YUMA
INTERNATIONAL AIRPORT

AIRPORT MASTER PLAN 2022

VOLUME II
APPENDICES

Mead&Hunt

AIRPORT MASTER PLAN

For the

Yuma International Airport

Yuma, Arizona

Federal Aviation Administration

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Glossary of Terms

APPENDIX A - GLOSSARY OF TERMS

This glossary includes industry standard terms, definitions, and acronyms and is intended to serve as a reference for this master plan.

A

AAC Aircraft Approach Category: An FAA classification based on how fast an aircraft approaches the runway on landing. Used to determine airfield design characteristics.

AC Advisory Circular: FAA standards and guidelines on a variety of airport characteristics. Also Asphalt Concrete (in Pavement Condition Index): A composite material commonly used to surface roads, parking lots, and airports. It consists of mineral aggregate bound together with asphalt, laid in layers, and compacted.

ACIP Airport Capital Improvement Plan: The planning program used by the Federal Aviation Administration to identify, prioritize, and distribute funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

ACRP Airport Cooperative Research Program: An industry-driven, applied research program that develops near-term, practical solutions to problems faced by airport operators. ACRP is managed by the Transportation Research Board of the National Academies and sponsored by the Federal Aviation Administration. The research is conducted by contractors who are selected on the basis of competitive proposals. (Transportation Research Board, 2014).

ADEQ Arizona Department of Environmental Quality

ADG

- Aircraft Design Group: An FAA classification based on the wingspan and tail height of aircraft used to determine airfield design characteristics:
- Group I: Up to but not including 49 feet.
- Group II: 49 feet up to but not including 79 feet.
- Group III: 79 feet up to but not including 118 feet.
- Group IV: 118 feet up to but not including 171 feet.
- Group V: 171 feet up to but not including 214 feet.
- Group VI: 214 feet or greater.

ADO FAA Airports District Office: The local ADO is located in Phoenix, Arizona. Staff in the ADO oversee airport planning, permitting, and design projects, manage capital improvement programs, and allocate federal funding.

ADOT	Arizona Department of Transportation
AFFF	Aqueous Film Forming Foam: A highly efficient type of fire suppressant agent, used to attack flammable liquid pool fires.
AFSS	Automated Flight Service Station.
AGL	Above Ground Level: The elevation of a point or surface above the ground.
AGIS	Airports Geographic Information System
AICUZ	Air Installation Compatibility Use Zones
AIP	Airport Improvement Program: The FAA AIP provides grants to public agencies — and, in some cases, to private owners and entities -- for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems (NPIAS). Airports receive regular funding each year called "entitlement" and may compete against other airports nationwide for additional "discretionary" funding. (Federal Aviation Administration, 2014)
Air Carrier	An operator which: (1) performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week, and places between which such flights are performed; or (2) transports mail by air pursuant to a current contract with the U.S. Postal Service. Certified in accordance with Federal Aviation Regulation (FAR) Parts 121 and 127.
Aircraft	The terms aircraft and airplane are synonymous, referring to all types of fixed-wing airplanes, including gliders. A fixed-wing aircraft is heavier than air, and is supported in flight by the dynamic reaction of the air against its wings
Aircraft Approach Category	A grouping of aircraft based on 1.3 times the stall speed in their landing configuration at their maximum certificated landing weight. The categories are as follows: ▸ Category A: Speed less than 91 knots. ▸ Category B: Speed 91 knots or more, but less than 121 knots. ▸ Category C: Speed 121 knots or more, but less than 141 knots. ▸ Category D: Speed 141 knots or more, but less than 166 knots. ▸ Category E: Speed greater than 166 knots.
Aircraft Operation	The landing, takeoff, or touch-and go procedure by an aircraft on a runway at an airport.
Aircraft Owners and Pilots Association (AOPA)	A private organization serving the interests and needs of general aviation pilots and aircraft owners.
Airfield	The portion of an airport which contains the facilities necessary for the operation of aircraft.
Airline Hub	An airport at which an airline concentrates a significant portion of its activity and which often has a significant amount of connecting traffic.

Airport Authority	A quasi-governmental public organization responsible for setting the policies governing the management and operation of an airport or system of airports under its jurisdiction.
Airport Beacon	A navigational aid located at an airport which displays a rotating light beam to identify whether an airport is lighted.
Airport Capital Improvement Plan	The planning program used by the Federal Aviation Administration to identify, prioritize, and distribute funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.
Airport Elevation	The highest point on an airport's usable runways expressed in feet above mean sea level (MSL).
Airport Master Plan	The planner's concept of the long-term development of an airport.
Airport Movement Area Safety System	A system that provides automated alerts and warnings of potential runway incursions or other hazardous aircraft movement events.
Airport Obstruction Chart	A system that provides automated alerts and warnings of potential runway incursions or other hazardous aircraft movement events.
Airport Sponsor	The entity that is legally responsible for the management and operation of an airport, including the fulfillment of the requirements of laws and regulations related thereto.
Airport Surface Detection Equipment	A radar system that provides air traffic controllers with a visual representation of the movement of aircraft and other vehicles on the ground on the airfield at an airport.
Airport Surveillance Radar (ASR)	The primary radar located at an airport or in an air traffic control terminal area that receives a signal at an antenna and transmits the signal to air traffic control display equipment defining the location of aircraft in the air. The signal provides only the azimuth and range of aircraft from the location of the antenna.
Airside	A collective term for those areas of the Airport that are accessible to aircraft including runways, taxiways, aprons, and hangar areas.
Airspace	The volume of space above the surface of the ground that is provided for the operation of aircraft.
Air Taxi	An air carrier certificated in accordance with FAR Part 121 and FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft. Generally, operates small aircraft "for hire" for specific trips.
Air Traffic Control	A service operated by an appropriate organization for the purpose of providing for the safe, orderly, and expeditious flow of air traffic.
Air Traffic Control System Command Center	A facility operated by the FAA, which is responsible for the central flow control, the central altitude reservation system, the airport reservation position system, and the air traffic service contingency command for the air traffic control system.
Air Traffic Hub	A categorization of commercial service airports or group of commercial service airports in a metropolitan or urban area based upon the proportion of annual national enplanements existing at the airport or airports. The categories are large hub, medium hub, small hub, or non-hub. It forms the basis for the apportionment of entitlement funds.

Air Transport Association of America	An organization consisting of the principal U.S. airlines that represents the interests of the airline industry on major aviation issues before federal, state, and local government bodies. It promotes air transportation safety by coordinating industry and governmental safety programs and it serves as a focal point for industry efforts to standardize practices and enhance the efficiency of the air transportation system.
Alert Area	See Special Use Airspace
ALD	Airport Layout Drawing: The drawing of the airport showing the layout of existing and proposed airport facilities.
ALP	Airport Layout Plan: A scaled graphic representation of existing and proposed airport facilities, indicating their location on the airport and pertinent clearance and dimensional information required to show conformance with applicable standards.
Airport Layout Plan Drawing Set	A set of technical drawings depicting the current and future airport conditions. The individual sheets comprising the set can vary with the complexities of the airport, but the FAA-required drawings include the Airport Layout Plan (sometimes referred to as the Airport Layout Drawing (ALD), the Airport Airspace Drawing, and the Inner Portion of the Approach Surface Drawing, On-Airport Land Use Drawing, and Property Map.
ALS	Approach Lighting System: A series of lights before the runway end that guide aircraft landing in the dark and during periods of low visibility.
ALSA	Adjacent Lands Study Area: A general land use study of property adjacent to another parcel that may inventory variable features (acreage, values, zoning, etc.).
ALSF-1	Standard 2,400-foot high intensity approach lighting system with sequenced flashers. Also see Category-I (CAT I) configuration.
ALSF-2	Standard 2,400-foot high intensity approach lighting system with sequenced flashers. Also see Category-II (CAT II) configuration.
Altitude	The vertical distance measured in feet above mean sea level.
AMSL	Above Mean Sea Level
AOA	Aircraft Operations Area: A restricted and secure area on the airport property designed to protect all aspects related to aircraft operations.
AOA	Airport Overflight Area: Land use regulations within the AOAs are established to minimize the potential of aircraft accidents or incidents and risk to the public. Interference within this area with aircraft operations or movement or creation of a wildlife hazard is prohibited. No uses within the district may interfere, obstruct, or impair navigable airspace or signals, radio communications, or visibility in the vicinity of the Airport.
Approach Minimums	The altitude below which an aircraft may not descend while on an IFR approach unless the pilot has the runway in sight.
Approach Surface	An imaginary obstruction limiting surface defined in FAR Part 77 which is longitudinally centered on an extended runway centerline and extends outward and upward from the primary surface at each end of a runway at a designated slope and distance based upon the type of available or planned approach by aircraft to a runway.

Apron	A specified portion of the airfield used for passenger, cargo or freight loading and unloading, aircraft parking, and the refueling, maintenance and servicing of aircraft.
APV	Instrument approach procedure with vertical guidance.
APMS	Arizona Pavement Management System
APPP	Arizona Pavement Preservation Program
APS	Arizona Public Service – Public Utility
ARC	Airport Reference Code: A combination of the AAC and ADG. These two elements combined set the design standards, setbacks, and dimensions of safety critical airport facilities, such as pavement to pavement separation, pavement width, safety areas, object free areas, and runway protection zones.
Area Navigation	The air navigation procedure that provides the capability to establish and maintain a flight path on an arbitrary course that remains within the coverage area of navigational sources being used.
ARFF	Aircraft Rescue Fire and Fighting: A special category of firefighting that involves the response, hazard mitigation, evacuation and possible rescue of passengers and crew of an aircraft involved in (typically) an airport ground emergency.
ARP	Airport Reference Point: The latitude and longitude of the approximate center of the airport.
ARTCC	Air Route Traffic Control Center: In air traffic control an air route control center, also known as a center, is a facility responsible for controlling aircraft en route in a particular volume of airspace at high altitudes between airport approaches and departures.
ASDA	Accelerate-Stop Distance Available: The runway plus stopway length declared available and suitable for the acceleration and deceleration of an aircraft aborting a takeoff. Also see Declared Distances.
ASDE	Airport Surface Detection Equipment: A radar system that provides air traffic controllers with a visual representation of the movement of aircraft and other vehicles on the ground on the airfield at an airport. Also see Declared Distances.
ASOS	Automated Surface Observation System: A reporting system that provides frequent airport ground surface weather observation data through digitized voice broadcasts and printed reports.
ASV	Annual Service Volume: The ASV is a reasonable estimate of an airport's annual capacity that accounts for differences in runway use, aircraft mix, weather conditions, and other variables encountered over a year's time.
ATA	Air Transport Association of America: An organization consisting of the principal U.S. airlines that represents the interests of the airline industry on major aviation issues before federal, state, and local government bodies. It promotes air transportation safety by coordinating industry and governmental safety programs and it serves as a focal point for industry efforts to standardize practices and enhance the efficiency of the air transportation system.

ATCT	Airport Traffic Control Tower: A manned observation tower in charge of managing ground traffic and air traffic in an airport's airspace. The ATCT staff help maintain safe separation between aircraft in the air, and aircraft and vehicles on the ground.
ATIS	Automated Terminal Information Service: The continuous broadcast of recorded non-control information at towered airports. Information typically includes wind speed, direction, and runway in use.
ATOW	Actual Takeoff Weight
AVGAS	Aviation Gasoline (also referred to at 100 low lead, LL): Leaded gasoline used in piston powered aircraft.
Avigation Easement	A contractual right or a property interest in land over which a right of unobstructed flight in the airspace is established.
AWOS	Automated Weather Observation System: The AWOS provides general reports that include temperature, dew point, sky condition, visibility, cloud heights, current weather, precipitation accumulations, icing conditions and sea level pressure.
Azimuth	Horizontal direction expressed as the angular distance between true north and the direction of a fixed point (as the observer's heading).
AzPDES	Arizona Pollutant Discharge Elimination System permit
B	
Base Leg	A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline. Also see Traffic Pattern.
Based Aircraft	Aircraft that hangar or tie-down at an airport. These aircraft indicate that they are based at an airport on their registration form, and the owners typically live or work in the area.
Bearing	The horizontal direction to or from any point, usually measured clockwise from true north or magnetic north.
Blast Fence	A barrier used to divert or dissipate jet blast or propeller wash.
Blast Pad	A prepared surface adjacent to the end of a runway for the purpose of eliminating the erosion of the ground surface by the wind forces produced by airplanes at the initiation of takeoff operations.
BRL	Building Restriction Line: Identifies areas on an airport where structures can be located to be compatible with airfield operations. Buildings should not conflict with the recommended airport design standards defined for a particular runway-taxiway system or the protected airspace associated with the runway. The location of the BRL is measured from the runway centerline outward in a perpendicular direction.
BTS	Bureau of Transportation Statistics: The statistical arm of the U.S. Department of Transportation. The BTS mission is to create, manage, and share transportation statistical knowledge with public and private transportation communities and the Nation. (U.S. Department of Transportation, 2014).

C

CAGR	Compound Annual Growth Rates: The average, annual rate of growth (or loss) over a period of multiple years.
CALA	Combat Aircraft Loading Area
Cargo Service Airport	An airport served by aircraft providing air transportation of property only, including mail, with an annual aggregate landed weight of at least 100,000,000 pounds.
Catchment Area	The geographic boundary from which an airport draws its users, and airport activity is primarily influenced by the movement of people and products to and from the catchment area. Catchment areas are defined by the types of services offered at an airport, proximity of competitor airports, and the tendency of the local population to use the airport.
Category-1 (CAT-I)	An instrument approach or approach and landing with a Height Above Threshold (HATh) or minimum descent altitude not lower than 200 ft (60 m) and with either a visibility not less than ½ statute mile (800m), or a runway visual range not less than 1800 ft (550m).
Category-2 (CAT-II)	An instrument approach or approach and landing with a Height Above Threshold (HATh) lower than 200 ft (60 m) but not lower than 100 ft (30 m) and a runway visual range not less than 1200 ft (350m).
Category-3 (CAT-III)	An instrument approach or approach and landing with a Height Above Threshold (HATh) lower than 100 ft (30m), or no HATh, or a runway visual range less than 1200 ft (350m).
CATEX	Categorical Exclusion
CBIS	Check Baggage Inspection System
CBP	Customs and Border Patrol
CCTV	Closed-Circuit Television
Ceiling	The height above the ground surface to the location of the lowest layer of clouds which is reported as either broken or overcast.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFC	Customer Facility Charge (CFC) is a user fee imposed by an airport operator on each rental car user, collected by rental car companies. CFC is regulated at the state level instead of the federal level. Therefore, the authorization, collection, and project eligibility vary from state to state.
CFR	Code of Federal Regulations: The CFR annual edition is the codification of the general and permanent rules published in the Federal Register by the departments and agencies of the Federal Government. (U.S. Government Printing Office, 2014).
CIP	Capital Improvement Plan: An airport's list of planned capital expenditures over the next five years, on file with the state and the FAA. The CIP is used by federal and state agencies to plan and allocate funding and use by airport sponsors to plan the local share of capital expenditures.
Circling Approach	A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or is not desirable.

Class A Airspace See Controlled Airspace.

Class B Airspace See Controlled Airspace.

Class C Airspace See Controlled Airspace.

Class D Airspace See Controlled Airspace.

Class E Airspace See Controlled Airspace.

Class G Airspace See Controlled Airspace.

Clearway A defined rectangular area beyond the end of a runway cleared or suitable for use in lieu of runway to satisfy takeoff distance requirements. See Takeoff Distance Available (TODA).

Clear Zone See Runway Protection Zone (RPZ).

Commercial Service Airport A public airport providing scheduled passenger service that enplanes at least 2,500 annual passengers.

Compass Rose Marking painted on the airfield so aircraft may calibrate the magnetic compass within the cockpit.

Conical Surface An imaginary obstruction-limiting surface defined in FAR Part 77 that extends from the edge of the horizontal surface outward and upward at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

CONRAC Consolidated Rental Car Center

Controlled Airport An airport that has an operating airport traffic control tower.

Controlled Airspace Airspace of defined dimensions within which air traffic control services are provided to instrument flight rules (IFR) and visual flight rules (VFR) flights in accordance with the airspace classification. Controlled airspace in the United States is designated as follows:

- CLASS A: Generally, the airspace from 18,000 feet mean sea level (MSL) up to but not including flight level FL600. All persons must operate their aircraft under IFR.
- CLASS B: Generally, the airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports. The configuration of Class B airspace is unique to each airport, but typically consists of two or more layers of air space and is designed to contain all published instrument approach procedures to the airport. An air traffic control clearance is required for all aircraft to operate in the area.
- CLASS C: Generally, the airspace from the surface to 4,000 feet above the airport elevation (charted as MSL) surrounding those airports that have an operational control tower and radar approach control and are served by a qualifying number of IFR operations or passenger enplanements. Although individually tailored for each airport, Class C airspace typically consists of a surface area with a five nautical mile (nm) radius and an outer area with a 10 nautical mile radius that extends from 1,200 feet to 4,000 feet above the airport elevation. Two-way radio communication is required for all aircraft.

- CLASS D: Generally, that airspace from the surface to 2,500 feet above the airport elevation (charted as MSL) surrounding those airports that have an operational control tower. Class D airspace is individually tailored and configured to encompass published instrument approach procedure. Unless otherwise authorized, all persons must establish two-way radio communication.
- CLASS E: Generally, controlled airspace that is not classified as Class A, B, C, or D. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Class E airspace encompasses all Victor Airways. Only aircraft following instrument flight rules are required to establish two-way radio communication with air traffic control.
- CLASS G: Generally, that airspace not classified as Class A, B, C, D, or E. Class G airspace is uncontrolled for all aircraft. Class G airspace extends from the surface to the overlying Class E airspace.

Controlled Firing Area	See Special-Use Airspace.
COVID-19	Infectious disease caused by the most recently discovered coronavirus
Critical Aircraft	The most demanding aircraft or grouping of aircraft with similar characteristics that make regular use of the airport. Facility design standards and dimensions are set to accommodate the critical aircraft. For projects requiring FAA-funding, the critical aircraft must have regular use operations over 500 operations per year excluding touch and go operations.
Crosswind	A wind that is not parallel to a runway centerline or to the intended flight path of an aircraft.
Crosswind Component	The component of wind that is at a right angle to the runway centerline or the intended flight path of an aircraft.
Crosswind Leg	A flight path at right angles to the landing runway off its upwind end. Also see Traffic Pattern.
CTAF	Common Traffic Advisory Frequency: A radio frequency used by pilots to communicate with each other at non-towered airports, or when the tower is closed at night. The CTAF may also be used to coordinate arrivals and departures and control airfield lighting systems.
CY	Calendar Year

D

DA	Decision Altitude
DCC	Defense Contractors Complex
DDFS	Design Day Flight Schedule
Decision Height	The height above the end of the runway surface at which a decision must be made by a pilot during the ILS or Precision Approach Radar approach to either continue the approach or to execute a missed approach.

Declared Distances	The distances the airport owner declares available for a turbine powered aircraft's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements. The distances are: ▸ TAKEOFF RUNWAY AVAILABLE (TORA): The runway length declared available and suitable for the ground run of an airplane taking off. ▸ TAKEOFF DISTANCE AVAILABLE (TODA): The TORA plus the length of any remaining runway and/or clear way beyond the far end of the TORA. ▸ ACCELERATE-STOP DISTANCE AVAILABLE (ASDA): The runway plus stopway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff. ▸ LANDING DISTANCE AVAILABLE (LDA): The runway length declared available and suitable for landing.
Department of Transportation	The cabinet level federal government organization consisting of modal operating agencies, such as the Federal Aviation Administration (FAA), which was established to promote the coordination of federal transportation programs and to act as a focal point for research and development efforts in transportation.
Deplanement	This term is used to reference passengers disembarking from an aircraft.
Discretionary Funds	Federal grant funds that may be appropriated to an airport based upon designation by the Secretary of Transportation or Congress to meet a specified national priority such as enhancing capacity, safety, and security, or mitigating noise.
Displaced Threshold	A threshold that is located at a point on the runway beyond the beginning of the runway surface.
DME	Distance Measuring Equipment: A transponder-based radio navigation technology that measures slant range distance by timing the propagation delay of Very-High Frequencies (VHF) or Ultra-High Frequencies (UHF) radio signals.
DNL	Day/Night Average Sound Level: The standard metric used to measure noise from aircraft is the Day-Night Noise Level, which measures the cumulative noise levels of all aircraft operations. DNL includes penalties for night operations (10pm-7am), when ambient noise levels tend to be lower and aircraft noise may be viewed as more disruptive.
DoD	Department of Defense
DoN	Department of Navy
Downwind Leg	A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg. Also see Traffic Pattern.
DTWL	Dual-Tandem Wheel Landing Gear: Runway weight bearing capacity of aircraft with dual-tandem type landing gear.
DWL	Dual-Wheel Landing Gear: Runway weight bearing capacity of aircraft with dual-wheel type landing gear.

E

EA	Environmental Assessment: A concise document that takes a thorough look at expected environmental effects of a proposed action. Projects that receive federal funding are subject to the National Environmental Policy Act and other applicable regulations. Should significant environmental impact be expected as part of a purposed action, then an environmental impact statement may be warranted. (Federal Aviation Administration, 2006).
Easement	The legal right of one party to use a portion of the total rights in real estate owned by another party. This may include the right of passage over, on, or below the property; certain air rights above the property, including view rights; and the rights to any specified form of development or activity, as well as any other legal rights in the property that may be specified in the easement document.
EIS	Environmental Impact Statement: If the EA indicates the proposed action's impacts would meet or exceed a significance threshold(s) for the affected resource(s), or that mitigation would not reduce the significant impact(s) below the applicable threshold(s), FAA must prepare an EIS. An EIS provides additional, detailed evaluations of the proposed action and its alternatives, including the No Action alternative. (Federal Aviation Administration, 2006).
Elevation	The vertical distance measured in feet above mean sea level.
Enplaned Passengers	The total number of revenue passengers boarding aircraft, including originating, stop-over, and transfer passengers, in scheduled and nonscheduled services.
Enplanement	The boarding of a passenger, cargo, freight, or mail on an aircraft at an airport.
Entitlement	Federal funds for which a commercial service airport may be eligible based upon its annual passenger enplanements.
Entrance Taxiway	A taxiway designed to be used by an aircraft entering a runway. Entrance taxiways may also be used to exit a runway.
Environmental Audit	An assessment of the current status of a party's compliance with applicable environmental requirements of a party's environmental compliance policies, practices, and controls.
EPA	Environmental Protection Agency: The purpose of the EPA is to ensure that Americans are protected from significant risks to health and the environment; that national efforts to reduce environmental risk are based on the best available scientific information; and that federal laws protecting health and the environment are enforced; that environmental protection is an integral consideration in U.S. policies concerning natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade, and these factors are similarly considered in establishing environmental policy. (U.S. Environmental Protection Agency, 2014).

ESA	Endangered Species Act: The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. It is administered by the U.S. Fish and Wildlife Service and the Commerce Department's National Marine Fisheries Service. Under the ESA, species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. (U.S. Fish and Wildlife Service, 2013).
Essential Air Service	A federal program which guarantees air carrier service to selected small cities by providing subsidies as needed to prevent these cities from such service.
ETMSC	Enhanced Traffic Management System Counts: Provides information on traffic counts by airport or by city pair for various data groupings such as aircraft type or by hour of the day. Data are created when pilots file flight plans and/or when flights are detected by the National Airspace System.
Exit Taxiway	A taxiway designed to be used by an aircraft only to exit a runway: Acute-Angled Exit Taxiway – A taxiway forming an angle less than 90 degrees from the runway centerline; High Speed Exit Taxiway – An acute-angled exit taxiway forming a 30-degree angle with the runway centerline, designed to allow an aircraft to exit a runway without having to decelerate to typical taxi speed.

F

FAA	Federal Aviation Administration: The FAA's continuing mission is to provide the safest, most efficient aerospace system in the world. (Federal Aviation Administration, 2010). They are the regulatory authority on airports, airspace, aircraft, and pilots in the U.S. FAA policy is created in Washington D.C. and administered by local, regional, and district offices.
FAR	Federal Aviation Regulations: The general and permanent rules established by the executive departments and agencies of the Federal Government for aviation, which are published in the Federal Register. These are the aviation subset of the Code of Federal Regulations.
FAR Part 77	Federal Aviation Regulation Part 77: Establishes standards and notification requirements for objects affecting navigable airspace.
FBO	Fixed Base Operator: Airport businesses that provide a variety of general aviation services including aircraft parking, fuel, maintenance, charter and aircraft rental, pilot lounge, flight instruction and sales.
Federal Inspection Services	The provision of customs and immigration services including passport inspection, inspection of baggage, the collection of duties on certain imported items, and the inspections for agricultural products, illegal drugs, or other restricted items.

FEMA	Federal Emergency Management Agency: FEMA coordinates the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from all domestic disasters, whether natural or man-made, including acts of terror. (Federal Emergency Management Agency, 2014).
FHWA	Federal Highway Administration
Final Approach	A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway. Also see Traffic Pattern.
Final Approach Fix	The designated point at which the final approach segment for an aircraft landing on a runway begins for a non-precision approach.
FIRM	Flood Insurance Resource Map
FIS	Federal Inspection Services
Flight Level	A designation for altitude within controlled airspace.
Flight Service Station	An operations facility in the national flight advisory system which utilizes data interchange facilities for the collection and dissemination of Notices to Airmen, weather, and administrative data and which provides pre-flight and in-flight advisory services to pilots through air and ground-based communication facilities.
FOD	Foreign Object Debris
FONSI	Finding of No Significant Impact: A federal agency's record of decision on an environmental assessment declaring that the proposed action poses no significant impact on natural and human resources included in the National Environmental Policy Act.
FPO	FAA Flight Procedures Office: The FPO is responsible for establishing instrument procedure (departure, en route, arrival, approach) design and obstacle clearance standards, criteria, and policy for the existing National Airspace System flight procedure structure and to accommodate emerging technologies and flight operation capabilities. The FPO develops and establishes criteria for terminal instrument procedures for issuance in the current edition of United States Standard for Terminal Instrument Procedures and related 8260-series orders. (Federal Aviation Administration, 2014).
Frangible	Retains its structural integrity and stiffness up to a designated maximum load, but on impact from a greater load, breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft.
Frangible NAVAID	A navigational aid which retains its structural integrity and stiffness up to a designated maximum load, but on impact from a greater load, breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft.
FSDO	FAA Flight Standards District Office: A regulatory agency in charge of low-flying aircraft, accident reporting, air carrier certification and operations, aircraft maintenance, aircraft operational issues, aircraft permits, airmen certification (licensing) for pilots, mechanics, repairmen, dispatchers, and parachute riggers, certification and modification issues, enforcement of airmen & aircraft regulations. (Federal Aviation Administration, 2013).

FTZ	Foreign Trade Zone: Designated areas intended to promote international trade and offer companies and importers a way to gain a financial edge in the global marketplace through reduction, deferral, or elimination of U.S. Customs duties.
FY	Fiscal Year.

G

GA	General Aviation: Aircraft activity that is not scheduled for commercial purposes (e.g. airlines and cargo carriers) or conducted by the military. GA operations include charter and on-demand air transport, flight instruction, recreational flying, pipeline inspection, and emergency response.
GDP	Gross Domestic Product
General Aviation Airport	An airport that provides air service to only general aviation.
GIS	Geographic Information System: A computer system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data.
GPA	Glide Path Angle: The angle of the final approach descent path relative to the approach surface baseline.
GPS	Global Positioning System: A system of 24 satellites used as reference points to enable navigators equipped with GPS receivers to determine their latitude, longitude, and altitude.
GQS	Glide Path Qualification Surface: An imaginary surface extending from the runway threshold along the runway centerline extended to the Decision Altitude (DA) point.
Ground Access	The transportation system on and around the airport that provides access to and from the airport by ground transportation vehicles for passengers, employees, cargo, freight, and airport services.
Glide Slope	The vertical component of the instrument landing system (ILS) for the glide path guidance when combined with the lateral guidance of the localizer. The glideslope consists of the following: Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS; or Visual ground aids, such as VASI, which provide vertical guidance for VFR approach or for the visual portion of an instrument approach and landing.

H

HAA	Height Above Airport: The height of the circling approach descent altitude (MDA) above the airport elevation.
HAZMAT	Hazardous Materials: Materials that pose a risk to human health and safety, and the environment. Transport, storage, and disposal of these materials are regulated by state and federal environmental and transportation agencies.
Helipad	A designated area for the takeoff, landing, and parking of helicopters.

High-Speed Exit Taxiway	A long radius taxiway designed to expedite aircraft turning off the runway after landing (at speeds to 60 knots), thus reducing runway occupancy time.
HIRL	High Intensity Runway Lights: The highest classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.
Holding Aprons	Aprons that allow for pilots to conduct final flight checks, wait for takeoff clearance, and use the provided area as a bypass space.
Horizontal Surface	An imaginary obstruction-limiting surface defined in FAR Part 77 that is specified as a portion of a horizontal plane surrounding a runway located 150 feet above the established airport elevation. The specific horizontal dimensions of this surface are a function of the types of approaches existing or planned for the runway.
Hot Spot	A location on an airport movement area with a history of potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary.

I

IAP	Instrument Approach Procedure: Consists of a series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight rules (IFR) conditions from the beginning of the initial approach to a landing, or to a point from which the landing can be made visually. IAPs are classified as precision instrument, with both horizontal and vertical guidance; non-precision instrument, with only horizontal guidance; and visual, without positional guidance.
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization: A United Nations specialized agency that works with Member States and global aviation organizations to develop international Standards and Recommended Practices (SARPs) which States reference when developing their legally enforceable national civil aviation regulations. (International Civil Aviation Organization, 2014).
IFR	Instrument Flight Rules: They govern flight procedures when there is cloud ceiling less than 1,000 feet and/or visibility less than three miles. These rules require pilots to be specially licensed to navigate using instruments and air traffic control instruction, without visual reference. (FAR Part 91).

ILS	Instrument Landing System: An instrument landing system operates as a ground-based instrument approach system that provides precision lateral and vertical guidance to an aircraft approaching and landing on a runway, using a combination of radio signals and, in many cases, high-intensity lighting arrays to enable a safe landing during instrument meteorological conditions (IMC), such as low ceilings or reduced visibility due to fog, rain, or blowing snow. The system normally consists of the following electronic components and visual aids: 1. Localizer. 2. Glide Slope. 3. Outer Marker. 4. Middle Marker. 5. Approach Lights.
IM	Inner Marker.
IMC	Instrument Meteorological Conditions: An aviation flight category that describes weather conditions that require pilots to fly primarily by reference to instruments, and therefore under instrument flight rules (IFR), rather than by outside visual references under visual flight rules (VFR).
Initial Approach Fix	The designated point at which the initial approach segment begins for an instrument approach to a runway.
Instrument Procedures	A series of predetermine maneuvers consisting of navigational waypoints, headings, and minimum altitudes, intended to guide aircraft between the terminal (airport area) phase of flight and the en route phase of flight.
ISA	International Standard Atmosphere: This mathematical model describes how the earth's atmosphere, or air pressure and density, changes depending on altitude.
ISP	Internet Service Provider
Itinerant Aircraft	An aircraft that is proceeding to or arriving from another location; or leaves the aerodrome traffic circuit but will be returning to land.
Itinerant Operations	Operations by aircraft that are not based at a specified airport.
J	
Jet	Jet aircraft are characterized for having a turbine engine instead of a piston engine. Jet aircraft range in size from small four-passenger business jets to the largest airliners.
Jet A	Jet A is gasoline used in turbine engine powered aircraft. These include jets and propeller aircraft with turbine engines. Jet A is essentially kerosene, refined to meet aviation specifications.
JUAG	Joint Use Advisory Group

K	
Knots	A unit of speed length used in navigation that is equivalent to the number of nautical miles traveled in one hour.
Kv	Kilovolt
L	
Landside	The portion of an airport that provides the facilities necessary for the processing of passengers, cargo, freight, and ground transportation vehicles.
Large Aircraft	An aircraft with a maximum certificated takeoff weight of more than 12,500 lbs.
LDA	Landing Distance Available: The runway length declared available and suitable for landing an aircraft. Also see Declared Distances.
LDA	Localizer Type Directional Aid
LIRL	Low Intensity Runway Lighting.
LL	Low Lead
LMM	Compass Locator at ILS Outer Marker.
LOC	Localizer: The lateral guidance component of the instrument landing system (ILS) for the runway center line when combined with the vertical guidance of the glide slope.
Local Area Augmentation System	A differential GPS system that provides localized measurement correction signals to the basic GPS signals to improve navigational accuracy integrity, continuity, and availability.
Local Operations	Aircraft operations performed by aircraft that are based at the airport and that operate in the local traffic pattern or within sight of the airport, that are known to be departing for or arriving from flights in local practice areas within a prescribed distance from the airport, or that execute simulated instrument approaches at the airport.
Locator Outer-Marker	A low power, low/medium frequency radio-beacon installed in conjunction with the instrument landing system at one or two of the marker sites.
Local Traffic	Aircraft operating in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from the local practice areas, or aircraft executing practice instrument approach procedures. Typically, this includes touch-and-go training operations.
Localizer Type Directional Aid	A facility of comparable utility and accuracy to a localizer, but is not part of a complete ILS and is not aligned with the runway.
LORAN	Long Range Navigation: An electronic navigational aid, or system, which determines aircraft position and speed by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters. LORAN is used for en route navigation.
Low Intensity Runway Lights	Low Intensity Runway Lights: The lowest classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

M

MAC	Missed Approach Course: The flight route to be followed if, after an instrument approach, a landing is not affected, and occurring normally: When the aircraft has descended to the decision height and has not established visual contact; or When directed by air traffic control to pull up or to go around again.
Magnetic Bearing	This determines the numbering scheme of runways. Runways are measured based on their orientation to the magnetic north pole (not the true North Pole, located at 90 degrees north latitude).
MALS	Medium Intensity Approach Lighting System with Indicator Lights.
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights: A medium approach intensity lighting system (ALS) installed in airport runway approach zones along the extended centerline of the runway. MALSR consists of a combination of threshold lamps, steady burning light bars and flashers, provides visual information to pilots on runway alignment, height perception, roll guidance, and horizontal references for Category I Precision Approaches.
MCAS Yuma	Marine Corps Air Station - Yuma
MDA	Minimum Decent Altitude: The lowest authorized altitude on an approach that does not have vertical guidance. MDA is referenced to mean sea level (MSL).
MEP	Multi-Engine Piston: Aircraft with two or more engines and are typically larger than Single Engine Piston (SEP) aircraft.
Military Operations	Aircraft operations that are performed in military aircraft.
Military Training Route	An air route depicted on aeronautical charts for the conduct of military flight training at speeds above 250 knots.
MIRL	Medium Intensity Runway Lights: Runway lights located along the edge of the runway and used by pilots at night and in low visibility to land and take-off from the runway.
MITL	Medium Intensity Taxiway Lights: Taxiway lights located along the edge of the taxiway and used by pilots at night and in low visibility to navigate on taxiways.
MLS	Microwave Landing System: An instrument approach and landing system that provides precision guidance in azimuth, elevation, and distance measurement.
MM	Middle Marker.
MOA	Military Operations Area: See Special-Use Airspace.
Modification to Standards	Any approved nonconformance to FAA standards, other than dimensional standards for Runway Safety Areas (RSAs), applicable to an airport design, construction, or equipment procurement project that is necessary to accommodate an unusual local condition for a specific project on a case-by-case basis while maintaining an acceptable level of safety.

Monte Carlo Simulation	Monte Carlo simulations are used to model the probability of different outcomes in a process that cannot easily be predicted due to the intervention of random variables. It is a technique used to understand the impact of risk and uncertainty in prediction and forecasting models.
Movement Area	The runways, taxiways, and other areas of an airport that are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft including helicopters and tiltrotors, exclusive of loading aprons and aircraft parking areas.
MRO	Maintenance, Repair and Overhaul
MSA	Metropolitan/Micropolitan Statistical Area: Metropolitan and micropolitan statistical areas (also referred to as metro and micro areas) are delineated by the Office of Management and Budget for the production and dissemination of federal statistical data. Each metro or micro area consists of one or more whole counties, and includes the counties containing a core urban area and any adjacent counties with a high degree of social and economic integration (measured by commuting to work) with the urban core.
MSL	Mean Sea Level: An average level of the surface of one or more of Earth's oceans from which heights such as elevations may be measured. MSL is a type of vertical datum – a standardized geodetic reference point – that is used, for example, as a chart datum in cartography and marine navigation or, in aviation, as the standard sea level at which atmospheric pressure is measured to calibrate altitude and, consequently, aircraft flight levels.
MTOW	Maximum Take-Off Weight
Multivariate time series regression analysis	Time series regression is a statistical method for predicting a future response based on the response history (known as autoregressive dynamics) and the transfer of dynamics from relevant predictors. ... Time series regression is commonly used for modeling and forecasting of economic, financial, and biological systems.
MUTCD	Manual on Uniform Traffic Control Devices

N

NAAQS	National Ambient Air Quality Standards: The Clean Air Act requires the Environmental Protection Agency to set National Ambient Air Quality Standards for pollutants considered harmful to public health and the environment. The Clean Air Act identifies two types of national ambient air quality standards. Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. (U.S. Environmental Protection Agency, 2011).
NAS	National Airspace System: The airspace, navigation facilities and airports of the United States along with their associated information, services, rules, regulations, policies, procedures, personnel, and equipment.

National Transportation Safety Board	A federal government organization established to investigate and determine the probable cause of transportation accidents, to recommend equipment and procedures to enhance transportation safety, and to review on appeal the suspension or revocation of any certificates or licenses issued by the Secretary of Transportation.
Nautical Mile	A unit of length used in navigation, which is equivalent to the distance spanned by one minute of arc in latitude, that is, 1,852 meters or 6,076 feet. It is equivalent to approximately 1.15 statute mile.
NAVAID	Navigational Aid: An electronic or visual guidance system that allows pilots to maintain situational and locational awareness during periods of low visibility. NAVAIDs include airfield lights and radio beacons that convey positional information to pilots.
NAVFAC	Naval Facilities Engineering Systems Command
NCRS	Natural Resources Conservation Service: U.S. Department of Agriculture's principal agency for providing conservation technical assistance to private landowners, conservation districts, tribes, and other organizations.
NDB	Non-Directional (Radio) Beacon: A radio transmitter at a known location, used as an aviation or marine navigational aid. A NAVAID that broadcasts its location in all directions. These NAVAIDs are typically coupled with automatic direction finders, which convey their relative direction to aircraft.
NEPA	National Environmental Policy Act: The NEPA requires federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. To meet NEPA requirements federal agencies prepare a detailed statement known as an Environmental Assessments and Environmental Impact Statements (EIS). EPA reviews and comments on EISs prepared by other federal agencies, maintains a national filing system for all EISs, and assures that its own actions comply with NEPA. (U.S Environmental Protection Agency, 2014).
NFIP	National Flood Insurance Program
NGS	National Geodetic Survey
NM	Nautical Mile: 6,076.1 feet.
NOAA	National Oceanic and Atmospheric Administration: An American scientific agency within the United States Department of Commerce that focuses on the conditions of the oceans, major waterways, and the atmosphere.
Noise Contour	A continuous line on a map of the airport vicinity connecting all points of the same noise exposure level.
Non-Movement Area	The areas of an airport that are used for taxiing or hover taxiing, or air taxiing aircraft including helicopters and tiltrotors, but are not part of the movement area (i.e., the loading aprons and aircraft parking areas).

Non-Precision Instrument	NAVAIDs and instrument procedures enabling only lateral guidance of aircraft, compared to precision instrument, which provides lateral and vertical guidance. During periods of visibility below three statute miles, and when the cloud ceiling is below 1,000 feet above ground level, aircraft, airports, and pilots must be equipped and trained to fly non-precision instrument procedures, otherwise the airport must close until visibility improves.
NOTAM	Notice to Airmen: Federally issued notice pertaining to deviations from standard operating procedures in the national airspace system. NOTAMs typically pertain to airspace and runway closures, and special events, such as air shows. Pilots are responsible for reviewing applicable NOTAMs in the airspace and airports within which they operate.
NPA	Non-Precision Approach: A straight-in instrument approach procedure that provides course guidance, with or without vertical path guidance, with visibility minimums not lower than 3/4 mile (4000 RVR).
NPDES	National Pollutant Discharge Elimination System.
NPIAS	National Plan of Integrated Airport Systems: The NPIAS identifies nearly 3,400 existing and proposed airports that are significant to national air transportation and thus eligible to receive Federal grants under the Airport Improvement Program (AIP). It also includes estimates of the amount of AIP money needed to fund infrastructure development projects that will bring these airports up to current design standards and add capacity to congested airports. The FAA is required to provide Congress with a 5-year estimate of AIP eligible development every two years. The NPIAS contains all commercial service airports, all reliever airports, and selected general aviation airports. (Federal Aviation Administration, 2014).
NPRM	Notice of Proposed Rulemaking.
NRCS	National Resource Conservation Service
NRI	Natural Resource Inventory: A statistical survey of land use and natural resource conditions and trends on U.S. non-Federal lands, maintained by the US Department of Agriculture.
NTAD	National Transportation Atlas Database
NYL	Yuma International Airport's current three letter identifier. The FAA changed the three letter identifier for Yuma International Airport to NYL from YUM effective June 5, 2008.

O

Obstacle	An existing object at a fixed geographical location, or which may be expected at a fixed location within a prescribed area with reference to which vertical clearance is or must be provided during flight operation.
OCS	Obstacle Clearance Surface: An evaluation surface that defines the minimum required obstruction clearance for approach or departure procedures.
ODALS	Omni-Directional Approach Lighting System.

OE/AAA	Obstacle Evaluation / Airport Airspace Analysis: FAA OE/AAA evaluates cases related to airspace in the U.S. Structures built within 20,000 feet of public airports, or exceeding 200 feet above ground level, must go through OE/AAA review. OE/AAA issues a determination on whether the proposed construction is or is not a hazard to air navigation.
OFA	Object Free Area: The area centered about the runway or taxiway centerline. The OFA clearing standard requires clearing the OFA of above-ground objects protruding above the nearest point of the safety area, except those fixed by function. Buildings and parked aircraft are not permitted in the OFA. (Federal Aviation Administration, 2012).
OFZ	Obstacle Free Zone: The OFZ clearing standard precludes aircraft and other object penetrations, except for frangible NAVAIDs that need to be located in the OFZ because of their function. Its shape is dependent on the approach minimums for the runway end and the aircraft on approach and, thus, the OFZ for a particular operation may not be the same shape as that used for design purposes. (Federal Aviation Administration, 2012).
OM	Outer Marker: An ILS navigation facility in the terminal area navigation system located four to seven miles from the runway edge on the extended centerline, indicating to the pilot that he/she is passing over the facility and can begin final approach.
One-Engine Inoperable Surface	A surface emanating from the runway end at a slope ratio of 62.5:1. Air carrier airports are required to maintain a technical drawing of this surface depicting any object penetrations by January 1, 2010.
Operation	Data showing how many times aircraft have taken off, landed, or performed a touch-and-go at an airport. One visit to an airport counts as two operations (landing and takeoff).

P

PAC	Planning Advisory Committee: A committee made up of airport staff, members of the Airport Advisory Board, and others with an in-depth understanding of aviation. PAC members are tasked with becoming familiar with how the airport operates, and what facilities pilots and aviation-related businesses require.
PAPI	Precision Approach Path Indicator: A series of lights that indicate to a pilot whether they are on, above, or below the prescribed glide path to a runway end. These devices have either two or four lights that alternate between white and red to indicate the pilot's position.
PCCP	Portland Cement Concrete Pavement
PCI	Pavement Condition Index: A numerical index used in transportation civil engineering between 0 and 100, which is used to indicate the general condition of a pavement.
PFC	Passenger Facility Charge.
Pilot Controlled Lighting	Runway lighting systems at an airport that are controlled by activating the microphone of a pilot on a specified radio frequency.
PIW	Public Information Workshop.
PLASI	Pulsating Visual Approach Slope Indicator.

PMAD	Peak Month Average Day
POFA	Precision Object Free Area: An area centered on the extended runway centerline, beginning at the runway threshold and extending behind the runway threshold that is 200 feet long by 800 feet wide. The POFA is a clearing standard, which requires the POFA to be kept clear of above ground objects protruding above the runway safety area edge elevation (except for frangible NAVAIDS). The POFA applies to all new authorized instrument approach procedures with less than ¾ mile visibility.
POFZ	Precision Obstacle Free Zone
Precision Approach	A standard instrument approach procedure, which provides runway alignment and glide slope (descent) information. It is categorized as follows: 1. CATEGORY I (CAT I): A precision approach which provides for approaches with a decision height of not less than 200 feet and visibility not less than 1/2 mile or Runway Visual Range (RVR) 2400 (RVR 1800) with operative touchdown zone and runway centerline lights. 2. CATEGORY II (CAT II): A precision approach which provides for approaches with a decision height of not less than 100 feet and visibility not less than 1200 feet RVR. 3. CATEGORY III (CAT III): A precision approach which provides for approaches with minima less than Category II.
Precision Approach Radar	A radar facility in the terminal air traffic control system used to detect and display with a high degree of accuracy the direction, range, and elevation of an aircraft on the final approach to a runway.
Precision Instrument	NAVAIDs and instrument procedures enabling both lateral and vertical guidance of aircraft. During periods of visibility below 1/2 a statute mile, and when the cloud ceiling is below 200 feet above ground level, aircraft, airports, and pilots must be equipped and trained to fly precision instrument procedures, otherwise the airport must close until visibility improves.
Primary Airport	A commercial service airport that enplanes at least 10,000 annual passengers.
Primary Surface	An imaginary obstruction limiting surface defined in FAR Part 77 that is specified as a rectangular surface longitudinally centered about a runway. The specific dimensions of this surface are a function of the types of approaches existing or planned for the runway.
Prohibited Area	See Special-Use Airspace.
PVACI	Pulsating | Steady Visual Approach Slope Indicator.
PVC	Poor Visibility and Ceiling: Used in determining Annual Service Volume. PVC conditions exist when the cloud ceiling is less than 500 feet and visibility is less than one statute mile.

Q

QTA	Quick Turn Area

R

Radial	A navigational signal generated by a Very High Frequency Omni-directional Range or VORTAC station that is measured as an azimuth from the station.
RCO	Remote Communications Outlet: An unstaffed transmitter receiver/facility remotely controlled by air traffic personnel. RCOs serve flight service stations (FSSs). RCOs were established to provide ground-to-ground communications between air traffic control specialists and pilots at satellite airports for delivering en route clearances, issuing departure authorizations, and acknowledging instrument flight rules cancellations or departure/landing times.
RCRA	Resource Conservation and Recovery Act
RDC	Runway Design Code: A combination of the AAC and ADG. These two elements combined set the design standards, setbacks, and dimensions, pavement width, safety areas, object free areas, and runway protection zones for a single runway. (Federal Aviation Administration, 2012).
Real GDP	Real Gross Domestic Product: GDP measures the value of all goods and services produced within a geographic area. Real GDP measures economic output in inflation-adjusted dollars.
Real GRP	Real Gross Regional Product: The value of goods and services produced in the region that serves as a health index for the overall economy.
Regression Analysis	Using projected change of one variable to forecast the change of another. Regression analysis typically identifies correlation between two variables historically, indicating whether these variables change in a similar fashion to each other, or inversely. Correlation and regression do not determine causation.
REIL	Runway End Identifier Lights: Lights that provide rapid and positive identification of the approach end of a runway. The system consists of a pair of synchronized flashing lights located laterally on each side of the runway threshold.
Reliever Airport	An airport to serve general aviation aircraft which might otherwise use a congested air-carrier served airport.
Remain Over day Apron (ROD)	Apron area where air carriers can park aircraft over day.
Remain Overnight Apron (RON)	Apron area where air carriers can park aircraft overnight.
Restricted Area	See Special-Use Airspace.
RNAV	Area Navigation: A method of instrument flight rules (IFR) navigation that allows an aircraft to choose any course within a network of navigation beacons, rather than navigate directly to and from the beacons. Typically, GPS system navigation.
ROFA	Runway Object Free Area: This is an object free area centered on the runway. Also see the definition of OFA.

RPZ	Runway Protection Zone: A trapezoidal feature whose function is to enhance the protection of people and property on the ground by keeping the area clear of incompatible land uses. These land uses generally include noise sensitive land uses, land uses that are characterized by high concentrations of people, and fuel and hazardous material storage.
RSA	Runway Safety Area: A safety area that is centered longitudinally on the runway. It must be clear of all objects, graded, drained, and capable of supporting snow removal equipment, firefighting equipment, and the passage of aircraft without damage to the aircraft. (Federal Aviation Administration, 2012).
RTR	Remote Transmitter/Receiver: RTRs serve ARTCCs. Also see Remote Communications Outlet (RCO).
Runway	A defined rectangular surface on an airport prepared or suitable for the landing or takeoff of aircraft. Runways are normally numbered in relation to their magnetic direction, rounded off to the nearest 10 degrees. For example, a runway with a magnetic heading of 180 would be designated Runway 18. The runway heading on the opposite end of the runway is 180 degrees from that runway end. For example, the opposite runway heading for Runway 18 would be Runway 36 (magnetic heading of 360). Aircraft can takeoff or land from either end of a runway, depending upon wind direction.
Runway Alignment Indicator Light	A series of high intensity sequentially flashing lights installed on the extended centerline of the runway usually in conjunction with an approach lighting system.
Runway Gradient	The average slope, measured in percent, between the two ends of a runway.
Runway Incursion	Any occurrence at an airport involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and takeoff of aircraft.
RVR	Runway Visibility Range: An instrumentally derived value, in feet, representing the horizontal distance a pilot can see down the runway from the runway end.
RVZ	Runway Visibility Zone: An area on the airport to be kept clear of permanent objects so that there is an unobstructed line of site from any point five feet above the runway centerline to any point five feet above an intersecting runway centerline.

S

SALS	Short Approach Lighting System.
SARA	Superfund Amendments and Reauthorization Act
SASO	Specialized Aviation Service Operator: A single-service provider, or special Fixed Based Operator, performing less than full services.
SASP	State Aviation System Plan.
SCASDP	Small Community Air Service Development Program
Scope	The document that identifies and defines the tasks, emphasis, and level of effort associated with a project or study.
Segmented Circle	A system of visual indicators designed to provide traffic pattern information at airports without operating control towers.
SEL	Sound Exposure Level.

SEP	Single Engine Piston: SEP have one piston-powered engine. These aircraft are generally smaller and are often used for flight training and recreational flying.
Shoulder	An area adjacent to the defined edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface; support for aircraft and emergency vehicles deviating from the full-strength pavement; enhanced drainage; and blast protection.
SID	Standard Instrument Departure: A preplanned coded air traffic control IFR departure routing, preprinted for pilot use in graphic and textual form only.
Slant-Range Distance	The distance between an aircraft and a point on the ground.
SM	Statute Mile: 5,280 feet.
Small Aircraft	An aircraft with a maximum certificated takeoff weight of 12,500 lbs. (5670 kg) or less.
SOP	Standard Operating Procedure
Special-Use Airspace	Airspace of defined dimensions identified by a surface area wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Special-use airspace classifications include: ▸ ALERT AREA: Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft. ▸ CONTROLLED FIRING AREA: Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons or property on the ground. ▸ MILITARY OPERATIONS AREA (MOA): Designated airspace with defined vertical and lateral dimensions established outside Class A airspace to separate/segregate certain military activities from instrument flight rule (IFR) traffic and to identify for visual flight rule (VFR) traffic where these activities are conducted. ▸ PROHIBITED AREA: Designated airspace within which the flight of aircraft is prohibited. ▸ RESTRICTED AREA: Airspace designated under Federal Aviation Regulation (FAR) 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use. When not in use by the using agency, IFR/VFR operations can be authorized by the controlling air traffic control facility. ▸ WARNING AREA: Airspace which may contain hazards to nonparticipating aircraft.
SSALF	Simplified Short Approach Lighting System with Runway Alignment Indicator Lights.
Standard Instrument Departure Procedures	A published standard flight procedure to be utilized following takeoff to provide a transition between the airport and the terminal area or en route airspace.

STAR	Standard Terminal Arrival Route: A preplanned coded air traffic control IFR arrival routing, preprinted for pilot use in graphic and textual or textual form only.
Stop-and-Go	A procedure wherein an aircraft will land, make a complete stop on the runway, and then commence a takeoff from that point. A Stop-and-Go is recorded as two operations: one operation for the landing and one operation for the takeoff.
Stopway	An area beyond the takeoff runway, no less wide than the runway and centered upon the extended centerline of the runway, able to support the airplane during an aborted takeoff, without causing structural damage to the airplane, and designated by the airport authorities for use in decelerating the airplane during an aborted takeoff. A blast pad is not a stopway.
Straight-in Landing/Approach	A landing made on a runway aligned within 30 degrees of the final approach course following completion of an instrument approach.
SWL	Single-Wheel Landing Gear: Runway Weight Bearing Capacity for Aircraft with Single-Wheel Tandem Type Landing Gear.
SWMP	Solid Waste Management Plan

T

TACAN	Tactical Air Navigation: An ultrahigh frequency electronic air navigation system which provides suitably equipped aircraft a continuous indication of bearing and distance to the TACAN station.
TAF	Terminal Area Forecast: The annual FAA forecast of passengers, aircraft operations, and based aircraft for the National airspace system. This is a top down forecast, starting from the FAA national aerospace forecast and being distributed to the different airports. It is used as a basis for comparison for Master Plan generated forecasts.
Taxilane	A taxiway designed for low speed and precise taxiing. Taxilanes are usually, but not always, located outside the movement area, providing access from taxiways (usually an apron taxiway) to aircraft parking positions and other terminal areas.
Taxiway	A defined path established for the taxiing of aircraft from one part of an airport to another.
TDG	Taxiway Design Group: Relates to the undercarriage dimensions of the aircraft. Taxiway/taxilane width and fillet standards, and in some cases, runway to taxiway and taxiway/taxilane separation standards are determined by TDG.
TDZ	Touchdown Zone: The first 3,000 feet of the runway beginning at the threshold.
TDZE	Touchdown Zone Elevation: The highest elevation in the touchdown zone.
Terminal Instrument Procedures	Published flight procedures for conducting instrument approaches to runways under instrument meteorological conditions.
Terminal Radar Approach Control	An element of the air traffic control system responsible for monitoring the en route and terminal segment of air traffic in the airspace surrounding airports with moderate to high levels of air traffic.
TESM	Taxiway Edge Safety Margin: The distance between the outer edge of the landing gear of an airplane with its nose gear on the taxiway centerline and the edge of the taxiway pavement.

Tetrahedron	A device used as a landing direction indicator. The small end of the tetrahedron points in the direction of landing.
TFMSC	Traffic Flow Management System Traffic Counts: The data collected from flight plans. These operations are categorized by aircraft type and used to identify trends in the airport fleet mix.
THC	Threshold Crossing Height: The theoretical height above the runway threshold at which the aircraft's glideslope (GS) antenna would be if the aircraft maintains the trajectory established by the Instrument Landing System (ILS) GS, or the height of the pilot's eye above the runway threshold, based on a visual guidance system.
Threshold	The beginning of that portion of the runway available for landing. In some instances, the threshold may be displaced. Threshold always refers to landing, not the start of takeoff.
Tiedown	Located on aircraft parking aprons and used to secure parked aircraft so that they do not move in high winds.
TNC	Transportation Network Companies
TODA	Takeoff Distance Available: The Takeoff Run Available (TORA) plus the length of any remaining runway or clearway beyond the far end of the TORA. Also see Declared Distances.
TOFA	Taxiway Object Free Area: This is an object free area centered on the taxiway. Also see the definition of OFA.
TORA	Takeoff Runway Available: The runway length declared available and suitable for the ground run of an aircraft taking off. Also see Declared Distances.
Touch-and-Go	An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway. A Touch-and Go is recorded as two operations: one operation for the landing and one operation for the takeoff.
Touchdown	The point at which a landing aircraft contacts the runway surface.
Touchdown Zone Lighting	Two rows of transverse light bars located symmetrically about the runway centerline normally at 100-foot intervals. The basic system extends 3,000 feet along the runway.
TRACON	Terminal Radar Approach Control.
Traffic Pattern	The traffic flow that is prescribed for aircraft landing at, or taking off from, an airport. The components of a typical Traffic Pattern are the upwind leg, crosswind leg, downwind leg, base leg, and final approach.
Transitional Surface	A surface extending outward and upward, at right angles to the runway centerline and runway centerline extended, from the sides of the Primary Surface and the Approach Surfaces.
TSA	Taxiway Safety Area: A safety area that is centered longitudinally on the taxiway. It must be clear of all objects, graded, drained, and capable of supporting snow removal equipment, firefighting equipment, and the passage of aircraft without damage to the aircraft. (Federal Aviation Administration, 2012).

Turboprop	Aircraft that uses gas turbine engines to drive a propeller. These aircraft tend to be slower than jets. Turboprops are used as small commuter aircraft due to lower fuel and maintenance costs.

U

UAS	Unmanned Aircraft (Arial) System: The combination of a pilotless vehicle and pilot that flies the vehicle remotely. This acronym is often used interchangeably with Unmanned Aerial Vehicle (UAV); however, UAS refers to the vehicle and the pilot.
UAV	Unmanned Aerial Vehicle: A pilotless vehicle. This acronym is often used interchangeably with Unmanned Aircraft (Arial) System (UAS); however, UAV refers to the vehicle itself, and not the pilot.
UFC	Unified Facilities Criteria
UGB	Urban Growth Boundary: A regional boundary, set by the local jurisdiction by mandating that the area inside the boundary be used for higher density urban development and the area outside be used for lower density development, with the hope of controlling urban sprawl.
UHF	Ultra-High Frequency
Uncontrolled Airport	An airport without an air traffic control tower at which the control of Visual Flight Rules (VFR) traffic is not exercised.
Uncontrolled Airspace	Airspace within which aircraft are not subject to air traffic control.
UNICOM	Universal Communication: A non-government communication facility which may provide airport information at certain airports. Locations and frequencies of UNICOM's are shown on aeronautical charts and publications.
Upwind Leg	A flight path parallel to the landing runway in the direction of landing. Also see Traffic Pattern.
USACE	U.S. Army Corps of Engineers: The USACE has regulatory over navigable waterways in the U.S. They manage river hydrology, flood prevention, and emergency response.
USC	United States Code: A consolidation and codification by subject matter of the general and permanent laws of the United States. It is prepared by the Office of the Law Revision Counsel of the United States House of Representatives. (United States House of Representatives, 2014).
USCBP	United States Customs and Border Patrol
USFS	United States Forest Service: An agency of the U.S. Department of Agriculture that administers the nation's national forests and national grasslands.
USFWS	U.S. Fish and Wildlife Service: USFWS is tasked with enforcing federal wildlife laws, protecting endangered birds and species, managing bird migrations and fisheries, restoring wetlands, and collecting excise taxes on fishing and hunting. (U.S. Fish and Wildlife Service, 2014).
USNGS	United States National Geodetic Survey
USMC	United States Marine Corps

V

VASI	Visual Approach Slope Indicator: An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he is on path if he sees red/white, above path if white/white, and below path if red/red. Some airports serving large aircraft have three-bar VASI's which provide two visual guide paths to the same runway.
Vector	A heading issued to an aircraft to provide navigational guidance by radar.
VFR	Visual Flight Rules: Under visual flight rules, pilots must be able to maintain separation from aircraft and objects visually, without the use of navigational aids (NAVAIDS). When weather reduces visibility below three statue miles then pilots may not operate under Visual Flight Rules (VFR) and must instead use Instrument Flight Rules (IFR). (FAR Part 91).
VHF	Very High Frequency.
Victory Airway	A control area or portion thereof established in the form of a corridor, the centerline of which is defined by radio navigational aids.
Visual Approach	An approach wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of an air traffic control facility and having an air traffic control authorization, may proceed to the airport of destination in VFR conditions.
Visual Meteorological Conditions	Meteorological conditions expressed in terms of specific visibility and ceiling conditions which are equal to or greater than the threshold values for instrument meteorological conditions.
VOR	Very High Frequency (VHR) Omni-Directional Range (VOR): VOR NAVAIDS convey position and course (relative to the VOR) information to aircraft in flight. These NAVAIDs are used to establish airways across the U.S.
VORTAC	Very High Frequency Omni-Directional Range | Tactile Air Navigation: A navigation aid providing VOR azimuth, TACAN azimuth, and TACAN distance-measuring equipment (DME) at one site.

W

WAAS	Wide Area Augmentation System: A ground-based global positioning system (GPS) signal augmentation service. WAAS antennas boost strength and reliability of satellite GPS signals, enabling aircraft to use GPS to fly instrument approach procedures.
Warning Area	See Special-Use Airspace.
Weight Bearing Capacity	The amount of weight a piece of pavement is capable of bearing under normal circumstances, without resulting in excessive wear. Aircraft that weigh more than a pavement's weight bearing capacity may still use the pavement; however, frequent use by such aircraft will cause premature wear of the pavement, requiring earlier replacement.
WHMP	A Wildlife Hazard Management Plan is a strategy document created after risk assessment of wildlife hazards at an airport. The document helps airports plan development to reduce the risk that wildlife hazards present to safe operations.

WHO	World Health Organization
Wingspan	The maximum horizontal distance from one wingtip to the other wingtip, including the horizontal component of any extensions, such as winglets or raked wingtips.
WTI	MCAS Yuma's Weapons and Tactics Instructor (WTI) course

X

Y

YCAA	Yuma County Airport Authority
YCAT	Yuma County Area Transit
YCDS	Yuma County Development Services
YPG	Yuma Proving Grounds
YUM	Yuma International Airport's former three letter identifier. The FAA changed the three-letter identifier for Yuma International Airport to NYL from YUM effective June 5, 2008.

Z

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APPENDIX B

Waste Recycling & Reuse Plan

APPENDIX B - RECYCLING & SOLID WASTE PLAN

SUMMARY

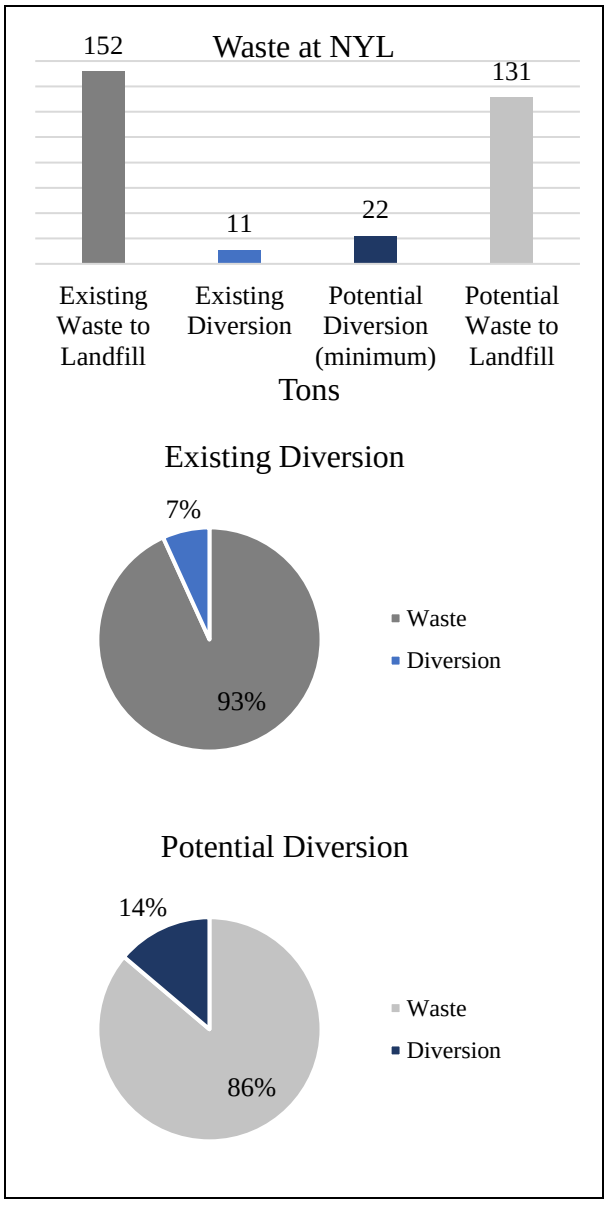
The Yuma County Airport Authority (YCAA) could reduce waste generation and increase landfill diversion at Yuma International Airport (NYL) by:

- Integrating waste diversion practices into Airport operations.
- Improving purchasing practices, reducing disposable items, and reusing supplies.
- Enhancing the existing recycling program.
- Tracking and voluntarily reporting waste metrics and diversion progress.

The existing program at NYL generates approximately 163 total tons of waste annually, including 11 tons of recycling. These recommended strategies have the potential to divert at least an additional 11 tons of waste annually.

Reducing waste generation and increasing landfill diversion align with YCAA's efforts to operate the Airport in a responsible manner. They also align with the adjacent Marine Corps Air Station (MCAS) Yuma Installation's *Sustainability Performance Plan* and program.

Planning for solid waste and recycling under the on-going master plan fulfills YCAA's federal obligation under the Federal Aviation Administration (FAA) Modernization and Reauthorization Act of 2012 and subsequent regulation.



RECOMMENDATIONS

The following recommendations to improve waste management at NYL include waste reduction, reuse, and recycling strategies. These recommendations are voluntary and would support YCAA's efforts to operate the Airport in an environmentally and financially responsible manner. Evaluation for each recommendation considered estimated relative cost and diversion potential; the suggested implementation time frame; and noted alignment with best practices or standard programs. Table B-1 shows the key for quick comparison of the impact of each recommendation on diversion.

Table B-1: Recommendation Key

Item	Icons	Significance
Relative Cost	$ $ $	Low cost
	$ $ $	Medium cost
	$ $ $	High cost
Estimated Diversion Potential	🗑 🗑 🗑	Low diversion potential
	🗑 🗑 🗑	Medium diversion potential
	🗑 🗑 🗑	High diversion potential
Suggested Implementation Time Frame	🕒 🕒 🕒	Short range (<1 year)
	🕒 🕒 🕒	Medium range (1-3 years)
	🕒 🕒 🕒	Long range (3+ years)
Alignment	BMP	Best Management Practice
	TRUE	BMP and Total Resource Use and Efficiency (TRUE) Certification program element

Recommendation 1: Integrate Waste Diversion in Airport Operations

Description

Waste diversion is the concept of avoiding and/or managing waste to avoid landfill disposal. Waste diversion strategies include practices such as reduction, reuse, donation, sustainable procurement, recycling, and composting. These strategies offer various levels of fiscal, environmental, and social benefits.

Relative Cost

Estimated Diversion

Time Frame

Alignment

BMP

Action

It is recommended that NYL continue to integrate waste diversion concepts and practices into existing Airport policies and operations, for example, in maintenance operations, purchasing practices, and tenant requirements.

Justification

Much of the municipal solid waste generated at NYL is disposed of at a local landfill, but some items are recycled (see **Current Waste Management Program**). Waste diversion would reduce the volume of waste sent to the landfill as well as reduce the financial and social impacts of waste.

Information Needed

- Communication tools to reach Airport staff and tenants.
- Waste diversion information.

Action Plan

- Emphasize the importance of waste diversion to Airport staff and tenants.
- Adopt additional waste diversion policy or integrate in existing guidance documents.
- Identify sources of waste and promote strategies to avoid, reduce, or divert these materials.
- Encourage waste diversion in future tenant and project contracts.

Recommendation 2: Improve Purchasing Practices, Reduce, & Reuse

Description

To reduce the facility's volume of waste sent to the landfill, the Airport should reduce waste generation and reuse materials where possible. NYL staff's existing purchasing practices may generate waste in the form of single-use and/or disposable items and supplies and tracking of these items could reveal opportunities for reduction and reuse.

Relative Cost

Estimated Diversion

Time Frame

Alignment

BMP

Action

It is recommended that YCAA adopt a purchasing policy prioritizing durable (versus disposable) items and supplies that are reusable, recyclable, compostable, and/or made from recycled content. It is also recommended that YCAA identify supplies and materials which can be avoided, reused on site, or donated to a third party.

Justification

Waste reduction is the most environmentally preferred waste management strategy as determined by the **Environmental Protection Agency (EPA)**. Reduction and reuse simultaneously lower waste program costs by producing a smaller material stream.

Information Needed

- Purchasing records.
- Waste stream information.

Action Plan

- Adjust practices which generate waste (printing, housekeeping, etc.)
- Substitute durable alternatives for single use or disposable items in the administration office and staff areas.
- Reuse items and materials where possible and encourage reuse by passengers, tenants, and contractors.
- Purchase reusable supplies and/or from local sources to reduce shipping waste.
- Collect and donate leftover food and ingredients from Brewers Restaurant and Sports Bar.

Recommendation 3: Enhance Existing Recycling Program

Description

To reduce the facility's volume of waste sent to the landfill, the Airport should continue to recycle materials that cannot be reused or avoided and expand the program to include additional materials. The Airport could also explore collaborating with new or additional waste management companies on improving the recycling program.

Relative Cost

Estimated Diversion

Time Frame

Alignment

TRUE

Action

It is recommended that the Airport maintain its existing recycling program and supplement current practices with additional receptacles, signage, an education campaign, the incorporation of more materials, and partnership with the waste hauler.

Justification

Convenient receptacles, effective signage, and educational campaigns have been shown to increase participation and improve compliance with a recycling program. Recycling bins should be readily visible, instructional recycling signage would increase effectivity, an awareness campaign for employees, tenants, or visitors further compounds the program's effectiveness. Partnership with a waste hauler could provide a resource for data and educational materials.

Information Needed

- Inventory of related signage and areas of significant waste generation.
- Protocol for communicating program to employees, tenants, and visitors.

Action Plan

- Convert surplus garbage cans into recycling bins with labeling.
- Collocate all recycling bins and garbage cans into pairs throughout the facility. (See **Attachments** for map.)
- Install color-coded, graphic instructional signage in public areas.
- Train employees on the recycling program to explain its purpose, requirements, and importance.
- Communicate information about the recycling program to tenants and visitors.
- Monitor and adjust recycling program using feedback from hauler.

Recommendation 4: Tracking & Reporting

Description

Monitoring waste metrics provides feedback on the efficiency of diversion efforts. Sharing this information with stakeholders has been shown to increase participation in diversion practices.

Action

It is recommended that YCAA begin to regularly estimate and track the volume of waste sent to the landfill and diverted through reduction, reuse, donation, recycling, or other strategies as well as the costs associated with these services. It is also recommended that YCAA discuss these trends with the waste hauler and share this information with program stakeholders (Airport staff and tenants).

Justification

YCAA does not currently track metrics associated with its waste. Trends associated with NYL's waste generation, landfill, diversion and associated costs could indicate opportunities for improvement.

Information Needed

- Waste generation, disposal, and cost estimates.
- Simple tracking tool (spreadsheet).
- Estimates of volume of waste diverted by various strategies and avoided costs.
- Mechanism for communicating progress to stakeholders.

Relative Cost

Estimated Diversion

Time Frame

Alignment

TRUE

Action Plan

- Collaborate with waste hauler to estimate quantity of waste generated, for example by counting the frequency of on-call waste pickups.
- Track costs associated with waste program.
- As strategies are implemented, update tracking tool to reflect waste avoided, diverted, and costs.
- Evaluate data for additional opportunities to set and pursue waste diversion goals.
- Share and celebrate progress with stakeholders.

ATTACHMENTS

Additional Recommendations for Consideration

In addition to the primary recommendations stated previously, the Waste Plan Team suggests a few other items that could be implemented at NYL. These supplementary recommendations, found in Table B-2, could further enhance NYL's waste program.

Table B-2: Additional Waste Management Recommendations for Consideration at NYL

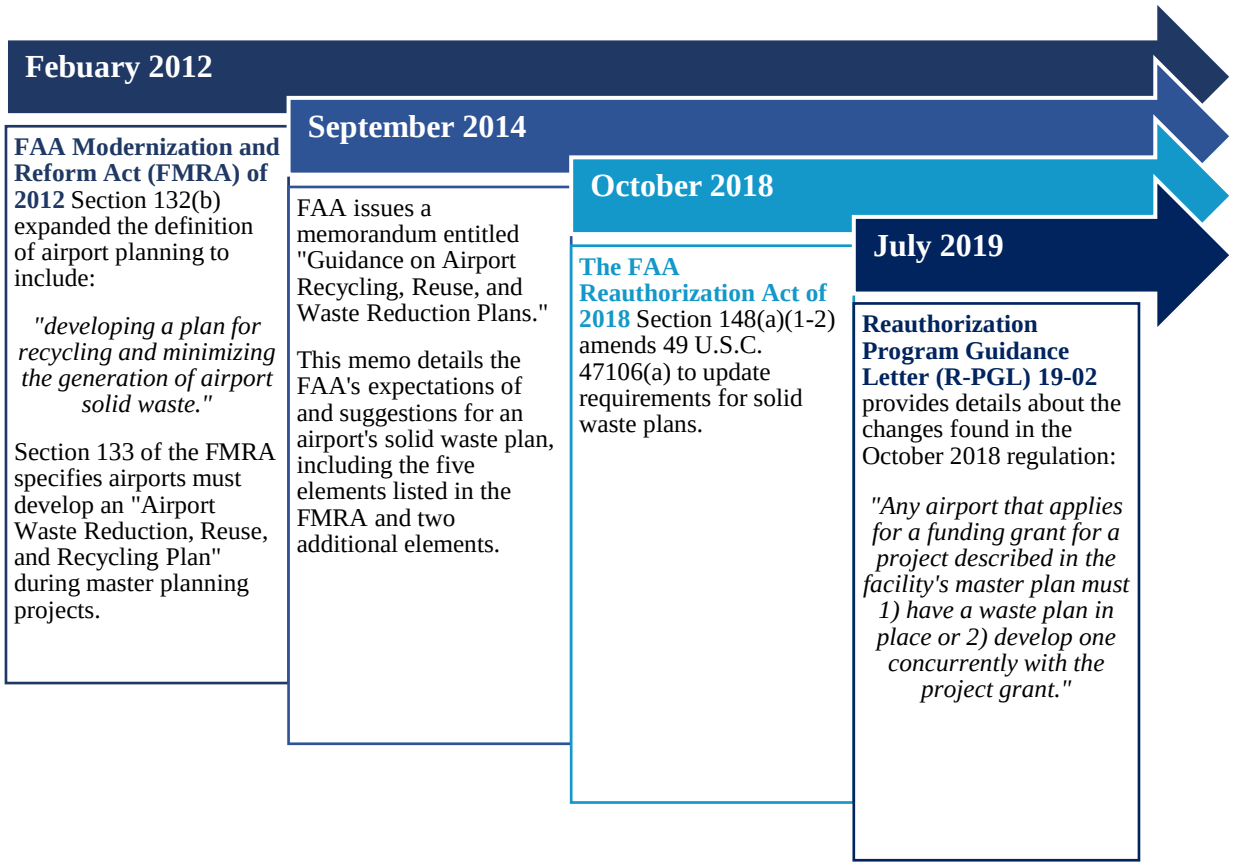
Additional Recommendations
Objectives and Targets ▪ Set specific, measurable, achievable, realistic, and time-bound (SMART) goals for YCAA and its waste program.
Tenant Requirements ▪ Encourage waste diversion and recycling among tenants through future leases and contracts. NYL Administrative Staff have noted an enthusiasm among their tenants for recycling and waste management practices and believe that official contract language requiring recycling would not be necessary.
Other Recyclables and Compost ▪ Work with the waste contractor to expand the recycling program and introduce new materials (where possible). ▪ Work with waste hauler to explore potential benefits and challenges of a two-stream recycling program (cardboard/paper (2D materials) and bottles/cans (3D materials). ▪ Explore collecting green waste (food waste or yard waste) for off-site composting in order to divert these materials from the landfill.
Additional Facilities and New Development ▪ Consider waste diversion and management in the design and construction process of future Airport projects.
Continuous Improvement ▪ Maintain and improve the recycling and waste program per the Plan Do Check Act cycle.
Material Markets ▪ Collaborate with waste hauler to identify and recycle material(s) with strongest market(s) based on available infrastructure. ▪ Minimize use of low value materials.

Source: Mead & Hunt

Regulatory Background

Figure B-1 outlines the introduction timeline and specifics of FAA's waste planning requirement. The FAA provides content guidance for airport waste plans in the September 2014 memo on the topic (available on the FAA's website).

Figure B-1: **FAA Solid Waste Recycling Planning Requirement Timeline and Details**



Sources: FAA; Mead & Hunt

Figure B-2 details the elements which are required for a solid waste recycling plan per the FMRA (marked with an asterisk, *) or suggested for inclusion in a plan in the FAA Memo (marked with two asterisks, **). Figure B-3 lists the factors influencing the scope and nature of an airport's waste program, as described in the FAA memo.

Figure B-2: **Elements of Airport Solid Waste Management**

Sources: FAA; Mead & Hunt

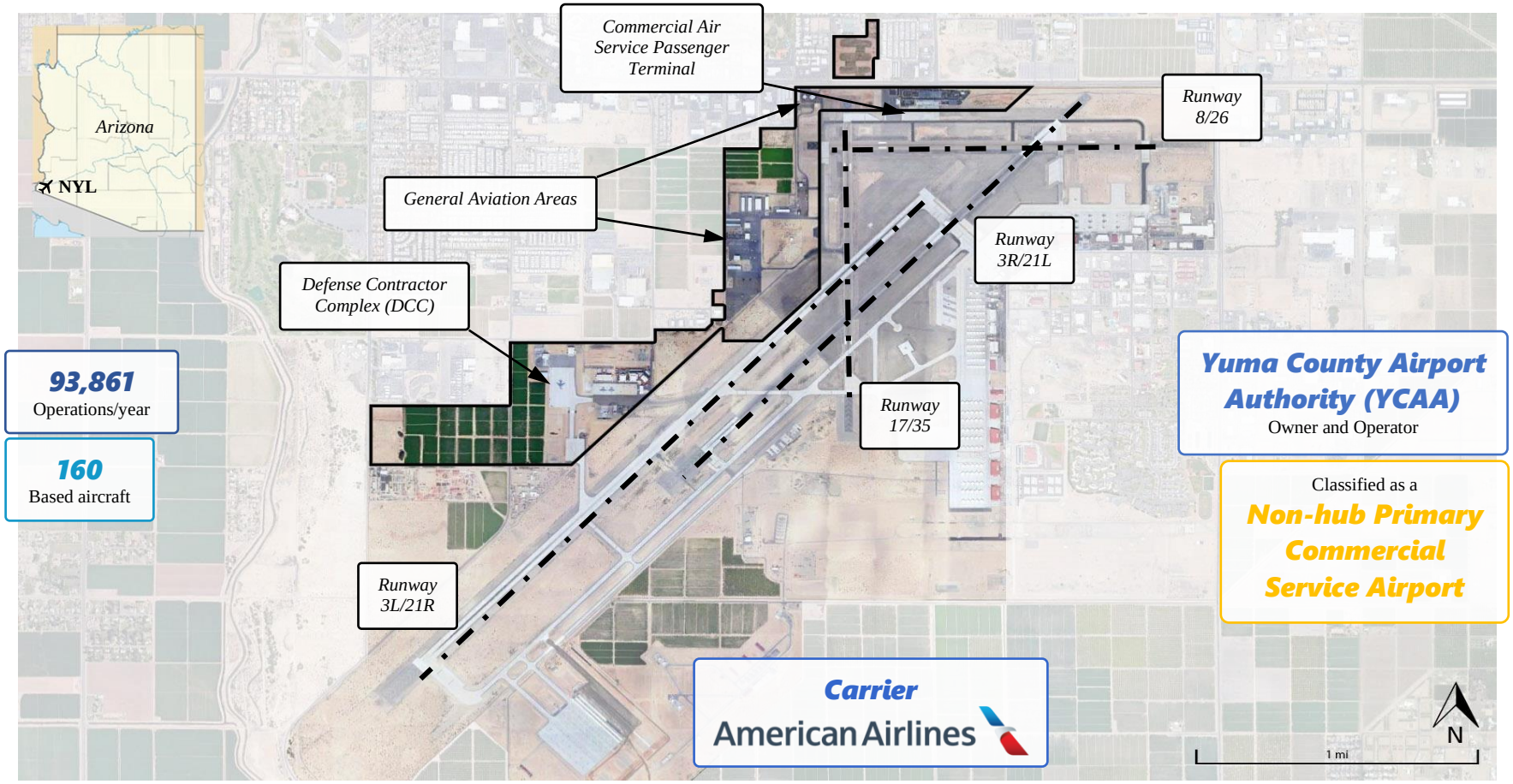
Figure B-3: Factors Influencing Airport Solid Waste Management Programs

Sources: FAA; Mead & Hunt

Airport Information

Figure B-4 shows a summary of background information about NYL, including its location, operations, air carrier, layout, ownership, and classification. Areas outlined in black are under the control of the YCAA.

Figure B-4: **NYL Background Information**



Sources: Yuma International Airport; Mead & Hunt
Google Basemap (Earth n.d.); Arizona County Map (NordNordWest 2009)

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Plan Scope

Municipal Solid Waste (MSW) consists of everyday items that are used and then discarded. This plan focuses on the management of MSW and other materials that may be recycled or disposed of in a municipal solid waste landfill. There are five primary types of MSW generated at airports: general MSW, food waste, green waste (yard waste), deplaned waste, and construction and demolition (C&D) waste. This plan does not address the management of other waste types regulated by federal, state, or local laws, specifically: hazardous, universal, or industrial waste; waste from international flights, or C&D waste that is subject to special requirements/handling. YCCA manages these materials through their Regulated Garbage Disposal program.

Facilities at NYL include buildings and areas over which the YCAA has a varying degree of control or influence over waste management practices. Some areas fall under direct control of the YCAA and Airport staff or are included in the Authority's janitorial services, while others the YCAA has influence over but not direct control. According to FAA guidance, areas over which the YCAA has direct control or influence should be included in the Recycling, Reuse, and Waste Reduction Plan; areas outside the Airport's control or influence, such as the facilities managed by (MCAS) Yuma, may be excluded. **Table B-3** lists a breakdown of the areas where NYL controls, or influences waste management, as well as areas where YCAA neither controls nor influences waste practices.

Table B-3: Waste Management Responsibility at NYL

Management Level	Description
Areas under direct control	Airport Administration Offices
	Airport Maintenance Areas
	FC "Frosty" Braden Passenger Terminal Public Areas (curbs, restrooms, seating areas, etc.) Tenant Areas (retail, restaurants, etc.)
Areas under influence	Million Air Yuma (FBO) Building owned by YCAA, leased by FBO
	Terminal Tenants Spaces owned by YCAA, leased by tenants
	Martha Taylor, Northwest, and Hero General Aviation (GA) Hangars Hangars owned by YCAA, leased by tenants
	Defense Contractor Complex (DCC) Buildings owned by YCAA, leased by contractors
Areas not under control or influence	Military Facilities (MCAS Yuma)
	FAA ATCT (MCAS Yuma)
	Aircraft Rescue and Firefighting (ARFF) (MCAS Yuma)

Source: Yuma International Airport

Current Waste Management Program

The waste program at NYL is maintained by facilities staff. Figure B-5 details the existing waste infrastructure in place at NYL.

Figure B-5: Existing NYL Infrastructure

Best Practice

1:1
Ratio of interior recycling bins to trash cans

Recycling Dumpsters

1

Waste Dumpsters

12

Dumpster Capacities

4-6
Cubic Yards each

Terminal Refill Stations

2

Collection Service

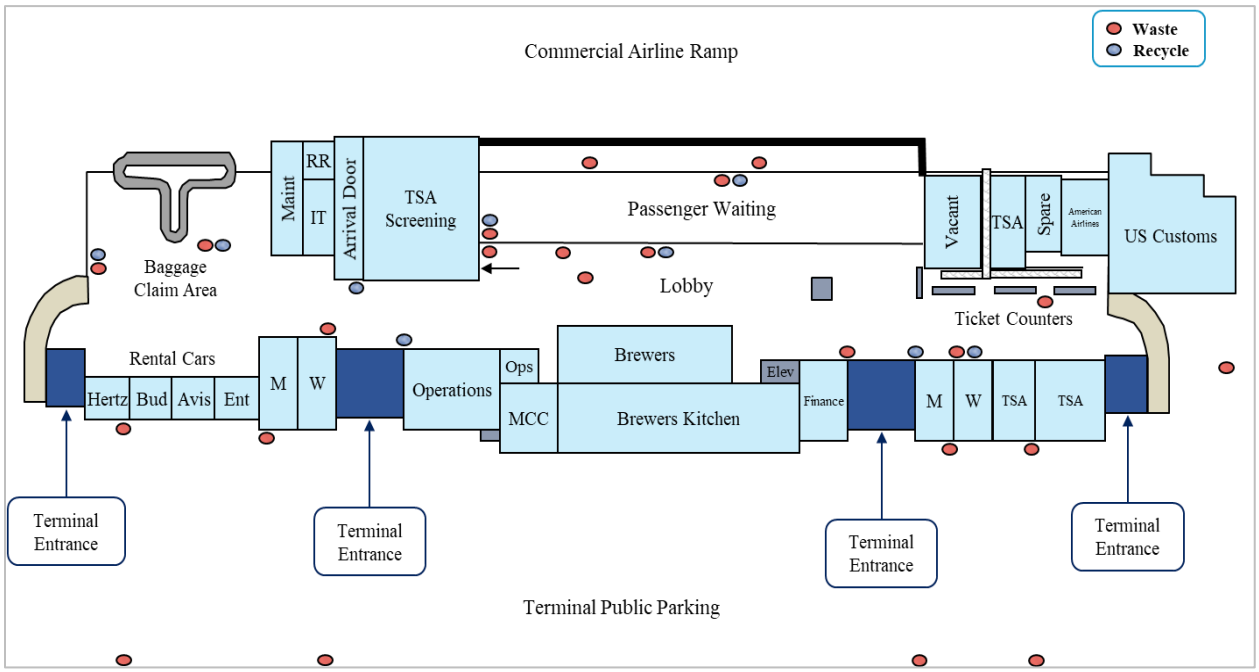
REPUBLIC SERVICES

Scheduled and On-Call
Waste and Recycling Collection Service

Sources: Yuma International Airport; Mead & Hunt

Republic Services is the waste and recycling collection contractor for NYL. Dumpsters are provided by YCAA for use by NYL's terminal and GA hangar tenants, including the FBO; these tenants are responsible for custodial activities in their areas including transferring waste to the appropriate dumpsters. The FC "Frosty" Braden Passenger Terminal has recycling bins and garbage cans distributed throughout the main level. The existing layout of the waste and recycle bins is shown in **Figure B-6**.

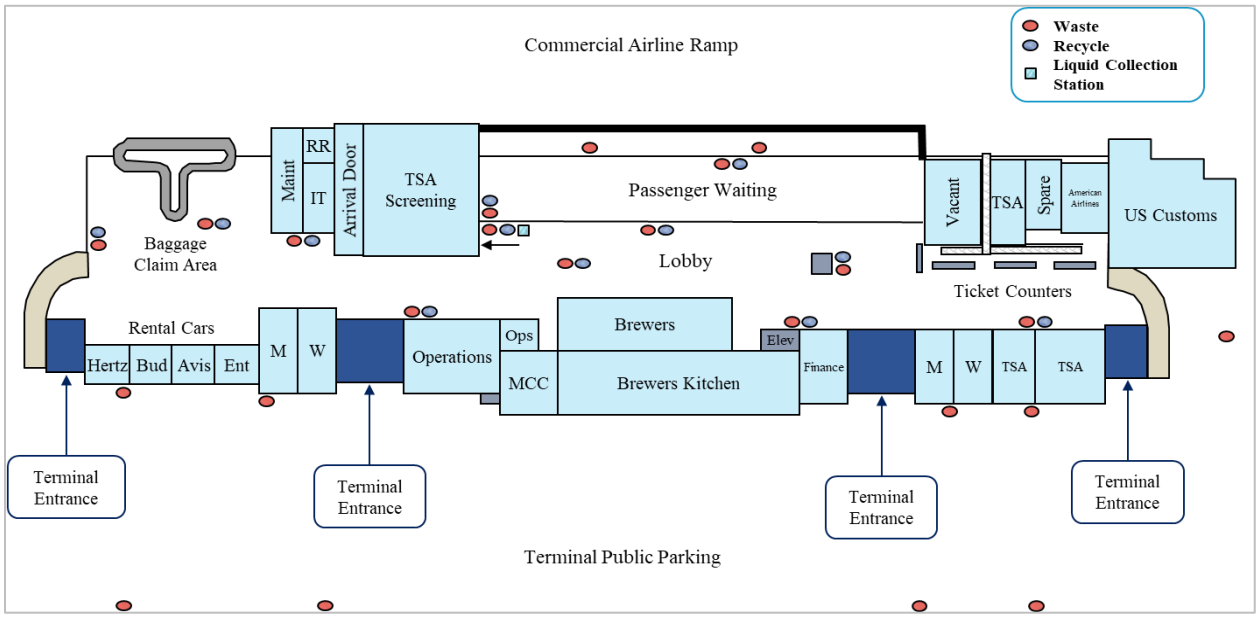
Figure B-6: **Existing Terminal Receptacle Locations – Main Level**



Sources: Yuma International Airport

The distribution of bins in the terminal could be improved to increase participation and the volume of recyclable materials collected in this facility. Collocating waste bins with a corresponding recycling bin is an industry best practice. Locating bins in high-traffic, easily visible, and convenient locations also greatly improves the effectiveness of the program. Installing a liquid collection station prior to the entrance of TSA screening would improve the quality of materials in the recycling stream while reducing the overall weight of the waste stream. These proposed changes may be seen in **Figure B-7**.

Figure B-7: **Proposed Terminal Receptacle Locations – Main Level**



Sources: Yuma International Airport

Figure B-8 shows materials accepted in NYL's existing recycling program. These items are currently collected at the Airport and picked up by the waste hauler for recycling.

Figure B-8: **Items Currently Collected for Recycling at NYL**

Source: Yuma International Airport; Mead & Hunt.

NYL also recycles single-stream shredded office paper through a private company. All paper is placed in a 65-gallon container that is emptied once every 4 months.

Waste Audit

Information about the following categories was collected to assist with this plan:

- Airport buildings and facilities
- Areas that generate waste
- Types of waste generated in each area

An evaluation of NYL's information and records, as well as aviation industry waste and recycling trends, supported efforts to identify the source, composition, and quantity of waste generated at NYL, including areas under YCAA's direct control or influence. This information then served as a foundation to identify opportunities to improve and monitor program effectiveness.

Quantity

The project team estimated a total of 163 tons of MSW is generated at NYL annually, including 11 tons of comingled recyclables and shredded paper. These volumes are based upon the capacity and frequency of collection service for each of the facility's dumpsters and the EPA's volume-to-weight conversion factors for MSW and comingled recyclables (including glass). The calculations utilized a 75 percent fill factor for the waste dumpsters.

Sources and Composition

Based on the activities taking place at NYL, a varied waste stream can be expected. **Table B-4** lists each area included in the scope of this plan and the type(s) of waste likely generated there. A sort could also be used to identify opportunities to improve the composition of the waste stream (by item substitution, by improving recycling to reduce the volume of waste, etc.).

A stream composition study (waste sort) could provide more detailed information about the specific composition of waste at NYL. This information may include:

- Types of items included in each general category
- Contamination rate of the recycling stream
  - (items that are not recyclable in the recycling bins)
- Recovery rate for recycling
  - (the proportion of recyclable items that are segregated properly)

Purchases

NYL staff do not currently track the quantity and type of disposable items and supplies purchased for the facility. This information could provide insight on some of the materials coming into the airport that will go back out as waste (other materials are brought on-site by visitors, employees, and vendors). Identifying and tracking the type and quantity of all disposable items purchased for use at NYL, will allow the YCAA to identify opportunities to reduce outgoing waste, including:

- Some items that could be eliminated
- Items that have reusable or recyclable alternatives

Table B-4: NYL Waste by Area and Material

Area | Material	Office Paper	Newspapers	Magazines	Plastic	Aluminum	Cardboard	Glass	Food Waste	Paper Products	Liquids	Toiletries	Deplaned Waste	Packaging	Styrofoam	Metals	Green Waste	C & D Waste	Other Waste
FC "Frosty" Braden Terminal Building																		
Public areas Curbs, restrooms, seating areas		x	x	x	x		x	x	x	x			x					x
Airline Areas	x	x	x	x	x	x	x	x	x	x		x	x					x
Tenant areas Retail, restaurants	x	x	x	x	x	x	x	x	x	x			x					x
Airport Administration Offices	x	x	x	x	x	x	x	x	x				x					x
TSA Security Checkpoint		x	x	x	x		x	x		x	x		x					
Airport Support Buildings																		
Maintenance Building	x	x	x	x	x	x	x	x	x	x			x	x				x
Airport Maintenance Activities			x	x	x	x				x			x		x	x	x	x
Million Air Yuma (FBO)	x		x	x	x	x	x							x				
Other Airport Buildings																		
GA Hangars				x	x	x	x	x		x			x					
DCC	x			x	x	x	x	x					x	x				

Source: Yuma International Airport; Mead & Hunt

Feasibility Analysis

Many factors impact the feasibility of recycling at NYL; some are universal, and others are specific to the facility. The following sections describe the more influential of these factors.

Commitment and Support

The willingness of the YCAA, NYL staff, and the Airport's contractors and tenants to support the facility's recycling program are critical to the success of such a program. Without committing resources such as funding, labor and time, space, and access to secure areas, a waste management program could struggle.

Airport Policy and Local Dedications

Based on the resources allocated to local recycling programs, the City of Yuma, Yuma County, and YCAA appear to generally support waste diversion, responsible waste management, and sustainable operations. MCAS Yuma also seems committed to responsible waste management practice through its installation sustainability performance plan.

Technical and Economic Factors

Local Markets and Infrastructure

Markets for recycled materials fluctuate widely based on many factors and interactions. Local waste haulers typically accept materials that can be recycled cost-effectively in the area. Manufacturers purchasing recycled material want it to be predictable and ready for use; therefore, recycling facilities are discriminatory about what materials they accept. They almost unilaterally prefer materials that are of high value, clean, and easy to separate.

According to the City of Yuma's website, the materials listed in **Table B-5** may be recycled through the City's residential recycling program and by commercial entities served by Republic Services (City of Yuma n.d.).

Table B-5: Materials Accepted for Residential Recycling in the City of Yuma

Acceptable Recyclable Materials	
Plastics #1-7	Paper
Glass	Aluminum/Metal
Cardboard	

Sources: City of Yuma Solid Waste Division

The South Yuma County Landfill, Copper Mountain Landfill, and Allied Waste Transfer Stations accept solid waste from commercial enterprises in Yuma County. (A transfer station acts as a smaller depository for local waste before being transferred to the landfills.) The South Yuma County Landfill is located 12 miles south of NYL; it is the closest of all the Yuma County waste management locations. Waste and recycling from the Airport are transferred directly to this landfill. It is anticipated that the landfill has adequate capacity to serve NYL and the area for the foreseeable future.

Logistical Considerations and Constraints

To maintain a recycling program at NYL, certain elements must be in place. These include:

- A proactive and engaged custodial staff
- A willing and affordable hauling contractor
- Space for bins, dumpsters, and compactors
- Hauler access to secure areas of the facility (including airside ramps and sterile areas)

At present, these elements appear unconstrained. Additional resources including custodial labor, waste hauling services, space, and airport access are anticipated to be available to support the continuation and/or expansion of the recycling program at NYL.

Recycling, Landfill, and Energy-From-Waste Facility Requirements

Components that seem recyclable (plastic, glass, or metal parts) may make up some items generated at NYL; however, the recycling facility has specific material standards which should be followed to protect the stream. It is important that non-recyclable items are not included in future recycling efforts at the facility. Waste items that may be generated at NYL but are prohibited by Yuma County's Solid Waste Program are outlined in **Table B-6.**

Table B-6: Materials Not Accepted for Landfill Disposal in Yuma County

Unacceptable Waste Materials	
Large Concrete Chunks	Contaminated Items
Large Automobile Parts	Paint Thinners or Solvents
Oil or Fuel Waste	Roofing Shingles

Sources: Yuma County Solid Waste Division.

Costs

YCAA strives to be as self-sustaining as is feasible; therefore, it is imperative that programs implemented and maintained at NYL, including recycling, are as cost-effective as possible. See **Financial Analysis** (pg. 24) for more information.

Guidelines And Policies

To evaluate NYL's existing recycling plan in the context of local, state, and national requirements, the consultant reviewed federal, Arizona State, and local-level waste and recycling regulations, policies, and factors.

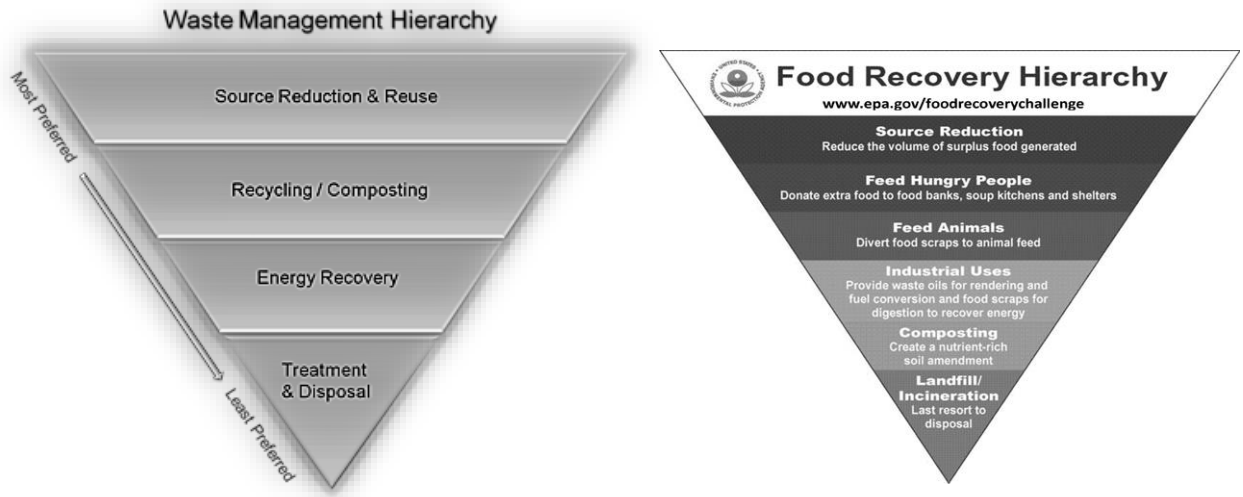
Federal

As described in Regulatory Background, the FAA's definition of airport planning includes planning for recycling and waste minimization.

The United States Environmental Protection Agency (EPA) is responsible for developing a solid waste management program under the Resource Conservation and Recovery Act (RCRA) and related policies and guidance. RCRA provides the framework for management of hazardous and non-hazardous waste. All generators of hazardous waste, including airports, are required to comply with RCRA and all other federal waste laws and regulations.

Figure B-9 shows a hierarchy of waste management strategies developed by the EPA. This hierarchy on the left ranks these strategies from most- to least-environmentally preferred and places emphasis on reducing, reusing, and recycling. In addition to the general waste management hierarchy, the EPA has also developed a preference ranking of management strategies for food waste, as shown in the figure at the right.

Figure B-9: **Waste Management and Food Recovery Hierarchies**



Source: United States Environmental Protection Agency, (Waste Management Hierarchy n.d.), (Food Recovery Hierarchy n.d.)

State

The State of Arizona encourages waste reduction and recycling; however, it does not mandate these strategies. The Arizona Department of Environmental Quality (ADEQ) is responsible for supporting waste diversion in the state. ADEQ works with counties, cities, environmental groups, and private enterprises in an effort to protect the public health and environment of Arizona through responsible waste management.

Local

Both Yuma County and the City of Yuma offer recycling programs for residents and commercial enterprises. All waste in Yuma County, including within the City of Yuma, is managed by the Yuma County Solid Waste Division. Residential recycling consists of street side single-stream pickup; items currently accepted by the program are listed in **Table B-5**. Commercial recycling is not specifically mentioned by the Yuma County Solid Waste Division, and likely falls under some form of special arrangement. (City of Yuma n.d.)

Based on the availability of residential and commercial recycling, this plan assumes the residents of the communities surrounding the airport, and therefore its employees and visitors, have been exposed to recycling, receive on-going messaging about its importance, and are generally supportive of recycling efforts.

Marine Corps Air Station Yuma Installation Sustainability Performance Plan (Adjacent Facility)

The *MCAS Yuma Installation Sustainability Performance Plan*, dated January 2014, established goals and practices that can serve as inspiration for NYL's recycling and solid waste program. The Plan targeted 50% waste diversion through the end of FY 2020.

Progress toward this goal was planned through reduction and reuse of materials across the facility, including:

- Implementation of the MCAS Yuma Qualified Recycling Program (a facility-wide recycling regimen for all station operations, including tenant participation)
- Diversion of organic and compostable materials through mess hall food donations to local farms as animal feed or by sending green waste to transfer stations offering yard waste composting.
- Reduced paper use through double-sided printing and electronic delivery.
- Minimized disposal of hazardous materials and chemicals through active reuse or substitution for other inputs. (Cardno Tech 2014)

Review Of Waste Management Contracts

The FAA memorandum titled "Guidance on Airport Recycling, Reuse, and Waste Reduction Plans" explains that the purpose of reviewing waste management contracts is to "identify opportunities for improving (waste) program scope and efficiency, as well as identify constraints."

YCAA does not have a formal contract with Republic Services, who recently acquired NYL's previous waste collection company, Yuma Disposal. NYL is serviced on a regular basis and receives invoices for the collection of waste and recycling. YCAA continuously looks for waste management providers who can provide more cost effective and/or additional services to support improvements in waste diversion.

Tenant leases were not reviewed as part of this study. Airport staff provided a general overview of their contents. They stated these contracts detail general housekeeping requirements and related expectations for managing trash; they provide no information about or requirement to reduce waste or recycle. The YCAA is willing to provide recycle bins to any interested tenants served by the Airport's janitorial services and to transport recyclable material to the on-Airport recycling dumpster as part of those services. The contracts do not necessarily impede recycling or other waste management strategies, but neither do they explicitly require conformance with or support of Airport-related waste efforts; the YCAA is open to including language requiring tenants to participate in the waste diversion program (for example, by collecting recyclables) in future agreements.

Financial Analysis

According to the FAA memo "Guidance on Airport Recycling, Reuse, and Waste Reduction Plans," an analysis of the financial aspects of waste management assists airport sponsors in determining the cost versus benefit of all existing and proposed enhancements to an airport's practices and should include capital costs, physical infrastructure, transport, and labor. A financial analysis of the cost of waste management at NYL was conducted for this plan to assess the potential cost savings of a recycling program.

In CY 2019, NYL paid a total of $10,293.29 for its waste management services. This was indicative of all charges related to the waste plan, including scheduled service on-call pickups. CY 2019 was also significant as June 2019 saw the acquisition of Yuma Disposal by Republic Services; all service invoices up to and including June were sent from Yuma Disposal, while July and beyond were sent by Republic Services. A letter from Republic Services dated May 31, 2019 stated that the company would honor the "current price and contract terms" of the arrangement with Yuma Disposal. NYL does not hold a formal contract with Republic Services.

Republic Services charges a flat rate per container for scheduled service. An estimated cost per cubic yard was calculated by the consultant using the total annual invoiced costs of waste and recycling divided by the estimated tonnages described in **Waste Audit**. The estimated cost for collection and disposal of waste per cubic yard is $10.70; recycling collection came to $13.37 per cubic yard. The size of dumpsters and the frequency at which they are serviced represents a significant contributor to the average cost per cubic yard, and a reduction of either or both factors would reduce the total spend. A reduction in dumpster size and servicing frequency would allow a shift to recycling without changing the total cost of the program. Reduction and reuse practices would further lower the program's cost, as these materials would not need to be recycled or landfilled.

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Glossary

(sorted by chronology)

Federal Aviation Administration (FAA) – regulatory body of the US government that regulates all national aviation activities.

FAA Modernization and Reform Act of 2012 (FMRA) – legislation that seeks to improve aviation safety and capacity of the national airspace system and provide a stable funding system.

Environmental Protection Agency (EPA) – independent agency of the US government that establishes policies that protect the natural environment.

FAA Reauthorization Act of 2018 – reauthorization of FMRA 2012 to extend funding and administrative authority to the FAA.

Reauthorization Program Guidance Letter (R-PGL) 19-02 – implements provisions to FAA Reauthorization Act of 2018 that changed project eligibility, scope, or funding under 49 U.S.C., Chapter 471.

Municipal Solid Waste (MSW) – everyday items that are used and then discarded. There are five primary types of MSW generated at airports:

- **General MSW** – common inorganic waste, such as product packaging, disposable utensils, plates and cups, bottles, and newspaper. Less common items, such as furniture and clothing, are also considered general MSW.
- **Food waste** – either food that is not consumed or the waste generated and discarded during food preparation. Food waste and green waste make up a waste stream known as compostable waste.
- **Green waste (yard waste)** – tree, shrub and grass clippings, leaves, weeds, small branches, seeds, pods, and similar debris generated by landscape maintenance activities. Food waste and green waste make up a waste stream known as compostable waste.
- **Deplaned waste** – waste removed from passenger aircraft. These materials include bottles and cans, newspaper and mixed paper, plastic cups, service ware, food waste, food-soiled paper, and paper towels.
- **Construction and demolition (C&D) waste** – any non-hazardous solid waste from land clearing, excavation, and/or the construction, demolition, renovation or repair of structures, roads, and utilities. C&D waste commonly includes concrete, wood, metals, drywall, carpet, plastic, pipes, land clearing debris, cardboard, and salvaged building components.

