DSM New Terminal

Board Presentation

HNTB + bnim

September 13, 2022

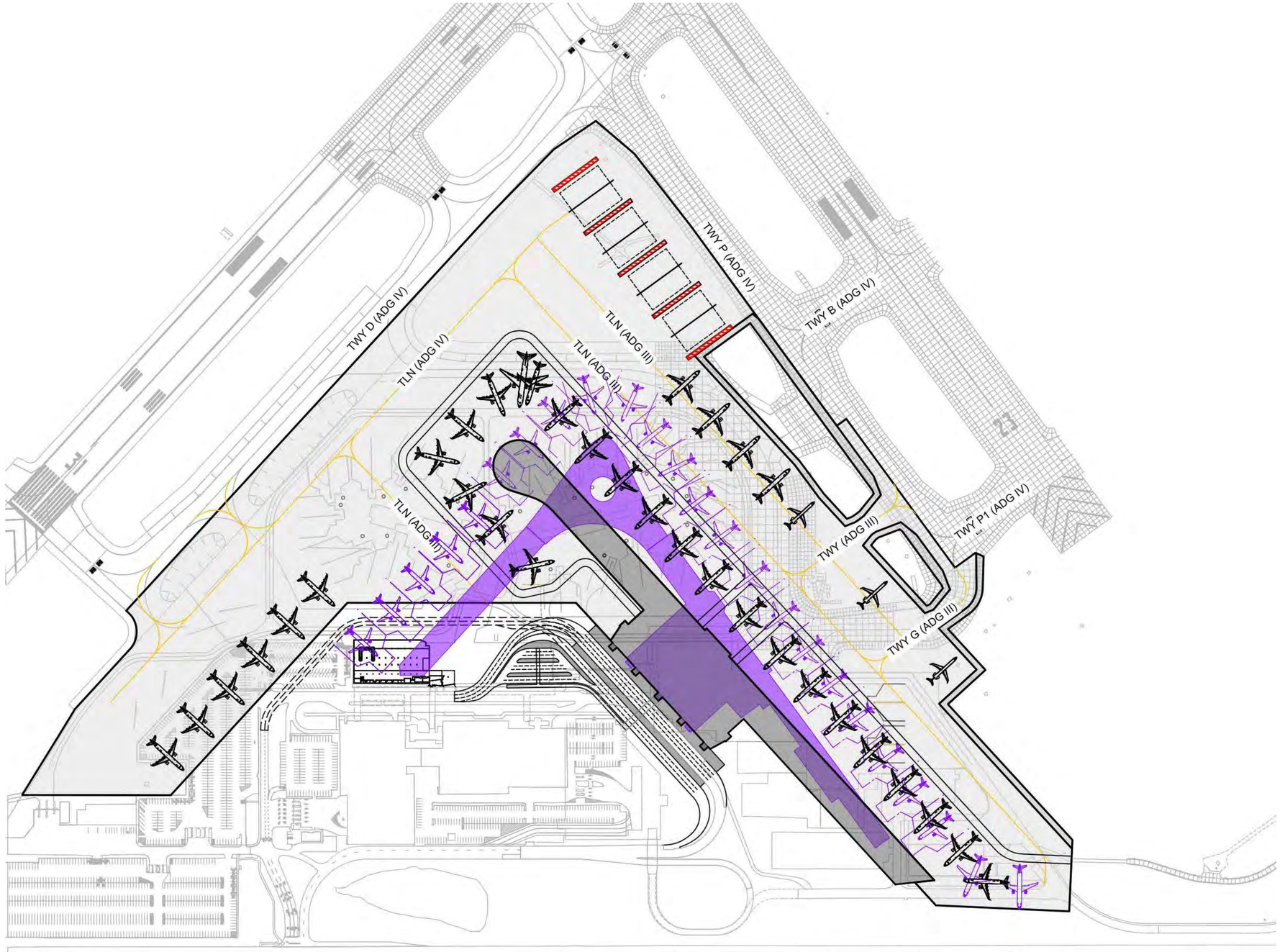
Agenda

- Review of Basis of Design Plans
  - Overview
  - New Terminal
  - Renovation of Existing Terminal
  - Pedestrian Bridge / Stair Tower 8
  - Site Updates
  - High Level Phasing
- Community Engagement Meeting
- Next Steps

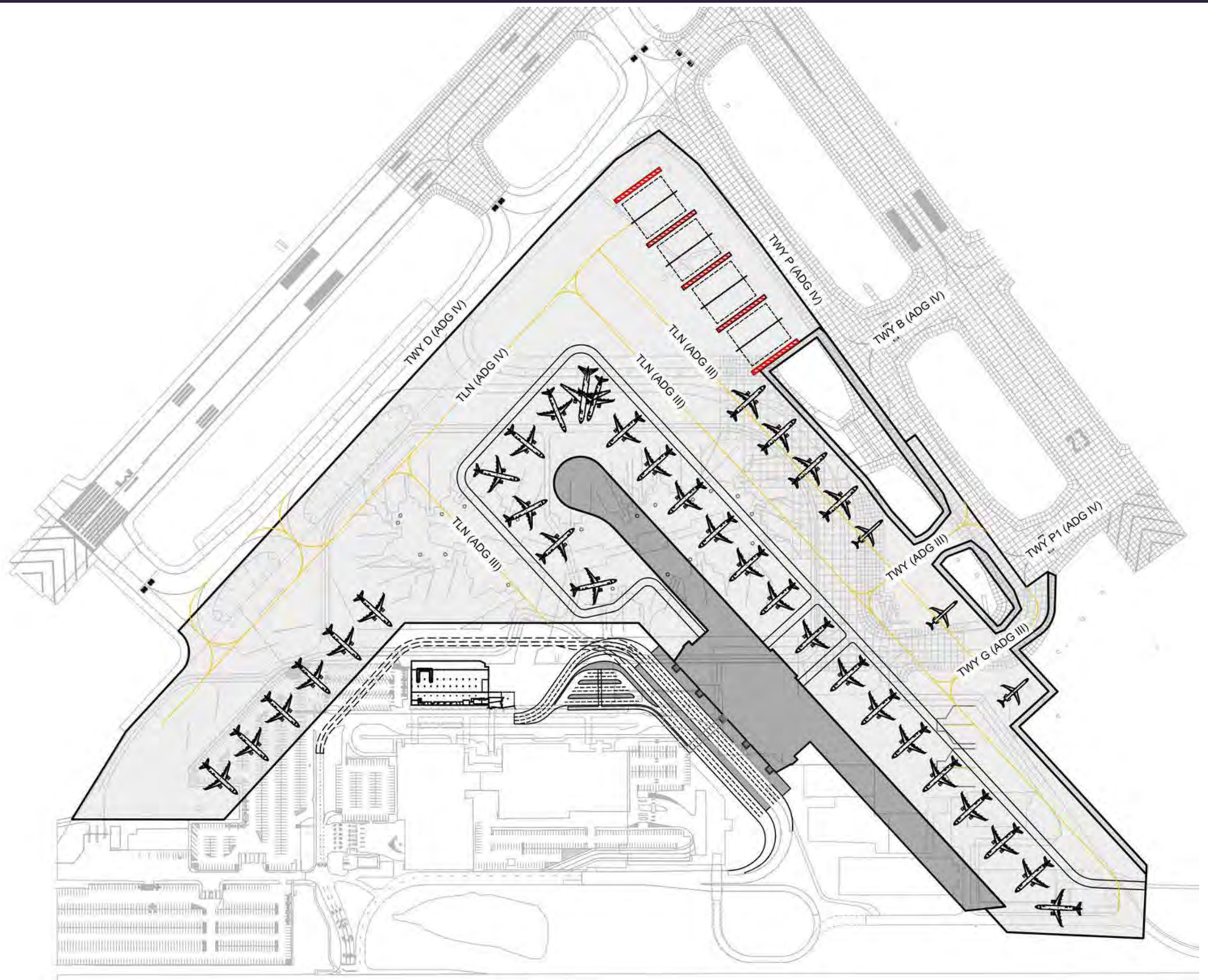
Basis of Design

Program Overview

Overall Site Diagram

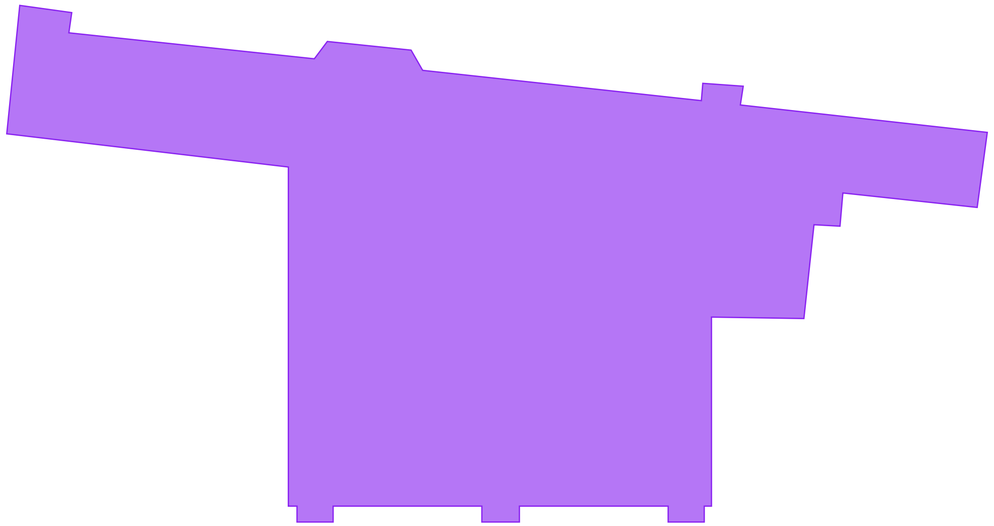


Overall Site Updates from Supplemental PDM



- Realigned terminal building to be parallel with roadway
- Dual-load South Concourse
- Future Dual Taxilane

Phase 1A Comparison

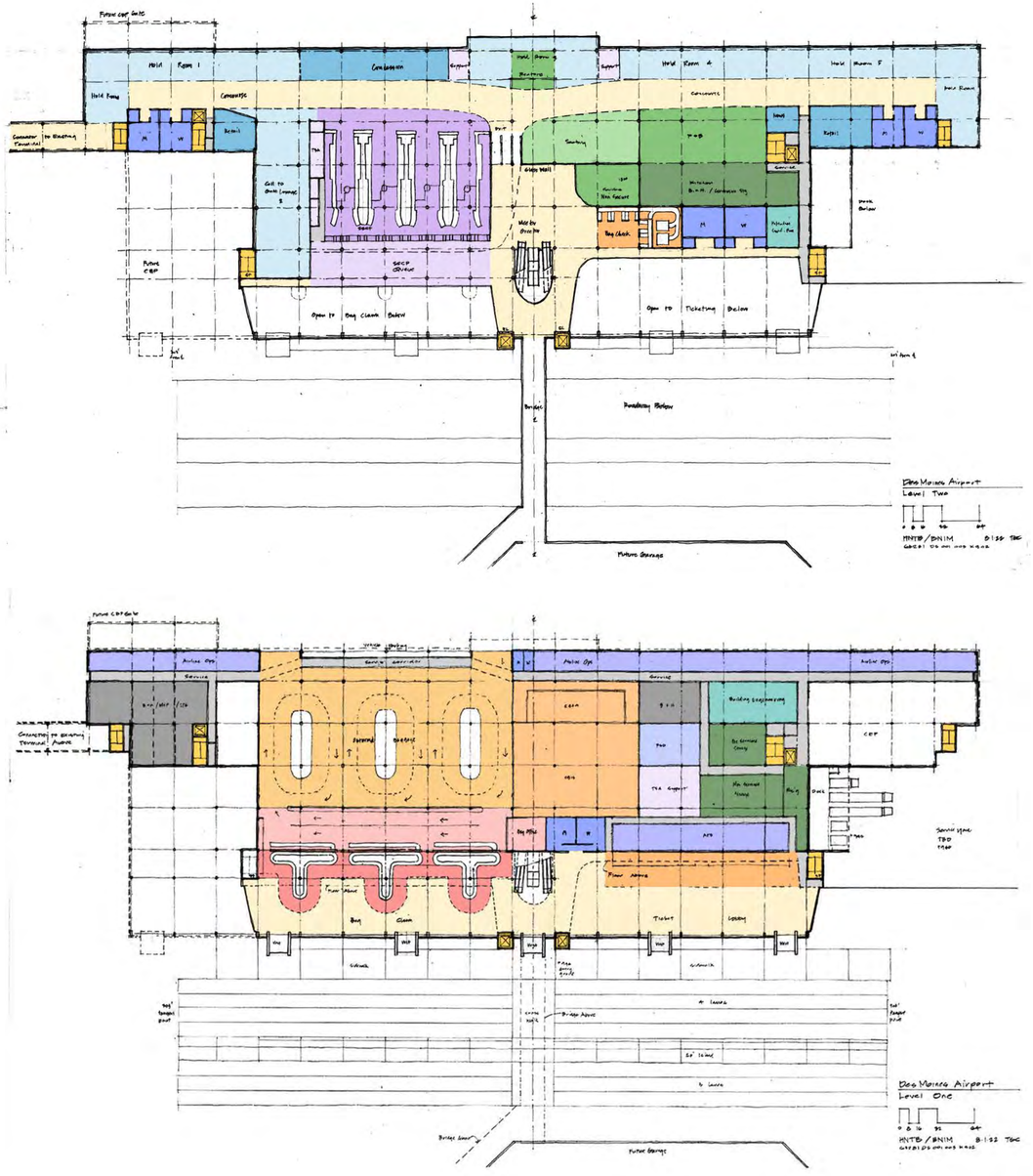


253,144 SF	Terminal SF
11,042 SF	CEP
3,663 SF	Pedestrian Bridge
2,160 SF	Connection to Existing Terminal
270,009 SF	Total
7,000 SF	Admin Offices

257,604 SF	Terminal SF
7,336 SF	CEP
3,663 SF	Pedestrian Bridge*
2,160 SF	Connection to Existing Terminal*
270,763 SF	Total
15,000 SF	Admin Offices

*Calculation used from Supplemental PDM for this Workshop.

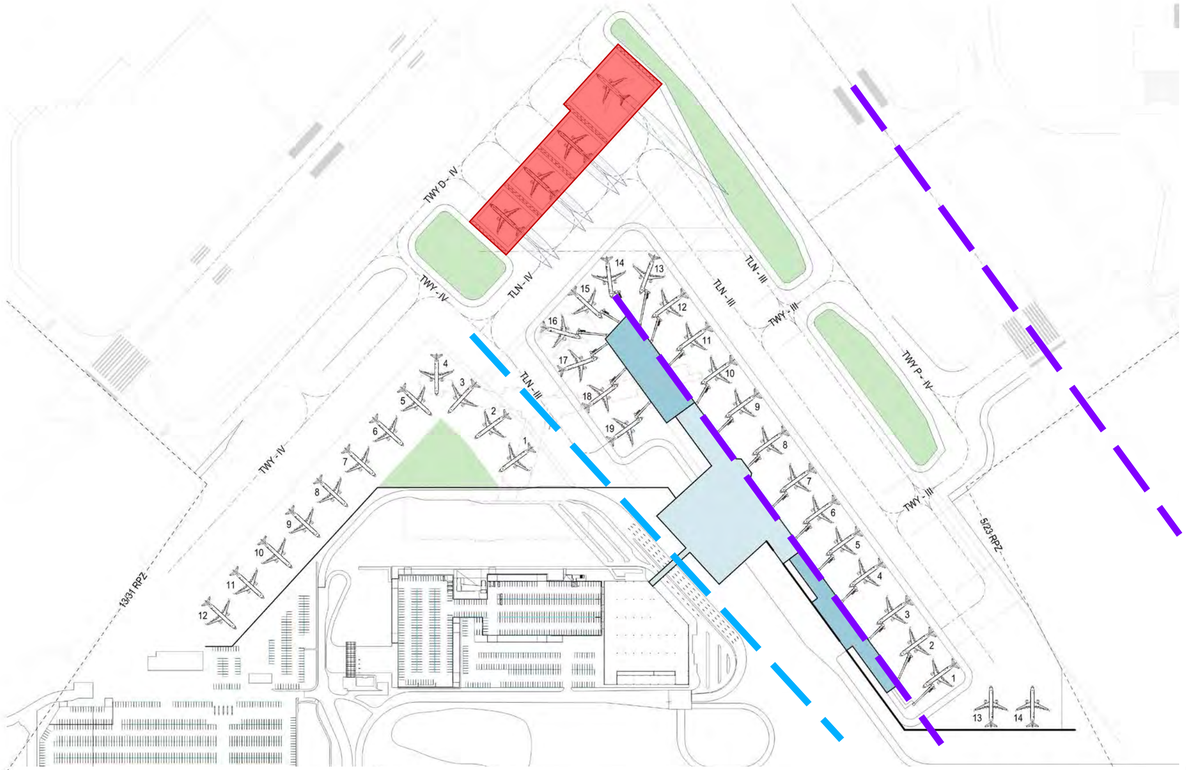
Overall Terminal Updates from Supplemental PDM



- Terminal is wider and shallower in depth
- Building is now orthogonal. All structural bays are the same- No odd sized trapezoidal shapes/grids.
- Moved check-in/ticketing to ground level (just a small self-bag drop on 2nd level)
- Admin offices to be relocated in *existing building* first level baggage claim area

