

(PRELIMINARY DRAFT) WORK IN PROGRESS - FOR DISCUSSION PURPOSES ONLY



Technical Advisory Committee

Briefing #3

June 22, 2018



Agenda



Master Plan Schedule Overview

Coordination Review

Recommended Remote 5-Gate Facility

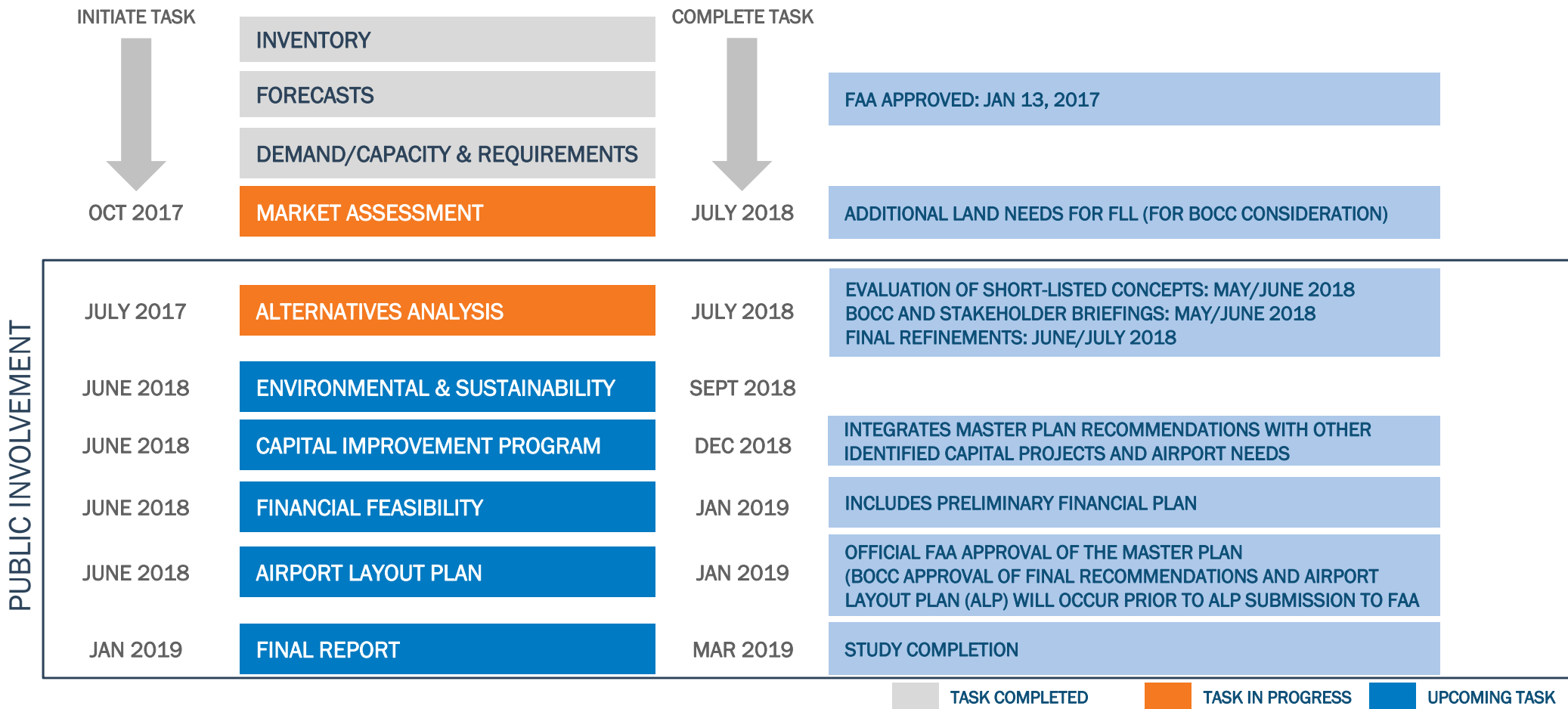
Short-listed Terminal Area Concepts

Assessment of Additional Airport Needs

Next Steps



Master Plan Schedule Overview



TASK COMPLETED
 TASK IN PROGRESS
 UPCOMING TASK

Key Stakeholder Meetings since April 18th Workshop

On-Going	Weekly	Project coordination with BCAD Development and Planning Staff
	Bi-Weekly	Executive Director briefings
2017	June 28, 2017	Florida Department of Transportation (FDOT) & Metropolitan Planning Organization (MPO) Briefings and Coordination Meetings
	November 1, 2017	
	July 10, 2017	Policy Advisory Committee (PAC) & Technical Advisory Committee (TAC) – Briefing #2
	October 30, 2017	Federal Aviation Administration (FAA) Airports District Office (ADO) Briefing
2018	January 24, 2018	FAA & FDOT Briefing
	January 26, 2018	Airport Airline Affairs Committee Briefing #3
	February 15, 2018	FLL Public Open House Workshop #1
	May 9, 2018	Airport Airline Affairs Committee Briefing #4
	June 6, 2018	FAA / FDOT / MPO Briefing



Introduction

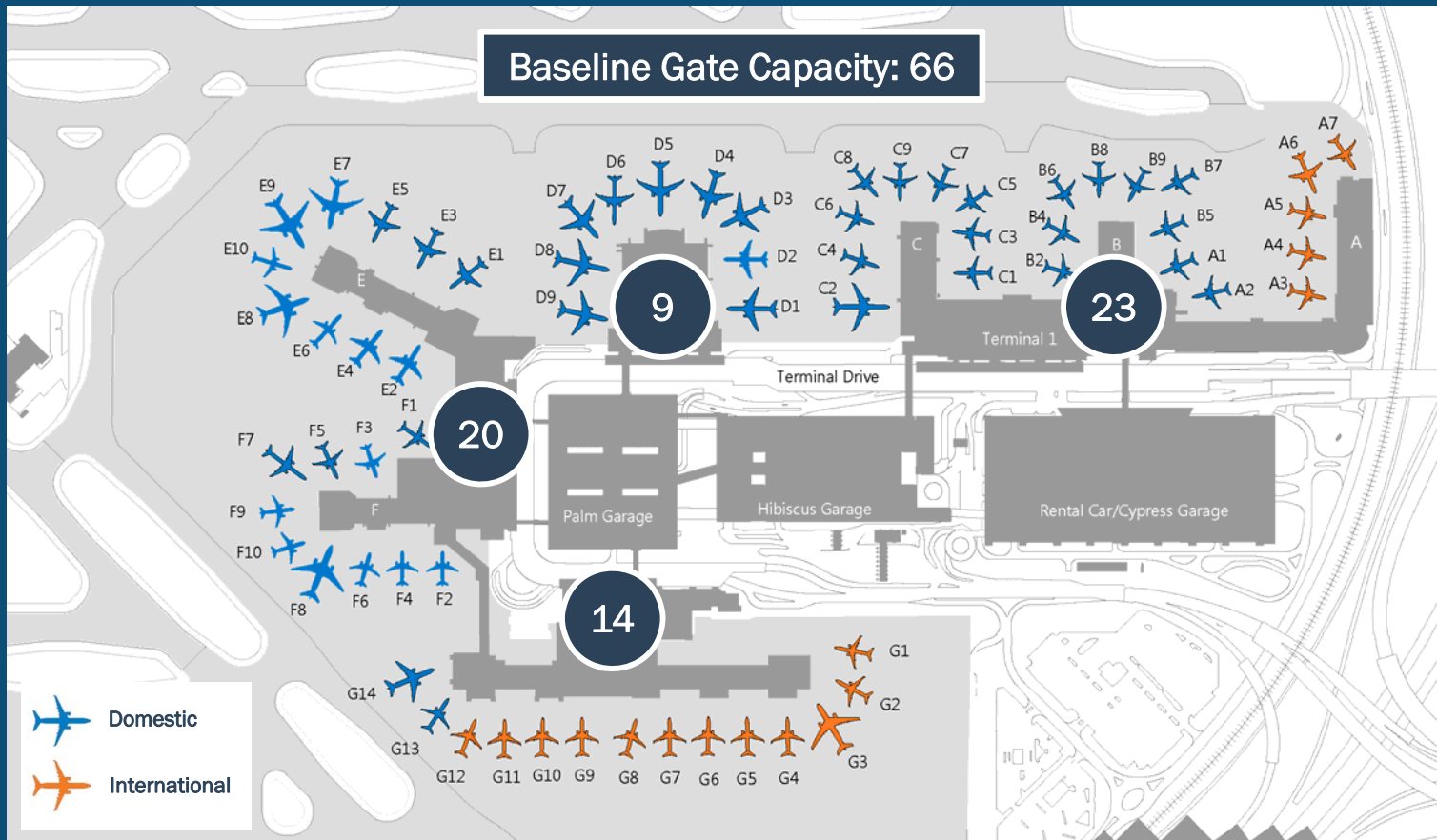
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Recommended Remote Facility Alternative