Resource Conservation and Recovery Act (RCRA) – federal law of the US governing the disposal of solid or hazardous waste.

Arizona Department of Environmental Quality (ADEQ) – state body dedicated to protecting the public health and environment of Arizona.

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APPENDIX C

Passenger Demand Analysis

YUMA INTERNATIONAL AIRPORT

Passenger Demand Analysis

YEAR ENDED SEPTEMBER 30, 2019

Mead & Hunt

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INTRODUCTION & METHODOLOGIES

INTRODUCTION

Achieving air service success requires thoroughly understanding the market and the needs of local stakeholders, airlines, and trends impacting the aviation industry. Air service development efforts are most effective when they follow a plan consistent with industry trends, the air service needs of the community and specific strategies of target airlines for additional air service. Yuma International Airport (YUM) is subject to several trends that impact air service efforts, including:

- Airline mergers have concentrated industry capacity with the “big four” airlines controlling over 80 percent of the U.S. domestic market.
- Smaller regional aircraft continue to be replaced by larger regional aircraft at an accelerated rate driven in part by a regional airline pilot shortage.
- Connecting passengers are funneled through fewer major hubs and short-haul markets were reduced or eliminated by select carriers.
- Competition for air service has increased with incentives and community partnerships becoming more important to the airline decision-making process.
- Low-cost carriers and ultra-low-cost carriers, as a group, are growing steadily in domestic markets and the reaction and competition from traditional network carriers is evolving rapidly.
- Several consecutive years of strong industry financial performance have airlines investing in growth opportunities but volatile fuel costs and the potential for a slowing economy may temper future growth.

With these trends in mind, the responsibility is on airports to monitor their market and be proactive with their air service development efforts, especially when performance issues are noted. When service improvements or new service is sought, it is important that airports and communities know and understand their market, and the *Passenger Demand Analysis* is a critical tool in helping communities do so. It provides objective air traveler data, compiled from industry accepted sources using standard methodologies.

This *Passenger Demand Analysis* was developed as the Coronavirus Disease 2019 (COVID-19) was rapidly developing throughout the world with devastating effects on the airline industry. While the ultimate impact on the airline industry is yet to be determined, there will be a long recovery period before the U.S. demand for air travel returns to normal conditions. This study reviews historical trends and catchment area demand as it existed through the third quarter of 2019 (our latest available traffic base at the time of this study). Assumptions about the pandemic-affected air travel environment have not been incorporated because there is not currently a clear view to where this evolving situation will lead. However, as with every other challenge to industry demand (e.g., September 11, 2001, swine flu, the Great Recession), the industry will rebound and air travel will continue to be a vital and growing element for economic development throughout the U.S. While the currently evolving environment will certainly create some temporary setbacks or delay potential expansion plans, the observations and recommendations of this study are still valid and important for long-term air service development.

OBJECTIVES

The objective of the *Passenger Demand Analysis* is to develop information on the travel patterns of airline passengers who reside in the YUM catchment area. The report provides an understanding of the YUM situation and formulates strategies for improvement. This analysis includes an estimate of total airline passengers in the catchment area and related destinations as well as an assessment of the air service situation at YUM.

METHODOLOGY

The *Passenger Demand Analysis* combines Airline Reporting Corporation (ARC) ticketed data and U.S. Department of Transportation (DOT) airline data to provide a comprehensive overview of the air travel market. For the purposes of this study, ARC data includes tickets purchased through travel agencies in the YUM catchment area (**Exhibit 3.1**, page 5) as well as tickets purchased via online travel agencies by passengers in the YUM catchment area. It does not capture tickets issued directly by airline web sites (e.g., www.aa.com, www.united.com) or directly through airline reservation offices. The data used include tickets for the zip codes in the catchment area, NOT all tickets. As a result, ARC data represents a sample to measure the air travel habits of catchment area air travelers. Data for travel agencies located within the catchment area is reported by the zip code of the travel agency. Online travel agency data (e.g. Expedia, Orbitz, and Travelocity) is reported by the customer zip code used to purchase the ticket. Although limitations exist, ARC data accurately portrays the airline ticket purchasing habits of a large cross-section of catchment area travelers. A total of 6,462 ARC tickets for the year ended September 30, 2019, were used in this analysis. Adjustments were made for Frontier Airlines, Southwest Airlines and Spirit Airlines since they have limited ARC representation.

EXECUTIVE SUMMARY

DATA SOURCE/ CATCHMENT AREA

The *Passenger Demand Analysis* includes 6,462 ARC tickets from the YUM catchment area for the year ended September 30, 2019. The catchment area has an estimated population of 226,285 in 2019 and 13 zip codes. In addition to ARC data, Diio Mi origin and destination data and schedule data is used throughout the report.

DEPARTURES AND AVAILABLE SEATS

For the year ended September 30, 2019, YUM had one airline, American Airlines, serving two hubs, Dallas-Fort Worth International Airport (DFW) and Phoenix-Sky Harbor International Airport (PHX). American provided a total of 1,699 departures from YUM offering more than 119,000 seats.

AIRPORT USE

Thirty-eight percent of catchment area travelers used YUM, while 38 percent diverted to PHX, 18 percent to San Diego International Airport (SAN) and 6 percent to Los Angeles International Airport (LAX). Compared to the true market estimate for the year ended June 30, 2016, YUM's retention decreased by 2 percentage points.

In a comparison of domestic versus international itineraries, 41 percent of domestic travelers and 12 percent of international travelers used YUM. PHX served 39 percent of domestic and 36 percent of international travelers, while SAN served 18 percent of domestic and 21 percent of international travelers. LAX served 2 percent of domestic and 31 percent of international travelers.

TRUE MARKET

YUM's total air service market, called the true market, is estimated at 459,961 annual origin and destination passengers. Domestic travelers accounted for 407,410 of the total true market (89 percent). International travelers made up the remaining 52,551 passengers (11 percent).

DESTINATIONS

Fifty-one percent of travelers were destined to or from one of the top 25 markets. Seattle was the number one destination with 5 percent of passengers. YUM retained 38 percent of passengers to/from Seattle. The next largest markets were Portland, Denver, Sacramento and DFW with retention of 40, 30, 31 and 77 percent, respectively. Six of the top 25 markets had retention rates greater than 45 percent while eight markets had retention rates lower than 30 percent.

REGIONAL DISTRIBUTION

Eighteen percent of travelers were destined to the Northwest region, followed by 17 percent to the West region. YUM's highest retention occurred in the Southwest region at 45 percent and Alaska at 50 percent. The lowest retention occurred to the Great Lakes region (39 percent), Northeast region (34 percent) and international regions (12 percent). Of the international travelers, the top three international regions were Canada, Europe, and Mexico and Central America with the highest YUM retention to Mexico and Central America (14 percent) and the lowest retention to Africa (0 percent).

AIRLINES USED

Providing the only service at YUM, American had the largest share of flown passengers based on U.S. DOT data. Airline share of diverting passengers were estimated using an approximation of carrier share with ARC data. An adjustment was made for Frontier Airlines, Spirit Airlines and Southwest Airlines. Carrier shares of diverting YUM catchment area passengers were Southwest with 28 percent, American with 28 percent, United Airlines with 13 percent, Delta Air Lines with 10 percent and Alaska Airlines with 7 percent. Air Canada, JetBlue Airways and Sun Country Airlines each had a share of 2 percent, and other various airlines served 8 percent.

PASSENGER ACTIVITY

For the year ended September 30, 2010, through the year ended September 30, 2019, YUM's origin and destination passengers (as reported by the airlines to the U.S. DOT) increased at a compounded annual growth rate (CAGR) of 1.2 percent compared to 3.4 percent at PHX, 4.2 percent at SAN and 5.1 percent at LAX. Notably, YUM's passengers increased by 14 percent from 2018 to 2019.

DOMESTIC AIRFARES

For the year ended September 30, 2019, the one-way average domestic airfare for YUM was $246. YUM's fare was $78 higher than PHX's average fare, $88 higher than SAN's average fare and $64 higher than LAX's average fare.

AVERAGE FARE TREND

From the year ended September 30, 2010, through the year ended September 30, 2019, the average domestic airfare for YUM passengers increased at a CAGR of 0.8 percent. PHX's average fare increased at a 1.8 percent CAGR over the 10-year period while SAN's fare increased at a 0.6 percent CAGR and LAX's fare increased at a 0.7 percent CAGR. The fare gap between YUM and each of the competing airports decreased from 2018 to 2019.

NONSTOP SERVICE

For the year ended September 30, 2019, YUM offered nonstop service to two top 25 destinations with an average of 33 weekly roundtrips. PHX had nonstop service to 24 of the top 25 destinations on 1,548 weekly roundtrips while SAN had service to 24 of the top 25 destinations and LAX had service to all 25 of the top 25 destinations.

AIR SERVICE OPPORTUNITIES

While the COVID-19 pandemic has brought tremendous new uncertainty, this study was performed prior to the impact of the pandemic on passenger traffic, for the year ended September 30, 2019. Because of this, the true market estimate does not reflect the change in passenger traffic brought on by COVID-19. Since then, the world has seen passenger airline traffic drop by over 90 percent compared to 2019 and will likely have impacts for many years to come. While it is likely that YUM will lose frequencies, capacity and potentially a route during some parts of 2020, the expectation is that the market will rebound in 2021 and likely be back to normal levels in 2022, with opportunities for new capacity or routes for summer 2021. In past downturns, non-hub airports (such as YUM) faired much better than medium and large hub airports in recovery time.

With a Small Community Air Service Development Program (SCASDP) grant for service to Denver awarded in 2020, the top new route opportunity for YUM is Denver with United Airlines. Denver is the third largest true market and offers significant connecting opportunities to the Intermountain West and Pacific Northwest not available today over PHX or DFW. United service to San Francisco is also a potential with significant demand to the San Francisco Bay Area and connections to the Pacific Northwest and western Canada.

With the partnership between American and Alaska, as well as the number one true market being Seattle, it is reasonable Seattle service could be implemented in the next two to three years depending on how the battle between Alaska and Delta unfolds following the COVID-19 pandemic. Long term potential for less-than-daily, seasonal service from a Canadian carrier to a pre-cleared Canadian market is also a potential opportunity.

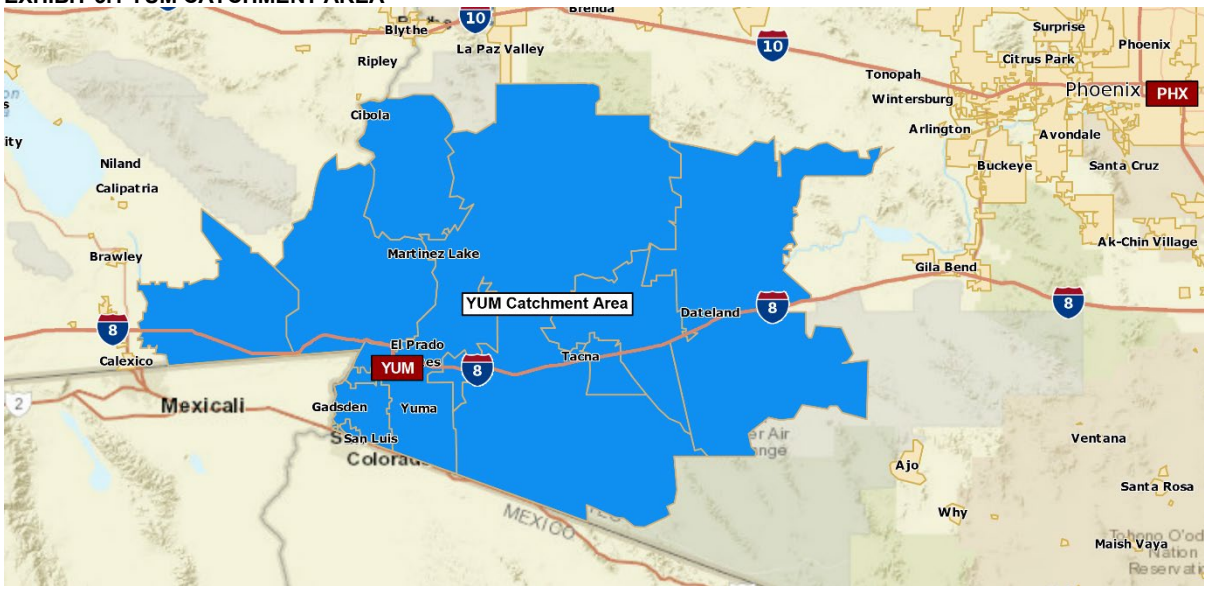
AIRPORT USE

To understand airport use, it is important to understand the relative size of the catchment area, current air service and passenger activity. YUM's use was determined using year ended September 30, 2019, ARC data for the zip codes from the catchment area.

AIRPORT CATCHMENT AREA

An airport catchment area, or service area, is a geographic area surrounding an airport where it can reasonably expect to draw passenger traffic and is representative of the local market. The catchment area contains the population of travelers who should use YUM considering the drive time from the catchment area to competing airports. This population of travelers is YUM's focus market for air service improvements and represents the majority of travelers using the local airport. **Exhibit 3.1** identifies the YUM catchment area. It is comprised of 13 zip codes within the U.S. with a population of approximately 226,285 in 2019 (source: U.S. Census Bureau, Woods & Poole Economics, Inc.).

EXHIBIT 3.1 YUM CATCHMENT AREA



One airline, American Airlines, served YUM to two hubs, DFW and PHX, with nearly 1,700 annual departures and more than 119,000 annual seats.

AIR SERVICE

Table 3.1 provides YUM's departures and seats by month for the year ended September 30, 2019. One airline, American Airlines, served YUM to two hubs, DFW and PHX. There were 1,699 total scheduled departures for the 12-month period and more than 119,000 seats.

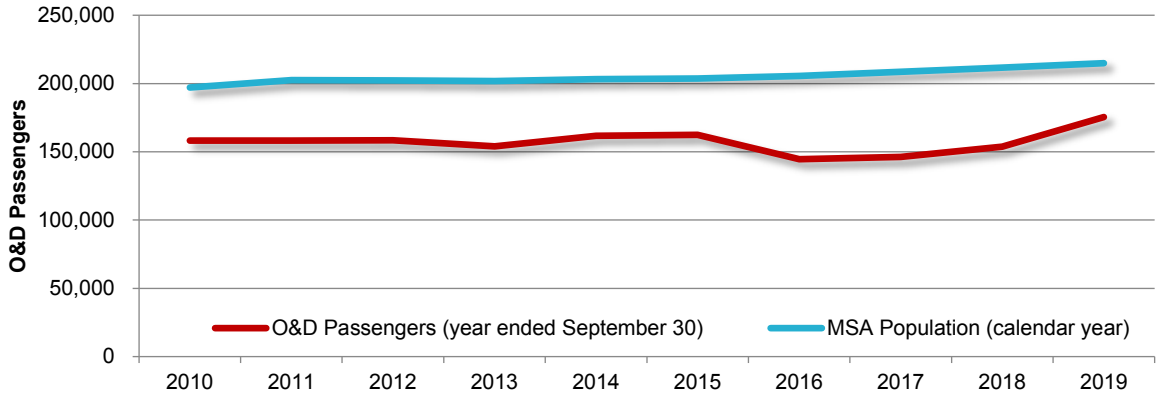
TABLE 3.1 DEPARTURES AND SEATS BY AIRLINE AND DESTINATION (YE Q3 2019)

DESTINATION	MARKETING CARRIER	CY 2018			CY 2019								
		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Dallas, TX (DFW)	American						28	30	31	30	31	31	30
Phoenix, AZ (PHX)	American	121	108	110	115	108	124	149	157	126	120	116	134
Total Departures		**121**	**108**	**110**	**115**	**108**	**152**	**179**	**188**	**156**	**151**	**147**	**164**
Total Seats		**8,470**	**7,560**	**7,700**	**8,050**	**7,560**	**10,982**	**12,745**	**13,203**	**10,800**	**10,415**	**10,135**	**11,594**

PASSENGER AND POPULATION TRENDS

Exhibit 3.2[1] plots origin and destination passenger trends from 2010 to 2019 compared to population trends at YUM. The Yuma, AZ Metropolitan Statistical Area (MSA) was used as a surrogate for the growth trend of the YUM catchment area population. During the 10-year period, passengers grew at a 1.2 percent compounded annual growth rate (CAGR), while population grew at a CAGR of 1.0 percent.

EXHIBIT 3.2 PASSENGERS AND POPULATION TRENDS



[1] *Source: Diio Mi; Woods & Poole Economics, Inc.*

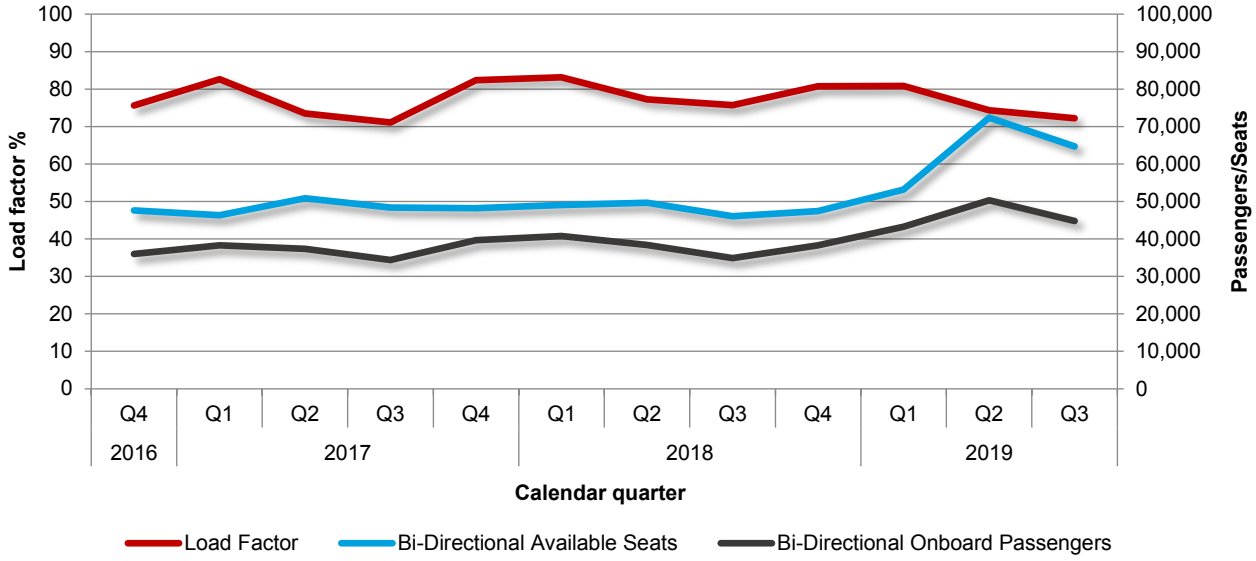
The average load factor at YUM declined on average year-over-year in each of the last four quarters with an increase in capacity in three of the last four quarters.

LOAD FACTOR, AVAILABLE SEATS AND PASSENGERS

Exhibit 3.3 shows YUM's bi-directional available seats, bi-directional onboard passengers and load factors for arrivals and departures by quarter from the fourth quarter 2016 through the third quarter 2019. The average load factor decreased in each of the last four quarters year-over-year with an increase in seats in three of the last four quarters. The lowest load factor during the 12-quarter period was in the third quarter of 2017 at 71 percent, while the high was in the first quarter of 2018 at 83 percent.

Over the three-year period, available seats were lowest in the third quarter of 2018 at 46,060, while the highest number of seats was in the second quarter of 2019 at 72,367. The low for onboard passengers at YUM through the three-year span was in the third quarter of 2017, and the high for onboard passengers was in the second quarter of 2019. Onboard passengers have grown in three of the last four quarters compared to the previous year.

EXHIBIT 3.3 LOAD FACTOR, AVAILABLE SEATS AND ONBOARD PASSENGERS

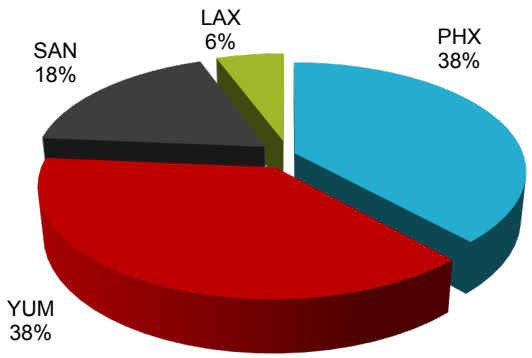


YUM retains 38 percent of its catchment area passengers, with PHX being the largest diversionary airport at 38 percent followed by SAN at 18 percent and LAX with 6 percent.

AIRPORT USE

Exhibit 3.4 shows the airports used by YUM catchment area travelers. An estimated 38 percent of the catchment area's air travelers used YUM for their trips; 38 percent diverted to PHX, 18 percent to SAN and 6 percent to LAX. Since the last true market estimate completed for the year ended June 30, 2016, YUM's retention decreased by 2 percentage points while PHX's use dropped by 7 percentage points, SAN's use increased 7 percentage points and LAX's use increased by 1 percentage point.

EXHIBIT 3.4 AIRPORT USE



DOMESTIC AND INTERNATIONAL ITINERARIES

Table 3.2 shows passengers by domestic and international itineraries. Forty-one percent, or 169,050 domestic travelers, and 12 percent, or 6,378 international travelers, used YUM. PHX is the top diversionary airport for domestic passengers, serving 39 percent of domestic travelers and the highest diversionary airport for international travelers serving 36 percent. SAN served the second highest share of diverting passengers with 18 percent versus serving 21 percent of diverting international travelers. LAX was the second largest diversionary airport for international travelers, serving 31 percent, but served only 2 percent of domestic travelers. Compared to the year ended June 30, 2016, study, YUM's domestic retention remained the same at 41 percent; however, international retention decreased 14 percentage points from 26 percent to 12 percent.

TABLE 3.2 AIRPORT USE - DOMESTIC & INTERNATIONAL COMPARISON

RANK	ORIGINATING AIRPORT	AIRPORT USE YE Q3 2019 PAX	%
Domestic			
1	YUM	169,050	41
2	PHX	157,051	39
3	SAN	71,853	18
4	LAX	9,457	2
Subtotal		**407,410**	**100**
International			
1	PHX	18,728	36
2	LAX	16,395	31
3	SAN	11,050	21
4	YUM	6,378	12
Subtotal		**52,551**	**100**
Domestic and International			
1	PHX	175,779	38
2	YUM	175,428	38
3	SAN	82,902	18
4	LAX	25,852	6
Total		**459,961**	**100**

AIRPORT USE BY COMMUNITY

Airport retention rates by community are an important aspect to understanding the overall YUM catchment area. ARC tickets include local travel agency data which is reported by the agency zip code and online travel agency data which is reported by the passenger zip code. **Table 3.3** shows how retention varies among the local communities within it.

Overall, the Yuma community generated the highest number of true market passengers, with 413,817 annual passengers, 90 percent of the total. The Somerton and Holtville communities each generated more than 10,000 annual passengers. The only community with a retention below the average of 38 percent was the Holtville community with few travelers using YUM. The highest retention (greater than 50 percent) was in the Wellton community and communities included in “other”.

TABLE 3.3 AIRPORT USE BY COMMUNITY

COMMUNITY	% AIRPORT USE				TRUE MARKET PASSENGERS
	PHX	YUM	SAN	LAX	
Yuma	40	38	17	5	413,817
Somerton	35	41	17	7	21,472
Holtville	6	2	80	11	12,768
Wellton	31	67	1	0	8,672
Winterhaven	35	42	21	2	2,400
Other	6	56	0	39	832
Total	**38**	**38**	**18**	**6**	**459,961**

TRUE MARKET

The true market portion of the *Passenger Demand Analysis* provides the total number of passengers in the catchment area; specifically, it analyzes the portion of passengers diverting from the YUM catchment area. This section investigates destinations associated with travel to and from the catchment area. In addition, destinations are grouped into geographic regions to further understand the regional flows of catchment area air travelers.

TRUE MARKET ESTIMATE

The airport catchment area (**Exhibit 3.1**, page 5) represents the geographic area from which the airport primarily attracts air travelers. Domestic airlines report origin and destination traffic statistics to the U.S. DOT on a quarterly basis. Used by itself, these traffic statistics do not quantify the total size of an air service market. By combining ARC tickets with passenger data contained in the U.S. DOT airline reports, an estimate of the total air travel market by destination was calculated. The total air travel market is also referred to as the “true market”. Passengers were estimated for domestic and international markets on a destination basis. Adjustments were made to account for Frontier Airlines, Southwest Airlines and Spirit Airlines, which are under-represented in ARC data.

The ARC data used in this report includes information on initiated passengers ticketed by local or online travel agencies. This enables the identification of passenger retention and diversion. According to U.S. DOT airline reports for the year ended September 30, 2019, 47 percent of YUM origin and destination passengers initiated air travel from YUM, and the other 53 percent began their trip from another city (e.g. New York, Dallas and Phoenix). For the purposes of this analysis, it is assumed that travel patterns for YUM visitors mirror catchment area passengers.

TOP 25 TRUE MARKET DESTINATIONS

The top 25 destinations for YUM (shown in **Table 4.1**) accounted for 51 percent of the travel to/from the YUM catchment area. Seattle was the largest market with 25,066 annual passengers (34.3 passengers daily each way [PDEW]) and accounted for 5 percent of all catchment area travel. Portland, Denver, Sacramento and DFW made up the remaining top five markets. YUM had nonstop service to one of its top five destinations.

TABLE 4.1 TRUE MARKET ESTIMATE - TOP 25 DESTINATIONS

RANK	DESTINATION	YUM REPORTED PAX	DIVERTED PAX	TRUE MARKET	PDEW
1	Seattle, WA	9,612	15,454	25,066	34.3
2	Portland, OR	7,364	11,187	18,551	25.4
3	Denver, CO	5,515	12,567	18,082	24.8
4	Sacramento, CA	4,033	9,043	13,075	17.9
5	Dallas, TX (DFW)	8,761	2,671	11,432	15.7
6	Minneapolis, MN	4,655	6,679	11,335	15.5
7	Chicago, IL (ORD)	4,480	5,237	9,718	13.3
8	San Jose, CA	2,230	7,372	9,602	13.2
9	Washington, DC (DCA)	4,353	4,581	8,934	12.2
10	San Francisco, CA	2,430	6,459	8,889	12.2
11	Charlotte-Douglas, NC	2,229	5,929	8,158	11.2
12	Oakland, CA	1,054	6,616	7,671	10.5
13	Phoenix, AZ (PHX)	7,617	0	7,617	10.4
14	Salt Lake City, UT	4,015	3,413	7,427	10.2
15	Orlando, FL (MCO)	2,379	5,035	7,414	10.2
16	St. Louis, MO	1,762	5,164	6,926	9.5
17	Boston, MA	2,083	4,842	6,926	9.5
18	Atlanta, GA	2,794	3,794	6,588	9.0
19	Chicago, IL (MDW)	0	6,406	6,406	8.8
20	Monterey, CA	5,145	1,247	6,392	8.8
21	Honolulu, HI	1,212	4,847	6,059	8.3
22	Dallas, TX (DAL)	0	5,969	5,969	8.2
23	El Paso, TX	2,431	3,501	5,932	8.1
24	New York, NY (JFK)	1,991	3,878	5,869	8.0
25	Newark, NJ	1,980	3,360	5,340	7.3
Top 25 destinations		**90,126**	**145,252**	**235,379**	**322.4**
Total domestic		**169,050**	**238,360**	**407,410**	**558.1**
Total international		**6,378**	**46,173**	**52,551**	**72.0**
All markets		**175,428**	**284,533**	**459,961**	**630.1**

Three markets had retention greater than 70 percent, including DFW, PHX and Monterey, two of which were served nonstop from YUM.

TOP 25 DOMESTIC DESTINATIONS

Table 4.2 shows the percentage of passengers by market and originating airport for the top 25 domestic destinations. Thirty-eight percent of passengers used YUM for travel to the top 25 domestic markets. Overall, the highest retention rates by market (greater than 45 percent) included DFW, Chicago-O'Hare, Washington-National, PHX, Salt Lake City and Monterey. The lowest retention rates (less than 30 percent) included San Jose, San Francisco, Charlotte, Oakland, St. Louis, Chicago-Midway, Honolulu and Dallas-Love Field.

TABLE 4.2 TOP 25 DOMESTIC DESTINATIONS BY ORIGINATING AIRPORT

RANK	DESTINATION	ORIGIN AIRPORT %				TOTAL PAX
		YUM	PHX	SAN	LAX	
1	Seattle, WA	38	38	24	0	25,066
2	Portland, OR	40	46	12	2	18,551
3	Denver, CO	30	61	5	4	18,082
4	Sacramento, CA	31	31	38	0	13,075
5	Dallas, TX (DFW)	77	16	7	1	11,432
6	Minneapolis, MN	41	56	3	0	11,335
7	Chicago, IL (ORD)	46	44	8	2	9,718
8	San Jose, CA	23	7	65	5	9,602
9	Washington, DC (DCA)	49	40	10	1	8,934
10	San Francisco, CA	27	18	47	7	8,889
11	Charlotte-Douglas, NC	27	67	6	0	8,158
12	Oakland, CA	14	44	41	1	7,671
13	Phoenix, AZ (PHX)	100	0	0	0	7,617
14	Salt Lake City, UT	54	16	20	9	7,427
15	Orlando, FL (MCO)	32	30	35	3	7,414
16	St. Louis, MO	25	39	36	0	6,926
17	Boston, MA	30	47	21	2	6,926
18	Atlanta, GA	42	44	8	6	6,588
19	Chicago, IL (MDW)	0	100	0	0	6,406
20	Monterey, CA	80	12	7	0	6,392
21	Honolulu, HI	20	31	41	8	6,059
22	Dallas, TX (DAL)	0	86	14	0	5,969
23	El Paso, TX	41	59	0	0	5,932
24	New York, NY (JFK)	34	48	11	7	5,869
25	Newark, NJ	37	48	14	1	5,340
Top 25 Domestic		**38**	**41**	**19**	**2**	**235,379**
Total Domestic		**41**	**39**	**18**	**2**	**407,410**

Portland was the only destination included in each of the top 10 destinations for the alternate airports.

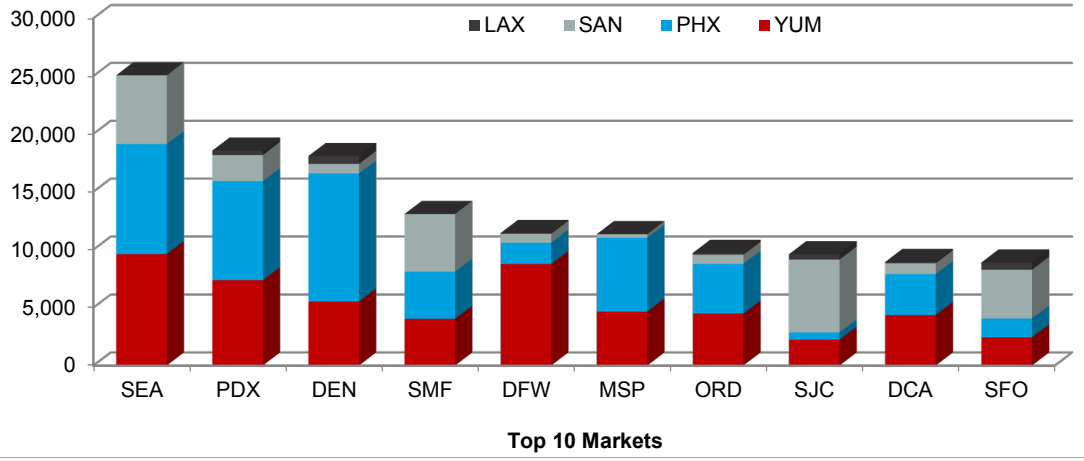
TOP 10 DOMESTIC DESTINATIONS BY ORIGINATING AIRPORT

Table 4.3 shows the top 10 markets when passengers exclusively fly out of YUM as well as the top 10 markets when passengers fly exclusively from the alternate airports. Portland was the only destination included in each of the top 10 destinations for the alternate airports. **Exhibit 4.1** shows the top 10 markets overall and the share YUM and the competing airports receive by market with a bar graph.

TABLE 4.3 TOP 10 DOMESTIC DESTINATIONS BY ORIGINATING AIRPORT

RANK	YUM		PHX		SAN		LAX	
	DESTINATION	PAX	DESTINATION	PAX	DESTINATION	PAX	DESTINATION	PAX
1	Seattle, WA	9,612	Denver, CO	11,057	San Jose, CA	6,288	Salt Lake City, UT	691
2	Dallas, TX (DFW)	8,761	Seattle, WA	9,503	Seattle, WA	5,951	Denver, CO	676
3	Phoenix, AZ (PHX)	7,617	Portland, OR	8,548	Sacramento, CA	4,972	San Francisco, CA	620
4	Portland, OR	7,364	Chicago, IL (MDW)	6,406	San Francisco, CA	4,210	Honolulu, HI	494
5	Denver, CO	5,515	Minneapolis, MN	6,367	Oakland, CA	3,162	San Jose, CA	457
6	Monterey, CA	5,145	Charlotte-Douglas, NC	5,448	Orlando, FL (MCO)	2,565	New York, NY (JFK)	419
7	Minneapolis, MN	4,655	Dallas, TX (DAL)	5,125	St. Louis, MO	2,473	Portland, OR	381
8	Chicago, IL (ORD)	4,480	Chicago, IL (ORD)	4,292	Honolulu, HI	2,460	Atlanta, GA	373
9	Washington, DC (DCA)	4,353	Sacramento, CA	4,071	Portland, OR	2,258	Baltimore, MD	276
10	Sacramento, CA	4,033	Fort Lauderdale, FL	3,801	Baltimore, MD	2,157	Washington, DC (IAD)	256

EXHIBIT 4.1 RETENTION AND DIVERSION FOR THE TOP 10 DESTINATIONS



TOP 15 INTERNATIONAL DESTINATIONS

Table 4.4 shows the percentage of passengers for the top 15 international destinations by originating airport. Only the top 15 international destinations are shown due to the smaller market sizes involved with international itineraries and limited available data. YUM retained 13 percent of the catchment area passengers destined for the top 15 international markets.

Calgary, Edmonton and Vancouver, Canada were the top three international markets. Tokyo, Japan and Cancun, Mexico made up the remainder of the top five markets. The highest retention (greater than 20 percent) was to Edmonton, Canada, Toronto, Canada, and Puerto Vallarta, Mexico. The lowest retention at less than 10 percent was to Calgary, Canada.

TABLE 4.4 TOP 15 INTERNATIONAL DESTINATIONS BY ORIGINATING AIRPORT

RANK	DESTINATION	ORIGIN AIRPORT %				PASSENGERS	
		PHX	LAX	SAN	YUM	TOTAL	PDEW
1	Calgary, Canada	56	0	42	2	5,064	6.9
2	Edmonton, Canada	56	0	22	22	4,917	6.7
3	Vancouver, Canada	31	0	56	13	3,080	4.2
4	Tokyo, Japan (NRT)	0	74	16	10	2,624	3.6
5	Cancun, Mexico	52	11	23	14	2,530	3.5
6	Toronto, Canada	56	7	15	22	1,975	2.7
7	London, UK (LHR)	43	37	0	20	1,914	2.6
8	Mazatlan, Mexico	31	46	13	10	1,843	2.5
9	Montreal, Canada	31	46	13	10	1,657	2.3
10	Tokyo-Haneda, Japan	31	46	13	10	1,493	2.0
11	San Jose del Cabo, Mexico	17	13	54	15	1,359	1.9
12	Brussels, Belgium	31	46	13	10	1,201	1.6
13	Puerto Vallarta, Mexico	13	13	42	33	1,167	1.6
14	Ottawa, Canada	31	46	13	10	1,108	1.5
15	Guatemala City, Guatemala	31	46	13	10	1,076	1.5
Top 15 International		**39**	**22**	**26**	**13**	**33,009**	**45.2**
Total International		**36**	**31**	**21**	**12**	**52,551**	**72.0**

Most airline hubs are directional and flow passenger traffic to and from geographic regions, not just destinations within the region.

FEDERAL AVIATION ADMINISTRATION (FAA) GEOGRAPHIC REGIONS

It is important to identify and quantify air travel markets, but it is also important to measure air travel by specific geographic regions. Generally, airlines operate route systems that serve geographic areas. Additionally, most airline hubs are directional and flow passenger traffic to and from geographic regions, not just destinations within the region. Therefore, air service analysis exercises consider the regional flow of passenger traffic as well as passenger traffic to a specific city. Accordingly, this section analyzes the regional distribution of air travelers from the airport catchment area. For this exercise, the FAA geographic breakdown of the U.S. is used (**Exhibit 4.2**).

EXHIBIT 4.2 FAA GEOGRAPHIC REGIONS

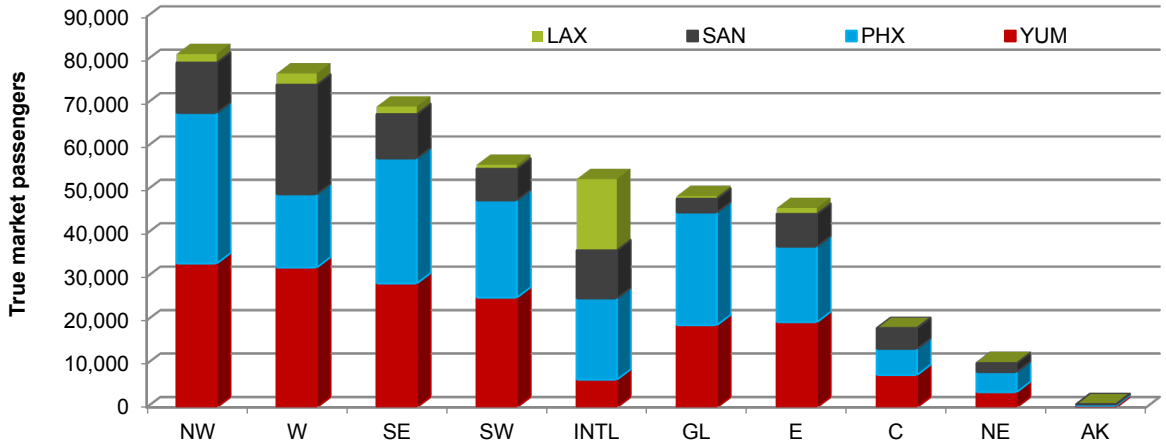
REGIONAL DISTRIBUTION OF TRAVELERS

Table 4.5 and **Exhibit 4.3** divide catchment area travel into the FAA's nine geographic regions and one catch-all international region. The Northwest region was the largest traveled region, with 18 percent of passengers. The West region was the second largest with 17 percent of passengers. YUM's retention rates were highest to the Southwest region (45 percent), East region (43 percent) and Alaska (50 percent) while its lowest retention rates were to the Great Lakes region (39 percent), Northeast region (34 percent) and international regions (12 percent).

TABLE 4.5 REGIONAL DISTRIBUTION OF TRAVEL BY AIRPORT

AIRPORT		REGION										
		NW	W	SE	SW	INTL	GL	E	C	NE	AK	TOTAL
PHX	Pax	34,705	16,871	28,811	22,415	18,728	25,945	17,401	6,043	4,620	239	175,779
	%	20	10	16	13	11	15	10	3	3	0	100
YUM	Pax	33,130	32,202	28,538	25,268	6,378	18,941	19,629	7,453	3,516	375	175,428
	%	19	18	16	14	4	11	11	4	2	0	100
SAN	Pax	11,594	25,254	10,191	7,261	11,050	3,156	7,501	4,731	2,055	110	82,902
	%	14	30	12	9	13	4	9	6	2	0	100
LAX	Pax	1,961	2,584	1,736	895	16,395	601	1,350	81	226	23	25,852
	%	8	10	7	3	63	2	5	0	1	0	100
Total	**Pax**	**81,390**	**76,911**	**69,276**	**55,839**	**52,551**	**48,643**	**45,880**	**18,308**	**10,416**	**747**	**459,961**
	%	**18**	**17**	**15**	**12**	**11**	**11**	**10**	**4**	**2**	**0**	**100**
YUM Retention %		**41**	**42**	**41**	**45**	**12**	**39**	**43**	**41**	**34**	**50**	**38**

EXHIBIT 4.3 REGIONAL DISTRIBUTION OF TRAVEL



Canada was the largest international region, with 34 percent of YUM catchment area international passengers. YUM retained 13 percent of travelers to Canada.

DISTRIBUTION OF INTERNATIONAL TRAVEL

Table 4.6 shows international travelers by airport and region. Eleven percent of catchment area travelers had international itineraries. Canada was the most frequented international region with 34 percent, or 18,100 of the total 52,551 catchment area international travelers, followed by Europe with 24 percent and Mexico and Central America with 21 percent of the total. Asia was the fourth largest region with 11 percent of international travel. The remaining top international regions were, in order of greatest to least: South America, the Middle East, the Caribbean, Australia and Oceania, and Africa.

YUM's retention averaged 12 percent for international destinations. YUM's retention was highest (greater than 10 percent) to Canada (13 percent), Europe (12 percent), and Mexico and Central America (14 percent). YUM's lowest retention was to Africa where YUM did not retain any air travelers.

TABLE 4.6 REGIONAL DISTRIBUTION OF INTERNATIONAL PASSENGERS

REGION	ORIGINATING AIRPORT				TRUE MARKET	% OF COLUMN	YUM RETENTION %
	PHX	LAX	SAN	YUM			
Canada	8,579	1,560	5,656	2,304	18,100	34	13
Europe	4,127	5,771	1,336	1,465	12,700	24	12
Mexico & Central America	3,579	3,434	2,602	1,560	11,174	21	14
Asia	963	3,402	823	581	5,769	11	10
South America	735	1,108	314	243	2,400	5	10
Middle East	378	569	161	125	1,232	2	10
Caribbean	231	348	99	76	754	1	10
Australia & Oceania	75	113	32	25	244	0	10
Africa	61	91	26	0	178	0	0
Total passengers	**18,728**	**16,395**	**11,050**	**6,378**	**52,551**	**100**	**12**
% of row	**36**	**31**	**21**	**12**	**100**	**-**	**-**

AIRLINES

Information in this section identifies airline use by catchment area air travelers. The information is airport and airline specific. The intent is to determine which airlines are used to travel to specific destinations. The airline market share at YUM is based on U.S. DOT airline reported data. Airline market share at diverting airports is based on ARC data and is an estimation of the carrier's share of diverted passengers.

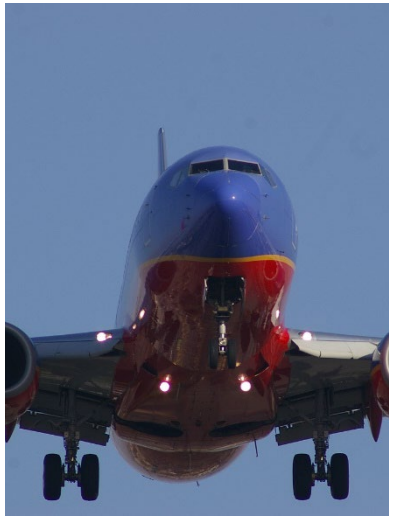
AIRLINES USED AT YUM

Table 5.1[2] provides the airline share for the top 25 true markets and total share by airline at YUM. With the only nonstop service at YUM, American Airlines served 99 percent of YUM passengers. All other carriers, through codeshare and interline connections, served approximately 1 percent of passengers.

TABLE 5.1 AIRLINES USED AT YUM

RANK	TOP 25 DOMESTIC TRUE MARKETS	AIRLINE %		TOTAL PAX
		AA	OTHER	
1	Seattle, WA	95	5	9,612
2	Dallas, TX (DFW)	100	0	8,761
3	Phoenix, AZ (PHX)	100	0	7,617
4	Portland, OR	98	2	7,364
5	Denver, CO	100	0	5,515
6	Monterey, CA	100	0	5,145
7	Minneapolis, MN	100	0	4,655
8	Chicago, IL (ORD)	100	0	4,480
9	Washington, DC (DCA)	100	0	4,353
10	Sacramento, CA	100	0	4,033
11	Salt Lake City, UT	100	0	4,015
12	Atlanta, GA	99	1	2,794
13	San Antonio, TX	100	0	2,602
14	Spokane, WA	99	1	2,508
15	El Paso, TX	100	0	2,431
16	San Francisco, CA	100	0	2,430
17	Orlando, FL (MCO)	100	0	2,379
18	Philadelphia, PA	100	0	2,350
19	San Jose, CA	100	0	2,230
20	Charlotte-Douglas, NC	100	0	2,229
21	Houston, TX (IAH)	99	1	2,204
22	Boston, MA	100	0	2,083
23	Las Vegas, NV	100	0	2,003
24	New York, NY (JFK)	100	0	1,991
25	Newark, NJ	98	2	1,980
Total Top 25		**99**	**1**	**97,765**
Total All Markets		**99**	**1**	**175,428**

[2] *Source: Diio Mi*



AIRLINES USED AT PHX

Table 5.2 shows the airlines used and top destinations when travelers from the catchment area used PHX. American had the highest share of catchment area passengers at PHX, carrying 37 percent of diverting passengers. Southwest Airlines had the second highest share at 25 percent, followed by United Airlines, Delta Air Lines and JetBlue Airways. All other carriers combined for the remaining 13 percent of passengers.

TABLE 5.2 AIRLINES USED AT PHX

RANK	TOP 25 DOMESTIC TRUE MARKETS	AIRLINE %						TOTAL PHX PAX
		AA	WN	UA	DL	B6	OTHER	
1	Denver, CO	32	11	45	0	0	11	11,057
2	Seattle, WA	11	24	3	35	0	27	9,503
3	Portland, OR	30	43	7	0	0	21	8,548
4	Chicago, IL (MDW)	0	99	0	1	0	0	6,406
5	Minneapolis, MN	23	0	2	44	0	31	6,367
6	Charlotte-Douglas, NC	84	1	14	0	0	1	5,448
7	Dallas, TX (DAL)	0	100	0	0	0	0	5,125
8	Chicago, IL (ORD)	37	0	37	8	0	17	4,292
9	Sacramento, CA	30	70	0	0	0	0	4,071
10	Fort Lauderdale, FL	9	4	20	3	50	14	3,801
11	Washington, DC (DCA)	86	3	3	0	6	3	3,535
12	El Paso, TX	32	68	0	0	0	0	3,501
13	Oakland, CA	12	88	0	0	0	0	3,365
14	Boston, MA	50	8	7	0	35	0	3,264
15	Atlanta, GA	44	1	3	38	11	3	2,916
16	New York, NY (JFK)	46	0	0	35	18	1	2,795
17	St. Louis, MO	98	1	0	0	0	1	2,691
18	Newark, NJ	41	15	31	0	0	12	2,540
19	Orlando, FL (MCO)	58	3	14	0	0	25	2,215
20	Detroit, MI	32	0	4	63	0	1	2,160
21	Buffalo, NY	9	67	7	13	4	0	2,003
22	Honolulu, HI	4	4	12	0	0	80	1,892
23	Dallas, TX (DFW)	87	0	0	0	0	13	1,835
24	Oklahoma City, OK	22	75	2	0	0	0	1,647
25	San Francisco, CA	44	45	4	0	0	7	1,629
Total Top 25		**33**	**30**	**11**	**10**	**4**	**12**	**102,607**
Total All Markets		**37**	**25**	**13**	**9**	**3**	**13**	**175,779**

Southwest Airlines had the highest share of catchment area passengers at SAN, carrying 40 percent of diverting passengers, followed by Alaska Airlines at 19 percent.

AIRLINES USED AT SAN

Table 5.3 shows the airlines used and top destinations when travelers from the catchment area used SAN. Southwest had the highest share of catchment area passengers at SAN, carrying 40 percent of diverting passengers, followed by Alaska Airlines with 19 percent of passengers. United and Delta had the third and fourth highest shares at 13 and 10 percent, respectively, while American served 9 percent of passengers. All other carriers combined for the remaining 9 percent of passengers.

TABLE 5.3 AIRLINES USED AT SAN

RANK	TOP 25 DOMESTIC TRUE MARKETS	AIRLINE %						TOTAL SAN PAX
		WN	AS	UA	DL	AA	OTHER	
1	San Jose, CA	82	18	0	0	0	0	6,288
2	Seattle, WA	15	46	5	33	0	0	5,951
3	Sacramento, CA	85	15	0	0	0	0	4,972
4	San Francisco, CA	41	26	33	0	0	0	4,210
5	Oakland, CA	100	0	0	0	0	0	3,162
6	Orlando, FL (MCO)	31	38	0	29	2	0	2,565
7	St. Louis, MO	70	23	0	4	4	0	2,473
8	Honolulu, HI	1	46	6	0	0	46	2,460
9	Portland, OR	37	42	17	0	4	0	2,258
10	Baltimore, MD	75	18	4	4	0	0	2,157
11	Salt Lake City, UT	27	8	0	41	24	0	1,499
12	Boston, MA	5	16	16	24	16	24	1,461
13	Washington, DC (IAD)	3	0	79	18	0	0	1,381
14	Austin, TX	61	39	0	0	0	0	1,287
15	Kahului, HI	1	24	23	3	0	49	1,231
16	Kansas City, MO	70	23	0	8	0	0	1,197
17	Washington, DC (DCA)	24	0	0	0	76	0	937
18	New Orleans, LA	57	0	18	25	0	0	909
19	Tampa, FL	47	0	37	0	16	0	850
20	Kona, HI	0	52	9	22	9	9	844
21	Dallas, TX (DAL)	100	0	0	0	0	0	844
22	Denver, CO	50	0	37	0	12	0	834
23	Chicago, IL (ORD)	0	0	58	0	42	0	791
24	Dallas, TX (DFW)	0	0	0	0	100	0	774
25	Newark, NJ	13	0	87	0	0	0	759
Total Top 25		**48**	**22**	**11**	**9**	**6**	**4**	**52,094**
Total All Markets		**40**	**19**	**13**	**10**	**9**	**9**	**82,902**

When YUM catchment area travelers divert to alternate airports, the largest percentage used Southwest Airlines, followed by American Airlines, United Airlines and Delta Air Lines.

DIVERTING PASSENGER AIRLINE USE

Exhibit 5.1 shows the airlines used when travelers from the catchment area originated from any other airport besides YUM. Overall, Southwest carried the highest number of diverting passengers, with 28 percent, followed by American with 28 percent, United with 13 percent, Delta with 10 percent and Alaska with 7 percent. Air Canada, JetBlue and Sun Country Airlines each had shares of 2 percent. Other airlines accounted for 8 percent of passengers.

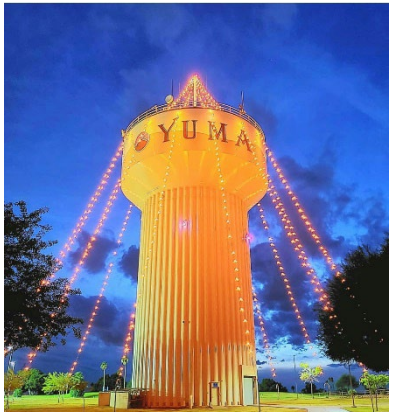
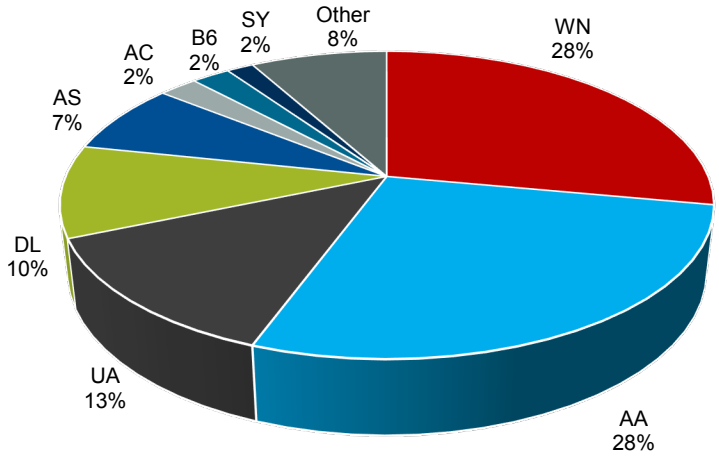


EXHIBIT 5.1 DIVERTING PASSENGER AIRLINE USE



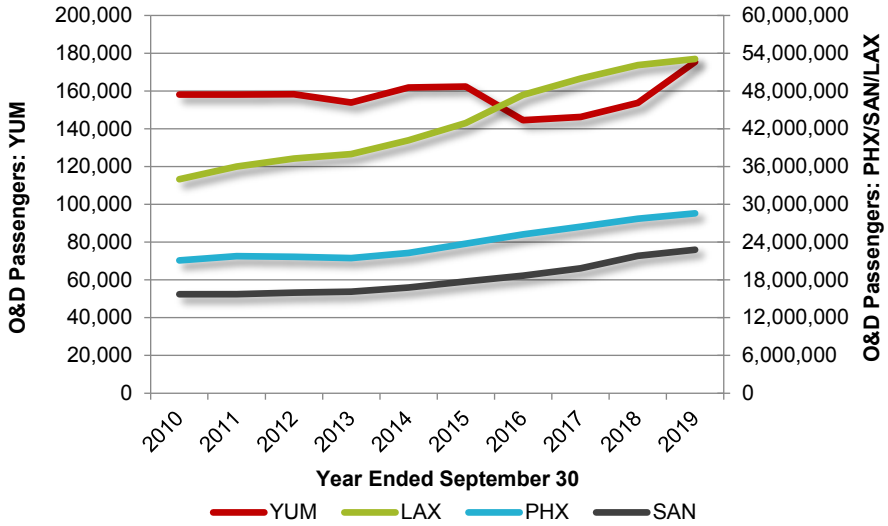
FACTORS AFFECTING AIR SERVICE DEMAND AND RETENTION

This section examines several factors that have affected and will continue to affect air service demand in the Yuma area and YUM's ability to retain passengers. The factors affecting YUM's ability to retain passengers included in this section are airfares, nonstop service availability, and the quality and capacity of air service offered at YUM, PHX, SAN and LAX.

PASSENGER ACTIVITY COMPARISON

To better understand the changes in passenger volumes at YUM and the diverting airports, **Exhibit 6.1** provides a depiction of origin and destination passengers over the last 10 years by year ended September 30. Passenger totals as reported to the U.S. DOT during this period:

EXHIBIT 6.1 PASSENGER TRENDS



- YUM's passengers increased at a CAGR of 1.2 percent and ranged from 144,562 in 2016 to 175,428 in 2019, notably increasing 14 percent from 2018 to 2019.
- PHX's passengers increased at a 3.4 percent CAGR and ranged from 21.1 million in 2010 to 28.6 million in 2019.
- SAN's passengers increased at a 4.2 percent CAGR, ranging from 15.7 million in 2011 to 22.8 million in 2019.
- LAX's passengers increased at a 5.1 percent CAGR and ranged from 34.0 million in 2010 to 53.1 million in 2019.

YUM's overall average domestic fare for the year ended September 30, 2019, was $246, $78 higher than PHX, $88 higher than SAN and $64 higher than LAX.

AIRFARES

When a traveler decides which airport to access for travel, airfares play a large role. Airfares affect air service demand and an airport's ability to retain passengers. One-way airfares (excluding taxes and Passenger Facility Charges (PFC)) paid by travelers are used to measure the relative fare competitiveness between YUM and the alternate airports. Fares listed for the alternate airports are for all air travelers using the airport and are not reflective of the average fare paid only by catchment area travelers diverting to these airports.

TABLE 6.1 U.S. DOT AVERAGE DOMESTIC ONE-WAY FARES

RANK	DESTINATION	AVERAGE ONE-WAY FARE				MIN DIFF.
		YUM	PHX	SAN	LAX	
1	Seattle, WA	$170	$121	$115	$126	$44
2	Portland, OR	$179	$127	$127	$113	$52
3	Denver, CO	$161	$106	$115	$118	$43
4	Sacramento, CA	$173	$130	$79	$93	$43
5	Dallas, TX (DFW)	$241	$180	$181	$135	$60
6	Minneapolis, MN	$176	$131	$167	$163	$9
7	Chicago, IL (ORD)	$239	$172	$187	$176	$52
8	San Jose, CA	$180	$138	$82	$87	$42
9	Washington, DC (DCA)	$393	$260	$240	$250	$132
10	San Francisco, CA	$159	$132	$97	$93	$27
11	Charlotte-Douglas, NC	$308	$273	$280	$290	$18
12	Oakland, CA	$192	$124	$97	$84	$68
13	Phoenix, AZ (PHX)	$177	-	$118	$113	$59
14	Salt Lake City, UT	$183	$135	$110	$109	$48
15	Orlando, FL (MCO)	$292	$213	$175	$189	$79
16	St. Louis, MO	$244	$174	$162	$200	$44
17	Boston, MA	$295	$227	$244	$228	$52
18	Atlanta, GA	$260	$212	$256	$223	$5
19	Chicago, IL (MDW)	-	$146	$160	$139	-
20	Monterey, CA	$233	$176	$118	$163	$56
21	Honolulu, HI	$478	$301	$241	$249	$177
22	Dallas, TX (DAL)	-	$152	$130	$118	-
23	El Paso, TX	$204	$119	$98	$128	$77
24	New York, NY (JFK)	$252	$219	$251	$328	($76)
25	Newark, NJ	$294	$226	$243	$265	$29
Average Domestic Fare		**$246**	**$168**	**$159**	**$183**	**$64**

Table 6.1[3] shows one-way average airfares for the top 25 catchment area domestic destinations. Average airfares are a result of many factors including length of haul, availability of seats, business versus leisure fares and airline competition. YUM's overall average domestic fare for the year ended September 30, 2019, was $246, $78 higher than PHX, $88 higher than SAN and $64 higher than LAX.

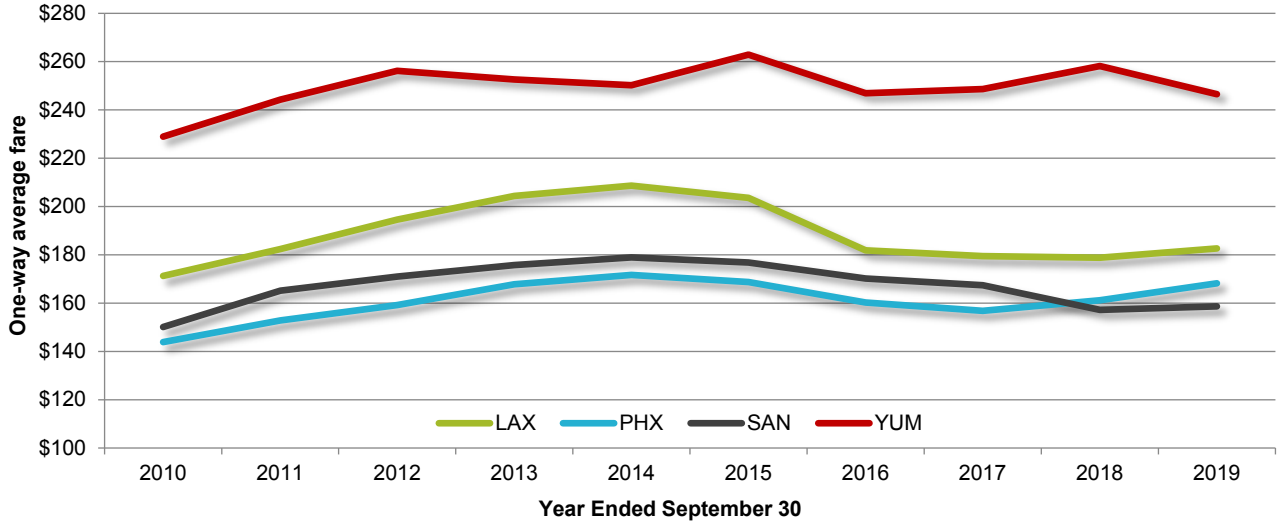
In individual markets, YUM had a higher fare than the highest fare at all of the competing airports in 22 of the top 25 markets. The highest fare differences compared to the highest fare at competing airports (greater than $100) were in the Washington-National and Honolulu markets.

[3] *Source: Diio Mi; Note: Year Ended September 30, 2019; Fares do not include taxes or Passenger Facility Charges*

Exhibit 6.2 tracks the average fares at YUM and the competing airports from the year ended September 30, 2010, through the year ended September 30, 2019. Based on U.S. DOT airline data, average fares at YUM have ranged from $229 (2010) to $263 (2015). The average fare at PHX ranged from $144 (2010) to $172 (2014), while the average fare at SAN ranged from $150 (2010) to $179 (2014) and LAX ranged from $171 (2010) to $209 (2014). Overall, average domestic fares over the 10-year period increased at a CAGR of 0.8 percent at YUM compared to 1.8 percent at PHX, 0.6 percent at SAN and 0.7 percent at LAX.

YUM's fare differential compared to PHX reached a 10-year low in 2019 at $78, having been as high as $97 in 2012 and 2018. The YUM-PHX fare spread declined from 2018 to 2019 by $19. The fare gap between YUM and SAN has ranged from $71 higher at YUM in 2014 to as high as $101 in 2018. The fare gap decreased from 2018 to 2019 by $13 one-way. Compared to LAX, the fare gap has ranged from as low as $42 in 2014 to as high as $79 in 2018 and also decreased from 2018 to 2019 by $16.

EXHIBIT 6.2 10-YEAR AVERAGE DOMESTIC ONE-WAY FARE TREND



YUM offered nonstop service to two of the top 25 catchment area destinations with an average of 33 weekly departures for the year ended September 30, 2019.

NONSTOP SERVICE AVAILABILITY

Travelers drive to competing airports to access air service for many reasons, one of which is nonstop service availability. **Table 6.2**[4] compares the level of air service offered at YUM with that offered at the competing airports. For the year ended September 30, 2019, YUM offered nonstop service to two of the top 25 catchment area destinations with an average of 33 weekly frequencies. PHX had service to 24 of the top 25 markets with an average of 1,548 weekly roundtrips to these markets, while SAN had service to 24 of the top 25 destinations with 1,284 weekly frequencies. LAX had the highest service levels, with service to all 25 of the top 25 markets, with an average of 2,879 weekly frequencies to the top 25 markets.

TABLE 6.2 NONSTOP SERVICE COMPARISON

RANK	DESTINATION	AVG WEEKLY DEPARTURES			
		PHX	YUM	SAN	LAX
1	Seattle, WA	122	0	95	204
2	Portland, OR	63	0	42	121
3	Denver, CO	150	0	87	156
4	Sacramento, CA	72	0	113	139
5	Dallas, TX (DFW)	89	4	62	150
6	Minneapolis, MN	86	0	38	68
7	Chicago, IL (ORD)	103	0	61	156
8	San Jose, CA	76	0	120	177
9	Washington, DC (DCA)	21	0	0	28
10	San Francisco, CA	98	0	148	335
11	Charlotte-Douglas, NC	55	0	23	45
12	Oakland, CA	64	0	76	98
13	Phoenix, AZ (PHX)	0	29	107	163
14	Salt Lake City, UT	98	0	50	116
15	Orlando, FL (MCO)	27	0	12	59
16	St. Louis, MO	36	0	20	33
17	Boston, MA	33	0	22	103
18	Atlanta, GA	68	0	45	123
19	Chicago, IL (MDW)	48	0	25	38
20	Monterey, CA	24	0	7	28
21	Honolulu, HI	18	0	14	115
22	Dallas, TX (DAL)	41	0	34	52
23	El Paso, TX	56	0	10	32
24	New York, NY (JFK)	53	0	40	245
25	Newark, NJ	49	0	31	96
Total Top 25 Frequencies		**1,548**	**33**	**1,284**	**2,879**
Total All Markets		**3,632**	**33**	**1,979**	**6,088**
Number of Top 25 Served		**24**	**2**	**24**	**25**
Total Destinations Served		**129**	**2**	**72**	**203**

[4] *Source: Diio Mi; Year Ended September 30, 2019*

YUM offered a total of 1,699 departures and 119,214 seats. YUM's departures were all provided on regional jet aircraft compared to only 15 to 20 percent of departures at alternate airports on regional jet aircraft.

QUALITY OF AIR SERVICE AT COMPETING AIRPORTS

The quality of air service offered by an airport is a factor in a traveler's decision when selecting which airport to originate travel from. In general, passengers prefer larger over smaller aircraft and jet over turboprops.

Table 6.3[5] provides YUM's and the competing airports total departures by aircraft type for the year ended September 30, 2019. YUM had 1,699 departures and 119,214 seats. YUM's departures were provided on regional jet aircraft. Comparatively, PHX offered 188,859 departures and 26.8 million seats on a mix of aircraft, with 20 percent of departures on regional jet aircraft. SAN had 102,924 departures and 15.3 million seats with 15 percent of the departures on regional jet aircraft. LAX had 316,559 departures and 51.5 million seats, with 20 percent of departures on regional jets.

TABLE 6.3 DEPARTURES BY AIRCRAFT TYPE BY ORIGIN

AIRCRAFT TYPE	SEAT RANGE	TOTAL DEPARTURES			
		PHX	YUM	SAN	LAX
Turboprop	<9	1,385	-	-	2,304
	9-30	361	-	-	332
	>30	-	-	-	308
Regional jet	30-50	1,589	-	842	9,168
	51-70	10,501	1,500	849	8,894
	71-100	25,274	199	13,990	44,854
Narrow body jet	70-125	1,190	-	1,719	8,623
	126-160	88,033	-	49,410	107,433
	>160	59,111	-	34,770	91,463
Wide body jet	160-240	179	-	365	3,859
	241-300	1,236	-	979	21,787
	>300	-	-	-	17,534
Total Departures		**188,859**	**1,699**	**102,924**	**316,559**
% Turboprop Departures		**1%**	**0%**	**0%**	**1%**
% Regional Jet Departures		**20%**	**100%**	**15%**	**20%**
Total Seats		**26,801,200**	**119,214**	**15,305,320**	**51,483,397**

[5] *Source: Diio Mi; Year Ended September 30, 2019*

An increase in retention of 10 percentage points would create an estimated additional 45,996 annual passengers (63.0 PDEW) for YUM.

RETENTION RATE SENSITIVITY

Considering the previous factors of airfares, nonstop service and quality of service, a retention rate sensitivity follows in **Table 6.4**. The purpose is to show how small changes in passenger retention can affect passenger volume. Passengers in total and for each of the top 25 markets are calculated using varying degrees of retention. An increase in retention of 10 percentage points would create an estimated additional 45,996 annual passengers (63.0 PDEW) for YUM.

TABLE 6.4 RETENTION RATE SENSITIVITY

RANK	DESTINATION	REPORTED PAX	RETENTION %	RETENTION IMPROVEMENT		
				5%	10%	15%
1	Seattle, WA	9,612	38	10,865	12,118	13,372
2	Portland, OR	7,364	40	8,292	9,220	10,147
3	Denver, CO	5,515	30	6,419	7,323	8,227
4	Sacramento, CA	4,033	31	4,686	5,340	5,994
5	Dallas, TX (DFW)	8,761	77	9,333	9,904	10,476
6	Minneapolis, MN	4,655	41	5,222	5,789	6,355
7	Chicago, IL (ORD)	4,480	46	4,966	5,452	5,938
8	San Jose, CA	2,230	23	2,710	3,190	3,670
9	Washington, DC (DCA)	4,353	49	4,800	5,247	5,693
10	San Francisco, CA	2,430	27	2,875	3,319	3,764
11	Charlotte-Douglas, NC	2,229	27	2,637	3,045	3,453
12	Oakland, CA	1,054	14	1,438	1,821	2,205
13	Phoenix, AZ (PHX)	7,617	100	7,617	7,617	7,617
14	Salt Lake City, UT	4,015	54	4,386	4,757	5,129
15	Orlando, FL (MCO)	2,379	32	2,750	3,121	3,492
16	St. Louis, MO	1,762	25	2,109	2,455	2,801
17	Boston, MA	2,083	30	2,430	2,776	3,122
18	Atlanta, GA	2,794	42	3,123	3,453	3,782
19	Chicago, IL (MDW)	0	0	320	641	961
20	Monterey, CA	5,145	80	5,464	5,784	6,103
21	Honolulu, HI	1,212	20	1,515	1,818	2,121
22	Dallas, TX (DAL)	0	0	320	641	961
23	El Paso, TX	2,431	41	2,728	3,024	3,321
24	New York, NY (JFK)	1,991	34	2,285	2,578	2,872
25	Newark, NJ	1,980	37	2,247	2,513	2,780
Total Top 25		**90,126**	**38**	**101,536**	**112,946**	**124,356**
Total Domestic		**169,050**	**41**	**189,421**	**209,791**	**230,162**
Total International		**6,378**	**12**	**9,005**	**11,633**	**14,261**
Total of All Markets		**175,428**	**38**	**198,426**	**221,424**	**244,422**

SITUATION ANALYSIS

YUM is located on the border of Arizona, California and Mexico, serving as a crucial access point for air service from an otherwise isolated region. Located approximately three hours from PHX and SAN, YUM retains just 38 percent of passengers. The proximity to two large-hub and relatively low-fare airports creates a challenge from both a fare and service level perspective for the local airport.

After passenger declines following United Airlines/SkyWest Airlines leaving the market in 2014, YUM has seen passengers grow for the past four years, at an impressive 21 percent over that timeframe. During that time, YUM was successfully able to recruit nonstop service to DFW which began in March 2019. Following the introduction of the F-35 at Marine Corps Air Station Yuma (MCAS Yuma), demand to DFW had been increasing from just 4.5 PDEW in 2012 to a true market demand of more than 15 PDEW. The market continues to grow, and the additional one-stop connecting opportunities to markets to the east have been important changes for YUM.

While the COVID-19 pandemic has brought tremendous new uncertainty, this study was performed before the pandemic affected passenger traffic in the U.S., and therefore the true market estimate has not been affected. Since the timeframe covered by this study, the world has seen passenger airline traffic drop by over 90 percent compared to 2019 and will likely have impacts for many years to come. The section identifies opportunities and discussion of routes based on data within this report, pre-COVID-19 impact. While it is likely that YUM will lose frequencies, capacity and routes in 2020, the expectation is that the market will rebound in 2021 and likely be back to normal levels in 2022, with opportunities for new capacity or routes possible for summer 2021. In past downturns, non-hub airports (such as YUM) faired much better than larger medium and large hub airports in recovery time.

While the COVID-19 pandemic is unprecedented, it is reasonable to predict that non-hub markets will recover faster than larger airports, with destination markets like YUM especially able to recover quicker.

Table 7.1 shows the year-over-year passenger variance for U.S. airports based on U.S. DOT origin and destination data. With two major downturns in the past 19 years (2001 and 2009), the nation's air traffic has rebounded at different speeds. In 2001, all of the different hub sizes bounced back within two years to positive growth and, by 2004, were essentially back to 2000 passenger levels. The 2008/2009 financial crisis exhibited a much more severe drop in passenger traffic across the board and took longer for the markets to rebound. Non-hub airports (such as YUM) had the smallest reduction in passengers each year. They also showed a much quicker rebound, with a nearly 7 percent growth in 2010 and, by 2011, in aggregate non-hub airports were back to pre-recession levels. The larger airports all took substantially longer to return to pre-recession levels, with small hub airports taking the longest (2017) to recover to normal levels. While the COVID-19 pandemic is unprecedented, it is reasonable to predict that non-hub markets will recover faster than larger airports, with destination markets like YUM especially able to recover quicker.

TABLE 7.1 YEAR-OVER-YEAR PASSENGER VARIANCE BY HUB SIZE

CALENDAR YEAR	HUB SIZE			
	LARGE	MEDIUM	SMALL	NON
2001	(8%)	(4%)	(6%)	(8%)
2002	(4%)	(4%)	(2%)	(3%)
2003	3%	0%	3%	4%
2004	11%	7%	8%	9%
2005	6%	5%	5%	3%
2006	3%	3%	0%	1%
2007	2%	2%	3%	2%
2008	(5%)	(6%)	(4%)	(3%)
2009	(6%)	(8%)	(7%)	(5%)
2010	3%	1%	1%	7%
2011	3%	0%	1%	2%
2012	1%	(1%)	0%	0%
2013	2%	0%	(1%)	1%
2014	3%	4%	2%	3%
2015	7%	7%	2%	0%
2016	7%	5%	4%	(1%)
2017	5%	5%	5%	1%
2018	5%	7%	8%	5%
2019	4%	5%	7%	9%

The following section will discuss the air service situation at YUM for the incumbent airline, American Airlines, and new potential airline entrants.

INCUMBENT AIRLINE – AMERICAN AIRLINES

American is the sole provider of air service at YUM, offering approximately four daily nonstop flights to PHX and one daily nonstop flight to DFW. The PHX service performs very well in comparison to other regional routes at PHX, and American's increase in frequency starting in October 2019 through March 2020 to five daily roundtrips, was indicative of the strength of the market. DFW service began in 2019, operating at a 77 percent load factor for the full calendar year. This strong performance so quickly after service startup is a testament to the demand, and it is likely that once demand returns that DFW will end up with at least two daily roundtrips. Due to the bank structures at PHX, it is unlikely that YUM would increase frequency beyond the peak off five daily roundtrips in the near future, and additional capacity instead would be to DFW.

United Airlines service to Denver is the top opportunity for YUM, as the third largest true market and significant connecting opportunities that Denver service would offer.

While American has a hub in Los Angeles, the minimal local traffic and limited connecting opportunities would likely create a challenge for the airline to operate the service daily; however, less-than-daily service could potentially be explored long-term.

NEW ENTRANT AIRLINES

With just one airline operating at YUM, the majority of new service opportunities for YUM long-term are with new entrant airlines. Potential airlines are listed by the highest priority to the least priority.

United Airlines

YUM was awarded a SCASDP grant in 2020, to support new service to Denver on United Airlines. This federal grant when packaged with local funds offers a significant amount of support for United's potential service. Denver continues to be a top opportunity from a local perspective, offering nearly 25 PDEW in true market passengers, as well as significant new connections especially to the Pacific Northwest and Canada.

With significant demand to the San Francisco Bay Area (45 PDEW), San Francisco presents another opportunity for United to serve the market in addition to Denver. It would also present significantly less circuitous connections to the Pacific Northwest and western Canada.

Alaska Airlines

The number one flown market based on origin and destination data and true market for YUM continues to be Seattle, which has been a top market for many years. The Portland market has continued to grow as well, coming in as the second largest true market with more than 25 PDEW. This demand to the Pacific Northwest will be an opportunity for growth from YUM in the long-term. With the new partnership between American and Alaska and Alaska's planned entrance into the **one**world alliance, the potential for new service to Seattle will increase over the next few years. Alaska has been entrenched in a drawn-out battle against Delta Air Lines in the past few years in Seattle, and that occupied the majority of the new service opportunities for Alaska. It is yet to be seen how the impact of COVID-19 will play out in Seattle, but long-term it is likely that Alaska will be able to add flying to additional markets not in direct response to Delta.

Delta Air Lines

Delta served YUM for a brief period prior to the 2009 Great Recession to Salt Lake City. The historical performance of the market will likely be a challenge to overcome in trying to entice Delta back to YUM; however, with a hub in Seattle, Delta is a potential opportunity to serve the Pacific Northwest. With limited opportunities for service to other markets and likely only being able to serve Seattle with one daily roundtrip, the fixed costs of operating a station at YUM may make the opportunity financially untenable.

Other Carriers

Low-cost carriers and ultra-low cost carriers such as Spirit Airlines, Sun Country Airlines or Frontier Airlines typically serve larger markets and would likely find consistently filling their large mainline-sized aircraft a challenge on a year-round basis from YUM. Allegiant Air could be a potential for service to Bellingham, WA, as that market serves as a gateway not only to Seattle but more importantly to western Canada; however, Allegiant has not historically added service solely to Bellingham and that will likely be an impediment to adding the service at YUM.

With very significant demand to western Canada, especially during the winter peak season, nonstop, less-than-daily service on a Canadian carrier is also a potential. With Federal Inspection Stations (FIS) set up in Canada to “pre-clear” international passengers, service to those top Canadian markets would not require YUM to build a dedicated FIS facility. There are several new startup low-cost carriers in Canada that could be a potential, as well as WestJet.

TOP 50 TRUE MARKETS

TABLE A.1 TOP 50 TRUE MARKETS

RANK	DESTINATION	YUM REPORTED PAX	RETENTION %	TRUE MARKET	PDEW	DIVERTING PASSENGERS		
						PHX	SAN	LAX
1	Seattle, WA	9,612	38	25,066	34.3	9,503	5,951	0
2	Portland, OR	7,364	40	18,551	25.4	8,548	2,258	381
3	Denver, CO	5,515	30	18,082	24.8	11,057	834	676
4	Sacramento, CA	4,033	31	13,075	17.9	4,071	4,972	0
5	Dallas, TX (DFW)	8,761	77	11,432	15.7	1,835	774	62
6	Minneapolis, MN	4,655	41	11,335	15.5	6,367	312	0
7	Chicago, IL (ORD)	4,480	46	9,718	13.3	4,292	791	155
8	San Jose, CA	2,230	23	9,602	13.2	628	6,288	457
9	Washington, DC (DCA)	4,353	49	8,934	12.2	3,535	937	109
10	San Francisco, CA	2,430	27	8,889	12.2	1,629	4,210	620
11	Charlotte-Douglas, NC	2,229	27	8,158	11.2	5,448	481	0
12	Oakland, CA	1,054	14	7,671	10.5	3,365	3,162	89
13	Phoenix, AZ (PHX)	7,617	100	7,617	10.4	0	0	0
14	Salt Lake City, UT	4,015	54	7,427	10.2	1,222	1,499	691
15	Orlando, FL (MCO)	2,379	32	7,414	10.2	2,215	2,565	255
16	St. Louis, MO	1,762	25	6,926	9.5	2,691	2,473	0
17	Boston, MA	2,083	30	6,926	9.5	3,264	1,461	117
18	Atlanta, GA	2,794	42	6,588	9.0	2,916	505	373
19	Chicago, IL (MDW)	0	0	6,406	8.8	6,406	0	0
20	Monterey, CA	5,145	80	6,392	8.8	779	468	0
21	Honolulu, HI	1,212	20	6,059	8.3	1,892	2,460	494
22	Dallas, TX (DAL)	0	0	5,969	8.2	5,125	844	0
23	El Paso, TX	2,431	41	5,932	8.1	3,501	0	0
24	New York, NY (JFK)	1,991	34	5,869	8.0	2,795	664	419
25	Newark, NJ	1,980	37	5,340	7.3	2,540	759	61
26	Baltimore, MD	1,799	34	5,335	7.3	1,103	2,157	276
27	Fort Lauderdale, FL	867	17	5,211	7.1	3,801	299	243
28	Calgary, Canada	78	2	5,064	6.9	2,849	2,137	0
29	Edmonton, Canada	1,093	22	4,917	6.7	2,732	1,093	0
30	Spokane, WA	2,508	59	4,243	5.8	1,350	384	0
31	Kansas City, MO	1,975	49	4,037	5.5	866	1,197	0
32	San Antonio, TX	2,602	65	4,002	5.5	794	459	147
33	Detroit, MI	1,830	46	3,989	5.5	2,160	0	0
34	Austin, TX	1,661	42	3,969	5.4	1,020	1,287	0
35	Houston, TX (IAH)	2,204	58	3,767	5.2	1,040	310	213

TABLE A.1 TOP 50 TRUE MARKETS

RANK	DESTINATION	YUM REPORTED PAX	RETENTION %	TRUE MARKET	PDEW	DIVERTING PASSENGERS		
						PHX	SAN	LAX
36	Philadelphia, PA	2,350	63	3,704	5.1	1,354	0	0
37	Miami, FL	1,465	41	3,535	4.8	1,563	394	113
38	Washington, DC (IAD)	839	26	3,270	4.5	794	1,381	256
39	Jacksonville, NC	1,624	50	3,237	4.4	1,037	477	99
40	Vancouver, Canada	385	13	3,080	4.2	963	1,733	0
41	Las Vegas, NV	2,003	67	3,012	4.1	441	338	230
42	Huntsville/Decatur, AL	1,510	50	3,009	4.1	964	443	92
43	Milwaukee, WI	1,230	41	2,973	4.1	1,625	118	0
44	New Bern, NC	1,781	60	2,969	4.1	1,188	0	0
45	Tampa, FL	1,398	47	2,960	4.1	713	850	0
46	Reno, NV	1,589	59	2,696	3.7	956	0	150
47	Omaha, NE	1,445	54	2,673	3.7	607	621	0
48	Tokyo, Japan (NRT)	262	10	2,624	3.6	0	411	1,951
49	Nashville, TN	1,305	50	2,614	3.6	572	737	0
50	Buffalo, NY	391	15	2,561	3.5	2,003	167	0
Top 50 Destinations		**126,321**	**39**	**324,830**	**445.0**	**128,118**	**61,661**	**8,730**
Total Domestic		**169,050**	**41**	**407,410**	**558.1**	**157,051**	**71,853**	**9,457**
Total International		**6,378**	**12**	**52,551**	**72.0**	**18,728**	**11,050**	**16,395**
Total All Markets		**175,428**	**38**	**459,961**	**630.1**	**175,779**	**82,902**	**25,852**

GLOSSARY

AIRLINE CODES

AA	American Airlines
AC	Air Canada
AS	Alaska Airlines
B6	JetBlue Airways
DL	Delta Air Lines
SY	Sun Country Airlines
UA	United Airlines
WN	Southwest Airlines

AIRPORT CATCHMENT AREA (ACA)

The geographic area surrounding an airport from which that airport can reasonably expect to draw passenger traffic. The airport catchment area is sometimes called the service area.

AIRPORT CODES

DAL	Dallas-Love Field, TX
DCA	Washington-National, DC
DEN	Denver, CO
DFW	Dallas-Fort Worth, TX
IAD	Washington-Dulles, DC
IAH	Houston-Intercontinental, TX
JFK	New York-Kennedy, NY
LAX	Los Angeles, CA
LHR	London-Heathrow, UK
MCO	Orlando-International, FL
MDW	Chicago-Midway, IL
MSP	Minneapolis-St. Paul, MN

AIRPORT CODES (CONTINUED)

NRT	Tokyo-Narita, Japan
ORD	Chicago-O'Hare, IL
PDX	Portland, OR
PHX	Phoenix-Sky Harbor, AZ
SAN	San Diego, CA
SEA	Seattle-Tacoma, WA
SFO	San Francisco, CA
SJC	San Jose, CA
SMF	Sacramento, CA
YUM	Yuma, AZ

ARC

Acronym for Airline Reporting Corporation.

AVERAGE AIRFARE

The average of the airfares reported by the airlines to the U.S. DOT. The average airfare does not include taxes or passenger facility charges and represents one-half of a roundtrip ticket.

CAGR

Abbreviation for compounded annual growth rate, or the average rate of growth per year over a given time period.

DESTINATION AIRPORT

Any airport where the air traveler spends four hours or more. This is the Federal Aviation Administration definition.

DIVERSION

Passengers who do not use the local airport for air travel, but instead use a competing airport to originate the air portion of their trip.

FAA

Acronym for the Federal Aviation Administration.

HUB

An airport used by an airline as a transfer point to get passengers to their intended destination. It is part of a hub and spoke model, where travelers moving between airports not served by direct flights change planes en route to their destination. Also an airport classification system used by the FAA (e.g., non-hub, small hub, medium hub, and large hub.

INITIATED (ORIGIN) PASSENGERS

Origin and destination passengers who began their trip from within the catchment area.

LOAD FACTOR

The percentage of airplane capacity that is used by passengers.

LOCAL MARKET

The number of air travelers who travel between two points via nonstop air service.

MSA

Acronym for Metropolitan Statistical Area. MSAs have at least one urban cluster with a population of at least 50,000 plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.

NARROW-BODY JET

A jet aircraft with a single aisle designed for seating over 100 passengers.

NONSTOP FLIGHT

Air travel between two points without stopping at an intermediate airport.

ONBOARD PASSENGERS

The number of passengers transported on one flight segment.

ORIGIN AND DESTINATION (O&D) PASSENGERS

Includes all originating and destination passengers. In the context of this report, it describes the passengers arriving and departing an airport.

ORIGINATING AIRPORT

The airport used by an air traveler for the first enplanement of a commercial air flight.

PASSENGER FACILITY CHARGE

Fee imposed by airports of $1 to $4.50 on enplaning passengers. The fees are used by airports to fund FAA approved airport improvement projects.

PAX

Abbreviation for passengers.

PDEW

Abbreviation for passengers daily each way.

POINT-TO-POINT

Nonstop service that does not stop at an airline's hub and whose primary purpose is to carry local traffic rather than connecting traffic.

REFERRED PASSENGERS

Origin and destination passengers who began their trip from outside the catchment area.

REGIONAL JET

A jet aircraft with a single aisle designed for seating fewer than 100 passengers.

RETAINED PASSENGERS

Passengers who use the local airport for air travel instead of using a competing airport to originate the air portion of their trip.

SCASDP

Acronym for the U.S. DOT Small Community Air Service Development Program.

TRUE MARKET

Total number of air travelers, including those who are using a competing airport, in the geographic area served by YUM. The true market estimate includes the size of the total market and for specific destinations.

TURBOPROP AIRCRAFT

A type of engine that uses a jet engine to turn a propeller. Turboprops are often used on regional and business aircraft because of their relative efficiency at speeds slower than, and altitudes lower than, those of a typical jet.

U.S. DOT

Acronym for U.S. Department of Transportation.

WIDE-BODY JET

A jet aircraft with two aisles designed for seating greater than 175 passengers.

FOR MORE INFORMATION, PLEASE CONTACT
JEFFREY HARTZ | 959 REDCEDAR WAY | COPPELL, TX 75019
360-600-6112 | JEFFREY.HARTZ@MEADHUNT.COM | WWW.MEADHUNT.COM

Mead & Hunt

APPENDIX D

Preferred Alternatives with Utilities

APPENDIX D - PREFERRED ALTERNATIVES WITH UTILITY OVERLAY

This appendix depicts each of the various types of utilities to include electrical (Arizona Public Service – APS), fiber, sewer, and water separately along with a combination of all utilities with the preferred alternatives for each function area. The functional areas include the taxiway system, Defense Contractor Complex and other facilities, general aviation, vehicle parking, and terminal building alternatives.

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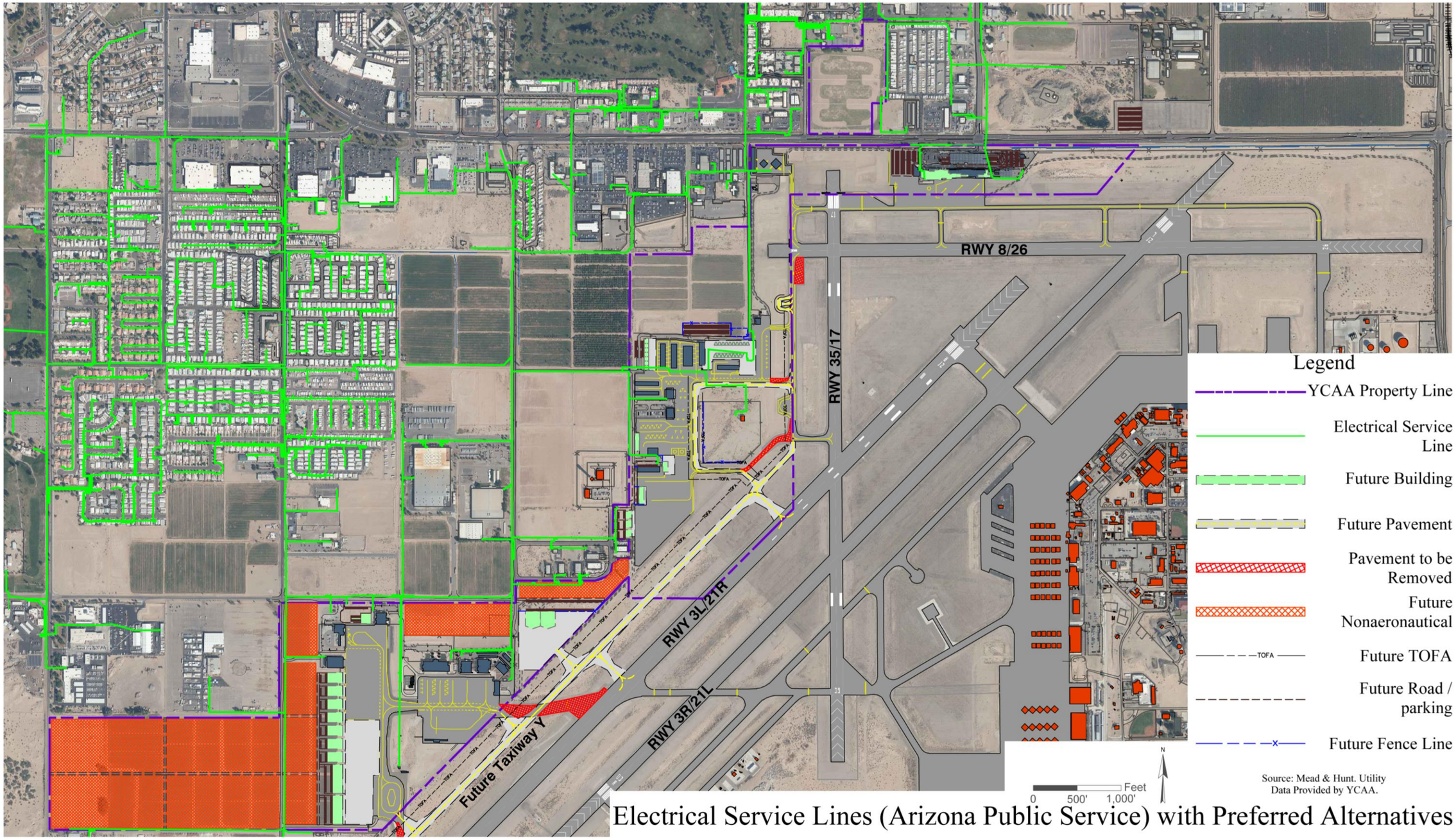
Figure D-1: **Electrical Service Lines with Preferred Alternatives**



Electrical Service Lines (Arizona Public Service) with Preferred Alternatives

Figure D-2: **Fiber Optics with Preferred Alternatives**

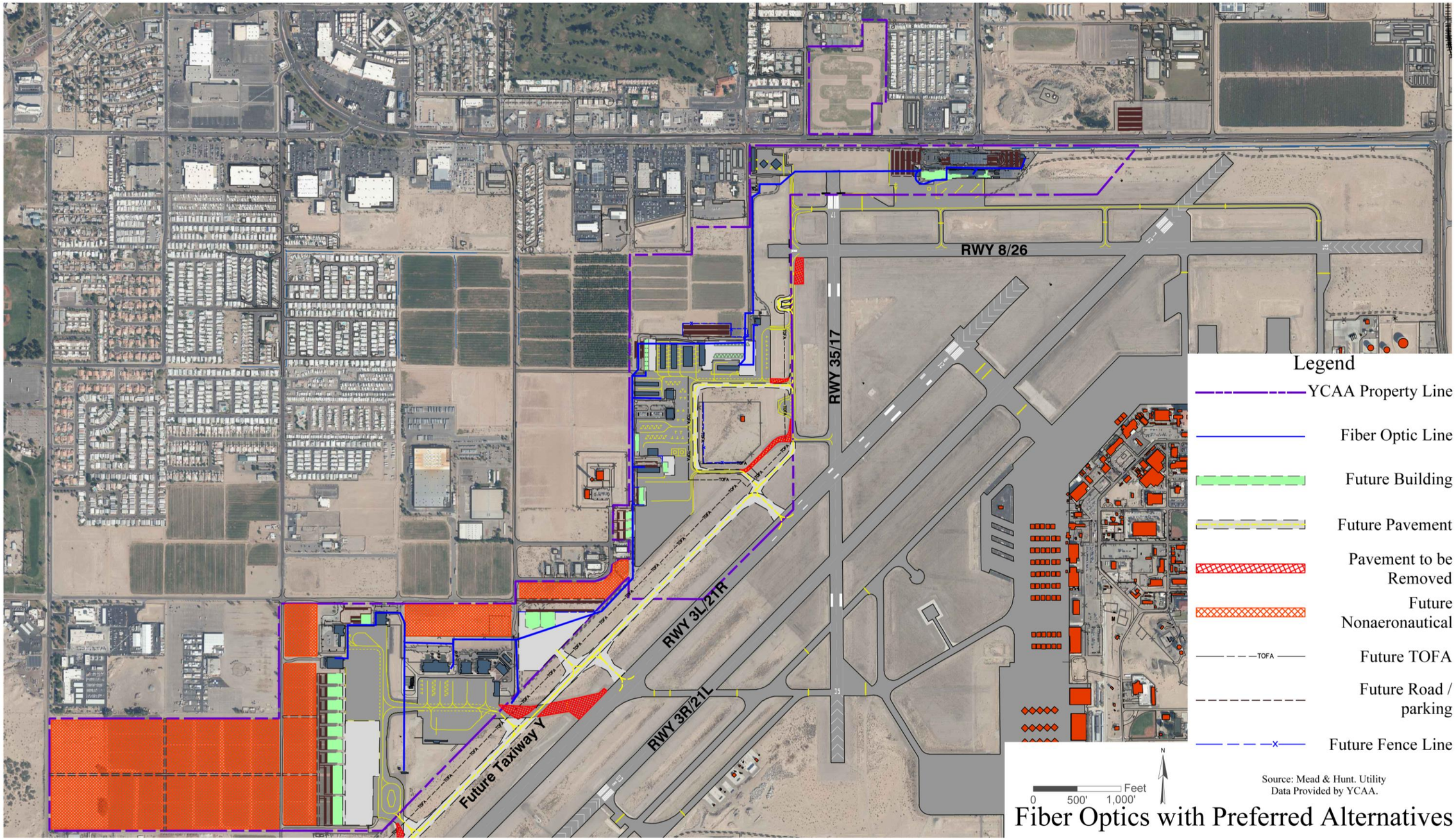


Figure D-3: **2019 City of Yuma Sewer Service with Preferred Alternatives**

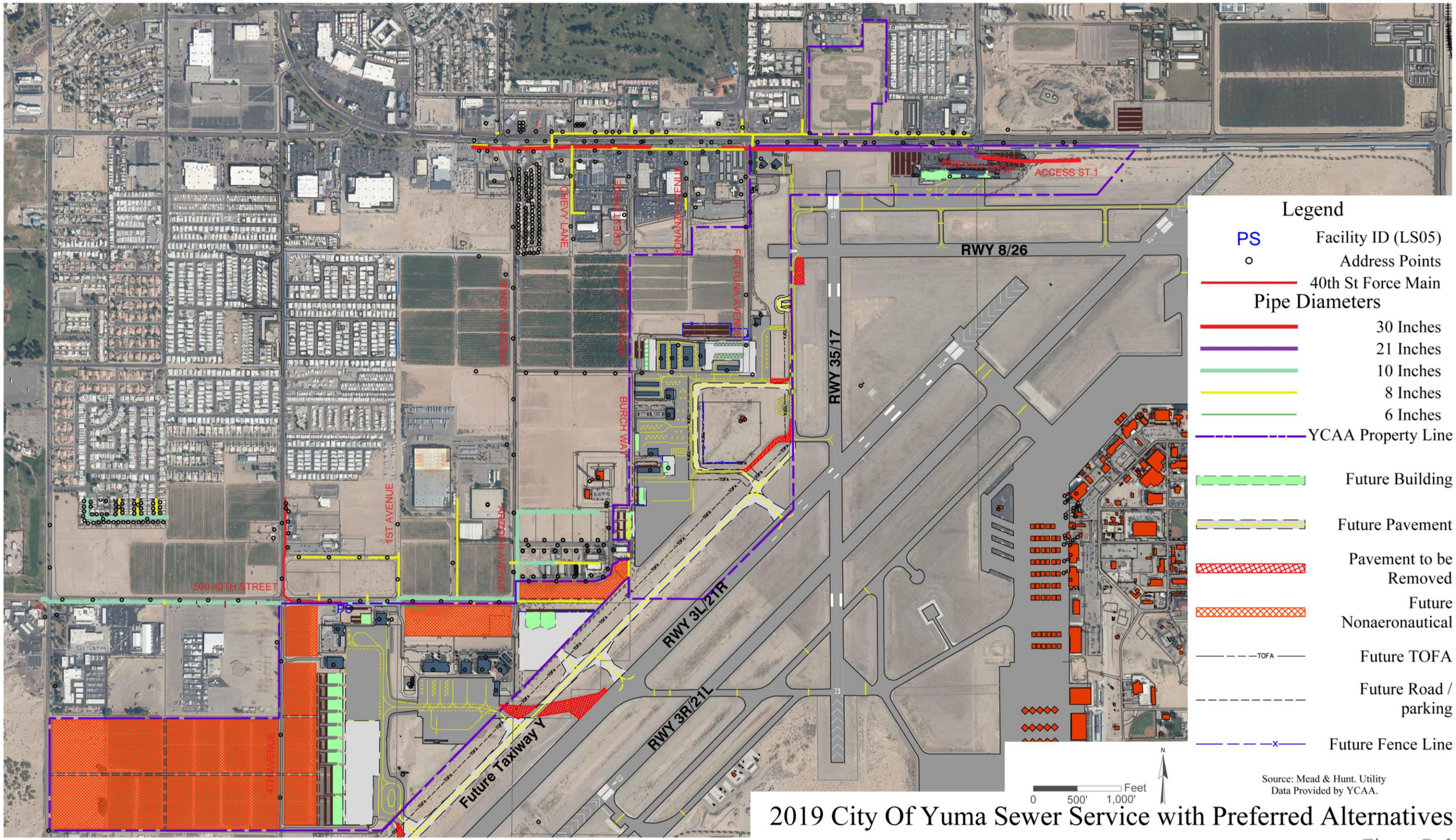


Figure D-4: 2019 City of Yuma Water Service with Preferred Alternatives

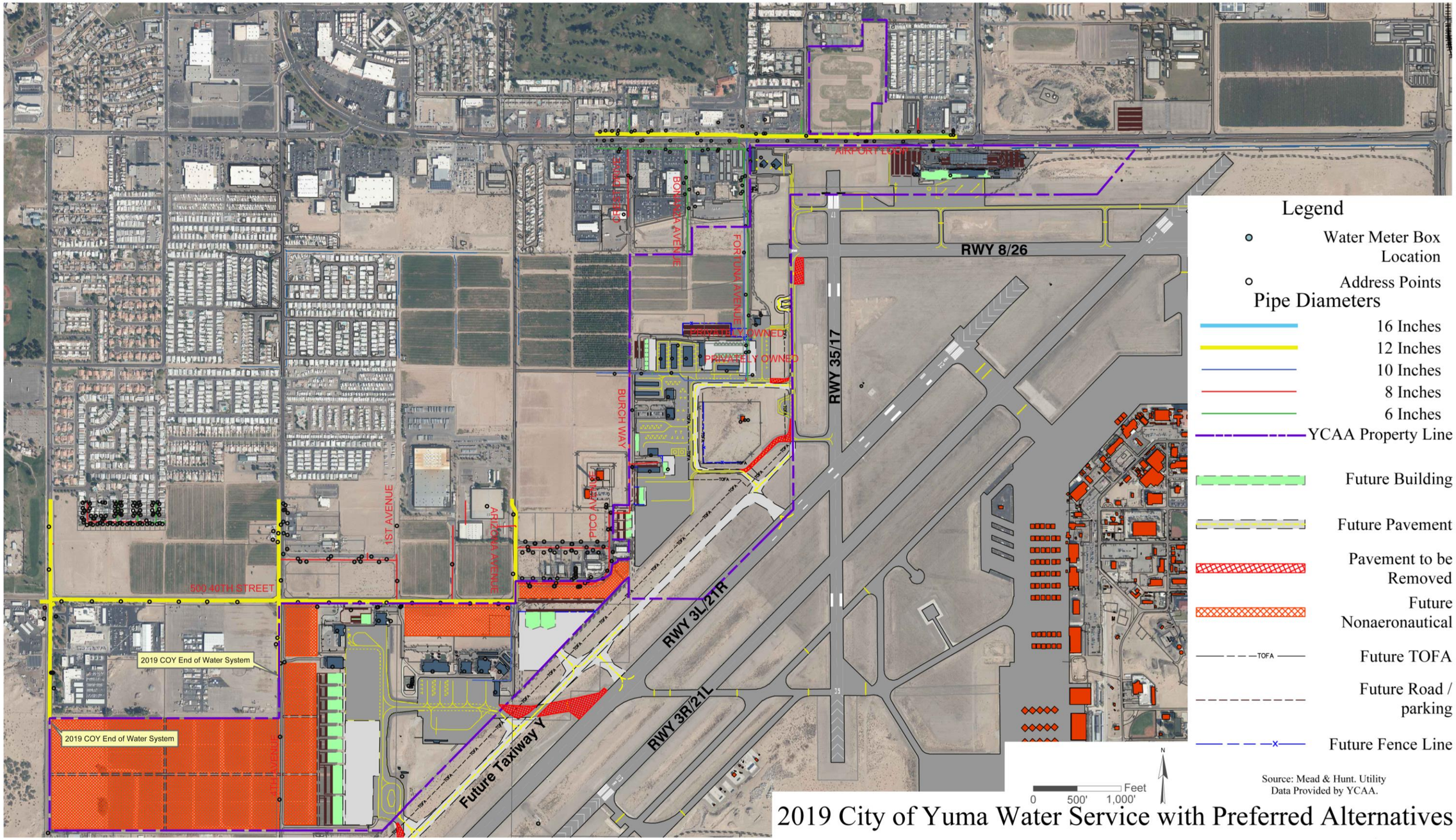
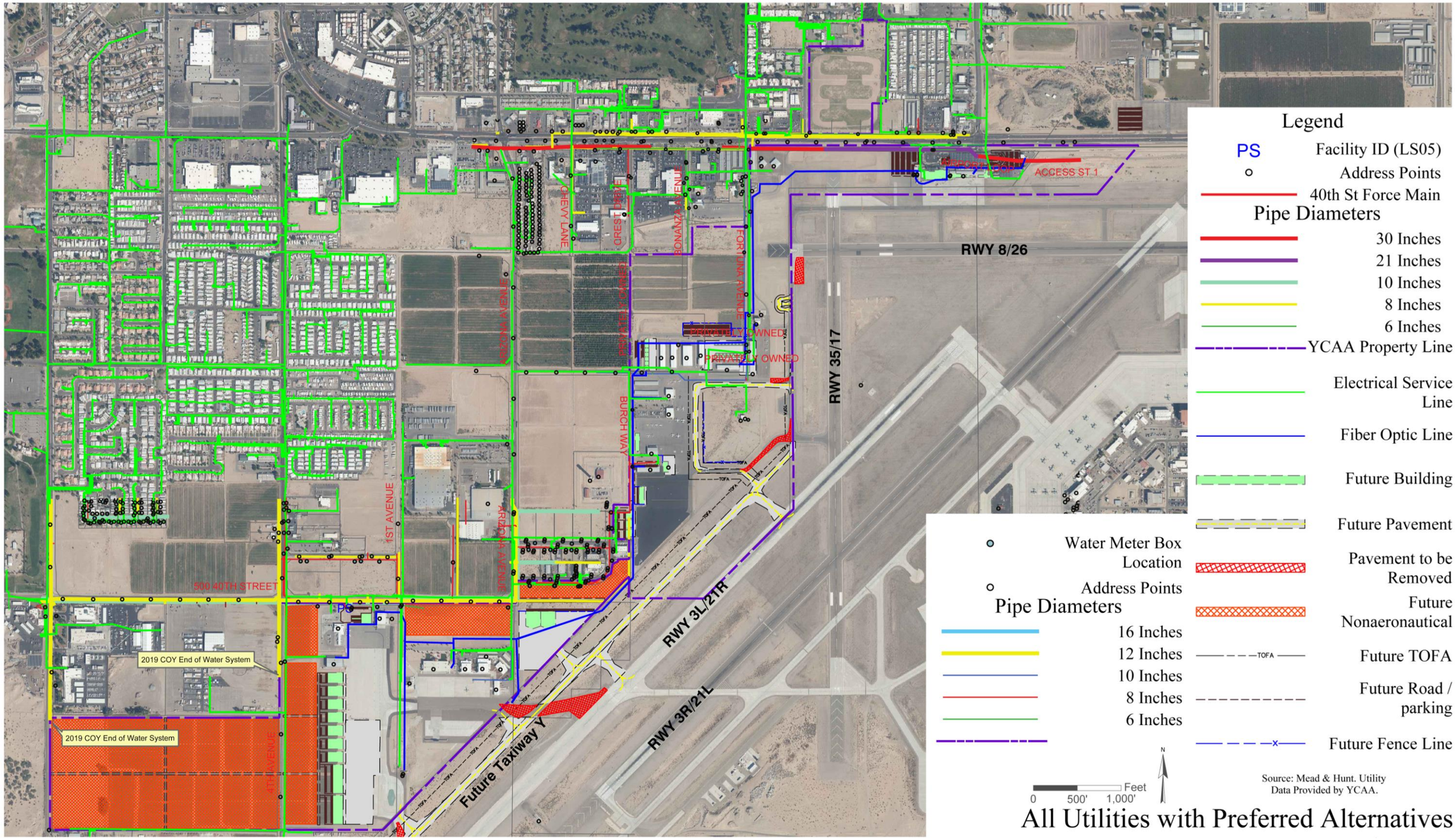


Figure D-5: **All Utilities with Preferred Alternatives**



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APPENDIX E

Agency Correspondence

Mead & Hunt, Inc.
8800 East Raintree, Suite 285
Scottsdale, Arizona 85260
480-718-1896
meadhunt.com

October 1, 2019

Ms. Gladys D. Brown, CM., C.A.E.
Yuma County Airport Authority
2191 E. 32nd Street
Yuma, AZ 85365

Email: gladys@yumaairport.com

Project: Yuma International Airport – 2019 Airport Master Plan (AIP 3-04-0053-038-2019)
Subject: Scope of Work Modification - Development of Noise Contours for Use in the Yuma International Airport Master Plan

To: Ms. Brown

The purpose of this letter is to document a change in the Yuma International Airport (NYL) master plan scope of work to utilize noise contour data generated from the ongoing Marine Corps Air Station (MCAS) Yuma 2019 Air Installation Compatible Use Zone (AICUZ) Update study. On September 26, 2019 the following attendees participated in a conference call to discuss the use of MCAS Yuma generated noise contour data for use within the NYL airport master plan:

- Gladys Brown, CM., C.A.E., Yuma County Airport Authority
- Jared Raymond, Federal Aviation Administration, Phoenix Airports District Office
- Ricardo Sanchez, Federal Aviation Administration, Phoenix Airports District Office
- Ryk Dunkelberg, Mead & Hunt, Inc.
- Christopher Hacker, Mead & Hunt, Inc.
- Corbett Smith, Mead & Hunt, Inc.

