boeing’s *World Air Cargo Forecast 2018-2037*.

TABLE B22: KTN Air Cargo Operation Projections

Year	Air Carrier	Air Taxi	Total Air Cargo Operations
2018	1,249	1,266	2,515
2023	1,249	1,266	2,515
2028	1,457	1,474	2,931
2033	1,457	1,474	2,931
2038	1,561	1,578	3,139
CAGR 2018-2038	1.1%	1.1%	1.1%

Source: USDOT BTS T-100 Data (Obtained August 2019) & Mead & Hunt Projections.

Air cargo data by type (air freight/mail) is reported by commercial carriers (both airlines and all-cargo companies) to the USDOT BTS. Although KTN experienced an overall decline of 9.2 percent in air cargo handled since 2008, it has grown at a CAGR of 5.5 percent since 2014. Due to the projected continued growth of e-commerce, which represents an ever-increasing share of the air cargo market, the volume of air freight/mail at the Airport is projected to continue to grow at a CAGR of 1.0 percent. As shown in **Table B23**, total air cargo at the Airport is projected to reach over 12,000 tons by 2038. This rate of growth is conservative compared to Boeing’s *World Air Cargo Forecast 2018-2037*, which predicts U.S. air cargo to grow at a CAGR of 2.3 percent through the same 20-year forecast period.

TABLE B23: Air Cargo (Freight/Mail) Projections - In Tons

Year	Freight	Mail	Total
2018	4,344	5,663	10,007
2023	4,566	5,952	10,517
2028	4,798	6,255	11,054
2033	4,798	6,575	11,618
2038	5,301	6,910	12,210
CAGR 2018-2038	1.0%	1.0%	1.0%

Source: USDOT BTS T-100 Data (Obtained August 2019) & Mead & Hunt Projections.

Military Aircraft Operations

As noted in a previous section, existing military operational activity at KTN is very limited, with less than one hundred operations being recorded at the Airport in 2018. This activity was represented primarily by a variety of fixed-wing aircraft performing itinerant training operations from various locations in

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Alaska and the Pacific Northwest but did also include some helicopter operations. As presented in **Table B24**, this military activity is projected to remain consistent near 2018 levels, with KTN continuing to accommodate infrequent military training operations throughout the forecast period.

TABLE B24: KTN Military Operation Projections

Year	Itinerant	Local	Total Military Operations
2018	76	0	76
2023	100	0	100
2028	100	0	100
2033	100	0	100
2038	100	0	100
CAGR 2018-2038	0.0%	0.0%	0.0%

Source: USDOT BTS T-100 Data (Obtained August 2019) & Mead & Hunt Projections.

General Aviation Aircraft Operations and Based Aircraft

As noted in a previous section, a review of general aviation operations from FAA’s TFMSC database indicates that itinerant general aviation aircraft activity at KTN has historically been under-reported by the TAF from between 78 percent to 89 percent annually. In addition, 71.4 percent of the annual itinerant activity for 2018 (i.e., 1,704 operations) were recorded by business jets and turboprops, with the balance being represented by various piston aircraft operations.

Analysis of KTN’s 2008-2018 TFMSC general aviation operations data indicates that the 2018 total represents the approximate 10-year average itinerant operations count reported by the TAF. This average of 2,400 operations will be carried forward as the forecast subtotal for itinerant operations through the planning period. Also, since the TFMSC data does not provide operational data for local general aviation activity, the existing TAF estimate of 350 local operations will be projected through the planning period. A summary of the forecast general aviation aircraft operations is presented below in **Table B25**.

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TABLE B25: KTN General Aviation Operation Projections

Year	Itinerant	Local	Total
Historic			
2008	1,993 ¹	410 ²	2,403
2009	1,799 ¹	410 ²	2,209
2010	2,243 ¹	410 ²	2,653
2011	2,753 ¹	410 ²	3,163
2012	3,514 ¹	350 ²	3,864
2013	3,378 ¹	350 ²	3,728
2014	2,495 ¹	350 ²	2,845
2015	1,896 ¹	350 ²	2,246
2016	1,788 ¹	350 ²	2,138
2017	1,905 ¹	350 ²	2,255
2018	2,375 ¹	350 ²	2,725
Projected			
2023	2,400	350	2,750
2028	2,400	350	2,750
2033	2,400	350	2,750
2038	2,400	350	2,750
CAGR 2018-2038	0.0%	0.0%	0.0%

Source: TFMSC & TAF Data (Obtained August 2019) & Mead & Hunt Projections.

¹ FAA TFMSC.

² FAA TAF.

Consistent with the limited number of local general aviation operations that have historically been recorded at KTN, the general aviation-based aircraft counts have also been relatively low. Based on the TAF data, based aircraft totals have ranged from a high of 13 in 2008 through 2011 to a low of 5 between 2012 and 2018. For the purposes of this planning effort, which is focused on the Terminal Area Plan, the existing counts of general aviation-based aircraft will be carried forward through the planning period. A summary of the forecast general aviation aircraft breakdown is presented below in **Table B26**.

TABLE B26: KTN Based Aircraft Projections

	2018 ¹	2023	2028	2033	2038	CAGR 2018-38
Based Aircraft	5	5	5	5	5	0.0%
Single-Engine	3	3	3	3	3	0.0%
Multi-Engine	1	1	1	1	1	0.0%
Jet	1	1	1	1	1	0.0%
Helicopter	0	0	0	0	0	---
Other	0	0	0	0	0	---

Source: ¹ FAA TAF and Mead & Hunt projections.

Operations Forecast by Aircraft Type

With the total number of aircraft operations projected for each category of user, the next step in the forecasting process involves the individual and collective use of the Airport by various aircraft types. The aircraft types expected to use the Airport assist in determining the amount and type of facilities needed to meet the future aviation demand.

Table B27 depicts the approximate level of use by aircraft types that are projected to use the Airport through the planning period. As a percentage of projected increasing total operations, commercial service passenger aircraft operations are expected to increase from 66.4 percent in 2018 to 68.9 percent in 2038, air cargo operations are projected to increase from 15.9 percent to 16.3 percent, and general aviation aircraft operations are projected to decrease from 17.2 percent to 14.3 percent, while military aircraft operations are projected to remain flat for the planning period.

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TABLE B27: Summary of Operations Forecast by Aircraft Type, 2018-2038

Operation by Type	2018	2023	2028	2033	2038
Commercial Service ¹	10,496	11,098	12,010	12,232	13,270
Narrow Body Jets	4,600	4,600	4,704	4,704	5,432
66+ Seat Regional Jets	176	176	302	352	530
Air Taxi	5,720	6,322	7,004	7,176	7,308
Air Cargo ¹	2,515	2,515	2,931	2,931	3,139
Narrow Body Jet	1,249	1,249	1,457	1,457	1,561
Turboprop	1,266	1,266	1,474	1,474	1,578
General Aviation	2,725	2,750	2,750	2,750	2,750
Single Engine Piston	516	520	520	520	520
Multi-Engine Piston	505	520	520	520	520
Turboprop	754	760	760	760	760
Business Jet	950	950	950	950	950
Helicopter	0	0	0	0	0
Military ¹	76	100	100	100	100
Total	15,812	16,463	17,791	18,013	19,259

Source: Mead & Hunt.

¹ Actual

In the commercial service category, the percentage distribution of narrow body jet, 66+ Seat Regional jet, and air taxi operations are projected to remain relatively consistent through the planning period. Regarding general aviation operations, it is forecast that the Airport will continue to experience a significant amount of business jet and turboprop operations relative to other aircraft types. This is the result of a higher percentage of use of the Airport by itinerant aircraft operators and limited use for training and pleasure flying.

Peak Period Forecasts

Peak period forecasts are prepared to estimate when certain airport facilities such as the passenger terminal, will be at their busiest. They are utilized to evaluate the Level-of-Service (LOS) provided by both airside and landside facilities (e.g., runway/taxiway systems and passenger terminal buildings) and to assist in the rightsizing of future development projects. As with most development, airport improvements are not typically designed for the busiest hour of the busiest day of the year because such a design would lead to over-building. Instead, peak period forecasts will often identify a busy period throughout the year (e.g., the average day of the peak month) from which to further analyze. Forecasters use historical records to project future peaking; therefore, it is essential that peak forecasts be reevaluated if a change in user or aircraft type occurs. **Table B28** presents a breakdown of the peak period passenger and aircraft operations forecasts generated for this study.

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TABLE B28: Peak Period Forecasts

Category	Period	Factor	2018	2023	2028	2033	2038
Enplanements and Deplanements	Annual	100%	227,112	254,809	289,029	318,385	345,896
	Peak Month	13.0%	29,321	32,700	37,100	40,900	44,400
	Peak Day	3%	980	1,090	1,240	1,360	1,480
	Peak Hour – Enplanements ¹	23%	230	250	290	310	340
	Peak Hour – Deplanements ¹	23%	230	260	290	320	350
Total Passengers	Annual	100%	457,502	513,295	582,230	641,366	696,784
	Peak Month	12.9%	58,926	66,100	75,000	82,600	89,700
	Peak Day	3%	1,960	2,200	2,500	2,750	2,990
	Peak Hour ¹	15%	280	320	360	400	430
Aircraft Operations	Annual	100%	15,812	16,463	17,791	18,013	19,259
	Peak Month	12%	1,800	1,880	2,030	2,050	2,200
	Peak Day	3%	60	60	70	70	70
	Peak Hour	18%	11 ²	11 ²	13 ³	13 ³	13 ³

¹ Peak hour forecasts adjusted to reflect average load factor, depicted in **Table B20**.

² Total includes four Alaska Airline passenger operations (two flights), one Island Air Express passenger operation (one departure or arrival), and one Alaska Airline cargo operation (one departure).

³ Total includes four Alaska Airline passenger operations (two flights), one Island Air Express passenger operation (one departure or arrival), two Delta Air Line passenger operations (one flight), and one Alaska Airline cargo operation (one departure).

Peak Enplanements/Deplanements/Passengers: Month: FAA T-100 Database. Day and Hour: Airline Schedules.

Peak Aircraft Operations: Peak Month and Day: USDOT BTS T-100 Data. Day and Hour: Airline Schedules.

Peak enplanement and deplanement passenger forecasts are driven by growth in total passenger numbers, resulting from a combination of airlines transitioning from smaller to larger aircraft (e.g., aircraft up-gauging) and/or the provision of additional flights (e.g., adding summer season flights). T-100 data and airline schedules show that KTN experiences peak passenger numbers during the summer months of June through August. This coincides with Alaska’s peak summer tourist season, during which time both Alaska Airlines and Delta Air Lines add seasonal flights from Seattle. Daily peaks for both enplaned and deplaned passengers occur in the afternoon (between 4:40 p.m. and 5:35 p.m.) and coincide with the daily peak in commercial passenger operations occurring currently.

Future peaking analysis assumes that peak percentages, shown in **Table B28**, will remain the same into the future; however, the total number of peak passengers will steadily increase due to projected increases in aircraft seating capacities.

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Critical Aircraft

The critical aircraft is the most demanding type or group of aircraft having more than 500 annual non touch-and-go operations at an airport. For this analysis at KTN, operations data by aircraft type was compiled from a combination of the T-100 data and the Alaska Airline’s schedule. This data for the top seven ranked aircraft at KTN is presented below in **Table B29**.

TABLE B29: Existing Critical Aircraft (2018)

Rank	Aircraft	Role	Operations	ARC
1	Boeing 737-700	Passenger and Air Cargo Airline	4,161	C-III
2	Cessna C208B	Air Taxi	3,834	A-II
3	Boeing 737-800	Passenger Airline	1,520	D-III
4	Beech 1900 A/B/C/D	Air Cargo Airline	1,266	B-II
5	Pilatus PC-12	Air Taxi	836	A-II
6	Embraer ERJ-175 & CRJ 900	Passenger Airline	176	C-III
7	Boeing 737-900	Passenger Airline	168	D-III

Source: T-100 data and airline schedule

As can be noted, existing commercial passenger service of narrow-body jets establishes the existing critical aircraft at KTN. With 1,688 operations of the Boeing 737-800 and 737-900 aircraft being recorded in 2018, the existing Airport Reference Code (ARC) is confirmed to be defined by Aircraft Approach Category (AAC) D and an Airplane Design Group (ADG) III (i.e., ARC D-III).

The exact composition of the future fleet is unknown. However, it is projected that KTN’s commercial passenger service will continue to be represented predominantly with various models of ARC C-III and D-III narrow-body jets, maintaining similar physical characteristics throughout the planning period. **Table B30** presents the projected future operations by the air carrier fleet, distinguished by aircraft seating capacity.

TABLE B30: Future Air Carrier Operations by Aircraft Type

Seating Capacity	Typical Aircraft	ARC	2023	2028	2033	2038
60-76	Embraer ERJ-175 & CRJ 900	C-III	176	302	352	530
100-124	Boeing 737-700	C-III	4,161	2,913	1,457	1,561
125-150	Boeing 737-800	D-III	1,520	3,080	4,536	3,808
> 150	Boeing 737-900	D-III	168	168	168	1,624

Source: Mead & Hunt analysis, 2019.

Forecast Summary

The aviation activity forecast summary information is presented in Tables B30 and B31. Highlights of the forecasts are presented below.

- **Passenger enplanement growth is expected to continue, driven primarily by the increasing local and national economies and the steady growth of tourism within the region.**
- **Current annual average load factors for the airlines are slightly below the industry average at KTN, which means that a portion of the projected enplanement growth can be absorbed by current aircraft operation levels and/or future aircraft up-gauging. However, some additional flights are projected to be needed to serve additional routes and/or increased frequencies during the latter years of the planning period.**
- **The average number of seats per departure will continue to increase as airlines transition (i.e., up-gauge) to larger aircraft. Therefore, commercial aircraft operations will likely remain steady until the latter years of the planning period as the total number of seats increase. The smaller air taxi aircraft (less than 9 seats) will continue to serve the smaller communities within the market area and likely increase operations in response to continued expansion of the tourism industry.**
- **Air cargo volume and aircraft operations are projected to increase slightly through the planning period in response to the continued expansion of the e-commerce industry.**
- **Both military and general aviation operations are projected to remain steady, with no known factors to support increasing growth rates.**
- **The overall number of based aircraft at KTN is expected to remain flat, with no known factors to support increasing growth rates.**
- **The future critical aircraft at KTN will continue to be represented by the existing Alaska Airlines narrow-body jet fleet that provide commercial passenger service to the facility. Both the Boeing 737-800 and 900 series aircraft are categorized in accordance with the ARC D-III design standards.**

In accordance with language specified in Aviation Forecast Guidance APP-400, local aviation forecasts are approved by regional airports division offices or airports district offices (ADOs). Local forecasts that are consistent with the FAA's Terminal Area Forecast (i.e., the local forecast differs by less than 10 percent in the first five years, differs by less than 15 percent in the remaining forecast periods, and does not affect the timing or scale of an airport project) do not need to be coordinated with APP-400 and APO-110. Local forecasts that are not consistent with the TAF, but which do not affect the timing or scale of an airport project and do not impact the analysis of a National Environmental Policy Act (NEPA) document or Benefit Cost Analysis (BCA), may be accepted (not approved) for information purposes by the regional office/ADO without APP/APO coordination. As noted on **Table B31** and **Table B32** below, the forecasts for passenger enplanements and commercial operations are within the specified TAF thresholds for acceptance. However, due to a combination of the TAF under-reporting itinerant general

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aviation and commercial operations for 2018, which was confirmed by the FAA’s TFMSC and the USDOT T-100 databases, the specified TAF threshold cannot be met for total operations. Since the differential in total operations for the 2018 base year would not affect the timing or scale of an airport project and would not impact the analysis of a National Environmental Policy Act (NEPA) document or Benefit Cost Analysis (BCA), the FAA regional office may be able to approve the KTN total operations forecast without additional coordination.

TABLE B31: Summary of Airport & TAF Forecast Comparison, 2018-2033

Category	Year	Airport Forecasts	TAF	AF/TAF (% Difference)
Passenger Enplanements				
Base yr.	2018	135,389	134,359	0.8%
Base yr. + 5yrs.	2023	151,900	143,022	6.2%
Base yr. + 10yrs.	2028	172,300	154,863	11.3%
Base yr. + 15yrs.	2033	189,800	168,934	12.4%
Commercial Operations				
Base yr.	2018	13,011 ¹	11,798	10.3%
Base yr. + 5yrs.	2023	13,613	12,580	8.2%
Base yr. + 10yrs.	2028	14,941	13,261	12.7%
Base yr. + 15yrs.	2033	15,163	14,045	8.0%
Total Operations				
Base yr.	2018	15,812 ²	12,678	24.7%
Base yr. + 5yrs.	2023	16,463	13,460	22.3%
Base yr. + 10yrs.	2028	17,791	14,141	25.8%
Base yr. + 15yrs.	2033	18,013	14,925	20.7%

Source: Mead & Hunt, Inc.

Note: TAF data is based on the U.S. Government fiscal year basis (October through September)

¹The Airport Forecast 2018 Base Year data reflects actual calendar year operation counts for commercial passenger and air cargo flights.

²The Airport Forecast 2018 Base Year data also reflects actual calendar year operation counts for itinerant general aviation from FAA TFMSC data.

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TABLE B32: TAF Summary of Airport Planning Forecasts

	Average Annual Compound Growth Rates								
	Base Yr. (2018)	Base Yr. +1yr. (2019)	Base Yr. +5yrs. (2023)	Base Yr. +10yrs. (2028)	Base Yr. +15yr. (2033)	Base yr. to +1 (2018)	Base yr. to +5 (2023)	Base yr. to +10 (2028)	Base yr. to +15 (2033)
Passenger Enplanements¹	135,389	138,691	151,900	172,300	189,800	2.4%	2.3%	2.4%	2.3%
Operations									
Air Carrier (Passenger)	4,776	4,776	4,776	5,006	5,006	0.00%	0.00%	0.47%	0.38%
Air Carrier (Air Cargo)	1,249	1,249	1,249	1,457	1,457	0.00%	1.6%	1.55%	1.03%
Commuter (Passenger)	5,720	5,720	6,322	7,004	7,176	2.02%	2.02%	2.05%	1.52%
Commuter (Air Cargo)	1,266	1,266	1,266	1,474	1,474	0.00%	0.00%	1.53%	1.02%
Total Commercial Operations	13,011	13,011	13,613	14,941	15,163	0.00%	0.91%	1.39%	1.03%
General Aviation	2,725	2,730	2,750	2,750	2,750	0.18%	0.18%	0.09%	0.06%
Military	76	81	100	100	100	6.32%	5.64%	2.78%	1.85%
Total Operations	15,812	15,942	16,463	17,791	18,013	0.82%	0.81%	1.19%	0.87%
Local	0	0	0	0	0	---	---	---	---
Itinerant	15,473	15,601	16,113	17,441	17,663	0.82%	0.81%	1.19%	0.87%
Instrument Operations¹	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
Peak Hour Operations	11	10.8	10.8	12.6	12.6	0.00%	0.00%	1.55%	1.03%
Cargo/Mail (enplaned + deplaned tons)	10,007	10,109	10,517	11,054	11,618	1.02%	1.00%	1.00%	1.00%

Source: Mead & Hunt, Inc.

¹ No data on instrument operations available.

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TABLE B32: TAF Summary of Airport Planning Forecasts (Continued)

	Average Annual Compound Growth Rates								
	Base Yr. (2018)	Base Yr. +1yr. (2019)	Base Yr. +5yrs. (2023)	Base Yr. +10yrs. (2028)	Base Yr. +15yr. (2033)	Base yr. to +1 (2015)	Base yr. to +5 (2019)	Base yr. to +10 (2024)	Base yr. to +15 (2029)
Based Aircraft									
Single Engine (Nonjet)	3	3	3	3	3	0.0%	0.0%	0.0%	0.0%
Multi-Engine (Nonjet)	1	1	1	1	1	0.0%	0.0%	0.0%	0.0%
Jet Engine	1	1	1	1	1	0.0%	0.0%	0.0%	0.0%
Helicopter	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
Other	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
Total	5	5	5	5	5	0.0%	0.0%	0.0%	0.0%
Average Aircraft Seat Size (seats)	135.3	135.3	135.3	155.3	154.5	---	---	---	---
Average boarding load factor	67.0	68.6	75.1	70.8	77.7	---	---	---	---
GA operations per based aircraft	545	546	550	550	550	---	---	---	---

Source: USDOT BTS T-100, TFMSC, TAF, & ACAIS Data (Obtained August 2019) & Mead & Hunt Projections.

¹ Includes enplanements on both air carrier and commuter airlines.

c – Terminal Area Facility Requirements



Introduction.

This chapter examines the terminal area facility needs in order to determine the type and magnitude of facilities to be programmed for the Airport. Specific allocations of the type and magnitude of such facilities will be noted as a basis for the recommendations for improvements. Perhaps the most important component of this Terminal Area Plan is the passenger terminal building itself. Except for a minor expansion of the building to the north, the existing terminal is fundamentally unchanged since it was originally constructed in 1973. Although modifications to the original facilities have been made, many areas of terminal still do not function optimally.

Developing a terminal facility program begins with examining the adequacy of each existing component to serve current activity. From that basis, forecast changes in activity are applied to develop recommendations for future planning horizons. These recommendations use actual activity and facilities at Ketchikan International Airport (KTN) as a basis and are the subject of quantitative as well as qualitative analyses. Recommendations for future facilities are based on “industry standards” in conjunction with local conditions and circumstances.

Terminal Area Plan : C—Terminal Area Facility Requirements

Terminal Area Facility Program

The components that comprise the terminal area facility program include vehicle parking, the commercial and air taxi parking aprons, and the terminal building. The facility needs for each of these components are described in the following sections.

Vehicle Parking

The location of the Airport and required ferry access for vehicles, along with the seasonal peaks and limited area available to develop additional parking facilities were considered in the development of parking demand projections at KTN. As described in **Chapter A – Inventory**, the majority of public and employee parking is provided in the Airport Ferry public parking lot on Revillagigedo Island. The total existing parking supply at the Airport is 161 spaces, which includes 101 public spaces and 60 rental car spaces; there are no designated employee spaces.

Based on interviews with Airport staff, rental car agency managers, and other stakeholders, additional public, employee, and rental car parking is desired; however, it is assumed that the majority of public and employee parking demand will continue to be accommodated by the parking facilities across the Tongass Narrows and that the rental car agencies will continue to shuttle vehicles on the ferry from their storage lots outside of the Town of Ketchikan.

Public Parking

As noted above, the majority of public parking is accommodated by facilities across the Tongass Narrows. As enplanements increase over the planning horizon it is expected that public parking demand will also increase. With limited space available for parking expansion at the Airport, it is expected that additional supply will be provided by Revillagigedo Island (town side of the Tongass Narrows) parking facilities, which are currently being expanded.

The State of Alaska Department of Transportation & Public Facilities (DOT & PF) is in the final stages of design for improvements to Airport ferry parking facilities that provides a total of 368 public parking stalls. Construction is anticipated to be completed in 2021 and is expected to meet public parking demand during the planning horizon.

Airport management indicated that while overall parking supply is sufficient at facilities on Revillagigedo Island, there is a strong desire for a premium covered parking product directly adjacent to the Airport. Factors that contribute to this demand for public parking at the Airport include the high proportion of leisure passengers traveling with multiple oversized bags, consistent rainfall, and increased rental parking demand in summer seasonal months. A premium parking product that meets this demand would be an added value to several user groups at the airport.

Rental Car Parking

Interviews were conducted with both car rental agency managers on current operations for both the consolidated rental car (RAC) ready/return spots and the RAC storage lot. Each manager was asked to

Terminal Area Plan : C—Terminal Area Facility Requirements

describe current constraints and whether the existing parking supply is adequate. Both car rental agency managers indicated that while they are able to meet demand during the winter months, the existing capacity is often exceeded during the seasonal summer peaks, requiring increased frequency of shuttling from the lower storage lot at the Airport or at their storage lots on Revillagigedo Island.

Based on the input from the car rental agency managers that additional spaces needed beyond the existing 60 spaces, balanced with the increased operational cost to lease additional rental car parking, it's estimated that there is currently a deficit of approximately 32 spaces, or about 53% of the existing supply. This equates to parking demand ratio of 0.68 spaces per 1,000 enplanements (168/135.389). RAC ready/return and storage parking demand projections are summarized in **Table C1**. These projections assume that rental car parking demand will increase at the same rate as enplanements and the sizes of each rental car fleet.

TABLE C1: Rental Car Ready/Return and Storage Parking Demand Projections

Year	Enplanements	Demand Ratio per 1,000 enplanements	Projected Demand	Parking Capacity	Surplus/Deficit
2018	135,389	0.68	92	60	-32
2023	151,900	0.68	103	60	-43
2028	172,300	0.68	117	60	-57
2033	189,800	0.68	129	60	-69
2038	206,200	0.68	140	60	-80

Source: Mead & Hunt.

Employee Parking

Currently, there are no designated employee parking spaces at the Airport. While Airport management and other Airport stakeholders indicated there is some desire for designated employee parking, it is assumed that the majority of employees will continue to use the Airport Ferry parking lot and that employee parking demand will be accommodated by planned improvements to Revillagigedo Island parking facilities. It's possible that some employee parking could be incorporated into future parking facility improvements at the Airport; however, this will be dictated by demand and availability to accommodate employee parking in addition to public and rental car parking at that time.

Parking Demand Summary

The facility needs analysis determined that future Public and Employee parking demand will be met by planned expansion of the Airport's ferry parking facilities. Nevertheless, the demand for a premium parking product adjacent to the terminal indicates a deficit of parking for certain users. Projected deficits for rental parking illustrate a need for additional rental parking at the Airport over the planning horizon. These deficits are operational in nature resulting from a desire by rental operators to minimize

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ferrying vehicles across the Tongass Narrow during peak times and also by passengers who want to pick up and drop off rental cars at the Airport.

Due to the limited available space for additional parking supply adjacent to the Airport it is assumed that the distribution of future parking spaces (public, employee, rental car) will ultimately be determined by factors such as the availability of funding, the addition of a premium parking product, and the rental operator lease negotiations. It is likely that in order to provide additional supply, solutions will need to incorporate a parking structure and/or require placing fill into the Tongass Narrows. As alternatives are developed and refined in the following chapters, the goal will be to at least maintain the existing parking capacity and identify areas for relocating existing parking facilities to accommodate the expansion of other needed terminal facilities.

Aircraft Gate Demands

The number of gates needed to support forecast activity is a critical element in determining the overall size and configuration of the terminal complex. A "gate" is defined as an aircraft parking position with a passenger access to the terminal, either by a jet bridge or by ground loading. As Alaska Airlines and Delta have and continue to transition their fleets to the use of larger regional commuter and Group III narrow-body aircraft, the Airport has experienced congestion within the terminal operations area and on the apron during peak periods. The airlines have also attempted to schedule around the peaks during the busy summertime at KTN due to the lack of gates/hardstands for airport. The purpose of this section is to present a framework for developing gate assets for near- and long-term growth.

As noted in **Chapter B – Forecasts of Aviation Activity**, the peak season at KTN is during the summer months. The following chart in **Figure C1** illustrates the peak summer airline schedule for 2019 at KTN. At can be seen in the chart, the Airport experiences two commercial aircraft on the ground at the same time approximately three times per day. The peak hour has been defined as late afternoon when Alaska flights 64 and 67 are on the ground at the same time.

Terminal Area Plan : C—Terminal Area Facility Requirements

FIGURE C1: Peak Season Scheduled Flight Activity and Gate Demand

Hourly Schedule ->		5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM						
		6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM						
SUMMER: DEPARTURES + ARRIVALS																								
Total Hour Period ->			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					
Total Flight Frequency ->		Average ->	1.5	0	0	0	2	4	2	2	2	2	3	3	2	0	0	2	0					
Total Hourly Peaking Percent ->		Average ->	9.0%	0.0%	0.0%	0.0%	11.8%	23.5%	11.8%	11.8%	11.8%	11.8%	17.6%	17.6%	11.8%	0.0%	0.0%	11.8%	0.0%					
ARRIVALS (DEPLANED) - SUMMER																								
#	Time	Airline	Flight #	From	Frequency	--	--	--	2	2	--	1	2	--	2	1	2	--	--	--	1	--		
1	8:25 AM	ALASKA	65	SEA	7 Days				8:25 AM	15.4%	15.4%												7.7%	
2	8:35 AM	ALASKA	60	JUN	7 Days				8:35 AM															
3	9:25 AM	ALASKA (CARGO)	7005	ANC-JUN-SIT	Not Sat. or Mon.				9:25 AM															
4	9:25 AM	ALASKA (CARGO)	7001	SEA	Only Mon.				9:25 AM															
5	11:00 AM	ALASKA	177	SEA	7 Days					11:00 AM														
6	12:45 PM	ALASKA	62	SIT	7 Days						12:45 PM													
7	12:51 PM	DELTA	3503	SEA	7 Days (eff. 6/8)						12:51 PM													
8	2:15 PM	ALASKA (CARGO)	7002	SEA	Sat. Only							2:15 PM												
9	2:50 PM	ALASKA	789	SEA	7 Days							2:50 PM												
10	3:10 PM	ALASKA (CARGO)	7004	SEA	Not Mon.								3:10 PM											
11	4:35 PM	ALASKA	64	ANC-JUN-PSG-WRG	7 Days									4:35 PM										
12	4:50 PM	ALASKA	67	SEA	7 Days									4:50 PM										
13	8:05 PM	ALASKA	69	SEA	7 Days																			8:05 PM
DEPARTURES (ENPLANED) - SUMMER																								
#	Time	Airline	Flight #	Destination	Frequency	--	--	--	--	2	2	1	--	2	--	2	1	2	--	--	--	1	--	
1	9:10 AM	ALASKA	65	WRG-PSG-JUN-ANC	7 Days					9:10 AM	15.4%	15.4%	7.7%			15.4%	7.7%	15.4%					7.7%	
2	9:30 AM	ALASKA	60	SEA	7 Days					9:30 AM														
3	10:15 AM	ALASKA (CARGO)	7005	SEA	Not Sat. or Mon.							10:15 AM												
4	10:15 AM	ALASKA (CARGO)	7001	J-A	Only Mon.							10:15 AM												
5	11:55 AM	ALASKA	178	SEA	7 Days							11:55 AM												
6	1:21 PM	DELTA	3503	SEA	7 Days								1:21 PM											
7	1:40 PM	ALASKA	62	SEA	7 Days								1:40 PM											
8	3:05 PM	ALASKA (CARGO)	7002	SIT-JUN-SEA	Sat. Only											3:05 PM								
9	3:45 PM	ALASKA	174	SEA	7 Days											3:45 PM								
10	4:00 PM	ALASKA (CARGO)	7004	SIT-JUN	Not Mon.												4:00 PM							
11	5:25 PM	ALASKA	64	SEA	7 Days													5:25 PM						
12	5:40 PM	ALASKA	67	SEA	7 Days													5:40 PM						
13	8:55 PM	ALASKA	69	JUN	Not Tues. or Sat.																			8:55 PM

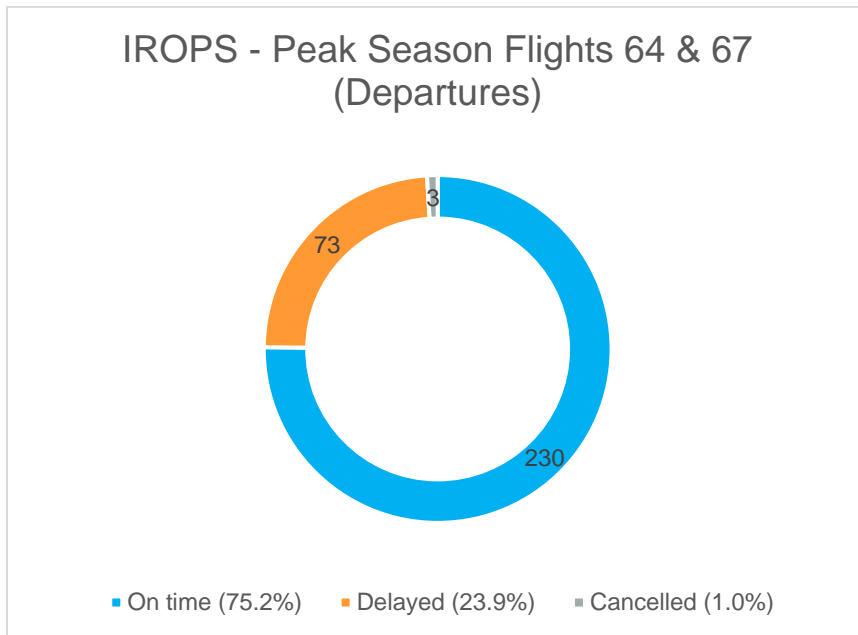
Source: KTN – Summer 2019 Flight Schedule.

Irregular Operations (IROPs)

Given the coastal climate and weather conditions at KTN, its position along the route between Seattle and other Alaska airports, and the availability of aircraft maintenance services, irregular operations (IROPs) are common at KTN, especially during the peak summer months. Delays due to weather and/or maintenance limit the ability of the Airport to accommodate current demand, particularly during the peak hour. During the peak summer season, Alaska Airlines flights 64 and 67, the two “Milk Run” peak hour flights in the late afternoon, are delayed approximately 25 percent of the time as illustrated in **Figure C2** and **Figure C3**. With only two narrow body parking positions, and the need to accommodate Alaska’s afternoon cargo flight as well, IROPs commonly disrupt the availability of aircraft parking positions during the summer months. These conditions result in gate constraints and support the need for a third commercial aircraft parking position and a third gate at KTN.

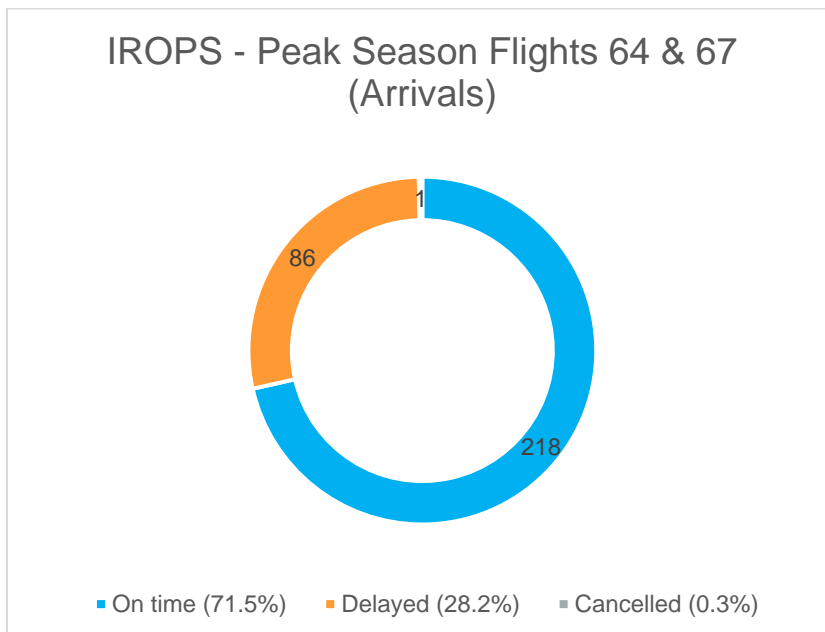
Terminal Area Plan : C—Terminal Area Facility Requirements

FIGURE C2: IROPS - Peak Season Flights 64 & 67 (Departures)



Source: DOT Bureau of Transportation Statistics (BTS) for May 2019 through September 2019.

FIGURE C3: IROPS - Peak Season Flights 64 & 67 (Arrivals)



Source: DOT Bureau of Transportation Statistics (BTS) for May 2019 through September 2019.

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Annual Passengers Per Gate Approach

Airport Cooperative Research Program (ACRP) Report 25 recommends two potential approaches to defining gate demand based on passenger projections. Unfortunately, both approaches are best suited for medium/large hub airports, not nonhub airports like KTN. However, for reference purposes, both approaches are presented here. The first approach shown in the following **Table C2** uses the current ratio of annual passengers per gate, adjusted for forecast changes in fleet mix and annual load factors at each forecast level. This methodology assumes that the pattern of gate utilization will remain relatively stable. The increase in passengers per gate would be due to increases in enplanements per departure (due to fleet seating capacity and/or passenger load factors), as opposed to increasing numbers of departures per gate. This approach results in a recommendation of two commercial gates by 2038 and assumes that additional departures and IROPS will be met during times when gates are not currently occupied.

TABLE C2: Annual Passengers Per Gate Approach

Year	Annual Enplaned Passengers	Annual Departures	# of Gates	Enplaned Passengers per Gate	Enplaned Passengers per Departure
2014	105,254	2,356	2	52,600	45
2015	110,338	2,365	2	55,200	47
2016	113,084	2,357	2	56,500	48
2017	115,572	2,314	2	58,800	50
2018	118,643	2,300	2	60,700	52
2020	124,640	2,300	2	63,800	54
2025	139,840	2,300	2	71,600	61
2030	158,621	2,352	2	79,400	67
2035	174,731	2,352	2	87,500	74
2038	189,829	2,716	2	82,300	70

Source: Mead & Hunt.

Annual Departures Per Gate Approach

The second approach considers Departures per Gate, as shown in the following **Table C3**, the ratio of annual departures/gate for each forecast year is calculated by multiplying the current (2019) factor by the percentage change in assumed daily departures/gate. This approach also results in a recommendation of two commercial gates by 2038 and assumes that additional departures and IROPS will be met during times when gates are not currently occupied.

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TABLE C3: Annual Departures Per Gate Approach

Year	Annual Enplaned Passengers	Annual Departures	# of Gates	Enplaned Passengers per Gate	Enplaned Passengers per Departure
2014	105,254	2,356	2	52,600	45
2015	110,338	2,365	2	55,200	47
2016	113,084	2,357	2	56,500	48
2017	115,572	2,314	2	58,800	50
2018	118,643	2,300	2	60,700	52
2020	124,640	2,300	2	63,800	54
2025	139,840	2,300	2	71,600	61
2030	158,621	2,352	2	79,400	67
2035	174,731	2,352	2	87,500	74
2038	189,829	2,716	2	82,300	70

Source: Mead & Hunt.

Aircraft Parking Aprons

As described in previous sections, KTN is considered a gate constrained airport, meaning that the airlines must schedule flights at certain times during the day when a commercial parking position is likely to be available. There are currently two designated commercial aircraft parking positions at KTN, one of which has ground loading capability only (see **Figure C4**). Based on the schedule being developed by the airlines for the 2020 peak season, it is recommended that the Airport plan for three commercial parking positions, one dedicated cargo parking position and space for five to six air taxi aircraft parked on the apron during the summertime peak hour.

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FIGURE C4: Passengers Deplaning from Ground Loading Commercial Aircraft Parking Position



Source: Mead & Hunt.

Terminal Building

This section assesses the current capacity of facilities in the terminal building against the expected demand for them, making recommendations for meeting facility requirements based on the Forecasts of Aviation Activity. These recommendations provide the basis for developing concepts for the terminal building that will have the capacity to meet future demand.

References

The recommendations for meeting future facility requirements have been developed using the consultant's prior experience together with references for airport terminal planning and design, including the following:

- *14 Code of Federal Regulations (CFR) Part 77: Safe, Efficient Use and Preservation of Navigable Airspace*
- *FAA Advisory Circular 150/5070-6B: Airport Master Plans*
- *FAA Advisory Circular 150/5360-13A: Airport Terminal Planning and Reference Materials*
- *Airport Cooperative Research Program (ACRP) Report 25: Airport Passenger Terminal Planning and Design and References*
- *Airport Cooperative Research Program (ACRP) Report 54: Resource Manual for Airport In-Terminal Concessions*
- *Airport Cooperative Research Program (ACRP) Report 130: Guidebook for Airport Terminal Restroom Planning and Design*
- *TSA Checkpoint Requirements and Planning Guide, December 17, 2018*

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- *TSA Planning Guidelines and Design Standards for Checked Baggage Inspection Systems, Version 6.0*

The following paragraphs briefly summarize the documents listed above and used in this analysis.

14 CFR Part 77

CFR Part 77 establishes standards for preserving navigable airspace at and around the airport, identifying potential aeronautical hazards early in the planning process.

FAA Advisory Circular (AC) 150/5070-6B: Airport Master Plans

This AC provides guidance for the preparation of airport master plans, which are comprehensive plans for meeting future aviation demand. The elements of a master planning process vary in scope and complexity, depending on the goals and issues of the individual airport. They provide a strategy for implementing near-term projects in the context of long-term development.

FAA AC 150/5360-13A: Airport Terminal Planning

This AC provides guidance for developing airport passenger terminals to meet future aviation demand. It outlines the space programming and concept planning processes for the terminal building and its adjacent site, providing references to publications that provide greater detail on key elements.

ACRP Report 25: Airport Terminal Planning and Design

The ACRP performs research to assist in developing airports to efficiently meet the challenges facing the nation's aviation system. Report 25 provides comprehensive guidance for the planning and design of airport commercial passenger terminal facilities, addressing airside, terminal building, and landside components of the terminal complex.

ACRP Report 54: Resource Manual for Airport In-Terminal Concessions

This manual provides guidance on the development of airport concessions programs for providing food and beverage establishments as well as retail stores, amenities, and passenger services.

ACRP Report 130: Guidebook for Airport Terminal Restroom Planning and Design

This report provides comprehensive guidance for planning airport restroom facilities, efficiently accommodating the needs and expectations of passengers.

Transportation Security Administration (TSA) Checkpoint Requirements and Planning Guide

Because each commercial airport represents a point of entry into the national aviation system, all commercial airports in the United States are required to provide checkpoints in order to screen passengers and their carry-on belongings before the passengers are admitted to the secure portion of the terminal building. Security checkpoints must meet the security and design criteria that is mandated by the TSA Checkpoint Requirements and Planning Guide.

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TSA Planning Guidelines and Design Standards for Checked Baggage Inspection Systems

All checked baggage must be screened for unallowable items before being loaded onto a commercial aircraft. TSA's Planning Guidelines and Design Standards for Checked Baggage Inspection Systems (CBIS) provides security and design guidance, identifying the operational requirements for providing a CBIS.

Previous Airport Master Plan Recommendations

The 2005 Master Plan recommended a new 23,000 SF remote terminal, located on the opposite side of the Tongass Narrows. The proposed concept involved splitting passenger functions between the two buildings separated by the Narrows.

There have been changes in design guidance and KTN air service since the MP was completed more than ten years ago, affecting both programming recommendations and the serviceability of the terminal. In this terminal area plan the split terminal concept was not considered due to operational inefficiencies for the Airport and its tenants, as well as inefficiencies resulting from duplication of maintenance and utility costs.

Passenger Terminal Space Program

The building program is used to assess the existing plan, identify operational deficits, and provide information on ways to rectify the deficits. In anticipation of developing layout concepts for building expansions, it recommends facilities to include in future work and provides direction for the sizes of these facilities. The assessment of the capacity of facilities is based on the forecasted demand. Several different metrics are used to determine this demand. For example, terminal building's overall capacity (gross terminal area) is validated based on forecasted annual passenger activity. The demand for most individual areas of the building, such as the departure lounges and lobby queuing space is based on the "peak hour" passenger activity, which is the time that the terminal building will experience the most concentrated public use. All terminal facilities must be capable of adequately meeting the demands of this point in time.

As indicated by this space program below, the KTN terminal should be twice the size that is today to function efficiently and, in twenty years, it is expected that it will need to nearly triple in size to meet the projected need. The following table summarizes the terminal program and space needs based on the updated forecast of annual enplanement and peak hour passengers (**Chapter B**).

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TABLE C4: Airport Terminal Facilities Program

Draft: KTN Terminal Program March 6, 2020							Nonhub Primary
	Exist 2019	2019	2023	2028	2033	2038	2038 is estimated. Air Carrier and Air Taxi PHS are different.
Pk Hr Enplaned PAX: Air Carrier		235	260	290	310	340	
Pk Hr Enplaned PAX: Air Taxi		45	45	45	45	45	
	GSF	Recommended Gross Square Footage					
Terminal - Landside							
Gates: Air Taxi (GB)	1	1	1	1	1	1	Nonsecure, ground floor
Air Taxi Gate & Seating	585	1,350	1,377	1,405	1,433	1,461	Podium, circulation, baggage
Ticketing Queue & Kiosks	1,923	2,875	2,635	2,912	3,119	3,407	Includes Air Taxi and Air Carrier
Circulation	4,485	9,072	9,858	10,221	10,584	11,642	
Baggage Carousels	1	2	2	2	2	2	
Baggage Claim	1,641	4,080	4,503	5,016	5,548	6,063	Adds oversized baggage
Public Restrooms	690	1,542	1,614	1,702	1,778	1,866	
Meeter / Greeter Lounge	970	1,413	1,559	1,737	1,891	2,070	
Public Concessions & Vending	209	1,177	1,299	1,448	1,576	1,725	
Bag Carts & Wheelchairs	47	277	304	345	380	418	
Subtotal Public	10,550	21,785	23,150	24,785	26,308	28,653	
Security Screening							Air Carrier only
Number of CP Lanes	1	2	2	2	2	3	
Passenger Screening	1,975	2,600	2,600	2,600	2,600	3,900	
CP Queue	627	800	800	800	800	1,200	Lg to accommodate ferry PAX surge
CP Exit	100	600	600	600	600	900	
Checkpoint Total	2,702	4,000	4,000	4,000	4,000	6,000	
(NP) Bag Screening & Conveyors	1,088	2,600	2,600	2,600	2,600	2,600	
(NP) Security Training & Badging	0	100	100	100	100	100	
Security Screening Total	3,790	6,700	6,700	6,700	6,700	8,700	
Concourse - Airside							Air Carrier only
Gates: Ground-Boarding	1	0	0	0	0	0	Future design is to support bridges
GB Gate & Seating	2,401	0	0	0	0	0	
Gates: Bridge Gates	1	3	3	3	3	4	Existing terminal constrains schedule
Bridge Gate & Seating	1,776	4,988	5,428	6,112	6,480	7,317	
Circulation	940	6,048	6,572	6,814	7,056	8,550	
Restrooms	783	1,810	1,858	1,954	2,002	2,118	
Public Concessions & Vending	1,356	2,166	2,391	2,664	2,894	3,169	
Subtotal Public	7,256	15,012	16,249	17,543	18,432	21,153	
(NP) Concession	753	1,352	1,481	1,680	1,851	2,039	Airside
Concourse Total	8,009	16,365	17,730	19,223	20,283	23,191	
Nonpublic Space							
(NP) Inbound & Outbound Baggage	0	4,055	4,541	4,988	5,327	5,878	Exist covered area = 2,500 SF
(NP) Airline Areas	2,349	3,693	4,076	4,541	4,878	5,348	Includes Air Taxi and Air Carrier
(NP) Car Rental Areas	469	690	711	732	754	777	
(NP) Concessions	200	928	997	1,105	1,196	1,298	Landside NP
(NP) Leased Space	468	600	600	600	600	600	LEO
(NP) Airport Offices & Support	154	863	927	985	1,038	1,127	Jan, trash. No offices, conference rm.
Subtotal Nonpublic	3,640	10,830	11,853	12,951	13,793	15,027	
Building Utilities and Chases	1,430	3,822	4,152	4,494	4,796	5,251	Exist heat system is used in future
Nonpublic Total	5,070	14,652	16,004	17,445	18,589	20,278	
(NP) Leased Space: TSA Offices	3,000	3,000	3,000	3,000	3,000	3,000	Existing is outside terminal
Terminal Facility Total	30,419	62,502	66,584	71,153	74,879	83,823	

Sources: FAA Advisory Circulars; Airports Cooperative Research Program; Mead & Hunt

Notes: All existing and recommended spaces estimated by Mead & Hunt based on industry standard guidance and consultant experience. Actual required areas dependent on space adjacency and arrangement. Not all spaces are eligible for FAA funding. Further study is recommended as part of project design.

Terminal - Landside

An important issue in the terminal at KNT is that the building's general arrangement is opposite to a typical airport layout. At KTN, the arrivals lobby precedes the departures lobby along the curbside. While the layout is simple for departing passengers to perceive, arriving passengers are often confused as they are making their way through congested areas on their way to baggage claim. This condition creates cross flow passenger movement paths, making circulation in the already crowded terminal worse.

The **departures lobby**, which includes both Commercial and Air Taxi ticket counters, is split between two locations. In fact, one location for ticket counters is in the baggage claim area. Both areas have insufficient space and are very congested during peak departure times when passenger queuing constrains circulation (see **Figure C5**). This split ticket counter configuration also creates cross-traffic and inefficiencies for passenger check-in, as passengers search for their ticket counter. In addition, the Delta agents must transport checked bags from their counter in the baggage claim area through the main path of passenger circulation to the baggage screening area.

While the national trend is for more passengers to use electronic ticketing, the departures lobby will continue to serve passengers who are checking baggage before a flight. KTN passengers also check in with a higher than average amount of baggage, further increasing the need for departure lobby space. At KTN there is now approximately 1,923 square feet of queuing space for **commercial ticketing** and baggage drop-off. This amount should increase to approximately 2,900 square feet by 2028 and to 3,400 square feet near the end of the planning period. In addition, all ticketing and baggage drop-off should occur in a single location in the terminal to reduce crossing circulation paths and congestion.

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FIGURE C5: Ticket lobby, ticket counters and kiosks



Source: Mead & Hunt.

The total length of ticket counter for both commercial and air taxi counters in both locations is approximately 95 linear feet. National trends for ticket counters show that new counters are smaller than the existing ones since they are built to accommodate newer, smaller ticketing equipment. In addition, the amount of additional counter length needed in the future is dependent not only on future equipment size requirements but also on the check-in process itself as more passengers use electronic ticketing and self-bag-checking becomes more widely accepted.

With new equipment and counters, nearly 100 linear feet of counter length is needed for today. The program also estimates that 20 linear feet more will be needed by 2028 and 40 linear feet more by 2038. The current number of ticket counters and self-check-in kiosks is insufficient, but expansion of these facilities is constrained by existing conditions. It is highly recommended that all ticketing for commercial and air taxi be collocated and that all check-in kiosks are located in the same area.

Airline ticket offices currently occupy approximately 1,300 square feet of space near their ticket counters. More than twice this amount is needed by 2023 and a total of nearly 3,400 square feet of space will be needed by the end of the planning period.

Air Taxi Gate

The Air Taxi service is a key element at KTN, as incoming commercial passengers transfer to the Air Taxi operations that provide connections to more remote areas and lodges. The process is reversed on their return. A single Air Taxi flight number can include five or more aircraft and up to 45 passengers;

Terminal Area Plan : C—Terminal Area Facility Requirements

however, these passengers are not required to pass through the security checkpoint when departing on Air Taxi aircraft. Their wait times between connecting flight can be lengthy and, because the terminal is separated from the community by the Tongass Narrows, it is necessary for them to stay in the terminal lobby until their connection departs.

The first floor boarding Gate A1 serves Air Taxi aircraft. It has no clearly defined departure lounge and has very limited space for passengers awaiting flights. While this space is insufficient, there is no other location for them to wait inside the building. For this reason, Air Taxi passengers tend to remain in the departure lobby, worsening congestion during commercial peak times and reducing the amount of space available for commercial passenger queuing for checking in and checking baggage. There is a small concession area for these passengers on the second floor, but it is difficult to find and access as the checkpoint queue blocks entry to the concession area. The amount of space needed for an Air Taxi gate lounge with gate podiums and gate circulation space is approximately 1,350 square feet. While the number of peak hour Air Taxi passengers is not expected to increase during the planning period, as commercial passenger numbers increase, a small amount of additional space may be needed to continue to separate both of these facilities.

Circulation

Circulation space is critical for the efficiency and flow of all other spaces in the terminal. At KTN, circulation space is one of the key areas that need to be improved. Currently, there is approximately 4,500 square feet of area available for circulation in the terminal, roughly half the amount of space needed today. Cross traffic worsens the already significant congestion in these areas. At peak times, the circulation space is usually occupied by check-in queues, passengers waiting to claim baggage and Air Taxi passengers. There is little space for clear movement through the lobby during these times. In addition, the baggage screening room divides the lobby, occupying a considerable amount of space, and baggage carts from Delta ticket counters bring checked baggage through the lobby to the baggage screening room.

Passenger queues in front of ticket counters and car rental counters impede movement between the arrivals and departures lobbies (see **Figure C6**). Currently there is approximately 1,900 square feet of space for queuing available for car rental, ticketing and baggage drop-off. Approximately 2,900 square feet are needed today. While electronic reservations are expected to reduce dependence on counters in the future, approximately 500 square feet of additional queue space will be needed by the end of the planning period.

Terminal Area Plan : C—Terminal Area Facility Requirements

FIGURE C6: Ticket counter queuing



Source: Mead & Hunt.

Baggage Claim

The requirements for the **baggage claim** area are based on number of incoming flights and the number of peak hour arriving passengers. To a lesser extent, checked bag per passenger ratios and the sizes of the bags influence the needs of the baggage claim area. The baggage claim area was once the most spacious part of the KTN terminal but some of the space is now used for other purposes, including baggage security screening and the Delta Airlines ticket counters. Oversize bags are brought to passengers through an exterior door, admitting combustion fumes from tugs into the building. The baggage carousel length that is available to the public for picking up baggage is approximately 70 linear feet. It can hold 50-55 bags at a time, making it acceptable for a flight of 70 or fewer passengers but too short to accommodate baggage from a flight of 100 passengers or more or when two flights arrive at the same time. There is very little space available for seating near the carousels.

Likewise, the amount of space in the baggage claim area, approximately 1,600 square feet, is insufficient for a flight with 70 or more passengers, especially due to the number and sizes of bags KTN passengers check. The baggage claim area is often very congested when several airlines are unloading baggage from flights arriving in a short time period (see **Figure C7**).

Terminal Area Plan : C—Terminal Area Facility Requirements

FIGURE C7: Baggage claim and seating area



Source: Mead & Hunt.

A carousel with twice the current length is needed to accommodate today's higher capacity flights, and a baggage claim area of 4,000 square feet is needed to accommodate both the longer carousel and an oversized baggage slide. The current flight schedule with three arrivals in the summer season peak hour drives the need for a second carousel, also with twice the length of the current carousel, and an additional 2,000 square feet of space.

Public Restrooms

Nationally, **restroom** design in public buildings has been undergoing a process of change resulting from historic observations on underperformance. The goal of the changes is to provide the correct number and type of restroom facilities that are needed based on actual demand. ACRP Report 130: *Guidebook for Airport Terminal Restroom Planning and Design* makes recommendations for restrooms in airport terminals. Specifically advocating that there are at least as many toilets for women as there are toilets and urinals for men. Furthermore, new building codes in some jurisdictions are mandating 25 percent more fixtures for women than for men in efforts to improve performance. In addition, restroom equipment and plumbing fixtures have been undergoing an evolution resulting from increased interest in water efficiency and in providing touch-free restroom environments.

The main feature of a restroom program for airports and other public buildings that experience high intensity restroom usage typically is a restroom "module" consisting of multiple user rooms with stalls

Terminal Area Plan : C—Terminal Area Facility Requirements

and separate rooms for other passenger services. At an airport terminal, these other passenger services typically include a family restroom and a mother's room, which should be provided on both the pre- and post-secure sides of the checkpoint. Additionally, a Service Animal Relief Area (SARA) is required at commercial airport terminals.

The KTN terminal currently has one public restroom module on each side of the checkpoint. There are no family restrooms and no mother's rooms. The restrooms in the arrivals lobby are approximately 700 square feet in area and located near both the ticketing and car rental queuing areas. While this is a central location, the entrance is partially obscured by the car rental queue and it is not within view of the baggage claim area. A second restroom module should be provided near the baggage claim area. The new module should also provide a family restroom and a mother's room.

Meeter/Greeter

There is no designated space for people coming to the terminal to await arriving passengers. These meeter/greeters currently add to the congestion in the departure lounge. It is recommended that a dedicated area of approximately 2,000 square feet developed for this function.