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Gate Capacity & Future Needs



FY2016: 28.7 MAP
CY2016: 29.2 MAP

Future gate requirements:

- 37 MAP (On or before 2020)
 - 70 - 72 gates
- 42 MAP (On or before 2025)
 - 75 - 77 gates
- 53 MAP (On or before 2035)
 - 83 - 85 gates

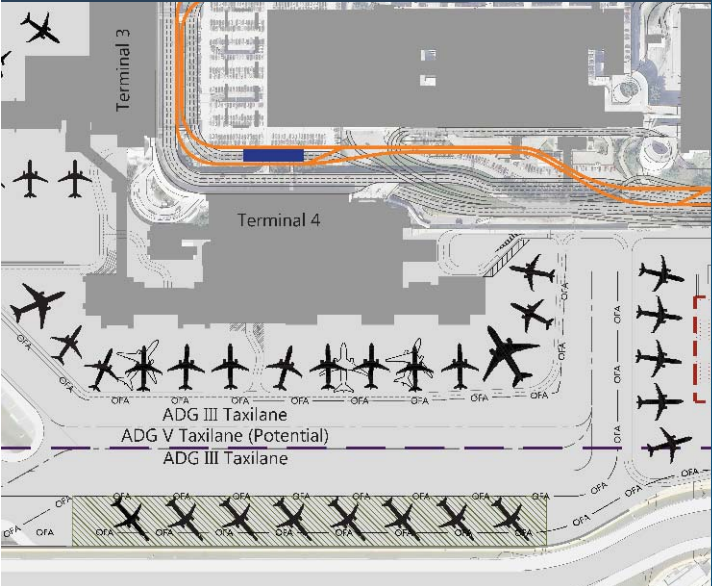
Notes:
MAP: Million Annual Passengers

Recommended Remote Gate Facility



SELECTION CRITERIA: LOWEST COST, L
DEVELOPABLE LANDSIDE ACREAGE, LIM

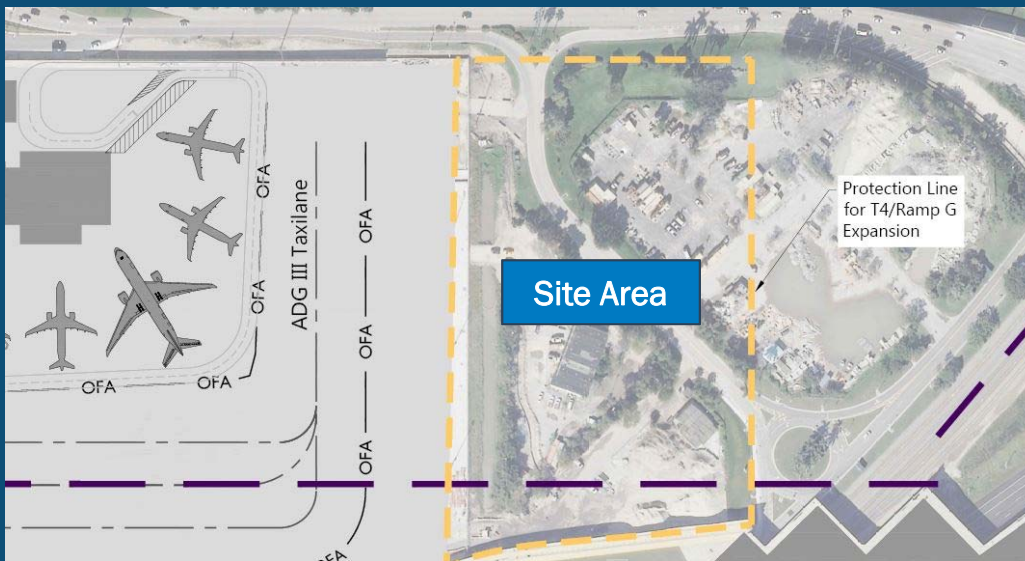
Phase 1 – Busing Operatic



Phase 1 Costs (2018 Dollars): \$64,000,000* (Excludes
On-Going O&M Costs (2018 Dollars): \$3,575,000 (Roun
(Includes assumed busing cost, facility janitorial, and facilit

Study Area Limits and Remediation ROM Estimate

PHASE 1 ENVIRONMENTAL REMEDIATION



Summary of Findings Exploratory Test Trenches for the 5-Gate Remote Facility (Includes contingencies)

Excavation, haul and disposal	\$3,000,000
Clean Fill	\$1,500,000
Total Environmental Remediation (With contingency allowance)	\$4,500,000

Source: Cherokee Enterprises, Inc., Exploratory Test Trenches, Technical Memorandum submitted to BCAD on April 20, 2018

+ Plus Terminal 4 Bus Station Costs (see next slide)

Rough Order of Magnitude (ROM) Estimate



Con

Rev
Cont

TOT.

TOTAL

Note: Escal:
Source: Tur

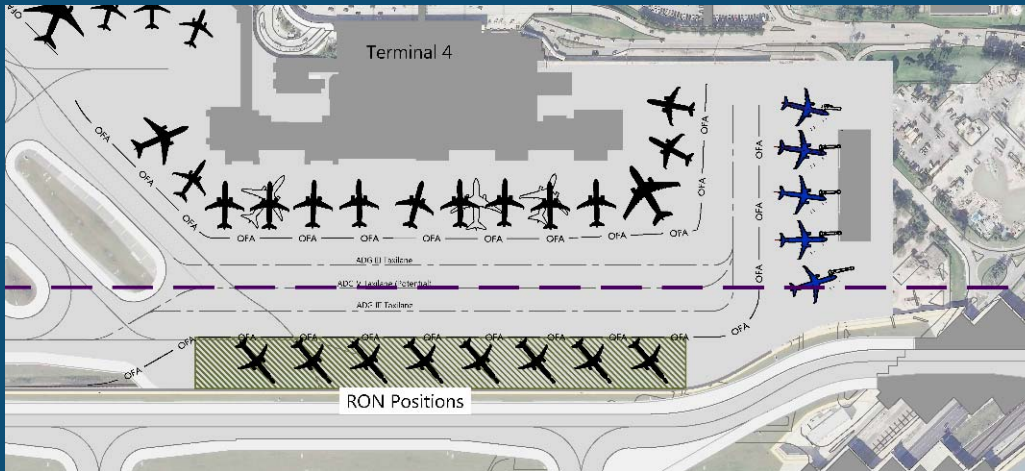
CO

To

Note: Ramp
Source: Cos

MSE Area Limits and Remediation ROM Estimate

RON Replacement Positions (Along MSE Wall)



Terminal 4 Apron Improvement RON Mitigation and Expansion Plan

Pavement Expansion Along MSE
Wall (Potential RON Positions)

\$8,000,000

Source: Nova Consultants Inc., Opinion of Probable Construction Costs for Remote 5-
Gate Facility, April 5, 2018

+ Total Capital
Improvement and
O&M Cost
(see next slide)

Rough Order of Magnitude (ROM) Estimate

Fixed Capital Improvement Costs:

ALTERNATIVE	PHASE 1**			
	Phase 1 (Loaded Cost)	Environmental Remediation Costs	Terminal 4 Bus Station	RON Replacement Positions
Baseline	\$ 52,000,000	\$ 5,000,000*	\$ 6,800,000	\$8,000,000

Phase 1 Annual Operating & Maintenance Costs:

ALTERNATIVE	COBUS Annual Lease Cost	COBUS Annual O&M Costs	5-Gate Facility Utility Costs***	5- Janit
Baseline	\$ 485,000	\$2,190,000	\$65,000	:

Notes:

* Environmental costs as estimated by Cherokee Enterprises, Inc., Exploratory Test Trenches, Technical Memorandum

** Totals may differ from previous slides due to rounding

*** Derived and estimated based on O&M costs for Concourse A.

Source: Nova Consultants Inc., Opinion of Probable Construction Costs for Remote 5-Gate Facility, April 5, 2018

Soft cost assumptions:

Mobilization and demobilization: 3%

General contractor overhead and profit: 10%

Airside construction cost: 10%

Contingency: 20%

Engineering and architectural design: 20%

Inflation: 3%

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Representative Remote Facility