Terminal Updates

Concourse Alignment



Runway Alignment

Potential for more RONs

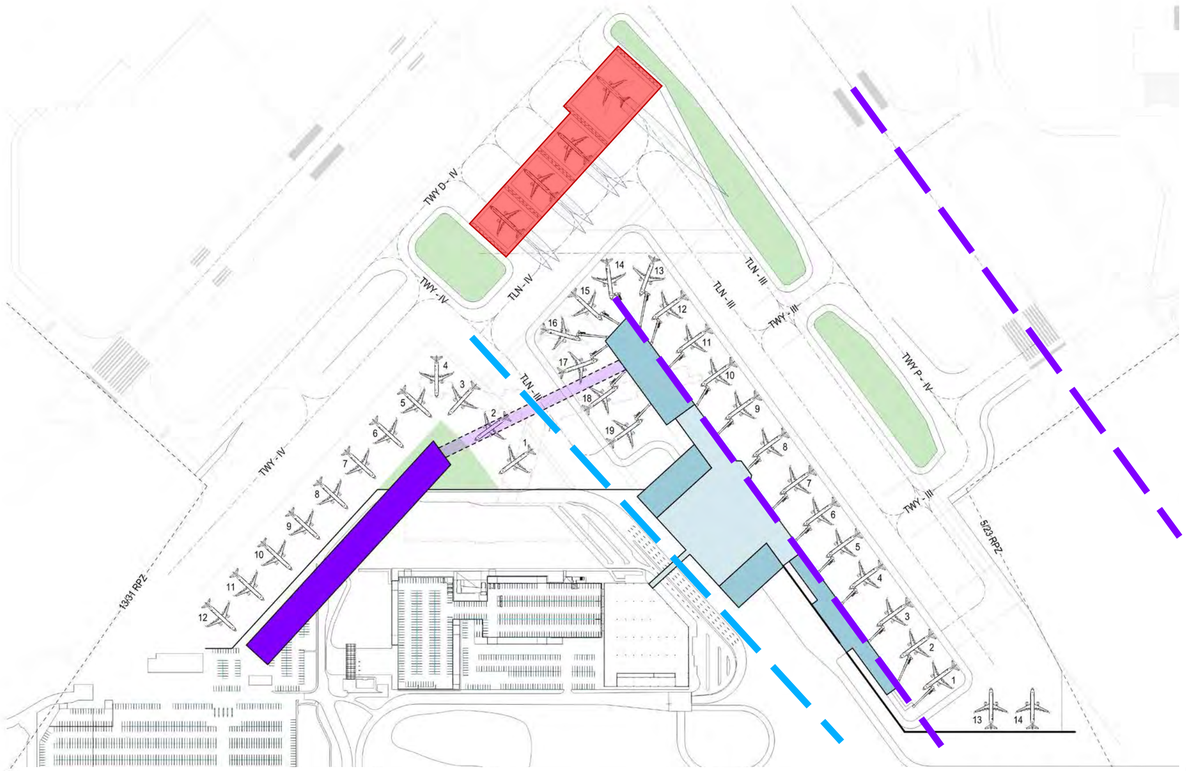
Roadway Alignment

Better future expansion capabilities

More ultimate contact gates

Better deicing queuing

Concourse Alignment - Maximized East Quadrant



Runway Alignment

31 ultimate Contact Gates

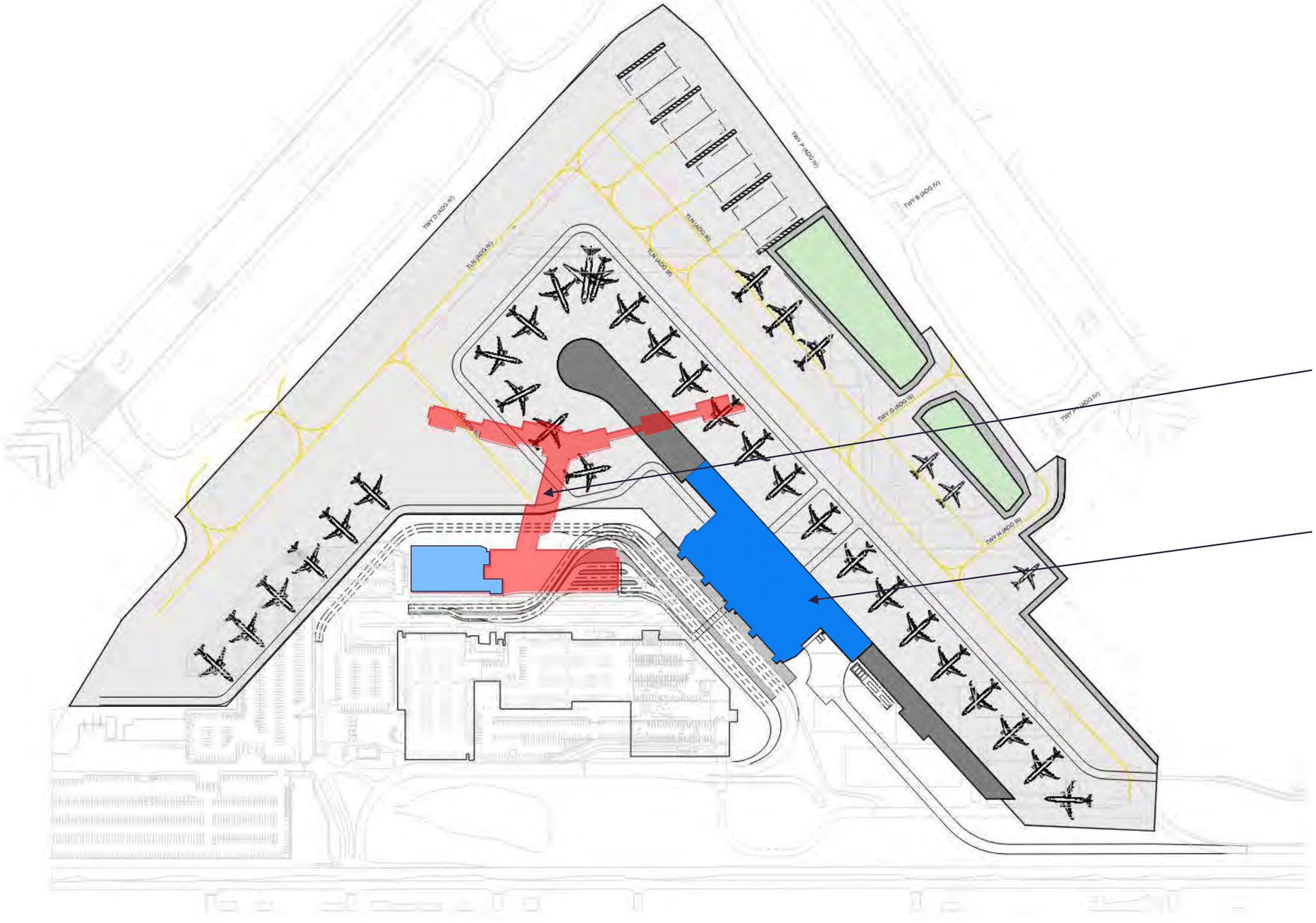
Satellite needed for 20th gate

Roadway Alignment

32 ultimate Contact Gates

Satellite needed for 23rd gate

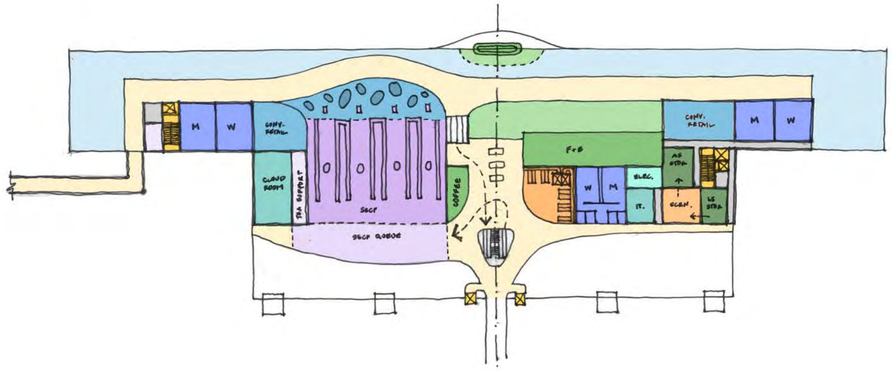
Overall Site Diagram

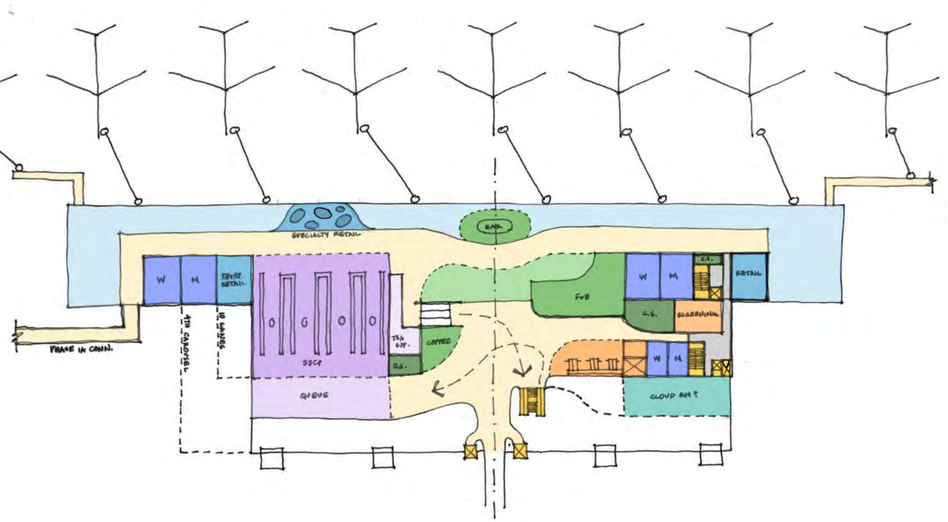


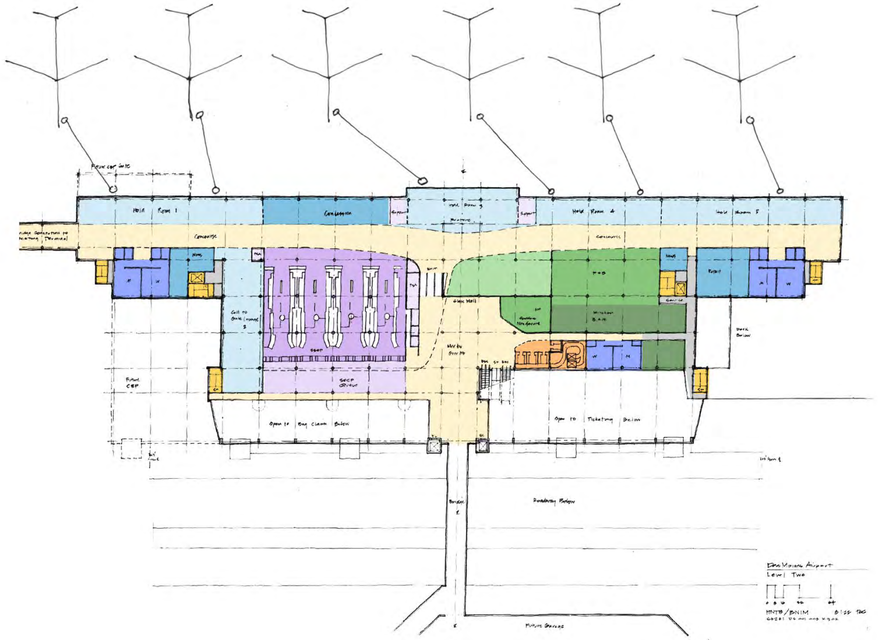
Existing Terminal & Concourses to be Demolished