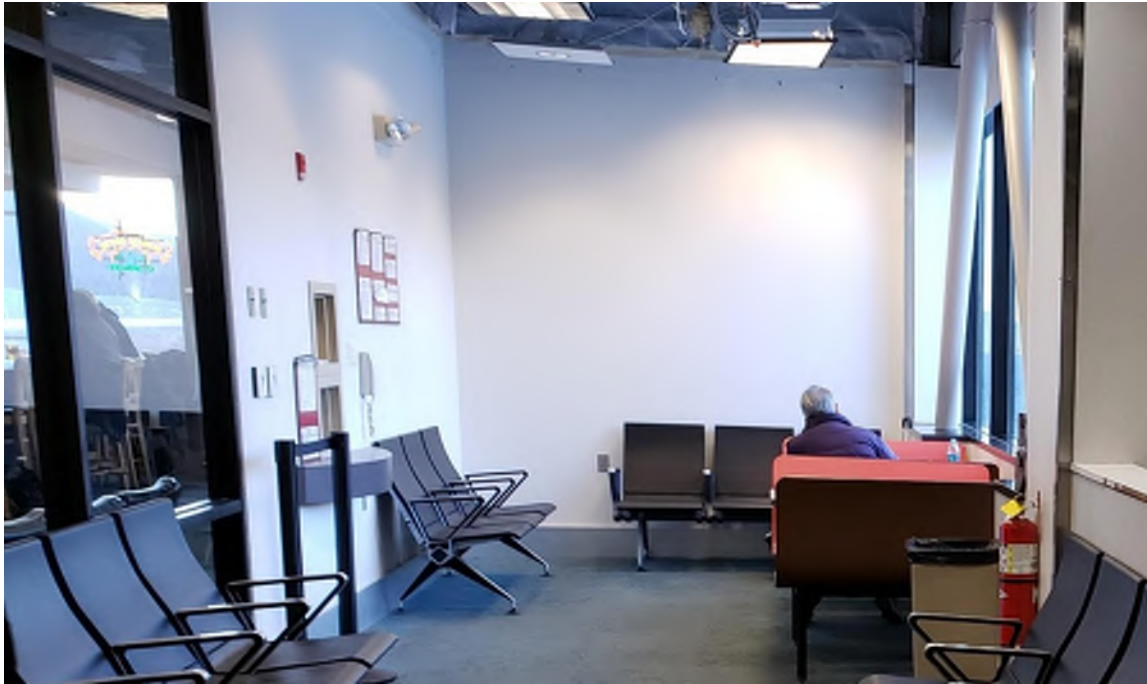
Public Concessions and Vending

Similar to restrooms, the need for public **concessions** in airport terminals is undergoing changes nationally. At KTN, the restaurant space was designed for a time in the past, when security protocols were less stringent than they are today. The only access to concessions on the non-secure side is on the second floor. At only approximately 200 square feet, food service on the non-secure side is nearly non-existent today (see **Figure C8**). A customer must use the stairway shared by commercial passengers to access a concession service window where they order on a phone. They then pay for their order and receive their items at this window. There are several tables for the customer to use but this area is often occupied by the queue for security screening. It is recommended that a separate non-secure side concession be planned. This should be part of a separate departure lounge for ground boarding of the Air Taxi operations.

ACRP Report 54: *Resource Manual for Airport In-Terminal Concessions*, recommends that the total amount of concessions space recommended at KTN should be divided between non-secure and secure areas at approximately 40 percent of it on the non-secure side and 60 percent secure side. It is recommended that the primary kitchen support space remain on the secure side to continue to efficiently serve passengers in the concourse. Associated utilities and storage should be located nearby.

Terminal Area Plan : C—Terminal Area Facility Requirements

FIGURE C8: Concession pre-secure order window and seating area



Source: Mead & Hunt.

Bag Carts and Wheelchairs

Baggage carts are a high demand item at KTN. Many travelers have multiple and large bags to transport to the ticketing queue as well as retrieving items at baggage claim. An area for the storage of these carts needs to be developed with a possibility of pick-up and drop off on both sides of the Tongass Narrows. Wheelchairs will need to have a dedicated storage space when not in use.

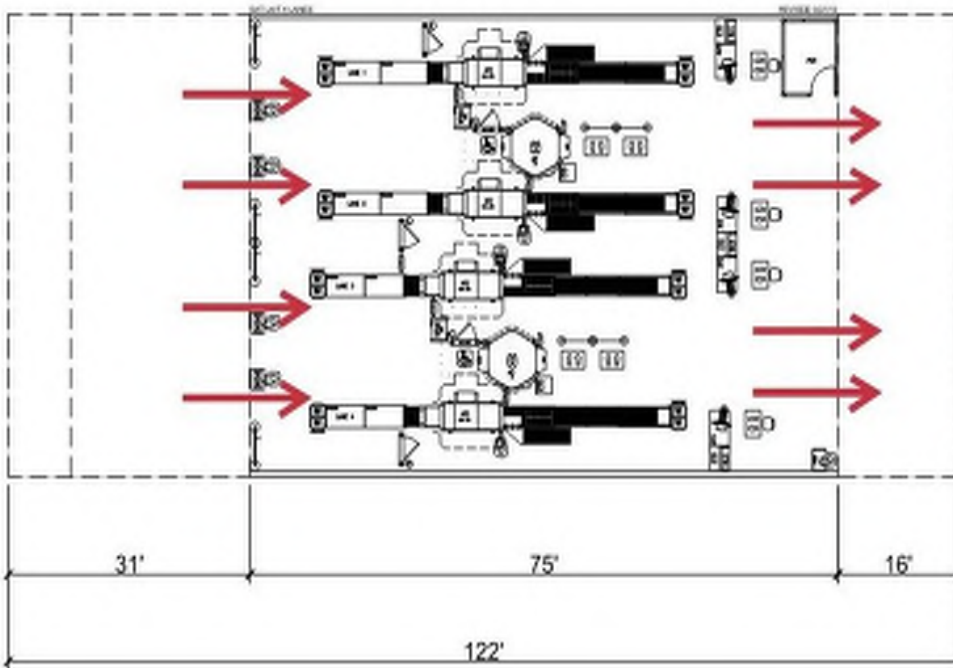
Security Screening

The implementation of the *Aviation and Transportation Security Act of 2001* has made all passengers and checked baggage subject to security screening.

The location of the security checkpoint and its configuration are critical factors in the efficiency with which **passenger screening** takes place. The KTN checkpoint is on the second floor and it does not prescribe to the recommended linear configuration (see **Figure C9**). It has one lane that is not standard length or width with divesting tables set at 90 degrees to the screening equipment. The checkpoint composure area is undersized and discharges into the concourse seating area and a critical circulation path in the concourse, causing congestion in an area that is heavily used by arriving passengers. The undersized checkpoint and its nonlinear configuration prevent smooth divesting or composure processes, reducing passenger processing efficiency. The exit lane is located on the left side of the checkpoint for arriving passengers, opposite of the traditional side causing cross-traffic.

Terminal Area Plan : C—Terminal Area Facility Requirements

FIGURE C9: Recommended TSA checkpoint configuration



Source: TSA Checkpoint Requirements and Planning Guide, December 17, 2018.

Two security lanes will be sufficient for the near-term future; however, both lanes should be of standard length, width, and configuration; straight, the only configuration recommended for checkpoint lanes in the PGDS. The amount of space necessary to accommodate two standard lanes is approximately 2,600 square feet. A third lane should be considered in the long-term future, when the peak demand makes it necessary. The checkpoint location and amount of space provided should be coordinated with circulation paths and the area provided for composure.

The security checkpoint queuing area now occupies approximately 200 square feet of space outside the central stairway connecting the terminal with the concourse. This amount is more than half the amount of space recommended for a checkpoint with a single passenger screening lane. It is inadequate for the number of passengers that queue when the terminal is its busiest at KTN. This is especially true when there are multiple flights causing passengers to queue in a long line that extends down the stairway and into the ticketing lobby, blocking access to the non-secure concession at the top of the stairs. The queue also interferes with the passengers leaving the secure side of the terminal as they move to baggage claim. These passengers must pass through the screening queue and down the same stairway that passengers are queued on as they wait to be processed at the checkpoint. This condition is not only operationally inefficient but it also not compliant with building code in that it prevents a clear egress path in the case of an emergency.

Terminal Area Plan : C—Terminal Area Facility Requirements

The security exiting corridor occupies approximately 100 square feet in the concourse. When arriving passengers leave the secure area they must travel through a small passageway. This passageway is kept locked when not in use and monitored by a TSA agent when it is in use. Often, exiting passengers must move through the screening queue to access the stair or elevator that brings them to the first-floor baggage claim area. TSA recommends an exit lane breach security system to be installed as part of the proposed project at KTN. The amount of space recommended for the breach security system is approximately 600-900 square feet. In order to maximize the throughput of the system there must be sufficient circulation width and length on either side of the equipment to allow passengers to enter and exit without reducing their pace.

Concourse – Airside

The concourse is the part of the terminal building in which the passengers wait for their flights after they have cleared the security checkpoint. It has departure lounges, general circulation space and public restrooms, as well as public amenities that generally include concessions and retail space, business work areas and child play areas. In addition, the concourse has ancillary space for airline gate podiums that are used for ticket collection and last-minute baggage check-in.

Nationally, gate circulation and seating areas in airport concourses are under pressure as the seating of the aircraft in the commercial fleet increases. Sufficient space must be provided at each gate for circulation associated with passenger deplaning aisles and enplaning queuing in order to ensure efficient passenger movement. Each departure lounge must have sufficient capacity to accommodate all of the passengers boarding the aircraft that is parked at the gate. Additionally, larger aircraft need more distance between gates for wingtip clearance and more space on the apron for maneuvering and parking.

Commercial Service Gates

In the secure area on the second floor, there are two primary commercial gates, Gates B1 and C1. Gate B1 is a walkout gate located at the southwest corner of the terminal, adjacent to a stairwell that is used for moving passengers down to the first floor to board a flight. Passengers who cannot use the stairs to move to the first floor must use the main elevator while being escorted through the nonsecure area by a TSA agent. This operation is not only operationally inefficient for TSA and the airline, it is also not ADA-compliant.

Gate C1 has a passenger boarding bridge that allows passengers to board their aircraft in a safe and efficient manner, protected from weather events. The gate podium is located near the concession, impeding access to both during the peak hour (see **Figure C10**).

The Space Program indicates the need for three passenger boarding bridges for the commercial operations and a total of 7,300 square feet as compared to the current 1,768 square feet.

Terminal Area Plan : C—Terminal Area Facility Requirements

FIGURE C10: Gate seating area looking into the restaurant



Circulation

The circulation primarily moves through the seating area. The gift shop and concession/bar are on opposite sides of the departure lounge and movement from one to the other is through the seating. The exit from the security screening spills directly into the lounge area. The seating for the restaurant encroaches into the lounge as well. The disparity of the current square footage of 940 versus the current need of over 6,000 square feet, as indicated in the space program, demonstrates the need for expansion.

Restrooms

As noted in the previous section, the KTN terminal currently has one public restroom module on each side of the checkpoint and there are no family restrooms or mother's rooms. The restrooms in the concourse are approximately 780 square feet in area and located near the departure area. Per ACRP Report 130, *Guidebook for Airport Terminal Restroom Planning and Design*, a second restroom module is needed to accommodate the forecasted demand. The new module should also provide a family restroom and a mother's room.

Public Concessions and Vending

The departure lounge is currently served by a small restaurant and bar. The seating for the restaurant, as noted earlier, encroaches into the departure lounge. The serving, ordering and pick-up areas are small in relation to the volume of business it does. The bar, which has a stunning view of the Narrows, also serves food as well as alcohol. Both areas are typically over crowded when multiple flights are preparing to enplane passengers. Across the departure lounge is a small gift shop that is inadequately sized. The projected square footage necessary for concessions in twenty years is 3,169 compared to the current 1,356 square feet.

Non-Public Space

Non-Public Concessions

Non-public concession space includes storage and the kitchen. These areas are currently half the size that they should be and will be approximately triple in size in twenty years.

Baggage Screening

Baggage screening is located between ticket counters and baggage claim. The walls that enclose it from the remainder of the terminal are demountable and partial height. The existing Type 2, Mini In-line baggage screening system and its associated conveyor area currently occupy approximately 1,000 square feet. It does not meet design guidance for this type of baggage screening system or processing speed requirements, as its output rate does not keep pace with the baggage checked in during peak times. The Alaska ticket counters have a conveyor that leads to the screening area, but Delta agents must deliver the checked baggage through the lobby to deliver to the screening area.

TSA indicates that an improved Type 2 screening system is to be provided for KTN. The TSA's Planning Guidelines and Design Standards (PGDS) for Checked Baggage Inspection Systems (CBIS) provides security and design guidance that identifies the operational requirements for providing several types of CBIS but it does not give space recommendations for baggage screening areas. For the planning period it is estimated that approximately 2,400 square feet of space is required for the baggage screening facility, plus an additional 200 square feet for conveyor space based on the consultant's previous experience in designing the type of baggage screening system that has TSA requested.

The **inbound and outbound baggage** area is located outside, under a continuous overhang that provides some weather protection for airline staff loading the baggage claim devices, but the protection is inadequate in rain or snow (see Figure **C11**). The overhang covers approximately 2,500 square feet of space that is not included in the building program. The baggage carousel is accessed directly from the exterior aircraft parking apron. An enclosed inbound baggage drop-off area would protect both workers, equipment and baggage from the elements and salty air. Regardless of if the baggage room is enclosed in the future, it would need to be 5,000-6,000 square feet in area to properly serve both the inbound and outbound baggage functions.

Terminal Area Plan : C—Terminal Area Facility Requirements

FIGURE C11: Outbound baggage



Rental Car Agencies

Both of the **car rental offices** and counter areas are too small for the current tenants. Access to both spaces are through a single door in the current arrangement. Each has a total of approximately 235 square feet in area, less than the 300-400 square feet of space generally offered to car companies in a newer terminal, however requirements for counter, office and storage space for car seats or other miscellaneous items will be coordinated in the concept development phase. There is also the possibility of adding a third rental car agency which would require further expansion.

Concessions Support

As concessions are added to the terminal to serve both Air Taxi and Commercial passengers, support spaces for these areas will need to be included. The need for these spaces is dependent on the concessionaire or concessionaires, if there is more than one in the future. Currently there is approximately 1,000 square feet used for these purposes. While the actual amount of space needed will be coordinated during the project's design, approximately 2,500 square feet should be reserved for planning purposes in the near-term future.

Leased Spaces

TSA office space currently occupies approximately 3,000 square feet of the adjacent building. Both TSA and the Airport want to relocate TSA to the terminal building in order to increase TSA operational efficiency. For planning purposes, the program assumes an equal amount of space until actual space needs are coordinated with the TSA facilities group.

Terminal Area Plan : C—Terminal Area Facility Requirements

Airport Offices and Support

The **airport administrative office area** is currently located on the third floor of the tower. As TSA is relocated to the terminal building, an expansion of the third floor could be considered. Other administrative and support areas that will need to expand include Law Enforcement Officer (LEO) office, airport storage, janitorial, trash and recycling. In addition, a location for accepting and screening deliveries should be identified.

Building Support

Building systems, chases and back of house space is provided to directly support the spatial recommendations made above. Many of the existing building systems are beyond their useful life and in need of replacement. Existing areas for building mechanical systems currently occupy approximately 5 percent of the existing building area, significantly less than typical for a building of this size due in part to the use of the wood pellet heating system.

KTN currently has building support spaces, (rooms and chases), dedicated to electrical, mechanical and technology systems. The amount of space provided for these spaces needs to increase to accommodate current code requirements and future growth. Dedicated space for technology, for example, has grown considerably in recent years. As technology infrastructure continues to grow and require upgrades, it is recommended that the space reserved for it is sized for considerable growth. Relocating utilities and building support room is costly. All building support spaces should be located to allow the building to expand in the future without requiring building system relocation.

It is recommended that existing building systems are brought up to current building code requirements and replaced with new, efficient systems as a part of the next significant project at the terminal. The amount of space recommended for building systems for programming is approximately 10 percent of gross building area, a recommendation based on industry standards for buildings of this type and location compared with the amount of existing space already used for building systems. The actual amount of space provided will be informed by the building systems space requirements once they are designed.

Facility Requirements Summary

This chapter made recommendations for rectifying operational deficits in the terminal area and terminal building in anticipation of developing concepts for building expansion, which will not only address space inadequacies and adjacencies, but will also address movement paths in the building.

There is a clear need for expansion of the terminal at KTN, as the current total terminal area of 30,419 square feet is half of the 62,502 square feet that is needed to function efficiently today. The next chapters will explore ways to meet the near-term need for additional space in the context of long-term projected passenger growth.

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D – Preliminary Terminal Area Alternative Concepts



Introduction.

The conceptual planning process is designed to evaluate the information gathered to date during the inventory, forecasts and facility requirements stages and use this information to develop preliminary concept alternatives that meet the goals and objectives of the Terminal Area Plan for the Ketchikan International Airport (KTN or Airport). The terminal building, apron and vehicle parking alternatives in this chapter are the direct result of the collaborative effort of the Consultant Team, Airport Staff and the Study Committee.

The following outlines the planning assumptions that accompany these alternative concepts and the goals that these alternatives are designed to achieve. Identified terminal area opportunities and constraints are also presented and later, a screening matrix is utilized to compare and contrast the alternative concepts.

Assumptions and Goals

There are a series of both fundamental reasoning assumptions and development goals that drive the planning process and influence the basis for the recommended long-term development program for the Airport. The following assumptions and goals were established to help guide the development and analysis of a range of alternatives designed to accommodate current and future demand at the Airport:

Terminal Area Plan : D—Preliminary Terminal Area Alternative Concepts

ASSUMPTION ONE: RECOMMENDED IMPROVEMENTS MUST COMPLY WITH LOCAL, STATE AND FEDERAL REGULATIONS. The Airport will be developed and operated in a manner that is consistent with local ordinances and codes, federal and state statutes, federal grant assurances and Federal Aviation Administration (FAA) regulations.

ASSUMPTION TWO: THE ROLE OF THE AIRPORT WILL REMAIN THE SAME. The Airport will continue to serve as a facility that accommodates commercial passenger service activity, cargo activity, general aviation activity and seaplane related activity.

ASSUMPTION THREE: THE TERMINAL AREA LAYOUT MUST ACCOMMODATE THE CRITICAL AIRCRAFT FOR EACH FACILITY. The size and type of aircraft that utilize the Airport and the resulting setback and safety criteria are used as the basis for the layout of facilities. The commercial design aircraft is a Boeing 737-900, or the largest narrow body type aircraft. For cargo activity, the design aircraft is the Boeing 737-500 cargo aircraft operated by Alaska Airlines. Finally, for air taxi activity, the design aircraft is a Cessna Caravan amphibious and/or fixed wing aircraft.

ASSUMPTION FOUR: THE AIRPORT WILL CONTINUE TO PROVIDE A SAFE AND RELIABLE OPERATING ENVIRONMENT. This requires that various operational uses of the apron and terminal area be segregated as much as possible and given an appropriate amount space including commercial service, air taxi, air cargo and general aviation.

ASSUMPTION FIVE: THE LIMITED DEVELOPMENT AREA NECESSITATES EFFICIENT AND TARGETED DEVELOPMENT. Because landside development area is at a premium at KTN, the fifth assumption is that the plan for future airport development should strive to make the most efficient use of the available area for aviation related activity.

ASSUMPTION SIX: FUTURE DEVELOPMENT MUST ACCOMMODATE PUBLIC PARKING AND ACCESS TO AND FROM THE AIRPORT AND THE ASSOCIATED PLANS FOR ACCESS IMPROVEMENTS. The decision not to build a vehicle access bridge has been made and the Airport is making significant improvements to public parking and ferry access to increase capacity and reliability of the system. While increased frequency of ferry service is also possible in the future, it is not a consideration of this study.

Goals for Development

Accompanying these assumptions are several goals, which have been established for the purposes of directing the planning and establishing continuity for future airport development. These goals consider several categorical considerations related to the Airport's short-term and long-term needs, including safety, noise, capital improvements, financial and economic conditions, public interest and investment, and community recognition and awareness.

Terminal Area Plan : D—Preliminary Terminal Area Alternative Concepts

These goals are preliminary and intended to stimulate discussion amongst the Study Committee. After receiving input, the goals will be used to guide additional formulation of recommendations for the Terminal Area Plan.

Airport Development Goals:

- **Address the passenger flow and space constraint issues related to the existing terminal building.**
- **Provide for future facilities that are flexible, cost effective, and financially feasible.**
- **Recommend development that can be implemented in a phased approach.**
- **Recommend development that is responsive to the needs of all stakeholders.**
- **Provide improved levels of passenger service and convenience.**
- **Reflect the character of Ketchikan and the existing airport environs.**
- **Retain and enhance the intimate character of the existing terminal building.**
- **Be flexible to respond to varying security requirements in a reasonable, safe, and efficient manner.**

Opportunities and Constraints

The passenger terminal development area is defined by the rental car parking and seaplane facilities to the north, the Tongass Narrows waterway to the east, the general aviation hangar and apron area to the south and the runway and Taxiway “A” to the west. The potential area for terminal expansion in this location is very limited. The diagram below in **Figure D1** illustrates the opportunities and constraints that area assumed to influence the development of future passenger terminal and cargo facilities. The major issues are as follows:

- **Expansion to the north is limited by the proximity of the existing terminal to the access road and ferry landing area.**
- **The existing Alaska Airlines maintenance storage facility constrains development opportunities to the west.**
- **Passenger access between the air taxi parking apron and terminal building conflicts with the adjacent cargo ground activity and the commercial aircraft parking positions.**
- **The proximity of the General Aviation aircraft parking apron to the air taxi and commercial air carrier areas limits opportunities for development or reconfiguration to the south.**
- **The proximity of employee parking, rental car parking and seaplane dock parking and the lack of developable land for expansion of any type of vehicle parking.**

Figure D2 illustrates the mid-day peak period crossflow activity and conflicts that occur between commercial and cargo ground service equipment (GSE) and passenger traffic to and from the air taxi parking apron, which has also served as Delta’s parking position during mid-day operations. Alternatives that segregate the flow of GSE traffic and enplaned/deplaned passengers on the air taxi ramp would significantly enhance both safety and efficiency and will be explored later in this chapter.

There is an opportunity to push the commercial aircraft parking positions farther away from the terminal towards the Taxiway “A” because of the difference in elevation between the runway and the taxiway. The section elevation shown in Figure D3 illustrates that the commercial parking positions could be pushed as far back as the Taxiway Object Free Area (TOFA) without the tail height of the 737-900 penetrating the Part 77 transitional surface.

Terminal Area Plan

Approximate Scale: 1" = 150'
 Elevations Taken from Airport Layout Plan, July 2002.

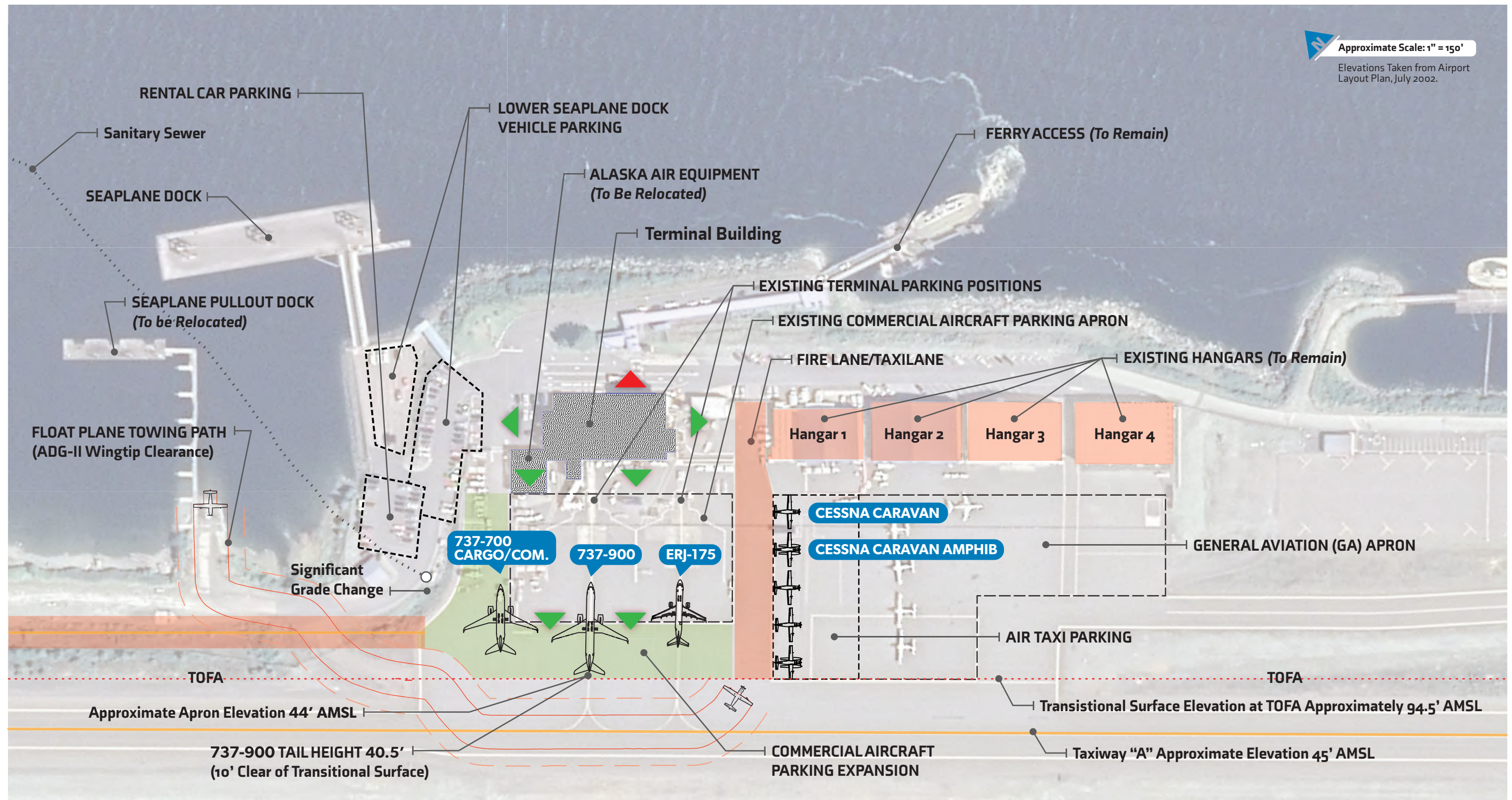


FIGURE D.1 Terminal Expansion Opportunities & Constraints

▶ Terminal Expansion Opportunities ▶ Terminal Expansion Constraints

Terminal Area Plan

Approximate Scale: 1" = 150'
 Elevations Taken from Airport Layout Plan, July 2002.

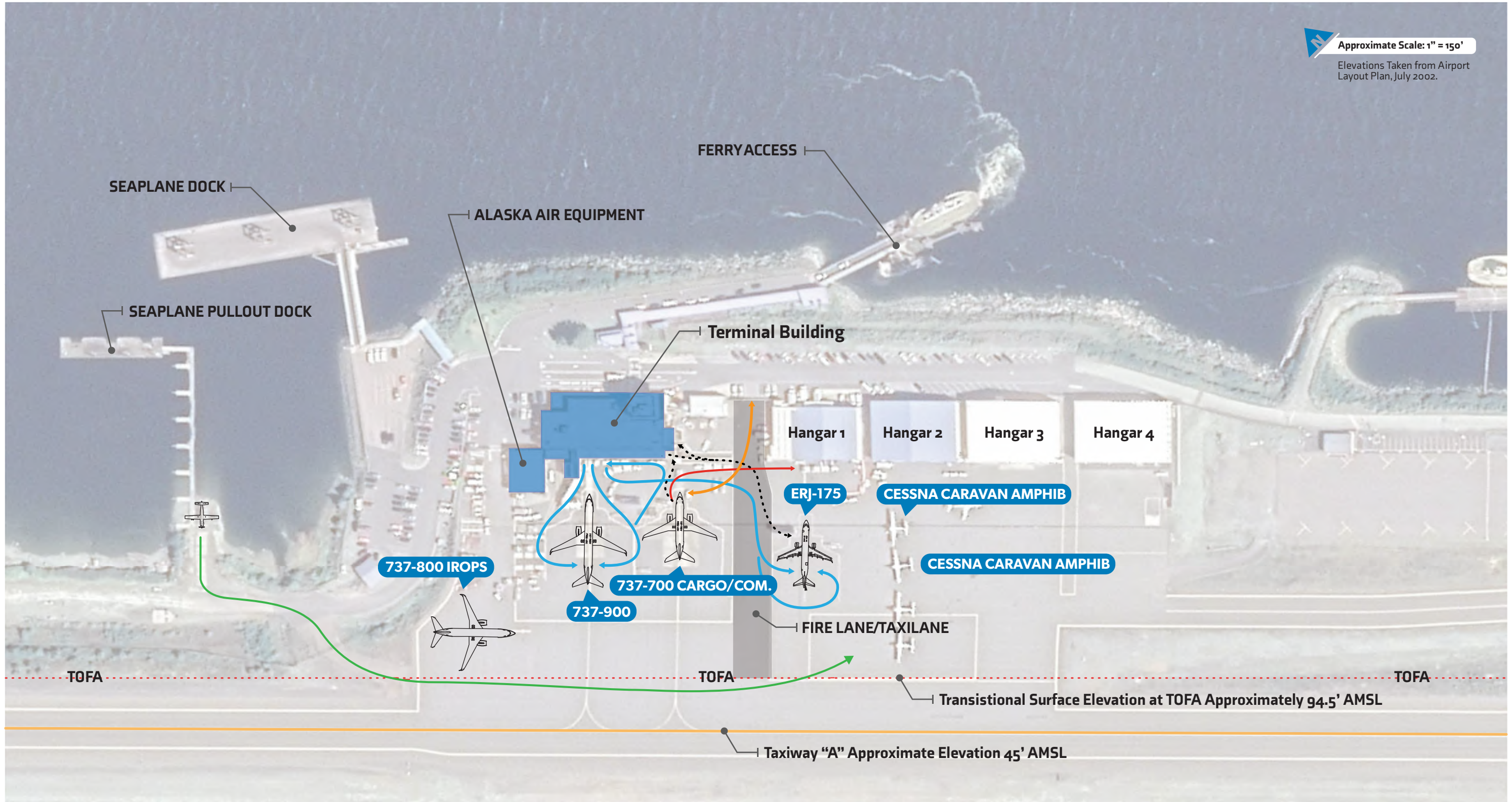


FIGURE D.2 Apron Conflicts (Mid-Day)

- Passenger Traffic
- GSE (Commercial)
- GSE (AirCargo)
- Air Cargo Trucks
- Seaplane Towing Route

Terminal Area Plan

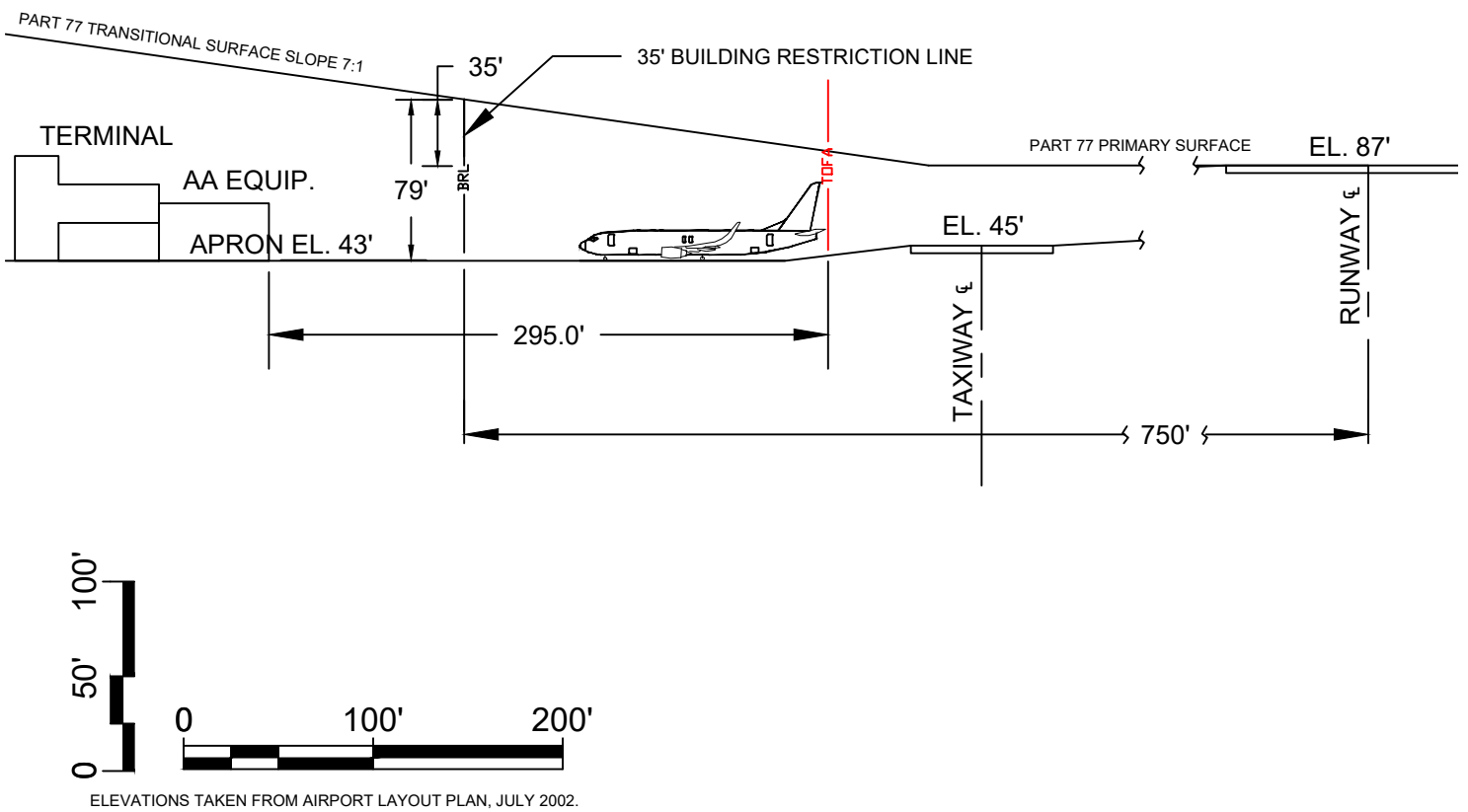


FIGURE D.3 ELEVATION CHANGE SECTION

ALP Considerations

There are several planned facilities shown on the existing approved ALP for the Airport that are outside the study area for this project but should be considered in the development of the terminal area alternatives. These facilities are identified in **Figure D4**.

A future Taxiway D is shown parallel to existing Taxiway C that would provide access to one possible location for an ultimate seaplane pullout ramp north of the existing seaplane pullout ramp, which is reaching the end of its useful life. If developed in this location as shown on the ALP, seaplanes would need to be towed behind parked commercial aircraft in front of the terminal to reach the GA ramp and facilities. Another possible location for an ultimate seaplane pullout ramp is south of the terminal area near the south ferry dock. If the seaplane pullout ramp were to be relocated in this location, seaplanes would not need to be towed behind parked commercial aircraft in front of the terminal and would have direct access to both the lower and upper GA ramps. This option is not shown on the ALP; however, it should be evaluated in the future.

An ultimate parking structure is also shown in the current location of the lower seaplane vehicle parking lot. Relative to vehicle parking, alternatives will be developed with the goal to replace any existing vehicle parking spaces that would be lost because of road relocation, apron expansion, etc. As possible, additional vehicle parking capacity will be incorporated into the alternatives to accommodate high demand for on-airport parking; however, with any increase in parking, ferry frequency and capacity will need to be studied.

Terminal Area Plan

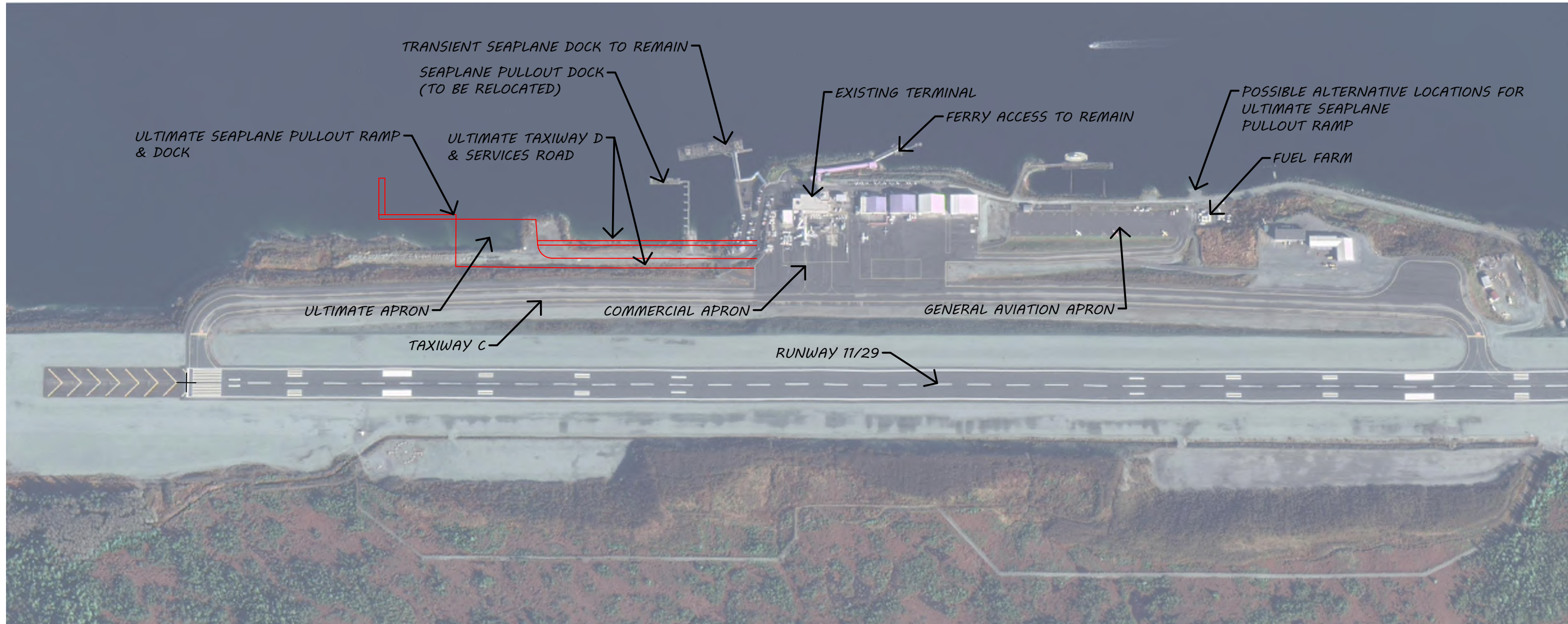
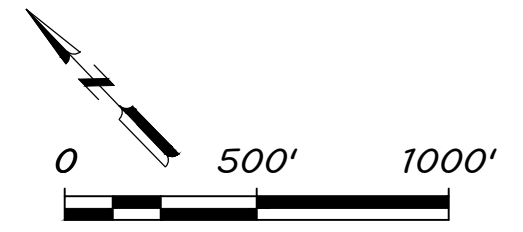


FIGURE D.4 AIRPORT LAYOUT PLAN CONSIDERATIONS

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Terminal Area Preliminary Alternative Concepts

A series of preliminary terminal area alternative concepts are presented on the following pages. These alternative concepts delineate potential vehicle parking, terminal building and terminal apron expansion options. It is important to note the components of these concepts could be mixed and matched and combined in a hybrid concept to be carried forward as opposed to just selecting one single alternative.

As previously mentioned, the existing terminal building contains approximately 30,419 square feet, with the current requirement estimated need being approximately 83,823 square feet. These concepts illustrate a potential terminal expansion/renovation footprint as well as conceptual layouts for future vehicle parking and aircraft parking related to the terminal. Each concept would accommodate an additional 5,000 SF for 3rd floor administrative space and 4th/5th floor FAA air traffic space (not included in total SF of each concept described below).

TERMINAL AREA CONCEPT ONE

Concept One incorporates a two-level vehicle parking deck in the existing vehicle parking area, terminal building expansions to the east and the west (plan left and plan right), and two additional jet bridges for a total of three jet bridges and three commercial aircraft parking positions.

The Alaska Airlines GSE/maintenance building is relocated to the west adjacent to the service road and in this concept, the building is intended to serve as both maintenance and parts storage as well as a cargo process and storage facility for Alaska airlines.

This alternative also relocates the Rental Car (RAC) wash facility adjacent to the service road. Finally, the alternative slightly realigns the fire lane, which is also used as a taxi lane for air taxi aircraft to the east or to plan left.

Specific features of Concept One include:

- **Provides for three commercial aircraft parking positions and three future jet bridges.**
- **Provides for separate parking position and area for cargo aircraft parking and activities. Aircraft parking apron expanded by 2,708 SF for cargo aircraft parking position.**
- **Keeps five air taxi aircraft parking in current location adjacent to Hangar 1.**
- **Expands terminal east and west (plan left and plan right).**
- **Provides for additional public and RAC vehicle parking in a future parking deck (147 deck spaces with 28 remaining surface RAC spaces).**
- **Relocates Alaska Airlines maintenance and cargo facilities.**
- **Relocates RAC wash facility.**

Terminal Area Plan : D—Preliminary Terminal Area Alternative Concepts

Potential Advantages of Concept One include:

- **Avoids vehicle parking expansion into the water of the Tongass Narrows.**
- **Utilizes existing aircraft parking apron with only minimal expansion (2,708 SF) for cargo aircraft parking.**
- **Aircraft parking does not infringe upon TOFA and aircraft tails would not penetrate FAR Par 77 surfaces.**
- **Minimal change to air taxi parking or fire lane/taxilane.**
- **Segregates commercial, air cargo and air taxi aircraft parking and minimizes cross flow activities on apron.**
- **Provides an additional 57,030 SF of terminal footprint and meets the space required for 20-year terminal program at 87,449 total SF.**

Potential Disadvantages of Concept One include:

- **Does not protect for Future Taxiway “D” as shown on ALP and float plane aircraft under tow would pass very close to cargo aircraft.**
- **If more than 5 air taxi parking positions are needed, these aircraft would have to be parked on the GA ramp as they do today.**
- **Limited space for parking deck construction without impacting water of Tongass Narrows.**
- **Terminal expansion footprint does not meet space required for 20-year terminal program.**

Terminal Area Plan

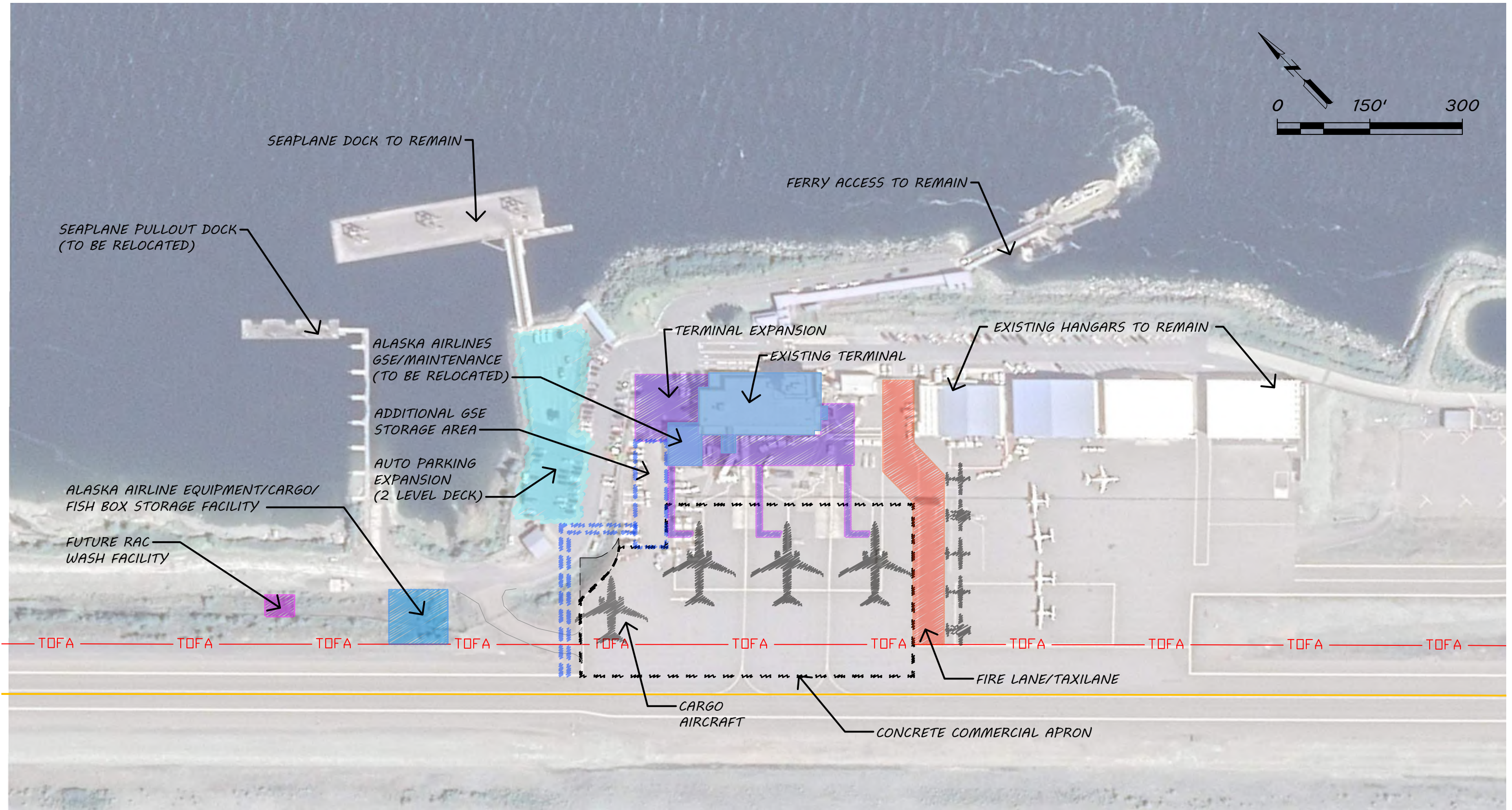


FIGURE D.5 TERMINAL AREA CONCEPT ONE

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Terminal Area Plan : D—Preliminary Terminal Area Alternative Concepts

TERMINAL AREA CONCEPT TWO

Concept Two incorporates a two-level vehicle parking deck constructed on either fill or pillars placed into the water in the Tongass Narrows, two level terminal expansions to the east, west and south (plan left, plan right, and plan down) and two additional jet bridges for a total of three jet bridges and three commercial aircraft parking positions.

The Alaska Airlines GSE/maintenance building is relocated on the existing aircraft parking apron in this concept and the building is intended to serve as both maintained and parts storage as well as a cargo process and storage facility for Alaska Airlines.

This alternative also relocates the Rental Car (RAC) wash facility adjacent to the service road. Concept Two protection for the future Taxilane “D” as shown on the ALP. Finally, the alternative slightly relocates the fire lane which is also used as a taxilane for air taxi aircraft to the east or to plan left.

Specific features of Concept Two include:

- **Provides for three commercial aircraft parking positions and three future jet bridges.**
- **Provides for separate parking position and area for cargo aircraft parking and activities. Aircraft parking apron expanded by 27,306 SF for cargo aircraft parking position.**
- **Keeps five air taxi aircraft parking in current location adjacent to Hangar 1.**
- **Expands first level and second level of terminal east, west, and south (plan left, plan right, and plan down).**
- **Provides for additional public and RAC vehicle parking in a future parking deck (148 deck spaces with 25 remaining surface RAC spaces).**
- **Relocates Alaska Airlines maintenance and cargo facilities.**
- **Relocates RAC wash facility.**
- **Relocates service road around future parking deck.**

Potential Advantages of Concept Two include:

- **Utilizes existing aircraft parking apron but also includes a 27,306 SF expansion for cargo aircraft parking.**
- **Protects for Future Taxiway “D” as shown on ALP. Future float planes could be towed from relocated dock up this taxilane for maintenance purposes.**
- **Aircraft parking does not infringe upon TOFA and aircraft tails would not penetrate FAR Par 77 surfaces.**
- **Minimal change to air taxi parking or fire lane/taxilane.**

Terminal Area Plan : D—Preliminary Terminal Area Alternative Concepts

- Segregates commercial, air cargo and air taxi aircraft parking and minimizes cross flow activities on apron.
- Provides an additional 57,946 SF of terminal footprint and meets the space required for 20-year terminal program at 88,365 SF.

Potential Disadvantages of Concept Two include:

- Aircraft parking apron expansion would require significant fill and retaining wall construction significantly increasing the cost of concept implementation.
- Does not avoid vehicle parking expansion into the water of the Tongass Narrows.
- Limited space for parking deck construction without impacting water of Tongass Narrows (42,644 SF of disturbance required).
- If more than 5 air taxi parking positions are needed, these aircraft would have to be parked on the GA ramp as they do today.

Terminal Area Plan

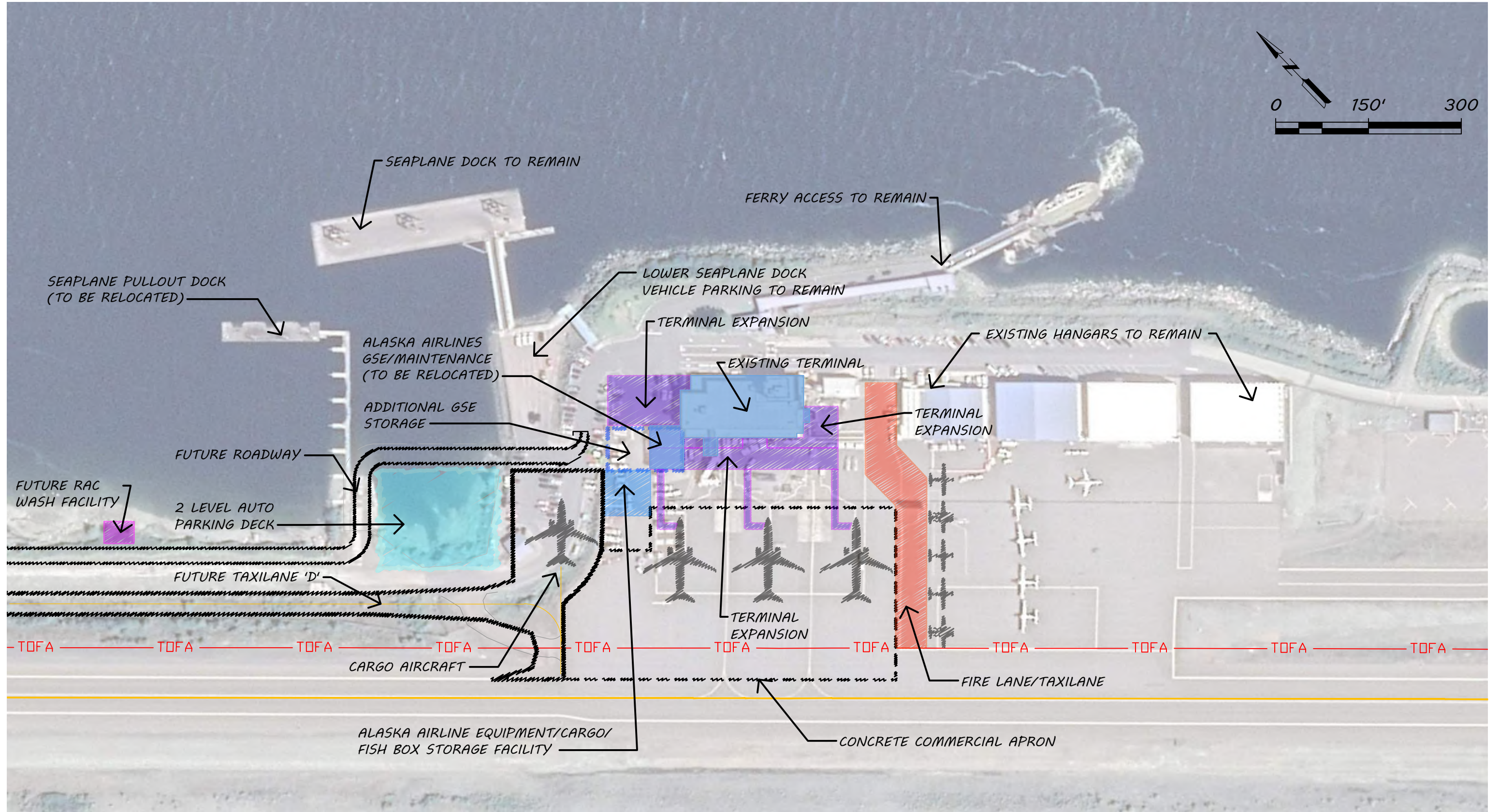


FIGURE D.6 TERMINAL AREA CONCEPT TWO

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Terminal Area Plan : D—Preliminary Terminal Area Alternative Concepts

TERMINAL AREA CONCEPT THREE

Concept Three incorporates a larger vehicle parking deck than Concept Two, also constructed on either fill or pillars placed into the water in the Tongass Narrows, both first and second level terminal expansion to the east, west and south (plan left, plan right, and plan down), and two additional jet bridges for a total of three jet bridges and three commercial aircraft parking positions. In Concept 3, the future second level concourse is expanded with a “pier” concourse with three commercial aircraft parked in a semicircle around the pier concourse.

The Alaska Airlines GSE/maintenance building is removed, and Hangar 1 is utilized for both Alaska Airlines maintenance and air cargo purposes. Also, the air taxi and cargo aircraft parking areas are in opposite locations from previous Concepts One and Two.

This alternative also relocates the Rental Car (RAC) wash facility adjacent to the service road. Concept Three protects for the future Taxilane “D” as shown on the ALP. Finally, the alternative slightly relocates the fire lane and as mentioned previously, and the air cargo and air taxi aircraft parking are swapped.