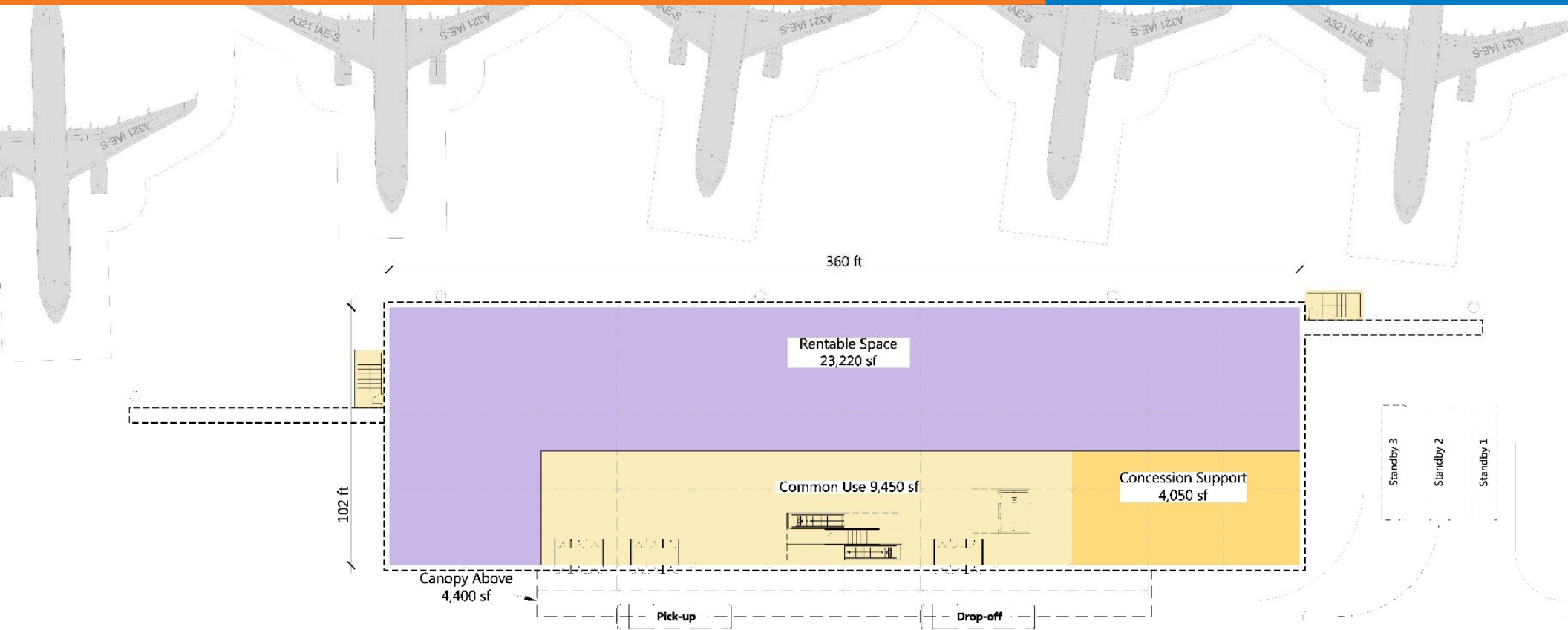
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Representative Remote Facility



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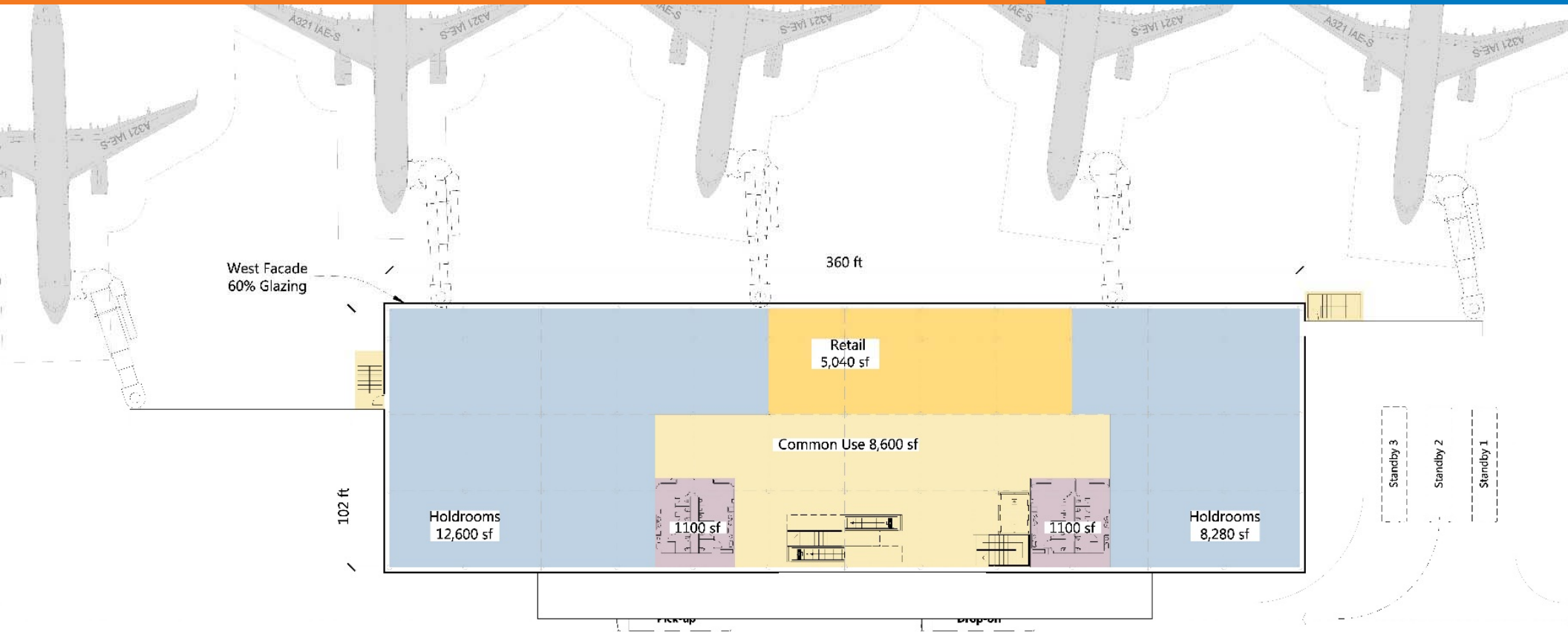
Domestic Facility with Busing Operation



LEGEND	0 sf
Holdroom:	

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Domestic Facility with Busing Operation



LEGEND	
Holdroom:	20,880 sf

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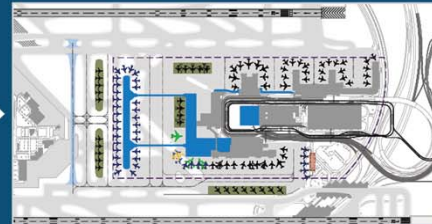
Refinement and Evaluation of Passenger Terminal Expansion Concepts

Refined Concept
1

77-Gate Complex
(proposed for serving 42 Million Annual Passengers)¹



85-Gate Complex
(proposed for serving 53 Million Annual Passengers)²



95-Gate Complex
(provides practical balance with airfield)



Refined Concept
5

REASONS FOR ELIMINATING CONCEPT 5:

Airfield constraints
(Single taxilane)

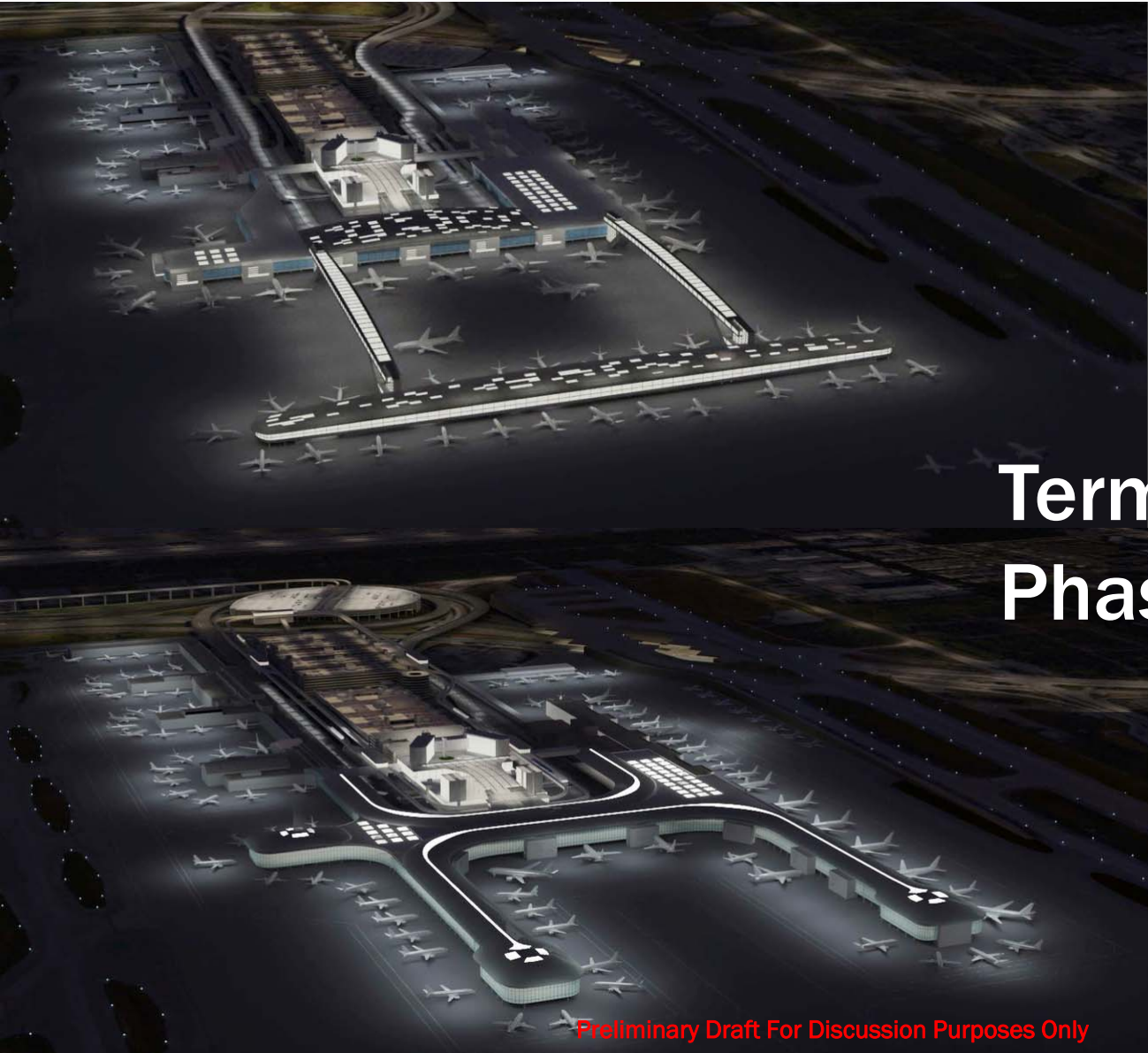
Continuity of operations
during construction

