



# Asheville Regional Airport Master Plan Update

Planning Advisory Committee Meeting #3

July 31, 2023



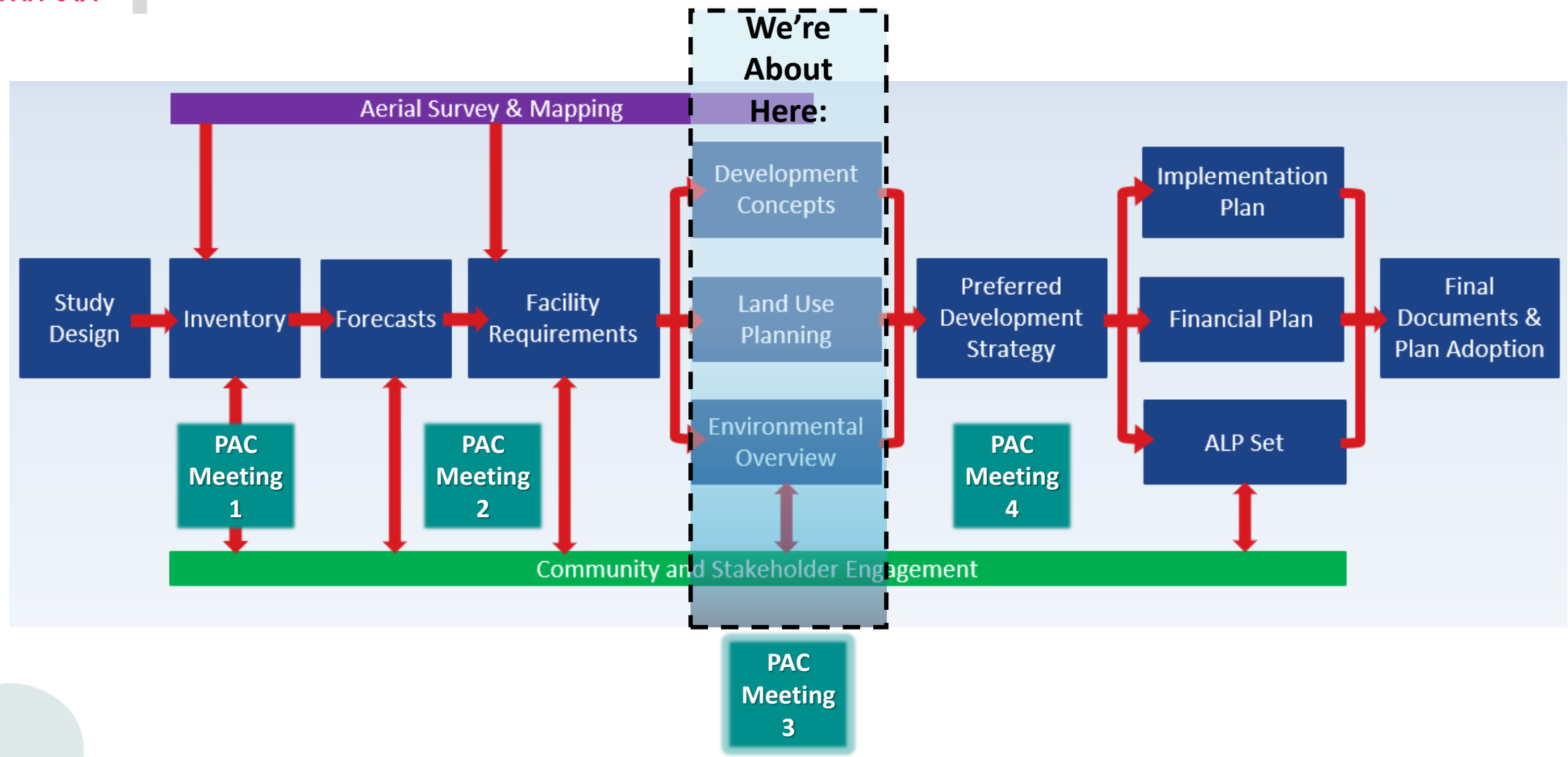
# Agenda

- Status of the Master Plan Update
- Forecast Summary
  - Forecast Results (FAA Approved)
- Facility Requirements Overview
- Airport Development Concepts Discussion
- Next Steps