Specific features of Concept Three include:

- **Provides for three commercial aircraft parking positions and three future jet bridges.**
- **Provides for separate parking position and area for cargo aircraft parking and activities. No aircraft parking apron expansion is planned.**
- **Relocates five air taxi aircraft parking positions to the west of terminal (plan left).**
- **Expands first and second level of terminal east, west and south (plan left, plan right, and plan down).**
- **Provides for additional public and RAC vehicle parking in a future single-level parking deck (173 surface deck spaces).**
- **Relocates Alaska Airlines maintenance facilities and collocates these facilities in Hangar 1 with Alaska Airlines cargo.**
- **Relocates RAC wash facility.**
- **Relocates service road.**

Potential Advantages of Concept Three include:

- **Utilizes existing aircraft parking apron with no expansion.**
- **Protects for Future Taxiway “D” as shown on ALP. Future float planes could be towed from relocated dock up this taxilane for maintenance purposes.**
- **Aircraft parking does not infringe upon TOFA and aircraft tails would not penetrate FAR Par 77 surfaces.**
- **Minimal change to air taxi parking or fire lane/taxilane.**

Terminal Area Plan : D—Preliminary Terminal Area Alternative Concepts

- **Segregates commercial, air cargo and air taxi aircraft parking and minimizes cross flow activities on apron.**

Potential Disadvantages of Concept Three include:

- **Does not avoid vehicle parking expansion into the water of the Tongass Narrows (requires 39,618 SF of disturbance).**
- **If more than 4 air taxi parking positions are needed, these aircraft would have to be parked on the GA ramp and would be segregated from the terminal. Cross flow issues could still exist for air taxi aircraft and passengers.**
- **Commercial aircraft taxi in maneuvering and push back would be complicated by pier concourse layout.**
- **Does not adequately segregate cargo aircraft and cargo activity and instead placed the cargo aircraft in front of Hangar One with all cargo activity passing through Hangar One.**
- **Only provides an additional 47,533 SF of terminal footprint for a total area of 77,952 SF, which does not meet the space required for 20-year terminal program.**
- **Isolates departure lounges/gates from the rest of the concourse – resulting in reduced efficiency of existing facilities being able to support new gates.**

Terminal Area Plan

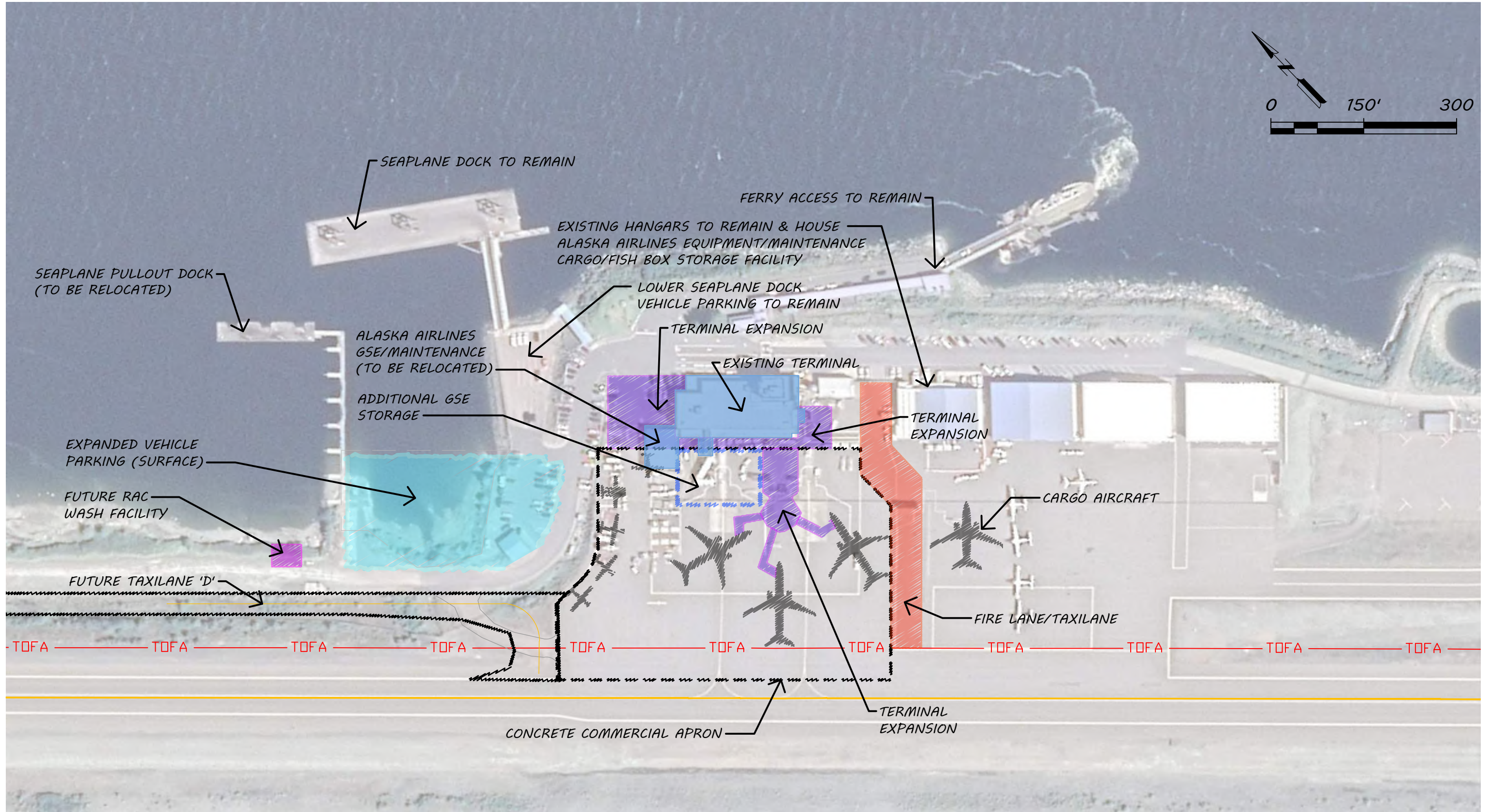


FIGURE D.7 TERMINAL AREA CONCEPT THREE

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Terminal Area Plan : D—Preliminary Terminal Area Alternative Concepts

TERMINAL AREA CONCEPT FOUR

Concept Four is different from the previous three concepts in that it proposes to completely replace the KTN terminal building with a completely new terminal located immediately south (plan down) of the existing terminal. This alternative would also include the replacement of the tower structure which currently includes floors 3, 4 and 5 and provides for both Airport Administrative office space as well as FAA Air Traffic personnel space. The construction phasing of Concept Four would also be more difficult than the previous three concepts in that the passengers would have to be moved or shuttled from aircraft to the existing terminal during construction of the replacement terminal.

Concept Four proposes either surface parking or a parking deck be constructed in the place of the existing terminal with a more traditional loop vehicle round surrounding the parking lot or the parking deck.

The Alaska Airlines GSE/maintenance building is relocated in this concept and the aircraft parking apron is expanded to accommodate cargo aircraft parking and associated cargo activities.

This alternative also relocates the Rental Car (RAC) wash facility and expands surface parking into the water of the Tongass Narrows. Concept Four protects for the future Taxiway “D” as shown on the ALP.

Specific features of Concept Four include:

- **Provides for three commercial aircraft parking positions and three future jet bridges.**
- **Provides for separate parking position and area for cargo aircraft parking and activities.**
- **Maintains five air taxi aircraft parking positions in existing location adjacent to Hangar 1.**
- **Replaces terminal with new 85,090 SF terminal building and associated tower immediately south (plan down) of the existing terminal.**
- **Provides opportunity to construct traditional loop road and additional vehicle parking (surface or deck).**
- **Provides for additional public and RAC vehicle surface parking (144 parking deck spaces with 28 remaining surface RAC spaces).**
- **Relocates Alaska Airlines maintenance facility.**
- **Relocates RAC wash facility.**
- **Relocates service road.**

Potential Advantages of Concept Four include:

- **Protects for Future Taxiway “D” as shown on ALP. Future float planes could be towed from relocated dock up this taxiway for maintenance purposes.**

Terminal Area Plan : D—Preliminary Terminal Area Alternative Concepts

- Aircraft parking does not infringe upon TOFA and aircraft tails would not penetrate FAR Par 77 surfaces.
- Provides an additional 19,872 SF of apron area for cargo aircraft parking.
- Minimal change to air taxi parking or fire lane/taxilane.
- Segregates commercial, air cargo and air taxi aircraft parking and minimizes cross flow activities on apron.
- Provides for 42,945 SF first level terminal footprint.
- Provides for 42,945 SF second level terminal footprint.
- Terminal expansion footprint meets space required for 20-year terminal program at 85,890 SF.
- Provides for all new terminal construction, allows for more efficient building right sized building to meet contemporary FAA regulations and set up for future growth.

Potential Disadvantages of Concept Four include:

- Requires complicated construction phasing to move passengers safely from aircraft to terminal and vice versa during construction.
- Probable higher costs for all new terminal construction.
- Requires 19,872 SF expansion of existing aircraft parking apron and associated fill and retaining wall construction and re-routing of sanitary storm sewer utilities. All of which would add to the implementation cost of the concept.
- Does not avoid roadway expansion into the water of the Tongass Narrows (requires 12,467 SF of disturbance area).
- If more than 5 air taxi parking positions are needed, these aircraft would have to be parked on the GA ramp as they do today.

Terminal Area Plan

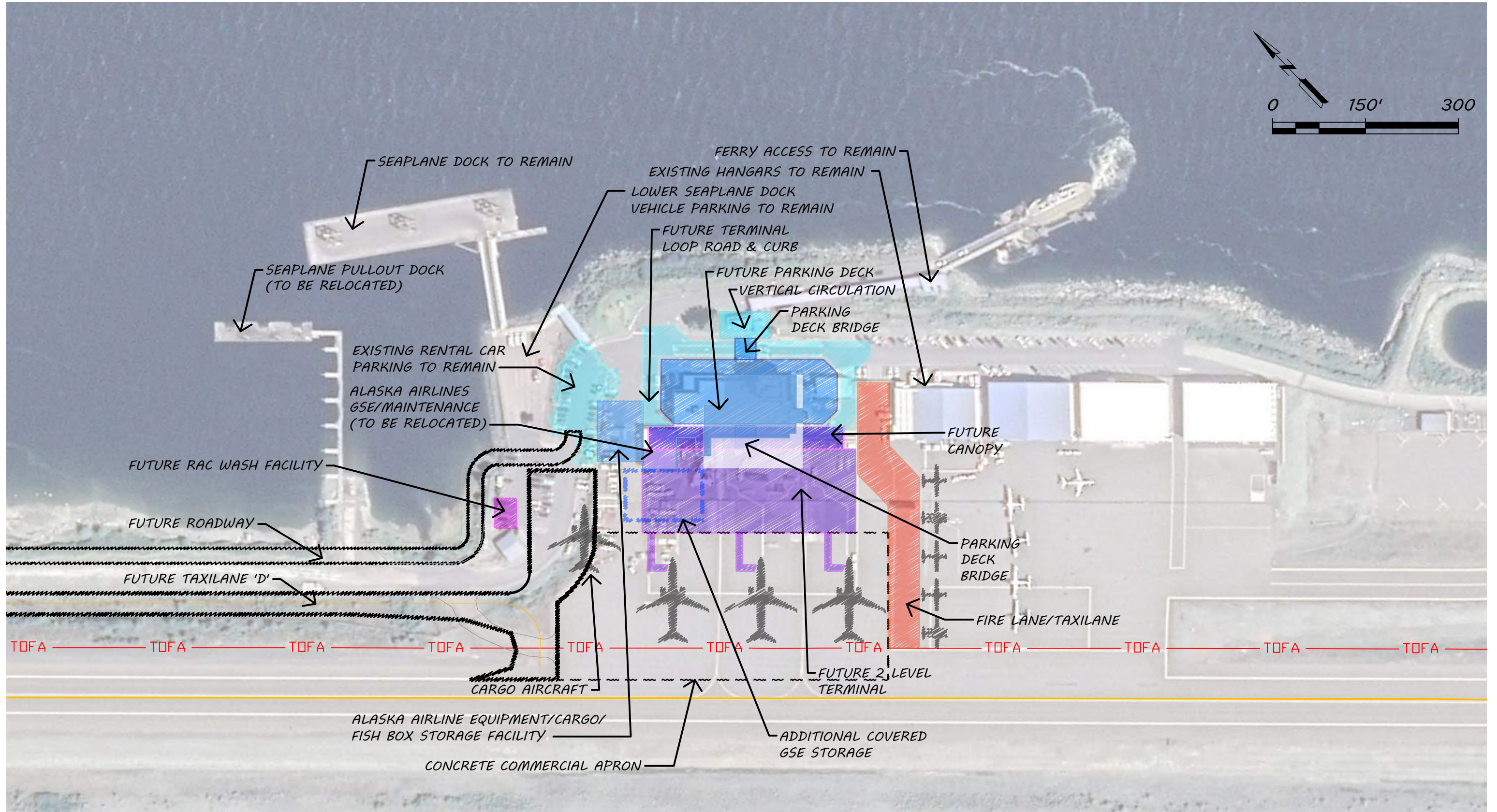


FIGURE D.8 TERMINAL AREA CONCEPT FOUR

NOTE: A REPLACEMENT TERMINAL AT KTN WOULD ALSO REQUIRE CONSTRUCTION OF A NEW AIRPORT ADMINISTRATION AND FAA FLIGHT SERVICES STATION TOWER SIMILAR TO EXISTING FACILITY.

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Alternative Concepts Evaluation and Summary

To evaluate these alternative concepts individually and against all concepts, a set of evaluation criteria was established based on four broad screening elements:

- **Passenger Experience**
- **Safety and Operational Efficiency**
- **Sustainability and Environment**
- **Implementation, Phasing, and Feasibility**

Specific screening criteria was developed for each of these four elements and used to evaluate each alternative concept in **Table D1**, on the following page. This matrix illustrates many of the strengths and weaknesses of each concept described in the previous sections.

Terminal Area Plan : D—Preliminary Terminal Area Alternative Concepts

TABLE D1: Preliminary Terminal Area Concepts Screening Matrix

Screening Criteria	Initial Concept 1	Initial Concept 2	Initial Concept 3	Initial Concept 4
Passenger Experience				
Minimizes the travel distance between the aircraft and the terminal	■	■	✗	■
Minimizes passenger walking distance from terminal to ferry	✓	✓	■	✗
Provides adequate RAC vehicle parking	■	■	✓	✓
Safety and Operational Efficiency				
Meets short, medium- and long-term terminal square footage requirements	■	✓	■	✓
Provides adequate space for Alaska cargo and proximity of cargo aircraft to maintenance and cargo facilities	■	✓	✗	✓
Adequately segregates air carrier, air taxi and cargo	✓	✓	■	✓
Reduces apron conflicts	✓	✓	✗	✓
Allow seaplanes to be towed behind commercial aircraft without using Taxiway "A"	■	✓	✗	✗
Maintains existing airport access infrastructure without requiring major access improvements	✓	■	✓	✗
Reserves space for Future Taxiway "D" as shown on ALP	✗	✓	✓	✓
Sustainability and Environment				
Reuses existing facilities to the extent practical	✓	✓	✓	✗
Promotes long term financial viability of the Airport/Limits order of magnitude costs	✓	■	■	✗
Minimizes potential environmental impacts	✓	■	✗	■
Implementation, Phasing, and Feasibility				
Meets terminal program space requirements	✓	✓	✗	✓
Minimizes impact to passengers during construction	✓	■	■	✗
Minimizes impact to operations during construction	✓	■	✗	✗
Allows for incremental construction to accommodate forecast passenger levels	✓	✓	■	✗
Minimizes utility impacts	■	✗	✓	✗

Source: Mead & Hunt.

Note: ✓ Strength of the Concept.

■ Neither a Strength nor a Weakness of the Concept.

✗ Weakness of the Concept.

Terminal Area Conceptual Development Plan

For several reasons, a refined version of preliminary Concept Two (shown in **Figure D9**) is considered the most favorable long-term development concept for the KTN terminal area. This concept provides flexibility that would allow for phased development and expansion of the terminal building in three directions while providing separation between cargo, commercial and air taxi aircraft activity. Once a preferred terminal building concept is identified, the conceptual development plan will be updated to reflect the proposed terminal building footprint.

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Terminal Area Plan

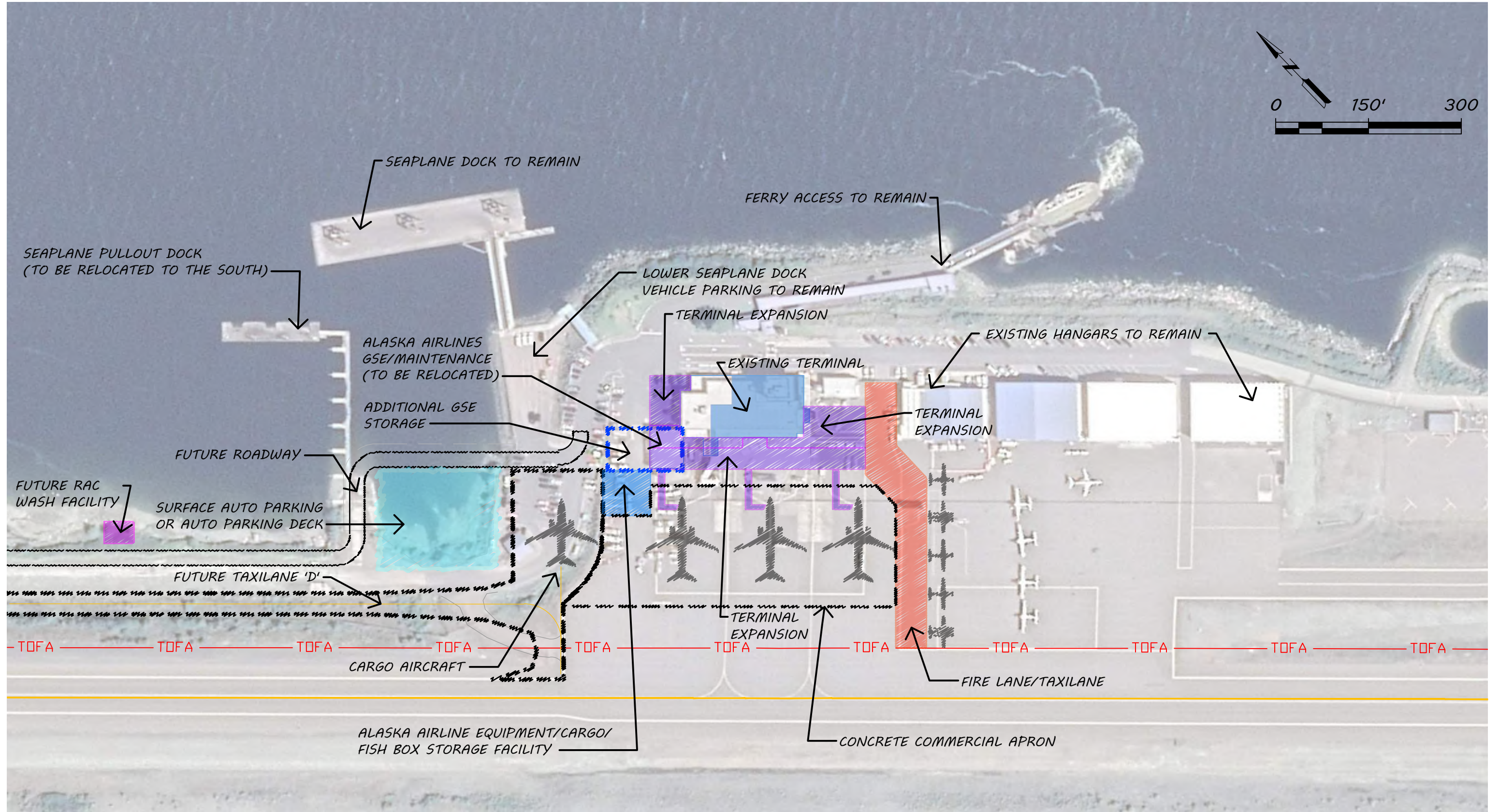


FIGURE D.9 PRELIMINARY TERMINAL AREA CONCEPTUAL DEVELOPMENT PLAN

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E – Terminal Building Alternative Concepts



Introduction.

The conceptual planning process continues from the previous chapter where initial terminal area alternative concepts were developed and presented. This chapter takes the terminal building envelope shown in purple in the previous chapter and further develops initial alternative concepts for the renovation and expansion of the terminal building at the Ketchikan International Airport (KTN or Airport). These alternative concepts were developed based on collaborative input from the Consultant Team, Airport Staff, and the Study Committee.

This chapter and the initial concepts included are also based on the assumptions and goals listed at the beginning of Chapter D as well as the identified terminal area opportunities and constraints. The goal of both alternative concept chapters is to determine a preferred concept for future development of both the terminal area and the terminal building at Ketchikan International Airport.

Existing Passenger Terminal Observations, Assessment and Conclusions

As the key component of the “Terminal Area”, decisions regarding the ultimate layout and configuration of the passenger terminal building must be resolved. This process started with a detailed review and

Terminal Area Plan : E—Terminal Building Alternative Concepts

assessment of the functionality and relative “health” of the existing terminal building in consideration of current standard airport terminal building operational characteristics; building and safety codes; and, the physical condition of the building’s structural, mechanical and electrical systems.

OBSERVATIONS

The existing building’s functional and operational issues were initially reviewed as part of the inventory conducted by planners and architects on the Consultant Team and considered in the development of the terminal building alternative concepts. These issues were documented in Chapter A, *Inventory of Existing Conditions*. In general, the team observed that many spaces within the terminal building are significantly undersized to meet current passenger demand, particularly during the peak summer months. This is amplified by the fact that passengers arrive in large waves every 30 minutes via the ferry, which dictates the timing and flow of departing passengers through the terminal. Furthermore, irregular operations occur regularly in the summer and present a significant challenge in accommodating passenger demand in every area of the terminal.

Additional observations considered in the development of the terminal building alternative concepts include the following:

- **Passenger Check-In.** The passenger check-in area is constrained and the current configuration results in significant challenges for passenger circulation and wayfinding. During the peak summer period, it is not uncommon for the line of passengers checking in to extend out the door. Since there is no Air Taxi lounge, waiting Island Air passengers use a seating area next to the ticketing queue and this can result in further congestion in the ticketing area. During the colder times of the year, there are cold drafts each time the door opens.
- **Baggage Claim.** The baggage claim belt can only accommodate one arriving flight at a time but must operate above its capacity in the morning when there are two arriving flights, and also when irregular operations occur simultaneously with scheduled operations. Air Taxi service also uses the bag claim device, further increasing congestion. There is already limited circulation for passengers collecting bags and it becomes crowded very quickly when there are multiple arriving flights. This issue is compounded by the fact that oversized baggage is common at KTN and there is no oversized bag drop. The ticketing queue at the Delta counter also backs up into the baggage claim area and further impacts the flow of passengers collecting their baggage.
- **Baggage Screening.** The TSA baggage screening area comprises a significant area of what formerly served as part of the baggage claim space. Delta does not have a bag belt that feeds to TSA baggage screening and must use carts to transport baggage to TSA and navigate through passengers collecting baggage at the bag claim. TSA only has one screening machine and because passengers arrive in waves, it is difficult to keep up with screening, particularly when there are simultaneously departing Alaska and Delta flights and during peak season when a high volume of fish boxes must be

Terminal Area Plan : E—Terminal Building Alternative Concepts

screened. On occasion, baggage screening can back up enough to delay a flight during the peak summer months.

- **Passenger Security Screening.** The single lane security screening checkpoint is undersized and poorly configured and because passengers arrive in waves, the queuing line will often extend down the stairs, which is a safety concern and diminishes the passenger experience. Delays in processing times can also result in departure delays for the airlines.
- **Gates and Holdrooms.** During the peak summer period when flights are delayed and the holdrooms reach capacity, access to holdrooms must be cut off. This results in a domino effect bottleneck by preventing passengers on the first floor from going through security. A and B gates are ground loading gates (with no loading bridge) and do not provide direct ADA access; passengers who require such access must be escorted in the elevator to board the aircraft. The ground loading gates are also not ideal because of the climate at KTN and frequency of precipitation.
- **Concessions.** The concessions areas often reach capacity when there is a delayed flight. There is limited concessions storage and the process of screening food and beverage through the security screening checkpoint is challenging. During busy periods, the line at the snack bar can extend into the hold room and interfere with the passenger boarding queue. With the significant volume of air taxi activity, there is high demand for non-secure concessions, which is currently accommodated by serving through the pass-through window.
- **Airline Operations and Baggage Handling.** There is a high percentage of leisure travelers at KTN who have multiple bags and oversized items, which can result in backups on the makeup bag belt and eventually delays in loading bags on departing aircraft. Bags can also become stacked up behind the Alaska ticketing counter when TSA cannot keep up with the screening volume.
- **Rental Cars (RACs).** Queuing for the RAC counters often backs up into the circulation and baggage claim areas and causes crossflow issues. Because of high demand, there is a need to plan for a third RAC position in the future.
- **Circulation and Public Amenities.** Circulation is a general problem throughout the terminal in many places where lines and queues back up into designated circulation space and block passenger traffic. Currently, there is no family restroom at KTN and additional restrooms are needed on the second floor.

BUILDING ASSESSMENT SUMMARY

The following is a summary of the recommendations set forth in the Jenson Yorba Wall Terminal Assessment Report, which was conducted as a companion study to this Terminal Area Plan.

Terminal Area Plan : E—Terminal Building Alternative Concepts

Jensen, Yorba, Wall conducted a condition survey of the Ketchikan International Airport in April of 2020. This narrative provides a summary of items that impact the planning process for the expansion of the current building.

The original Ketchikan Airport Terminal was built in 1972. The main building was two-stories approximately 75' x 140' with a 1 story cargo wing located off the north end and a 3-story tower located at the south end. The building has a steel frame structure with non-bearing concrete exterior wall panels. The tower is clad in aluminum curtain wall. The building has a flat roof appearance with sloping roof structure providing a varying roof pitch to perimeter interior drains. A 5,200 sf, 2-story addition was added in 2001, replacing the 1-story cargo area. The new addition was similar in shape and construction to the original building but has an aluminum curtain wall exterior. In 2016, a biomass boiler was constructed in a new stand-alone building to the south of the Terminal. In 2019, the Terminal mechanical system was comprehensively upgraded, with new large air-handling units installed in the old boiler room.

The building structure consists of wide-flange columns and beams supporting open-web joists. While the report did not study the structural capacity of the building, it was noted that adding additional floors atop the current building are unlikely with the existing structural system. If the building expansion plan include vertical expansion on the current building, a comprehensive structural study will be needed.

Many of the exterior walls are uninsulated and the windows are of an inferior type. Where the planned expansion extends beyond the new building, proper insulation and window selection will be addressed. Those walls that remain should be investigated and thermally upgraded.

The current interior finishes have varied conditional issues. With the expansion, the current finishes should be addressed and upgraded to match the quality of the new addition.

The mechanical system has been recently upgraded to meet the needs of the building and will service the current building for the next 20 years. The electrical system has not been significantly upgraded. Both mechanical and electrical systems will need to be evaluated for any additional loads that a building expansion would place on the system's capacity.

The complete conditions survey report is included in the appendix to this chapter.

Initial Terminal Building Concepts

The purpose of these initial concepts is to explore alternative terminal layouts and configurations which can be developed in a phased manner and that address the major capacity deficiencies and flow issues related to the existing terminal. The alternative terminal concepts address the same level of forecast activity and recognize the major constraints and opportunities of the terminal area. The terminal building concepts presented on the following pages delineate potential terminal footprint options for a future phased terminal building. Each option provides for 60,649 square feet or more of terminal space. The terminal program presented in Chapter C indicates that 83,824 square feet of terminal space is needed by 2038; however, there are efficiencies in the space configuration of the concepts presented in this chapter, which result in a reduction of the estimated space needed by 2038.

INITIAL TERMINAL CONCEPT ONE – 60, 649 SQ FT

First floor

Concept One provides eighteen centrally located ticketing counters stations for commercial and air taxi services, providing adequate room for queuing and cross-circulation at the counters. The departure lounge for air taxi ground boarding is located south of ticketing and contains space for restrooms and a vending area. A family restroom and building support area replaces the rental car offices and counters. Outbound baggage screening has been enlarged to support properly sized equipment for security screening. Baggage claim has been expanded to include two carousels and an oversized baggage drop. Adjacent to baggage claim are three rental counters and offices and two baggage service offices. A meeter/greeter area is located near the baggage claim with a view of the passageway for arriving passengers. Circulation separates the inbound passenger path from the outbound passenger path.

Second Floor

The new vertical circulation from the first floor provides access to the non-secure concessions and the existing stairway and elevator takes passengers to the TSA queue for security screening. The TSA check point screening is expanded to two check points lanes near the center of the concourse and provides a recompose area that leads to secured circulation. The circulation provides access to three departure lounges, secured concessions and the existing restroom. All departure lounges are served by Passenger Boarding Bridges that connect to the aircraft. Inbound passengers move through circulation to the secure exiting lanes and proceed to the new vertical circulation that leads them to baggage claim on the first floor.

Potential Advantages of Concept One include:

- **All Commercial and Air Taxi ticketing combined and centrally located.**
- **Air Taxi ticket counters are near the Air Taxi departure lounge and circulation is separated from commercial circulation.**
- **Air Taxi passengers have an adequate holdroom space.**

Terminal Area Plan : E—Terminal Building Alternative Concepts

- **Allows for flexible, phased expansion of most areas.**
- **Minimizes length of passenger boarding bridges for two positions.**

Potential Disadvantages of Concept One include:

- **Air taxi lounge would not have direct access to non-secure concessions on the second floor.**
- **Security screening checkpoint configuration does not support easy wayfinding and requires passengers to make multiple turns to enter the checkpoint.**
- **Location of security recompose area would also create crossflow with arriving passengers accessing the secured area existing lanes.**
- **Does not provide an expanded restroom on the second floor.**
- **Location of secured concessions on the second floor would result in crossflow traffic between passengers exiting security screening checkpoint and arriving passengers exiting the departure lounges.**

Terminal Area Plan

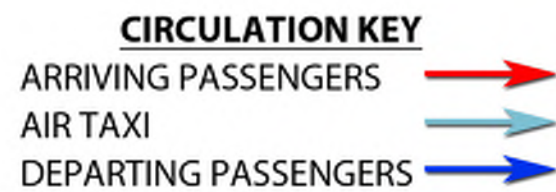
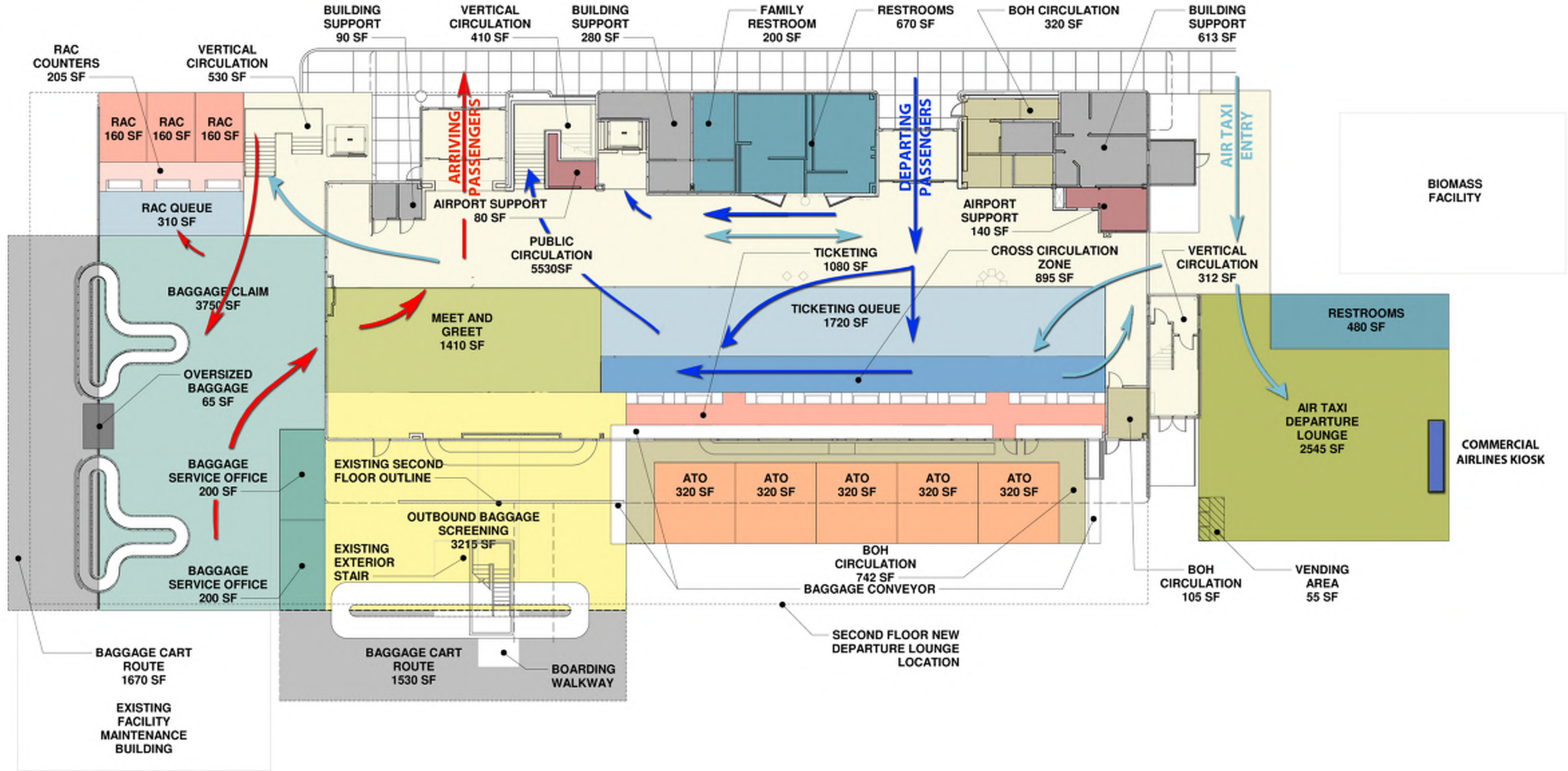


FIGURE E1 - TERMINAL CONCEPT 1, FIRST FLOOR



Terminal Area Plan

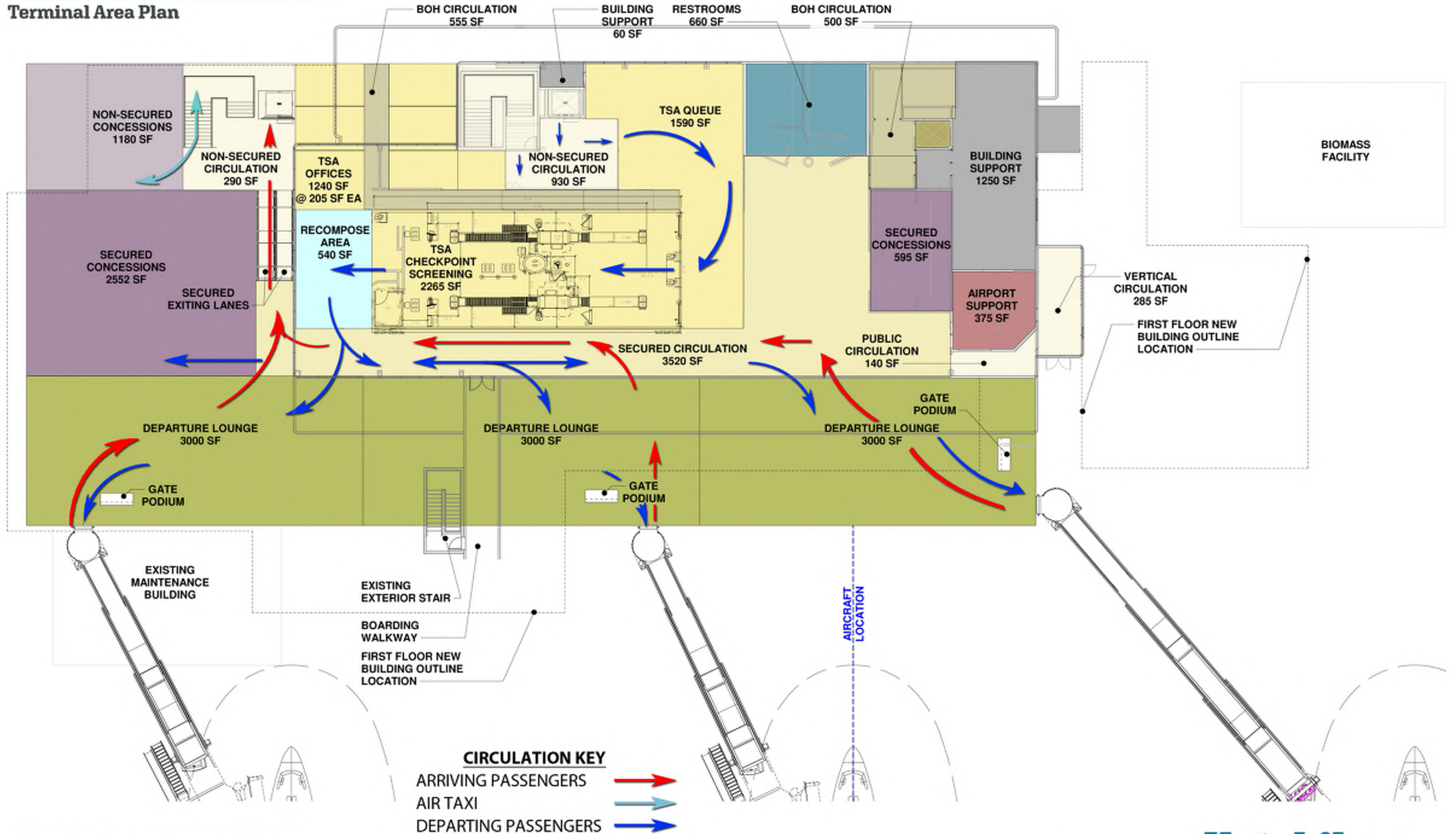


FIGURE E2 - TERMINAL CONCEPT 1, SECOND FLOOR

Terminal Area Plan

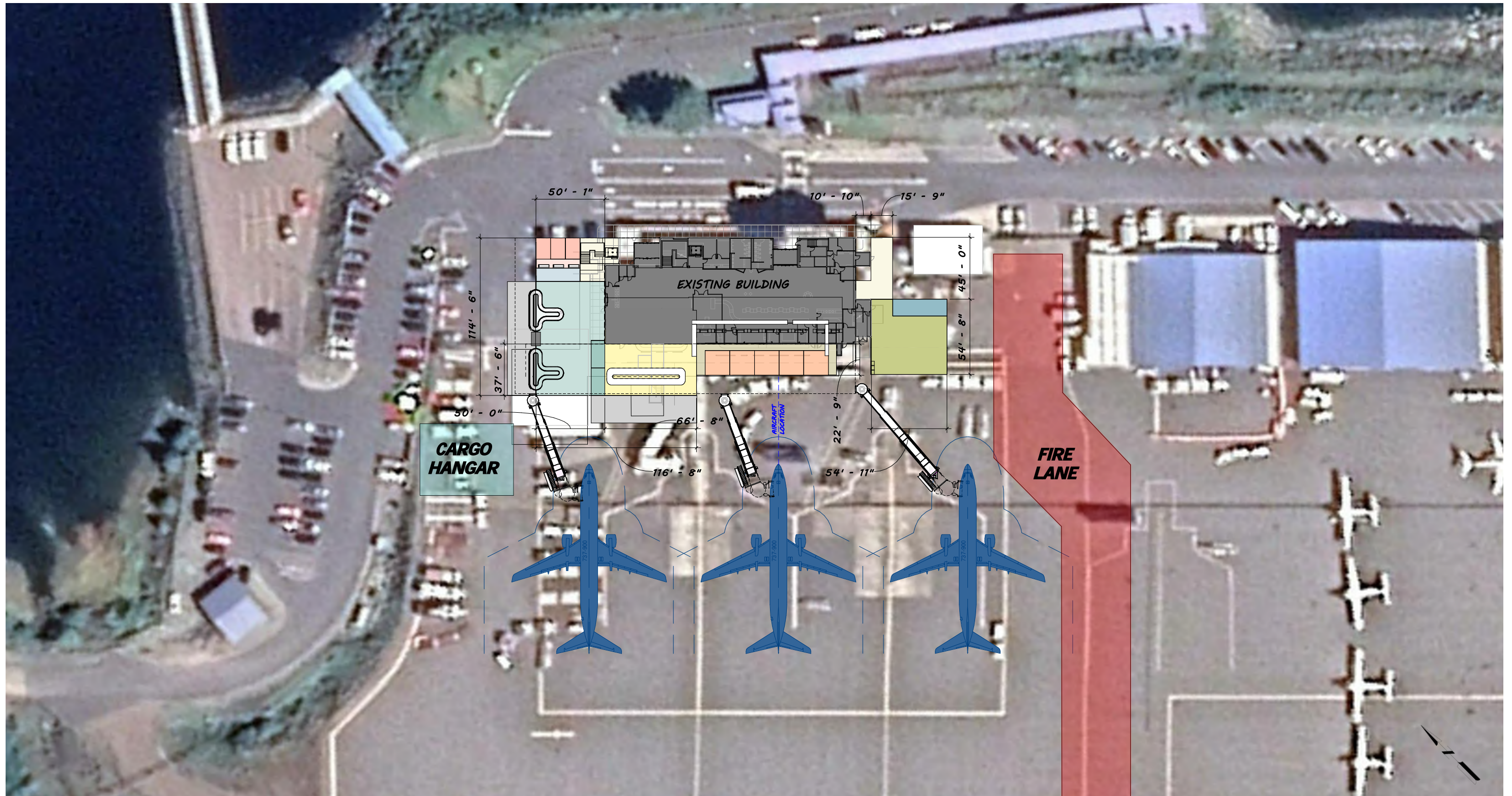


FIGURE E3 - TERMINAL CONCEPT 1, SITE EXTENTS

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Terminal Area Plan : E—Terminal Building Alternative Concepts

INITIAL TERMINAL CONCEPT 2 – 66,884 SQ FT

First floor

Concept Two separates the fourteen-station ticketing counters for Commercial airlines from the four-station ticketing counter for Air Taxi services, providing adequate room for queuing and cross-circulation at the counters. The Air Taxi ticketing is immediately adjacent to the departure lounge for Air Taxi ground boarding. The lounge is located south of ticketing and contains restrooms and a vending area with vertical circulation to the second-floor non-secure concession. A family restroom and building support replaces the rental car offices and counters. Outbound baggage screening has been enlarged to support properly sized equipment for security screening. Baggage claim has been expanded to include two carousels and an oversized baggage drop. Adjacent to baggage claim are three rental counters and offices and two baggage service offices. A meeter/greeter area is located near the baggage claim with a view of the passageway for arriving passengers. Circulation separates the inbound passenger path from the outbound passenger path.

Second Floor

The new vertical circulation from the first floor Air Taxi lounge provides access to the non-secure concessions. The existing stairway and elevator take passengers to the TSA queue for security screening. The TSA check point screening is expanded to two check point lanes and is added onto the north side of the existing building and provides a recompose area that leads to secured circulation. The circulation provides access to three departure lounges, secured concessions and an expanded restroom. All three departure lounges are served by Passenger Boarding Bridges that connect to the aircraft. Inbound passengers move through circulation to the secure exiting lanes and proceed to the new vertical circulation that leads them to baggage claim on the first floor.

Potential Advantages of Concept Two include:

- **Air Taxi ticket counters are directly next to the Air Taxi departure lounge and circulation is separated from commercial circulation.**
- **Air taxi lounge would have direct access to non-secure concessions on the second floor.**
- **Provides an expanded restroom on the second floor.**
- **Minimizes length of passenger boarding bridges for two positions.**

Potential Disadvantages of Concept Two include:

- **Requires a large expansion outside of the existing building footprint**
- **Air Taxi ticketing and departure lounge are not visible and could result in wayfinding challenges.**
- **Ability to phase expansions would be difficult.**

Terminal Area Plan : E—Terminal Building Alternative Concepts

- Does not address first floor cross flow of departing passengers moving from ticketing to vertical circulation and arriving passengers moving from vertical circulation down to baggage claim.
- The restaurant bar area of concessions is relocated from the north side of the terminal to the south side of the terminal. The views of the Tongass Narrows are best from the northeast corner of the building where the bar is currently located.

Terminal Area Plan

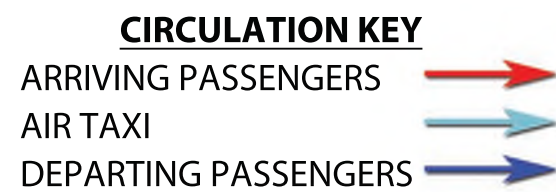
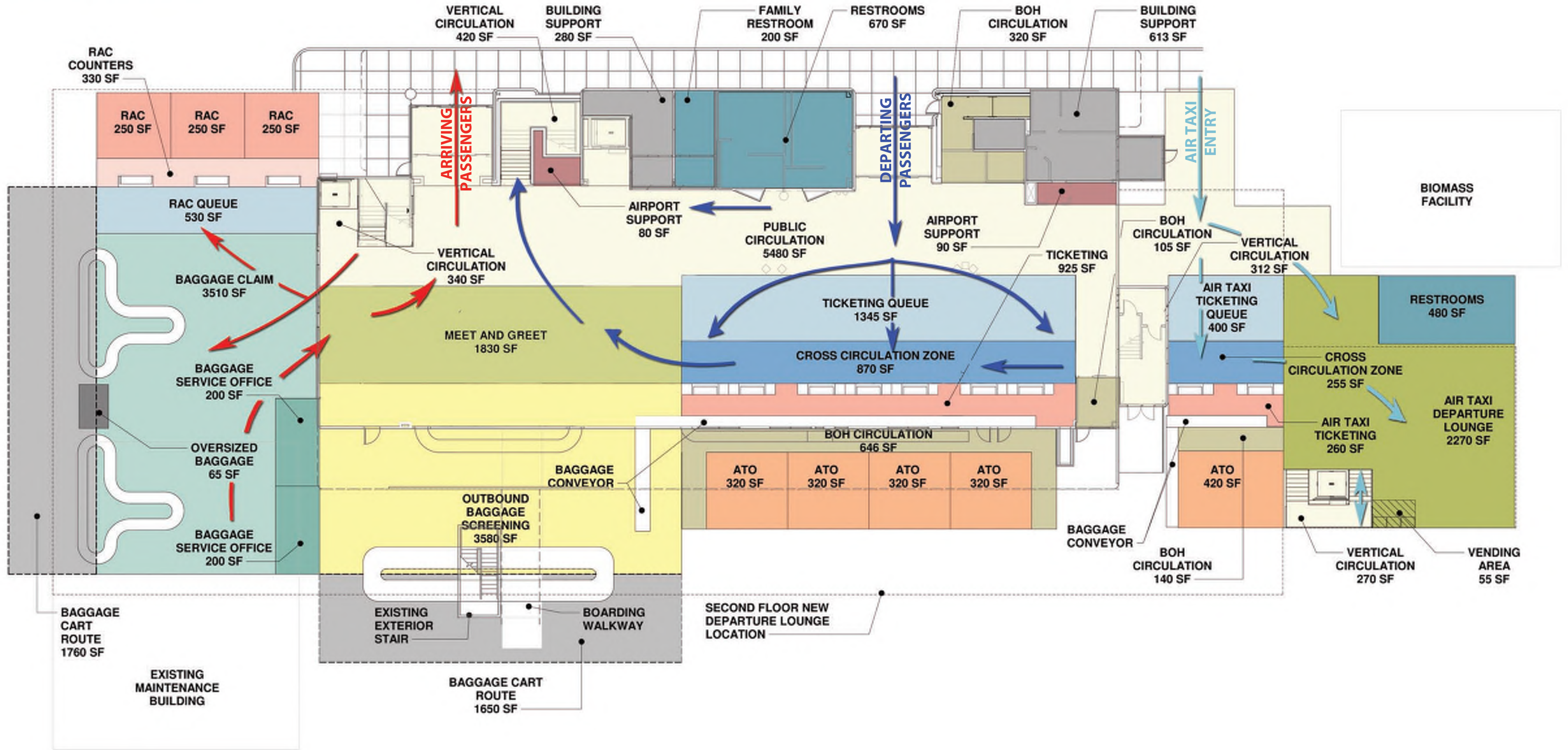


FIGURE E4 - TERMINAL CONCEPT 2, FIRST FLOOR



Terminal Area Plan

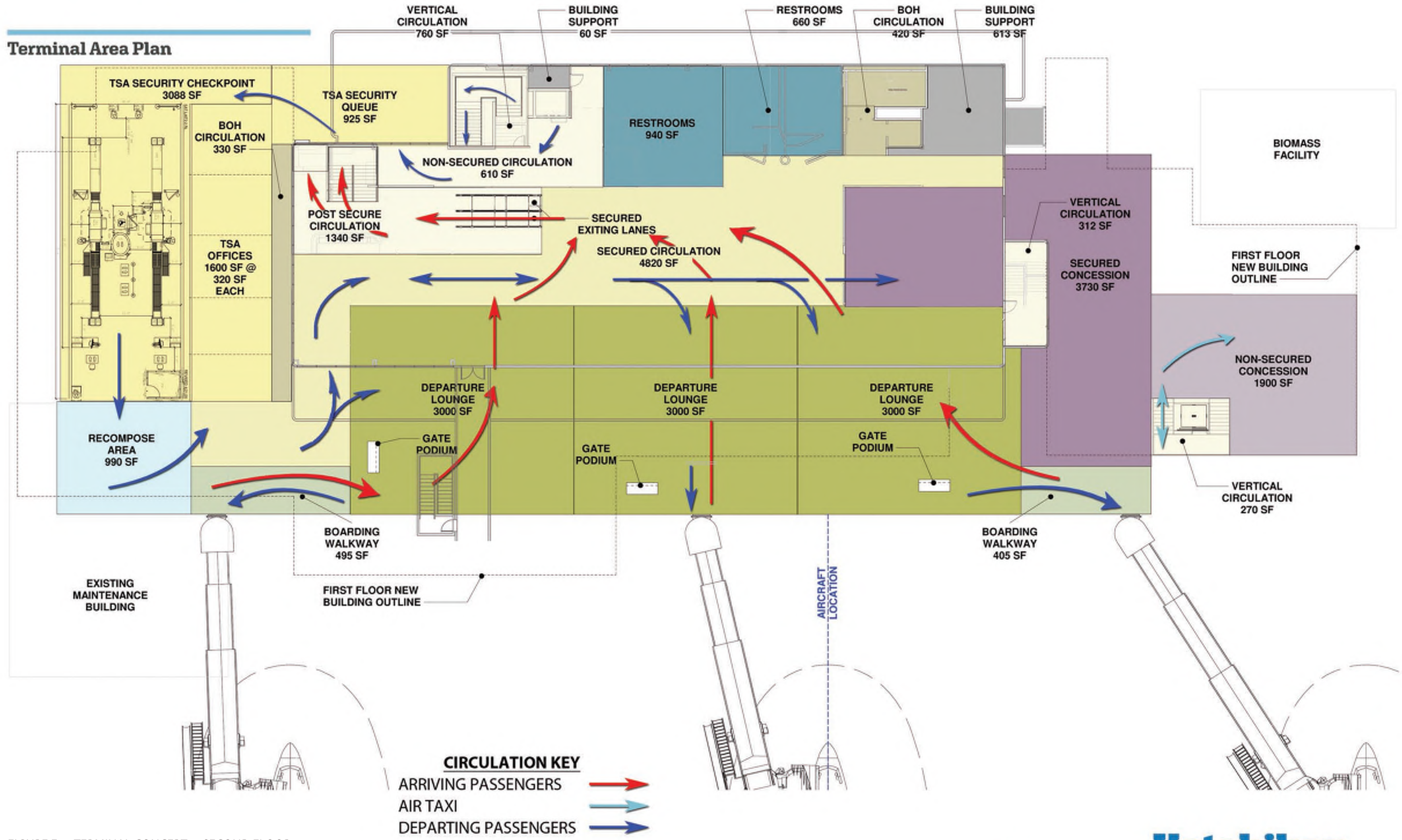


FIGURE E5 - TERMINAL CONCEPT 2, SECOND FLOOR



Terminal Area Plan

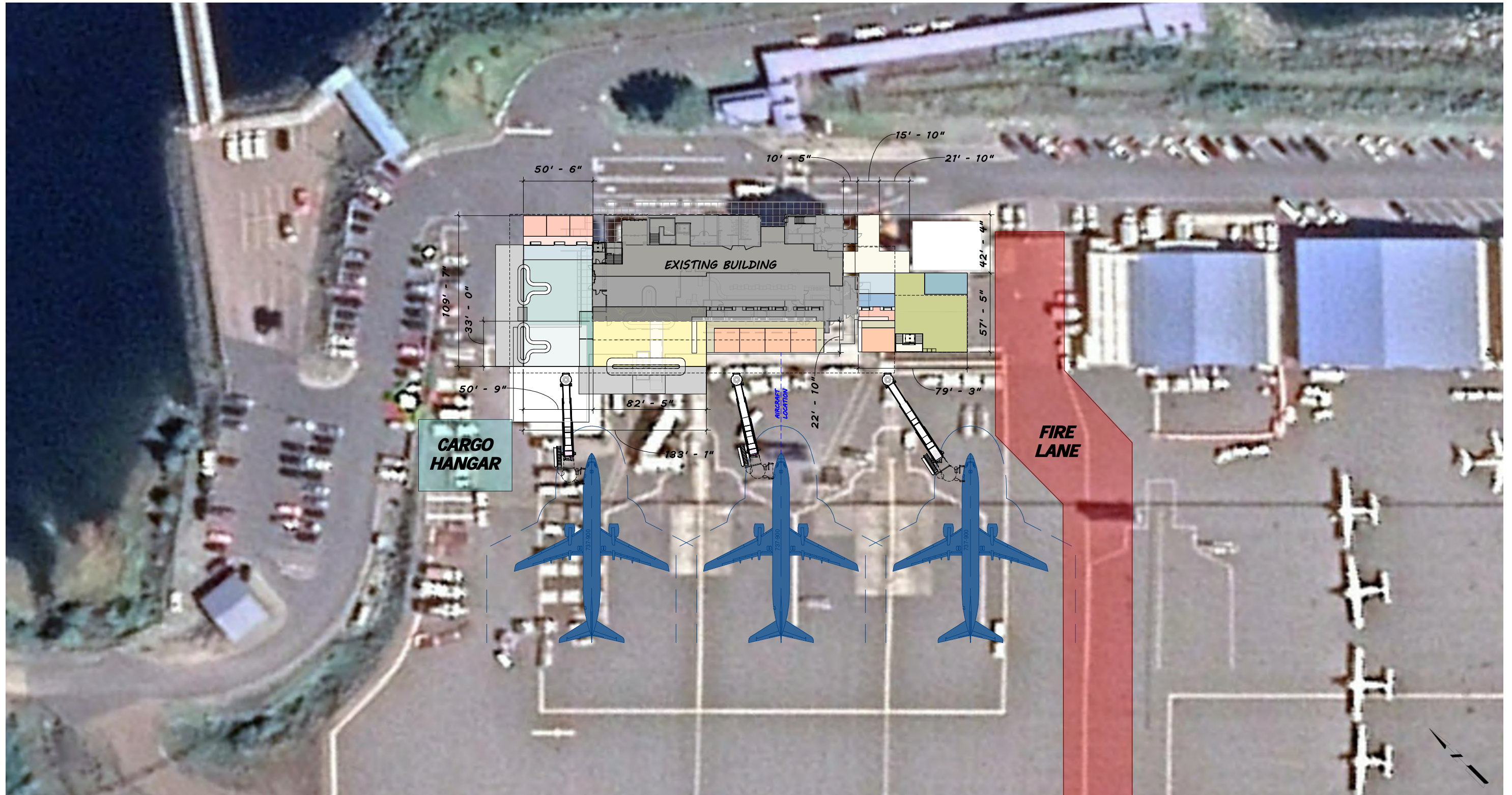


FIGURE E6 - TERMINAL CONCEPT 2, SITE EXTENTS

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Terminal Area Plan : E—Terminal Building Alternative Concepts

INITIAL TERMINAL CONCEPT 3 – 69,497 SQ FT

First Floor

Concept Three includes a radical shift in space configurations from Concepts One and Two in that is proposed to relocate the Security Screening Checkpoint from the second floor to the first floor. This option centralizes the eighteen station ticketing counters for Commercial and Air Taxi services, providing adequate room for queuing and cross-circulation at the counter. After check-in, both Commercial passengers and air taxi passenger would circulate right or to the south to enter the TSA Secure Checkpoint located just outside of the existing southwest corner of the terminal. The security check point screening is expanded to two check points lanes and provides a recompose area that leads to secured circulation. The departure lounge for Air Taxi ground boarding is located south of the security screening checkpoint and contains restrooms and a vending area. A family restroom and building support replaces the rental car offices and counters. Outbound baggage screening has been enlarged to support properly sized equipment for security screening. Baggage claim has been expanded to include two carousels and an oversized baggage drop. Adjacent to baggage claim are three rental counters and offices and two baggage service offices. A meeter/greeter area is located near the baggage claim with a view of the passageway for arriving passengers. Cross flow issued in the terminal are addressed by separating circulation for inbound passenger path from the outbound passenger path.

Second Floor

The existing vertical circulation from the first floor provides access to the non-secure concessions and serves as the exiting path for passengers leaving the concourse. The circulation provides access to three departure lounges, secured concessions and the existing restroom. All departure lounges are served by Passenger Boarding Bridges that connect to the aircraft. Inbound passengers move through circulation to the secure exiting lanes and proceed to the new vertical circulation that leads them to baggage claim on the first floor.