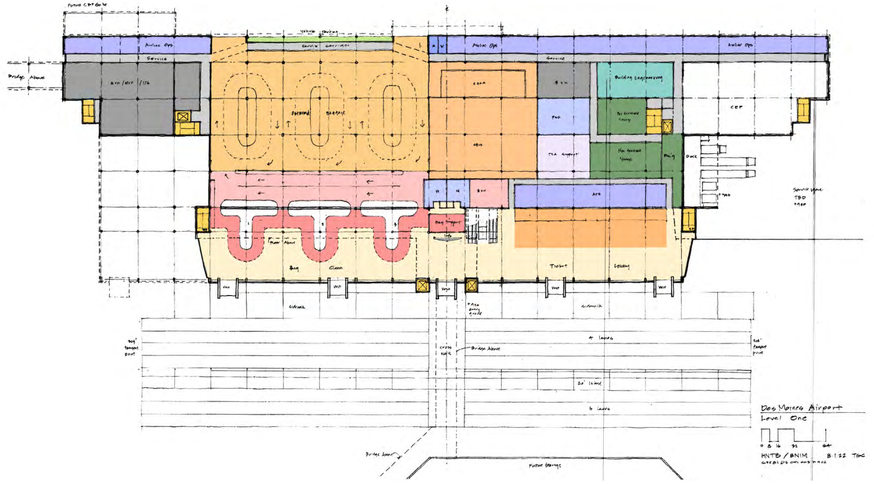
Phase 1 Footprint

Design Process





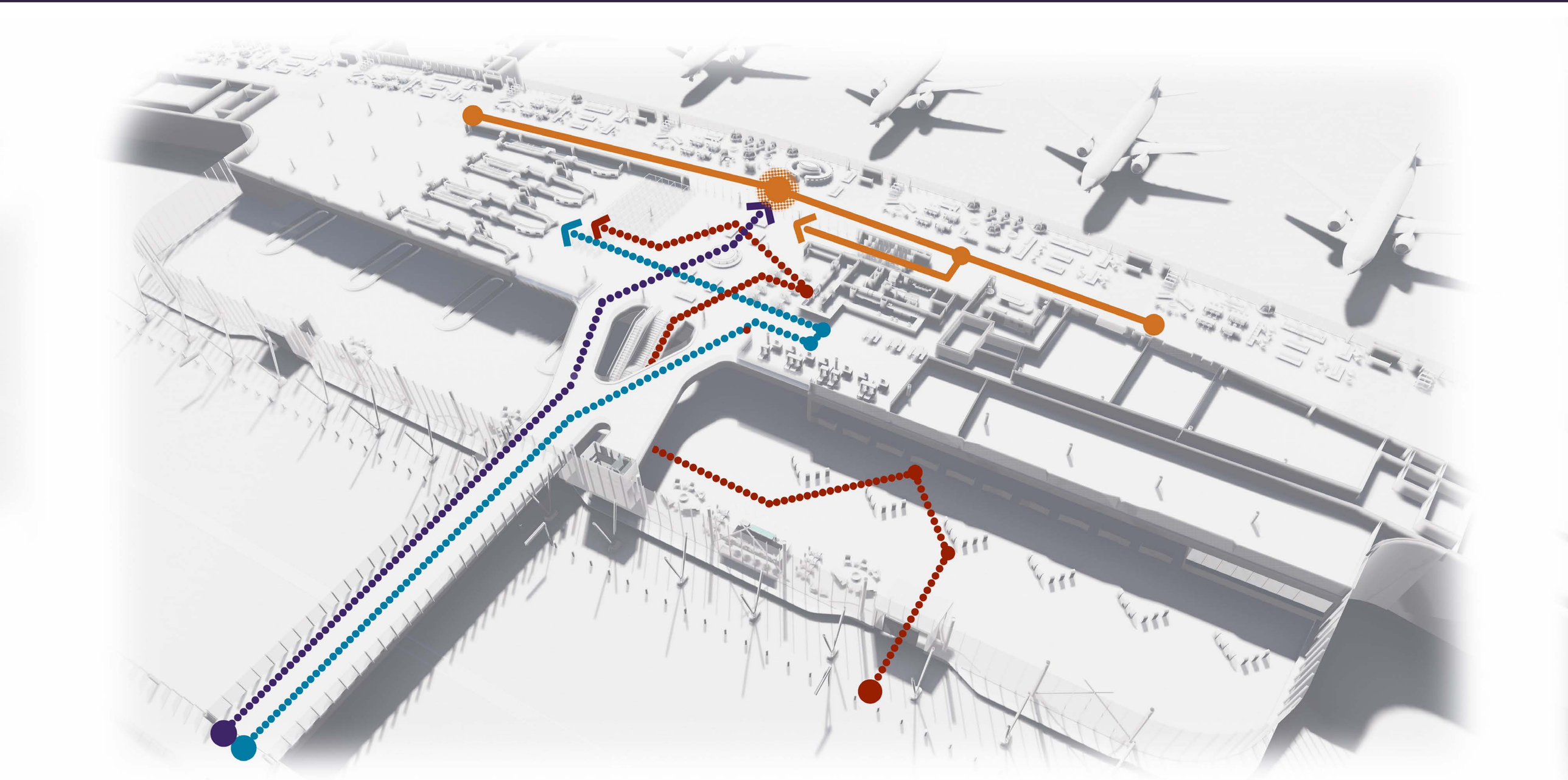




2032 Program (Phase 1A) – Terminal + CEP

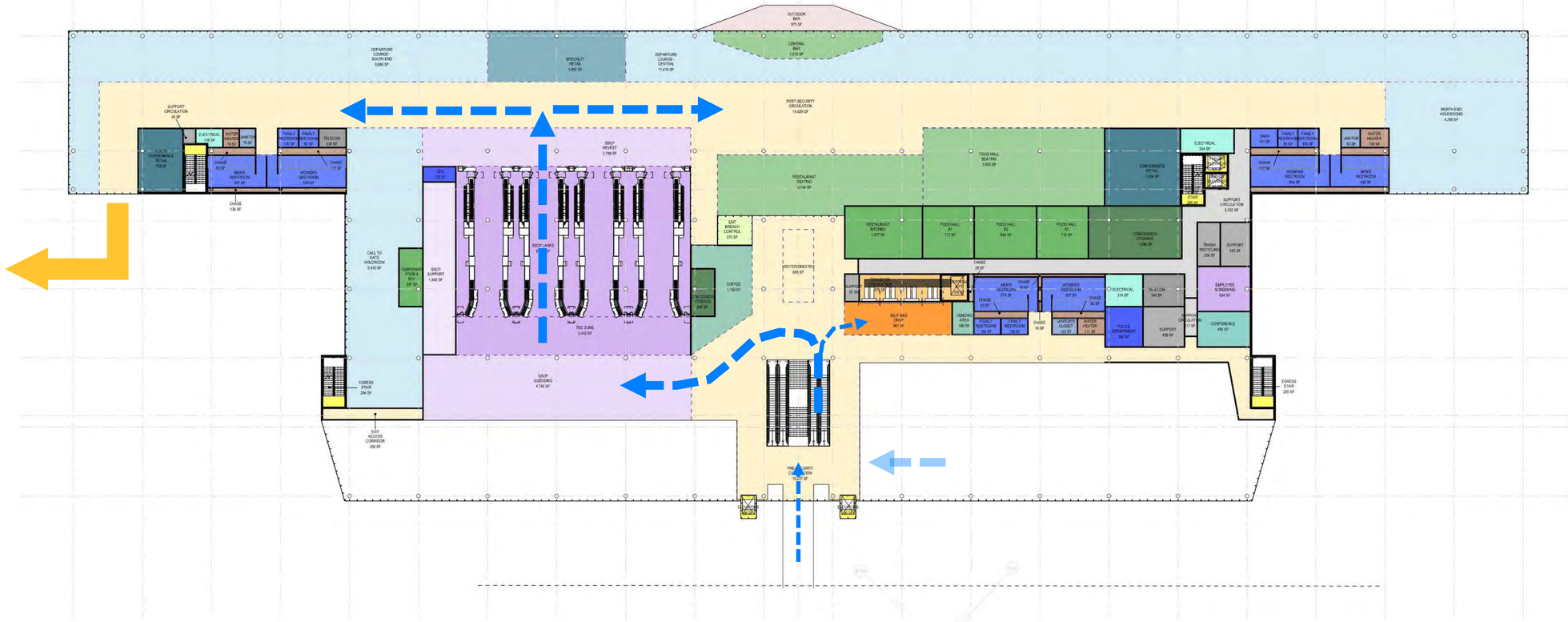
Department	Net Program Req.	Gross Program Req.	Current Takeoffs	Notes
Airport Administration*	1,300	1,430	1,858	Only includes terminal spaces (excl. Cloud Room, incl. small conference)
Airline Operations	15,350	16,885	13,107	Validate with Airline Questionnaires VS. Existing Concourse
Baggage Claim	12,900	14,190	12,961	
CBIS	11,583	12,741	10,918	
Circulation	41,485	45,634	45,211	
Concession Storage	3,700	4,070	5,011	Need to validate Phase 1C requirements for storage near dock
Electrical	6,900	7,590	3,362	
GSE Storage	100	110	0	All space for Phase 1A is covered exterior space at Apron Level
Holdrooms	18,000	19,800	27,778	Opportunity to reduce SF
Inbound Baggage	8,250	9,075	8,150	
Mechanical / FP / Plumb.	11,296	12,426	19,119	
Central Energy Plant	7,500	8,250	7,336	
Outbound Baggage	25,550	28,105	27,829	
Police	520	572	519	
Post-Security Concessions	19,104	21,014	17,487	Recommendation from ICF uses existing concourse.
Post-Security Restrooms	2,825	3,108	2,828	Need to determine desired fixture count for Phase 1A
Pre-Security Concessions	1,500	1,650	1,985	
Pre-Security Restrooms	2,468	2,715	2,416	
SSCP	16,116	17,728	15,427	8 Lanes needed in 2032 vs. 6 lanes assumed
SSCP Queuing	5,500	6,050	4,742	Queuing sized for 8 lanes.
SSCP Support	3,287	3,615	3,794	
Support Circulation	5,500	6,050	12,300	Includes BOH stairs.
Support	5,384	5,922	5,686	Includes loading dock, custodial, restrooms, airport support
Telecom	2,820	3,102	1,287	Need to refine with Burns
Ticketing	8,995	9,895	9,293	
Vertical Circulation	1,600	1,760	4,536	
Totals	**239,533**	**263,487**	**264,940**	**Includes basement dock & mechanical mezzanine**

Passenger Journey



Note: Background has not been updated to match new design.

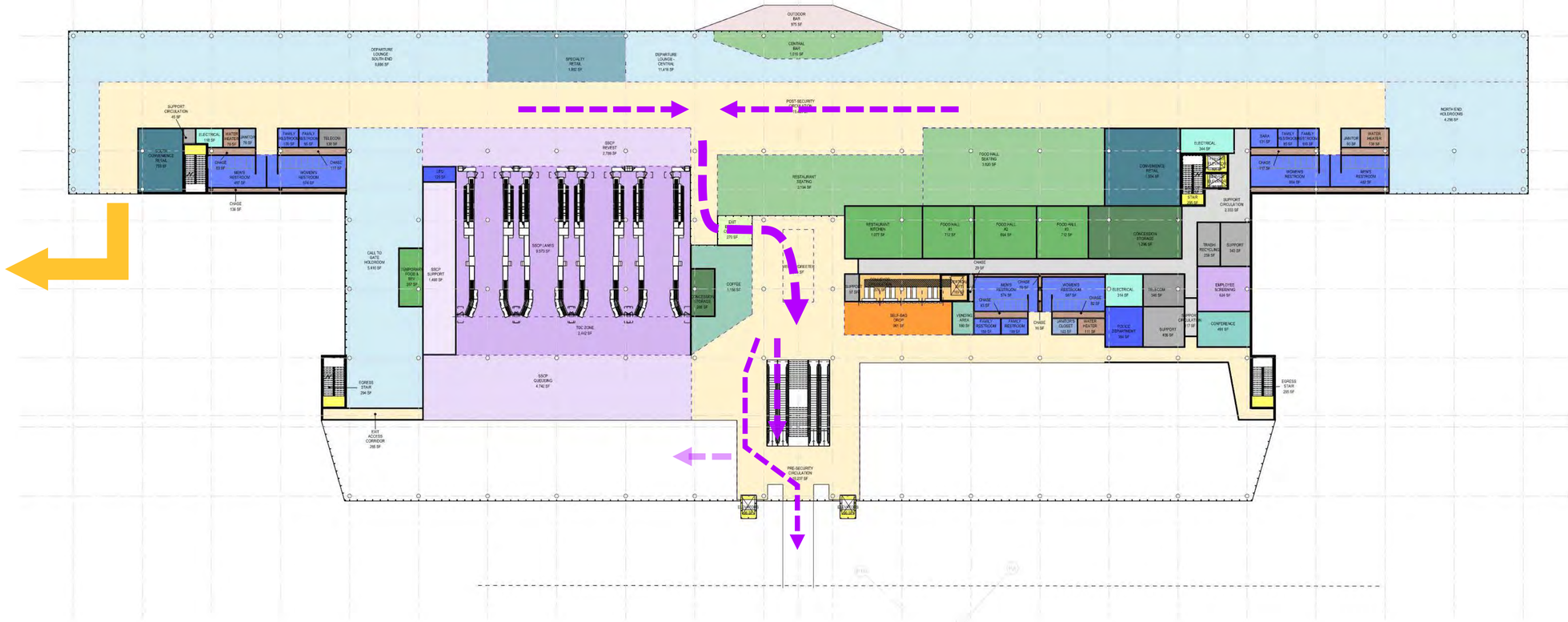
Level 2 - Concourse



GRAPHIC LEGEND

- Self-Bag Drop Area
- Main Circulation
- SSCP Lanes
- SSCP Queue / Revest
- SSCP Support/Circulation
- Airside Concessions
- Landside Concessions
- Concession Storage
- Retail
- Holdrooms
- Restrooms
- Mechanical / Plumbing
- Support Circulation

Level 2 - Concourse



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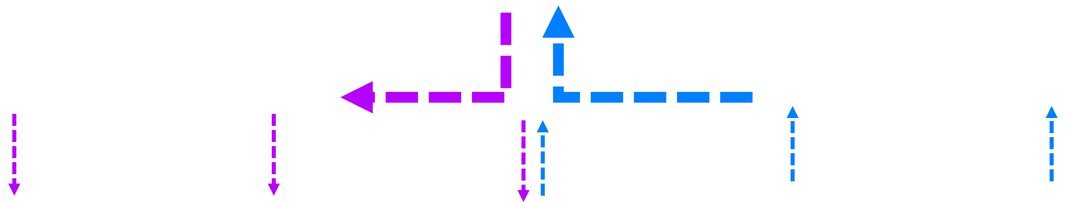
- Holdrooms
- Restrooms
- Mechanical / Plumbing
- Support Circulation

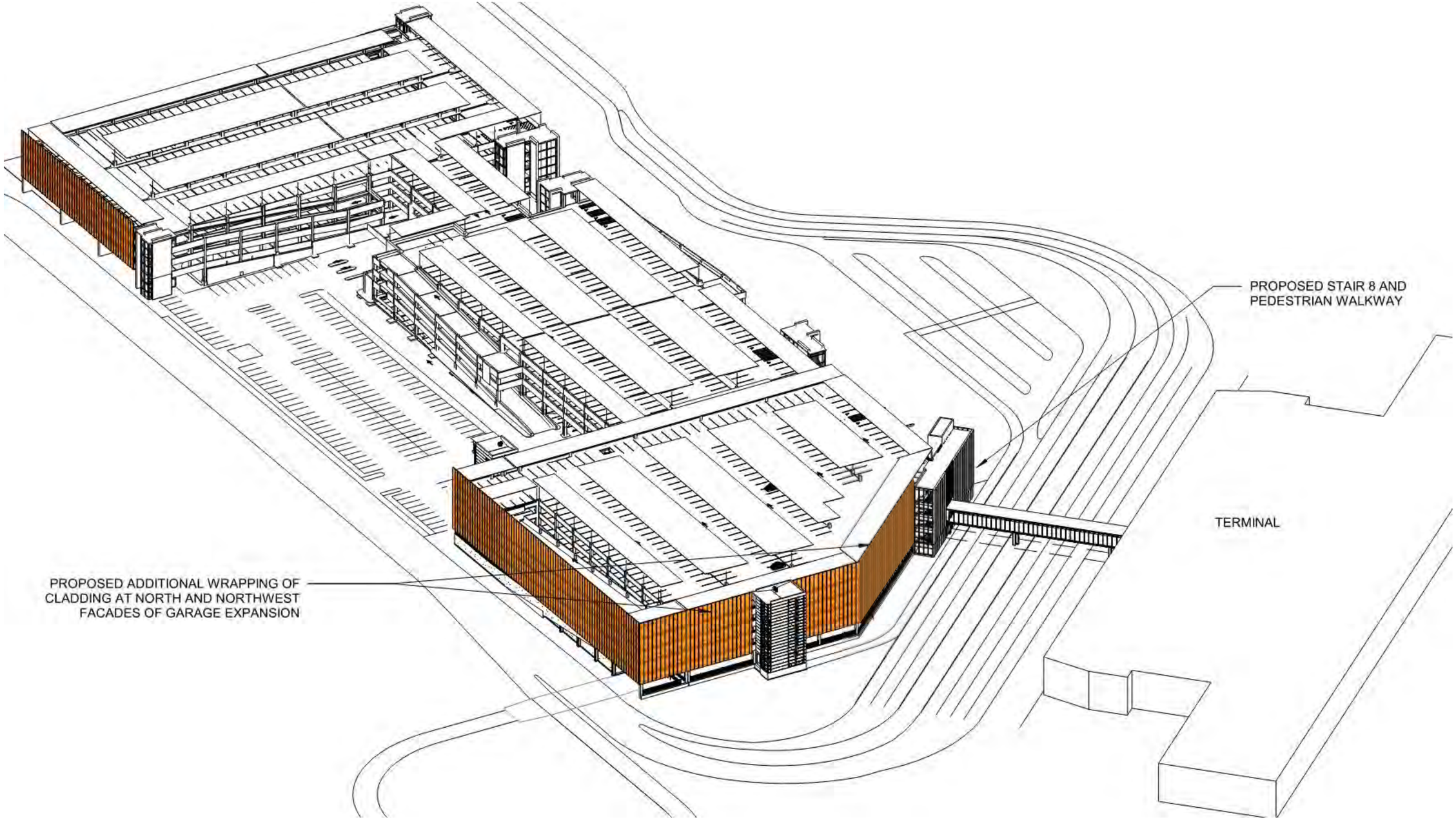
Level 1 - Apron

GRAPHIC LEGEND

- Ticketing
- Main Circulation
- Airline Operations / ATO
- SSCP Support
- Administration Program
- Restrooms
- CBIS / Outbound Baggage
- Inbound Baggage
- Baggage Claim
- Mechanical / Plumbing
- Electrical
- Support Circulation
- Covered Exterior Space



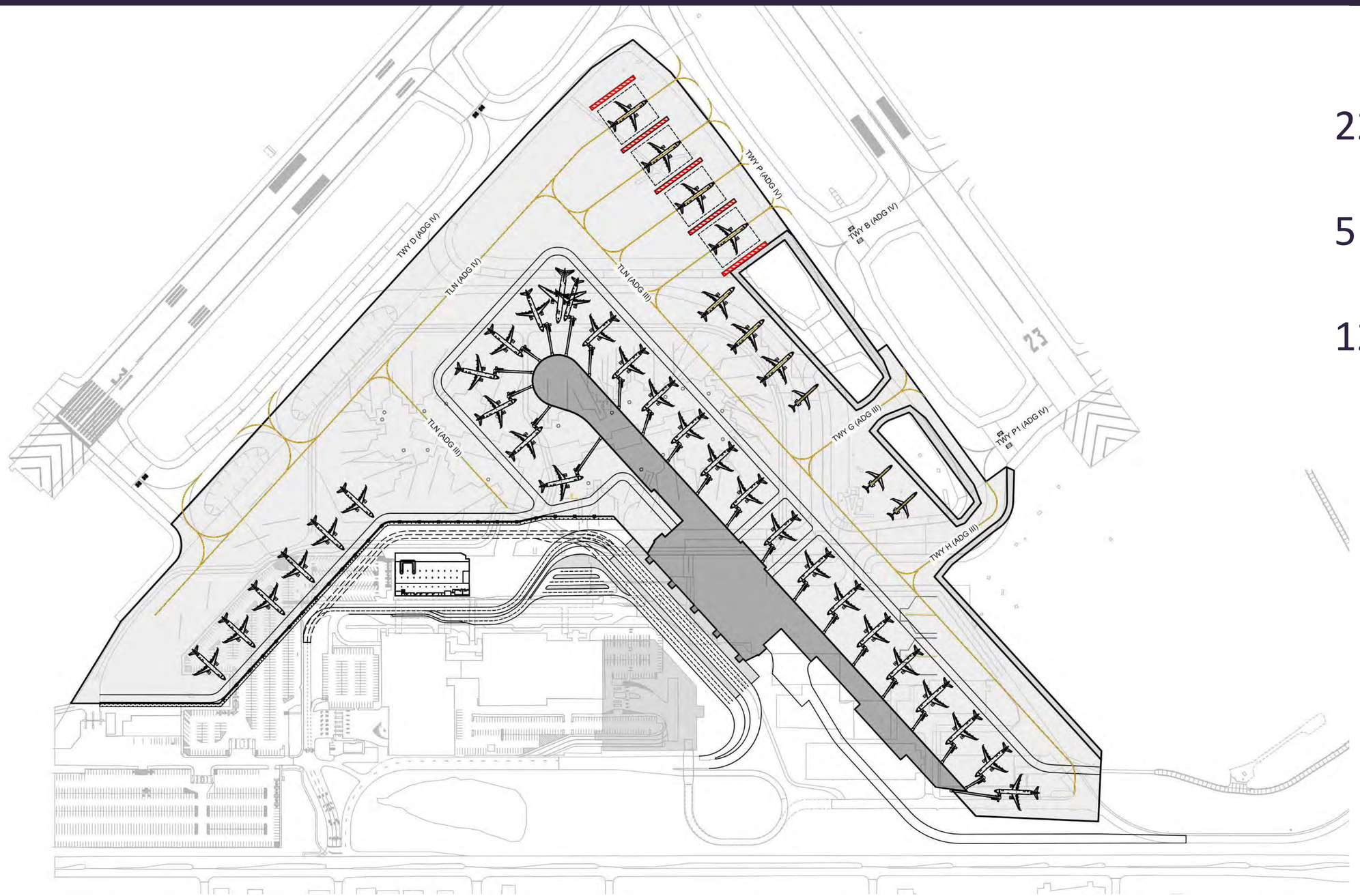
Garage Cladding Option



Site Plan Updates

Airside

Airside – Preferred Alternative – Ultimate Build Out



22 Gates

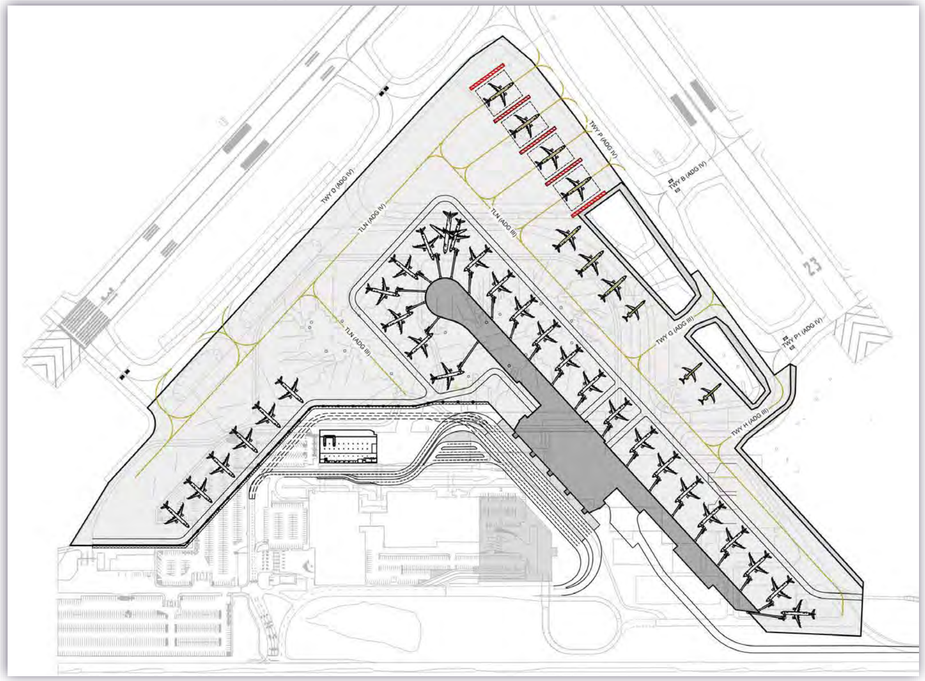
5 Deicing Pads

12 RONs

Airside – Comparison to Supplemental PDM Update

	Current Configuration	PDM Update Configuration
SAME	• 22 Gates • 5 Deicing Pads • De-icing Tank Relocated	• 22 Gates • 5 Deicing Pads • De-icing Tank Relocated
DIFFERENT	• 12 RONs Total • 6 RONs on West Side of terminal • Spacing for Dual Taxilanes	• 9 RONs • 2 RONs on West Side of Terminal • Single Taxilane