# Status of the Master Plan Update





# Forecast Summary





# Planning Activity Levels (PALs)

- Provides the Airport Authority with a planning tool to accelerate or defer recommended improvements based on potential triggers
- PALs vs. Year: Anticipated Year activity is projected:
  - Base Year (2021)
  - PAL 1 (2026)
  - PAL 2 (2031)
  - PAL 3 (2036)
  - PAL 4 (2041)
  - PAL 5 (2041 - Medium-High Growth)
  - PAL 6 (2041 - High Growth)



# Recommended Forecast Summary

Passenger Activity							
Enplanements	Base (2021)	PAL 1 (2026)	PAL 2 (2031)	PAL 3 (2036)	PAL 4 (2041)	PAL 5 (2041+)	PAL 6 (2041+)
Annual	716,015	1,038,576	1,162,182	1,300,499	1,455,279	1,649,002	1,841,354
Peak Hour	616	910	1,019	1,140	1,276	1,446	1,614

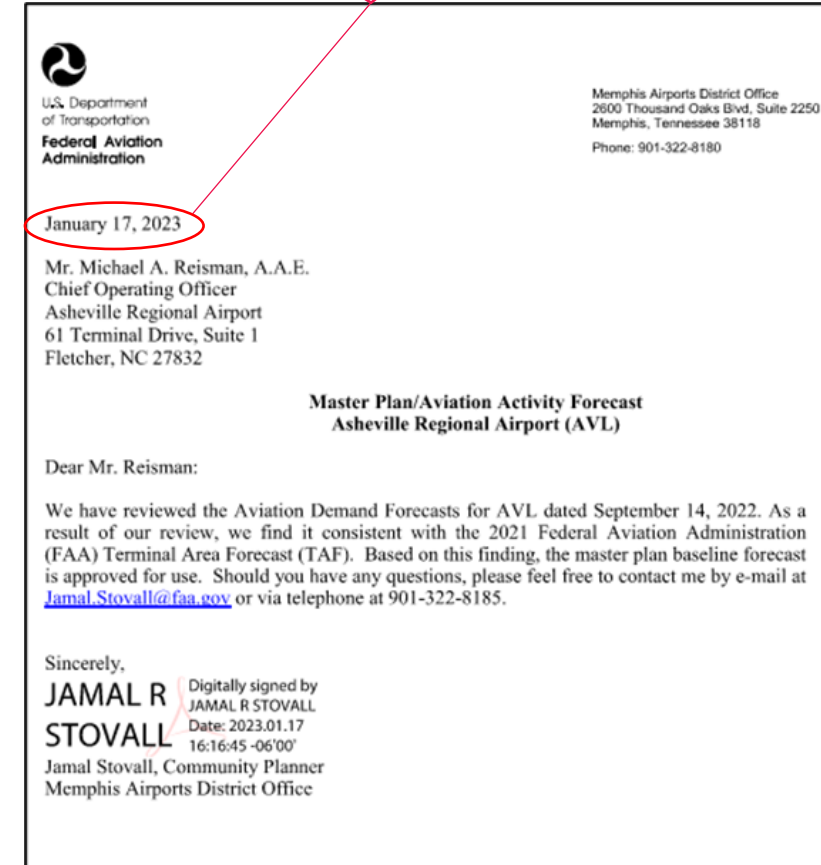
Annual Operations							
Category	Base (2021)	PAL 1 (2026)	PAL 2 (2031)	PAL 3 (2036)	PAL 4 (2041)	PAL 5 (2041+)	PAL 6 (2041+)
Commercial Aviation	20,328	26,054	28,292	30,723	33,363	37,804	42,214
General Aviation	51,008	53,256	55,475	57,694	60,230	60,230	60,230
Military Aviation	4,402	4,402	4,402	4,402	4,402	4,402	4,402
<b>Total Operations</b>	<b>75,738</b>	<b>83,712</b>	<b>88,169</b>	<b>92,819</b>	<b>97,995</b>	<b>102,436</b>	<b>106,846</b>