Potential Advantages of Concept Three include:

- **All Commercial and Air Taxi ticketing combined and centrally located.**
- **Crossflow issues are fully addressed by separating circulation for inbound and outbound passengers.**
- **Provides an expanded restroom on the second floor.**
- **Minimizes length of passenger boarding bridges for two positions.**
- **Locates security screening checkpoint on the first floor, opening up space on the second floor for circulation.**
- **Allows for flexible, phased expansion of most areas, including the security screening checkpoint.**
- **Second floor layout allows for an open central core and easy wayfinding.**
- **Allows for future second floor expansion for offices, a conference room, or other needs.**

Potential Disadvantages of Concept Three include:

- **Air Taxi ticket counters are not directly adjacent to the Air Taxi departure lounge, reducing ease of wayfinding.**
- **Air taxi lounge would not have direct access to non-secure concessions on the second floor.**
- **Access from the southern most departure lounge to the passenger boarding bridge would require longer fixed portion of the passenger boarding bridge**

Terminal Area Plan

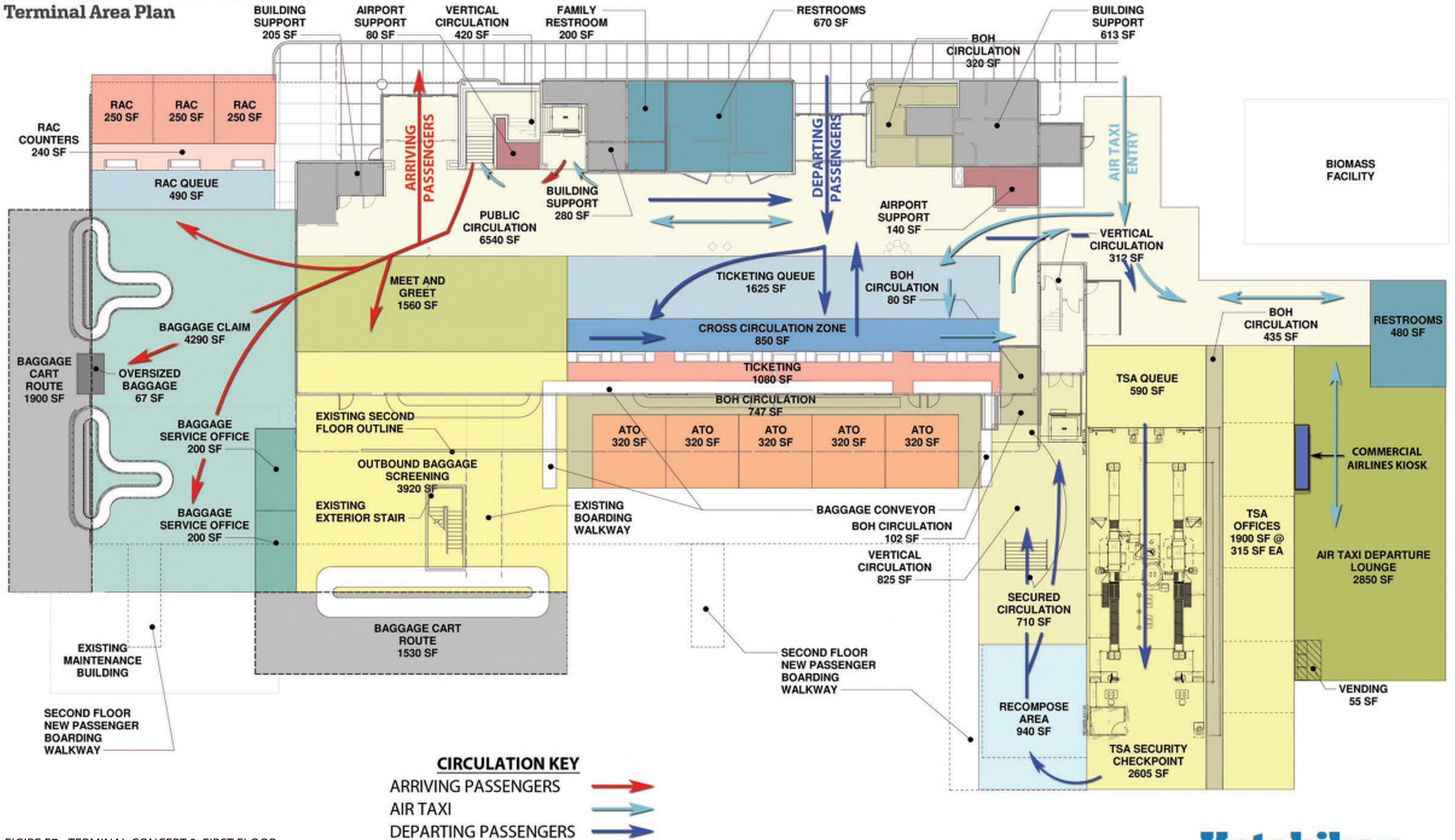


FIGURE E7 - TERMINAL CONCEPT 3, FIRST FLOOR

Terminal Area Plan

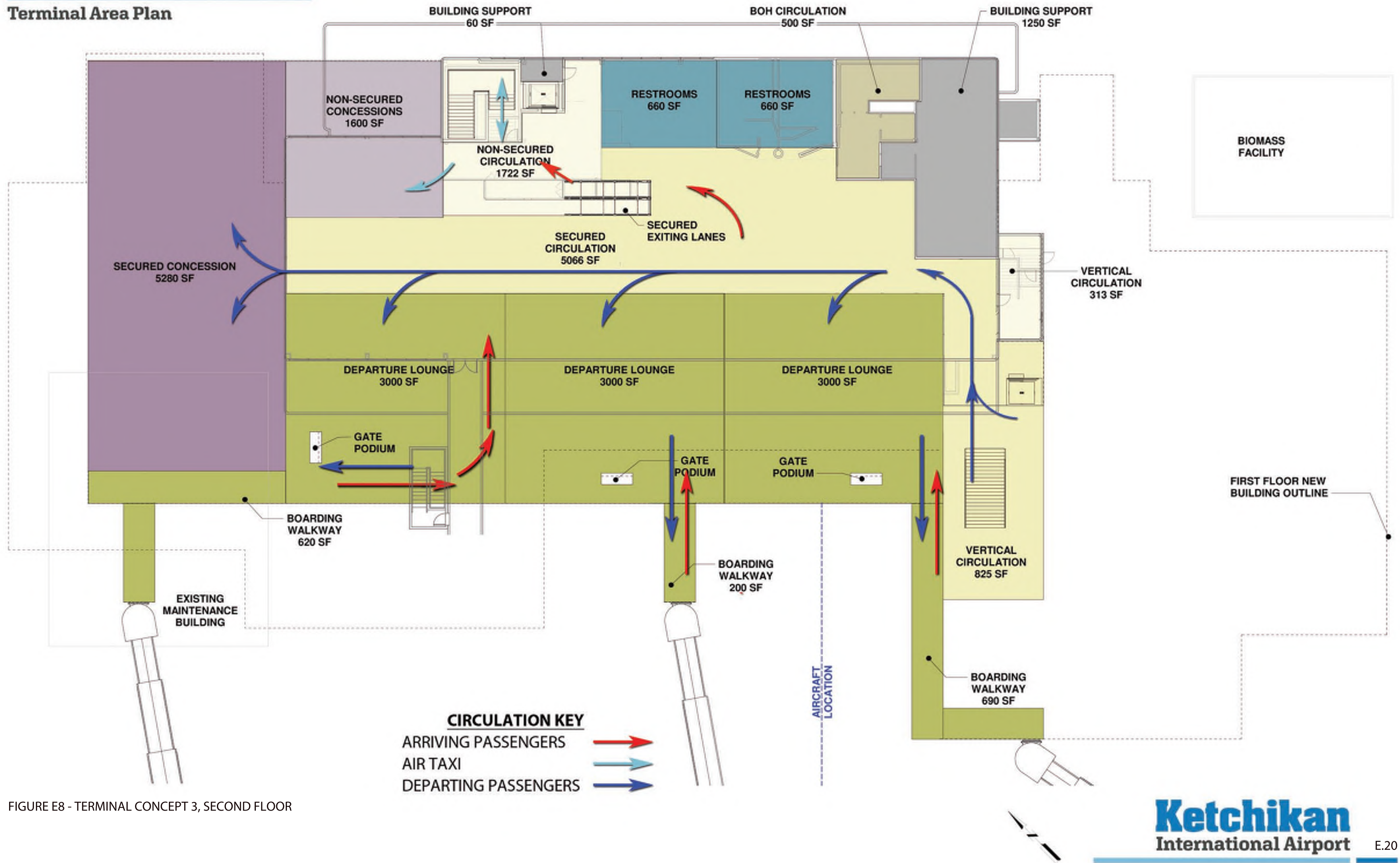


FIGURE E8 - TERMINAL CONCEPT 3, SECOND FLOOR

Terminal Area Plan

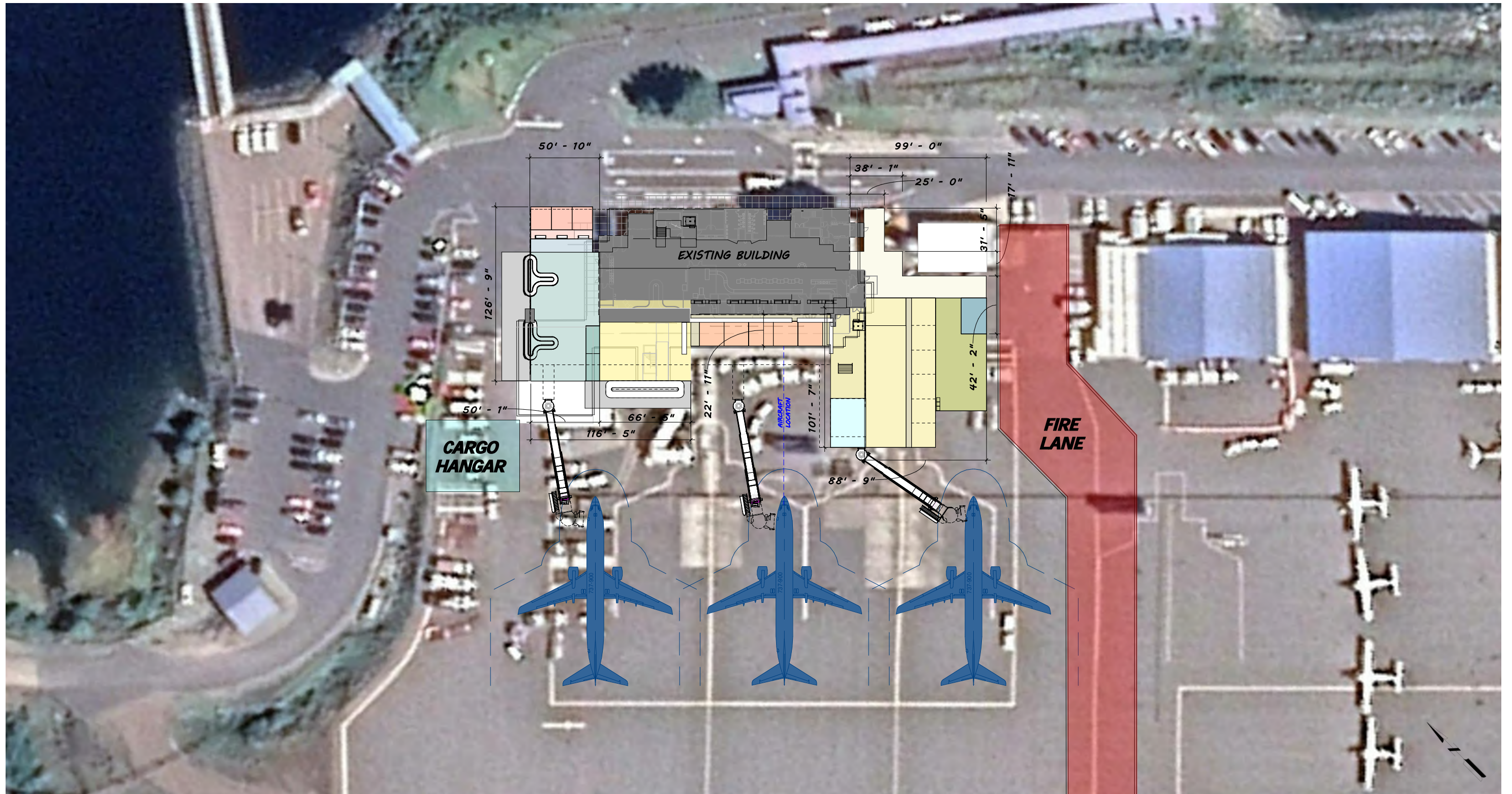


FIGURE E9 - TERMINAL CONCEPT 3, SITE EXTENTS

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Terminal Expansion Alternative Concepts Evaluation and Screening

To evaluate these terminal expansion alternative concepts individually and against all concepts, a set of evaluation criteria was established based on four broad screening elements:

- **Passenger Experience**
- **Operational Efficiency**
- **Sustainability and Environment**
- **Implementation, Phasing, and Feasibility**

Specific screening criteria was developed for each of these four elements and used to evaluate each alternative concept in **Table E1**, on the following page. This matrix illustrates many of the strengths and weaknesses of each concept described in the previous sections and provides a comparative analysis of all the concepts.

Terminal Area Plan : E—Terminal Building Alternative Concepts

Table E1: TERMINAL BUILDING CONCEPTS SCREENING CRITERIA

Screening Criteria	Initial Concept 1	Initial Concept 2	Initial Concept 3
Passenger Experience			
Consolidates Air Taxi and Commercial Ticketing Operations and provides adequate queuing	✓	■	✓
Provides a linear orientation of the TSA Security Screening Checkpoint	■	■	✓
Provides direct access to TSA Security Screening Checkpoint from Ticketing	■	■	✓
Separates air taxi from commercial circulation	✓	✓	■
Expands second floor restrooms	✗	✓	✓
Layout supports improved wayfinding for arriving passengers	✗	✓	✓
Layout supports improved wayfinding for departing passengers	✗	✗	✓
Provides access to non-secure concessions	✗	✓	✗
Operational Efficiency			
Air Taxi lounge is proximate to Air Taxi Ticketing	■	✓	■
Separates circulation of deplaning and enplaning passengers	✗	■	✓
Minimizes passenger boarding bridge length	✓	✓	■
Efficient passenger flow in and out of security screening checkpoint	✗	■	✓
Sustainability and Environment			
Reuses existing facilities to the extent practical	■	✓	✓
Promotes long term financial viability of the Airport/Limits order of magnitude costs	✗	✓	■
Implementation, Phasing, and Feasibility			
Allows for incremental construction to accommodate forecast passenger levels	✓	✗	✓
Allows for phased development of expansion projects	■	✗	✓
Provides opportunity to expand building in the future	✓	■	✓
Meets terminal program requirements through square footage or efficient use of space	✓	✓	✓

Source: Mead & Hunt.

Note: ✓ Strength of the Concept.

■ Neither a Strength nor a Weakness of the Concept.

✗ Weakness of the Concept.

Summary and Conclusions

Based on a review of the terminal building alternatives and confirmation of the screening analysis shown above, the Study Committee selected Terminal Building Concept 3 as the most favorable long-term development concept for the KTN terminal building. This concept best lends itself to phased development and expansion of the terminal building with minimal disruption to operations during construction of each phase, which is crucial to the feasibility of most terminal expansion projects and the continued operation of the Airport. Additionally, the Study Committee strongly favored the relocation of TSA security screening checkpoint to the first floor to improve the passenger experience and flow within the terminal building. Based on this feedback, an updated terminal area conceptual development plan that illustrates the Preferred Terminal Area Alternative and Terminal Building Concept 3 was prepared and is shown in **Figure E10**.

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Terminal Area Plan

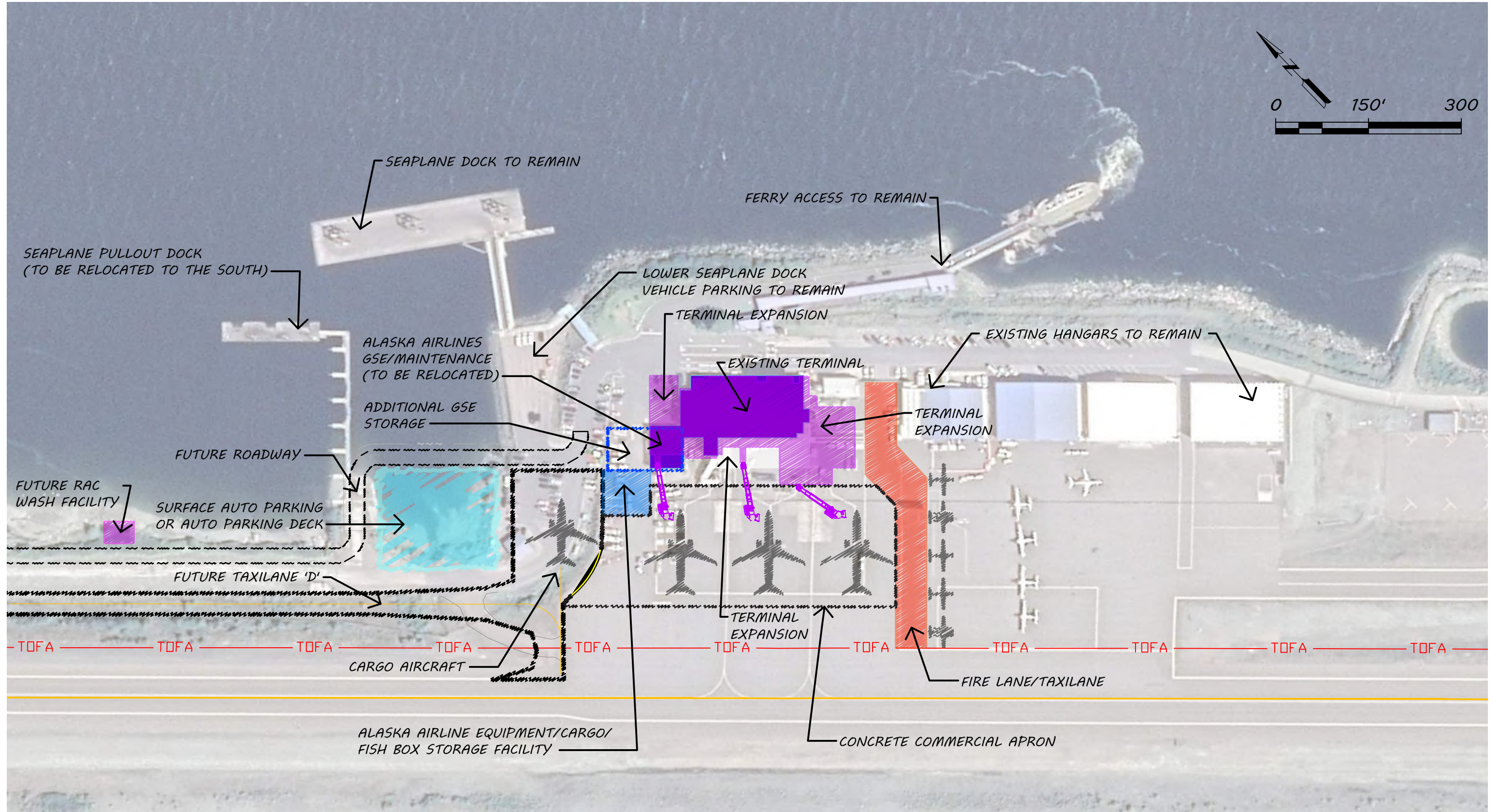


FIGURE E.10 REFINED TERMINAL AREA CONCEPTUAL DEVELOPMENT PLAN

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F – Environmental Review



Introduction.

The purpose of this chapter is to present a high-level overview and screening of the potential environmental considerations of the Terminal Area Conceptual Development Plan for Ketchikan International Airport (KTN or Airport). The following narrative provides preliminary information concerning environmental resources in an effort to define and identify critical resources that would need to be addressed in the preparation of environmental documentation for the proposed Airport development identified in the development program.

Alternatives involving the future configuration of the terminal area and terminal building have been reviewed in previous chapters. The primary changes proposed to the existing terminal area layout include the phased expansion of the terminal building, the expansion of the aircraft parking apron, the relocation of the seaplane pullout dock, a new vehicle parking area and a new airlines maintenance/cargo facility.

Existing Conditions

The Ketchikan Gateway Borough is located in Southeast Alaska in a maritime climate zone. Much of Southeast Alaska is covered by the Tongass National Forest and surrounded by the Inside Passage, an area known for its scenic, rugged coastline with steep terrain and forested islands. The Airport is located on Gravina Island, across the Tongass Narrows from Ketchikan. The Tongass Narrows waterway

Terminal Area Plan : F—Environmental Review

is part of the Alaska Marine Highway and is used by recreational vessels, passenger vessels (including large cruise ships), commercial fishing vessels, commercial freight barges, commercial tank barges, kayaks, floatplanes, charter vessels, and passenger ferries.

The climate of the Ketchikan Gateway Borough is characterized as a mild maritime or oceanic climate, that frequently has heavy cloud cover, high humidity and abundant rainfall averaging 153 inches per year, while the average snowfall is about 40 inches per year. The average annual maximum temperature is 52° F, and the average annual minimum temperature is 39° F.

The Borough has authority over the zoning and development codes that help guide development on Gravina Island. Much of Gravina Island is undeveloped and owned by the United States Forest Service (USFS). The area immediately south and west of the Airport has an Airport Reserve designation that is intended for future airport uses. There is an Airport Development zone beyond the Airport Reserve zone, which is intended for other airport facilities such as parking facilities and airport related businesses. The area north of the Airport Development zone was formerly a timber processing plant is designated as heavy industrial. There are also two residential zones, one on the northern side of the island and one at Clam Cove south of the Airport.

There are limited surface transportation facilities on the island. Vehicle access to the Airport is provided by the Airport ferry. Passenger terminal access is provided by the Airport Access Road from the ferry dock. The Airport Access Road also connects to Lewis Reef Road and the Gravina Island Highway.

Future Conditions

The following future conditions discussion is based on the assumption that all the projects included in the proposed terminal area 20-year capital improvement program are implemented. An analysis of the potential environmental impacts of implementing these projects allows for the identification of any potentially significant environmental concerns and also allows for the identification of the level of documentation that may be required to receive environmental clearance for each project. It is anticipated that the majority of the terminal area projects can be environmentally cleared under a Categorical Exclusion Form. However, several development projects identified in the development program may result in potential impacts to several resource categories and may require the preparation of an Environmental Assessment (EA). Specifically, it's assumed that potential impacts related to the North Airport Service Road Relocation and the Vehicle Parking Expansion, which are interrelated projects, could be evaluated in a single EA.¹

Air Quality

The proposed development outlined in this Terminal Area Plan is not expected to have a significant impact on the long-term quality of the air in the vicinity of the Airport. According to the U.S. Environmental Protection Agency (EPA), Ketchikan Gateway Borough is in attainment area with federal health-based air quality standards known as the National Ambient Air Quality Standards (NAAQS). A

¹ Note that the Seaplane Pullout Dock Relocation/Replacement project (A1) is a currently planned project, and the replacement location is located outside of the terminal area. Therefore, this project is not addressed in this chapter.

Terminal Area Plan : F—Environmental Review

non-attainment area is defined as a locality where air pollution levels persistently exceed the NAAQS. The EPA normally makes this designation only after air quality standards have been exceeded for several consecutive years. Furthermore, a conformity analysis conducted to ensure actions included in a non-attainment or maintenance area “conforms” to any relevant State Implementation Plan (SIP) will not be required because Ketchikan Gateway Borough is not considered a non-attainment or maintenance area.

Short-term air quality impacts may be expected during construction of the proposed projects from heavy equipment pollutant emissions, fugitive dusts resulting from cut and fill activities, and the operation of portable concrete batch plants. Compliance with all applicable local, state, and federal air quality regulations and permitting requirements will be the responsibility of construction contractors.

Biological Resources

The *Endangered Species Act*, as Amended, requires each federal agency to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species. According to the U.S. Department of the Interior Fish and Wildlife Service (USFWS), Information for Planning and Consultation (IPaC) website, there no known occurrences of federal threatened, endangered, and candidate species or migratory birds of conservation concern located within the Ketchikan Gateway Borough.²

Section 305 of the Magnuson-Stevens Act requires federal agencies to identify and conserve essential fish habitat (EFH) for federally managed fish species. EFH is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” According to the National Marine Fisheries Service (NMFS), the Tongass Narrows is identified as EFH for five pacific salmon species and various ground fish.³ Projects that involve fill into the Narrows could result in direct habitat loss as well as indirect effects to physical processes that shape aquatic habitats and the species that live there. An EFH assessment could be required for the North Airport Service Road Relocation and the Vehicle Parking Expansion development projects.

Marine mammals are protected under the Marine Mammal Protection Act. The 2017 environmental documentation related to the Gravina Access Project notes that eight species of marine animals have been documented in the Tongass Narrows east of the Airport: harbor seals, Steller sea lions, humpback whales, killer whales, Dall’s porpoises, Pacific white-sided dolphins, minke whales, and harbor porpoises.⁴ A Biological Assessment for some or all of these species may be required for the North Airport Service Road Relocation and the Vehicle Parking Expansion development projects. Placing concrete, rock, and other fill materials or removing materials in intertidal and subtidal areas could in

² U.S. Fish & Wildlife Service, 2020. Information for Planning and Consultation. Accessed June 20, 2020. Available at: <https://ecos.fws.gov/ipac/location/index>.

³ National Marine Fisheries Service, 2019. Alaska Essential Fish Habitat Mapper. Accessed June 20, 2020. Available at: <https://alaskafisheries.noaa.gov/portal/apps/webappviewer/index.html?id=bf2254ed51f444a8a16c564add54250>

⁴ Federal Highway Administration (FHWA) and the Department of Transportation & Public Facilities (DOT&PF), 2017. Gravina Access Project Final SEIS, Chapter 4 Environmental Consequences, p 4-57. Accessed June 20, 2020. Available at: http://dot.alaska.gov/sereg/projects/gravina_access/assets/FSEIS_6-2017/12-Chap4_EnvConseq_red.pdf

Terminal Area Plan : F—Environmental Review

long-term effects by eliminating small percentages habitat. The North Airport Service Road Relocation and the Vehicle Parking Expansion may result in some loss of marine mammal habitat; however, it's unlikely that any resulting habitat loss would be substantial in nature. In-water construction activities routine maintenance associated with the North Airport Service Road Relocation and the Vehicle Parking Expansion would likely result in temporary audible impacts to marine mammals. Marine mammal habitat and food sources are unlikely to have substantial long-term impacts.

Coordination with the USFWS, NMFS, and Alaska Department of Fish and Game (ADF&G) may be necessary to determine whether any major development project actions are likely to jeopardize the continued existence of ESA-listed species and marine mammals, or would result in the destruction or adverse modification of federally designated critical habitat. Best Management Practices (BMPs) should be incorporated into development projects to mitigate temporary construction impacts, protect water quality, and minimize effects related to runoff.

Coastal Zone Management and Wild and Scenic Rivers

In 2011, Alaska chose to discontinue the Coastal Management Program, which was developed under the Coastal Zone Management Act of 1972. However, under the *Ketchikan Coastal Management Plan* (1978), the Borough of Ketchikan established enforceable coastal development (CD) policies that provide guidelines and requirements for developing along the waterfront. The North Airport Service Road Relocation and the Vehicle Parking Expansion projects will need to be designed to comply with the policies outlined in this plan.

According to a listing of Wild and Scenic Rivers compiled and managed by the USACE, the Bureau of Land Management (BLM), the National Park Service (NPS), the U.S. Forest Service (USFS), and the U.S. Fish and Wildlife Service (USFWS), there are no wild and scenic rivers located within the vicinity of KTN. Therefore, there will not be any impacts to a nationally significant river resource as a result of the proposed development within the Airport's terminal area.

Noise and Noise Compatible Land Use

The proposed terminal area projects are not anticipated to have an impact on the number or type of aircraft operations occurring at KTN over the 20-year planning period. An aircraft noise analysis will likely not be required prior to implementation of any of these projects. The KTN noise contours also do not encompass any noise sensitive land use such as residential, schools, hospitals, nursing home and churches.

Natural Resources and Energy Supply

The proposed development outlined in this Terminal Area Plan is not expected to have a significant impact on natural resources and energy supply in the vicinity of the Airport.

Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks

Socioeconomics. The potential effects of proposed airport projects can extend to nearby residents and communities to cause direct or indirect socioeconomic impacts. The principal social impacts that should

Terminal Area Plan : F—Environmental Review

be considered during project analyses include those associated with relocation or other community disruption, transportation, planned development, and employment. In some cases, the effects of proposed projects can extend beyond current Airport boundaries to cause the relocation of residents or businesses, disrupt an established community, affect transportation patterns, or conflict with off-site development plans or land uses. Project implementation may also affect employment by creating temporary or permanent jobs associated with Airport development or by relocating jobs to another location.

All proposed development projects, with the exception of the proposed North Airport Service Road Relocation and the Vehicle Parking Expansion will occur within the Airport boundary. As such, none of the proposed development projects will result in the relocation of residents or businesses or conflict with off-site development land and land uses.

Construction activities related to the North Airport Service Road Relocation and the Vehicle Parking Expansion could potentially result in temporary effects to residents and businesses near the Airport. Potential temporary construction effects could include noise, dust or light emissions from construction activities, or could be associated with changes to surface traffic. These proposed development projects will be evaluated in a subsequent NEPA evaluation to identify the potential to result in temporary or permanent socioeconomic effects.

Environmental Justice. Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. None of the proposed development projects are likely to disproportionately affect minority or low-income populations in the Borough.

Children’s Environmental Health and Safety Risks. Under NEPA, sponsors and federal agencies must consider environmental health risks and safety risks that may disproportionately affect children and ensure that policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Children’s Health and Safety Risks are generally risks that would be attributable to products or substances children are likely to encounter or ingest through air, food, drinking water, recreational waters, soil, or other projects that children might use or to which they might be exposed.

Given the isolated location of the Airport on Gravina Island, there are no residential structures, schools, churches, hospitals, or assisted living facilities present within 1-mile of the Airport. No impacts to Children’s Environmental Health and Safety Risks are anticipated with any of the proposed development projects.

Terminal Area Plan : F—Environmental Review

Water Resources

Under Section 10 of the Rivers and Harbors Act of 1899, approval by the United States Army Corps of Engineers (USACE) is required prior to any work in, over or under navigable waters of the United States, or which affects the course, location, condition or capacity of such waters. Since the Tongass Narrows is a navigable waterway, this would be required for Airport improvement projects that involve construction of any piers, ramps, floats, and cable or pipeline crossings; dredging or disposal of dredged material; and excavation, fill or other modifications to into the Narrows. USACE will be required for the North Airport Service Road Relocation and the Vehicle Parking Expansion development projects. National Pollutant Discharge Elimination System (NPDES) construction permits will be needed for projects that include new ground disturbance or changes in impervious surface.

Also, Section 404 of the Clean Water Act requires permit authorization to discharge dredged or fill material into the waters of the United States, including wetlands. Section 404 permitting will be required for the North Airport Service Road Relocation and the Vehicle Parking Expansion projects, as they involve discharge fill or dredged material into the Tongass Narrows, as well as the placement of riprap and road fills.

Prior to completing any projects at the Airport where there is potential for wetlands impacts, coordination with the USACE is recommended to confirm whether wetland features are present in project areas and to classify any such wetland features. If wetlands will be disturbed as a result of a project, the requisite permits would need to be obtained. The National Wetlands Inventory (NWI) classifies most of the developed area of the Airport as uplands, which is a non-wetland area. The shoreline along the Tongass Narrows and the Narrows itself are classified as and estuarine and marine wetlands, which consist of deepwater tidal habitats and adjacent tidal wetlands. The North Airport Service Road Relocation and the Vehicle Parking Expansion projects will result in some loss of these wetlands. These areas will need to be surveyed and mapped prior to construction of these projects to determine the extent of wetlands that would be impacted, and some form of mitigation will likely be required.

The Airport is located within the Tongass Narrows-Frontal Clarence Strait watershed, which has been designated as a priority watershed by the Alaska Department of Environmental Conservation (ADEC).

Farmland

There are no prime or unique farmlands in Alaska because the soil temperatures in the state do not meet the criteria established by congress. Furthermore, no farmlands of statewide importance have been designated in Alaska and there are no farmlands of local importance in the Ketchikan area.

Visual Effects (Light Emissions/Visual Resources)

Airfield lighting and rotating beacons are the main sources of light emissions emanating from an airport. Lighting required for construction activities could result in temporary light emissions, however no significant lighting impacts are expected from any of the proposed development projects.

Terminal Area Plan : F—Environmental Review

Visual effects refer to the extent to which a project would emit light that creates annoyance or interferes with other activities, contrasts with or detracts from visual resources, or affects the visual character of the existing environment. Per NEPA regulations, proposed Terminal Area Plan projects will require evaluation of potential impacts on visual resources associated with new structures, roadways, and/or aviation facilities. Proposed development in the Terminal Area Plan is not anticipated to significantly change the lighting or visual environment at the Ketchikan International Airport.

Summary

On a project-specific basis, each improvement specified in this Terminal Area Plan that receives federal funding or requires a change to the Airport Layout Plan, will require environmental clearance prior to implementation. The environmental documentation required to receive the clearance differs with the complexity of the project and the anticipated level of environmental impacts. This documentation can range from a Categorical Exclusion for simple projects to a full Environmental Impact Statement for projects with potentially significant impacts. The purpose of this Environmental Review chapter is to attempt to document and potentially uncover any significant environmental concerns that might greatly influence the ability to implement one or more of the recommended improvement projects and determine the level of environmental documentation required.

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G – Development Program and Financial Implementation Analysis



Introduction.

The previous chapters evaluated and identified the future development needs of the terminal area and the terminal building at the Ketchikan International Airport (KTN or Airport). This chapter builds upon previous chapters and presents the Capital Improvement Program (CIP), or long-term Development Program for KTN, and the Financial Implementation Analysis, which establishes a funding strategy for airport improvements by maximizing the potential to receive federal and state matching funds and provides a financially prudent plan for improvement funding at the local level. This information serves as a critical planning tool for the Federal Aviation Administration (FAA) in establishing priorities and budgeting expenditures at KTN when compared with the needs of other airports. From the local Borough's perspective, the CIP identifies improvement needs and allows budgeting/financial decisions to be made with a comprehensive understanding of financial implications.

The overall concept is to maximize opportunities to receive federal funds, within the context of and in recognition of the amount of local funds available to support capital needs. While the FAA uses the CIP for programming purposes, neither the federal government nor the Borough are financially

Terminal Area Plan : G—Development Program and Financial Implementation Analysis

obligated to provide funding for the CIP. If federal matching funds are unavailable for a project, it is unlikely that local funding will cover its cost and the project will be put on hold until funding becomes available.

This chapter was initially developed in January 2021. Updates to the financial implementation plan were made in July 2021 and are reflected in **Appendix 3 – Financial Implementation Plan Update**.

Development Program

The Development Program/CIP provides the structure for the phasing of capital improvement projects and planning level cost estimates for these projects in 2020 dollars. The Financial Implementation section of this chapter provides a more detailed financial analysis and accounts for escalation over the 20-year planning period. The potential improvements necessary to accommodate the future needs at KTN are organized into three (3) phases according to priority:

- **Phase A – Short-Term (1-5 years, 2021-2025)**
- **Phase B – Mid-Term (6-10 years, 2026-2030)**
- **Phase C – Long-Term (11-20 years, 2031-2040)**

Project List, Implementation Schedule, and Cost Estimates

Using the information from previous chapters, a list of capital improvement projects was developed. The proposed projects and phasing of projects are presented in **Tables G1 - G3**. The Phase A Short-Term project list includes the year for which each project is programmed for implementation. The phasing and prioritization of Phase B Mid-Term and Phase C Long-Term projects is likely to change as local and federal priorities evolve over time; therefore, the year of implementation is not specified Phase B and C projects.

The details of the Development Program, including the capital improvement project list, project cost estimates, the finalized phasing list, and the financial feasibility analysis, were formulated with consideration of comments and input received from the Airport staff, the FAA, the Alaska Department of Transportation & Public Facilities (DOT & PF), the Terminal Area Plan Study Committee.

Planning level cost estimates were prepared for projects identified during each phase of the 20-year planning period. The CIP cost estimates presented in this chapter are based on 2020 dollars and do not account for inflation. Inflation of these cost estimates is addressed in the following section of this chapter, Financial Implementation Analysis. These estimates are intended for planning purposes only; they are not construction cost estimates, which can only be compiled following the preparation of detailed engineering design documents.

Terminal Area Plan : G—Development Program and Financial Implementation Analysis

TABLE G1: Phase A (1-5 Years) – Estimated Development Program Project Costs

Year	Project No.	Project Name	Estimated Total Cost
2022	A1	Terminal Expansion (Phase I)	\$20,885,132
2023	A2	Convert Commercial Apron from Asphalt to Concrete (Phase I)	\$893,113
2024	A3	Environmental Assessment for Road Relocation/Vehicle Parking Expansion	\$300,000
		Completion of projects in progress	\$799,355
Phase A Total Cost			\$22,877,600

Source: Mead & Hunt, 2020.

TABLE G2: Phase B (6-10 Years) – Estimated Development Program Project Costs

Years	Project No.	Project Name	Estimated Total Cost
2026-2030	B1	North Airport Service Road Relocation	\$445,186
	B2	Vehicle Parking Expansion	\$4,604,003
	B3	RAC Wash Facility Replacement	\$845,000
	B4	Air Cargo Apron Expansion	\$2,858,712
	B5	Taxilane D	\$1,894,320
	B6	Alaska Airline Equipment/Cargo/Fishbox Storage Facility	\$3,500,000
	B7	Terminal Expansion (Phase II)	\$19,204,878
	B8	Convert Commercial Apron from Asphalt to Concrete (Phase II)	\$1,615,972
Phase B Total Cost			\$34,968,071

Source: Mead & Hunt, 2020.

TABLE G3: Phase C (11-20 Years) – Estimated Development Program Project Costs

Years	Project No.	Project Name	Estimated Total Cost
2031-2040	C1	Two Level Parking Deck	\$2,948,400
	C2	Convert Commercial Apron from Asphalt to Concrete (Phase III)	\$3,195,257
	C3	Terminal Expansion (Phase III)	\$25,256,141
Phase C Total Cost			\$31,399,798
Phases A, B, and C Grand Total			\$89,245,469

Source: Mead & Hunt, 2020.

Phasing Plan

Figure G1 on the following page illustrates the suggested phasing for the Development Program projects throughout the 20-year planning period based on the current phasing priorities, as previously presented in **Tables G1 - G3**. Terminal building expansion projects occur in phase with corresponding commercial apron aircraft parking improvement projects. Some considerations in developing the project phasing plan include minimizing disruptive scheduling to avoid making a portion of the facility inoperative due to construction, and preventing extra costs resulting from improper project scheduling.

The primary factors that will likely drive the timing of project implementation, particularly in Phases B and C, include the actual demand for certain facilities and improvements, as well as the economic feasibility. It will be important to provide adequate lead-time for detailed planning and construction of these Mid- and Long-Term projects in order to accommodate demand as it increases over time.

Financial Plan and Implementation Strategy

The Funding sources for the CIP depend on many factors, including FAA Airport Improvement Program (AIP) project eligibility and availability of AIP funds, the ultimate type and use of facilities to be developed, debt capacity of the Airport, the availability of other financing sources, and the priorities for scheduling project completion. The cost estimates presented above serve as the basis for the detailed financial analysis presented in the next section of this chapter, which outlines the potential CIP project financing options and incorporates an escalation factor in the project cost estimates.

Terminal Area Plan

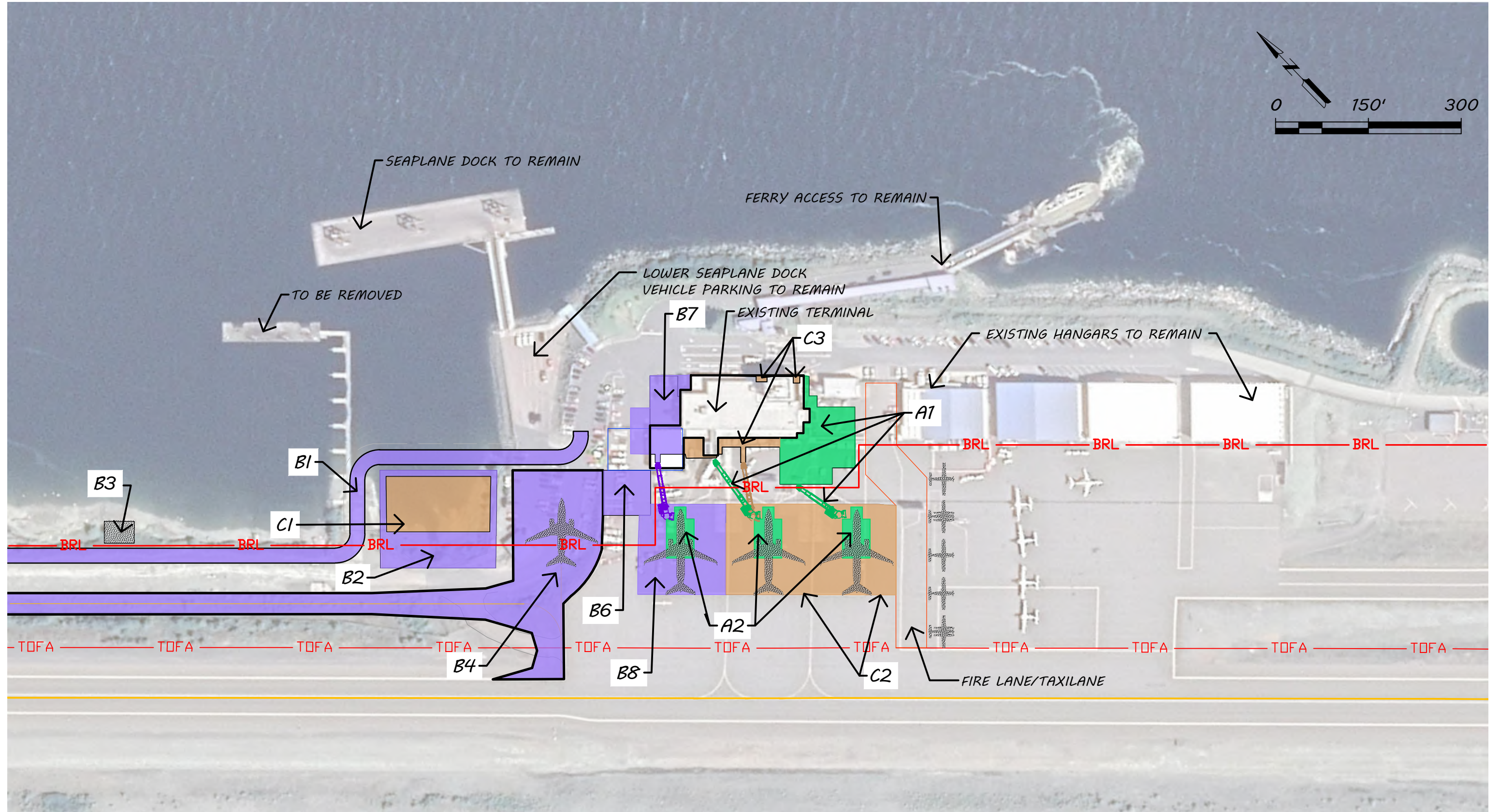


FIGURE G1 PHASING PLAN

- PHASE A SHORT (2021-2025)
- PHASE B MEDIUM (2026-2030)
- PHASE C LONG (2031-2041)

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Financial Implementation Analysis

The purpose of this analysis is to evaluate Ketchikan International Airport’s capability to fund the Terminal Area Development and other projects in its overall Capital Improvement Program (CIP) while also financing operations during three phases of capital development. These phases include a five-year planning period from 2021 through 2025 (Short-Term), a five-year period from 2026 to 2030 (Mid-Term) and a ten-year period from 2031 to 2040 (Long-Term).

The analysis includes development of a detailed Financial Implementation Plan prepared annually for the Short-Term period and in summary for the Mid-Term and Long-Term planning periods. Objectives for developing the Plan include presenting the results of the implementation evaluation and providing practical guidelines for matching an appropriate amount and timing of financial resources with the planned use of capital funds. Detailed schedules of projections for the Terminal Area Development and other capital program projects, operating expenses, operating revenues and cash flow are provided at the end of **Chapter G**. These schedules support the Financial Plan Summary which presents the overall results of this evaluation.

Overall Approach

The overall approach for conducting the Financial Implementation Analysis included the following steps:

- Gathering and reviewing key Airport documents related to historical financial results, capital improvement plans, operating budgets, regulatory requirements, Borough and Airport policies, State agreement, airline agreements and other operating agreements with Airport users
- Interviewing Borough and Airport officials to gain an understanding of the existing operating and financial environment, relationship with the State, relationships with airlines and overall financial management philosophy
- Reviewing the Forecasts of Aviation Activity previously developed in the Terminal Area Plan
- Reviewing the detailed project components of the Terminal Area Plan to obtain cost estimates and understand the preferred development schedule anticipated for the twenty-year capital planning period
- Reviewing the Airport’s existing capital improvement program for non-terminal related projects to obtain cost estimates and understand the planned development schedule anticipated for the twenty-year capital planning period
- Determining and analyzing the sources and timing of capital funds available to meet financial requirements for funding the capital program for terminal area improvements as well as other capital projects not related to the terminal

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- Developing a financial plan that balances the anticipated overall need for capital funding with the practical availability of multiple funding sources including an assessment of the Airport’s debt capacity to support the funding requirement within the preferred development time frame
- Analyzing historical and budgeted operating expenses, developing operations and maintenance expense assumptions, reviewing assumptions with Borough and Airport officials and projecting future operating costs for the planning period
- Analyzing historical and budgeted operating revenue sources, developing revenue growth assumptions, reviewing assumptions with Borough and Airport officials and projecting future revenues for the planning period
- Completing results of the analysis and evaluation in a Financial Plan Summary that provides conclusions regarding the Airport’s capability to fund the planned capital improvement program and finance Airport operations.

Organization, Accounting and Budgeting

GOVERNMENTAL ORGANIZATION AND ADMINISTRATION. The Ketchikan International Airport is a state-owned airport managed entirely by the Ketchikan Gateway Borough through a partnership agreement. This agreement allows for the operation of the Airport, with the State acting as a technical advisor to the Borough and as a financial partner in major maintenance projects. As legal owner of the Airport, the State of Alaska is recognized by the Federal Aviation Administration as the airport sponsor for purposes of administering the Airport Improvement Program and the Passenger Facility Charge Program, discussed below.

The current lease agreement commenced on January 1, 1985 and will expire on May 31, 2027. This agreement divides the airport property into two parcels – the Landing Field Parcel and the Building Site Parcel. The agreement defines the responsibilities of each party toward the maintenance, repair and development of those parcels. Generally speaking, the State is responsible for major maintenance and capital development of the Landing Field Parcel and the Borough is responsible for maintenance and development of the Building Site Parcel which includes the Airport Terminal Building.

ACCOUNTING AND BUDGETING PRACTICES. Accounting records for the Airport are maintained by the Ketchikan Gateway Borough and the financial transactions are recorded in a separate enterprise fund. The services provided by the Borough include accounts payable, accounts receivable, payroll processing, purchasing functions, all monthly and annual financial reporting, and other services. As a proprietary fund, the Airport Enterprise Fund uses the accrual basis of accounting. The accrual basis of accounting is used on which revenues are recognized when earned and expenses are recognized when the liability is incurred. The financial activity of the Airport includes the day-to-day operations of the airfield, terminal building, airport ferry, parking and general aviation/seaplane facilities.

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The annual budget serves as the foundation for the Airport’s financial planning and control. The budget is developed by Airport and Borough officials on a non-GAAP budgetary basis which includes budgeting for capital outlay and excludes depreciation. The budget is then submitted to the Borough Assembly for approval.

Aviation Forecasts

In **Chapter B** of the Terminal Area Plan, aviation activity forecasts were developed to determine if existing Airport facilities, specifically Terminal Area facilities, have the capacity to meet future demand or if facility modifications are needed. These forecasts, which include passenger enplanements, total aircraft operations and commercial aircraft operations aid in the development and prioritization of the projects included in the Terminal Area Plan. AIP entitlement funds, Passenger Facility Charges (PFCs), and net operating revenues described below are projected based on these forecasts.

The forecasts were developed prior to the impact of the COVID-19 pandemic. For purposes of the financial implementation plan, the enplanements forecast in the Short-Term were modified to reflect the estimated impact on 2020 enplanements and the anticipated recovery of those enplanements to the originally forecast levels by the end of the Short-Term. Given that KTN is predominately a tourism market, it is anticipated that its recovery will occur more quickly than air service markets whose demand is driven by business travel.

Capital Funding Sources

In the past, the Airport has used a combination of FAA AIP grants, Passenger Facility Charges, Alaska State Legislative Grants and cash reserves/net operating revenues to fund capital improvements. These funding sources, as well as additional sources of capital funding, will continue to be important to finance the Airport’s Terminal Area Plan and non-terminal capital projects during the future twenty-year planning period.

FEDERAL PASS-THROUGH FUNDING (AIRPORT IMPROVEMENT GRANTS AND OTHER FEDERAL FUNDING). As owner and sponsor of the Airport, the State receives grants from the Federal Aviation Administration (FAA) to finance the eligible costs of certain capital improvements. These federal grants are allocated to commercial passenger service airports through the AIP. AIP grants include passenger entitlement grants, which are allocated among airports by a formula that is based on passenger enplanements and discretionary grants (including supplemental appropriations) which are awarded in accordance with FAA guidelines. After several years of continuing budget resolutions and other short-term legislative measures implemented by Congress, the FAA Reauthorization Act of 2018 was enacted on October 5, 2018. The Act authorized funding for the AIP through September 30, 2023.

In the State of Alaska, eligible projects are funded on a 93.75 percent AIP grant / 6.25 percent local match basis for small and non-hub airports. As the owner of 239 airports in the State of Alaska, the State is considered a multi-airport system and is permitted to distribute all or part of its entitlements among the airports it owns, per 49 USC 47117(c)(1). Therefore, in certain years, the State may utilize

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more AIP funds at an airport on eligible capital projects than that airport would have earned (as if it were not owned by the State) in allotments through the AIP program based on their individual enplanements. In other years, the State may utilize fewer AIP funds than were generated by an airport. This flexibility allows the State to direct AIP funds to airport projects as needed at its discretion.

Historically, AIP funds at KTN have been used to fund airfield development projects - projects included in the Landing Field Parcel defined by the agreement with the Borough and for which the State is responsible. However, the Borough has communicated with the State regarding the required expansion and rehabilitation of the Terminal Building described in this Terminal Area Plan and the need for some level of AIP funding participation in such projects. Therefore, for purposes of the Financial Implementation Plan, assumptions have been made regarding the use of federal funds toward the Building Parcel Site of the agreement (specifically in this case, the Terminal Building) as well as other federal funds which may be used by the State for projects included in the Landing Field Parcel.

The implementation analysis assumes that the current AIP program will continue to be extended through 2040 and that future program authorizations will provide substantially similar funding levels as it currently does and as it has historically provided since the program was established in 1982.

In addition to the traditional AIP Program described above, other federal funding may be available to airports for capital development. For example, on March 27, 2020, the Coronavirus Aid, Relief and Economic Security Act (CARES Act) was enacted and included \$9.5 billion in supplemental funding for airports. The funds were allocated to airports based on formulas specified in the Act and calculated by the FAA. Under the Act, the funds can be used for any lawful purpose on which airport revenues can be used (in accordance with Airport Sponsor Grant Assurances and FAA policies), including capital and operating costs of the airport. Additional similar federal funding was appropriated in December 2020. It is anticipated that the State would utilize one or a combination of multiple federal funding programs available to pass-through funds for capital development at KTN.

The implementation analysis assumes the application of federal funding passed through to KTN from the State will be about \$8.8 million during the Short-Term planning period, \$8.0 million during the Mid-Term and \$4.7 million during the Long-Term. Of the federal funds assumed during the twenty-year planning period, all but \$7.6 million are assumed to be utilized for projects included in the Landing Site Parcel. The analysis assumes \$7.6 million will be used in the Short-Term for the Building Site Parcel.

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES. The Alaska Department of Transportation and Public Facilities (AKDOT&PF) oversees the Division of Statewide Aviation (SWA) which is responsible for developing policies, procedures, and programs to plan, develop, improve and manage the safety, security and operations of DOT&PF's rural airport system, which represents 237 of the 239 state-owned airports. As previously described, AIP funds used at small and non-hub airports in Alaska require a 6.25% local match from the airport sponsor. For airports in the rural airport system, this required local match is funded from the State's general fund.

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For purposes of this implementation analysis, it was assumed that the local match required on AIP funded projects to support projects included in the Landing Field Parcel would be funded by AKDOT&PF through the rural airport system. The implementation analysis assumes these local matches will be about \$82 thousand during the Short-Term planning period, \$532 thousand during the Mid-Term and \$311 thousand during the Long-Term. The funds required to match AIP funds utilized for the Terminal Expansion project are assumed to be funded through KTN airport cash and net operating revenues described below.

PASSENGER FACILITY CHARGES. The Aviation Safety and Capacity Expansion Act of 1990 established the authority for commercial service airports to apply to the FAA for imposing and using a Passenger Facility Charge (PFC) of up to \$3.00 per eligible enplaned passenger. With the passage of AIR-21 in June 2000, airports could apply for an increase in the PFC collection amount from \$3.00 per eligible enplaned passenger to \$4.50. The proceeds from PFCs are eligible to be used for AIP eligible projects and for certain additional projects that preserve or enhance capacity, safety or security; mitigate the effects of aircraft noise; or enhance airline competition. PFCs may also be used to pay debt service on bonds (including principal, interest and issue costs) and other indebtedness incurred to carry out eligible projects. In addition to funding future planned projects, the legislation permits airports to collect PFCs to reimburse the eligible costs of projects that began on or after November 5, 1990.

Similar to the Airport Improvement Program, the FAA recognizes the State of Alaska as the KTN airport sponsor for purposes of the Passenger Facility Charge Program. However, in February 2019, the Borough and the State entered into a Passenger Facility Charge Agreement which allows the Borough to continue to collect and use PFCs for projects approved under a PFC application developed by the Borough but agreed to and submitted by the State. The Borough is responsible for the receipt and disbursement of PFC funds, as well as reporting requirements and compliance with the PFC requirements and regulations.

KTN currently collects PFC revenues in an approved open application at the \$4.50 collection level. It plans to submit a new application for additional PFC eligible capital projects identified in the Terminal Area Plan and to continue collection without interruption of its collection authority. The implementation analysis assumes that the Airport will submit additional PFC applications and amendments, as required, to ensure that the collection of PFC revenues continues beyond the authorized expiration date through the end of the twenty-year planning period in 2040.

At the beginning of fiscal year 2021, the Airport had \$658 thousand in unliquidated PFCs. PFC collections at the \$4.50 level are estimated to yield approximately \$277 - \$494 thousand per year in the Short-Term. In the Short-Term planning period, approximately \$830 thousand of PFCs will be used to complete non-terminal related capital projects. The implementation analysis then assumes that PFCs will be used on a pay-as-you-go basis to fund \$350 thousand of construction costs of Phase A of the Terminal Expansion Project in the Short-Term. PFC collections are estimated to yield approximately \$2.6 million during the five-year Mid-Term and \$6.1 million during the ten-year Long-Term. PFCs are

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assumed to fund \$908 thousand in the Long-Term, also on a pay-as-you-go basis for eligible costs associated with the acquisition of a Passenger Boarding Bridge.

In addition to using PFCs on a pay-as-you-go basis, PFCs can also be used to pay debt service on bonds or other indebtedness related to eligible projects. The implementation of Phase A of the Terminal Expansion Project will require the issuance of approximately \$8.1 million of long-term debt to fund the project (\$7.5 million for construction plus \$568 thousand of issuance costs and reserve requirements), the assumptions for which are described further in this chapter. It is assumed that the debt service on these funds will be funded with PFCs. The implementation analysis assumes \$9.4 million in PFCs will be used to service the debt - \$1.5 million in the Short-Term, \$2.5 million in the Mid-Term and \$5.4 million in the Long-Term.

OTHER CAPITAL CONTRIBUTION. While State owned, KTN is operated by the Borough under an agreement with the State, as previously discussed. The Borough, on occasion, may provide funding to the Airport for capital projects from its general fund budget, or as temporary short-term loans from other Borough funds. The implementation analysis assumes the Borough will provide approximately \$5.7 million during the Mid-Term to fund an expansion to the vehicle parking facilities and \$4.6 million during the Long-Term to fund a two-level vehicle parking deck.

PRIVATE THIRD PARTY FUNDING. Certain on-airport development projects may be funded through private third party funding. This is frequently the case for general aviation or private use development where a third party will assume the capital development costs of a hangar, and in exchange, the Airport receives rent through a ground lease. The implementation analysis assumes private third party funding during the Mid-Term planning period in the amount of approximately \$5.4 million for the rental car wash facility replacement as well as an airline equipment, cargo and fishbox storage facility. If private third party funding does not materialize in the time frame needed, the associated projects may have to be modified, delayed or cancelled until such funding is committed.

CASH RESERVES/AIRPORT NET OPERATING REVENUE. The Airport's cash reserves and future net operating revenues can be an important source of funds for the implementation of the Terminal Area Plan as well as other non-terminal projects included in the CIP. Net operating revenues represent the remaining funds available from the generation of operating revenues less payment of operating expenses as well as any debt service requirements of the Airport's debt obligations not funded through other sources such as PFCs. The projection of Operating Expenses and Operating Revenues is further discussed below.