Ability to accommodate large
aircraft (225+ passengers)

Refined Concept
6



Notes:
¹ Projected 2025 Demand Level Per the FAA Approved Master Plan Forecast
² Projected 2035 Demand Level Per the FAA Approved Master Plan Forecast



Terminal Development Phasing

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Concept 1

Terminal Development 95-GATE COMPLEX



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Concept 6

Terminal Development 95-GATE COMPLEX



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Potential Palm Garage and Commercial Center Development

POTENTIAL FACILITY

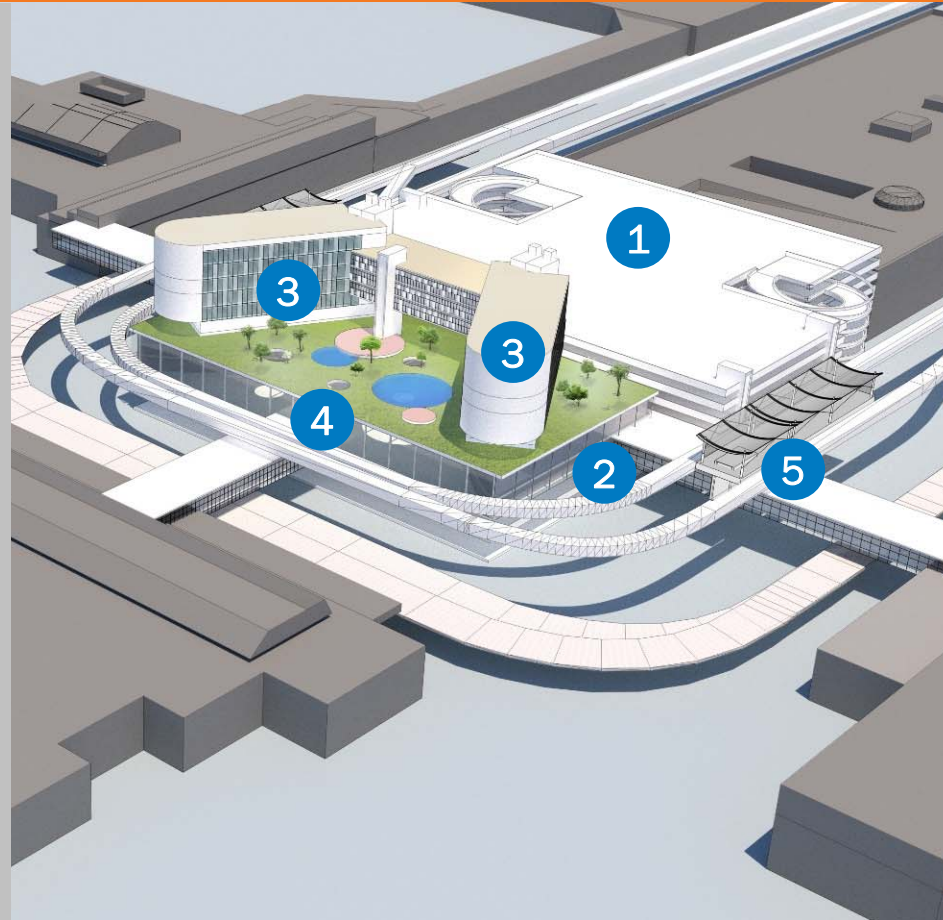
1 NEW PALM GARAGE

2 GROUND TRANSPORTATION CENTER (GTC)

3 HOTEL

4 COMMERCIAL CENTER / COURTYARD & OUTDOOR SPACE

5 AIRPORT PEOPLE MOVER STATION CONNECTION



RESULT/PROVIDES

More Parking Capacity;
Integrated with Hibiscus Garage

Consolidated & Co-located with
new Palm Garage; Reduces Road
& Curb Congestion

New Customer Offering &
Revenue Opportunity

Customer Offering & Assembly
Area For Early Arriving
Passengers

Easy Access & Connectivity to all
Terminals and Landside Facilities

Commercial Center

ILLUSTRATIVE SPACE EXAMPLES

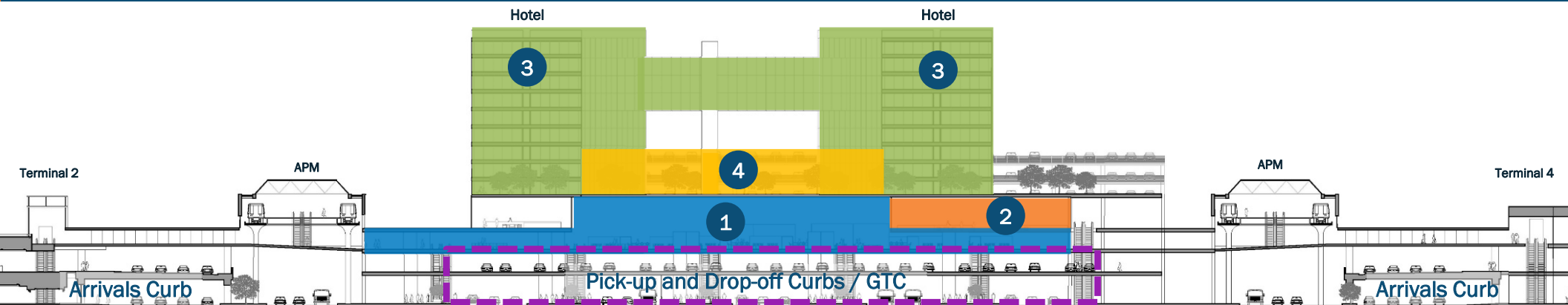


1
New Landside Commercial
Transfer Level

2
Conference Space / Meeting Rooms

3
Hotel

4
Courtyard & Outdoor Exhibit
Palm Garage Levels Beyond

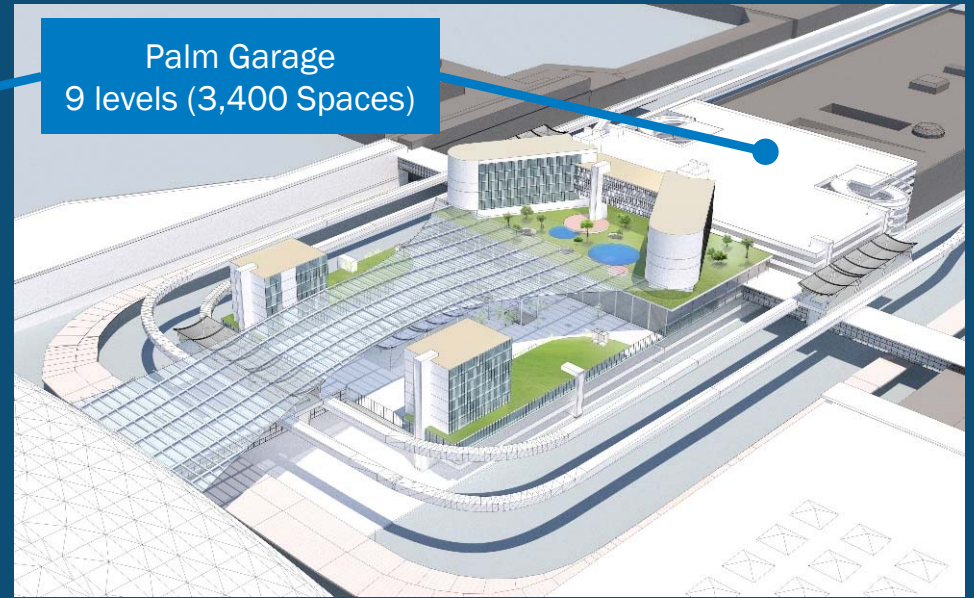


Commercial Center

POTENTIAL LANDSIDE REDEVELOPMENT



PHASE 1
Proposed Palm Garage
Redevelopment and Hotel



Palm Garage
9 levels (3,400 Spaces)