# Recommended Forecast vs. FAA Terminal Area Forecast (TAF)

- FAA Requirements
  - Within 10 % of FAA TAF in 5-Years
  - Within 15% of TAF in 10-Years
- Recommended VS. TAF: 5-Years / 10-Years
  - Enplanements: 5.7% (Above) / 7.8% (Above)
  - Commercial Operations: 11.2% (Below) / 10.9% (Above)
  - Total Operations: 0.7% (Below) / 1.4% (Above)

FAA Approval  
January 17, 2023



# Demand/Capacity and Facility Requirements



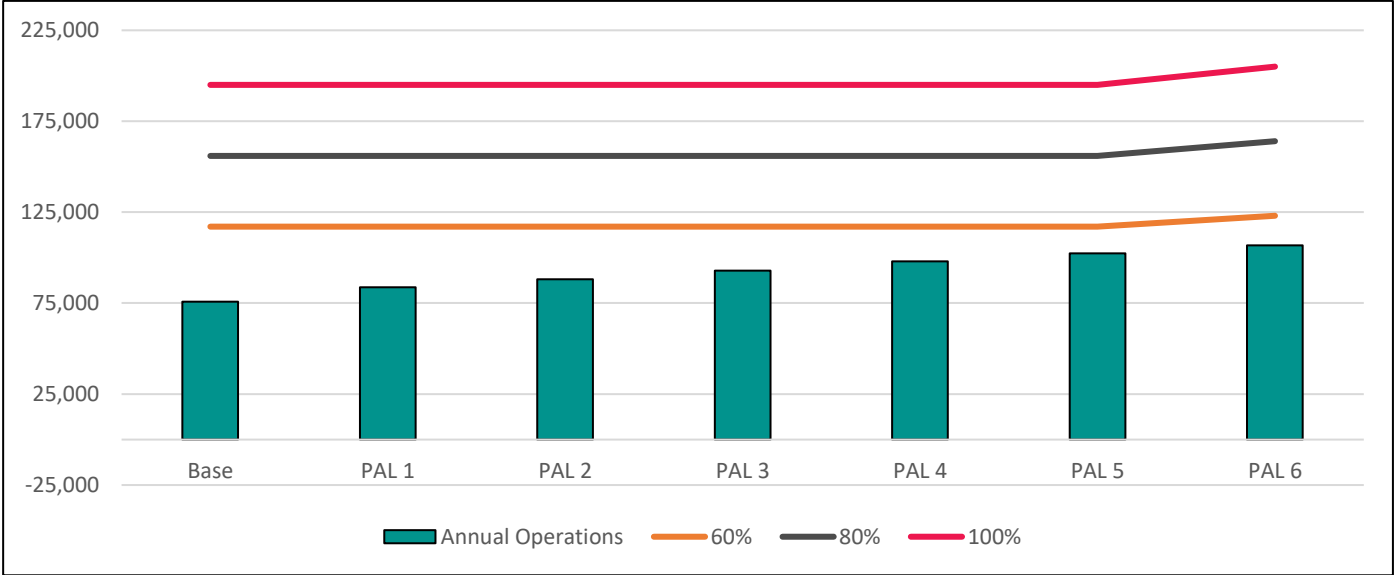




# Airfield Capacity Requirements

- FAA AC 150/5060-5, *Airfield Capacity and Delay*

Projected Demand



Capacity for Long-Range Planning

Timeframe	Hourly Capacity (Ops/Hr)	
	VFR	IFR
PAL 1 – PAL 5 (2026 – 2041+)	74	57
PAL 6 (2041+)	63	56

Annual Service Volume & Capacity Level

Factor	Base (2021)	PAL 1 (2026)	PAL 2 (2031)	PAL 3 (2036)	PAL 4 (2041)	PAL 5 (2041+)	PAL 6 (2041+)
Annual Operations	75,738	83,712	88,169	92,819	97,995	102,436	106,846
Annual Service Volume	195,000	195,000	195,000	195,000	195,000	195,000	205,000
Capacity Level	38.8%	42.9%	45.2%	47.6%	50.3%	52.5%	52.1%

Airfield capacity at AVL is expected to range from 38.8 percent in the Base Year to 52.5 percent in PAL 5 and only reaching 52.1 percent by PAL 6.