At the beginning of 2020, the Airport had accumulated about \$6.4 million in unrestricted cash reserves available for operations and capital project funding. During the Short-Term, an additional \$1.8 million in net operating revenues are anticipated to be generated followed by \$3.3 million in the Mid-Term and \$13.3 million in the Long-Term. The Airport benefits from the estimated \$804 thousand of CARES Act funds planned to support operating expenses in 2021.

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The implementation analysis assumes that Airport cash reserves/net operating cash flow will be used during the Short-Term planning period to fund \$7.0 million in costs related to the Phase A Terminal Expansion. This includes funding for ineligible portions of the work as well as costs which would be AIP and/or PFC eligible but for which there is insufficient funding available from those sources. The implementation analysis assumes no cash reserves or operating revenues will be used for projects in the Mid-Term. The analysis assumes \$1.5 million in cash reserves/net operating cash flow will be used during the Long-Term planning period to fund the balance of a new Passenger Boarding Bridge.

OTHER UNIDENTIFIED FUNDING. The traditional airport capital funding sources described in the preceding paragraphs are insufficient in amount and timing to finance Phases B and C of the Terminal Expansion Projects planned for implementation during the Mid and Long-Term planning periods. Consequently, non-traditional funding sources will be needed to finance the cost of projects totaling about \$24.0 million during the Mid-Term planning period, and \$36.9 million during the Long-Term planning period. The source of this non-traditional funding has not yet been determined and represents a shortfall for the Terminal Development Plan. This funding shortfall could potentially be provided by sources such as State Legislative Grants, federal economic stimulus grants, Borough and local economic development funding, and other possible sources that are not certain at this time. If other funding sources cannot be identified and obtained in the time frames needed, Phases B and C of the Terminal Development Plan will have to be modified, delayed or cancelled until such funding can be identified. Consequently, this source of capital funding has been referenced in the Financial Implementation Analysis as “Other Unidentified Funding”.

Financial Analysis and Implementation Plan for the Terminal Area Development and Other Capital Improvement Projects

This analysis, along with the schedules presented at the end of **Chapter G**, provides the results of evaluating the financial reasonableness of implementing the Terminal Area Development and other capital improvement projects during the 2021-2040 planning period.

ESTIMATED TERMINAL AREA DEVELOPMENT COSTS. Detailed capital cost estimates for planned improvements for the Terminal Area Development are presented in **Schedules G1a, G1b and G1c** at the end of **Chapter G**. Each schedule represents a different phase of the Terminal Expansion Project – Phase A in the Short-Term, Phase B in the Mid-Term and Phase C in the Long-Term. The capital expenditure estimates provided in the schedules include construction costs, a 5% design contingency, 10% design costs as well as soft costs of 22% to include pre-construction costs, construction administration, and construction contingencies. Estimates are based on 2020 dollars with no adjustments for future inflation. The Financial Analysis for this project has determined that Phase A is financially feasible within the 2021-2023 planning period while reasonably available funding for Phases B and C cannot yet be determined. A summary of **Schedules G1abc** (which reflect feasible versus infeasible parts of the development) is presented in **Table G4** below.

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TABLE G4: Estimated Terminal Area Development Costs (Base Year 2020)

Terminal Area Project Components	Construction Costs	Design and Soft Costs	Total Estimated Costs	Funding Eligibility	
				AIP/PFC	Ineligible
Phase A – Financially Feasible					
Pax and Baggage Screening/Security	\$5,065,200	\$1,620,864	\$6,686,064	\$4,579,344	\$2,106,720
Departure Areas	3,334,800	1,067,136	4,401,936	4,401,936	0
Concessions	46,200	14,784	60,984	60,984	0
Other Public Areas	5,097,120	1,631,078	6,728,198	6,728,198	0
Support Areas	420,000	134,400	554,400	0	554,400
Site Costs	578,750	185,200	763,950	763,950	0
Terminal Equipment	1,280,000	409,600	1,689,600	1,689,600	0
Phase A Total Estimated Cost	\$15,822,070	\$5,063,062	\$20,885,132	\$18,224,012	\$2,661,120
Estimated Eligibility Percentages				87.3%	12.7%
Phase B – Not Financially Feasible	\$14,549,150	\$4,655,728	\$19,204,878	\$16,000,446	\$3,204,432
Phase C – Not Financially Feasible	\$19,133,440	\$6,122,701	\$25,256,141	\$21,809,658	\$3,446,483
Total Terminal Area Development Costs	\$49,504,660	\$15,841,491	\$65,346,151	\$56,034,116	\$9,312,035

Source: Leibowitz & Horton, AMC, 2020.

Note: Addition errors are due to rounding of calculated amounts.

As shown in **Table G4** above, the implementation analysis indicates that \$18,224,012 (87.3%) of the total estimated (feasibly funded) Terminal Area Development Costs (Only Phase A) is eligible for AIP and/or PFC funding while the remaining \$2,661,120 (12.7%) is not eligible and would need to be funded from Airport cash reserves and/or other funding sources. However, as described later in this chapter, while 87.3% may be AIP or PFC eligible, there are insufficient AIP and PFC funds available during the planned time frame that are required to fund those eligible costs. Therefore, such eligible costs must be funded with Airport cash reserves and net operating revenues. The \$44,461,019 cost of the development which is not feasible (Phases B and C) have eligible components, but that funding is not reasonably available within the 2026-2040 time frame.

ESTIMATED PROJECT COSTS AND DEVELOPMENT SCHEDULE. The Estimated Project Costs and Development Schedule (**Schedule G2** at the end of **Chapter G**) is derived from previous results of the Terminal Area Plan facilities analysis. The program for capital expansion and improvement is projected for the twenty-year planning period for years 2021 through 2040. **Schedule G3** at the end of **Chapter G** presents the Projected Capital Funding Sources for the identified projects. The estimated timing and costs of the overall capital development program are presented in these schedules along with the amounts and timing of the projected funding sources. **Table G5**, shown below, presents a summary of the estimated costs by type of project component as well as the anticipated construction schedule by

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development planning period that is provided in detail on **Schedule G2**. The estimated costs for projects scheduled during the planning period are adjusted by an assumed 3% rate of annual inflation. **Table G5** also provides a comparison of 2020 base year costs with escalated costs adjusted for inflation. As shown in the table, base year costs for the Terminal Area Development (all three Phases ABC) are estimated to be \$65.3 million compared with about \$87.6 million when inflation inherent in the future development period is considered. Base year costs for the Other Capital Projects are estimated at about \$23.9 million compared with about \$31.4 million in inflated dollars.

TABLE G5: Summary of Estimated Terminal Area Development Costs and Other Capital Project Costs

Project Components	2020 Base Year Costs	Escalated Costs			Totals
		Short-Term (2021-2025)	Mid-Term (2026-2030)	Long-Term (2031-2040)	
Terminal Area Development					
Ticketing / Check In	\$5,277,611	\$0	\$0	\$8,222,346	\$8,222,346
Pax and Baggage Screening/Security	10,012,464	7,175,932	0	5,182,423	12,358,355
Departure Areas	12,450,161	4,724,453	858,073	11,467,838	17,050,364
Concessions	8,354,808	65,452	10,352,232	0	10,417,684
Baggage Claim	7,384,608	0	9,217,362	0	9,217,362
Other Public Areas	11,755,498	7,221,154	0	7,832,368	15,053,522
Support Areas	1,707,552	595,019	0	1,796,573	2,391,592
Site Costs	2,291,850	819,922	953,551	1,190,209	2,963,682
Terminal Equipment	6,111,600	1,813,392	2,590,035	3,656,487	8,059,914
Totals Before Financing	\$65,346,151	\$22,415,324	\$23,971,253	\$39,348,244	\$85,734,821
Financing Costs	0	539,049	633,314	702,983	1,875,346
Total Terminal Area Costs	\$65,346,151	\$22,954,373	\$24,604,567	\$40,051,227	\$87,610,167
Other Capital Projects					
Landing Parcel Site Projects	\$11,202,560	\$1,313,582	\$8,505,374	\$4,978,106	\$14,797,061
Parking Facilities	7,552,403	0	5,746,650	4,593,511	10,340,161
Other Projects	5,144,355	829,805	5,423,367	0	6,253,172
Total Other Project Costs	\$23,899,318	\$2,143,386	\$19,675,391	\$9,571,617	\$31,390,394
Total All Project Costs	\$89,245,469	\$25,097,759	\$44,279,959	\$49,622,844	\$119,000,562

Source: Leibowitz & Horton AMC Analysis, 2020

Note: Addition errors are due to rounding of calculated amounts.

DEBT CAPACITY AND DEBT FUNDING REQUIREMENTS. The funds flow section (upper section) of **Schedule G2** provides an overall analysis of the annual availability of the Airport's various funding sources along with an indication of the adequacy of cash flow (both capital and operating) to meet funding needs of the capital program. The preferred project development schedule presented in the lower section of **Schedule G2** indicates significant funding is needed to support Phase A of the Terminal Expansion project in the 2021 to 2023 time period. Because the key funding sources are not available in the amounts needed to develop the project on a pay-as-you-go basis, Phase A of the Terminal Expansion cannot be achieved without debt financing. Currently, the Airport has no outstanding debt. The Airport's debt capacity is based on the Airport's level of cash flow available to service debt while still maintaining a sound financial condition. The Airport's cash flow sources available to pay debt service for these projects are future PFC revenue and its net operating revenue. KTN's level of PFC revenue is projected to be approximately \$468 thousand or more per year beginning in 2023 and its net operating revenue is projected to be \$233 thousand or more per year beginning in 2023 - these cash flows would thus provide a total of about \$701 thousand per year available to pay debt service. **Schedule G4** at the end of **Chapter G** provides a summary level debt service schedule for the PFC eligible debt (to support Phase A of the Terminal Building Expansion financing need) assuming a net proceeds requirement of \$7.5 million, a 1/1/2023 issue date, a 2.0% interest rate, a 20-year term and level annual debt service payments. The analysis further assumes issuance costs of \$75,000, a debt service reserve fund on one-year's payment and a required debt service coverage ratio 1.25. Issue costs and debt service reserve requirements were estimated at an additional \$568 thousand on the date of issue. For the PFC Debt Issue, this would result in debt service payments of about \$493 thousand per year compared with the availability of \$701 thousand in cash flow from PFCs and net operating revenue. The Airport could reasonably manage this level of debt funding within a financially prudent capital implementation plan. This debt issue structure results in an approximate debt service coverage ratio ranging from 1.42 in 2023 growing to about an average of 2.42 in the Mid-Term years of 2026-2030.

The analysis assumes that these funds would be secured through the issuance of airport revenue bonds through the Alaska Municipal Bond Bank Authority (AMBBA). The AMBBA is a public corporation established to aid authorized Alaskan borrowers in financing capital improvement projects such as public infrastructure and buildings including airport projects. AMBBA generates funding by selling bonds on the national market, and using the proceeds to purchase bonds from authorized borrowers within the State. Administratively supported by Department of Revenue staff, a board of five directors determines the Bond Bank's actions such as setting interest rates and approving loans. The Bond Bank has an excellent loan record and maintains high credit ratings from national rating agencies. With these high ratings, it is able to borrow money at favorable interest rates and terms. The AMBBA provides the mechanism for smaller Alaskan communities to access the national debt market on favorable terms that they could not otherwise obtain. From inception in 1975, all Bond Bank debt service has been paid by borrowers with interest rates that were significantly below what they could have gotten by issuing debt without the aid of the AMBBA. The Ketchikan Gateway Borough has used the AMBBA in the past to issue debt for the Borough, including airport projects. In 2020, an Alaska Supreme Court case was decided which delayed AMBBA's current lending activities. Based on discussions with the AMBBA, it is the opinion of the Borough that this issue will be resolved before the needed debt issuance for the

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Terminal Expansion Project anticipated for fiscal year 2023. Therefore, this analysis assumes the debt will be issued through the AMBBA, at the terms described above.

SOURCES AND USES OF CAPITAL FUNDING. As discussed in previous sections of this analysis, a variety of sources is available for funding capital improvements at the Airport. Funding sources for the Terminal Area Plan projects and other airport capital projects depend on many factors, including AIP and PFC project eligibility, the ultimate type and use of facilities to be developed, management's current and desired levels of the Airport's airline cost per enplaned passenger, the availability of other financing sources and the priorities for scheduling project completion. For planning purposes, assumptions were made related to the funding source of each capital improvement.

Schedule G3a provided at the end of **Chapter G** lists, in detail, each of the CIP projects, their estimated costs (escalated annually for inflation) and the assumed funding sources and amounts. A summary of the capital plan with project cost estimates and funding sources is presented below in **Table G6**.

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TABLE G6: Summary of Projected Capital Funding Sources

Project Components	USES			SOURCES – Projected Capital Funding						Totals
	Estimated Capital Costs	Pass-Thru Federal Funding	AKDOT&PF	PFCs	Other Capital Contribution	Private Third Party Funds	Other Unidentified Funding	Cash Reserves/Net Revenues		
Terminal Area Development										
Ticketing/Check-In	\$8,222,346	\$0	\$0	\$0	\$0	\$0	\$8,222,346	\$0	\$8,222,346	
Pax and Bag Screen/Security	12,358,355	4,607,680	0	0	0	0	5,182,423	2,568,252	12,358,355	
Departure Areas	17,050,364	2,992,320	0	1,171,127	0	0	12,325,911	561,006	17,050,364	
Concessions	10,417,684	0	0	0	0	0	10,352,232	65,452	10,417,684	
Baggage Claim	9,217,362	0	0	0	0	0	9,217,362	0	9,217,362	
Other Public Areas	15,053,522	0	0	6,678,873	0	0	7,832,368	542,280	15,053,522	
Support Areas	2,391,592	0	0	0	0	0	1,796,573	595,019	2,391,592	
Site Costs	2,963,682	0	0	0	0	0	2,143,760	819,922	2,963,682	
Terminal Equip	8,059,914	0	0	908,398	0	0	3,778,702	3,372,814	8,059,914	
Totals Before Financing	\$85,734,821	\$7,600,000	\$0	\$8,758,398	\$0	\$0	\$60,851,677	\$8,524,746	\$85,734,821	
Financing Costs	1,875,346	0	0	1,875,346	0	0	0	0	1,875,346	
Total Costs	\$87,610,167	\$7,600,000	\$0	\$10,633,744	\$0	\$0	\$60,851,677	\$8,524,746	\$87,610,167	
Other Capital Projects										
Landing Parcel Site	\$14,797,061	\$13,872,245	\$924,816	\$0	\$0	\$0	\$0	\$0	\$14,797,061	
Parking Facilities	10,340,161	0	0	0	10,340,161	0	0	0	10,340,161	
Other Projects	6,253,172	0	0	829,805	0	5,423,367	0	0	6,253,172	
Total Other Project Costs	\$31,390,394	\$13,872,245	\$924,816	\$829,805	\$10,340,161	\$5,423,367	\$0	\$0	\$31,390,394	
Total All Project Costs	\$119,000,562	\$21,472,245	\$924,816	\$11,463,549	\$10,340,161	\$5,423,367	\$60,851,677	\$8,524,746	\$119,000,562	

Source: Leibowitz & Horton, AMC, 2020.

Note: Addition errors are due to rounding of calculated amounts.

Terminal Area Plan

The Terminal Area Development (all three Phases ABC) has a total project cost of \$87.6 million (as shown in **Table G6** above) - \$24.3 million of this cost is financially feasible (only Phase A – during the 2021 through 2023 timeframe) while \$63.3 million (Phases B and C) is not feasible in the Mid and Long-Term (2026 through 2040 timeframe). The table indicates that \$7.6 million in pass-through federal funds are assumed to fund 31.3% of the feasible Terminal Area Plan Phase A costs. Annual PFC revenues are assumed to pay debt service on the FY 2023 \$8.1 million debt issue (\$7.5 million in capital costs plus \$568 thousand in issue costs/reserve requirements, as shown in **Schedule G4**). Combined with the total interest expense (\$1.8 million) and additional pay-as-you-go costs, PFC revenues are assumed to fund \$9.7 million or 39.9% of the feasible Terminal Area Plan Phase A cost. As reflected in **Schedule G1a**, 87.3% of the costs included in Phase A of the Terminal Expansion Project are eligible for AIP or PFC funding. However, there are insufficient AIP and PFC funds available to fund those eligible costs (only 71.2%). Therefore, such eligible costs must be funded with Airport cash and net operating revenues. Cash reserves/net operating revenues are estimated to fund \$7.0 million (28.8%) of the feasible Terminal Area Plan Phase A costs.

Table G7 presented below provides a summary of the funding sources of the financially feasible Phase A of the Terminal Expansion Project, as reflected in **Schedule G3b** provided at the end of **Chapter G**.

TABLE G7: Summary of Projected Capital Funding Sources – Terminal Building Expansion Phase A

Funding Sources	Funding Year			Totals
	2021 Design	2022 Construct 50%	2023 Construct 50%	
Total Capital Funding Uses	\$1,629,673	\$10,239,237	\$10,546,414	\$22,415,324
Pass Thru Federal Funding	\$0	\$7,600,000	\$0	\$7,600,000
PFC Pay-as-you-go	0	350,000	0	350,000
PFC Debt Proceeds	0	0	7,500,000	7,500,000
Airport Cash Reserves	1,629,673	2,289,237	3,046,414	6,965,324
Total Capital Funding Sources	\$1,629,673	\$10,239,237	\$10,546,414	\$22,415,324

PROJECTED OPERATIONS AND MAINTENANCE EXPENSES. Operations and maintenance expense projections for the Short-Term, the Mid-Term and the Long-Term planning periods are based on KTN's current budget, the anticipated impacts of inflation, aviation traffic increases, facility improvements and the recent experience of other similarly-sized airports.

Operations and Maintenance Expense Projection Assumptions. Operations and maintenance expense growth assumptions, as reflected in **Schedule G5** were developed to project KTN's operating expenses during the planning period. Actual amounts for 2018, 2019 and 2020, and budgeted amounts for 2021 provide a comparison with expenses that are projected for the period 2022 through 2040. Beginning in 2022, the projection for all expense categories is based on the Airport's budgeted expenses

for 2021 and an annual inflation growth rate of 3%.

Projection of Operations & Maintenance Expenses and Operating Expenses Per Enplaned Passenger. The projection of operations and maintenance expenses is provided in **Schedule G5**. As shown in the schedule, total operating expenses are expected to increase from \$5,133,286 budgeted for 2021 to \$5,777,559 projected for 2025 with a total of \$27,253,313 during the five-year Short-Term period. During the five-year Mid-Term period, expenses are projected to total \$31,594,059 and during the ten-year Long-Term period, expenses are projected to total \$79,085,946. The overall growth rate of expenditures during the projection period is 3.0% per year.

Schedule G5 also provides a comparison of the Airport's total operating expenses per enplaned passenger versus the industry average for non-hub airports. The Airport's operating expense per enplaned passenger is projected to grow from \$33.64 for 2019 to an average of \$39.96 during the Long-Term planning period. During the same period, the industry average for non-hub airports ranges from \$44.47 in 2019 to an average of \$52.84 during the Long-Term period [Sources: FAA Air Carrier Activity Information System (ACAIS) enplanement database and non-hub airport annual financial report #127 from the FAA Compliance Activity Tracking System (CATS)]. This comparison shows that KTN's operating expenses are in line with those of other similarly-sized airports during the Short-Term period and are projected to be below those of other similar airports during the Mid and Long-Term planning periods. These statistics indicate that KTN's operating expenses appear to be cost-efficient compared with other similarly-sized non-hub airports currently as well as for the long term future.

PROJECTED OPERATING REVENUES. Operating revenue projections for the Short-Term, the Mid-Term and the Long-Term planning periods are based on KTN's current budget, the anticipated impacts of inflation, aviation traffic increases, anticipated user fee and tenant rental adjustments, facility improvements and the recent experience of other similarly-sized airports.

Operating Revenue Projection Assumptions. **Schedule G6** presents actual, budgeted and projected operating revenues for KTN for the period 2018 through 2040. Actual amounts for 2018, 2019, and 2020 and budgeted amounts for 2021 provide a comparison with revenues that are projected for the period 2022 through 2040. Revenues for the period 2022 through 2024 are based on projections anticipating the Airport's recovery from the COVID-19 pandemic. Annual growth assumptions from 2025 through 2040 for the following revenue categories are as follows:

- **Airline Operating Revenues**

Terminal Rent, Landing Fees and Airfield Rental Income Projections are based on the 2024 estimate and a 3% annual inflation rate thereafter.

Airline Security Revenue Projections are based on the Airport's 2024 estimate with 3% annual inflation plus the annual rate of forecast enplanement growth, as this fee is driven by the number of enplaned passengers.

▪ Non-Airline Operating Revenues and Non-Operating Revenues

Ferry Fees and Vehicle Parking Revenue Projections are also based on the Airport’s 2024 estimate with a 3% annual inflation rate plus the annual rate of forecast enplanement growth, as these revenues are also generally driven by the volume of passengers at the Airport.

State Memorandum of Agreement (MOA) Revenues, Commercial Passenger Vessel Revenues and Interest Income projections are based on the 2021 budget and are all assumed to be flat throughout the twenty-year planning period.

All other Non-Airline Revenues projections are based on the 2024 estimate and a 3% annual inflation thereafter.

Projection of Operating Revenues, Airline Cost Per Enplaned Passenger and Operating Revenues Per Enplaned Passenger. The projection of operating revenues is provided in **Schedule G6**. As shown in the schedule, airline revenues are expected to grow from \$1,349,087 budgeted for 2021 to \$1,738,376 projected for 2025 with a total of \$7,893,664 during the five-year Short-Term planning period. During the five-year Mid-Term period, airline revenues are projected to total \$9,482,652 and during the ten-year Long-Term period, revenues are projected to total \$23,463,296. The overall annual growth rate for airline revenues is 3.6%. Non-Airline revenues are expected to grow from \$3,604,565 budgeted for 2021 to \$4,425,405 projected for 2025 with a total of \$20,047,645 during the Short-Term period. During the Mid-Term period, non-airline revenues are projected to total \$25,177,880 and during the Long-Term period, revenues are projected to total \$68,383,092. The overall annual growth rate for non-airline revenues is 4.4%. Non-Operating revenues are expected to remain flat at \$55,000 per year for the twenty-year planning period, with the exception of 2021 which includes the remainder of the Airport’s estimated CARES Act O&M funds. Total Airport revenues are expected to grow from \$5,812,652 budgeted for 2021 to \$6,218,781 projected for 2025 with a total of \$29,020,309 during the Short-Term period. During the Mid-Term period, revenues are projected to total \$34,935,531 and during the Long-Term period, revenues are projected to total \$92,396,387. The overall annual growth rate for total revenues is 3.3%.

Schedule G6 also provides a comparison of the Airport’s airline cost per enplaned passenger versus the industry average for other non-hub airports. The airline cost per enplaned passenger (airline fees and rentals divided by enplaned passengers) is a measure airlines use to compare their cost of operations among the airports they serve. KTN’s airline cost per enplaned passenger is projected to range from \$10.72 in 2019 to an average of \$11.86 during the Long-Term planning period. During the same period, the industry average for non-hub airports ranges from \$9.18 in 2019 to an average of \$10.90 during the Long-Term (Sources: FAA Air Carrier Activity Information System (ACAIS) enplanement database and non-hub airport annual financial report #127 from the FAA Compliance Activity Tracking System (CATS)). This result shows that current and projected airline rates and charges at KTN are more than other similarly-sized non-hub airports throughout the twenty-year planning period. KTN management should continue to monitor and manage future airline rates and charges that reasonably cover airport costs and are competitive in the Alaska commercial aviation market environment.

Schedule G6 also provides a comparison of the Airport’s total operating revenue per enplaned passenger versus the industry average for non-hub airports. KTN’s total operating revenue per enplaned passenger is projected to grow from \$41.89 in 2019 to an average of \$46.41 during the Long-Term planning period. During the same period, the industry average for non-hub airports ranges from \$46.81 in 2019 to an average of \$55.61 during the Long-Term (Sources: FAA ACAIS enplanement database and non-hub airport annual financial report #127 from the FAA CATS). These statistics show that current and projected operating revenues at KTN are currently lower and are projected to remain lower than other similarly-sized airports throughout the planning period. This result is due to lower non-airline operating revenues at KTN compared to other non-hub airports. This is likely due to limitations on other aeronautical and non-aeronautical revenues such as ground leases affected by the physical limitations at the Airport as well as lower concession revenues, such as rental car revenues, due to the limited demand for such by passengers traveling to Ketchikan.

Financial Implementation Summary

The Financial Plan Summary presented in **Schedule G7** includes projection totals for Operating Cash Flow and Capital Cash Flow. In the Operating Cash Flow section, revenues and expenses are summarized from **Schedules G5** and **G6**. As shown in **Schedule G7**, cash flow from operations is positive for every period of the projection. The Capital Cash Flow section provides the matching of capital project expenditures with the availability of capital funds so that positive cash flows result throughout the twenty-year planning period.

The Capital Cash Flow section of **Schedule G7** summarizes the results of analysis from **Schedules G2** and **G3**. In **Schedule G2**, an approach was provided for scheduling capital expenditures to match the availability of capital funding. **Schedule G3** provided an approach for matching specific capital funding sources with each of the Terminal Area Plan projects and other non-terminal Airport projects. Based on the assumptions underlying the Financial Plan summarized in **Schedule G7**, implementation of the Terminal Area Plan (Phase A only; Phases B and C are not feasible within the Mid and Long-Term planning periods 2026-2040) and other capital expenditures is financially reasonable with several caveats noted in the paragraphs below.

ASSUMPTIONS RELATED TO CAPITAL FUNDING SOURCES. Several key assumptions supporting the Financial Plan relate to the availability and timeliness of the funding sources that have been identified. Receiving awards for at least \$7.6 million in federal funding passed through by the State for capital development during the Short-Term will be essential to support implementation of Phase A of the Terminal Expansion Project without delay. Additional federal funds are also required to support projects identified for the Landing Field Parcel. Additionally, the financial analysis indicated a capital funding shortfall of \$60.9 million for the Terminal Expansion Project (Phases B & C) for which a reasonable capital funding source could not be identified, thus, the “funding” for this shortfall has been referenced as “Other Unidentified Funding.”

Terminal Area Plan : G—Development Program and Financial Implementation Analysis

Similarly, it should be noted that projects programmed for funding through other capital contributions or private third party funding depends on favorable market demand conditions - if these conditions do not occur, then the investment necessary for implementation of the associated projects may not be available in the time frames that are planned.

ASSUMPTIONS RELATED TO AVIATION ACTIVITY FORECASTS. The COVID-19 outbreak in the United States has caused significant business as well as tourism disruption to the aviation industry through travel restrictions, stay-at-home orders, quarantine requirements, and an increased reliance on teleconferencing. While the disruption may be short term, there is considerable uncertainty around the duration and longer term impacts on the aviation industry. While we expect this matter to negatively impact the Airport's operations, the related financial impacts and duration cannot be reasonably estimated at this time.

The forecasts included in this Terminal Area Plan were prepared and approved prior to the COVID-19 impact and are still considered valid for the purposes of this study. For purposes of the Financial Implementation Plan, the enplanements forecast in the Short-Term were modified to reflect the estimated impact on 2020 enplanements and the anticipated recovery of those enplanements to the originally forecast levels by the end of the Short-Term. The Financial Implementation Analysis relies on achievement of the aviation activity and passenger enplanement forecasts. If the actual aviation activity varies temporarily from the projected levels of activity, the adverse impact on the capital program may not be significant. However, if decreased traffic levels occur and persist, implementation of all the proposed projects may not be financially feasible. **It should also be noted, however, that if the forecast activity levels are not met, then a number of the planned capital improvements may be canceled or deferred as necessary.**

ASSUMPTIONS RELATED TO REQUIRED STATE APPROVALS. In order for the Borough to secure all of the required funding to undertake Phase A of the Terminal Expansion Project within the Short-Term time frame (2021 through 2023), coordination with and approval by Alaska DOT&PF are required on several items. **First**, AKDOT&PF must commit to the use of \$7.6 million in federal funds for the project. **Second**, per the lease agreement between the Borough and the State, the State must approve any debt issued over the amount of \$250,000 to finance construction of additional Airport improvements (including those in the Building Site Parcel). Therefore, the State must approve the issuance of \$8.1 million in Airport Revenue Bonds (presumably through the Alaska Municipal Bond Bank Authority). **Third**, given that repayment of the bonds would be made using PFC revenues and that the FAA considers the State the Airport sponsor for PFC purposes, the State would have to approve the submission of the PFC application. **Finally**, as previously discussed, the current agreement between the Borough and the State for the operation of the Airport is due to expire in May 2027. It is reasonable to assume that in anticipation of long-term debt which would mature in 2042, a new or extended lease agreement between the parties would need to be negotiated and executed prior to the issuance of such debt.

FINANCIAL ANALYSIS SCHEDULES. Financial analysis **Schedules G1** through **G7** are presented on the following pages.

- **Schedules G1abc – Estimated Terminal Building Costs:** These schedules (a, b and c) present the estimated costs of each Phase of the Terminal Expansion Project broken down by the terminal building components and functional areas. These schedules provide estimates, for each Phase of the Terminal Development Project, of those costs which are AIP and PFC eligible, costs which are PFC eligible, and those costs which are not eligible for either AIP or PFC funding.
- **Schedule G2 – Estimated Project Costs and Development Schedule:** This schedule presents the overall CIP including estimated costs and anticipated development schedule for individual projects in the program. The schedule provides practical approaches for matching capital expenditure amounts with capital funding availability in the Short-Term, Mid-Term, and Long-Term planning periods. This schedule also applies inflation adjustments to provide escalated development costs for projects implemented throughout the entire 20-year planning period.
- **Schedules G3ab – Projected Capital Funding Sources:** **Schedule G3a** lists each of the CIP projects, their estimated costs (escalated for inflation) and the assumed funding sources and amounts. The schedule applies specific capital funding sources to each individual project in the capital program. **Schedule G3b** provides a summary of the funding sources of the financially feasible Phase A of the Terminal Expansion Project.
- **Schedule G4 – PFC Serviced Debt Issue:** This schedule provides the details of the debt issue which is expected to be required in fiscal year 2023 to partially fund Phase A of the Terminal Expansion Project. This schedule includes the anticipated terms of the loan and the resulting annual debt service requirements including associated financing and interest costs. Debt service is planned to be funded with PFCs.
- **Schedule G5 – Actual, Budgeted and Projected Operations & Maintenance Expenses:** This schedule reflects the past three years of actual operations and maintenance expenses, budgeted 2021 operations and maintenance expenses, and projections of these expenses through the Short-Term, Mid-Term, and Long-Term planning periods. This schedule also provides a comparison of KTN’s annual expenses per enplaned passenger with the average of other non-hub airports.
- **Schedule G6 – Actual, Budgeted and Projected Operating Revenues:** This schedule reflects the past three years of actual operating revenues, budgeted 2021 operating revenues, and projections of these revenues through the Short-Term, Mid-Term, and Long-Term planning periods. These revenues are organized into categories for airline revenues, non-airline revenues and non-operating revenues, and provides statistical comparisons of KTN’s airline cost per enplaned passenger and total revenue per enplaned passenger with other non-hub airport averages.

- **Schedule G7 – Budgeted and Projected Net Revenues, Capital Funding and Capital Expenditures:** This Financial Plan Summary includes a Capital Cash Flow section that presents a summary of projected capital funding (from **Schedule G3**) and scheduled capital expenditures (from **Schedule G2**) with the cash flow that results from implementing the overall Capital Improvement Program. It also includes an Operating Cash Flow section that summarizes totals for operating revenues (from **Schedule G6**) and operating expenses (from **Schedule G5**) with the addition of beginning cash reserve balances to provide the cash flow that results from these activities.

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

KTN - TAS - 2020 - 7

Schedule G1a

**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Estimated Project Costs and Development Schedule
Estimated Terminal Building Costs
Phase A - Short-Term (2021 - 2023)**

07-Jan-21

Terminal Building Components	Terminal Space (Sq Ft) (4)						Estimated Capital Costs				Funding Eligibility		
	Phase A		New	Light Rehab	Heavy Rehab	Total	Design Costs (2)	Hard Costs (1)	Soft Costs (3)	Total Costs	AIP/PFC	PFC Only	Ineligible
	1st Floor	2nd Floor											
Passenger and Baggage Screening/Security													
Passenger Screening	2,600		2,600			2,600	\$218,400	\$2,184,000	\$480,480	\$2,882,880	\$2,882,880		
Passenger Screening Queuing	590		590			590	49,560	495,600	109,032	654,192	654,192		
Passenger Recomposure Area	940		940			940	78,960	789,600	173,712	1,042,272	1,042,272		
TSA Office/Break/Training Area	1,900		1,900			1,900	159,600	1,596,000	351,120	2,106,720			2,106,720
Total Pax and Bag Screening/Security	6,030	0	6,030	0	0	6,030	\$506,520	\$5,065,200	\$1,114,344	\$6,686,064	\$4,579,344	\$0	\$2,106,720
Departure Areas													
Departure Lounge/Holdroom	2,850	430	3,280			3,280	\$275,520	\$2,755,200	\$606,144	\$3,636,864	\$3,636,864		
Boarding Walkway		690	690			690	57,960	579,600	127,512	765,072	765,072		
Total Departure Areas	2,850	1,120	3,970	0	0	3,970	\$333,480	\$3,334,800	\$733,656	\$4,401,936	\$4,401,936	\$0	\$0
Concessions													
Vending	55		55			55	4,620	46,200	10,164	60,984	60,984		
Total Concessions	55	0	55	0	0	55	\$4,620	\$46,200	\$10,164	\$60,984	\$60,984	\$0	\$0
Other Public Areas													
Vertical Circulation	825	1,138	1,963			1,963	\$164,892	\$1,648,920	\$362,762	\$2,176,574	\$2,176,574		
Public Circulation	3,210	415	3,625			3,625	304,500	3,045,000	669,900	4,019,400	4,019,400		
Public Restrooms	480		480			480	40,320	403,200	88,704	532,224	532,224		
Total Other Public Areas	4,515	1,553	6,068	0	0	6,068	\$509,712	\$5,097,120	\$1,121,366	\$6,728,198	\$6,728,198	\$0	\$0
Support Areas													
Non-Public Circulation	500		500			500	42,000	420,000	92,400	554,400			554,400
Total Support Areas	500	0	500	0	0	500	\$42,000	\$420,000	\$92,400	\$554,400	\$0	\$0	\$554,400
Site Costs													
Demolition/Phasing							\$7,875	\$78,750	\$17,325	\$103,950	\$103,950		
Landside Site Costs							25,000	250,000	55,000	330,000	330,000		
Airside Site Costs							25,000	250,000	55,000	330,000	330,000		
Total Site Costs							\$57,875	\$578,750	\$127,325	\$763,950	\$763,950	\$0	\$0
Terminal Equipment													
Passenger Boarding Bridges							\$120,000	\$1,200,000	\$264,000	\$1,584,000	\$1,584,000		
Elevators							8,000	80,000	17,600	105,600	\$105,600		
Total Terminal Equipment							\$128,000	\$1,280,000	\$281,600	\$1,689,600	\$1,689,600	\$0	\$0
Total Terminal Building Costs	13,950	2,673	16,623	0	0	16,623	\$ 1,582,207	\$ 15,822,070	\$ 3,480,855	\$ 20,885,132	\$ 18,224,012	\$ -	\$ 2,661,120
Total Cost/Sq Ft (including site & equip) =						\$1,256.40	7.6%	75.8%	16.7%	100.0%	87.3%	0.0%	12.7%
Total Cost/Sq Ft (without site & equip) =						\$1,108.80							

Notes:

- (1) Hard Costs include construction costs plus a design contingency (5%)
- (2) Design Cost estimate is 10% of hard costs
- (3) Soft Costs include pre-construction costs, construction administration, and construction contingencies (22%)
- (4) Construction estimate is based on \$800 per square foot for new construction, \$400 per square foot for heavy rehabilitation and \$200 per square foot for light rehabilitation.

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

KTN - TAS - 2020 - 7

Schedule G1b

**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Estimated Project Costs and Development Schedule
Estimated Terminal Building Costs
Phase B - Mid-Term (2026 - 2030)**

07-Jan-21

Terminal Building Components	Terminal Space (Sq Ft) (4)					Estimated Capital Costs				Funding Eligibility			
	Phase B		New	Light Rehab	Heavy Rehab	Total	Design Costs (2)	Hard Costs (1)	Soft Costs (3)	Total Costs	AIP/PFC	PFC Only	Ineligible
	1st Floor	2nd Floor											
Departure Areas													
Boarding Walkway		620	620			620	\$52,080	\$520,800	\$114,576	\$687,456	\$687,456		
Total Departure Areas	0	620	620	0	0	620	\$52,080	\$520,800	\$114,576	\$687,456	\$687,456	\$0	\$0
Concessions													
RAC Counter/Offices	990		990			990	\$83,160	\$831,600	\$182,952	\$1,097,712			\$1,097,712
RAC Queuing	490		490			490	41,160	411,600	90,552	543,312	543,312		
Concessions		1,500	1,500			1,500	126,000	1,260,000	277,200	1,663,200			1,663,200
Concessions - Public Areas		4,500	4,500			4,500	378,000	3,780,000	831,600	4,989,600	4,989,600		
Total Concessions	1,480	6,000	7,480	0	0	7,480	\$628,320	\$6,283,200	\$1,382,304	\$8,293,824	\$5,532,912	\$0	\$2,760,912
Baggage Claim													
Baggage Claim Area	4,360		4,360			4,360	\$366,240	\$3,662,400	\$805,728	\$4,834,368	\$4,834,368		
Baggage Service Offices	400		400			400	33,600	336,000	73,920	443,520			443,520
Inbound Baggage Handling	1,900		1,900			1,900	159,600	1,596,000	351,120	2,106,720		2,106,720	
Total Baggage Claim	6,660	0	6,660	0	0	6,660	\$559,440	\$5,594,400	\$1,230,768	\$7,384,608	\$4,834,368	\$2,106,720	\$443,520
Site Costs													
Demolition/Phasing							\$7,875	\$78,750	\$17,325	\$103,950	\$103,950		
Landside Site Costs							25,000	250,000	55,000	330,000	330,000		
Airside Site Costs							25,000	250,000	55,000	330,000	330,000		
Total Site Costs							\$57,875	\$578,750	\$127,325	\$763,950	\$763,950	\$0	\$0
Terminal Equipment													
Passenger Boarding Bridges							\$120,000	\$1,200,000	\$264,000	\$1,584,000	\$1,584,000		
Baggage Handling Systems							37,200	372,000	81,840	491,040		491,040	
Total Terminal Equipment							\$157,200	\$1,572,000	\$345,840	\$2,075,040	\$1,584,000	\$491,040	\$0
Total Terminal Building Costs	8,140	6,620	14,760	0	0	14,760	\$ 1,454,915	\$14,549,150	\$ 3,200,813	\$19,204,878	\$13,402,686	\$ 2,597,760	\$ 3,204,432
Total Cost/Sq Ft (including site & equip) =						\$1,301.14	7.6%	75.8%	16.7%	100.0%	69.8%	13.5%	16.7%
Total Cost/Sq Ft (without site & equip) =						\$1,108.80							

Notes:

- (1) Hard Costs include construction costs plus a design contingency (5%)
- (2) Design Cost estimate is 10% of hard costs
- (3) Soft Costs include pre-construction costs, construction administration, and construction contingencies (22%)
- (4) Construction estimate is based on \$800 per square foot for new construction, \$400 per square foot for heavy rehabilitation and \$200 per square foot for light rehabilitation.

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

KTN - TAS - 2020 -7

Schedule G1c

**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Estimated Project Costs and Development Schedule
Estimated Terminal Building Costs
Phase C - Long-Term (2031 - 2040)**

07-Jan-21

Terminal Building Components	Terminal Space (Sq Ft)					Estimated Capital Costs				Funding Eligibility				
	Phase C		New	Light Rehab	Heavy Rehab	Total	Design Costs (2)	Hard Costs (1)	Soft Costs (3)	Total Costs	AIP/PFC	PFC Only	Ineligible	
	1st Floor	2nd Floor												
Airline Ticketing/Check-In														
Airline ATO	1,600		1,600			1,600	\$134,400	\$1,344,000	\$295,680	\$1,774,080			\$1,774,080	
Ticketing	1,057				1,057	1,057	44,394	443,940	97,667	586,001			586,001	
Ticketing Queuing	1,625			1,625		1,625	34,125	341,250	75,075	450,450	450,450			
Baggage Make-Up	1,530		1,530			1,530	128,520	1,285,200	282,744	1,696,464		1,696,464		
Baggage Handling Conveying System	1,070		570	500		1,070	58,380	583,800	128,436	770,616		770,616		
Total Airline Ticketing/Check-In	6,882	0	3,700	2,125	1,057	6,882	\$399,819	\$3,998,190	\$879,602	\$5,277,611	\$450,450	\$2,467,080	\$2,360,081	
Passenger and Baggage Screening/Security														
TSA Baggage Screening Area	3,920		2,660	1,260		3,920	249,900	2,499,000	549,780	3,298,680		3,298,680		
Customs	100			100		100	2,100	21,000	4,620	27,720	27,720			
Total Pax and Bag Screening/Security	4,020	0	2,660	1,360	0	4,020	\$252,000	\$2,520,000	\$554,400	\$3,326,400	\$27,720	\$3,298,680	\$0	
Departure Areas														
Departure Lounge/Holdroom		8,585	5,723	2,862		8,585	\$540,834	\$5,408,340	\$1,189,835	\$7,139,009	\$7,139,009			
Boarding Walkway		200	200			200	16,800	168,000	36,960	221,760	221,760			
Total Departure Areas	0	8,785	5,923	2,862	0	8,785	\$557,634	\$5,576,340	\$1,226,795	\$7,360,769	\$7,360,769	\$0	\$0	
Other Public Areas														
Vertical Circulation	420	66		486		486	\$10,206	\$102,060	\$22,453	\$134,719	\$134,719			
Public Circulation	6,970	6,300		13,270		13,270	278,670	2,786,700	613,074	3,678,444	3,678,444			
Public Restrooms	870	1,320			2,190	2,190	91,980	919,800	202,356	1,214,136	1,214,136			
Total Other Public Areas	8,260	7,686	0	13,756	2,190	15,946	\$380,856	\$3,808,560	\$837,883	\$5,027,299	\$5,027,299	\$0	\$0	
Support Areas														
Mechanical & Electrical (5)	280			280		280	\$5,880	\$58,800	\$12,936	\$77,616	\$57,436	\$9,314	\$10,866	
Non-Public Circulation	1,150	400	750	800		1,550	79,800	798,000	175,560	1,053,360			1,053,360	
Airport Support	80			80		80	1,680	16,800	3,696	22,176			22,176	
Total Support Areas	1,510	400	750	1,160	0	1,910	\$87,360	\$873,600	\$192,192	\$1,153,152	\$57,436	\$9,314	\$1,086,402	
Site Costs														
Demolition/Phasing							\$7,875	\$78,750	\$17,325	\$103,950	\$103,950			
Landside Site Costs							25,000	250,000	55,000	330,000	330,000			
Airside Site Costs							25,000	250,000	55,000	330,000	330,000			
Total Site Costs							\$57,875	\$578,750	\$127,325	\$763,950	\$763,950	\$0	\$0	
Terminal Equipment														
Passenger Boarding Bridges							\$120,000	\$1,200,000	\$264,000	\$1,584,000	\$1,584,000			
Baggage Handling Systems							57,800	578,000	127,160	762,960		\$762,960		
Total Terminal Equipment							\$177,800	\$1,778,000	\$391,160	\$2,346,960	\$1,584,000	\$762,960	\$0	
Total Terminal Building Costs	20,672	16,871	13,033	21,263	3,247	37,543	1,913,344	19,133,440	4,209,357	25,256,141	15,271,624	6,538,034	3,446,483	
Total Cost/Sq Ft (including site & equip) =							\$672.73	7.6%	75.8%	16.7%	100.0%	60.5%	25.9%	13.6%
Total Cost/Sq Ft (without site & equip) =							\$589.86							

Notes:

- (1) Hard Costs include construction costs plus a design contingency (5%)
- (2) Design Cost estimate is 10% of hard costs
- (3) Soft Costs include pre-construction costs, construction administration, and construction contingencies (22%)
- (4) Construction estimate is based on \$800 per square foot for new construction, \$400 per square foot for heavy rehabilitation and \$200 per square foot for light rehabilitation.
- (5) Mechanical & Electrical spaces have been prorated between eligible and ineligible costs based on the ratio of eligible to ineligible square footage of the entire terminal after completion of all three Phases of expansion/rehabilitation (in accordance with AIP Handbook 5100.38D, Change 1).

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**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Estimated Project Costs and Development Schedule**

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Capital Improvement Program	Funding Schedule								
	Short-Term						Mid-Term	Long-Term	Total
	2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding
Funds Used for Capital Improvement Projects									
Alaska DOT&PF - Pass Through Federal Funding:									
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245
AIP - Building Site Parcel	0	7,600,000	0	0	0	7,600,000	0	0	7,600,000
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583
PFC beginning year unliquidated balance	657,966	635,181	126,410	99,759	85,023	657,966	85,573	254,725	657,966
PFC unspent current year + carryover	(635,181)	(126,410)	(99,759)	(85,023)	(85,573)	(85,573)	(254,725)	0	0
PFC Debt Proceeds (20 yrs, 2.0%) Thru 2042	0	0	7,500,000	0	0	7,500,000	0	0	7,500,000
Less PFC Funded Principal Payments	0	0	(332,070)	(338,712)	(345,486)	(1,016,268)	(1,833,882)	(4,649,849)	(7,500,000)
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0	5,423,367
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677
Net Operating Cash Flow	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911
Funds Available Current Year	978,721	8,518,348	8,869,937	868,251	589,176	19,824,432	47,621,431	61,448,863	128,894,727
Beginning Cash Balance/Funds Carried Over from Prior Year	6,408,958	5,458,651	3,207,312	318,538	694,408	6,408,958	1,135,631	4,477,104	6,408,958
Funds Used Current Year	(1,929,028)	(10,769,687)	(11,758,711)	(492,380)	(147,953)	(25,097,759)	(44,279,959)	(49,622,844)	(119,000,562)
Funds Carried Over to Next Year	\$5,458,651	\$3,207,312	\$318,538	\$694,408	\$1,135,631	\$1,135,631	\$4,477,104	\$16,303,122	\$16,303,122
	Average Debt Service Coverage >>>		1.42	1.73x	1.9x		2.42x		
Estimated Project Costs and Development Schedule									
Capital Project Description	2020 Base Year Costs	Short-Term					Mid-Term 2026-2030	Long-Term 2031-2040	Total Escalated Costs
		2021	2022	2023	2024	2025			
Short-Term Projects (2021-2025)									
Terminal Building Components - Phase A		Phase A							
		Design	Construct (50%)	Construct (50%)					
Passenger and Baggage Security/Screening:									
Passenger Screening	\$2,882,880	\$224,952	\$1,413,373	\$1,455,775		\$3,094,100		\$3,094,100	
Passenger Screening Queuing	654,192	51,047	320,727	330,349		702,123		702,123	
Passenger Recomposure Area	1,042,272	81,329	510,989	526,319		1,118,636		1,118,636	
TSA Office/Break/Training Area	2,106,720	164,388	1,032,850	1,063,835		2,261,073		2,261,073	
Departure Areas:									
Departure Lounge/Holdroom	3,636,864	283,786	1,783,025	1,836,516		3,903,326		3,903,326	
Boarding Walkway	765,072	59,699	375,088	386,340		821,127		821,127	
Concessions:									
Vending	60,984	4,759	29,898	30,795		65,452		65,452	
Other Public Areas:									
Vertical Circulation	2,176,574	169,839	1,067,097	1,099,110		2,336,046		2,336,046	
Public Circulation	4,019,400	313,635	1,970,569	2,029,686		4,313,889		4,313,889	
Public Restrooms	532,224	41,530	260,930	268,758		571,218		571,218	
Support Areas:									
Non-Public Circulation	554,400	43,260	271,803	279,957		595,019		595,019	
Site Costs:									
Demolition/Phasing	103,950	8,111	50,963	52,492		111,566		111,566	
Landside Site Costs	330,000	25,750	161,787	166,641		354,178		354,178	
Airsides Site Costs	330,000	25,750	161,787	166,641		354,178		354,178	
Terminal Equipment:									
Passenger Boarding Bridges	1,584,000	123,600	776,579	799,876		1,700,055		1,700,055	
Elevators	105,600	8,240	51,772	53,325		113,337		113,337	
Subtotal - Terminal Building Components - Phase A	\$20,885,132	\$1,629,673	\$10,239,237	\$10,546,414	\$0	\$0	\$22,415,324	\$0	\$0

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**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Estimated Project Costs and Development Schedule**

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Capital Improvement Program	Funding Schedule									
	Short-Term						Mid-Term	Long-Term	Total	
	2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding	
Funds Used for Capital Improvement Projects										
Alaska DOT&PF - Pass Through Federal Funding:										
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245	
AIP - Building Site Parcel	0	7,600,000	0	0	0	7,600,000	0	0	7,600,000	
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816	
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583	
PFC beginning year unliquidated balance	657,966	635,181	126,410	99,759	85,023	657,966	85,573	254,725	657,966	
PFC unspent current year + carryover	(635,181)	(126,410)	(99,759)	(85,023)	(85,573)	(85,573)	(254,725)	0	0	
PFC Debt Proceeds (20 yrs, 2.0%) Thru 2042	0	0	7,500,000	0	0	7,500,000	0	0	7,500,000	
Less PFC Funded Principal Payments	0	0	(332,070)	(338,712)	(345,486)	(1,016,268)	(1,833,882)	(4,649,849)	(7,500,000)	
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162	
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0	5,423,367	
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677	
Net Operating Cash Flow	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911	
Funds Available Current Year	978,721	8,518,348	8,869,937	868,251	589,176	19,824,432	47,621,431	61,448,863	128,894,727	
Beginning Cash Balance/Funds Carried Over from Prior Year	6,408,958	5,458,651	3,207,312	318,538	694,408	6,408,958	1,135,631	4,477,104	6,408,958	
Funds Used Current Year	(1,929,028)	(10,769,687)	(11,758,711)	(492,380)	(147,953)	(25,097,759)	(44,279,959)	(49,622,844)	(119,000,562)	
Funds Carried Over to Next Year	\$5,458,651	\$3,207,312	\$318,538	\$694,408	\$1,135,631	\$1,135,631	\$4,477,104	\$16,303,122	\$16,303,122	
	Average Debt Service Coverage >>>		1.42	1.73x	1.9x		2.42x			
Estimated Project Costs and Development Schedule										
Capital Project Description	2020 Base Year Costs	Short-Term						Mid-Term	Long-Term	Total
		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Escalated Costs
Other Capital Projects										
Convert Commercial Apron from Asphalt to Concrete (Ph I)	893,113			975,929			975,929		975,929	
Env. Assessment for Road Relocation/Vehicle Parking	300,000				337,653		337,653		337,653	
Complete Terminal Roof Replacement/HVAC Project	148,579	148,579					148,579		148,579	
Complete Terminal Area Plan	150,776	150,776					150,776		150,776	
Rehabilitate Transient Seaplane Dock	500,000		530,450				530,450		530,450	
Total Short-Term Project Costs Before Financing	\$22,877,600	\$1,929,028	\$10,769,687	\$11,522,343	\$337,653	\$0	\$24,558,710	\$0	\$0	\$24,558,710
Financing Costs for Debt Serviced with PFCs	-	0	0	236,369	154,727	147,953	539,049	0	0	539,049
Total Short-Term Project Costs	\$22,877,600	\$1,929,028	\$10,769,687	\$11,758,711	\$492,380	\$147,953	\$25,097,759	\$0	\$0	\$25,097,759

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**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
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Capital Improvement Program	Funding Schedule									
	Short-Term						Mid-Term	Long-Term	Total	
	2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding	
Funds Used for Capital Improvement Projects										
Alaska DOT&PF - Pass Through Federal Funding:										
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245	
AIP - Building Site Parcel	0	7,600,000	0	0	0	7,600,000	0	0	7,600,000	
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816	
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583	
PFC beginning year unliquidated balance	657,966	635,181	126,410	99,759	85,023	657,966	85,573	254,725	657,966	
PFC unspent current year + carryover	(635,181)	(126,410)	(99,759)	(85,023)	(85,573)	(85,573)	(254,725)	0	0	
PFC Debt Proceeds (20 yrs, 2.0%) Thru 2042	0	0	7,500,000	0	0	7,500,000	0	0	7,500,000	
Less PFC Funded Principal Payments	0	0	(332,070)	(338,712)	(345,486)	(1,016,268)	(1,833,882)	(4,649,849)	(7,500,000)	
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162	
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0	5,423,367	
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677	
Net Operating Cash Flow	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911	
Funds Available Current Year	978,721	8,518,348	8,869,937	868,251	589,176	19,824,432	47,621,431	61,448,863	128,894,727	
Beginning Cash Balance/Funds Carried Over from Prior Year	6,408,958	5,458,651	3,207,312	318,538	694,408	6,408,958	1,135,631	4,477,104	6,408,958	
Funds Used Current Year	(1,929,028)	(10,769,687)	(11,758,711)	(492,380)	(147,953)	(25,097,759)	(44,279,959)	(49,622,844)	(119,000,562)	
Funds Carried Over to Next Year	\$5,458,651	\$3,207,312	\$318,538	\$694,408	\$1,135,631	\$1,135,631	\$4,477,104	\$16,303,122	\$16,303,122	
	Average Debt Service Coverage >>>		1.42	1.73x	1.9x		2.42x			
Estimated Project Costs and Development Schedule										
Capital Project Description	2020 Base Year Costs	Short-Term					Mid-Term	Long-Term	Total	
		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Escalated Costs
Mid-Term Projects (2026-2030)										
Terminal Building Components - Phase B							Phase B			
Departure Areas:										
Boarding Walkway	\$687,456						\$0	\$858,073	\$858,073	
Concessions:										
RAC Counter/Offices	1,097,712						0	1,370,148	1,370,148	
RAC Queuing	543,312						0	678,154	678,154	
Concessions	1,663,200						0	2,075,982	2,075,982	
Concessions - Public Areas	4,989,600						0	6,227,947	6,227,947	
Baggage Claim:										
Baggage Claim Area	4,834,368						0	6,034,189	6,034,189	
Baggage Service Offices	443,520						0	553,595	553,595	
Inbound Baggage Handling	2,106,720						0	2,629,578	2,629,578	
Site Costs:										
Demolition/Phasing	103,950						0	129,749	129,749	
Landside Site Costs	330,000						0	411,901	411,901	
Airsides Site Costs	330,000						0	411,901	411,901	
Terminal Equipment:										
Passenger Boarding Bridges	1,584,000						0	1,977,126	1,977,126	
Baggage Handling Systems	491,040						0	612,909	612,909	
Subtotal - Terminal Building Components - Phase B	\$19,204,878	\$0	\$0	\$0	\$0	\$0	\$0	\$23,971,253	\$0	\$23,971,253