Current Configuration



PDM Update Configuration

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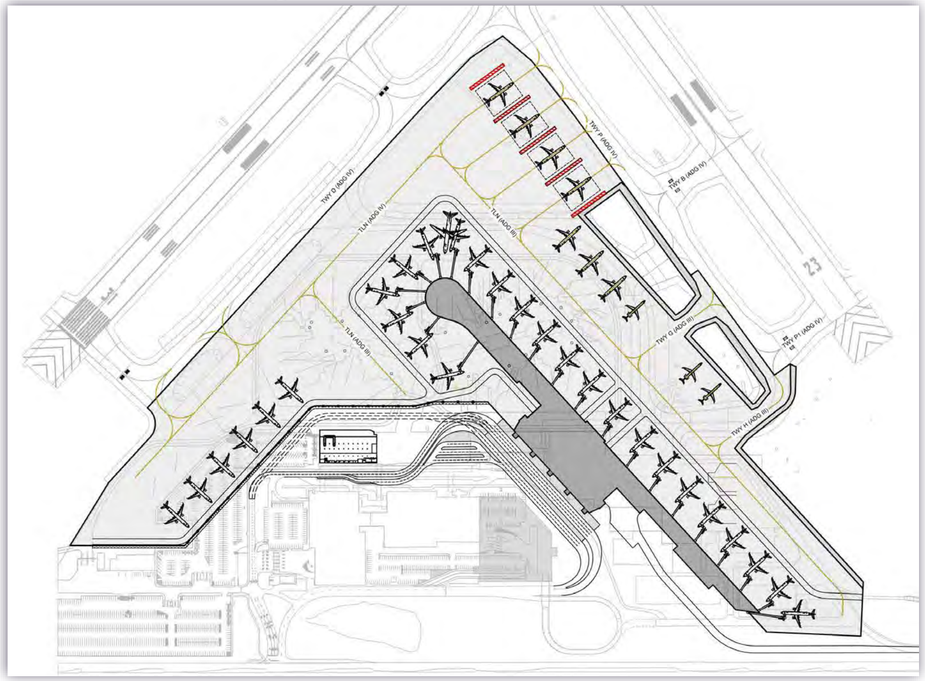
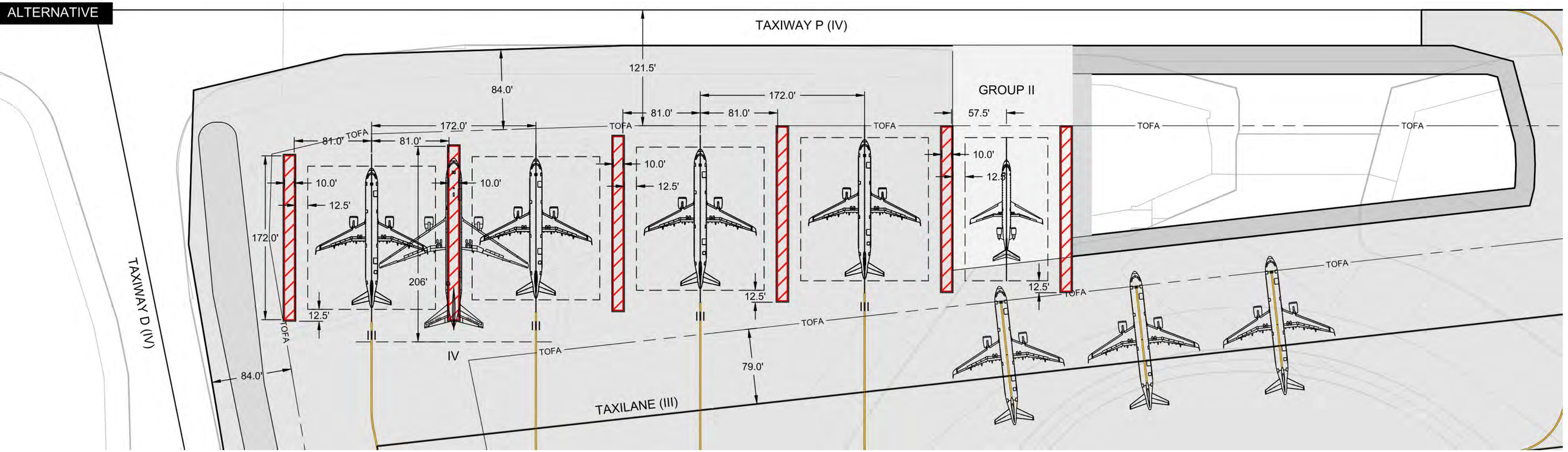


PDM Update Configuration

Airside – New Deicing Layout



- 4 Narrow Bodies with Simultaneous Operations
- 1 larger aircraft space as 2 for 1 due to irregular operations
- 1 Future regional jet
- Smaller Containment area to go to relocated tank

Airside – Comparison to Supplemental PDM Update

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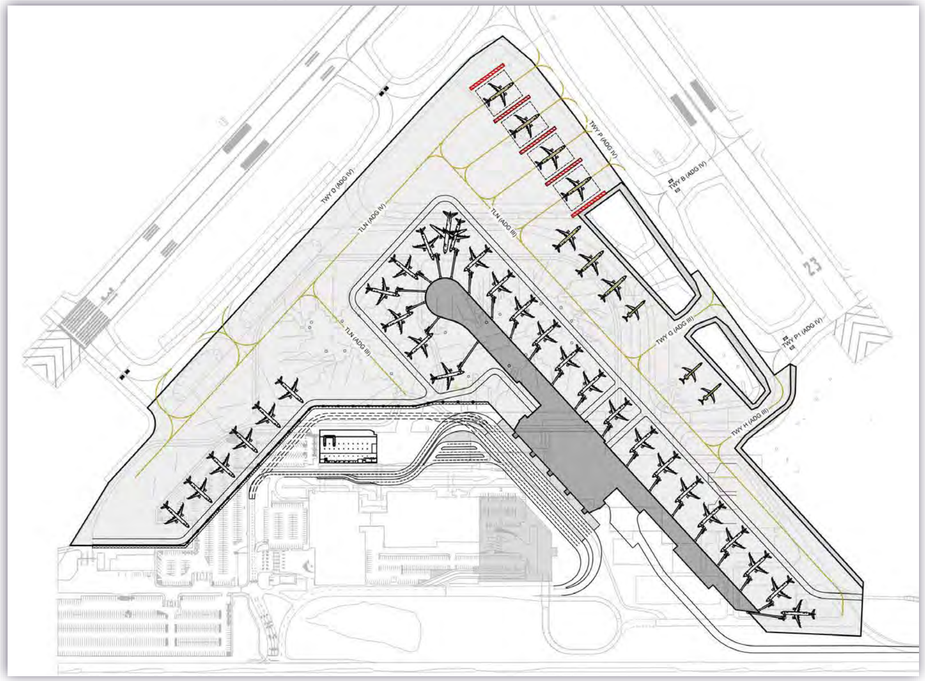
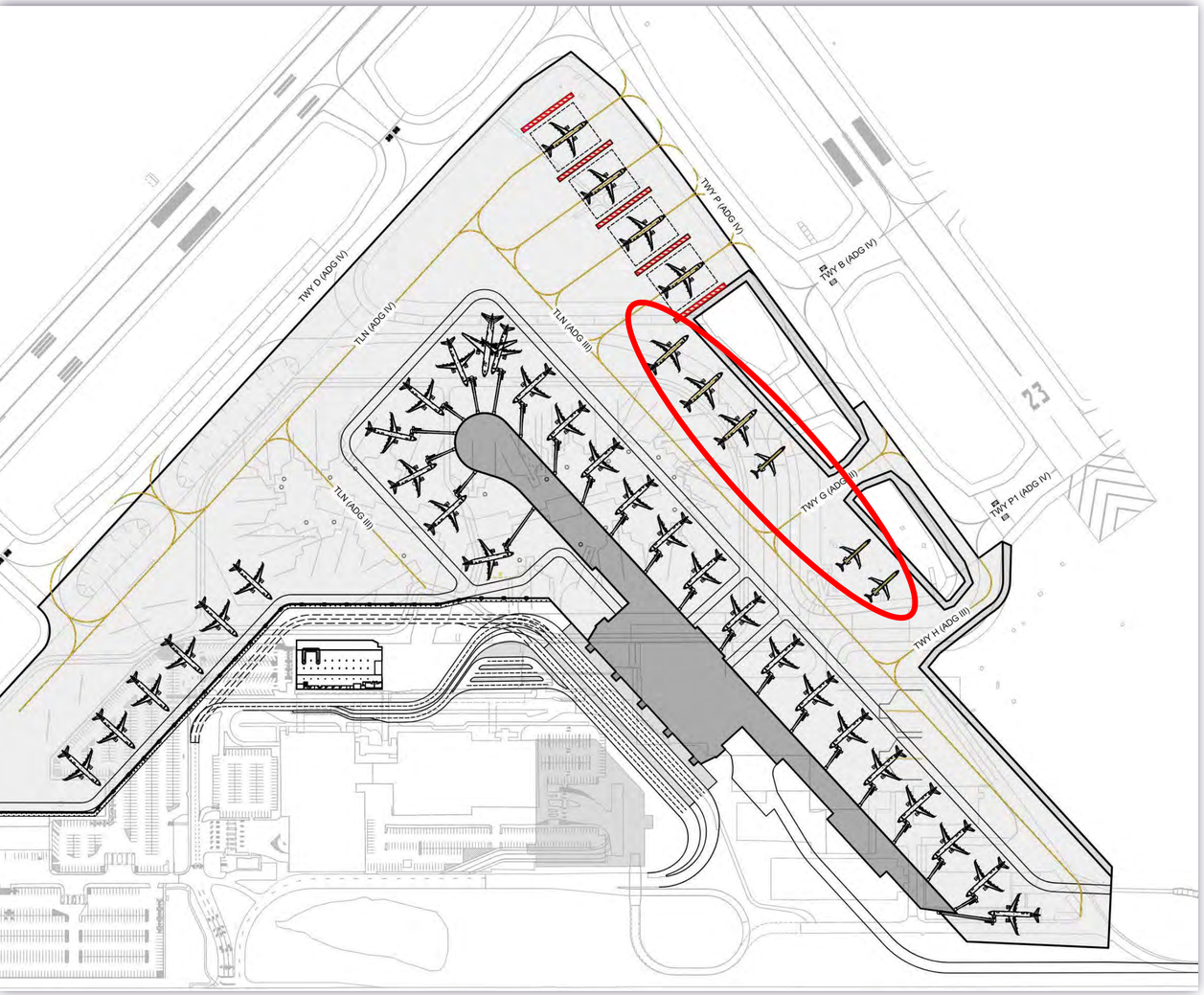