# Runway Requirements

- Runway Object Free Areas (ROFA)
  - Contain the FAA glideslope antenna and equipment building
  - Recommendation: The FAA may want to consider relocation.
- Runway Protection Zones (RPZ)
  - Contain incompatible land uses
  - Recommendation: Seek opportunities to eliminate, reduce, or mitigate

## Runway Design Standards

Design Standard	FAA Runway Design Standards	AVL Runway 17/35: Meet or Exceed (Yes / No)
	D-III * (< ¾ mile visibility)	
Runway Width	150'	Yes
RSA Width	500'	Yes
RSA Length Beyond Runway End	1,000'	Yes
ROFA Width	800'	Yes
ROFA Length Past Runway End	1,000'	Yes
Runway OFZ Width	400'	Yes
<b>Separation Between:</b>		
Runway Centerline to Parallel Taxiway Centerline	400'	Yes
Runway Centerline to Hold line	250'	Yes
<b>Approach Runway Protection Zone (RPZ):</b>		
Length	2,500'	Yes
Inner Width	1,000	Yes
Outer Width	1,750	Yes
<b>Departure Runway Protection Zone (RPZ):</b>		
Length	1,700	Yes
Inner Width	500	Yes
Outer Width	1,010	Yes

# Runway Length Analysis

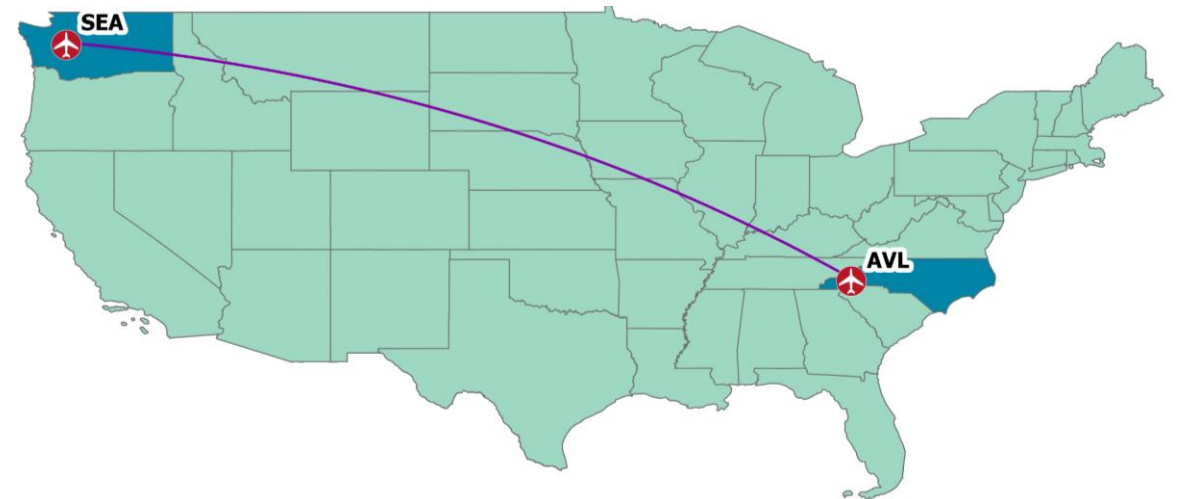
- Recommendation: Extend Runway approximately 1,000 feet
  - Accommodate future potential takeoff length requirements
  - Support farther stage lengths on hot days and/or with 90% payloads