As a result of the conversation, it was agreed to by the Federal aviation Administration (FAA) that the project would utilize noise contour data generated by MCAS Yuma and the project consultant Mead & Hunt, would request the data from NYL and format the data to FAA requirements as appropriate.

In examination of the scope, the Mead & Hunt, Inc. has developed new scope language to address this scope change. The current scope indicates the following:

Task 10.2 - Review of Noise Compatibility Program

Description: After Consultant development and FAA approval of the aviation activity forecasts (Element 3), the Consultant will prepare baseline and future (year 2040) noise contours for the Airport. The Consultant will provide one revision to the baseline and/or future noise contours if requested from the Sponsor. The modeled noise contours will depict 60, 65, 70, and 75 DNL contours. The Consultant will use the FAA's Aviation Environmental Design Tool (AEDT) version 2d to prepare the noise contours. AEDT inputs will be included as an Appendix to the Master Plan. Weather information will be used as provided in the AEDT model. The Consultant will work with the Sponsor to develop the necessary AEDT inputs by aircraft type, including runway end utilization, arrival and departure track utilization, and time-of-day. MCAS Yuma will be responsible for providing baseline and future military activity information for incorporation into the model. If specific military aircraft are not available in AEDT, consultation will occur with the FAA, the Sponsor and MCAS Yuma for an appropriate substitute aircraft. No custom aircraft noise models will be developed as a part of this effort. If custom aircraft noise models are required, and amendment to this scope of work will be necessary. This Scope does not include conducting a Part 150 study nor any noise monitoring.

Responsibilities:

Consultant:

- Develop baseline and future noise contours for the Airport

Sponsor:

- Provide and/or assist in collection of MCAS Yuma baseline and future aircraft operation information. Review and approval of AEDT inputs prior to model runs.

Product:

- Baseline and future noise contours in PDF format

Proposed scope revision:

Task 10.2 – Aircraft Noise Contours

Description: The Consultant, utilizing aircraft noise data generated for the MCAS Yuma 2019 ACIUZ update, through NoiseMap software, and obtained through the Yuma County Airport Authority, will depict the 60, 65, 70, and 75 DNL contours as depicted in Exhibit 1. The data will need to reflect FAA standards and conditions acceptable to the FAA for approval. Noise contour data will be depicted on the updated Airport Layout Plan. This task does not include conducting a Part 150 study nor any noise monitoring to support any additional requests for specific noise events.

Responsibilities:

Consultant:

- Utilize MCAS Yuma noise contour data from the 2019 AICUZ update, adjust as necessary to FAA requirements for inclusion on the ALP.

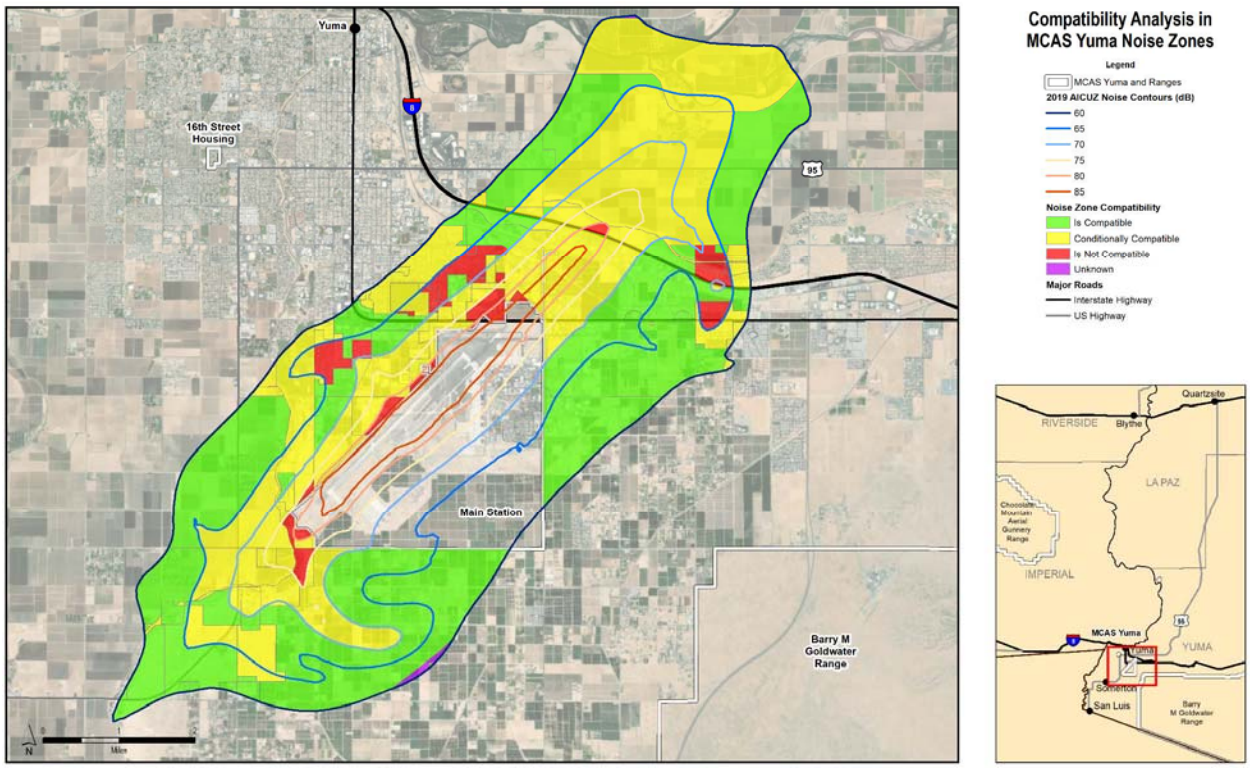
Sponsor:

- Provide and assist with the collection of the MCAS Yuma 2019 AICUZ update noise files.

Product:

- Baseline and future noise contours for inclusion into the ALP.

Exhibit 1 – 2019 MCAS Yuma Noise Zones (Proposed)



Source: NAVFAC Southwest, *Air Installations Compatible Use Zones Update for MCAS Yuma, Arizona*, Final June 2019.

If this scope revision is acceptable to both the Yuma County Airport Authority and the FAA, please indicate acceptance in the signature block below as this memorandum will become Amendment #1 to the project's approved scope of work. Please note that this proposed scope revision, will not change the overall project budget due to the unknown condition of the files and any associated work effort required to ensure the noise analysis will meet FAA standards.

10/2/19

Ms. Gladys D. Brown, CM., C.A.E. Date
Airport Director

Mr. Jared Raymond Date
Community Planner

Please let me know if you have any questions.

Sincerely,

Christopher C. Hacker
Project Manager

cc: Ricardo Sanchez
Junior Hinkle
Juan Trasvina
Ryk Dunkelberg
Mitch Hooper
Corbett Smith
Cam Thomas

Yuma International Airport

Yuma County Airport Authority 2191 E 32nd St, Ste 218, Yuma, AZ 85365 (928) 726-5882

PORT OF OPPORTUNITY

October 13, 2020

Mr. Jared Raymond
Community Planner, PHX-610
Federal Aviation Administration
Phoenix Airports District Office
3800 N. Central Ave.
Suite 1025, 10th Floor
Phoenix, AZ 85012

Email: jared.raymond@faa.gov

Project: Yuma International Airport – 2019 Airport Master Plan (AIP 3-04-0053-038-2019)
Subject: Critical Aircraft Determination

To: Mr. Raymond

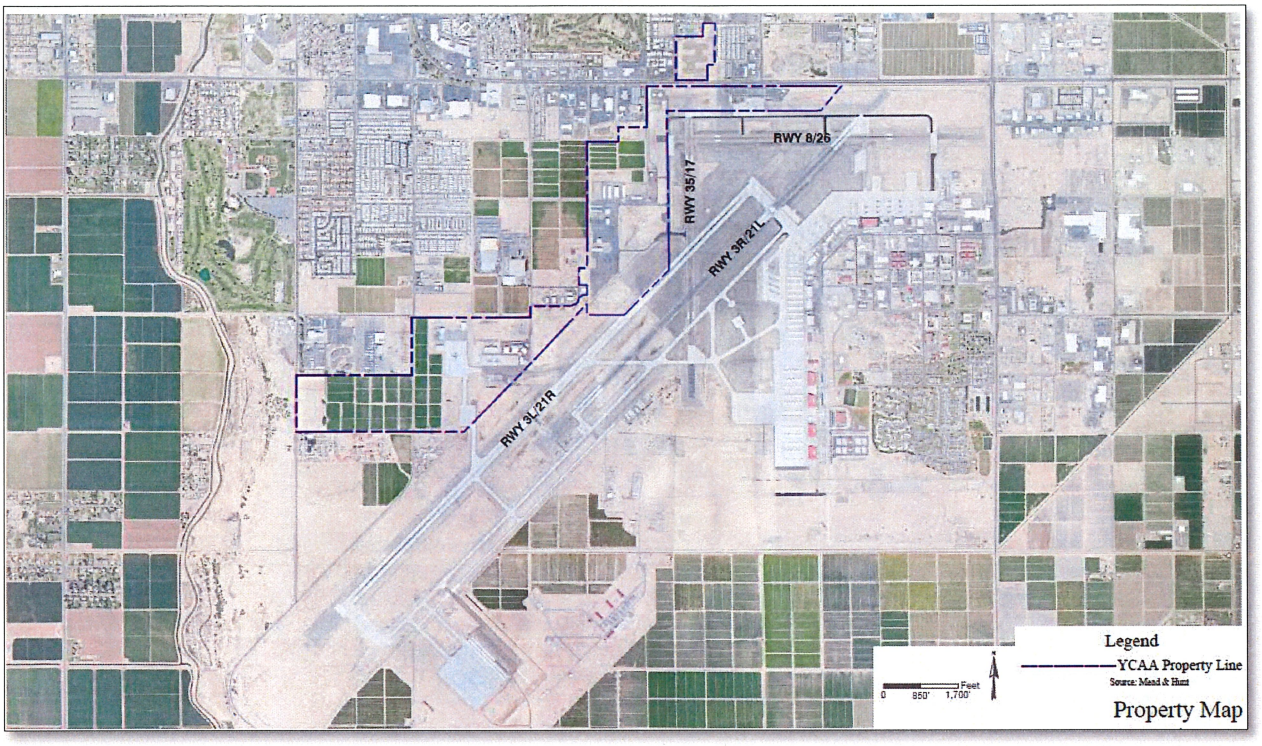
Determining the existing and future critical aircraft, and the Airport Reference Code (ARC) is paramount during the master plan process. The ARC is based on the operational and design characteristics of a critical aircraft and is utilized to evaluate current facilities and plan for future development needs. Advisory Circular (AC) 150/5000-17, *Critical Aircraft and Regular Use Determination,* defines the critical aircraft as the most demanding aircraft type, or a group of aircraft with similar characteristics, that make regular use of the airport.

Due to the array of aircraft regularly conducting and predicted to conduct operations at Yuma International Airport (NYL or the Airport) for commercial, cargo, and general aviation purposes, the Airport has chosen to utilize a group of the most demanding civilian aircraft that meets the regular use definition at NYL.

Since this Airport Master Plan is being conducted by the Yuma County Airport Authority (YCAA) and funded in part by a Federal Aviation Administration (FAA) Airport Improvement Program (AIP) grant, the critical aircraft for this document will be the most demanding group of *civilian* aircraft that meets the regular use definition at NYL. For informational purposes, and overall airfield planning considerations, the critical group of military aircraft is also reported.

NYL has a complex operational and ownership structure. The critical aircraft information contained in this letter covers all runways at the Airport, but it is important to understand the limited areas under YCAA responsibility. **Figure 1** illustrates the YCAA property line relative to Marine Corps Air Station Yuma.

Figure 1 – YCAA Property Line



The ARC is based on an aircraft's wingspan or tail height, and approach speed, and relates the operational and physical characteristics of the most demanding aircraft expected to operate at, or make substantial use of the airport, to airport design criteria (such as the size of runway safety areas and runway and taxiway/taxilane length, width, and separation distances). The most demanding aircraft is often referred to as the critical aircraft or the design aircraft and must account for at least 500 or more annual itinerant or scheduled commercial service operations (does not include local operations) at the airport. Itinerant operations are defined as all operations (takeoffs and landings) of aircraft going from one airport to another. Likewise, local operations are defined as operations of aircraft that remain within sight of the airport or within 20 nautical miles for the entire flight and are typically training operations.

The ARC, consists of a letter designator (A through E) identifying the Aircraft Approach Category (ACC) based on aircraft approach speeds followed by a Roman numeral (I through VI) identifying the Airplane Design Group (ADG) in terms of the aircraft wingspan or tail height, for example C-IV, representing Aircraft Approach Category C and ADG IV. The aircraft approach speed affects runway length and runway-related facilities, such as navigational aids, while aircraft wingspan primarily affects separation criteria between runways, taxiways, and taxilanes. **Tables 1 and 2** summarizes the aircraft classifications as presented in AC 150/5300-13A and lists typical aircraft by ACC and ADG.

Table 1: Aircraft Approach Category (AAC)

Aircraft Approach Category (AAC)	
AAC	pproach Speed
A	Approach Speed less than 91 knots
B	Approach speed 91 knots or more but less than 121 knots
C	Approach speed 121 knots or more but less than 141 knots
D	Approach speed 141 knots or more but less than 166 knots
E	Approach speed 166 knots or more

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

Table 2: Airplane Design Group (ADG)

Airplane Design Group (ADG)		
Group Number	Wingspan (in feet)	Tail Height (in feet)
I	< 49'	< 20'
II	49' - < 79'	20' - < 30'
III	79' - < 118'	30' - < 45'
IV	118' - < 171'	45' - < 60'
V	171' - < 214'	60' - < 66'
VI	214' - < 262'	66' - < 80'

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

To determine the group of civilian critical aircraft operating at NYL, the following references were used:

- FAA's Traffic Flow Management System Counts (TFMSC)
- Aviation Activity Forecast Chapter
- 2019 air carrier flight schedules

To determine the group of military critical aircraft operating at the Airport, the following references were used:

- Air Installations Compatible Use Zones Update for MCAS Yuma (June 2019)
- FAA's Traffic Flow Management System Counts (TFMSC)

The FAA's TFMSC report for 2019 confirms that the CRJ-900 operated at NYL 710 times. The CRJ-900 is the most demanding civilian aircraft to operate at NYL. Therefore, it has been determined that the CRJ-900 should be used as the civilian critical aircraft at NYL. The Bombardier CRJ-900 is a C-III according to the FAAs Aircraft Characteristic Database. The C-III designation will be used for existing and future design considerations on the two runways used by civilian aircraft (Runway 17/35 and Runway 08/26). Typical C-III aircraft that are anticipated to operate at NYL in the future include:

- Bombardier CRJ-900 / 90 seat typical configuration
- Embraer ERJ -175 / 78 seat typical configuration
- Airbus A220-100 / 135 seat typical configuration

For reference, **Table 3** below contains runway utilization information for commercial and general aviation operations.

Table 3: Commercial and General Aviation Operations – Runway Utilization

Runway Utilization		
Runway End	Operations	Percentage
08	2,993	5.1%
26	12,978	22.3%
17	20,331	35.0%
35	21,608	37.1%
03L	0	0%
21R	266	0.5%
03R	0	0%
21L	0	0%

Source: 2019 AICUZ

As identified in the prior master plan, MCAS Yuma has designated Runway 03L/21R as ARC E-VI and Runway 03R/21L as D-V. While the intent of the ongoing master plan is focused on NYL, there is a need to understand the military operations at MCAS Yuma for airfield planning purposes. Due to the broad spectrum of aircraft that operate at MCAS Yuma, it is recommended that the existing ARC E-VI and D-V be brought forward for the runways which mainly support military operations. These standards allow the full range of air carrier, cargo, and military aircraft, expected to operate at MCAS Yuma now and in the future. Identified below, **Table 4** summarizes the existing and future ARC and critical aircraft for NYL.

Table 4: Existing and Future ARC and Critical Aircraft

Existing and Future ARC and Critical Aircraft		
Runway End	Existing Critical Aircraft and ARC	Future Critical Aircraft and ARC
08/26	CRJ-900	CRJ-900
17/35	CRJ-900	CRJ-900
03L/21R	Military Hybrid	E-VI
03R/21L	Military Hybrid	D-V

Source: 2009 Airport Master Plan/ALP for Military aircraft and FAA TFMSC for commercial civilian aircraft

In conclusion, we seek your concurrence in the determination of the critical civilian and military aircraft for planning purposes to proceed in the next steps of the master planning process. Please feel free to either contact myself or Gen Grosse at gen@yumaairport.com if you have any questions. Thank you for your prompt review and approval.

Sincerely,

Gladys D. Brown, CM., C.A.E.
Airport Director

cc: Gen Grosse – YCAA
Juan Trasvina – YCAA
Christopher Hacker – Mead & Hunt, Inc.

Yuma International Airport

Yuma County Airport Authority 2191 E 32nd St, Ste 218, Yuma, AZ 85365 (928) 726-5882

PORT OF OPPORTUNITY

October 13, 2020

Mr. Jared Raymond
Community Planner, PHX-610
Federal Aviation Administration
Phoenix Airports District Office
3800 N. Central Ave.
Suite 1025, 10th Floor
Phoenix, AZ 85012

Email: jared.raymond@faa.gov

Project: Yuma International Airport – 2019 Airport Master Plan (AIP 3-04-0053-038-2019)
Subject: Yuma International Airport Master Plan – Request for FAA Aviation Forecast Review and Approval

To: Mr. Raymond

The aviation activity forecasts prepared for the Yuma International Airport (NYL) Master Plan have been completed and are ready for Federal Aviation Administration (FAA) forecast review and approval. The Master Plan forecasts include commercial aviation activity, consisting of commercial passenger traffic, air taxi and commuter, and non-commercial aviation activity, consisting of general aviation and military operations.

Appendix A provides a summary of the methodologies used to develop forecasts for these two components of aviation activity at NYL. Appendix B summarizes the NYL forecasts and Appendix C compares the NYL forecasts with the Terminal Area Forecast published in January 2019.

Please initiate an FAA forecast review of the NYL Draft Master Plan aviation activity forecasts and direct all questions and comments to Gen Grosse at gen@yumaairport.com. Thank you for your prompt review and approval.

Sincerely,

Gladys D. Brown, CM., C.A.E.
Airport Director

Attachments (3): Appendix A – Summary of Forecast Methodologies
Appendix B – Template for Summarizing and Documenting Airport Planning Forecasts
Appendix C – Comparison of the IWA Master Plan Forecasts and the FAA TAF Forecasts

cc: Gen Grosse – YCAA
Juan Trasvina – YCAA
Christopher Hacker – Mead & Hunt, Inc.

Appendix A
Summary of Forecast Methodologies
Yuma International Airport (NYL)

Passenger Commercial Aviation Activity

The developing COVID-19 pandemic and global economic recession, and their impacts on passenger demand for air travel warrant a modified hybrid approach to forecast development. The forecast period is divided into three phases: short-term decline, medium-term recovery, and post-recovery long-term growth. Different data sources and methods are used to develop forecasts of commercial passenger aviation activity in each phase.

The forecasts are presented with a major caveat: They were developed during a period of extraordinary uncertainty, amid the COVID-19 global pandemic and containment measures that halted nearly all passenger air travel, and plunged the U.S. economy—and the entire global economy—into a deep recession. The high level of uncertainty called for different scenarios particularly with respect to the pace and duration of recovery.

The forecast assumptions are based on information available at the time of forecast development. These assumptions may not hold in the future. Actual traffic trends may deviate significantly from the resulting forecasts, especially if the COVID-19 pandemic continues over an extended period and stalls the emerging economic and passenger traffic recovery in progress as of August 2020. Traffic recovery could take much longer than assumed. History has shown that major crises prompt significant structural changes in both demand and supply in the aviation industry. Speculations abound on how COVID-19 could usher in "a new normal" in consumer behavior, social interactions, and ways of conducting business that would permanently alter travel propensities and preferences.

The forecasts are presented in annual frequency based on the Airport's fiscal year ending on September 30 each year, which coincides with the federal fiscal year.

Noncommercial Aviation Activity

Over the past decade, noncommercial aircraft operations remained under 170,000 annually, except in 2011 when they rose to 198,572 and in 2015 when they rose to 179,102, according to historical data reported in the TAF. They have been essentially flat since 2012. Noncommercial aviation activity consists of military and GA operations.

NYL is a shared-use airport with civilian and military flights operated in conjunction with the U.S. Marine Corps. The large military presence explains why military operations account for the larger share of noncommercial operations at NYL, which has ranged from 55 percent to 65 percent since 2012. Military operations ranged between 95,000 and 109,000 annually over the past 10 years, according to historical data reported in the TAF.

GA accounted for the remaining share, which has ranged from 35 percent to 45 percent of annual noncommercial aircraft operations since 2012. GA includes all non-commercial and non-military passenger or cargo services provided at the airport. GA activity includes corporate flying, emergency transport, flight instruction, and recreational flying. GA activity is influenced by a variety of factors including local and national economic conditions, fuel cost, and, recently, public health safety concerns.

Appendix B
Template for Summarizing and Documenting Airport Planning Forecasts
Yuma International Airport (NYL)

A. Forecast Levels and Growth Rates

Base year: 2019

	2019	2020	2025	2030	2035	Average Annual Compound Growth Rates 2019-2020	2019-2025	2019-2030	2019-2035
Passenger Enplanements									
TOTAL	92,908	67,340	104,040	124,788	143,950	-27.5%	1.9%	2.7%	2.8%
Operations									
Itinerant									
Air carrier & commuter	5,912	5,164	6,040	6,595	7,302	-12.7%	0.4%	1.0%	1.3%
Air taxi	9,928	6,044	9,928	9,928	9,928	-39.1%	0.0%	0.0%	0.0%
Total Commercial Operations	15,840	11,208	15,968	16,523	17,229	-29.2%	0.1%	0.4%	0.5%
General aviation	33,773	20,560	33,773	33,773	33,773	-39.1%	0.0%	0.0%	0.0%
Military	95,680	86,142	95,680	95,680	95,680	-10.0%	0.0%	0.0%	0.0%
Local									
General aviation	34,545	25,529	34,545	34,545	34,545	-26.1%	0.0%	0.0%	0.0%
Military	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
TOTAL OPERATIONS	179,838	143,439	179,966	180,521	181,227	-20.2%	0.0%	0.0%	0.0%
Instrument Operations									
Peak Hour Operations	4	4	5	6	6	-13.2%	1.7%	2.1%	2.3%
Cargo/mail (enplaned + deplaned tons)	1,578	1,354	1,610	1,681	1,750	-14.2%	0.3%	0.6%	0.6%
Based Aircraft*									
Military	83	103	106	106	106	23.4%	4.1%	2.2%	1.5%
Single Engine (Nonjet)	55	48	49	49	49	-12.1%	-1.6%	-0.9%	-0.6%
Multi Engine (Nonjet)	13	12	12	12	12	-10.4%	-1.3%	-0.7%	-0.5%
Jet Engine	4	2	2	2	2	-51.5%	-10.9%	-6.1%	-4.2%
Helicopter	0	0	0	0	0				
Other	1	1	1	1	1	-2.9%	0.0%	0.0%	0.0%
TOTAL	171	166	171	171	171	-2.9%	0.0%	0.0%	0.0%

* For FY2019, the based aircraft total is from the TAF released in January 2020, allocated by aircraft type based on the breakout shares in the FAA Airport Master Record for NYL as of February 2020. For FY2020, the based aircraft total and breakout are based on the FAA Airport Master Record for NYL as of July 2020.

B. Operational Factors

	2019	2020	2025	2030	2035
Average aircraft size (seats)	65.1	65.3	67.5	69.2	69.3
Average enplaning load factor	76.4%	63.7%	74.5%	76.9%	77.0%
GA operations per based aircraft	400	278	400	400	400

Appendix C
Comparison of the NYL Master Plan Forecasts and the FAA TAF Forecasts
Yuma International Airport (NYL)

Year	Airport Forecast	TAF	AF/TAF (% Difference)
Passenger Enplanements			
2019	92,908	91,647	1.4%
2020	67,340	91,647	-26.5%
2025	104,040	91,647	13.5%
2030	124,788	91,647	36.2%
2035	143,950	91,647	57.1%
Commercial Operations			
2019	15,840	15,840	0.0%
2020	11,208	15,840	-29.2%
2025	15,968	15,840	0.8%
2030	16,523	15,840	4.3%
2035	17,229	15,840	8.8%
Total Operations			
2019	179,838	179,838	0.0%
2020	143,439	179,838	-20.2%
2025	179,966	179,838	0.1%
2030	180,521	179,838	0.4%
2035	181,227	179,838	0.8%

Note: TAF data is on a U.S. government fiscal year basis (October through September).

U.S. Department
of Transportation
Federal Aviation Administration

Western-Pacific Region
Office of Airports
Phoenix Airports District Office

3800 N Central Ave
Suite 1025
Phoenix, AZ 85012

October 23, 2020

Yuma International Airport
Gladys D. Brown, CM., C.A.E
Airport Director
2191 E. 32nd Street Ste. 218
Yuma, AZ 85365

<SENT VIA EMAIL>

Dear Ms. Brown:

Yuma International Airport (NYL), Yuma, Arizona
Aviation Activity Forecast Approval

The Federal Aviation Administration (FAA) has reviewed the aviation forecast for the airport master plan dated October 13, 2020. The FAA approves this forecast and the use of C-III as the existing critical design aircraft for Runway 17/35 and Runway 08/26. Overall, C-III is the future critical design aircraft for airport planning purposes, including Airport Layout Plan (ALP) development.

In summary, the FAA TAF and the Yuma International Airport forecast update regarding total operations does not exceed the 10 percent allowance for the 5 year planning horizon and does not exceeds the 15 percent allowance for the 10 year planning horizon. The airport forecast update appropriately explains these tolerances due to the most current conditions at the airport and the available data when the forecasts were developed. Because the 5 and 10 year forecasts do not exceed benchmarks established in the FAA's Guidance on Review & Approval of Local Aviation Forecasts published in 2008, approval of this forecast doesn't need to be sent to FAA Headquarters for review because the future growth has been adequately justified.

The forecast was developed using current data, appropriate methodologies, and therefore is approved for planning purposes at Yuma International Airport. However, this forecast was prepared at the same time as the evolving impacts of the COVID-19 public health emergency. Forecast approval is based on the methodology, data, and conclusions at the time the document was prepared. Consideration of the impacts of the COVID-19 public health emergency on aviation activity is warranted to acknowledge the reduced confidence in future growth projections using currently available data.

Accordingly, FAA approval of this forecast does not constitute justification for future projects. Justification for future projects will be made based on activity levels at the time the project is requested for development, and documentation of actual activity levels meeting planning activity levels will be necessary to justify AIP funding for eligible projects.

If you have any questions about this forecast approval, please call me at 602-792-1072.

Sincerely,

Jared M. Raymond

Jared M. Raymond
Phoenix ADO,
Community Planner

JARED M RAYMOND
Digitally signed by JARED M RAYMOND
Date: 2020.10.23 10:05:25 -07'00'

Cc: FAA Grant File
Gladys D. Brown, CM., C.A.E., Airport Director – Yuma International Airport
Chris Hacker, Project Manager – Mead & Hunt

U.S Department
of Transportation

**Federal Aviation
Administration**

Western-Pacific Region
Airports Division
Phoenix Airports District Office

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November 10, 2021

Yuma International Airport
Gladys Brown, C.M., C.A.E <sent via email gladys@yumaairport.com>
Airport Director
2191 E. 32nd Street #218
Yuma, AZ 85365

Yuma International Airport (NYL) Yuma, Arizona
Airport Layout Plan Review
Airspace Case No. 2021-AWP-3775-NRA

Dear Ms. Brown:

Thank you for the draft Airport Layout Plan (ALP) received on September 23, 2021 from your consultants. The Federal Aviation Administration (FAA) has the following ALP comments/revisions:

a. **ADVISORY** The subject ALP was reviewed as a planning document and this evaluation does not include any obstacle evaluations. Any changes to the runway physical end latitude/longitude coordinates or elevations must be uploaded into the OE/AAA runway/data base, to ensure the FAR Part 77 calculations are run on the most recent data. All proposed construction projects (terminal buildings, taxiways, etc.), and associated equipment must be filed separately prior to commencing construction as individual studies for impact on the National Airspace System.

b. The existing elevation of Runway 8 is different from the ALP drawing sheet and the ALP data sheet. Please verify the discrepancy.

c. Please identify in the legend or existing facilities, the arresting gear equipment that are visible in aerial photos, but not shown on the ALP.

d. No comments were provided by the Arizona Department of Transportation Aeronautics Division.

After the aforementioned changes are made please submit one electronic version for review. We will be approving the ALP via electronic signature, so ensure that the FAA ALP approval language is on the ALP. If you have

any questions or would like to discuss this letter in more detail, please contact me at (602) 792-1072.

Sincerely,

Jared M. Raymond

Jared M. Raymond
Community Planner

cc: ADOT, Mr. Don Kriz, ADOT Aeronautics Manager
Mead & Hunt, Christopher C. Hacker, Project Manager

RESPONSES TO ARIZONA DEPARTMENT OF TRANSPORTATION – AERONAUTICS DIVISION (ADOT) COMMENTS TO CHANGES/CORRECTIONS TO THE PRELIMINARY AIRPORT LAYOUT PLAN (ALP), YUMA INTERNATIONAL AIRPORT (NYL).

GENERAL COMMENTS

ADOT did not have any comments on the preliminary ALP.

RESPONSES TO FEDERAL AVIATION ADMINISTRATION (FAA) COMMENTS TO CHANGES/CORRECTIONS TO THE PRELIMINARY AIRPORT LAYOUT PLAN (ALP), YUMA INTERNATIONAL AIRPORT (NYL).

GENERAL COMMENTS

Ref. No.	Comment	Response
G-1	**ADVISORY** The subject ALP was reviewed as a planning document and this evaluation does not include any obstacle evaluations. Any changes to the runway physical end latitude/longitude coordinates or elevations must be uploaded into the OE/AAA runway/data base, to ensure the FAR Part 77 calculations are run on the most recent data. All proposed construction projects (terminal buildings, taxiways, etc.), and associated equipment must be filed separately prior to commencing construction.	• No changes to the ALP required.
G-2	The existing elevation of Runway 8 is different from the ALP drawing sheet and the ALP data sheet. Please verify the discrepancy.	• The existing elevation of Runway 8 is the same on both the ALP and Data sheets. There is a callout for the elevation for the runway end and the runway low point that are close to each other that have different elevation values, but they are not the same point on the runway. The ALP now has additional separation between the numbers to help eliminate confusion.
G-3	Please identify in the legend or existing facilities, the arresting gear equipment that are visible in aerial photos, but not shown on the ALP.	• Arresting gear equipment added to existing facilities table and labeled on the ALP.

U.S. Department
of Transportation
Federal Aviation Administration

Western Pacific Region
Office of Airports
Phoenix Airports District Office

3800 N. Central Ave.
Suite 1025 10th Floor
Phoenix, AZ 85012

December 15, 2021

Yuma International Airport
Gladys Brown, C.M., C.A.E <sent via email gladys@yumaairport.com>
Airport Director
2191 E. 32nd Street #218
Yuma, AZ 85365

Dear Ms. Brown:

The Yuma International Airport (NYL), Airport Layout Plan (ALP), prepared by your consultant, and bearing your signature, is approved. A signed copy of the FAA approved ALP is enclosed.

An aeronautical study (no. 2021-AWP-3775-NRA) was conducted on the proposed development. This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

In making this determination, the FAA has considered matters such as the effects the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons and property on the ground, the effects that existing or proposed manmade objects (on file with the FAA), and known natural objects within the affected area would have on the airport proposal.

The FAA has only limited means to prevent the construction of structures near an airport. The airport sponsor has the primary responsibility to protect the airport environs through such means as local zoning ordinances, property acquisition, avigation easements, letters of agreement or other means.

This ALP approval is conditioned on acknowledgement that any development on airport property requiring Federal environmental approval must receive such written approval from FAA prior to commencement of the subject development. This ALP approval is also conditioned on acceptance of the plan under local land use laws. We encourage appropriate agencies to adopt land use and height restrictive zoning based on the plan.

Approval of the plan does not indicate that the United States will participate in the cost of any development proposed. AIP funding requires evidence of eligibility and justification at the time a funding request is ripe for consideration. When construction of any proposed structure or development indicated on the plan is undertaken, such construction requires

normal 45-day advance notification to FAA for review in accordance with applicable Federal Aviation Regulations (i.e., Parts 77, 157, 152, etc.). More notice is generally beneficial to ensure that all statutory, regulatory, technical and operational issues can be addressed in a timely manner.

The FAA Reauthorization Act of 2018, section 163(d), has limited the FAA's review and approval authority for ALPs. The Act limits the FAA's authority to those portions of the ALP that:

- Materially impact the safe and efficient operation of aircraft at, to, or from the airport;
- Adversely affect the safety of people or property on the ground adjacent to the airport as a result of aircraft operations; or
- Adversely affect the value of prior Federal investments to a significant extent.

FAA's approval of this ALP is limited to existing facilities only (or those specific areas that FAA retains approval authority). The FAA has not made a determination on whether or not it retains review and approval authority for any proposed facilities depicted on the ALP associated with this letter. Under Title 49 U.S.C. § 47107(a)(16) (as revised per section 163(d) of Pub.L. 115-254), FAA will separately determine whether it retains approval authority for each individual proposed facility depicted on an ALP before construction occurs.

Although section 163(d) has limited the FAA's review and approval authority of proposed projects depicted on an ALP, airport sponsors must continue to maintain an up-to-date ALP in accordance with Federal law, 49 U.S.C. § 47107(a)(16).

Please attach this letter to the ALP and retain it in the airport. We wish you great success in your plans for the development of the airport. If we can be of further assistance, please do not hesitate to call Mr. Jared Raymond, Community Planner, at 602-792-1072.

Sincerely,

MICHAEL N WILLIAMS

Digitally signed by MICHAEL N WILLIAMS
Date: 2021.12.15 10:50:53 -07'00'

Mike N. Williams
Manager,
Phoenix Airports District Office

Attachment: Updated Airport Layout Plan

APPENDIX F

Public Involvement

APPENDIX F - PUBLIC INVOLVEMENT

This appendix documents the coordination and outreach efforts throughout the Master Plan process. This introduction notes the organizations involved, dates of meetings, and other outreach methods. The documents included in this appendix are described at the end of the introduction.

PLANNING ADVISORY COMMITTEE

A Planning Advisory Committee (PAC) was established to engage its members for input and review of working papers, materials, and alternatives early in the planning process. The PAC consisted of members from these organizations:

- Aircraft Owners and Pilots Association
- American Airlines
- Arizona Department of Transportation – Aeronautics Division
- Arizona Public Service
- Arizona Western College
- Avis Rental Car
- Big Adventure Hangars
- Brewers Restaurant
- Budget Rental Car
- CareFlight
- City of San Luis
- City of Somerton
- City of Yuma
- Cocopah Native American Tribe
- County of Yuma
- Crane Elementary School District
- Enterprise Rental Car
- Experimental Aircraft Association, Inc.
- Federal Aviation Administration
- Federal Express
- Fort Yuma Quechan Native American Tribe
- Greater Yuma Port Authority

- Hertz Rental Car
- Million Air
- Transportation Security Agency
- United States Customs and Border Protection
- United States Marine Corps Air Station Yuma
- Yuma County Airport Authority
- Yuma County Airport Authority Board of Directors
- Yuma County Chamber of Commerce Transportation Committee
- Yuma County Intergovernmental Public Transit Authority
- Yuma Elementary School District One
- Yuma Metropolitan Planning Organization
- Yuma Proving Ground
- Yuma Unified High School District
- Yuma Union High School District
- 4FrontED

PAC MEETINGS AND DATES

PAC meetings were held on these dates:

- PAC Meeting #1 – September 22, 2020
- PAC Meeting #2 – March 16, 2021
- PAC Meeting #3 – July 21, 2021
- PAC Meeting #4 – December 1, 2021

PUBLIC OPEN HOUSES

Members of the public were invited to contribute to the planning process at two open house opportunities.

MEETINGS AND DATES

The following public open houses were held:

- Public Open House Meeting #1 – September 23, 2020
- Public Open House Meeting #2 – July 21, 2021

YUMA COUNTY AIRPORT AUTHORITY BOARD MEETINGS

As a public entity and governing body of the Yuma International Airport, the Yuma County Airport Authority Board of Director's hold regular meetings on the second Tuesday of every month, and when necessary Special Board Meetings maybe scheduled with proper notice on matters concerning the Airport. The Board consists of members from the local and business communities in the greater Yuma metropolitan area.

MEETINGS AND DATES

Airport Master Plan documents, informational briefs, and updates were presented to the Yuma County Airport Authority Board on these dates:

- Yuma County Airport Authority Board Meeting #1 – September 14, 2019
- Yuma County Airport Authority Board Meeting #2 – June 11, 2019
- Yuma County Airport Authority Board Meeting #3 – July 19, 2019
- Yuma County Airport Authority Board Meeting #4 – August 13, 2019
- Yuma County Airport Authority Board Meeting #5 – February 11, 2020
- Yuma County Airport Authority Board Meeting #6 – March 10, 2020
- Yuma County Airport Authority Board Meeting #7 – March 16, 2020
- Yuma County Airport Authority Board Meeting #8 – April 14, 2020
- Yuma County Airport Authority Board Meeting #9 – July 31, 2020
- Yuma County Airport Authority Board Meeting #10 – September 8, 2020
- Yuma County Airport Authority Board Meeting #11 – October 13, 2020
- Yuma County Airport Authority Board Meeting #12 – November 10, 2020
- Yuma County Airport Authority Board Meeting #13 – December 8, 2020
- Yuma County Airport Authority Board Meeting #14 – January 12, 2021
- Yuma County Airport Authority Board Meeting #15 – February 9, 2021
- Yuma County Airport Authority Board Meeting #16 – March 9, 2021
- Yuma County Airport Authority Board Meeting #17 – April 13, 2021
- Yuma County Airport Authority Board Meeting #18 – May 11, 2021
- Yuma County Airport Authority Board Meeting #19 – July 13, 2021
- Yuma County Airport Authority Board Meeting #20 – December 14, 2021
- Yuma County Airport Authority Board Meeting #21 – January 11, 2022
- Yuma County Airport Authority Strategic Planning Committee Meeting – February 28, 2022
- Yuma County Airport Authority Finance Committee Meeting – February 28, 2022
- Yuma County Airport Authority Public Relations Committee Meeting – February 28, 2022
- Yuma County Airport Authority Election and Personnel Committee Meeting – February 28, 2022

- Yuma County Airport Authority Board Meeting #22 – March 8, 2022

WEBSITE, PRESENTATIONS, AND ADVERTISEMENTS

This Appendix contains subsequent information, including the project website, project presentations, informational boards, and associated advertisements to support the Master Plan public involvement efforts.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting#1 Meeting

Airport Conference Room & Zoom Web Conference (10:00am to 12:00pm)

Tuesday, September 22, 2020

Attendance

Study Team:
Mead & Hunt - Mitchell Hooper, Chris Hacker, Cam Thomas
Unison – Sharon Sarmiento
Gordley Group – Teresita Finch

Planning Advisory Committee Members:
YCAA – Gladys Brown, Gen Grosse, Jason Frost (came in at 10:30 a.m.)
YCAA Board Member: Russ Jones
Arizona Western College – Randy Nelson
City of Yuma – Jennifer Alders
Million Air – James Combs

Meeting Notes

Chris Hacker, Mitch Hooper, and Sharron Sarmiento presented an overview of the draft Inventory, Forecast, and Waste Management Chapters of the Master Plan. Participants were encouraged to comment or ask questions verbally or via the chat function of Zoom.

The following comments and questions were offered during the meeting:

- There was a question in the room about waste management approval.
    - Chris answered that the forecast and the airport layout plan does require Federal Aviation Administration (FAA) approval, but waste management does not. Waste management was recently added to the master planning process, and the FAA does require the Airport have a waste management plan on file with the FAA in order to receive federal funds. The FAA will review it and have comments, but they do not have approval authority.

- A question in the room was asked regarding the updated noise study in the Yuma area, dealing with the F35, to what extent does the plan take into consideration the current noise envelopes? Is there flexibility?
    - The team responded that the Air Installation Compatible Use Zone (AICUZ) study was almost in final form when this project was started. Mead & Hunt coordinated with the FAA and MCAS and will be adopting those noise contours that are presented in the AICUZ. Those noise contours are what was approved by the FAA. They account for military and civilian aircraft.

- There was a follow-up question: Discussions on the air traffic patterns still need to be determined, correct?
    - The study team answered that yes, it is an ongoing discussion, and because the military is the main driver of that, whatever the military comes up with is what the master plan will adopt. In the master planning process, we are monitoring and adopting. If it is appropriate, we provide feedback into their process, but this plan is really focusing on the facilities on the ground.

- Russ Jones asked about leakage of passengers leaving from Yuma vs leaving from Phoenix: Have there been any changes in that pattern due to COVID?
    - Sharon responded that it would be based on anecdotal evidence. To actually look at specific patterns at Yuma, they would have to do the same analysis that Mead & Hunt did for the passenger demand analysis. Based on trends and based on recovery trends at Yuma that are better than the national trends, it does look like people are avoiding larger airports. The recovery rate, with Yuma already at 45 percent of its traffic, versus the entire nation being at 27 percent pre-Covid traffic, tells you that Yuma is capturing some of that leakage. American Airlines has scheduled to restore a second flight to Dallas Fort Worth International Airport in November.

- Randy Nelson asked about economic data, anticipating a higher inflation rate and also the effect of trillions of dollars in stimulus funding, with unemployment benefits declining in the near future. Does that factor into some of your thoughts on the recovery?
    - Sharon responded that inflation has not been a worry. The government gave out the stimulus package in the hopes that people would spend it to boost consumer spending, but people saved a large part of that instead. So we did not see a spike in inflation because of that. The economy has been reopening, consumer spending has also begun to recover, and employment has begun to recover, but the recovery is going to be slow. Full recovery will not be earlier than 2022.

- Gladys responded to a comment about recycling oil. The airport is not a disposal site, but does have a company pick up oil to recycle it to be environmentally friendly and does not pass that charge on to the tenants. Fuel is included in that pickup as well.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting#1 Meeting

Airport Conference Room & Zoom Web Conference (1:00pm to 3:00pm)

Tuesday, September 22, 2020

Attendance

Study Team:
Mead & Hunt – Chris Hacker, Mitchell Hooper, Cam Thomas
Unison – Sharon Sarmiento
Gordley Group – Teresita Finch

Planning Advisory Committee Members:
YCAA - Gladys Brown, Gen Grosse, Lynn Hall
Yuma Metro Planning – Paul Ward, Charles Gutierrez, Delaurien Mckenzie
Arizona Western College – Daniel Corr

Meeting Notes

Chris Hacker, Mitch Hooper, and Sharron Sarmiento presented an overview of the draft Inventory, Forecast, and Waste Management Chapters of the Master Plan. Participants were encouraged to comment or ask questions verbally or via the chat function of Zoom.

The following comments and questions were offered during the meeting:

- There was a question from room about what kind of socio-economic information is being gathered.
    - The consultant team responded that it would be covered in the demand forecast section.
- There was a follow-up question: Do you look back at what money has been received in the past?
    - The team responded not typically unless we are looking at an obligation.
    - Gladys explained that the Airport receives entitlement as being a primary non-hub status of commercial air service. Primary funding source through the FAA is through their commercial air service.

- There was a question from room: Passenger catchment shows area up to the Imperial Valley Airport. How does that take into effect what we are looking at? Is Imperial also showing data? Additionally, the bombing range is being included.
    - The basis for the catchment area is the bookings data. The leakage is mostly going to Phoenix and San Diego airports, not Imperial Valley Airport. The smaller airports have fewer flights, therefore, fewer choices. A 50-mile radius is taken and whatever is in that, minus the international line, is in that catchment area.

- There was a question from room about the difference between economic data from the US Bureau of Economic Analysis vs American Community Survey (ACS).

    - The team responded that the ACS is survey-based data used, for example, for household income. The one from Bureau of Economic Analysis is part of accounting of gross domestic product, not survey based.

- There was a comment from the room regarding travel data for non-citizens.
    - The team responded that traffic data includes all kinds of travelers, but bookings data is limited to data from US Citizens.

- There was a question from the room: Are snowbirds included?
    - The team responded that at the Airport, in passenger traffic, snowbirds are considered in the seasonal surge and captured by seasonal patterns.

- There was a comment from the room that scenarios, when it comes to recovery, should account for vaccine becoming available.
    - The team responded that the forecast is accounting for a vaccine being made available. But the longer the industry is in the depressed state, the longer it will still take to repair the damage.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting#1 Meeting

Airport Conference Room & Zoom Web Conference (3:00pm to 5:00pm)

Tuesday, September 22, 2020

Attendance

Study Team:
Mead & Hunt – Chris Hacker, Mitchell Hooper, Cam Thomas
Unison – Sharon Sarmiento
Gordley Group – Teresita Finch

Planning Advisory Committee Members:
YCAA - Gladys Brown, Gen Grosse, Mark Workman
YCAA Board Members: Linda Morgan, Reetika Dhawan
City of Yuma – Gary Knight
San Luis City Attorney – Kay Macuil
Customs and Border Protection – Jim Schuetzler
GYPA – Buna George
Bill Fox, Albert Gardner

Meeting Notes

Chris Hacker, Mitch Hooper, and Sharron Sarmiento presented an overview of the draft Inventory, Forecast, and Waste Management Chapters of the Master Plan. Participants were encouraged to comment or ask questions verbally or via the chat function of Zoom.

The following comments and questions were provided during the meeting:

- There was a question from the room: All commercial jets that fly in do not need to use military runways?
    - The team responded that yes, that is correct. We do make sure all four runways are available.
- There was a follow-up question: How large are the commercial aircraft? Are there restrictions on size?
    - The team responded that yes, the restrictions are limited to large regional aircraft. Low cost carriers are not an option because of the wingspan. Taxiways are set too close to parking lots to expand.

- There was a question from the room about the total aircraft operations if military is bringing more squadron.
    - Gladys responded that military are bringing in more squadrons but not necessarily more aircraft. And the master plan accounts for what is on the ground, home-based aircraft.

- There was a comment from the room that the response from COVID is being exaggerated. They could have a cure and it can be over by next year, not 2025.
    - Gladys responded that the way the recovery is going to work is not exaggerated because of training, amount of aircraft they have allocated, and the consumer confidence rebuilding the Airport will have to do, regardless of a vaccine. The Airport already had an issue because of pilots and mechanics retiring. We are guaranteed that a recovery is not going to happen until 2025 and that is being optimistic.

- There was a question about consumer waste and recycling oil.
    - Gladys responded that we do have a program in place for oil recycling.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting#1 Meeting

Airport Conference Room & Zoom Web Conference (10:00am to 12:00pm)

Wednesday, September 23, 2020

Attendance

Study Team:
Mead & Hunt: Mitchell Hooper, Chris Hacker, Cam Thomas
Unison: Sharon Sarmiento
Gordley Group: C.T. Revere

Planning Advisory Committee Members:
YCAA: Gladys Brown, Gen Grosse, Junior Hinkle, Juan Trasvina
YCAA Board Member: Bill Craft, Dean Hager
City of Yuma: Shelly Hook, Alyssa Linville
Enterprise: John Lotarsky, Juana Garcia, Moses Lujan
Aerocare: Dave Simkins
Yuma County: Maggie Castro
MCAS Yuma: Greg McShane, Mary Ellen Finch, Antonio Martinez
FAA: Jay Wallace
USMC: Will Barr
Air Traffic Control: Matt Danque
APS: Charles Molina, Daniel Ortega
AOPA: Ken Scott

Meeting Notes

Chris Hacker, Mitch Hooper, and Sharron Sarmiento presented an overview of the draft Inventory, Forecast, and Waste Management Chapters of the Master Plan. Participants were encouraged to comment or ask questions verbally or via the chat function of Zoom.

The following comments and questions were offered during the meeting:

- Gladys Brown, NYL Director, asked if handling and disposal of medical waste was part of the Waste Management and Recycling program mandated by the Federal Aviation Administration.
    - Mitch Hooper of Mead & Hunt reported that medical waste was included within the Airport's hazardous materials plan.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting#1 Meeting

Airport Conference Room & Zoom Web Conference (1:00pm to 3:00pm)

Wednesday, September 23, 2020

Attendance

Study Team:
Mead & Hunt: Mitchell Hooper, Chris Hacker, Cam Thomas
Unison: Sharon Sarmiento
Gordley Group: C.T. Revere

Planning Advisory Committee Members:
YCAA: Gladys Brown, Junior Hinkle, Gen Grosse
City of San Luis: Jenny Torres
YCAA Board Member: Reetikha Dhawan

Meeting Notes

Chris Hacker, Mitch Hooper, Sharron Sarmiento, and Cam Thomas an overview of the draft Inventory, Forecast, and Waste Management Chapters of the Master Plan. Participants were encouraged to comment or ask questions verbally or via the chat function of Zoom.

The following comments and questions were offered during the meeting:

- Reetika Dhawan asked if the Airport forecast looked at the economic benefits both on and off the Airport.
    - Sharon Sarmiento said there are several economic benefits the Airport brings to the local Yuma community to include revenue generation, tax growth for businesses surrounding the Airport, including car rentals and other airport-influenced industries.

- Jenny Torres asked if the study team looked beyond the anticipated five-year recovery period from the COVID-19 pandemic to assess growth in travel for the next 15 years.
    - The study has forecast growth of 3.7 percent between 2025 and 2030 and a 2.7 percent increase between 2030 and 2040.

- Jenny Torres asked if the study had looked at potential opportunities created by the COVID-19 pandemic, such as business owners flying private planes and increasing general aviation activities at NYL.
    - Sharon Sarmiento said such opportunities were the basis for the assumption that general aviation would recover sooner than commercial aviation.

- Jenny Torres asked if the study team analyzed economic impact data from the Mexicali Airport to determine its effect on the Yuma airport.
    - The study team noted that the Mexicali Airport only hosts flights within Mexico; therefore, it does not have a significant effect on NYL.

- Junior Hinkle asked about the limitations of the "catchment area" for NYL, which stops short of incorporating Calexico and El Centro, California.
    - The study team noted that airport catchment areas routinely take in a 60-mile circumference surrounding airports, representing a maximum one-hour drive. Sharon Sarmiento said that based on questions about the limitations of the catchment area, they are likely to revisit the limits of the NYL catchment area. Mitch Hooper added that tracking of ticket sales shows that both San Diego and Phoenix also draw from NYL's catchment area.

- Junior Hinkle noted that recovery from economic downturns over the past two decades have not had underlying issues like COVID-19 and asked if the study team expected the lingering reluctance of people to travel by plane to exacerbate the ill effects on NYL.
    - Sharon Sarmiento said that the recovery forecasts for air travel are based on the assumption of an effective vaccine against COVID-19 in 2021 aiding economic recovery.

AIRPORT MASTER PLAN

Mead & Hunt

Planning Advisory Committee Meeting #1

September 22, 2020 & September 23, 2020

Yuma County Airport Authority

Agenda

- Introduction and Opening Comments
- Expected Outcomes for Master Planning Process
- Project Approach and Schedule
- Role of the Planning Advisory Committee
- Inventory of Existing Conditions
- Key Airport Planning Goals
- Forecast of Aviation Activity
- Recycling & Solid Waste Plan
- Next Steps
- Question & Comments

Mead &Hunt

Project Team

- **Yuma County Airport Authority (YCAA) Staff**
- **Marine Corps Air Station Yuma (MCAS Yuma)**
- **Federal Aviation Administration/Arizona Department of Transportation**
- **Consultants**
  - Mead & Hunt, Inc.
  - Gordley Group
  - Makers Architecture & Urban Design
  - Nicklaus Engineering, Inc.
  - Quantum Spatial
  - SWCA Environmental Consultants
  - Unison Consulting

Mead &Hunt

Master Plan

- **Statement of Policy**
  - Anticipate What We Think Will Happen
  - Influence What We want to Happen

Mead &Hunt

Expected Outcomes

- Comprehensive Recommendations for Layout of Future Airport Facilities
- Reasonable Long-Term Capital Improvement Plan
- Appropriate Documentation of Considerations and Influences
- FAA Approved Airport Layout Plan

Mead &Hunt

Public Outreach

- **Airport Authority Briefings**
- **Planning Advisory Committee Meetings**
- **Coordination Meetings**
- **Public Open House Workshops**
- **Master Plan Project Website**
  - https://www.yumaairportmasterplan.com/

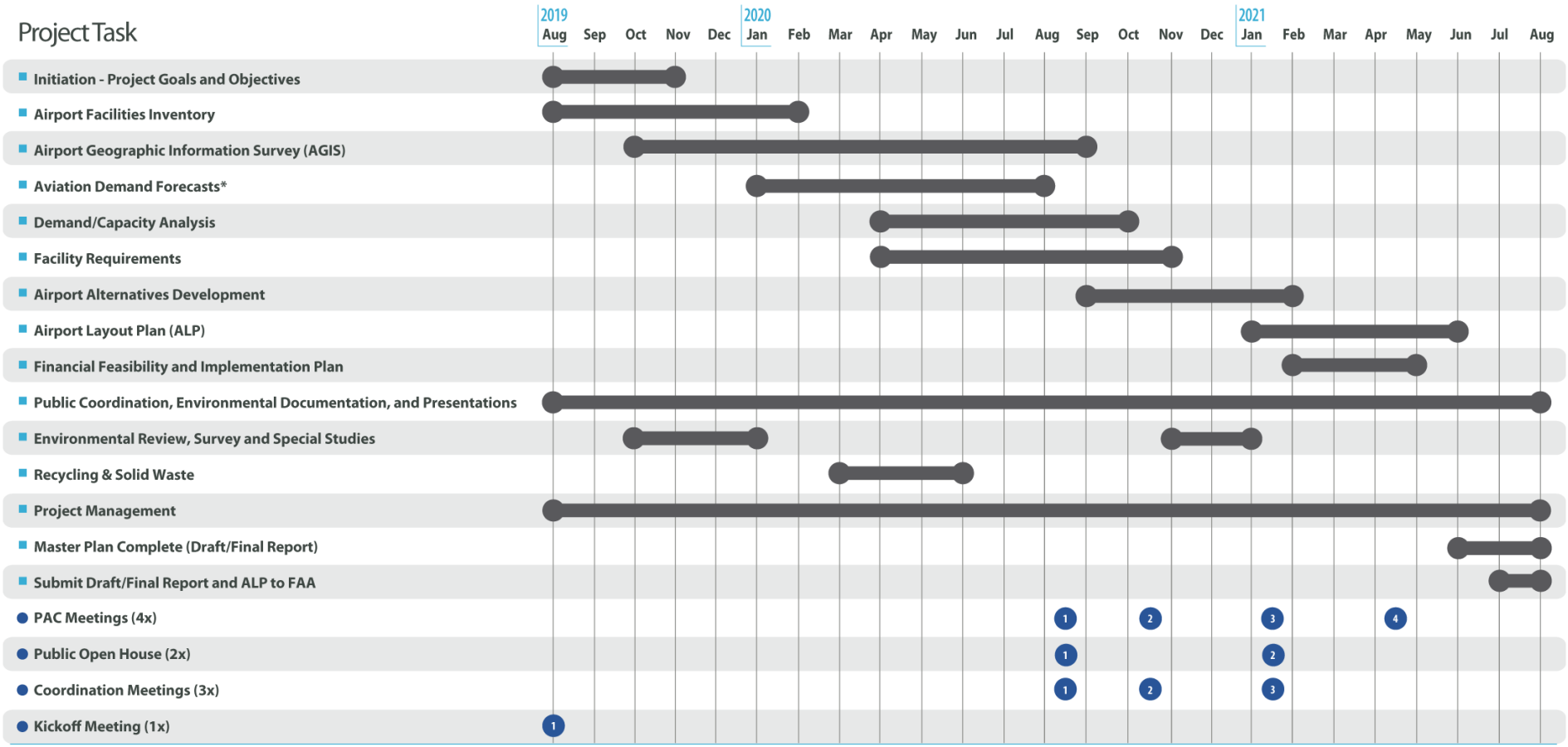
Mead &Hunt

Project Approach

- **Follow FAA Guidance**
- **Building Block Process**
  - Inventory
  - Forecasts
  - Facility Needs Determination
  - Alternatives and Development Plan Formulation
  - Airport Layout Plan
  - Financial Plan

Mead &Hunt

Project Schedule Airport Master Plan



Planning Advisory Committee (PAC)

- **PAC Composition**
  - Aviation stakeholders
  - Local and regional stakeholders
  - Government and regulatory stakeholders
- **PAC Roles**
  - Provide feedback
  - Share organization's perspective
  - Keep others in your organization informed
  - PAC does not vote, consensus is not required
  - PAC input is CRITICAL to Master Plan

Mead &Hunt

Inventory of Existing Conditions

- **Airport Background**
- **Airport Role**
- **Aircraft Facilities Inventory**
  - Airside Facilities
  - Landside Facilities
  - Airspace System and NAVAIDS
  - Airport Environs
  - Issues Summary

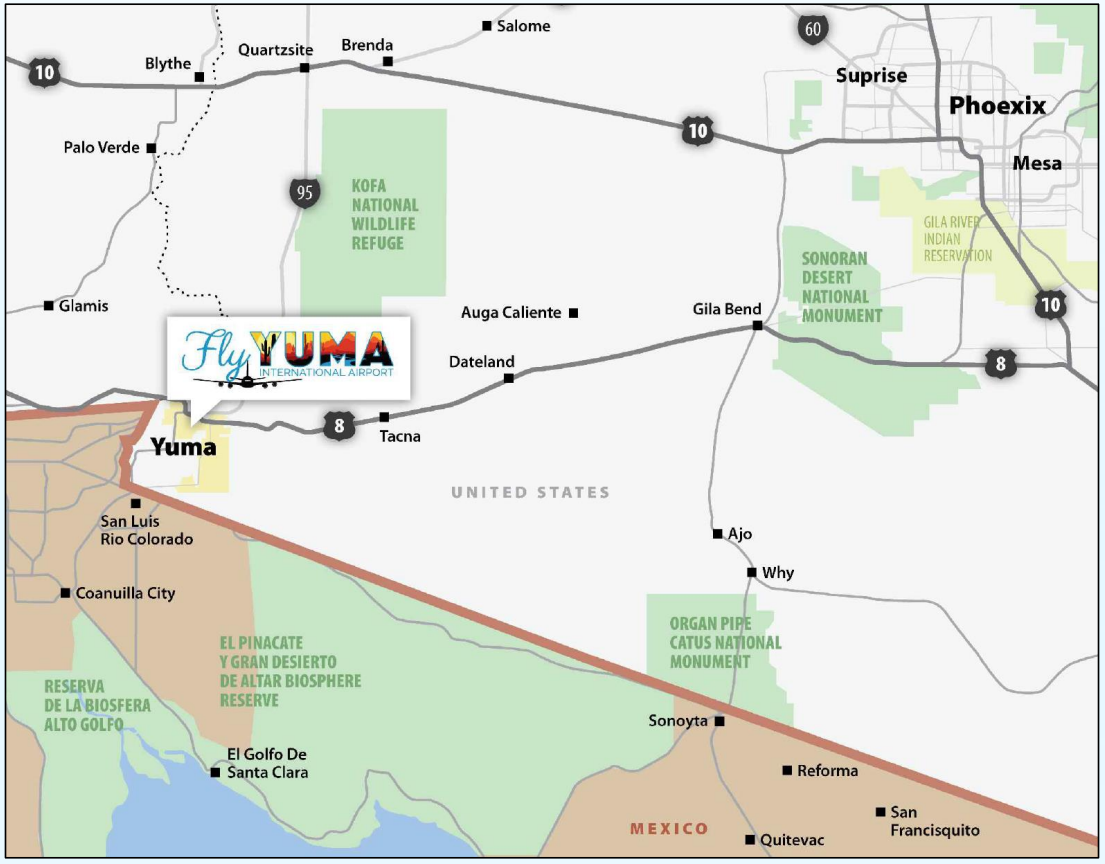
Mead &Hunt

Airport Background – Ownership and Use

- **Airport is owned and operated by YCAA and MCAS Yuma**
- **Executive Order Number 10536**
  - Patent from Department of Interior to the County of Yuma, State of Arizona and its successor land to Yuma County
  - Provides access to all runways, taxiways into perpetuity
  - MCAS Yuma owns and maintains the Air Traffic Control Tower (ATCT) and Aircraft Rescue & Fire Fighting (ARFF)

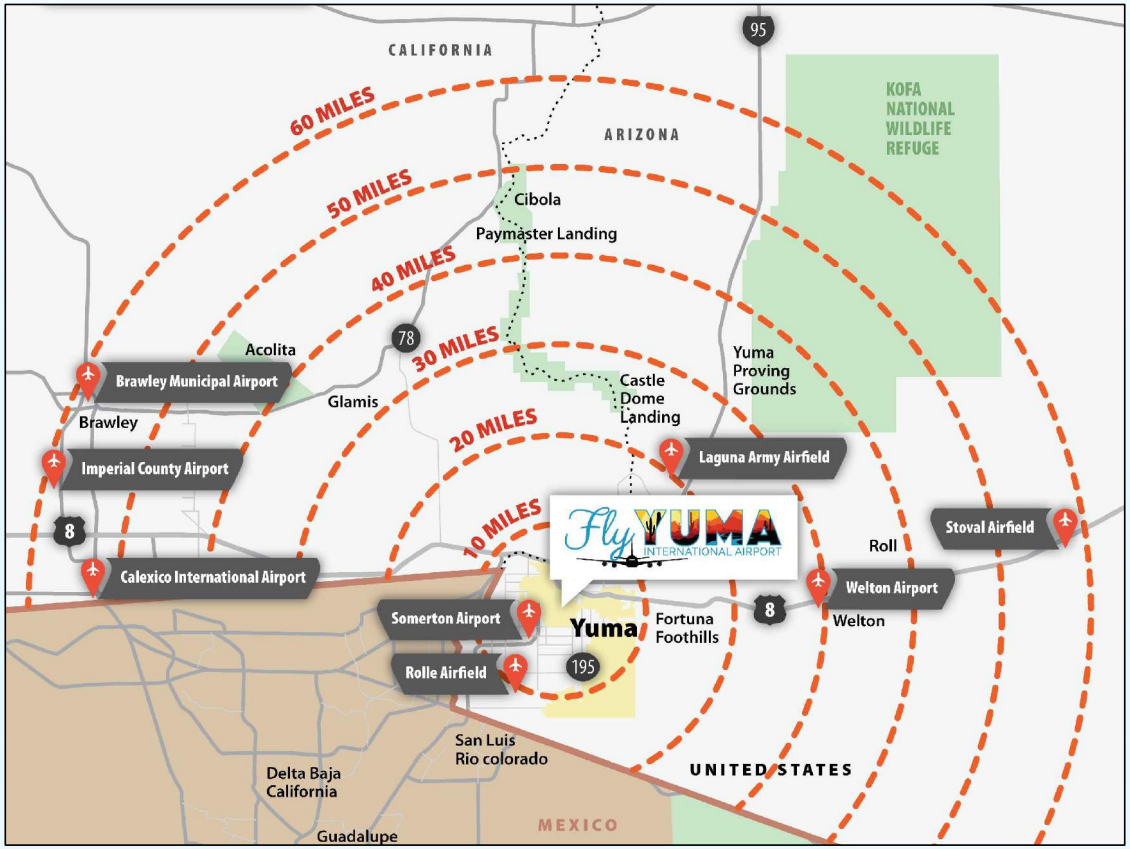
Mead &Hunt

Airport Role – Location



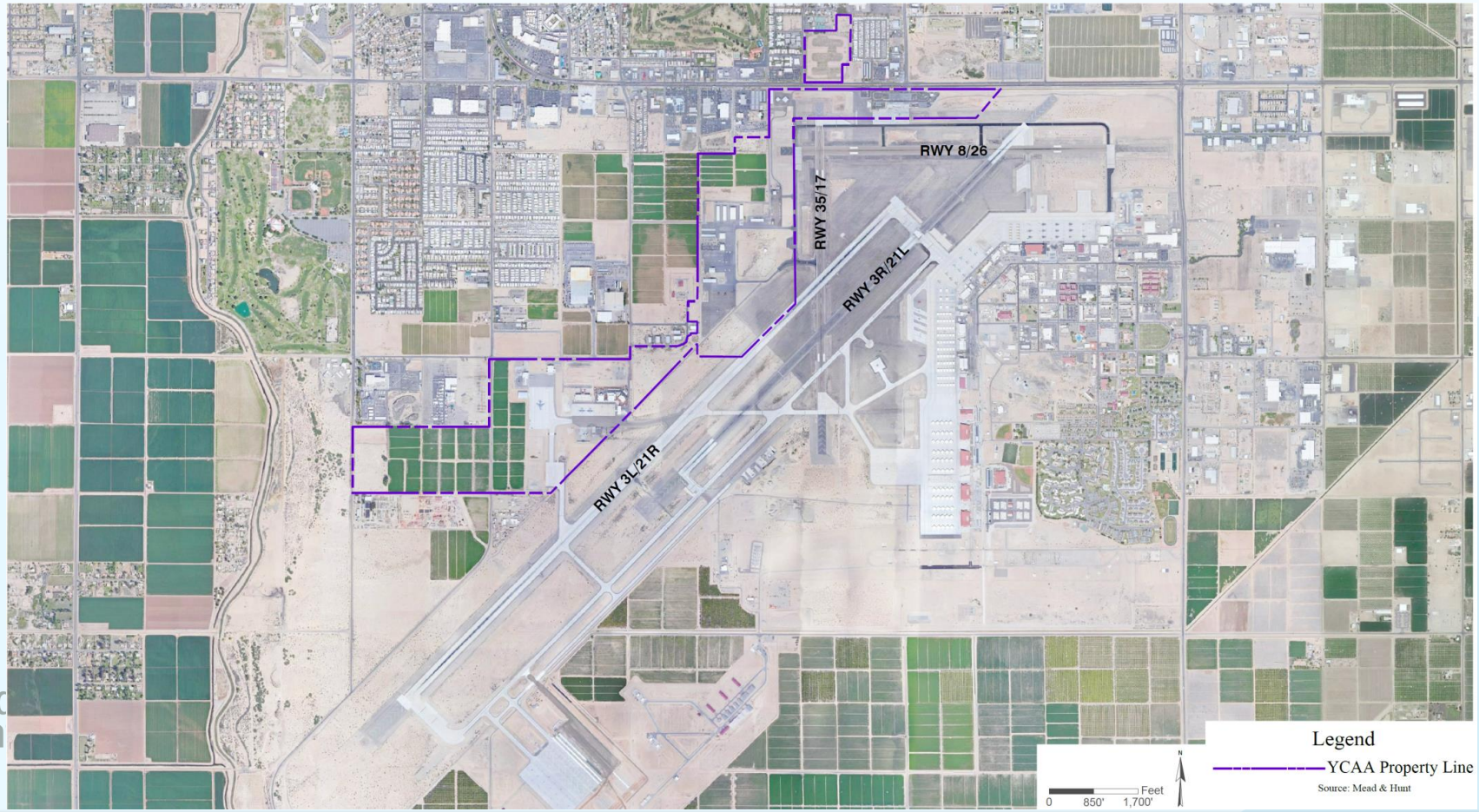
Mead &Hunt

Airport Role – Local Area Airports

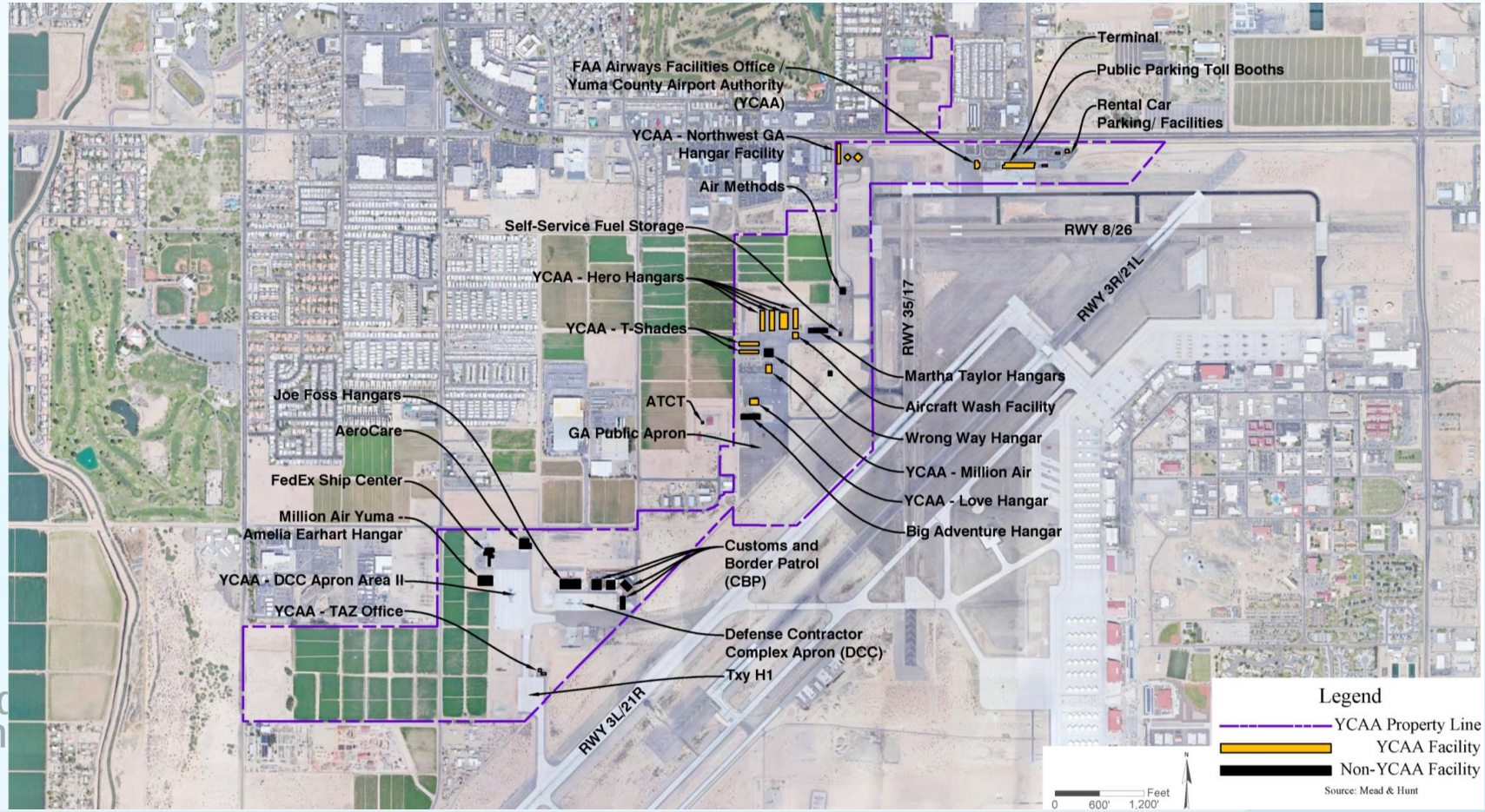


Mead &Hunt

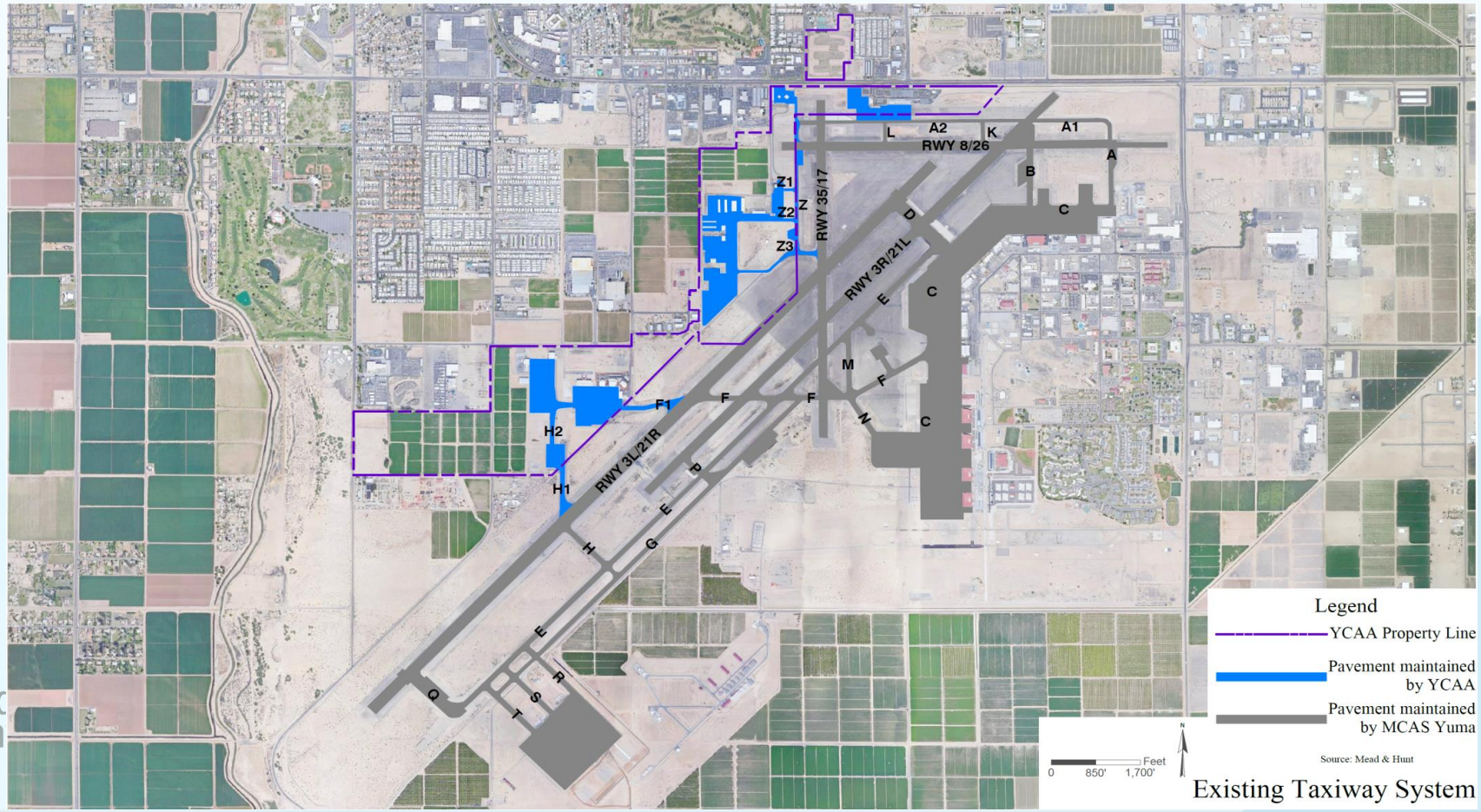
Airport Role – Airport Property



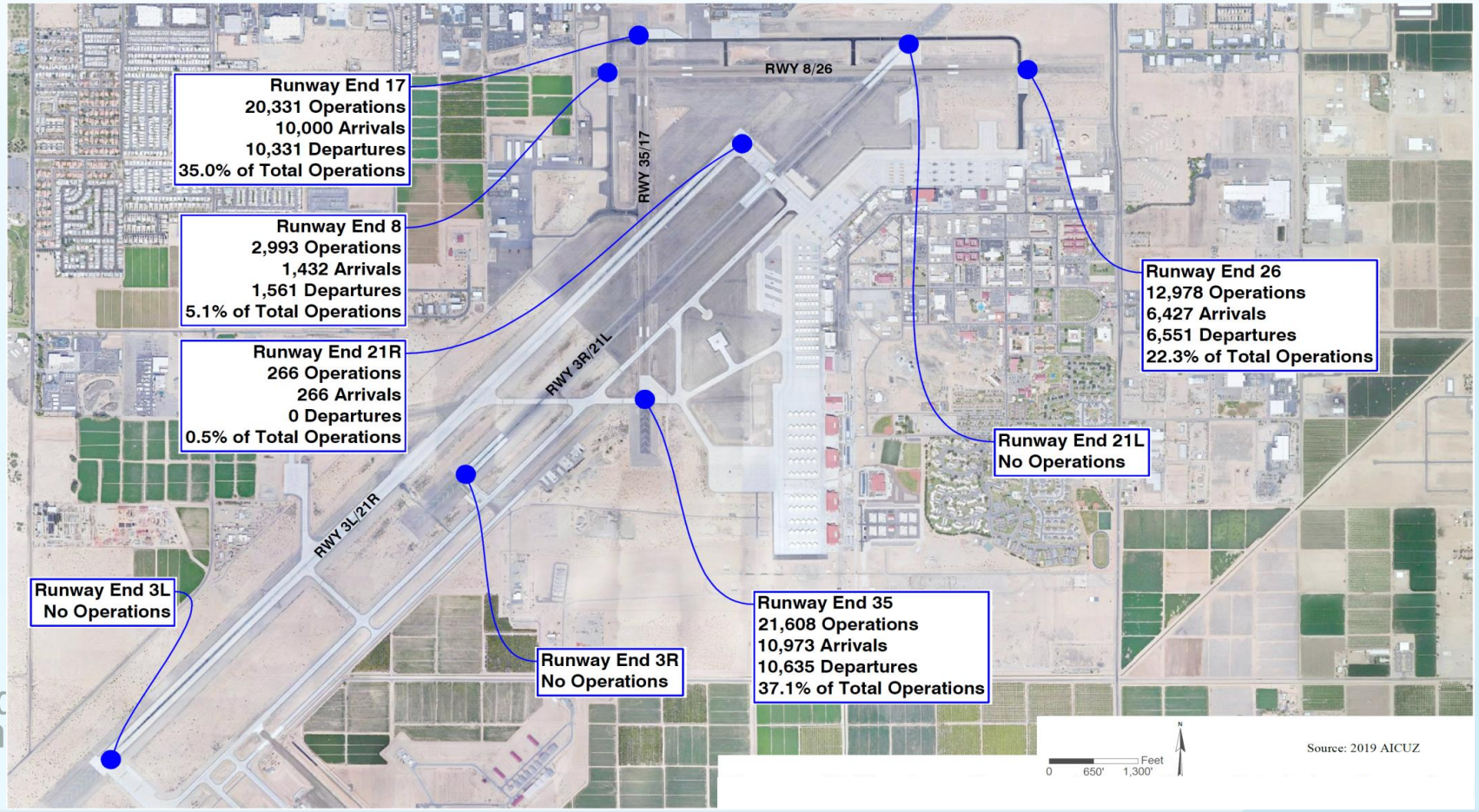
Airport Role – Airport Facilities



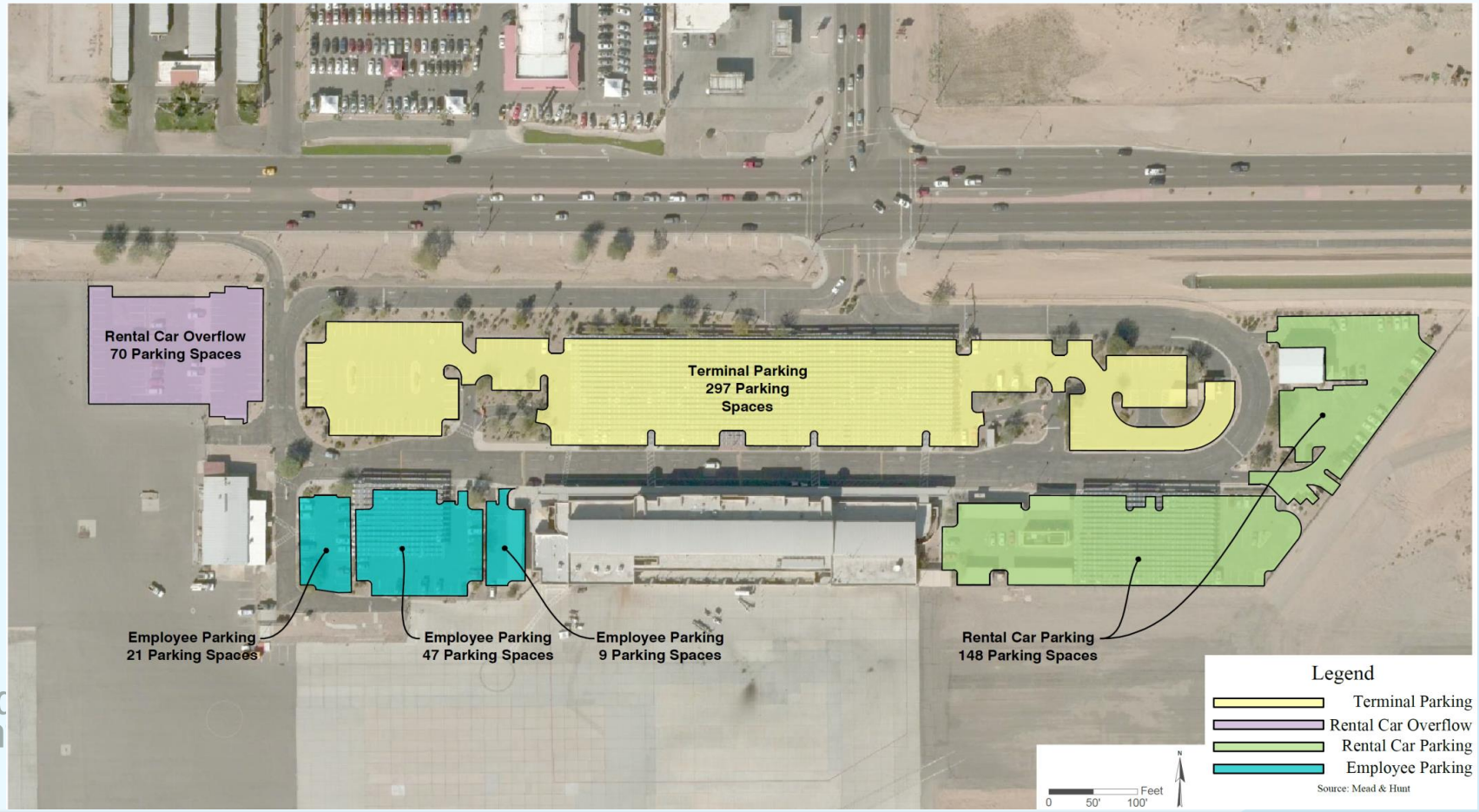
Airport Taxiway System



Airport Runway Utilization *(Civilian Operations)*

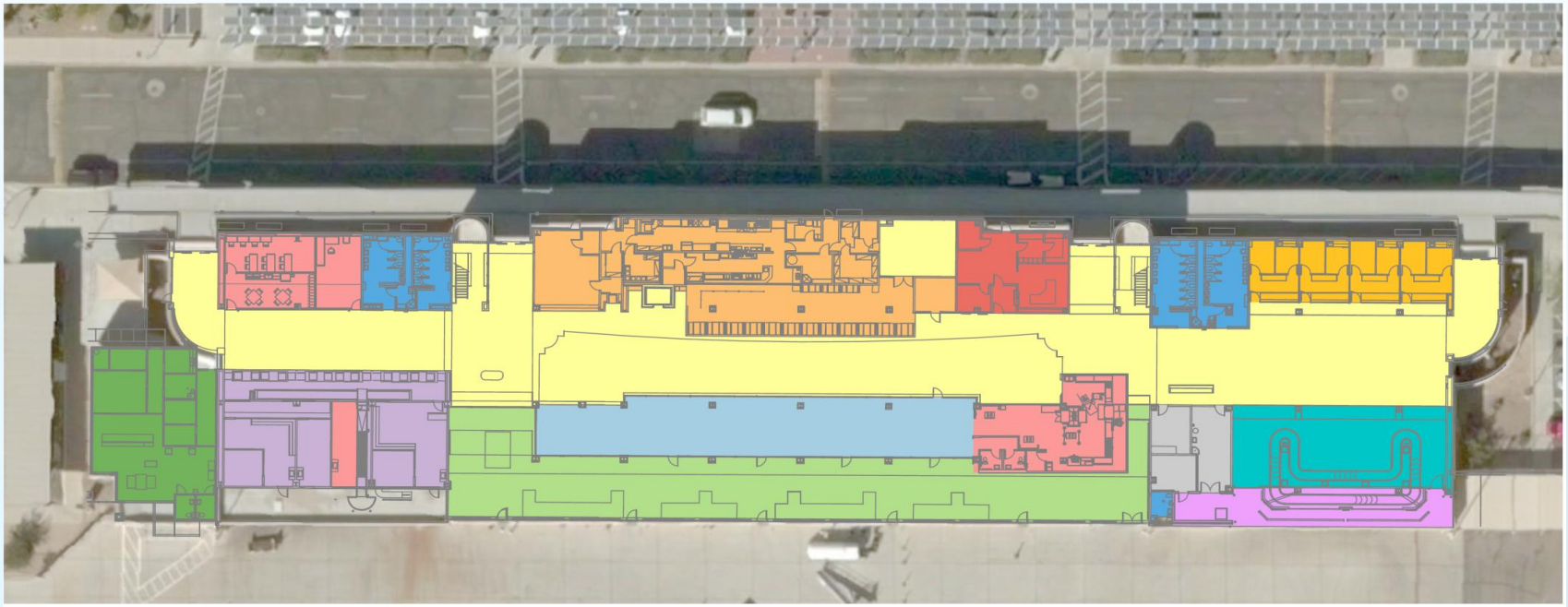


Airport Parking Facilities



Terminal Building – Upper Level

Terminal Building – Lower Level



Legend

Type of Space	Area (Square Feet)	Type of Space	Area (Square Feet)	Type of Space	Area (Square Feet)
Public Circulation	13,000	U.S. Customs and Border Protection	2,050	Airport Operations Office	1,050
Secure Passenger Waiting Area / Outdoor Atrium	5,050	Baggage Claim	1,920	TSA Screening and Offices	2,680
Concessions	4,050	Restrooms	1,750	Mechanical / Airport Storage	760
Airline / Ticket Counter Space	2,670	Baggage Handling	1,110	Lower Level Total Area:	40,200
Boarding Area	2,700	Rental Car Counter and Offices	1,410		

Feet
0 15' 30'

Source: Mead & Hunt

Notes

Key Airport Planning Goals

- **Comply with FAA guidance and regulations**
  - Address airfield geometry challenges
  - Provide operational areas for existing and future users
- **Plan for passenger terminal area development**
  - Grow terminal with demand
  - Improve parking facilities
- **Develop property to improve and diversify revenue**
- **Promote land use compatibility initiatives with local communities**
- **Prepare a sustainable and implementable Capital Plan**

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Aviation Activity Forecasts

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Comprehensive Forecast Development Process

- **Analysis of the airport's business environment**
- **Analysis of the airport's historical aviation activity**
  - Passenger traffic
  - Air cargo
  - General aviation
  - Military
- **Analysis of COVID-19 impact on aviation activity**
- **Assessment of air service development potential**
- **Forecast development and risk assessment**

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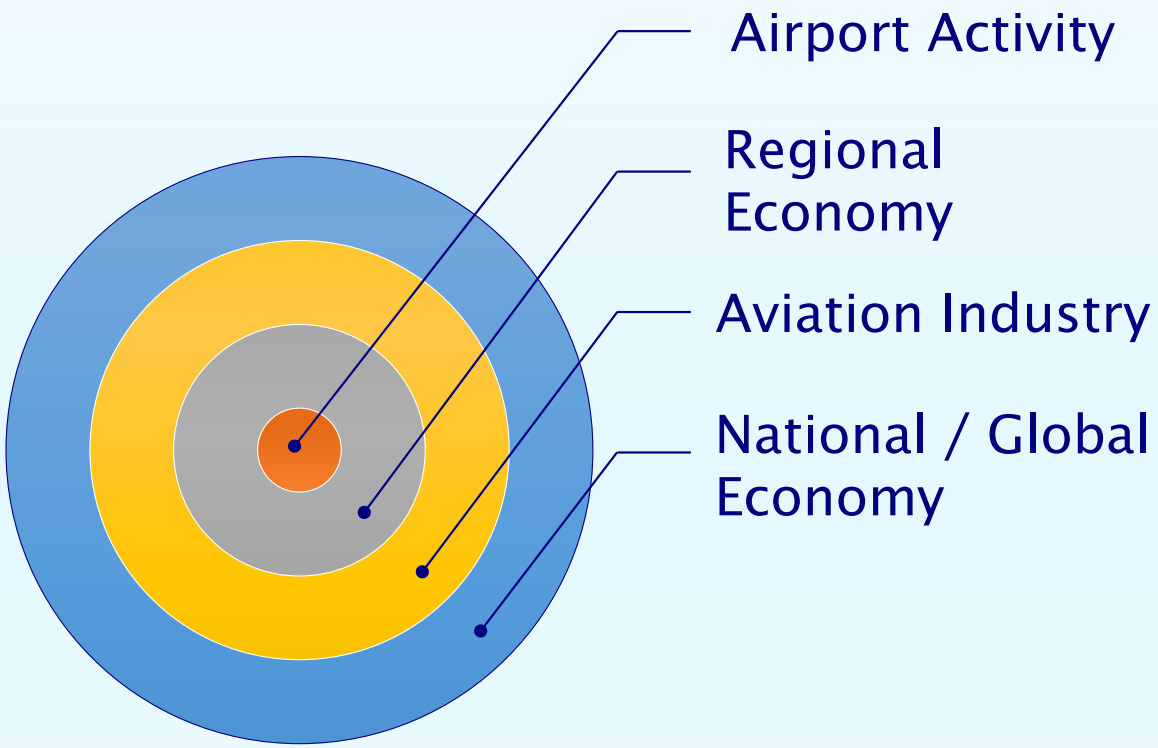
The Airport Business Environment



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Passenger Catchment Area

Socio-Economic Trends

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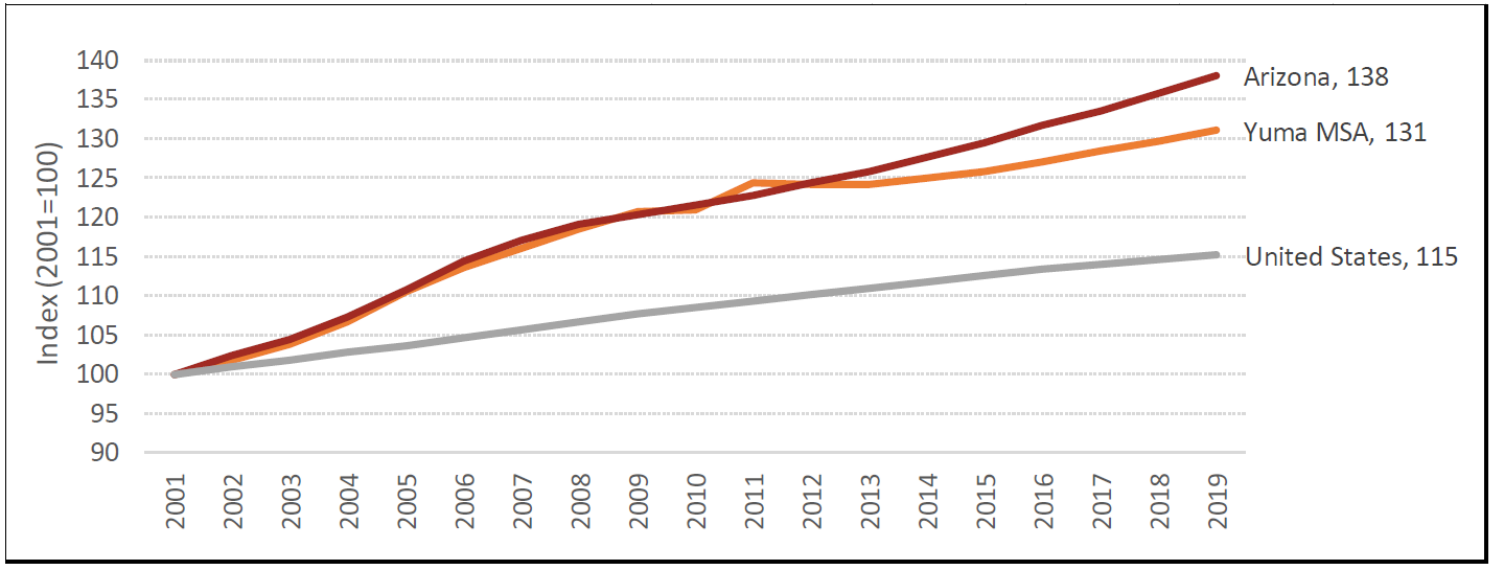
Population



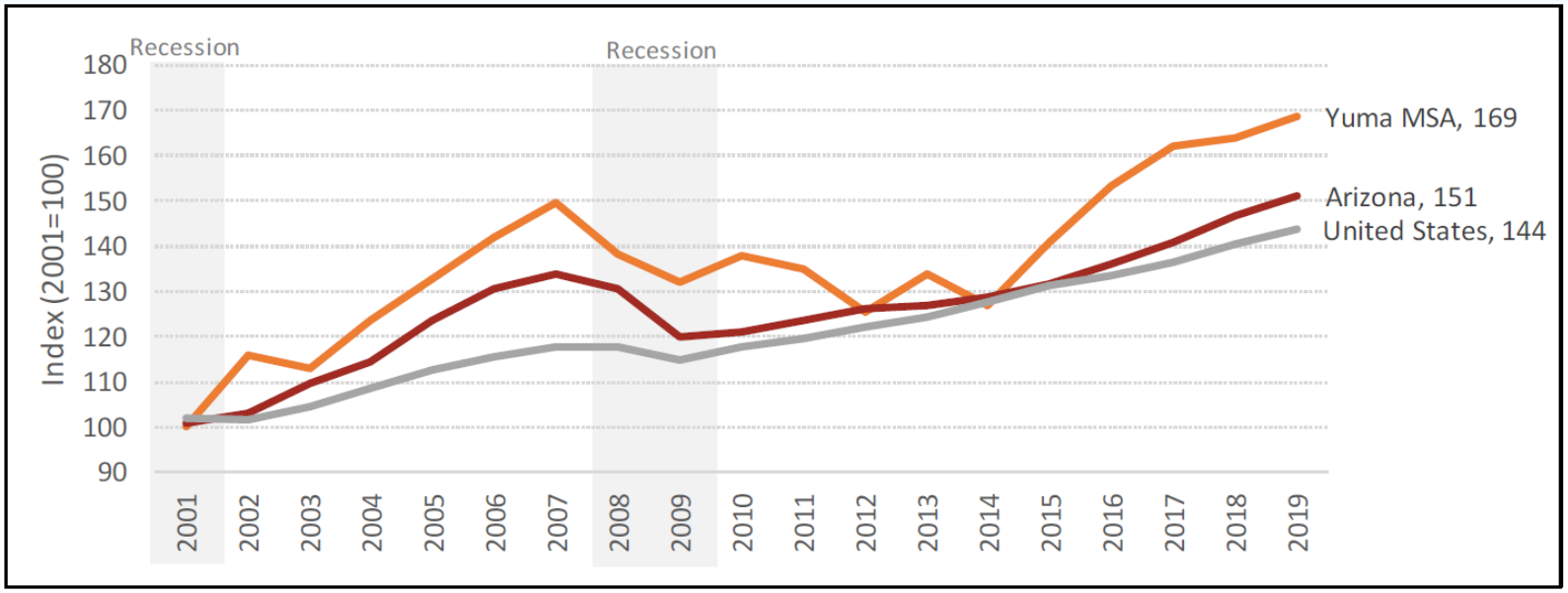
Average Annual Growth Rate

Period	Yuma MSA	Arizona	United States
2001-2010	2.1%	2.2%	0.9%
2010-2019	0.9%	1.4%	0.7%
2001-2019	1.5%	1.8%	0.8%

Source: U.S. Census Bureau.

Mead &Hunt

Real Gross Domestic Product



Average Annual Growth Rate

Period	Yuma MSA	Arizona	United States
2001-2010	3.6%	2.1%	1.8%
2010-2019	2.3%	2.5%	2.3%
2001-2019	2.9%	2.3%	2.0%

Sources: Moody's Analytics and U.S. Bureau of Economic Analysis.

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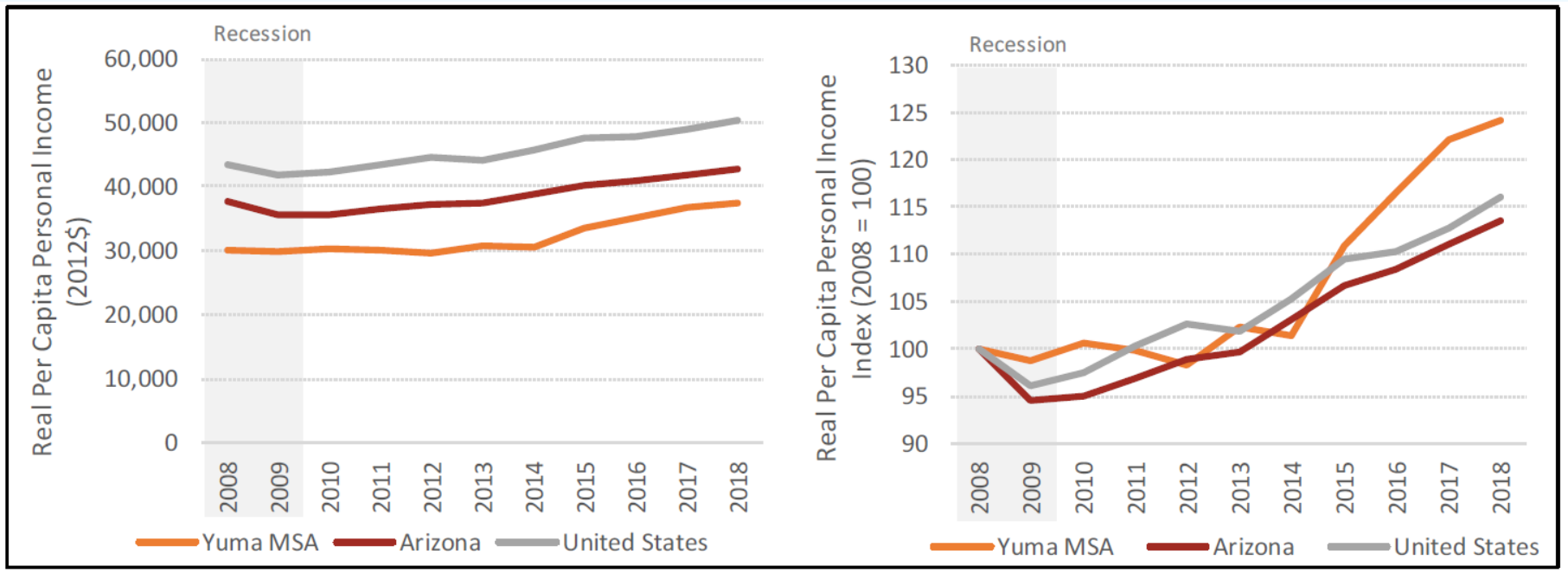
Personal Income



Source: U.S. Bureau of Economic Analysis.

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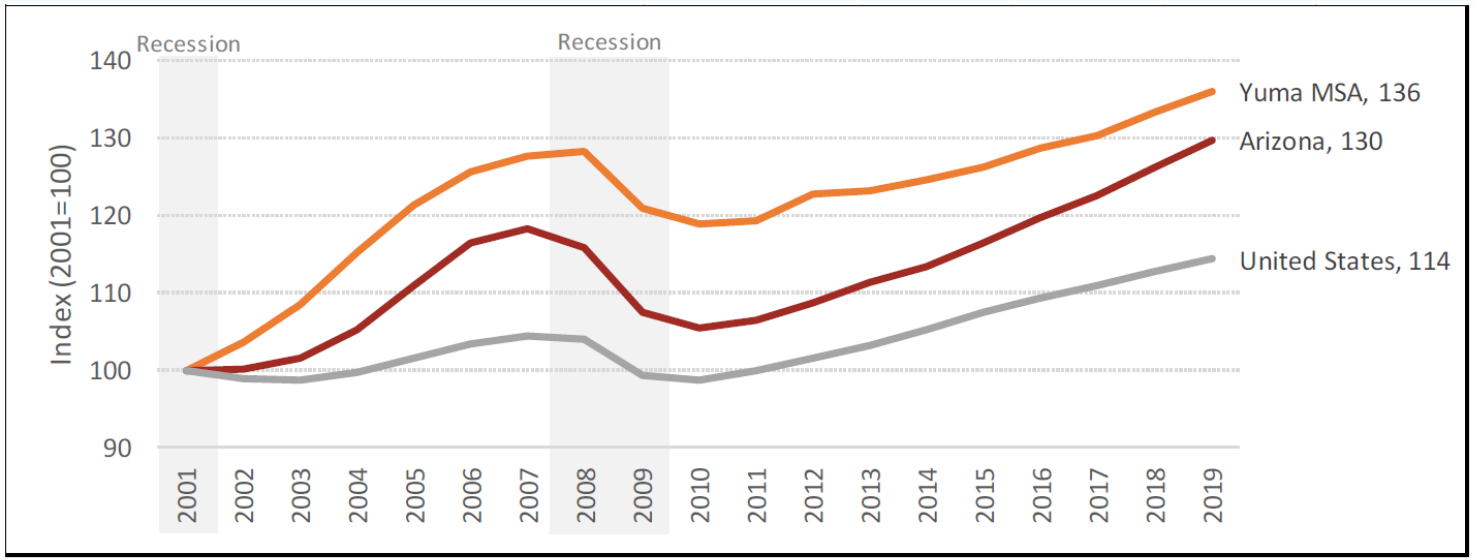
Nonfarm Employment



Average Annual Growth Rate

Period	Yuma MSA	Arizona	United States
2001-2010	1.9%	0.6%	-0.1%
2010-2019	1.5%	2.3%	1.6%
2001-2019	1.7%	1.5%	0.7%

Source: U.S. Bureau of Labor Statistics.