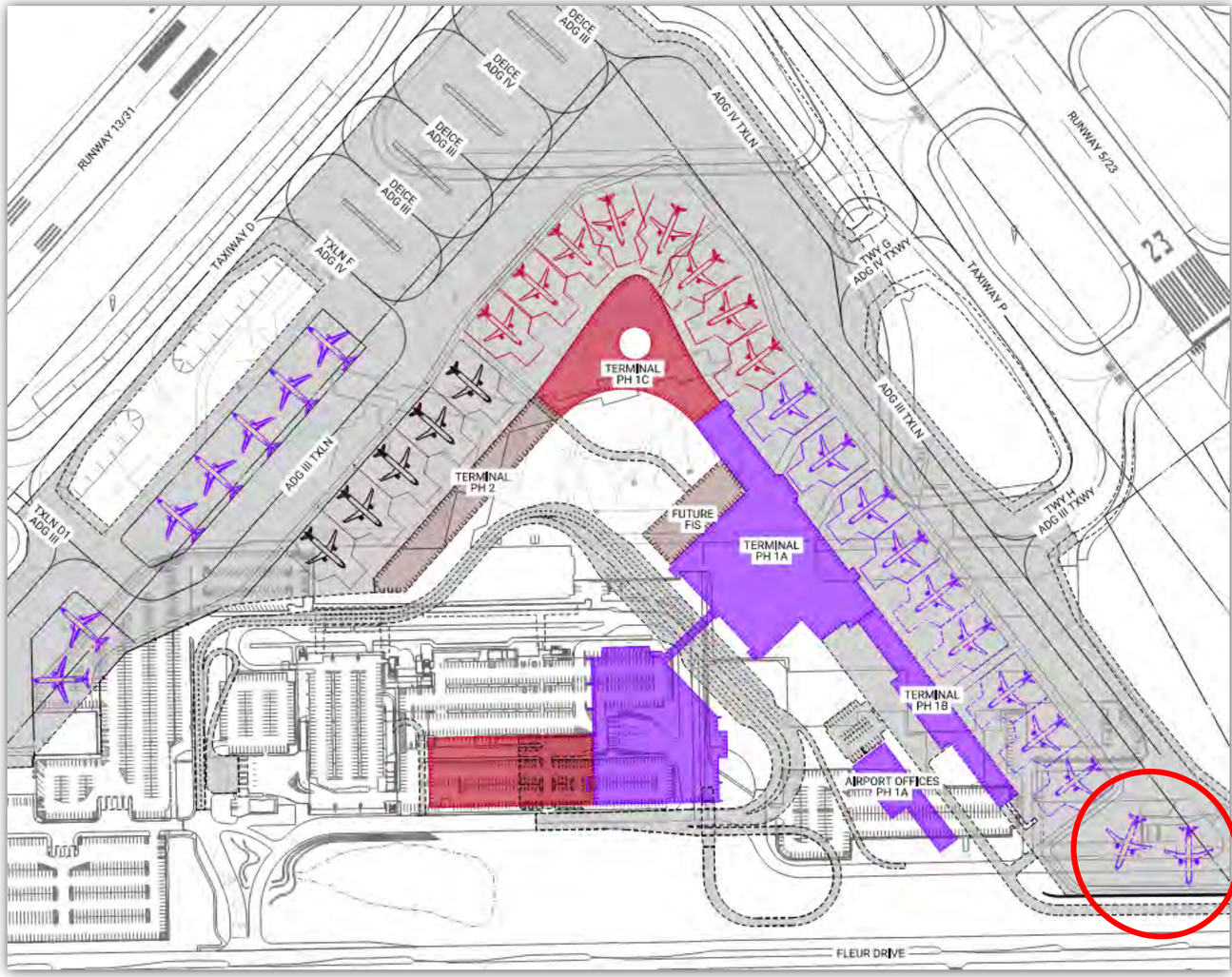
PDM Update Configuration

Airside – RON Comparison

Current Configuration: 12 Total, 6 on West Side



PDM Update Configuration: 9 Total, 2 on West Side



Airside – Comparison to Supplemental PDM Update

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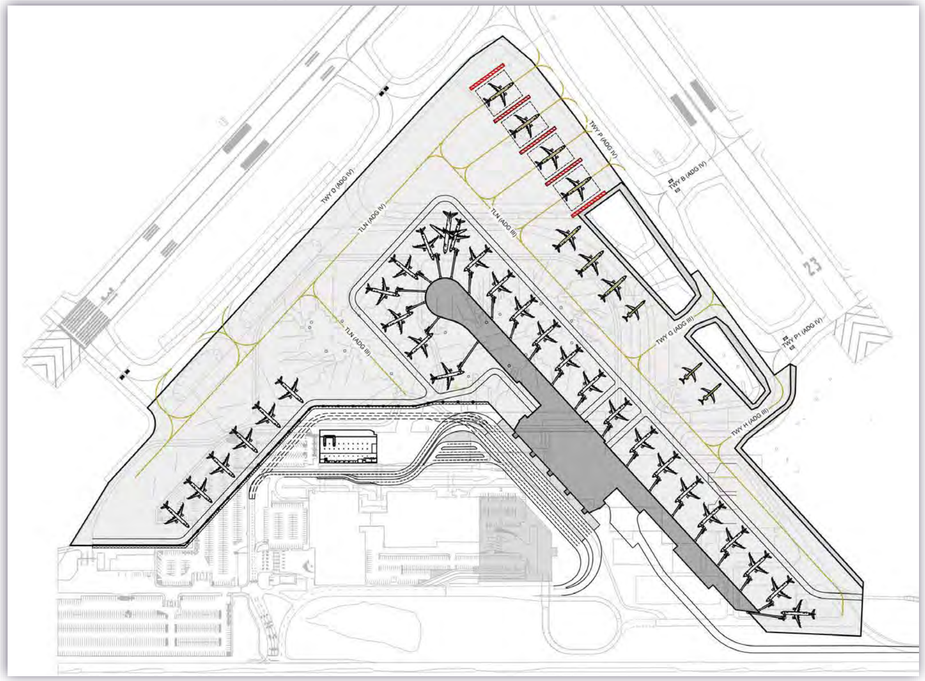
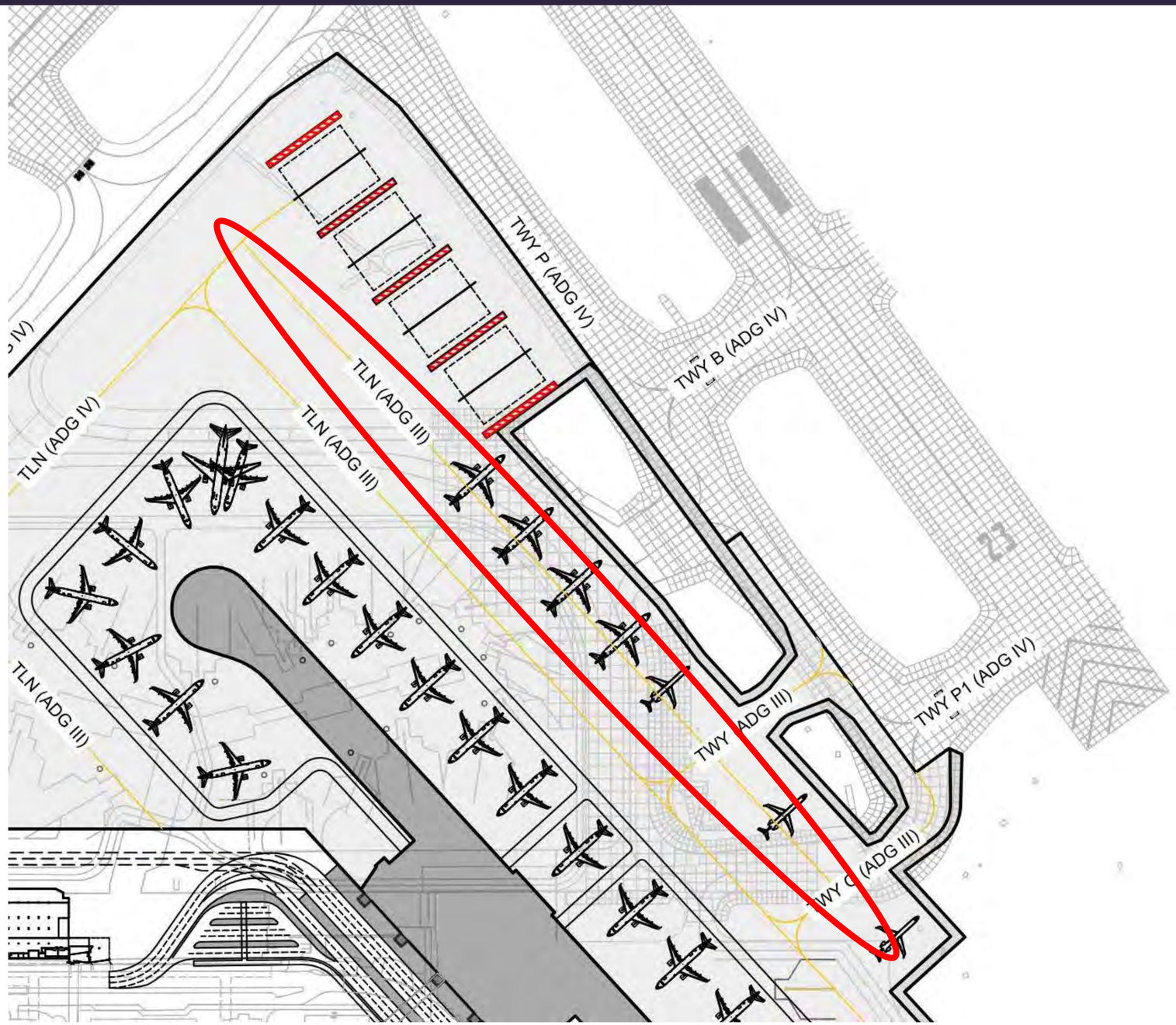
Current Configuration



PDM Update Configuration

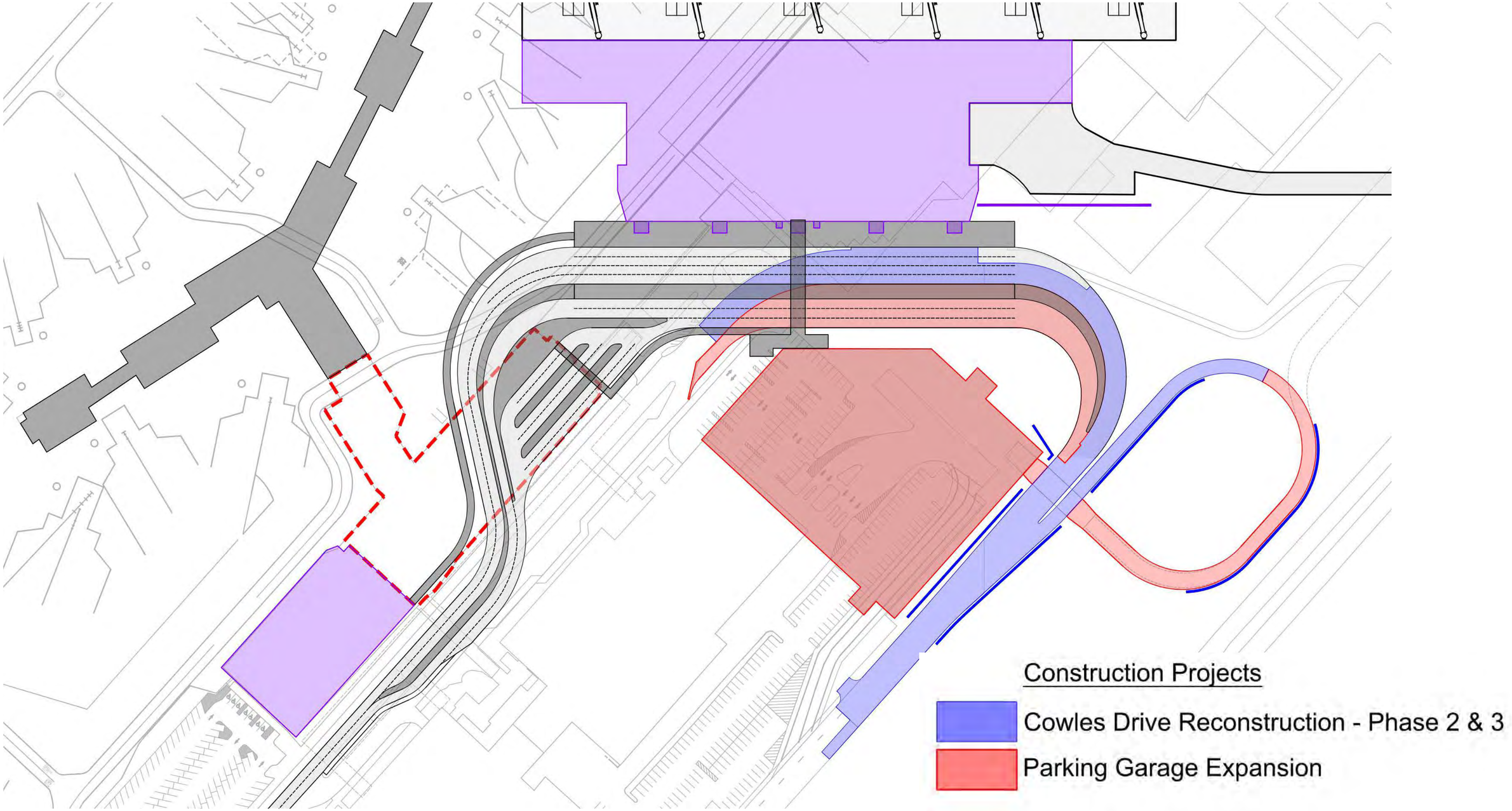
Airside – Future Dual Taxilanes



Site Plan Updates

Landside

Landside Proposed Layout



Landside Layout Comparison to PDM Update

SAME

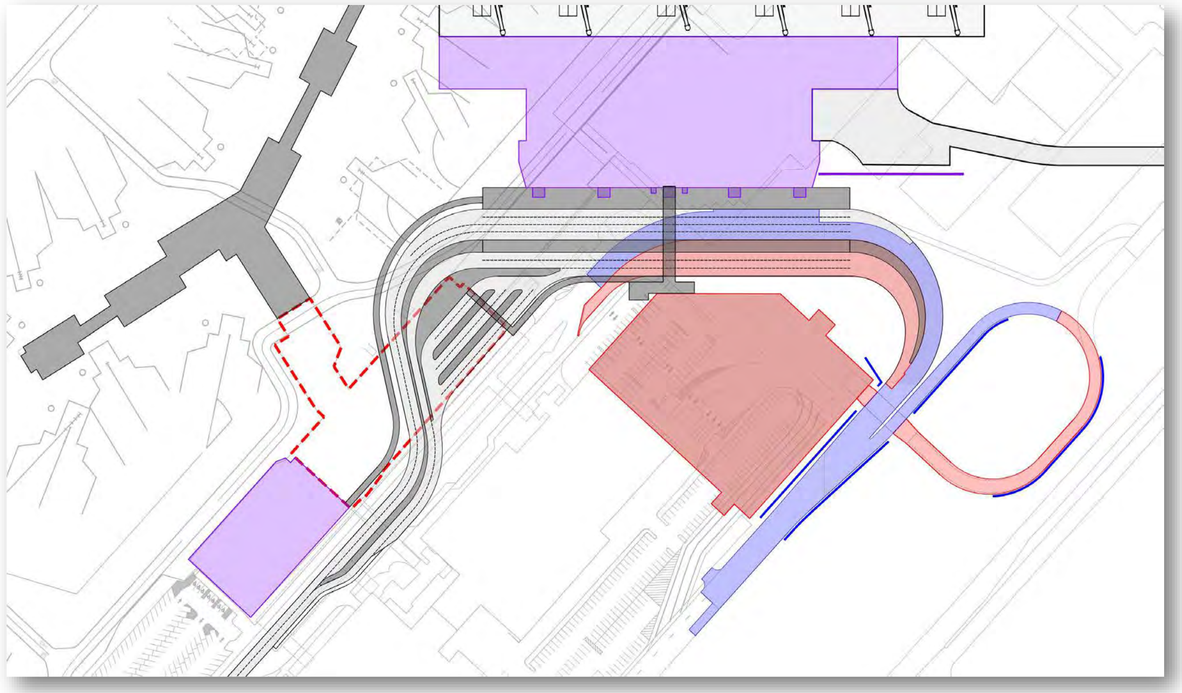
- 174’ Garage to Terminal
- 4 Private Vehicle Lanes: 2 drop off/ 2 through

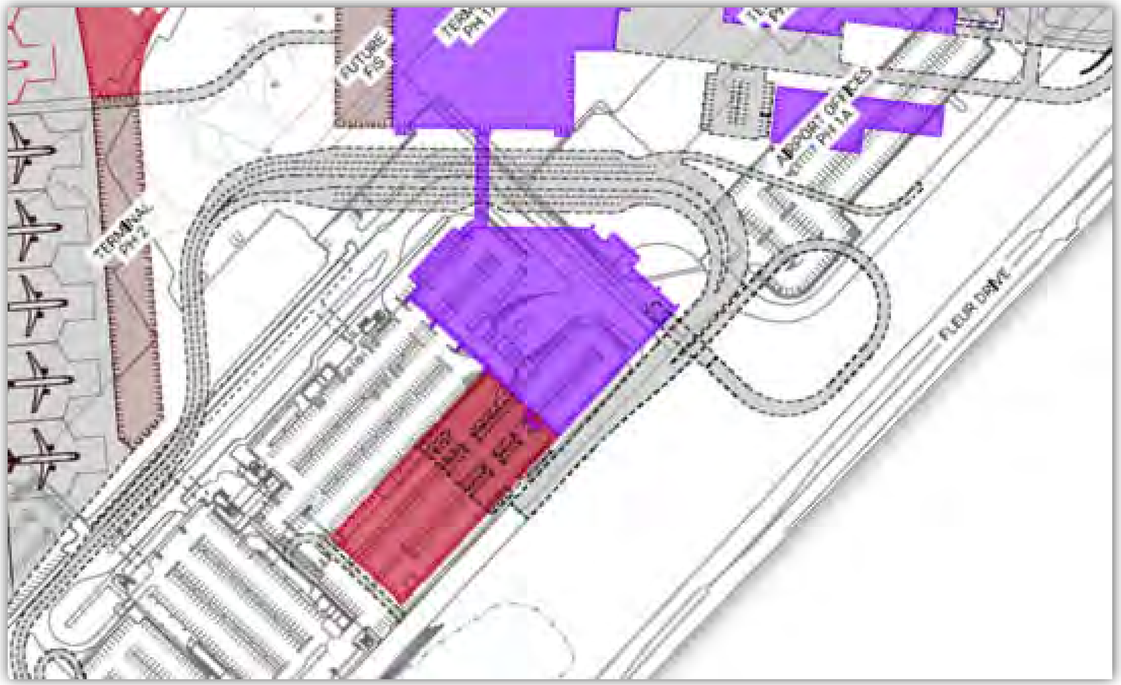
- 174’ Garage to Terminal
- 4 Private Vehicle Lanes: 2 drop off/ 2 through

DIFFERENT

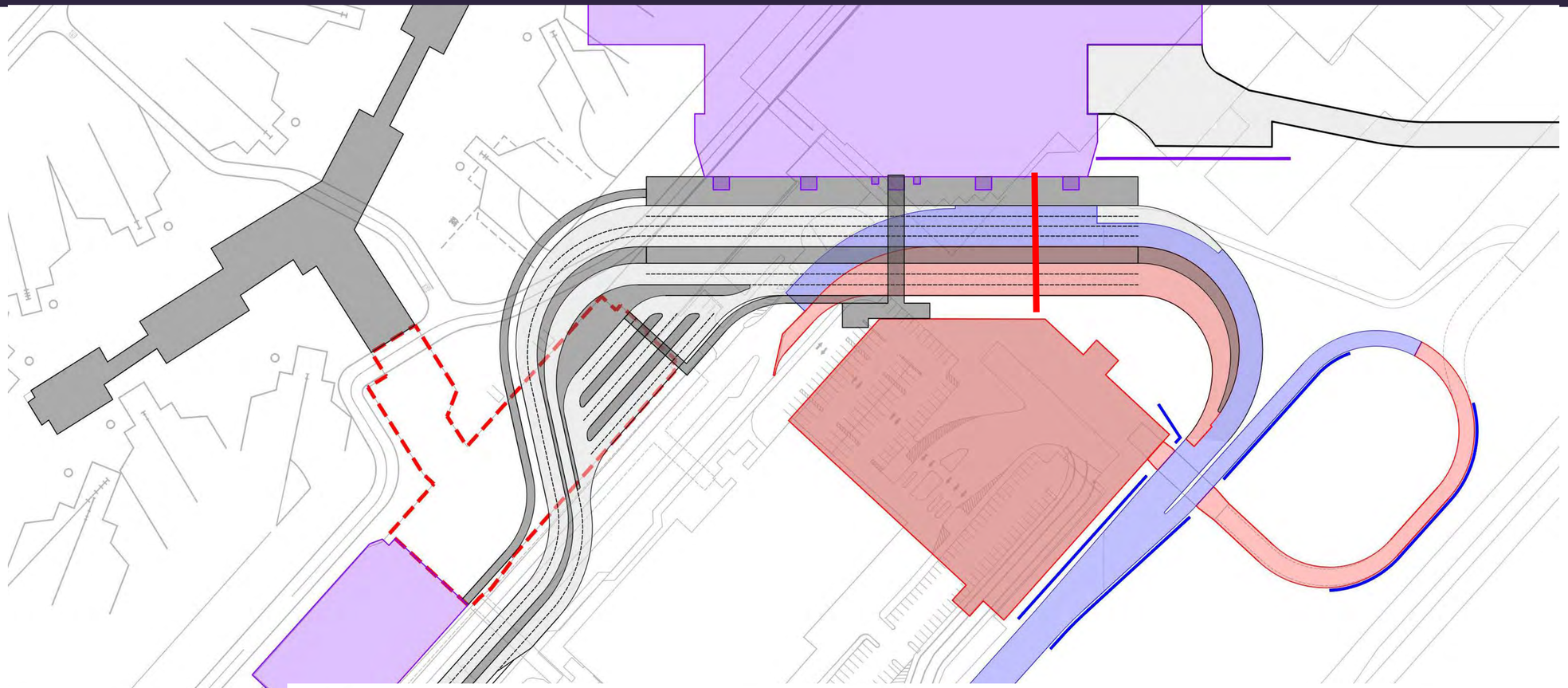
- 3 Commercial Vehicle Lanes: 1 drop off/2 through
- No Left hand drop offs
- TNC/Taxi Plaza
- Accommodating Admin Offices in Existing Bag Claim