Critical Aircraft: B737-800 MAX



Source: <https://www.boeing.com/commercial/737max/>

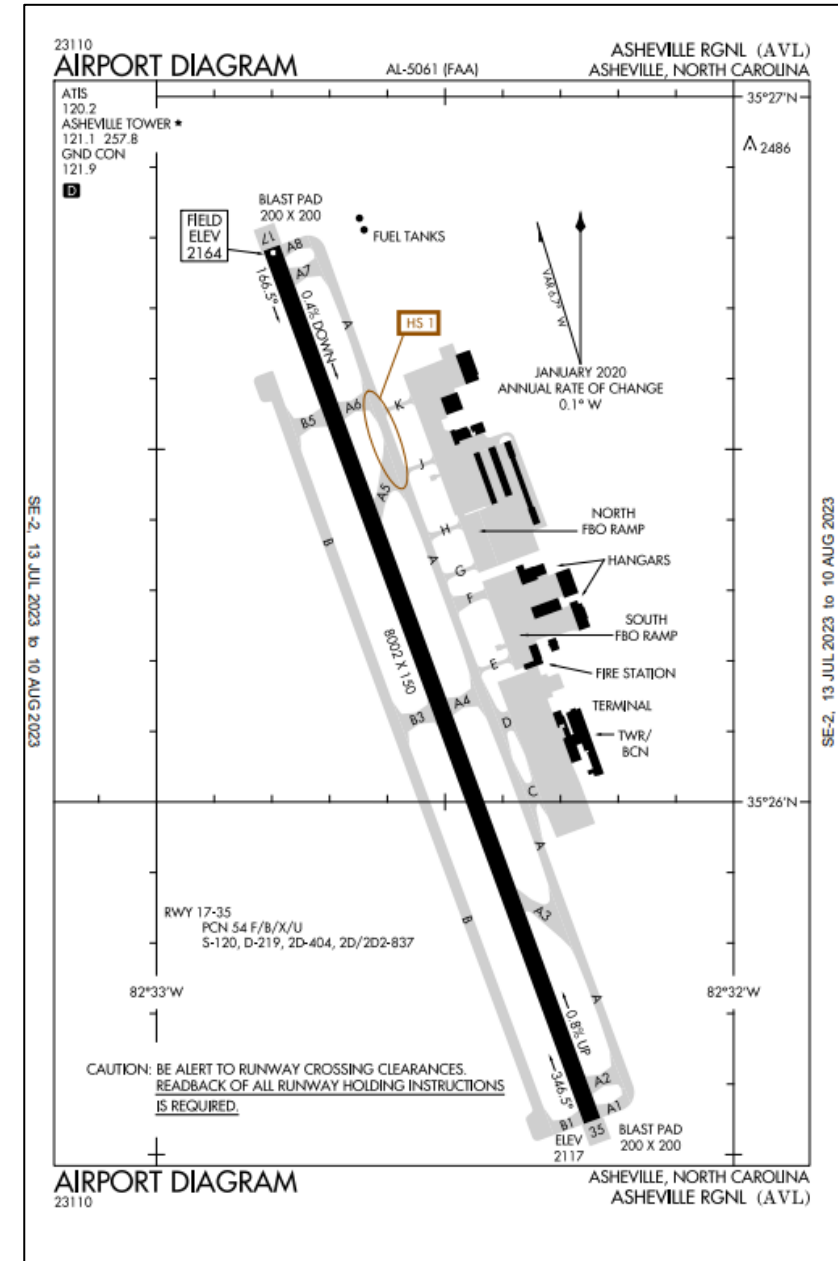
Farthest Potential Destination  
Seattle-Tacoma International Airport (SEA)



\*Stage Length: Approximately 1,580.8 nautical miles

# Taxiway Requirements

- Based on TDG-4 Requirements
  - Recommendation: Extend Taxiway B to a full-length parallel taxiway
  - Recommendation: Consider additional improvements to connector taxiways
- Hot Spot Identified (Temporary)





# Support Facility Requirements: General Aviation Hangar Storage

- Based Aircraft Storage Demand:
  - 82,300 SF of additional hangar space
    - 16,500 SF for single- & multi-engine aircraft
    - 65,800 SF for jet Aircraft
- Additional Storage Demand for Transient Aircraft:
  - 75 additional aircraft frequenting AVL
    - 20% assumed to require accommodation at any given time (or 15 aircraft), requiring 2,500 SF each
    - Total additional demand: 37,500 SF
- Future Hangar Demand: 119,800 SF of additional hangar space

Projected Hangar Space Requirements (Based Aircraft)