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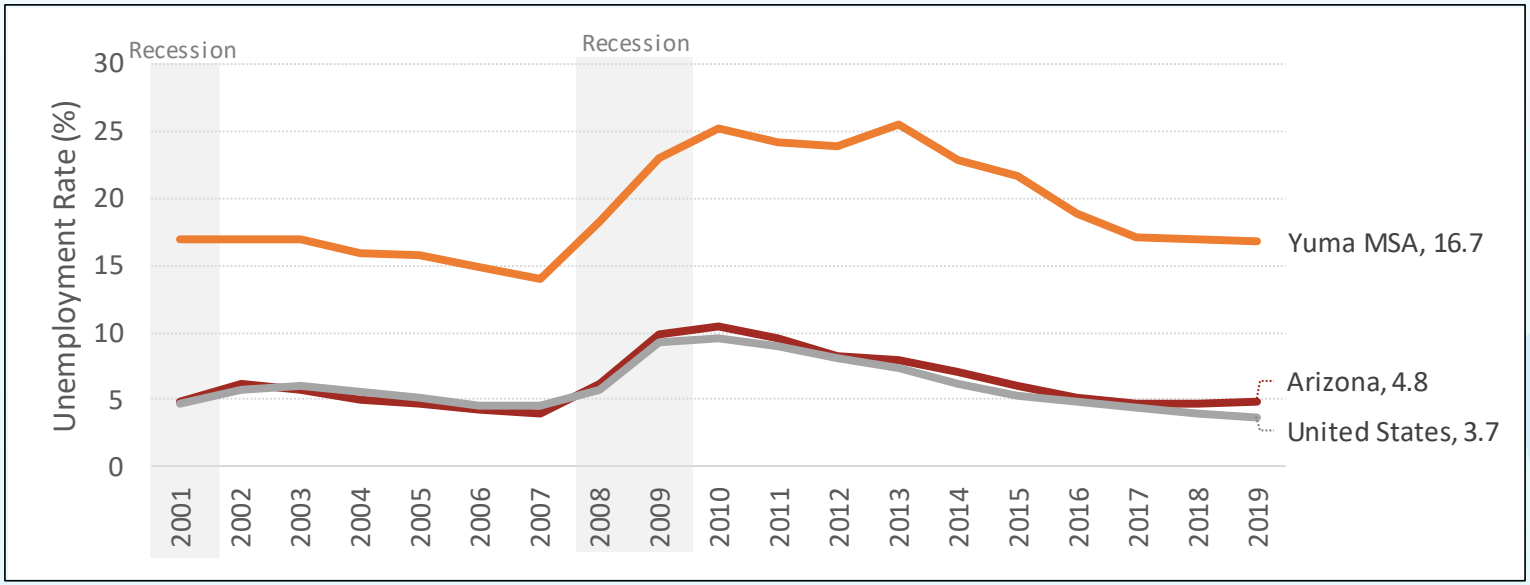
Unemployment Rate



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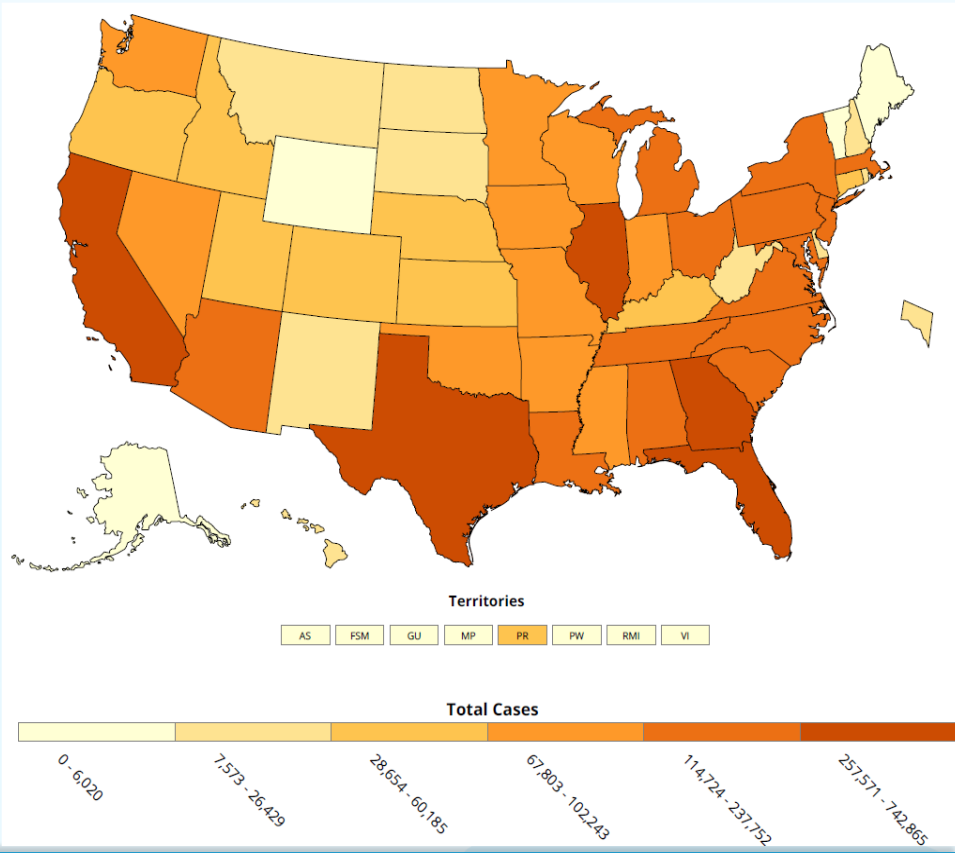
The COVID-19 Pandemic

- **As of September 11, 2020**
  - ✈ 6.38 Million total cases
  - ✈ 191,353 total deaths

Total COVID-19 Cases in the United States by State/Territory, As of September 11, 2020



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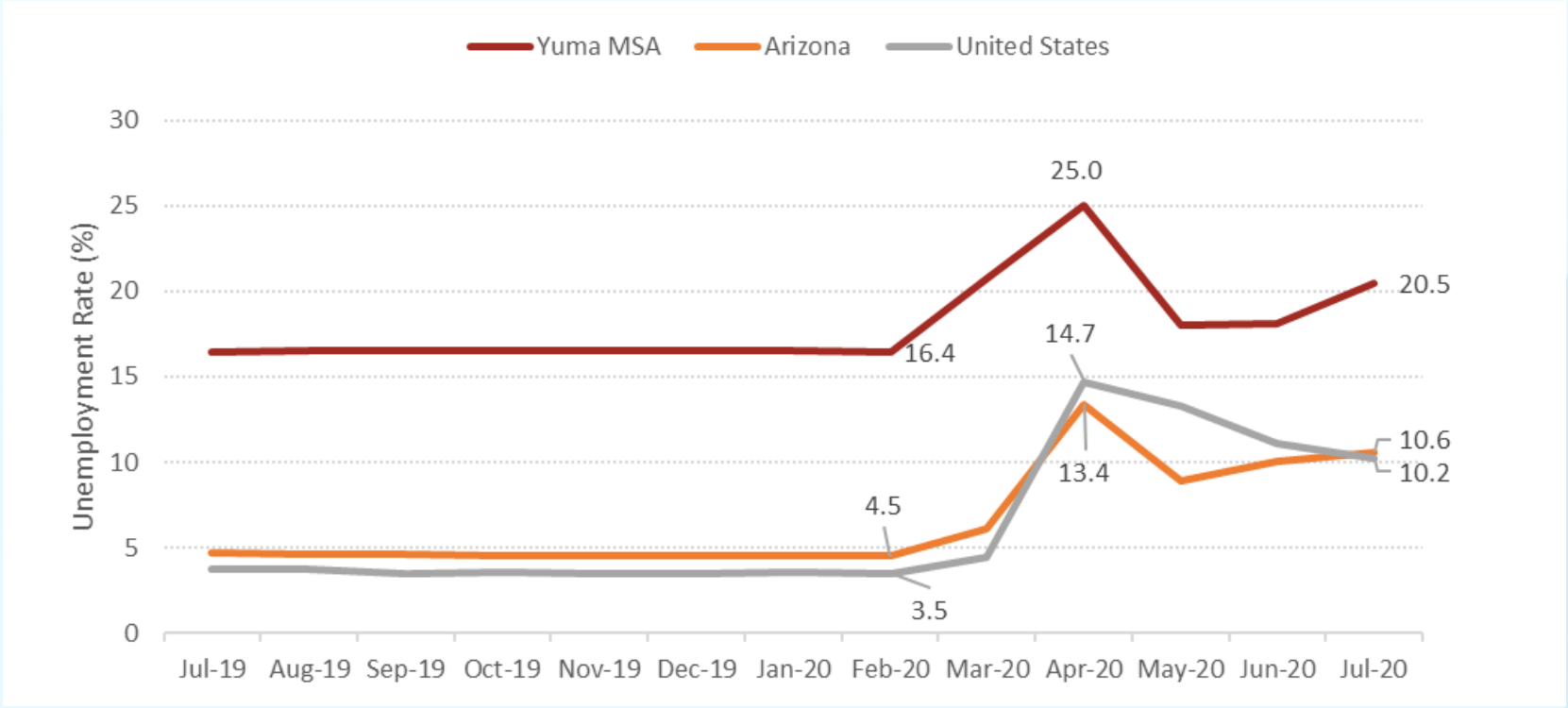
Adverse Economic Impact of COVID-19

Monthly Unemployment Rate, July 2019-July 2020



Source: U.S. Bureau of Labor Statistics.

Commercial Passenger Traffic

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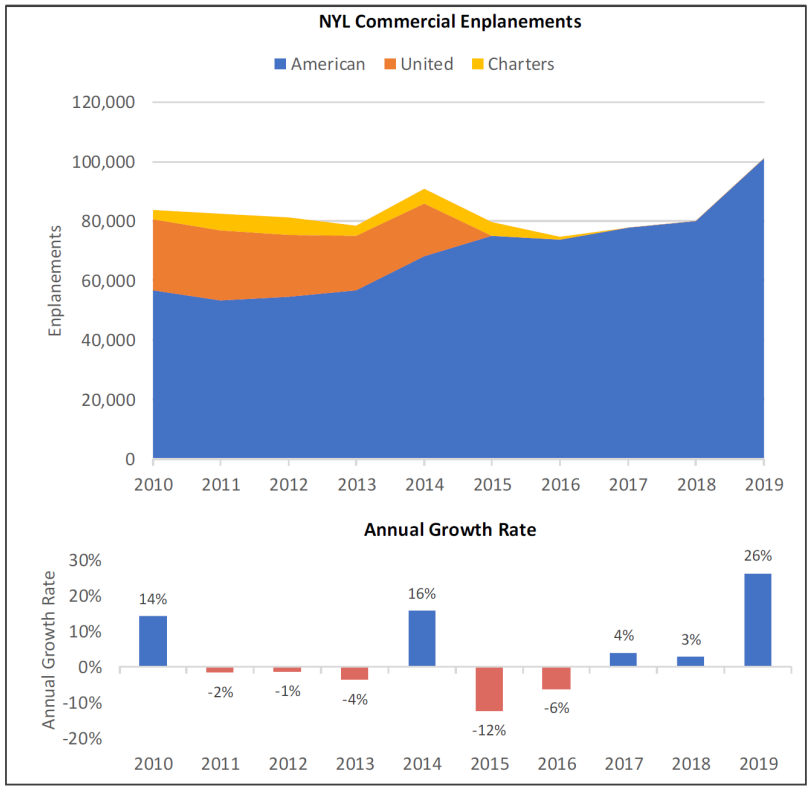
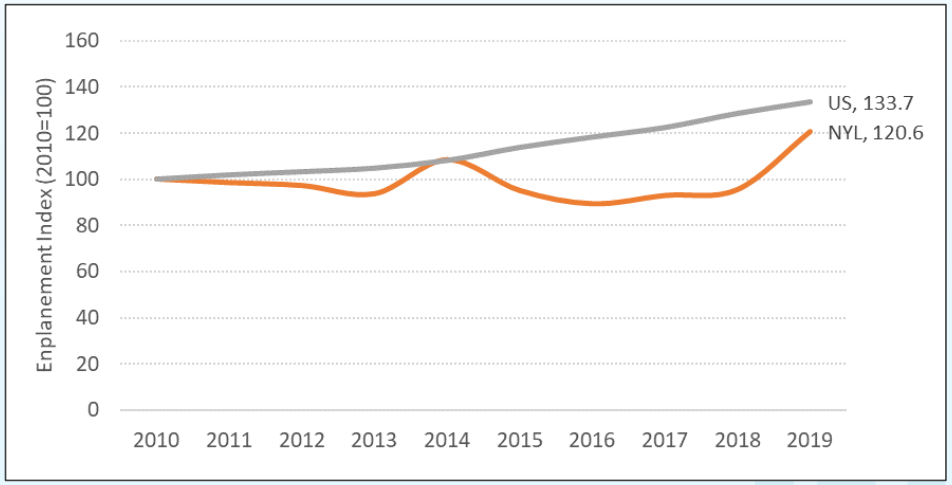
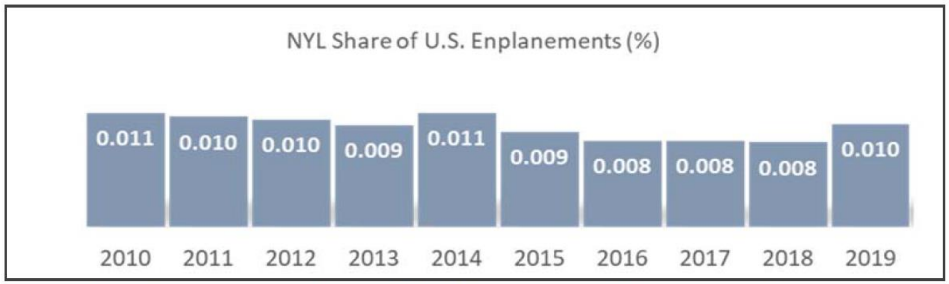
Long-Term Enplanement Trends, 2010-2019



Note: Enplanements attributed to American Airlines include enplanements by US Airways prior to the two airlines' full integration in 2015.
Source: Yuma County Airport Authority.

Comparison of NYL and U.S. Enplanement Trends





Sources: Yuma County Airport Authority and the U.S. Department of Transportation T100.

Scheduled PAX Service by Air Carrier & Destination

Measure	Carrier	Airport destinations	2016	2017	2018	2019
Flights (per day)	AA - SkyWest	DFW				301 (0.83)
	AA - SkyWest	PHX	1,960 (5.37)	1,379 (3.78)	1,376 (3.77)	1,262 (3.46)
	AA - Mesa	DFW				29 (0.08)
	AA - Mesa	PHX	1 (0.003)	26 (0.07)		326 (0.89)
Seats (per day)	AA - SkyWest	DFW				19,630 (54)
	AA - SkyWest	PHX	100,080 (274)	94,970 (260)	96,300 (264)	88,340 (242)
	AA - Mesa	DFW				2,204
	AA - Mesa	PHX	76 (0.2)	1,976 (5)		24,776 (68)
Seats per flight	AA - SkyWest	DFW				65
	AA - SkyWest	PHX	51	69	70	70
	AA - Mesa	DFW				76
	AA - Mesa	PHX	76	76		76

Source: OAG Schedules Analyzer.

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COVID-19 Impact on Aviation Activity

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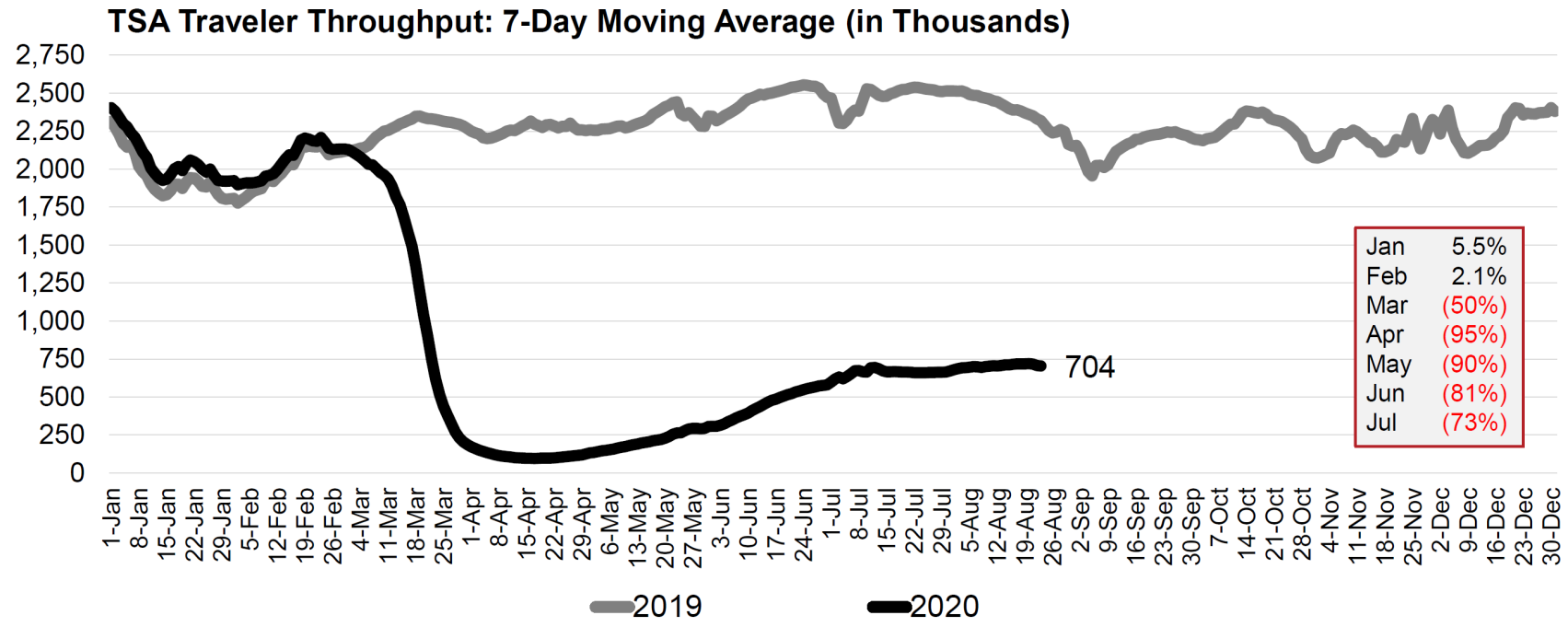
TSA Travel Throughput - Systemwide

TSA Checkpoint Traveler Throughput* Down 70 Percent Year Over Year

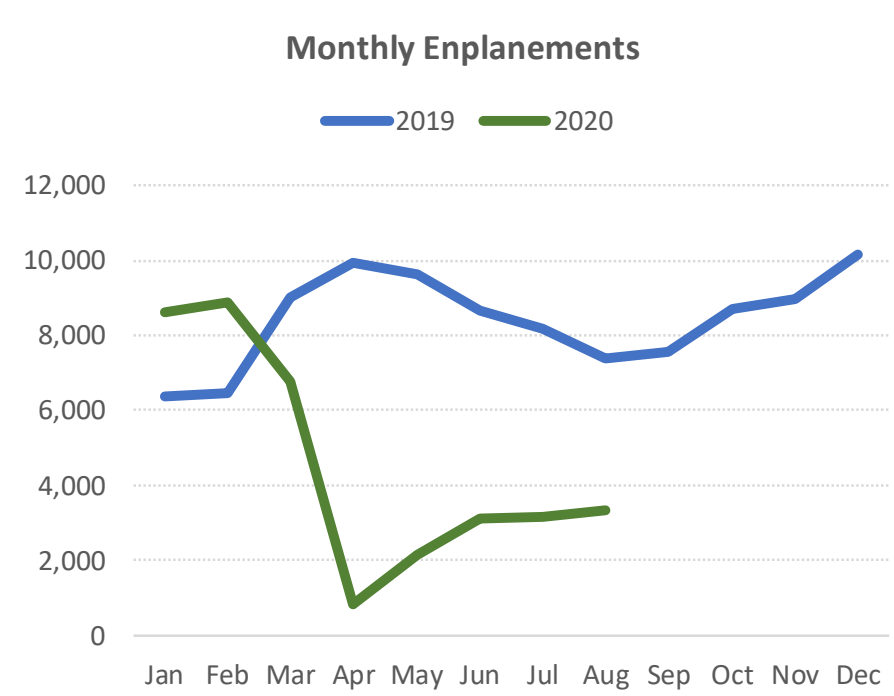
Daily Average Bottomed Out at 95K in April 11-17

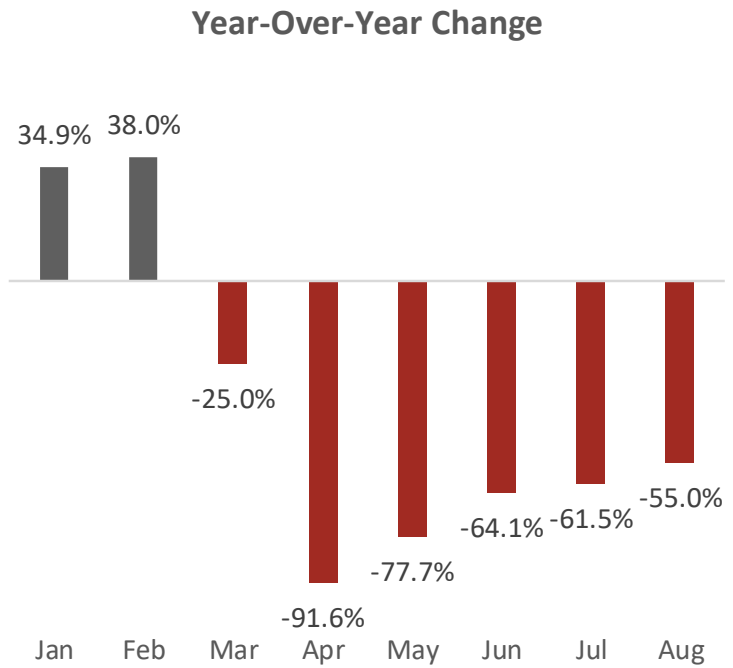


Source: Transportation Security Administration

* U.S. and foreign carrier customers traversing TSA checkpoints; 2019 is year-ago same weekday

NYL Passenger Enplanement Trends in 2020





Source: Yuma County Airport Authority.

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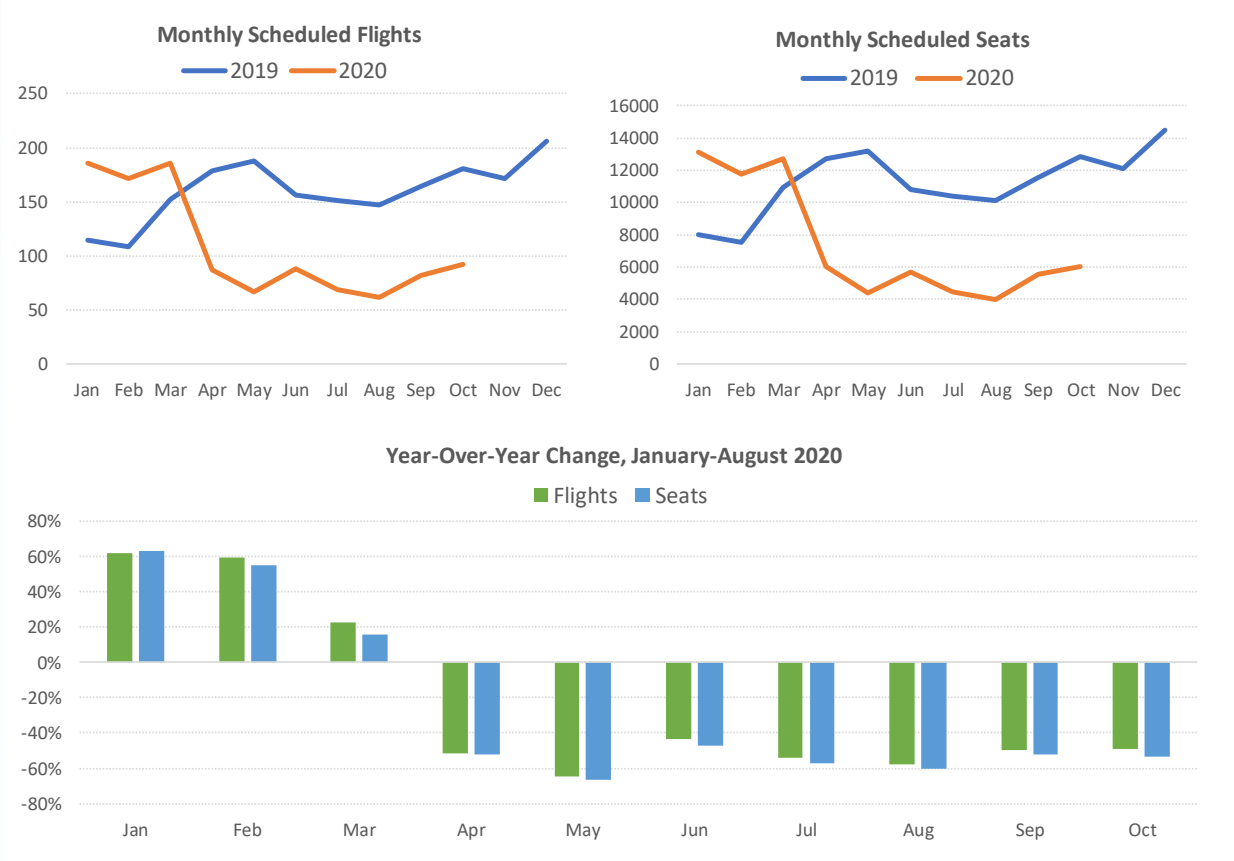
NYL Schedule PAX Service 2019-2020



Source: OAG Schedules Analyzer.

Commercial Passenger Traffic Forecast Development

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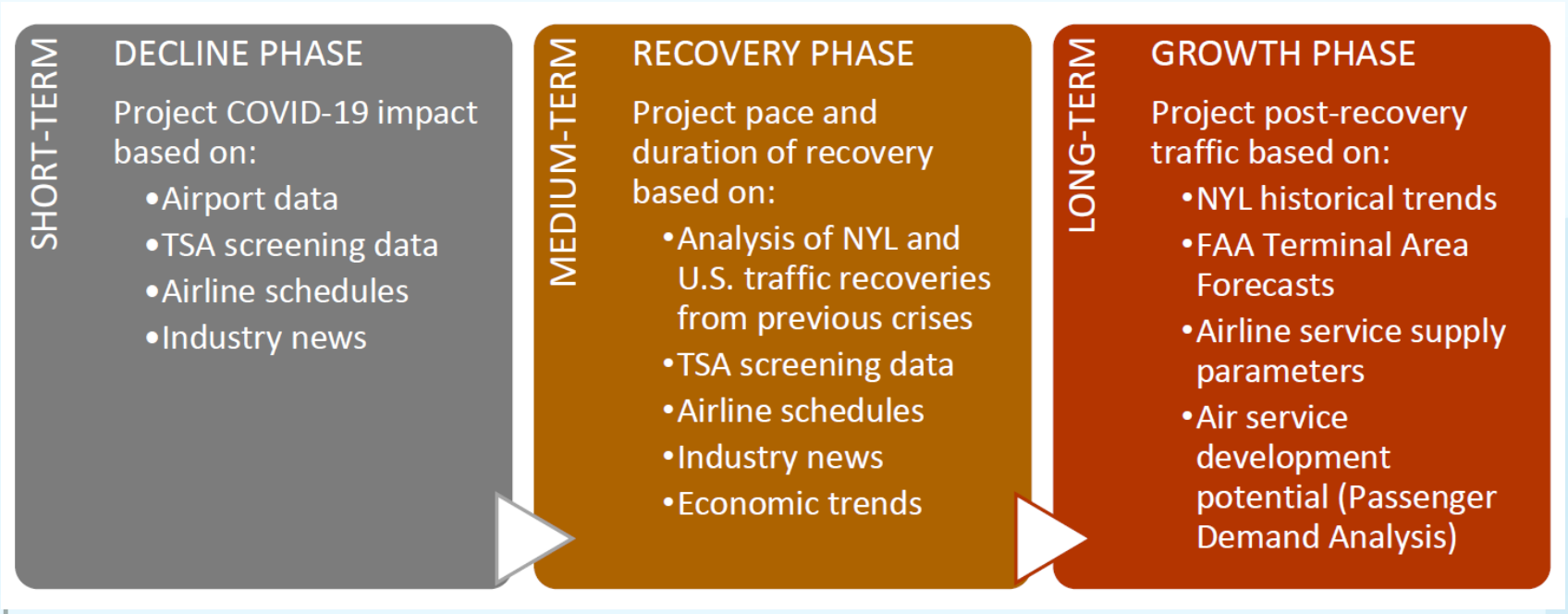
Hybrid Forecast Development Framework



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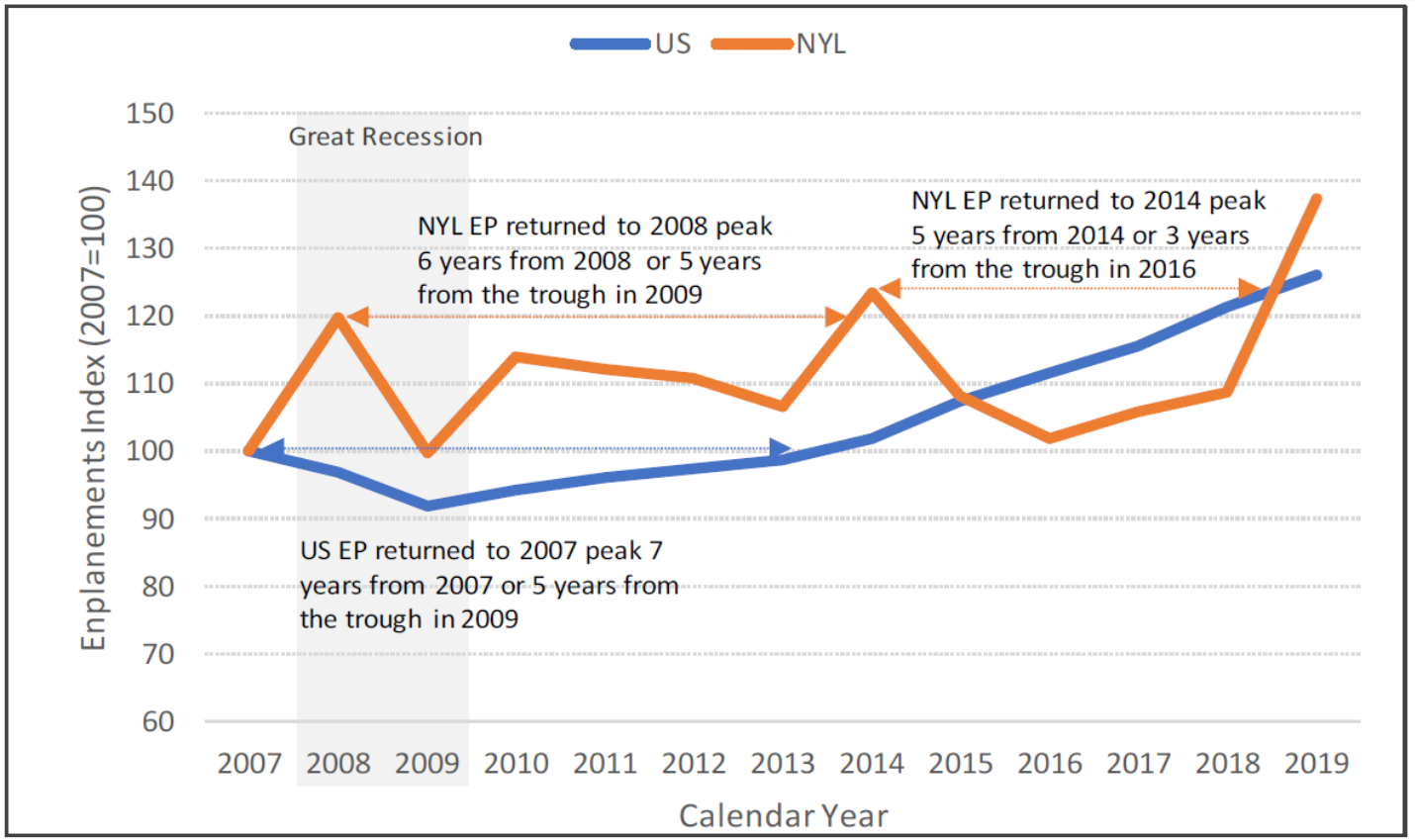
The Shape of Recovery



Sources: Yuma County Airport Authority and U.S. Bureau of Transportation Statistics.

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Commercial Passenger Traffic Forecast Scenarios

- **Scenario 1A** – NYL passenger traffic returns to pre-COVID-19 level in April 2023. Thereafter, traffic holds steady with no new service added through 2040.
- **Scenario 2A** – NYL passenger traffic returns to pre-COVID-19 level in April 2025. Thereafter, traffic holds steady with no new service added through 2040.
- **Scenario 1B** – NYL passenger traffic returns to pre-COVID-19 level in April 2023. Thereafter, traffic holds steady until the first new service begins about five years later in FY2028. The second service begins in FY2033, and the third new service begins in FY2038.
- **Scenario 2B** – NYL passenger traffic returns to pre-COVID-19 level in April 2025. Thereafter, traffic holds steady until the first new service begins about five years later in FY2030. The second service begins in FY2035, and the third new service begins in FY2040.

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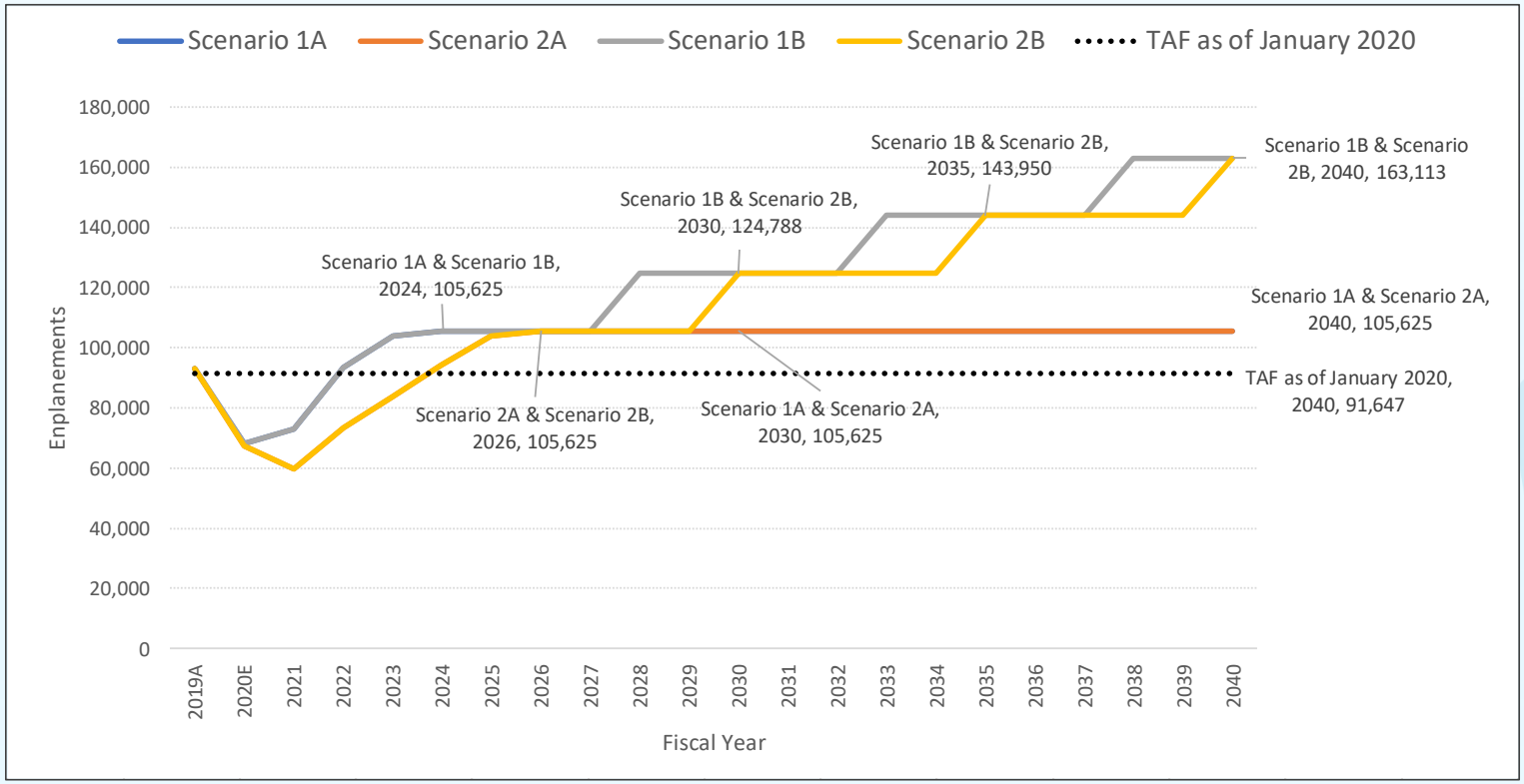
PAX Traffic Scenarios, 2019-2040



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Forecast – Commercial PAX Enplanements

Commercial Passenger Enplanements

	Actual	Estimate	Forecast			Compound Annual Growth Rate				
	2019	2020	2025	2030	2040	2019-2020	2020-2025	2025-2030	2030-2040	2019-2040
MPU Scenario 1A	92,908	68,025	105,625	105,625	105,625	-26.8%	9.2%	0.0%	0.0%	0.6%
MPU Scenario 2A	92,908	67,340	104,040	105,625	105,625	-27.5%	9.1%	0.3%	0.0%	0.6%
MPU Scenario 1B	92,908	68,025	105,625	124,788	163,113	-26.8%	9.2%	3.4%	2.7%	2.7%
MPU Scenario 2B	92,908	67,340	104,040	124,788	163,113	-27.5%	9.1%	3.7%	2.7%	2.7%
FAA TAF as of January 2020	*91,647*	*91,647*	*91,647*	*91,647*	*91,647*	0.0%	0.0%	0.0%	0.0%	0.0%
MPU Scenario 1A Ratio to TAF	*1.01*	*0.74*	*1.15*	*1.15*	*1.15*					
MPU Scenario 2A Ratio to TAF	*1.01*	*0.73*	*1.14*	*1.15*	*1.15*					
MPU Scenario 1B Ratio to TAF	*1.01*	*0.74*	*1.15*	*1.36*	*1.78*					
MPU Scenario 2B Ratio to TAF	*1.01*	*0.73*	*1.14*	*1.36*	*1.78*					

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Air Cargo Activity

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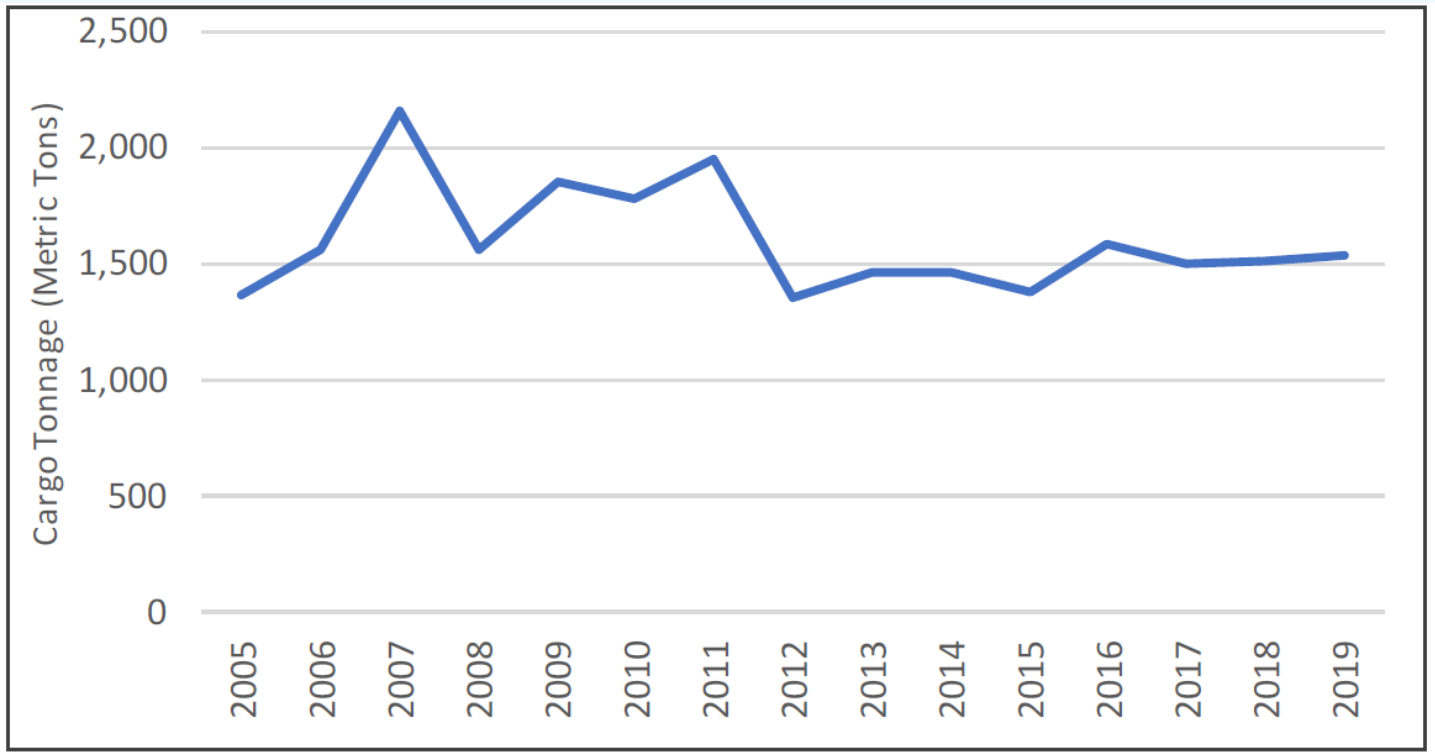
Historical Trends in Air Cargo - NYL



Source: U.S. Department of Transportation T100.

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Forecast – Air Cargo Activity

	Actual	Estimate	Forecast			Compound Annual Growth Rate				
	2019	2020	2025	2030	2040	2019-2020	2020-2025	2025-2030	2030-2040	2019-2040
Air Cargo (Metric Tons)	1,578	1,354	1,610	1,681	1,846	-14.2%	3.5%	0.9%	0.9%	0.8%
Aircraft Departures	1,089	961	953	953	953	-11.7%	-0.2%	0.0%	0.0%	-0.6%
Aircaft Operations (Arrivals and Departures)	2,178	1,923	1,905	1,906	1,906	-11.7%	-0.2%	0.0%	0.0%	-0.6%
Aircraft Landed Weight (1,000 lbs.)	53,986	46,602	46,515	46,518	46,518	-13.7%	0.0%	0.0%	0.0%	-0.7%

Sources: Yuma County Airport Authority, U.S. Department of Transportation T100, and FAF4.

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Non-Commercial Aviation Activity

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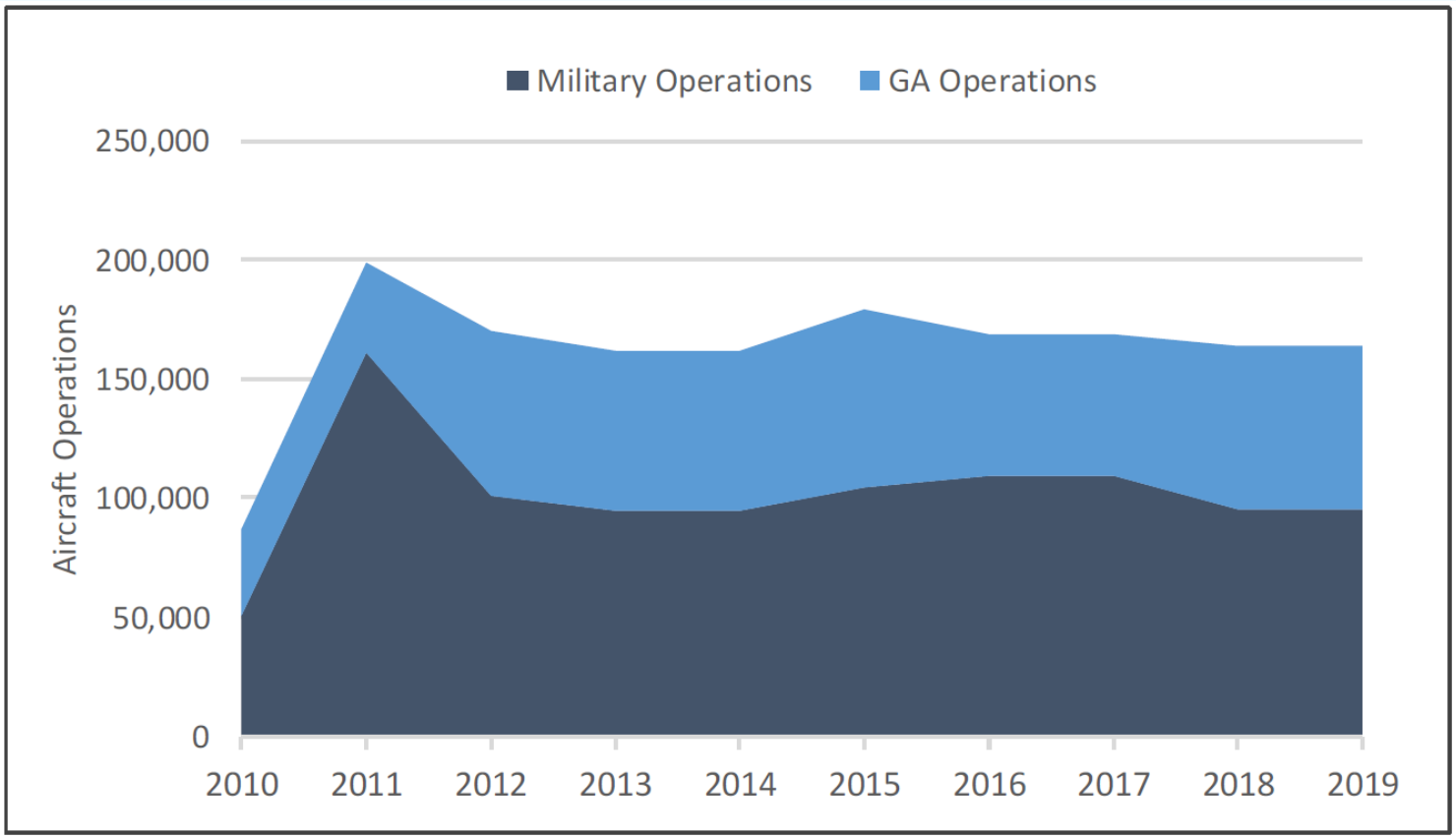
Trends in Noncommercial Aviation Activity



Source: FAA TAF.

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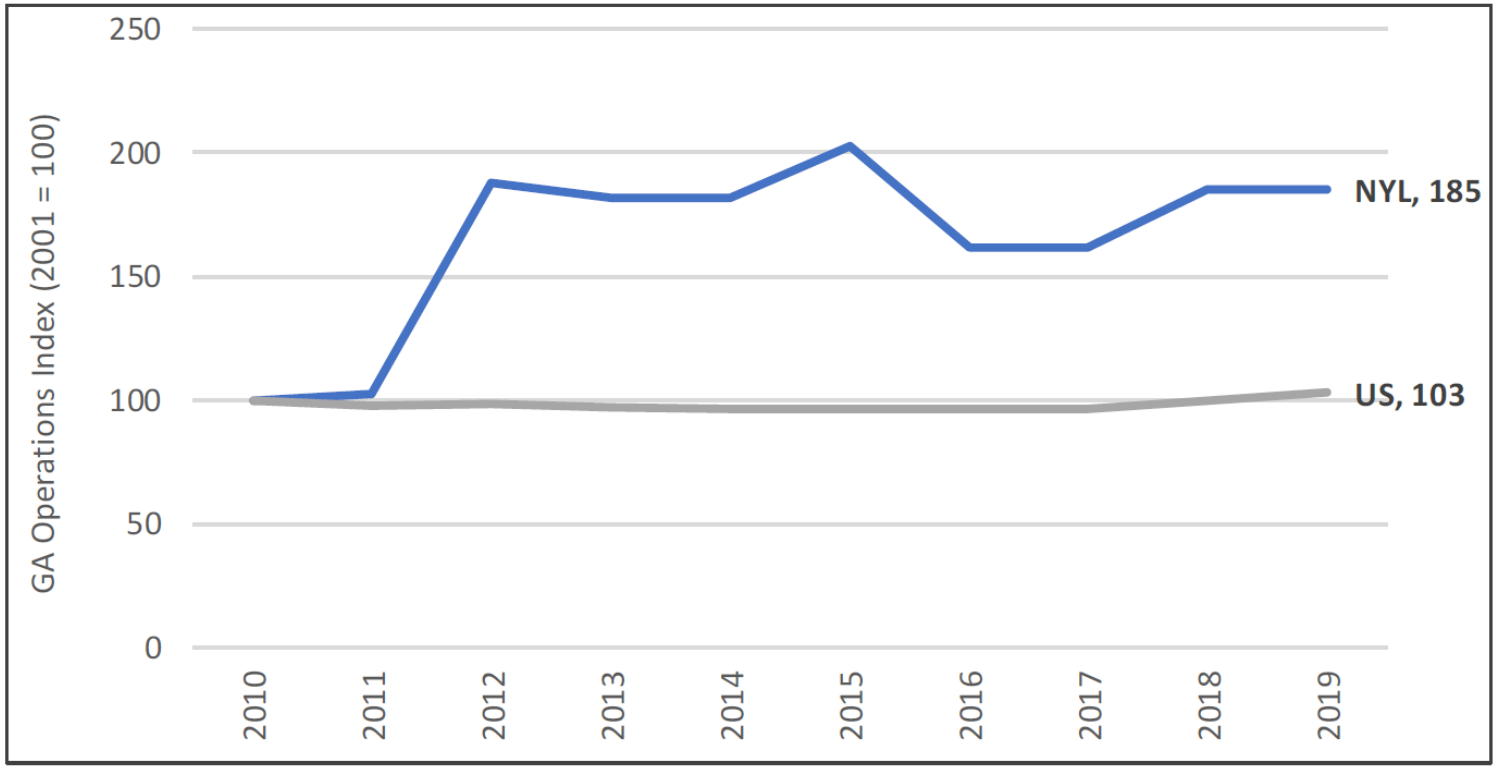
Trends in GA Operations at NYL and the U.S.



Source: FAA OPSNET/ATADS.

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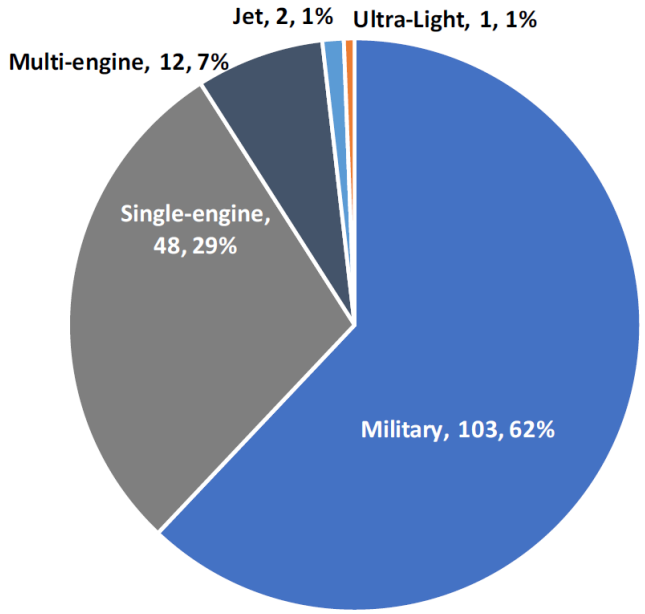
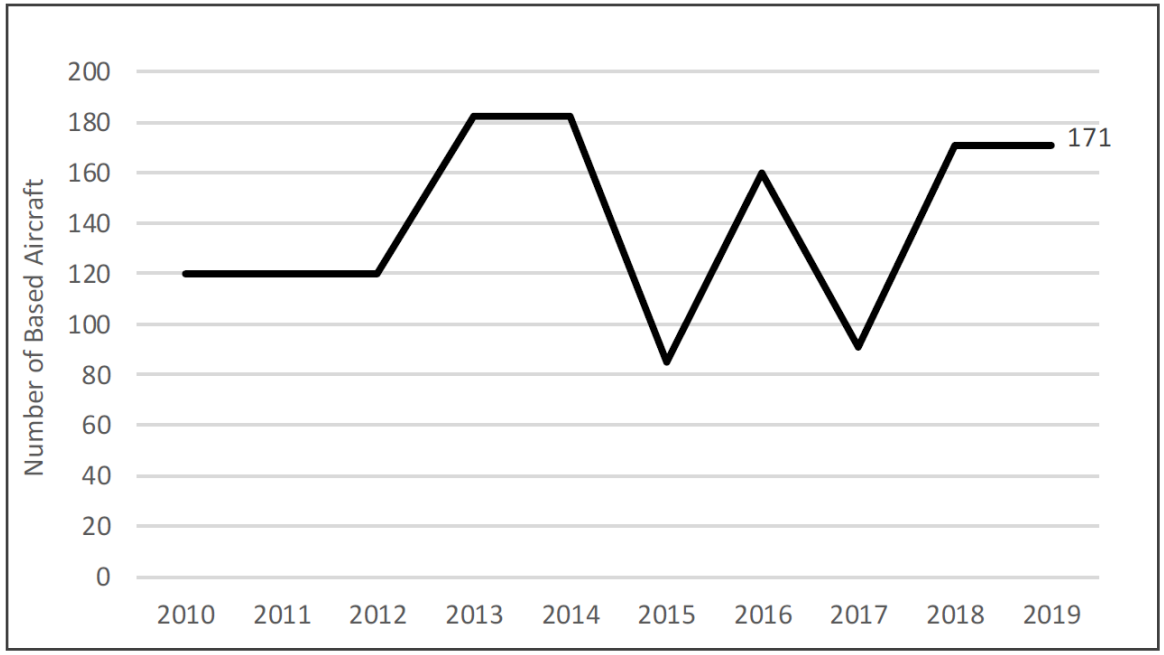
Based Aircraft at NYL



Source: FAA Airport Master Record as of July 2020.



Source: FAA TAF.

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Composition of Based Aircraft

Aircraft Type	FY2020		FY2040	
	#	Share	#	Share
Military	103	62.0%	103	60.2%
Single-engine piston	48	28.9%	41	23.7%
Multi-engine piston	12	7.2%	11	6.7%
Turbo prop and turbo jet	2	1.2%	15	8.8%
Experimental, ultra-light, and other	1	0.6%	1	0.6%
Total	**166**	**100.0%**	**171**	**100.0%**

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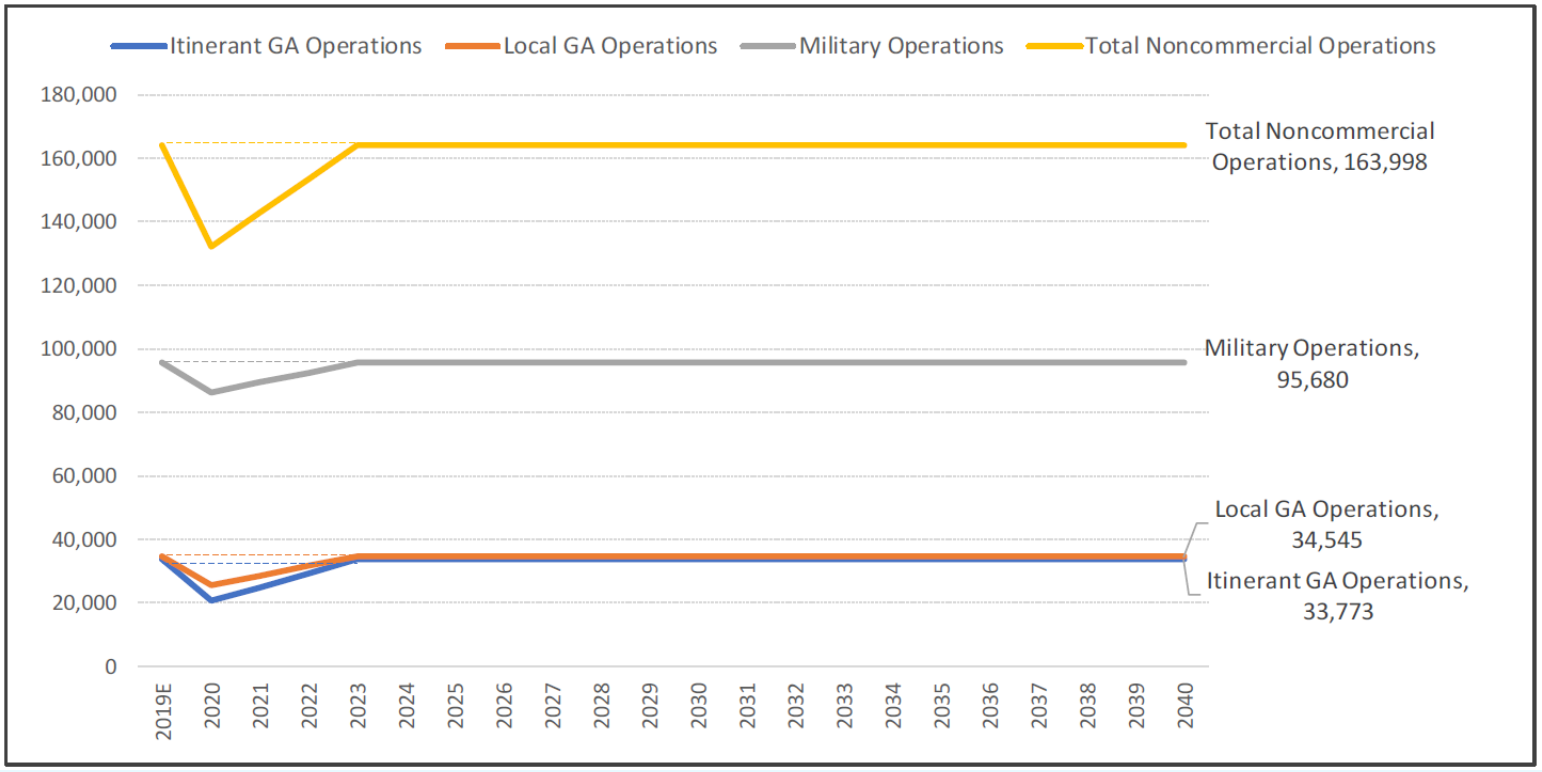
Forecast – Noncommercial Activity



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Forecast Aircraft Operations

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Forecast Total Aircraft Operations

Total Aircraft Operations

	Actual	Estimate	Forecast			Compound Annual Growth Rate				
	2019	2020	2025	2030	2040	2019-2020	2020-2025	2025-2030	2030-2040	2019-2040
MPU Scenario 1A	179,838	143,471	179,905	179,780	179,750	-20.2%	4.6%	0.0%	0.0%	0.0%
MPU Scenario 2A	179,838	143,439	179,966	179,791	179,754	-20.2%	4.6%	0.0%	0.0%	0.0%
MPU Scenario 1B	179,838	143,471	179,905	180,510	181,940	-20.2%	4.6%	0.1%	0.1%	0.1%
MPU Scenario 2B	179,838	143,439	179,966	180,521	181,944	-20.2%	4.6%	0.1%	0.1%	0.1%
FAA TAF as of January 2020	*179,838*	*179,838*	*179,838*	*179,838*	*179,838*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
MPU Scenario 1A Ratio to TAF	*1.00*	*0.80*	*1.00*	*1.00*	*1.00*					
MPU Scenario 2A Ratio to TAF	*1.00*	*0.80*	*1.00*	*1.00*	*1.00*					
MPU Scenario 1B Ratio to TAF	*1.00*	*0.80*	*1.00*	*1.00*	*1.01*					
MPU Scenario 2B Ratio to TAF	*1.00*	*0.80*	*1.00*	*1.00*	*1.01*					

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Waste Management & Recycling Plan

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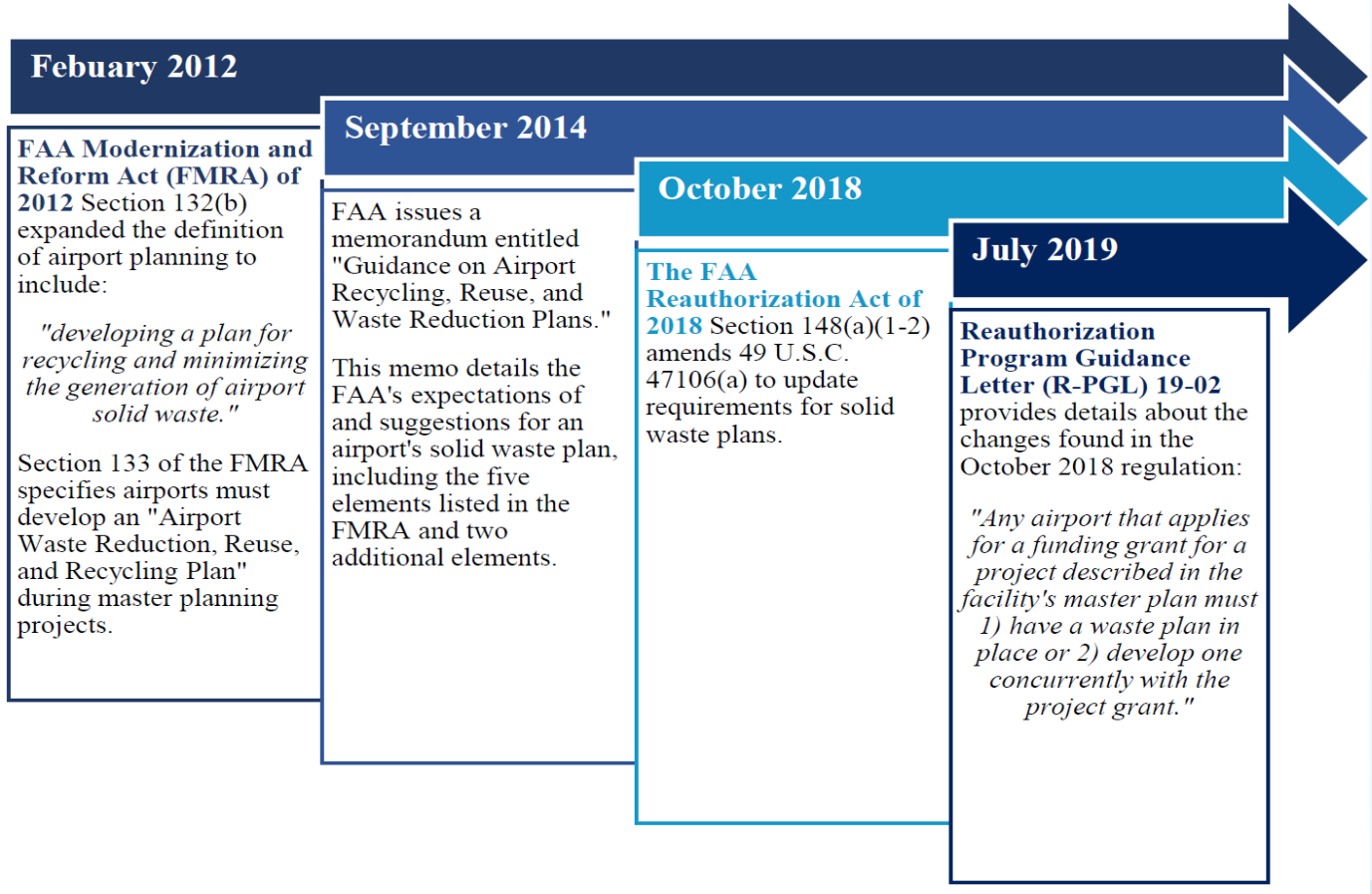
FAA Requirement Timeline & Detail



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Recommendations

- **#1 - Integrate Waste Diversion in Airport Operations**
  - Includes waste reduction, reuse, donation, sustainable procurement, recycling, and composting.
- **#2 - Improve Purchasing Practices, Reduce and Reuse**
  - Prioritize durable (versus disposable) items and supplies that are reusable, recyclable, compostable, and/or made from recycled content.
  - Identify supplies and materials which can be avoided, reused on site, or donated to a third party.
- **#3 - Enhance Existing Recycling Program**
  - Maintain the existing recycling program and supplement current practices with additional receptacles, signage, an education campaign, the incorporation of more materials, and partnership with the waste hauler.
- **#4 - Tracking & Reporting**
  - Regularly estimate and track the volume of waste sent to the landfill and diverted through reduction, reuse, donation, recycling, or other strategies as well as the costs associated with these services. It is also recommended that YCAA discuss these trends with the waste hauler and share this information with program stakeholders (Airport staff and tenants).

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Additional Recommendations

Objectives and Targets ▪ Set specific, measurable, achievable, realistic, and time-bound (SMART) goals for YCAA and its waste program.
Tenant Requirements ▪ Encourage waste diversion and recycling among tenants through future leases and contracts. NYL Administrative Staff have noted an enthusiasm among their tenants for recycling and waste management practices and believe that official contract language requiring recycling would not be necessary.
Other Recyclables and Compost ▪ Work with the waste contractor to expand the recycling program and introduce new materials (where possible). ▪ Work with waste hauler to explore potential benefits and challenges of a two-stream recycling program (cardboard/paper (2D materials) and bottles/cans (3D materials). ▪ Explore collecting green waste (food waste or yard waste) for off-site composting in order to divert these materials from the landfill.
Additional Facilities and New Development ▪ Consider waste diversion and management in the design and construction process of future Airport projects.
Continuous Improvement ▪ Maintain and improve the recycling and waste program per the Plan Do Check Act cycle.
Material Markets ▪ Collaborate with waste hauler to identify and recycle material(s) with strongest market(s) based on available infrastructure. ▪ Minimize use of low value materials.

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Next Steps

- **Forecast revisions**
- **Submission of forecasts to FAA for acceptance**
- **Facility needs documentation**
- **Identification of preliminary airport development alternatives**
- **Public Open House #1** *(September 23, 2020)*
- **Next Meetings Late October/November 2020**
  - ✈ Planning Advisory Committee (PAC) Meeting #2
  - ✈ Public Open House #2

Mead &Hunt

Project Contact Information

- **Yuma County Airport Authority**

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Yuma International Airport Master Plan

Planning Advisory Committee Meeting#2

Airport Conference Room & Zoom Web Conference (9:00 a.m. to 10:00 a.m.)

Tuesday, March 16, 2021

Attendance

Study Team:
Mead & Hunt: Mitchell Hooper, Chris Hacker (online), Cam Thomas
Makers Architecture & Urban Design: Andy Fenstermacher
Gordley Group: C.T. Revere, Kara Lehmann (online), Phil Burdick (online)

Planning Advisory Committee Members:
YCAA: Gladys Brown, Gen Grosse, Gerald Hinkle, Jr.
YCAA Board Director: Jenny Torres
Million Air (FBO): Ryan Hart
Enterprise Rental: Juana Garcia
University of Chicago: Loren Sutherland

Meeting Overview

Chris Hacker, Mead & Hunt, presented the update on the master plan, providing a review of the project to date, including the approach, schedule, existing facilities, and travel forecasts. The presentation included discussion of critical aircraft at the airport, including the Marine Corps Air Station Yuma, the configuration of aviation facilities, and the study's findings related to the passenger terminal, parking facilities, aeronautical and non-aeronautical development needs, military and military support facility findings, and next steps in the process. The presentation was repeated for each of four sessions, with Mitch Hooper of Mead & Hunt making portions of the presentation in the two afternoon sessions.

Meeting Notes – Airport Tenants Session

Gerald "Junior" Hinkle, the YCAA chief financial officer, asked for an explanation of how runway length affects the range of aircraft flying out of the airport.

The study team explained that the load capacity of an aircraft (passengers, cargo, and fuel), and air temperature determine how much distance a plane must travel to obtain the lift needed to become airborne. If the runway is too short given the weight and lift in the air, it limits how much fuel (or passengers and cargo) can be carried. The two commercial aviation runways limit the range of flights under those circumstances, but the parallel military runways are of sufficient length to allow takeoff at 100 percent weight capacity.

Mr. Hinkle pointed out that the presentation made it appear that flight options are limited at the airport, while the longer military runways make all flights possible to the maximum range of commercial aircraft that operate out of NYL.

Chris Hacker noted that those longer runways (including the longest at any Arizona airport at 13,300 feet long) were not included in the study because they are not a limiting factor. A notation was added to the presentation clarifying that those runways are sufficient for all flights and available for use by commercial aircraft.

Mr. Hinkle noted that the forecast for the airport showed a static number of "Based Aircraft" at 171 between the base year of 2019 and the year 2040 and asked why additional facility needs have been identified given that the number of aircraft is not expected to increase. Ryan Hart of Million Air asked if the team anticipated having more jet-fueled aircraft in the future.

The study team explained that the types of aircraft included in the "Based Aircraft" will change over time, leading to more and larger jet aircraft replacing smaller propellor aircraft, requiring changes throughout the airport operations.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting #2

Airport Conference Room & Zoom Web Conference (10:30 a.m. to 11:30 a.m.)

Tuesday, March 16, 2021

Attendance

Study Team:
Mead & Hunt: Mitchell Hooper, Chris Hacker (online), Cam Thomas
Gordley Group: C.T. Revere, Kara Lehmann (online), Phil Burdick (online)

Planning Advisory Committee Members:
YCAA: Gladys Brown, Gen Grosse
Greater Yuma Port Authority: Buna George (online)
Yuma Unified High School District: Gina Thompson (online)
4FrontED: Nazzer Mendez (online)
Yuma Metropolitan Planning Organization: (online, left at start of presentation)
Paul Ward (online)

Meeting Notes – Community Organizations

No in-person attendance. No questions, comments, or discussion of information provided.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting#2

Airport Conference Room & Zoom Web Conference (1:00 p.m. to 2:00 p.m.)

Tuesday, March 16, 2021

Attendance

Study Team:
Mead & Hunt: Mitchell Hooper, Chris Hacker (online), Cam Thomas
Gordley Group: C.T. Revere, Kara Lehmann (online), Phil Burdick (online)

Planning Advisory Committee Members:
YCAA: Gladys Brown, Gen Grosse, Juan Travina
Federal Aviation Administration: Jared Raymond (online)
City of Yuma Council Member: Gary Knight
City of Yuma Development Services Director: Alyssa Linville
Visit Yuma- Executive Director: Linda Morgan
Marine Corps Air Station Yuma: Greg McShane, Antonio Martinez, Mary Ellen Finch
Yuma Proving Ground: Commanding Officer COL Ben P. McFall III

Meeting Notes – Yuma Tenants

Jared Raymond of the Federal Aviation Administration (FAA) informed the team that when the COVID-19 pandemic hit, FAA forecast a four- to five-year recovery period for passenger air travel. He noted that in the year since air travel declined significantly because of public health concerns, general aviation (non-commercial) flights have returned to 90 percent of the pre-COVID levels while commercial passengers remain at 40 percent to 50 percent of the previous level.

Greg McShane asked what is included in airfield "operations." The study team noted that it includes aircraft takeoffs and landings but excludes "touch-and-go" training operations.

McShane asked if the airport has the opportunity to mitigate incompatible land uses that have become part of the airport's Runway Protection Zones with changes in aircraft using the facility.

Gladys Brown, the Yuma Airport Director, noted that the Yuma County Airport Authority is required to have available cash to acquire land within the expanded Runway Protection Zone (RPZ), but that the designation of "incompatible land uses" does not require mitigation in all circumstances. She added that some land adjacent to the airport is owned by Yuma County, which leases the property to the YCAA. She noted that the YCAA works with adjacent property owners on such matters as tree trimming or removal and bird habitat that present risks to aircraft. The YCAA also is authorized to replace trees that are removed from the RPZ. Raymond added that the FAA survey of the airport surroundings is "very precise" and will be made part of the Airport Layout Plan. Raymond informed the group that the FAA may allow for a ONE-TIME mitigation and to be aware that it will not allow for funding to be used on the same site mitigation year after year.

Greg McShane asked for a clear definition of what constitutes a taxiway versus an apron on the airport tarmac, noting that the U.S. Navy has asked for maps that clarify the location and use of each element. McShane expressed concern about the weight-bearing limitations on aprons. Gladys Brown assured him that airport staff manage airfield activities to ensure that surfaces are not compromised.

Raymond of FAA asked if proposed expansion of fuel storage facilities includes fuel storage for military aircraft. The study team noted that it does not.

McShane asked if the plan for expanding parking capacity at the airport entails expansion of the existing parking lot or if it envisions new parking capacity elsewhere. Gladys Brown said both options are being considered, but that no parking structure is planned for the existing airport property.

Alyssa Linville asked about the study factors in overlay zoning and existing zoning restrictions imposed by the City of Yuma. The study team responded that existing zoning is factored into recommendations in the plan, and Chris Hacker noted that the land-use review process in the study is designed to avoid incompatible land use.

McShane asked if a Department of Defense (DoD) Overlay Zone for the airport could be included in the study. Mitch Hooper said the study will include information about the DoD zoning.

Mary Ellen Finch asked if the forecasting for the plan is inclusive of all aviation activity at the airport. Gladys Brown said that the forecast strives to include all elements but having the Marine Corps Air Station Yuma included means future plans for that element are not always made available because of sensitive DoD information and plans and uncertainty regarding Congressional appropriations for the military operation.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting#2

Airport Conference Room & Zoom Web Conference (2:30 p.m. to 3:30 p.m.)

Tuesday, March 16, 2021

Attendance

Study Team:
Mead & Hunt: Mitchell Hooper, Chris Hacker (online), Cam Thomas
Gordley Group: C.T. Revere, Kara Lehmann (online) Phil Burdick (online)

Planning Advisory Committee Members:
YCAA: Gladys Brown, Gen Grosse, Mark Workman
YCAA Board Director: Russ Jones
Customs and Border Protection: Jim Scheutzler

Meeting Notes – Open Session

Russ Jones noted that Million Air, the Fixed Base Operator at the airport, has overflow parking issues, while the current and short-term assessment of parking capacity in the plan shows no need for additional spaces in those timeframes. Chris Hacker said that assessment will be reconsidered in the plan and will show an immediate need for vehicle parking.

Jones asked if the plan incorporated the impact of "ride apps" such as Lyft and Uber in their forecast for parking and revenue generated through parking. The team said the ride apps are considered and will be revisited in forecasts as necessary.

Jones asked if the terminal layout plan factored the interconnectivity of all elements of the forecast. Chris Hacker said the plan elements are in a spreadsheet model that will be used when considering alternatives for plan recommendations. He noted that a design and planning charette is scheduled to discuss alternatives.

Jones asked if the study considers reconfiguring the existing aircraft hangars to accommodate larger aircraft or if it is more desirable and affordable to build new hangars. The team said they will include recommendations for how to best store aircraft in the future.

Jim Scheutzler asked if the forecasts factor in more helicopter traffic. Gladys Brown said it does, but additional helicopter traffic will not impact other aviation uses.

Scheutzler noted that other airports, including one in Calexico, have facilities that keep rotor-powered aircraft separate from fixed-wing aircraft by providing remotely located helipads and taxiways. Brown said the airport would need to see what future demand is for helicopter traffic to consider making similar accommodations and that it will be considered.

PAC Meeting#2 Comments & Response

Comment #1: Vehicle parking is shown to be deficient for the passenger terminal but adequate for rent cars. I disagree with that assessment. I am not certain what role the Operations Department had in this analysis, but the lack of rent car parking stalls is a huge problem for them on a regular basis [especially during the Marine Corps Weapons & Tactics Instructor (WTI) course twice a year]. As you know, we have been allowing rent cars to park in the terminal lot during these times. It happens a lot. Please ask Mead & Hunt to address this issue and provide solutions on a short/long term basis.

Response: The analysis incorporated the rental concessionaire responses from the survey. Page 3-37 of the Demand/Capacity Chapter addresses the demand for overflow from returns in the public lot. I have attached the language:

> To determine existing demand, anecdotal data received through surveys of the rental concessionaires and observations by airport staff were conducted. The results of these surveys indicate that there is a need/ demand for additional rental return parking supply. This translates to approximately an additional 10 stalls for each concessionaire group, or a total of 30 stalls. Avis/Budget are under the same parent company and indicate an additional 10 stalls between the brands would be sufficient. The survey responses also indicate that the ready lot is sufficient to meet existing needs. There are spikes in car rental demand during the WTI training courses.

The rental demand presumes that given the additional demand they are showing that the Rental Concessionaires would like 30 greater stalls in the next contract. Until then, the airport would presumably operate in the manner they do now, with overflow parking.

Mid & Long-Term the Airport would negotiate what they would supply with a new consolidated and expanded lot, possibly relocated, but the demand estimations are provided for context.

Table 4-12: NYL Overall Anticipated Rental Parking Supply (PFG Rate)[1]

Parking Component	Current	Short-Term	Mid-Term	Long-Term
	2019	**2025**	**2030**	**2040**
Rental Ready	197	227	258	305

Source: Mead & Hunt, Inc, Yuma County Airport Authority
Note: 1. Does not include QTA staging facilities.

Comment#2: Is Mead & Hunt aware of Enterprise Rental Car's need and several requests for a vehicle Maintenance Facility? It would be great to see if they have a development solution for this.

Response: This was not brought up outright in the rental car survey responses, but it was presumed that the ultimate solution might be a Consolidated Rental Car Center (CONRAC) with Quick Turn Around (QTA) facility. If development of a CONRAC occurs, it will be examined as part of the

Development Alternatives Chapter. Not all rental car operators are supportive of this type of facility as there would be a need to increase fees to the rental car agencies and users to build this type of facility.

Comment#3: Vehicle parking is shown to be adequate for Million Air. I disagree with that assessment. Ryan is newly stationed at the FBO and may not be aware of the constant challenge regarding vehicle parking there since he has come on board during the recent slowdown. Please ask Mead & Hunt to address this issue and provide solutions.

Response: There is no quantifiable data, only anecdotal for this need. We have revised the Facility Requirements Chapter to indicate an immediate need, so that planning can begin now. We can certainly make some assumptions on what the existing deficit is, but the available area for parking expansion is limited to approximately 22 stalls. We will also be looking at GA vehicle parking as part of the Development Alternatives Chapter.

Ultimately the existing retention basin can be reconfigured for additional vehicle parking stalls.

Comment#4: The statement was made that accessing the parallel runway directly from Taxiway F1 and H1 is not a safety issue. Please ask Mead & Hunt to research/review the FAA's written finding that access directly to that runway is a safety hazard. The assessment was that building a parallel Taxiway Yankee was necessary for safety reasons (The YCAA received AIP # 32 to design phase 1 of Taxiway Y, grant was closed out in March 2011 - please see page 6 of the grant application below for project description). I believe back taxi travel was an issue as well. If this update of our masterplan does not identify this safety issue we will never see Taxiway Yankee constructed. It may never be constructed but the safety issue here cannot be ignored.

Response: Taxiway Y was conditionally approved on the 2009 ALP and a subsequent design grant was issued by the FAA. Taxiway Y will be included and discussed in all taxiway development alternatives and conform to the criteria in FAA AC 150/5300-13A, Airport Design published in 2012. Also, p.4-34 of the Facility Requirements Chapter, provides reasoning for the construction (to minimize runway crossings and mitigate runway incursions). However, the issue surrounding the construction of Taxiway Y is land ownership and calculations for runoff. Taxiway Y will be shown in the Development Alternatives Chapter, but it may never be constructed.

Comment#5: The prediction that there will be ZERO additional based aircraft over the next 20 years but analysis shows need for 20 additional aircraft storage hangars does not 'add up'. Can you make Mead & Hunt aware there is no cost be on the aircraft storage waiting list, no penalty for pulling out when your name is called and many people on the list are already tenants wanting to improve their location. A masterplan that indicates an immediate need for hangars will likely cause a drive for investment in facilities in which there is likely no financial benefit, if not an outright negative ROI. Our tenants are VERY price sensitive.

Response: The Airport has indicated that it will not build any new hangars and would look to the private sector for the construction of new facilities. The master plan will examine various types of hangar expansion alternatives.

In terms of the based aircraft forecast, the current FAA Terminal Area Forecast numbers for based aircraft at NYL were used. Though demand is flat, the numbers were slightly greater than the current based aircraft totals at the Airport today (166 vs. 172). In addition, given the lack of consistent growth patterns and correlation with economic trends, the historical trends in GA operations, military operations, and number of based aircraft at the Airport did not lend itself to a regression analysis forecasting method.

AIRPORT MASTER PLAN

Mead & Hunt

Planning Advisory Committee Meeting #2

March 16, 2021

Yuma County Airport Authority

Agenda

- **Introduction and Opening Comments**
- **Project Review**
  - Approach, Schedule, Existing Facilities, and Forecasts
- **Airport Reference Code and Critical Aircraft**
- **Airfield Configuration Facility Findings Summary**
- **Passenger Terminal Findings**
- **Vehicle Parking Findings**
- **Other Aviation Support Area Findings**
- **Aeronautical & Non-Aeronautical Development**
- **Military/Military Support Facility Findings**
- **Next Steps**

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Project Approach

- **Follow FAA Guidance**
- **Building Block Process**
  - Inventory
  - Forecasts
  - Facilities Need Determination
  - Development Plan Formulation
  - Financial Plan

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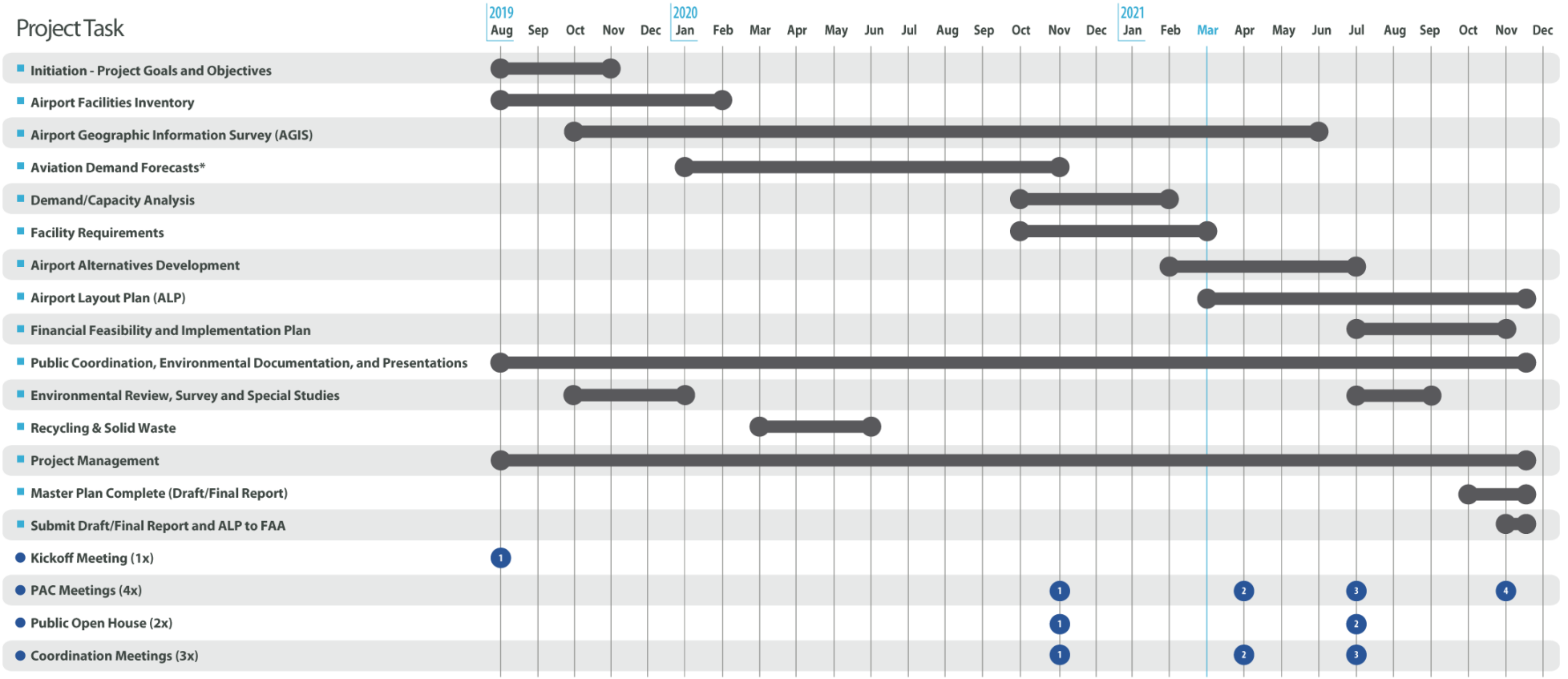
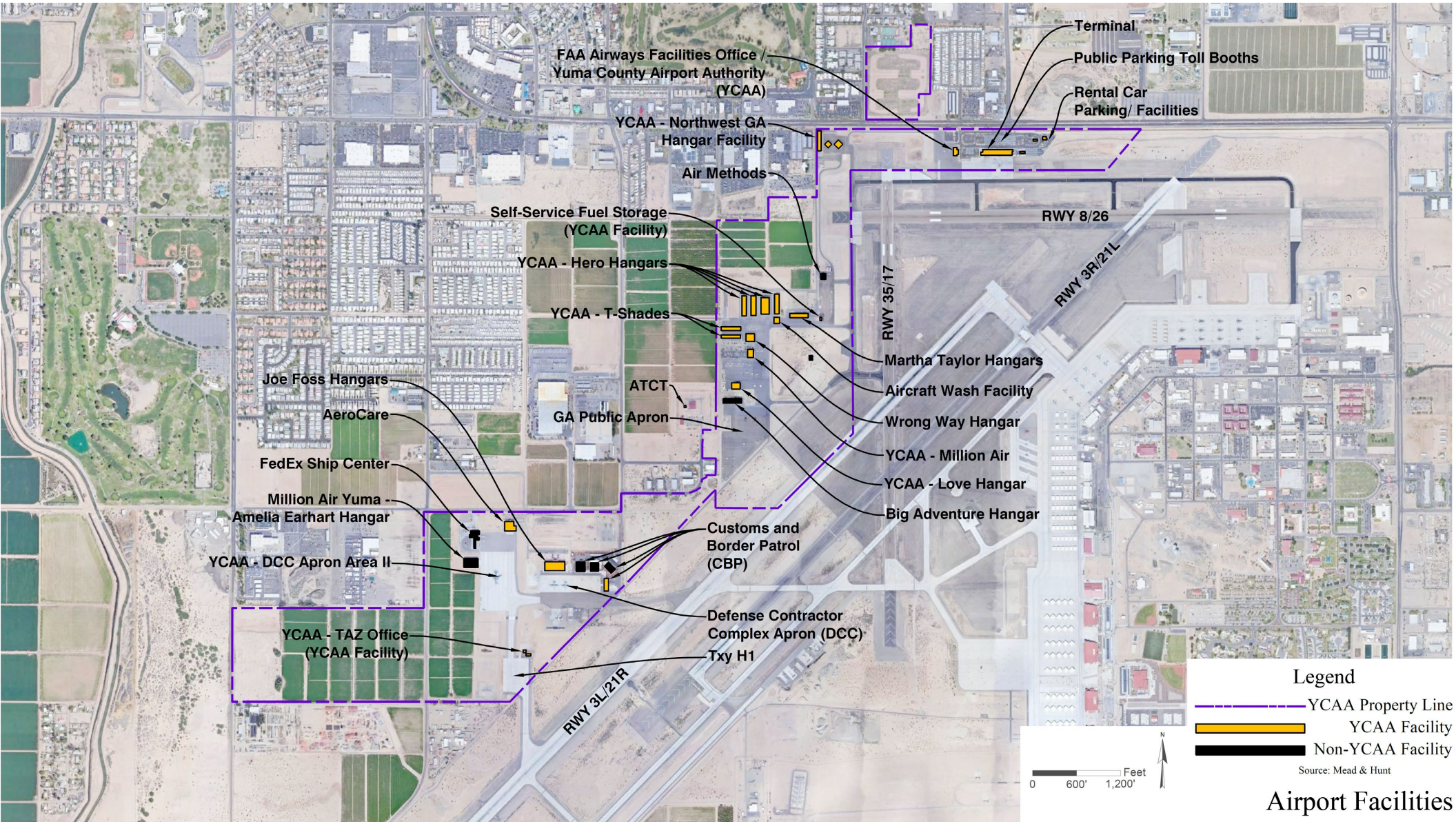
Project Schedule Airport Master Plan



NOTES: *Aviation Demand Forecast Development Impacted by COVID-19 Pandemic

Notice to Proceed - August 22, 2019; Schedule updated - February 25, 2021. Subject to change.



Airport Facilities

Airport Master Plan – FAA Approved Forecast

	Base Year 2019	Short-Term 2025	Medium-Term 2030	Long-Term 2040
Passenger Enplanements	92,908	104,040	124,788	163,113
Aircraft Operations	179,838	179,966	180,521	181,944
Based Aircraft	171	171	171	171

FAA Approved Forecast – October 23, 2020

- **Based aircraft composition changes despite the flat forecast.**
  - More jets and turboprops
  - Fewer single engine piston

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Airport Reference Code & Critical Aircraft

ARC & Critical Aircraft Summary		
Runway	Last Master Plan	Current / Future
08/26	B-II	CRJ-900, E175, A220, C-III
17/35	B-II	CRJ-900, E175, A220, C-III
3R/21L	Military Hybrid, D-V	Military Hybrid, D-V
3L/21R	Military Hybrid, E-VI	Military Hybrid, E-VI

Category C Aircraft		
CRJ-900	**E175**	**A220**
		

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Airfield Configuration

- **Airfield Operational Capacity**
  - Not anticipated to be an issue during the 20-year planning period
- **Runway Length Analysis**
- **Design and Dimensional Criteria - Airfield Analysis**
  - FAA AC 150/5300-13A
    - Runway Protection Zones
    - Runways
    - Taxiways
  - YCAA Property & Responsibilities
    - Taxiways
    - Aprons

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Runway Length Analysis: CRJ-900 (80% LF)

Table 4-11: CRJ-900 Range at 80 Percent Load Factor

CRJ-900 Average Temperature 107°F at 80 Percent Load Factor			
		Is this Destination within Range?	
Destination	**Distance** (Nautical Miles)	**Runway 08/26** (6,410' in length)	**Runway 17/35** (5,710' in length)
Dallas Fort-Worth International Airport (DFW)	888	YES	YES
Phoenix Sky Harbor International Airport (PHX)	139	YES	YES

Source: Mead & Hunt, Inc.

Notes: Maximum Range for Runway 08/26 - 1,200 nautical miles
Maximum Range for Runway 17/35 - 1,100 nautical miles

- **Destinations are in range using Runways 3L/21R and 3R/21L**

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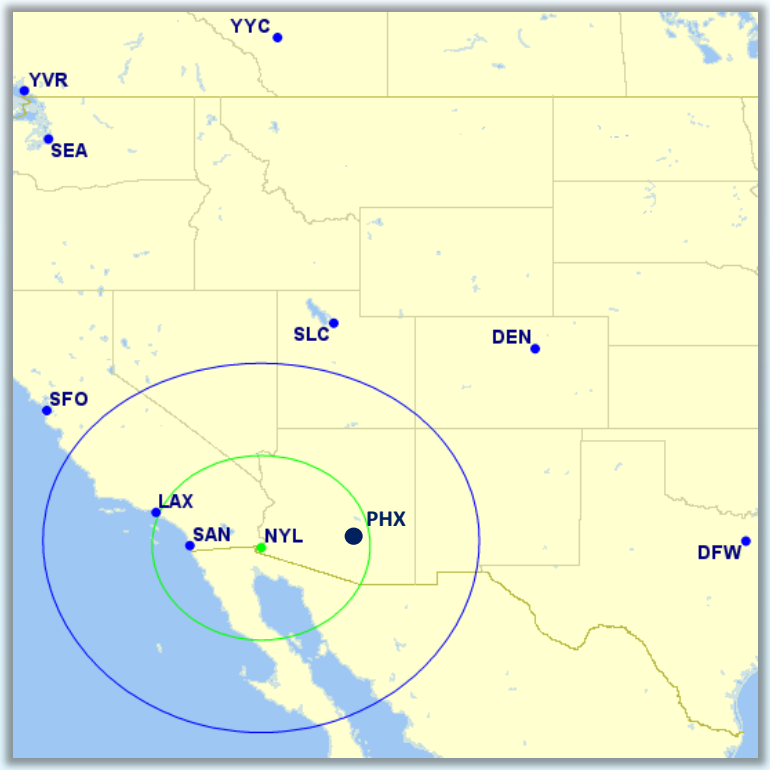
Runway Length Analysis: CRJ-900 (100% LF)



CRJ-900 Average Temperature 107°F at 100 Percent Load Factor			
		Is this Destination within Range?	
Destination	**Distance** (Nautical Miles)	**Runway 08/26** (6,410' in length)	**Runway 17/35** (5,710' in length)
Dallas Fort-Worth International Airport (DFW)	888	NO	NO
Phoenix Sky Harbor International Airport (PHX)	139	YES	YES

Source: Mead & Hunt, Inc.

Notes: Runways 3L/21R (13,300' in length) and 3R/21L (9,240' in length) are available for use and provide additional range
Maximum Range for Runway 08/26 - 400 nautical miles
Maximum Range for Runway 17/35 - 200 nautical miles

- **Destinations are in range using Runways 3L/21R and 3R/21L**

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Runway Length Analysis: E175 (80% LF)

ERJ-175 Average Temperature 107°F at 80 Percent Load Factor			
		Is this Destination within Range?	
Destination	**Distance** (Nautical Miles)	**Runway 08/26** (6,410' in length)	**Runway 17/35** (5,710' in length)
Dallas Fort-Worth International Airport (DFW)	888	YES	YES
Phoenix Sky Harbor International Airport (PHX)	139	YES	YES

Source: Mead & Hunt, Inc.

Notes: Maximum Range for Runway 08/26 - 1,300 nautical miles
Maximum Range for Runway 17/35 - 1,100 nautical miles

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Runway Length Analysis: E175 (100% LF)

E175 Average Temperature 107°F at 100 Percent Load Factor			
		Is this Destination within Range?	
Destination	**Distance** (Nautical Miles)	**Runway 08/26** (6,410' in length)	**Runway 17/35** (5,710' in length)
Dallas Fort-Worth International Airport (DFW)	888	NO	NO
Phoenix Sky Harbor International Airport (PHX)	139	YES	YES

Source: Mead & Hunt, Inc.