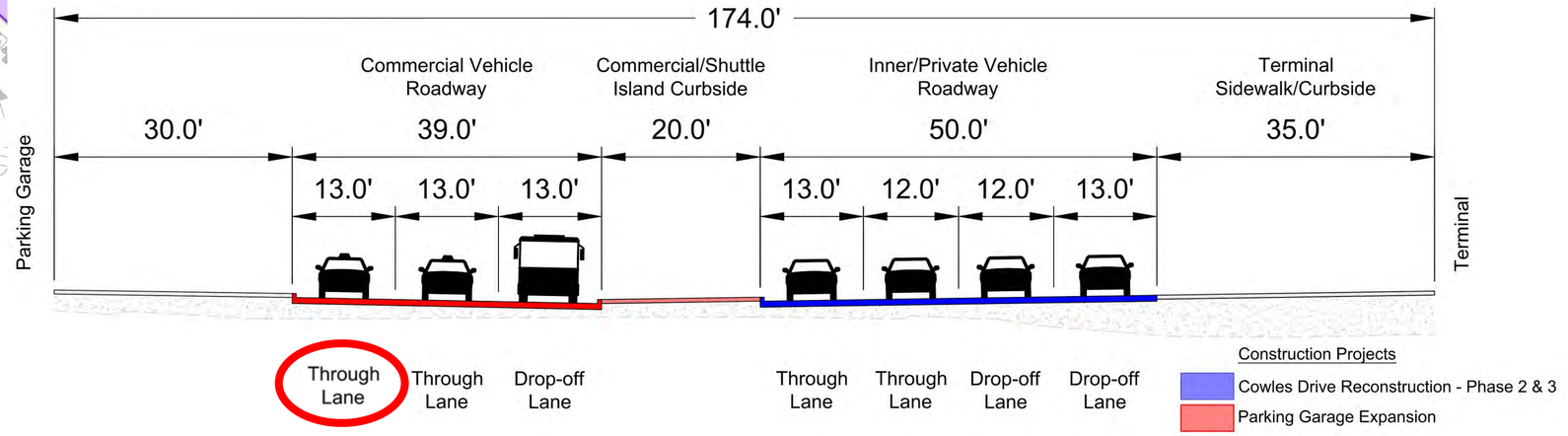
- 3 Commercial Vehicle Lanes: 2 drop off/1 through
- Left hand drop offs



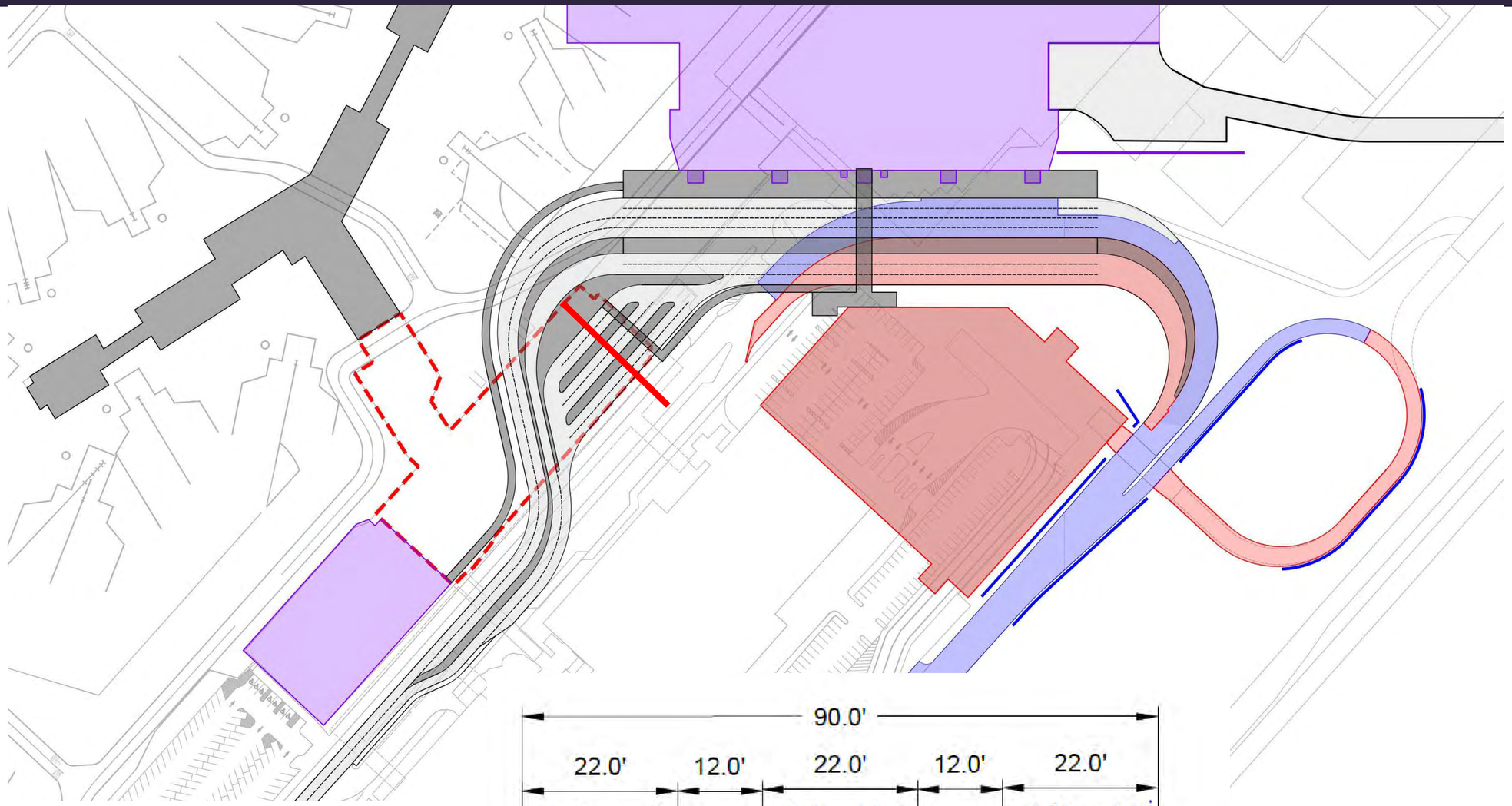


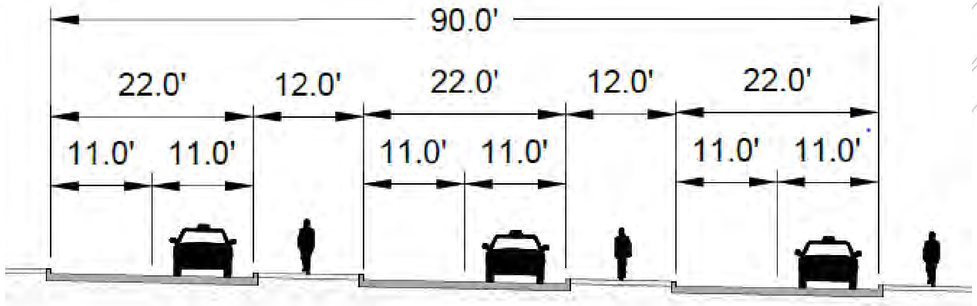
Landside Lane Configuration



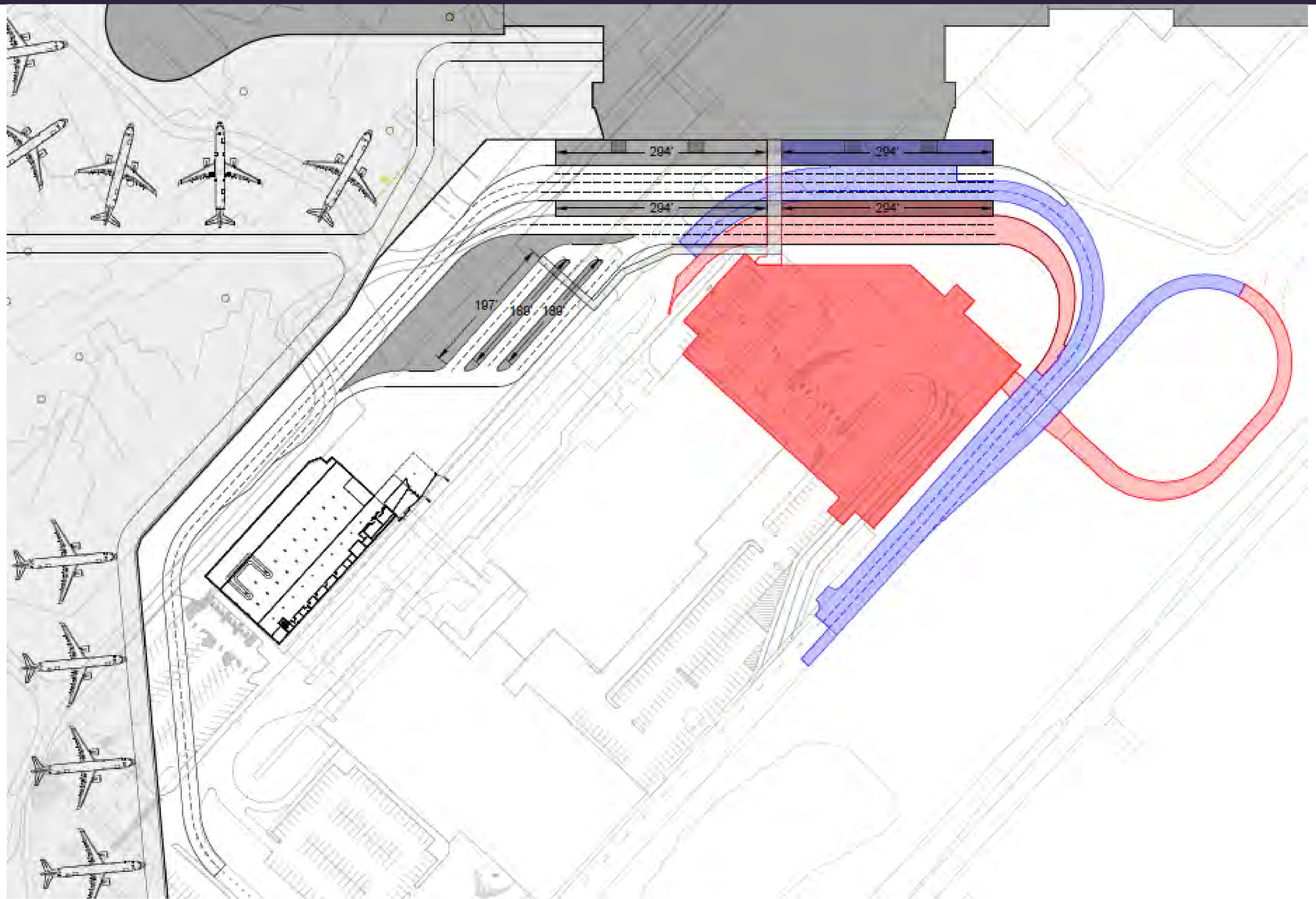


Landside Commercial Plaza (TNC/Taxi)