Aircraft Type	Base (2021)	PAL 1 (2026)	PAL 2 (2031)	PAL 3 (2036)	PAL 4 (2041)
<b>Current &amp; Projected Based Aircraft</b>					
Single- & Multi Engine Aircraft	153	156	160	164	168
Jet Aircraft	5	9	12	15	19
Helicopters	3	3	3	3	3
<b>Total</b>	<b>161</b>	<b>168</b>	<b>175</b>	<b>182</b>	<b>190</b>
<b>Additional Based Aircraft to Be Accommodated Each Planning Period</b>					
Single- & Multi Engine Aircraft; Helicopters	-	3	4	4	4
Jet Aircraft	-	4	3	3	4
Helicopters	-	0	0	0	0
<b>Total</b>	<b>-</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>8</b>
<b>Additional Hangar Storage Required (SF)</b>					
Single- & Multi Engine Aircraft; Helicopters	-	3,300	4,400	4,400	4,400
Jet Aircraft	-	18,800	14,100	14,100	18,800
Helicopters	-	0	0	0	0
<b>Total</b>	<b>-</b>	<b>22,100</b>	<b>18,500</b>	<b>18,500</b>	<b>23,200</b>
<b>Total Additional Hangar Space Through PAL 4</b>			<b>82,300</b>		





# Support Facility Requirements: Aviation Fueling Facilities

	Base (2021)	PAL 1 (2026)	PAL 2 (2031)	PAL 3 (2036)	PAL 4 (2041)	PAL 5 (2041+)	PAL 6 (2041+)
Existing Jet-A/SAF* Fuel Storage Capacity (In gallons)	80,000	80,000	80,000	80,000	80,000	80,000	80,000
<b>3-Day Reserve</b>							
Total Fuel Storage Capacity Required for a 3-Day Reserve (In gallons)	160,000	205,069	222,684	241,818	262,597	285,162	309,666
Total Fuel Storage Capacity Deficit if wanting a 3-Day Reserve (In gallons)	(80,000)	(125,069)	(142,684)	(161,818)	(182,597)	(205,162)	(229,666)
Recommended Additional Tanks to Provide a 3-Day Reserve (At 40,000 gallons each)	2	4	4	5	5	6	6

\*SAF: Sustainable Aviation Fuel

Avgas	Storage (Gallons)
<b>Fuel Farm Tank</b>	
Capacity	12,000
Safe-Fill	10,500
<b>Self-Serve Fuel Tank</b>	
Capacity	1,000
Safe-Fill	800

Avgas: Adequate through PAL 6 (2041+)



# Support Facility Requirements: Aircraft Rescue & Firefighting (ARFF) / Department of Public Safety Facilities

- ARFF / Department of Public Safety Building
  - May require relocation with the terminal program in the long-term
- ARFF Equipment
  - Currently operating as ARFF Index B
  - ARFF Index increasing to Index C next calendar year