Notes: Runways 3L/21R (13,300' in length) and 3R/21L (9,240' in length) are available for use and provide additional range
Maximum Range for Runway 08/26 - 700 nautical miles
Maximum Range for Runway 17/35 - 500 nautical miles

- **Destinations are in range using Runways 3L/21R and 3R/21L**

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Runway Protection Zone – Design Surfaces

- **Change in critical aircraft from B-II to C-III increases RPZ size**
- **No changes to visibility minimums to below 1-mile visibility**
  - MCAS Yuma controls the airfield
  - FAA implements approaches
- **The FAA does not have a fiduciary interest in NYL's runways**
- **Existing review process for development surrounding the Airport**
  - Prevent incompatible land use
  - Airport protection
- **Resolve incompatible uses through**
  - Land Acquisition
  - Easements
  - Zoning

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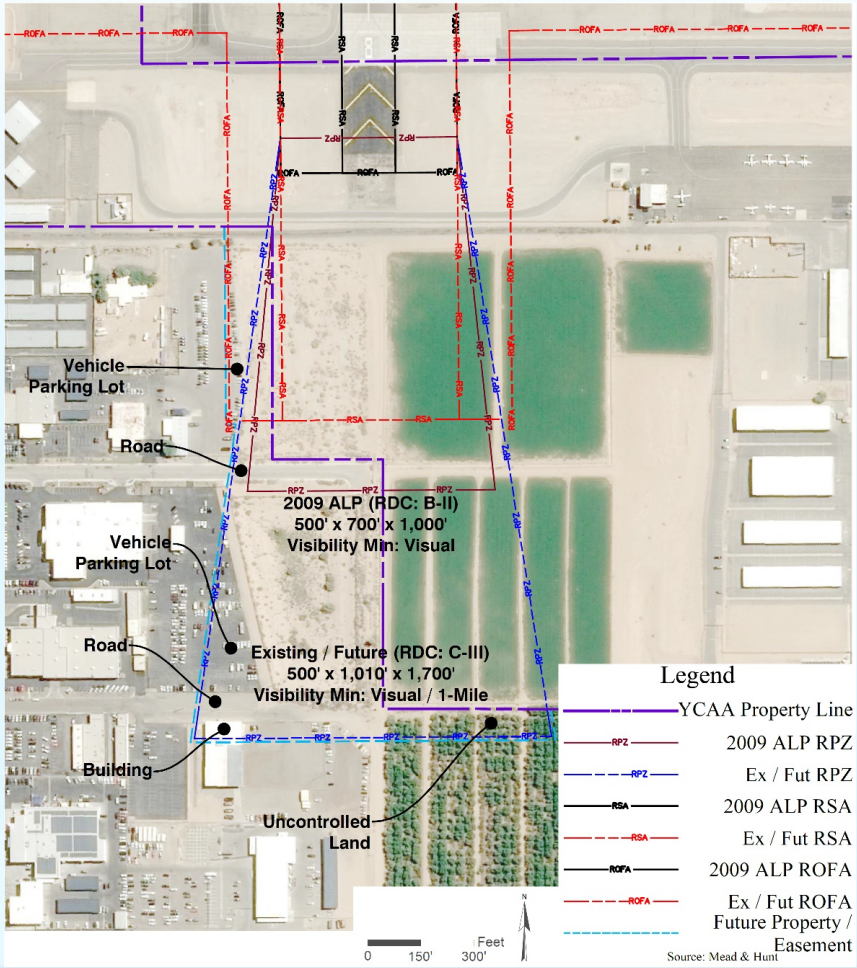
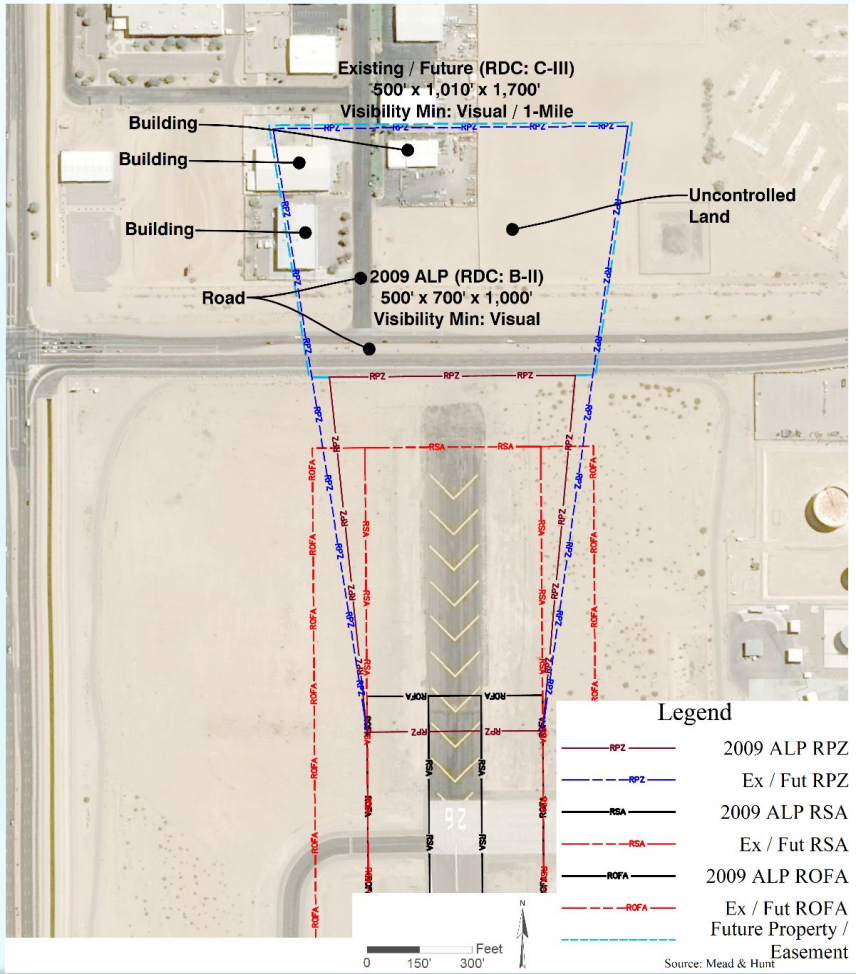
Runway 08 - Runway Protection Zone



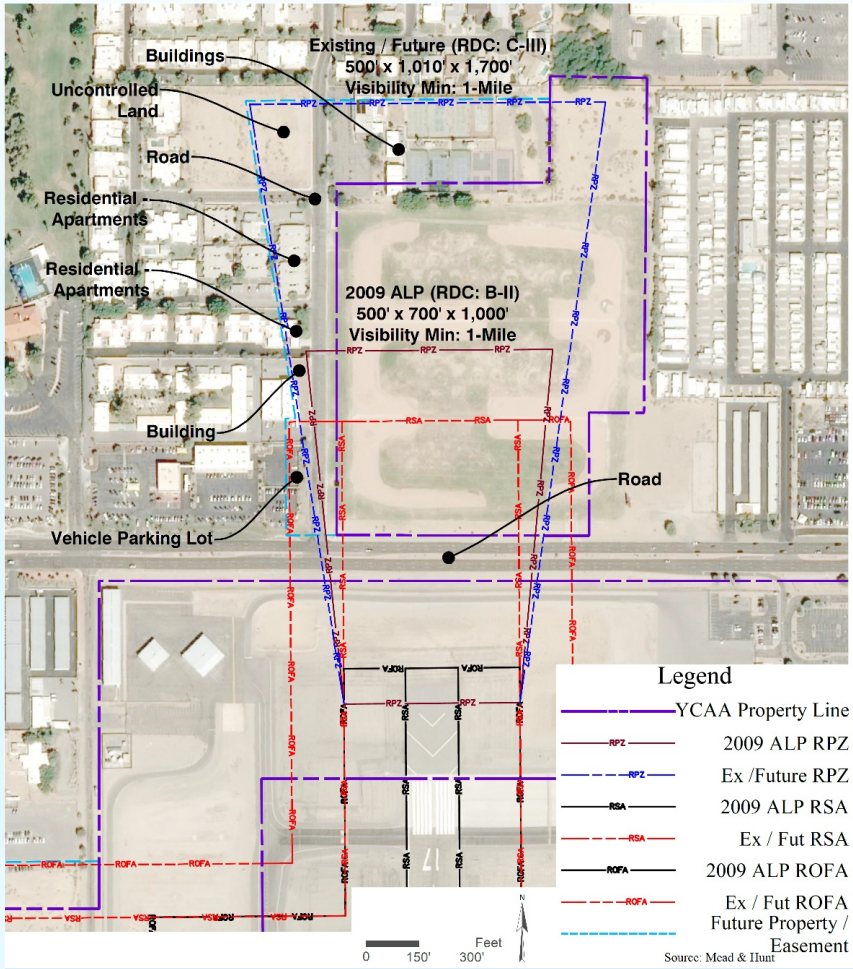
- **Identified Incompatible Land Uses**
  - Industrial, Office, Commercial Related Buildings
  - Vehicle Parking Lot
  - Road
  - Uncontrolled Land

Runway 26 - Runway Protection Zone



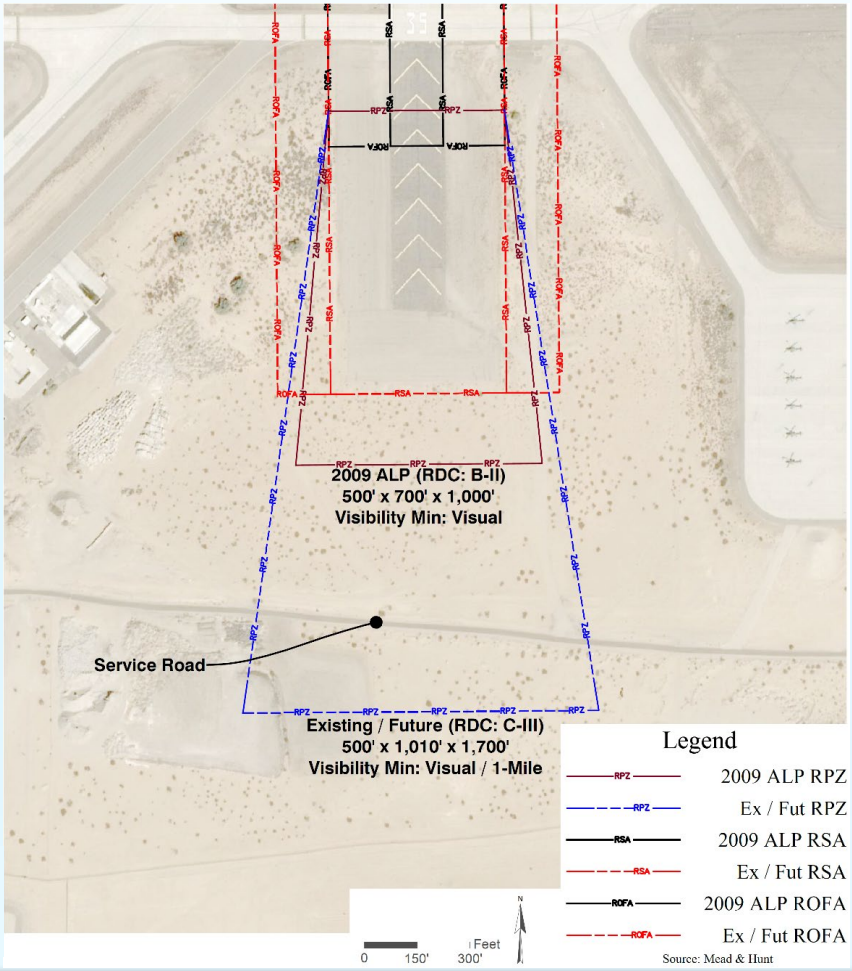
- **Identified Incompatible Land Uses**
  - ✈ Industrial, Office, Commercial Related Buildings
  - ✈ Road
  - ✈ Uncontrolled Land

Runway 17 - Runway Protection Zone

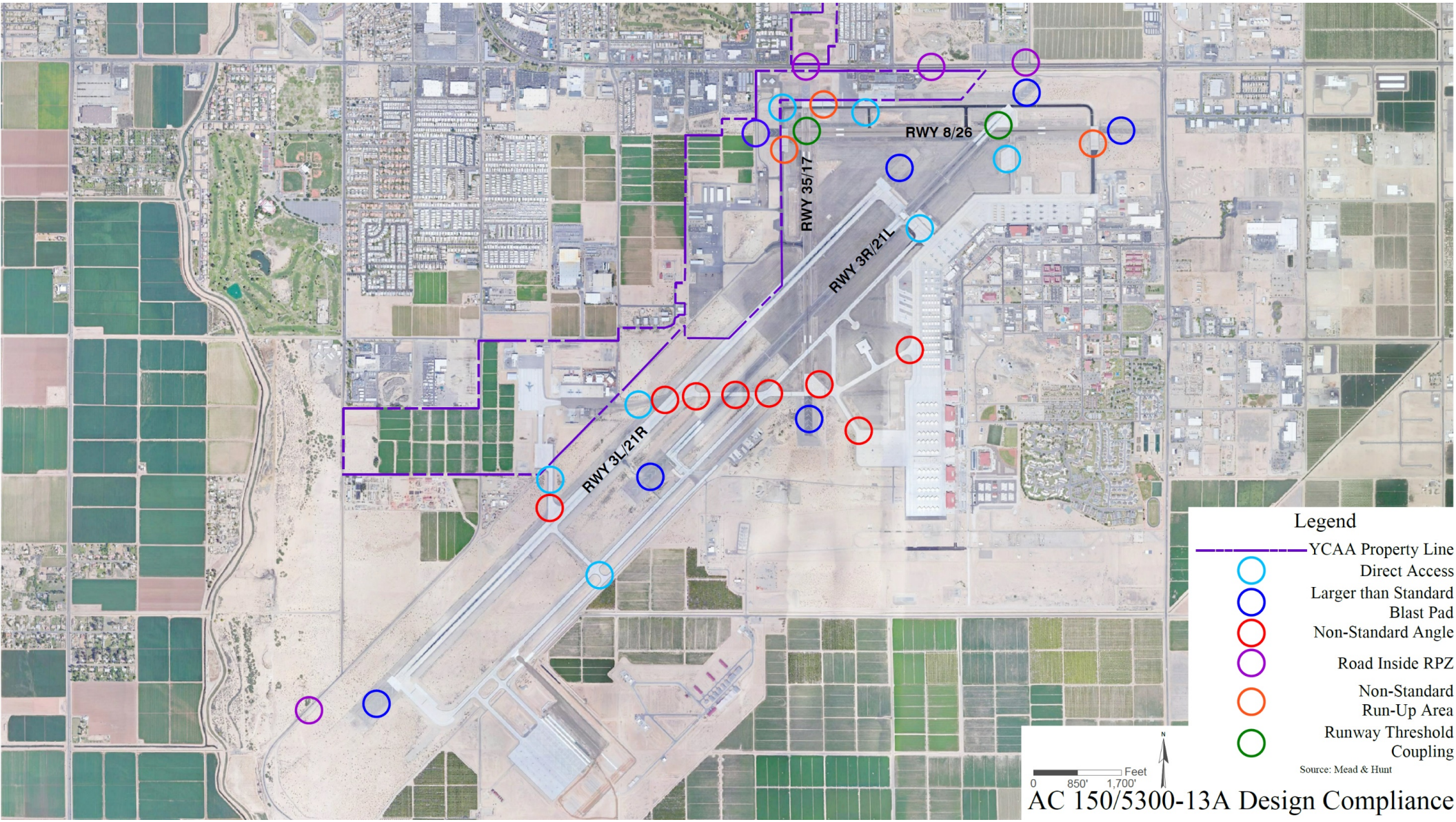


- **Identified Incompatible Land Uses**
  - Industrial, Office, Commercial Related Buildings
  - Vehicle Parking Lots
  - Residential - Apartments
  - Road
  - Uncontrolled Land

Runway 35 - Runway Protection Zone



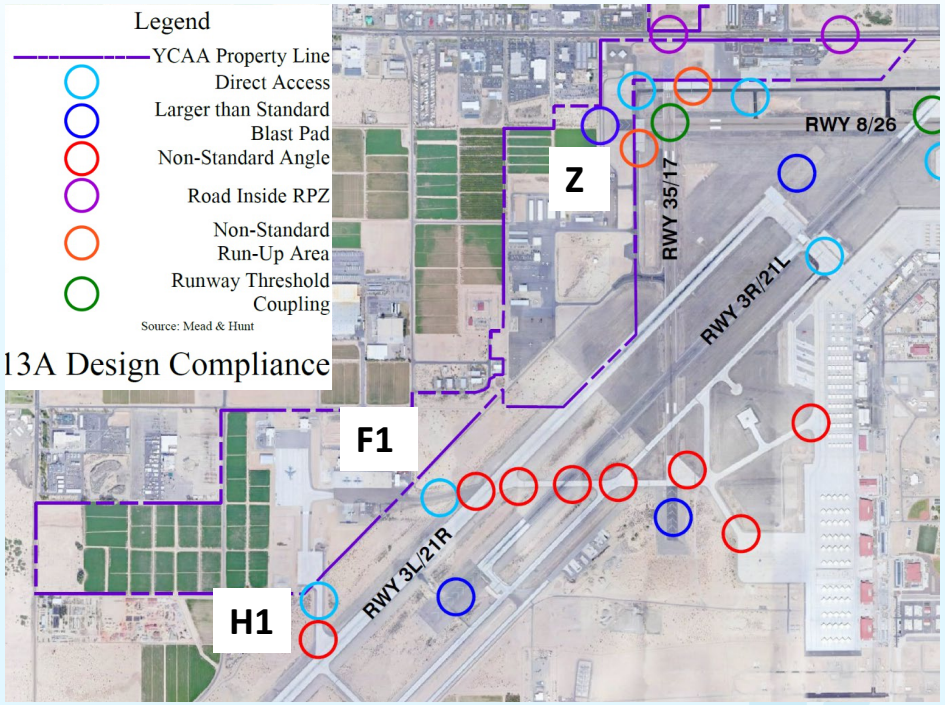
- **Identified Incompatible Land Uses**
  - ✈ Military Vehicle Service Road



AC 150/5300-13A Design Compliance

Design Compliance Analysis

- **Performed analysis on entire airfield**
- **Joint Use Operating Agreement U.S. Patent No. 1160556**
  - YCAA responsibilities
    - Taxiway Z, Z1, Z2, and Z3
    - Taxiway F1 to Runway 3L/21R
    - Taxiway H1 and H2
    - All Defense Contractor Complex access
    - Terminal & GA hangar apron areas
- **Analysis indicates**
  - Taxiway H1 – Direct access to Runway 3L/21R
  - Taxiway H1 – Nonstandard angle to Runway 3L/21R
  - Taxiway F1 – Direct access to Runway 3L/21R
  - Taxiway F1 – Nonstandard angle to Runway 3L/21R
  - Taxiway Z – Direct access to Runway 17/35
  - Taxiway Z – Nonstandard angle to Runway 17/35
- **Resolve during future construction or maintenance projects**



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Terminal Building Analysis

Terminal	Existing GSF	FORECAST		
		Short-Term 2025	Mid-Term 2030	Long-Term 2040
Number of Gates	2	3	4	5
Holdroom/Seating	1,780	4,680	5,730	7,430
Concourse Total	**2,980**	**11,000**	**13,380**	**16,550**
Checkpoint Lanes	1	2	2	2
Checkpoint Queuing/Exiting	450	1,000	1,000	1,000
Checkpoint Total	**1,540**	**3,200**	**3,200**	**3,200**
Baggage Carousels	1	1	2	2
Baggage Screening	375	700	700	1,400
US Customs & Border Protection	2,130	2,130	2,130	4,000
Terminal Building Total	**42,540**	**45,480**	**52,670**	**65,650**

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Vehicle Parking Lots

Parking Component	TIMEFRAME			
	Current	Short-Term	Mid-Term	Long-Term
Public Parking	-59	-94	-146	-250
Rental Car Parking	0	-30	-61	-108
Employee Parking	0	-10	-13	-40
Temporary Parking	0	-30	-30	-30
FBO: Million Air	0	0	-22	-22
Grand Total	-59	-164	-272	-450

- **Current public parking lot supports 2 demand drivers**
  - ✈ Airport passengers
  - ✈ Brewers restaurant customers
- **Parking stall deficits increase relative to forecasted passenger activity levels**
- **General aviation parking areas will be analyzed in Development Alternatives**

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Other Aviation Support Facilities

- **General Aviation Hangar and Aircraft Tie-Down Areas**
  - Immediate short-term need for facilities
  - Long-term need to support forecasted market changes
- **Air Cargo Facilities**
  - Sufficient for planning period
- **Airport Maintenance Facilities**
  - Sufficient for planning period
- **Aircraft Rescue and Fire Fighting**
  - Provided by MCAS Yuma – Exceed FAA Index-B requirements
- **Airport Traffic Control Tower**
  - Provided by MCAS Yuma – Extend operating hours for 24/7 operations
- **Fuel Storage**
  - Increase jet fuel storage by 143,000 gallons to a total of 315,000 gallons

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Aeronautical & Non-Aeronautical Development

- **Foreign Trade Zone (FTZ) #219 designation**
  - ✈ Greater Yuma Economic Development Corporation
- **Common activities**
  - ✈ Logistics, warehousing/distribution, and manufacturing
- **Explore and market opportunities on available property**
  - ✈ Defense Contractors Complex
- **Acquire additional land for future aeronautical and non-aeronautical development**

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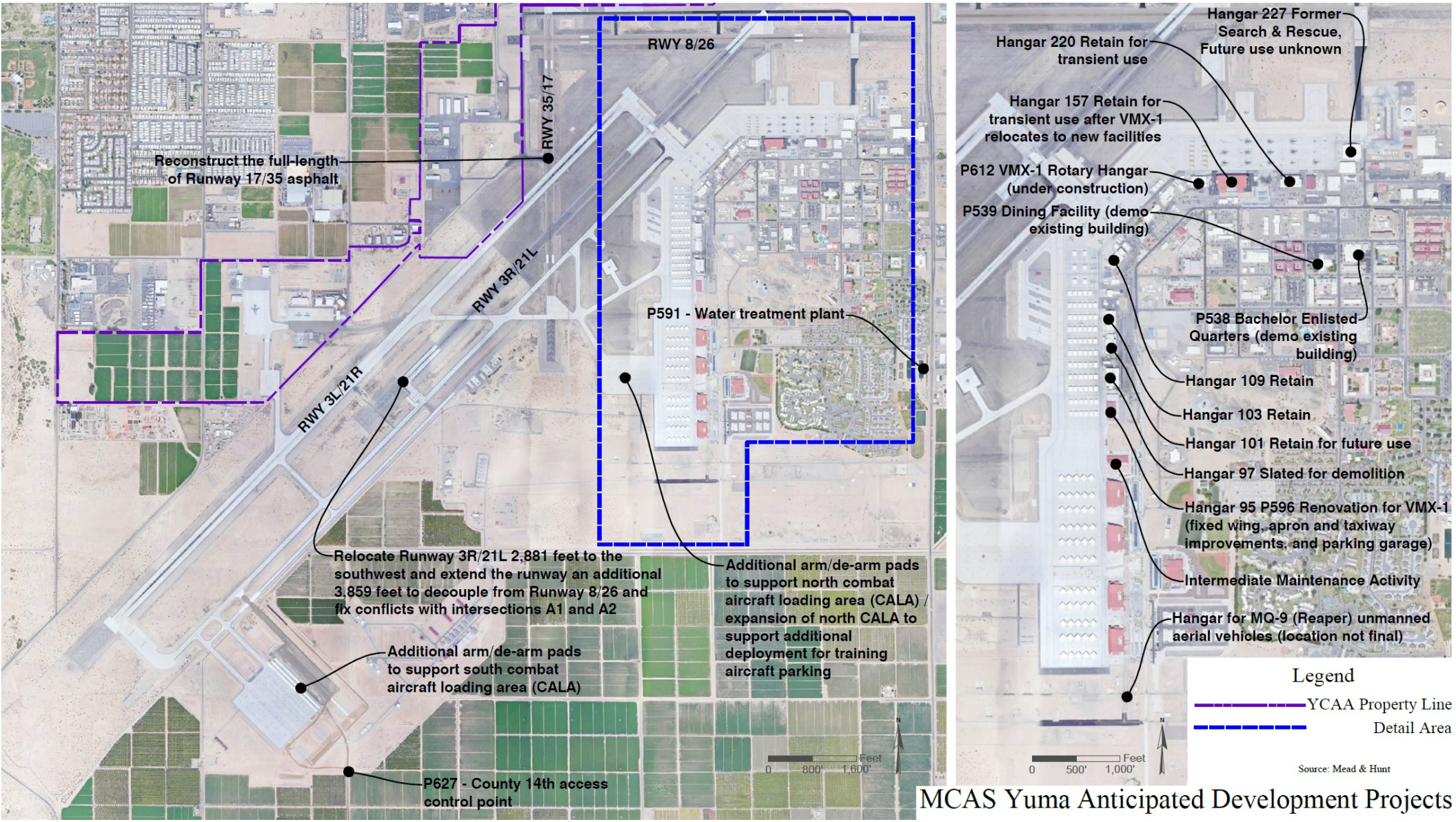

MCAS Yuma Anticipated Development Projects

Summary of Facility Requirements

- **Airfield capacity is sufficient for now and the foreseeable future**
- **Runway 17/35 and Runway 8/26 lengths are sufficient to current destinations**
- **Identify potential runway protection zone improvements for C-III category aircraft**
  - Property acquisition, overlay zoning, or avigation easements
- **Identify potential runway and taxiway improvements**
  - FAA Advisory Circular 150/5300-13A

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Summary of Facility Requirements (Cont.)

- **Passenger terminal**
  - Short-term focus on maintaining the existing terminal building
  - Long-term focus on demand driven program improvements
- **Vehicular access and parking**
  - Short-term focus on demand driven improvements for existing public parking
  - Long-term focus on parking improvements with terminal expansion
- **General Aviation and Other Aviation Support Areas**
  - Continue to program for demand driven facility expansions and improvements
- **Military & Military Support Areas**
  - Incorporate adopted recommendations into master plan

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Next Steps

Alternatives Development and Evaluation	Summer 2021
Preferred Development Concept	Summer 2021
Planning Advisory Committee Meeting #3	Summer 2021
Public Open House Meeting #2	Summer 2021
Formulation of the draft Airport Layout Plan	Fall 2021
Financial Feasibility & Implementation	Fall 2021

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Project Contact Information

- **Yuma County Airport Authority**
  - Gladys Brown
    - Gladys@yumaairport.com
    - (928) 726-5882 Ext.2217
- **Mead & Hunt**
  - Christopher C. Hacker
    - Chris.Hacker@MeadHunt.com
    - (480) 718-1909
- **Project Website**
  - https://www.yumaairportmasterplan.com/

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Yuma International Airport Master Plan

Planning Advisory Committee Meeting #3
Airport Conference Room (9:00 a.m. to 10:00 a.m.)
Wednesday, July 21, 2021

Attendance

***Study Team**:*
Mead & Hunt - Chris Hacker, Cam Thomas
Gordley Group - Phil Burdick

Planning Advisory Committee Members:
YCAA – Gladys Brown, Gen Gross
City of Yuma – Alyssa Linville, Assistant Director of Community Development; Shelly Hook, Development Project Coordinator, Jennifer Albers, Principal Planner
MCAS Yuma – Mary Ellen Finch, Antonio Martinez
Federal Aviation Administration – Delmer Wentzel, Jay Wallace
Crane Schools – Laurie Doering

Meeting Overview

Chris Hacker (Mead & Hunt) presented the update on the master plan and provided a review of the current status of the project, including the approach, schedule, existing facilities, and demand forecasts. The presentation included discussion of defined facility requirements, supporting development alternatives, and the next steps in the project. The presentation was repeated for each of the four sessions.

Meeting Notes – Group A

Gladys Brown welcomed the attendees and gave opening remarks.

Chris Hacker gave the PAC Meeting #3 presentation focused on development alternatives.

Jay Wallace expressed concern that the Taxiway System: Alternative 1 as proposed would be too close to nearby roads and could impact their land and equipment. Delmer Wentzel added to the Taxiway System Alternative 1 question by asking if the property would need to be expanded through acquisition or easement with the addition of Taxiway Y and if a service road would be added parallel to Taxiway Y.

Gladys Brown responded that any expansion plan involving taxiways and runways would take into account the impact on neighboring businesses, facilities, and services within the safety corridor and expansion plans would only be advanced if there is a substantial increase in traffic, which forecasts predict is not likely in the foreseeable future.

Jay Wallace asked if we would be looking at more than 3 aircraft on the deck with all these extra travelers (if expansion happens). Chris Hacker replied that the YCAA would explore expanding the terminal to accommodate that if it becomes necessary.

Alyssa Linville asked if vehicle entrances and exits are sufficient to handle possible increased traffic. Chris Hacker replied yes, they should be sufficient based on traffic studies. Gladys Brown said, "Given the staggered flight schedules, existing entrances and exits should be fine. There's more of an issue with parking for rentals cars. Building a parking structure would be costly. $20,000 -$30,000 cost per stall is prohibitive. If we have parking congestion in the future, YCAA can adjust and will need to revise the plan again in ten years. Studies by traffic engineers confirm there are multiple challenges with expanding traffic lanes around the airport."

There was a general discussion of possible rezoning and city, county, and MCAS land planning as a result of expansion. Jennifer Albers asked if the airport authority intends to acquire property. Gladys Brown responded that the YCAA can't use federal funds to acquire property. The authority will have to look at alternative ways to acquire property if it needs to. There was further discussion on how the city, MCAS and TCAA would need to proceed in order to acquire land and rezone if necessary for expansion.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting #3
Airport Conference Room (10:30 a.m. to 12:00 p.m.)
Wednesday, July 21, 2021

Attendance

***Study Team**:*
Mead & Hunt - Chris Hacker, Cam Thomas
Gordley Group - Phil Burdick

Planning Advisory Committee Members:
YCAA – Gladys Brown, Gen Gross
City of Yuma Mayor - Doug Nicholls
City of Yuma – Jeff Burt, Economic Development Administrator
Yuma County Airport Authority Board of Directors - Russ Jones

Meeting Notes – Group B

Gladys Brown welcomed the attendees and gave opening remarks.

Chris Hacker gave the PAC Meeting#3 presentation focused on development alternatives.

Russ Jones asked if the passenger projections were just more of the same, or if there were projections of adding additional routes or destinations, which would mean increased capacity and the need to expand facilities. Chris Hacker said the current projections forecast that the airport currently has enough capacity to handle expected growth in the future and that the runway lengths are sufficient.

There was a discussion with Doug Nicholls about possible impacts of future runway expansion on properties near the perimeter of the airport, runway protection zones, how the land would be acquired, and how landowners would be involved in the process. Doug Nicholls expressed concern about the process of taking over land as landowners and developers near the airport have developed properties in good faith. Mr. Nicholls expressed this was a big issue, and if the correct balance isn't struck, the Marine base will have to look at reducing its activity or the community is going to run out of land to build on.

Mr. Nicholls also emphasized the importance of not making plan changes regarding future growth and development without communicating with affected landowners and developers.

There was a general discussion about having more city representation at YCAA Board meetings.
Russ Jones asked about the possibility of shade structures/canopy for corporate jets similar to Swift Aviation in Sky Harbor Phoenix as planes can get extremely hot sitting in the sun. Concerns were expressed about the costs, how to recoup those costs, and design challenges to meet regulations.

There was a general discussion about MCAS security concerns regarding possible new opportunities for general development and hanger development on airport grounds as well as access to taxiways and runways. Chris Hacker outlined possible development options for more General Aviation hangers as there is currently a waiting list.

There was a general discussion about parking issues and possible alternatives for airport users, rental cars, and restaurant customers who are not passengers. The car rental company is already experiencing a shortage of spaces, which is expected to get worse in the future. Building a five-story parking structure is likely cost-prohibitive with estimates between $30 - $50 million.

The distance passengers would have to walk if there were additional flights and how to shelter passengers from the elements was discussed. Gladys Brown said planes would disembark and take on passengers at the closest gates during the afternoon to limit exposure, and overnight planes would park at the furthest spots.

The conceptual development alternatives and possible future development North, East and West of the airport and possible overlays was summarized. YCAA will work to make sure future plans and runway safety and protection areas are in alignment with the city's master planning.

There was a discussion of 24/7 operation of the air traffic control tower in the future, which would open up more opportunities for growth, but the cost currently is prohibitive.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting #3
Airport Conference Room (1:00 p.m. to 2:00 p.m.)
Wednesday, July 21, 2021

Attendance

***Study Team**:*
Mead & Hunt - Chris Hacker, Cam Thomas
Gordley Group - Phil Burdick

Planning Advisory Committee Members:
YCAA – Gladys Brown, Gen Gross
Yuma Aircraft Supply - John Ewing, Owner
Nicolas Engineering - Eric Gardner
Air Interdiction Agent U.S. Customs and Border Patrol - Gabriel Mourik
Harper Construction - Thomas Ames

Meeting Notes – Group C

Gladys Brown welcomed the attendees and gave opening remarks.

Chris Hacker gave the PAC Meeting #3 presentation focused on development alternatives.

Thomas Ames said that general aviation service lacks a maintenance facility. He said that there are a few mechanics, but there's no place to go if his airplane breaks down. John Ewing offered his insight into why a maintenance facility would be difficult to support as he formerly ran a maintenance facility at the airport. He said insurance costs have skyrocketed, airport rental costs have increased, the only aspect of his former maintenance operation that made money was fuel, and he never made money on maintenance. Mr. Ewing said the industry has changed and said a maintenance facility could not be financially viable here.

Gladys Brown added that the YCAA is aware of the issue and that mechanics are in short supply. She is working on programs to help bring more mechanics in to serve the needs of the airport and pilots, especially working with military aviation mechanics to get their certifications. However, costs to operate an MRO are currently prohibitive.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting #3

Airport Conference Room & Zoom Meeting (2:30 p.m. to 4:00 p.m.)

Wednesday, July 21, 2021

Attendance

***Study Team**:*
Mead & Hunt – Chris Hacker, Cam Thomas
Gordley Group – Phil Burdick, Kara Lehmann

Planning Advisory Committee Members:
YCAA – Gladys Brown, Gen Gross, Mark Workman
MCAS Yuma – Greg McShane, Andrew Everitt
Arizona Western College – Daniel Corr
FAA – Jared Raymond ***(Via Zoom)***
Yuma Union High School District – Eric Patten ***(Via Zoom)***
4FrontED – Nazzer Mendez ***(Via Zoom)***

Others:
David Foster - local pilot and schoolteacher ***(Via Zoom)***
Sean ***(Via Zoom)***

Meeting Notes – Group D

Gladys Brown welcomed the attendees and gave opening remarks.

Chris Hacker gave the PAC Meeting #3 presentation focused on development alternatives.

There was a general discussion about the height and costs of a five-story parking structure. Gladys Brown said that regardless of the design and height concerns, the costs are prohibitive for a parking structure. The ROI from the YCAA perspective is not advantageous.

Greg McShane asked if the analysis for the development of a terminal expansion included DOD criteria, which may be different from the FAA criteria. Gladys Brown said none of the possible future terminal improvements would be taller in the plan than what is exists today. When we look at the imaginary surfaces, including the extension to the west portion of it, even those finished faces will not exceed the height of what's existing there now. You're not going to see surfaces higher than what is preexisting.

David Foster asked (via Zoom) when the hours of operations for the tower will go to 24/7. Gladys Brown said that is highly unlikely. That's a big wish for the Marine Corps as well. If that would happen, it would be six months prior to going into effect and would be published. Andrew Everitt added that if the airport plan is approved, expanding tower hours to 24/7 would not be likely unless there is a need or a requirement for it. Gladys Brown said control tower hours are budget and user-driven.

AIRPORT MASTER PLAN

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Planning Advisory Committee Meeting #3

July 21, 2021

Yuma County Airport Authority

Agenda

- Introductory Remarks
- Project Approach and Schedule
- Forecasts of Aviation Activity Review
- Facility Requirements Review
- Taxiway System Alternatives
- Defense Contractor Complex & Other Facilities Alternatives
- General Aviation Facilities Alternatives
- Landside Access & Vehicle Parking Alternatives
- Terminal Building Alternatives
- Conceptual Development Plan
- Next Steps

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Project Approach

- **Follow FAA Guidance**
- **Building Block Process**
  - Inventory
  - Forecasts
  - Facilities Need Determination
  - Development Plan Formulation
  - Financial Plan

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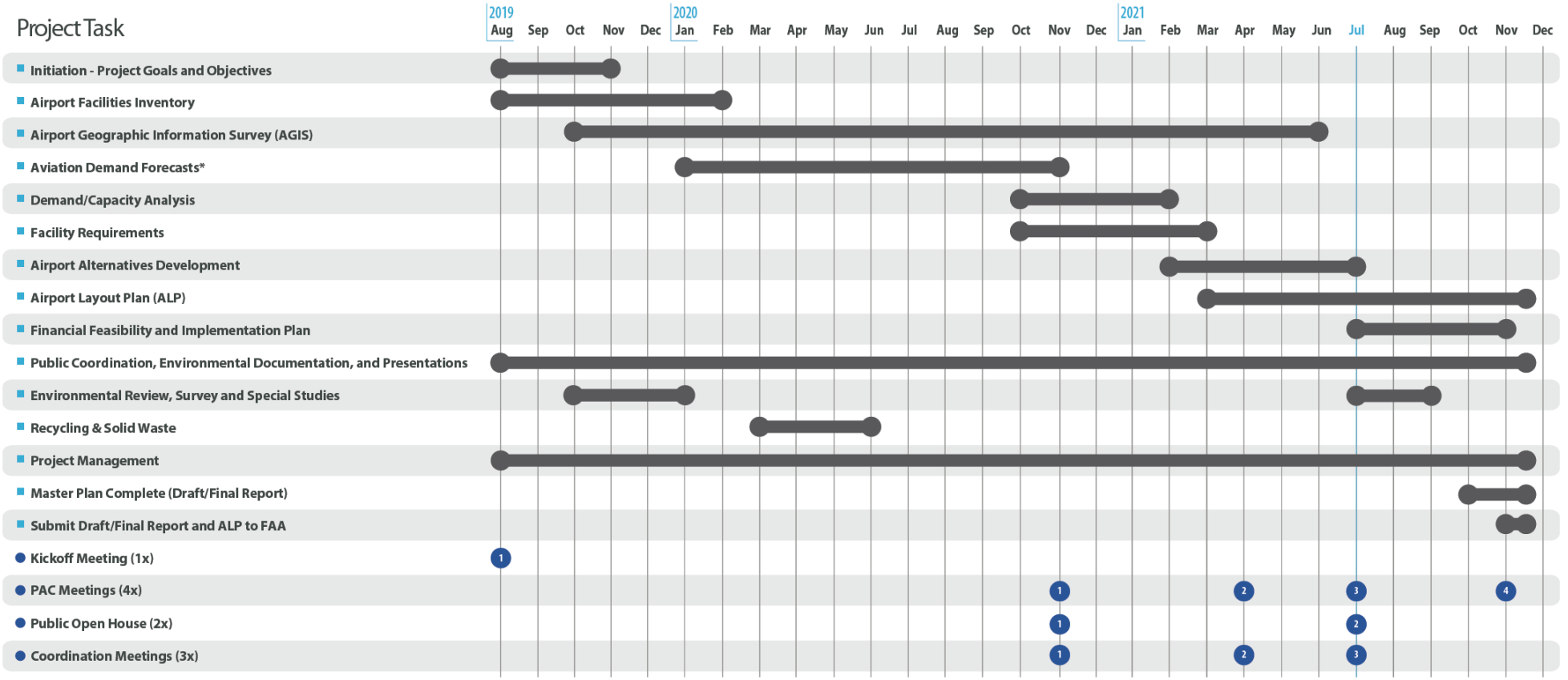
Project Schedule Airport Master Plan



NOTES: *Aviation Demand Forecast Development Impacted by COVID-19 Pandemic

Notice to Proceed - August 22, 2019; Schedule updated - February 25, 2021. Subject to change.

Airport Master Plan – FAA Approved Forecast

	Base Year 2019	Short-Term 2025	Medium-Term 2030	Long-Term 2040
Passenger Enplanements	92,908	104,040	124,788	163,113
Aircraft Operations	179,838	179,966	180,521	181,944
Based Aircraft	171	171	171	171

FAA Approved Forecast – October 23, 2020

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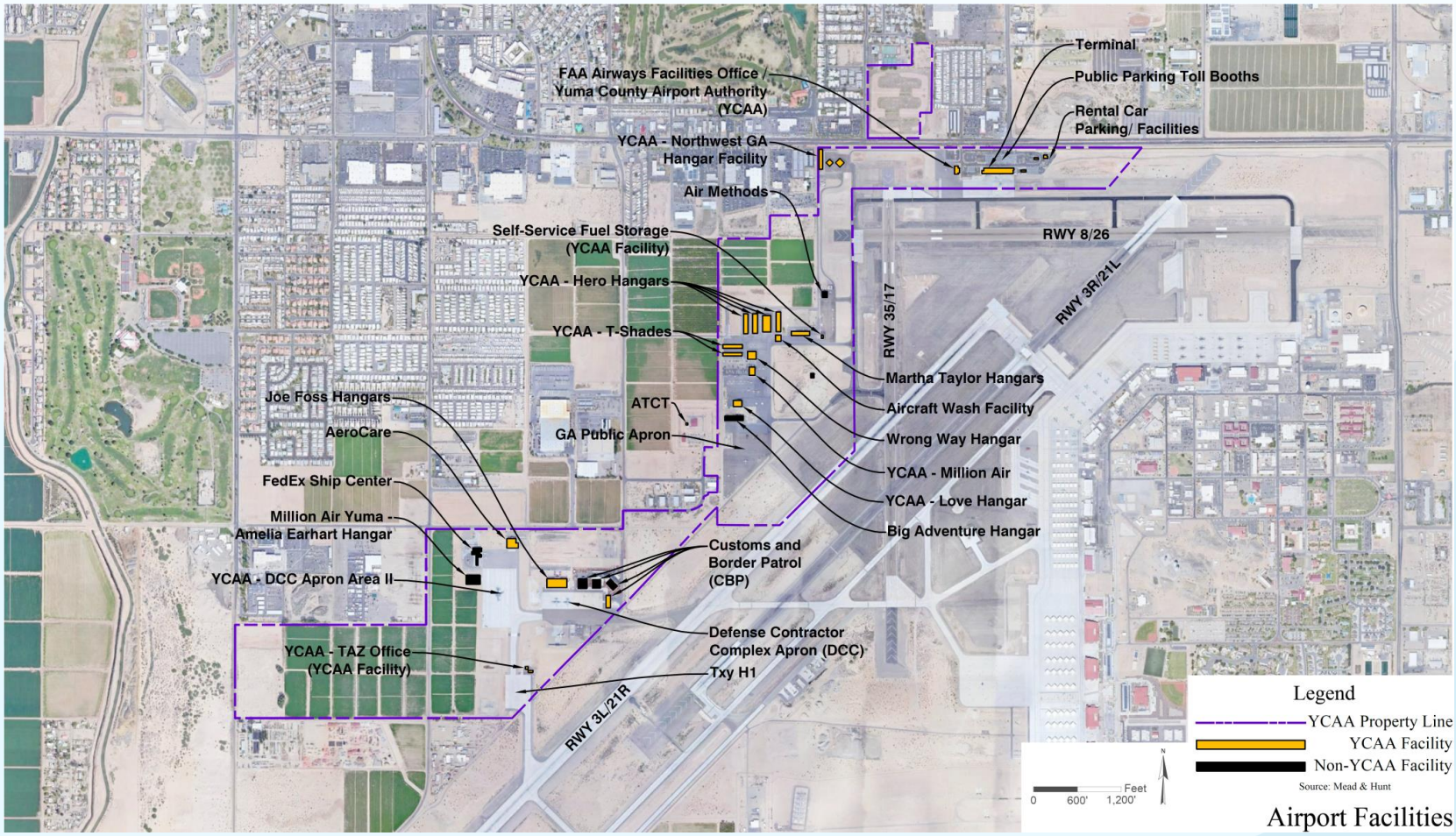
Existing Airport Facilities



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Summary of Facility Requirements

- **Airfield capacity**
  - Sufficient for now and the foreseeable future
- **Runway 17/35 and Runway 8/26**
  - Lengths are sufficient for current destinations
- **Runway protection zone improvements for C-III category aircraft**
  - Property acquisition, overlay zoning, or avigation easements
- **Runway and taxiway improvements**
  - FAA Advisory Circular 150/5300-13A

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Summary of Facility Requirements (Cont.)

- **Defense Contractor Complex and Other Aviation Support Areas**
  - Plan and market both aeronautical and non-aeronautical properties
  - Maximize properties with airfield access
- **General Aviation Facilities**
  - Program for demand-driven facility expansions and improvements
- **Vehicular access and parking**
  - Short-term focus on demand-driven improvements for existing public parking
  - Long-term focus on parking improvements with terminal expansion
- **Passenger terminal**
  - Short-term focus on maintaining the existing terminal building
  - Long-term focus on demand-driven program improvements

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Taxiway System Alternatives

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Design Compliance Analysis

- **Performed analysis on entire airfield**
- **Joint Use Operating Agreement - U.S. Patent No. 1160556**
  - YCAA responsibilities
    - Taxiway Z, Z1, Z2, and Z3
    - Taxiway F1 to Runway 3L/21R
    - Taxiway H1 and H2
    - All Defense Contractor Complex access
    - Terminal & GA hangar apron areas

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Design Compliance Analysis *(Cont.)*

- **Analysis indicated**
  - Taxiway H1 – Provides direct access to Runway 3L/21R from an apron area
  - Taxiway H1 – Nonstandard angle to Runway 3L/21R
  - Taxiway F1 – Provides direct access to Runway 3L/21R from an apron area
  - Taxiway F1 – Nonstandard angle to Runway 3L/21R
  - Taxiway Z – Direct access to Runway 17/35 from an apron area
  - Taxiway Z – Nonstandard angle to Runway 17/35
- **Resolve during future construction or maintenance projects**

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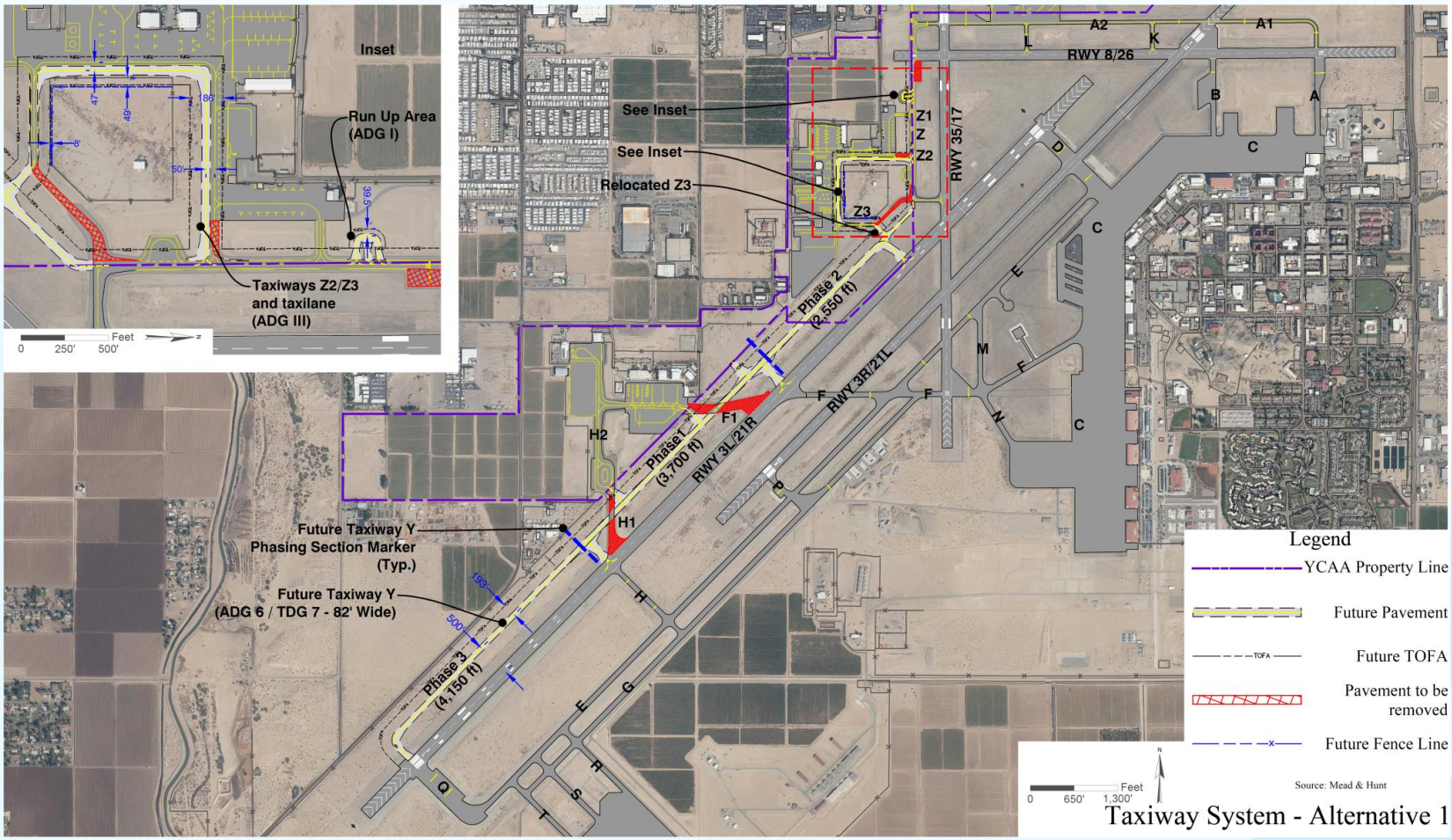
Taxiway System: *Alternative 1*



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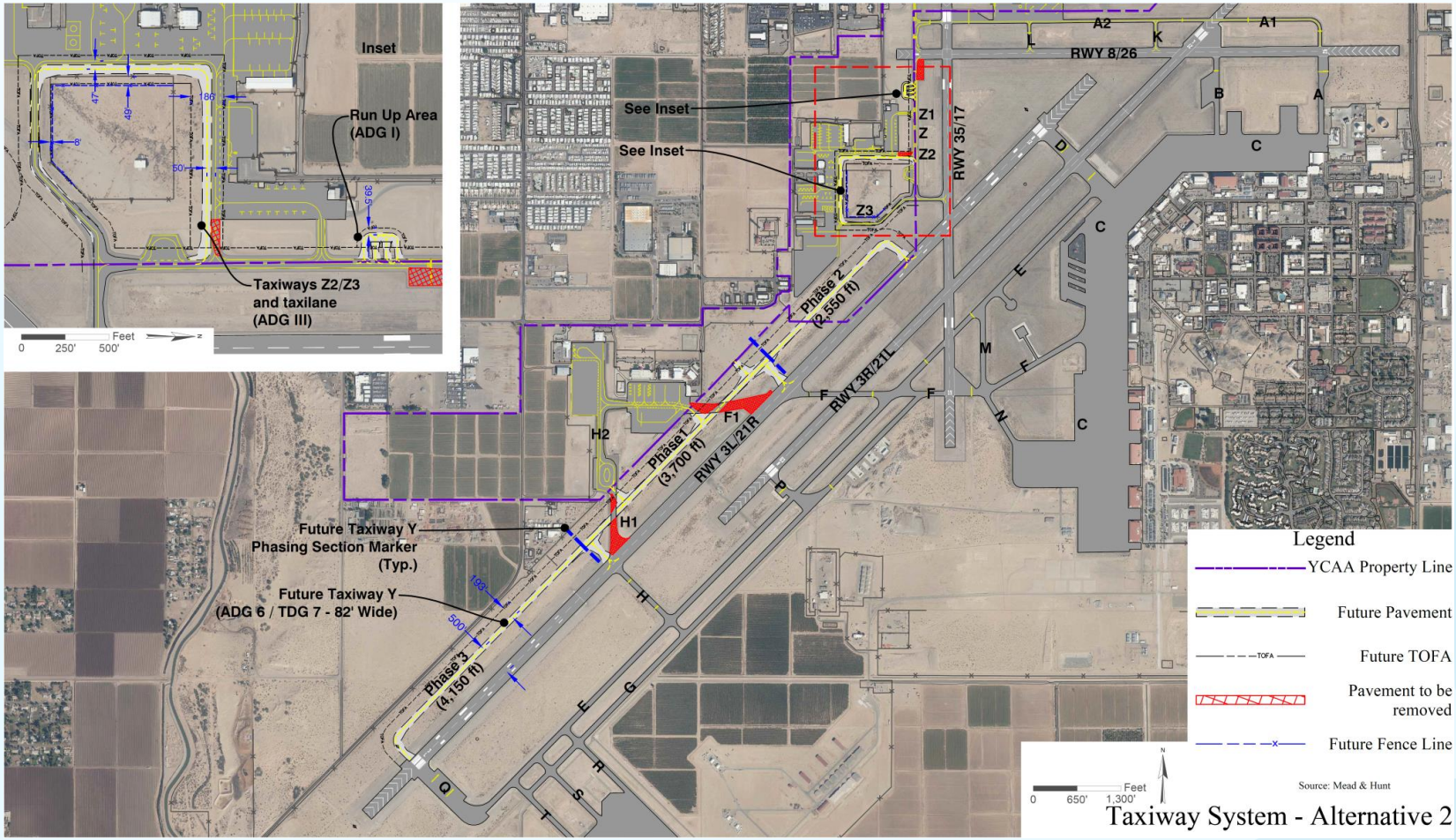
Taxiway System: *Alternative 2*



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Defense Contractor Complex & Other Facilities Alternatives

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Aeronautical & Non-Aeronautical Development

- **Foreign Trade Zone (FTZ) #219 designation**
  - ✈ Greater Yuma Economic Development Corporation
- **Common activities**
  - ✈ Logistics, warehousing/distribution, and manufacturing
- **Explore and market opportunities on available property**
  - ✈ Defense Contractors Complex
- **Acquire additional land for future aeronautical and non-aeronautical development**

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Other Aviation Support Facilities

- **General Aviation Hangar and Aircraft Tie-Down Areas**
  - Immediate short-term need for facilities
  - Long-term need to support forecasted market changes
- **Air Cargo Facilities**
  - Sufficient for planning period
- **Airport Maintenance Facilities**
  - Sufficient for planning period

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Other Aviation Support Facilities *(Cont.)*

- **Aircraft Rescue and Fire Fighting**
  - ✈ Provided by MCAS Yuma – Exceed FAA Index-B requirements
- **Airport Traffic Control Tower**
  - ✈ Provided by MCAS Yuma – Extend operating hours for 24/7 operations
- **Fuel Storage**
  - ✈ Increase jet fuel storage by 143,000 gallons to a total of 315,000 gallons

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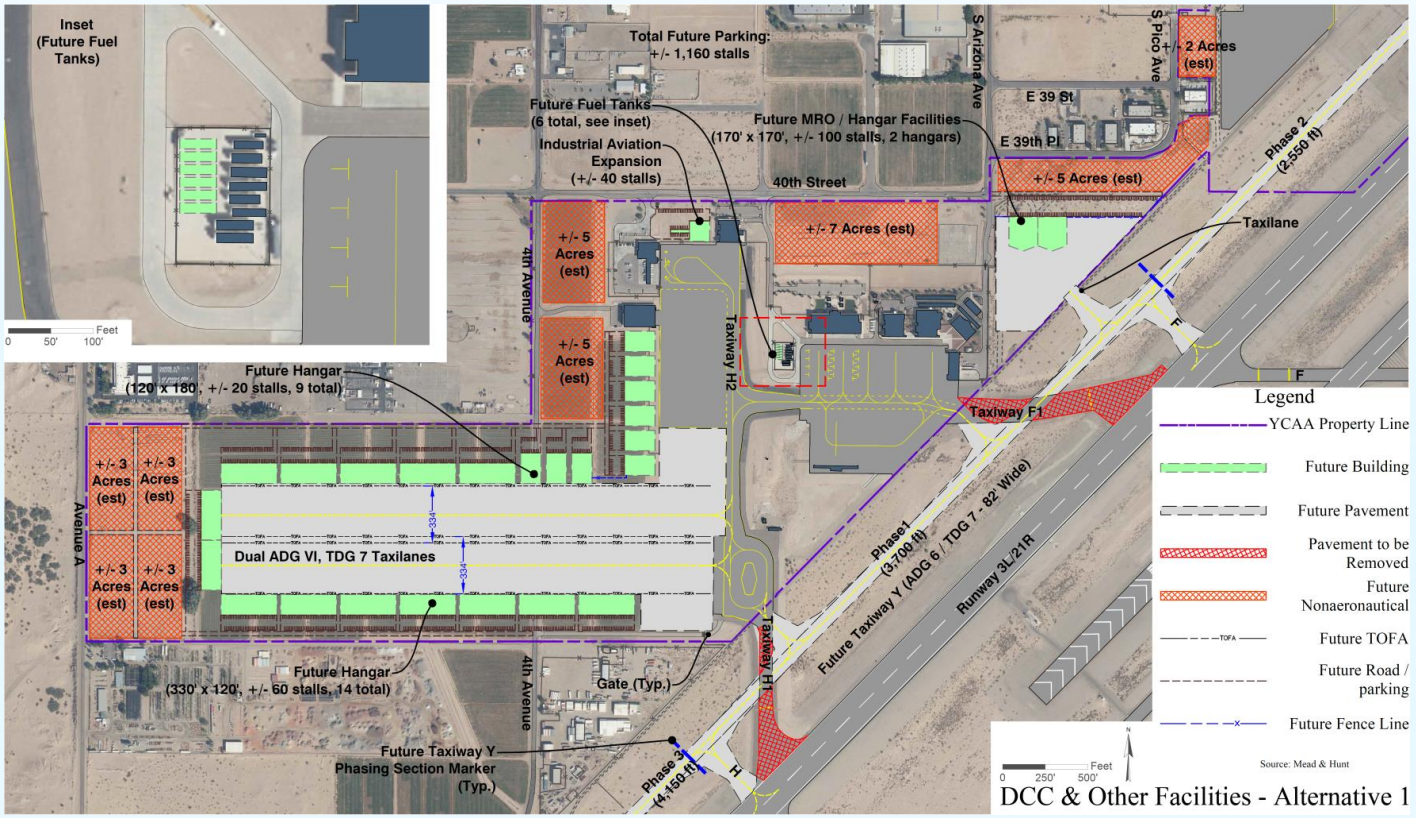
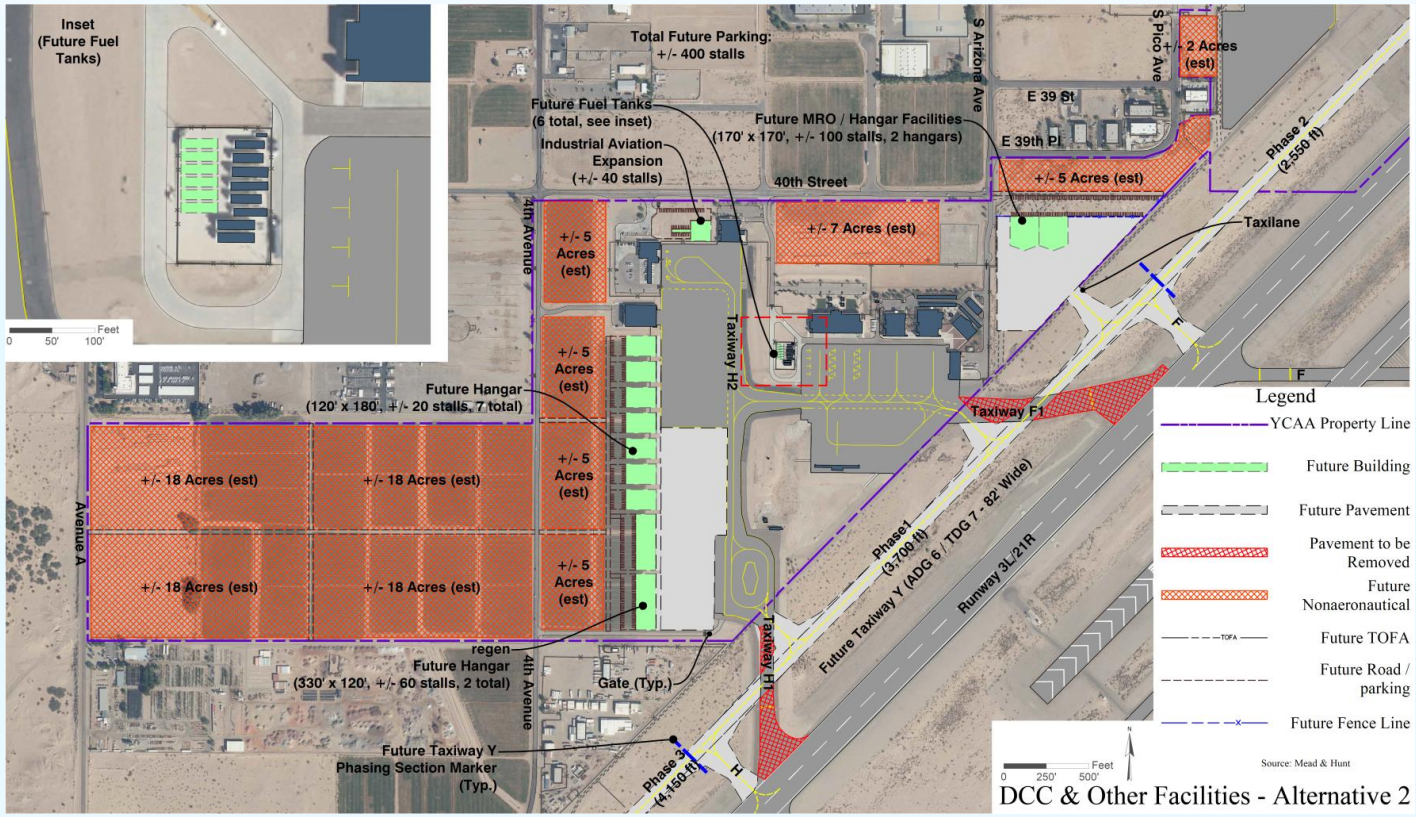
Defense Contractor Complex & Other

Facilities: *Alternative 1*



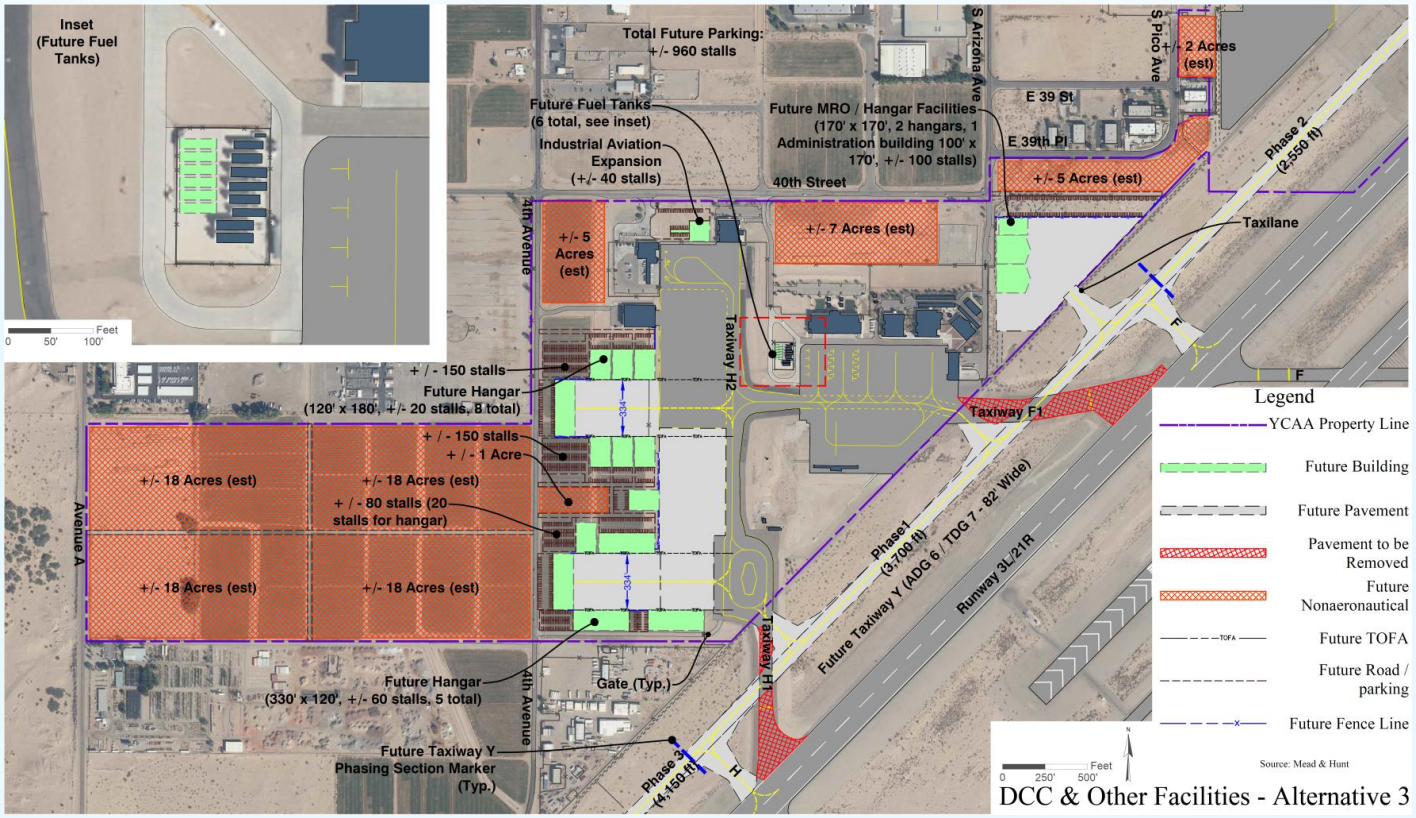
Defense Contractor Complex & Other

Facilities: *Alternative 2*



Defense Contractor Complex & Other

Facilities: *Alternative 3*



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General Aviation Facilities Alternatives

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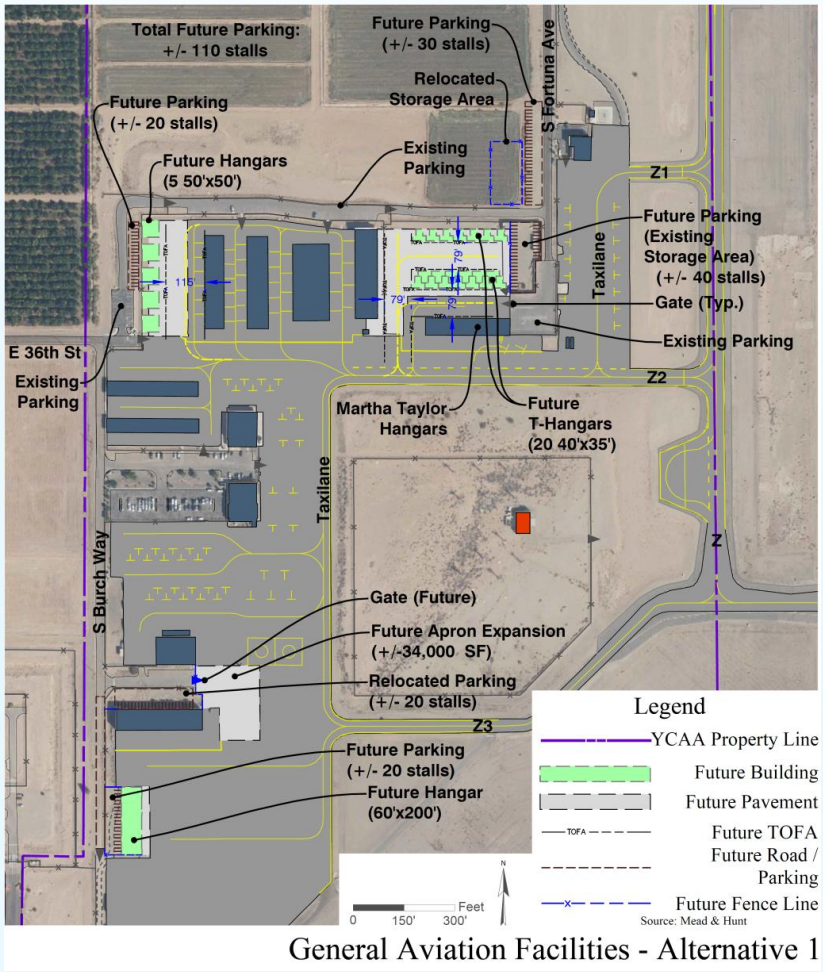
General Aviation Facilities: *Alternative 1*



General Aviation Facilities - Alternative 1

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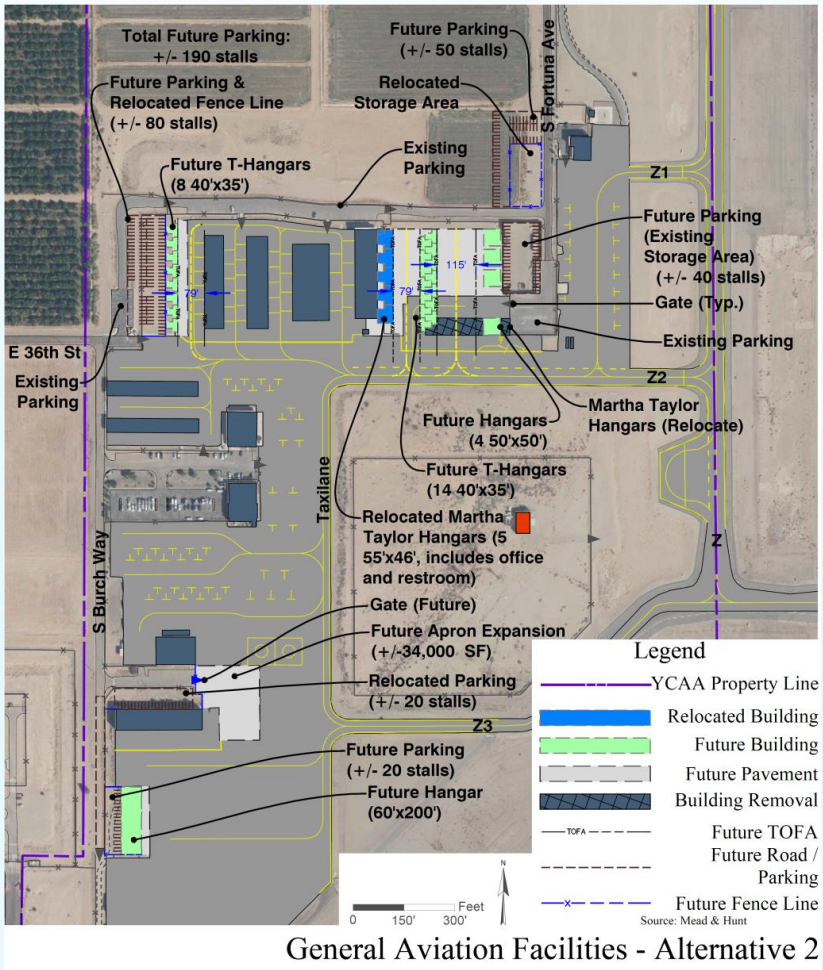
General Aviation Facilities: *Alternative 2*



General Aviation Facilities - Alternative 2

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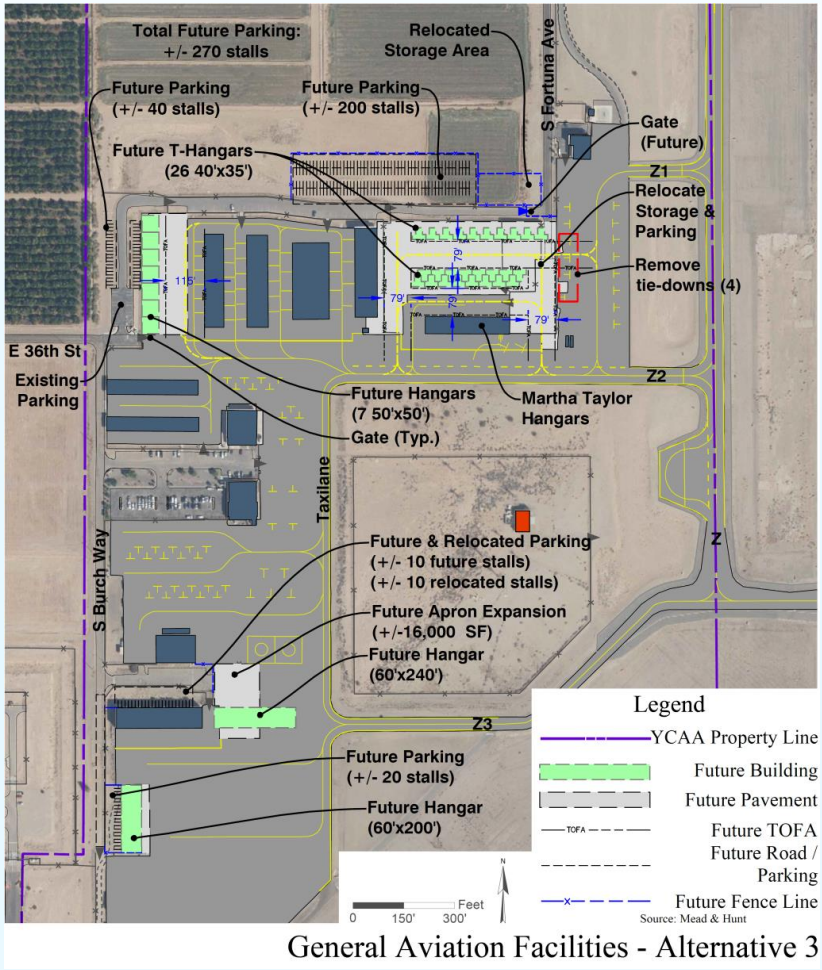
General Aviation Facilities: *Alternative 3*



General Aviation Facilities - Alternative 3

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Landside Access & Vehicle Parking Alternatives

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Vehicle Parking Lots

Parking Component	TIMEFRAME			
	Current	Short-Term	Mid-Term	Long-Term
Public Parking	-59	-94	-146	-250
Rental Car Parking	0	-30	-61	-108
Employee Parking	0	-10	-13	-40
Temporary Parking	0	-30	-30	-30
FBO: Million Air	0	0	-22	-22
Grand Total	-59	-164	-272	-450

- **Current public parking lot supports 2 demand drivers**
  - Airport passengers
  - Brewers restaurant customers
- **Parking stall deficits increase relative to forecasted passenger activity levels**
- **General aviation parking areas will be analyzed in Development Alternatives**

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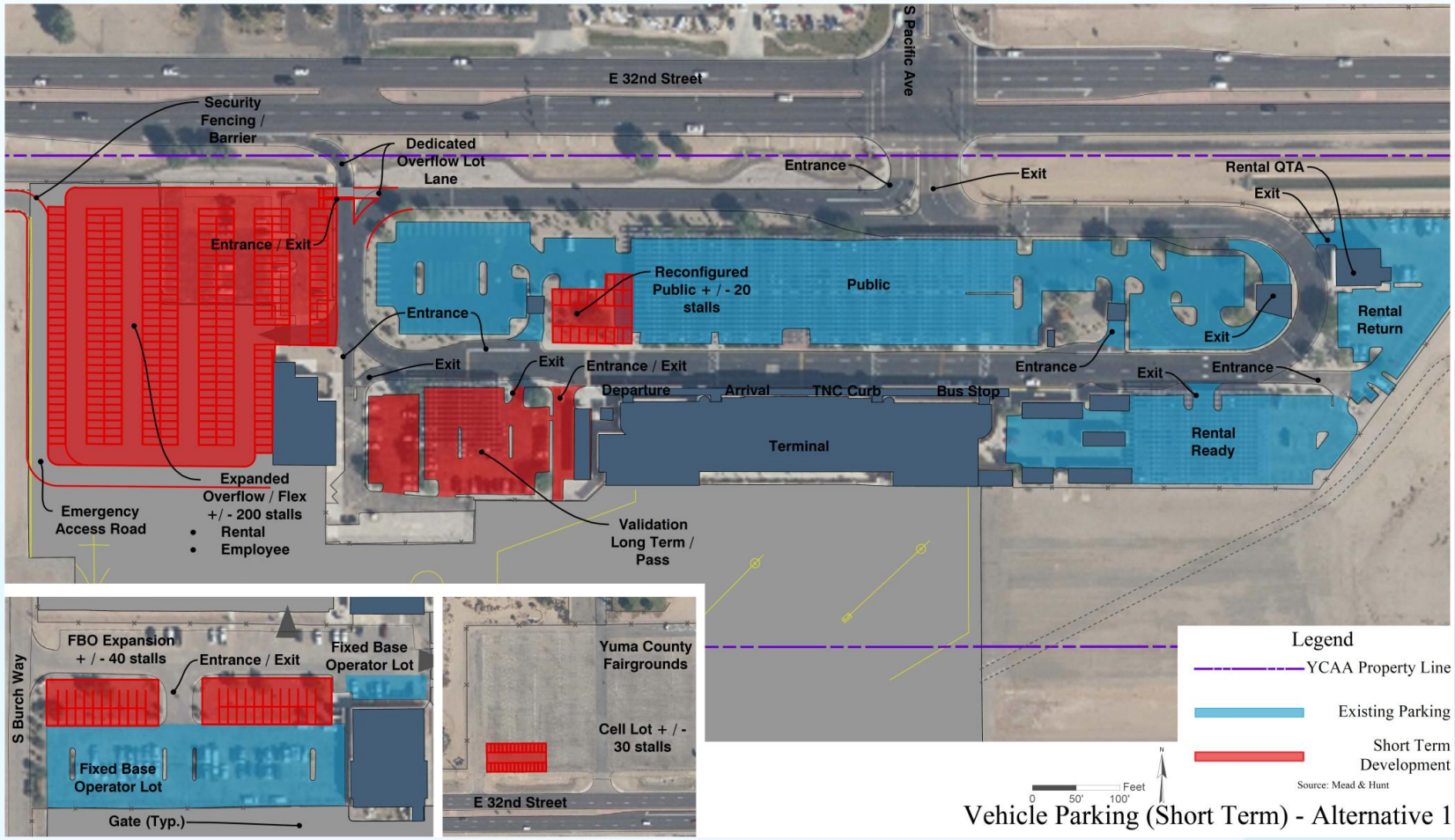
Landside Access & Vehicle Parking: *Alternative 1*



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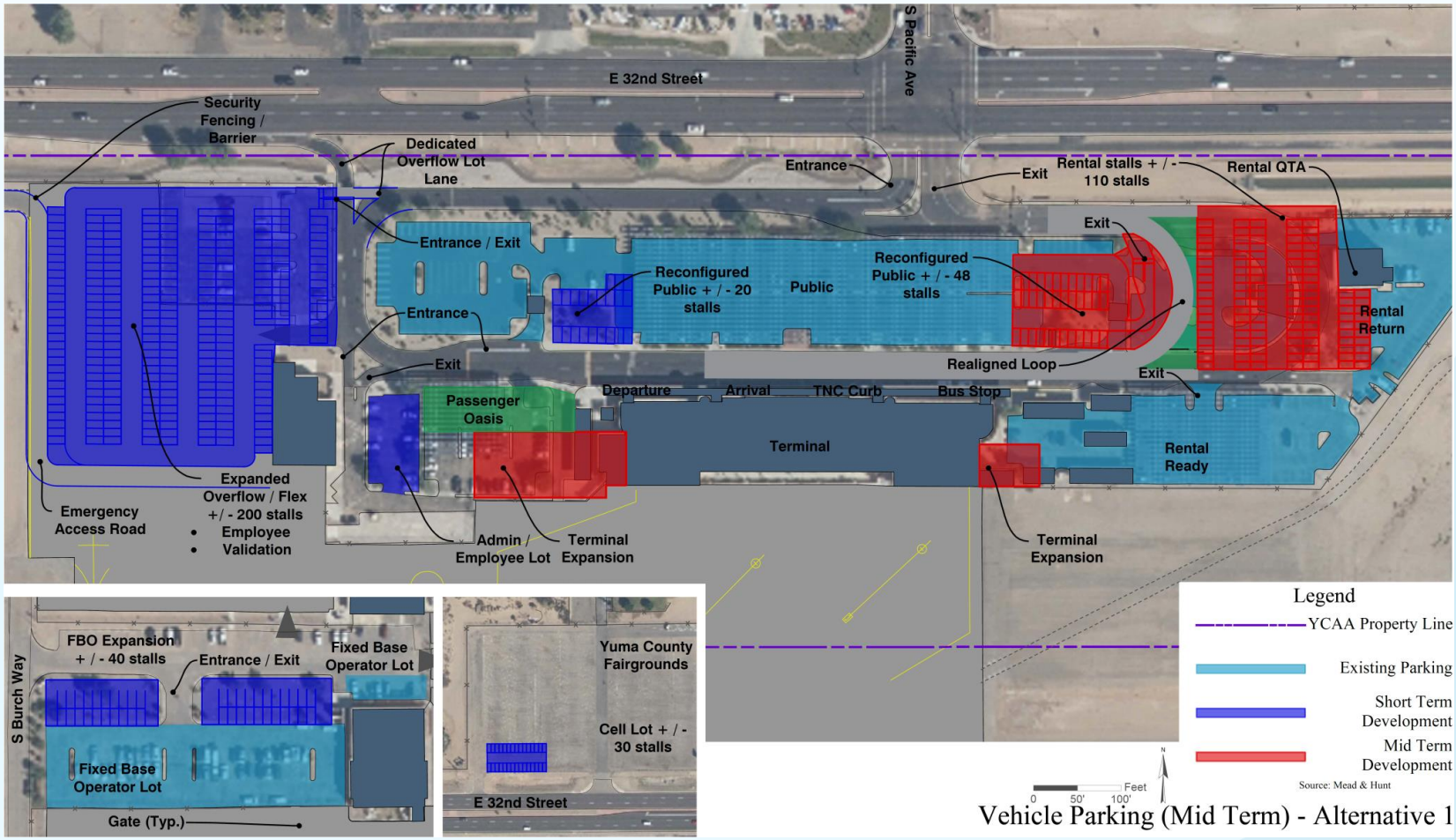
Landside Access & Vehicle Parking: *Alternative 1*



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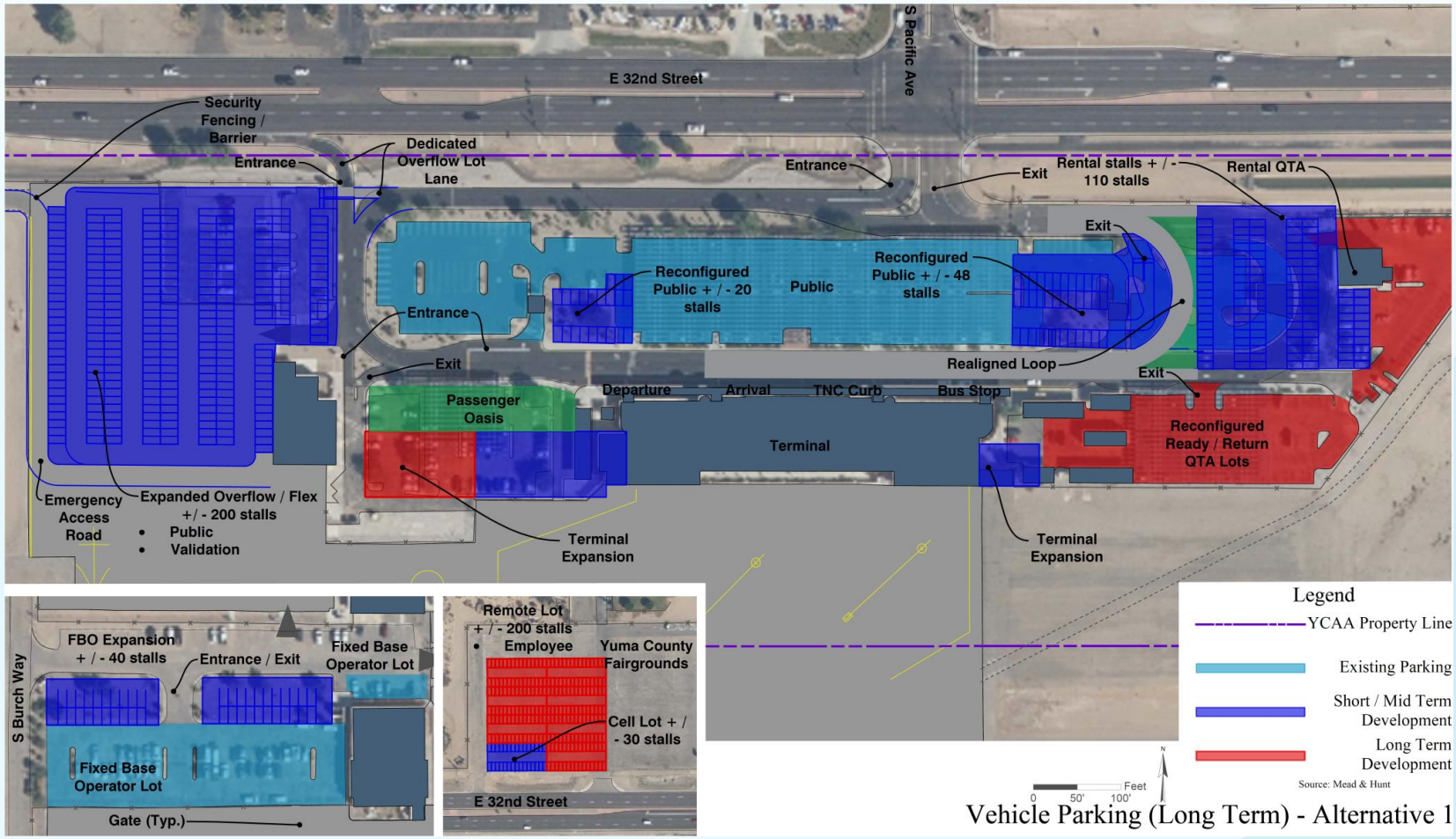
Landside Access & Vehicle Parking: *Alternative 1*



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Landside Access & Vehicle Parking Alternative 2

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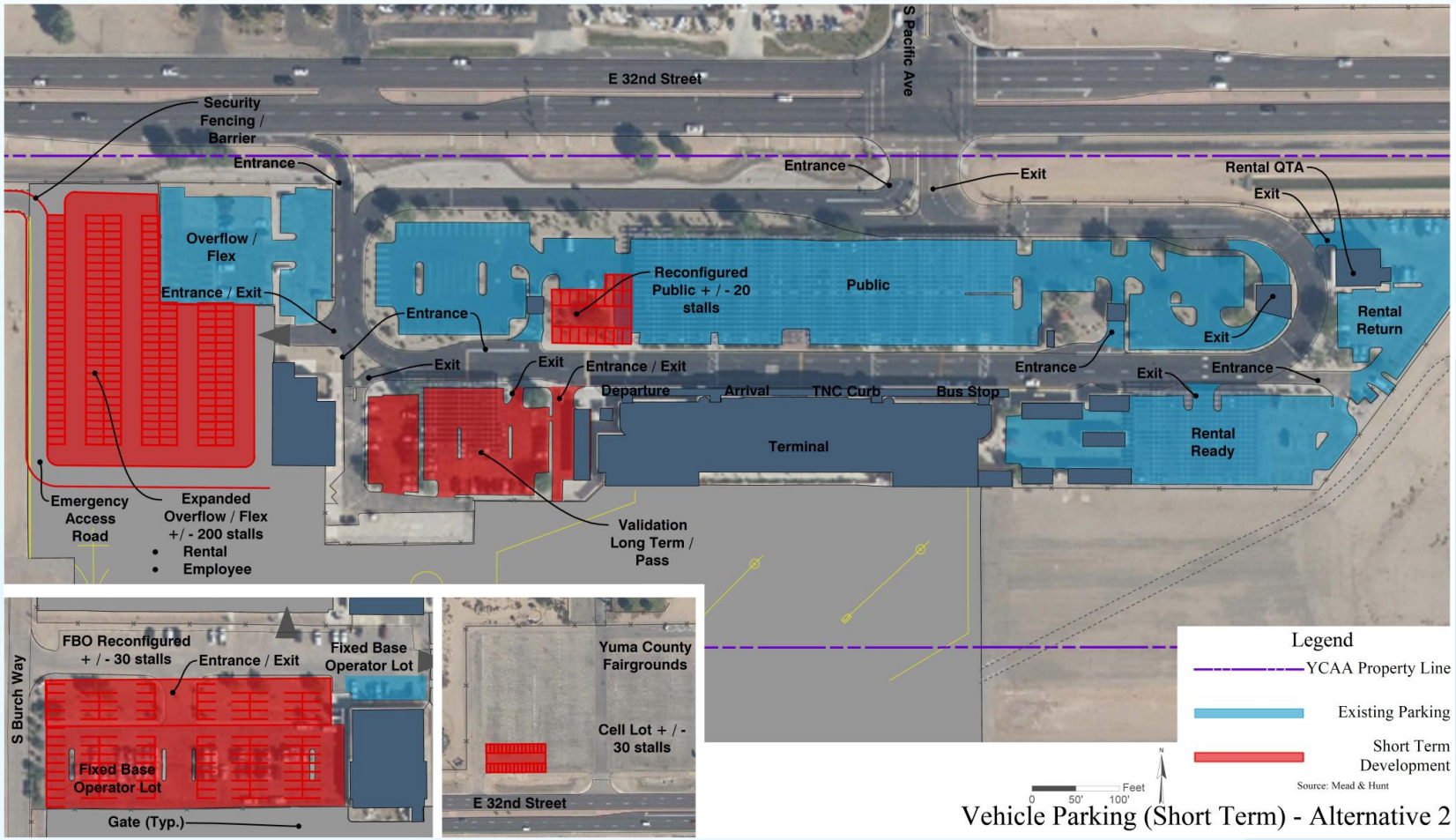
Landside Access & Vehicle Parking: *Alternative 2*



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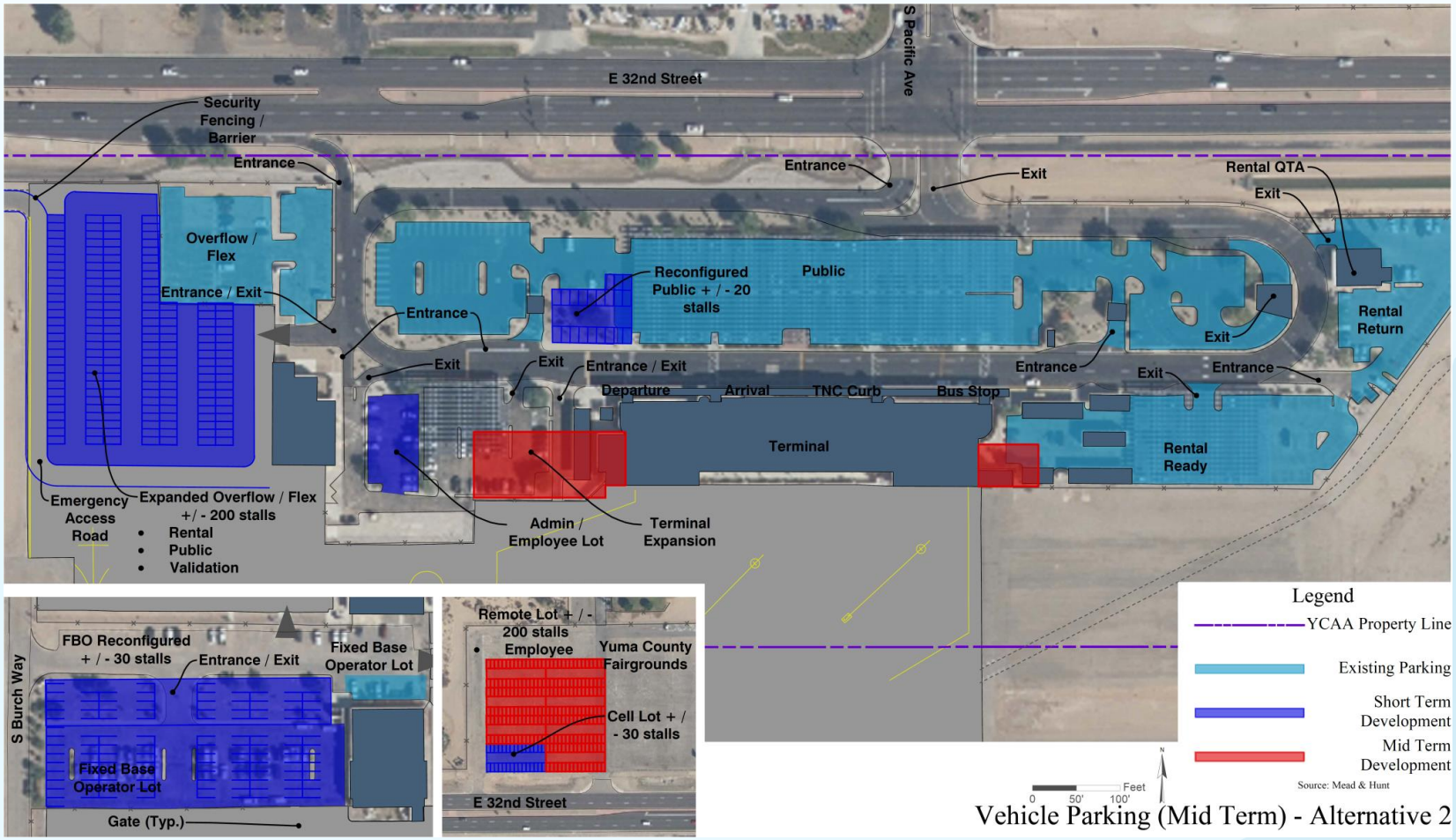
Landside Access & Vehicle Parking: *Alternative 2*



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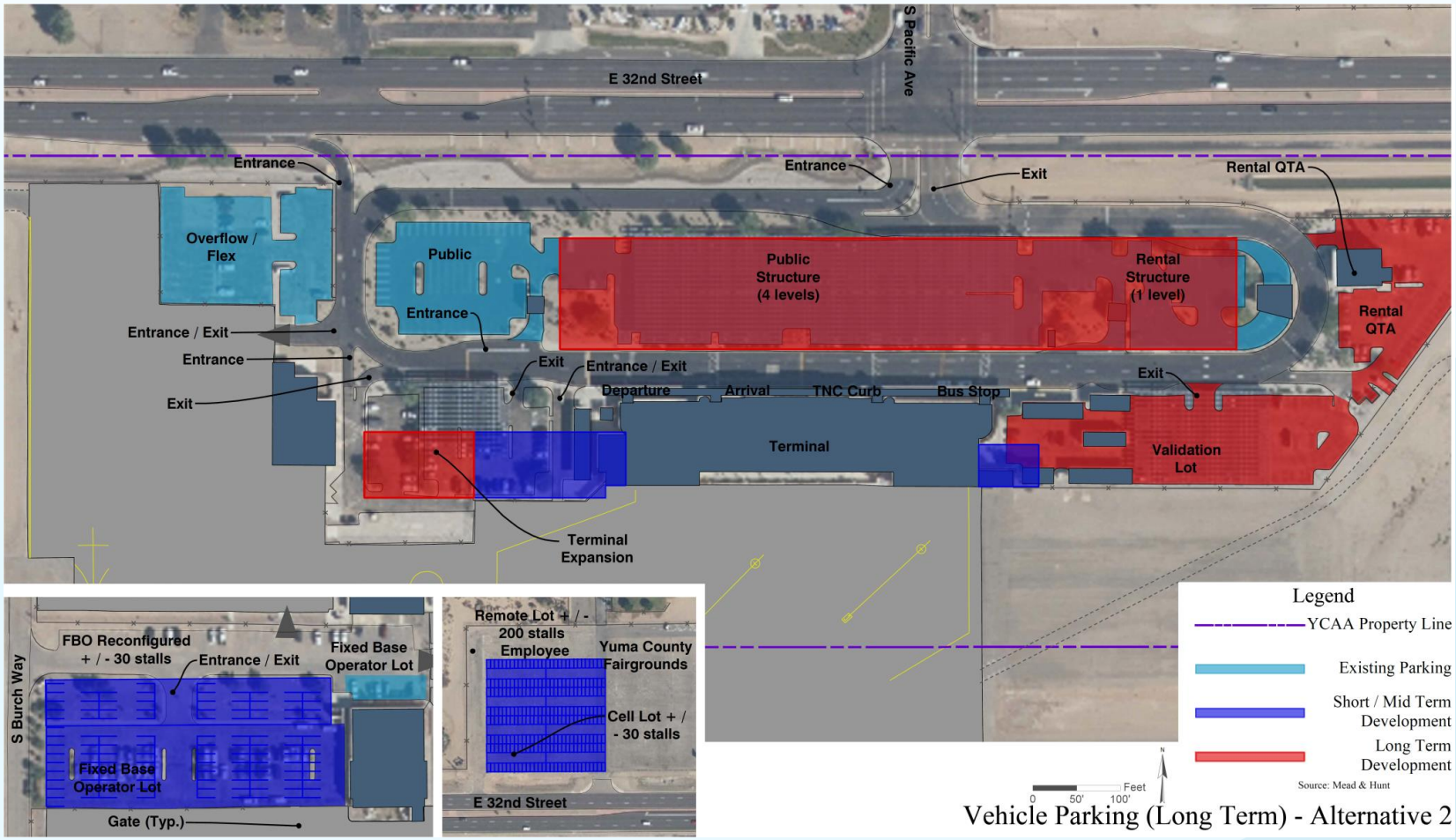
Landside Access & Vehicle Parking: *Alternative 2*



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Terminal Building Alternatives

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Terminal Building Analysis

Terminal	Existing GSF	FORECAST		
		Short-Term 2025	Mid-Term 2030	Long-Term 2040
Number of Gates	2	3	4	5
Holdroom/Seating	1,780	4,680	5,730	7,430
Concourse Total	**2,980**	**11,000**	**13,380**	**16,550**
Checkpoint Lanes	1	2	2	2
Checkpoint Queuing/Exiting	450	1,000	1,000	1,000
Checkpoint Total	**1,540**	**3,200**	**3,200**	**3,200**
Baggage Carousels	1	1	2	2
Baggage Screening	375	700	700	1,400
US Customs & Border Protection	2,130	2,130	2,130	4,000
Terminal Building Total	**42,540**	**45,480**	**52,670**	**65,650**

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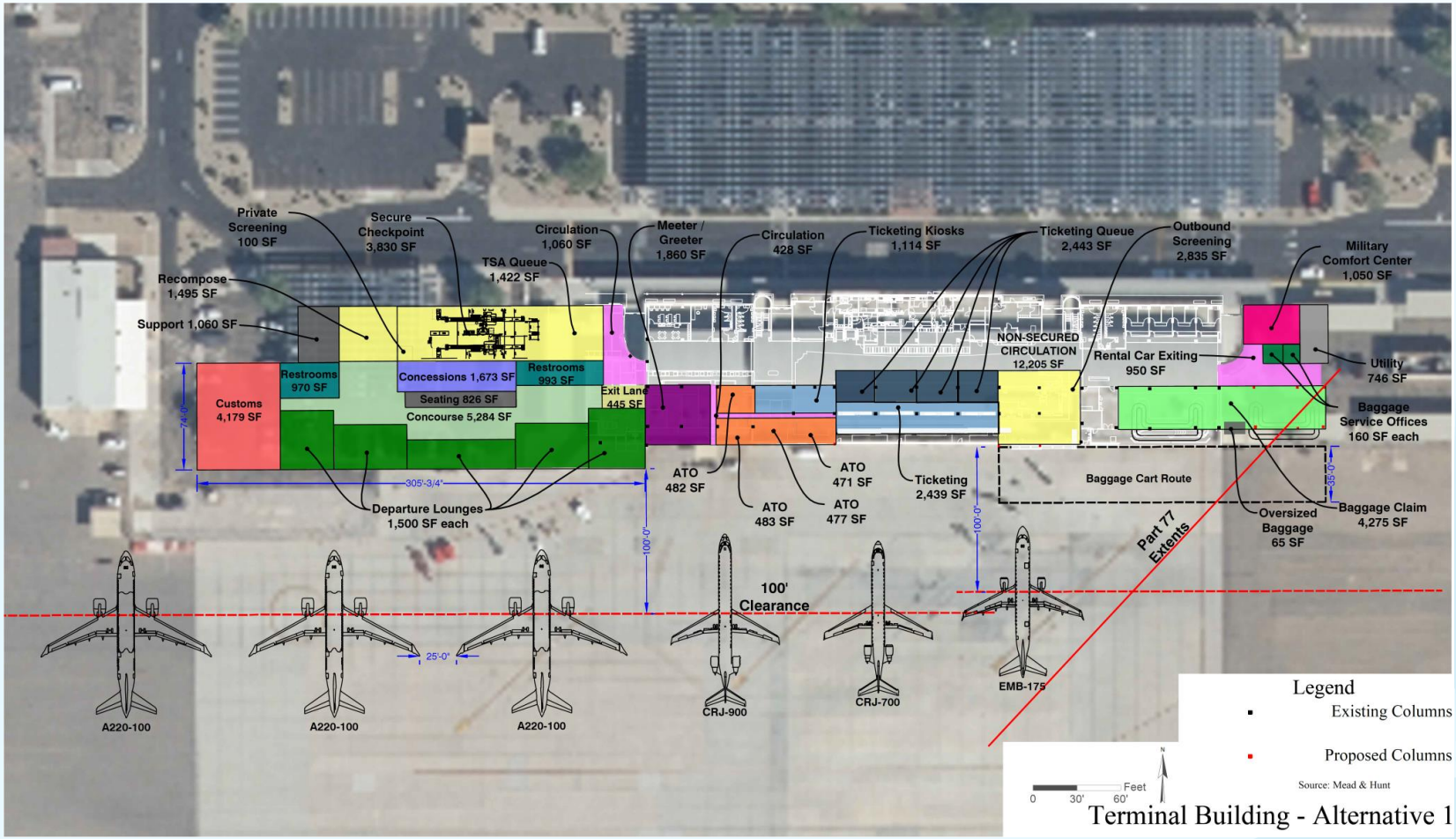
Terminal Building: *Alternative 1*



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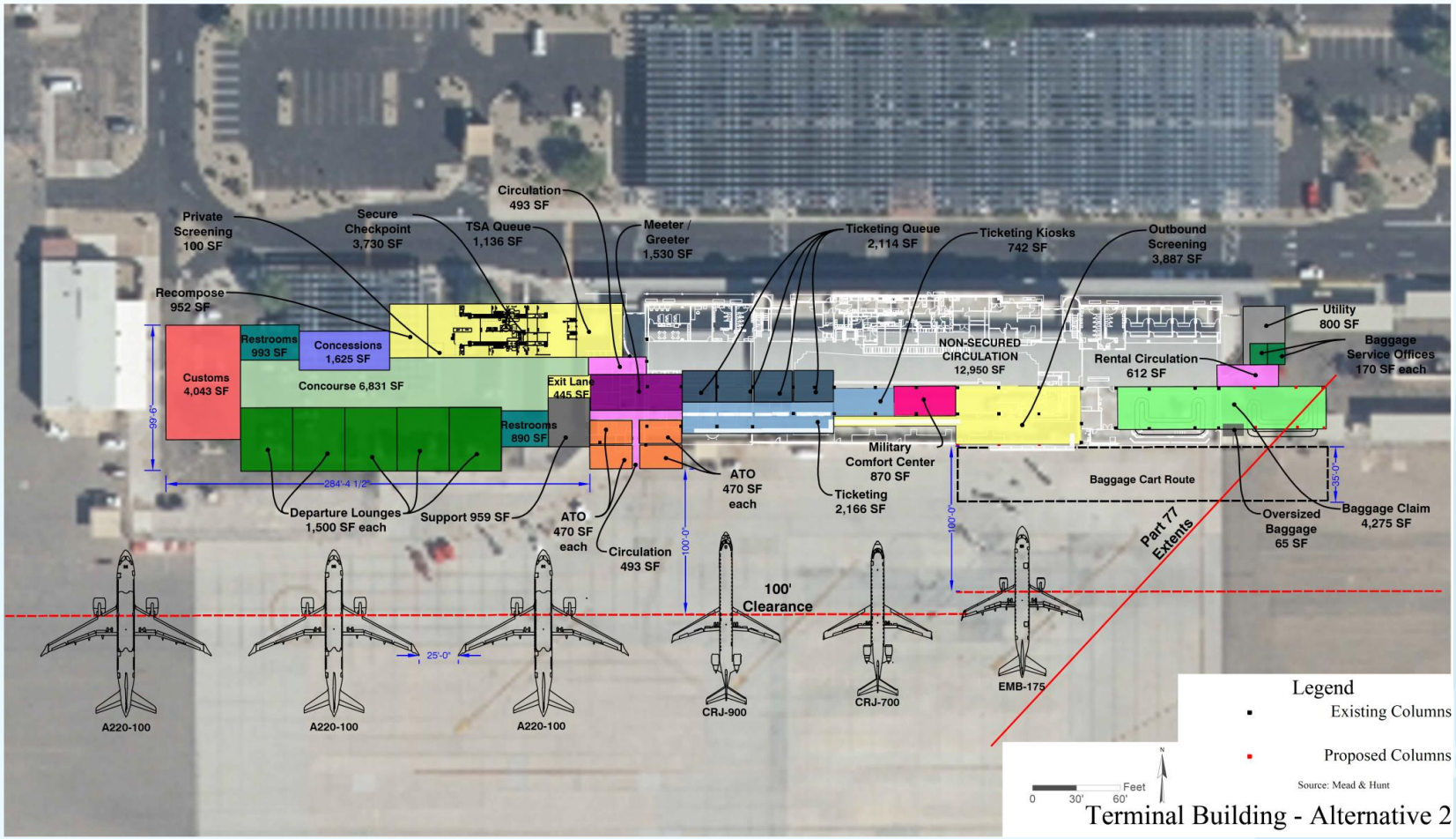
Terminal Building: *Alternative 2*



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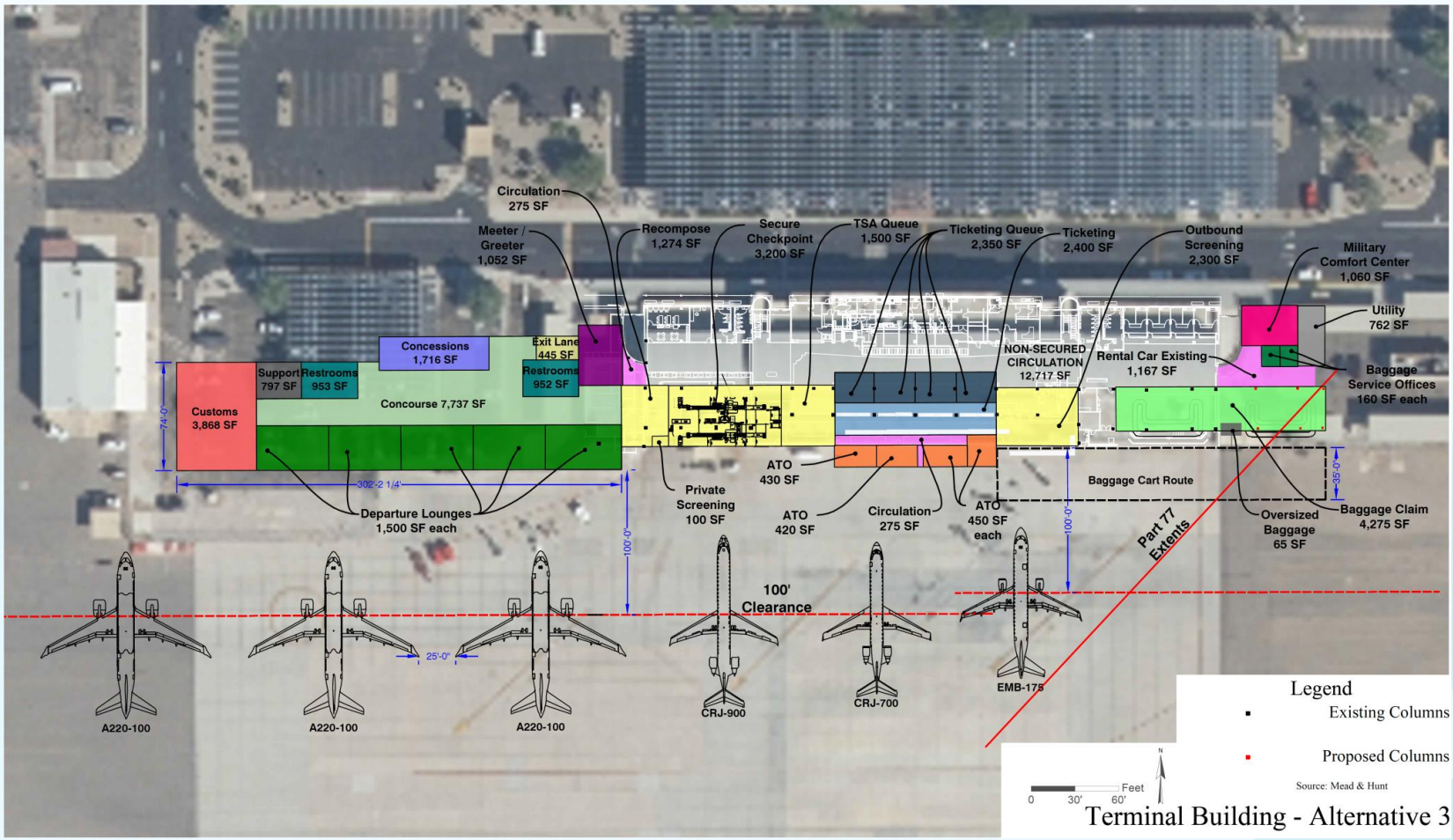
Terminal Building: *Alternative 3*



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Conceptual Development Plan

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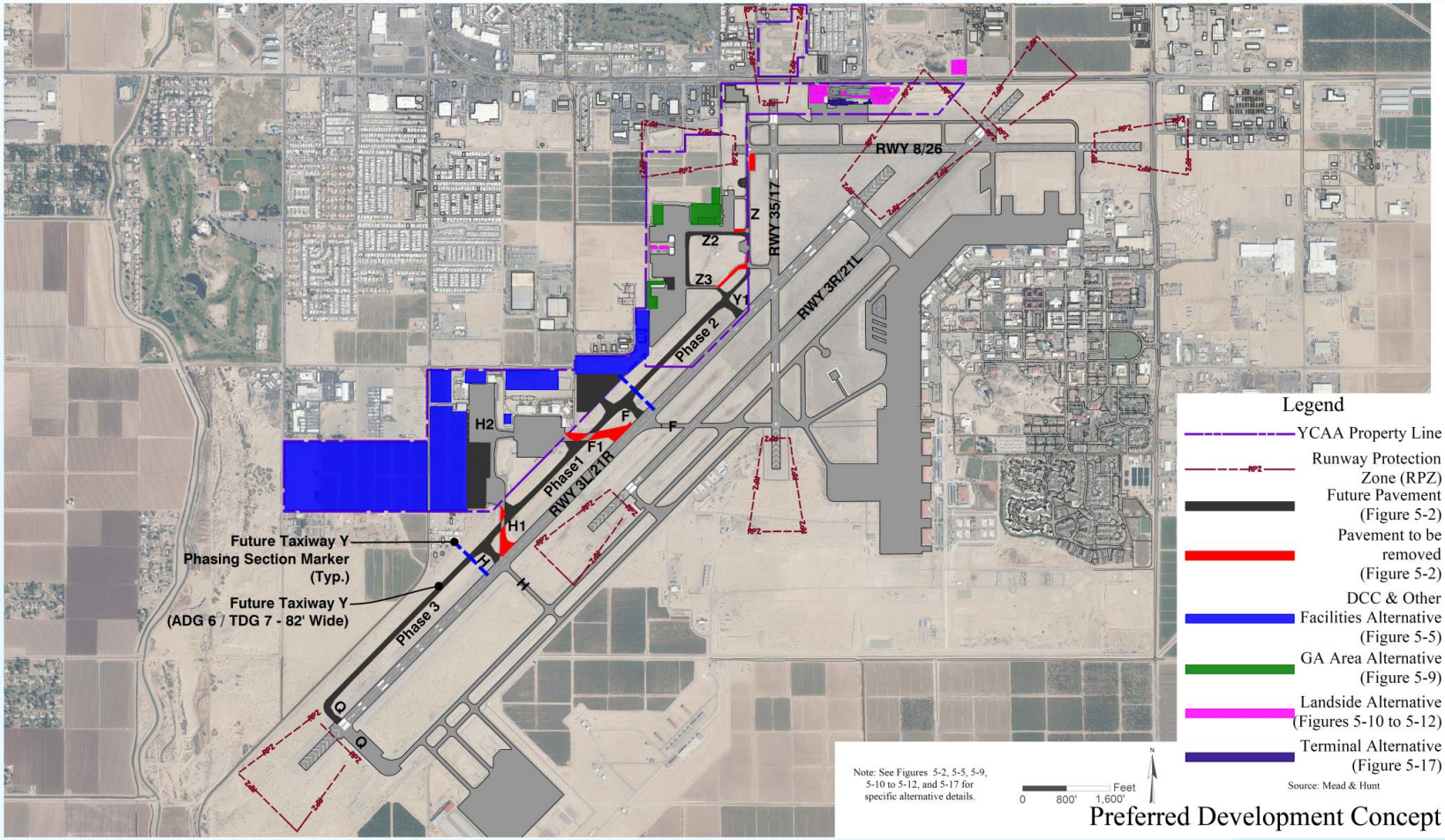
Preferred Conceptual Development Plan



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Next Steps

Planning Advisory Committee Meeting #3	July 2021
Public Open House #2	July 2021
Financial Feasibility & Implementation Chapters	Fall 2021
Environmental Overview of Conceptual Development Plan	Fall 2021
Formulation of the draft Airport Layout Plan	Fall 2021
Final PAC Meeting #4	Fall 2021
Airport Layout Plan Submitted to FAA For Approval	Late 2021
Yuma County Airport Authority Board of Directors Approval	Late 2021

Mead &Hunt

Project Contact Information

- **Yuma County Airport Authority**
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    - (928) 726-5882 Ext.2217
- **Mead & Hunt**
  - Christopher C. Hacker
    - Chris.Hacker@MeadHunt.com
    - (480) 718-1909
- **Project Website**
  - https://www.yumaairportmasterplan.com/

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Yuma International Airport Master Plan

Planning Advisory Committee Meeting #4
Airport Conference Room (9:00 a.m. to 10:00 a.m.)
Wednesday, December 1, 2021

Attendance

Study Team:
Mead & Hunt – Chris Hacker
Unison Consulting – Brian Drake
Gordley Group – C.T. Revere

Planning Advisory Committee Members:
YCAA – Gladys Brown, Gen Grosse, Bill Craft
City of Yuma – Alyssa Linville, Shelly Hook, Tim Bourcier
Yuma County – Maggie Castro
MCAS Yuma – Greg McShane, Antonio Martinez

Meeting Overview

Chris Hacker, Mead & Hunt, presented the update on the master plan for this final round of Planning Advisory Committee meetings. Information provided included a summary of the update process and findings, with focus on the proposed phased improvements. Brian Drake, Unison Consulting, provided information on the funding opportunities and implementation plan. The presentation was repeated for each of the three sessions.

Meeting Notes – Group A

Gladys Brown welcomed attendees, gave opening remarks and provided study background.

Chris Hacker, Mead & Hunt, led introductions of study team and PAC members, then updated the PAC on the master plan using a PowerPoint slide presentation for this final round of Planning Advisory Committee meetings. Information provided included a summary of the update process and findings, with focus on the proposed phased improvements.

Brian Drake, Unison Consulting, provided information on the funding opportunities and implementation plan.

Bill Craft asked what the study team designated for annual increases in enplanements. Chris Hacker said the average increase is expected to be approximately 3 percent annually. Gladys Brown noted that the

forecast for enplanements at the airport did not factor in COVID-19 variants, which she estimates will reduce the volume of traffic at the airport by approximately 40 percent.

Greg McShane asked if the forecast of YCAA-based aircraft included both general aviation and MCAS aircraft. Chris Hacker responded that the figure of 171 aircraft included both.

During a discussion of potential changes in the airport's Runway Protection Zones (RPZ), Greg McShane noted that RPZs was not a term used by the MCAS. Gladys Brown said that the Federal Aviation Administration requires the YCAA to identify the RPZs and noted that the MCAS safety zone regulations exceed what FAA requires of the general aviation operations.

Alyssa Linville asked what the City of Yuma needs to do regarding RPZs and noise contour overlays as they impact potential development within the city limits. Gladys Brown noted that the overlays already adopted by the City of Yuma are more expansive than those adopted by the YCAA.

Tim Bourcier asked which of four phases identified in the Airport Layout Plan allows for larger aircraft to use the general aviation facilities. Gladys Brown said improvements in the first phase – defined as the next one to five years – will allow for larger aircraft and that the second phase will include improvements and expansion of the airport terminal.