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**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
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		Funding Schedule									
		Short-Term					Mid-Term	Long-Term	Total		
Capital Improvement Program		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding	
Funds Used for Capital Improvement Projects											
Alaska DOT&PF - Pass Through Federal Funding:											
AIP - Landing Field Parcel		\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245	
AIP - Building Site Parcel		0	7,600,000	0	0	0	7,600,000	0	0	7,600,000	
Alaska DOT&PF - Major Capital Contribution		0	0	60,996	21,103	0	82,099	531,586	311,132	924,816	
Passenger Facility Charges:		276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583	
PFC beginning year unliquidated balance		657,966	635,181	126,410	99,759	85,023	657,966	85,573	254,725	657,966	
PFC unspent current year + carryover		(635,181)	(126,410)	(99,759)	(85,023)	(85,573)	(85,573)	(254,725)	0	0	
PFC Debt Proceeds (20 yrs, 2.0%) Thru 2042		0	0	7,500,000	0	0	7,500,000	0	0	7,500,000	
Less PFC Funded Principal Payments		0	0	(332,070)	(338,712)	(345,486)	(1,016,268)	(1,833,882)	(4,649,849)	(7,500,000)	
Other Capital Contribution		0	0	0	0	0	0	5,746,650	4,593,511	10,340,162	
Private 3rd Party Funding		0	0	0	0	0	0	5,423,367	0	5,423,367	
Other Unidentified Funding		0	0	0	0	0	0	23,971,253	36,880,424	60,851,677	
Net Operating Cash Flow		679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911	
Funds Available Current Year		978,721	8,518,348	8,869,937	868,251	589,176	19,824,432	47,621,431	61,448,863	128,894,727	
Beginning Cash Balance/Funds Carried Over from Prior Year		6,408,958	5,458,651	3,207,312	318,538	694,408	6,408,958	1,135,631	4,477,104	6,408,958	
Funds Used Current Year		(1,929,028)	(10,769,687)	(11,758,711)	(492,380)	(147,953)	(25,097,759)	(44,279,959)	(49,622,844)	(119,000,562)	
Funds Carried Over to Next Year		\$5,458,651	\$3,207,312	\$318,538	\$694,408	\$1,135,631	\$1,135,631	\$4,477,104	\$16,303,122	\$16,303,122	
		Average Debt Service Coverage >>>			1.42	1.73x	1.9x	2.42x			
Estimated Project Costs and Development Schedule											
Capital Project Description		2020 Base Year Costs	Short-Term					Mid-Term	Long-Term	Total	
		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Escalated Costs	
Other Capital Projects											
North Airport Service Road Relocation	445,186							0	555,675	555,675	
Vehicle Parking Expansion	4,604,003							0	5,746,650	5,746,650	
RAC Wash Facility Replacement	845,000							0	1,054,717	1,054,717	
Air Cargo Apron Expansion	2,858,712							0	3,568,203	3,568,203	
Taxilane D	1,894,320							0	2,364,463	2,364,463	
Alaska/Airline Equipment/Cargo/Fishbox Storage Facility	3,500,000							0	4,368,650	4,368,650	
Convert Commercial Apron from Asphalt to Concrete (Ph II)	1,615,972							0	2,017,033	2,017,033	
Total Mid-Term Project Costs Before Financing	\$34,968,071	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$43,646,644	\$0	
Financing Costs for Debt Serviced with PFCs	-	0	0	0	0	0	0	0	633,314	633,314	
Total Mid-Term Project Costs	\$34,968,071	\$0	\$0	\$0	\$0	\$0	\$0	\$44,279,959	\$0	\$44,279,959	

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Capital Improvement Program	Funding Schedule								
	Short-Term					Mid-Term 2026-2030	Long-Term 2031-2040	Total Funding	
	2021	2022	2023	2024	2025				Total
Funds Used for Capital Improvement Projects									
Alaska DOT&PF - Pass Through Federal Funding:									
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245
AIP - Building Site Parcel	0	7,600,000	0	0	0	7,600,000	0	0	7,600,000
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583
PFC beginning year unliquidated balance	657,966	635,181	126,410	99,759	85,023	657,966	85,573	254,725	657,966
PFC unspent current year + carryover	(635,181)	(126,410)	(99,759)	(85,023)	(85,573)	(85,573)	(254,725)	0	0
PFC Debt Proceeds (20 yrs, 2.0%) Thru 2042	0	0	7,500,000	0	0	7,500,000	0	0	7,500,000
Less PFC Funded Principal Payments	0	0	(332,070)	(338,712)	(345,486)	(1,016,268)	(1,833,882)	(4,649,849)	(7,500,000)
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0	5,423,367
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677
Net Operating Cash Flow	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911
Funds Available Current Year	978,721	8,518,348	8,869,937	868,251	589,176	19,824,432	47,621,431	61,448,863	128,894,727
Beginning Cash Balance/Funds Carried Over from Prior Year	6,408,958	5,458,651	3,207,312	318,538	694,408	6,408,958	1,135,631	4,477,104	6,408,958
Funds Used Current Year	(1,929,028)	(10,769,687)	(11,758,711)	(492,380)	(147,953)	(25,097,759)	(44,279,959)	(49,622,844)	(119,000,562)
Funds Carried Over to Next Year	\$5,458,651	\$3,207,312	\$318,538	\$694,408	\$1,135,631	\$1,135,631	\$4,477,104	\$16,303,122	\$16,303,122
	Average Debt Service Coverage >>>		1.42	1.73x	1.9x		2.42x		
Estimated Project Costs and Development Schedule									
Capital Project Description	2020 Base Year Costs	Short-Term					Mid-Term 2026-2030	Long-Term 2031-2040	Total Escalated Costs
		2021	2022	2023	2024	2025			
Long-Term Projects (2031-2040)									
Terminal Building Components - Phase C								Phase C	
<u>Airline Ticketing/Check In:</u>									
Airline ATO	\$1,774,080						\$0	\$2,763,959	\$2,763,959
Ticketing	586,001						0	912,970	912,970
Ticketing Queuing	450,450						0	701,786	701,786
Baggage Make-Up	1,696,464						0	2,643,036	2,643,036
Baggage Handling Conveying System	770,616						0	1,200,595	1,200,595
<u>Passenger and Baggage Security/Screening:</u>									
TSA Baggage Screening Area	3,298,680						0	5,139,236	5,139,236
Customs	27,720						0	43,187	43,187
<u>Departure Areas:</u>									
Departure Lounge/Holdroom	7,139,009						0	11,122,343	11,122,343
Boarding Walkway	221,760						0	345,495	345,495
<u>Other Public Areas:</u>									
Vertical Circulation	134,719						0	209,888	209,888
Public Circulation	3,678,444						0	5,730,896	5,730,896
Public Restrooms	1,214,136						0	1,891,584	1,891,584
<u>Support Areas:</u>									
Mechanical & Electrical	77,616						0	120,923	120,923
Non-Public Circulation	1,053,360						0	1,641,101	1,641,101
Airport Support	22,176						0	34,549	34,549
<u>Site Costs:</u>									
Demolition/Phasing	103,950						0	161,951	161,951
Landside Site Costs	330,000						0	514,129	514,129
Airsides Site Costs	330,000						0	514,129	514,129
<u>Terminal Equipment:</u>									
Passenger Boarding Bridges	1,584,000						0	2,467,820	2,467,820

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

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Schedule G2

**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Estimated Project Costs and Development Schedule**

07-Jan-21

Capital Improvement Program	Funding Schedule									
	Short-Term						Mid-Term	Long-Term	Total	
	2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding	
Funds Used for Capital Improvement Projects										
Alaska DOT&PF - Pass Through Federal Funding:										
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245	
AIP - Building Site Parcel	0	7,600,000	0	0	0	7,600,000	0	0	7,600,000	
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816	
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583	
PFC beginning year unliquidated balance	657,966	635,181	126,410	99,759	85,023	657,966	85,573	254,725	657,966	
PFC unspent current year + carryover	(635,181)	(126,410)	(99,759)	(85,023)	(85,573)	(85,573)	(254,725)	0	0	
PFC Debt Proceeds (20 yrs, 2.0%) Thru 2042	0	0	7,500,000	0	0	7,500,000	0	0	7,500,000	
Less PFC Funded Principal Payments	0	0	(332,070)	(338,712)	(345,486)	(1,016,268)	(1,833,882)	(4,649,849)	(7,500,000)	
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162	
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0	5,423,367	
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677	
Net Operating Cash Flow	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911	
Funds Available Current Year	978,721	8,518,348	8,869,937	868,251	589,176	19,824,432	47,621,431	61,448,863	128,894,727	
Beginning Cash Balance/Funds Carried Over from Prior Year	6,408,958	5,458,651	3,207,312	318,538	694,408	6,408,958	1,135,631	4,477,104	6,408,958	
Funds Used Current Year	(1,929,028)	(10,769,687)	(11,758,711)	(492,380)	(147,953)	(25,097,759)	(44,279,959)	(49,622,844)	(119,000,562)	
Funds Carried Over to Next Year	\$5,458,651	\$3,207,312	\$318,538	\$694,408	\$1,135,631	\$1,135,631	\$4,477,104	\$16,303,122	\$16,303,122	
	Average Debt Service Coverage >>>		1.42	1.73x	1.9x		2.42x			
Estimated Project Costs and Development Schedule										
Capital Project Description	2020 Base Year Costs	Short-Term						Mid-Term	Long-Term	Total
		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Escalated Costs
Baggage Handling Systems	762,960						0		1,188,667	1,188,667
Subtotal - Terminal Building Components - Phase C	\$25,256,141	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,348,244	\$39,348,244
Other Capital Projects										
Two Level Parking Deck	2,948,400						0		4,593,511	4,593,511
Convert Commercial Apron from Asphalt to Concrete (Ph III)	3,195,257						0		4,978,106	4,978,106
Total Long-Term Project Costs Before Financing	\$31,399,798	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$48,919,862	\$48,919,862
Financing Costs for Debt Serviced with PFCs	-	0	0	0	0	0	0	0	702,983	702,983
Total Long-Term Project Costs	\$31,399,798	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$49,622,844	\$49,622,844
Total Project Costs	\$89,245,469	\$1,929,028	\$10,769,687	\$11,758,711	\$492,380	\$147,953	\$25,097,759	\$44,279,959	\$49,622,844	\$119,000,562

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

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Schedule G3a

**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Projected Capital Funding Sources**

07-Jan-21

	Total Escalated Costs	AK DOT&PF - Pass Thru Federal Funding		Total Pass Thru Federal Funding	Alaska DOT&PF Grants	Passenger Facility Charges (Debt)	Passenger Facility Charges (PAYG)	Other Capital Contribution - Borough / Land Trust	Private 3rd Party Funding	Other Unidentified Funding	Cash Reserves/ Net Revs	Total Funding
		AIP - Landing Field Parcel	AIP - Building Site Parcel									
Capital Improvement Projects												
Short-Term Projects (2020-2024)												
Terminal Building Components - Phase A												
Passenger and Baggage Security/Screening:												
Passenger Screening	\$3,094,100		\$2,900,719	\$2,900,719							\$193,381	\$3,094,100
Passenger Screening Queuing	702,123		658,240	658,240							43,883	702,123
Passenger Recomposure Area	1,118,636		1,048,721	1,048,721							69,915	1,118,636
TSA Office/Break/Training Area	2,261,073			0							2,261,073	2,261,073
Departure Areas:												
Departure Lounge/Holdroom	3,903,326		2,992,320	2,992,320			350,000				561,006	3,903,326
Boarding Walkway	821,127			0		821,127					0	821,127
Concessions:												
Vending	65,452			0							65,452	65,452
Other Public Areas:												
Vertical Circulation	2,336,046			0		2,336,046					0	2,336,046
Public Circulation	4,313,889			0		4,313,889					0	4,313,889
Public Restrooms	571,218			0		28,938					542,280	571,218
Support Areas:												
Non-Public Circulation	595,019			0							595,019	595,019
Site Costs:												
Demolition/Phasing	111,566			0							111,566	111,566
Landside Site Costs	354,178			0							354,178	354,178
Airside Site Costs	354,178			0							354,178	354,178
Terminal Equipment:												
Passenger Boarding Bridges	1,700,055			0							1,700,055	1,700,055
Elevators	113,337			0							113,337	113,337
Subtotal - Terminal Building Components - Phase A	\$22,415,324	\$0	\$7,600,000	\$7,600,000	\$0	\$7,500,000	\$350,000	\$0	\$0	\$0	\$6,965,324	\$22,415,324
Other Capital Projects												
Convert Commercial Apron from Asphalt to Concrete (Ph I)	975,929	914,933		914,933	60,996						0	975,929
Env. Assessment for Road Relocation/Vehicle Parking	337,653	316,549		316,549	21,103						0	337,653
Complete Terminal Roof Replacement/HVAC Project	148,579			0			148,579				0	148,579
Complete Terminal Area Plan	150,776			0			150,776				0	150,776
Rehabilitate Transient Seaplane Dock	530,450			0			530,450				0	530,450
Total Short-Term Project Funding Before Financing	\$24,558,710	\$1,231,482	\$7,600,000	\$8,831,482	\$82,099	\$7,500,000	\$1,179,805	\$0	\$0	\$0	\$6,965,324	\$24,558,710
Financing Costs for Debt Serviced with PFCs	539,049					539,049						539,049
Total Short-Term Project Funding	\$25,097,759	\$1,231,482	\$7,600,000	\$8,831,482	\$82,099	\$8,039,049	\$1,179,805	\$0	\$0	\$0	\$6,965,324	\$25,097,759
Mid-Term Projects (2025-2029)												
Terminal Building Components - Phase B												
Departure Areas:												
Boarding Walkway	\$858,073			\$0						\$858,073	\$0	\$858,073
Concessions:												
RAC Counter/Offices	1,370,148			0						1,370,148	0	1,370,148
RAC Queuing	678,154			0						678,154	0	678,154
Concessions	2,075,982			0						2,075,982	0	2,075,982
Concessions - Public Areas	6,227,947			0						6,227,947	0	6,227,947
Baggage Claim:												
Baggage Claim Area	6,034,189			0						6,034,189	0	6,034,189
Baggage Service Offices	553,595			0						553,595	0	553,595
Inbound Baggage Handling	2,629,578			0						2,629,578	0	2,629,578
Site Costs:												
Demolition/Phasing	129,749			0						129,749	0	129,749
Landside Site Costs	411,901			0						411,901	0	411,901
Airside Site Costs	411,901			0						411,901	0	411,901
Terminal Equipment:												
Passenger Boarding Bridges	1,977,126			0						1,977,126	0	1,977,126
Baggage Handling Systems	612,909			0						612,909	0	612,909
Subtotal - Terminal Building Components - Phase B	\$23,971,253	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,971,253	\$0	\$23,971,253
Other Capital Projects												
North Airport Service Road Relocation	555,675	520,945		520,945	34,730						0	555,675
Vehicle Parking Expansion	5,746,650			0				5,746,650			0	5,746,650
RAC Wash Facility Replacement	1,054,717			0					1,054,717		0	1,054,717

KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough

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Schedule G3a

Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Projected Capital Funding Sources

07-Jan-21

	Total Escalated Costs	AK DOT&PF - Pass Thru Federal Funding		Total Pass Thru Federal Funding	Alaska DOT&PF Grants	Passenger Facility Charges (Debt)	Passenger Facility Charges (PAYG)	Other Capital Contribution - Borough / Land Trust	Private 3rd Party Funding	Other Unidentified Funding	Cash Reserves/ Net Revs	Total Funding
		AIP - Landing Field Parcel	AIP - Building Site Parcel									
Capital Improvement Projects												
Air Cargo Apron Expansion	3,568,203	3,345,191		3,345,191	223,013						0	3,568,203
Taxilane D	2,364,463	2,216,684		2,216,684	147,779						0	2,364,463
Alaska/Airline Equipment/Carqo/Fishbox Storage Facility	4,368,650			0					4,368,650		0	4,368,650
Convert Commercial Apron from Asphalt to Concrete (Ph II)	2,017,033	1,890,968		1,890,968	126,065						0	2,017,033
Total Mid-Term Project Funding Before Financing	\$43,646,644	\$7,973,788	\$0	\$7,973,788	\$531,586	\$0	\$0	\$5,746,650	\$5,423,367	\$23,971,253	\$0	\$43,646,644
Financing Costs for Debt Serviced with PFCs	633,314					633,314						633,314
Total Mid-Term Project Funding	\$44,279,959	\$7,973,788	\$0	\$7,973,788	\$531,586	\$633,314	\$0	\$5,746,650	\$5,423,367	\$23,971,253	\$0	\$44,279,959
Long-Term Projects (2030-2039)												
Terminal Building Components - Phase C												
Airline Ticketing/Check In:												
Airline ATO	\$2,763,959			\$0						\$2,763,959	\$0	\$2,763,959
Ticketing	912,970			0						912,970	0	912,970
Ticketing Queuing	701,786			0						701,786	0	701,786
Baggage Make-Up	2,643,036			0						2,643,036	0	2,643,036
Baggage Handling Conveying System	1,200,595			0						1,200,595	0	1,200,595
Passenger and Baggage Security/Screening:												
TSA Baggage Screening Area	5,139,236			0						5,139,236	0	5,139,236
Customs	43,187			0						43,187	0	43,187
Departure Areas:												
Departure Lounge/Holdroom	11,122,343			0						11,122,343	0	11,122,343
Boarding Walkway	345,495			0						345,495	0	345,495
Public Areas:												
Vertical Circulation	209,888			0						209,888	0	209,888
Public Circulation	5,730,896			0						5,730,896	0	5,730,896
Public Restrooms	1,891,584			0						1,891,584	0	1,891,584
Support Areas:												
Mechanical & Electrical	120,923			0						120,923	0	120,923
Non-Public Circulation	1,641,101			0						1,641,101	0	1,641,101
Airport Support	34,549			0						34,549	0	34,549
Site Costs:												
Demolition/Phasing	161,951			0						161,951	0	161,951
Landside Site Costs	514,129			0						514,129	0	514,129
Airside Site Costs	514,129			0						514,129	0	514,129
Terminal Equipment:												
Passenger Boarding Bridges	2,467,820			0			908,398				1,559,422	2,467,820
Baggage Handling Systems	1,188,667			0						1,188,667	0	1,188,667
Subtotal - Terminal Building Components - Phase C	\$39,348,244	\$0	\$0	\$0	\$0	\$0	\$908,398	\$0	\$0	\$36,880,424	\$1,559,422	\$39,348,244
Other Capital Projects												
Two Level Parking Deck	4,593,511			0				4,593,511			0	4,593,511
Convert Commercial Apron from Asphalt to Concrete (Ph	4,978,106	4,666,975		4,666,975	311,132						0	4,978,106
Total Long-Term Project Funding Before Financing	\$48,919,862	\$4,666,975	\$0	\$4,666,975	\$311,132	\$0	\$908,398	\$4,593,511	\$0	\$36,880,424	\$1,559,422	\$48,919,862
Financing Costs for Debt Serviced with PFCs	702,983					702,983						702,983
Total Long-Term Project Funding	\$49,622,844	\$4,666,975	\$0	\$4,666,975	\$311,132	\$702,983	\$908,398	\$4,593,511	\$0	\$36,880,424	\$1,559,422	\$49,622,844
Total Project Funding	\$119,000,562	\$13,872,245	\$7,600,000	\$21,472,245	\$924,816	\$9,375,346	\$2,088,203	\$10,340,162	\$5,423,367	\$60,851,677	\$8,524,746	\$119,000,562

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

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Schedule G3b
07-Jan-21

**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Summary of Projected Capital Funding Sources
Terminal Building Expansion Phase A - Short-Term (2021 - 2023)**

	2021	2022	2023	Total
	Design	Construct (50%)	Construct (50%)	
Total Terminal Building Cost - Phase A	\$1,629,673	\$10,239,237	\$10,546,414	\$22,415,324
Capital Funding:				
PassThru Federal Funding	\$0	\$7,600,000	\$0	\$7,600,000
PFC Pay Go	0	350,000	0	350,000
PFC Debt Proceeds	0	0	7,500,000	7,500,000
Airport Cash Reserves	1,629,673	2,289,237	3,046,414	6,965,324
Total Capital Funding	<u>\$1,629,673</u>	<u>\$10,239,237</u>	<u>\$10,546,414</u>	<u>\$22,415,324</u>

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
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**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
PFC Serviced Debt Issue**

07-Jan-21

Debt Issue Structure						
		Issue Date:	01-Jul-22			
		Interest:	2.0%			
		Term:	20 Years			
		Project Funding Requirement:	\$7,500,000			
		Debt Service Reserve Fund Requirement (MADS):	493,439			
		Capitalized Debt Issue Costs (1.0%):	<u>75,000</u>			
		Total Debt Requirement:	<u><u>\$8,068,439</u></u>			
Notes:						
(1) Assumes no interest earnings on Construction Fund balance or Debt Service Reserve Fund deposit.						
(2) Assumes DSRF funded from the issue amount						
Debt Service Schedule						
Payment Number	Fiscal Year	Beginning Principal	Annual Debt Service	Interest Payment	Principal Payment	Ending Principal
1	2023	\$8,068,439	\$493,439	\$161,369	\$332,070	\$7,736,369
2	2024	7,736,369	493,439	154,727	338,712	7,397,657
3	2025	7,397,657	493,439	147,953	345,486	7,052,171
4	2026	7,052,171	493,439	141,043	352,396	6,699,775
5	2027	6,699,775	493,439	133,995	359,444	6,340,331
6	2028	6,340,331	493,439	126,807	366,633	5,973,698
7	2029	5,973,698	493,439	119,474	373,965	5,599,733
8	2030	5,599,733	493,439	111,995	381,445	5,218,288
9	2031	5,218,288	493,439	104,366	389,073	4,829,215
10	2032	4,829,215	493,439	96,584	396,855	4,432,360
11	2033	4,432,360	493,439	88,647	404,792	4,027,568
12	2034	4,027,568	493,439	80,551	412,888	3,614,680
13	2035	3,614,680	493,439	72,294	421,146	3,193,534
14	2036	3,193,534	493,439	63,871	429,569	2,763,966
15	2037	2,763,966	493,439	55,279	438,160	2,325,806
16	2038	2,325,806	493,439	46,516	446,923	1,878,883
17	2039	1,878,883	493,439	37,578	455,862	1,423,021
18	2040	1,423,021	493,439	28,460	464,979	958,042
19	2041	958,042	493,439	19,161	474,278	483,764
20	2042	483,764	493,439	9,675	483,764	0
Totals			<u>\$9,868,785</u>	<u>\$1,800,346</u>	<u>\$8,068,439</u>	

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
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**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Actual, Budgeted and Projected Operations & Maintenance Expenses**

07-Jan-21

Operations & Maintenance Expenses	Actual 2018	Actual 2019	Actual 2020	Short-Term					Total	Mid-Term 2026-2030	Long-Term 2031-2040
				Budget	Projected						
				2021	2022	2023	2024	2025			
Personnel Costs	\$3,097,341	\$3,032,655	\$3,178,443	\$3,300,000	\$3,399,000	\$3,500,970	\$3,605,999	\$3,714,179	\$17,520,148	\$20,310,654	\$50,841,434
Travel & Training	16,802	14,157	19,668	26,900	27,707	28,538	29,394	30,276	142,816	165,563	414,435
Uniform Allowance	2,928	3,079	1,681	11,000	11,330	11,670	12,020	12,381	58,400	67,702	169,471
Supplies	4,572	2,544	1,816	6,700	6,901	7,108	7,321	7,541	35,571	41,237	103,224
Operating Supplies	74,714	70,961	78,984	85,000	87,550	90,177	92,882	95,668	451,277	523,153	1,309,552
Dues & Publications	2,152	1,653	1,314	1,200	1,236	1,273	1,311	1,351	6,371	7,386	18,488
Banking Fees	31,991	35,890	38,470	30,000	30,900	31,827	32,782	33,765	159,274	184,642	462,195
Security Screening Expense	5,000	0	1,350	3,000	3,090	3,183	3,278	3,377	15,927	18,464	46,219
Professional Services	0	80,620	0	0	0	0	0	0	0	0	0
Licenses/Fees/Permits	1,370	735	930	2,000	2,060	2,122	2,185	2,251	10,618	12,309	30,813
Contractual Services	90,508	93,657	391,043	100,525	103,541	106,647	109,846	113,142	533,701	618,706	1,548,738
Insurance	221,644	220,810	235,055	266,464	274,458	282,692	291,172	299,908	1,414,694	1,640,018	4,105,276
Medical Expense	1,042	267	274	2,100	2,163	2,228	2,295	2,364	11,149	12,925	32,354
Administrative Fees	228,741	234,177	260,287	280,072	288,474	297,128	306,042	315,224	1,486,940	1,723,771	4,314,928
Electricity	121,770	123,352	137,241	139,525	143,711	148,022	152,463	157,037	740,757	858,741	2,149,591
Water	29,928	34,397	35,793	35,000	36,050	37,132	38,245	39,393	185,820	215,416	539,227
Telephone/Long Distance	14,581	15,002	13,225	14,200	14,626	15,065	15,517	15,982	75,390	87,397	218,772
Sewer	27,600	31,326	31,790	37,000	38,110	39,253	40,431	41,644	196,438	227,726	570,040
Landfill Fees	8,965	8,928	7,315	8,500	8,755	9,018	9,288	9,567	45,128	52,315	130,955
Dock Maintenance	24,736	7,075	8,819	9,000	9,270	9,548	9,835	10,130	47,782	55,393	138,658
Field Maintenance	6,859	9,865	11,952	10,000	10,300	10,609	10,927	11,255	53,091	61,547	154,065
Building Maintenance	38,595	36,753	42,733	68,000	70,040	72,141	74,305	76,535	361,021	418,523	1,047,642
Heating Fuel	41,924	52,417	60,132	57,000	58,710	60,471	62,285	64,154	302,621	350,820	878,170
Equipment Maintenance	3,244	8,127	10,140	16,000	16,480	16,974	17,484	18,008	84,946	98,476	246,504
Vehicle Maintenance	14,037	17,651	22,464	33,000	33,990	35,010	36,060	37,142	175,201	203,107	508,414
Vehicle Fuel & Oil	225,835	220,050	204,961	235,000	242,050	249,312	256,791	264,495	1,247,647	1,446,365	3,620,526
Ferry Maintenance	218,819	201,451	215,236	245,000	252,350	259,921	267,718	275,750	1,300,738	1,507,912	3,774,591
Airport Parking Lot Maintenance	21,514	13,865	14,916	49,000	50,470	51,984	53,544	55,150	260,148	301,582	754,918
Equipment Purchases	10,732	22,100	16,060	60,000	61,800	63,654	65,564	67,531	318,548	369,285	924,390
Miscellaneous	598	798	6,452	2,100	2,163	2,228	2,295	2,364	11,149	12,925	32,354
Debt Service	2,542	1,598	626	0	0	0	0	0	0	0	0
Bad Debt Expense	5,519	17,511	35,788	0	0	0	0	0	0	0	0
Gain/Loss On Asset Disposal	0	-1,300	0	0	0	0	0	0	0	0	0
Total Operations & Maintenance Expenses	\$4,596,601	\$4,612,171	\$5,084,956	\$5,133,286	\$5,287,285	\$5,445,903	\$5,609,280	\$5,777,559	\$27,253,313	\$31,594,059	\$79,085,946
Annual Growth Rate	-	0.3%	10.3%	1.0%	3.0%	3.0%	3.0%	3.0%	2.6%	3.0%	3.0%
Operating Expenses Per Enplaned Passenger:											
Ketchikan International Airport	\$33.95	\$33.64	\$36.32	\$57.04	\$43.71	\$35.85	\$36.01	\$36.17	\$40.17	\$36.78	\$39.96
Non-Hub Industry Average	\$44.02	\$44.47	\$44.92	\$45.38	\$45.84	\$46.31	\$46.78	\$47.26	\$46.31	\$48.97	\$52.84

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

KTN - TAS - 2020 -7

Schedule G6

**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Actual, Budgeted and Projected Operating Revenues**

07-Jan-21

Revenues	Actual 2018	Actual 2019	Actual 2020	Short-Term					Mid-Term 2026-2030	Long-Term 2031-2040	
				Budget 2021	Projected						Total
					2022	2023	2024	2025			
Enplanement Growth+Inf.											
AIRLINE REVENUES											
Terminal Building Rents - Airlines	\$382,990	\$350,670	\$351,249	\$350,000	\$360,500	\$371,315	\$382,454	\$393,928	\$1,858,198	\$2,154,160	\$5,392,273
Landing Fees - Airlines	954,474	793,987	1,001,698	700,000	800,000	900,000	927,000	954,810	4,281,810	5,221,292	13,069,889
Rental Income - Field - Airlines	79,392	119,087	119,087	119,087	122,660	126,339	130,130	134,033	632,249	732,950	1,834,713
Airline Security Revenue	241,348	205,560	242,462	180,000	193,520	243,040	249,243	255,605	1,121,408	1,374,249	3,166,420
Total Airline Revenues	\$1,658,204	\$1,469,304	\$1,714,496	\$1,349,087	\$1,476,680	\$1,640,694	\$1,688,827	\$1,738,376	\$7,893,664	\$9,482,652	\$23,463,296
Annual Growth Rate	-	-11.4%	16.7%	-21.3%	9.5%	11.1%	2.9%	2.9%	0.3%	2.9%	2.8%
Airline Cost Per Enplaned Passenger:											
Ketchikan International Airport	\$12.25	\$10.72	\$12.25	\$14.99	\$12.21	\$10.80	\$10.84	\$10.88	\$11.64	\$11.04	\$11.86
Non-Hub Industry Average	\$9.09	\$9.18	\$9.27	\$9.37	\$9.46	\$9.56	\$9.65	\$9.75	\$9.56	\$10.11	\$10.90
NON-AIRLINE REVENUES											
Landing Fees - Non-Airline	\$48,814	\$51,491	\$51,961	\$50,000	\$51,500	\$53,045	\$54,636	\$56,275	\$265,457	\$307,737	\$770,325
Fuel Flowage Fees	131,752	172,896	161,868	140,000	144,200	148,526	152,982	157,571	743,279	861,664	2,156,909
State Fuel Tax Revenue	9,131	15,457	0	16,000	16,480	16,974	17,484	18,008	84,946	98,476	246,504
Rental Income - Field - Non-Airlines	30,027	35,138	44,723	24,913	25,660	26,430	27,223	28,040	132,267	153,333	383,822
Aircraft Parking Fees	19,751	24,049	15,063	18,000	18,540	19,096	19,669	20,259	95,564	110,785	277,317
Tie-Down Charges	2,230	2,032	1,167	2,000	2,060	2,122	2,185	2,251	10,618	12,309	30,813
Seaplane Dock Fees	10,671	16,588	8,821	8,000	8,240	8,487	8,742	9,004	42,473	49,238	123,252
Murphy's Landing Docking Fees	10,000	8,900	8,900	7,800	8,034	8,275	8,523	8,779	41,411	48,007	120,171
Terminal Building Rents - Non-Airline	204,129	209,224	198,527	225,000	231,750	238,703	245,864	253,239	1,194,556	1,384,817	3,466,461
Terminal Rents - TSA Offices (\$36/SF)	0	0	0	0	0	0	68,400	70,452	138,852	385,260	964,380
Terminal Use Fees	40,597	33,536	41,008	30,000	30,900	31,827	32,782	33,765	159,274	184,642	462,195
Ambassador Fees	8,003	7,804	8,341	7,800	8,034	8,275	8,523	8,779	41,411	48,007	120,171
Background Check Fees	6,250	3,840	1,850	3,000	3,090	3,183	3,278	3,377	15,927	18,464	46,219
Terminal Vendor Concessions	5,409	6,100	6,686	6,500	6,695	6,896	7,103	7,316	34,509	40,006	100,142
TSA Law Enforcement Reimbursement	57,815	61,680	46,765	36,000	37,080	38,192	39,338	40,518	191,129	221,571	554,634
Vehicle Parking - Terminal	85,681	91,251	83,200	80,000	90,000	100,000	110,000	116,192	496,192	684,121	1,978,432
Vehicle Parking - Revilla	122,806	135,249	209,936	160,000	190,000	220,000	250,000	264,072	1,084,072	1,554,820	4,496,436
Parking Enforcement Fees	34,921	37,605	40,839	30,000	30,900	31,827	32,782	33,765	159,274	184,642	462,195
Ferry Fees	2,400,856	2,529,709	2,188,364	2,040,000	2,165,000	2,290,000	2,415,000	2,550,938	11,460,938	15,019,560	43,435,574
Medivac - Ambulance Ferry Fees	5,500	5,500	5,500	5,500	5,665	5,835	6,010	6,190	29,200	33,851	84,736
State MOA Revenue	502,000	502,000	502,000	502,000	502,000	502,000	502,000	502,000	2,510,000	2,510,000	5,020,000
Commercial Passenger Vessel Revenue:	168,604	190,840	143,130	34,698	35,000	35,000	35,000	35,000	174,698	175,000	350,000
Pers on Behalf Payments	91,470	102,731	122,275	177,354	182,675	188,155	193,800	199,613	941,596	1,091,568	2,732,404
Miscellaneous Revenues	2,150	30,280	3,040	0	0	0	0	0	0	0	0
Total Non-Airline Revenues	\$3,998,566	\$4,273,900	\$3,893,964	\$3,604,565	\$3,793,503	\$3,982,848	\$4,241,324	\$4,425,405	\$20,047,645	\$25,177,880	\$68,383,092
Annual Growth Rate	-	6.9%	-8.9%	-7.4%	5.2%	5.0%	6.5%	4.3%	2.6%	4.3%	4.1%
NON-OPERATING REVENUES											
Interest Income	\$23,301	\$67,349	\$64,882	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$275,000	\$275,000	\$550,000
PFC Reimbursements	0	56,308	810,022	0	0	0	0	0	0	0	0
CARES Act Grant - O & M Funding	0	0	804,837	804,000	0	0	0	0	804,000	0	0
Total Non-Operating Revenues	\$23,301	\$123,657	\$1,679,740	\$859,000	\$55,000	\$55,000	\$55,000	\$55,000	\$1,079,000	\$275,000	\$550,000
Annual Growth Rate	-	430.7%	1258.4%	-48.9%	-93.6%	0.0%	0.0%	0.0%	-49.5%	0.0%	0.0%
Total Revenues	\$5,680,070	\$5,866,861	\$7,288,200	\$5,812,652	\$5,325,183	\$5,678,542	\$5,985,151	\$6,218,781	\$29,020,309	\$34,935,531	\$92,396,387
Annual Growth Rate	-	3.3%	24.2%	-20.2%	-8.4%	6.6%	5.4%	3.9%	-3.1%	3.9%	3.7%
Operating Revenues Per Enplaned Passenger:											
Ketchikan International Airport	\$41.78	\$41.89	\$40.06	\$55.04	\$43.57	\$37.02	\$38.07	\$38.58	\$41.19	\$40.35	\$46.41
Non-Hub Industry Average	\$46.34	\$46.81	\$47.28	\$47.76	\$48.25	\$48.74	\$49.24	\$49.74	\$48.75	\$51.54	\$56.61

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

KTN - TAS - 2020 -7

Schedule G7

**Terminal Area Plan - Financial Implementation Analysis - 20 yr Debt
Financial Plan Summary
Budgeted and Projected Net Revenues, Capital Funding and Capital Expenditures**

07-Jan-21

Operating/Capital Cash Flow	Short-Term					Total	Mid-Term 2026-2030	Long-Term 2031-2040
	Budget	Projected						
	2021	2022	2023	2024	2025			
Passenger Enplanements	90,000	120,950	151,900	155,777	159,753	678,380	858,906	1,979,012
Annual Growth Rates	-	34.39%	25.59%	2.55%	2.55%	15.43%	1.95%	1.67%
Operating Cash Flow								
Revenues:								
Airline Revenues	\$1,349,087	\$1,476,680	\$1,640,694	\$1,688,827	\$1,738,376	\$7,893,664	\$9,482,652	\$23,463,296
Non-Airline Revenues	3,604,565	3,793,503	3,982,848	4,241,324	4,425,405	20,047,645	25,177,880	68,383,092
Non-Operating Revenues	859,000	55,000	55,000	55,000	55,000	1,079,000	275,000	550,000
Total Revenues	\$5,812,652	\$5,325,183	\$5,678,542	\$5,985,151	\$6,218,781	\$29,020,309	\$34,935,531	\$92,396,387
Operations & Maintenance Expenses	(5,133,286)	(5,287,285)	(5,445,903)	(5,609,280)	(5,777,559)	(27,253,313)	(31,594,059)	(79,085,946)
Total Net Operating Cash Flow Available For Capital Expenditures	\$679,366	\$37,898	\$232,639	\$375,871	\$441,223	\$1,766,997	\$3,341,473	\$13,310,441
Capital Cash Flow								
Beginning Cash Balance	\$6,408,958	\$5,458,651	\$3,207,312	\$318,538	\$694,408	\$6,408,958	\$1,135,631	\$4,477,104
Other Capital Funding Sources:								
Alaska DOT&PF - Pass Through Federal Funding:								
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975
AIP - Building Site Parcel	0	7,600,000	0	0	0	7,600,000	0	0
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505
PFC beginning year unliquidated balance	657,966	635,181	126,410	99,759	85,023	657,966	85,573	254,725
PFC unspent current year + carryover	(635,181)	(126,410)	(99,759)	(85,023)	(85,573)	(85,573)	(254,725)	0
PFC Debt Proceeds (20 yrs, 2.0%) Thru 2042	0	0	7,500,000	0	0	7,500,000	0	0
Less PFC Funded Principal Payments	0	0	(332,070)	(338,712)	(345,486)	(1,016,268)	(1,833,882)	(4,649,849)
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424
Total Other Capital Funding Sources	\$299,355	\$8,480,450	\$8,637,297	\$492,380	\$147,953	\$18,057,436	\$44,279,959	\$48,138,422
Total Funds Available for Capital Expenditures	\$7,387,679	\$13,976,999	\$12,077,249	\$1,186,788	\$1,283,584	\$26,233,390	\$48,757,062	\$65,925,967
Capital Improvement Program Expenditures	1,929,028	10,769,687	11,758,711	492,380	147,953	25,097,759	44,279,959	49,622,844
Ending Cash Balance	\$5,458,651	\$3,207,312	\$318,538	\$694,408	\$1,135,631	\$1,135,631	\$4,477,104	\$16,303,122

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Terminal Area Plan : Appendix 1, FAA Forecast Approval

From: Linqvist, Jonathan (FAA) <jonathan.linqvist@faa.gov>
Sent: Thursday, January 30, 2020 3:03 PM
To: Ryan Hayes
Cc: Mike Carney; paul.khera@alaska.gov; Cody Fussell
Subject: RE: KTN TAP Forecasts chapter

Ryan and all,

FAA approves the KTN forecast as written, and approves the critical aircraft determination as D-III, based on the Boeing 737-800/900.

Please let me know if you have questions or need anything else!

Thanks,
Jonathan

//Signed//
JONATHAN LINQUIST
Community Planner, FAA
Alaskan Region Airports Division
Tel: 907-271-5040

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Terminal Area Plan : Appendix 2, Public Involvement

Ketchikan Terminal Area Plan: Summary of Public Engagement Methodology

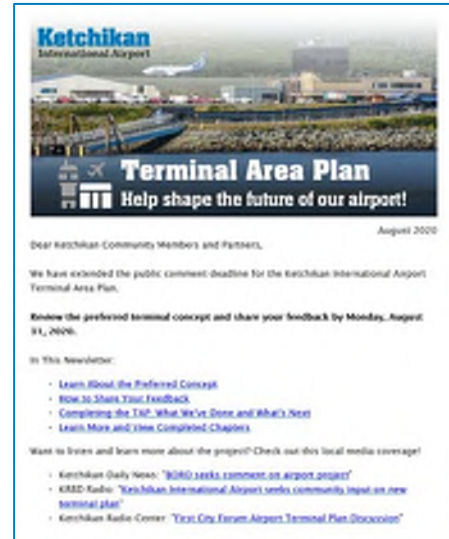
For copies of public engagement materials, see the Public Engagement materials that follow this summary.

The public engagement process included the following steps and outreach efforts:

- **Study Committee.** Established the Study Committee to help guide the planning process. The Study Committee was a representative group that offered input on the planning process, inventory, requirements and draft concepts. The Study Committee also provided guidance on stakeholder engagement tools and suggested stakeholder activities for garnering input on study alternatives and related results. The Study Committee met four times throughout the project.
- **Public Engagement Plan:** Created a Public Engagement Plan to outline the project team’s approach for engaging with stakeholders to ensure the plan and concepts meet the needs of the Ketchikan Gateway Borough, airport tenants, residents, visitors, agencies, businesses and other stakeholders. The plan identifies target audiences, outreach activities, communication tools, an outreach schedule and key questions to consider throughout the planning process. Note: the Public Engagement Plan was developed before the COVID-19 pandemic took hold and therefore the final methods for engagement evolved somewhat from when the Public Engagement Plan was finalized; for example, in-person meetings were no longer an option. As a result the project team focused on other engagement methods as identified below.
- **Interviews:** Conducted over a series of in-depth interviews with community leaders, airport staff, tenants, agency representatives and other stakeholders to learn about terminal challenges, priorities and to compile suggestions for the terminal building and area concepts.
- **Contact List:** Compiled a contacts list with stakeholders including Borough, municipal, state and Tribal representatives; chambers of commerce; tourism providers; current airport tenants; state and federal agencies, and more. The contact list included 120 different stakeholders.



- **E-Newsletters:** Developed and sent three e-newsletters to the contact list. The e-newsletters offered progress updates, links to draft materials and promoted the public comment period for the preferred terminal concept, with links to the community survey and local media coverage.
- **Flyer:** Created an informational flyer with a summary of the project purpose, timeline and contact information, to be shared throughout the project.
- **Project Website:** Worked with Borough staff to create a dedicated project information page on the Ketchikan Gateway Borough website (<https://www.borough.ketchikan.ak.us/897/Terminal-Area-Plan>). As chapters were completed they were uploaded to the website. The website also included copies of past newsletters, links to outreach opportunities such as the community survey, and contact information for the project team. Most printed project materials included a QR code which residents could scan to access the webpage via a mobile device.

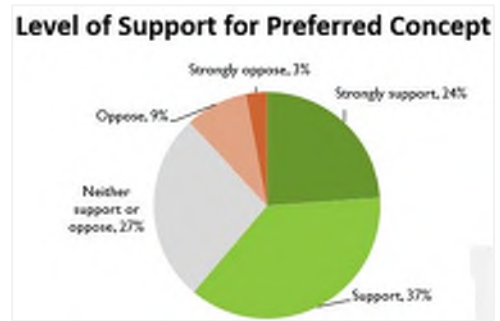


- **Postcards:** Distributed approximately 7,200 postcards to all Ketchikan addresses and PO boxes, both residential and commercial. The postcards announced the release of the preferred terminal concept and encouraged the public to review and respond via the community survey.
- **Radio:** Collaborated with two local radio stations (KRBD and KTKN First City Forum) to cover the terminal area plan through interviews with the Airport Manager and public service announcements (PSAs). Stories available here:



- KRBD Radio: "[Ketchikan International Airport seeks community input on new terminal plan](#)"
- KTKN First City Forum: "[Airport Terminal Plan Discussion](#)"
- **Newspaper:** Worked with Scott Bowlen at the Ketchikan Daily News to publish a newspaper article about the project. The story is available here:
 - Ketchikan Daily News: "[BORO seeks comment on airport project](#)"

- Survey:** Created a short, simple survey for stakeholders to review and give feedback on the preferred terminal concept. A short accompanying concept summary was created to introduce the preferred terminal concept and how it was selected, as well as to outline next steps. Respondents were asked about overall levels of support for the concept, as well as what they liked and disliked about the concept. The survey was advertised via postcard, e-newsletters, posters at the airport and local media (radio and newspaper). The survey was open from July 14th through August 31st, 2020 and received 76 responses.
- Public Comment Period:** Established a 30-day public comment period for the public to share input on the preferred terminal concept, which was ultimately extended to increase opportunities for residents and stakeholders to submit comments. The public comment period was open from July 14th through August 21st, 2020. Most individuals shared public comments via the community survey; the project team also received two sets of individual comments via email.



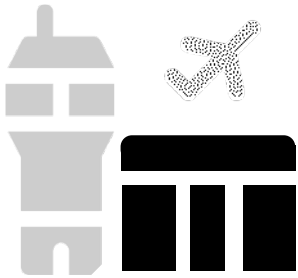
Ketchikan Terminal Area Plan:

Stakeholder Engagement Appendix Content List

- A. *Public Engagement Plan*
- B. *Project Flyer*
- C. *Preferred Terminal Concept Summary*
- D. *Preferred Terminal Concept Poster*
- E. *June 2020 E-Newsletter*
- F. *July 2020 E-Newsletter*
- G. *August 2020 E-Newsletter*
- H. *Postcard*
- I. *Blank Community Survey*
- J. *Presentation of Survey Results*

Ketchikan

International Airport



Terminal Area Plan

Public Engagement Plan

January 2020



**Prepared for:
Ketchikan Gateway Borough**

Prepared by Agnew::Beck Consulting

1. Introduction

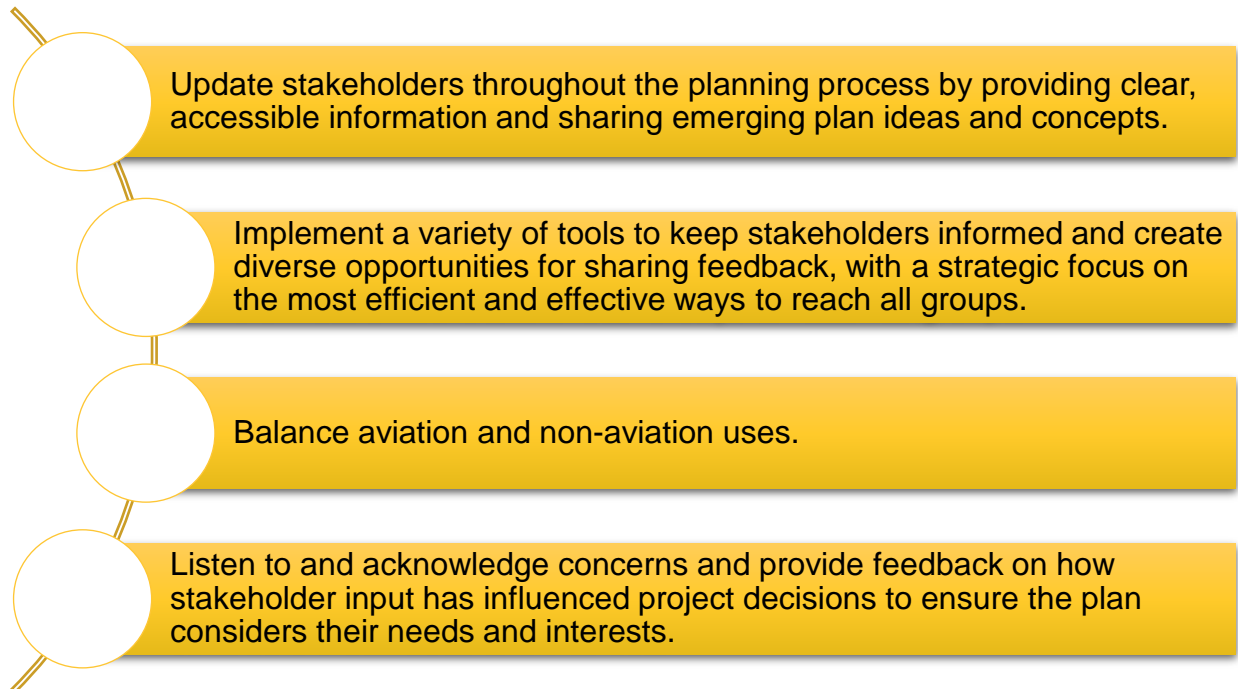
Project Overview

The purpose of the Terminal Area Plan (TAP) is to prepare a concept plan within the terminal area at the Ketchikan International Airport (KTN) to address the long-term planning needs of the terminal building and the terminal area. The existing KTN terminal area facilities cannot accommodate the current capacity and require expansion. The concept plan will offer short, medium and long-term recommendations to accommodate future growth and enhance the passenger experience.

Purpose of the Public Engagement Plan

This plan outlines the project team's approach for engaging with stakeholders to develop a final plan that meets the needs of the Ketchikan Gateway Borough (the Borough), airport tenants, agencies, businesses and other stakeholders. A robust and relevant public engagement plan provides the public an opportunity to learn about the project purpose and the planning process, including a schedule for how and when to provide input on the proposed TAP. The plan identifies target audiences, outreach activities, communication tools, an outreach schedule and key questions to consider throughout the planning process.

Public Engagement Goals



2. Public Engagement Roles

As part of the public engagement program, a TAP Study Committee comprised of a cross section of the Borough, the local community, and airport stakeholders will be established to provide input and recommendations throughout the planning process. The TAP Study Committee, along with Airport Staff and the Consulting Team will lead the public engagement program. The roles and responsibilities of each are described below:

KTN Terminal Area Plan Study Committee

- Help with recruitment, engagement and outreach for site visits.
- Participate in key informant interviews, stakeholder meetings.
- Provide guidance on stakeholder engagement tools and suggest community and other stakeholder activities/events for garnering input on study alternatives and related results.
- Participate in a debrief after each community outreach event.
- Seek to identify areas of agreement and common ground solutions that serve the needs of all parties with a stake in the future of the Airport.
- Work productively with other committee members, project staff and partners even when experiences and opinions may differ.

Airport Staff

- Identify Study Committee participants.
- Help with recruitment and outreach for stakeholder outreach and community meetings.
- Provide feedback on stakeholder engagement tools, process and informational materials.
- Provide contact information to receive public feedback and comments (along with consulting team).
- Participate in community meetings.
- Assist with the identification and reservation of local meeting space and provide meeting refreshments, if desired.
- Participate in debrief after each community outreach event.

Consulting Team (Agnew::Beck Consulting w/oversight from Mead & Hunt)

- Prepare public engagement plan.
- Plan for and conduct interviews, focus groups and other stakeholder engagement efforts.
- Prepare for, facilitate and document the results of at least one public meeting.
- Oversee the development and distribution of outreach materials.
- Provide contact information to collect stakeholder feedback and comments (along with Airport Staff).
- Package stakeholder engagement feedback and results.
- Participate in debrief after each community outreach event.

3. Potentially Affected Stakeholders

For the TAP project to be successful, relevant stakeholders must be invited to participate in the planning process. This will ensure the final recommendations are reflective of the community's needs and interests. This section identifies relevant stakeholders who should be engaged in the TAP planning process. The list below is a recommended starting point based on the Consulting Team's knowledge of the Ketchikan area; the list will likely grow over the course of the planning process as additional stakeholders are identified. The list of stakeholder groups includes airport staff and tenants, state and federal agency representatives, and local entities and residents.

Ketchikan Community

1. Residents
2. Businesses
3. Ketchikan Gateway Borough
4. City of Ketchikan
5. City of Saxman
6. Ketchikan Indian Community (KIC)
7. Greater Ketchikan Chamber of Commerce
8. Ketchikan Visitor's Bureau
9. Tourism providers, including Cruise Line Agencies of Alaska and local area lodges
10. Cruise ship representatives (potentially through cruise line industry association)
11. Youth (e.g., student council bodies)
12. Public safety (police, fire, troopers) and healthcare representatives
13. Gravina Island property owners
14. Prince of Wales Chamber of Commerce

Current Airport Staff and Tenants

15. Director and other key personnel
16. Air carriers
17. FAA Flight Service Station
18. Cargo representatives
19. Concessionaires and other tenants
20. U.S. Customs and Border Protection

Agency Representatives

21. Alaska Department of Transportation and Public Facilities
22. Transportation Security Administration (TSA)
23. Federal Aviation Administration (FAA)
24. U.S. Postal Service
25. Coast Guard Base Ketchikan

26. USDA Forest Service

Other Potentially Affected Stakeholders

- 27. Ketchikan Gateway Borough School District
- 28. University of Alaska Southeast
- 29. Southeast Conference
- 30. Southeast Alaska Tourism Council
- 31. Senior and disability advocates (potentially Southeast Alaska Independent Living/SAIL, Community Connections, AARP, Senior Services Division of the Ketchikan Transportation Department)
- 32. Borough and state representatives

4. Potential Public Engagement Strategies

A description of the possible stakeholder engagement efforts is listed below; Agnew::Beck Consulting will work with other members of the Consultant team, the Borough and the Study Committee to identify the right combination of tools to encourage robust public participation in the planning process and to develop study recommendations that meet community and other stakeholder needs.

A. In-Person Meetings and Conversations

- 1. Community Meetings:** Agnew::Beck Consulting will work with team members and Airport Staff to prepare for, facilitate and document results for at least one public meeting/open house. Agnew::Beck Consulting will coordinate with Airport Staff and other team members to determine the appropriate time and setting for each meeting, taking care not to conflict with existing events. The purpose of these meetings is to present proposed improvements, anticipated project impacts and potential measures to mitigate impacts and to answer questions and facilitate public input. These community meetings could include work sessions with community leadership and policymakers, with the public invited to participate.
- 2. Focus Area, Topic or Stakeholder-Specific Work Sessions and Small Group Discussion:** Small group conversations offer valuable qualitative data and provide participants a forum for sharing their individual experiences and perspectives. These subject-specific work sessions will help the project team further understand the collective needs and concerns of stakeholders on key topics. To increase access and awareness of project information, when possible, the project team will attend and share information at existing meetings. The project team will work with organizational leaders to determine the most appropriate way to get involved and solicit feedback from their membership. Possible focus area conversation topics could include cargo representatives, cruise company representatives, tourism businesses or local air carriers; see the “Potentially Affected Stakeholders” section for a list of relevant groups.
- 3. Informal Outreach at Community Events:** To reach a broader audience and engage the public, consider having a project informational booth or short presentation at community events such as AARP meetings, chamber luncheons, the Festival of the North (February) and Celebration of the Sea (May). This is an opportunity to introduce the project, share background materials and encourage residents to sign up for project updates and visit the project webpage. The booth could also offer an informal opportunity for one-on-one conversations with Airport Staff, members of the project team. A community event booth may also provide space for other interactive activities to share information and collect public feedback.

B. Outreach Materials and Methods

The Agnew::Beck Consulting graphic design team will create engaging, visually-compelling materials, tailored to specific stakeholder interests. Proposed outreach materials include the following:

1. **Project webpage** – Develop and host a project-specific webpage that will be referenced on all stakeholder outreach materials. The website will include a summary of project purpose, information on upcoming opportunities to get involved, the project schedule, an e-newsletter sign-up form, copies of flyers or draft products, team contact information and other relevant materials. If desired, the website can be used to collect stakeholder feedback on draft products. This will be hosted on the Ketchikan Gateway Borough's airport website; Agnew::Beck will assist with developing content to populate the page.
2. **Flyers** – Create informational flyers with a summary of the project purpose, timeline and contact information. A template flyer will be created and adapted as needed to announce specific opportunities for the public to engage in the planning process.
3. **E-Newsletters** – E-newsletters are a simple, efficient and cost-effective method for communications throughout the life of a project. Newsletters can introduce the process, offer progress updates, present public involvement opportunities, share contact information, and announce the release of draft and final products. Agnew::Beck Consulting will work with Airport Staff and the Study Committee to develop an initial distribution list for the project, which will be updated regularly. Interested residents and other stakeholders can request to join the distribution list via email, a contact form on the project webpage and/or through sign-up sheets at community events and project meetings.
4. **Postcards and newsletters** – Mailed postcards and print newsletters can be costly and require strategic timing but can be useful for reaching residents who may not be tracking community events and projects online. Agnew::Beck Consulting works closely with an Alaska-based printer who has successfully completed over 100 targeted project-based mailings to communities across the state.
5. **Social media** – Agnew::Beck Consulting will work with Airport Staff to post relevant updates regarding the planning process, upcoming meetings and project milestones on appropriate social media outlets. Outreach and information-sharing through Facebook and other social media outlets can quickly spread the word about upcoming events, share interesting research findings, collect thoughts from users with online polls or comments, and inform the public of each step in the process.

6. **Newspaper, television and radio** – Agnew::Beck Consulting will work closely with Airport Staff to identify opportunities and develop content, talking points and interview questions for sharing information via local newspapers and radio stations and programs. This will include an introductory interview with the two stations listed below.

<p>Radio</p> <ul style="list-style-type: none"> • Radio: KTKN-AM930 • KRBD-FM 105.3 	<p>Newspaper</p> <ul style="list-style-type: none"> • Ketchikan Daily News
--	--

7. **Audience Response System:** Agnew::Beck Consulting has an audience response polling system for use at meetings and work sessions, if desired. The system provides an opportunity for all participants to provide live, anonymous voting feedback. The system allows for increased discussion and is effective for prioritization processes with large groups.
8. **Comment forms:** Develop a comment form to make available in the airport terminal, with a collection box for gathering completed forms. This comment form will create an easy opportunity for people moving through the space to share their immediate thoughts, observations and recommendations. An electronic comment form could also be created for online distribution.
9. **QR Codes:** the project team will generate QR codes and add them to informational materials and flyers throughout the public engagement process. A QR Code is a small square code that can be scanned by a mobile phone, which then directs the user directly to a specific website. They can be used to link to web-based comment forms, the project webpage or other online resources.
10. **Gravina Access Project:** Track the results of stakeholder engagement for the Gravina Access Project for relevance to this Terminal Area Plan effort; Ketchikan airport staff will share updates when relevant.