LONG-TERM EXPANDABILITY
(Dependent on Terminal 3 Redevelopment)
Landside Commercial Center



Landside Development Strategy

Transportation Modes Comprising Landside Development



RENTAL CAR



PARKING



TAXI



RAIL



LIMO



RIDE SHARING



 AIRPORT AREAS PRESERVED FOR POTENTIAL LANDSIDE FACILITIES DEVELOPMENT

 RESERVED FOR POTENTIAL FUTURE GATE EXPANSION

 ON-AIRPORT ROADWAY IMPROVEMENTS
 OFF-AIRPORT ROADWAY IMPROVEMENTS

Intermodal Center

LOOKING TO THE SOUTH/SOUTHWEST



LOOKING TO THE EAST



Potential Integrated Development (To be further studied) Could include, but not be limited to:

- Multiple Modes of Ground Transportation & Rail
- Public Parking
- Employee Parking
- Bag Tagging/Drop-off for Early Arriving Passengers
- Entertainment
- Office
- Food Service Options



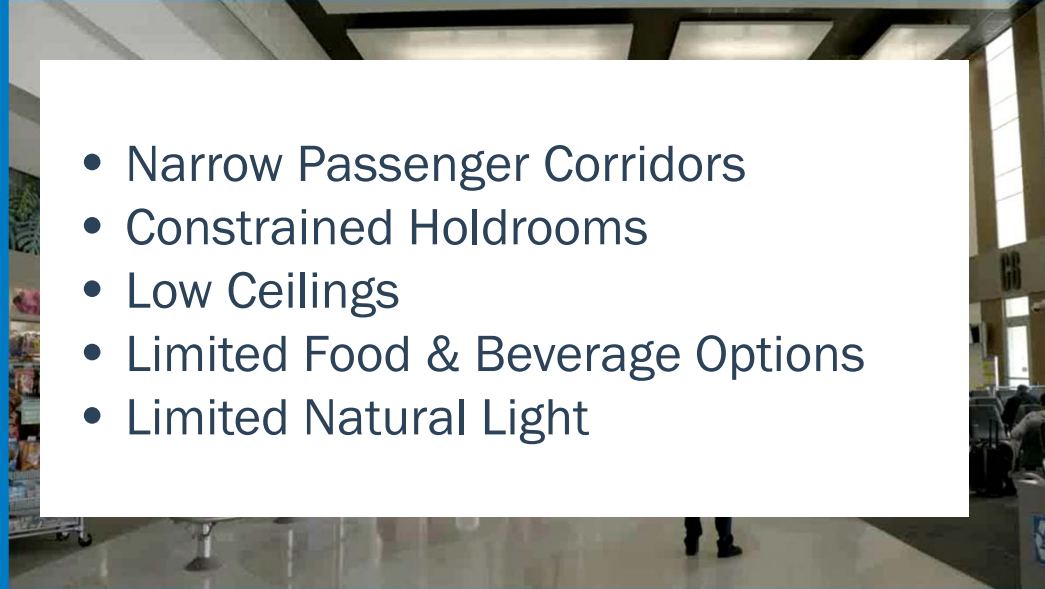
Passenger Experience

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- 
- Follows FLL Terminal Design Guidelines
 - Open Interiors With High Ceilings
 - Expanded Food & Beverage Options
 - Design Facilitates Natural Lighting

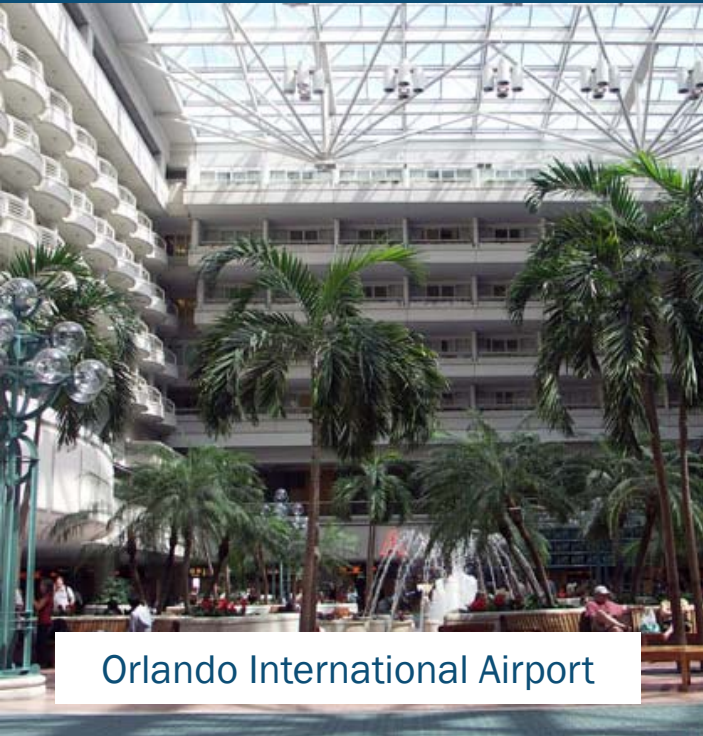
Existing Concourse F

Terminal 3

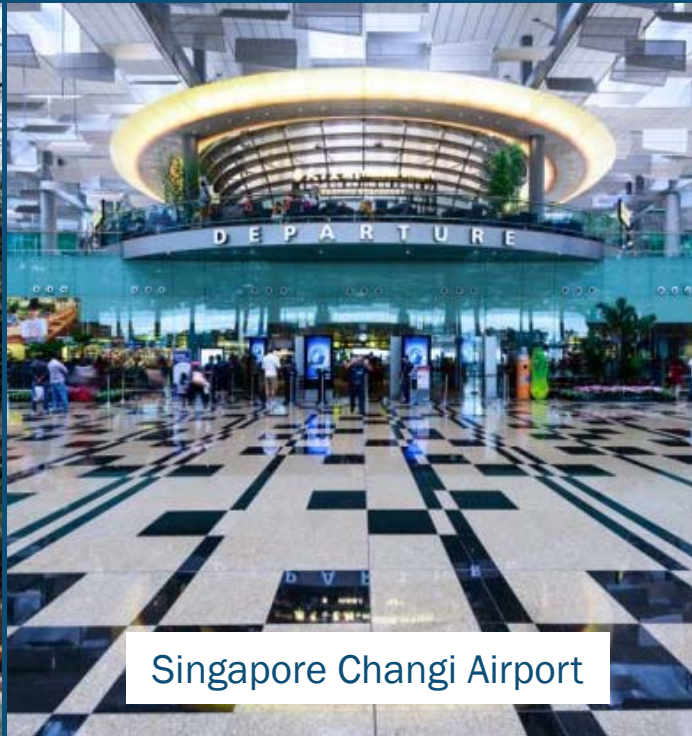
- 
- Narrow Passenger Corridors
 - Constrained Holdrooms
 - Low Ceilings
 - Limited Food & Beverage Options
 - Limited Natural Light

Existing Concourse G

Terminal 4



Orlando International Airport



Singapore Changi Airport



Zurich Airport

Future Opportunities – Illustrative Examples



Assessment of Additional Airport Needs

Analysis Review and Task Objective

- Airfield, terminal and landside development alternatives have been identified and evaluation is nearing completion
- Non-terminal development alternatives include:
 - Cargo
 - General aviation/FBO development
 - Airport/airline support facilities
 - Other aeronautical and non-aeronautical uses
- Task Objectives:
 - Prioritize development initiatives for available on-airport property (Contiguous and non contiguous parcels)
 - Discuss potential off-airport land opportunities to support Airport needs

Cargo Expansion Opportunities

The Master Plan analysis has concluded that FLL is well situated to accommodate the cargo projections for the 20-year planning horizon; however expansion opportunities are being analyzed and include:

- Expand belly cargo warehouse capacity to better serve new entrants, particularly for foreign flag carriers
- Expand the air cargo apron for UPS to accommodate two B767 aircraft simultaneously during peak demand periods
- Identify a potential area for future cargo facility development, should a new entrant cargo carrier/developer require cargo warehouse facilities at FLL.