Bill Craft asked if federal grants available for making airport improvements could expire before all the projects they are funding have been completed. Brian Drake said that near shovel-ready projects are most likely to qualify for grants. Bill Craft asked whether there is a minimum amount for grant allocations. Brian Drake said there are no minimum amounts for grants.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting #4
Airport Conference Room (10:30 a.m. to 11:30 a.m.)
Wednesday, December 1, 2021

Attendance

Study Team:
Mead & Hunt – Chris Hacker
Unison Consulting – Brian Drake
Gordley Group – C.T. Revere

Planning Advisory Committee Members:
YCAA – Gen Grosse
Enterprise Holdings – Juana Garcia

Meeting Notes - Group B

Gen Grosse welcomed the attendee and began the meeting.

Chris Hacker, Mead & Hunt, led introductions of study team and PAC members, then updated the PAC on the master plan using a PowerPoint slide presentation for this final round of Planning Advisory Committee meetings. Information provided included a summary of the update process and findings, with focus on the proposed phased improvements.

Brian Drake, Unison Consulting, provided information on the funding opportunities and implementation plan.

Juana Garcia asked how the terminal is expected to expand when that occurs in Phase 2. Chris Hacker said the expansion would occur at the west end of the existing terminal.

Yuma International Airport Master Plan

Planning Advisory Committee Meeting #4
Airport Conference Room (1:30 p.m. to 2:30 p.m.)
Wednesday, December 1, 2021

Attendance

Study team:
Mead & Hunt – Chris Hacker
Unison Consulting – Brian Drake
Gordley Group – C.T. Revere

Planning Advisory Committee Members:
YCAA – Gladys Brown, Gen Grosse
Arizona Western College – Daniel P. Corr
City of Yuma/Arizona State Transportation Board – Gary Knight
Greater Yuma Port Authority – Buna George

Meeting Notes – Group C

Gladys Brown welcomed attendees, gave opening remarks and provided study background.

Chris Hacker, Mead & Hunt, led introductions of study team and PAC members, then updated the PAC on the master plan using a PowerPoint slide presentation for this final round of Planning Advisory Committee meetings. Information provided included a summary of the update process and findings, with focus on the proposed phased improvements.

Brian Drake, Unison Consulting, provided information on the funding opportunities and implementation plan.

Gary Knight asked about option of moving projects between phases of the Airport Layout Plan and how projects moved from one to another would be funded. Brian Drake said that the YCAA has the option of issuing bonds for making improvements and using federal and state grants to pay off the debt service for those grants.

Buna George asked if a discrepancy between the capital improvement costs in the study summary and those provided in the financial feasibility presentation were based on annual inflation rates. Chris Hacker explained that the study used 2021 costs and the financial feasibility report did factor annual inflation.

Daniel Corr asked if the landing fees of $1.25 per 1,000 pounds at Yuma International Airport are a common amount for such charges. Brian Drake said they are toward the lower end of the national spectrum and are set to be very competitive.

Gary Knight asked about the noise contours and RPA designations, saying that the City of Yuma has development plans in place and that the restrictions appear to be “moving the goalposts.” Gladys Brown noted that the overlays already adopted by the City of Yuma are more expansive than those adopted by the YCAA.

Buna George asked if a separate master plan has been adopted for Rolle Field in San Luis. Gladys Brown said that Rolle Field does have its own master plan.

AIRPORT MASTER PLAN

Mead & Hunt

Planning Advisory Committee Meeting #4

December 1, 2021

Yuma County Airport Authority

Agenda

- Introductory Remarks
- Project Approach and Schedule
- Forecasts of Aviation Activity Review
- Facility Requirements Review
- Conceptual Development Plan
- 20-Year Capital Improvement Project List
- Financial Implementation and Feasibility
- Airport Layout Plan
- Next Steps

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Project Approach

- **Follow FAA Guidance**
- **Building Block Process**
  - Inventory
  - Forecasts
  - Facilities Need Determination
  - Development Plan Formulation
  - Financial Plan

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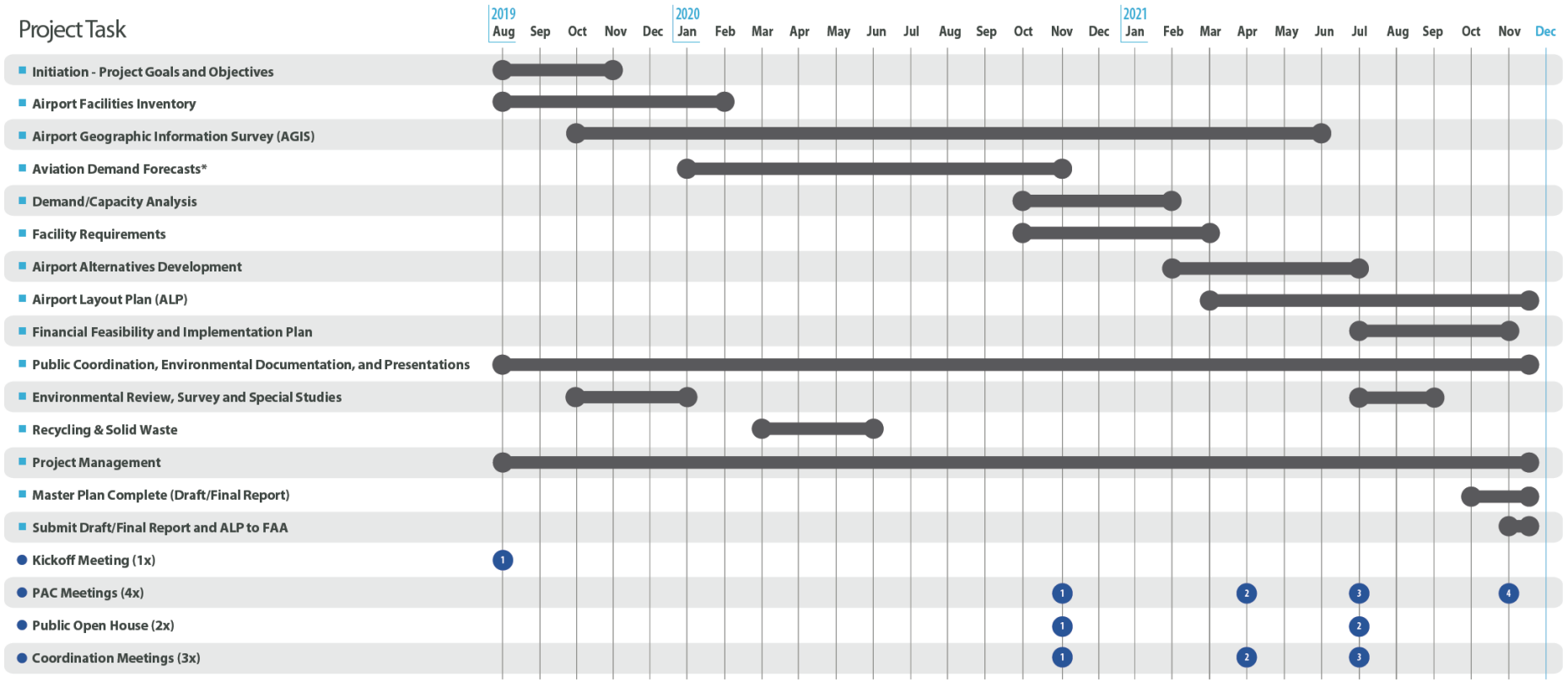
Project Schedule Airport Master Plan



NOTES: *Aviation Demand Forecast Development Impacted by COVID-19 Pandemic

Notice to Proceed - August 22, 2019; Schedule updated - February 25, 2021. Subject to change.

Airport Master Plan – FAA Approved Forecast

	Base Year 2019	Short-Term 2025	Medium-Term 2030	Long-Term 2040
Passenger Enplanements	92,908	104,040	124,788	163,113
Aircraft Operations	179,838	179,966	180,521	181,944
Based Aircraft	171	171	171	171

FAA Approved Forecast – October 23, 2020

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Summary of Facility Requirements

- **Airfield capacity**
  - Sufficient for now and the foreseeable future
- **Runway 17/35 and Runway 8/26**
  - Lengths are sufficient for current destinations
- **Runway protection zone improvements for C-III category aircraft**
  - Property acquisition, overlay zoning, or avigation easements
- **Runway and taxiway improvements**
  - FAA Advisory Circular 150/5300-13A

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Summary of Facility Requirements (Cont.)

- **Defense Contractor Complex and Other Aviation Support Areas**
  - Plan and market both aeronautical and non-aeronautical properties
  - Maximize properties with airfield access
- **General Aviation Facilities**
  - Program for demand-driven facility expansions and improvements
- **Vehicular access and parking**
  - Short-term focus on demand-driven improvements for existing public parking
  - Long-term focus on parking improvements with terminal expansion
- **Passenger terminal**
  - Short-term focus on maintaining the existing terminal building
  - Long-term focus on demand-driven program improvements

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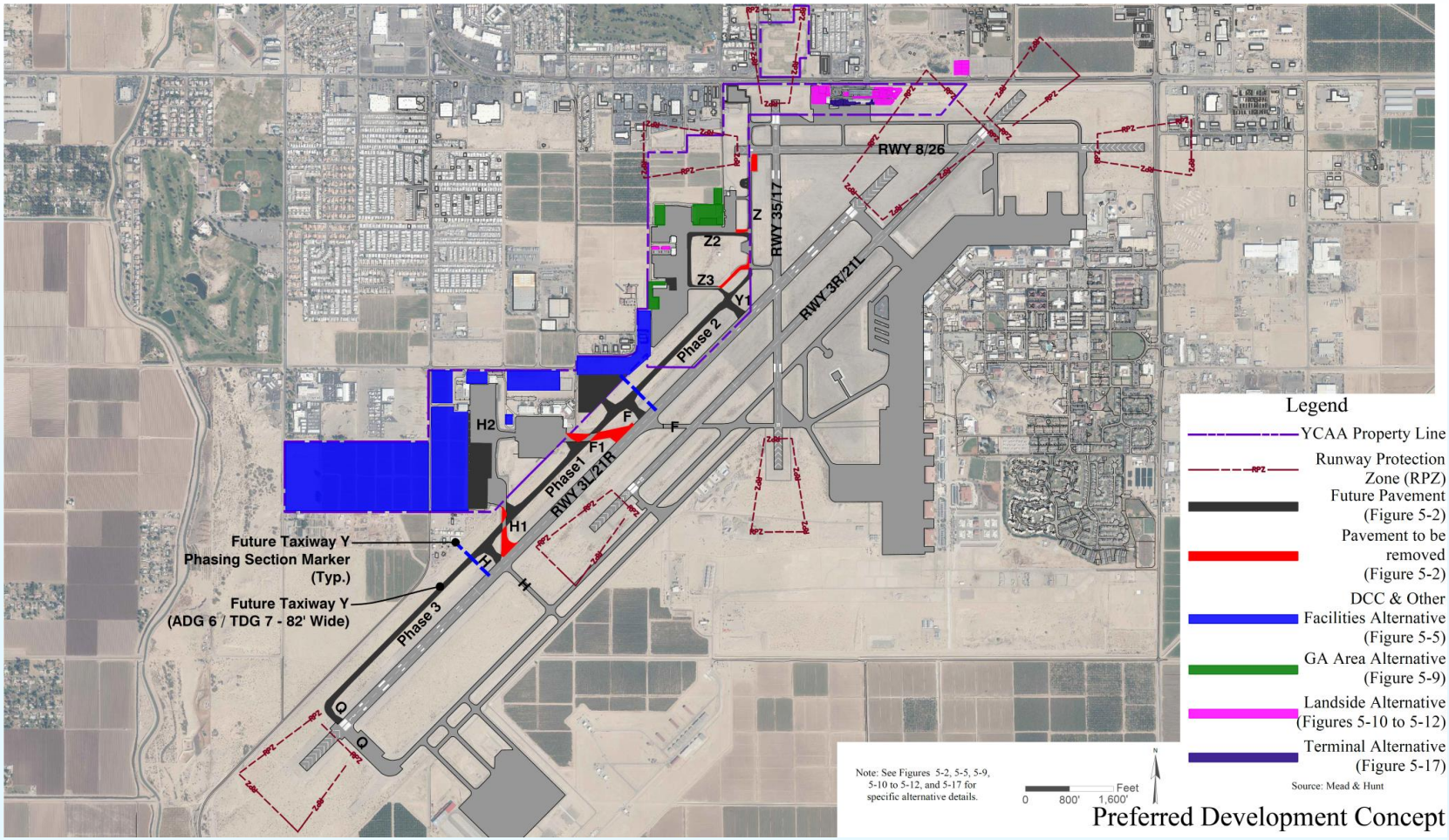
Preferred Conceptual Development Plan



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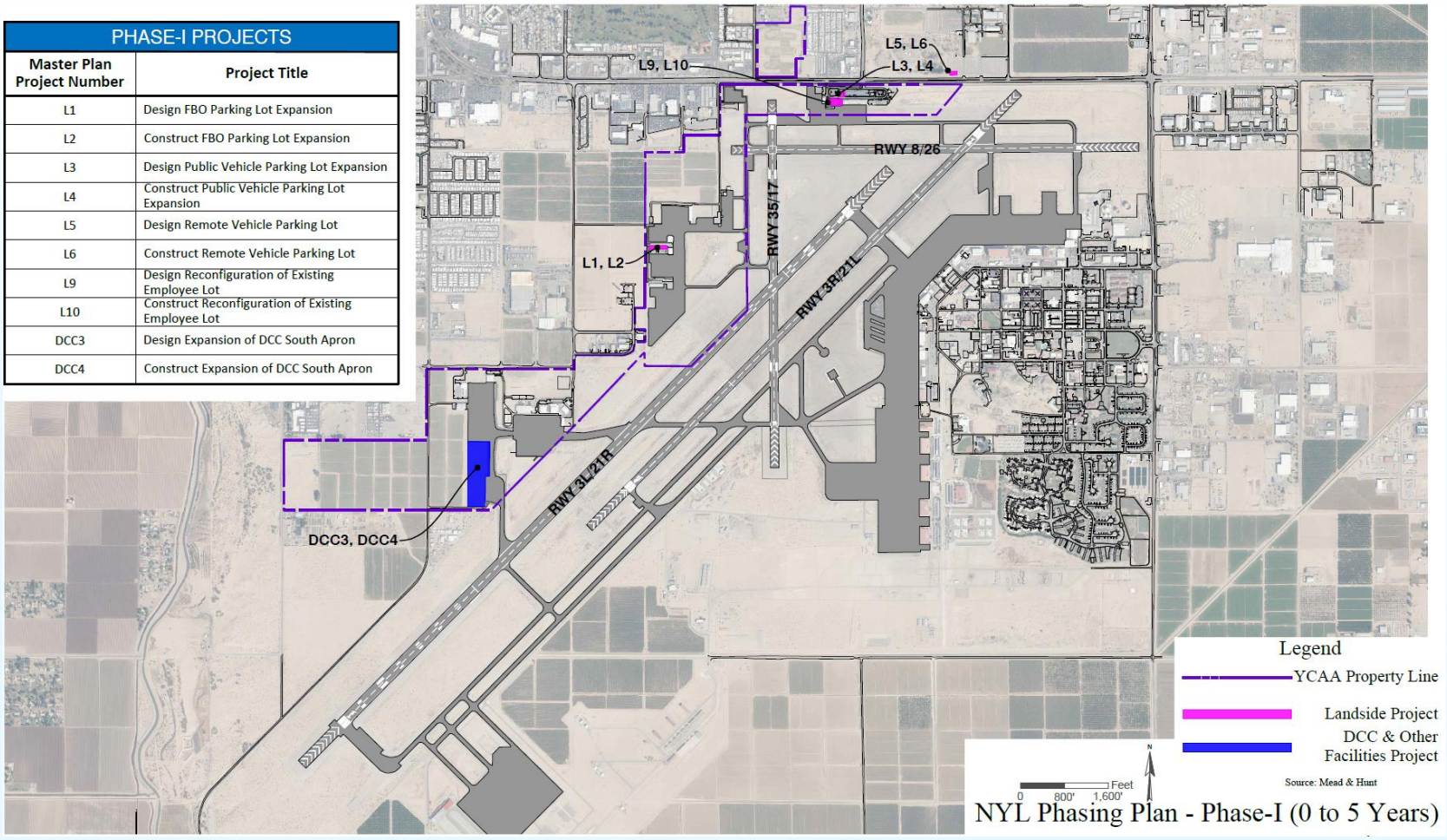
PHASE-I PROJECTS	
Master Plan Project Number	**Project Title**
L1	Design FBO Parking Lot Expansion
L2	Construct FBO Parking Lot Expansion
L3	Design Public Vehicle Parking Lot Expansion
L4	Construct Public Vehicle Parking Lot Expansion
L5	Design Remote Vehicle Parking Lot
L6	Construct Remote Vehicle Parking Lot
L9	Design Reconfiguration of Existing Employee Lot
L10	Construct Reconfiguration of Existing Employee Lot
DCC3	Design Expansion of DCC South Apron
DCC4	Construct Expansion of DCC South Apron



Phase-I Program

- **Project Types**
  - Landside
  - DCC & Other Facilities
- **$33.2M**
  - (2021 dollars)

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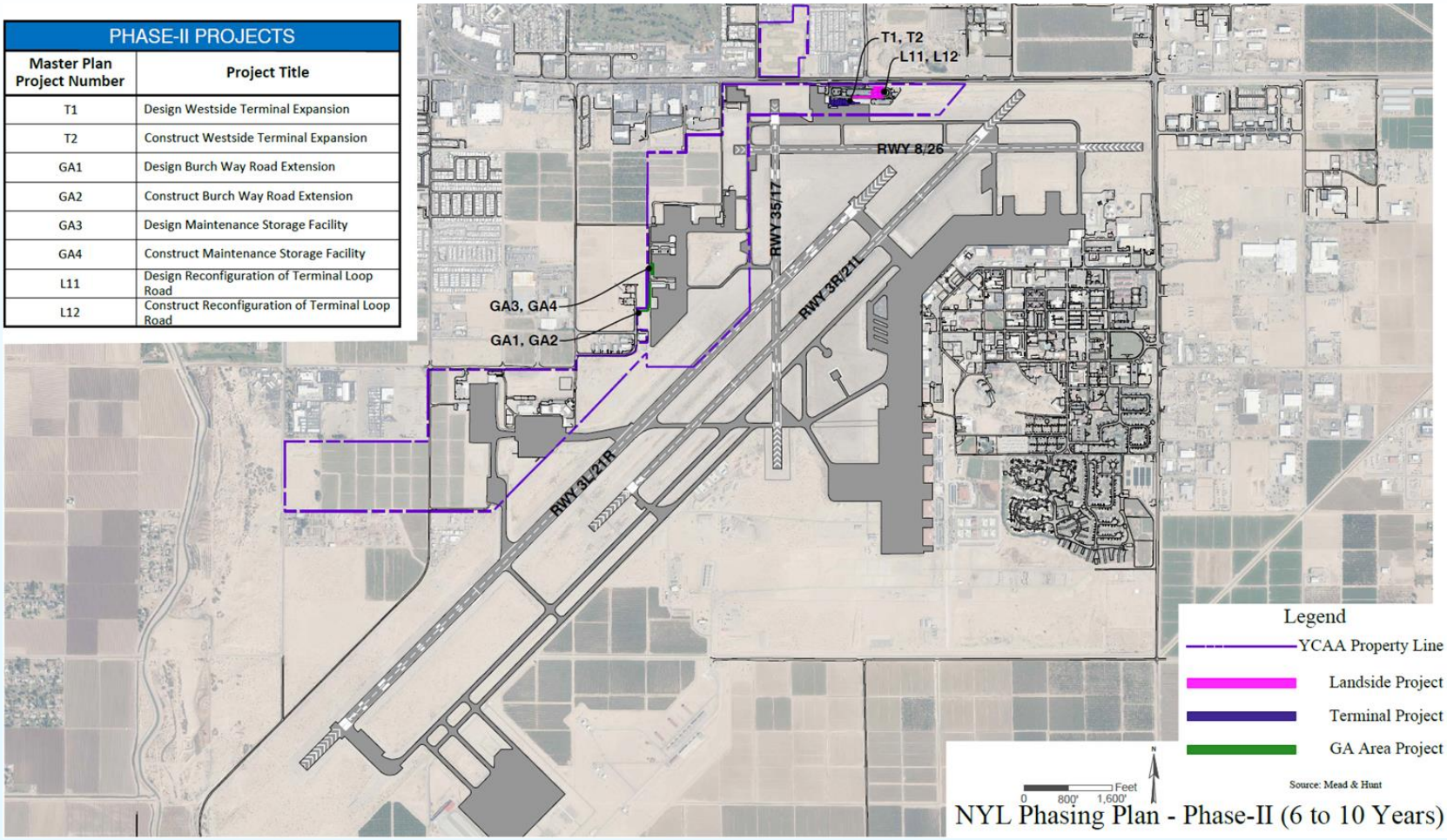
PHASE-II PROJECTS	
Master Plan Project Number	**Project Title**
T1	Design Westside Terminal Expansion
T2	Construct Westside Terminal Expansion
GA1	Design Burch Way Road Extension
GA2	Construct Burch Way Road Extension
GA3	Design Maintenance Storage Facility
GA4	Construct Maintenance Storage Facility
L11	Design Reconfiguration of Terminal Loop Road
L12	Construct Reconfiguration of Terminal Loop Road



Phase-II Program

- **Project Types**
  - Landside
  - Terminal
  - GA Area
- **$44.8M**
  - (2021 dollars)

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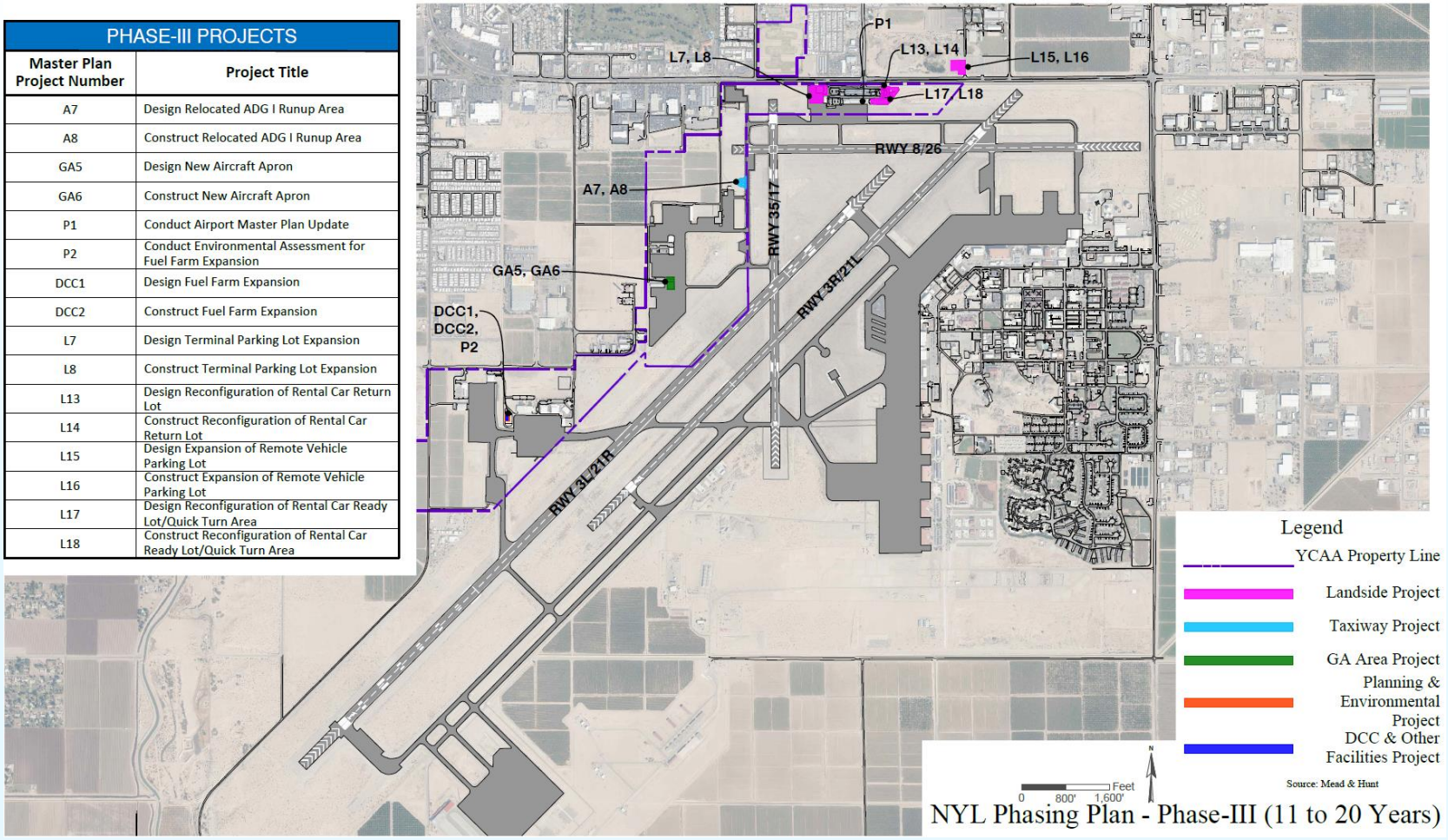
PHASE-III PROJECTS	
Master Plan Project Number	**Project Title**
A7	Design Relocated ADG I Runup Area
A8	Construct Relocated ADG I Runup Area
GA5	Design New Aircraft Apron
GA6	Construct New Aircraft Apron
P1	Conduct Airport Master Plan Update
P2	Conduct Environmental Assessment for Fuel Farm Expansion
DCC1	Design Fuel Farm Expansion
DCC2	Construct Fuel Farm Expansion
L7	Design Terminal Parking Lot Expansion
L8	Construct Terminal Parking Lot Expansion
L13	Design Reconfiguration of Rental Car Return Lot
L14	Construct Reconfiguration of Rental Car Return Lot
L15	Design Expansion of Remote Vehicle Parking Lot
L16	Construct Expansion of Remote Vehicle Parking Lot
L17	Design Reconfiguration of Rental Car Ready Lot/Quick Turn Area
L18	Construct Reconfiguration of Rental Car Ready Lot/Quick Turn Area



Phase-III Program

- **Project Types**
  - Landside
  - Taxiway
  - GA Area
  - Planning/Enviro.
  - DCC & Other Facilities
- **$9.1M**
  - (2021 dollars)

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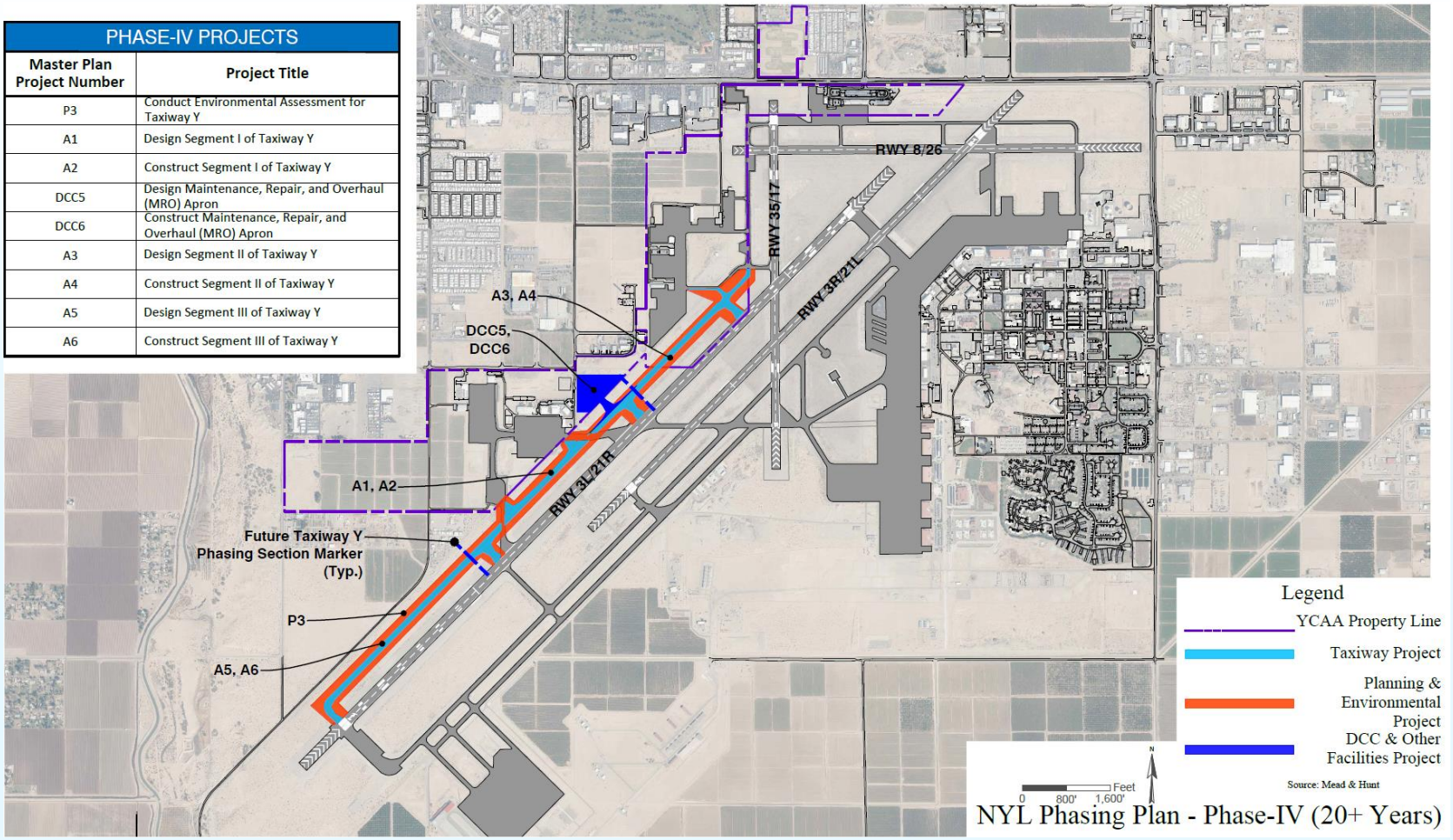
PHASE-IV PROJECTS	
Master Plan Project Number	**Project Title**
P3	Conduct Environmental Assessment for Taxiway Y
A1	Design Segment I of Taxiway Y
A2	Construct Segment I of Taxiway Y
DCC5	Design Maintenance, Repair, and Overhaul (MRO) Apron
DCC6	Construct Maintenance, Repair, and Overhaul (MRO) Apron
A3	Design Segment II of Taxiway Y
A4	Construct Segment II of Taxiway Y
A5	Design Segment III of Taxiway Y
A6	Construct Segment III of Taxiway Y



Phase-IV Program

- **Project Types**
  - Taxiway
  - Planning/Enviro.
  - DCC & Other Facilities
- **$60.7M**
  - (2021 dollars)

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Financial Implementation and Feasibility

- **YCAA Organizational and Financial Framework**
- **Master Plan and CIP funding plan**
- **Financial Analysis**
  - Airline Rates and Charges
  - Historical Trends
  - Projected Trends

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Financial Information Collected from YCAA

- Audited financial reports for FY 2017 – FY 2020
- Revenue and expense budgets for FY 2021 & FY 2022
- Current ACIP on file with FAA
- FAA PFC Final Agency Decision for most recent application and PFC reports
- Airline Lease Agreement
- Additional information in response to follow-up requests

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Funding Plan

- **Evaluation of eligibility and availability of:**
  - FAA AIP grants
  - PFCs
  - ADOT funding
  - TSA Grants
- **Other funds**
  - CFCs
  - Local Funds

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Funding Plan – Phase I

Project	Project Number	Total	AIP		PFC		TSA Grants	State Grants	Local	CFCs
			Entitlements	Discretionary	Paygo	Bonds				
Phase I - 2021 to 2025										
Rehabilitate Hero Hangar		$ 1,750,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,750,000	$ -
Rehabilitate NW T-Hangar Apron		500,000	-	-	-	-	-	-	500,000	-
Design/Construct - Expansion of Bag Belt		2,042,000	-	-	408,400	-	1,633,600	-	-	-
Design - Rehabilitate Commercial Air Service Apron		408,400	371,889	-	36,511	-	-	-	-	-
Design - Expand FBO Vehicle Parking	L1	26,138	-	-	-	-	-	-	26,138	-
Construct - Expand FBO Vehicle Parking	L2	224,620	-	-	-	-	-	-	224,620	-
Design/Construct Replacement of Terminal Floor		867,850	-	-	-	-	-	-	867,850	-
Purchase of Airfield Sweeper		306,300	-	-	-	-	-	-	306,300	-
Purchase of Commercial Air Service Stairs		76,575	-	-	-	-	-	-	76,575	-
Construct - Rehabilitate Commercial Air Service Apron		10,506,250	1,628,111	7,938,880	469,629	-	-	469,629	-	-
Design - Expand Airport Public Parking	L3	23,114	-	-	-	-	-	-	23,114	-
Construct - Expand Airport Public Parking	L4	199,619	-	-	-	-	-	-	199,619	-
Design - Remote Parking Lot	L5	106,190	-	-	-	-	-	-	106,190	-
Construct - Remote Parking Lot	L6	367,719	-	-	-	-	-	-	367,719	-
Design - Reconfigure Employee Parking Lot	L9	50,662	-	-	-	-	-	-	50,662	-
Construct - Reconfigure Employee Parking Lot	L10	415,090	-	-	-	-	-	-	415,090	-
Design - General Aviation Pavement Rehabilitation		159,650	145,377	-	14,273	-	-	-	-	-
Construct - General Aviation Pavement Rehabilitation		2,173,366	1,979,068	-	194,299	-	-	-	-	-
Design - Expand the Defense Contractor's South Apron	DCC3	819,576	-	-	-	-	-	-	819,576	-
Construct - Expand the Defense Contractor's South Apron	DCC4	14,365,952	-	-	-	-	-	-	14,365,952	-
Total Phase I - 2021 to 2025		**$ 35,389,071**	**$ 4,124,445**	**$ 7,938,880**	**$ 1,123,112**	**$ -**	**$ 1,633,600**	**$ 469,629**	**$ 20,099,405**	**$ -**

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Funding Plan – Phase II

Project	Project Number	Total	AIP		PFC		TSA Grants	State Grants	Local	CFCs
			Entitlements	Discretionary	Paygo	Bonds				
Phase II - 2026 to 2030										
Design - Westside Terminal Expansion	T1	$ 8,211,813	$ 875,555	$ 4,951,591	$ 894,250	$ -	$ -	$ 894,250	$ 596,167	$ -
Purchase Computer Server Upgrades		332,851	-	-	-	-	-	-	332,851	-
Construct - Westside Terminal Expansion	T2	38,712,838	-	15,048,409	250,000	6,743,110	-	6,993,110	9,678,209	-
Design - Extend Burch Way Road	GA1	79,070	72,001	-	7,069	-	-	-	-	-
Construct - Extend Burch Way Road	GA2	600,386	546,711	-	26,837	-	-	26,837	-	-
Design - Maintenance Storage Facility	GA3	96,527	-	-	-	-	-	-	96,527	-
Construct - Maintenance Storage Facility	GA4	998,553	-	-	-	-	-	-	998,553	-
Design - Reconfigure Terminal Loop Road and Public Parking Lot	L11	83,435	-	-	-	-	-	-	83,435	-
Construct - Reconfigure Terminal Loop Road and Public Parking Lot	L12	687,892	-	-	-	-	-	-	687,892	-
Total Phase II - 2026 to 2030		**$ 49,803,365**	**$ 1,494,267**	**$ 20,000,000**	**$ 1,178,156**	**$ 6,743,110**	**$ -**	**$ 7,914,197**	**$ 12,473,634**	**$ -**

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Funding Plan – Phase III

Project	Project Number	Total	AIP		PFC		TSA Grants	State Grants	Local	CFCs
			Entitlements	Discretionary	Paygo	Bonds				
Phase III - 2031 to 2040										
Design - ADG I Aircraft Runup Area	A7	$ 216,299	$ 196,962	$ -	$ 19,337	$ -	$ -	$ -	$ -	$ -
Construct - ADG I Aircraft Runup Area	A8	2,206,392	2,009,141	-	98,626	-	-	98,626	-	-
Design - Aircraft Apron	GA5	77,799	70,844	-	6,955	-	-	-	-	-
Construct - Aircraft Apron	GA6	640,119	582,892	-	28,613	-	-	28,613	-	-
Conduct Airport Master Plan Update	P1	1,068,322	972,814	-	47,754	-	-	47,754	-	-
Conduct Environmental Assessment for Fuel Storage Expansion	P2	641,622	-	-	-	-	-	-	641,622	-
Design - Fuel Farm Expansion	DCC1	151,720	-	-	-	-	-	-	151,720	-
Construct - Fuel Farm Expansion	DCC2	1,572,229	-	-	-	-	-	-	1,572,229	-
Design - Expand Vehicle Parking Lot	L7	163,334	-	-	-	-	-	-	163,334	-
Construct - Expand Vehicle Parking Lot	L8	1,698,886	-	-	-	-	-	-	1,698,886	-
Design - Reconfigure Rental Car Return Lot	L13	101,342	-	-	-	-	-	-	101,342	-
Construct - Reconfigure Rental Car Return Lot	L14	846,794	-	-	-	-	-	-	846,794	-
Design - Expand Remote Vehicle Parking Lot	L15	89,665	-	-	-	-	-	-	89,665	-
Construct - Expand Remote Vehicle Parking Lot	L16	1,101,638	-	-	-	-	-	-	1,101,638	-
Design - Reconfigure Rental Car Ready Lot/Quick Turn Area Lot	L17	138,390	-	-	-	-	-	-	-	138,390
Construct - Reconfigure Rental Car Ready Lot/Quick Turn Area Lot	L18	1,153,248	-	-	-	-	-	-	-	1,153,248
Total Phase III - 2031 to 2040		**$ 11,867,798**	**$ 3,832,653**	**$ -**	**$ 201,285**	**$ -**	**$ -**	**$ 174,993**	**$ 6,367,230**	**$ 1,291,638**

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Funding Plan – Phase IV

Project	Project Number	Total	AIP		PFC		TSA Grants	State Grants	Local	CFCs
			Entitlements	Discretionary	Paygo	Bonds				
Phase IV - 2041 and Beyond										
Conduct Environmental Assessment for Taxiway Y	P3	$ 783,069	$ 713,063	$ -	$ 70,006	$ -	$ -	$ -	$ -	$ -
Design - Segment I Taxiway Y	A1	1,227,424	1,117,692	-	109,732	-	-	-	-	-
Construct - Segment I Taxiway Y	A2	21,972,671	4,229,644	13,778,670	-	3,848,358	-	115,999	-	-
Design - Aircraft Apron for Maintenance, Repair, and Overhaul (MRO) in	DCC5	961,861	-	-	-	-	-	-	961,861	-
Construct - Aircraft Apron for Maintenance, Repair, and Overhaul (MRO)	DCC6	13,999,476	-	-	-	-	-	-	13,999,476	-
Design - Segment II of Taxiway Y	A3	1,426,076	1,298,585	-	127,491	-	-	-	-	-
Construct - Segment II of Taxiway Y	A4	25,524,045	3,194,847	17,047,349	-	4,775,509	-	506,341	-	-
Design - Segment III of Taxiway Y	A5	1,707,147	-	1,554,528	76,309	-	-	76,309	-	-
Construct - Segment III of Taxiway Y	A6	29,920,768	-	27,245,851	1,337,458	-	-	1,337,458	-	-
Total Phase IV - 2041 and Beyond		**$ 97,522,537**	**$ 10,553,831**	**$ 59,626,398**	**$ 1,720,997**	**$ 8,623,867**	**$ -**	**$ 2,036,107**	**$ 14,961,337**	**$ -**

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Sources and Uses of Capital Funding

Sources of Capital Funding	Phase I 2021 - 2025	Phase II 2026 - 2030	Phase III 2031 -2040	Phase IV Beyond 2041	Total
AIP Entitlements	$ 4,124,445	$ 1,494,267	$ 3,832,653	$ 10,553,831	$ 20,005,196
AIP Discretionary	7,938,880	20,000,000	-	59,626,398	87,565,278
PFC Paygo	1,123,112	1,178,156	201,285	1,720,997	4,223,551
PFC Bonds	-	6,743,110	-	8,623,867	15,366,977
TSA Grants	1,633,600	-	-	-	1,633,600
ADOT Grants	469,629	7,914,197	174,993	2,036,107	10,594,927
CFCs	-	-	1,291,638	-	1,291,638
Local Funds	20,099,405	12,473,634	6,367,230	14,961,337	53,901,606
Total Sources	**$ 35,389,071**	**$ 49,803,364**	**$ 11,867,799**	**$ 97,522,537**	**$ 194,582,772**

Uses of Capital Funding	Phase I 2021 - 2025	Phase II 2026 - 2030	Phase III 2031 -2040	Phase IV Beyond 2041	Total
Taxiway	$ -	$ -	$ -	$ 82,561,200	$ 82,561,200
Terminal Expansion/Renovation	2,909,850	46,924,651	-	-	49,834,501
Apron	26,100,179	-	717,918	14,961,337	41,779,434
Parking and Roadways	1,413,151	1,450,782	3,053,522	-	5,917,455
Other Airfield Improvements	306,300	-	2,422,691	-	2,728,991
Fuel Farm/Fuel Storage	-	-	2,365,571	-	2,365,571
General Aviation	2,333,016	-	-	-	2,333,016
Hangar	2,250,000	-	-	-	2,250,000
Rental Car	-	-	2,239,774	-	2,239,774
Maintenance Facility	-	1,095,080	-	-	1,095,080
Other	76,575	332,851	1,068,322	-	1,477,748
Total Uses	**$ 35,389,071**	**$ 49,803,365**	**$ 11,867,798**	**$ 97,522,537**	**$ 194,582,771**

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Projected Operating Expenses

	Budget	Budget	Projected						
	2021	2022	2023	2024	2025	2030	2035	2040	2045
Personnel and Fringe Benefits	$ 2,204,290	$ 2,267,088	$ 2,335,101	$ 2,405,154	$ 2,477,308	$ 2,871,879	$ 3,329,295	$ 3,859,566	$ 4,474,294
Communication and Utilites	293,252	320,000	326,400	332,928	339,587	374,931	413,954	457,039	504,608
Supplies and Materials	60,000	65,000	66,300	67,626	68,979	76,158	84,084	92,836	102,498
Contractual Services	162,000	180,000	183,600	187,272	191,017	210,899	232,849	257,084	283,842
Insurance	167,000	185,000	188,700	192,474	196,323	216,757	239,317	264,226	291,726
Other	667,452	780,652	796,265	812,190	828,434	914,658	1,009,857	1,114,963	1,231,010
Total Operating Expenses	**$ 3,553,994**	**$ 3,797,740**	**$ 3,896,366**	**$ 3,997,644**	**$ 4,101,648**	**$ 4,665,282**	**$ 5,309,357**	**$ 6,045,714**	**$ 6,887,978**

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Projected Operating Revenues

	Budget 2021	Budget 2022	Projected 2023	2024	2025	2030	2035	2040	2045
Landing Fees	$ 95,253	$ 130,000	$ 144,973	$ 158,301	$ 169,301	$ 196,568	$ 226,343	$ 256,115	$ 288,071
Cargo Landing Fees	10,000	10,000	11,081	12,099	12,940	15,024	17,300	19,575	22,018
Terminal Rentals	401,124	401,124	413,157	425,552	425,552	478,963	523,376	571,907	643,686
FBO	290,555	303,365	333,312	361,127	383,378	434,836	500,664	566,677	638,422
Hangar and T-Shade Rentals	935,371	1,016,714	1,306,893	1,057,789	1,078,945	1,191,242	1,315,228	1,452,118	1,603,256
Fuel Flowage Fees	390,000	500,000	549,511	595,355	631,724	716,687	825,183	933,985	1,052,235
Total Aeronautical Revenue	**$2,122,303**	**$2,361,203**	**$2,758,927**	**$2,610,223**	**$2,701,841**	**$3,033,319**	**$3,408,093**	**$3,800,377**	**$4,247,687**
TSA Grants	$ 64,000	$ 64,000	$ 95,000	$ 106,959	$ 117,798	$ 141,289	$ 162,983	$ 184,682	$ 208,025
Food and Beverage	30,000	52,000	59,489	66,978	73,765	88,476	102,060	115,648	130,266
Other Terminal Rent	66,162	75,264	76,769	78,305	79,871	88,184	97,362	107,496	118,684
Rental Car	720,503	726,674	810,661	894,707	971,269	1,148,099	1,314,720	1,483,495	1,665,690
Parking	75,000	170,000	194,484	218,966	241,155	289,247	333,658	378,081	425,869
Other	82,357	84,743	86,438	88,167	89,930	99,290	109,624	121,034	133,631
CARES/CRRSA/ARPA Grants	2,136,612	2,014,359	-	-	-	-	-	-	-
Total Non-Aeronautical Revenue	**$3,174,634**	**$3,187,040**	**$1,322,841**	**$1,454,080**	**$1,573,788**	**$1,854,585**	**$2,120,407**	**$2,390,435**	**$2,682,165**
Total Operating Revenue	**$5,296,937**	**$5,548,243**	**$4,081,768**	**$4,064,304**	**$4,275,628**	**$4,887,904**	**$5,528,500**	**$6,190,812**	**$6,929,852**

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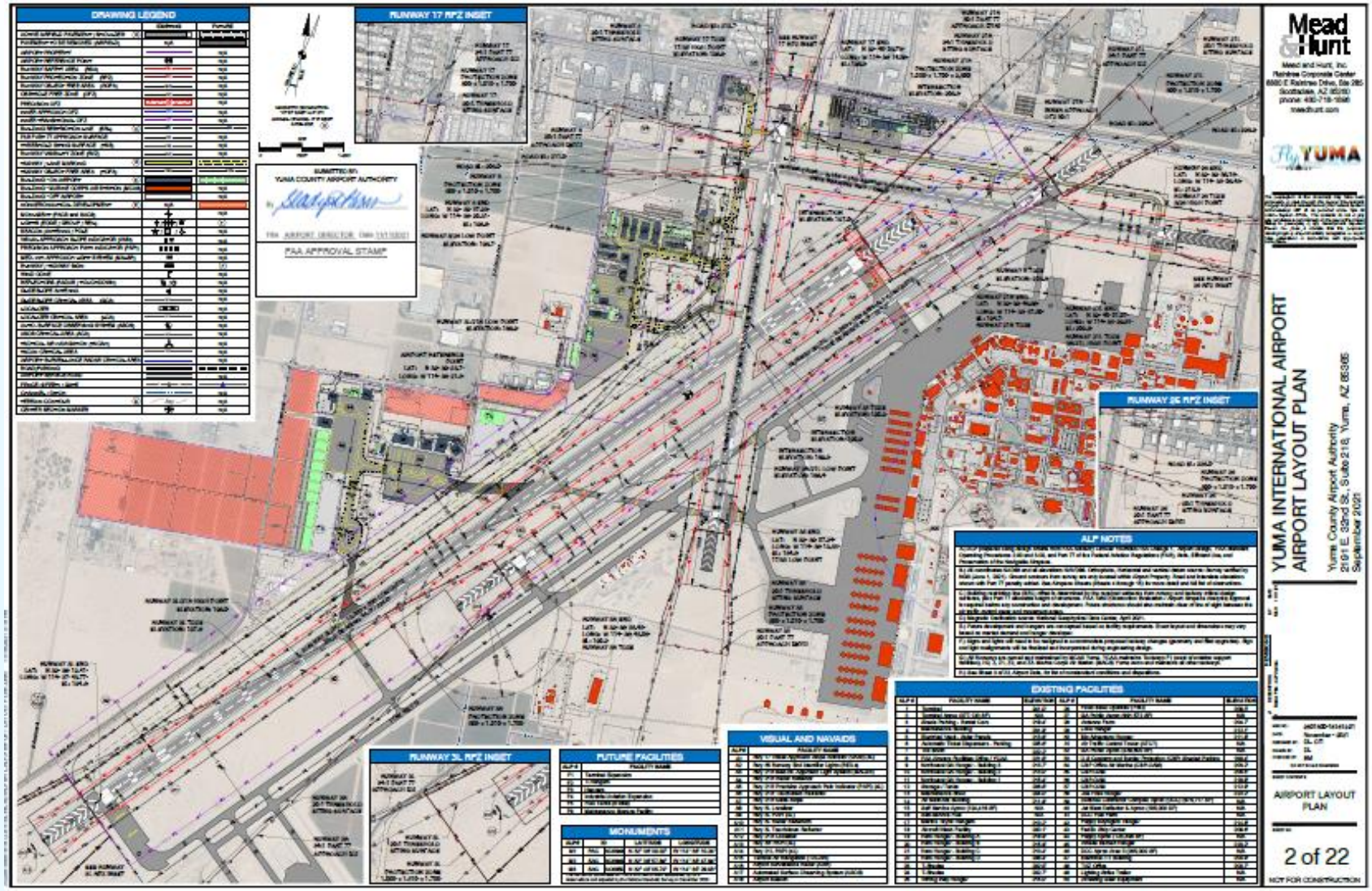
Airline Rates and Charges

- **Terminal Rental Rate**
  - $70.38 per square foot in 2022 Budget
  - Projections include 3.0% increases in 2 out of every 3 years
- **Landing Fee**
  - $1.25 per 1,000 pounds
  - Rate has been $1.25 for several years
  - Rate is not projected to change during forecast period

Mead & Hunt

Airport Layout Plan



Next Steps

FAA Approval of the Airport Layout Plan	December 2021
Finalize Financial Feasibility & Implementation Chapters	December 2021
Develop Airport Master Plan Draft Executive Summary	December 2021
Develop Airport Master Plan Draft Document	January 2021
Finalize Airport Master Plan Executive Summary	January 2022
Finalize Airport Master Plan Document	January 2022

Mead &Hunt

Project Contact Information

- **Yuma County Airport Authority**
  - Gladys Brown
    - Gladys@yumaairport.com
    - (928) 726-5882 Ext.2217
- **Mead & Hunt**
  - Christopher C. Hacker
    - Chris.Hacker@MeadHunt.com
    - (480) 718-1909
- **Project Website**
  - https://www.yumaairportmasterplan.com/

Mead &Hunt

NOTICE OF PUBLIC OPEN HOUSE

Yuma International Airport Master Plan

YOU'RE INVITED:

The Yuma County Airport Authority (YCAA) invites you to attend a Public Open House to discuss the Yuma International Airport Master Plan. The "Shared-Use" Master Plan will serve both the Yuma International Airport (NYL) and its partnership with the Marine Corps Air Station, Yuma (MCAS) and the update will provide the airport, public officials and the community with proper guidance for future development that will satisfy commercial and general aviation demands while being wholly compatible with the environment, community, and future airfield plans. The Master Plan will establish goals and objectives, taking into account current conditions and evaluating aeronautical and facility needs for the future while identifying recommended improvement projects.

In response to the public health crisis created by the COVID-19 pandemic, we are offering the opportunity to participate online or in a limited-attendance in-person open house meeting that will adhere to all guidelines of the Centers for Disease Control and the Yuma County Health Department, including appropriate social distancing and mandatory wearing of masks.

WHEN AND WHERE:

PUBLIC OPEN HOUSE

Wednesday, Sept. 23, 2020, 5:30 p.m. to 7 p.m.
Presentation at 5:45 p.m.

TO ATTEND ONLINE: Visit the project website at www.yumaairportmasterplan.com and click on the Zoom meeting link.

TO ATTEND IN-PERSON: Yuma International Airport Terminal Conference Room at 2191 E. 32nd Street, Yuma, Arizona 85365

For additional information, please visit the Yuma International Airport Master Plan website at www.yumaairportmasterplan.com or contact Gen Grosse, Property & Community Relations, Yuma International Airport at 928.726.5882 Ext 2211 or 2191 E. 32nd Street, Suite 218, Yuma, AZ 85365.

The presentation and all materials provided for the public open house will be posted on the website after the meeting date.

Persons who require a reasonable accommodation based on language or disability should contact Teresita Finch at teresita@gordleygroup.com or at 520-327-6077 Ext 111.

Yuma Sun

Affidavit of Performance

I hereby affirm that the following appeared in: Yuma Sun Newspaper
(Name of Publication)

On 09/09/2020 (Date) as ordered by Gordley Group (Advertiser)

Size of Display Ad: 3X 10.50 or Units Inserted: _____

Name: Isabella Ramirez Date: 9/10/2020

Signature: _____

Arizona
State of

Yuma
County Of

Sworn to and subscribed before me this 10th (Day) of Sept. (Month) 2020 (Year)

Virgen P. Perez
Notary Public Signature

May 10, 2021
Commission Expires

VIRGEN P PEREZ
NOTARY PUBLIC, ARIZONA
YUMA COUNTY
My Commission Expires
May 10, 2021

The Master Plan will look at how to:

- Comply with FAA guidance and regulations.
  - Address airfield geometry challenges
  - Provide operational areas for existing and future users
- Plan for passenger terminal area development.
  - Grow terminal with demand
  - Improve parking facilities
- Develop property to improve and diversity revenue.
- Promote land use compatibility initiatives with local communities.
- Prepare a sustainable and implementable Capital Plan.

Building Block Process

Inventory

Forecasts

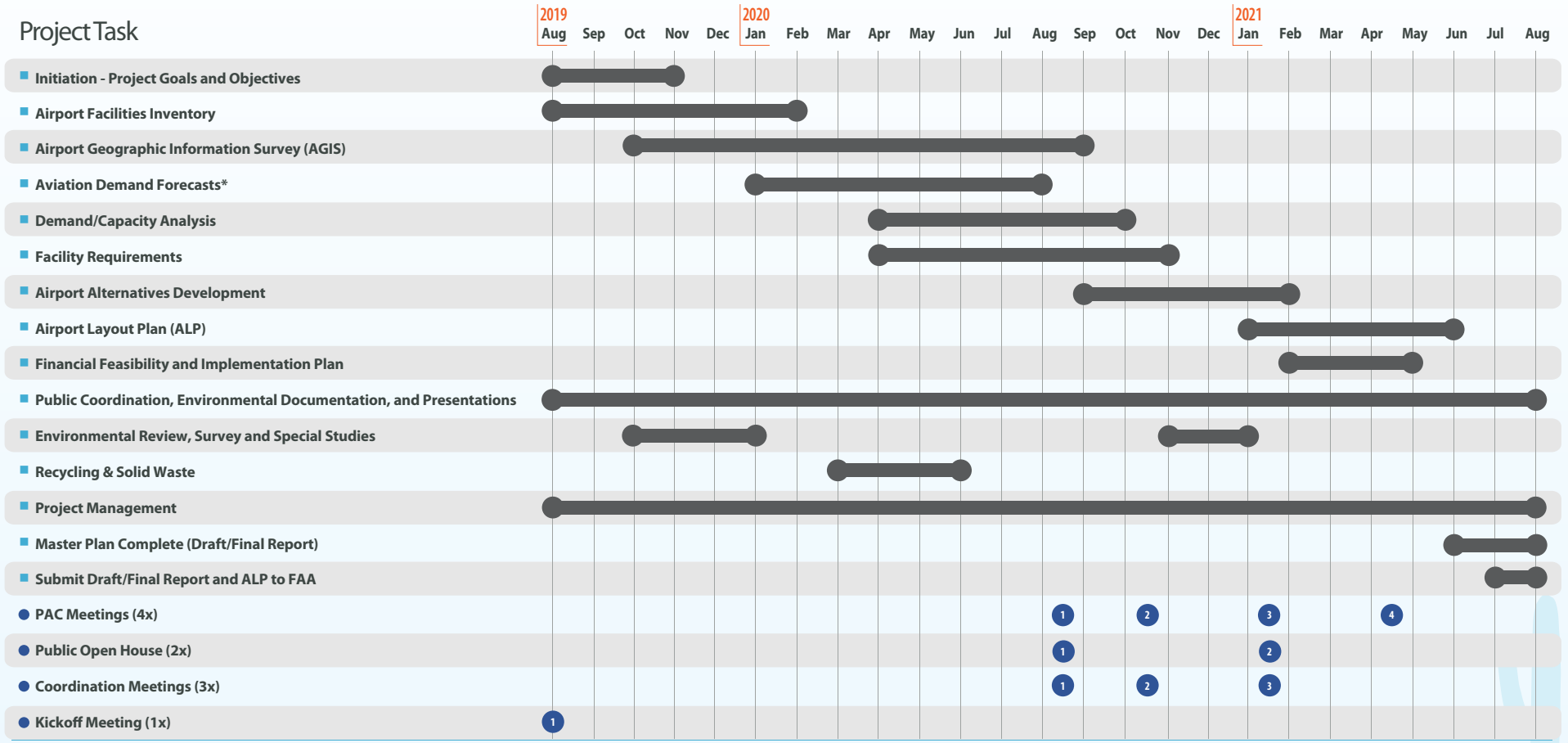
Facility Needs

Alternatives

Layout Plan

Financial Plan

(Follow FAA Guidance)

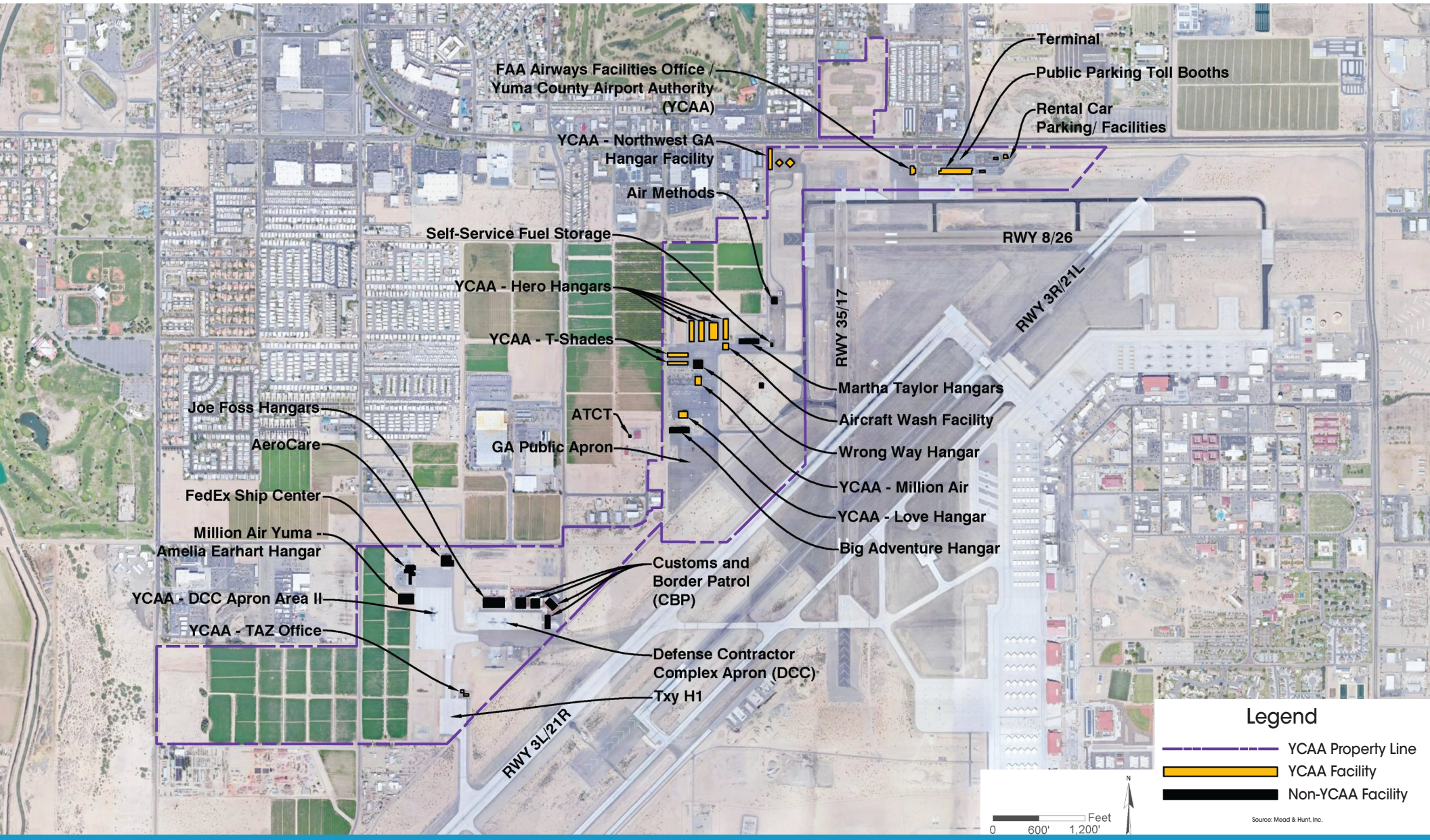


NOTES: *Aviation Demand Forecast Development Impacted by COVID-19 Pandemic

Notice to Proceed - August 22, 2019; Schedule updated - May 18, 2020. Subject to change.

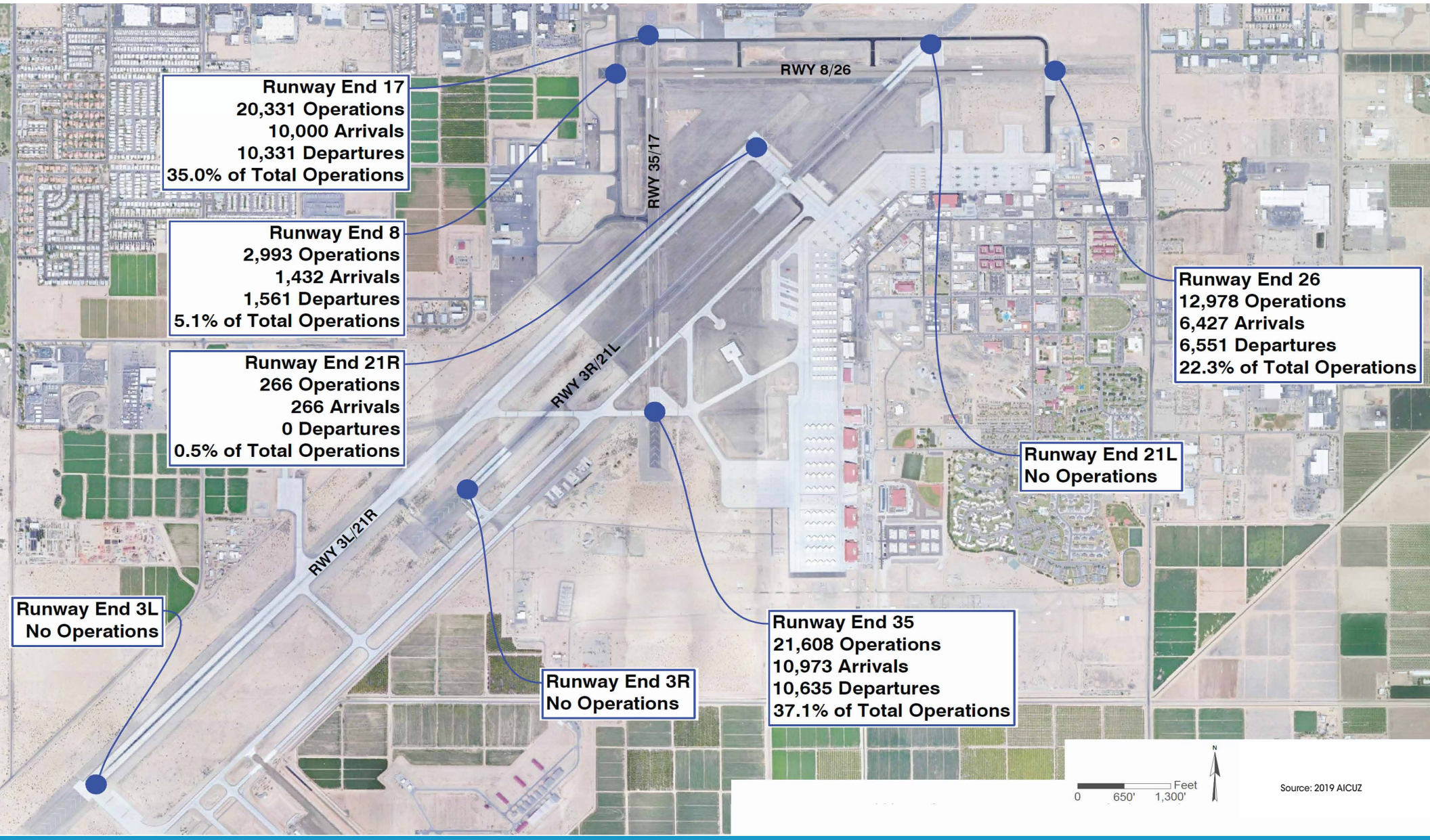
PROJECT SCHEDULE

YUMA INTERNATIONAL AIRPORT



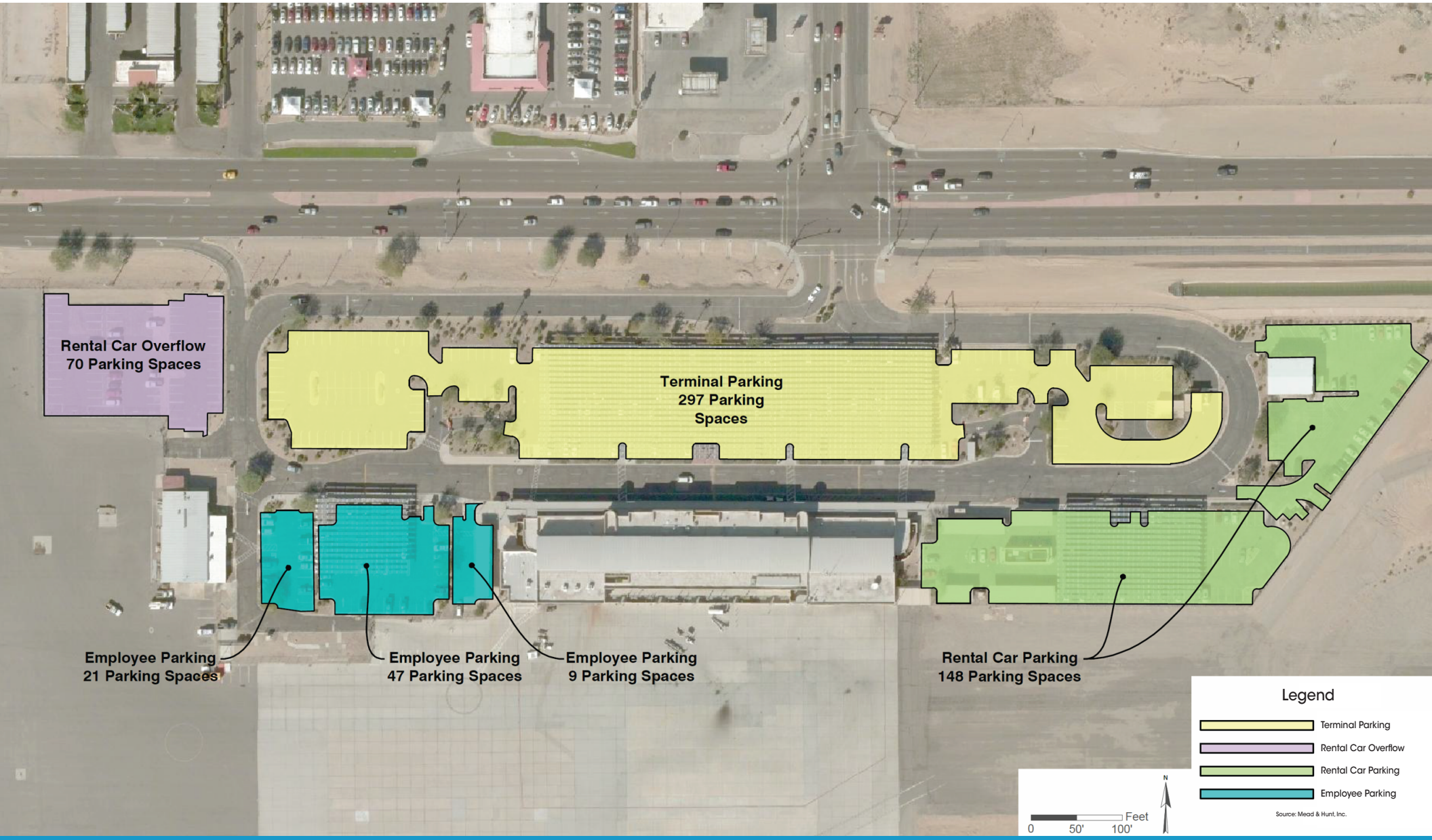
AIRPORT FACILITIES

YUMA INTERNATIONAL AIRPORT



RUNWAY UTILIZATION (CIVILIAN)

YUMA INTERNATIONAL AIRPORT



AIRPORT PARKING

YUMA INTERNATIONAL AIRPORT

The Master Plan will look at how to:

- Comply with FAA guidance and regulations.
  - Address airfield geometry challenges
  - Provide operational areas for existing and future users

- Plan for passenger terminal area development.
  - Grow terminal with demand
  - Improve parking facilities

- Develop property to improve and diversity revenue.

- Promote land use compatibility initiatives with local communities.

- Prepare a sustainable and implementable Capital Plan.

KEY PLANNING GOALS

YUMA INTERNATIONAL AIRPORT

Comprehensive:

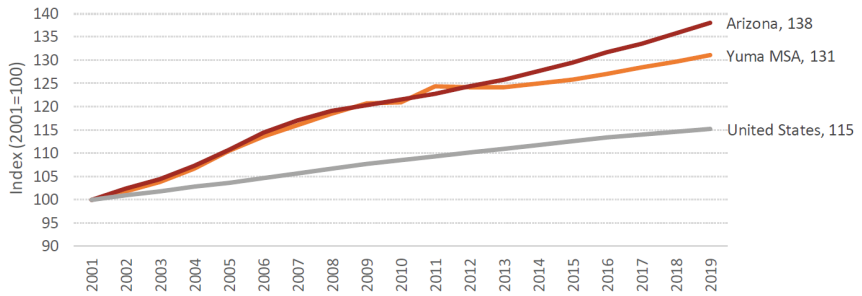
- Analysis of the airport's business environment
- Analysis of the airport's historical aviation activity
  - Passenger traffic
  - Air cargo
  - General aviation
  - Military
- Analysis of COVID-19 impact on aviation activity
- Assessment of air service development potential
- Forecast development and risk assessment

Business Environment

FORECAST DEVELOPMENT PROCESS

YUMA INTERNATIONAL AIRPORT

Population

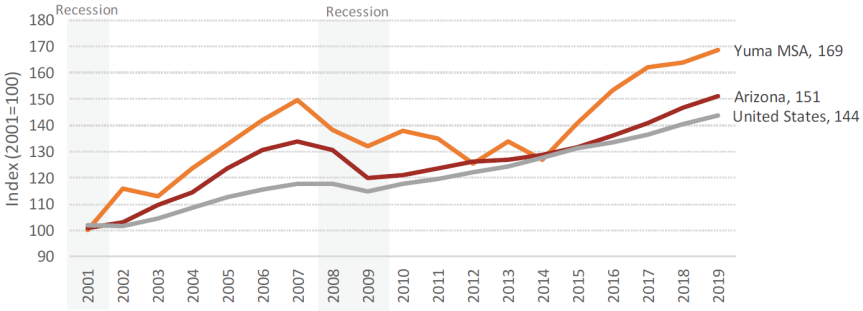


Average Annual Growth Rate

Period	Yuma MSA	Arizona	United States
2001-2010	2.1%	2.2%	0.9%
2010-2019	0.9%	1.4%	0.7%
2001-2019	1.5%	1.8%	0.8%

Source: U.S. Census Bureau.

Real Gross Domestic Product

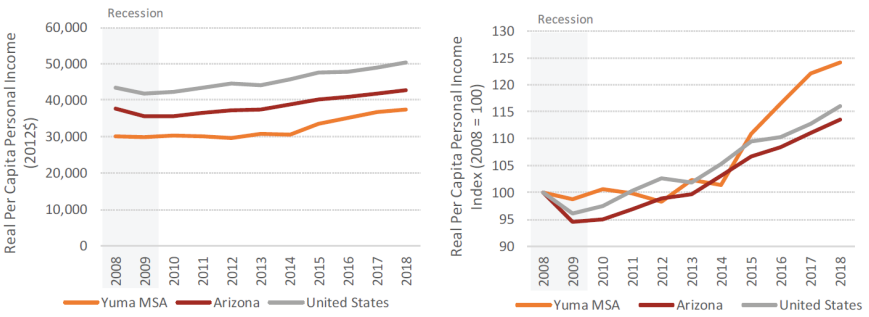


Average Annual Growth Rate

Period	Yuma MSA	Arizona	United States
2001-2010	3.6%	2.1%	1.8%
2010-2019	2.3%	2.5%	2.3%
2001-2019	2.9%	2.3%	2.0%

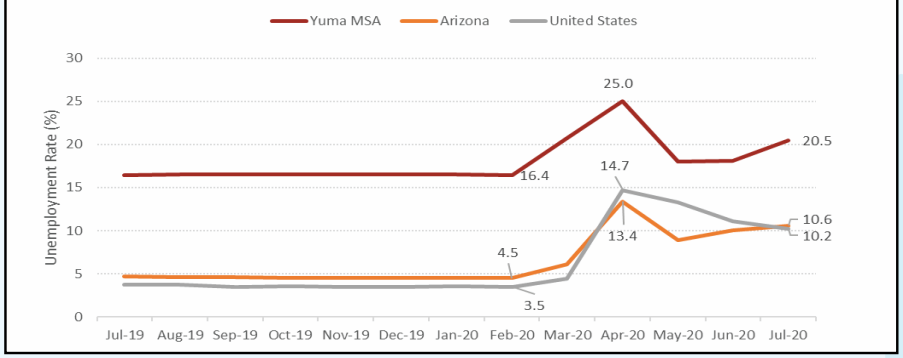
Sources: Moody's Analytics and U.S. Bureau of Economic Analysis.

Personal Income



Source: U.S. Bureau of Economic Analysis.

Adverse Economic Impact of COVID-19



ECONOMIC TRENDS

YUMA INTERNATIONAL AIRPORT

SHORT-TERM : DECLINE PHASE

Project COVID-19 impact based on:
- Airport data
- TSA screening data
- Airline schedules
- Industry news

MEDIUM-TERM : RECOVERY PHASE

Project pace and duration of recovery based on:
- Analysis of NYL and U.S. traffic recoveries from previous crises
- TSA screening data
- Airline schedules
- Industry news
- Economic trends

LONG-TERM : GROWTH PHASE

Project post-revoery traffic based on:
- NYL historical trends
- FAA Terminal Area Forecasts
- Airline service supply parameters
- Air service development potential (Passenger Demand Analysis)

Commercial Passenger Traffic Forecast Scenarios

Scenario 1A – NYL passenger traffic returns to pre-COVID-19 level in April 2023. Thereafter, traffic holds steady with no new service added through 2040.

Scenario 2A – NYL passenger traffic returns to pre-COVID-19 level in April 2025. Thereafter, traffic holds steady with no new service added through 2040.

Scenario 1B – NYL passenger traffic returns to pre-COVID-19 level in April 2023. Thereafter, traffic holds steady until the first new service begins about five years later in FY2028. The second service begins in FY2033, and the third new service begins in FY2038.

Scenario 2B – NYL passenger traffic returns to pre-COVID-19 level in April 2025. Thereafter, traffic holds steady until the first new service begins about five years later in FY2030. The second service begins in FY2035, and the third new service begins in FY2040.

PAX FORECAST DEVELOPMENT

YUMA INTERNATIONAL AIRPORT

FAA Requirement Timeline & Detail

FEBRUARY 2012

FAA Modernization and Reform Act (FMRA) of 2012 Section 132(b) expanded the definition of airport planning to include:

"developing a plan for recycling and minimizing the generation of airport solid waste."

Section 133 of the FMRA specifies airports must develop an "Airport Waste Reduction, Reuse, and Recycling Plan" during master planning projects.

SEPTEMBER 2014

FAA issues a memorandum entitled "Guidance on Airport Recycling, Reuse, and Waste Reduction Plans."
This memo details the FAA's expectations of and suggestions for an airport's solid waste plan, including the five elements listed in the FMRA and two additional elements.

OCTOBER 2018

The FAA Reauthorization Act of 2018 Section 148(a)(1-2) amends 49 U.S.C. 47106(a) to update requirements for solid waste plans.

JULY 2019

Reauthorization Program Guidance Letter (R-PGL) 19-02
Provides details about the changes found in the October 2018 regulation:

"Any airport that applies for a funding grant for a project described in the facility's master plan must 1) have a waste plan in place or 2) develop one concurrently with the project grant."

Recommendations

#1 - INTEGRATE WASTE DIVERSION IN AIRPORT OPERATIONS

Includes waste reduction, reuse, donation, sustainable procurement, recycling, and composting.

#2 - IMPROVE PURCHASING PRACTICES, REDUCE AND REUSE

Prioritize durable (versus disposable) items and supplies that are reusable, recyclable, compostable, and/or made from recycled content.
Identify supplies and materials which can be avoided, reused on site, or donated to a third party.

#3 - ENHANCE EXISTING RECYCLING PROGRAM

Maintain the existing recycling program and supplement current practices with additional receptacles, signage, an education campaign, the incorporation of more materials, and partnership with the waste hauler.

#4 - TRACKING & REPORTING

Regularly estimate and track the volume of waste sent to the landfill and diverted through reduction, reuse, donation, recycling, or other strategies as well as the costs associated with these services. It is also recommended that YCAA discuss these trends with the waste hauler and share this information with program stakeholders (Airport staff and tenants).

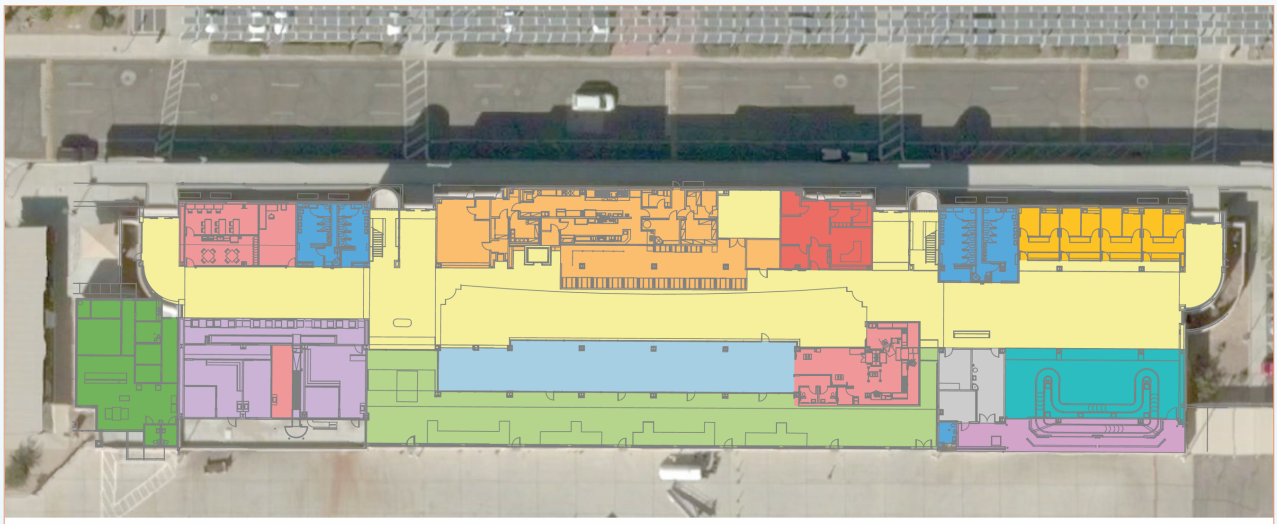
Where are we going next?

- Forecast revisions
- Submission of forecasts to FAA for acceptance
- Facility needs documentation
- Identification of preliminary airport development alternatives
- Public Open House #1 (September 23, 2020)
- Next Meetings Late October/November 2020
  - Planning Advisory Committee (PAC) Meeting #2
  - Public Open House #2

Terminal Building - Upper Level

Notes
1. Drawing regenerated and digitized from previous line work (Fisher Architects).
2. Square feet represents an estimate of space and drawing is not to scale.

Terminal Building - Lower Level



Legend

Type of Space	Area (Square Feet)	Type of Space	Area (Square Feet)	Type of Space	Area (Square Feet)
Public Circulation	13,000	U.S. Customs and Border Protection	2,050	Airport Operations Office	1,050
Secure Passenger Waiting Area / Outdoor Atrium	5,050	Baggage Claim	1,920	TSA Screening and Offices	2,680
Concessions	4,050	Restrooms	1,750	Mechanical / Airport Storage	760
Airline / Ticket Counter Space	2,670	Baggage Handling	1,110	Lower Level Total Area:	40,200
Boarding Area	2,700	Rental Car Counter and Offices	1,410		

N
Feet
0 15' 30'

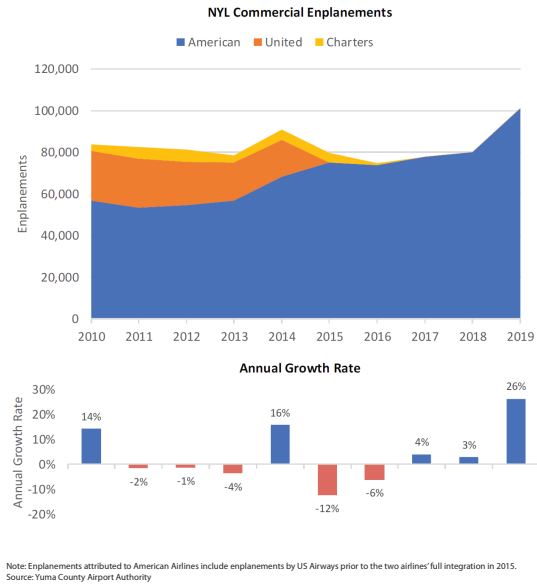
Source: Mead & Hunt

Notes

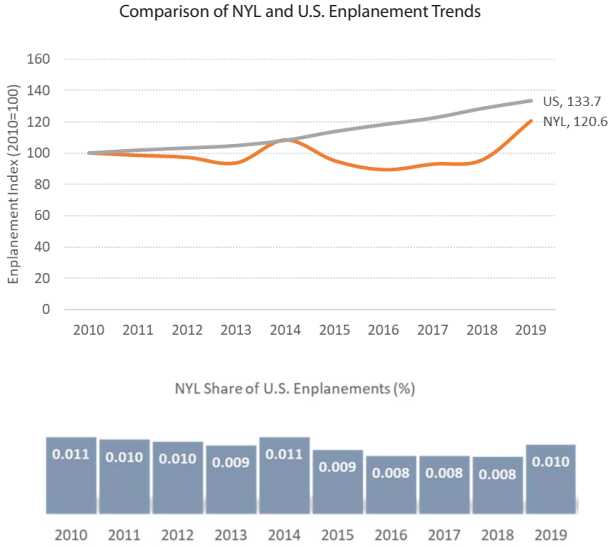
AIRPORT TERMINAL

YUMA INTERNATIONAL AIRPORT

Long-Term Enplanement Trends, 2010-2019

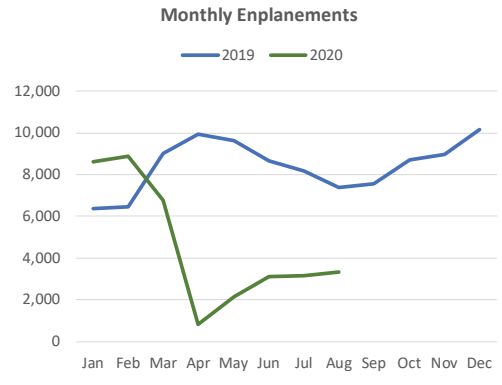


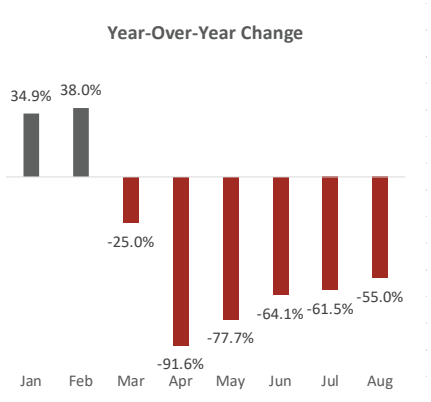
Note: Enplanements attributed to American Airlines include enplanements by US Airways prior to the two airlines' full integration in 2015.
Source: Yuma County Airport Authority



Source: Yuma County Airport Authority and the U.S. Department of Transportation T100

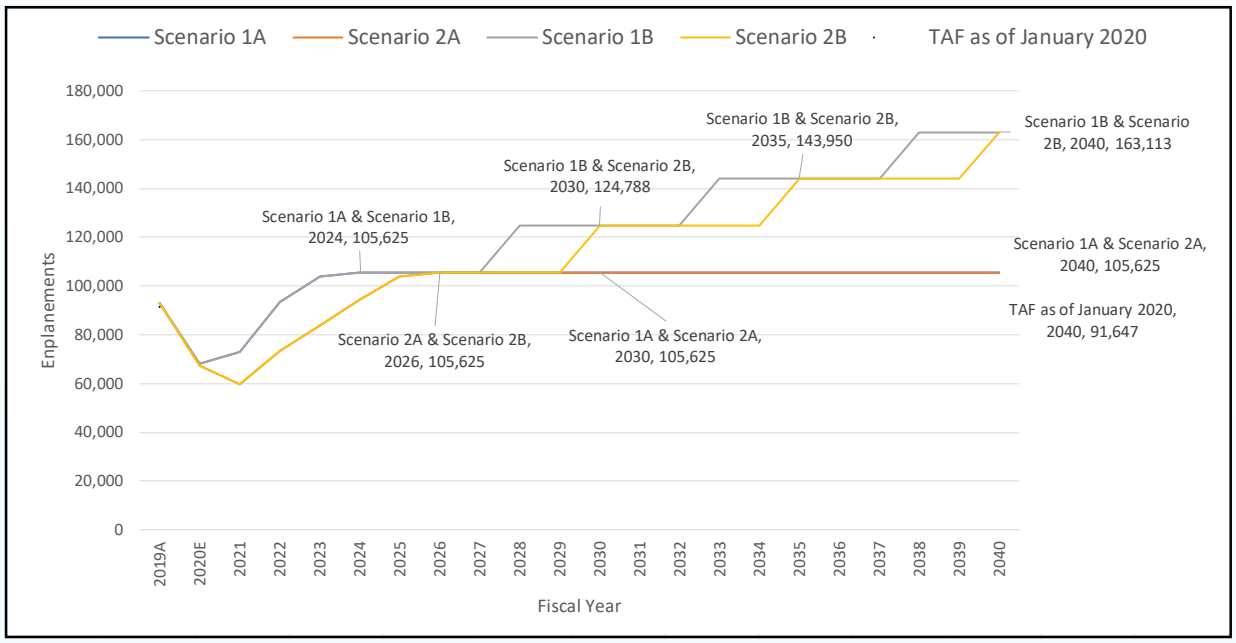
NYL Passenger Enplanement Trends in 2020



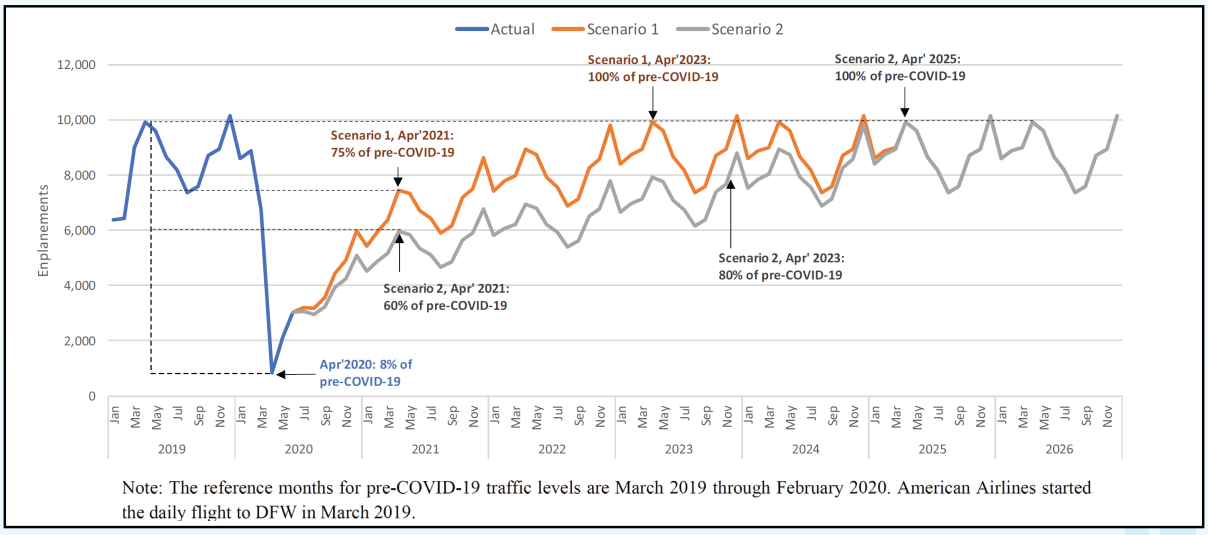


Source: Yuma County Airport Authority

Passenger (PAX) Traffic Scenarios, 2019-2040

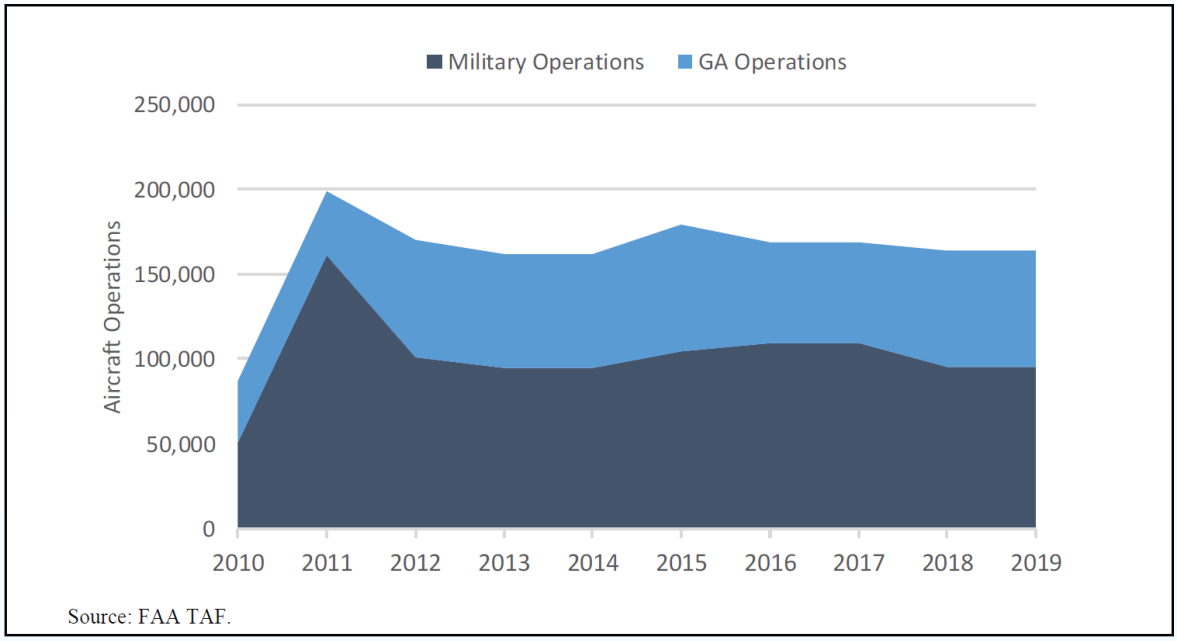


Passenger (PAX) Traffic Scenarios by Month



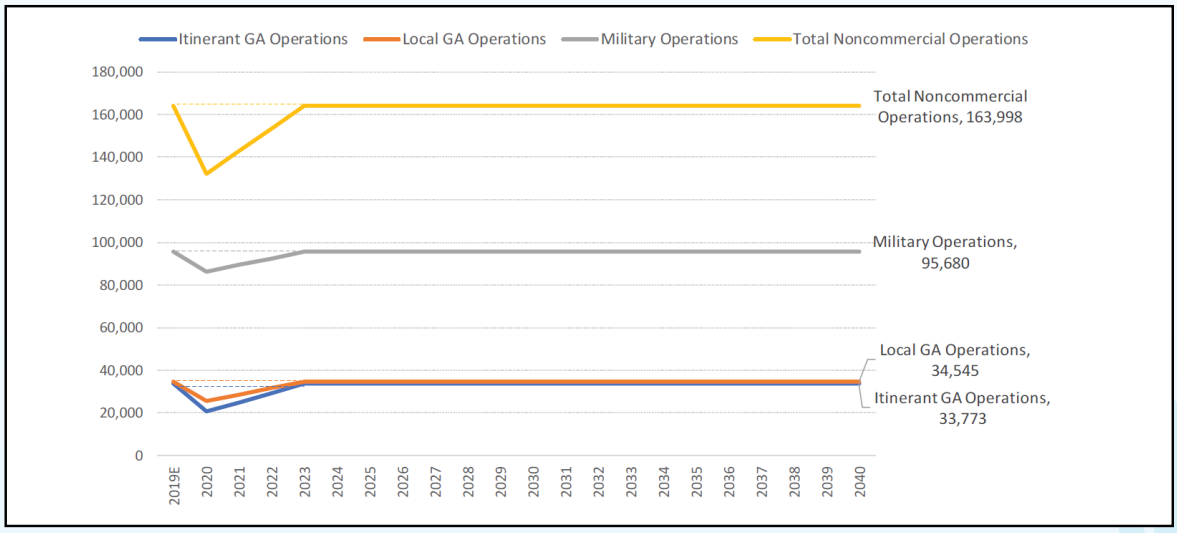
Note: The reference months for pre-COVID-19 traffic levels are March 2019 through February 2020. American Airlines started the daily flight to DFW in March 2019.

Trends in Noncommercial Aviation Activity



Source: FAA TAF.

Forecast - Noncommercial Activity



Commercial Passenger (PAX) Enplanements

Commercial Passenger Enplanements

	Actual	Estimate	Forecast			Compound Annual Growth Rate				
	2019	2020	2025	2030	2040	2019-2020	2020-2025	2025-2030	2030-2040	2019-2040
MPU Scenario 1A	92,908	68,025	105,625	105,625	105,625	-26.8%	9.2%	0.0%	0.0%	0.6%
MPU Scenario 2A	92,908	67,340	104,040	105,625	105,625	-27.5%	9.1%	0.3%	0.0%	0.6%
MPU Scenario 1B	92,908	68,025	105,625	124,788	163,113	-26.8%	9.2%	3.4%	2.7%	2.7%
MPU Scenario 2B	92,908	67,340	104,040	124,788	163,113	-27.5%	9.1%	3.7%	2.7%	2.7%
FAA TAF as of January 2020	*91,647*	*91,647*	*91,647*	*91,647*	*91,647*	0.0%	0.0%	0.0%	0.0%	0.0%
MPU Scenario 1A Ratio to TAF	*1.01*	*0.74*	*1.15*	*1.15*	*1.15*					
MPU Scenario 2A Ratio to TAF	*1.01*	*0.73*	*1.14*	*1.15*	*1.15*					
MPU Scenario 1B Ratio to TAF	*1.01*	*0.74*	*1.15*	*1.36*	*1.78*					
MPU Scenario 2B Ratio to TAF	*1.01*	*0.73*	*1.14*	*1.36*	*1.78*					

Air Cargo Activity

	Actual	Estimate	Forecast			Compound Annual Growth Rate				
	2019	2020	2025	2030	2040	2019-2020	2020-2025	2025-2030	2030-2040	2019-2040
Air Cargo (Metric Tons)	1,578	1,354	1,610	1,681	1,846	-14.2%	3.5%	0.9%	0.9%	0.8%
Aircraft Departures	1,089	961	953	953	953	-11.7%	-0.2%	0.0%	0.0%	-0.6%
Aircaft Operations (Arrivals and Departures)	2,178	1,923	1,905	1,906	1,906	-11.7%	-0.2%	0.0%	0.0%	-0.6%
Aircraft Landed Weight (1,000 lbs.)	53,986	46,602	46,515	46,518	46,518	-13.7%	0.0%	0.0%	0.0%	-0.7%

Sources: Yuma County Airport Authority, U.S. Department of Transportation T100, and FAF4.

Air Carrier, Commuter, Air Taxi Operations

Commercial Air Carrier, Commuter and Air Taxi Operations

	Actual	Estimate	Forecast			Compound Annual Growth Rate				
	2019	2020	2025	2030	2040	2019-2020	2020-2025	2025-2030	2030-2040	2019-2040
MPU Scenario 1A	15,840	11,240	15,907	15,782	15,752	-29.0%	7.2%	-0.2%	0.0%	0.0%
MPU Scenario 2A	15,840	11,208	15,968	15,793	15,756	-29.2%	7.3%	-0.2%	0.0%	0.0%
MPU Scenario 1B	15,840	11,240	15,907	16,512	17,942	-29.0%	7.2%	0.7%	0.8%	0.6%
MPU Scenario 2B	15,840	11,208	15,968	16,523	17,946	-29.2%	7.3%	0.7%	0.8%	0.6%
FAA TAF as of January 2020	*15,840*	*15,840*	*15,840*	*15,840*	*15,840*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
MPU Scenario 1A Ratio to TAF	*1.00*	*0.71*	*1.00*	*1.00*	*0.99*					
MPU Scenario 2A Ratio to TAF	*1.00*	*0.71*	*1.01*	*1.00*	*0.99*					
MPU Scenario 1B Ratio to TAF	*1.00*	*0.71*	*1.00*	*1.04*	*1.13*					
MPU Scenario 2B Ratio to TAF	*1.00*	*0.71*	*1.01*	*1.04*	*1.13*					

Passenger (PAX) Traffic Scenarios by Month

	Actual	Estimate	Forecast			Compound Annual Growth Rate				
	2019	2020	2025	2030	2040	2019-2020	2020-2025	2025-2030	2030-2040	2019-2040
General Aviation (GA)										
Itinerant	33,773	20,560	33,773	33,773	33,773	-39.1%	10.4%	0.0%	0.0%	0.0%
Local	34,545	25,529	34,545	34,545	34,545	-26.1%	6.2%	0.0%	0.0%	0.0%
GA Subtotal	68,318	46,089	68,318	68,318	68,318	-32.5%	8.2%	0.0%	0.0%	0.0%
Military	95,680	86,142	95,680	95,680	95,680	-10.0%	2.1%	0.0%	0.0%	0.0%
Noncommercial Total	163,998	132,231	163,998	163,998	163,998	-19.4%	4.4%	0.0%	0.0%	0.0%
FAA TAF	*163,998*	*163,998*	*163,998*	*163,998*	*163,998*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Ratio to FAA TAF	*1.00*	*0.81*	*1.00*	*1.00*	*1.00*					
Based Aircraft	171	166	171	171	171	-2.9%	0.6%	0.0%	0.0%	0.0%
FAA TAF	*171*	*171*	*171*	*171*	*171*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Ratio to FAA TAF	*1.00*	*0.97*	*1.00*	*1.00*	*1.00*					

Passenger (PAX) Traffic Scenarios by Month

Total Aircraft Operations

	Actual	Estimate	Forecast			Compound Annual Growth Rate				
	2019	2020	2025	2030	2040	2019-2020	2020-2025	2025-2030	2030-2040	2019-2040
MPU Scenario 1A	179,838	143,471	179,905	179,780	179,750	-20.2%	4.6%	0.0%	0.0%	0.0%
MPU Scenario 2A	179,838	143,439	179,966	179,791	179,754	-20.2%	4.6%	0.0%	0.0%	0.0%
MPU Scenario 1B	179,838	143,471	179,905	180,510	181,940	-20.2%	4.6%	0.1%	0.1%	0.1%
MPU Scenario 2B	179,838	143,439	179,966	180,521	181,944	-20.2%	4.6%	0.1%	0.1%	0.1%
FAA TAF as of January 2020	*179,838*	*179,838*	*179,838*	*179,838*	*179,838*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
MPU Scenario 1A Ratio to TAF	*1.00*	*0.80*	*1.00*	*1.00*	*1.00*					
MPU Scenario 2A Ratio to TAF	*1.00*	*0.80*	*1.00*	*1.00*	*1.00*					
MPU Scenario 1B Ratio to TAF	*1.00*	*0.80*	*1.00*	*1.00*	*1.01*					
MPU Scenario 2B Ratio to TAF	*1.00*	*0.80*	*1.00*	*1.00*	*1.01*					

NOTICE OF PUBLIC OPEN HOUSE

Yuma International Airport Master Plan

YOU'RE INVITED:

The Yuma County Airport Authority (YCAA) invites you to attend a Public Open House to discuss the Yuma International Airport Master Plan. The "Shared-Use" Master Plan will serve both the Yuma International Airport (NYL) and its partnership with the Marine Corps Air Station, Yuma (MCAS) and the update will provide the airport, public officials and the community with proper guidance for future development that will satisfy commercial and general aviation demands while being wholly compatible with the environment, community, and future airfield plans. The Master Plan will establish goals and objectives, taking into account current conditions and evaluating aeronautical and facility needs for the future while identifying recommended improvement projects.

PUBLIC OPEN HOUSE

Wednesday, July 21, 2021

YUMA INTERNATIONAL AIRPORT

Terminal Conference Room
2191 E. 32nd Street, Yuma, Arizona 85365

OPEN HOUSE FORMAT

No formal presentation, drop by anytime
5:30 p.m. to 7:00 p.m.

For additional information, please visit the Yuma International Airport Master Plan website at www.yumaairportmasterplan.com. All materials provided for the public open house will be posted on the website after the meeting date.