5. List of Potential Interview/Stakeholder Questions

The following is a list of potential questions to guide conversations during interviews and with stakeholder groups. This is a preliminary list for Airport Staff and Study Committee considerations. To effectively gather input from different stakeholder groups, Agnew::Beck Consulting will work with Airport Staff and the Study Committee to modify these questions accordingly.

Existing Conditions

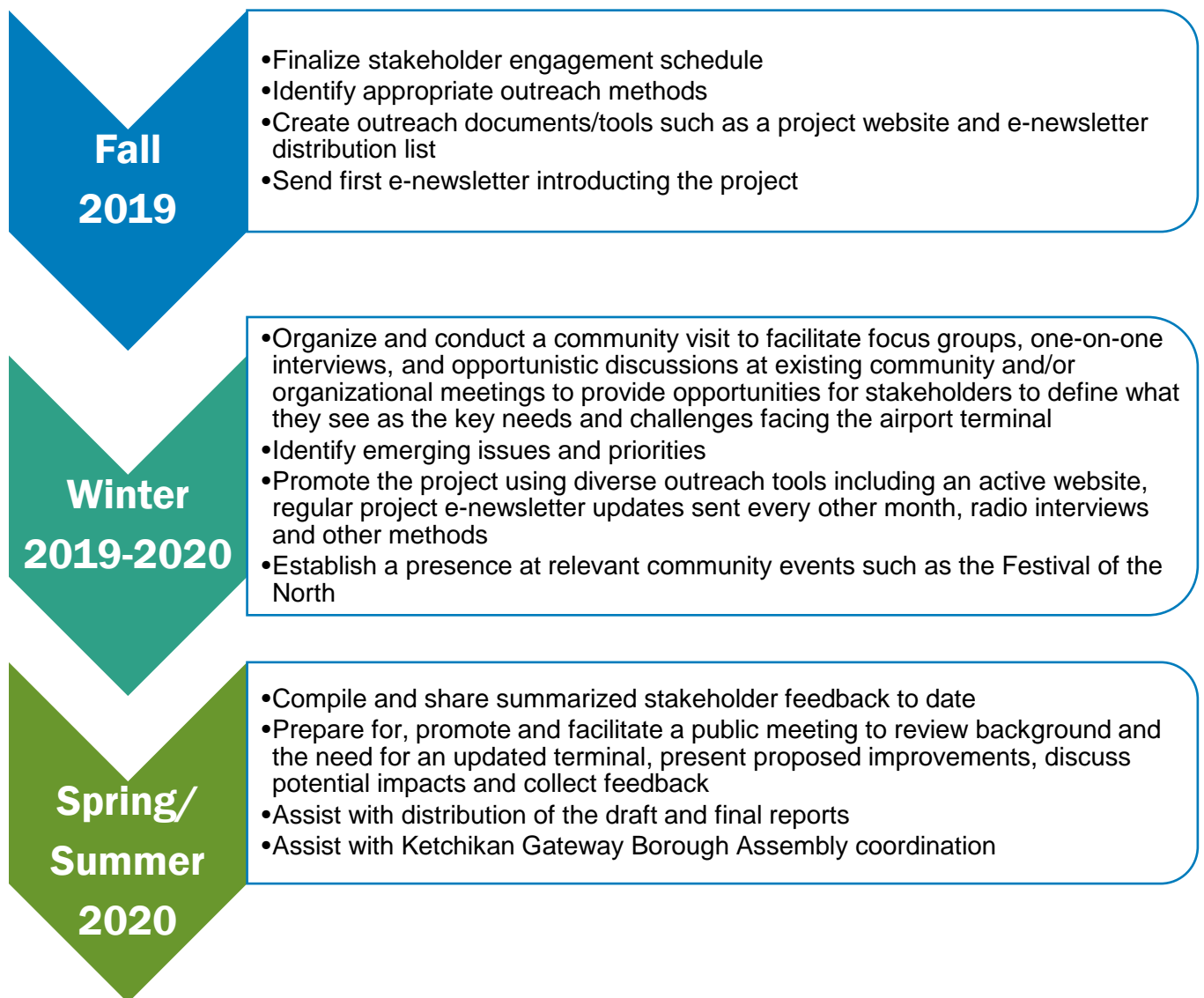
- What do you like most about the existing terminal building? What features or facilities would you like to preserve?
- What are the biggest challenges with the existing terminal? What improvements would you like to see?
For each improvement, ask for additional details such as needed size/space, potential placement within the terminal, and other important design features.

Future Needs

- What future needs do you anticipate for the airport terminal and surrounding area? What changes, if any, are needed to...
 - Accommodate new and/or expansion/reduction of existing uses?
 - Improve security and safety?
 - Improve passenger flow?
 - Improve passenger comfort, such as bathrooms, seating, dining, retail opportunities?
 - Improve cargo support?
 - Improve baggage handling systems?
 - Improve the parking area and entrance?
 - Improve airport access (e.g. expanded ferry hours or increase ferry frequency)?
 - Improve the visual appeal, cultural relevance and artistic value of the terminal?
- What specific populations should we consider in the terminal plan? What are the unique needs of different populations? (e.g., visitors, seniors, pet owners, nursing mothers, fishermen, etc.)

6. Public Engagement Schedule

The following graphic depicts the proposed public engagement schedule for the Ketchikan TAP. The public engagement timeline generally follows the overall project timeline, beginning in fall 2019 and concluding in summer 2020. The public engagement timeline has been broadly divided into three phases. In the first phase, the Consulting Team will develop a public engagement plan and develop outreach tools such as a project website. In the second phase, occurring during winter 2019-2020, the Consulting Team will promote the project through a series of in-person meetings, events and virtual tools to identify issues and priorities. In the third phase, the Consulting Team will compile and share a summary of feedback, including emerging ideas and recommendations, and assist with the distribution of draft and final reports.





Terminal Area Plan

Help shape the future of our airport!

Project Purpose

WHAT	To develop a terminal area plan (TAP) for the Ketchikan International Airport that accommodates current needs, anticipated growth, and enhances the passenger experience.
WHY	The existing terminal area facilities and design do not meet current and projected needs.
HOW	The TAP will offer short, medium and long-term recommendations for addressing current needs and projected growth.

Learn More and Get Involved

- Visit our webpage – <https://www.borough.ketchikan.ak.us/897/Terminal-Area-Plan>
- Receive project updates – sign up on the project webpage or email us (see contact info below).
- Attend a community conversation or event – see the webpage for upcoming events.

Contact Us

- Mike Carney, Ketchikan International Airport Manager, 907-225-6800, mikec@kqbak.us
- Ryan Hayes, Mead & Hunt Project Manager, 303-888-1904, Ryan.Hayes@meadhunt.com

What is our Timeline?

Fall 2019	Winter 2019-2020	Spring-Summer 2020
<ul style="list-style-type: none"> • Establish vision, goals and objectives • Compile background information and forecasting • Develop stakeholder engagement schedule 	<ul style="list-style-type: none"> • Develop terminal programming and alternatives • Prepare environmental review • Host community meetings, work sessions and interviews to collect stakeholder input and select preferred alternative(s) 	<ul style="list-style-type: none"> • Finalize Terminal Area Plan, including: <ul style="list-style-type: none"> ○ Financial planning ○ Capital improvement plan ○ Airport layout plan



Terminal Area Plan

Preferred Terminal Concept, July 2020

Project Overview

The Ketchikan Gateway Borough is developing a Terminal Area Plan (TAP). The existing terminal at the Ketchikan International Airport does not meet current or projected travel demand. The TAP will offer recommendations and a terminal concept that addresses current and projected needs and enhances the passenger experience.

The Preferred Terminal Concept

A key outcome of the Ketchikan Terminal Area Plan is the selection of a **preferred terminal concept**. The project team, led by aviation consultant Mead & Hunt, developed four alternatives offering different layout ideas and potential solutions to address the overcrowding, efficiency and safety concerns of the current terminal. The four alternative concepts were evaluated against the following broad criteria:

- ✓ Passenger Experience
- ✓ Operational Efficiency
- ✓ Sustainability and Environment
- ✓ Implementation, Phasing, and Feasibility

Based on the evaluation criteria and input from the project Study Committee, Terminal Alternative Concept #3 was identified as the preferred concept for the future Ketchikan terminal.

We Want Your Feedback on The Preferred Concept to Guide Next Steps

We want to hear from you – residents, businesses, airport tenants, travelers and all - - - what are your thoughts on the preferred terminal concept? What do you like most? What do you like least? What other comments or questions do you have about Concept #3? Your input will help inform the final steps in the TAP process (see *Completing the TAP* for more details).

How to Share Your Feedback on the Preferred Concept

1. Respond to our short, 5-minute survey: www.surveymonkey.com/r/ketchikanterminal
2. Email or call us with your questions, comments and concerns.
See below for contact information.



Scan with your phone to visit the survey

Submit your comments by August 14th, 2020.

Completing the TAP: What We've Done and What's Next

Completed Chapters *These chapters informed the creation and selection of the preferred alternative.*

A. Existing Facility Inventory	B. Forecast of Aviation Activity	C. Facility Requirements	D. Terminal Area Alternative Concepts	E. Terminal Building Alternative Concepts
--------------------------------	----------------------------------	--------------------------	---------------------------------------	---



In Progress *We are currently confirming the preferred terminal concept, Alternative Concept #3.*

Select Preferred Terminal Concept



Next Steps *These steps will occur before the final plan goes to the Borough Assembly in late August.*

Financial Planning to Implement Preferred Alternative	Capital Improvement Plan for Preferred Alternative	Update the Airport Layout Plan
---	--	--------------------------------

Learn More and View Completed Chapters:

- Visit our webpage – <https://www.borough.ketchikan.ak.us/897/Terminal-Area-Plan>
- Receive project updates – email us a request to be added to the e-newsletter list (*see Contact Us for project team emails*).

Questions, Comments, Concerns? Contact Us:

- Mike Carney, Ketchikan International Airport Manager, 907-225-6800, mikec@kgbak.us
- Ryan Hayes, Mead & Hunt Project Manager, 303-888-1904, Ryan.Hayes@meadhunt.com

KTN TAP: Preferred Terminal Concept #3, 1st Floor

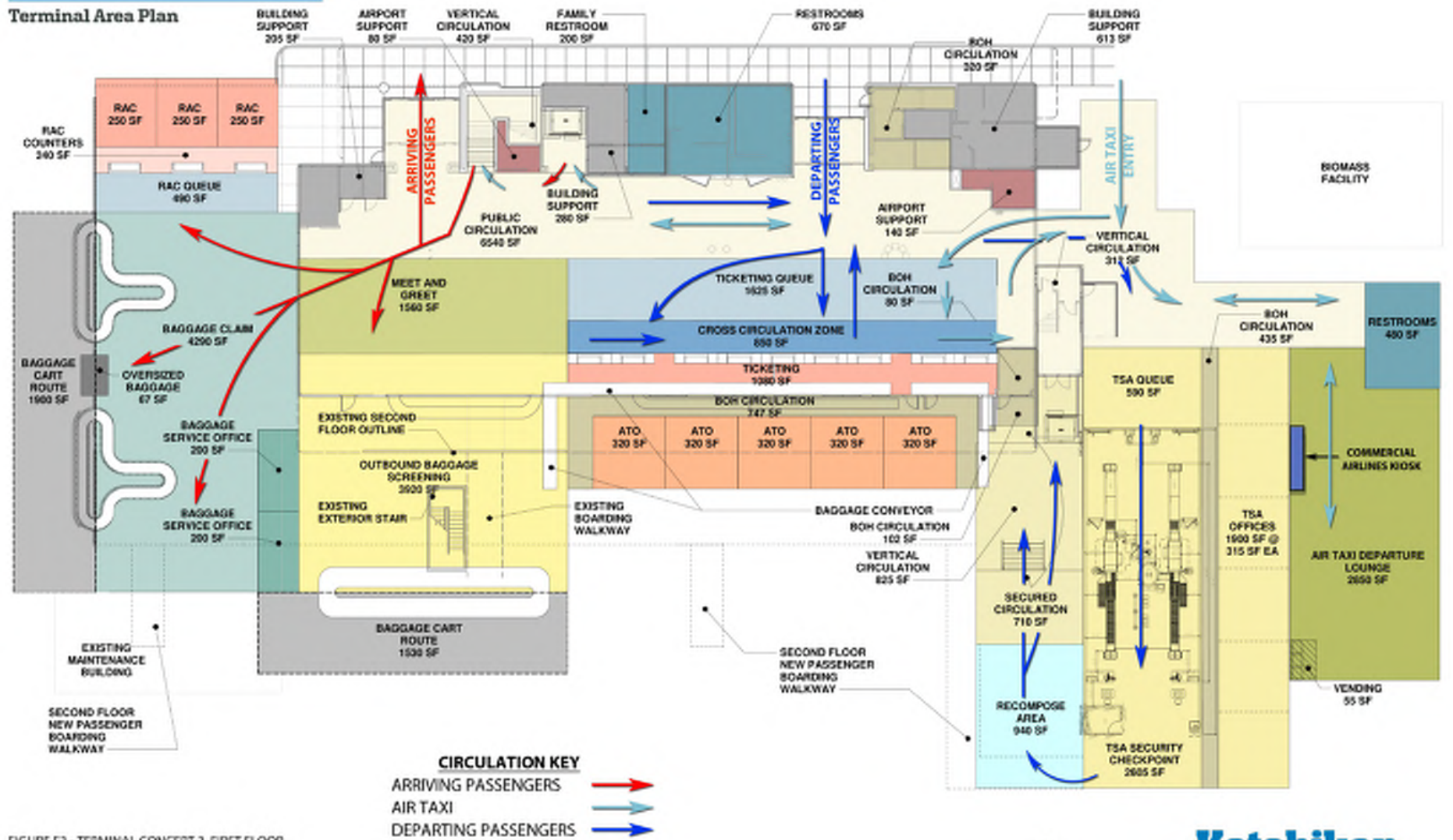
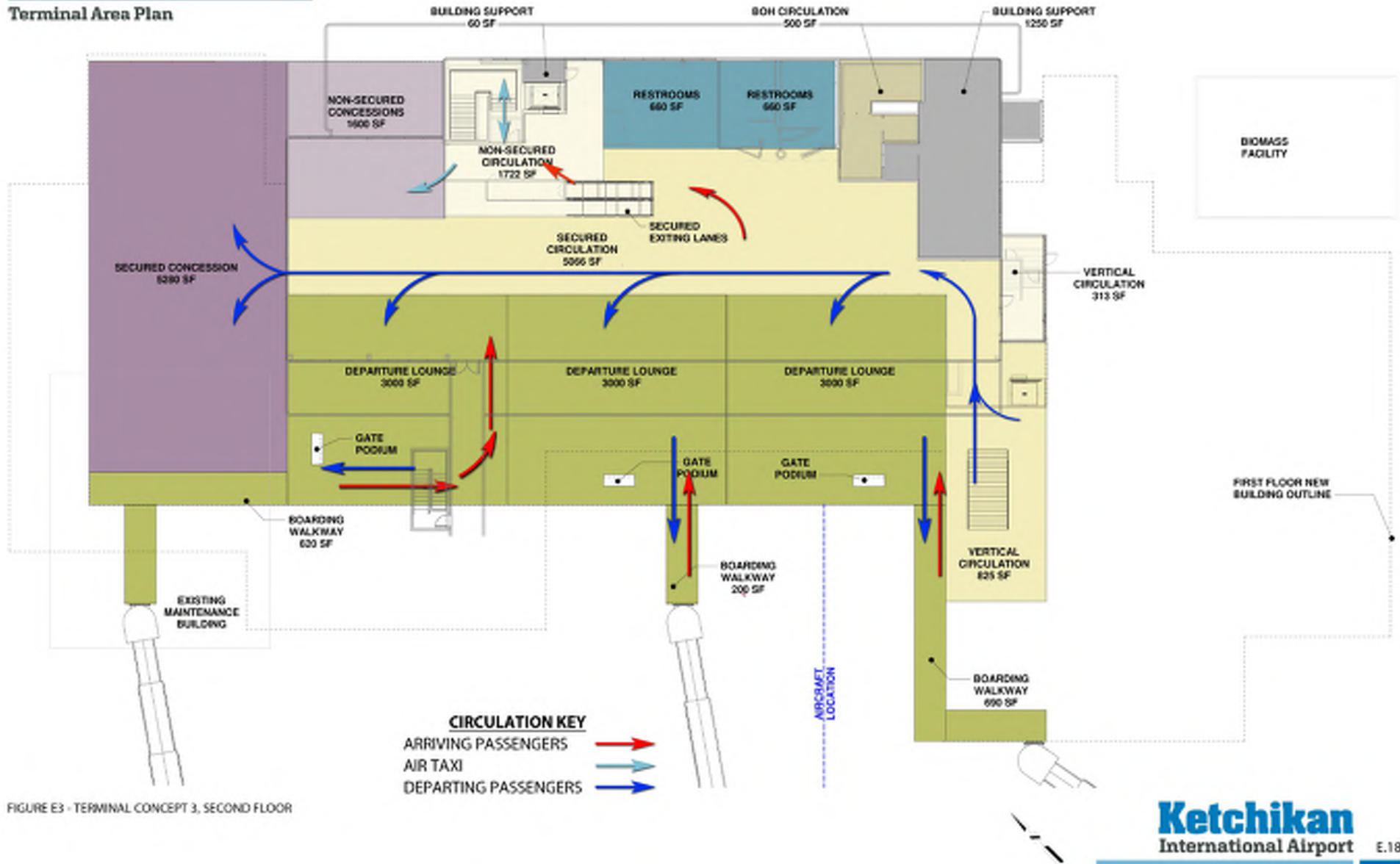
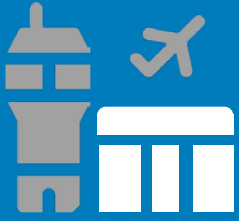


FIGURE E3 - TERMINAL CONCEPT 3, FIRST FLOOR

KTN TAP: Preferred Terminal Concept #3, 2nd Floor

Terminal Area Plan





Help shape the future of our airport!

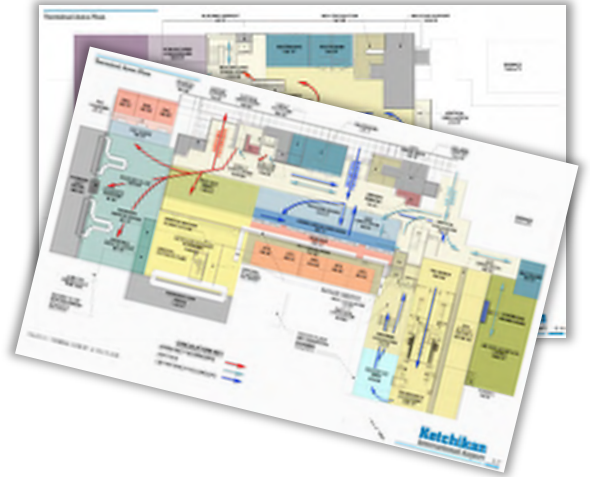
We have selected a preferred terminal concept and would like your feedback.

Project Overview

The Ketchikan Gateway Borough is developing a Terminal Area Plan (TAP). The existing terminal at the Ketchikan International Airport does not meet current or projected travel demand. The TAP will offer recommendations and a terminal concept that addresses current and projected needs and enhances the passenger experience.

We Want Your Feedback on The Preferred Concept to Guide Next Steps

We want to hear from you – residents, businesses, airport tenants, travelers and all - - - what are your thoughts on the preferred terminal concept? What do you like most? What do you like least? What other comments or questions do you have?



View the concept.

<https://tinyurl.com/ktnconcept>

**Tell us what you think.
Take this short survey.**

www.surveymonkey.com/r/ketchikanterminal



Scan these codes and go directly to the links!

Submit Your Comments by August 14th, 2020

Visit the Project Webpage to Learn More:

<https://www.borough.ketchikan.ak.us/897/Terminal-Area-Plan>

Questions, Comments, Concerns? Contact Us:

- Mike Carney, Ketchikan International Airport Manager, 907-225-6800, mikec@kqbak.us
- Ryan Hayes, Mead & Hunt Project Manager, 303-888-1904, Ryan.Hayes@meadhunt.com

Stakeholder Engagement Attachment E. June 2020 E-Newsletter

[View this email in your browser](#)



June 2020

Dear Ketchikan Community Members and Partners,

In this first e-newsletter, we are excited to share information with you about the Ketchikan International Airport Terminal Area Plan (TAP).

In This Newsletter:

- [What information is available today?](#)
- [What's next?](#)
- [Does this project consider access to and from the airport?](#)
- [How can I learn more and get involved?](#)

As many of you know, prior to the impacts of COVID-19, the existing terminal area facilities at the Ketchikan International Airport were not meeting current and projected travel needs. In anticipation of eventual increases in airport activity, the Ketchikan Gateway Borough is working to develop a Terminal Area Plan (TAP) that accommodates historical needs, anticipated growth, and enhances the passenger experience. The TAP will offer short, medium and long-term recommendations for addressing pre-COVID-19 needs and projected future demand.

Our team, led by airport planning consultant [Mead & Hunt](#) with assistance from Leibowitz & Horton (financial analysis), [Agnew::Beck](#) (stakeholder engagement) and [Jensen Yorba Wall](#) (architecture), was hired to assist the Ketchikan Gateway Borough with development of the Terminal Area Plan. Over the past six months we have worked closely with local leadership, community representatives and airport terminal users to conduct an inventory of the facility, prepare aviation demand forecasts, review facility requirements and develop preliminary alternative expansion concepts that better meet historical and projected needs.

What information is available today?

Click the links to below to learn more about:

- [Inventory of Existing Conditions](#): an inventory of existing facilities within the terminal area, including the physical layout of buildings, taxiways, lighting, roadways, seaplane base, access, and parking. The inventory includes an assessment on the condition and capacity of existing facilities.
- [Forecasts of Aviation Activity](#): estimates of future aviation and visitation demands to the Ketchikan International Airport, focused on long-term estimates for commercial passenger service.
- [Facility Requirements](#): identification of short and long-term terminal needs to meet the forecast demands of aircraft and passengers. The chapter also compares existing facilities against anticipated future demand.
- [Terminal Area Alternative Concepts](#): evaluates information gathered to date, summarizes opportunities and constraints, and proposes a series of preliminary concepts for the terminal area.

What's next?

Later this summer, we will release a proposed terminal renovation and expansion alternative concept and request YOUR FEEDBACK. The concept will include different ideas and solutions for addressing historical need and future demand at the airport.

Look for a postcard in the mail in the coming months about how you can weigh in on the proposed concept for renovating and expanding the terminal at the Ketchikan International Airport.

Does this project consider access to and from the airport?

No. The Alaska Department of Transportation and Public Facilities is overseeing a separate planning effort, the Gravina Access Project. That effort focuses on how to improve the movement of passengers and freight between the Revillagigedo Island ferry terminal north of downtown Ketchikan, and the Ketchikan Airport on Gravina Island.

To learn more about the Gravina Access Project, [click here](#).

How can I learn more and get involved?

- Provide Your Feedback – We need to hear from you. Stay tuned for the **release of the potential concept later this summer** and ways residents, businesses, organizations and other community partners can provide input on the draft.
- Visit the Project Website: [click here](#)
- Sign up for project updates, or send any other comments, questions or concerns to our team:
 - Mike Carney, Ketchikan International Airport Manager, 907-225-6800, MikeC@kgbak.us
 - Ryan Hayes, Mead & Hunt Project Manager, 303-888-1904, Ryan.Hayes@meadhunt.com



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Stakeholder Engagement Attachment F. July 2020 E-Newsletter

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July 2020

Dear Ketchikan Community Members and Partners,

The Ketchikan Gateway Borough is developing a Terminal Area Plan (TAP). The existing terminal at the Ketchikan International Airport does not meet current or projected travel demand. The TAP will offer recommendations and a terminal concept that addresses current and projected needs and enhances the passenger experience.

Today we are excited to share our second project update. We have selected a preferred concept for the terminal and would like your feedback.

In This Newsletter:

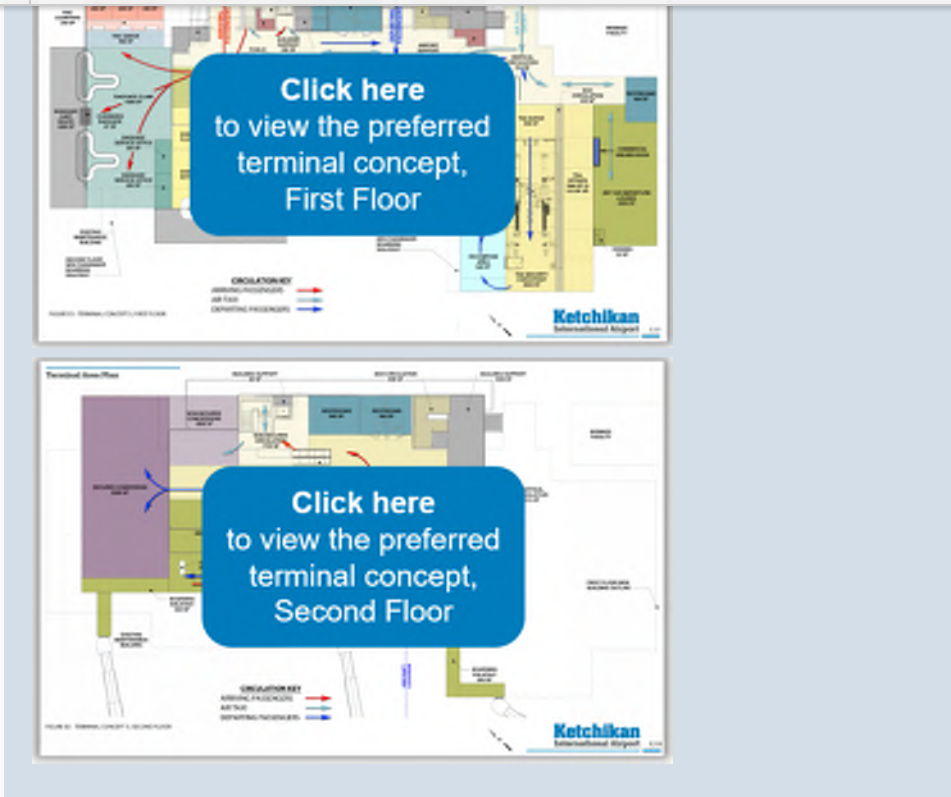
- [Learn About the Preferred Concept](#)
- [How to Share Your Feedback](#)
- [Completing the TAP: What We've Done and What's Next](#)
- [Learn More and View Completed Chapters](#)

The Preferred Terminal Concept

A key outcome of the Ketchikan Terminal Area Plan is the selection of a preferred terminal concept. The project team, led by aviation consultant Mead & Hunt, developed four alternatives offering different layout ideas and potential solutions to address the overcrowding, efficiency and safety concerns of the current terminal. The four alternative concepts were evaluated against the following broad criteria:

- Passenger Experience
- Operational Efficiency
- Sustainability and Environment
- Implementation, Phasing and Feasibility

Based on the evaluation criteria and input from the project Study Committee, Terminal Alternative Concept #3 was identified as the preferred concept for the future Ketchikan terminal.



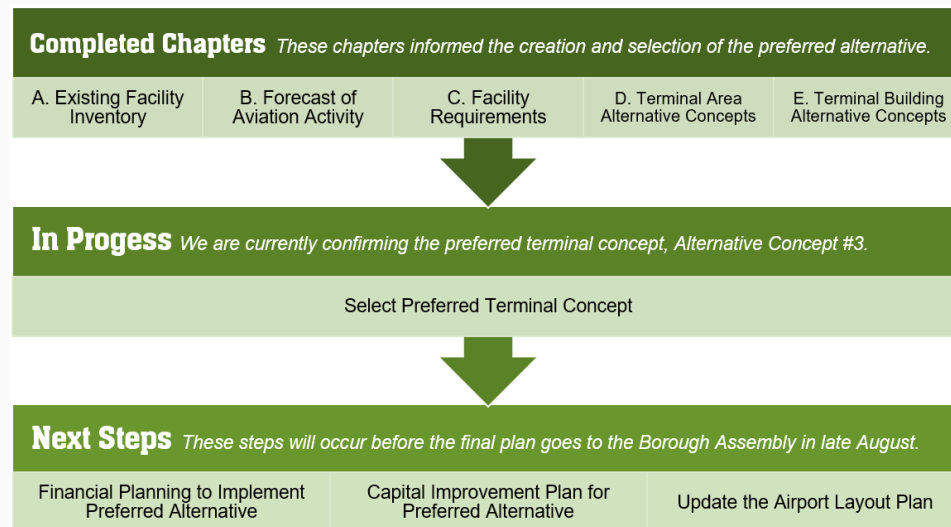
How to Share Your Feedback

We want to hear from you – residents, businesses, airport tenants, travelers and all – – – what are your thoughts on the preferred terminal concept? What do you like most? What do you like least? What other comments or questions do you have about Concept #3? Your input will help inform the final steps in the TAP process (see *Completing the TAP* for more details).

1. Respond to our short, 5-minute survey: www.surveymonkey.com/r/ketchikanterminal
2. Email or call us with your questions, comments and concerns. See below for contact information.

Submit your comments by August 14, 2020.

Completing the TAP: What We've Done and What's Next



Learn More and View Completed Chapters

- Visit the Project Webpage: [click here](#)

- Mike Carney, Ketchikan International Airport Manager, 907-225-6800, MikeC@kgbak.us
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Stakeholder Engagement Attachment G. August 2020 E-Newsletter

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August 2020

Dear Ketchikan Community Members and Partners,

We have extended the public comment deadline for the Ketchikan International Airport Terminal Area Plan.

Review the preferred terminal concept and share your feedback by Monday, August 31, 2020.

In This Newsletter:

- [Learn About the Preferred Concept](#)
- [How to Share Your Feedback](#)
- [Completing the TAP: What We've Done and What's Next](#)
- [Learn More and View Completed Chapters](#)

Want to listen and learn more about the project? Check out this local media coverage!

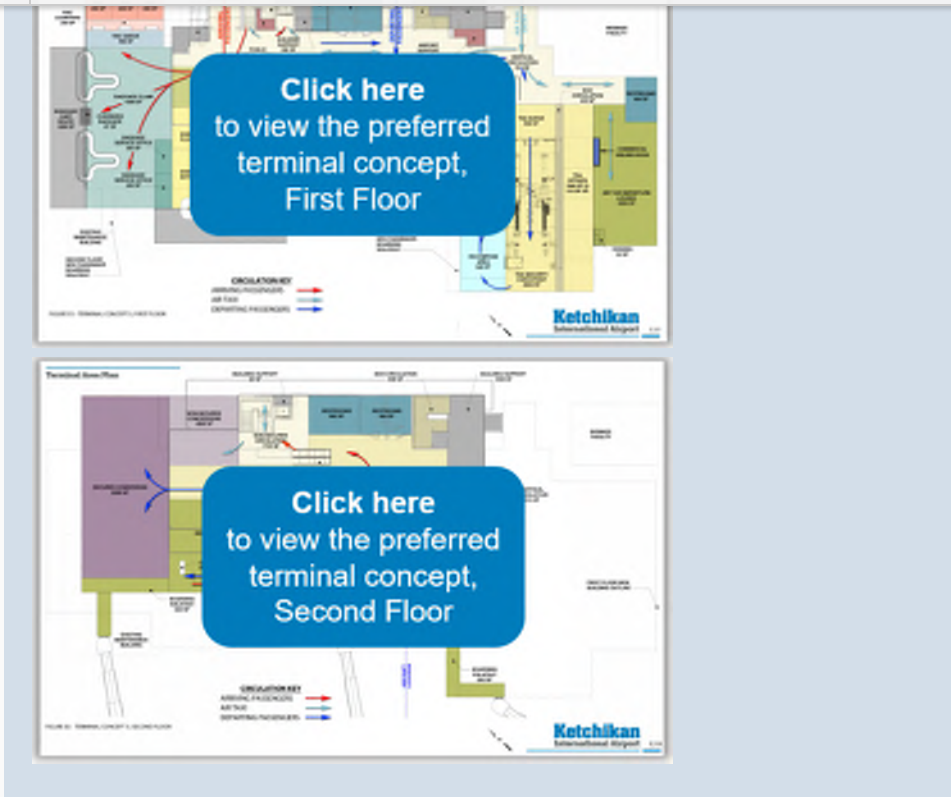
- Ketchikan Daily News: "[BORO seeks comment on airport project](#)"
- KRBD Radio: "[Ketchikan International Airport seeks community input on new terminal plan](#)"
- Ketchikan Radio Center: "[First City Forum Airport Terminal Plan Discussion](#)"

The Preferred Terminal Concept

A key outcome of the Ketchikan Terminal Area Plan is the selection of a preferred terminal concept. The project team, led by aviation consultant Mead & Hunt, developed four alternatives offering different layout ideas and potential solutions to address the overcrowding, efficiency and safety concerns of the current terminal. The four alternative concepts were evaluated against the following broad criteria:

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- Implementation, Phasing and Feasibility

Based on the evaluation criteria and input from the project Study Committee, Terminal Alternative Concept #3 was identified as the preferred concept for the future Ketchikan terminal.



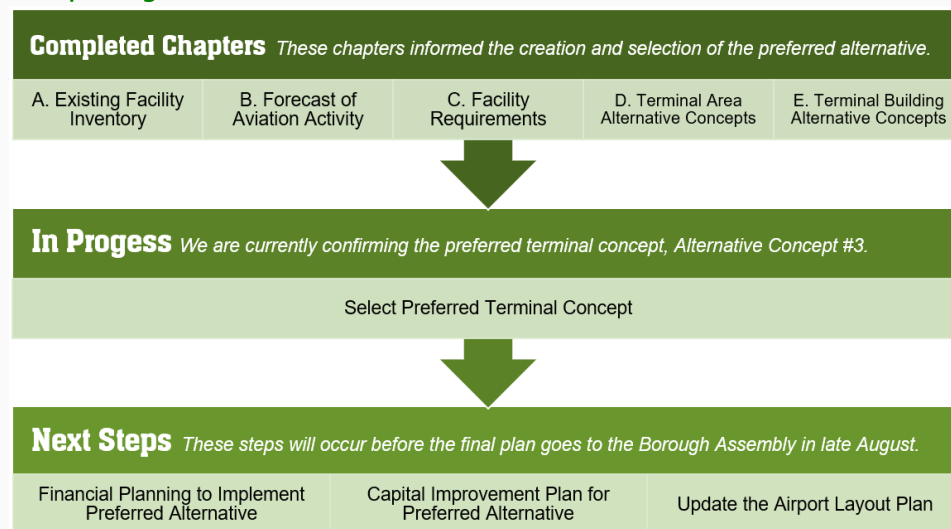
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1. Respond to our short, 5-minute survey: www.surveymonkey.com/r/ketchikanterminal
2. Email or call us with your questions, comments and concerns. See below for contact information.

Deadline extended! Submit your comments by August 31, 2020.

Completing the TAP: What We've Done and What's Next



Learn More and View Completed Chapters

- Visit the Project Webpage: [click here](#)

- Mike Carney, Ketchikan International Airport Manager, 907-225-6800, MikeC@kgbak.us
- Ryan Hayes, Mead & Hunt Project Manager, 303-888-1904, Ryan.Hayes@meadhunt.com



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Ketchikan International Airport

Terminal Area Plan



Help shape the future of our airport!

We have selected a preferred terminal concept and would like your feedback.

Scan these codes and go directly to the links!

View the concept.

<https://tinyurl.com/ktnconcept>



**Tell us what you think.
Take this short survey.**

www.surveymonkey.com/r/ketchikanterminal



Submit Your Comments by August 14th, 2020

Ketchikan International Airport Terminal Area Plan

About the Project

- The Ketchikan Gateway Borough is developing a Terminal Area Plan (TAP) for the Ketchikan International Airport.
- The existing terminal does not meet current or projected travel demand.
- The TAP will offer recommendations and a concept that addresses current and projected needs, and enhances the passenger experience.

Visit the project
webpage for more
information:

<https://www.borough.ketchikan.ak.us/897/Terminal-Area-Plan>

Questions, Comments? Contact Us!

Mike Carney

Ketchikan International Airport Manager

phone: 907-225-6800

email: mikec@kgbak.us

Ryan Hayes

Mead & Hunt Project Manager

phone: 303-888-1904

email: Ryan.Hayes@meadhunt.com

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Occupant**

Stakeholder Engagement Attachment I. Blank Community Survey



Share Your Feedback on the Future of the Ketchikan Terminal

The Ketchikan Gateway Borough is developing a Terminal Area Plan (TAP). The existing terminal at the Ketchikan International Airport does not meet current or projected travel demand. The TAP will offer recommendations and a terminal concept that addresses current and projected needs and enhances the passenger experience.

We have selected a preferred concept for the terminal and would like your feedback.

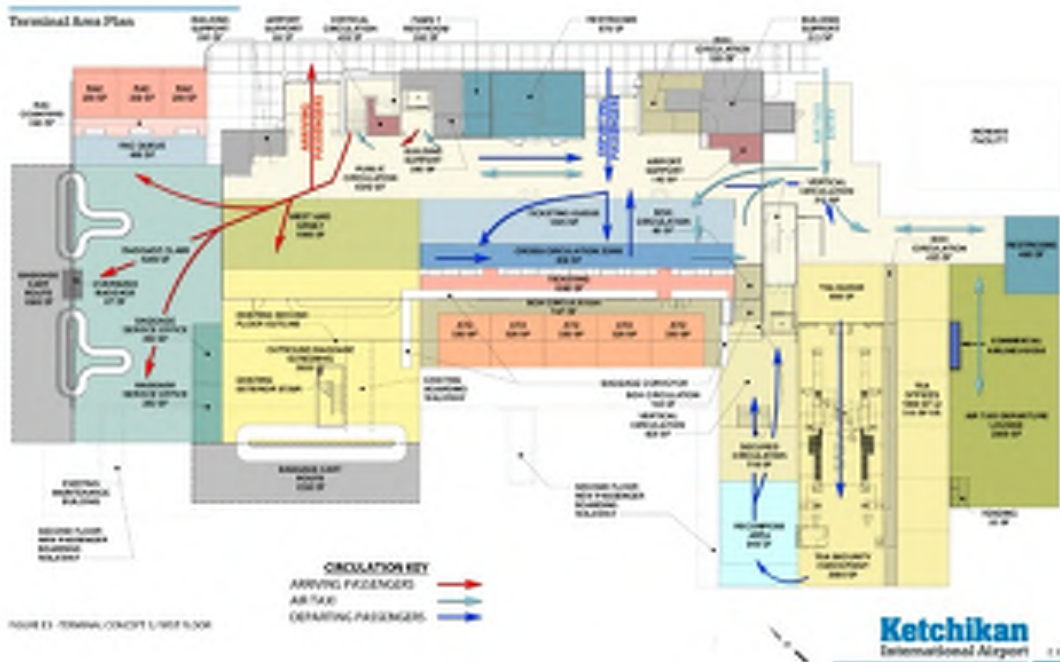
What do you like about the concept?

What are your concerns?

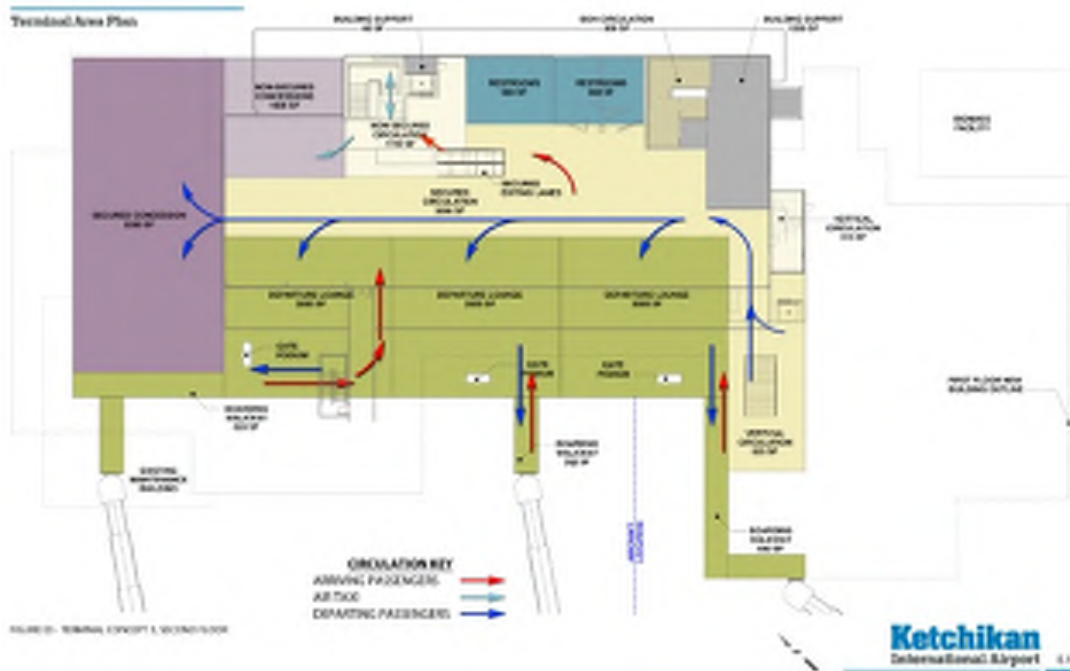
To learn more about the preferred terminal concept and how it was selected, [click here](#).

This survey will take approximately 5 minutes. It will close on August 31, 2020.

Preferred Terminal Concept, First Floor ([click here](#) to view larger in a new window)



Preferred Terminal Concept, Second Floor ([click here](#) to view larger in a new window)



1. Please indicate your level of support for the preferred concept (First and Second Floor) for the Ketchikan Airport Terminal.

- Strongly support
- Support
- Neither support or oppose
- Oppose
- Strongly oppose

2. What do you **like most** about the preferred terminal concept and why?

3. What do you **like least** about the preferred concept any why?

4. What other comments or questions do you have about the preferred concept?

Thank you for your responses!

For more detailed information visit the project website:

<https://www.borough.ketchikan.ak.us/897/Terminal-Area-Plan>

For additional questions, comments or concerns, please contact our project team:

- **Mike Carney**, Ketchikan International Airport Manager; phone: 907-225-6800, email: mikec@kgbak.us
- **Ryan Hayes**, Mead & Hunt Project Manager; phone: 303-888-1904, email: Ryan.Hayes@meadhunt.com


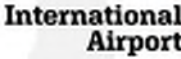


1

Overview

- Open July 14th through August 31, 2020
- Advertised via:
 - Postcard mailed to all Ketchikan addresses & PO boxes, both residential and commercial (approx. 7,200)
 - Two e-newsletters sent to project distribution list (120 subscribers)
 - Posters at the airport
 - Local media
- Received 76 survey responses

In addition to the survey, the project team received two sets of individual comments via email

2

Local Media Coverage

For the survey and overall project:

- Ketchikan Daily News: "[BORO seeks comment on airport project](#)"
- KRBD Radio: "[Ketchikan International Airport seeks community input on new terminal plan](#)"
- KTKN First City Forum: "[Airport Terminal Plan Discussion](#)"

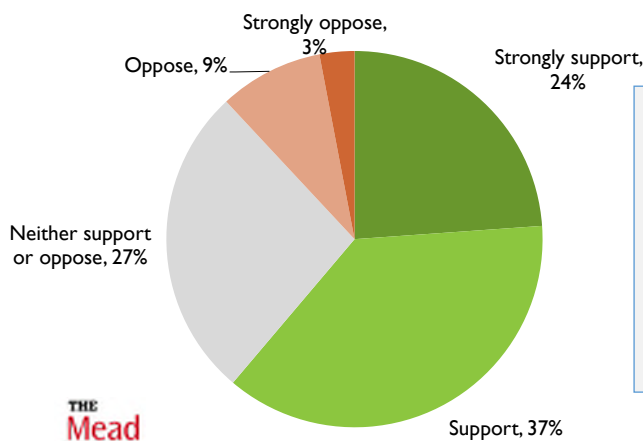


International Airport

Ketchikan

3

Level of Support for Preferred Concept



Overall:

61% Support or Strongly Support

27% Neither Support or Oppose

12% Oppose or Strongly Oppose



International Airport

Ketchikan

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What Respondents **Like** About the Concept

Top 5 Themes:

- **Passenger flow:** better layout (separation of departing and arriving passengers), more efficient, more room
- **Security improvements:** TSA expansion, screening on 1st floor
- **Baggage handling:** larger area, better access
- **Gates:** additional boarding gate, covered jetways
- **Concessions:** additional space



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What Respondents **Dislike** About the Concept

Top 5 Themes:

- **Lobby:** area too small/narrow
- **Cost:** concerns about cost of construction and lack of demonstrated need
- **Concessions:** no concessions pre-security
- **Security:** concerns with location of the queue line
- **View:** fewer scenic views from public areas



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Questions About the Project

- **Need:** Why is this project necessary? With declining visitation due to COVID-19, will there still be a need for these changes?
- **Cost:** Where will the funds come from? Will Ketchikan residents have to pay for it?
- **Comparison:** What does the before and after comparison of the footprint look like? How much space and what amenities are being added?
- **Phasing:** What is the anticipated timeline for construction and what closures would need to happen?



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Other Recommendations (*=mentioned more than once)

Interior

- Add an elevator*
- Create space to display the historic Goose aircraft
- Work with the Ketchikan Visitor's Bureau to accommodate visitor service needs
- Consider bigger bathrooms
- Add a space for breastfeeding moms
- Address lack of air taxi waiting area
- Add a breakroom for tenants
- Add vending machines
- Ensure sufficient seating
- Support a dedicated TSA precheck security line
- Consider accessibility throughout the design



Exterior

- Continue to address issues with ferry service; add bus connecting city parking to terminal*
- Establish a clear, covered passenger drop off/pick up site*
- Increase parking

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How Will This Information be Used?

- The project team will review and consider the community input on likes, dislikes and concept recommendations.
- Many survey recommendations focused on detailed design elements that are not being considered at the conceptual level of the current plan.
 - These suggestions will be helpful for the architect that is ultimately selected to design the terminal.

THE
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& Hunt
TEAM

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Terminal Area Plan : Appendix 3, Financial Implementation Plan Update

Appendix 3 – Updated Financial Implementation Analysis

Chapter G of the Terminal Area Plan presented the Capital Improvement Program (CIP) and the Financial Implementation Analysis, which established a funding strategy for airport improvements by maximizing the potential to receive federal and state matching funds and provided a financially prudent plan for improvement funding at the local level. That plan was completed in late 2020 based on the information available at the time.

Since the completion of **Chapter G**, the Borough prepared and submitted a package to the State of Alaska Department of Transportation and Public Facilities (DOT&PF) to request funding support for Phase A of the Terminal Building Expansion Project as well as a project to convert the Commercial Apron from Asphalt to Concrete. This project was nominated by the DOT&PF's Division of Program Development for evaluation and inclusion in the State's Spending Plan at the April 13, 2021 meeting of the Aviation Project Evaluation Board (APEB). The project nomination requested \$8.5 million in AIP funding for AIP eligible work in a larger project to improve the airport terminal owned by the Ketchikan Gateway Borough. Based on this evaluation, the project funding was included in the DOT&PF's Federal Fiscal Year (FFY) 2024 AIP Expected Spending Plan. It was also included as an FFY 2023 AIP Contingency project, for consideration in the event that currently unexpected funding becomes available in FFY 2023.

The original implementation plan assumed the project would be designed in 2021 with construction taking place in 2022 and 2023. Based on the funding programmed by the State, the updated implementation analysis now reflects project design being undertaken in 2022 with construction in 2023 and 2024. This change in implementation schedule results in slightly higher estimated costs based on the impact of inflation. Additionally, the assumptions related to the PFC serviced debt funding were also updated based on preferences of the Borough.

Table Appendix 3-1 presented below provides a summary of the updated funding sources for Phase A of the Terminal Expansion Project as well as the Convert Commercial Apron from Asphalt to Concrete project, as reflected in **Appendix 3 – Schedule 3b** provided at the end of **Appendix 3**.

Terminal Area Plan : Appendix 3 — Updated Financial Implementation Analysis

TABLE Appendix 3-1: Summary of Projected Capital Funding Sources – Terminal Building Expansion Phase A and Convert Commercial Apron from Asphalt to Concrete Projects

Funding Sources	Funding Year			
	2022 Design	2023 Construct 50%	2024 Construct 50%	Totals
Total Capital Funding Uses	\$1,678,563	\$11,522,343	\$10,862,806	\$24,063,713
Pass Thru Federal Funding	\$0	\$8,514,933	\$0	\$8,514,933
PFC Pay-as-you-go	0	350,000	0	350,000
PFC Debt Proceeds	0	2,596,414	5,403,586	8,000,000
Airport Cash Reserves	1,678,563	0	5,459,220	7,137,784
State Funding	0	60,996	0	60,996
Total Capital Funding Sources	\$1,678,563	\$11,522,343	\$10,862,806	\$24,063,713

The assumptions and results of the financial implementation analysis described in the Financial Implementation Summary provided at the end of **Chapter G** remain unchanged with a financially feasible funding plan based on this updated information and analysis. A complete set of the updated financial analysis schedules are provided at the end of this **Appendix 3**.

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

KTN - TAS - 2021 - 8 (Appendix 3)

Appendix 3 - Schedule 1a

**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Estimated Project Costs and Development Schedule
Estimated Terminal Building Costs
Phase A - Short-Term (2021 - 2023)**

21-Jun-21

Terminal Building Components	Terminal Space (Sq Ft) (4)						Estimated Capital Costs				Funding Eligibility		
	Phase A		New	Light Rehab	Heavy Rehab	Total	Design Costs (2)	Hard Costs (1)	Soft Costs (3)	Total Costs	AIP/PFC	PFC Only	Ineligible
	1st Floor	2nd Floor											
Passenger and Baggage Screening/Security													
Passenger Screening	2,600		2,600			2,600	\$218,400	\$2,184,000	\$480,480	\$2,882,880	\$2,882,880		
Passenger Screening Queuing	590		590			590	49,560	495,600	109,032	654,192	654,192		
Passenger Recomposure Area	940		940			940	78,960	789,600	173,712	1,042,272	1,042,272		
TSA Office/Break/Training Area	1,900		1,900			1,900	159,600	1,596,000	351,120	2,106,720			2,106,720
Total Pax and Bag Screening/Security	6,030	0	6,030	0	0	6,030	\$506,520	\$5,065,200	\$1,114,344	\$6,686,064	\$4,579,344	\$0	\$2,106,720
Departure Areas													
Departure Lounge/Holdroom	2,850	430	3,280			3,280	\$275,520	\$2,755,200	\$606,144	\$3,636,864	\$3,636,864		
Boarding Walkway		690	690			690	57,960	579,600	127,512	765,072	765,072		
Total Departure Areas	2,850	1,120	3,970	0	0	3,970	\$333,480	\$3,334,800	\$733,656	\$4,401,936	\$4,401,936	\$0	\$0
Concessions													
Vending	55		55			55	4,620	46,200	10,164	60,984	60,984		
Total Concessions	55	0	55	0	0	55	\$4,620	\$46,200	\$10,164	\$60,984	\$60,984	\$0	\$0
Other Public Areas													
Vertical Circulation	825	1,138	1,963			1,963	\$164,892	\$1,648,920	\$362,762	\$2,176,574	\$2,176,574		
Public Circulation	3,210	415	3,625			3,625	304,500	3,045,000	669,900	4,019,400	4,019,400		
Public Restrooms	480		480			480	40,320	403,200	88,704	532,224	532,224		
Total Other Public Areas	4,515	1,553	6,068	0	0	6,068	\$509,712	\$5,097,120	\$1,121,366	\$6,728,198	\$6,728,198	\$0	\$0
Support Areas													
Non-Public Circulation	500		500			500	42,000	420,000	92,400	554,400			554,400
Total Support Areas	500	0	500	0	0	500	\$42,000	\$420,000	\$92,400	\$554,400	\$0	\$0	\$554,400
Site Costs													
Demolition/Phasing							\$7,875	\$78,750	\$17,325	\$103,950	\$103,950		
Landside Site Costs							25,000	250,000	55,000	330,000	330,000		
Airside Site Costs							25,000	250,000	55,000	330,000	330,000		
Total Site Costs							\$57,875	\$578,750	\$127,325	\$763,950	\$763,950	\$0	\$0
Terminal Equipment													
Passenger Boarding Bridges							\$120,000	\$1,200,000	\$264,000	\$1,584,000	\$1,584,000		
Elevators							8,000	80,000	17,600	105,600	\$105,600		
Total Terminal Equipment							\$128,000	\$1,280,000	\$281,600	\$1,689,600	\$1,689,600	\$0	\$0
Total Terminal Building Costs	13,950	2,673	16,623	0	0	16,623	\$ 1,582,207	\$ 15,822,070	\$ 3,480,855	\$ 20,885,132	\$ 18,224,012	\$ -	\$ 2,661,120
Total Cost/Sq Ft (including site & equip) =						\$1,256.40	7.6%	75.8%	16.7%	100.0%	87.3%	0.0%	12.7%
Total Cost/Sq Ft (without site & equip) =						\$1,108.80							

Notes:

- (1) Hard Costs include construction costs plus a design contingency (5%)
- (2) Design Cost estimate is 10% of hard costs
- (3) Soft Costs include pre-construction costs, construction administration, and construction contingencies (22%)
- (4) Construction estimate is based on \$800 per square foot for new construction, \$400 per square foot for heavy rehabilitation and \$200 per square foot for light rehabilitation.

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

KTN - TAS - 2021 - 8 (Appendix 3)

Appendix 3 - Schedule 1b

**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Estimated Project Costs and Development Schedule
Estimated Terminal Building Costs
Phase B - Mid-Term (2026 - 2030)**

21-Jun-21

Terminal Building Components	Terminal Space (Sq Ft) (4)					Estimated Capital Costs				Funding Eligibility			
	Phase B		New	Light Rehab	Heavy Rehab	Total	Design Costs (2)	Hard Costs (1)	Soft Costs (3)	Total Costs	AIP/PFC	PFC Only	Ineligible
	1st Floor	2nd Floor											
Departure Areas													
Boarding Walkway		620	620			620	\$52,080	\$520,800	\$114,576	\$687,456	\$687,456		
Total Departure Areas	0	620	620	0	0	620	\$52,080	\$520,800	\$114,576	\$687,456	\$687,456	\$0	\$0
Concessions													
RAC Counter/Offices	990		990			990	\$83,160	\$831,600	\$182,952	\$1,097,712			\$1,097,712
RAC Queuing	490		490			490	41,160	411,600	90,552	543,312	543,312		
Concessions		1,500	1,500			1,500	126,000	1,260,000	277,200	1,663,200			1,663,200
Concessions - Public Areas		4,500	4,500			4,500	378,000	3,780,000	831,600	4,989,600	4,989,600		
Total Concessions	1,480	6,000	7,480	0	0	7,480	\$628,320	\$6,283,200	\$1,382,304	\$8,293,824	\$5,532,912	\$0	\$2,760,912
Baggage Claim													
Baggage Claim Area	4,360		4,360			4,360	\$366,240	\$3,662,400	\$805,728	\$4,834,368	\$4,834,368		
Baggage Service Offices	400		400			400	33,600	336,000	73,920	443,520			443,520
Inbound Baggage Handling	1,900		1,900			1,900	159,600	1,596,000	351,120	2,106,720		2,106,720	
Total Baggage Claim	6,660	0	6,660	0	0	6,660	\$559,440	\$5,594,400	\$1,230,768	\$7,384,608	\$4,834,368	\$2,106,720	\$443,520
Site Costs													
Demolition/Phasing							\$7,875	\$78,750	\$17,325	\$103,950	\$103,950		
Landside Site Costs							25,000	250,000	55,000	330,000	330,000		
Airside Site Costs							25,000	250,000	55,000	330,000	330,000		
Total Site Costs							\$57,875	\$578,750	\$127,325	\$763,950	\$763,950	\$0	\$0
Terminal Equipment													
Passenger Boarding Bridges							\$120,000	\$1,200,000	\$264,000	\$1,584,000	\$1,584,000		
Baggage Handling Systems							37,200	372,000	81,840	491,040		491,040	
Total Terminal Equipment							\$157,200	\$1,572,000	\$345,840	\$2,075,040	\$1,584,000	\$491,040	\$0
Total Terminal Building Costs	8,140	6,620	14,760	0	0	14,760	\$ 1,454,915	\$ 14,549,150	\$ 3,200,813	\$ 19,204,878	\$ 13,402,686	\$ 2,597,760	\$ 3,204,432
Total Cost/Sq Ft (including site & equip) =						\$1,301.14	7.6%	75.8%	16.7%	100.0%	69.8%	13.5%	16.7%
Total Cost/Sq Ft (without site & equip) =						\$1,108.80							

Notes:

- (1) Hard Costs include construction costs plus a design contingency (5%)
- (2) Design Cost estimate is 10% of hard costs
- (3) Soft Costs include pre-construction costs, construction administration, and construction contingencies (22%)
- (4) Construction estimate is based on \$800 per square foot for new construction, \$400 per square foot for heavy rehabilitation and \$200 per square foot for light rehabilitation.