General Aviation/FBO Facility Planning Considerations

- FLL Market Trends:
 - FBOs targeting high end corporate activity
 - Primary demand for aircraft storage hangars
 - Bombardier looking to relocate from existing location (sub-tenant to Signature Flight Support)
- Baseline Requirements:
 - In accordance with FAA Approved Forecast
 - In general, reflective current FBO expansion plans (including Signature and National Jets)
- Sensitivity Analysis:
 - Intended for contingency planning only
 - In accordance with FAA's National Aerospace Forecast
 - Reflective of current FBO expansion plans + approx. 225,000 s.f. of additional hangars

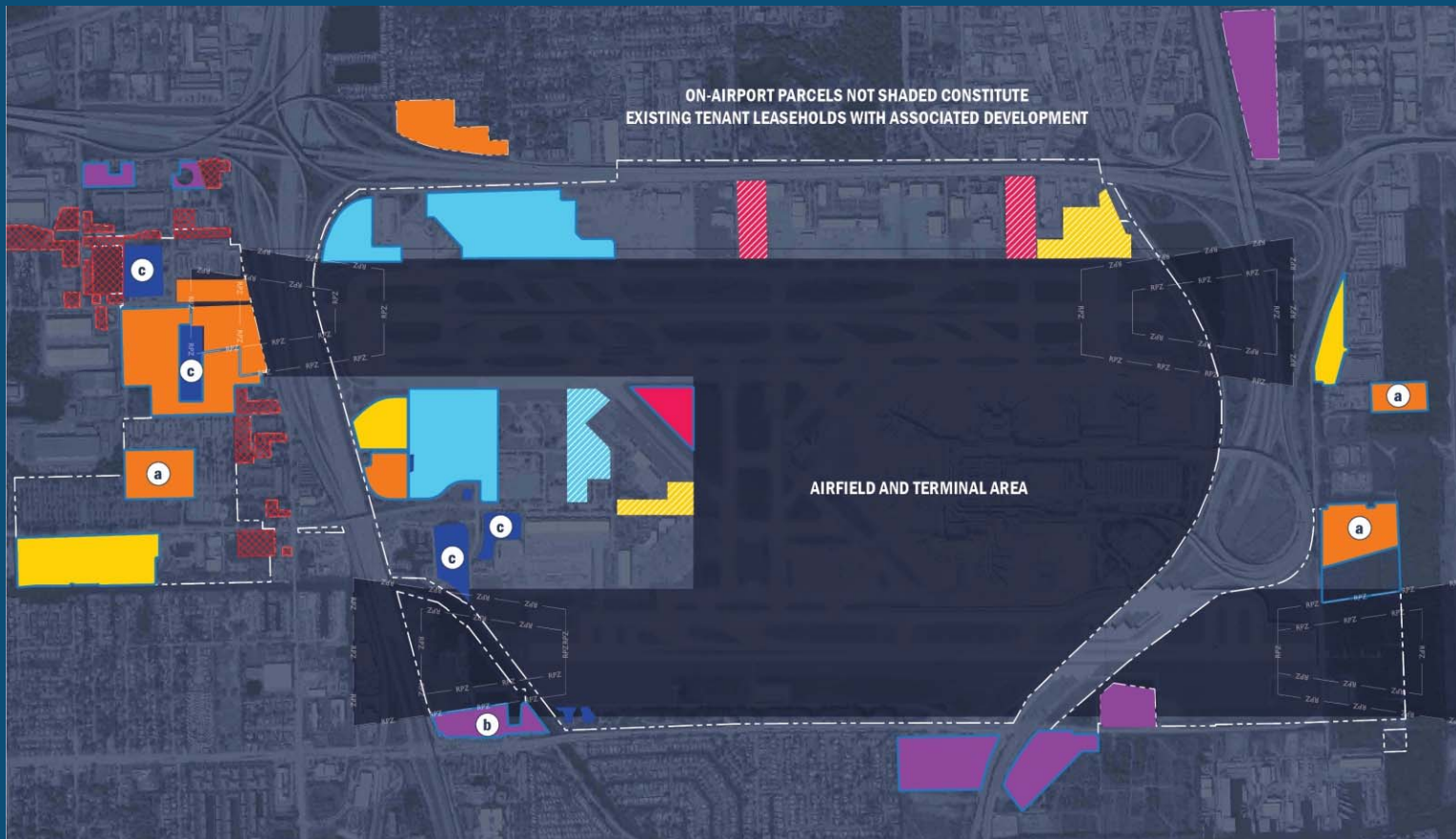
FLL 2035 Facility Deficiencies (Acres)

Facility Type	Existing Area	Deficiency	2035 Gross Requirement
Cargo	34.2	1.5 ^{1/}	35.7
General Aviation ^{2/}	91.7	10.3	102.0
Airline/Airport Support:			
- Flight Kitchens	0.5	1.5	2.0
- Fuel Farm	3.3	1.0	4.3
- ARFF	1.7	2.3 ^{3/}	4.0 ^{3/}
- Public Safety Office	0.75	1.0 ^{3/}	1.7
- Airport Maintenance	2.6	6	8.6
- GSE Storage and Maintenance	- ^{4/}	- ^{4/}	- ^{4/}
- GA Customs	1.0	0.7 ^{3/}	1.7
- Centralized Receiving/Distribution	0.0	1.5	1.5
Drainage Contingency (28%)		7.2 ^{5/}	7.2 ^{5/}
Total	135.75	33.0 ^{6/}	168.8 ^{6/}

Notes:

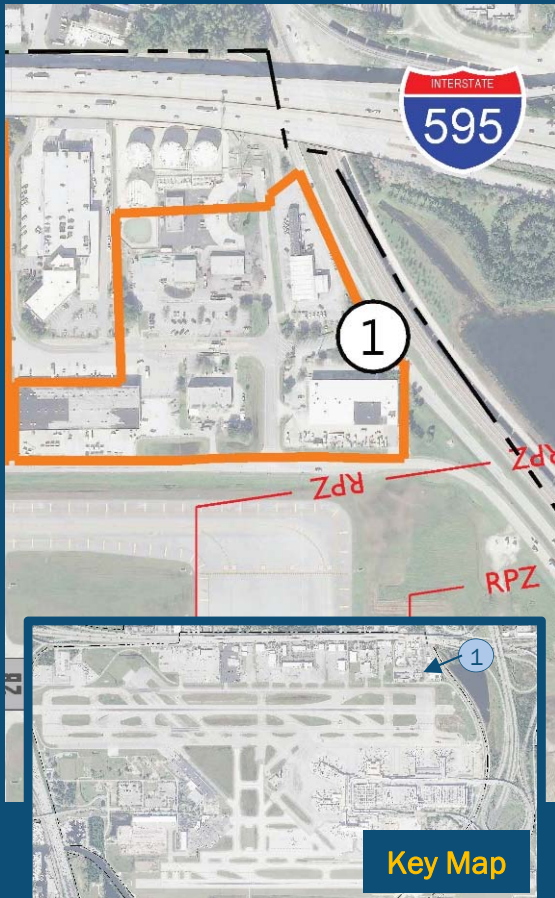
- 1/ Cargo deficiency accounts for additional aircraft parking for UPS, and nominal expansion for belly cargo
- 2/ General Aviation includes Bombardier and Embraer.
- 3/ Assumes full relocation of ARFF, GA Customs and Public Safety functions
- 4/ GSE Storage and Maintenance facilities are embedded with other airline functions.
- 5/ To account for drainage requirements, the overall deficiency was increased to 34.2 acres which includes a 28% retention requirement for future development.
- 6/ The total for new facilities has been increased for the potential full replacement of ARFF, Public safety Office and GA Customs facilities.

Assessment of Additional Facility Needs



- (a) Limited Development (Wooded Area/ Environmental Considerations)
- (b) Limited Development (Building Restrictions) - Airspace/NAVAID
- (c) Wetlands / Existing Retention
- ▨ Interlocal Agreement Parcels
- Development Opportunity - Vacant
- ▨ Development Opportunity - Occupied
- General Aviation
- Support Facilities
- Aeronautical (Demand Driven)
- Non-Aeronautical Use
- Dry Retention (Stormwater)
- Wet Retention (Stormwater)

Parcel 1 Development Priorities



Parcel ID	PROPOSED 1 (12 Acres)
First Priority	Support (See note.)
Second Priority	Belly Cargo
Third Priority	-
Fourth Priority	-

Key Considerations:

- NE Quadrant Study Recommendations
- Long-term use of Building N-35 (former maintenance building)
- Fuel Farm expansion needs
- AOA Gate 100
 - Potential 504 conversion
- BCAD Maintenance Requirements
- Limited airfield access

Note: Parcel 1 can accommodate centralized receiving and distribution warehouse, fuel farm expansion, potential gate 100 relocation and potential maintenance storage.