Persons who require a reasonable accommodation based on language, disability, or health concerns or for additional information, please contact Gen Grosse, Property & Community Relations, Yuma International Airport at 928.726.5882 Ext 2211 or email at gen@yumaairport.com

Yuma County
Yuma International Airport
PORT OF OPPORTUNITY
Airport Authority

Publisher's Affidavit of Publication

o0o

STATE OF ARIZONA }
COUNTY OF YUMA }

Lisa Reilly or David Fornof, having been first duly sworn, deposes and says: that Yuma Sun is a newspaper of general circulation published daily in the City of Yuma, County of Yuma, State of Arizona; that (s)he is the publisher or business manager of said paper; that the

GORDLEY GROUP-YUMA INTERNATIONAL AIRPORT

a printed copy of which, as it appeared in said paper, is hereto attached and made a part of this affidavit, was published in Yuma Sun

For ONE issues; that the date of the first publication of said

GORDLEY GROUP-YUMA INTERNATIONAL AIRPORT

was JULY 09, ,2021 and the date of the last publication being JULY 09, ,2021 and that the dates when said

GORDLEY GROUP-YUMA INTERNATIONAL AIRPORT

was printed and published in said paper were

JULY 09, 2021

Subscribed and sworn to before me, by the said Lisa Reilly or David Fornof

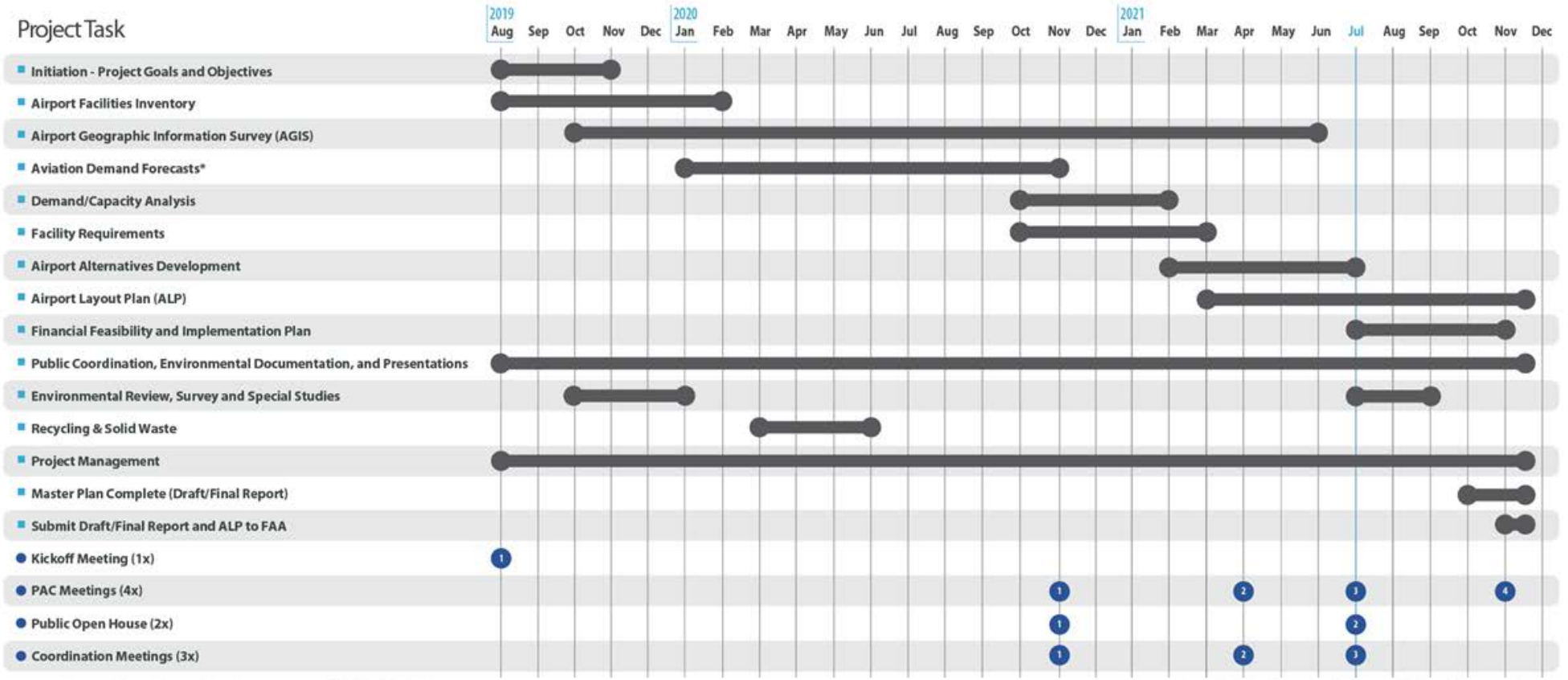
13th day of July, 2021

Virgen P. Perez Notary Public

My commission expires May 10, 2025

OFFICIAL SEAL
VIRGEN P PEREZ
NOTARY PUBLIC - ARIZONA
YUMA COUNTY
COMM # 601885
My Comm. Expires May 10, 2025

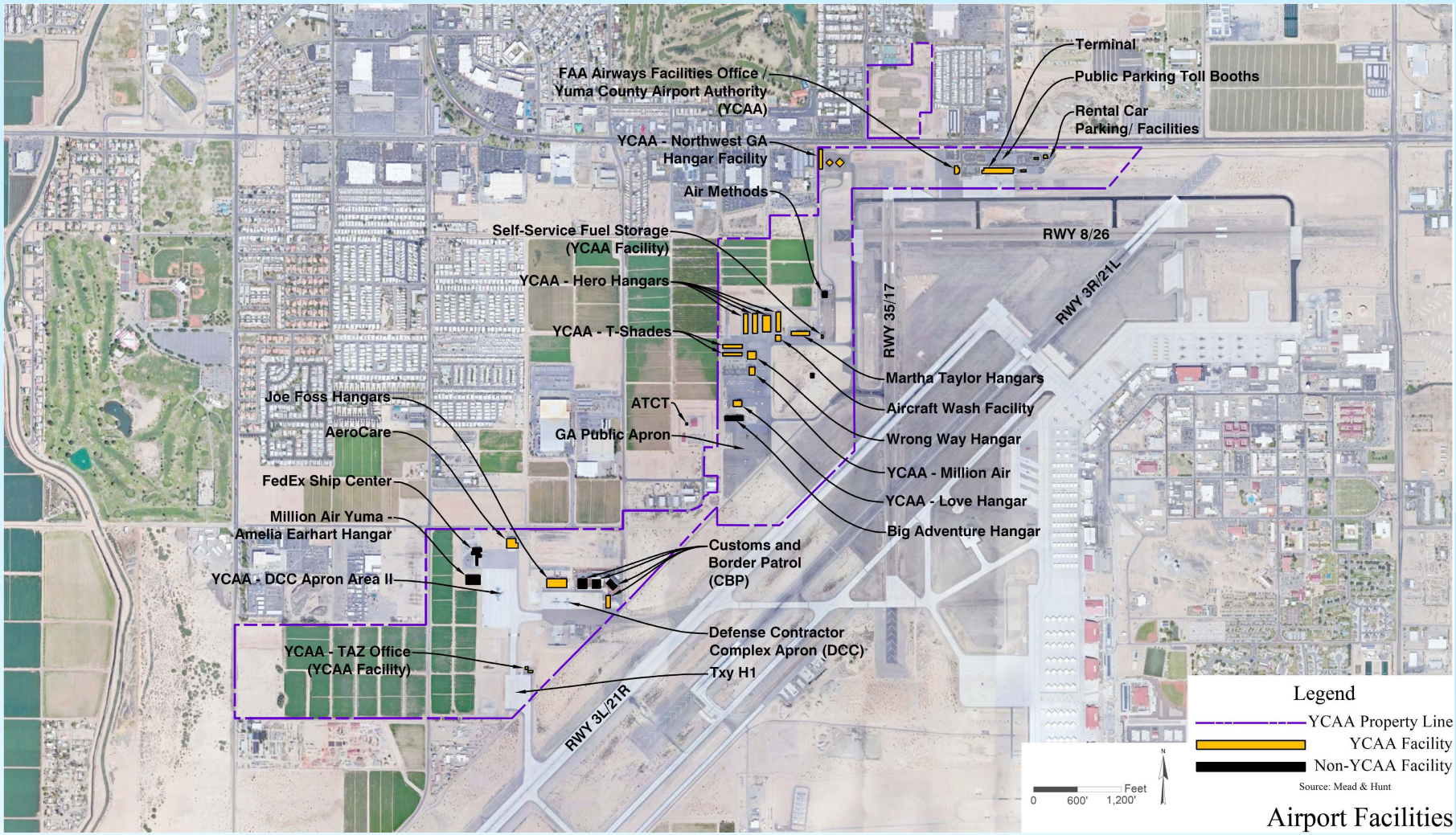
Project Schedule Airport Master Plan



NOTES: *Aviation Demand Forecast Development Impacted by COVID-19 Pandemic

Notice to Proceed - August 22, 2019; Schedule updated - February 25, 2021. Subject to change.

Existing Airport Facilities



Mead &Hunt

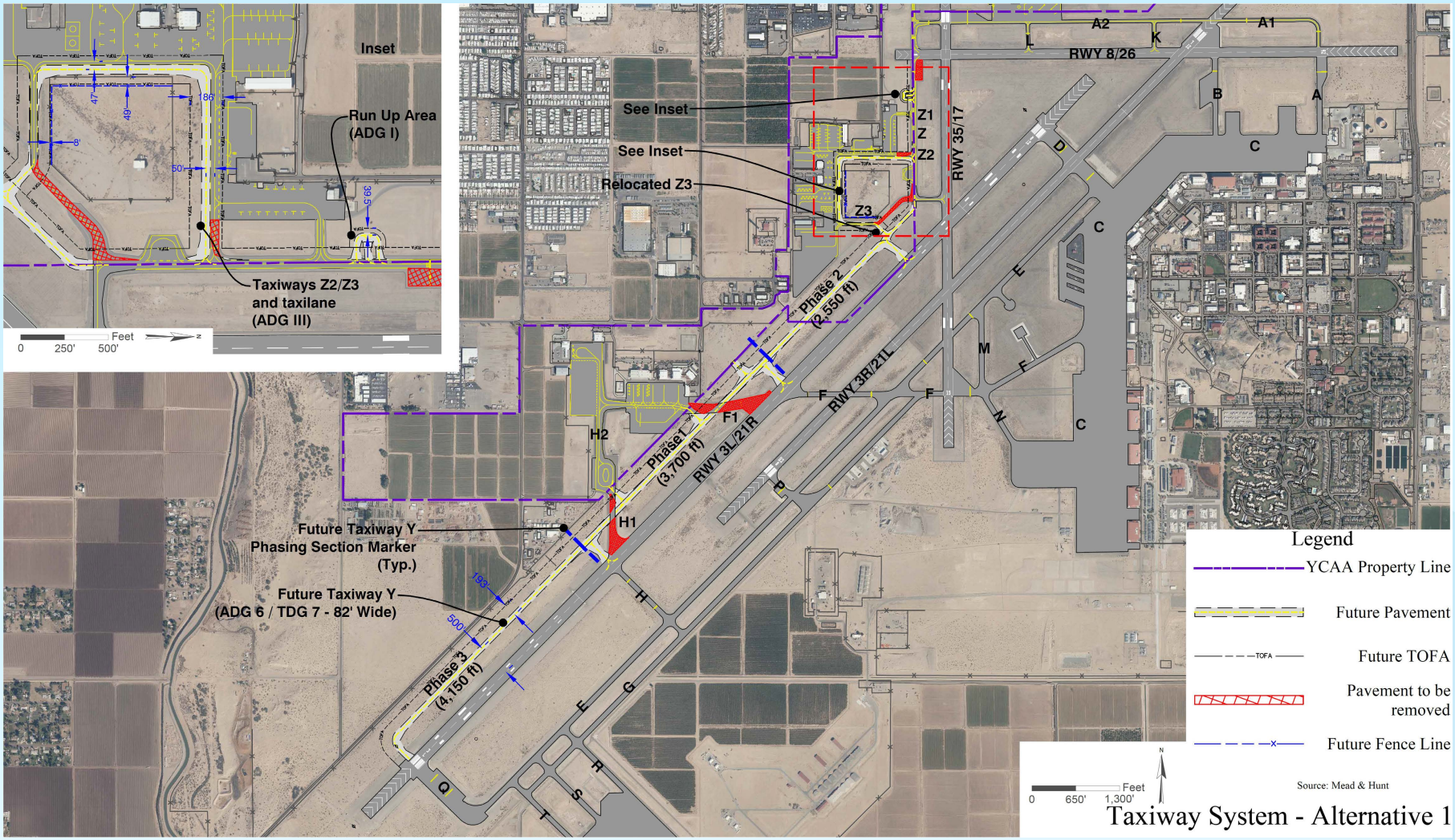
Summary of Facility Requirements

- **Airfield capacity**
  - ✈ Sufficient for now and the foreseeable future
- **Runway 17/35 and Runway 8/26**
  - ✈ Lengths are sufficient for current destinations
- **Runway protection zone improvements for C-III category aircraft**
  - ✈ Property acquisition, overlay zoning, or avigation easements
- **Runway and taxiway improvements**
  - ✈ FAA Advisory Circular 150/5300-13A

Summary of Facility Requirements *(Cont.)*

- **Defense Contractor Complex and Other Aviation Support Areas**
  - Plan and market both aeronautical and non-aeronautical properties
  - Maximize properties with airfield access
- **General Aviation Facilities**
  - Program for demand driven facility expansions and improvements
- **Vehicular access and parking**
  - Short-term focus on demand-driven improvements for existing public parking
  - Long-term focus on parking improvements with terminal expansion
- **Passenger terminal**
  - Short-term focus on maintaining the existing terminal building
  - Long-term focus on demand-driven program improvements

Taxiway System: *Alternative 1*



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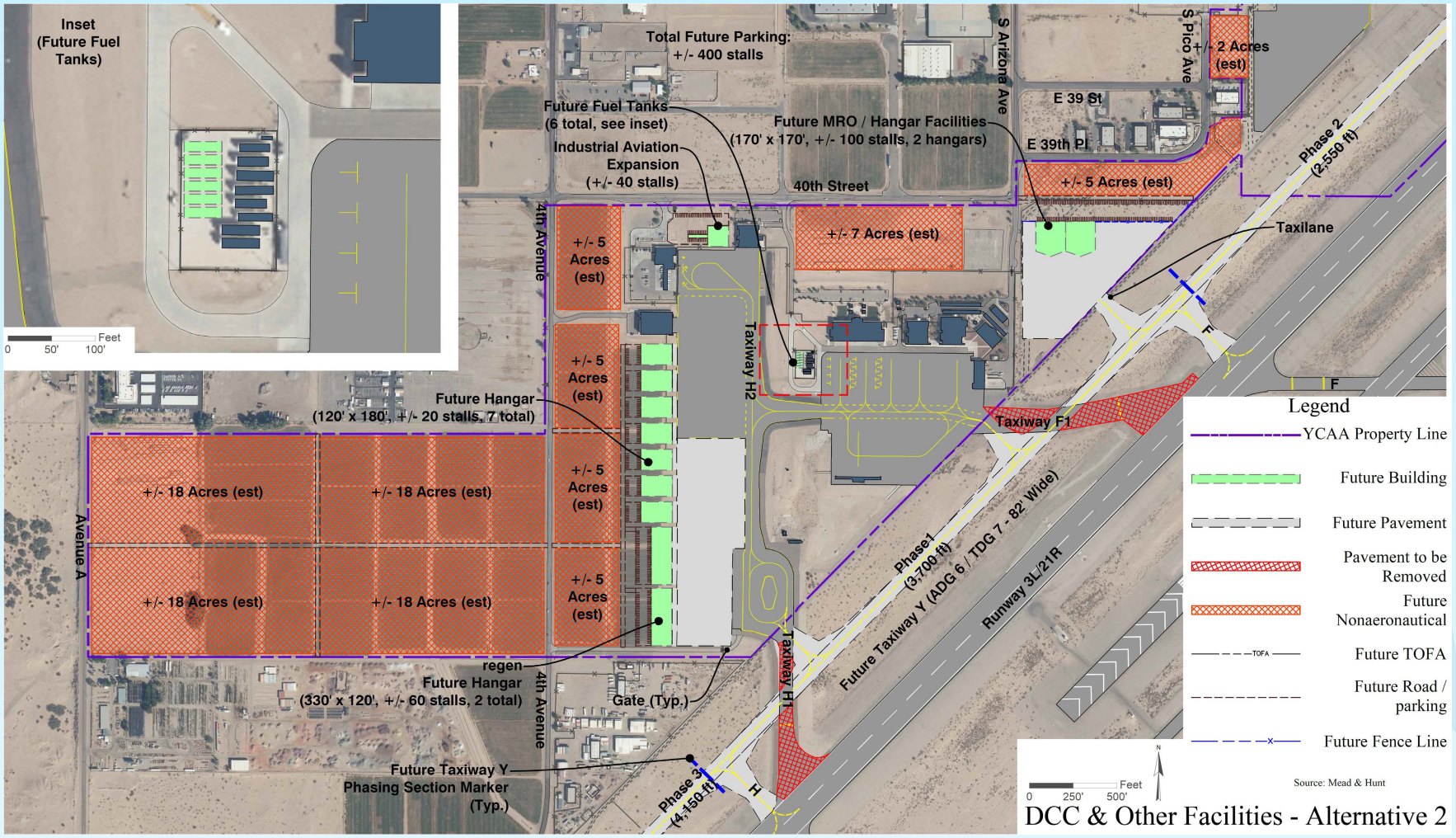
Defense Contractor Complex & Other Facilities: *Alternative 2*



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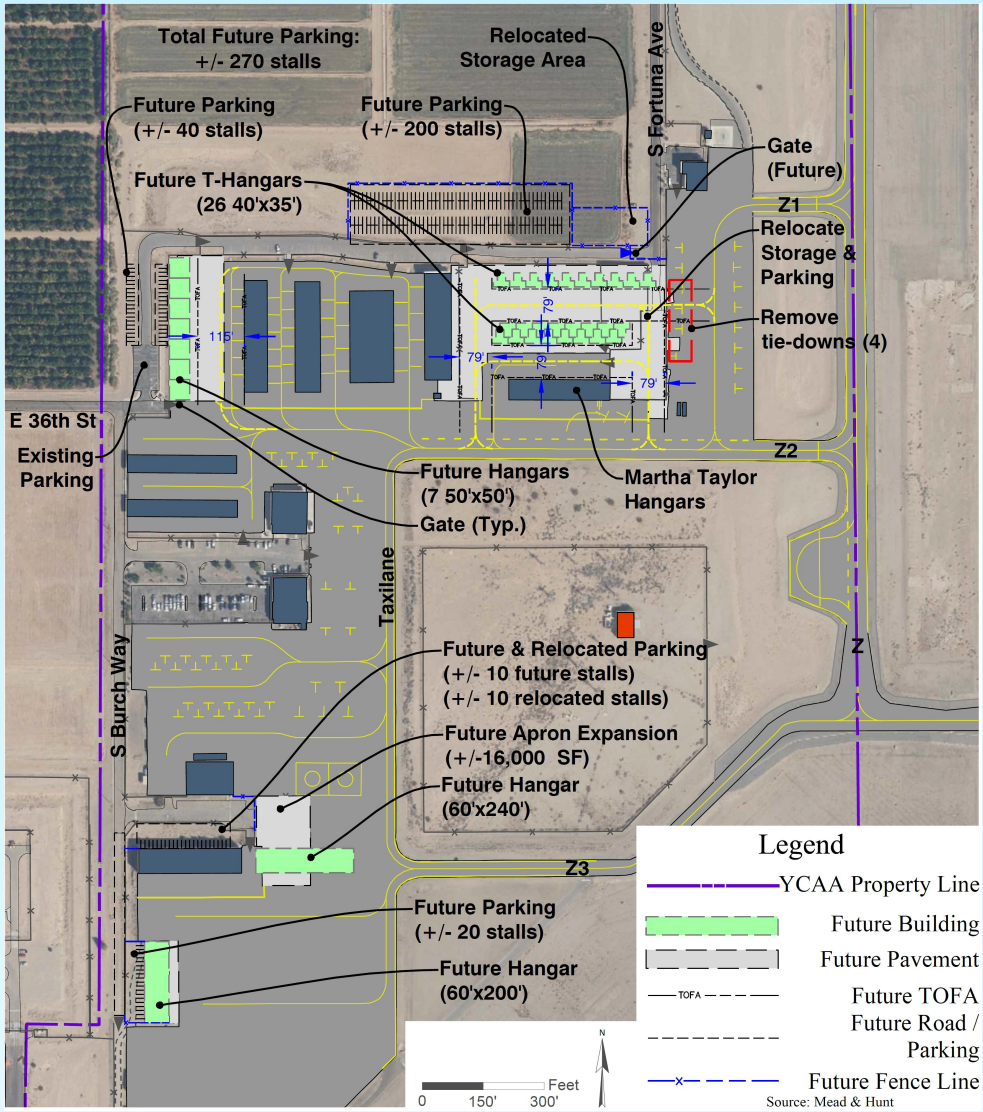
General Aviation Facilities: *Alternative 3*



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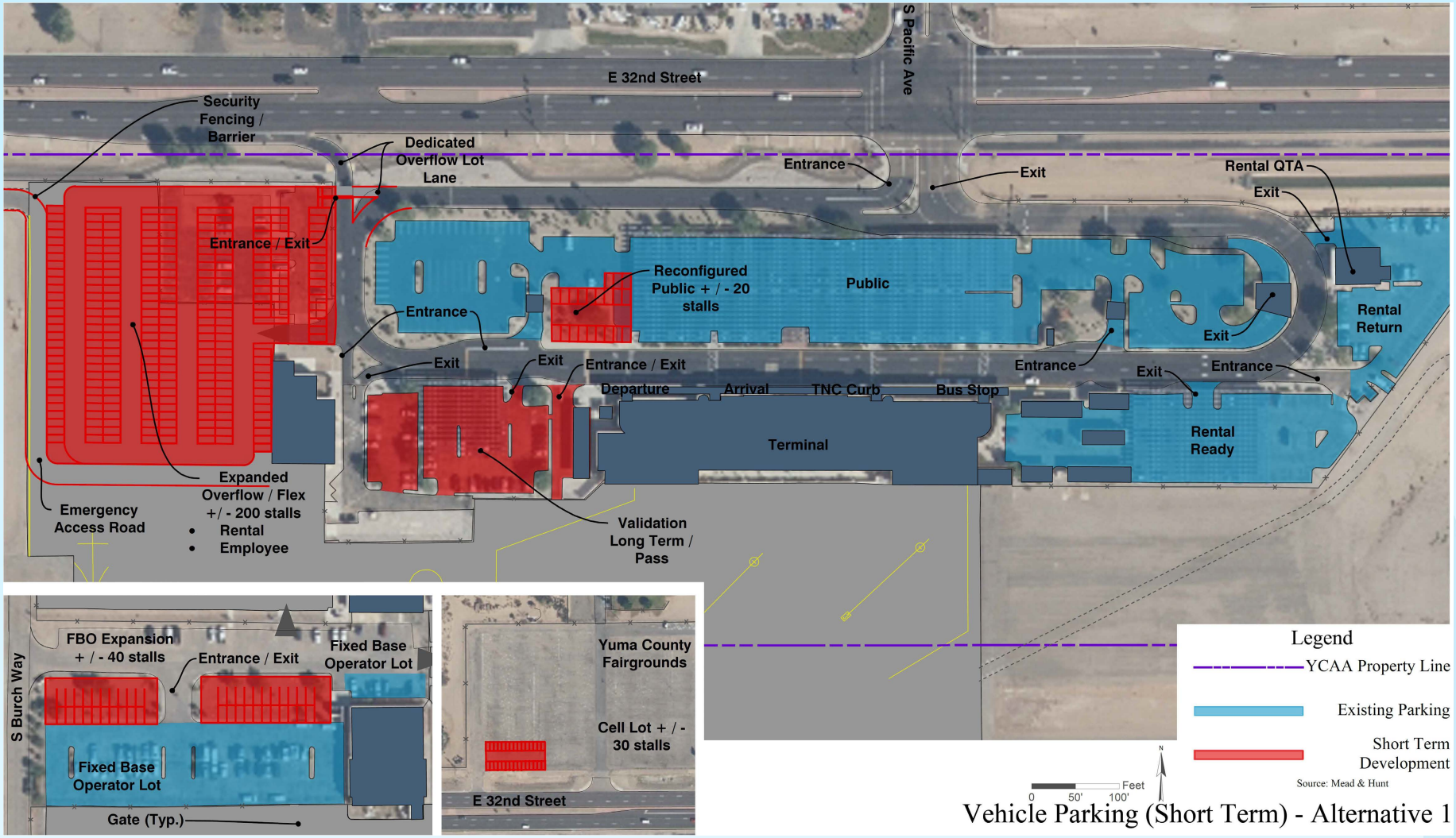
Landside Access & Vehicle Parking: *Alternative 1*



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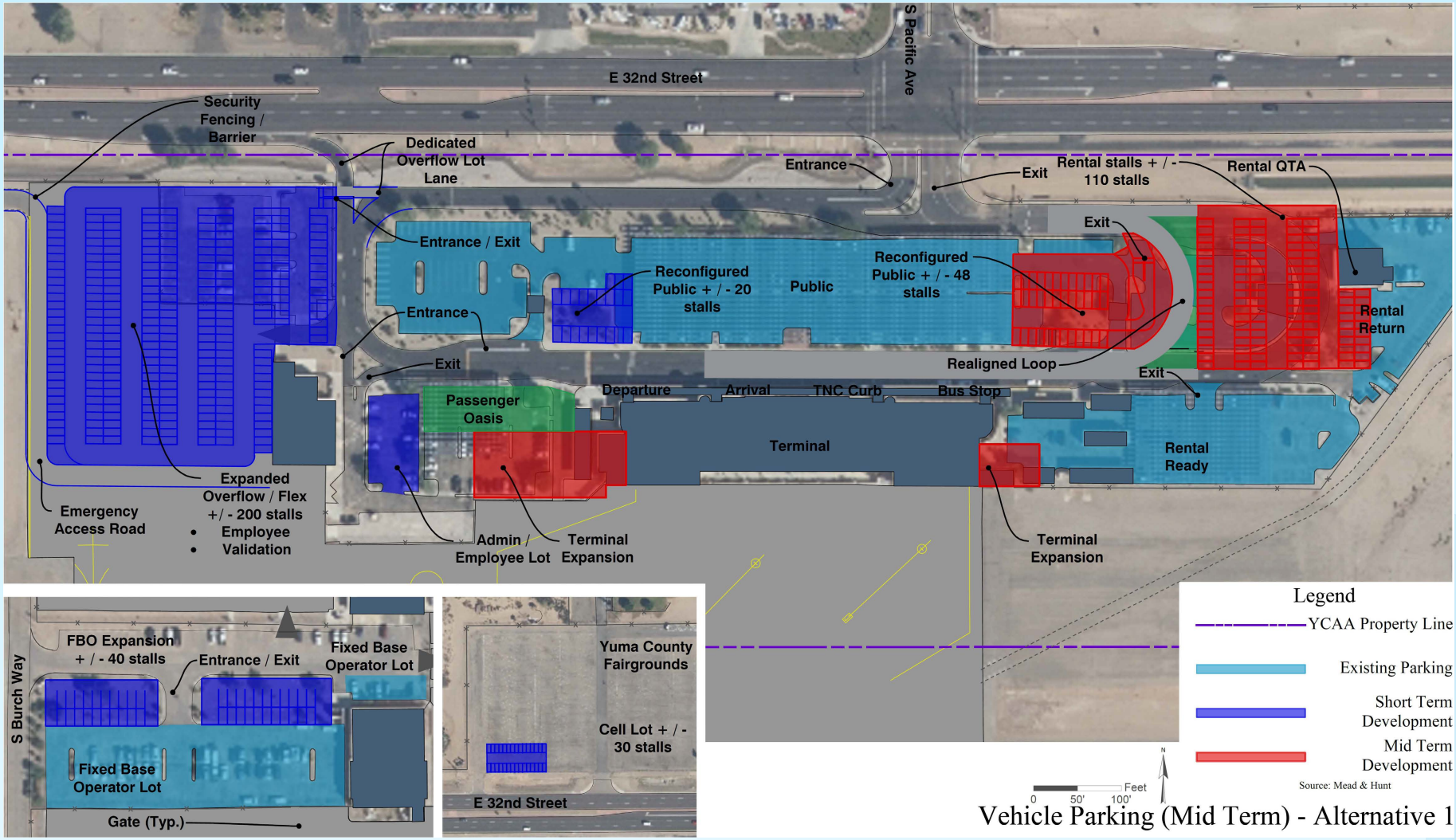
Landside Access & Vehicle Parking: *Alternative 1*



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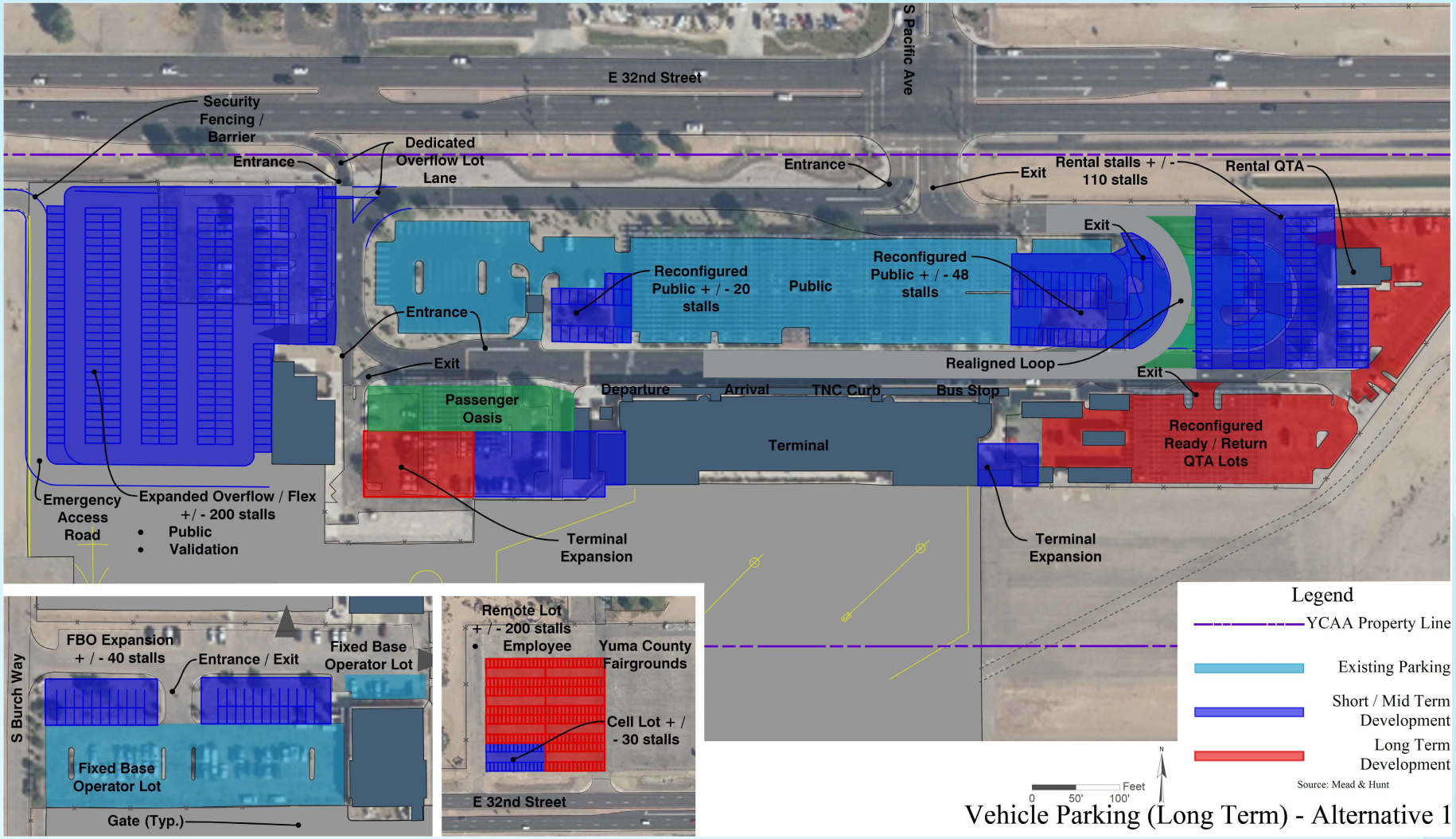
Landside Access & Vehicle Parking: *Alternative 1*



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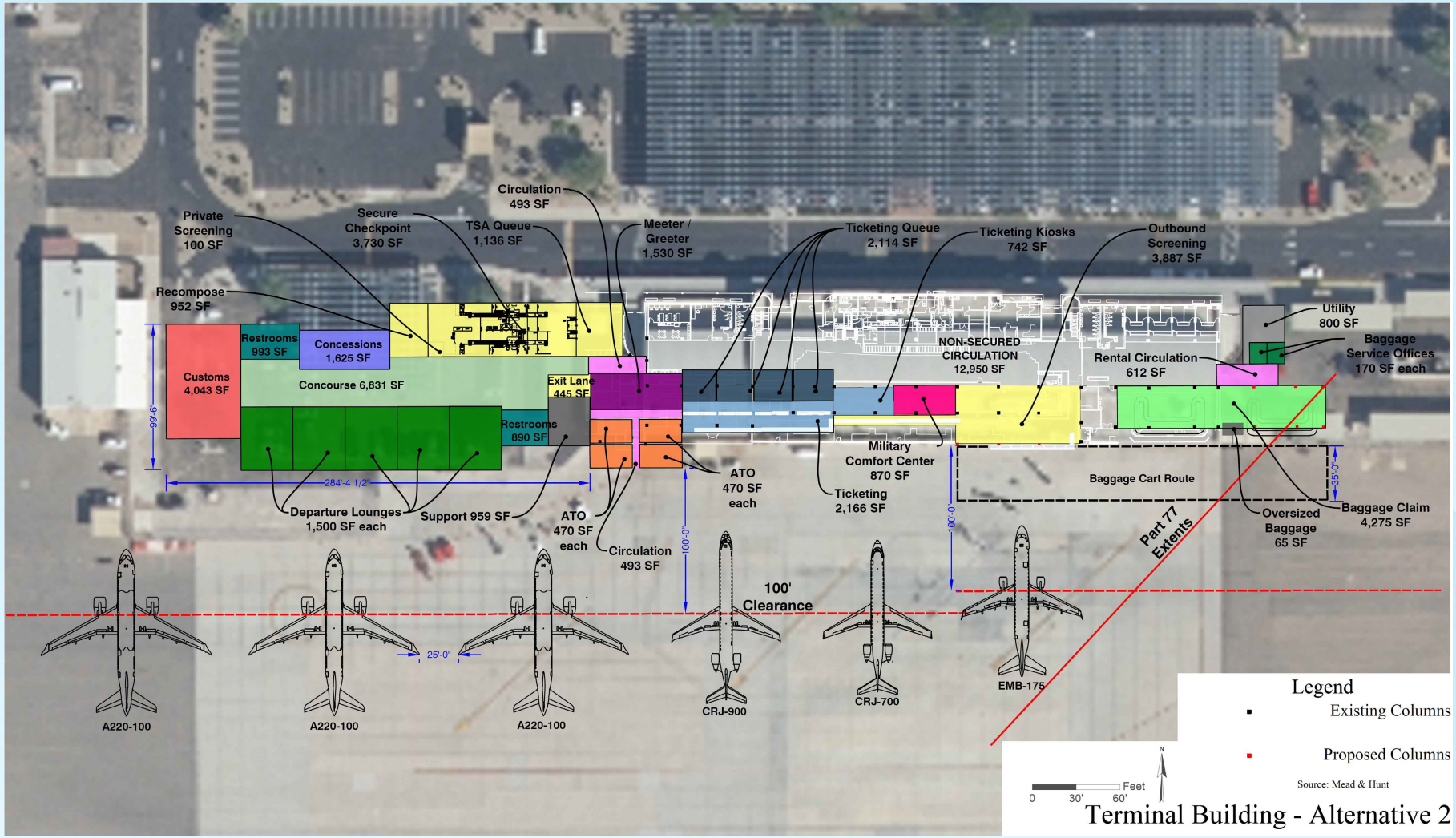
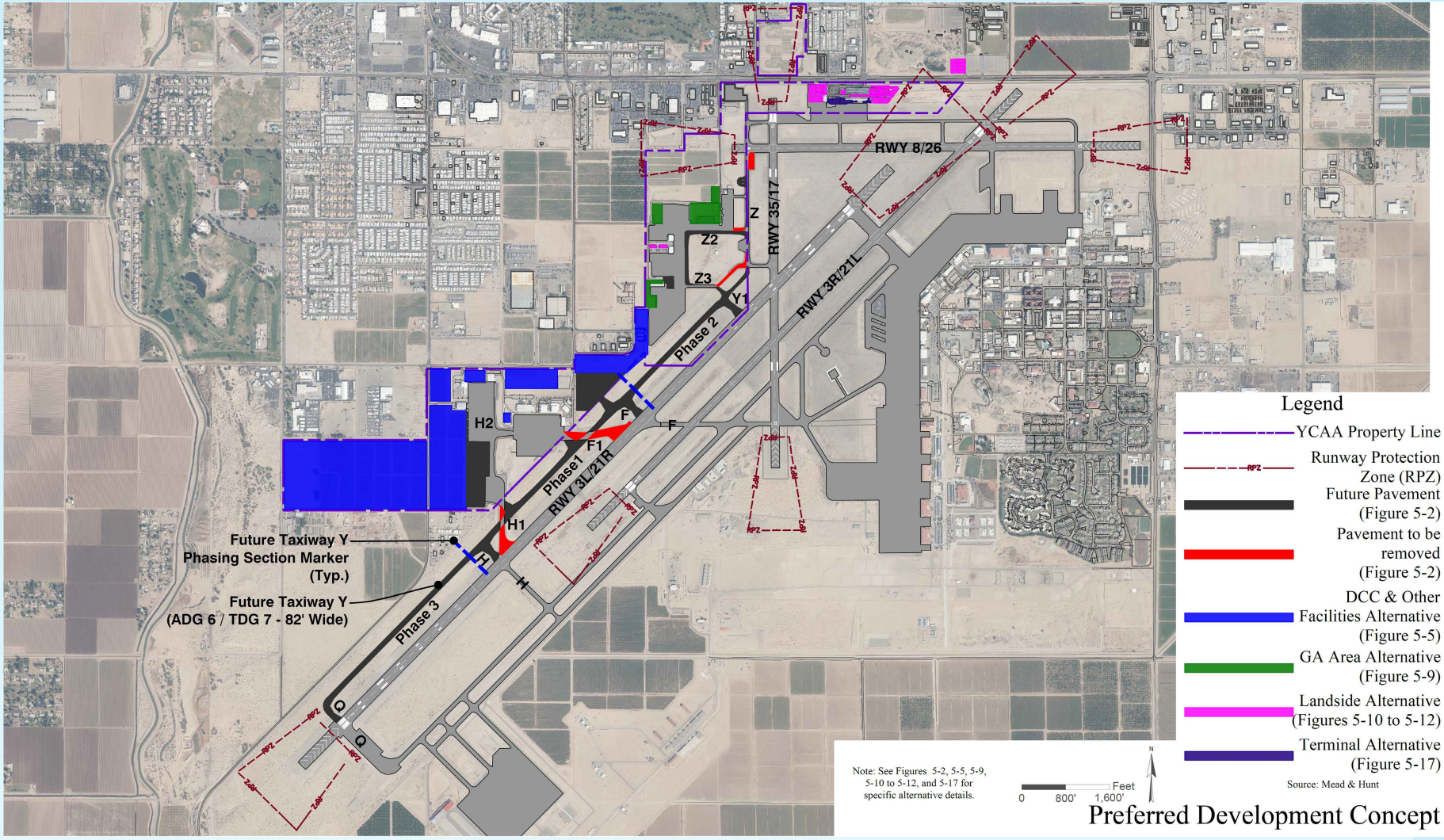
Terminal Building: *Alternative 2*



Mead &Hunt

Preferred Conceptual Development Plan



Mead & Hunt

Next Steps

Planning Advisory Committee Meeting #3	July 2021
Public Open House #2	July 2021
Financial Feasibility & Implementation Chapters	Fall 2021
Environmental Overview of Conceptual Development Plan	Fall 2021
Preliminary Draft Airport Layout Plan	Fall 2021
Final Planning Advisory Committee Meeting #4	Fall 2021
Final Airport Layout Plan to FAA For Approval	Late 2021
Yuma County Airport Authority Board of Directors	Late 2021

Project Contact Information

- **Yuma County Airport Authority**
  - ✈ Gladys Brown
    - Gladys@yumaairport.com
    - (928) 726-5882 Ext.2217
- **Mead & Hunt**
  - ✈ Christopher C. Hacker
    - Chris.Hacker@MeadHunt.com
    - (480) 718-1909
- **Project Website**
  - ✈ https://www.yumaairportmasterplan.com/

Yuma International Airport Master Plan

Airport Board of Directors - Strategic Planning Committee Meeting A
Airport Conference Room (8:30 a.m. to 10:15 a.m.)
Monday, February 28, 2022

Attendance

Study Team:
Mead & Hunt – Chris Hacker
Gordley Group – Kara Lehmann

Yuma International Airport:
Gladys Brown, Airport Director

Board of Directors:
Albert Gardner
Chris Medina
Dean Hager
Jason Frost
Jenny Torres
Russell Jones
Stanley Gourley

Meeting Overview

Chris Hacker (Mead & Hunt) presented the Airport Master Plan to the Airport Board of Directors Strategic Planning Committee for review. Information provided included the Master Plan project approach and schedule, demand capacity and facility requirements, and the airport layout plan and remaining steps.

Meeting Notes – Group A

Gladys Brown welcomed attendees, gave opening remarks, and introduced Chris Hacker. Russell Jones asked Chris Hacker to emphasize strategic planning so the committee can focus and comment on those areas. Chris Hacker agreed to focus on each committee specialty.

Chris Hacker (Mead & Hunt) led introductions and then updated the directors on the Master Plan using a PowerPoint slide presentation.

During the presentation of the Waste Management & Recycling Plan, Russell Jones asked what kind of reusable waste the Airport has. Gladys Brown responded that the Airport has a small amount of reusable waste from the wash station and that items such as oil are recycled. Gladys Brown stated that the Airport must maintain compliance with FAA requirements and understand waste management for the future.

Dean Hager asked the group if the Airport oil is recycled or reclaimed. Gladys Brown said that oil is recycled and picked up by Batavia Oil in exchange for credit. Gladys Brown stated that the Airport needs to keep its waste levels manageable, and any independent contractors can be scheduled separately but the Airport does not want excess oils dropped off by others.

Russell Jones asked if the marine base was included in the Airport's Master Plan for waste management. Gladys Brown said the marine base does manage its own waste, but the Airport manages the international trash disposal. The Airport handles all the incineration and the regulatory side including what comes off military planes if it is coordinated properly. It is written in the regulations that the Airport takes care of international trash.

Stanley Gourley asked if the Airport has calculated a cost for the international trash disposal. Gladys Brown responded that there are costs associated with it: pick-up fees and burning fees. It is all done on-site, and the Airport does not use private contractors for it.

Chris Hacker resumed the presentation.

During the discussion of the Passenger Catchment Area, Gladys Brown mentioned that as the Airport prepares for larger-scale projects, milestones need to be met regarding expansions. This document is very fluid and is a tool that the Airport will use in federal funding. If development is not identified in the Airport plan, the FAA will point that out. This portion will fall under public relations to understand what population the Airport is trying to reach.

Russell Jones stated that when he looks at the catchment area, there is nothing from Mexico. Gladys Brown responded that the Airport is not allowed to take that area into consideration because it is over international lines. The trade portion can be discussed, but that data cannot be taken into account. Airport numbers can include anything within 60 miles unless it is international.

Stanley Gourley asked how does the Airport fit the military activities into daily operations? Gladys Brown responded that the Airport can see where military installations are set and can pull how many military members come through, but a passenger is a passenger. The Airport can focus on why it pulls from certain areas in future development. The Airport not only looks at military installations, but it also looks at contractors. The Northwest area population has a lot of contractors and traveling nurses. The Airport has people that come back and forth from the Northwest.

Stanley Gourley asked if the Airport is capable of addressing international surges, like how in the current situation the Airport could end up with increased military numbers going overseas. Gladys Brown responded that the Airport does have a disembarkment area depending on the type of military mission, and she hopes that the Airport will continue to be a component of the military installation.

Chris Hacker resumed the presentation.

Regarding the Top 5 Passenger Destinations, Glady Brown said the Airport did an additional study based on mobile services that has San Francisco as a likely candidate for top passenger destinations. These were the top destinations based on Arizona Department of Transportation data.

Chris Hacker resumed the presentation.

During the Airport Master Plan – FAA Approved Forecast slide presentation, Gladys Brown said in her 13-14 years at the Airport, Airport operations have stayed around 175,000-180,000. Seeing those numbers steady is a good thing. The Airport is a lot busier than other airports of its size because of the military. These numbers are tracked and reported annually.

Russell Jones asked about transitory air traffic from California in support of agriculture operations and what increases have been seen. Gladys Brown responded that 15 years ago these operations were overcrowded, but those planes were upgraded to jets. Now, they are not bringing in multiple aircrafts, there is one plane that might leave multiple times during a day. The Airport is getting more personnel that are commuting but not multiple planes. Some modifications were made, and overall transient numbers are staying steady.

Dean Hager asked if the Airport operations numbers were just commercial. Gladys Brown said that the Airport operations number includes everything.

Chris Hacker resumed the presentation.

During the discussion of the Airport Reference Code & Critical Aircraft slide information, Gladys Brown stated aircraft clearance is measured from nose to tail. The Airport does not have potential right now on the radar of an A-220, so don't get excited about the Airbus and the competitiveness with the Boeing 737 class. The 220 is not realistic in this market yet, but that doesn't mean it is not on the Airport's radar. American Airlines does not buy regional liners, only mainliners. There is potential for the 220 but that is by specific modeling. The 900s are still competitive but there are questions on efficiency and turnaround time on repairs for those aircrafts.

Chris Hacker mentioned that the manufactured life of the 900 has about 8-10 more years. The 175 is about 3-4 years into its manufactured life and the A220 just started, so airlines are just beginning to place their orders for this. Gladys Brown noted that 10 years ago, airlines were trying to exit the market on regional aircraft and they saw how competitive the CRJ's were – with the fluctuation in manufacturers, there will likely be additional models that will be developed, so the Airport will need to look for these new aircraft and their requirements.

Russell Jones asked if there is any change in runway usage at the Airport and if there would be shifts due to gross weights or summer traffic. Gladys Brown responded no; it depends on the pilots and their comfort level. Most of this airport's runways are longer than regional airports.

Chris Hacker resumed the presentation.

During the discussion of the Runway Protection Zone – Design Surfaces slides, Gladys Brown noted that there is a proposal and cost estimate for land shown in the presentation. The land was privately appraised. If the Authority wanted to purchase this land, it couldn't do it with anything but its own funds. The Yuma County Airport Authority is not allowed to perform land acquisitions with any other type of funding.

Russell Jones said it appears that about half of the land is unusable. Gladys Brown responded that it can be used for some sort of storage because minimal use is desired. When you lay Airport services on there, nothing else should be happening on that land. It could be a cell phone lot, storage, long-term parking for contractors, as long as it doesn't involve personnel. It cannot have office space or provide a prolonged area of use.

Chris Hacker resumed the presentation.

During the MCAS Yuma's 2019 AICUZ Study discussion, Stanley Gourley asked if there would be an extension option that would move the whole trapezoid south. Gladys Brown responded that the air station is not looking at any of the north, south, east, or west runways – they are only looking at parallel runways. Everything they have is a combination with military land. For shifting runways, the only one being considered is the 21 Right. Those are not high-priority tactical runways.

Chris Hacker resumed the presentation.

During the discussion of the Design Compliance Analysis information, Jenny Torres asked if the military has ever brought up the possibility of taking over the Airport for their own purposes and the Airport relocating where it is not restricted for future development. Meaning, the military takes over and buys the Airport out so Yuma International Airport can relocate without development restrictions. Gladys Brown responded with no, that has never been brought up, and she would recommend that the Airport never entertains that idea due to costs. Anything is possible as far as relocation within 40-60 years of development, but it would take a very different individual to plan those efforts.

Russell Jones said that a more likely scenario would be if Williams Gateway Airport decided to move elsewhere. Gladys Brown responded that the Airport has a lot of development and is creating a center. The other potential location is Goodyear, they have good potential with major highways that go through the area. For Yuma, a concerted effort should be made to keep the Airport the way it is. It is wonderful that it can handle aircraft that smaller airports cannot handle. The standards that the military requires just need to be maintained.

Jenny Torres said that she understands that it is out of the question financially, she was just wondering about the military. Dean Hager responded that they need to facilitate conversations with the military and have a good partnership. The key thing is to continue this. In the foreseeable future, this Airport is it.

Gladys Brown said that she does believe that the Airport will need to build another parallel taxiway, but not in their lifetimes. There will need to be a justifiable need and the Authority will be very supportive. At least 70% of that parallel taxiway will be justified in the far, far future.

Chris Hacker resumed the presentation.

During the discussion of Vehicle Parking Lots topic, Russell Jones said at Million Air there are never any parking spots. Gladys Brown responded with there is an opportunity there, but the modification can't be made without redesigning.

Stanley Gourley asked if the numbers in the presentation show that the building has become obsolete. Gladys Brown responded that yes, Chris Hacker is going to show that. The building will become obsolete when the expansion on the loading capacities is done.

Russell Jones asked if the airport is going to get to a point where the types of ramps that are used need to be air-conditioned. Gladys Brown responded that the Airport tried to design the terminal to handle jet bridging. The Airport is going to always use the ramps for unloading and air conditioning is not going to go further than it is now, maybe adding shading or awnings for personnel. Offloading in a sufficient amount of time and getting them in the terminal is the best option.

Chris Hacker resumed the presentation.

During the discussion of the Defense Contractor Complex & Other Facilities Alternatives slides, Gladys Brown said that there are no hangars on the other side which will give the clearance needed. The Martha Taylor hangars do not displace anything, but those are smaller. It will move the security gate. If in the future and the demand goes up, Design Group 1 can be moved there.

Albert Gardner said that it makes more sense for larger runways. Gladys Brown responded that Zulu 1 and Zulu 2 activity restrict larger aircraft. The development of facility plans is not set in stone and the Airport can reconfigure them. The Airport needs to create a footprint that shows the changes in the configuration of this area that indicate a general idea of what the Authority wants so it can justify changes in the future.

The hangars themselves can be funded privately, but a cost-benefit analysis must be done. Thought should be given to where improvement programs can be used and what areas are eligible. A lot of the Master Plan is strategic with timing in 5-year increments.

Chris Hacker resumed the presentation.

During the Landside Access & Vehicle Parking slide presentation, Jenny Torres asked if two-story parking was considered. Gladys Brown responded that two-story parking is in the alternative plan, but it is expensive. Several different concepts were reviewed.

Chris Hacker resumed the presentation.

During the presentation of the Terminal Building slides, Gladys Brown said the FIS will allow the airport to take regularly scheduled international flights. When the analytics are considered, it will be up to Canada.

Chris Hacker finished the presentation.

Russell Jones asked about the status of 4th Avenue and the curve around the Airport. Gladys Brown responded that the city says the Airport Authority has to be able to purchase that outright, which it can do, or it ensures that aeronautical use is maintained. The city has it projected for closure. Russell Jones responded that in the short term there were a lot of items and in the mid-phase the primary thing is the maintenance facility and the terminal, so that makes a lot of sense.

Albert Gardner asked if the military has said anything about closing the A26 in recent years. Gladys Brown responded that they have justified keeping it open and are not looking at closing it.

Albert Gardner asked about the status of the antenna farm. Gladys Brown responded that it is still there, but space reduction will need to be reviewed and considered in the future. That site needs to remain where it is. Albert Gardner asked if there is more than one agency responsible for the antenna farm. Gladys Brown responded that the Navy is the only agency they deal with.

Russell Jones said that he recommends everyone review the presentation online.

Gladys Brown concluded the meeting by saying that the Airport Authority is happy with the document overall. The planning sheets have already been approved, which are part of this document, and now some of the data is being reviewed. The air station uses a different type of data system, and that is being resituated now.

Yuma International Airport Master Plan

Airport Board of Directors - Finance Committee Meeting B
Airport Conference Room (10:30 a.m. to 12:15 a.m.)
Monday, February 28, 2022

Attendance

Study Team:
Mead & Hunt – Chris Hacker
Gordley Group – Kara Lehmann

Yuma International Airport:
Gladys Brown, Airport Director
Gerald Hinkle, Jr.

Finance Committee:
Stanley Gourley
Albert Gardner
Reetika Dhawan

1st Bank Yuma:
Silvia Gunderman

Meeting Overview

Chris Hacker (Mead & Hunt) presented the Airport Master Plan to the Airport Board of Directors Finance Committee for review. Information provided included the Master Plan project approach and schedule, demand capacity and facility requirements, and the airport layout plan and remaining steps.

Meeting Notes – Group B

Gladys Brown welcomed attendees, began the presentation, discussion, and possible recommendations related to YCAA long-term debt.

Chris Hacker (Mead & Hunt) led introductions and then updated the committee members on the master plan using a PowerPoint slide presentation.

During the presentation of the Runway Length Analysis slide, Gerald Hinkle, Jr. asked if the difference in the DFW was due to the fuel difference. Chris Hacker responded that fuel does play a factor and that the numbers in the presentation assume the plane is fully maxed for luggage, passengers, and fuel.

Chris Hacker resumed the presentation.

During the presentation of the Runway Protection Zone slide, Gerald Hinkle, Jr. asked if the trapezoids shown in the presentation are at ground level and if the restricted area rises as it goes into the air. Chris Hacker responded that the presentation is on a two-dimensional scale and that there are services that extend in a three-dimensional shape, essentially forming slopes similar to a stadium where the runways are the playing field.

Chris Hacker resumed and finished the presentation.

Reetika Dhawan noted that the presentation was well done and that she liked the master plan.

Gladys Brown asked the group to look at the financial impacts and to see what the Airport's lending capabilities are. Gladys noted the authority is not interested in bonding. She looked at federal and state funds to see if the Airport can pilot something and go through entitlements and projects specifics.

Reetika Dhawan said that she does a lot of bond work on other committees, but she knows there are a lot of complications with bonds.

Albert Gardner said that he likes the plan; it covers the possibilities that may develop but also covers the airport's money.

Stanley Gourley said that it is a plan that he can easily support at the board meeting. Gladys Brown responded that they could present as early as the March meeting if revisions are made prior to the publication.

Stanley Gourley said that the board does not see this type of development often and that the master plan document is very important. He asked if the presentation shown today will be used for further presentation purposes. Gladys Brown responded that yes, the document will be used for planning purposes.

Stanley Gourley asked if they can get the presentation printed and posted someplace. Gladys Brown responded that they could do that.

Albert Gardner said that the Airport's past planning has been excellent. He has lived in Yuma for over 20 years and consistently looks at the development of the Airport. He is very pleased by the results of this long-term planning; it is economically viable. The Airport is coming out of a pandemic with all its systems intact, no lost personnel, and he thinks the Airport is ready to move forward.

Yuma International Airport Master Plan

Airport Board of Directors – Public Relations Committee Meeting C
Airport Conference Room (1:00 p.m. to 2:30 p.m.)
Monday, February 28, 2022

Attendance

Study Team:
Mead & Hunt – Chris Hacker
Gordley Group – Kara Lehmann

Yuma International Airport:
Gladys Brown, Airport Director

Public Relations Committee:
Eric Saltzer
Juan Guzman
Ken Scott

Meeting Overview

Chris Hacker (Mead & Hunt) presented the Airport Master Plan to the Airport Board of Directors Public Relations Committee for review. Information provided included the Master Plan project approach and schedule, demand capacity and facility requirements, and the airport layout plan and remaining steps.

Meeting Notes – Group C

Gladys Brown welcomed attendees, gave opening remarks, and introduced Chris Hacker.

Chris Hacker (Mead & Hunt) led introductions and then updated the directors on the Airport Master Plan using a PowerPoint slide presentation.

After Chris Hacker concluded the presentation, Gladys Brown noted that in upcoming years the Airport will need to use some of the data and business development to figure out if current marketing is effective. How to invest in future growth also needs to be considered as paid advertisements can be pricey. There does need to be an evaluation of the market in 2025, but that does not directly impact prices.

Eric Saltzer asked if the information in the presentation is considered as guidelines. Gladys Brown responded yes; the information is considered guidelines. There were multiple renditions, and an alignment was picked.

Ken Scott asked about the possibility of bringing on a maintenance/avionics shop to the Airport. Gladys Brown responded that the use of each building does not have to be identified in the master plan, so bringing in a shop is a possibility.

Juan Guzman asked if it was possible to include in the master plan that the Airport would have a maintenance shop by 2028. Glady Brown responded that the Airport could set additional goals, but that request would need to come from the board.

Ken Scott asked if there was a way to draw in more general aviation. Glady Brown responded that the best way to do that would be through academia, offering certificates for future professionals while they contribute to the Airport.

Juan Guzman asked if there was a master schedule calendar to show the activities for each month. Gladys Brown responded that the annual marketing activities would be easy to schedule out and pass to the team.

Yuma International Airport Master Plan

Airport Board of Directors – Election and Personnel Committee Meeting D
Airport Conference Room (2:30 p.m. to 3:45 p.m.)
Monday, February 28, 2022

Attendance

Study Team:
Mead & Hunt – Chris Hacker
Gordley Group – Kara Lehmann

Yuma International Airport:
Gladys Brown, Airport Director

Board of Directors:
Reetika Dhawan
William Fox
Bill Craft
Juan Trasvina
Ken Scott

Meeting Overview

Chris Hacker (Mead & Hunt) presented the Airport Master Plan to the Airport Board of Directors and Election and Personnel Committee for review. Information provided included the Master Plan project approach and schedule, demand capacity and facility requirements, and the airport layout plan and remaining steps.

Meeting Notes – Group D

Gladys Brown welcomed attendees, gave opening remarks, and introduced Chris Hacker.

Chris Hacker (Mead & Hunt) led introductions and then updated the directors on the master plan using a PowerPoint slide presentation.

During the presentation of the Runway 17 – Runway Protection Zone slide, Bill Craft asked if the current runways are going to get grandfathered in. Chris Hacker responded yes, they will get grandfathered in.

Gladys Brown noted that the Airport will never design the plan for the FAA to have any issues and the plan will automatically meet the requirements due to the Marine Corps restrictions.

Chris Hacker resumed and finished the presentation.

Gladys Brown said that a large portion of the budget is to construct a taxiway which has proven to be difficult due to the property owners. Everything else is within the Airport's capabilities.

William Fox asked if Gladys Brown was referring to local funds and grants. She responded that donations, grants, and artwork donations in the terminal are all local funds. Everything else is through federal and state programs. Local funds are from the bank or reserves.

AIRPORT MASTER PLAN

Mead & Hunt

Airport Board of Directors Strategic Planning Committee Meetings

February 28, 2022

Yuma County Airport Authority

Agenda

- Introduction and Opening Comments
- Expected Outcomes for the Master Planning Process
- Project Approach and Schedule
- Key Airport Planning Goals & Objectives
- Inventory of Existing Facilities
- Recycling & Solid Waste Plan
- Forecast of Aviation Activity
- Demand Capacity/Facility Requirements
- Airport Development Alternatives
- Financial Implementation and Feasibility
- Airport Layout Plan
- Remaining Steps

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Master Plan Consultant Team

- **Mead & Hunt, Inc.** *(Prime Firm)*
- **Gordley Group** *(Public Involvement)*
- **Makers Architecture & Urban Design** *(MCAS Yuma Facility Requirements, and Alternatives)*
- **Nicklaus Engineering, Inc.** *(Cost Estimates)*
- **Quantum Spatial** *(Airports GIS)*
- **SWCA Environmental Consultants** *(Environmental)*
- **Unison Consulting** *(Forecasts & Financial Implementation)*

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Expected Outcomes

- Appropriate Documentation of Considerations and Influences
- FAA Approved Aviation Demand Forecasts
- Comprehensive Recommendations for Layout of Future Airport Facilities
- Reasonable Long-Term Capital Improvement Plan
- FAA Approved Airport Layout Plan

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Community Outreach

- Airport Authority Briefings
- Planning Advisory Committee Meetings
- Coordination Meetings
- Public Open House Workshops
- Master Plan Project Website
  - ✈ https://www.yumaairportmasterplan.com/

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Project Approach

- **Follow FAA Guidance**
- **Building Block Process**
  - Inventory
  - Forecasts
  - Facilities Need Determination
  - Development Plan Formulation
  - Financial Plan

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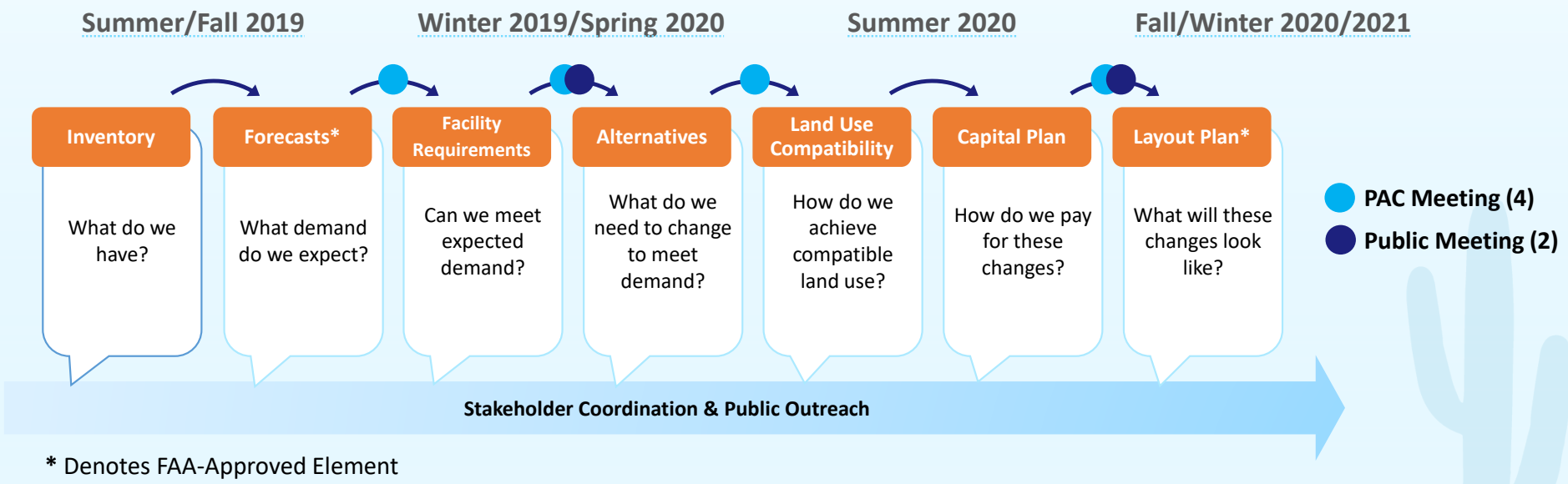
Project Schedule



* Denotes FAA-Approved Element

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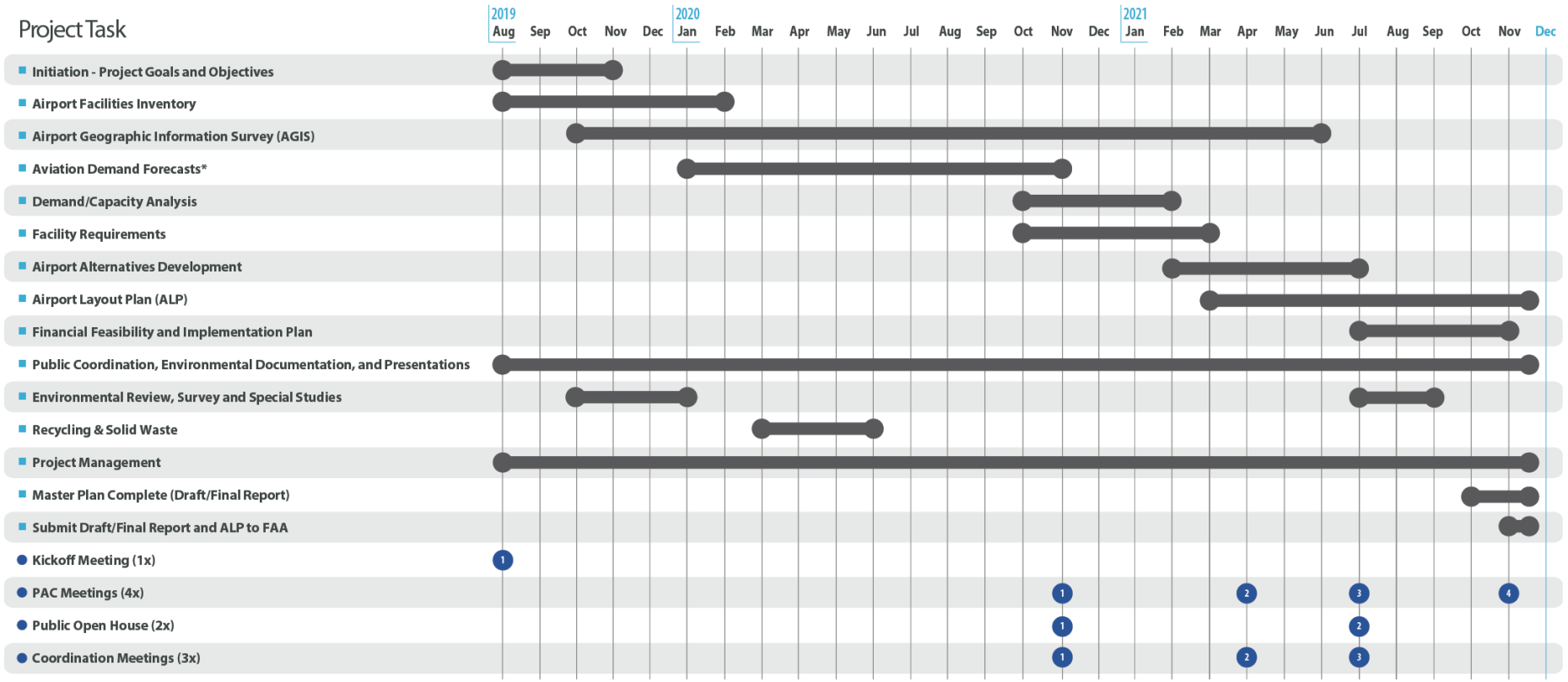
Project Schedule Airport Master Plan



NOTES: *Aviation Demand Forecast Development Impacted by COVID-19 Pandemic

Notice to Proceed - August 22, 2019; Schedule updated - February 25, 2021. Subject to change.

Key Airport Planning Goals & Objectives

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Key Airport Planning Goals & Objectives

- **Comply with FAA guidance and regulations**
  - Address airfield geometry challenges
  - Provide operational areas for existing and future users
- **Plan for passenger terminal area development**
  - Grow terminal with demand
  - Improve parking facilities
- **Develop property to improve and diversify revenue**
- **Promote land use compatibility initiatives with local communities**
- **Prepare a sustainable and implementable Capital Plan**

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Inventory of Existing Facilities

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Inventory of Existing Conditions

- **Airport Background**
- **Airport Role**
- **Aircraft Facilities Inventory**
  - Airside Facilities
  - Landside Facilities
  - Airspace System and NAVAIDS
  - Airport Environs
  - Issues Summary

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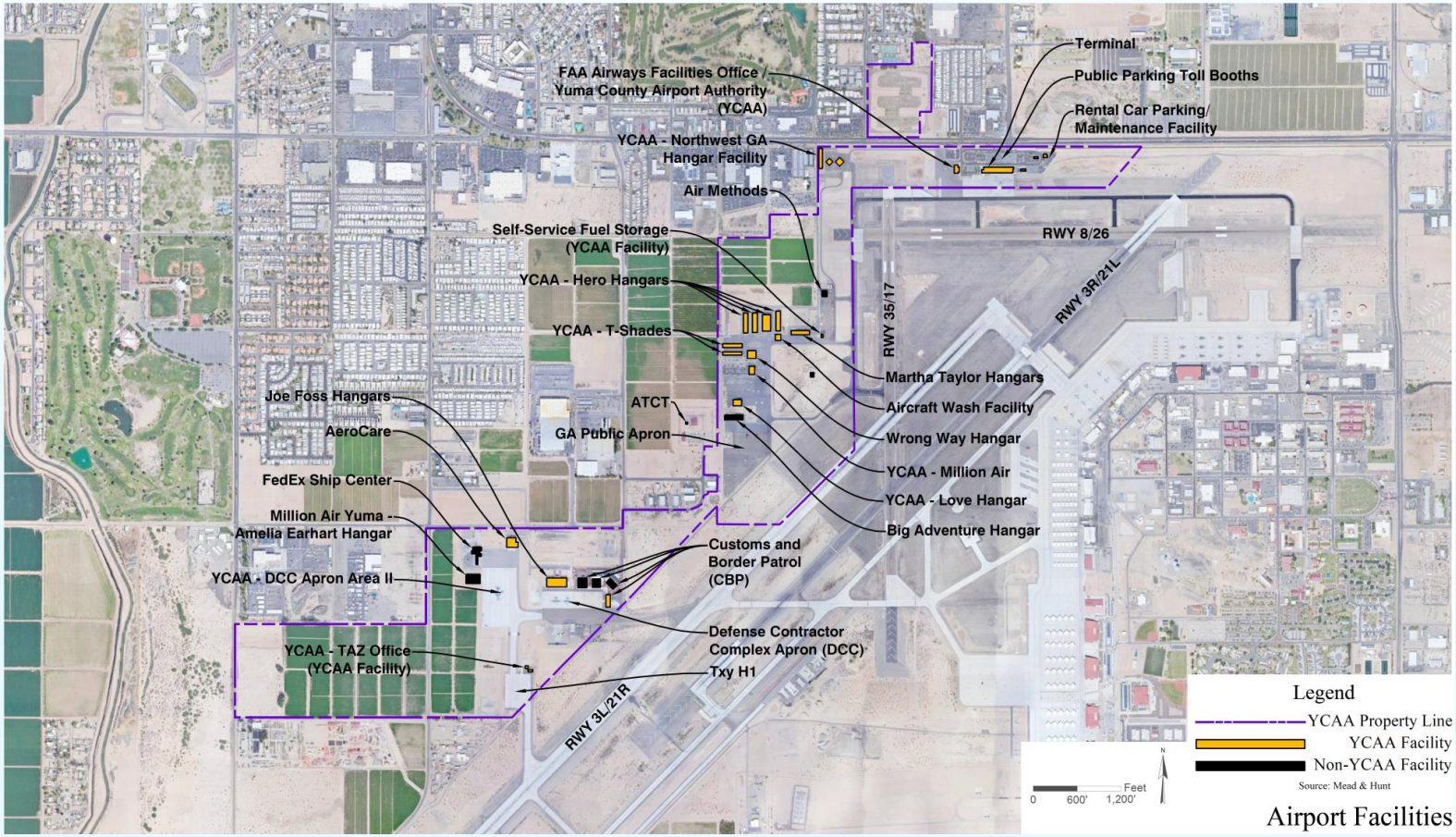
Airport Existing Facilities



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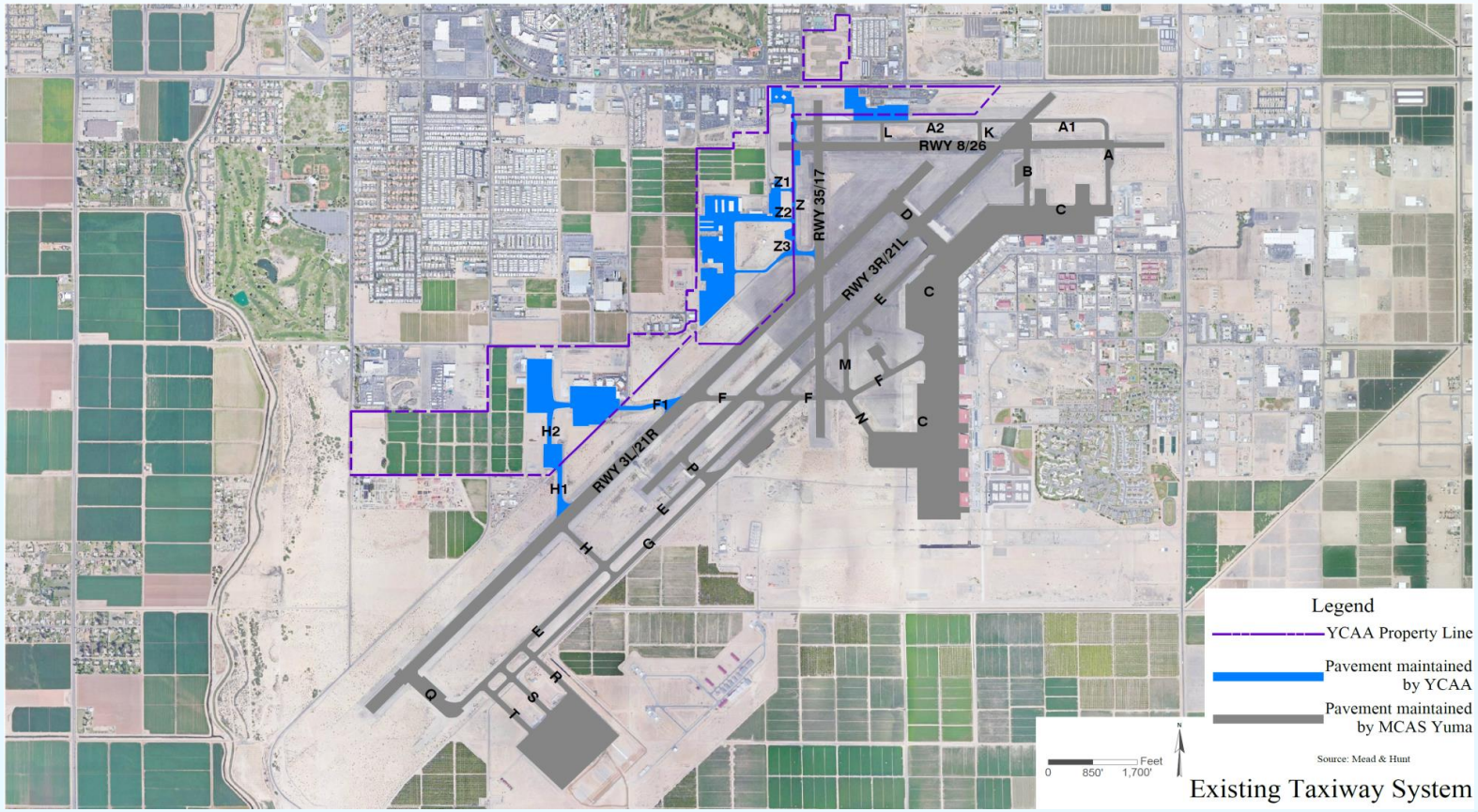
Airport Taxiway System



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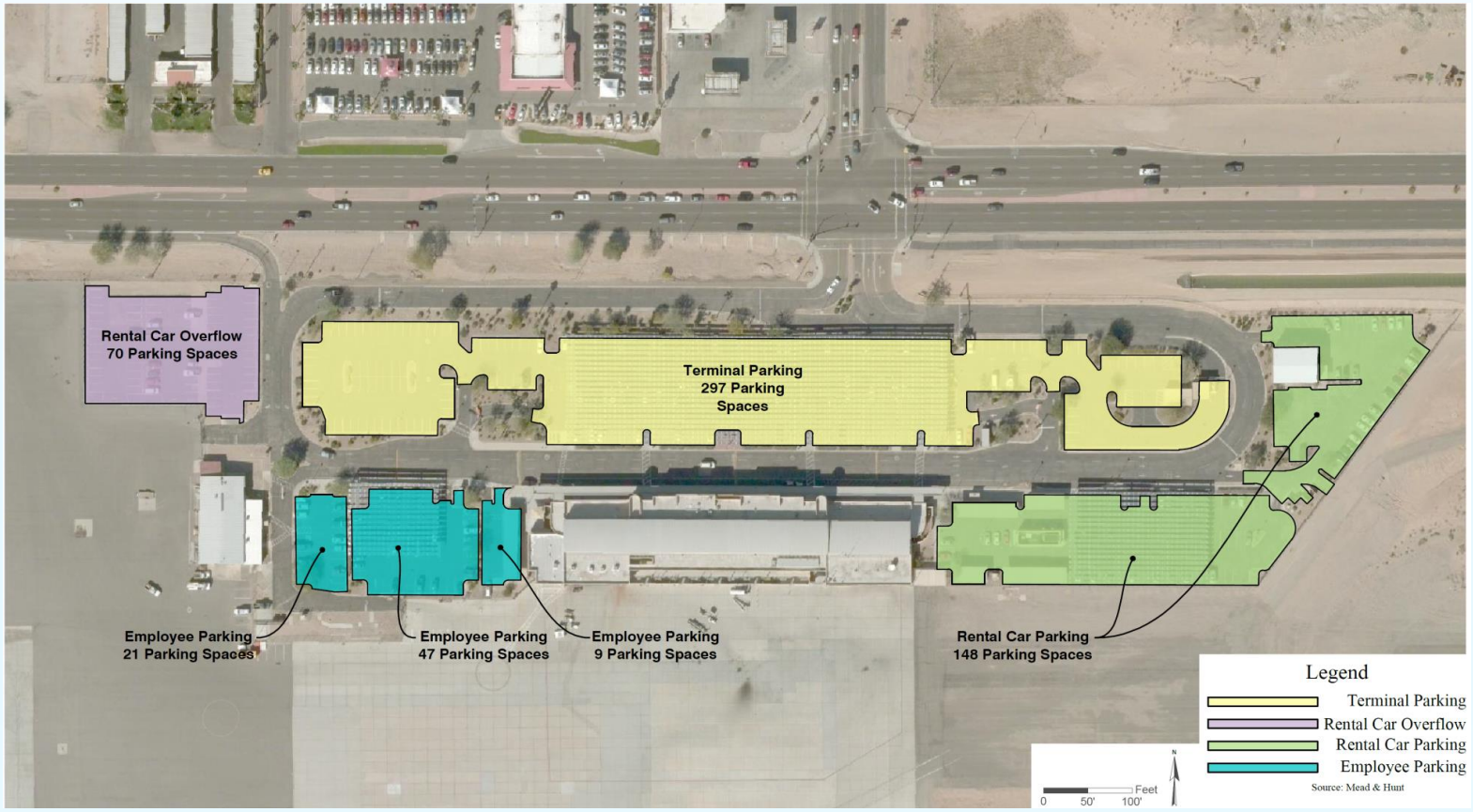
Airport Parking Facilities



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Terminal Building – Upper Level

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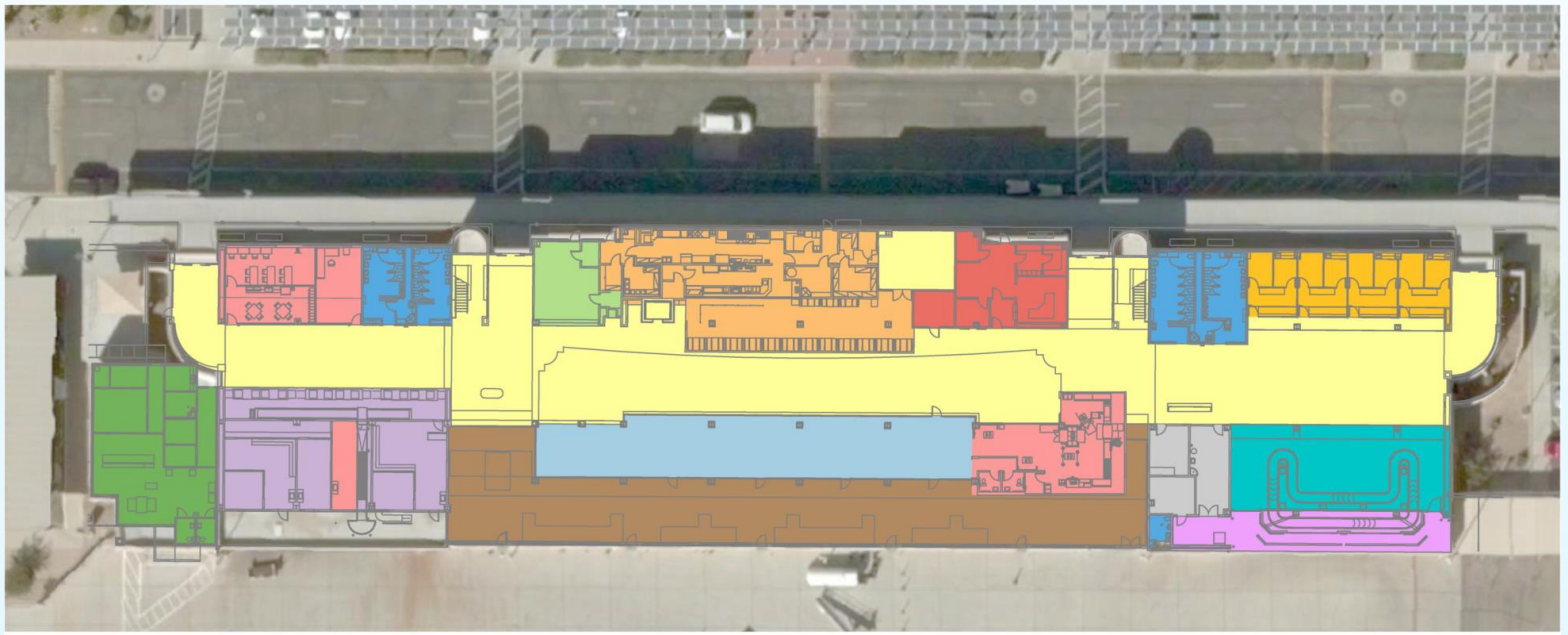
Terminal Building – Lower Level



Legend

Type of Space	Area (Square Feet)
Public Circulation	13,000
Secure Passenger Waiting Area / Outdoor Atrium	5,050
Concessions	3,250
Airline / Ticket Counter Space	2,670
Boarding Area	2,700
U.S. Customs and Border Protection	2,050
Baggage Claim	1,920
Restrooms	1,750
Baggage Handling	1,110
Rental Car Counter and Offices	1,410
Airport Operations Office	1,200
TSA Screening and Offices	2,680
Mechanical / Airport Storage	760
YCAA Administrative Offices	650
Lower Level Total Area:	40,200

Source: Mead & Hunt

Notes
1. Drawing regenerated and digitized from previous line work (Fisher Architects).
2. Square feet represents an estimate of space and drawing is not to scale.

0 15' 30' Feet

Terminal Building (Lower Level)

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Waste Management & Recycling Plan

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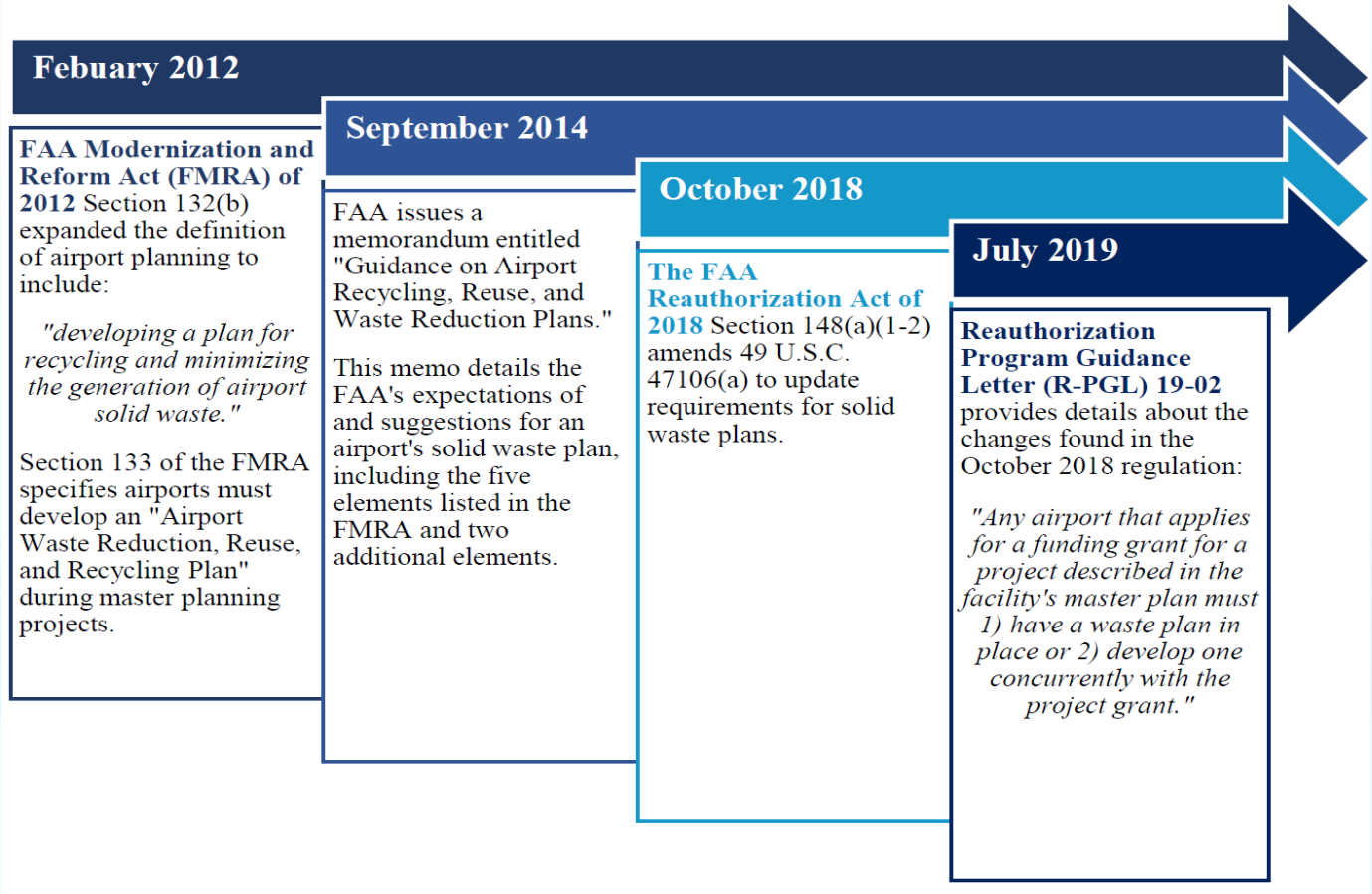
FAA Requirement Timeline & Detail



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Recommendations

- **#1 - Integrate Waste Diversion in Airport Operations**
  - Includes waste reduction, reuse, donation, sustainable procurement, recycling, and composting.
- **#2 - Improve Purchasing Practices, Reduce and Reuse**
  - Prioritize durable (versus disposable) items and supplies that are reusable, recyclable, compostable, and/or made from recycled content.
  - Identify supplies and materials which can be avoided, reused on site, or donated to a third party.
- **#3 - Enhance Existing Recycling Program**
  - Maintain the existing recycling program and supplement current practices with additional receptacles, signage, an education campaign, the incorporation of more materials, and partnership with the waste hauler.
- **#4 - Tracking & Reporting**
  - Regularly estimate and track the volume of waste sent to the landfill and diverted through reduction, reuse, donation, recycling, or other strategies as well as the costs associated with these services. It is also recommended that YCAA discuss these trends with the waste hauler and share this information with program stakeholders (Airport staff and tenants).

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Additional Recommendations

Objectives and Targets ▪ Set specific, measurable, achievable, realistic, and time-bound (SMART) goals for YCAA and its waste program.
Tenant Requirements ▪ Encourage waste diversion and recycling among tenants through future leases and contracts. NYL Administrative Staff have noted an enthusiasm among their tenants for recycling and waste management practices and believe that official contract language requiring recycling would not be necessary.
Other Recyclables and Compost ▪ Work with the waste contractor to expand the recycling program and introduce new materials (where possible). ▪ Work with waste hauler to explore potential benefits and challenges of a two-stream recycling program (cardboard/paper (2D materials) and bottles/cans (3D materials). ▪ Explore collecting green waste (food waste or yard waste) for off-site composting in order to divert these materials from the landfill.
Additional Facilities and New Development ▪ Consider waste diversion and management in the design and construction process of future Airport projects.
Continuous Improvement ▪ Maintain and improve the recycling and waste program per the Plan Do Check Act cycle.
Material Markets ▪ Collaborate with waste hauler to identify and recycle material(s) with strongest market(s) based on available infrastructure. ▪ Minimize use of low value materials.

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Aviation Activity Forecasts

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Comprehensive Forecast Development Process

- **Analysis of the airport's business environment**
- **Analysis of the airport's historical aviation activity**
  - Passenger traffic
  - Air cargo
  - General aviation
  - Military
- **FAA published documents**
- **Analysis of COVID-19 impact on aviation activity**
- **Assessment of air service development potential**
- **Forecast development and risk assessment**

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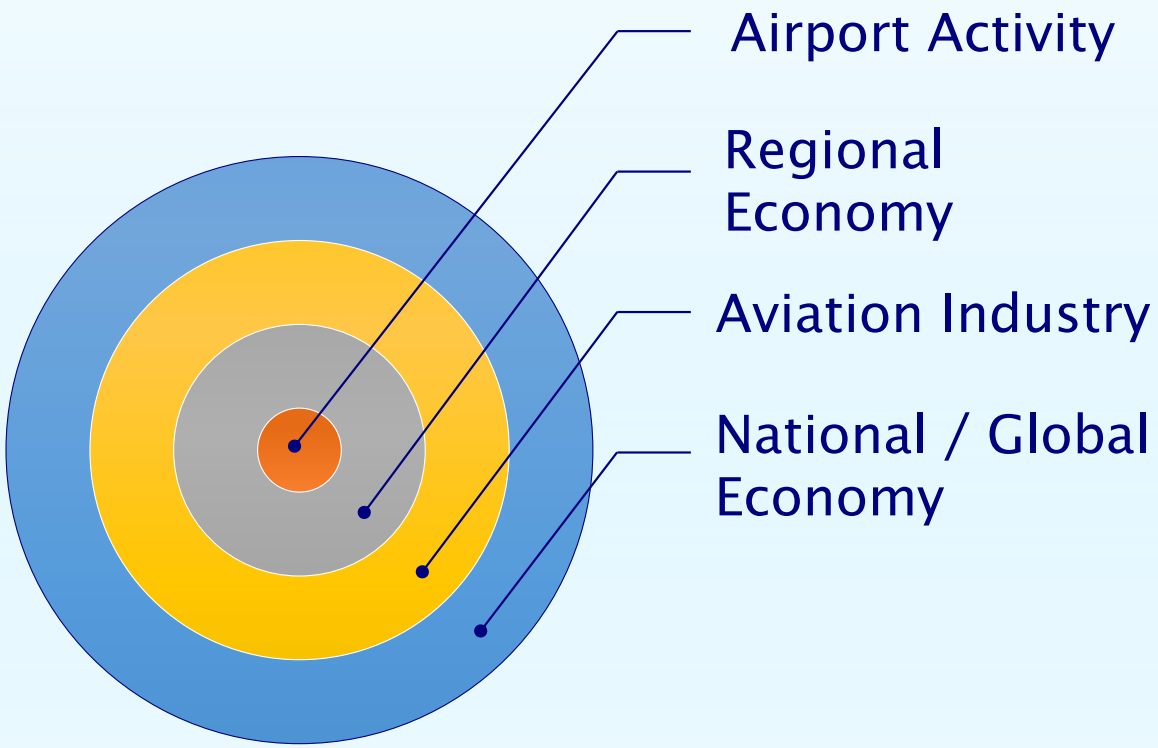
The Airport Business Environment



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Passenger Catchment Area

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Top 5 Passenger Destinations

Domestic	International
Seattle, Washington	Calgary, Canada
Portland, Oregon	Edmonton, Canada
Denver, Colorado	Vancouver, Canada
Sacramento, California	Tokyo, Japan (NRT)
Dallas, Texas	Cancun, Mexico

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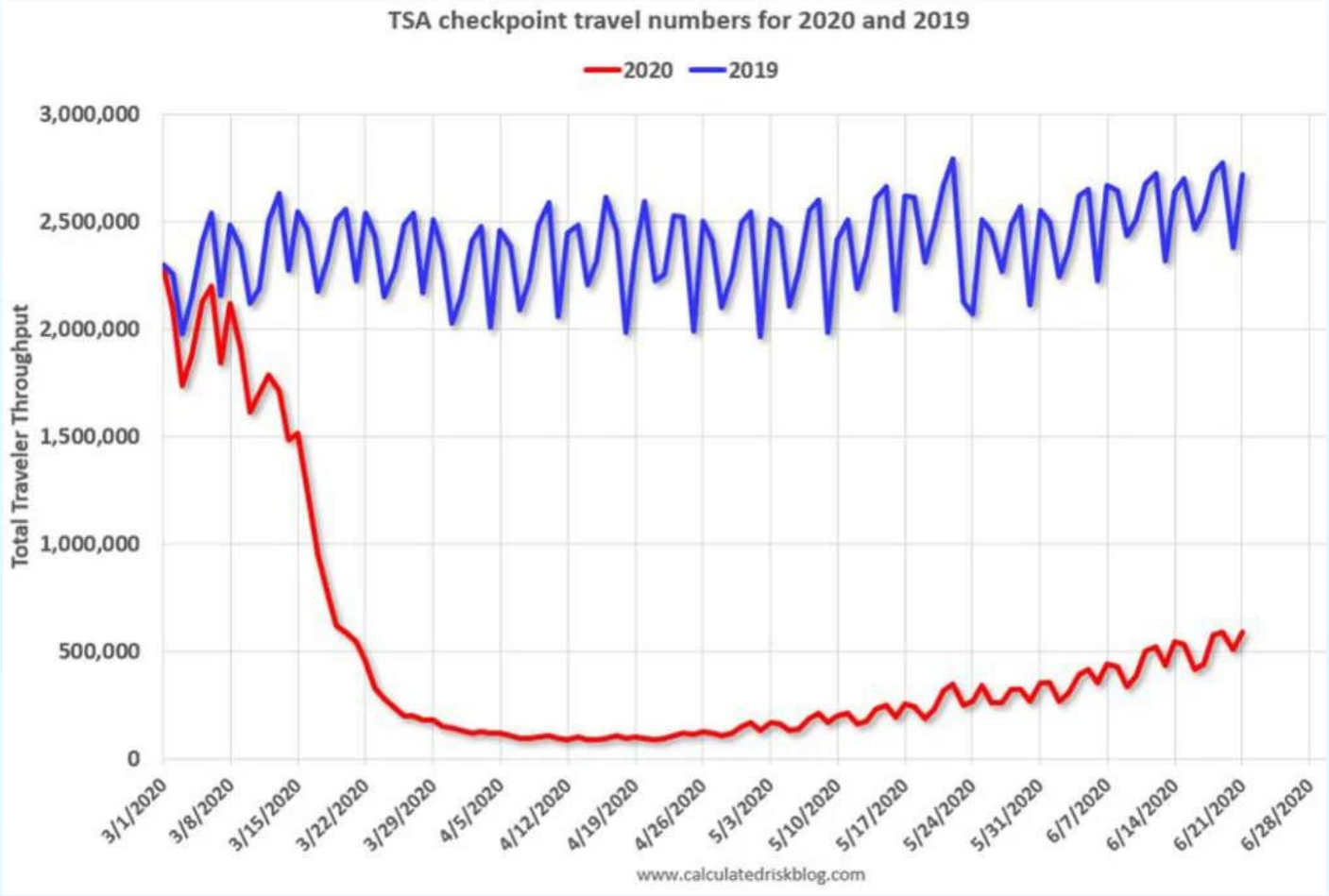
COVID-19 Impact to Passenger Throughput



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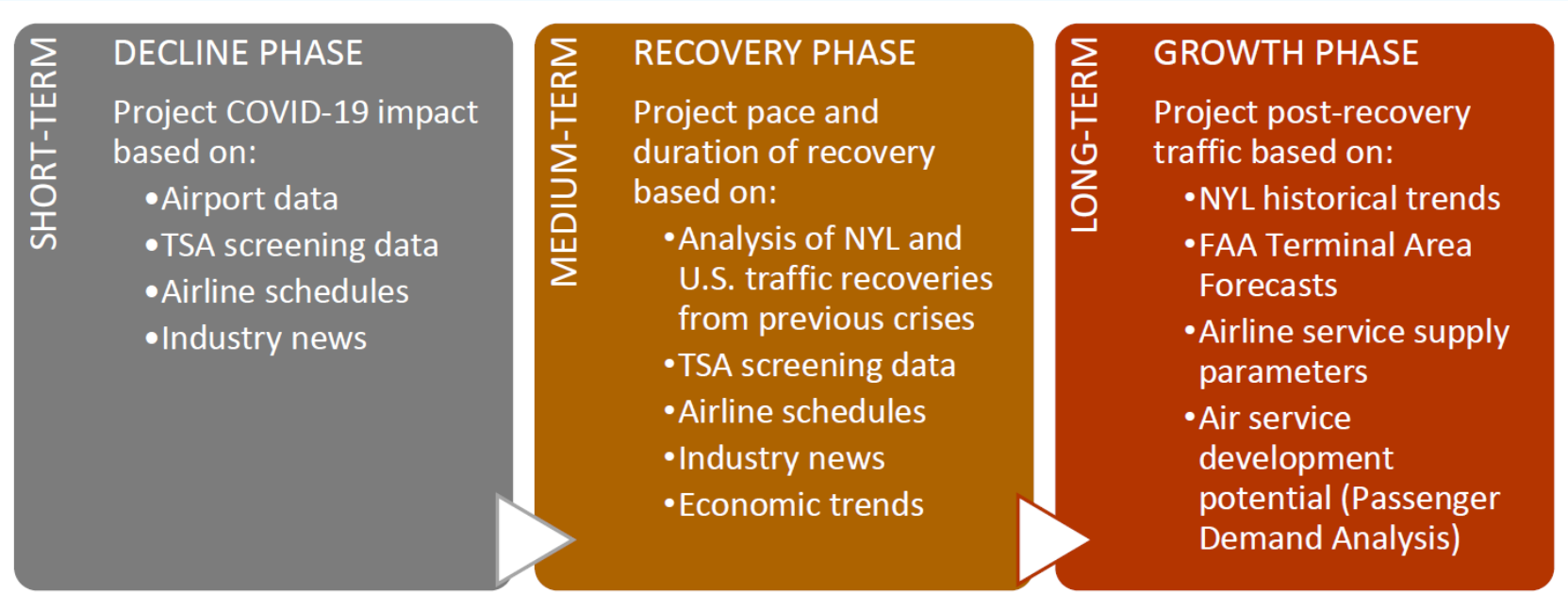
Hybrid Forecast Development Framework



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Airport Master Plan – FAA Approved Forecast

	Base Year 2019	Short-Term 2025	Medium-Term 2030	Long-Term 2040
Passenger Enplanements	92,908	104,040	124,788	163,113
Aircraft Operations	179,838	179,966	180,521	181,944
Based Aircraft	171	171	171	171

FAA Approved Forecast – October 23, 2020

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Demand Capacity/Facility Requirements

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Airport Reference Code & Critical Aircraft

ARC & Critical Aircraft Summary		
Runway	Existing	Future
08/26	B-II	CRJ-900, E175, A220, C-III
17/35	B-II	CRJ-900, E175, A220, C-III
3R/21L	Military Hybrid, D-V	Military Hybrid, D-V
3L/21R	Military Hybrid, E-VI	Military Hybrid, E-VI

Category C Aircraft		
CRJ-900	**E175**	**A220**
		

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Airfield Configuration

- **Airfield Operational Capacity**
- **Runway Length Analysis**
- **Design and Dimensional Criteria - Airfield Analysis**
  - ✈ FAA AC 150/5300-13A
    - Runway Protection Zones
    - Runways
    - Taxiways
  - ✈ YCAA Property & Responsibilities
    - Taxiways
    - Aprons

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Airfield Operational Capacity

- **FAA Calculation**
  - FAA Advisory Circular 150/5060-5 Airport Capacity & Delay
  - Range of Aircraft Operations (270,000 to 350,000) annually
- **Annual Service Volume**
  - Not anticipated to be an issue during the 20-year planning period

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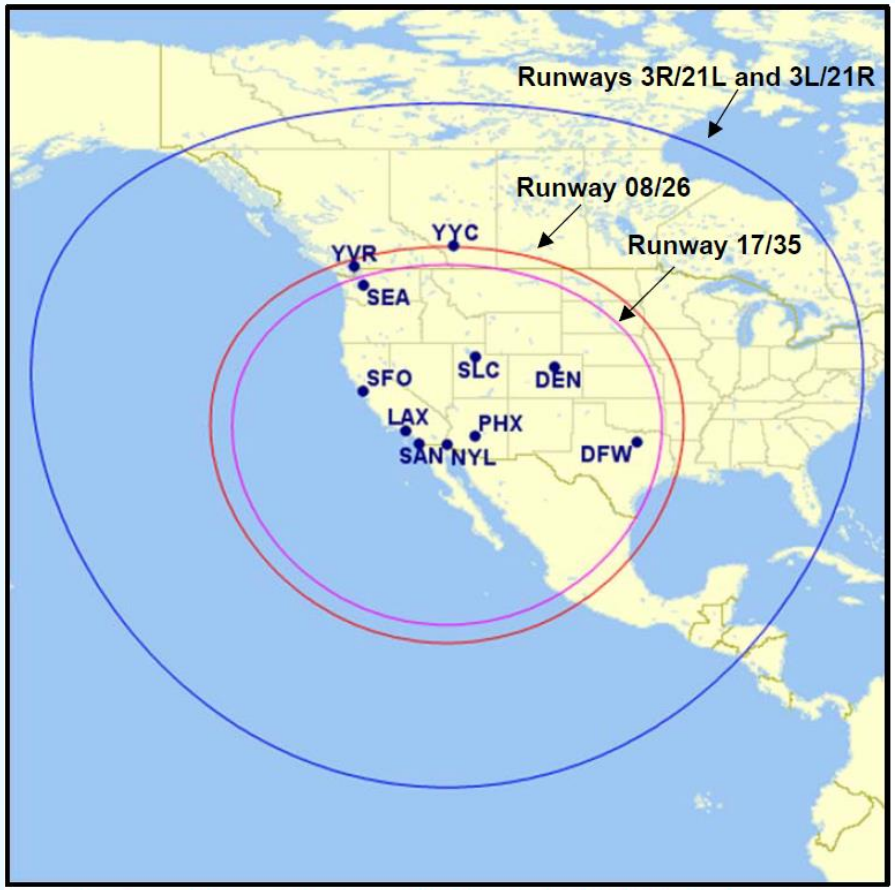
Runway Length Analysis: CRJ-900 (80% LF)



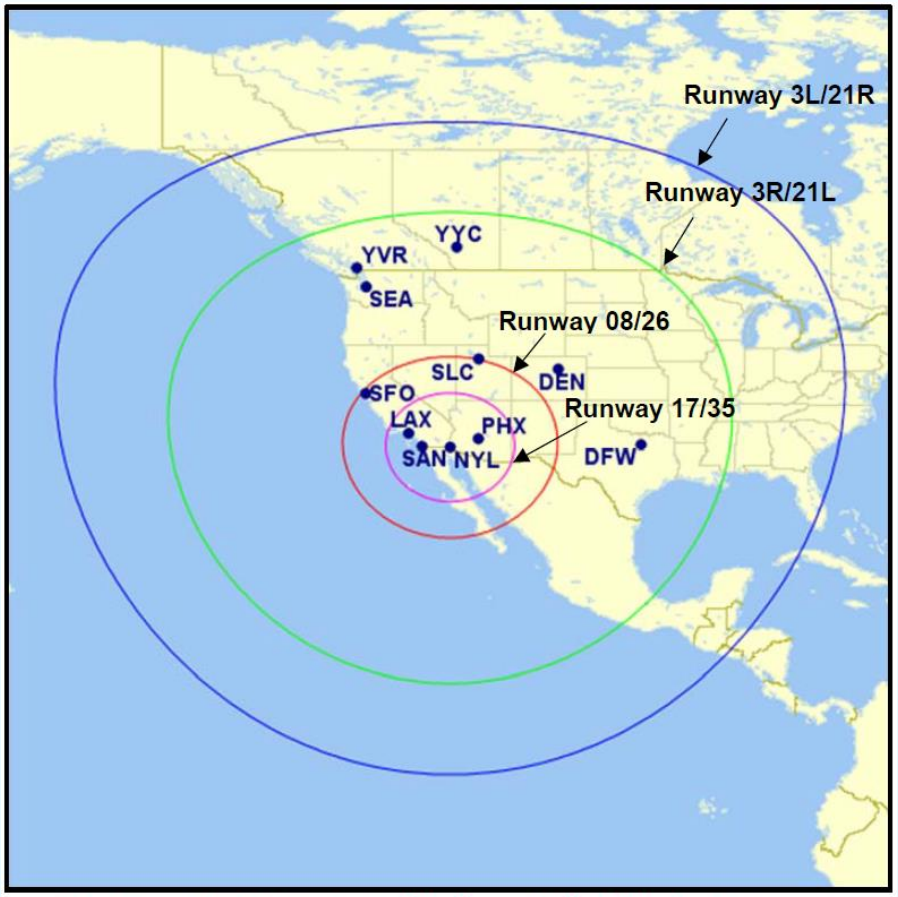
Note: Pink = Runway 17/35 (5,710' in length); Red = Runway 08/26 (6,146' in length); and Blue = Runway 3R/21L (9,240' in length) and Runway 3L/21R (13,300' in length).