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

KTN - TAS - 2021 - 8 (Appendix 3)

Appendix 3 - Schedule 1c

**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Estimated Project Costs and Development Schedule
Estimated Terminal Building Costs
Phase C - Long-Term (2031 - 2040)**

21-Jun-21

Terminal Building Components	Terminal Space (Sq Ft)					Estimated Capital Costs				Funding Eligibility			
	Phase C		New	Light Rehab	Heavy Rehab	Total	Design Costs (2)	Hard Costs (1)	Soft Costs (3)	Total Costs	AIP/PFC	PFC Only	Ineligible
	1st Floor	2nd Floor											
Airline Ticketing/Check-In													
Airline ATO	1,600		1,600			1,600	\$134,400	\$1,344,000	\$295,680	\$1,774,080			\$1,774,080
Ticketing	1,057				1,057	1,057	44,394	443,940	97,667	586,001			586,001
Ticketing Queuing	1,625			1,625		1,625	34,125	341,250	75,075	450,450	450,450		
Baggage Make-Up	1,530		1,530			1,530	128,520	1,285,200	282,744	1,696,464		1,696,464	
Baggage Handling Conveying System	1,070		570	500		1,070	58,380	583,800	128,436	770,616		770,616	
Total Airline Ticketing/Check-In	6,882	0	3,700	2,125	1,057	6,882	\$399,819	\$3,998,190	\$879,602	\$5,277,611	\$450,450	\$2,467,080	\$2,360,081
Passenger and Baggage Screening/Security													
TSA Baggage Screening Area	3,920		2,660	1,260		3,920	249,900	2,499,000	549,780	3,298,680		3,298,680	
Customs	100			100		100	2,100	21,000	4,620	27,720	27,720		
Total Pax and Bag Screening/Security	4,020	0	2,660	1,360	0	4,020	\$252,000	\$2,520,000	\$554,400	\$3,326,400	\$27,720	\$3,298,680	\$0
Departure Areas													
Departure Lounge/Holdroom		8,585	5,723	2,862		8,585	\$540,834	\$5,408,340	\$1,189,835	\$7,139,009	\$7,139,009		
Boarding Walkway		200	200			200	16,800	168,000	36,960	221,760	221,760		
Total Departure Areas	0	8,785	5,923	2,862	0	8,785	\$557,634	\$5,576,340	\$1,226,795	\$7,360,769	\$7,360,769	\$0	\$0
Other Public Areas													
Vertical Circulation	420	66		486		486	\$10,206	\$102,060	\$22,453	\$134,719	\$134,719		
Public Circulation	6,970	6,300		13,270		13,270	278,670	2,786,700	613,074	3,678,444	3,678,444		
Public Restrooms	870	1,320			2,190	2,190	91,980	919,800	202,356	1,214,136	1,214,136		
Total Other Public Areas	8,260	7,686	0	13,756	2,190	15,946	\$380,856	\$3,808,560	\$837,883	\$5,027,299	\$5,027,299	\$0	\$0
Support Areas													
Mechanical & Electrical (5)	280			280		280	\$5,880	\$58,800	\$12,936	\$77,616	\$57,436	\$9,314	\$10,866
Non-Public Circulation	1,150	400	750	800		1,550	79,800	798,000	175,560	1,053,360			1,053,360
Airport Support	80			80		80	1,680	16,800	3,696	22,176			22,176
Total Support Areas	1,510	400	750	1,160	0	1,910	\$87,360	\$873,600	\$192,192	\$1,153,152	\$57,436	\$9,314	\$1,086,402
Site Costs													
Demolition/Phasing							\$7,875	\$78,750	\$17,325	\$103,950	\$103,950		
Landside Site Costs							25,000	250,000	55,000	330,000	330,000		
Airside Site Costs							25,000	250,000	55,000	330,000	330,000		
Total Site Costs							\$57,875	\$578,750	\$127,325	\$763,950	\$763,950	\$0	\$0
Terminal Equipment													
Passenger Boarding Bridges							\$120,000	\$1,200,000	\$264,000	\$1,584,000	\$1,584,000		
Baggage Handling Systems							57,800	578,000	127,160	762,960		\$762,960	
Total Terminal Equipment							\$177,800	\$1,778,000	\$391,160	\$2,346,960	\$1,584,000	\$762,960	\$0
Total Terminal Building Costs	20,672	16,871	13,033	21,263	3,247	37,543	1,913,344	19,133,440	4,209,357	25,256,141	15,271,624	6,538,034	3,446,483
Total Cost/Sq Ft (including site & equip) =						\$672.73	7.6%	75.8%	16.7%	100.0%	60.5%	25.9%	13.6%
Total Cost/Sq Ft (without site & equip) =						\$589.86							

Notes:

- (1) Hard Costs include construction costs plus a design contingency (5%)
- (2) Design Cost estimate is 10% of hard costs
- (3) Soft Costs include pre-construction costs, construction administration, and construction contingencies (22%)
- (4) Construction estimate is based on \$800 per square foot for new construction, \$400 per square foot for heavy rehabilitation and \$200 per square foot for light rehabilitation.
- (5) Mechanical & Electrical spaces have been prorated between eligible and ineligible costs based on the ratio of eligible to ineligible square footage of the entire terminal after completion of all three Phases of expansion/rehabilitation (in accordance with AIP Handbook 5100.38D, Change 1).

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

KTN - TAS - 2021 - 8 (Appendix 3)

Appendix 3 - Schedule 2

**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Estimated Project Costs and Development Schedule**

21-Jun-21

Capital Improvement Program	Funding Schedule									
	Short-Term						Mid-Term	Long-Term	Total	
	2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding	
Funds Used for Capital Improvement Projects										
Alaska DOT&PF - Pass Through Federal Funding:										
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245	
AIP - Building Site Parcel	0	0	7,600,000	0	0	7,600,000	0	0	7,600,000	
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816	
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583	
PFC beginning year unliquidated balance	657,966	635,181	126,410	215,566	316,636	657,966	432,993	1,181,178	657,966	
PFC unspent current year + carryover	(635,181)	(126,410)	(215,566)	(316,636)	(432,993)	(432,993)	(1,181,178)	(2,577,958)	(2,577,958)	
PFC Debt Proceeds (30 yrs, 2.0%) Thru 2052	0	0	8,000,000	0	0	8,000,000	0	0	8,000,000	
Less PFC Funded Principal Payments	0	0	(208,480)	(212,650)	(216,903)	(638,032)	(1,151,345)	(2,674,661)	(4,464,039)	
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162	
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0	5,423,367	
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677	
Net Operating Cash Flow	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911	
Funds Available Current Year	978,721	918,348	16,977,721	878,506	601,953	20,355,249	47,724,935	61,772,546	129,852,730	
Beginning Cash Balance/Funds Carried Over from Prior Year	6,408,958	7,088,324	5,797,659	11,003,884	516,948	6,408,958	958,171	4,299,644	6,408,958	
Funds Used Current Year	(299,355)	(2,209,013)	(11,771,495)	(11,365,442)	(160,730)	(25,806,036)	(44,383,463)	(50,021,527)	(120,211,025)	
Funds Carried Over to Next Year	\$7,088,324	\$5,797,659	\$11,003,884	\$516,948	\$958,171	\$958,171	\$4,299,644	\$16,050,663	\$16,050,663	
	Average Debt Service Coverage >>>		1.85	2.26x	2.48x		3.17x			
Estimated Project Costs and Development Schedule										
Capital Project Description	2020 Base Year Costs	Short-Term					Mid-Term	Long-Term	Total	
		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Escalated Costs
Short-Term Projects (2021-2025)										
Terminal Building Components - Phase A			Phase A							
			Design	Construct (50%)	Construct (50%)					
Passenger and Baggage Security/Screening:										
Passenger Screening	\$2,882,880		\$231,701	\$1,455,775	\$1,499,448	\$3,186,923			\$3,186,923	
Passenger Screening Queuing	654,192		52,578	330,349	340,259	723,186			723,186	
Passenger Recomposure Area	1,042,272		83,769	526,319	542,108	1,152,195			1,152,195	
TSA Office/Break/Training Area	2,106,720		169,320	1,063,835	1,095,750	2,328,905			2,328,905	
Departure Areas:										
Departure Lounge/Holdroom	3,636,864		292,299	1,836,516	1,891,611	4,020,426			4,020,426	
Boarding Walkway	765,072		61,490	386,340	397,930	845,760			845,760	
Concessions:										
Vending	60,984		4,901	30,795	31,719	67,416			67,416	
Other Public Areas:										
Vertical Circulation	2,176,574		174,934	1,099,110	1,132,083	2,406,127			2,406,127	
Public Circulation	4,019,400		323,044	2,029,686	2,090,576	4,443,306			4,443,306	
Public Restrooms	532,224		42,775	268,758	276,821	588,355			588,355	
Support Areas:										
Non-Public Circulation	554,400		44,558	279,957	288,355	612,870			612,870	
Site Costs:										
Demolition/Phasing	103,950		8,355	52,492	54,067	114,913			114,913	
Landside Site Costs	330,000		26,523	166,641	171,640	364,803			364,803	
Airside Site Costs	330,000		26,523	166,641	171,640	364,803			364,803	
Terminal Equipment:										
Passenger Boarding Bridges	1,584,000		127,308	799,876	823,872	1,751,057			1,751,057	
Elevators	105,600		8,487	53,325	54,925	116,737			116,737	
Subtotal - Terminal Building Components - Phase A	\$20,885,132	\$0	\$1,678,563	\$10,546,414	\$10,862,806	\$0	\$23,087,784	\$0	\$0	\$23,087,784

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**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Estimated Project Costs and Development Schedule**

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Capital Improvement Program	Funding Schedule									
	Short-Term						Mid-Term	Long-Term	Total	
	2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding	
Funds Used for Capital Improvement Projects										
Alaska DOT&PF - Pass Through Federal Funding:										
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245	
AIP - Building Site Parcel	0	0	7,600,000	0	0	7,600,000	0	0	7,600,000	
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816	
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583	
PFC beginning year unliquidated balance	657,966	635,181	126,410	215,566	316,636	657,966	432,993	1,181,178	657,966	
PFC unspent current year + carryover	(635,181)	(126,410)	(215,566)	(316,636)	(432,993)	(432,993)	(1,181,178)	(2,577,958)	(2,577,958)	
PFC Debt Proceeds (30 yrs, 2.0%) Thru 2052	0	0	8,000,000	0	0	8,000,000	0	0	8,000,000	
Less PFC Funded Principal Payments	0	0	(208,480)	(212,650)	(216,903)	(638,032)	(1,151,345)	(2,674,661)	(4,464,039)	
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162	
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0	5,423,367	
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677	
Net Operating Cash Flow	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911	
Funds Available Current Year	978,721	918,348	16,977,721	878,506	601,953	20,355,249	47,724,935	61,772,546	129,852,730	
Beginning Cash Balance/Funds Carried Over from Prior Year	6,408,958	7,088,324	5,797,659	11,003,884	516,948	6,408,958	958,171	4,299,644	6,408,958	
Funds Used Current Year	(299,355)	(2,209,013)	(11,771,495)	(11,365,442)	(160,730)	(25,806,036)	(44,383,463)	(50,021,527)	(120,211,025)	
Funds Carried Over to Next Year	\$7,088,324	\$5,797,659	\$11,003,884	\$516,948	\$958,171	\$958,171	\$4,299,644	\$16,050,663	\$16,050,663	
	Average Debt Service Coverage >>>		1.85	2.26x	2.48x		3.17x			
Estimated Project Costs and Development Schedule										
Capital Project Description	2020 Base Year Costs	Short-Term						Mid-Term	Long-Term	Total
		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Escalated Costs
Other Capital Projects										
Convert Commercial Apron from Asphalt to Concrete (Ph I)	893,113			975,929			975,929			975,929
Env. Assessment for Road Relocation/Vehicle Parking	300,000				337,653		337,653			337,653
Complete Terminal Roof Replacement/HVAC Project	148,579	148,579					148,579			148,579
Complete Terminal Area Plan	150,776	150,776					150,776			150,776
Rehabilitate Transient Seaplane Dock	500,000		530,450				530,450			530,450
Total Short-Term Project Costs Before Financing	\$22,877,600	\$299,355	\$2,209,013	\$11,522,343	\$11,200,459	\$0	\$25,231,170	\$0	\$0	\$25,231,170
Financing Costs for Debt Serviced with PFCs	-	0	0	249,153	164,983	160,730	574,866	0	0	574,866
Total Short-Term Project Costs	\$22,877,600	\$299,355	\$2,209,013	\$11,771,495	\$11,365,442	\$160,730	\$25,806,036	\$0	\$0	\$25,806,036

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**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
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Capital Improvement Program	Funding Schedule								
	Short-Term						Mid-Term	Long-Term	Total
	2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding
Funds Used for Capital Improvement Projects									
Alaska DOT&PF - Pass Through Federal Funding:									
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245
AIP - Building Site Parcel	0	0	7,600,000	0	0	7,600,000	0	0	7,600,000
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583
PFC beginning year unliquidated balance	657,966	635,181	126,410	215,566	316,636	657,966	432,993	1,181,178	657,966
PFC unspent current year + carryover	(635,181)	(126,410)	(215,566)	(316,636)	(432,993)	(432,993)	(1,181,178)	(2,577,958)	(2,577,958)
PFC Debt Proceeds (30 yrs, 2.0%) Thru 2052	0	0	8,000,000	0	0	8,000,000	0	0	8,000,000
Less PFC Funded Principal Payments	0	0	(208,480)	(212,650)	(216,903)	(638,032)	(1,151,345)	(2,674,661)	(4,464,039)
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0	5,423,367
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677
Net Operating Cash Flow	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911
Funds Available Current Year	978,721	918,348	16,977,721	878,506	601,953	20,355,249	47,724,935	61,772,546	129,852,730
Beginning Cash Balance/Funds Carried Over from Prior Year	6,408,958	7,088,324	5,797,659	11,003,884	516,948	6,408,958	958,171	4,299,644	6,408,958
Funds Used Current Year	(299,355)	(2,209,013)	(11,771,495)	(11,365,442)	(160,730)	(25,806,036)	(44,383,463)	(50,021,527)	(120,211,025)
Funds Carried Over to Next Year	\$7,088,324	\$5,797,659	\$11,003,884	\$516,948	\$958,171	\$958,171	\$4,299,644	\$16,050,663	\$16,050,663
	Average Debt Service Coverage >>>		1.85	2.26x	2.48x		3.17x		
Estimated Project Costs and Development Schedule									
Capital Project Description	2020 Base Year Costs	Short-Term					Mid-Term	Long-Term	Total
		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040
Mid-Term Projects (2026-2030)									
Terminal Building Components - Phase B							Phase B		
Departure Areas:									
Boarding Walkway	\$687,456						\$0	\$858,073	\$858,073
Concessions:									
RAC Counter/Offices	1,097,712						0	1,370,148	1,370,148
RAC Queuing	543,312						0	678,154	678,154
Concessions	1,663,200						0	2,075,982	2,075,982
Concessions - Public Areas	4,989,600						0	6,227,947	6,227,947
Baggage Claim:									
Baggage Claim Area	4,834,368						0	6,034,189	6,034,189
Baggage Service Offices	443,520						0	553,595	553,595
Inbound Baggage Handling	2,106,720						0	2,629,578	2,629,578
Site Costs:									
Demolition/Phasing	103,950						0	129,749	129,749
Landside Site Costs	330,000						0	411,901	411,901
Airsides Site Costs	330,000						0	411,901	411,901
Terminal Equipment:									
Passenger Boarding Bridges	1,584,000						0	1,977,126	1,977,126
Baggage Handling Systems	491,040						0	612,909	612,909
Subtotal - Terminal Building Components - Phase B	\$19,204,878	\$0	\$0	\$0	\$0	\$0	\$0	\$23,971,253	\$0

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Capital Improvement Program	Funding Schedule									
	Short-Term						Mid-Term	Long-Term	Total	
	2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding	
Funds Used for Capital Improvement Projects										
Alaska DOT&PF - Pass Through Federal Funding:										
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245	
AIP - Building Site Parcel	0	0	7,600,000	0	0	7,600,000	0	0	7,600,000	
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816	
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583	
PFC beginning year unliquidated balance	657,966	635,181	126,410	215,566	316,636	657,966	432,993	1,181,178	657,966	
PFC unspent current year + carryover	(635,181)	(126,410)	(215,566)	(316,636)	(432,993)	(432,993)	(1,181,178)	(2,577,958)	(2,577,958)	
PFC Debt Proceeds (30 yrs, 2.0%) Thru 2052	0	0	8,000,000	0	0	8,000,000	0	0	8,000,000	
Less PFC Funded Principal Payments	0	0	(208,480)	(212,650)	(216,903)	(638,032)	(1,151,345)	(2,674,661)	(4,464,039)	
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162	
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0	5,423,367	
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677	
Net Operating Cash Flow	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911	
Funds Available Current Year	978,721	918,348	16,977,721	878,506	601,953	20,355,249	47,724,935	61,772,546	129,852,730	
Beginning Cash Balance/Funds Carried Over from Prior Year	6,408,958	7,088,324	5,797,659	11,003,884	516,948	6,408,958	958,171	4,299,644	6,408,958	
Funds Used Current Year	(299,355)	(2,209,013)	(11,771,495)	(11,365,442)	(160,730)	(25,806,036)	(44,383,463)	(50,021,527)	(120,211,025)	
Funds Carried Over to Next Year	\$7,088,324	\$5,797,659	\$11,003,884	\$516,948	\$958,171	\$958,171	\$4,299,644	\$16,050,663	\$16,050,663	
	Average Debt Service Coverage >>>		1.85	2.26x	2.48x		3.17x			
Estimated Project Costs and Development Schedule										
Capital Project Description	2020 Base Year Costs	Short-Term						Mid-Term	Long-Term	Total
		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Escalated Costs
Other Capital Projects										
North Airport Service Road Relocation	445,186						0	555,675		555,675
Vehicle Parking Expansion	4,604,003						0	5,746,650		5,746,650
RAC Wash Facility Replacement	845,000						0	1,054,717		1,054,717
Air Cargo Apron Expansion	2,858,712						0	3,568,203		3,568,203
Taxilane D	1,894,320						0	2,364,463		2,364,463
Alaska/Airline Equipment/Cargo/Fishbox Storage Facility	3,500,000						0	4,368,650		4,368,650
Convert Commercial Apron from Asphalt to Concrete (Ph II)	1,615,972						0	2,017,033		2,017,033
Total Mid-Term Project Costs Before Financing	\$34,968,071	\$0	\$0	\$0	\$0	\$0	\$0	\$43,646,644	\$0	\$43,646,644
Financing Costs for Debt Serviced with PFCs	-	0	0	0	0	0	0	736,818	0	736,818
Total Mid-Term Project Costs	\$34,968,071	\$0	\$0	\$0	\$0	\$0	\$0	\$44,383,463	\$0	\$44,383,463

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Capital Improvement Program	Funding Schedule								
	Short-Term						Mid-Term	Long-Term	Total
	2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding
Funds Used for Capital Improvement Projects									
Alaska DOT&PF - Pass Through Federal Funding:									
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245
AIP - Building Site Parcel	0	0	7,600,000	0	0	7,600,000	0	0	7,600,000
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583
PFC beginning year unliquidated balance	657,966	635,181	126,410	215,566	316,636	657,966	432,993	1,181,178	657,966
PFC unspent current year + carryover	(635,181)	(126,410)	(215,566)	(316,636)	(432,993)	(432,993)	(1,181,178)	(2,577,958)	(2,577,958)
PFC Debt Proceeds (30 yrs, 2.0%) Thru 2052	0	0	8,000,000	0	0	8,000,000	0	0	8,000,000
Less PFC Funded Principal Payments	0	0	(208,480)	(212,650)	(216,903)	(638,032)	(1,151,345)	(2,674,661)	(4,464,039)
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0	5,423,367
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677
Net Operating Cash Flow	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911
Funds Available Current Year	978,721	918,348	16,977,721	878,506	601,953	20,355,249	47,724,935	61,772,546	129,852,730
Beginning Cash Balance/Funds Carried Over from Prior Year	6,408,958	7,088,324	5,797,659	11,003,884	516,948	6,408,958	958,171	4,299,644	6,408,958
Funds Used Current Year	(299,355)	(2,209,013)	(11,771,495)	(11,365,442)	(160,730)	(25,806,036)	(44,383,463)	(50,021,527)	(120,211,025)
Funds Carried Over to Next Year	\$7,088,324	\$5,797,659	\$11,003,884	\$516,948	\$958,171	\$958,171	\$4,299,644	\$16,050,663	\$16,050,663
	Average Debt Service Coverage >>>		1.85	2.26x	2.48x		3.17x		
Estimated Project Costs and Development Schedule									
Capital Project Description	2020 Base Year Costs	Short-Term					Mid-Term	Long-Term	Total
		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040
Long-Term Projects (2031-2040)									
Terminal Building Components - Phase C								Phase C	
<u>Airline Ticketing/Check In:</u>									
Airline ATO	\$1,774,080						\$0	\$2,763,959	\$2,763,959
Ticketing	586,001						0	912,970	912,970
Ticketing Queuing	450,450						0	701,786	701,786
Baggage Make-Up	1,696,464						0	2,643,036	2,643,036
Baggage Handling Conveying System	770,616						0	1,200,595	1,200,595
<u>Passenger and Baggage Security/Screening:</u>									
TSA Baggage Screening Area	3,298,680						0	5,139,236	5,139,236
Customs	27,720						0	43,187	43,187
<u>Departure Areas:</u>									
Departure Lounge/Holdroom	7,139,009						0	11,122,343	11,122,343
Boarding Walkway	221,760						0	345,495	345,495
<u>Other Public Areas:</u>									
Vertical Circulation	134,719						0	209,888	209,888
Public Circulation	3,678,444						0	5,730,896	5,730,896
Public Restrooms	1,214,136						0	1,891,584	1,891,584
<u>Support Areas:</u>									
Mechanical & Electrical	77,616						0	120,923	120,923
Non-Public Circulation	1,053,360						0	1,641,101	1,641,101
Airport Support	22,176						0	34,549	34,549
<u>Site Costs:</u>									
Demolition/Phasing	103,950						0	161,951	161,951
Landside Site Costs	330,000						0	514,129	514,129
Airsides Site Costs	330,000						0	514,129	514,129
<u>Terminal Equipment:</u>									
Passenger Boarding Bridges	1,584,000						0	2,467,820	2,467,820

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Capital Improvement Program	Funding Schedule									
	Short-Term						Mid-Term	Long-Term	Total	
	2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Funding	
Funds Used for Capital Improvement Projects										
Alaska DOT&PF - Pass Through Federal Funding:										
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975	\$13,872,245	
AIP - Building Site Parcel	0	0	7,600,000	0	0	7,600,000	0	0	7,600,000	
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132	924,816	
Passenger Facility Charges:										
PFC beginning year unliquidated balance	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505	10,805,583	
PFC unspent current year + carryover	657,966	635,181	126,410	215,566	316,636	657,966	432,993	1,181,178	657,966	
PFC Debt Proceeds (30 yrs, 2.0%) Thru 2052	(635,181)	(126,410)	(215,566)	(316,636)	(432,993)	(432,993)	(1,181,178)	(2,577,958)	(2,577,958)	
Less PFC Funded Principal Payments	0	0	8,000,000	0	0	8,000,000	0	0	8,000,000	
Other Capital Contribution	0	0	(208,480)	(212,650)	(216,903)	(638,032)	(1,151,345)	(2,674,661)	(4,464,039)	
Private 3rd Party Funding	0	0	0	0	0	0	5,746,650	4,593,511	10,340,162	
Other Unidentified Funding	0	0	0	0	0	0	5,423,367	0	5,423,367	
Net Operating Cash Flow	0	0	0	0	0	0	23,971,253	36,880,424	60,851,677	
Funds Available Current Year	679,366	37,898	232,639	375,871	441,223	1,766,997	3,341,473	13,310,441	18,418,911	
Beginning Cash Balance/Funds Carried Over from Prior Year	978,721	918,348	16,977,721	878,506	601,953	20,355,249	47,724,935	61,772,546	129,852,730	
Funds Used Current Year	6,408,958	7,088,324	5,797,659	11,003,884	516,948	6,408,958	958,171	4,299,644	6,408,958	
Funds Carried Over to Next Year	(299,355)	(2,209,013)	(11,771,495)	(11,365,442)	(160,730)	(25,806,036)	(44,383,463)	(50,021,527)	(120,211,025)	
	\$7,088,324	\$5,797,659	\$11,003,884	\$516,948	\$958,171	\$958,171	\$4,299,644	\$16,050,663	\$16,050,663	
	Average Debt Service Coverage >>>		1.85	2.26x	2.48x		3.17x			
Estimated Project Costs and Development Schedule										
Capital Project Description	2020 Base Year Costs	Short-Term						Mid-Term	Long-Term	Total
		2021	2022	2023	2024	2025	Total	2026-2030	2031-2040	Escalated Costs
Baggage Handling Systems	762,960						0		1,188,667	1,188,667
Subtotal - Terminal Building Components - Phase C	\$25,256,141	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,348,244	\$39,348,244
Other Capital Projects										
Two Level Parking Deck	2,948,400						0		4,593,511	4,593,511
Convert Commercial Apron from Asphalt to Concrete (Ph III)	3,195,257						0		4,978,106	4,978,106
Total Long-Term Project Costs Before Financing	\$31,399,798	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$48,919,862	\$48,919,862
Financing Costs for Debt Serviced with PFCs	-	0	0	0	0	0	0	0	1,101,665	1,101,665
Total Long-Term Project Costs	\$31,399,798	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50,021,527	\$50,021,527
Total Project Costs	\$89,245,469	\$299,355	\$2,209,013	\$11,771,495	\$11,365,442	\$160,730	\$25,806,036	\$44,383,463	\$50,021,527	\$120,211,025

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

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**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Projected Capital Funding Sources**

21-Jun-21

	Total Escalated Costs	AK DOT&PF - Pass Thru Federal Funding		Total Pass Thru Federal Funding	Alaska DOT&PF Grants	Passenger Facility Charges (Debt)	Passenger Facility Charges (PAYG)	Other Capital Contribution - Borough / Land Trust	Private 3rd Party Funding	Other Unidentified Funding	Cash Reserves/ Net Revs	Total Funding
		AIP - Landing Field Parcel	AIP - Building Site Parcel									
Capital Improvement Projects												
Short-Term Projects (2020-2024)												
Terminal Building Components - Phase A												
Passenger and Baggage Security/Screening:												
Passenger Screening	\$3,186,923		\$2,987,740	\$2,987,740							\$199,183	\$3,186,923
Passenger Screening Queuing	723,186		677,987	677,987							45,199	723,186
Passenger Recomposure Area	1,152,195		1,080,183	1,080,183							72,012	1,152,195
TSA Office/Break/Training Area	2,328,905			0							2,328,905	2,328,905
Departure Areas:												
Departure Lounge/Holdroom	4,020,426		2,854,089	2,854,089			350,000				816,337	4,020,426
Boarding Walkway	845,760			0		845,760					0	845,760
Concessions:												
Vending	67,416			0							67,416	67,416
Other Public Areas:												
Vertical Circulation	2,406,127			0		2,406,127					0	2,406,127
Public Circulation	4,443,306			0		4,443,306					0	4,443,306
Public Restrooms	588,355			0		304,807					283,548	588,355
Support Areas:												
Non-Public Circulation	612,870			0							612,870	612,870
Site Costs:												
Demolition/Phasing	114,913			0							114,913	114,913
Landside Site Costs	364,803			0							364,803	364,803
Airside Site Costs	364,803			0							364,803	364,803
Terminal Equipment:												
Passenger Boarding Bridges	1,751,057			0							1,751,057	1,751,057
Elevators	116,737			0							116,737	116,737
Subtotal - Terminal Building Components - Phase A	\$23,087,784	\$0	\$7,600,000	\$7,600,000	\$0	\$8,000,000	\$350,000	\$0	\$0	\$0	\$7,137,784	\$23,087,784
Other Capital Projects												
Convert Commercial Apron from Asphalt to Concrete (Ph I)	975,929	914,933		914,933	60,996						0	975,929
Env. Assessment for Road Relocation/Vehicle Parking	337,653	316,549		316,549	21,103						0	337,653
Complete Terminal Roof Replacement/HVAC Project	148,579			0			148,579				0	148,579
Complete Terminal Area Plan	150,776			0			150,776				0	150,776
Rehabilitate Transient Seaplane Dock	530,450			0			530,450				0	530,450
Total Short-Term Project Funding Before Financing	\$25,231,170	\$1,231,482	\$7,600,000	\$8,831,482	\$82,099	\$8,000,000	\$1,179,805	\$0	\$0	\$0	\$7,137,784	\$25,231,170
Financing Costs for Debt Serviced with PFCs	574,866					574,866						574,866
Total Short-Term Project Funding	\$25,806,036	\$1,231,482	\$7,600,000	\$8,831,482	\$82,099	\$8,574,866	\$1,179,805	\$0	\$0	\$0	\$7,137,784	\$25,806,036
Mid-Term Projects (2025-2029)												
Terminal Building Components - Phase B												
Departure Areas:												
Boarding Walkway	\$858,073			\$0						\$858,073	\$0	\$858,073
Concessions:												
RAC Counter/Offices	1,370,148			0						1,370,148	0	1,370,148
RAC Queuing	678,154			0						678,154	0	678,154
Concessions	2,075,982			0						2,075,982	0	2,075,982
Concessions - Public Areas	6,227,947			0						6,227,947	0	6,227,947
Baggage Claim:												
Baggage Claim Area	6,034,189			0						6,034,189	0	6,034,189
Baggage Service Offices	553,595			0						553,595	0	553,595
Inbound Baggage Handling	2,629,578			0						2,629,578	0	2,629,578
Site Costs:												
Demolition/Phasing	129,749			0						129,749	0	129,749
Landside Site Costs	411,901			0						411,901	0	411,901
Airside Site Costs	411,901			0						411,901	0	411,901
Terminal Equipment:												
Passenger Boarding Bridges	1,977,126			0						1,977,126	0	1,977,126
Baggage Handling Systems	612,909			0						612,909	0	612,909
Subtotal - Terminal Building Components - Phase B	\$23,971,253	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,971,253	\$0	\$23,971,253
Other Capital Projects												
North Airport Service Road Relocation	555,675	520,945		520,945	34,730						0	555,675
Vehicle Parking Expansion	5,746,650			0				5,746,650			0	5,746,650
RAC Wash Facility Replacement	1,054,717			0					1,054,717		0	1,054,717

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
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**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Projected Capital Funding Sources**

21-Jun-21

	Total Escalated Costs	AK DOT&PF - Pass Thru Federal Funding		Total Pass Thru Federal Funding	Alaska DOT&PF Grants	Passenger Facility Charges (Debt)	Passenger Facility Charges (PAYG)	Other Capital Contribution - Borough / Land Trust	Private 3rd Party Funding	Other Unidentified Funding	Cash Reserves/ Net Revs	Total Funding
		AIP - Landing Field Parcel	AIP - Building Site Parcel									
Capital Improvement Projects												
Air Cargo Apron Expansion	3,568,203	3,345,191		3,345,191	223,013						0	3,568,203
Taxilane D	2,364,463	2,216,684		2,216,684	147,779						0	2,364,463
Alaska/Airline Equipment/Carqo/Fishbox Storage Facility	4,368,650			0					4,368,650		0	4,368,650
Convert Commercial Apron from Asphalt to Concrete (Ph II)	2,017,033	1,890,968		1,890,968	126,065						0	2,017,033
Total Mid-Term Project Funding Before Financing	\$43,646,644	\$7,973,788	\$0	\$7,973,788	\$531,586	\$0	\$0	\$5,746,650	\$5,423,367	\$23,971,253	\$0	\$43,646,644
Financing Costs for Debt Serviced with PFCs	736,818					736,818						736,818
Total Mid-Term Project Funding	\$44,383,463	\$7,973,788	\$0	\$7,973,788	\$531,586	\$736,818	\$0	\$5,746,650	\$5,423,367	\$23,971,253	\$0	\$44,383,463
Long-Term Projects (2030-2039)												
Terminal Building Components - Phase C												
Airline Ticketing/Check In:												
Airline ATO	\$2,763,959			\$0						\$2,763,959	\$0	\$2,763,959
Ticketing	912,970			0						912,970	0	912,970
Ticketing Queuing	701,786			0						701,786	0	701,786
Baggage Make-Up	2,643,036			0						2,643,036	0	2,643,036
Baggage Handling Conveying System	1,200,595			0						1,200,595	0	1,200,595
Passenger and Baggage Security/Screening:												
TSA Baggage Screening Area	5,139,236			0						5,139,236	0	5,139,236
Customs	43,187			0						43,187	0	43,187
Departure Areas:												
Departure Lounge/Holdroom	11,122,343			0						11,122,343	0	11,122,343
Boarding Walkway	345,495			0						345,495	0	345,495
Public Areas:												
Vertical Circulation	209,888			0						209,888	0	209,888
Public Circulation	5,730,896			0						5,730,896	0	5,730,896
Public Restrooms	1,891,584			0						1,891,584	0	1,891,584
Support Areas:												
Mechanical & Electrical	120,923			0						120,923	0	120,923
Non-Public Circulation	1,641,101			0						1,641,101	0	1,641,101
Airport Support	34,549			0						34,549	0	34,549
Site Costs:												
Demolition/Phasing	161,951			0						161,951	0	161,951
Landside Site Costs	514,129			0						514,129	0	514,129
Airside Site Costs	514,129			0						514,129	0	514,129
Terminal Equipment:												
Passenger Boarding Bridges	2,467,820			0			908,398				1,559,422	2,467,820
Baggage Handling Systems	1,188,667			0						1,188,667	0	1,188,667
Subtotal - Terminal Building Components - Phase C	\$39,348,244	\$0	\$0	\$0	\$0	\$0	\$908,398	\$0	\$0	\$36,880,424	\$1,559,422	\$39,348,244
Other Capital Projects												
Two Level Parking Deck	4,593,511			0				4,593,511			0	4,593,511
Convert Commercial Apron from Asphalt to Concrete (Ph	4,978,106	4,666,975		4,666,975	311,132						0	4,978,106
Total Long-Term Project Funding Before Financing	\$48,919,862	\$4,666,975	\$0	\$4,666,975	\$311,132	\$0	\$908,398	\$4,593,511	\$0	\$36,880,424	\$1,559,422	\$48,919,862
Financing Costs for Debt Serviced with PFCs	1,101,665					1,101,665						1,101,665
Total Long-Term Project Funding	\$50,021,527	\$4,666,975	\$0	\$4,666,975	\$311,132	\$1,101,665	\$908,398	\$4,593,511	\$0	\$36,880,424	\$1,559,422	\$50,021,527
Total Project Funding	\$120,211,025	\$13,872,245	\$7,600,000	\$21,472,245	\$924,816	#####	\$2,088,203	\$10,340,162	\$5,423,367	\$60,851,677	\$8,697,206	\$120,211,025

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
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Appendix 3 - Schedule 3b

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**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Summary of Projected Capital Funding Sources
Terminal Building Expansion Phase A - Short-Term (2022 - 2024)**

	2022	2023	2024	Total
	Design	Construct (50%)	Construct (50%)	
Total Terminal Building Cost - Phase A	\$1,678,563	\$10,546,414	\$10,862,806	\$23,087,784
Capital Funding:				
PassThru Federal Funding	\$0	\$7,600,000	\$0	\$7,600,000
PFC Pay Go	0	350,000	0	350,000
PFC Debt Proceeds	0	2,596,414	5,403,586	8,000,000
Airport Cash Reserves	1,678,563	0	5,459,220	7,137,784
Total Capital Funding - Building	\$1,678,563	\$10,546,414	\$10,862,806	\$23,087,784
Convert Commercial Apron from Asphalt to Concrete	\$0	\$975,929	\$0	\$975,929
Capital Funding:				
PassThru Federal Funding	\$0	\$914,933	\$0	\$914,933
State Funding	0	60,996	0	60,996
Total Capital Funding - Apron	\$0	\$975,929	\$0	\$975,929

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**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
PFC Serviced Debt Issue**

21-Jun-21

Debt Issue Structure						
			Issue Date:	01-Oct-22		
			Interest:	2.0%		
			Term:	30 Years		
			Project Funding Requirement:	\$8,000,000		
			Debt Service Reserve Fund Requirement (MADS):	377,633		
			Capitalized Debt Issue Costs (1.0%):	<u>80,000</u>		
			Total Debt Requirement:	<u><u>\$8,457,633</u></u>		
Notes:						
(1) Assumes no interest earnings on Construction Fund balance or Debt Service Reserve Fund deposit.						
(2) Assumes DSRF funded from the issue amount						
Debt Service Schedule						
Payment Number	Fiscal Year	Beginning Principal	Annual Debt Service	Interest Payment	Principal Payment	Ending Principal
1	2023	\$8,457,633	\$377,633	\$169,153	\$208,480	\$8,249,153
2	2024	8,249,153	377,633	164,983	212,650	8,036,503
3	2025	8,036,503	377,633	160,730	216,903	7,819,601
4	2026	7,819,601	377,633	156,392	221,241	7,598,360
5	2027	7,598,360	377,633	151,967	225,665	7,372,695
6	2028	7,372,695	377,633	147,454	230,179	7,142,516
7	2029	7,142,516	377,633	142,850	234,782	6,907,734
8	2030	6,907,734	377,633	138,155	239,478	6,668,256
9	2031	6,668,256	377,633	133,365	244,268	6,423,988
10	2032	6,423,988	377,633	128,480	249,153	6,174,835
11	2033	6,174,835	377,633	123,497	254,136	5,920,699
12	2034	5,920,699	377,633	118,414	259,219	5,661,481
13	2035	5,661,481	377,633	113,230	264,403	5,397,078
14	2036	5,397,078	377,633	107,942	269,691	5,127,386
15	2037	5,127,386	377,633	102,548	275,085	4,852,302
16	2038	4,852,302	377,633	97,046	280,587	4,571,715
17	2039	4,571,715	377,633	91,434	286,198	4,285,517
18	2040	4,285,517	377,633	85,710	291,922	3,993,594
19	2041	3,993,594	377,633	79,872	297,761	3,695,833
20	2042	3,695,833	377,633	73,917	303,716	3,392,117
21	2043	3,392,117	377,633	67,842	309,790	3,082,327
22	2044	3,082,327	377,633	61,647	315,986	2,766,341
23	2045	2,766,341	377,633	55,327	322,306	2,444,035
24	2046	2,444,035	377,633	48,881	328,752	2,115,283
25	2047	2,115,283	377,633	42,306	335,327	1,779,956
26	2048	1,779,956	377,633	35,599	342,034	1,437,923
27	2049	1,437,923	377,633	28,758	348,874	1,089,049
28	2050	1,089,049	377,633	21,781	355,852	733,197
29	2051	733,197	377,633	14,664	362,969	370,228
30	2052	370,228	377,633	7,405	370,228	0
Totals			<u>\$11,328,980</u>	<u>\$2,871,347</u>	<u>\$8,457,633</u>	

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

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**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Actual, Budgeted and Projected Operations & Maintenance Expenses**

21-Jun-21

Operations & Maintenance Expenses	Actual 2018	Actual 2019	Actual 2020	Short-Term					Total	Mid-Term 2026-2030	Long-Term 2031-2040
				Budget	Projected						
				2021	2022	2023	2024	2025			
Personnel Costs	\$3,097,341	\$3,032,655	\$3,178,443	\$3,300,000	\$3,399,000	\$3,500,970	\$3,605,999	\$3,714,179	\$17,520,148	\$20,310,654	\$50,841,434
Travel & Training	16,802	14,157	19,668	26,900	27,707	28,538	29,394	30,276	142,816	165,563	414,435
Uniform Allowance	2,928	3,079	1,681	11,000	11,330	11,670	12,020	12,381	58,400	67,702	169,471
Supplies	4,572	2,544	1,816	6,700	6,901	7,108	7,321	7,541	35,571	41,237	103,224
Operating Supplies	74,714	70,961	78,984	85,000	87,550	90,177	92,882	95,668	451,277	523,153	1,309,552
Dues & Publications	2,152	1,653	1,314	1,200	1,236	1,273	1,311	1,351	6,371	7,386	18,488
Banking Fees	31,991	35,890	38,470	30,000	30,900	31,827	32,782	33,765	159,274	184,642	462,195
Security Screening Expense	5,000	0	1,350	3,000	3,090	3,183	3,278	3,377	15,927	18,464	46,219
Professional Services	0	80,620	0	0	0	0	0	0	0	0	0
Licenses/Fees/Permits	1,370	735	930	2,000	2,060	2,122	2,185	2,251	10,618	12,309	30,813
Contractual Services	90,508	93,657	391,043	100,525	103,541	106,647	109,846	113,142	533,701	618,706	1,548,738
Insurance	221,644	220,810	235,055	266,464	274,458	282,692	291,172	299,908	1,414,694	1,640,018	4,105,276
Medical Expense	1,042	267	274	2,100	2,163	2,228	2,295	2,364	11,149	12,925	32,354
Administrative Fees	228,741	234,177	260,287	280,072	288,474	297,128	306,042	315,224	1,486,940	1,723,771	4,314,928
Electricity	121,770	123,352	137,241	139,525	143,711	148,022	152,463	157,037	740,757	858,741	2,149,591
Water	29,928	34,397	35,793	35,000	36,050	37,132	38,245	39,393	185,820	215,416	539,227
Telephone/Long Distance	14,581	15,002	13,225	14,200	14,626	15,065	15,517	15,982	75,390	87,397	218,772
Sewer	27,600	31,326	31,790	37,000	38,110	39,253	40,431	41,644	196,438	227,726	570,040
Landfill Fees	8,965	8,928	7,315	8,500	8,755	9,018	9,288	9,567	45,128	52,315	130,955
Dock Maintenance	24,736	7,075	8,819	9,000	9,270	9,548	9,835	10,130	47,782	55,393	138,658
Field Maintenance	6,859	9,865	11,952	10,000	10,300	10,609	10,927	11,255	53,091	61,547	154,065
Building Maintenance	38,595	36,753	42,733	68,000	70,040	72,141	74,305	76,535	361,021	418,523	1,047,642
Heating Fuel	41,924	52,417	60,132	57,000	58,710	60,471	62,285	64,154	302,621	350,820	878,170
Equipment Maintenance	3,244	8,127	10,140	16,000	16,480	16,974	17,484	18,008	84,946	98,476	246,504
Vehicle Maintenance	14,037	17,651	22,464	33,000	33,990	35,010	36,060	37,142	175,201	203,107	508,414
Vehicle Fuel & Oil	225,835	220,050	204,961	235,000	242,050	249,312	256,791	264,495	1,247,647	1,446,365	3,620,526
Ferry Maintenance	218,819	201,451	215,236	245,000	252,350	259,921	267,718	275,750	1,300,738	1,507,912	3,774,591
Airport Parking Lot Maintenance	21,514	13,865	14,916	49,000	50,470	51,984	53,544	55,150	260,148	301,582	754,918
Equipment Purchases	10,732	22,100	16,060	60,000	61,800	63,654	65,564	67,531	318,548	369,285	924,390
Miscellaneous	598	798	6,452	2,100	2,163	2,228	2,295	2,364	11,149	12,925	32,354
Debt Service	2,542	1,598	626	0	0	0	0	0	0	0	0
Bad Debt Expense	5,519	17,511	35,788	0	0	0	0	0	0	0	0
Gain/Loss On Asset Disposal	0	-1,300	0	0	0	0	0	0	0	0	0
Total Operations & Maintenance Expenses	\$4,596,601	\$4,612,171	\$5,084,956	\$5,133,286	\$5,287,285	\$5,445,903	\$5,609,280	\$5,777,559	\$27,253,313	\$31,594,059	\$79,085,946
Annual Growth Rate	-	0.3%	10.3%	1.0%	3.0%	3.0%	3.0%	3.0%	2.6%	3.0%	3.0%
Operating Expenses Per Enplaned Passenger:											
Ketchikan International Airport	\$33.95	\$33.64	\$36.32	\$57.04	\$43.71	\$35.85	\$36.01	\$36.17	\$40.17	\$36.78	\$39.96
Non-Hub Industry Average	\$44.02	\$44.47	\$44.92	\$45.38	\$45.84	\$46.31	\$46.78	\$47.26	\$46.31	\$48.97	\$52.84

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**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Actual, Budgeted and Projected Operating Revenues**

21-Jun-21

Revenues	Actual 2018	Actual 2019	Actual 2020	Short-Term					Mid-Term 2026-2030	Long-Term 2031-2040	
				Budget 2021	Projected						Total
					2022	2023	2024	2025			
Enplanement Growth+Inf.											
AIRLINE REVENUES											
Terminal Building Rents - Airlines	\$382,990	\$350,670	\$351,249	\$350,000	\$360,500	\$371,315	\$382,454	\$393,928	\$1,858,198	\$2,154,160	\$5,392,273
Landing Fees - Airlines	954,474	793,987	1,001,698	700,000	800,000	900,000	927,000	954,810	4,281,810	5,221,292	13,069,889
Rental Income - Field - Airlines	79,392	119,087	119,087	119,087	122,660	126,339	130,130	134,033	632,249	732,950	1,834,713
Airline Security Revenue	241,348	205,560	242,462	180,000	193,520	243,040	249,243	255,605	1,121,408	1,374,249	3,166,420
Total Airline Revenues	\$1,658,204	\$1,469,304	\$1,714,496	\$1,349,087	\$1,476,680	\$1,640,694	\$1,688,827	\$1,738,376	\$7,893,664	\$9,482,652	\$23,463,296
Annual Growth Rate	-	-11.4%	16.7%	-21.3%	9.5%	11.1%	2.9%	2.9%	0.3%	2.9%	2.8%
Airline Cost Per Enplaned Passenger:											
Ketchikan International Airport	\$12.25	\$10.72	\$12.25	\$14.99	\$12.21	\$10.80	\$10.84	\$10.88	\$11.64	\$11.04	\$11.86
Non-Hub Industry Average	\$9.09	\$9.18	\$9.27	\$9.37	\$9.46	\$9.56	\$9.65	\$9.75	\$9.56	\$10.11	\$10.90
NON-AIRLINE REVENUES											
Landing Fees - Non-Airline	\$48,814	\$51,491	\$51,961	\$50,000	\$51,500	\$53,045	\$54,636	\$56,275	\$265,457	\$307,737	\$770,325
Fuel Flowage Fees	131,752	172,896	161,868	140,000	144,200	148,526	152,982	157,571	743,279	861,664	2,156,909
State Fuel Tax Revenue	9,131	15,457	0	16,000	16,480	16,974	17,484	18,008	84,946	98,476	246,504
Rental Income - Field - Non-Airlines	30,027	35,138	44,723	24,913	25,660	26,430	27,223	28,040	132,267	153,333	383,822
Aircraft Parking Fees	19,751	24,049	15,063	18,000	18,540	19,096	19,669	20,259	95,564	110,785	277,317
Tie-Down Charges	2,230	2,032	1,167	2,000	2,060	2,122	2,185	2,251	10,618	12,309	30,813
Seaplane Dock Fees	10,671	16,588	8,821	8,000	8,240	8,487	8,742	9,004	42,473	49,238	123,252
Murphy's Landing Docking Fees	10,000	8,900	8,900	7,800	8,034	8,275	8,523	8,779	41,411	48,007	120,171
Terminal Building Rents - Non-Airline	204,129	209,224	198,527	225,000	231,750	238,703	245,864	253,239	1,194,556	1,384,817	3,466,461
Terminal Rents - TSA Offices (\$36/SF)	0	0	0	0	0	0	68,400	70,452	138,852	385,260	964,380
Terminal Use Fees	40,597	33,536	41,008	30,000	30,900	31,827	32,782	33,765	159,274	184,642	462,195
Ambassador Fees	8,003	7,804	8,341	7,800	8,034	8,275	8,523	8,779	41,411	48,007	120,171
Background Check Fees	6,250	3,840	1,850	3,000	3,090	3,183	3,278	3,377	15,927	18,464	46,219
Terminal Vendor Concessions	5,409	6,100	6,686	6,500	6,695	6,896	7,103	7,316	34,509	40,006	100,142
TSA Law Enforcement Reimbursement	57,815	61,680	46,765	36,000	37,080	38,192	39,338	40,518	191,129	221,571	554,634
Vehicle Parking - Terminal	85,681	91,251	83,200	80,000	90,000	100,000	110,000	116,192	496,192	684,121	1,978,432
Vehicle Parking - Revilla	122,806	135,249	209,936	160,000	190,000	220,000	250,000	264,072	1,084,072	1,554,820	4,496,436
Parking Enforcement Fees	34,921	37,605	40,839	30,000	30,900	31,827	32,782	33,765	159,274	184,642	462,195
Ferry Fees	2,400,856	2,529,709	2,188,364	2,040,000	2,165,000	2,290,000	2,415,000	2,550,938	11,460,938	15,019,560	43,435,574
Medivac - Ambulance Ferry Fees	5,500	5,500	5,500	5,500	5,665	5,835	6,010	6,190	29,200	33,851	84,736
State MOA Revenue	502,000	502,000	502,000	502,000	502,000	502,000	502,000	502,000	2,510,000	2,510,000	5,020,000
Commercial Passenger Vessel Revenue:	168,604	190,840	143,130	34,698	35,000	35,000	35,000	35,000	174,698	175,000	350,000
Pers on Behalf Payments	91,470	102,731	122,275	177,354	182,675	188,155	193,800	199,613	941,596	1,091,568	2,732,404
Miscellaneous Revenues	2,150	30,280	3,040	0	0	0	0	0	0	0	0
Total Non-Airline Revenues	\$3,998,566	\$4,273,900	\$3,893,964	\$3,604,565	\$3,793,503	\$3,982,848	\$4,241,324	\$4,425,405	\$20,047,645	\$25,177,880	\$68,383,092
Annual Growth Rate	-	6.9%	-8.9%	-7.4%	5.2%	5.0%	6.5%	4.3%	2.6%	4.3%	4.1%
NON-OPERATING REVENUES											
Interest Income	\$23,301	\$67,349	\$64,882	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$275,000	\$275,000	\$550,000
PFC Reimbursements	0	56,308	810,022	0	0	0	0	0	0	0	0
CARES Act Grant - O & M Funding	0	0	804,837	804,000	0	0	0	0	804,000	0	0
Total Non-Operating Revenues	\$23,301	\$123,657	\$1,679,740	\$859,000	\$55,000	\$55,000	\$55,000	\$55,000	\$1,079,000	\$275,000	\$550,000
Annual Growth Rate	-	430.7%	1258.4%	-48.9%	-93.6%	0.0%	0.0%	0.0%	-49.5%	0.0%	0.0%
Total Revenues	\$5,680,070	\$5,866,861	\$7,288,200	\$5,812,652	\$5,325,183	\$5,678,542	\$5,985,151	\$6,218,781	\$29,020,309	\$34,935,531	\$92,396,387
Annual Growth Rate	-	3.3%	24.2%	-20.2%	-8.4%	6.6%	5.4%	3.9%	-3.1%	3.9%	3.7%
Operating Revenues Per Enplaned Passenger:											
Ketchikan International Airport	\$41.78	\$41.89	\$40.06	\$55.04	\$43.57	\$37.02	\$38.07	\$38.58	\$41.19	\$40.35	\$46.41
Non-Hub Industry Average	\$46.34	\$46.81	\$47.28	\$47.76	\$48.25	\$48.74	\$49.24	\$49.74	\$48.75	\$51.54	\$56.61

**KETCHIKAN INTERNATIONAL AIRPORT (KTN)
Ketchikan Gateway Borough**

KTN - TAS - 2021 - 8 (Appendix 3)

Appendix 3 - Schedule 7

**Terminal Area Plan - Financial Implementation Analysis - 30 yr Debt
Financial Plan Summary
Budgeted and Projected Net Revenues, Capital Funding and Capital Expenditures**

21-Jun-21

Operating/Capital Cash Flow	Short-Term					Total	Mid-Term 2026-2030	Long-Term 2031-2040
	Budget	Projected						
	2021	2022	2023	2024	2025			
Passenger Enplanements	90,000	120,950	151,900	155,777	159,753	678,380	858,906	1,979,012
Annual Growth Rates	-	34.39%	25.59%	2.55%	2.55%	15.43%	1.95%	1.67%
Operating Cash Flow								
Revenues:								
Airline Revenues	\$1,349,087	\$1,476,680	\$1,640,694	\$1,688,827	\$1,738,376	\$7,893,664	\$9,482,652	\$23,463,296
Non-Airline Revenues	3,604,565	3,793,503	3,982,848	4,241,324	4,425,405	20,047,645	25,177,880	68,383,092
Non-Operating Revenues	859,000	55,000	55,000	55,000	55,000	1,079,000	275,000	550,000
Total Revenues	\$5,812,652	\$5,325,183	\$5,678,542	\$5,985,151	\$6,218,781	\$29,020,309	\$34,935,531	\$92,396,387
Operations & Maintenance Expenses	(5,133,286)	(5,287,285)	(5,445,903)	(5,609,280)	(5,777,559)	(27,253,313)	(31,594,059)	(79,085,946)
Total Net Operating Cash Flow Available For Capital Expenditures	\$679,366	\$37,898	\$232,639	\$375,871	\$441,223	\$1,766,997	\$3,341,473	\$13,310,441
Capital Cash Flow								
Beginning Cash Balance	\$6,408,958	\$7,088,324	\$5,797,659	\$11,003,884	\$516,948	\$6,408,958	\$958,171	\$4,299,644
Other Capital Funding Sources:								
Alaska DOT&PF - Pass Through Federal Funding:								
AIP - Landing Field Parcel	\$0	\$0	\$914,933	\$316,549	\$0	\$1,231,482	\$7,973,788	\$4,666,975
AIP - Building Site Parcel	0	0	7,600,000	0	0	7,600,000	0	0
Alaska DOT&PF - Major Capital Contribution	0	0	60,996	21,103	0	82,099	531,586	311,132
Passenger Facility Charges:	276,570	371,679	466,789	478,703	493,990	2,087,730	2,636,348	6,081,505
PFC beginning year unliquidated balance	657,966	635,181	126,410	215,566	316,636	657,966	432,993	1,181,178
PFC unspent current year + carryover	(635,181)	(126,410)	(215,566)	(316,636)	(432,993)	(432,993)	(1,181,178)	(2,577,958)
PFC Debt Proceeds (30 yrs, 2.0%) Thru 2052	0	0	8,000,000	0	0	8,000,000	0	0
Less PFC Funded Principal Payments	0	0	(208,480)	(212,650)	(216,903)	(638,032)	(1,151,345)	(2,674,661)
Other Capital Contribution	0	0	0	0	0	0	5,746,650	4,593,511
Private 3rd Party Funding	0	0	0	0	0	0	5,423,367	0
Other Unidentified Funding	0	0	0	0	0	0	23,971,253	36,880,424
Total Other Capital Funding Sources	\$299,355	\$880,450	\$16,745,081	\$502,636	\$160,730	\$18,588,252	\$44,383,463	\$48,462,105
Total Funds Available for Capital Expenditures	\$7,387,679	\$8,006,672	\$22,775,379	\$11,882,390	\$1,118,901	\$26,764,207	\$48,683,106	\$66,072,190
Capital Improvement Program Expenditures	299,355	2,209,013	11,771,495	11,365,442	160,730	25,806,036	44,383,463	50,021,527
Ending Cash Balance	\$7,088,324	\$5,797,659	\$11,003,884	\$516,948	\$958,171	\$958,171	\$4,299,644	\$16,050,663