



APPENDIX D.2

Alternatives Workshop #2

Alternatives Workshop #2

October 9, 2019



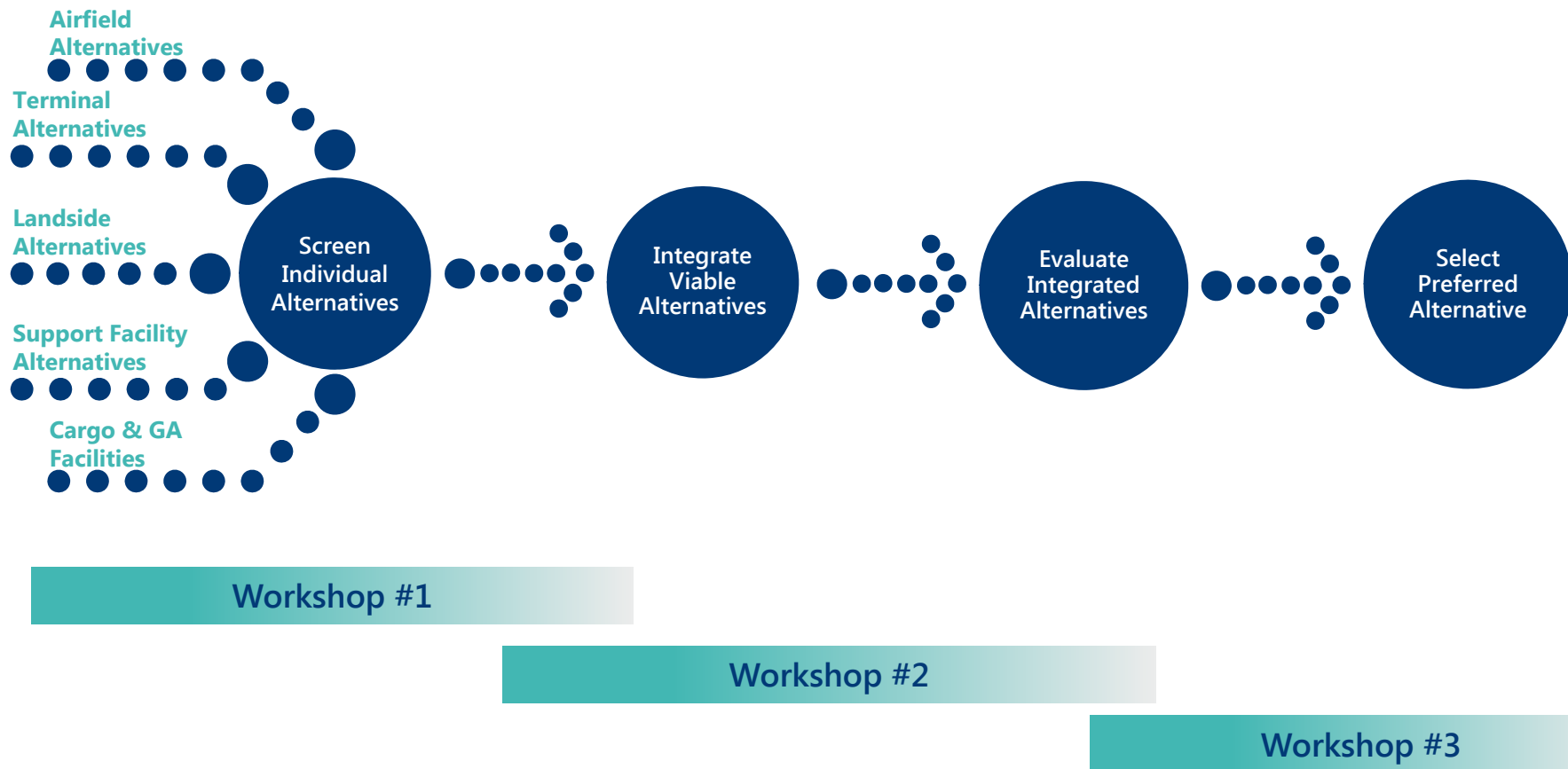
MASTER PLAN **2040**



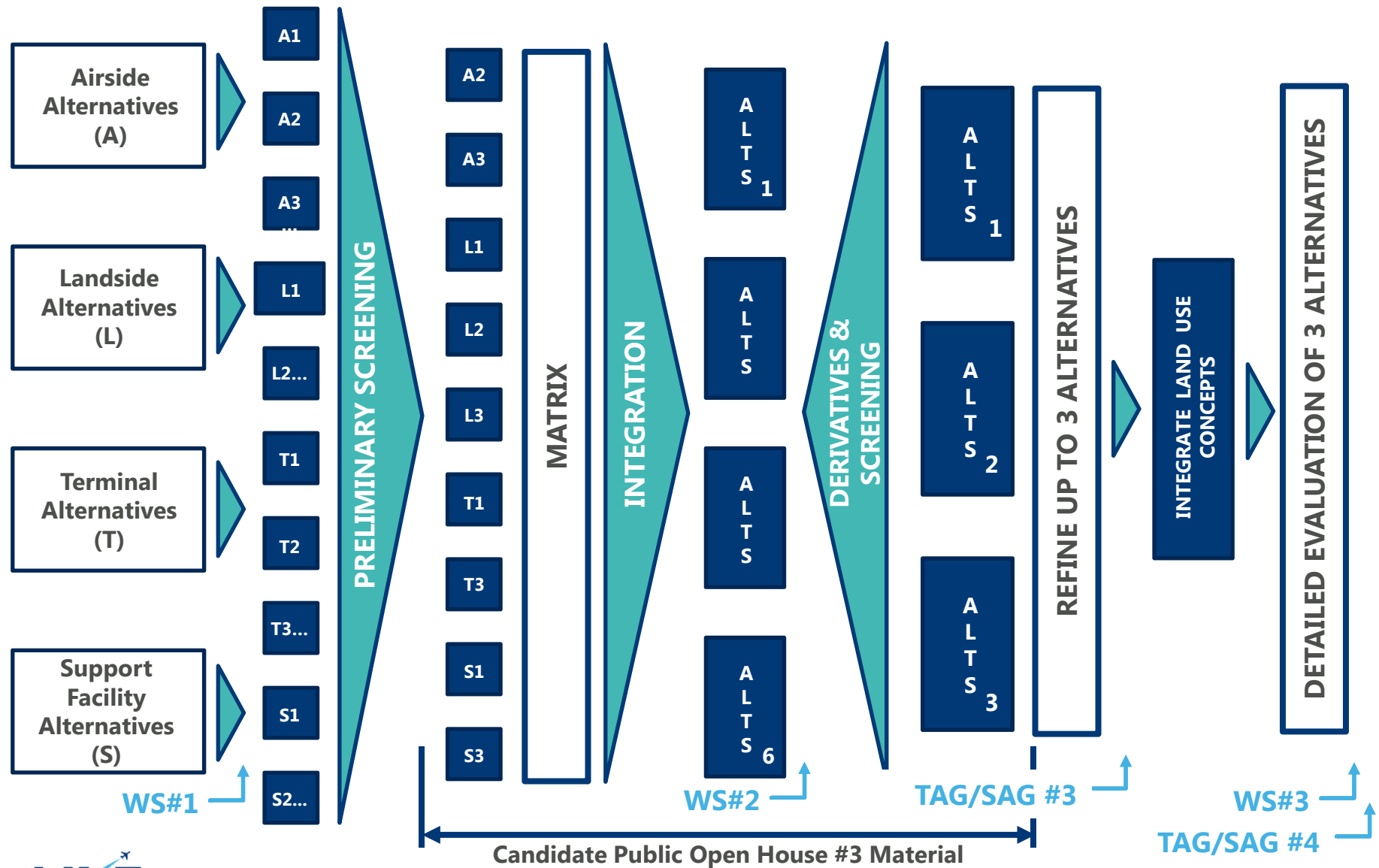
Agenda

- Alternatives Analysis Process Review
- Subject Area Alternatives
 - Airfield facilities (runway focus)
 - Terminal facilities
 - Landside facilities (curbside, roadway, parking, rental car, etc.)
 - Cargo
 - General Aviation
 - Support facilities
- Integration of Alternatives

Alternatives Planning Process

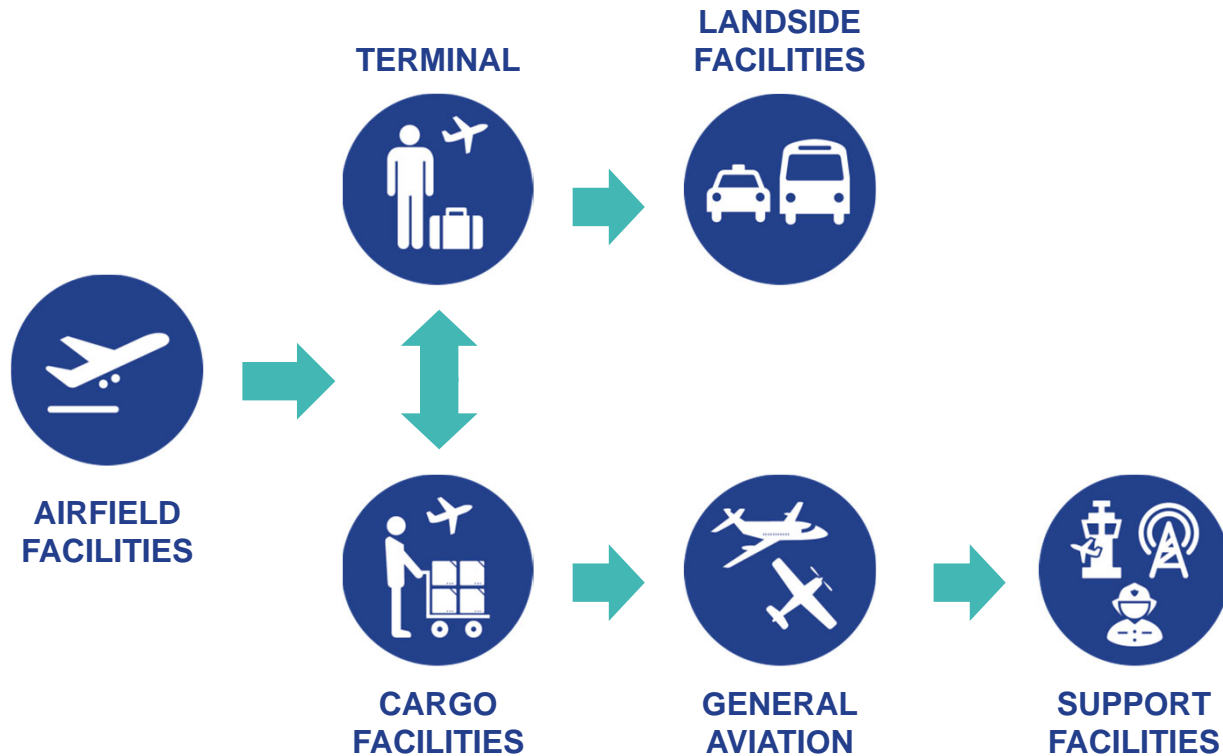


Alternatives Analysis Process Diagram



Alternatives Planning Process

- Meet defined aeronautical needs and Airport development priorities
- Comply with FAA criteria
- Consider operational safety and efficiency
- Recognize hierarchy among facilities



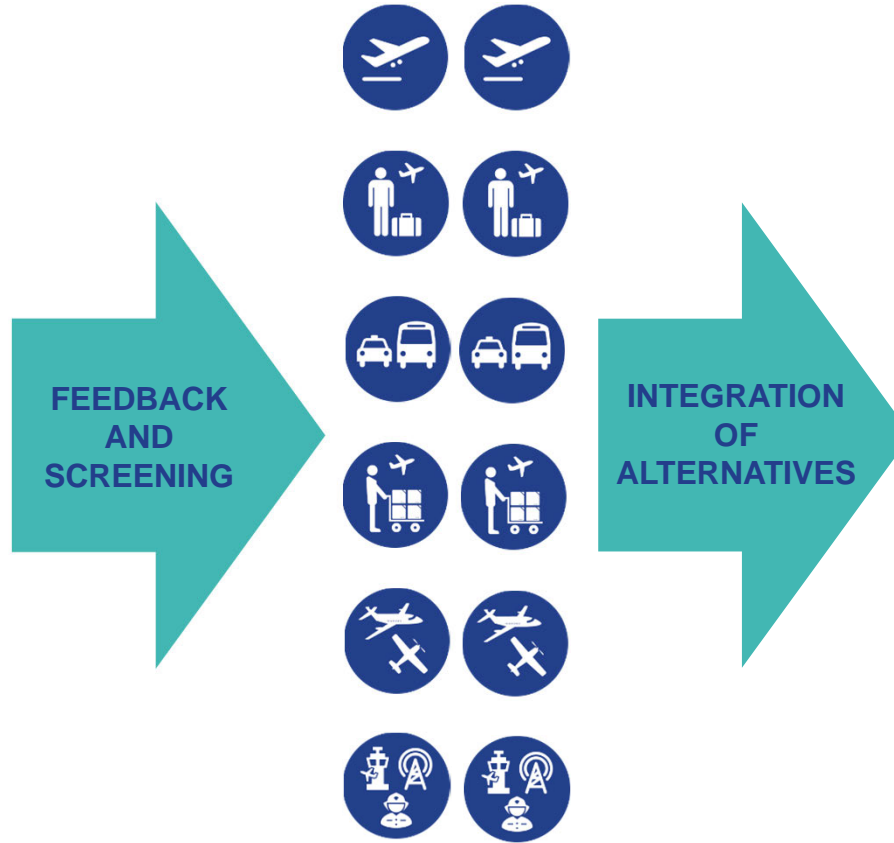
Alternatives Planning Process

WORKSHOP #1

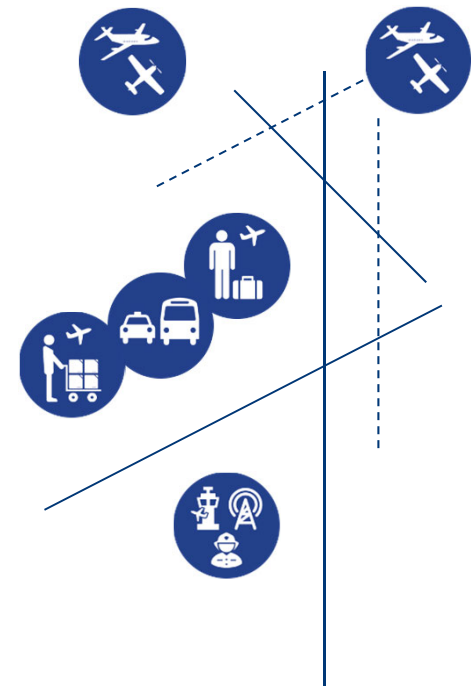


INITIAL ALTERNATIVES
(SUBJECT MATTER)