Parcel 2 Development Priorities



Parcel ID	PROPOSED 2 (8 Acres)
First Priority	GA (Corporate)
Second Priority	Support (See Note)
Third Priority	Belly Cargo (See Note)
Fourth Priority	-

Key Considerations:

- Current Jetscape lease
Consideration for existing paint hangar
- Not ideal for FBO/Cargo/MRO use
 - Parcel/hangar depths limit aircraft compatibility
 - Limited frontage/exposure to airfield

Note: Parcel 2 can accommodate potential gate 100 relocation, expanded maintenance storage and belly cargo expansion.

Parcel 3 Development Priorities

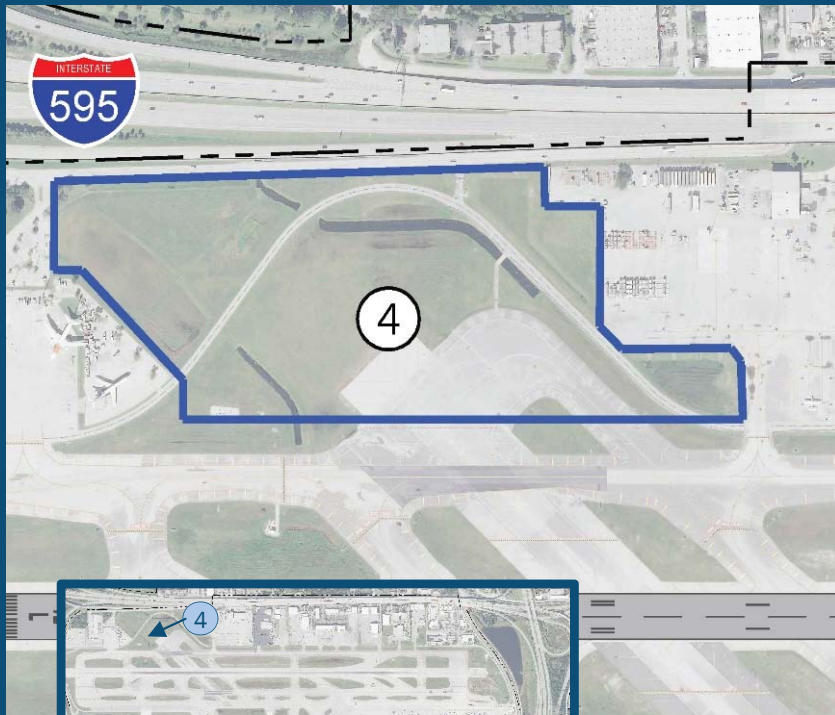


Parcel ID	PROPOSED 3 (7 Acres)
First Priority	GA (FBO Expansion)
Second Priority	-
Third Priority	-
Fourth Priority	-

Key Considerations:

- Currently utilized for BCAD storage
- National Jets has expressed interest to expand and redevelop Parcel 3
- Otherwise not suitable for FBO/Cargo/MRO use
 - Antiquated buildings
 - Parcel depth limit aircraft compatibility
 - Limited frontage/exposure to airfield

Parcel 4 Development Priorities

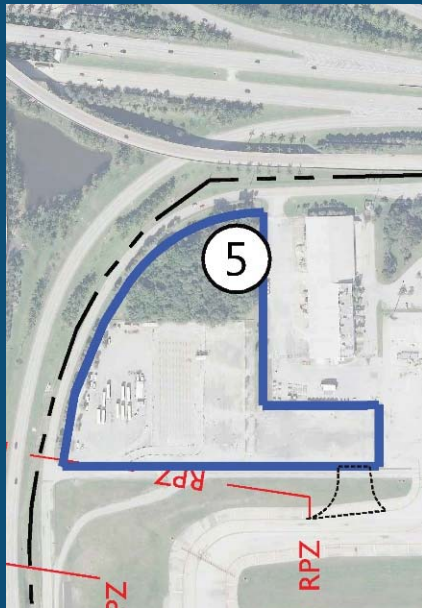


Parcel ID	PROPOSED 4 (30.9 Acres)
First Priority	Aeronautical - Demand Driven (FBO, MRO, Cargo, RON)
Second Priority	-
Third Priority	-
Fourth Priority	-

Key Considerations:

- Adjacent to existing cargo facilities
- Drainage modifications anticipated
- Requires relocation of ASOS
- Good airfield frontage

Parcel 5 Development Priorities



Parcel ID	PROPOSED 5 (9 Acres)
First Priority	Aeronautical (Demand Driven)
Second Priority	Support Facilities
Third Priority	-
Fourth Priority	-

Key Considerations:

- Existing TNC staging area
- Limited airfield access
- Tree clearing may be required
- Airspace limitations

Parcel 10 Development Priorities

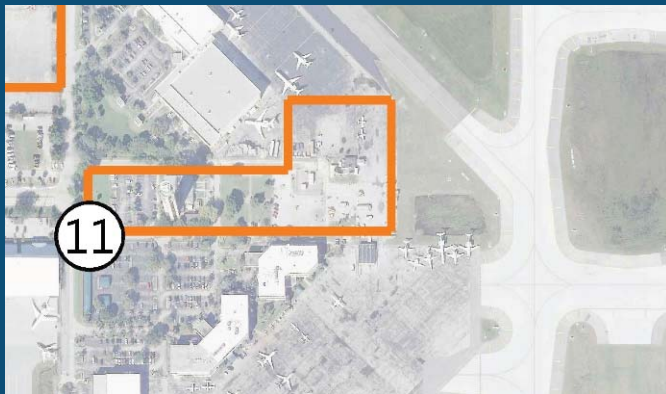


Parcel ID	PROPOSED 10 (6.5 Acres)
First Priority	ARFF/GA
Second Priority	-
Third Priority	-
Fourth Priority	-

Key Considerations:

- Primary existing airfield retention area
- No landside access
- Development may require closure of Taxiway E
- On-going discussion with Signature to expand leasehold area

Parcel 11 Development Priorities

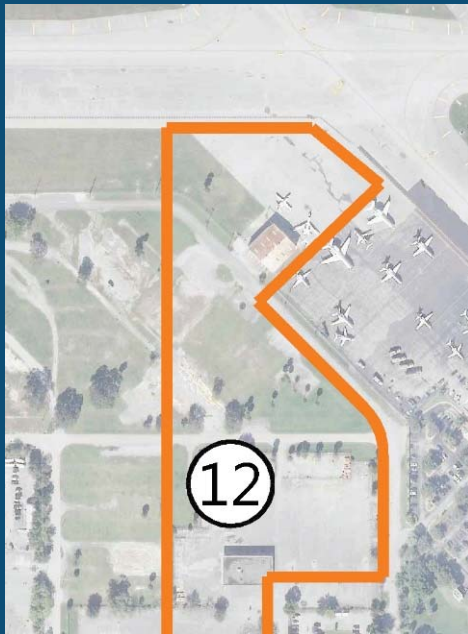


Parcel ID	PROPOSED 11 (3.8 Acres)
First Priority	Support (Security/ Public Safety)
Second Priority	GA (Signature Expansion /Reconfiguration)
Third Priority	-
Fourth Priority	-

Key Considerations:

- Existing ATC tower (to be relocated) and airfield electric vault
- Current ALP proposes future ARFF relocation
- Adjacent to Signature and Sheltair leaseholds
- Otherwise not suitable for aeronautical development
 - Parcel depth limit aircraft compatibility
 - Limited frontage/exposure to airfield

Parcel 12 Development Priorities



Parcel ID	PROPOSED 12 (12 Acres)
First Priority	Aeronautical (Demand Driven)
Second Priority	-
Third Priority	-
Fourth Priority	-

Key Considerations:

- On-going discussion with potential tenant
- Adjacent to Signature and future Jetscape parcels
 - Would provide potential future expansion opportunities

Parcel 13 Development Priorities

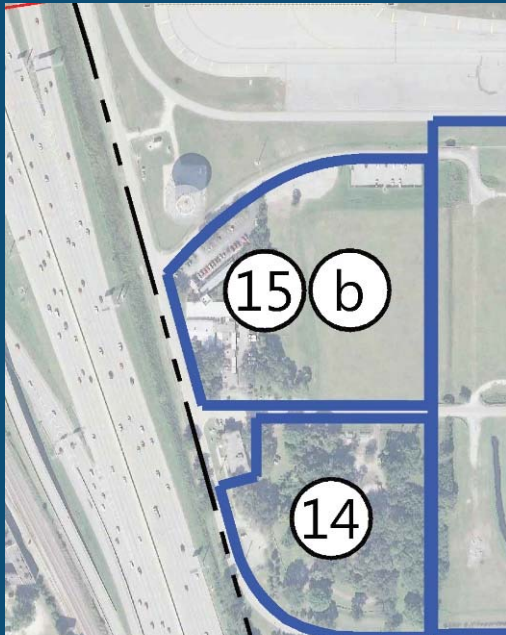


Parcel ID	PROPOSED 13 (30 Acres)
First Priority	Aeronautical (Demand Driven)
Second Priority	-
Third Priority	-
Fourth Priority	-