CRJ-900 Average Temperature 107˚F at 80 Percent Load Factor

		Is this Destination within Range?			
Destination	**Distance** (Nautical Miles)	**Runway 17/35** (5,710' in length)	**Runway 08/26** (6,410' in length)	**Runway 3R/21L** (9,240' in length)	**Runway 3L/21R** (13,300' in length)
Dallas Fort-Worth International Airport (DFW)	888	YES	YES	YES	YES
Phoenix Sky Harbor International Airport (PHX)	139	YES	YES	YES	YES

Notes: Runways 3L/21R (13,300' in length) and 3R/21L (9,240' in length) are available for use and provide additional range
Maximum Range for Runway 17/35 - 1,000 nautical miles
Maximum Range for Runway 08/26 - 1,100 nautical miles
Maximum Range for Runway 3L/21R - 1,900 nautical miles
Maximum Range for Runway 3R/21L - 1,900 nautical miles

Runway Length Analysis: CRJ-900 (100% LF)



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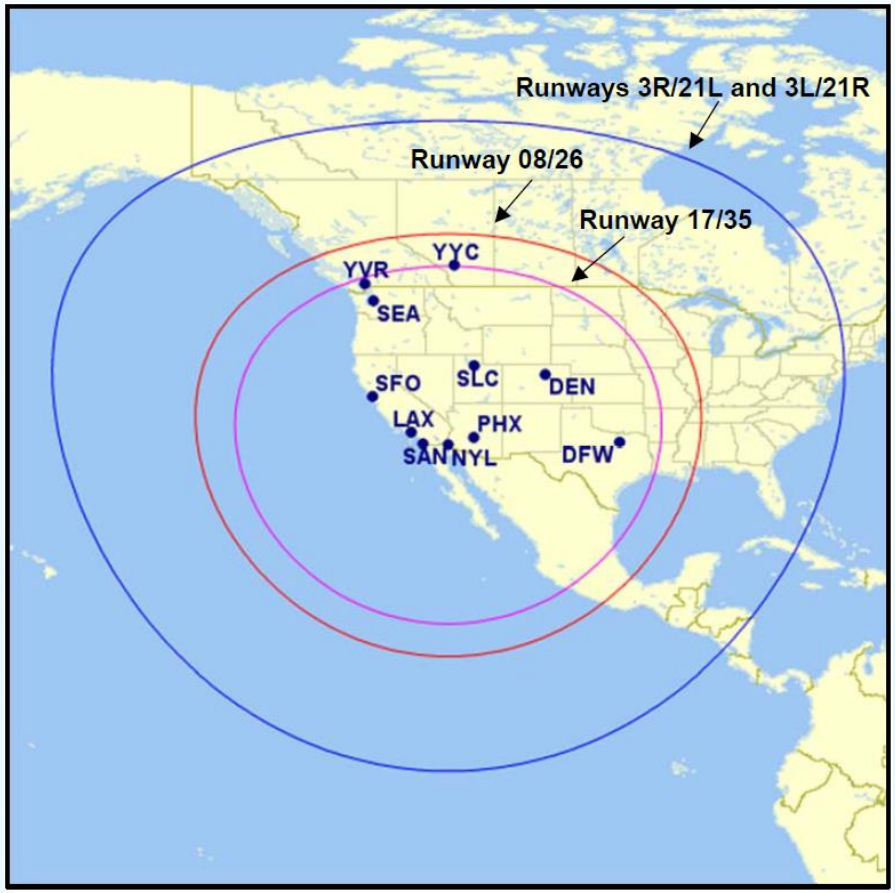
CRJ-900 Average Temperature 107˚F at 100 Percent Load Factor

		Is this Destination within Range?			
Destination	**Distance** (Nautical Miles)	**Runway 17/35** (5,710' in length)	**Runway 08/26** (6,410' in length)	**Runway 3R/21L** (9,240' in length)	**Runway 3L/21R** (13,300' in length)
Dallas Fort-Worth International Airport (DFW)	888	NO	NO	YES	YES
Phoenix Sky Harbor International Airport (PHX)	139	YES	YES	YES	YES

Notes: Runways 3L/21R (13,300' in length) and 3R/21L (9,240' in length) are available for use and provide additional range
Maximum Range for Runway 17/35 - 300 nautical miles
Maximum Range for Runway 08/26 - 500 nautical miles
Maximum Range for Runway 3L/21R - 1,300 nautical miles
Maximum Range for Runway 3R/21L - 1,800 nautical miles

Runway Length Analysis: E175 (80% LF)

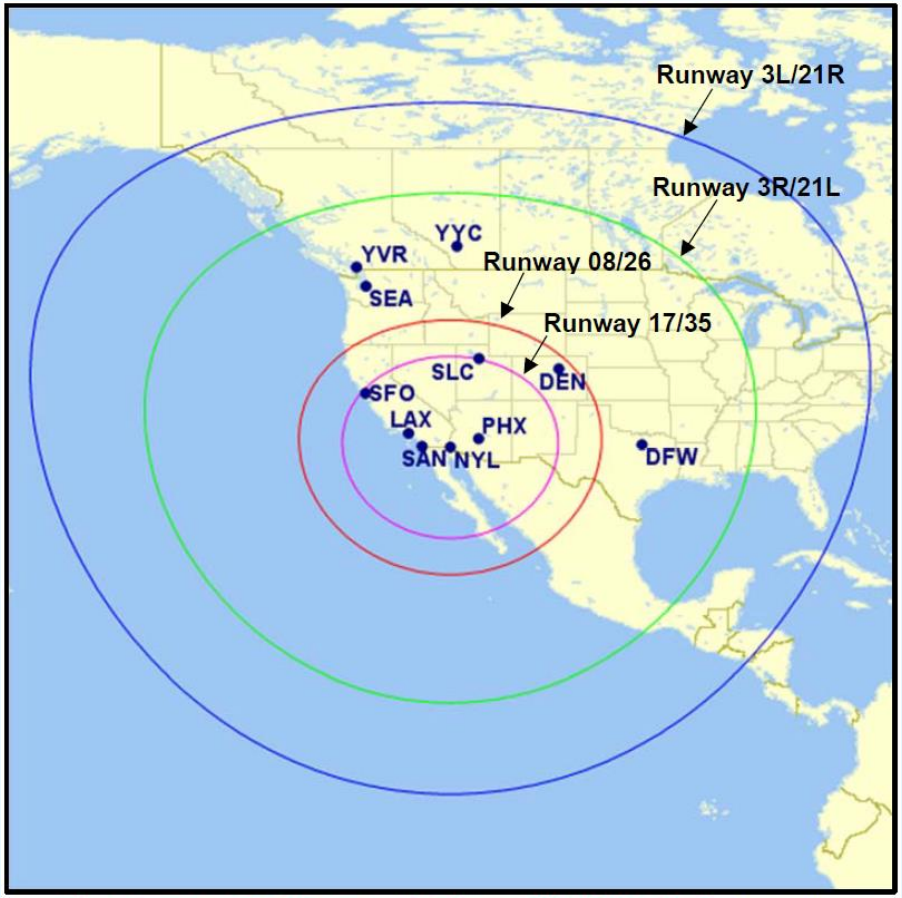


Note: Pink = Runway 17/35 (5,710' in length); Red = Runway 08/26 (6,146' in length); and Blue = Runway 3R/21L (9,240' in length) and Runway 3L/21R (13,300' in length).

E175 Average Temperature 107°F at 80 Percent Load Factor					
		Is this Destination within Range?			
Destination	**Distance** (Nautical Miles)	**Runway 17/35** (5,710' in length)	**Runway 08/26** (6,410' in length)	**Runway 3R/21L** (9,240' in length)	**Runway 3L/21R** (13,300' in length)
Dallas Fort-Worth International Airport (DFW)	888	YES	YES	YES	YES
Phoenix Sky Harbor International Airport (PHX)	139	YES	YES	YES	YES

Notes: Runways 3L/21R (13,300' in length) and 3R/21L (9,240' in length) are available for use and provide additional range
Maximum Range for Runway 17/35 - 1,100 nautical miles
Maximum Range for Runway 08/26 - 1,300 nautical miles
Maximum Range for Runway 3L/21R - 2,000 nautical miles
Maximum Range for Runway 3R/21L - 2,000 nautical miles

Runway Length Analysis: E175 (100% LF)



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E175 Average Temperature 107°F at 100 Percent Load Factor					
		Is this Destination within Range?			
Destination	**Distance** (Nautical Miles)	**Runway 17/35** (5,710' in length)	**Runway 08/26** (6,410' in length)	**Runway 3R/21L** (9,240' in length)	**Runway 3L/21R** (13,300' in length)
Dallas Fort-Worth International Airport (DFW)	888	NO	NO	YES	YES
Phoenix Sky Harbor International Airport (PHX)	139	YES	YES	YES	YES

Notes: Runways 3L/21R (13,300' in length) and 3R/21L (9,240' in length) are available for use and provide additional range
Maximum Range for Runway 17/35 - 500 nautical miles
Maximum Range for Runway 08/26 - 700 nautical miles
Maximum Range for Runway 3R/21L - 1,400 nautical miles
Maximum Range for Runway 3L/21R - 1,900 nautical miles

Runway Protection Zone – Design Surfaces

- **Change in critical aircraft from B-II to C-III increases RPZ size**
- **No changes to visibility minimums to below 1-mile visibility**
  - MCAS Yuma controls the airfield
  - FAA implements approaches
- **The FAA does not have a fiduciary interest in NYL's runways**
- **Existing review process for development surrounding the Airport**
  - Prevent incompatible land use
  - Airport protection
- **Resolve incompatible uses through**
  - Land Acquisition
  - Easements
  - Zoning
- **MCAS Yuma's military criteria take precedence over FAA criteria**

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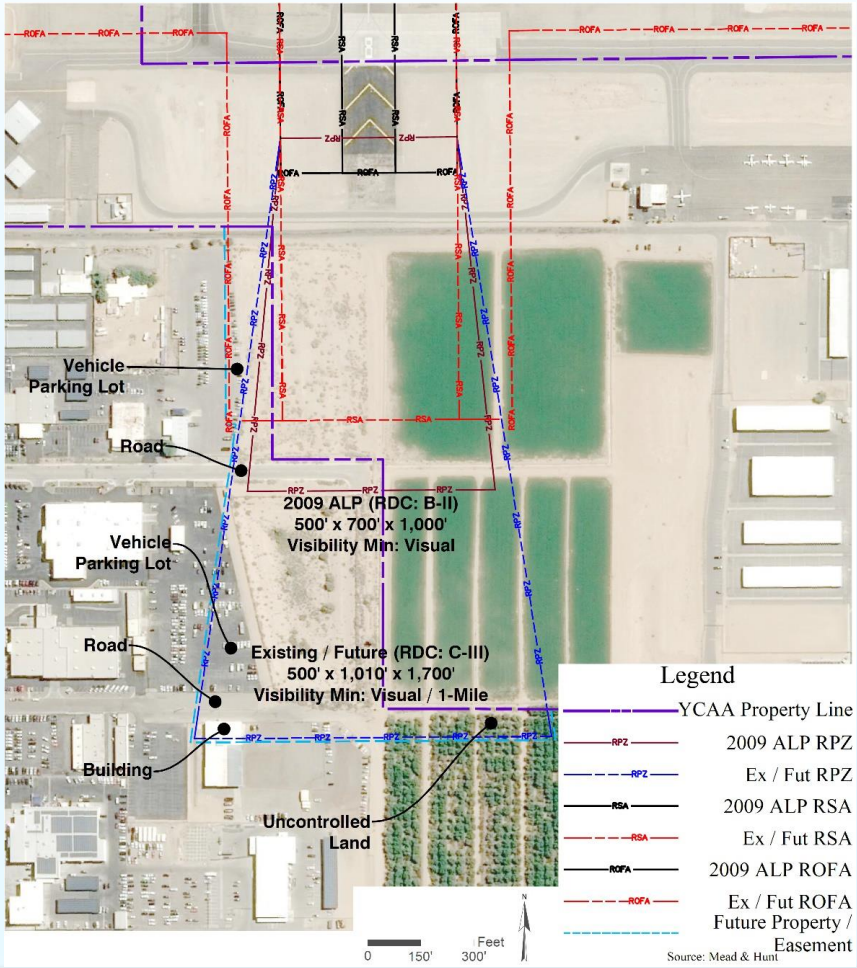
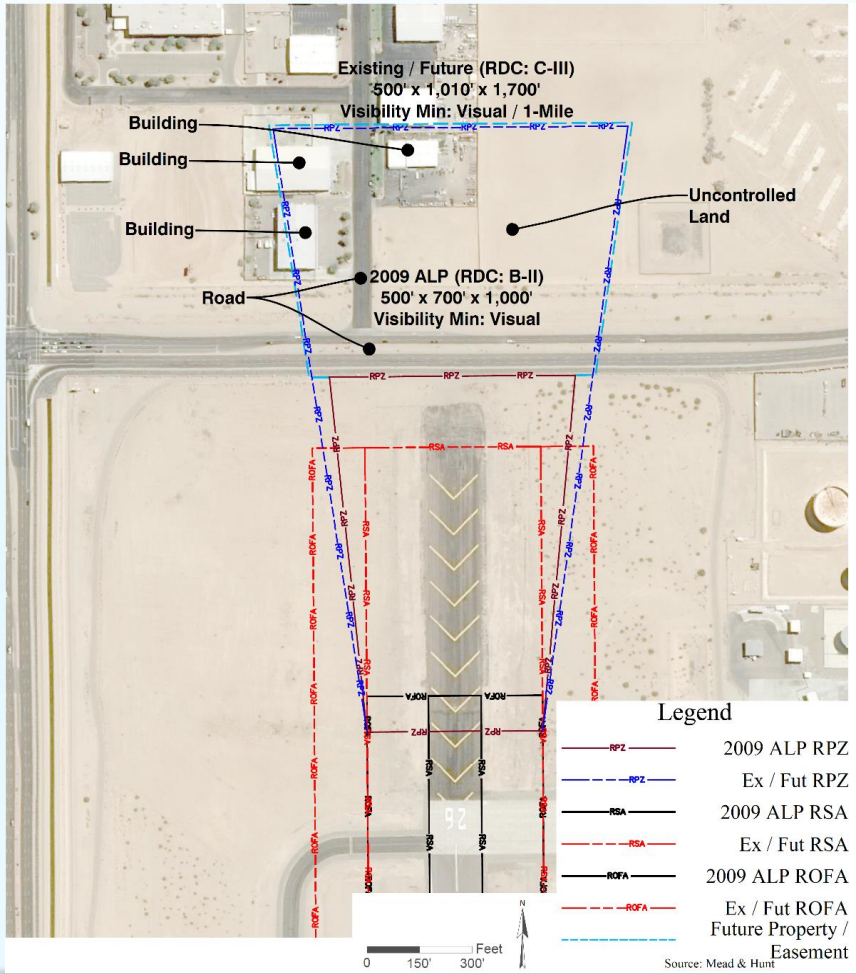
Runway 08 - Runway Protection Zone



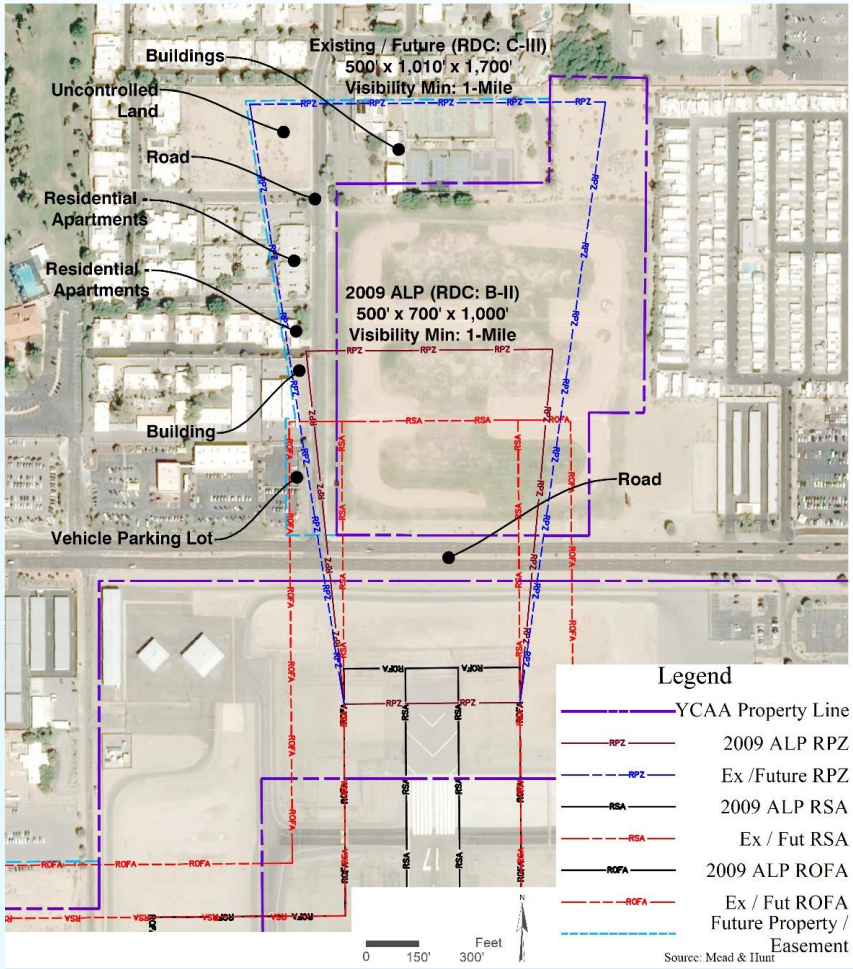
- **Identified Incompatible Land Uses**
  - Industrial, Office, Commercial Related Buildings
  - Vehicle Parking Lot
  - Road
  - Uncontrolled Land

Runway 26 - Runway Protection Zone



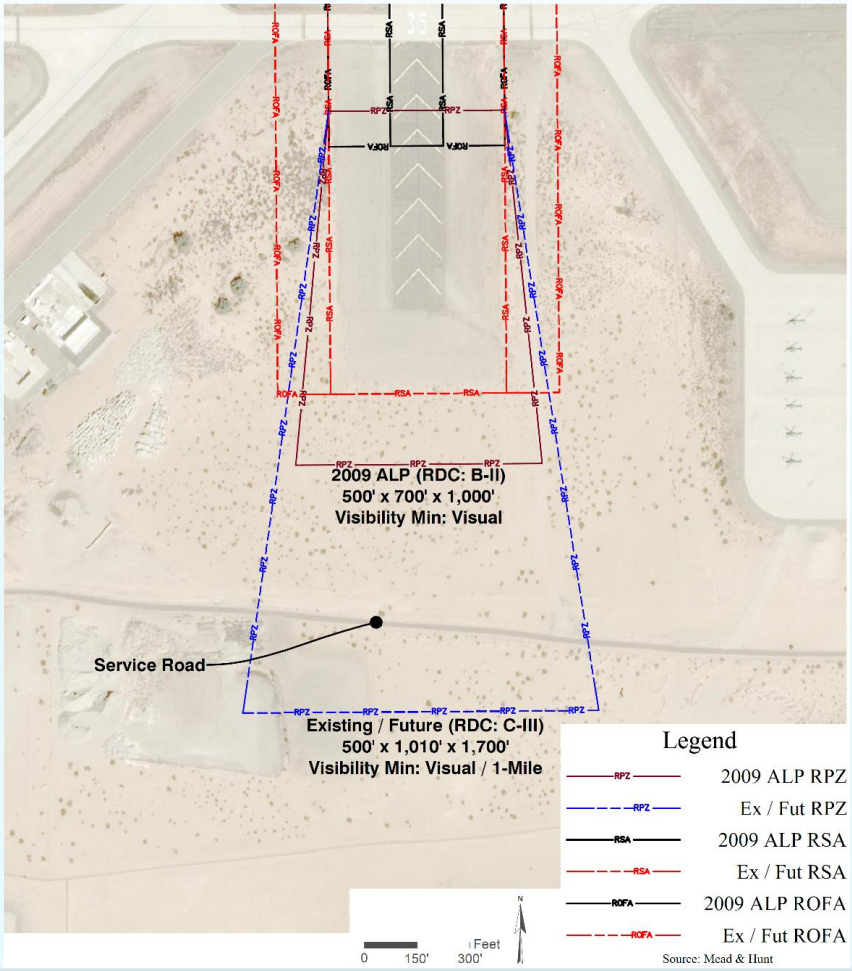
- **Identified Incompatible Land Uses**
  - Industrial, Office, Commercial Related Buildings
  - Road
  - Uncontrolled Land

Runway 17 - Runway Protection Zone



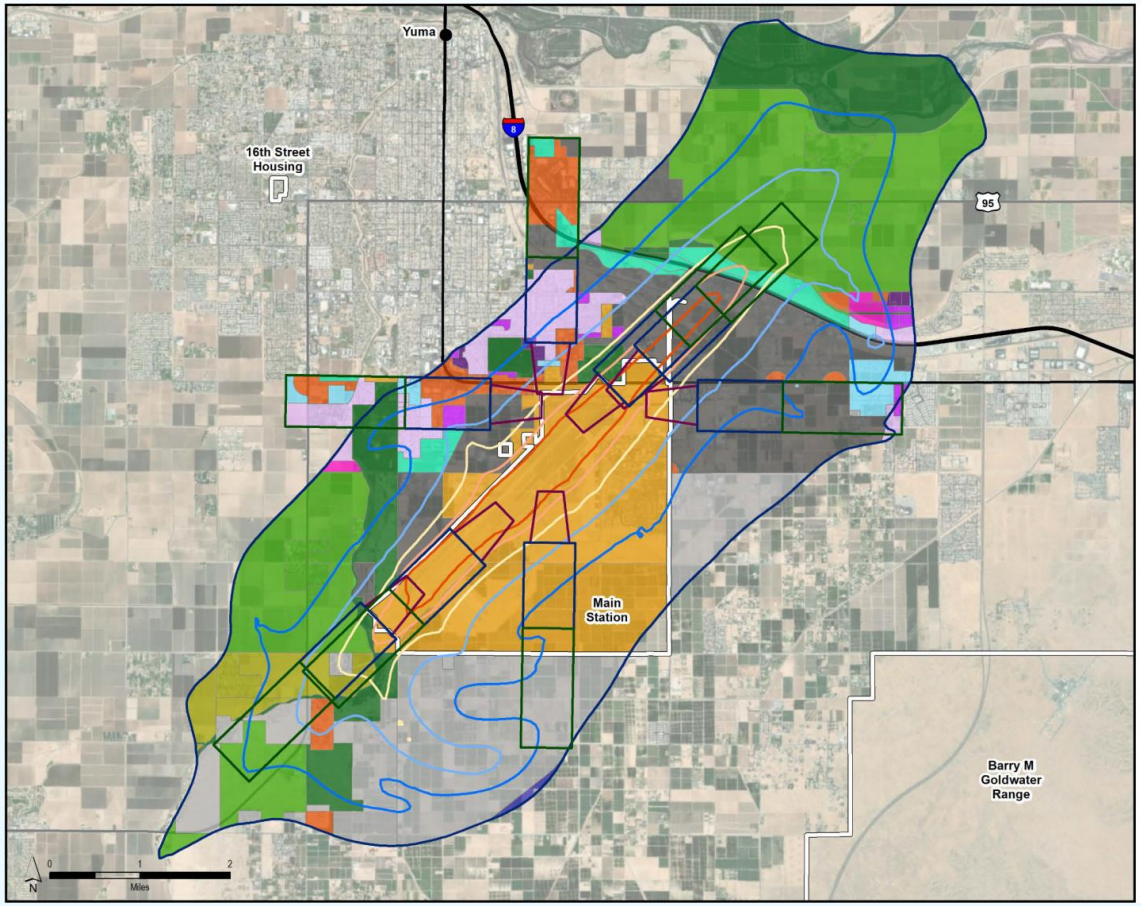
- **Identified Incompatible Land Uses**
  - Industrial, Office, Commercial Related Buildings
  - Vehicle Parking Lots
  - Residential - Apartments
  - Road
  - Uncontrolled Land

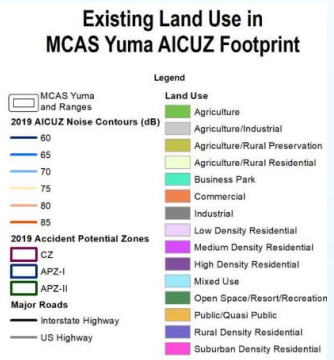
Runway 35 - Runway Protection Zone

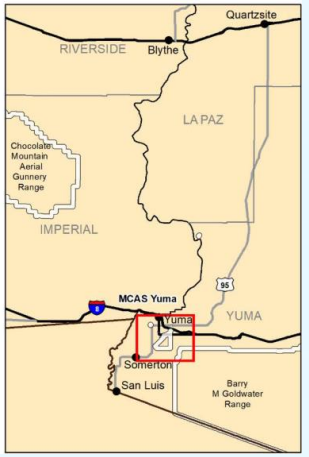


- **Identified Incompatible Land Uses**
  - ✈ Military Vehicle Service Road

MCAS Yuma's 2019 AICUZ Study







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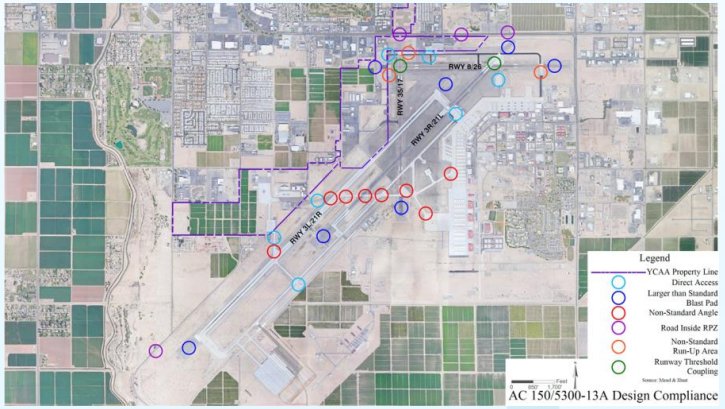
Design Compliance Analysis

- **Analysis of entire airfield**
- **Joint Use Operating Agreement - U.S. Patent No. 1160556**
  - YCAA responsibilities
    - Taxiway Z, Z1, Z2, and Z3
    - Taxiway F1 to Runway 3L/21R
    - Taxiway H1 and H2
    - All Defense Contractor Complex access
    - Terminal & GA hangar apron areas
- **Analysis indicates**
  - Taxiway H1 – Provides direct access to Runway 3L/21R from an apron area
  - Taxiway H1 – Nonstandard angle to Runway 3L/21R
  - Taxiway F1 – Provides direct access to Runway 3L/21R from an apron area
  - Taxiway F1 – Nonstandard angle to Runway 3L/21R
  - Taxiway Z – Direct access to Runway 17/35 from an apron area
  - Taxiway Z – Nonstandard angle to Runway 17/35
- **Resolve during future construction or maintenance projects**



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Terminal Building Analysis

Terminal	Existing GSF	FORECAST		
		Short-Term 2025	Mid-Term 2030	Long-Term 2040
Number of Gates	2	3	4	5
Holdroom/Seating	1,780	4,680	5,730	7,430
Concourse Total	**2,980**	**11,000**	**13,380**	**16,550**
Checkpoint Lanes	1	2	2	2
Checkpoint Queuing/Exiting	450	1,000	1,000	1,000
Checkpoint Total	**1,540**	**3,200**	**3,200**	**3,200**
Baggage Carousels	1	1	2	2
Baggage Screening	375	700	700	1,400
US Customs & Border Protection	2,130	2,130	2,130	4,000
Terminal Building Total	**42,540**	**45,480**	**52,670**	**65,650**

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Vehicle Parking Lots

Parking Component	TIMEFRAME			
	Current	Short-Term	Mid-Term	Long-Term
Public Parking	-59	-94	-146	-250
Rental Car Parking	0	-30	-61	-108
Employee Parking	0	-10	-13	-40
Temporary Parking	0	-30	-30	-30
FBO: Million Air	0	0	-22	-22
Grand Total	-59	-164	-272	-450

- **Current public parking lot supports 2 demand drivers**
  - ✈ Airport passengers
  - ✈ Brewers' restaurant customers
- **Parking stall deficits increase relative to forecasted passenger activity levels**
- **General aviation parking areas will be analyzed in Development Alternatives**

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Other Aviation Support Facilities

- **General Aviation Hangar and Aircraft Tie-Down Areas**
  - Immediate short-term need for facilities
  - Long-term need to support forecasted market changes
- **Air Cargo Facilities**
  - Sufficient for planning period
- **Airport Maintenance Facilities**
  - Sufficient for planning period
- **Aircraft Rescue and Fire Fighting**
  - Provided by MCAS Yuma – Exceed FAA Index-B requirements
- **Airport Traffic Control Tower**
  - Provided by MCAS Yuma – Extend operating hours for 24/7 operations
- **Fuel Storage**
  - Increase jet fuel storage by 143,000 gallons to a total of 315,000 gallons

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Aeronautical & Non-Aeronautical Development

- **Foreign Trade Zone (FTZ) #219 designation**
  - Greater Yuma Economic Development Corporation
- **Common activities**
  - Logistics, warehousing/distribution, and manufacturing
- **Explore and market opportunities on available property**
  - Defense Contractors Complex
- **Acquire additional land for future aeronautical and non-aeronautical development**

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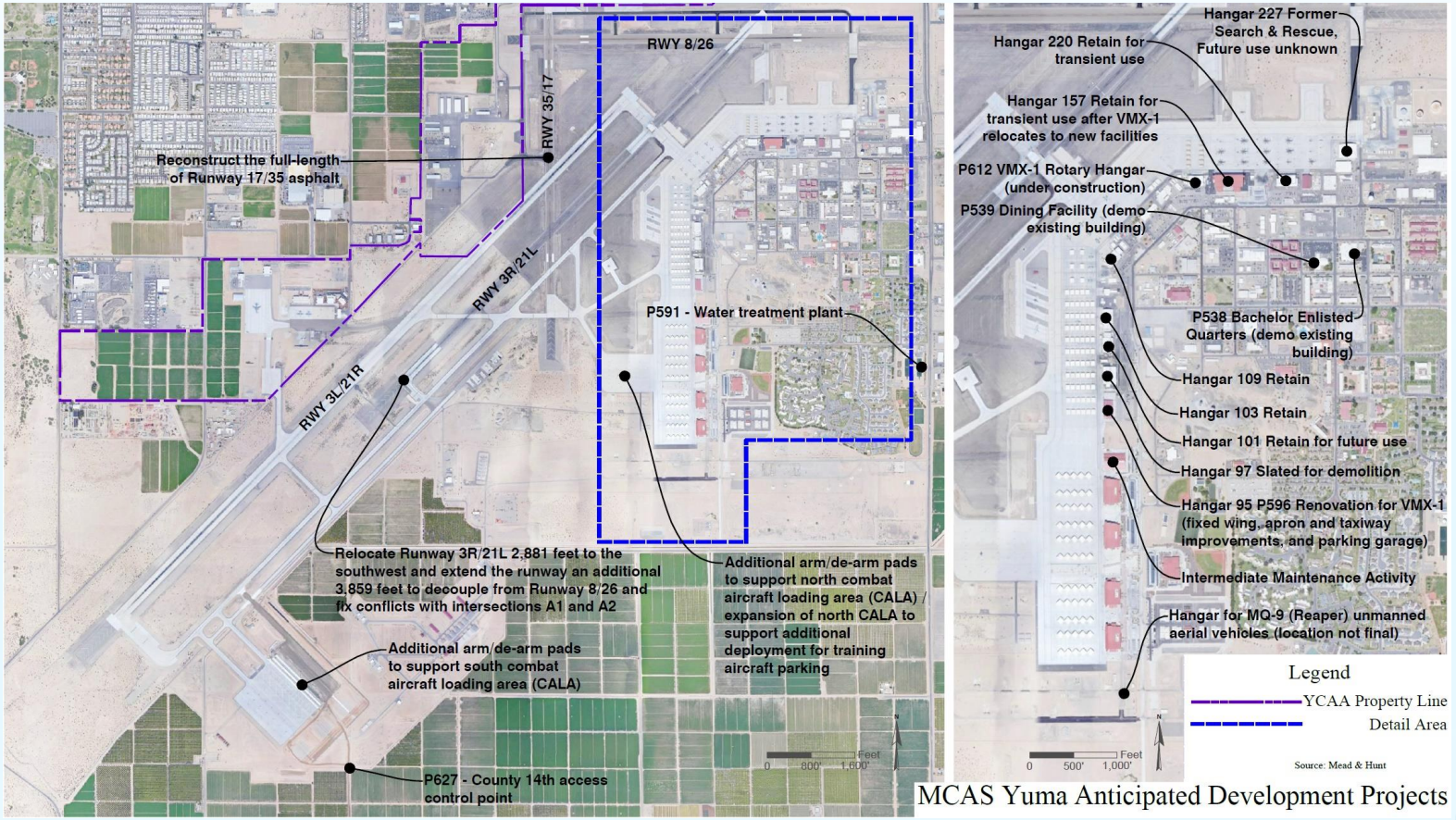
MCAS Yuma Anticipated Development Projects



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Summary of Demand Capacity/Facility Requirements

- **Airfield capacity is sufficient for now and the foreseeable future**
- **Runway 17/35 and Runway 8/26 lengths are sufficient to current destinations**
- **Identify potential runway protection zone improvements for C-III category aircraft**
  - Property acquisition, overlay zoning, or avigation easements
- **Identify potential runway and taxiway improvements**
  - FAA Advisory Circular 150/5300-13A

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Summary of Demand Capacity/Facility Requirements (Cont.)

- **Passenger terminal**
  - Short-term focus on maintaining the existing terminal building
  - Long-term focus on demand driven program improvements
- **Vehicular access and parking**
  - Short-term focus on demand driven improvements for existing public parking
  - Long-term focus on parking improvements with terminal expansion
- **General Aviation and Other Aviation Support Areas**
  - Continue to program for demand driven facility expansions and improvements
- **Military & Military Support Areas**
  - Incorporate adopted recommendations into master plan

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Airport Development Alternatives

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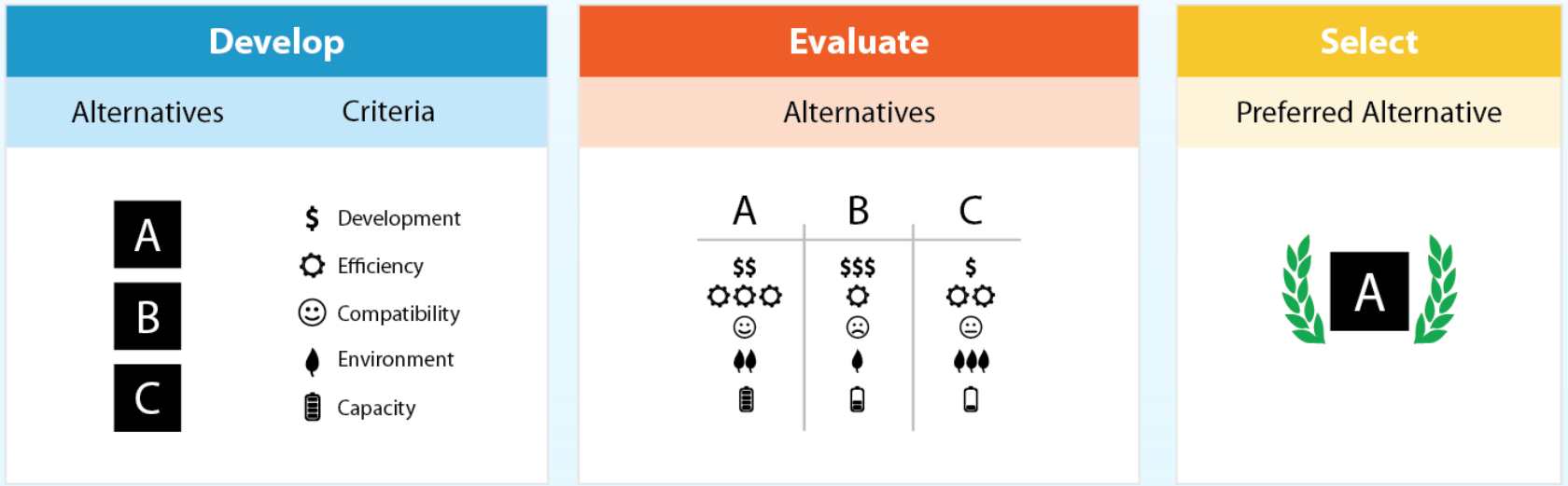
Airport Development Alternatives Process



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Taxiway System Alternatives

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Design Compliance Analysis

- **Performed analysis on entire airfield**
- **Joint Use Operating Agreement - U.S. Patent No. 1160556**
  - YCAA responsibilities
    - Taxiway Z, Z1, Z2, and Z3
    - Taxiway F1 to Runway 3L/21R
    - Taxiway H1 and H2
    - All Defense Contractor Complex access
    - Terminal & GA hangar apron areas

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Design Compliance Analysis *(Cont.)*

- **Analysis indicated the following:**
  - Taxiway H1 – Provides direct access to Runway 3L/21R from an apron area
  - Taxiway H1 – Nonstandard angle to Runway 3L/21R
  - Taxiway F1 – Provides direct access to Runway 3L/21R from an apron area
  - Taxiway F1 – Nonstandard angle to Runway 3L/21R
  - Taxiway Z – Direct access to Runway 17/35 from an apron area
  - Taxiway Z – Nonstandard angle to Runway 17/35
- **Resolve during future construction or maintenance projects**

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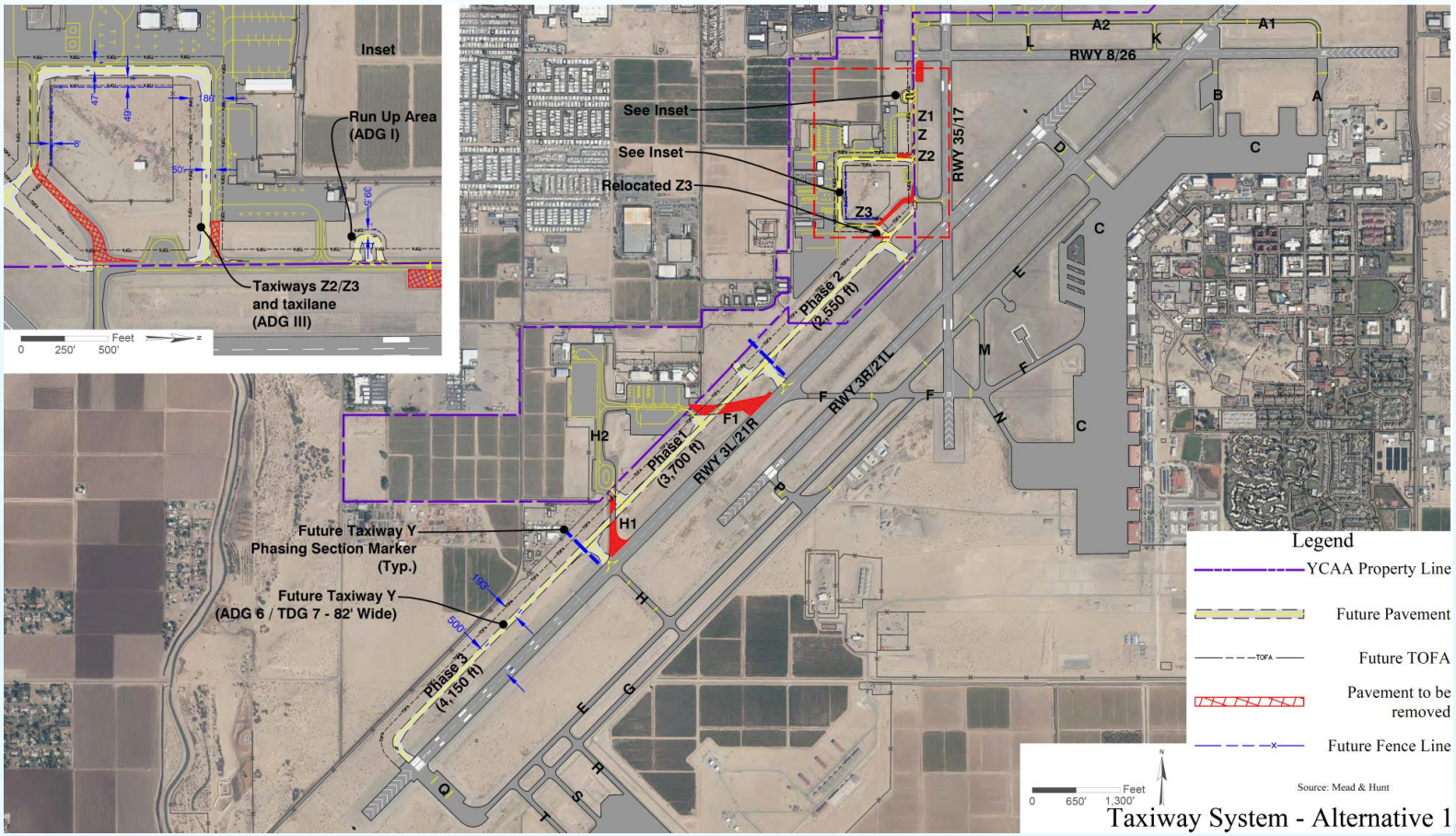
Taxiway System: *Alternative 1* *(Preferred)*



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Defense Contractor Complex & Other Facilities Alternatives

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Aeronautical & Non-Aeronautical Development

- **Foreign Trade Zone (FTZ) #219 designation**
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- **Common activities**
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  - Immediate short-term need for facilities
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Other Aviation Support Facilities *(Cont.)*

- **Aircraft Rescue and Fire Fighting**
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- **Fuel Storage**
  - Increase jet fuel storage by 143,000 gallons to a total of 315,000 gallons

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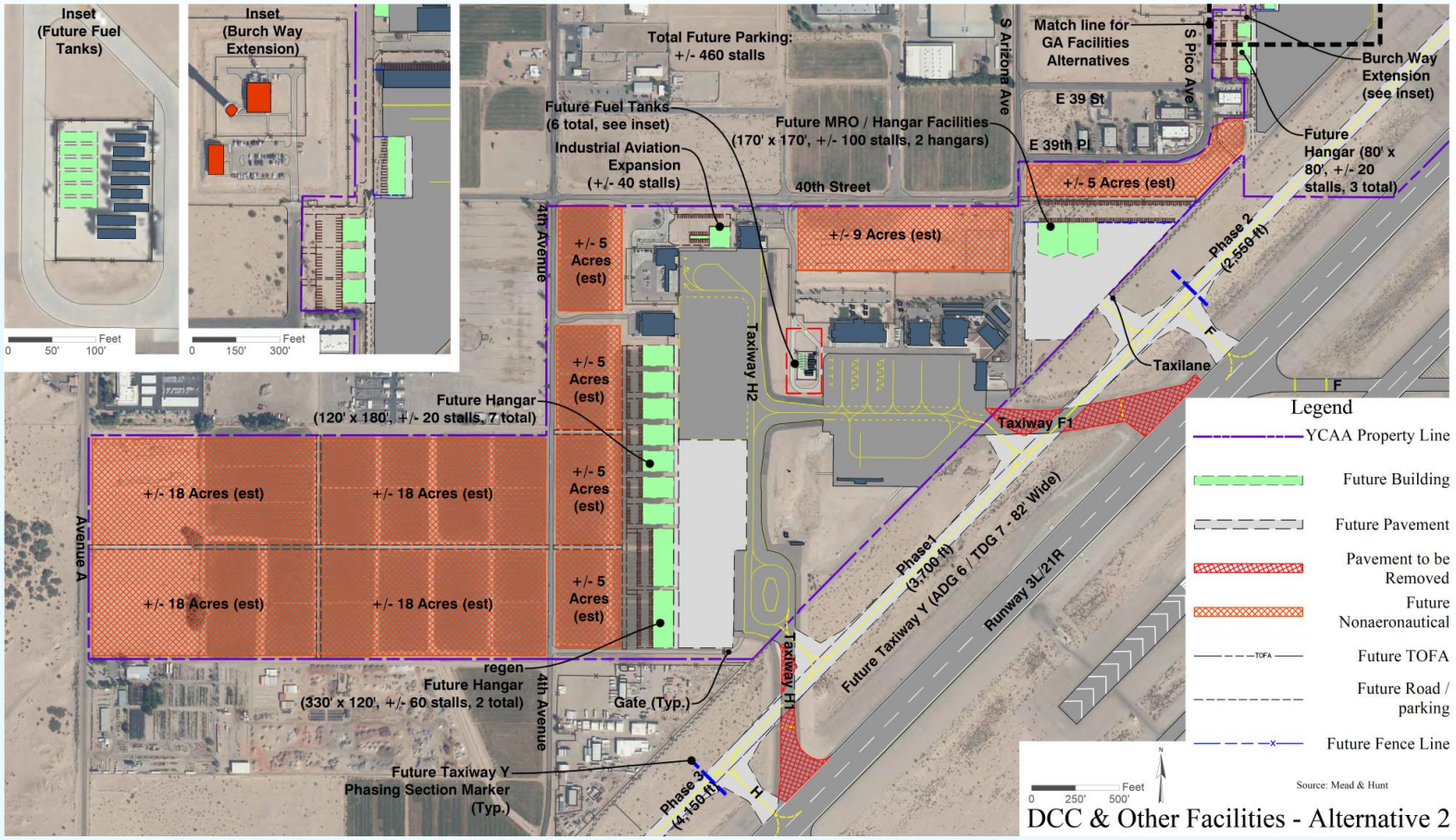
DCC & Other Facilities: *Alternative 2* *(Preferred)*



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General Aviation Facilities Alternatives

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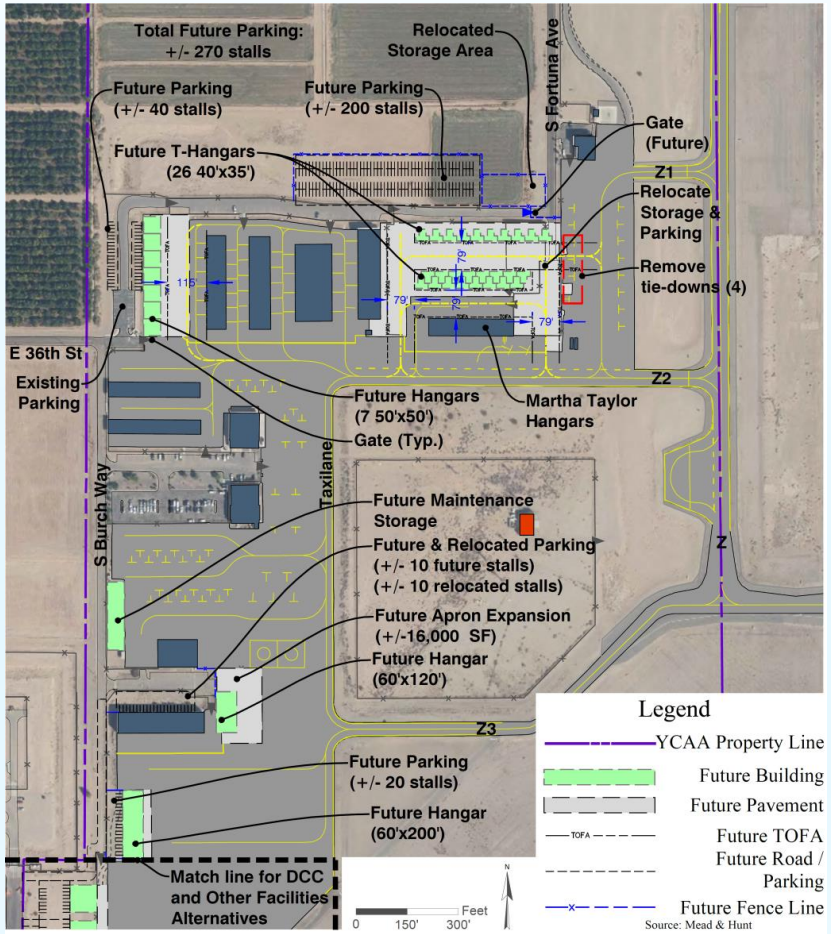
General Aviation Facilities: *Alternative 3* *(Preferred)*



General Aviation Facilities - Alternative 3

Landside Access & Vehicle Parking Alternatives

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Vehicle Parking Lots

Parking Component	TIMEFRAME			
	Current	Short-Term	Mid-Term	Long-Term
Public Parking	-59	-94	-146	-250
Rental Car Parking	0	-30	-61	-108
Employee Parking	0	-10	-13	-40
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FBO: Million Air	0	0	-22	-22
Grand Total	-59	-164	-272	-450

- **Current public parking lot supports 2 demand drivers**
  - Airport passengers
  - Brewers restaurant customers
- **Parking stall deficits increase relative to forecasted passenger activity levels**
- **General aviation parking areas will be analyzed in Development Alternatives**

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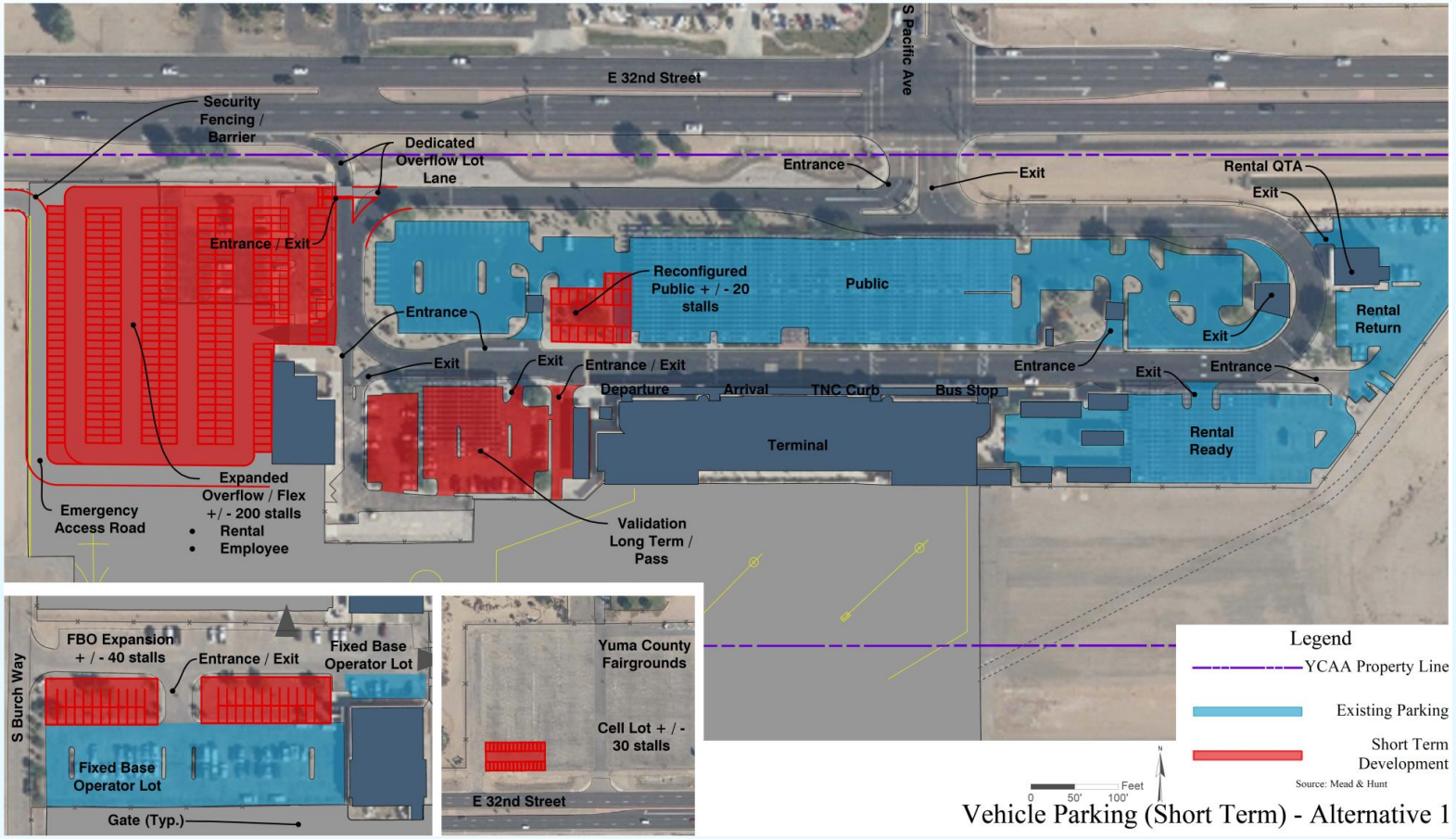
Landside Access & Vehicle Parking: *Alternative 1* *(Preferred)*



Vehicle Parking (Short Term) - Alternative 1

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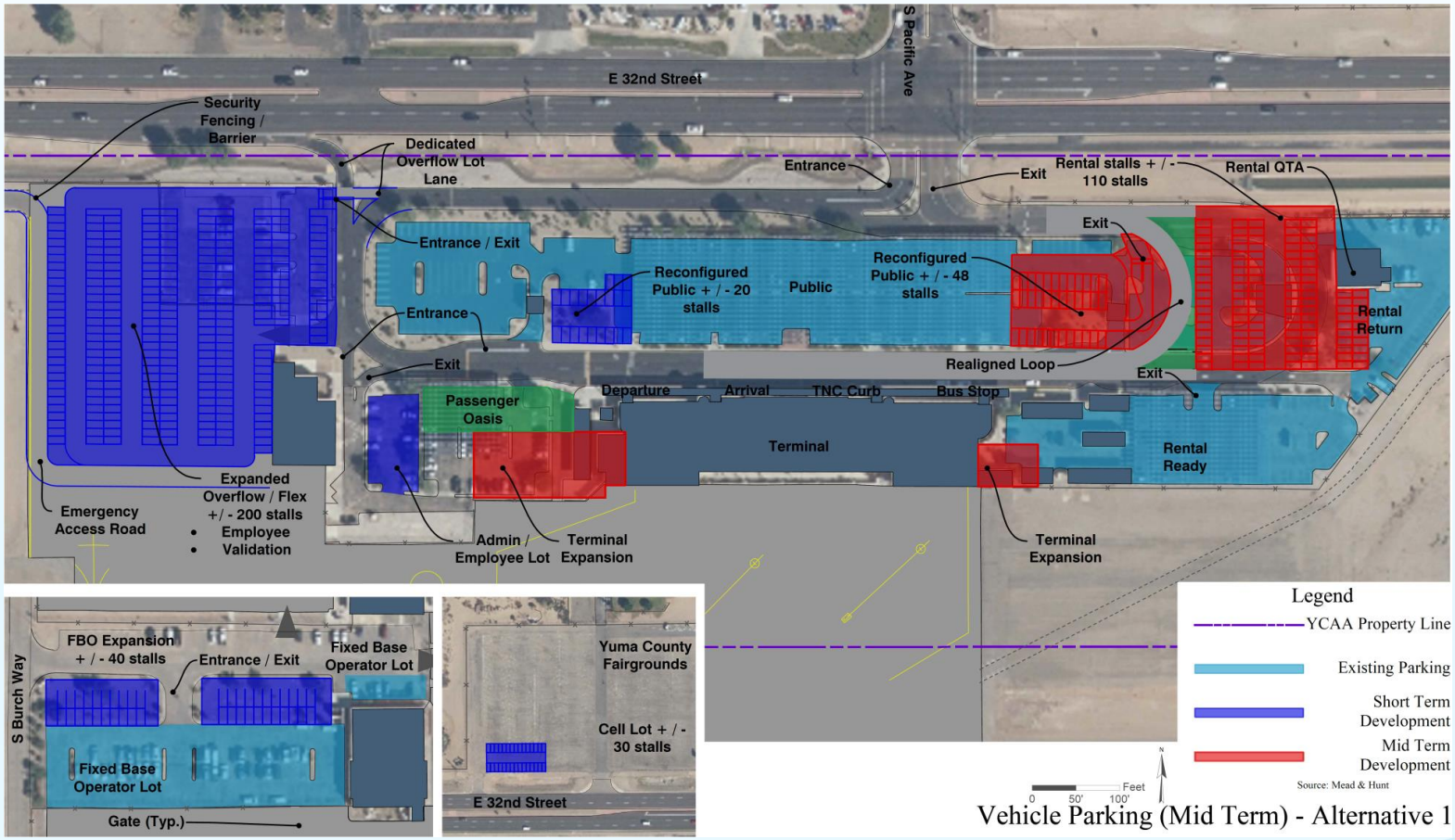
Landside Access & Vehicle Parking: *Alternative 1* *(Preferred)*



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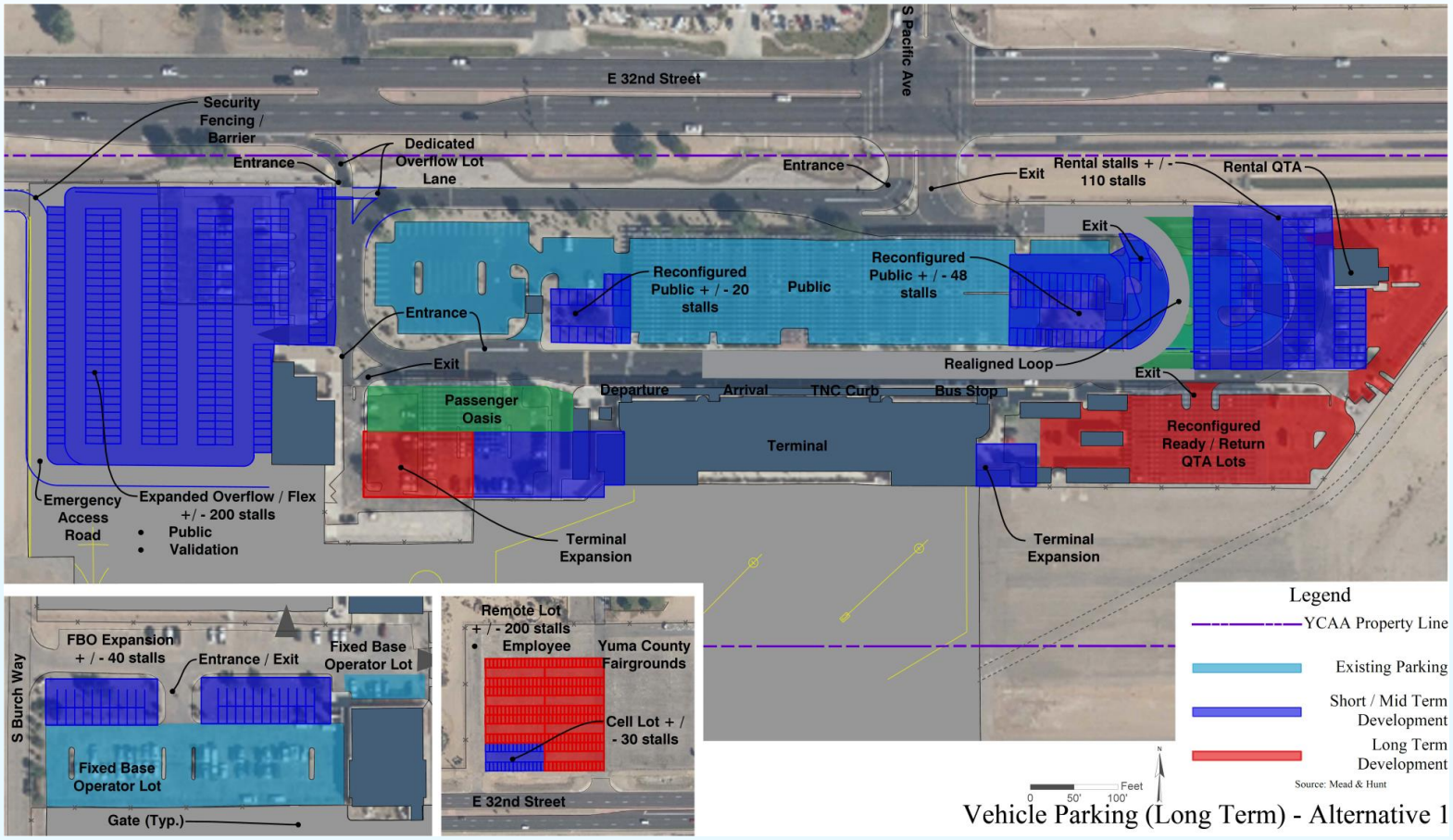
Landside Access & Vehicle Parking: *Alternative 1* *(Preferred)*



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Terminal Building Alternatives

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Terminal Building Analysis

Terminal	Existing GSF	FORECAST		
		Short-Term 2025	Mid-Term 2030	Long-Term 2040
Number of Gates	2	3	4	5
Holdroom/Seating	1,780	4,680	5,730	7,430
Concourse Total	**2,980**	**11,000**	**13,380**	**16,550**
Checkpoint Lanes	1	2	2	2
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US Customs & Border Protection	2,130	2,130	2,130	4,000
Terminal Building Total	**42,540**	**45,480**	**52,670**	**65,650**

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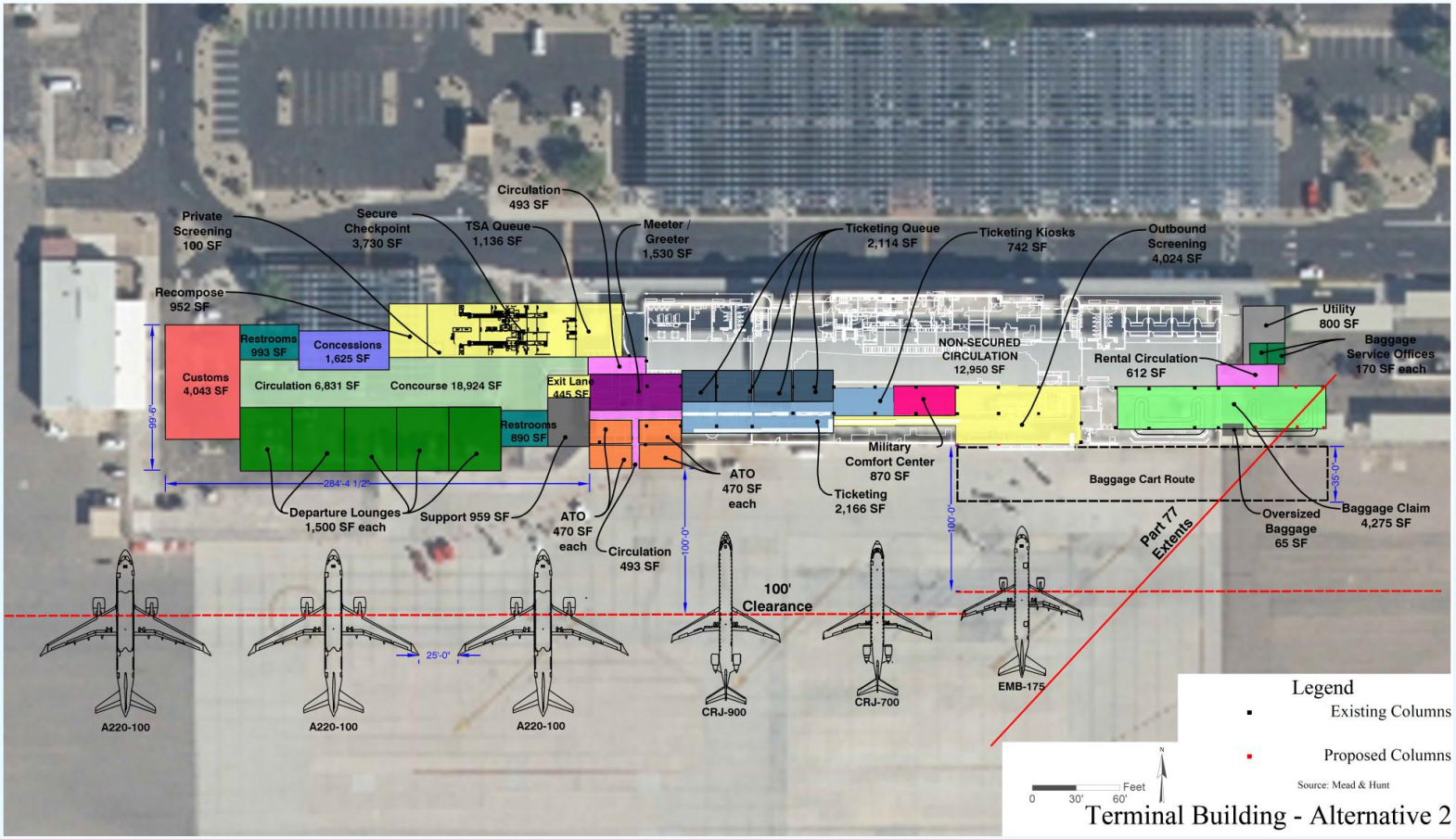
Terminal Building: *Alternative 2* *(Preferred)*



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Conceptual Development Plan

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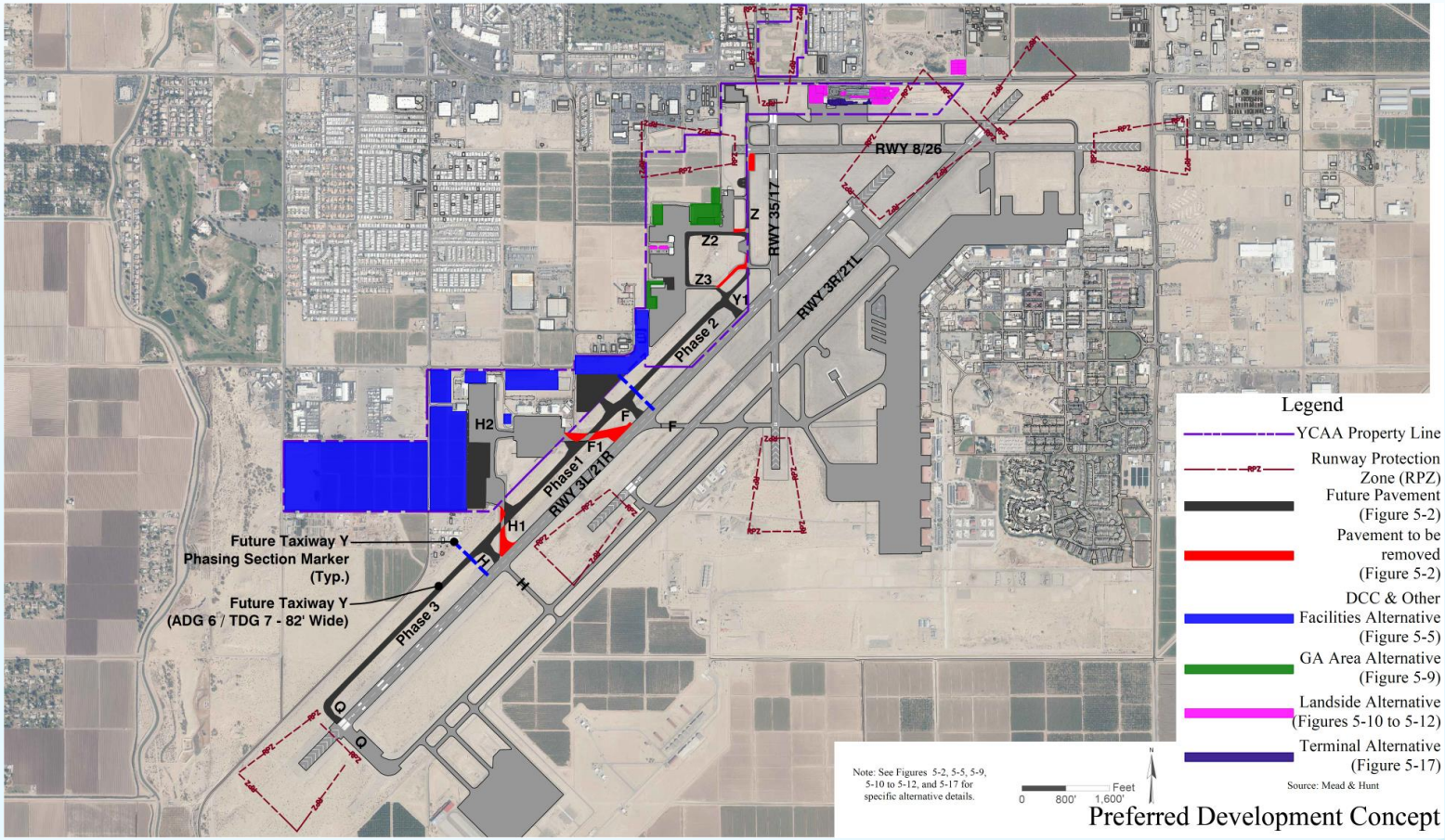
Preferred Conceptual Development Plan



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Financial Implementation & Feasibility Plan

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Airport Capital Improvement Program

- **Project Identification**
- **Rough Order of Magnitude Cost Estimates**
- **Project Phasing Based on Demand**
- **Cost Escalation**
  - Project costs by 2.1% in 2022
  - Project costs by 2.5% in 2023
  - 2.1% in each year thereafter

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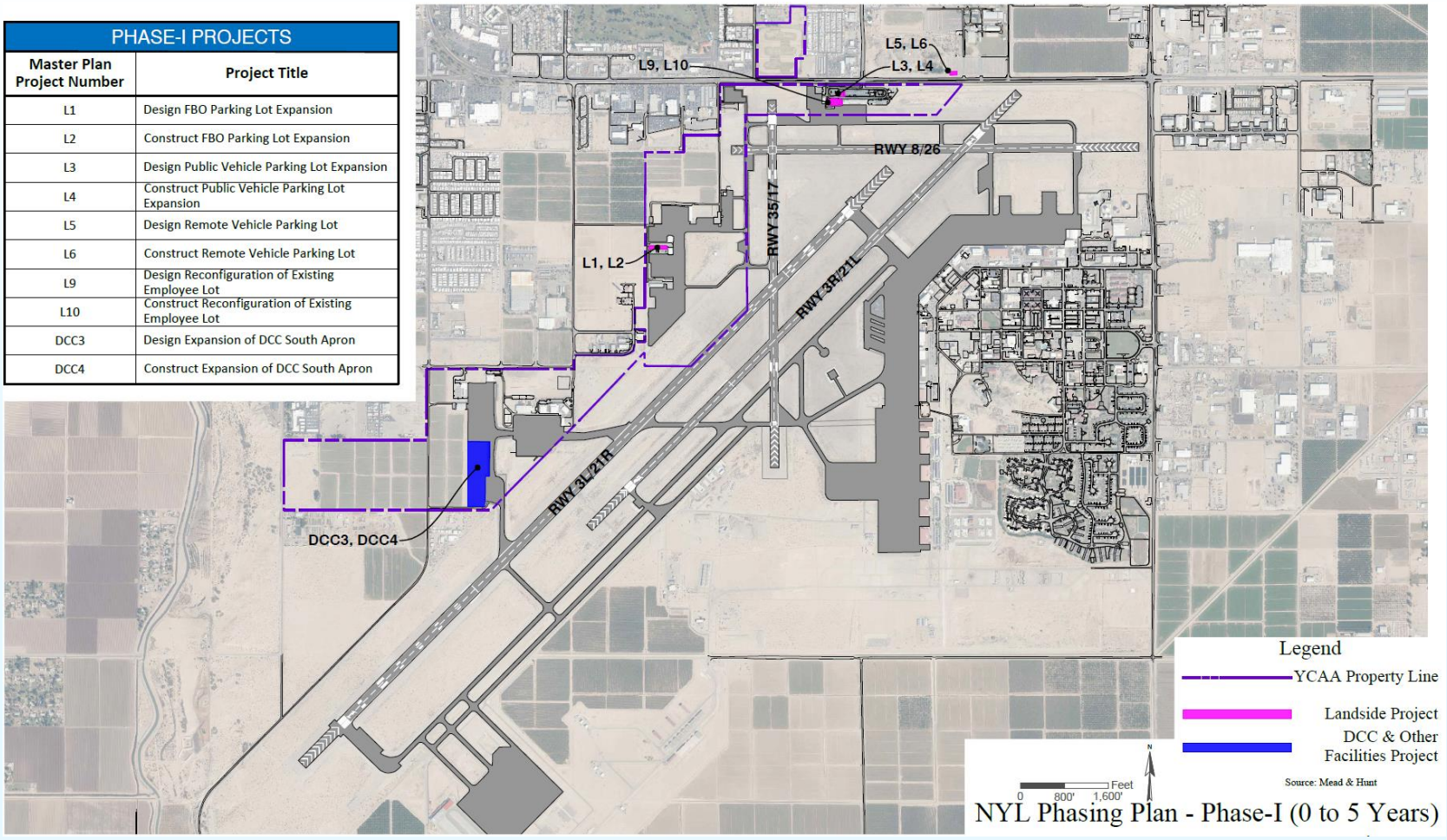
PHASE-I PROJECTS	
Master Plan Project Number	**Project Title**
L1	Design FBO Parking Lot Expansion
L2	Construct FBO Parking Lot Expansion
L3	Design Public Vehicle Parking Lot Expansion
L4	Construct Public Vehicle Parking Lot Expansion
L5	Design Remote Vehicle Parking Lot
L6	Construct Remote Vehicle Parking Lot
L9	Design Reconfiguration of Existing Employee Lot
L10	Construct Reconfiguration of Existing Employee Lot
DCC3	Design Expansion of DCC South Apron
DCC4	Construct Expansion of DCC South Apron



Phase-I Program

- **Project Types**
  - Landside
  - DCC & Other Facilities
- **$33.2M**
  - (2021 dollars)

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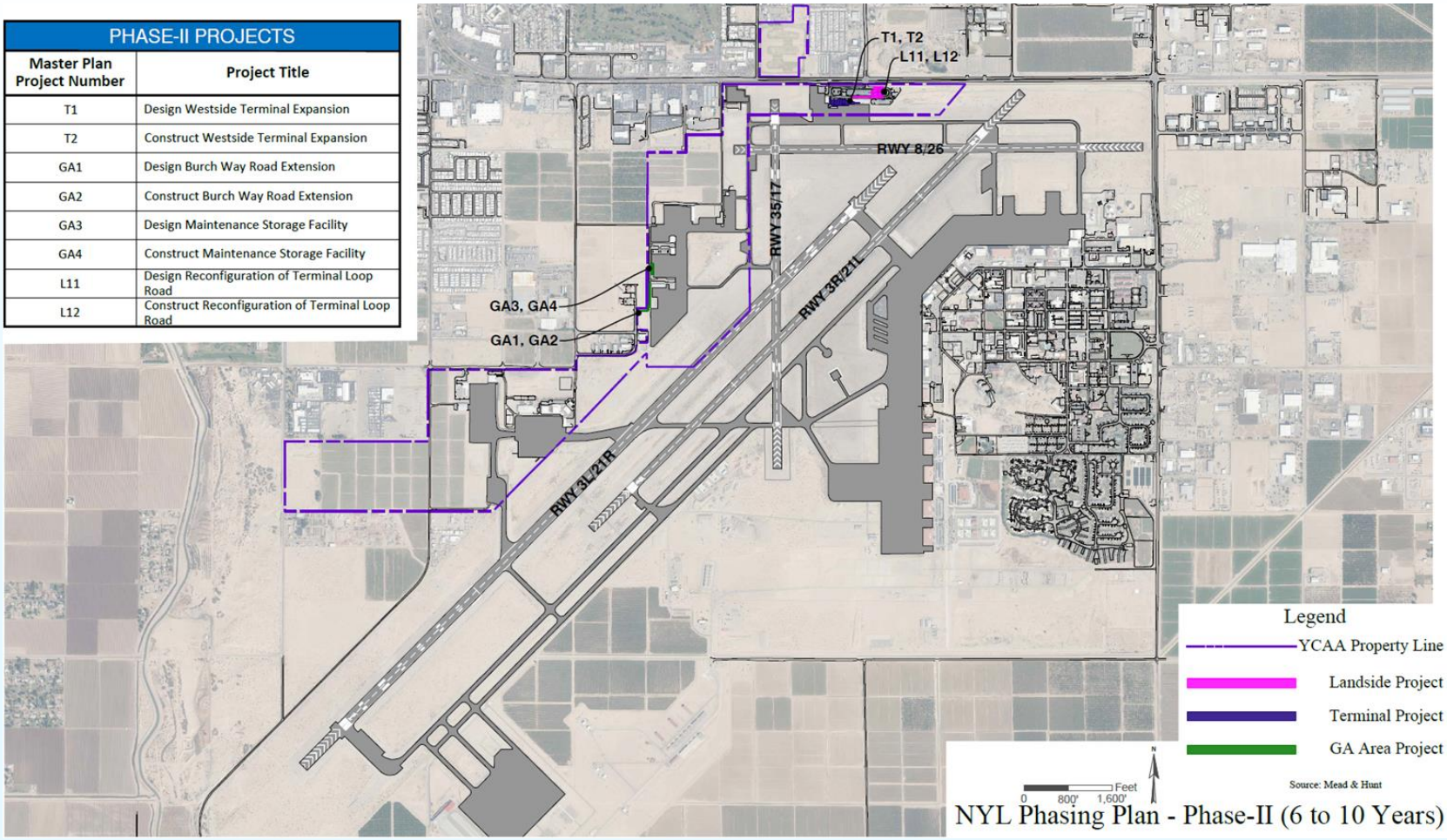
PHASE-II PROJECTS	
Master Plan Project Number	**Project Title**
T1	Design Westside Terminal Expansion
T2	Construct Westside Terminal Expansion
GA1	Design Burch Way Road Extension
GA2	Construct Burch Way Road Extension
GA3	Design Maintenance Storage Facility
GA4	Construct Maintenance Storage Facility
L11	Design Reconfiguration of Terminal Loop Road
L12	Construct Reconfiguration of Terminal Loop Road



Phase-II Program

- **Project Types**
  - Landside
  - Terminal
  - GA Area
- **$44.8M**
  - (2021 dollars)

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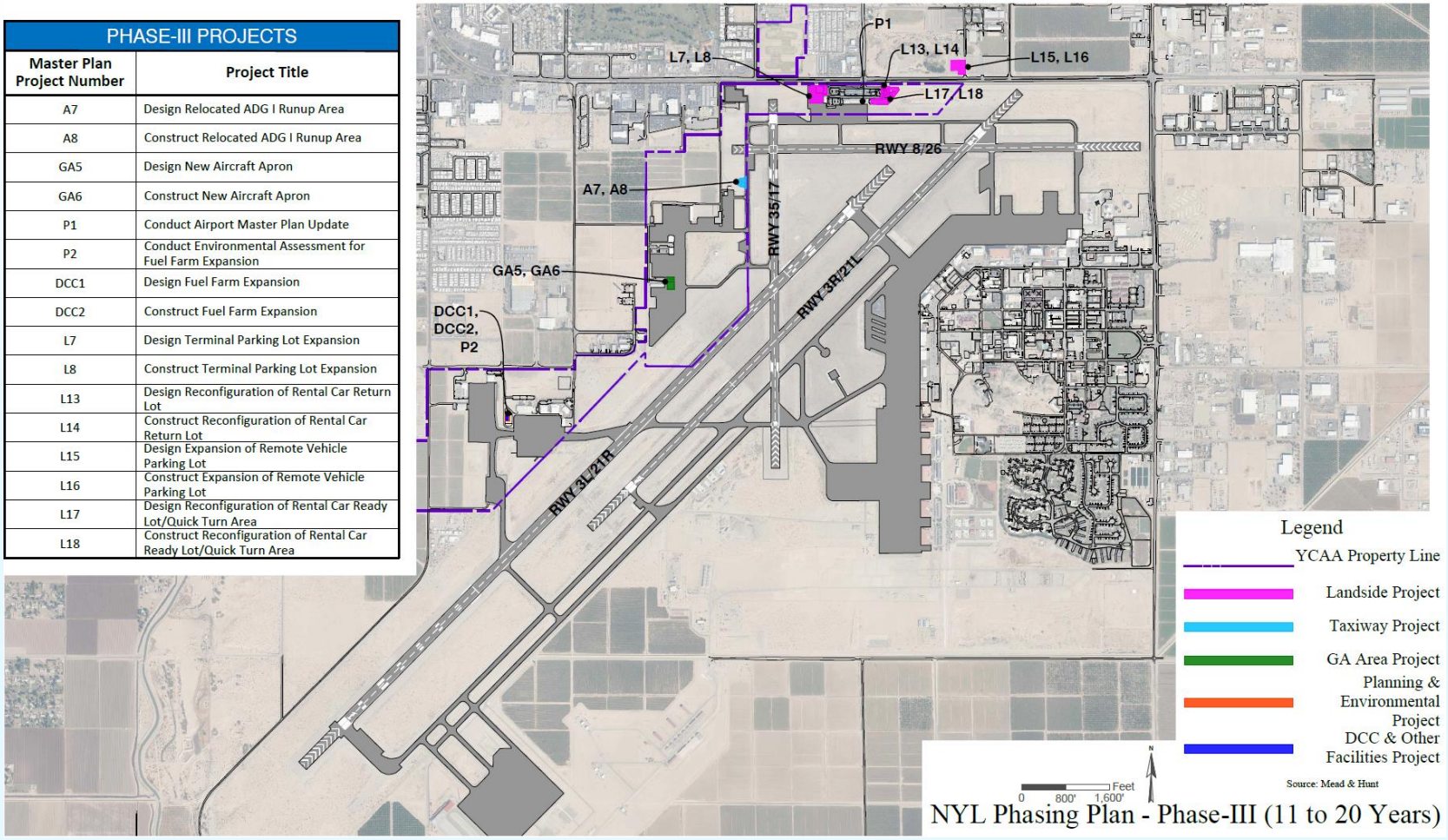
PHASE-III PROJECTS	
Master Plan Project Number	**Project Title**
A7	Design Relocated ADG I Runup Area
A8	Construct Relocated ADG I Runup Area
GA5	Design New Aircraft Apron
GA6	Construct New Aircraft Apron
P1	Conduct Airport Master Plan Update
P2	Conduct Environmental Assessment for Fuel Farm Expansion
DCC1	Design Fuel Farm Expansion
DCC2	Construct Fuel Farm Expansion
L7	Design Terminal Parking Lot Expansion
L8	Construct Terminal Parking Lot Expansion
L13	Design Reconfiguration of Rental Car Return Lot
L14	Construct Reconfiguration of Rental Car Return Lot
L15	Design Expansion of Remote Vehicle Parking Lot
L16	Construct Expansion of Remote Vehicle Parking Lot
L17	Design Reconfiguration of Rental Car Ready Lot/Quick Turn Area
L18	Construct Reconfiguration of Rental Car Ready Lot/Quick Turn Area



Phase-III Program

- **Project Types**
  - Landside
  - Taxiway
  - GA Area
  - Planning/Enviro.
  - DCC & Other Facilities
- **$9.1M**
  - (2021 dollars)

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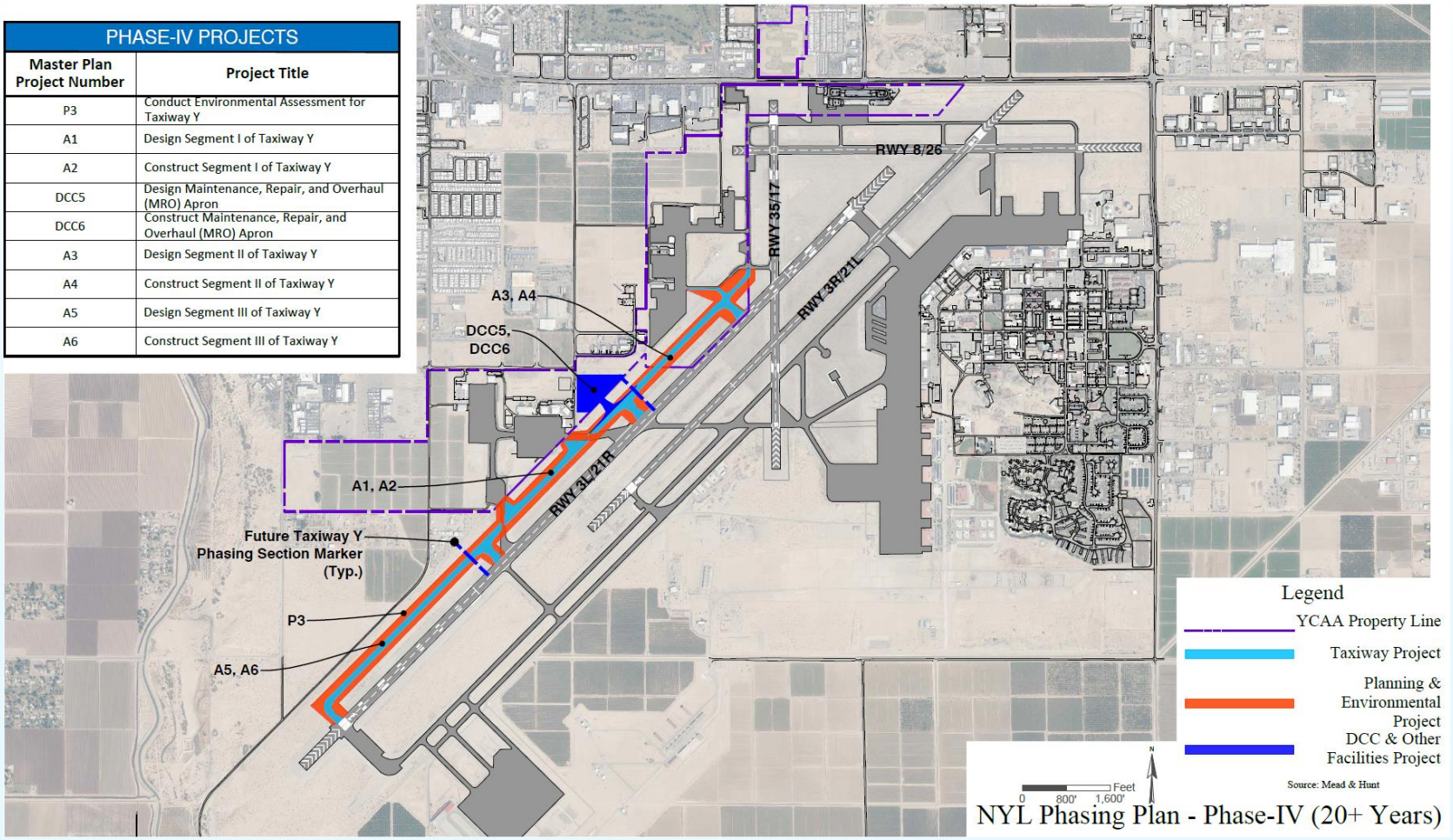
PHASE-IV PROJECTS	
Master Plan Project Number	**Project Title**
P3	Conduct Environmental Assessment for Taxiway Y
A1	Design Segment I of Taxiway Y
A2	Construct Segment I of Taxiway Y
DCC5	Design Maintenance, Repair, and Overhaul (MRO) Apron
DCC6	Construct Maintenance, Repair, and Overhaul (MRO) Apron
A3	Design Segment II of Taxiway Y
A4	Construct Segment II of Taxiway Y
A5	Design Segment III of Taxiway Y
A6	Construct Segment III of Taxiway Y



Phase-IV Program

- **Project Types**
  - Taxiway
  - Planning/Enviro.
  - DCC & Other Facilities
- **$60.7M**
  - (2021 dollars)

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Sources and Uses of Capital Funding – Summary

Sources of Capital Funding	Phase I 2021 - 2025	Phase II 2026 - 2030	Phase III 2031 -2040	Phase IV Beyond 2041	Total
AIP Entitlements	$ 4,124,445	$ 1,494,267	$ 3,832,653	$ 10,553,831	$ 20,005,196
AIP Discretionary	7,938,880	20,000,000	-	59,626,398	87,565,278
PFC Paygo	1,123,112	1,178,156	201,285	1,720,997	4,223,551
PFC Bonds	-	6,743,110	-	8,623,867	15,366,977
TSA Grants	1,633,600	-	-	-	1,633,600
ADOT Grants	469,629	7,914,197	174,993	2,036,107	10,594,927
CFCs	-	-	1,291,638	-	1,291,638
Local Funds	20,099,405	12,473,634	6,367,230	14,961,337	53,901,606
Total Sources	**$ 35,389,071**	**$ 49,803,364**	**$ 11,867,799**	**$ 97,522,537**	**$ 194,582,772**

Uses of Capital Funding	Phase I 2021 - 2025	Phase II 2026 - 2030	Phase III 2031 -2040	Phase IV Beyond 2041	Total
Taxiway	$ -	$ -	$ -	$ 82,561,200	$ 82,561,200
Terminal Expansion/Renovation	2,909,850	46,924,651	-	-	49,834,501
Apron	26,100,179	-	717,918	14,961,337	41,779,434
Parking and Roadways	1,413,151	1,450,782	3,053,522	-	5,917,455
Other Airfield Improvements	306,300	-	2,422,691	-	2,728,991
Fuel Farm/Fuel Storage	-	-	2,365,571	-	2,365,571
General Aviation	2,333,016	-	-	-	2,333,016
Hangar	2,250,000	-	-	-	2,250,000
Rental Car	-	-	2,239,774	-	2,239,774
Maintenance Facility	-	1,095,080	-	-	1,095,080
Other	76,575	332,851	1,068,322	-	1,477,748
Total Uses	**$ 35,389,071**	**$ 49,803,365**	**$ 11,867,798**	**$ 97,522,537**	**$ 194,582,771**

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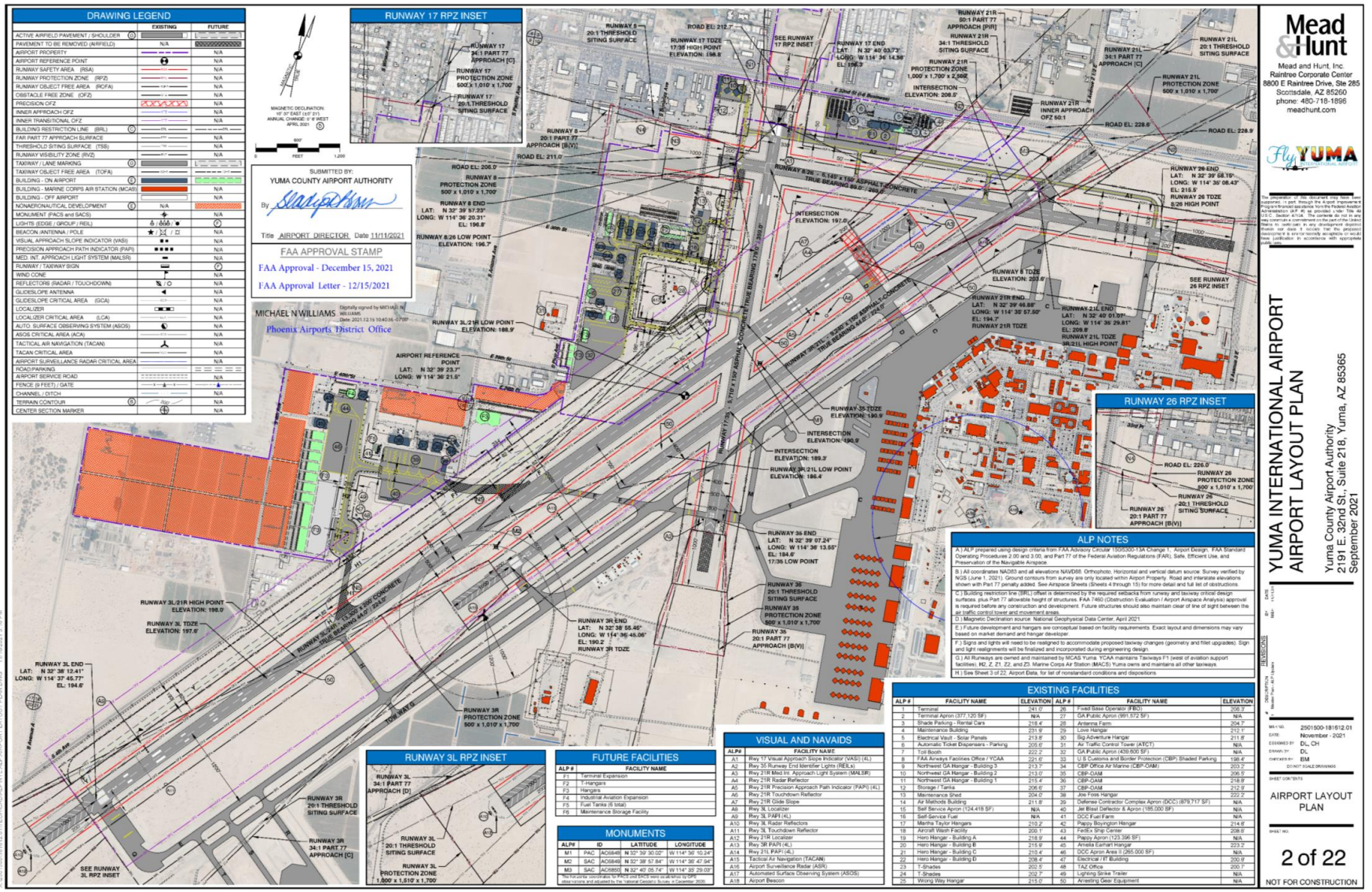
Airport Layout Plan



Remaining Steps

Revise the draft Airport Master Plan Document	February/March 2022
Revise the draft Executive Summary	February/March 2022
YCAA Board of Directors Approval	March 2022
Finalize Airport Master Plan Executive Summary	March 2022
Finalize Airport Master Plan Document	March 2022

Mead &Hunt

Project Contact Information

- **Yuma County Airport Authority**
  - Gladys Brown
    - Gladys@yumaairport.com
    - (928) 726-5882 Ext.2217
- **Mead & Hunt**
  - Christopher C. Hacker
    - Chris.Hacker@MeadHunt.com
    - (480) 718-1909
- **Project Website**
  - https://www.yumaairportmasterplan.com/

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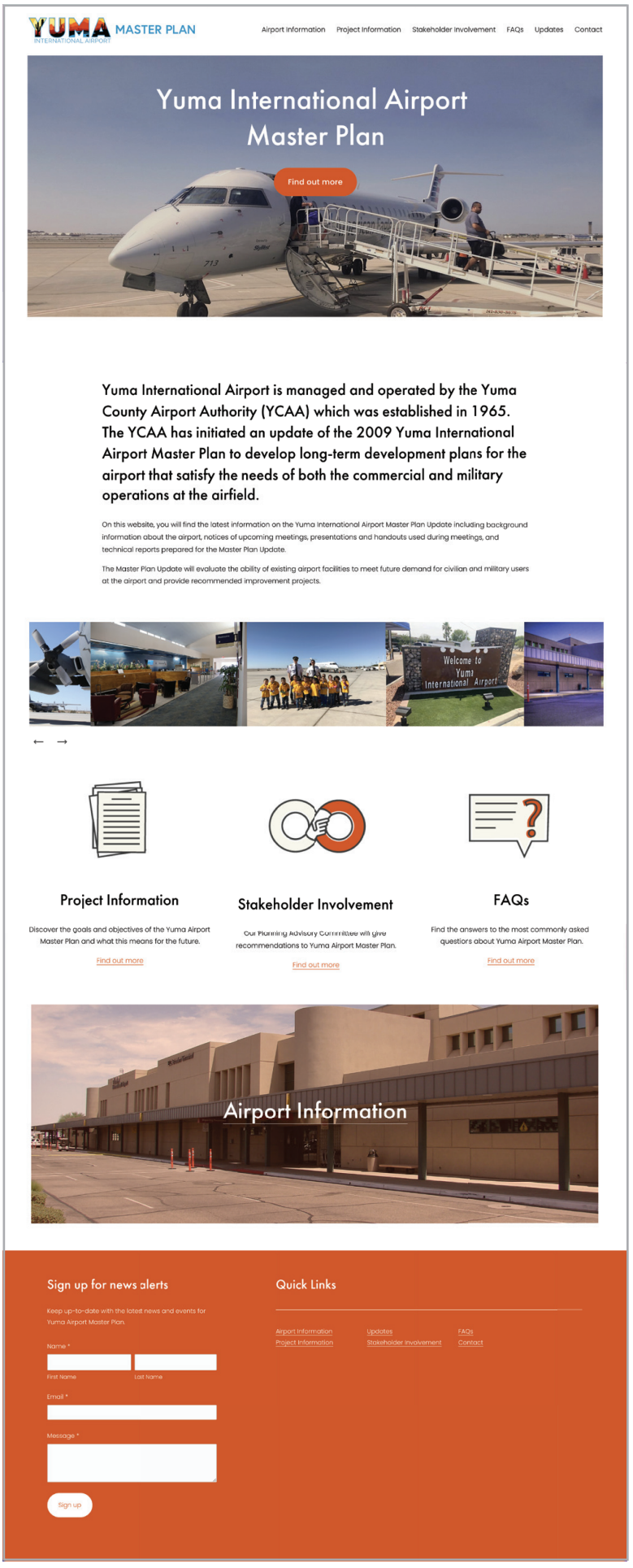
Homepage

https://www.yumaairportmasterplan.com/



Airport Information

https://www.yumaairportmasterplan.com/airport-information

Project Information

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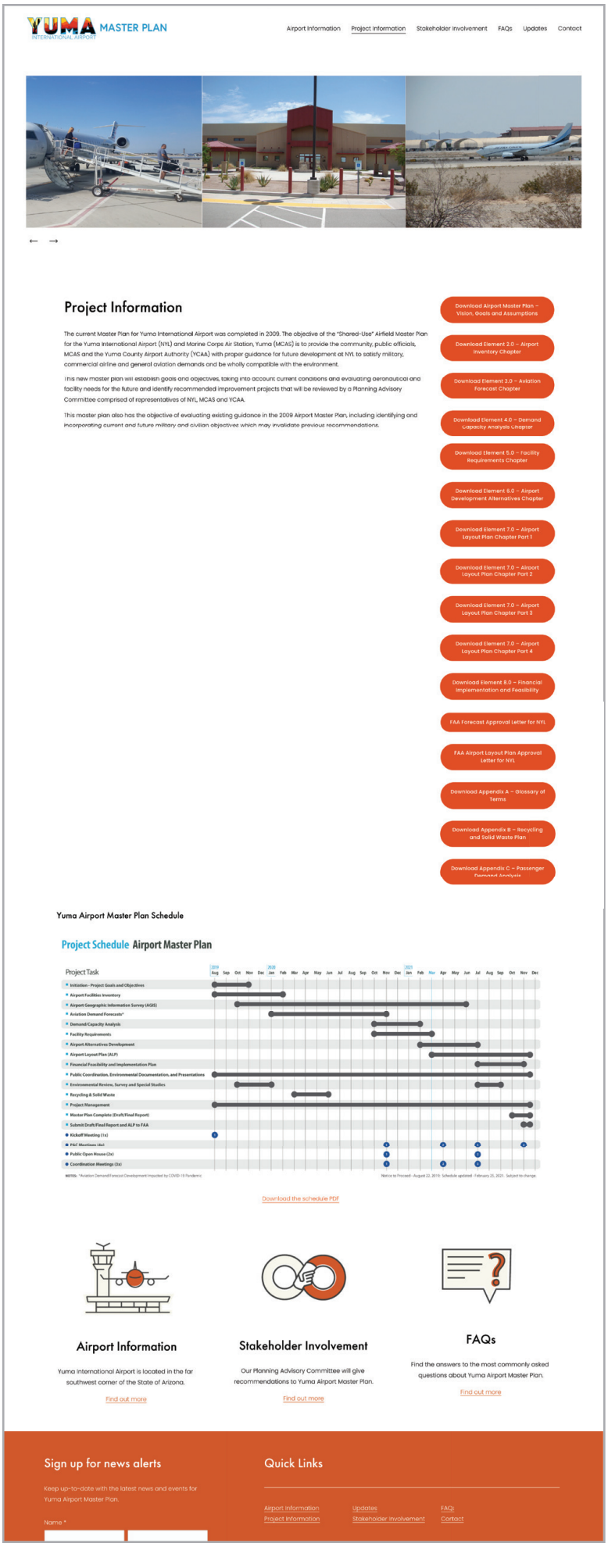
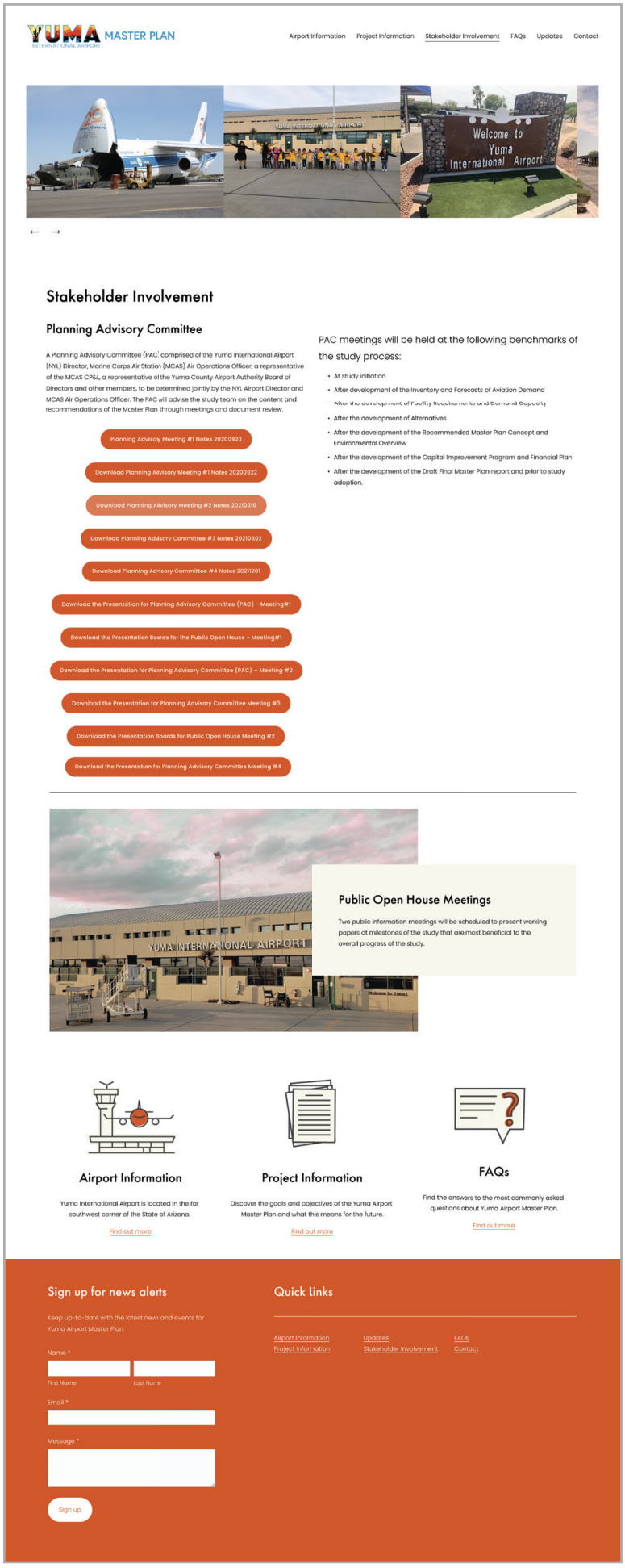


Stakeholder Involvement

https://www.yumaairportmasterplan.com/stakeholder-involvement



FAQ

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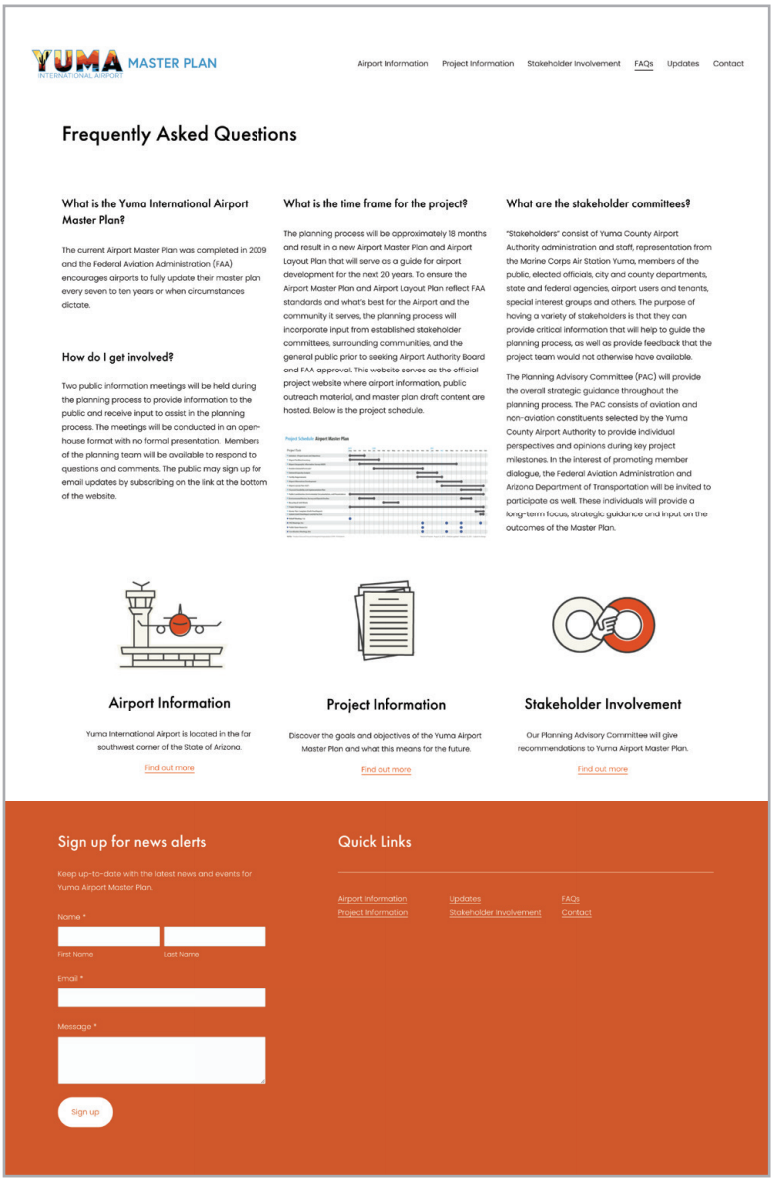

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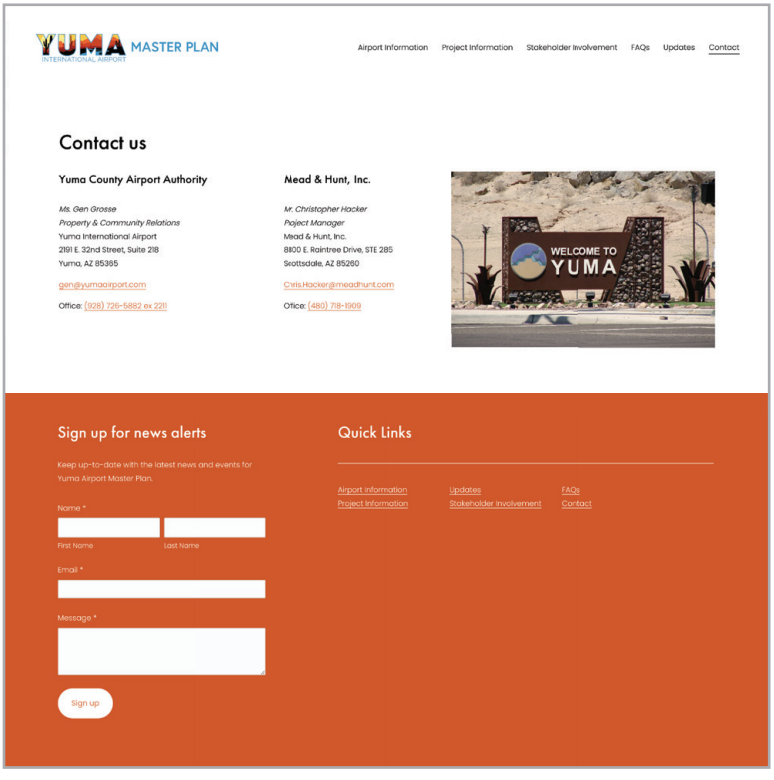

APPENDIX G

Security System Analysis

APPENDIX G - SECURITY SYSTEMS ANALYSIS

This appendix and the information disclosed within is confidential to the Yuma County Airport Authority and is not available for public dissemination.

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Yuma County Airport Authority
Yuma International Airport
PORT OF OPPORTUNITY

YUMA
INTERNATIONAL AIRPORT

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