WORKSHOP #2



REFINED ALTERNATIVES
(SUBJECT MATTER)



INTEGRATED
ALTERNATIVES

Updated Requirements

- Since Workshop #1, some DRAFT facility requirements have been quantitatively updated to reflect changes in methodology and new developments at MKE
- Alternatives analysis is based on updated requirements
- DRAFT facility requirements are currently under review by MKE

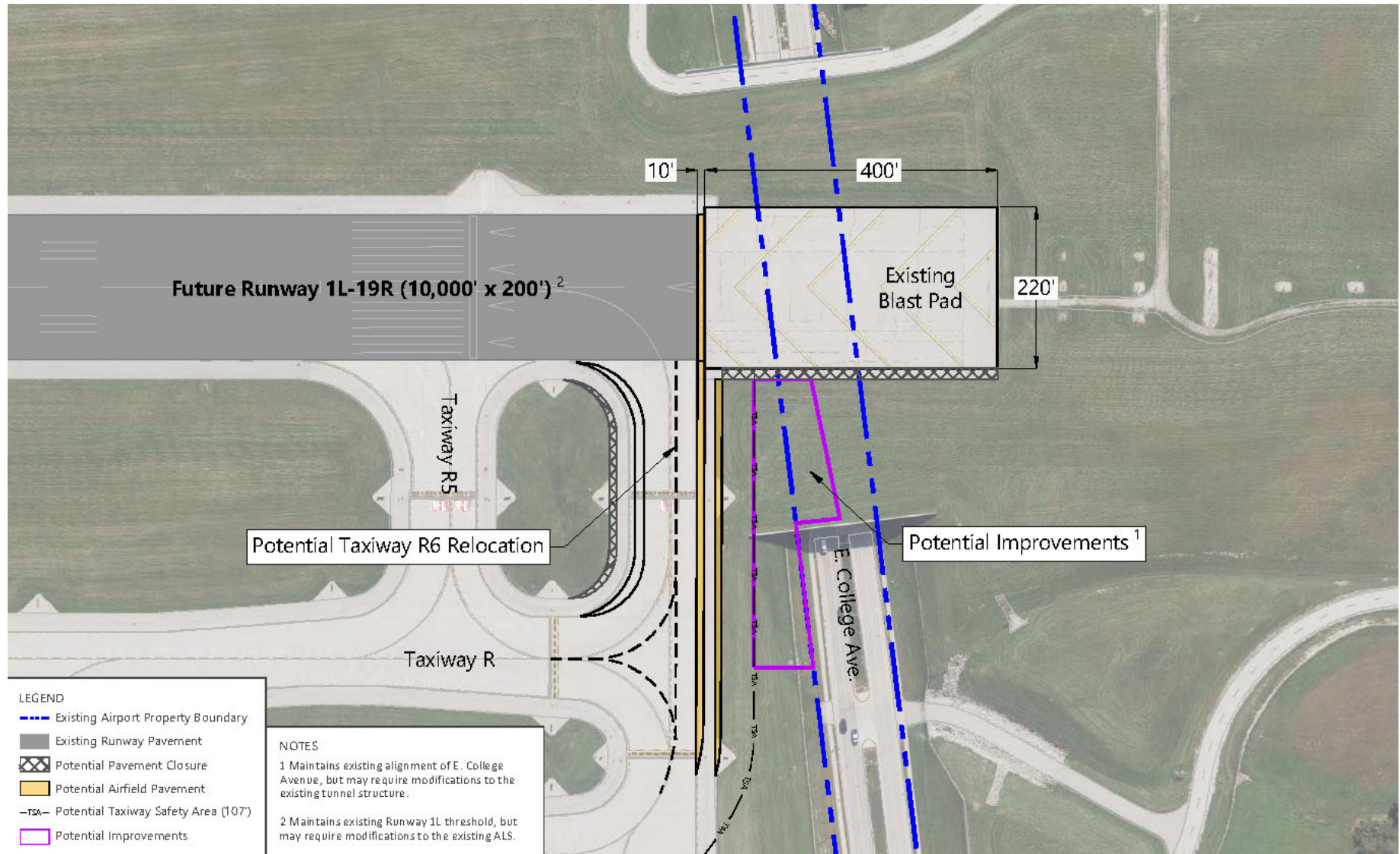
Airfield Alternatives



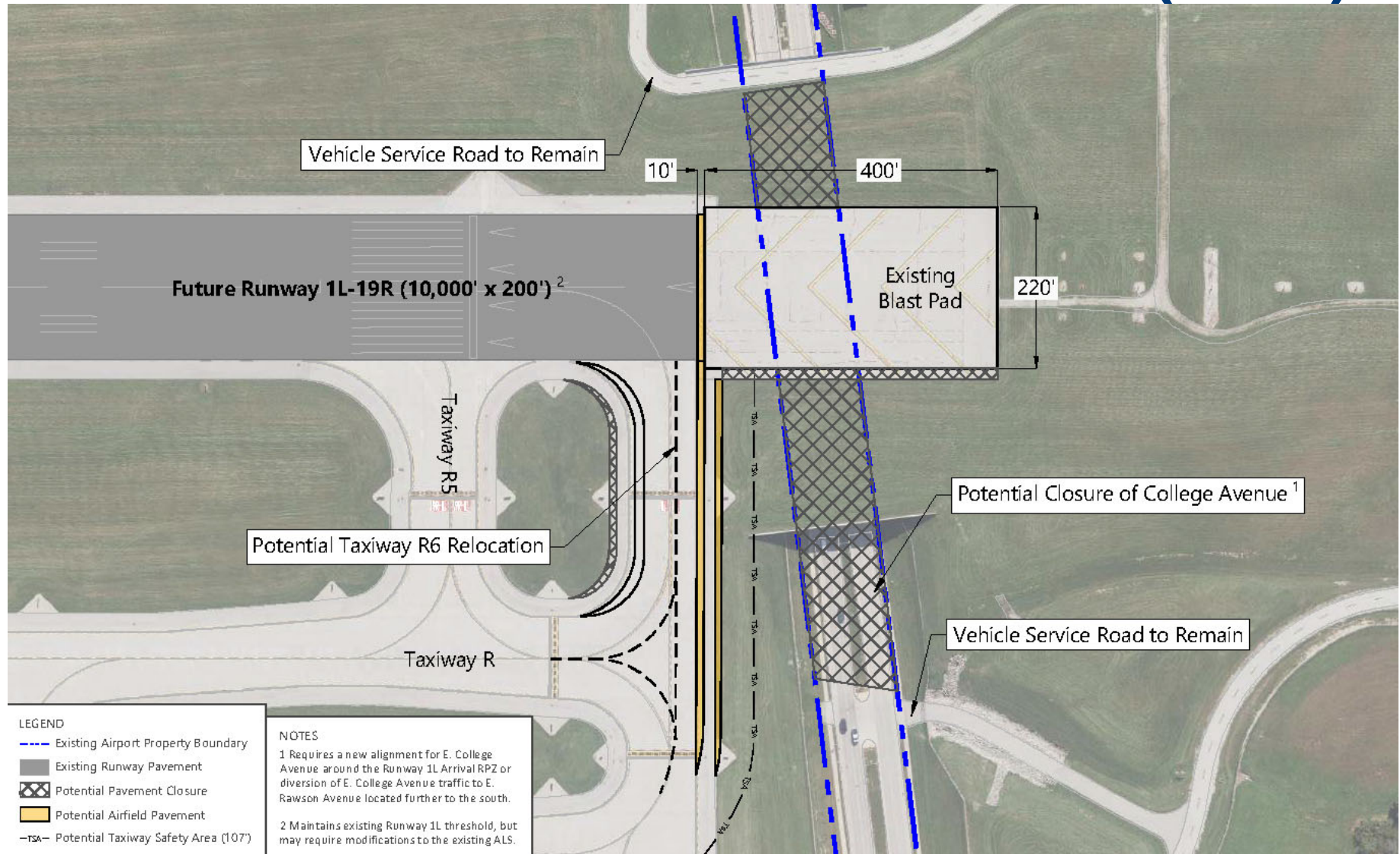
Airfield Challenges

- Qualitative
 - 10,000-foot runway requirement to meet WI ANG mission preferences
 - Airfield hot spots / complex intersections
 - Compliance with FAA criteria/standards
 - FAA funding challenges
 - Proximity of RW 1R-19L to WI ANG facilities
 - Operational redundancy (in case of runway out of service)
 - Runway length to serve international markets
 - Noise Abatement
- Quantitative
 - Forecast demand between 60 and 75 percent of Annual Service Volume (trigger for planning additional capacity) – identify Ultimate configuration
 - Preserve adequate wind coverage and crosswind capabilities

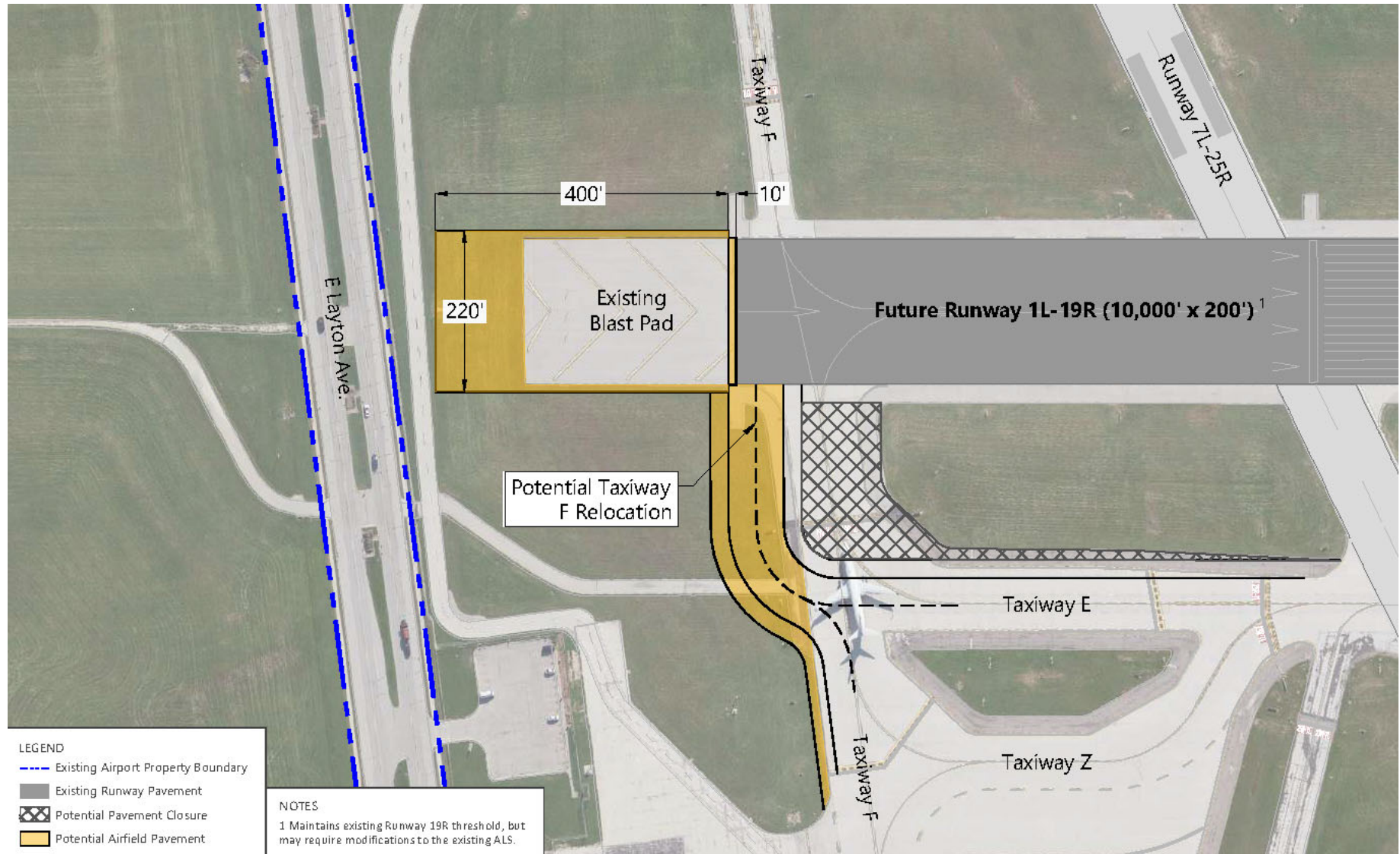
Airfield Alternative – 1L 10ft Extension