Key Considerations:

- On-going discussion with potential tenant
- Adjacent to future Jetscape parcel
 - Would provide potential future expansion opportunities
- Airspace/NAVAID constraints

Parcel 14 & 15 Development Priorities



Parcel ID	PROPOSED 14 (5.7 Acres)	PROPOSED 15 (8 Acres)
First Priority	Retention/ Drainage	Customs Facility
Second Priority	-	GA (Demand Driven)
Third Priority	-	-
Fourth Priority	-	-

Key Considerations:

- Parcel 14
 - No airfield access
 - Airspace/NAVAID constraints
- Parcel 15
 - Limited airfield access
 - Airspace/NAVAID constraints
 - Demolition of existing facilities may be required

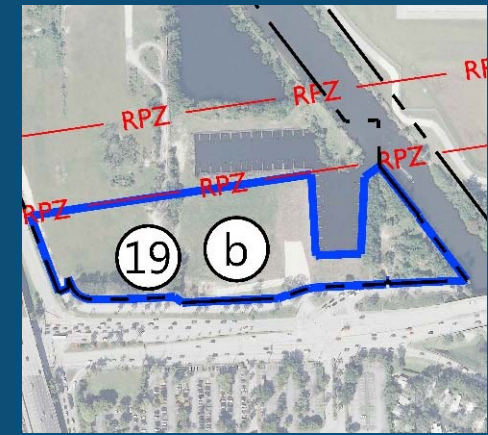
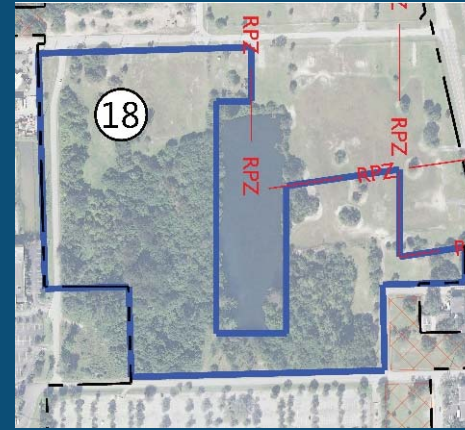
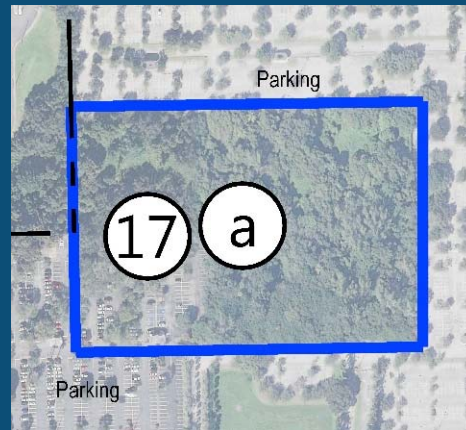
Non-Contiguous Parcels– West

- Airport Maintenance
- Flight Kitchens
- Non-Aeronautical
- Parking

- Detention/Retention

- Detention/Retention
- Non-aeronautical
- Parking
- Maintenance (Warehouse/storage)
- Recycling/Waste Disposal (MRF)

- Airport storage
- Must develop in coordination with Dania Beach

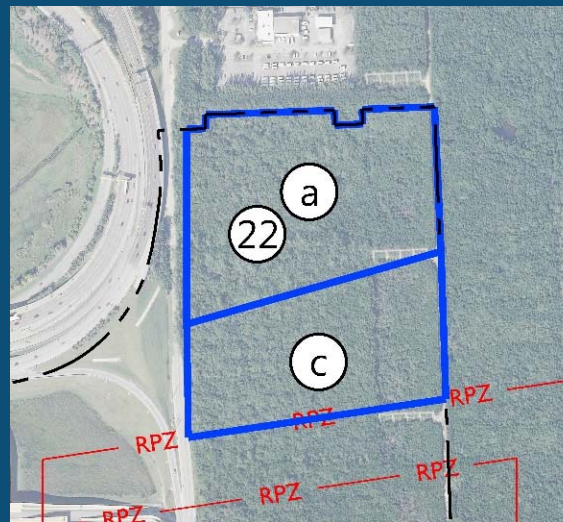


Non-Contiguous Parcels – East

- Parking
- Non-aeronautical
- Airport support (Maintenance)
- Cell phone waiting area
- Retention

- Detention/Retention
- Non-aeronautical
- Parking

- APM Support (Parcel 24)
- TNC Expansion (Parcel 24)
- Detention/Retention (Parcel 23)



Non-Contiguous Parcels– North

- Detention/Retention (May not be viable, remaining capacity needs to be determined)



- Fuel Farm
- Co-development with Port for logistics hub
- Non-aeronautical
- Parking



- Non-aeronautical
- Potential disposal/transfer

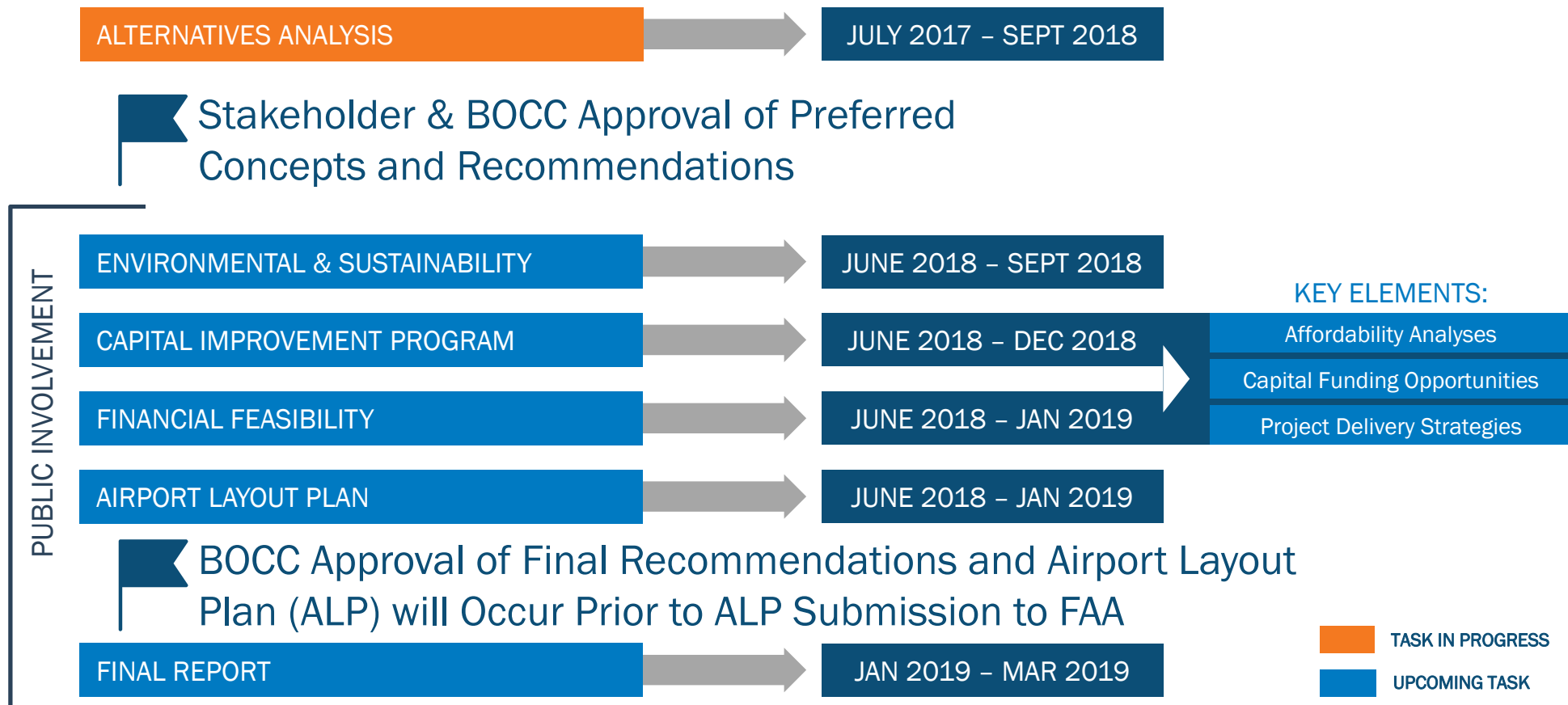




Next Steps

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Next Steps



Thank You