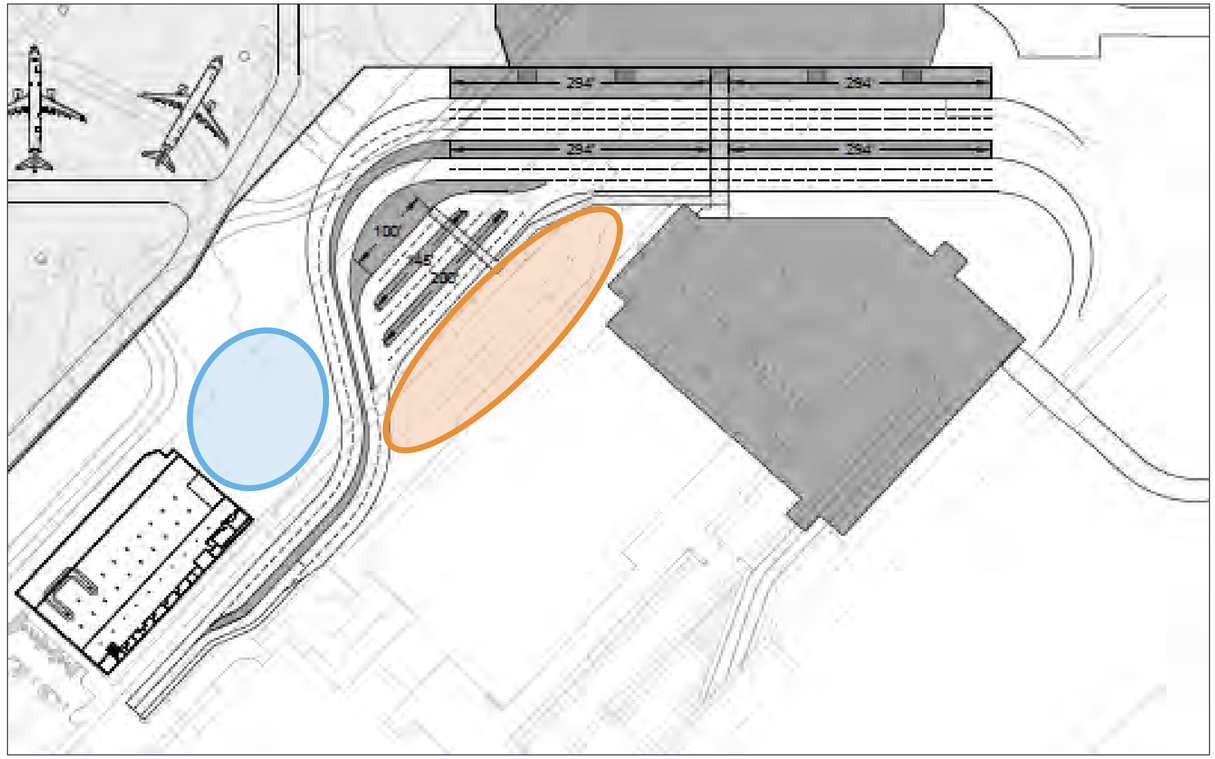


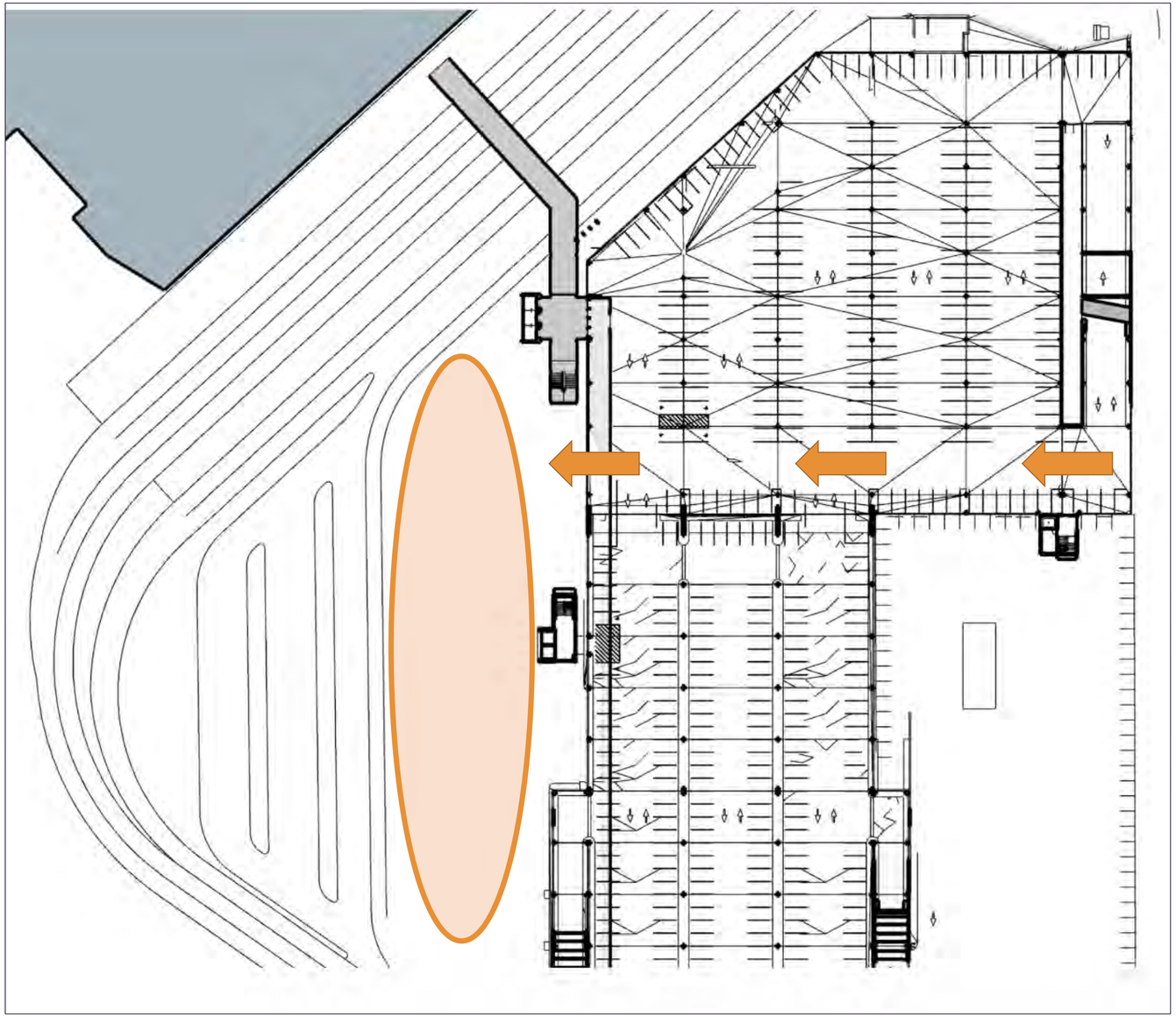


Landside Layout – Ultimate Configuration



Landside – Future Expansion

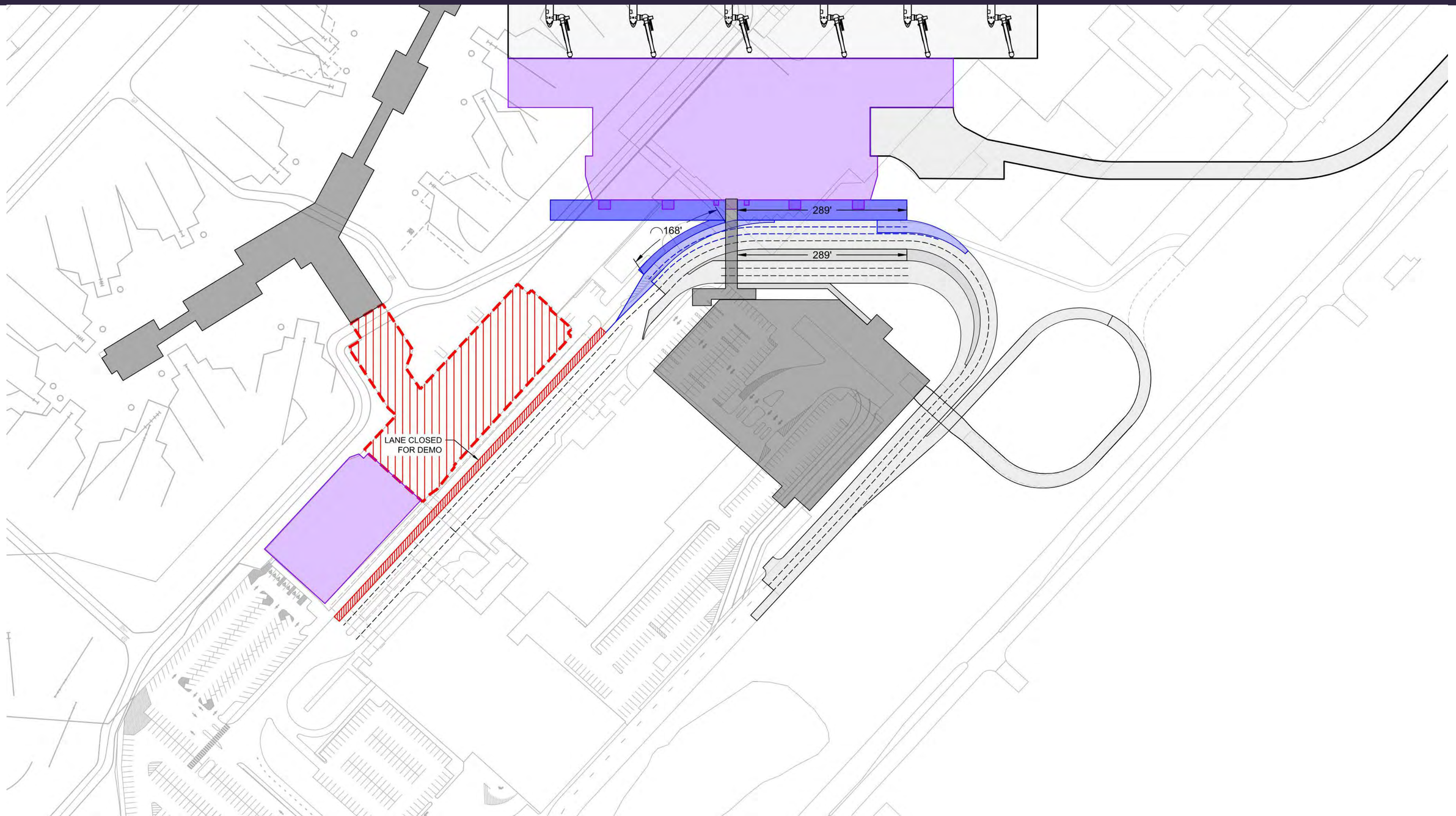




- Short-Term Parking – access provided from garage
- Valet drop-off – access provided from garage
- Future expansion of curbside plaza
- Future garage expansion (with ultimate roadway configuration)
- Future office space – operations center for commercial vehicles / parking

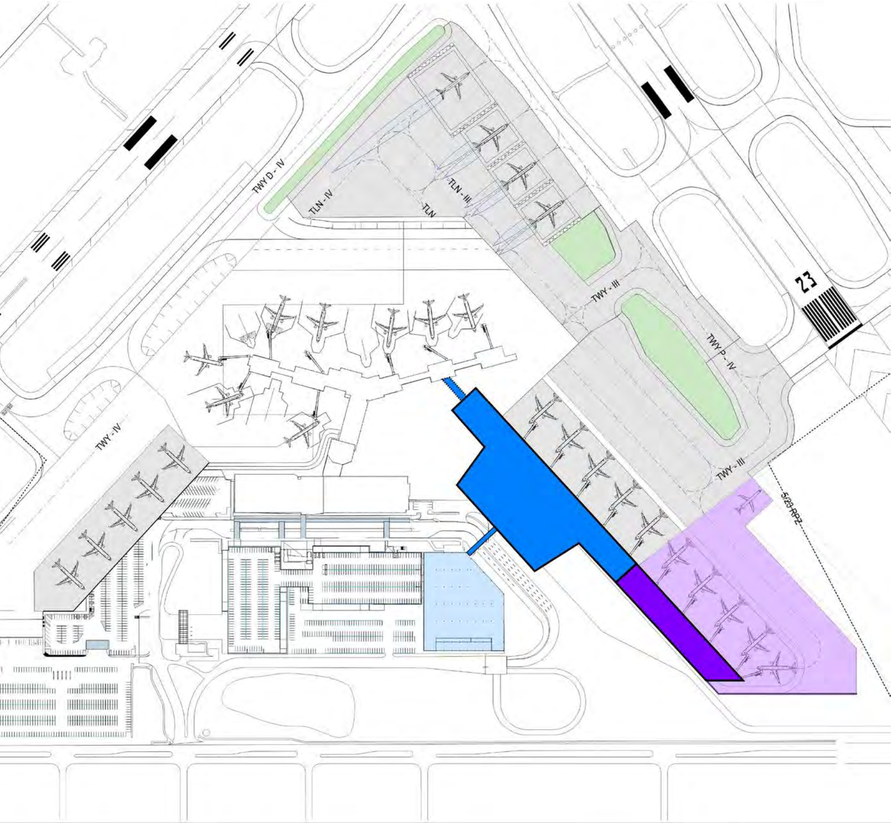
- Short-Term Parking – access through gate
- Administration Parking

Landside Layout – Phasing

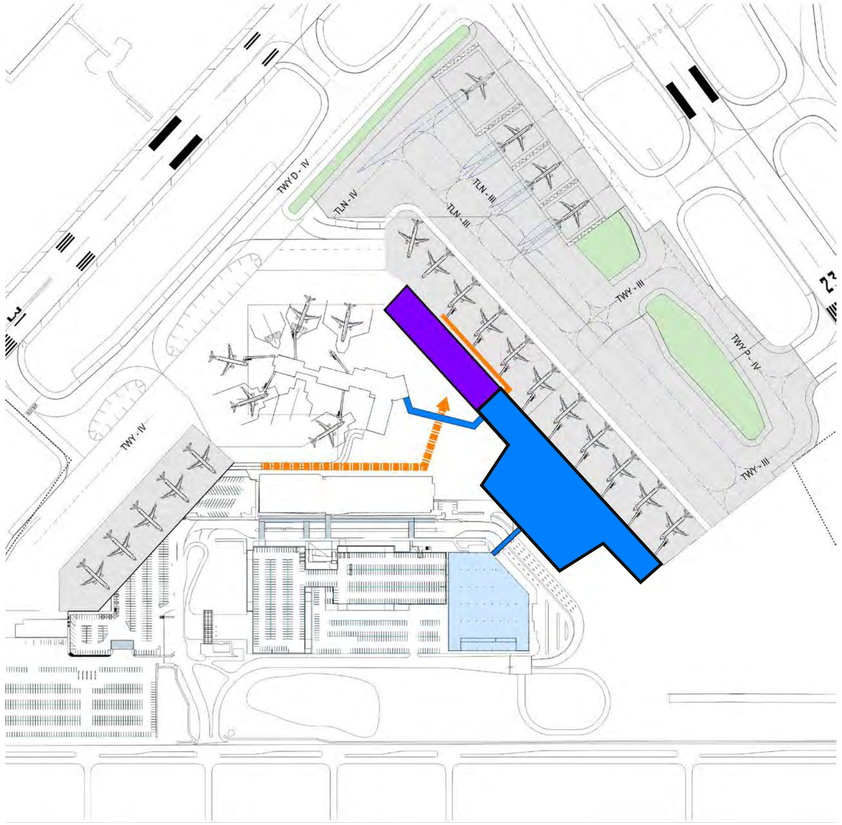


Phasing

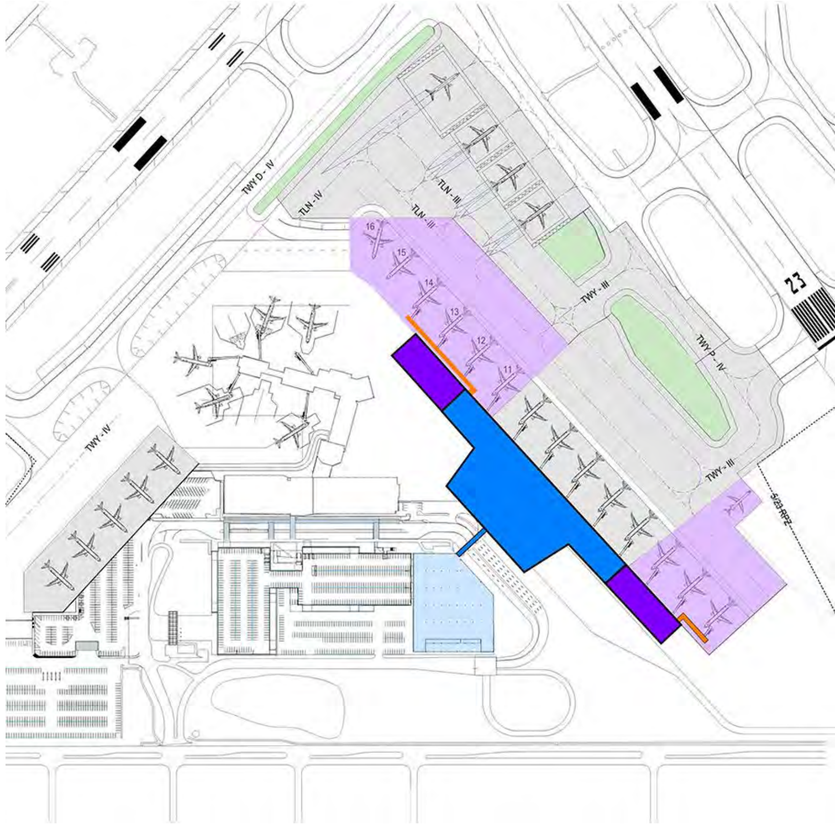
DSM Concourse Expansion Options



1 North Concourse Expansion



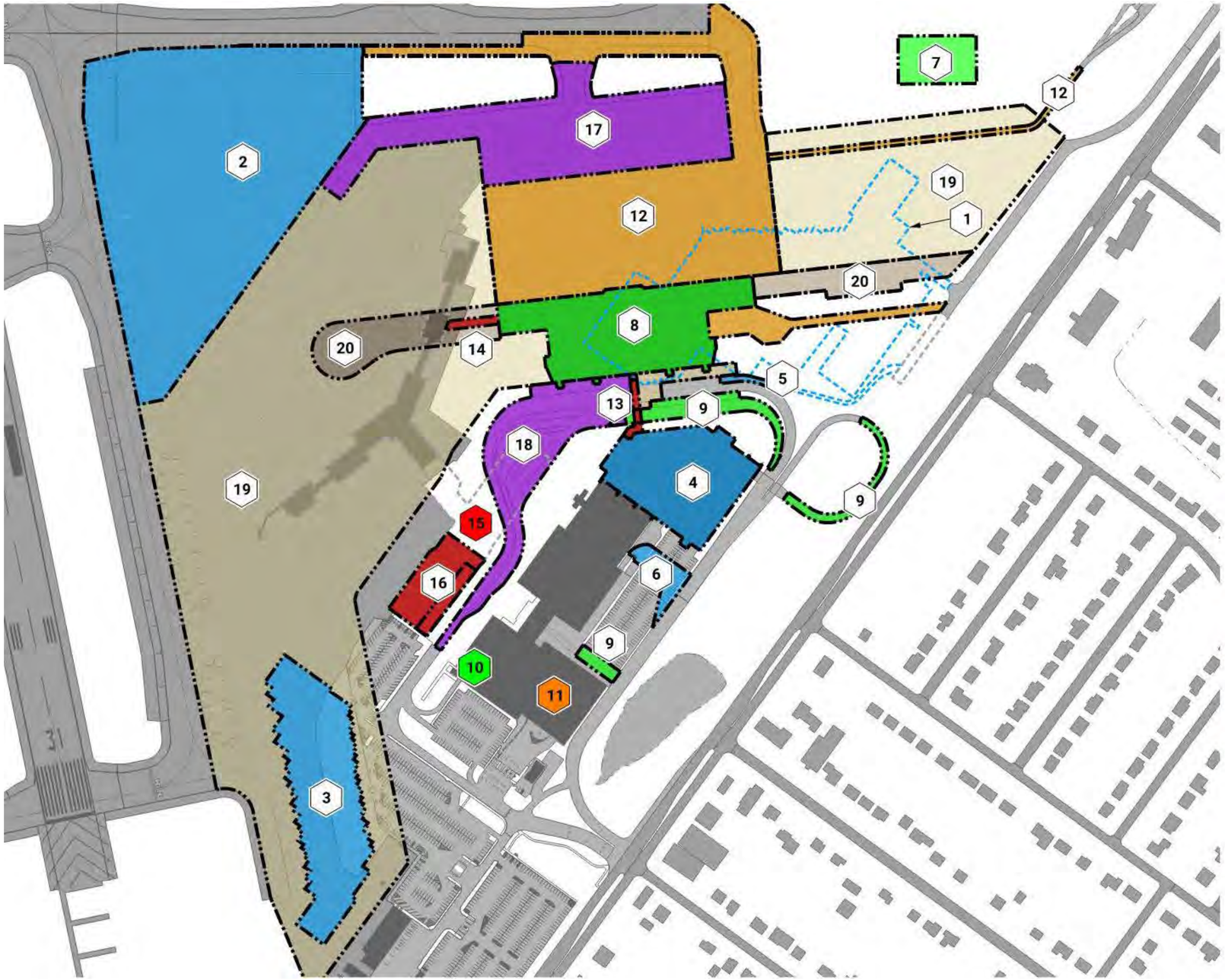
2 South Concourse Expansion



3 Hybrid Expansion

Summary of Updates

Overall Program Phasing



KEY NOTES

2023

1. FUTURE TERMINAL SITE PREPARATION. WORK BEGINS 2023 AND ENDS 2023.
2. CONSTRUCT TERMINAL APRON PHASE 1 - DEICING PADS. WORK BEGINS 2023 AND ENDS 2025.
3. PREPARE THE GREEN LOT FOR RON. WORK TO BE COMPLETED IN 2023.
4. CONSTRUCT NEW NORTH PARKING GARAGE. WORK BEGINS 2023 AND ENDS 2024.
5. COMPLETE COWLES DRIVE PHASE 2/3 - 2023
6. CONSTRUCT TEMPORARY PUBLIC ACCESS TO PARKING GARAGE. TO BE COMPLETED 2023

2024

7. INSTALL GLYCOL STORM WATER STORAGE TANK. WORK TO BE COMPLETED 2024.
8. CONSTRUCT TERMINAL INITIAL PHASE. WORK BEGINS 2024 AND ENDS 2026.
9. CONSTRUCT COMMERCIAL LANES OF COWLES DRIVE AND COMPLETE LOOP ROADWAY TO GARAGE AS PART OF PARKING GARAGE PROJECT. ADD RENTAL CAR RETURN LANE. WORK TO BE COMPLETED 2024.
10. INSTALL PUBLIC RESTROOMS AND RENTAL CAR BREAK ROOM IN SOUTH GARAGE IN 2024

2025

11. RELOCATE RENTAL CARS TO FLOORS 2, 3, 4 OF THE SOUTH GARAGE IN 2025.
12. APRON PHASE 2A CONSTRUCTION TO BE COMPLETED 2026.

2026

13. PEDESTRIAN BRIDGE FROM NORTH PARKING GARAGE TO NEW TERMINAL. WORK TO BE COMPLETED 2026.
14. CONNECTION BETWEEN NEW TERMINAL AND CONCOURSE C. WORK TO BE COMPLETED 2026.
15. ABATEMENT AND DEMOLITION OF EXISTING PROCESSOR AND STEM. WORK COMMENCES 2026 TO BE COMPLETED 2027.
16. EXISTING BAGGAGE CLAIM AREA TO REMAIN AND BE CONVERTED TO AIRPORT OPERATIONS AND ADMINISTRATION SPACE. WORK COMMENCES 2026 TO BE COMPLETED 2027.