Airfield Alternative – 1L 10ft Extension (Con't)

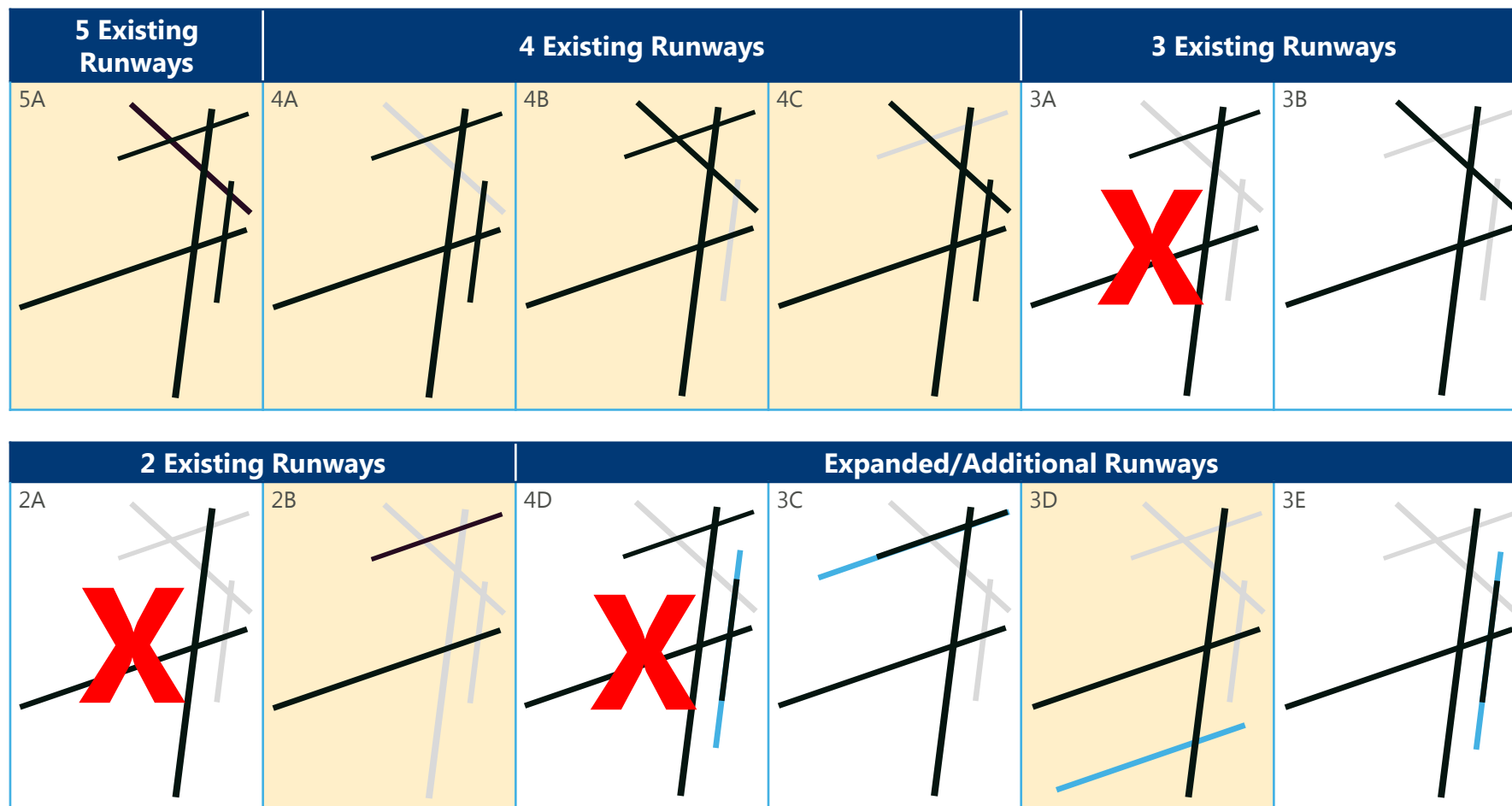


Airfield Alternative – 19R 10ft Extension



Potential Runway Alternatives

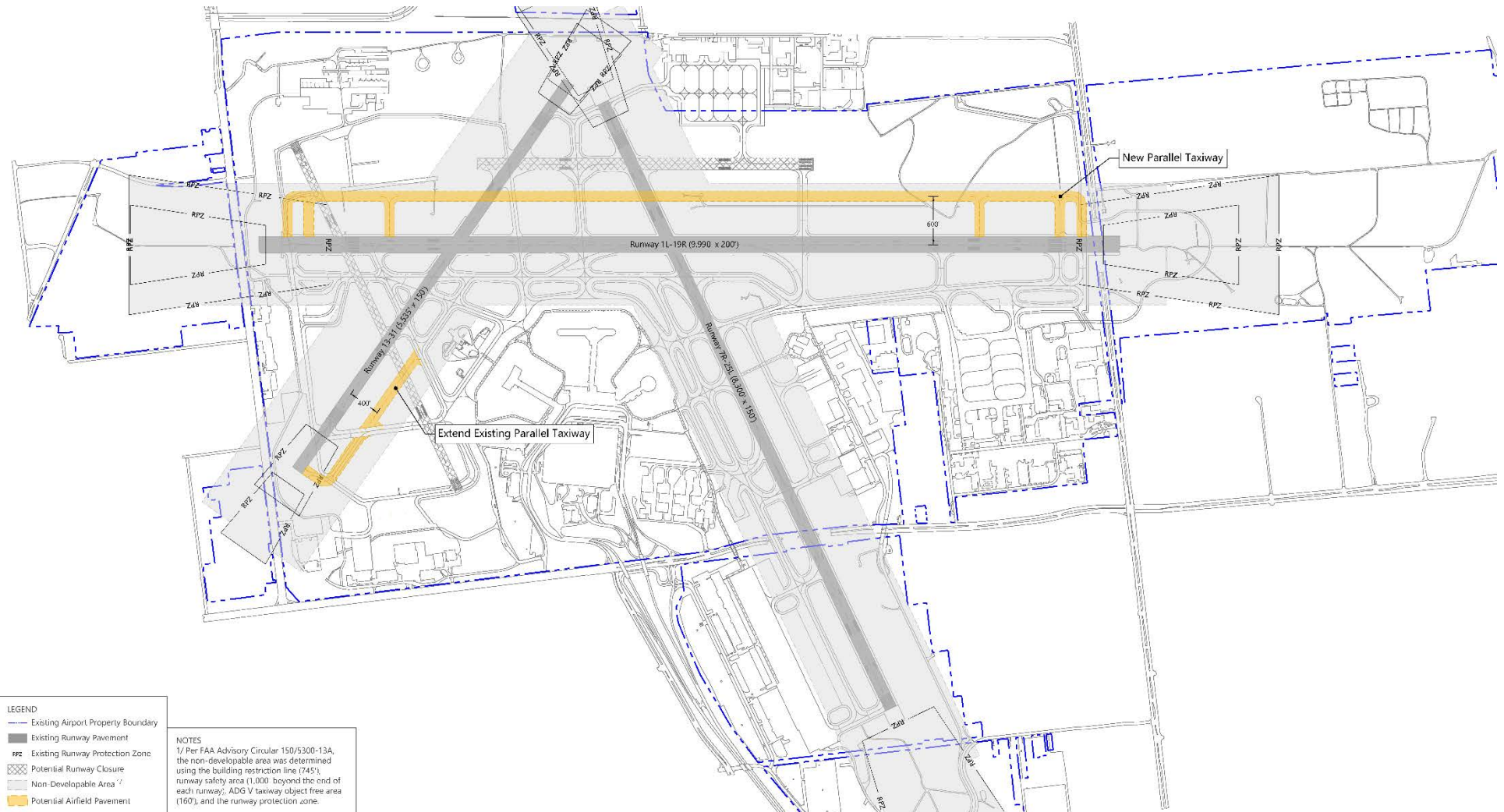
N
↑
not to scale



Legend | — Existing/Retained Runway — Existing/Decommissioned Runway — Expanded/Additional Runway Eliminated Concept

SOURCE: Ricondo & Associates, Inc., July 2019.