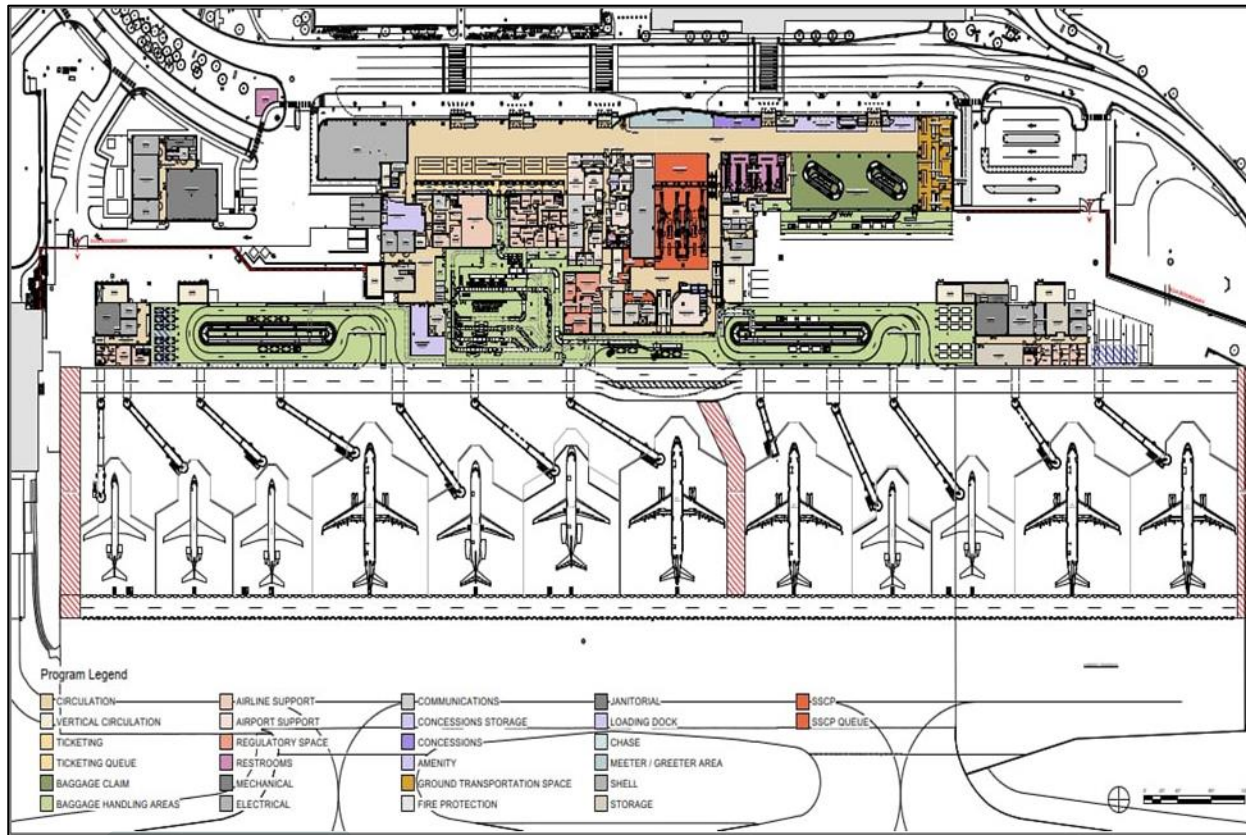


# Additional Support Facility Requirements

- Airport Maintenance & Snow Removal Equipment (SRE) Facilities
  - Recommendation
    - Upgrade facilities due to aging infrastructure
    - Expand/relocate facilities to accommodate future needs, including storage of snow removal equipment (SRE) and airport maintenance vehicle fuel facilities
- Airport Traffic Control Tower Relocation
  - Construction underway
- Urban Air Mobility
  - Recommendation
    - Install charging stations in the GA areas for the aircraft electrical motors and batteries
    - Construction of new hangars to accommodate EVTOL