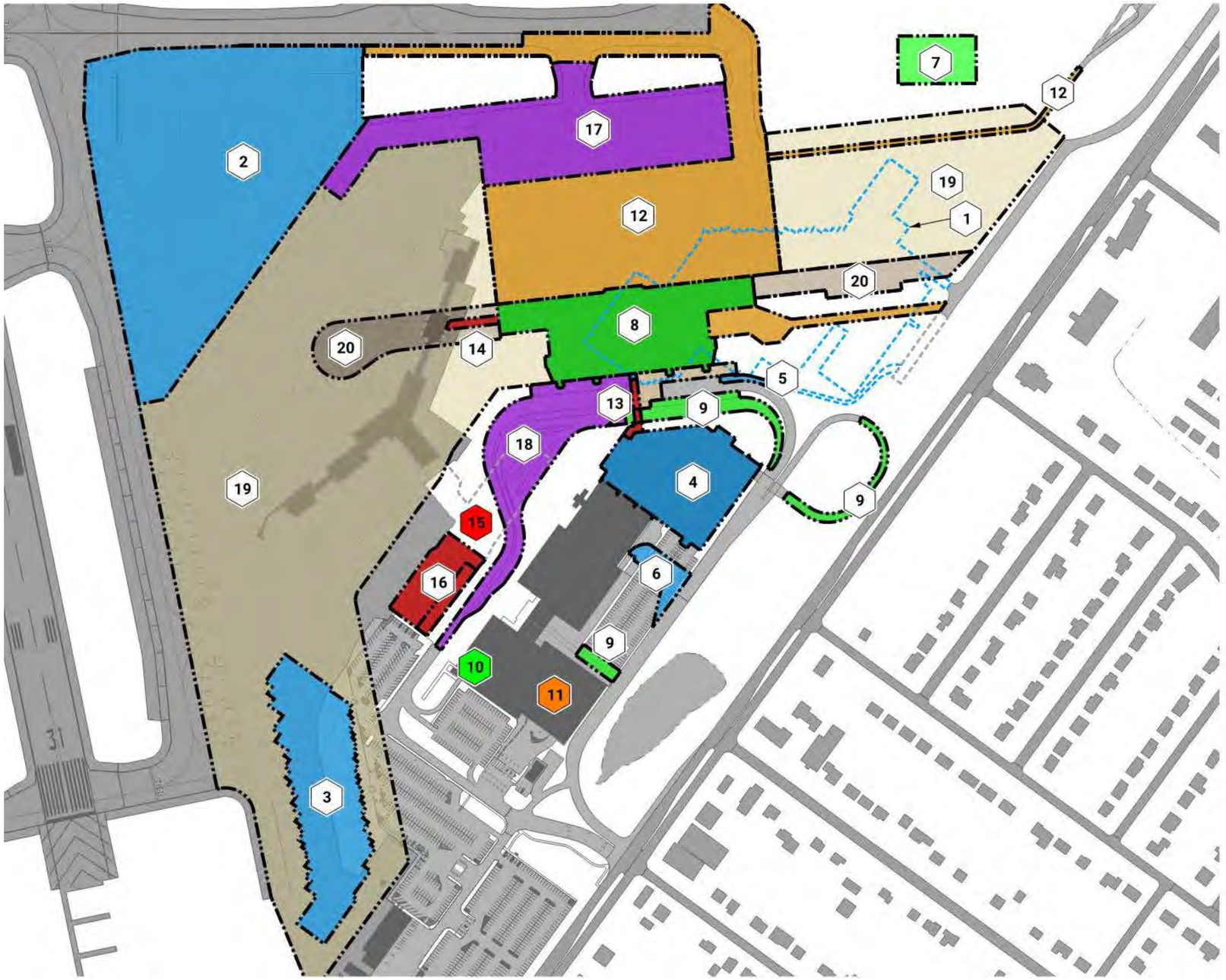
2027

17. APRON PHASE 2B CONSTRUCTION WITH CONNECTIONS TO TAXIWAY P AND CONCOURSES A & C APRON. WORK TO BE COMPLETED 2027.
18. COMPLETE COWLES DRIVE - 2027

2028+

19. FUTURE APRON EXPANSION
20. FUTURE CONCOURSE EXPANSION

Overall Program Phasing

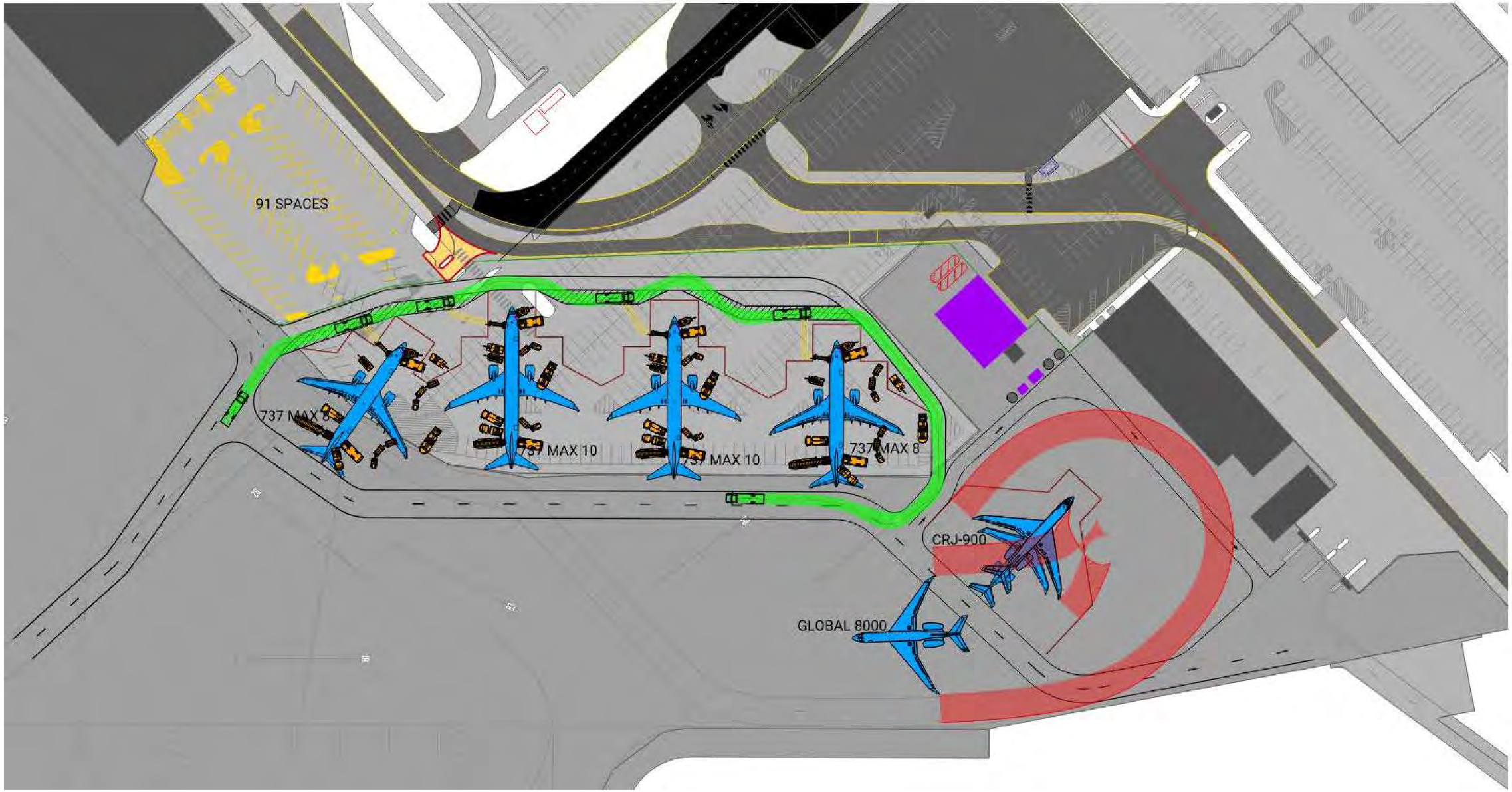


KEY NOTES

2023

1. FUTURE TERMINAL SITE PREPARATION. WORK BEGINS 2023 AND ENDS 2023.
2. CONSTRUCT TERMINAL APRON PHASE 1 - DEICING PADS. WORK BEGINS 2023 AND ENDS 2025.
3. PREPARE THE GREEN LOT FOR RON. WORK TO BE COMPLETED IN 2023.
4. CONSTRUCT NEW NORTH PARKING GARAGE. WORK BEGINS 2023 AND ENDS 2024.
5. COMPLETE COWLES DRIVE PHASE 2/3 - 2023
6. CONSTRUCT TEMPORARY PUBLIC ACCESS TO PARKING GARAGE. TO BE COMPLETED 2023

5 RONs


91 SPACES
737 MAX 8
737 MAX 10
737 MAX 10
737 MAX 8
CRJ-900
GLOBAL 8000

Summary of Decisions Made since PDM Update - Site

Airside

- Terminal / Concourse aligned to roadway
- Dual-loaded south concourse
- Future dual TLN
- Moved Deicing pads and exit northward to TWY P
  - Maximize Deicing locations for ADG III (ADG IV will utilized 2 ADG III stalls)
  - Deicing pads to be constructed / phased earlier (for environmental / economical purposes)
- Moved / Added RONs west of terminal
  - Relocate TWY H to maximize RONs

Landside

- Removed left hand loading on commercial curb
- Confirmed a cross walk will be provided to cross the road to terminal at grade
- Added TNC/Taxi Plaza
- Admin offices to be relocated in *existing building* first level baggage claim area

Decisions Made since PDM Update - Terminal

Terminal

- Terminal is wider and shallower in depth
- Building is now orthogonal. All structural bays are the same- No odd sized trapezoidal shapes/grids.
- Moved check-in/ticketing to ground level (just a small self-bag drop on 2nd level)
- Eliminated service corridor through and around baggage room
- Eliminated baggage tunnels feeding bag claim devices.
- Passenger departure holdrooms increased from 2535 SF to 2800 – 3000 SF
- Security checkpoint requires 8, not 6 lanes

Phasing

- Considering north, south or hybrid concourse expansion options

Advisory Committee Engagement

Attendees

Local Governments Represented:

- Altoona
- Ankeny
- Bondurant
- Clive
- Grimes
- Johnston
- Newton
- Norwalk
- Pleasant Hill
- Polk City
- Urbandale
- Waukee
- Windsor Heights

Local Governments Missing:

- Alleman
- Des Moines
- Indianola
- Mitchellville
- West Des Moines
- Polk County
- Warren County

Discussion Questions

Community Focused

1. Words that describe Des Moines?
2. What defines Des Moines?
3. What defines Iowa?
4. What does this Community want to be in the future?

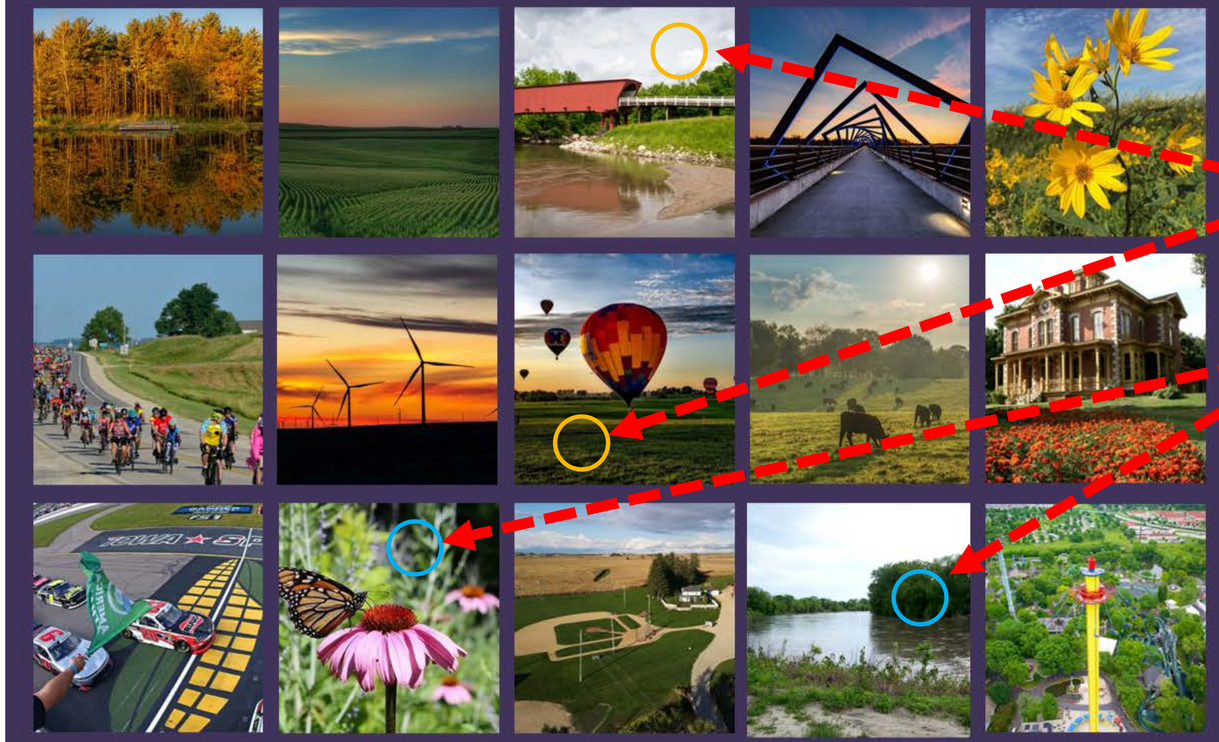
Airport Specific

1. What should DSM represent?
2. What do people like about DSM?
3. What challenges do you see at DSM?
4. What are important qualities of Iowa communities we can celebrate in the new terminal?

HNTB + bnim

I think therefore I JAM
THINK OUTSIDE THE
LET'S
HERE!
COLLABORATE
BOOM!
WORK +PLAY = JAM

What defines Iowa?

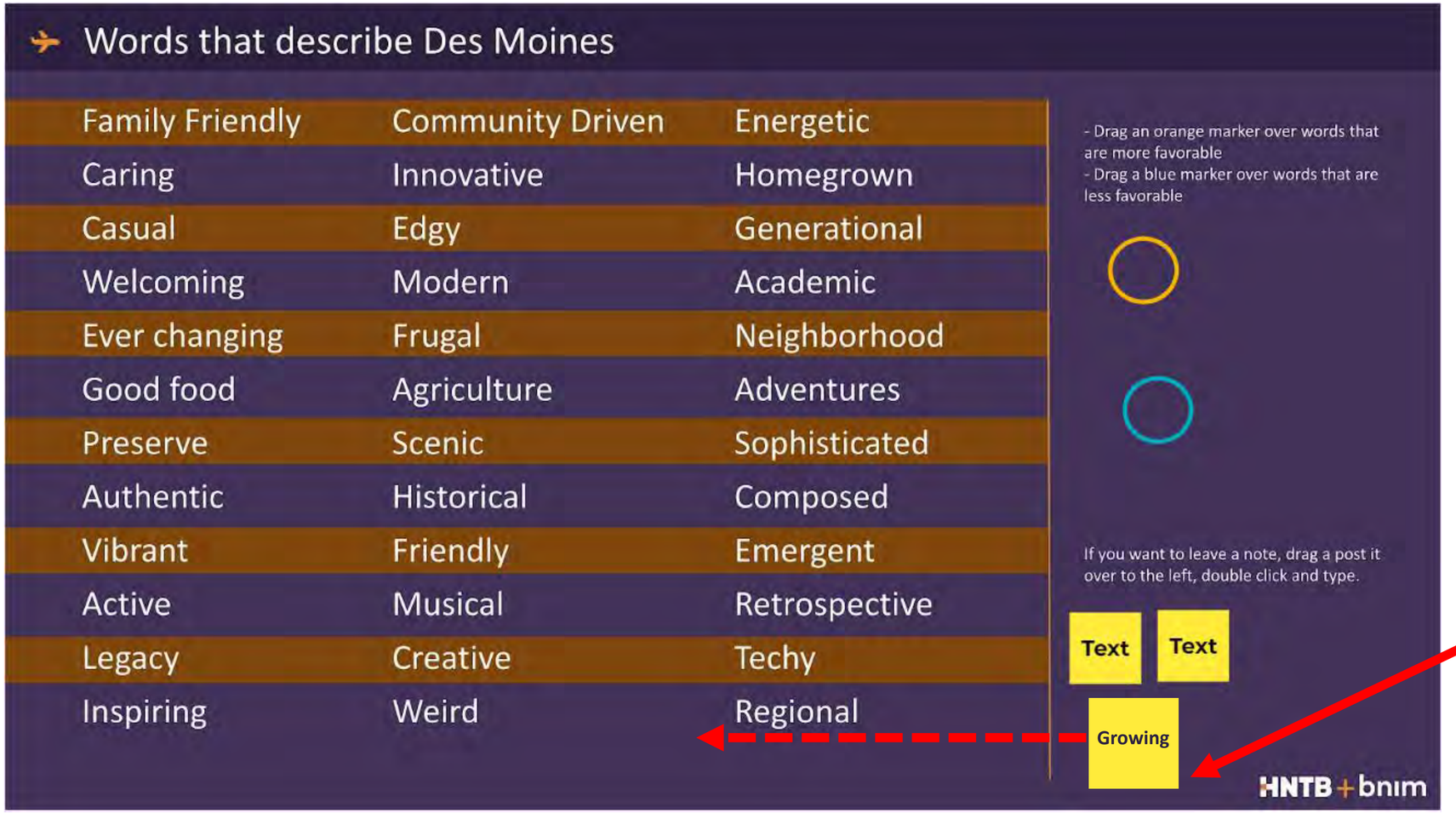


- Drag an orange marker over words that are more favorable
- Drag a blue marker over words that are less favorable

If you want to leave a note, drag a post it over to the left, double click and type.

HNTB+bnim

Audience Members will be able to drag these circles



Audience Members type in these post-it notes, then drag them wherever they want.

Key Responses from Advisory Committee

- The new terminal should be welcoming, comfortable and family friendly.

- The design should highlight the diverse, modernizing culture of Des Moines and Iowa, rather than its historical background.
  - While the community still has a connection to agriculture, world-renowned companies like Corteva should be highlighted.
  - Eliminate the stigma of Iowa only having cornfields.
  - The community leaders appreciated photos that are “iconic” for Iowa rather than images that could exist anywhere.

Key Responses from Advisory Committee

- The community leaders see Iowa as, or evolving to be:
  - A place with many activities to offer (recreation and performances were highlighted)
  - A magnet as the right place to raise families
  - A highly educated demographic, where corporations seek to be
  - A logistical hub of the Midwest.
  - A highly sustainable city
  - An inclusive place to live
  - A place to come home to

- The design needs to balance passenger experience and aesthetics with functionality and responsible use of funding.

- Community leaders were invited to submit photos for consideration for inclusion in the terminal design process.

Next Steps

Look Ahead/Next Steps – Design Team

10% Design

- Full Program
- Plans Due December 15

30% Design

- Board Approval for Task Order – November 8
- NTP – December 15
- Plans Due Mid May

Early Bid Package 1

- Site/Foundation
- Bid May 2023
- Construction NTP Aug 2023

Look Ahead/Next Steps – Board involvement

October 11: Board Presentation – Cost Estimate for Basis of Design

TBD: Terminal Visioning Meeting

January Board Meeting: Revised plans from 10% Design & revised Cost Estimate

Questions