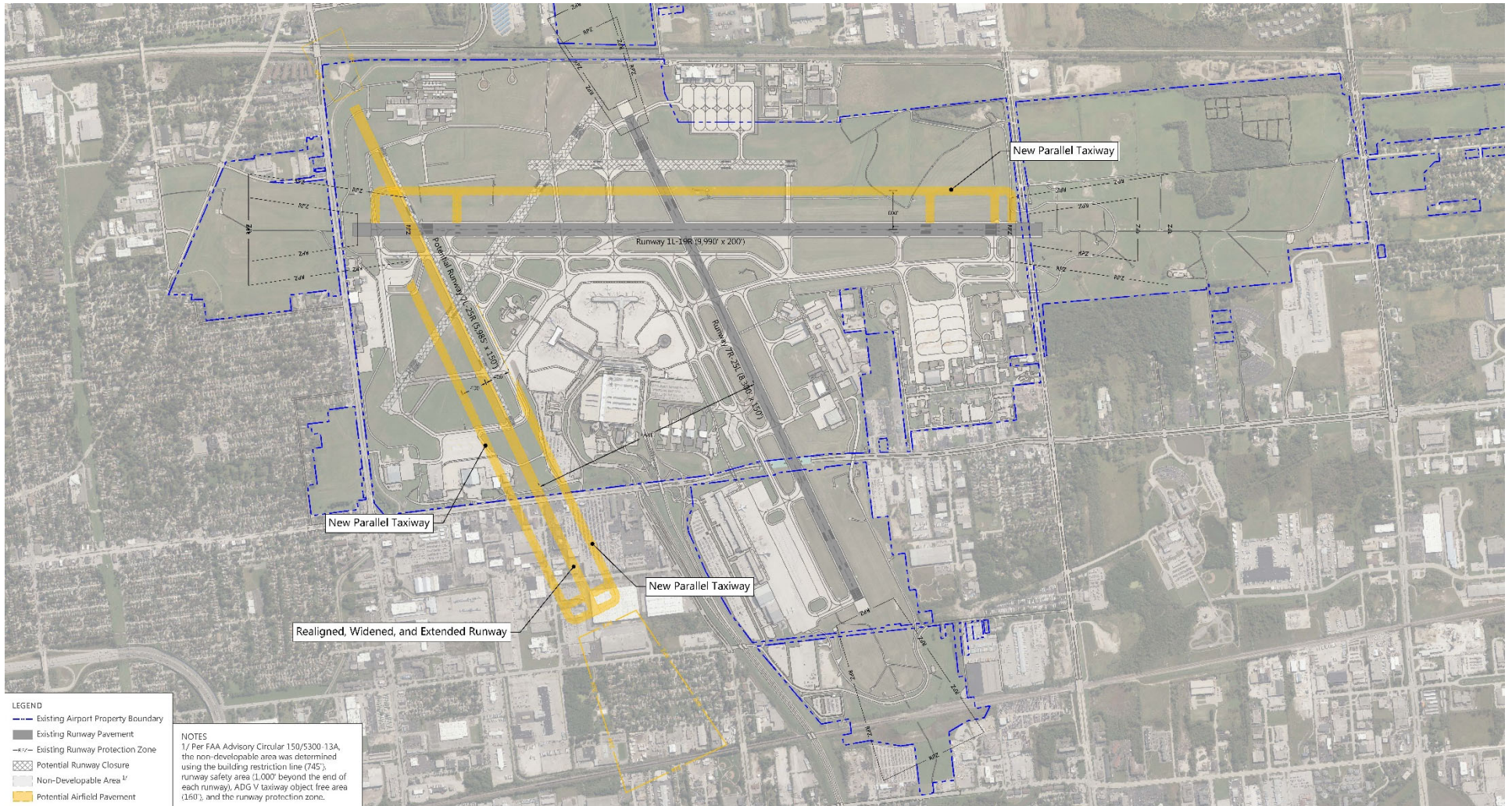
Airfield Alternative 3B



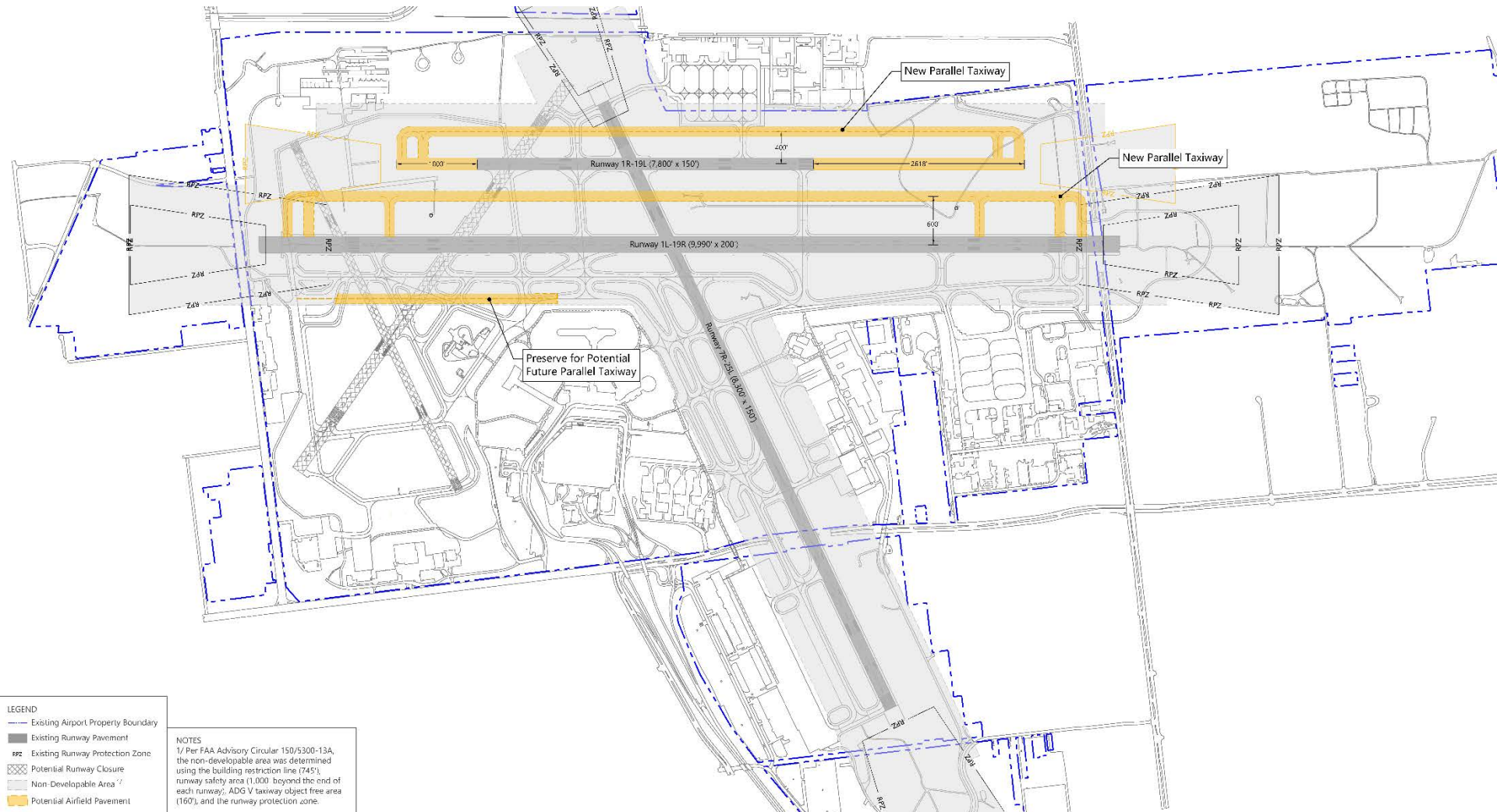
Airfield Alternative 3C



Airfield Alternative 3C-Ultimate



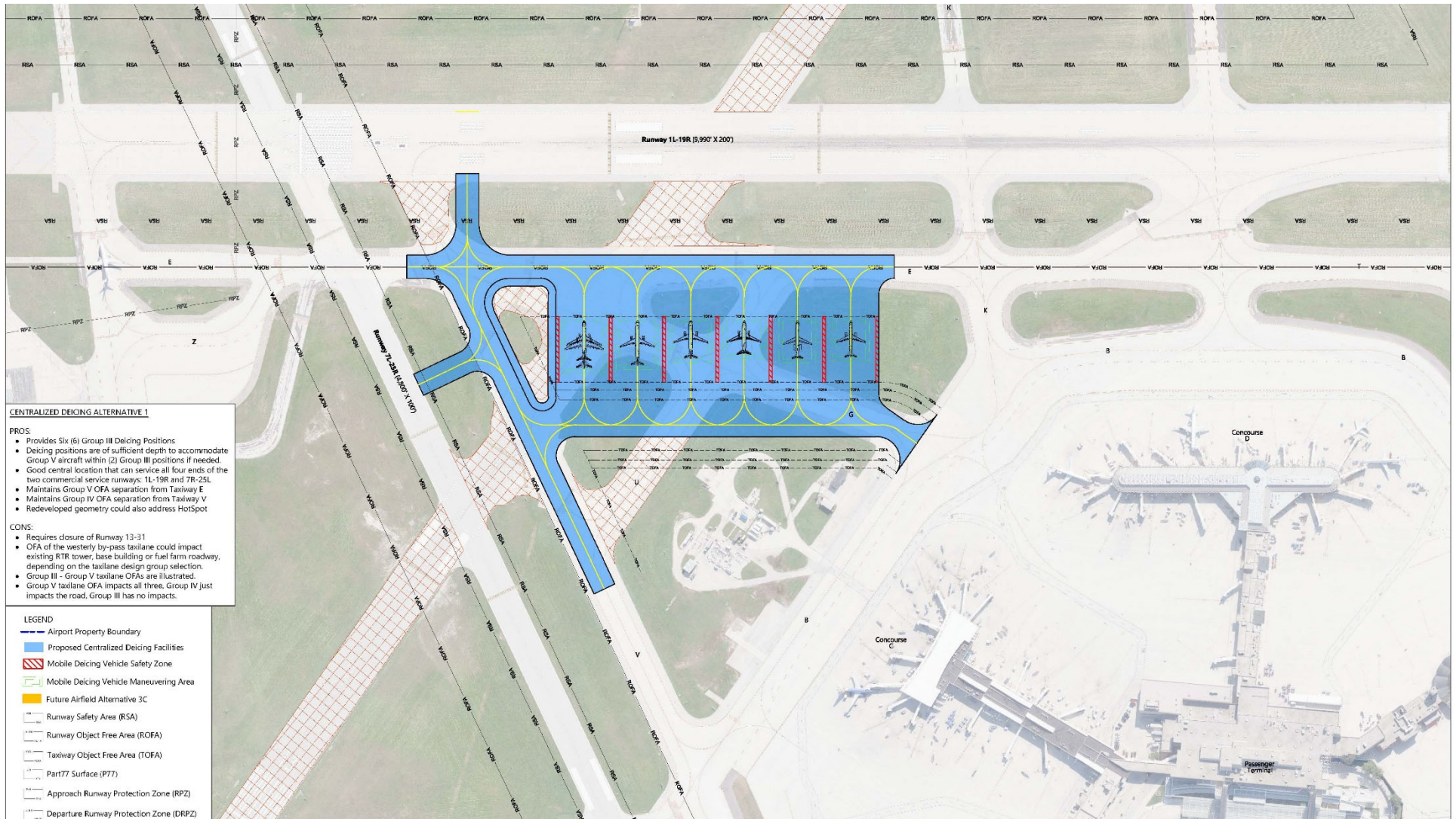
Airfield Alternative 3E



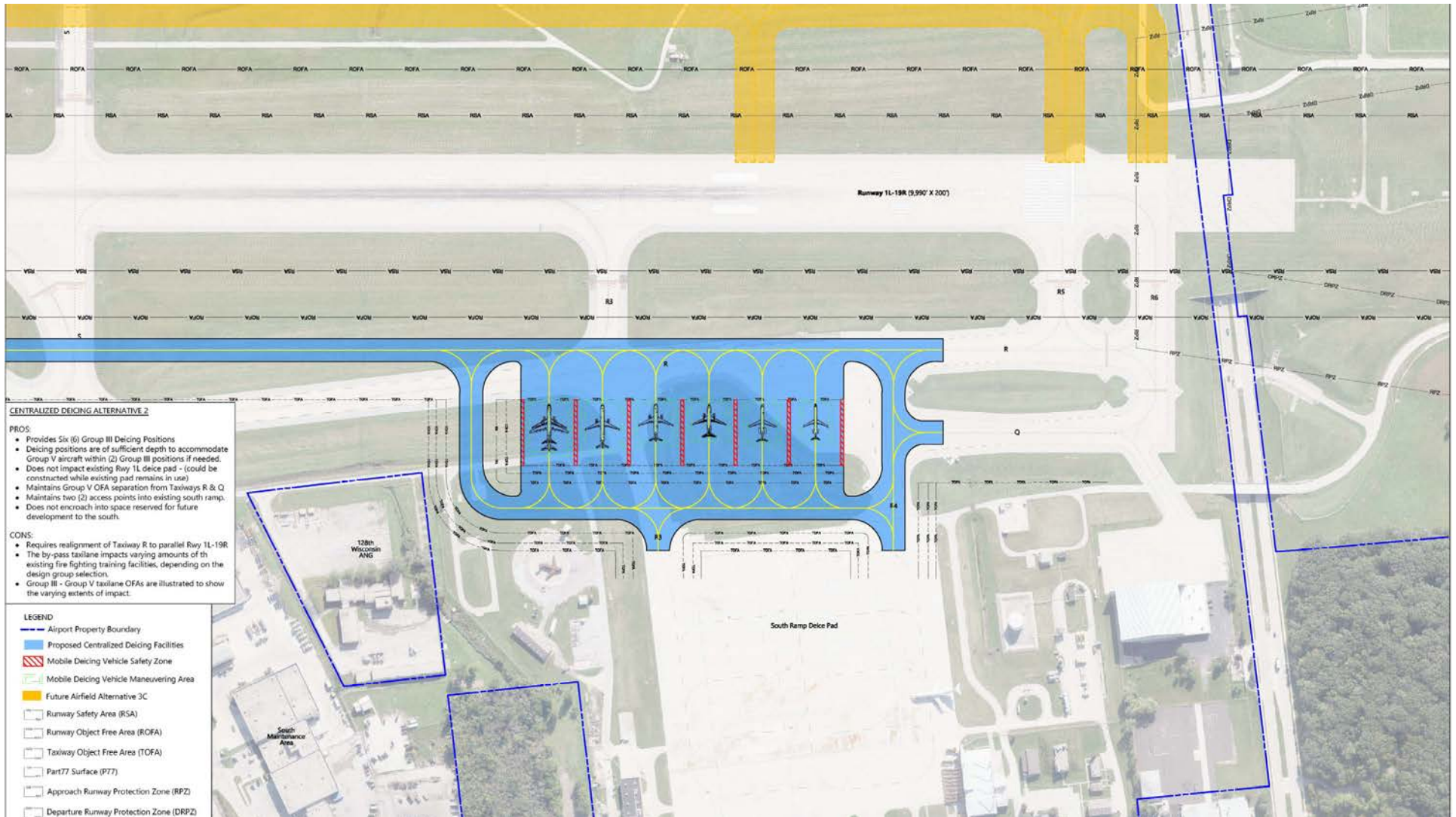
Deicing Alternatives



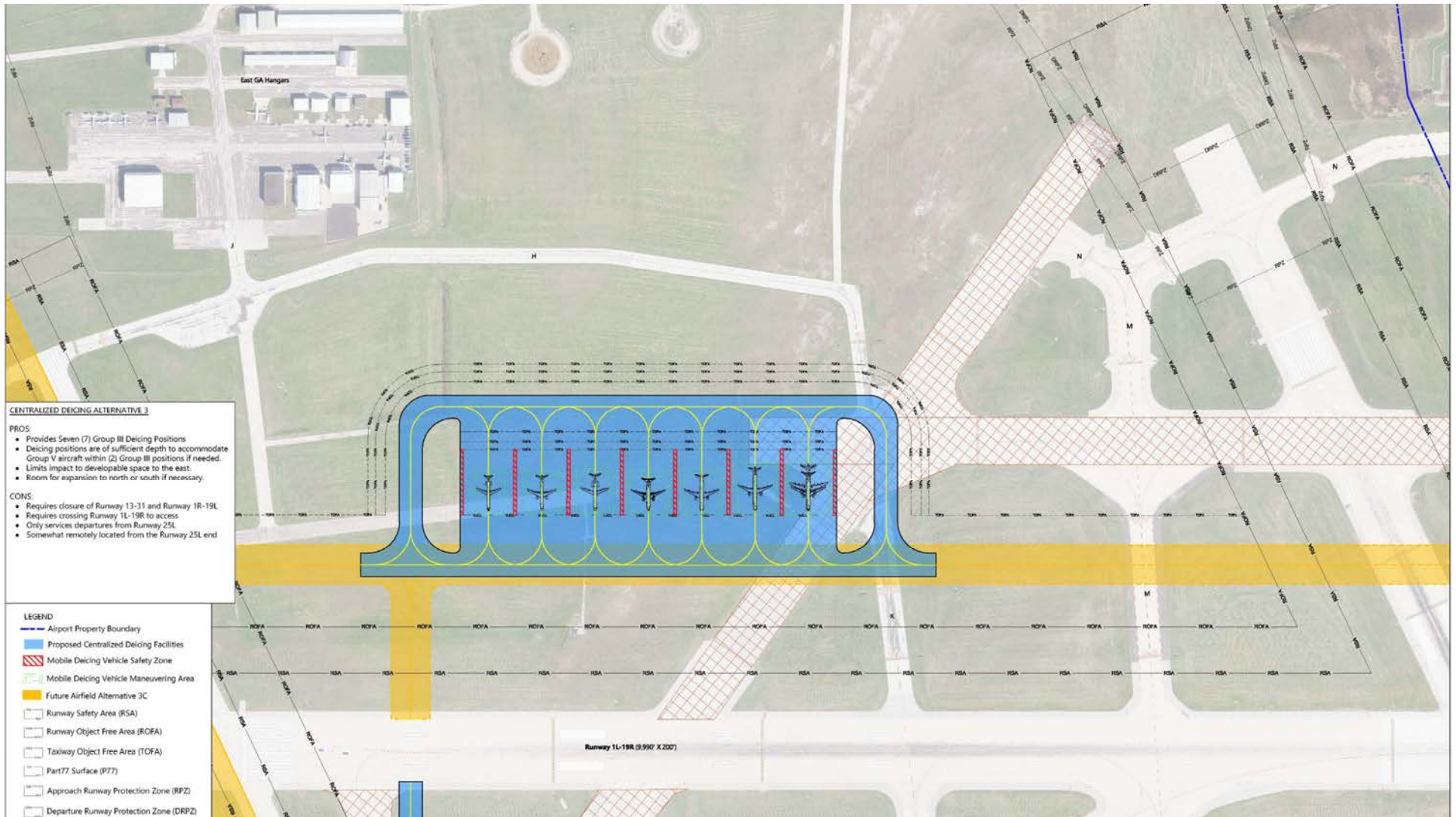
Centralized Deicing Alternative 1



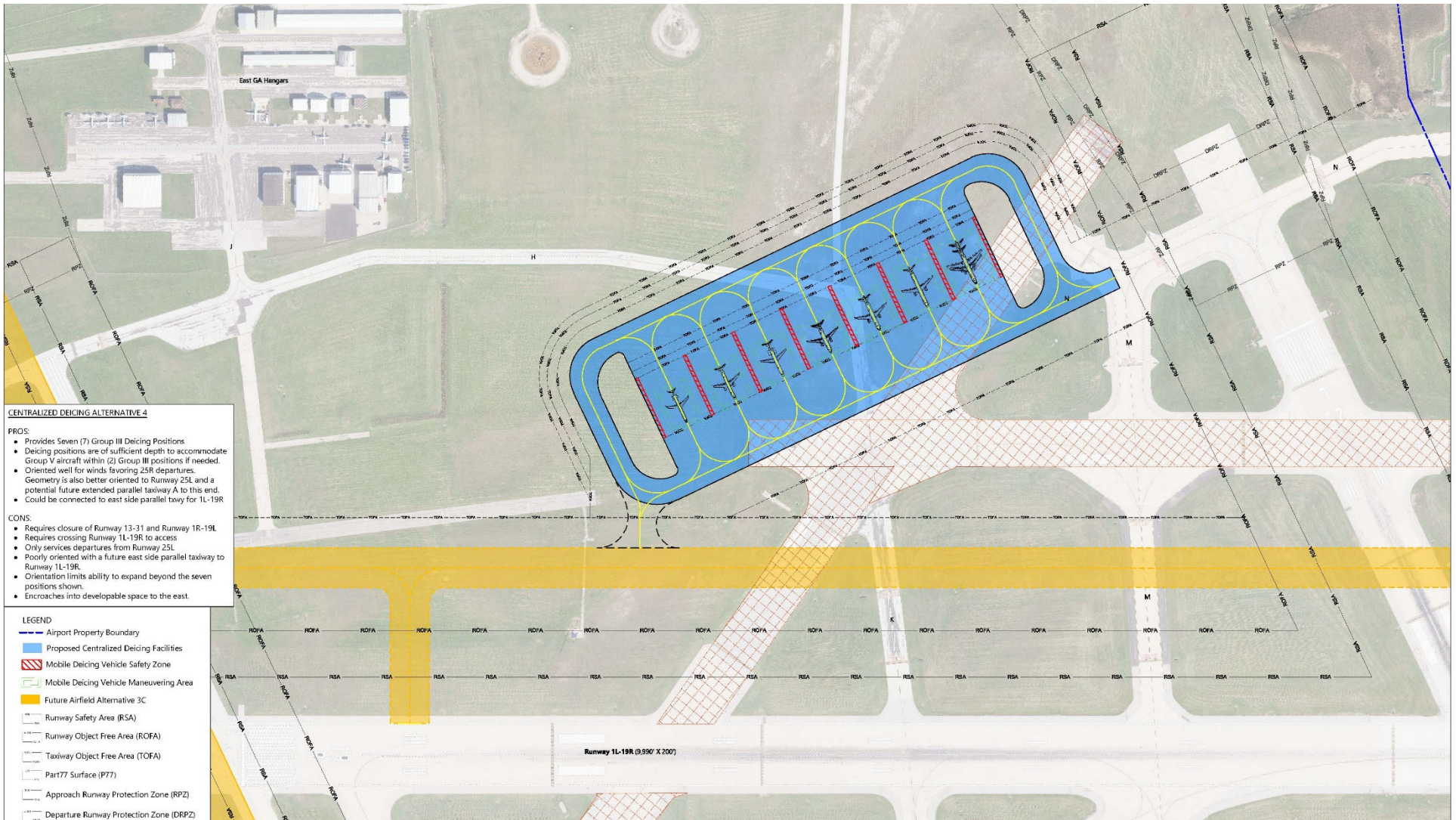
Centralized Deicing Alternative 2



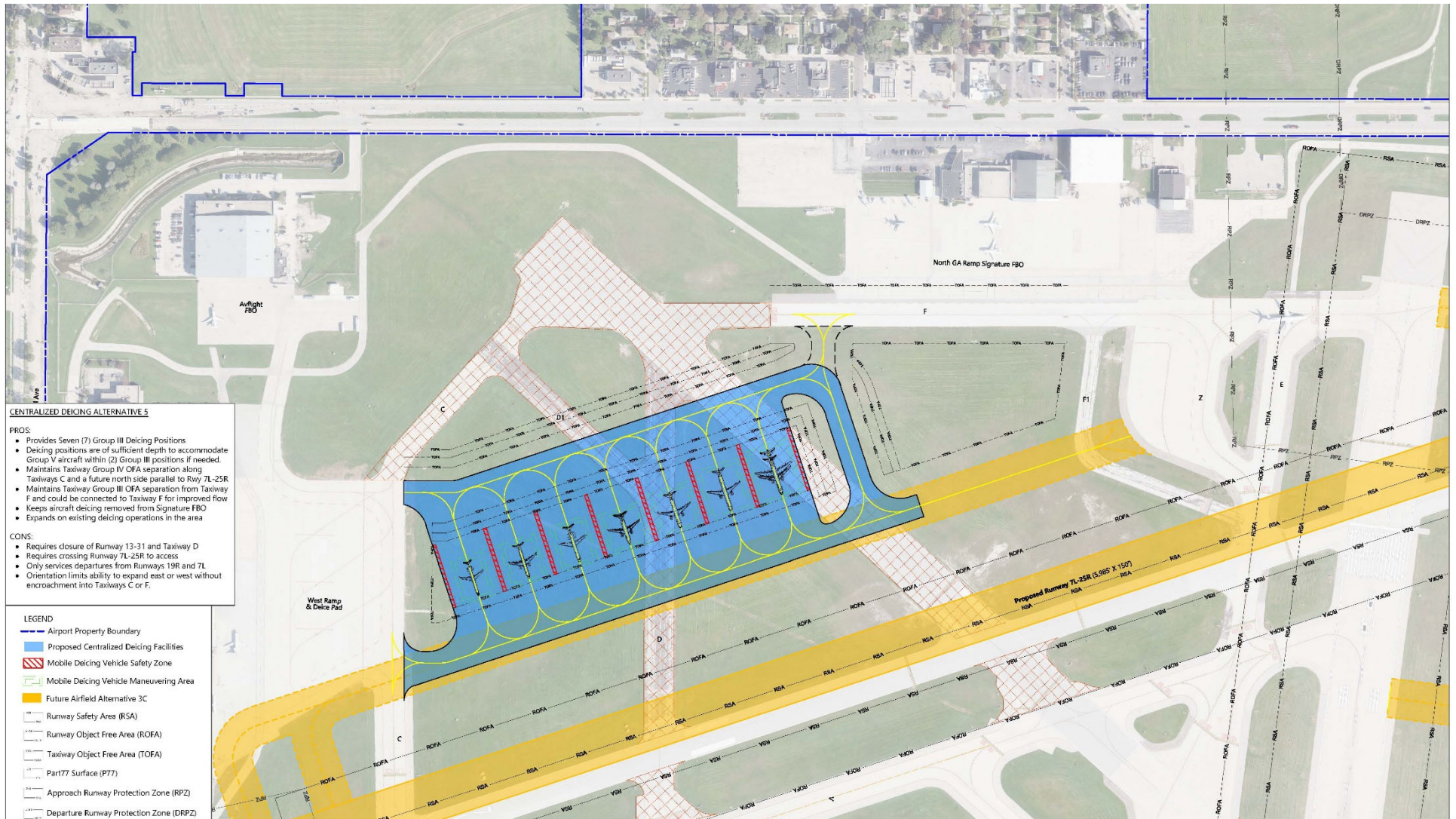
Centralized Deicing Alternative 3