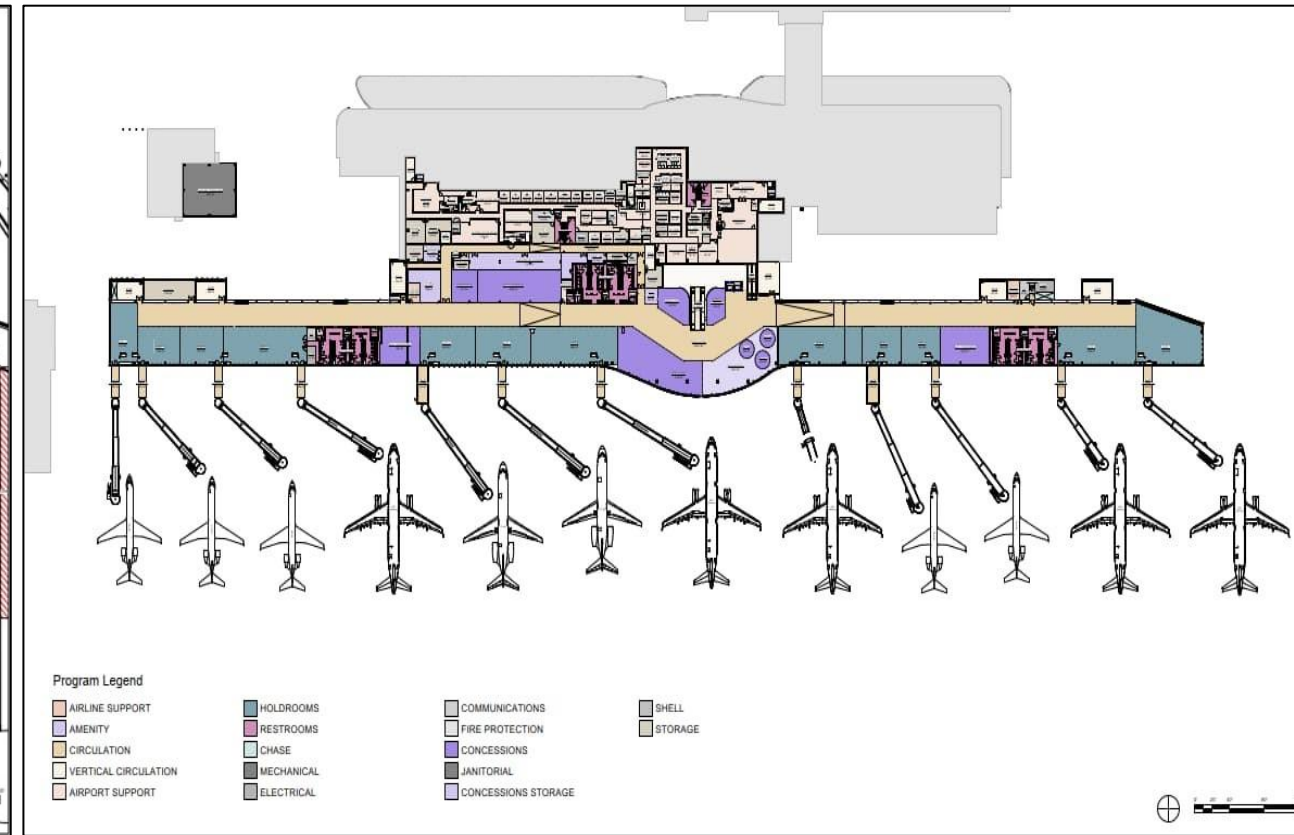
# Airport Terminal Modernization

Terminal Modernization Project (Base Year) – Ground Level



Source: Gresham Smith, 2022.

Terminal Modernization Project (Base Year) – Upper Level



Source: Gresham Smith, 2022.





# Passenger Terminal Facility Needs(Summary)

- General Recommendation: Attain Level of Service (LOS) 'C' for each processor and non-processor area, if not already at or above Level 'C'
- Key Recommendations through PAL 4 (2041):
  - Additional Gates – 5 Gates
  - Additional Holdroom Space – 21,000 SF
  - Expand Ticket Lobby Area – 4,100 SF
  - Additional Security Screening Checkpoint Lanes – 4 Lanes
  - Expand Security Screening Checkpoint Queue – 12,500 SF
  - Expand Baggage Claim Area (Inbound / Outbound) – 9,200 SF
  - Expand Concessions Area (Pre-Security) – 2,000 SF
  - Expand Concessions Area (Post-Security) – 9,000 SF
  - Expand Rental Car Concessions Area – 1,000 SF
  - Expand Airport Administration – 3,000 SF
  - Expand Airport Terminal Operations Area – 9,000 SF
  - Expand Check-In / Baggage Claim Restrooms – 1,300 SF
  - Extend Curb Front Length – 800 LF
  - Additional Public Parking – 2,000 Parking Spaces





An aerial photograph of an airport terminal and surrounding infrastructure, including parking lots, taxiways, and runways. A semi-transparent grey overlay covers the central portion of the image, and the text "Development Concepts" is superimposed on this area in a bold red font.

# Development Concepts



# Development Concepts Overview

- Airfield Facilities
  - Runway extension (1,000 feet)
  - Taxiway B extension to full-length parallel taxiway
- General Aviation Hangar Storage
  - Proposed Hangar Locations for Based Aircraft and Transient Aircraft
- Aircraft Fueling
  - Proposed locations for up to six (6) additional fuel tanks by PAL 6
- ARFF/Department of Public Safety Building
  - Proposed areas for relocation long-term
- Airport Maintenance/Snow Removal Equipment (SRE) Facility
- Urban Air Mobility
  - High-level overview of proposed areas for accommodation on the airfield
- Passenger Terminal Facility
- Vehicular Parking
- Surface Transportation & Wayfinding (On- and Off-Airport)

# Next Steps

- Working Paper #4 – Development Concepts
  - GARRA Review and Comment Period
- PAC Meeting #4
- Complete Sustainability/Environmental Analysis
- Develop Preferred Improvement Program
- Develop Airport Financial Plan
- Develop Airport Layout Plan (ALP) Package
- Public Meeting (PAC Encouraged to Attend)
- GARRA & FAA: Review & Approval





# Questions / Comments

Any questions or comments regarding the Airport Master Plan  
or any of the information discussed today?

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