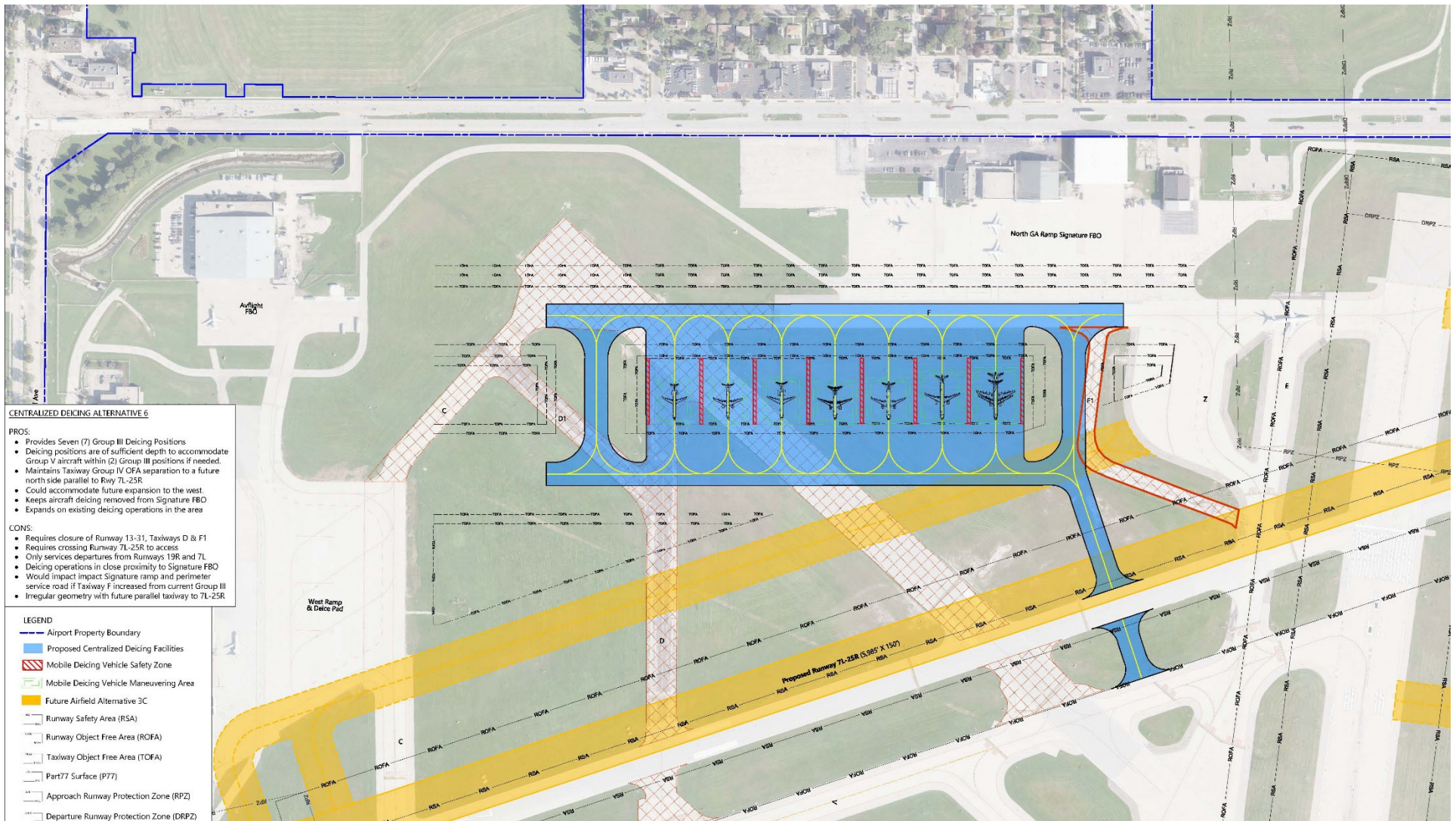
Centralized Deicing Alternative 4



Centralized Deicing Alternative 5



Centralized Deicing Alternative 6



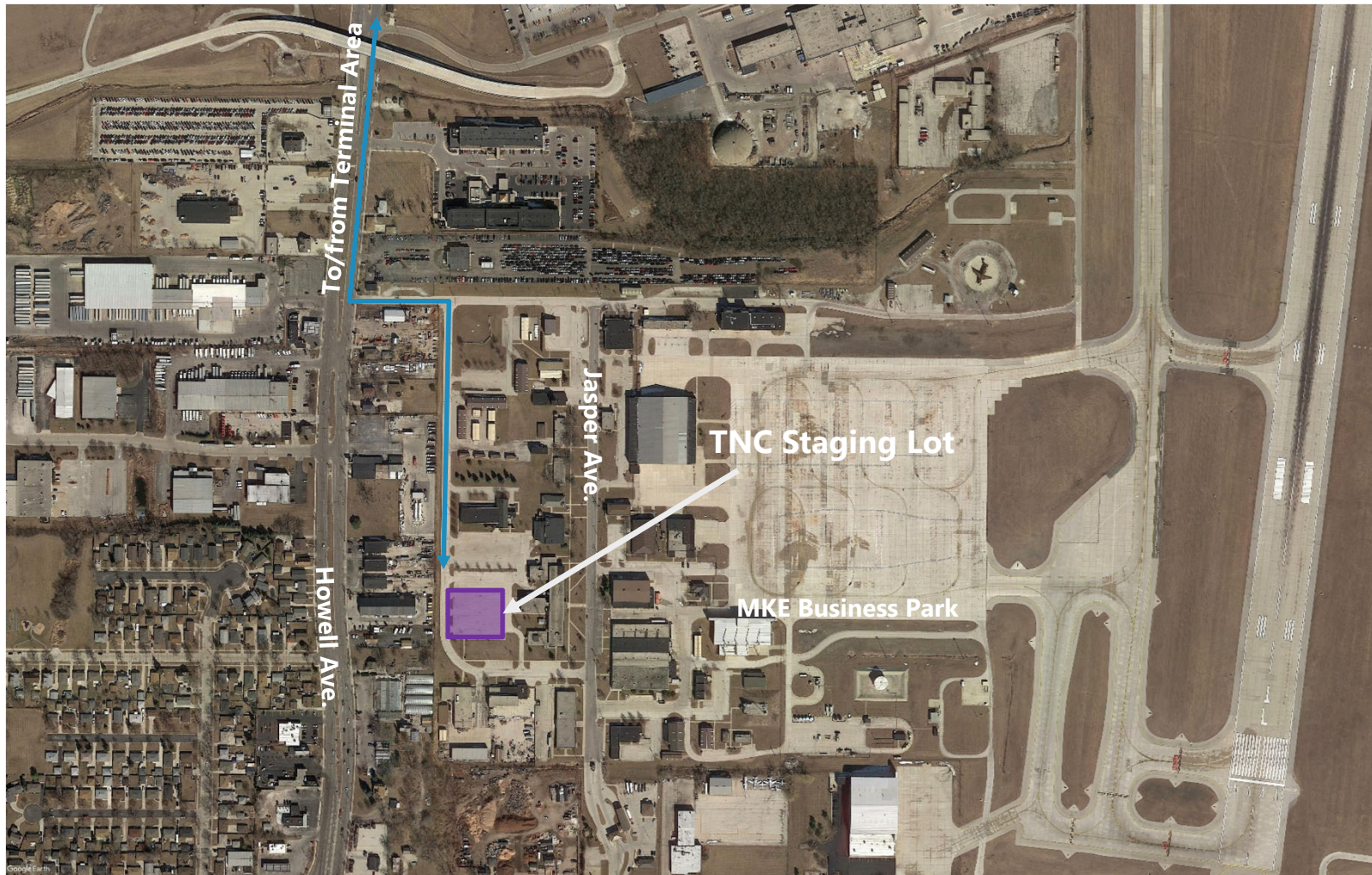
Landside Alternatives



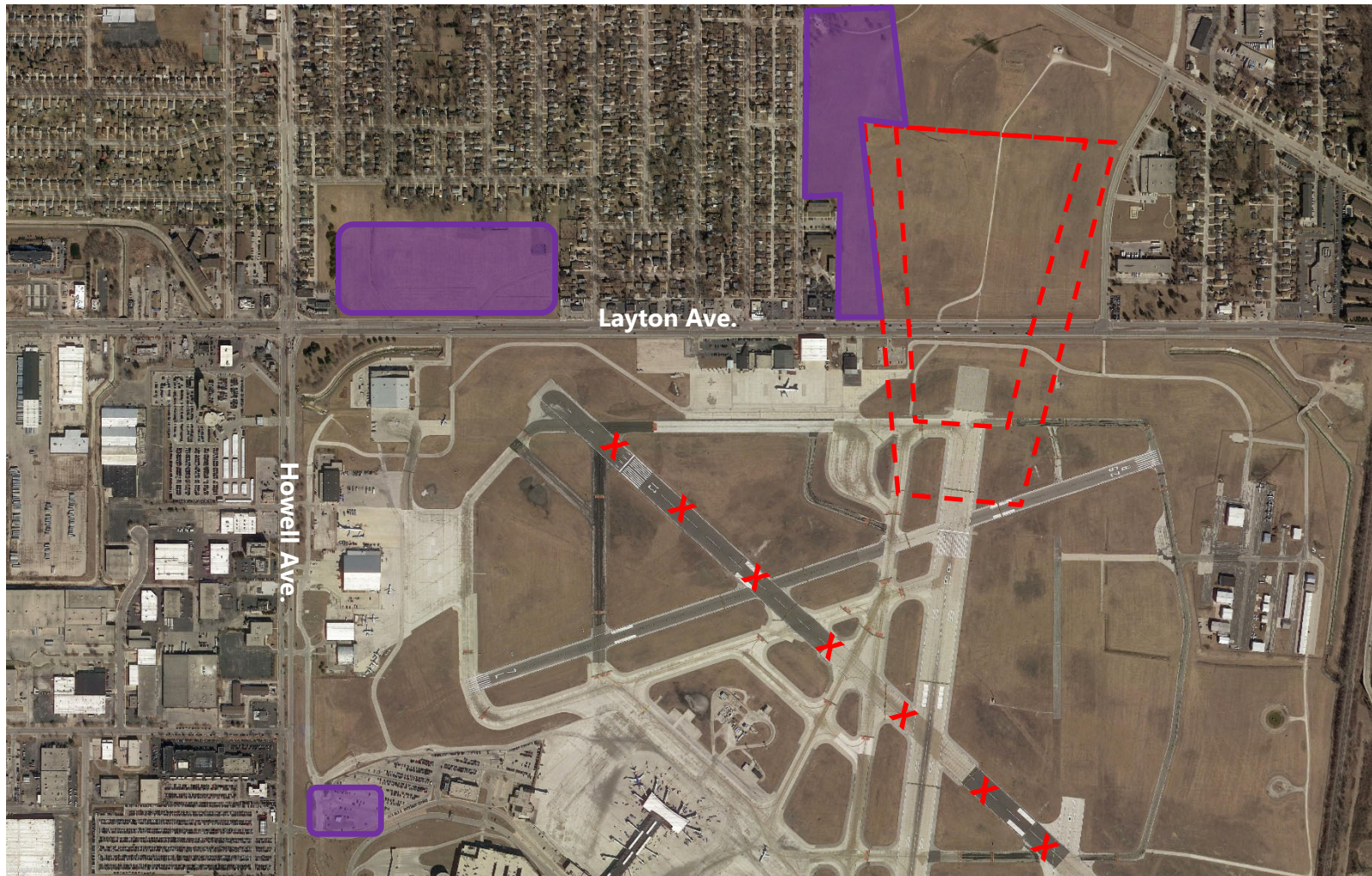
Landside Challenges

- Qualitative
 - Create “front-door” visibility at MKE entrance
 - Potential for enhancing parking revenue by expanding on-airport facilities
 - Driver experience and ease of wayfinding (complexity of navigation)
 - Simplify access along Howell Ave. and Airport Spur
 - Taxi dispatch and circulation within terminal roadway
 - Relocation of TNC staging area
- Quantitative
 - Short sight distances and vehicle weave distances
 - Ease curbside and on-airport roadway congestion during peak periods
 - Potential for consolidation of facilities (CONRAC and/or Ground Transportation Center [GTC])
 - Close-in vs. remote facilities (off-airport site options?)
 - Ability to repurpose future facilities should mode share shift
- Additional public parking (2,600-4,600 spaces required by 2040)

TNC Staging Lot Alternative



TNC Staging Alternatives

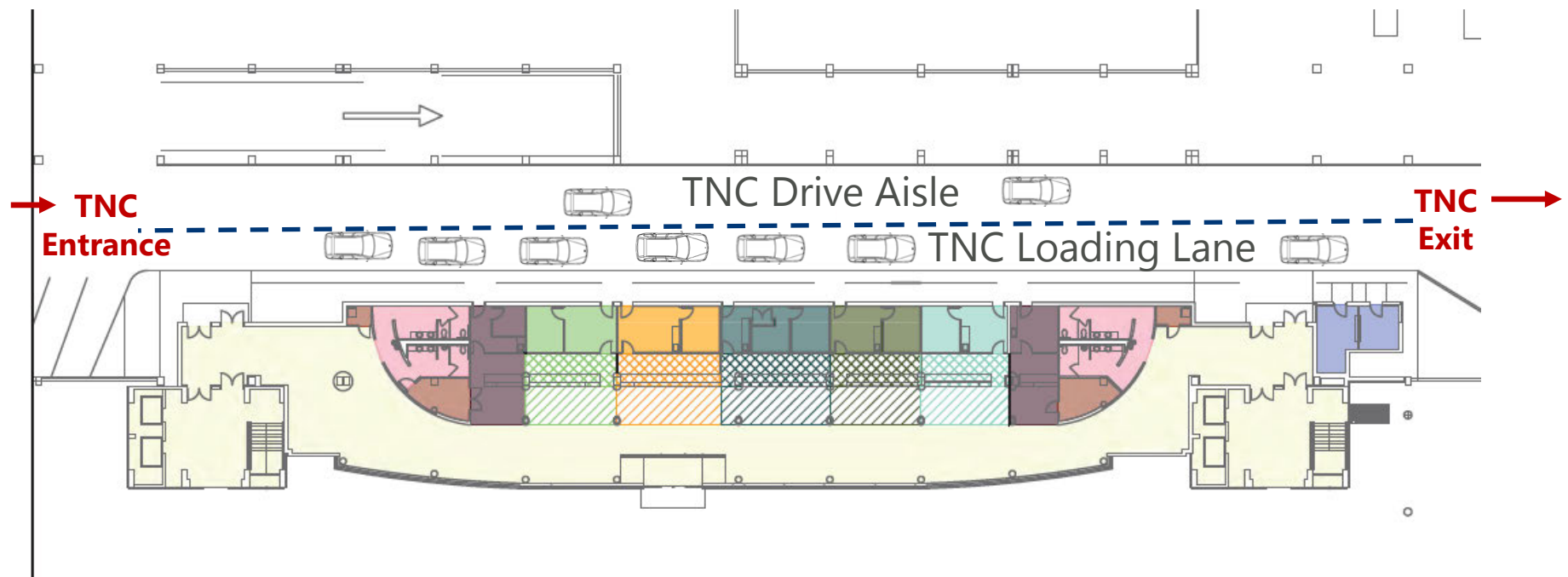


TNC Staging and Pickup Alternative

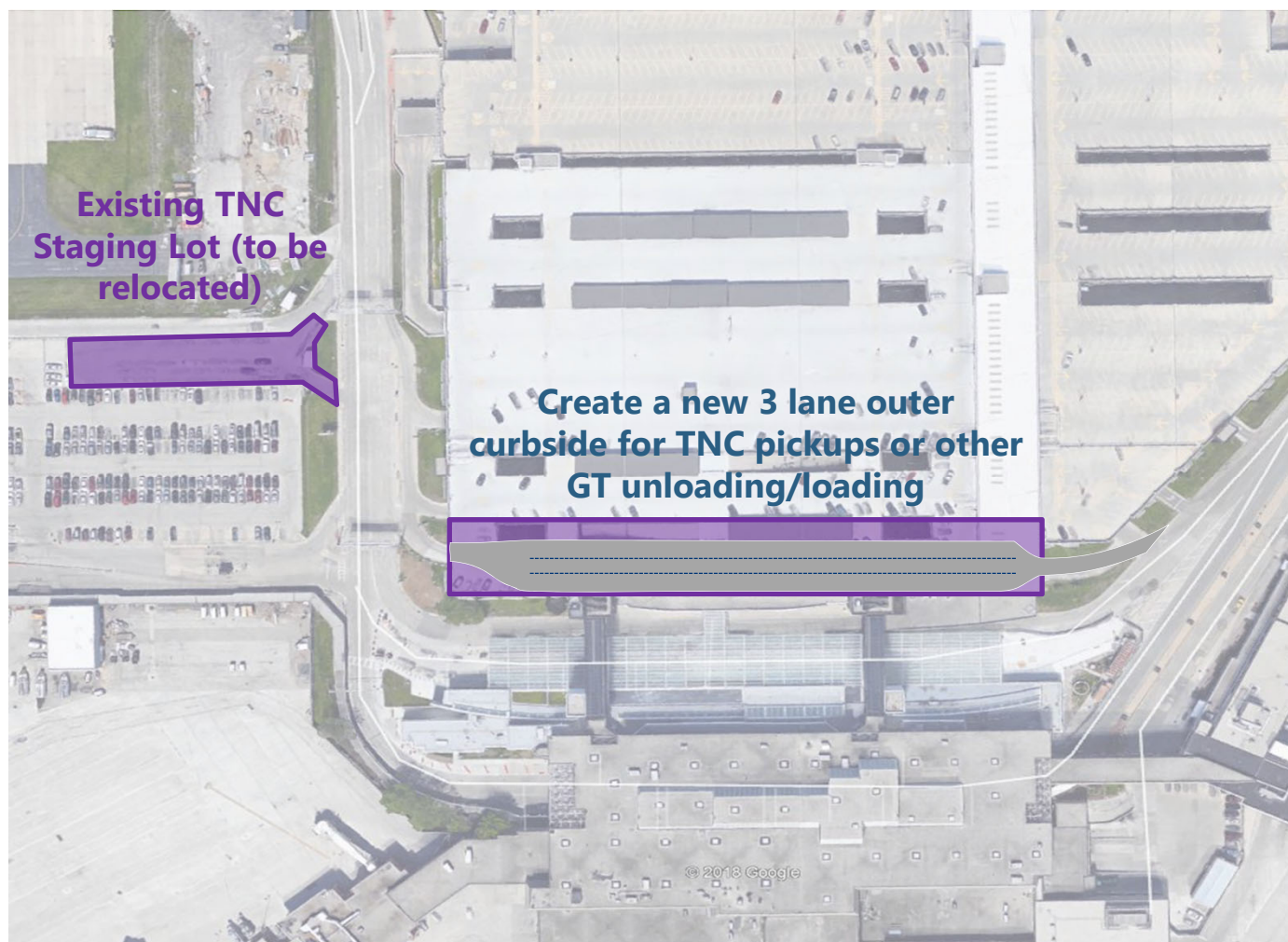


TNC Staging and Pickup Alternative (Con't)

- New Linear TNC pickup lane behind Rental Car Customer Service Area
 - Linear curb configuration
 - TNC PIN match configuration
- Entrance/Exit via existing roadway through garage
- Verify dimensions of available drive lanes
- Limousine Parking would need to move into the Daily section of garage (Level 3)
- High Volume of TNC traffic may impact rental car customers



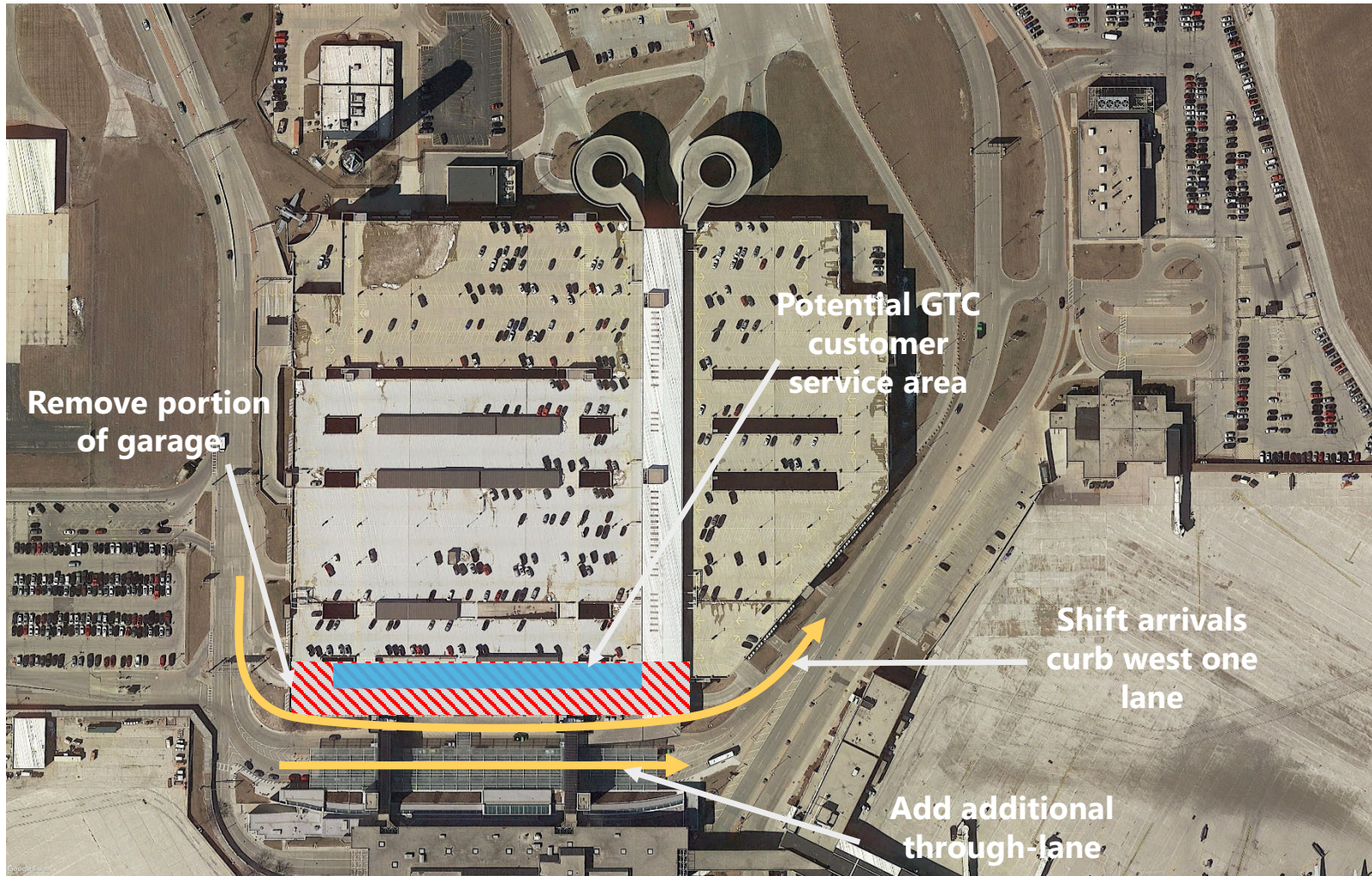
Ground Transportation Alternative



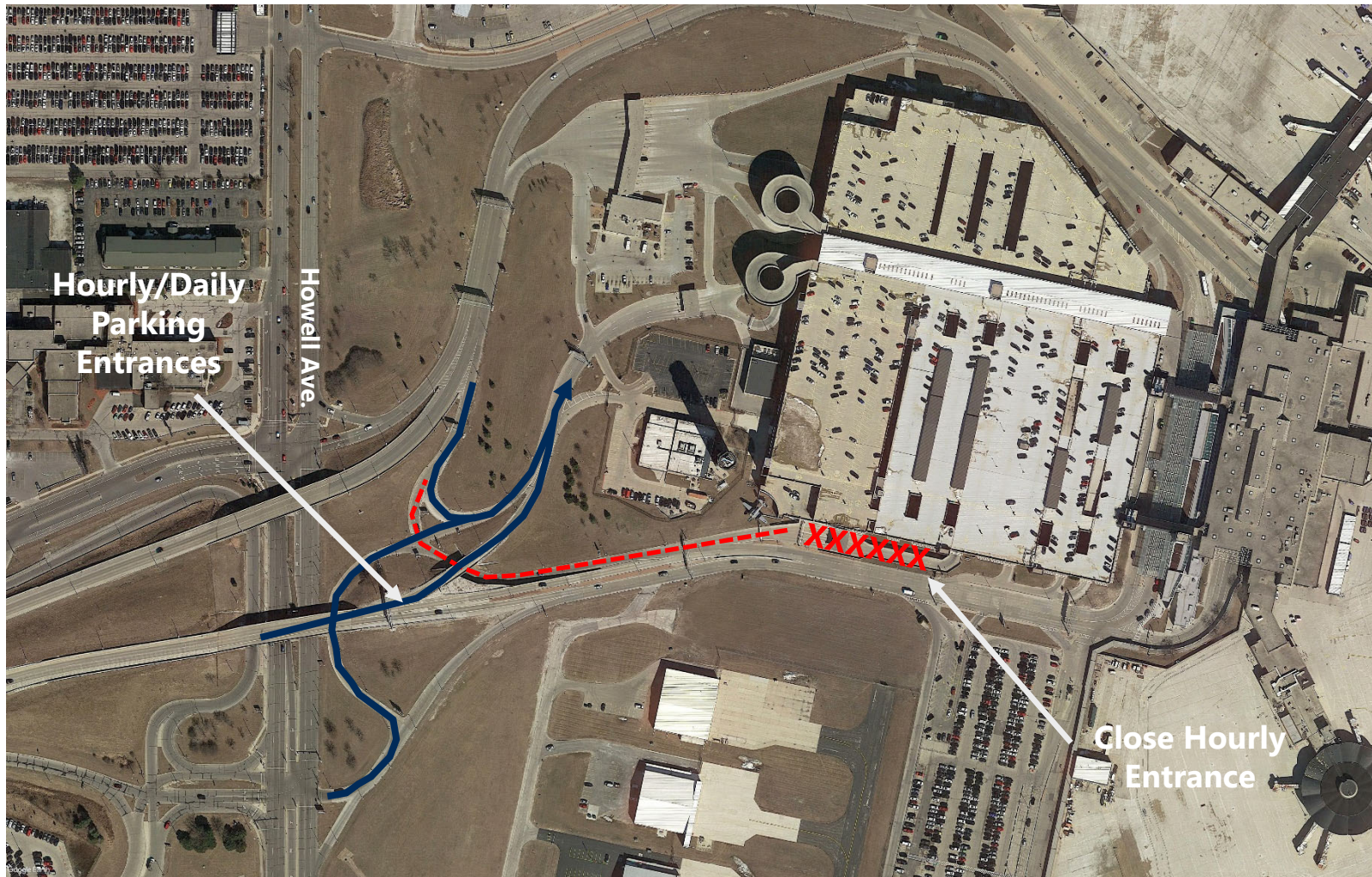
Cutting back the garage to first lightwells would require:

- Relocation of Consolidated Rental Car Facility
- Modifications to existing pedestrian bridges and vertical cores
- Relocation of the TNC hold lot as TNC can't make the cross inbound roadway movement to the new curbside

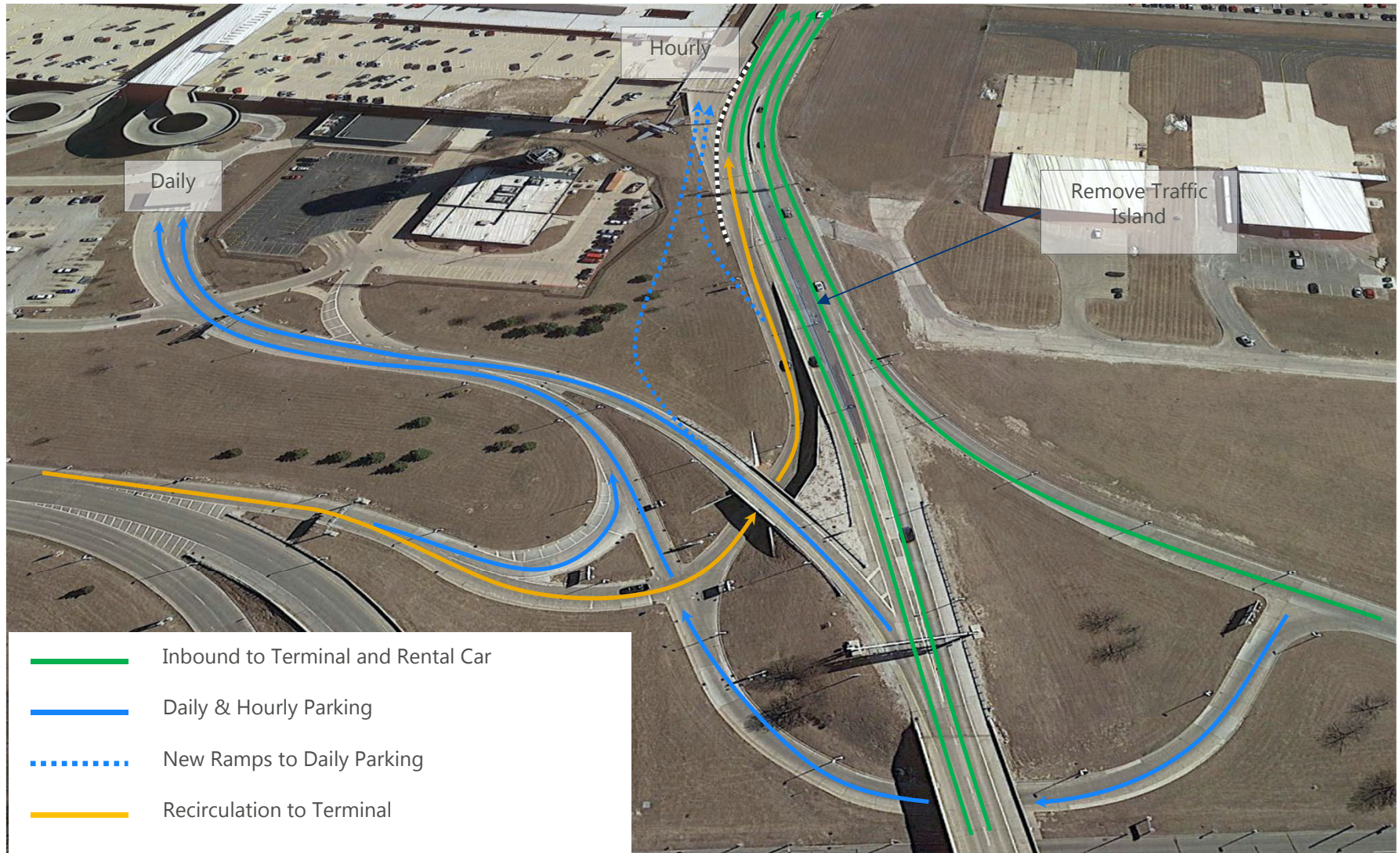
Additional Curbfront Alternative



Parking Garage Roadway Alternative



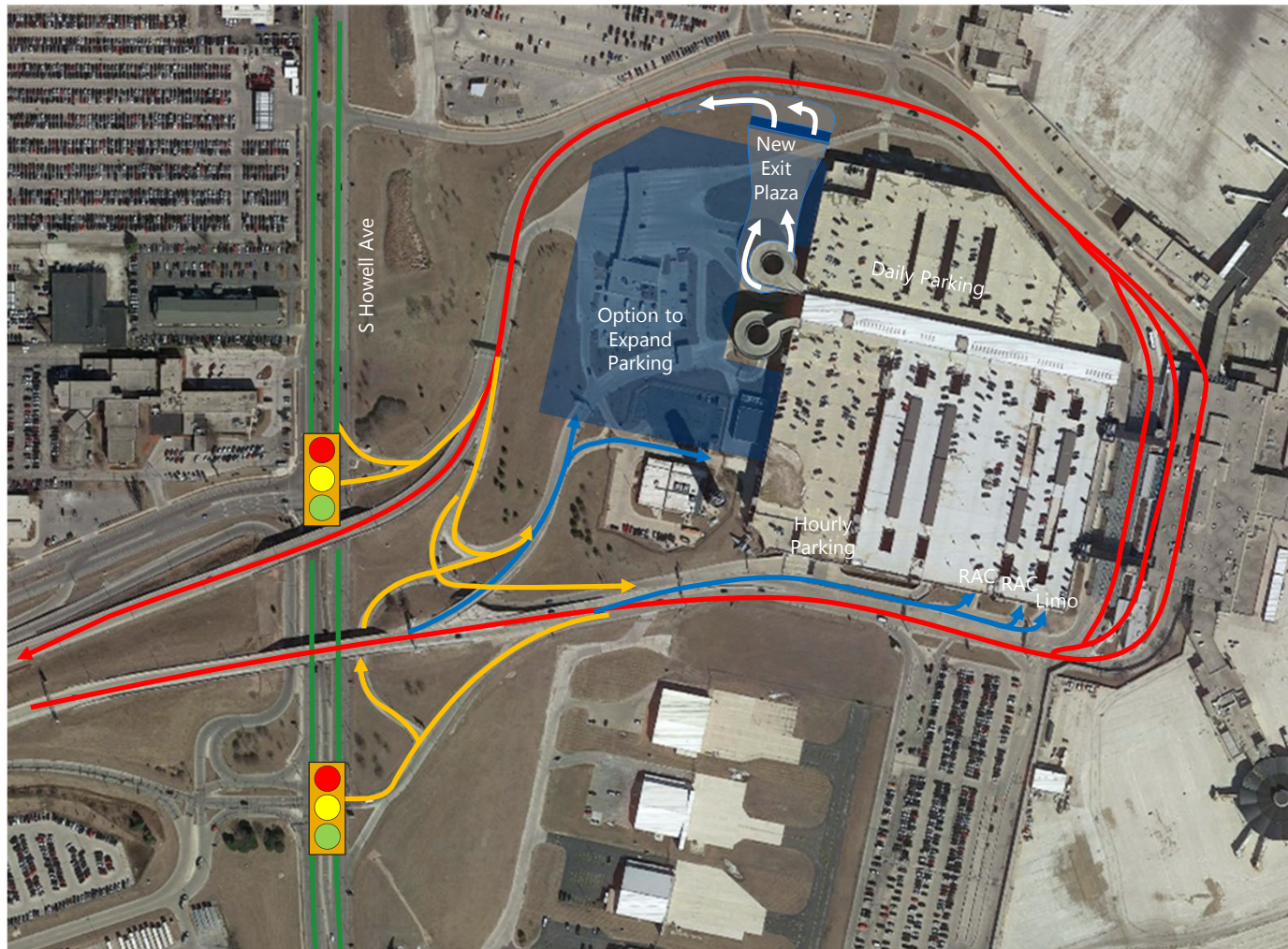
Landside Roadways Alternative 1



Landside Roadways Alternative 2



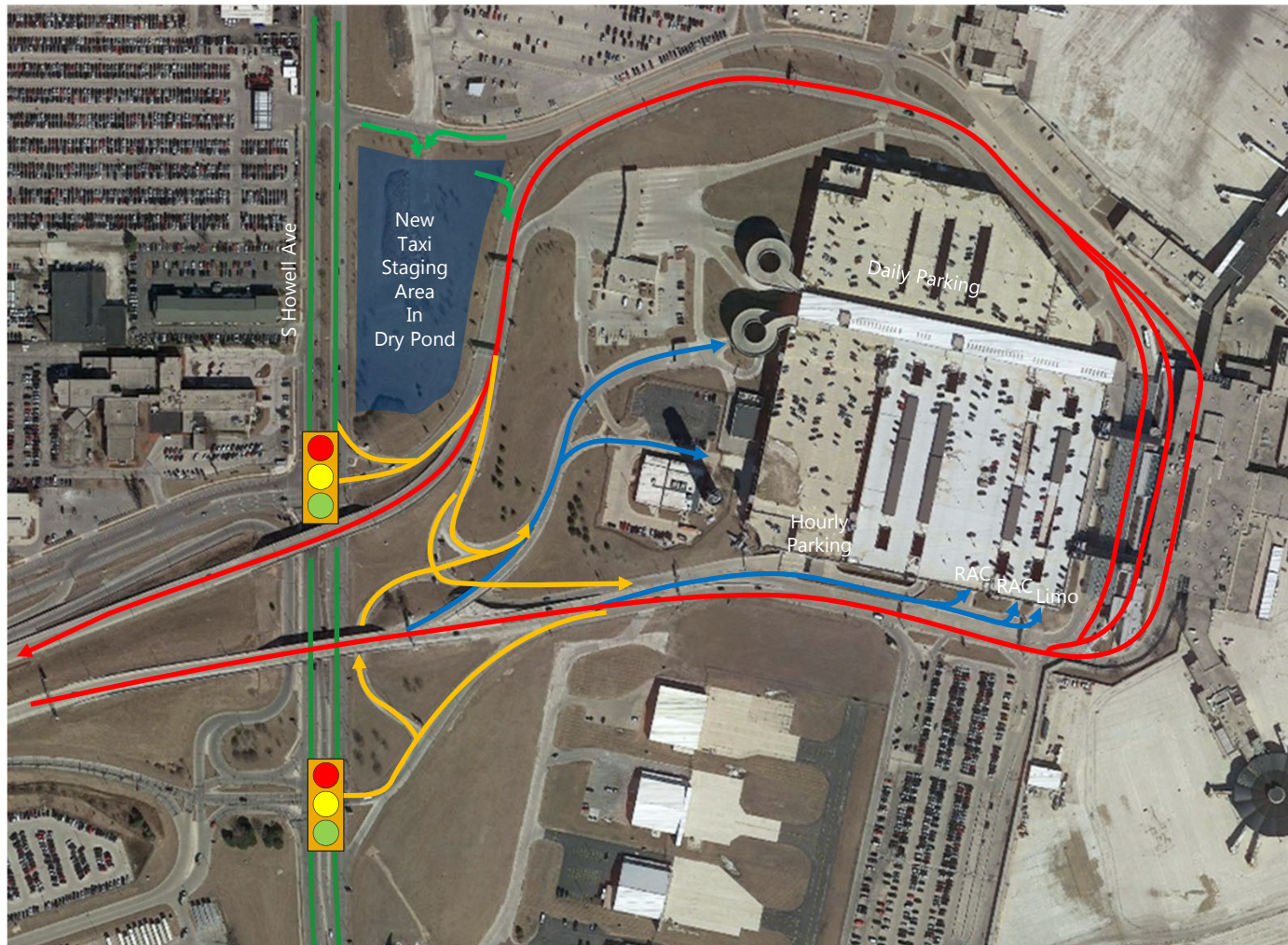
Landside Roadways Alternative 2



Reconstruct Exit Plaza

- Change orientation of exit plaza to free up space for Parking expansion or other land uses
- Moving exit plazas give an additional 400 feet for outbound weaving
- Optional additional parking can be constructed over site of existing parking plazas, design of exit plazas would need to work with ground floor layout of new garage

Landside Roadways Alternative 3



New Taxi Staging Area

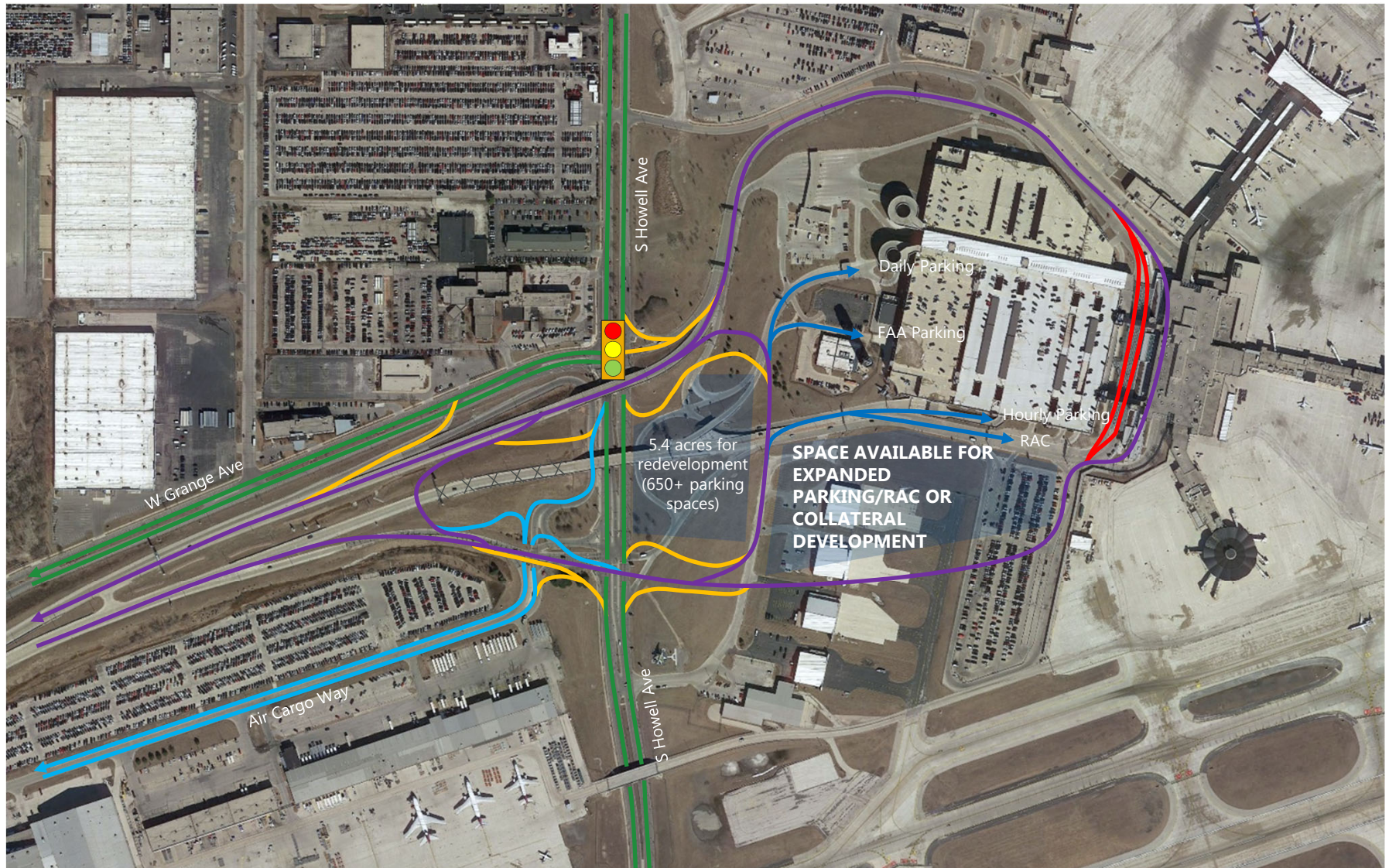
Pros:

- Up to 150,000 sq ft
- Entry Access off Hutsteiner Dr

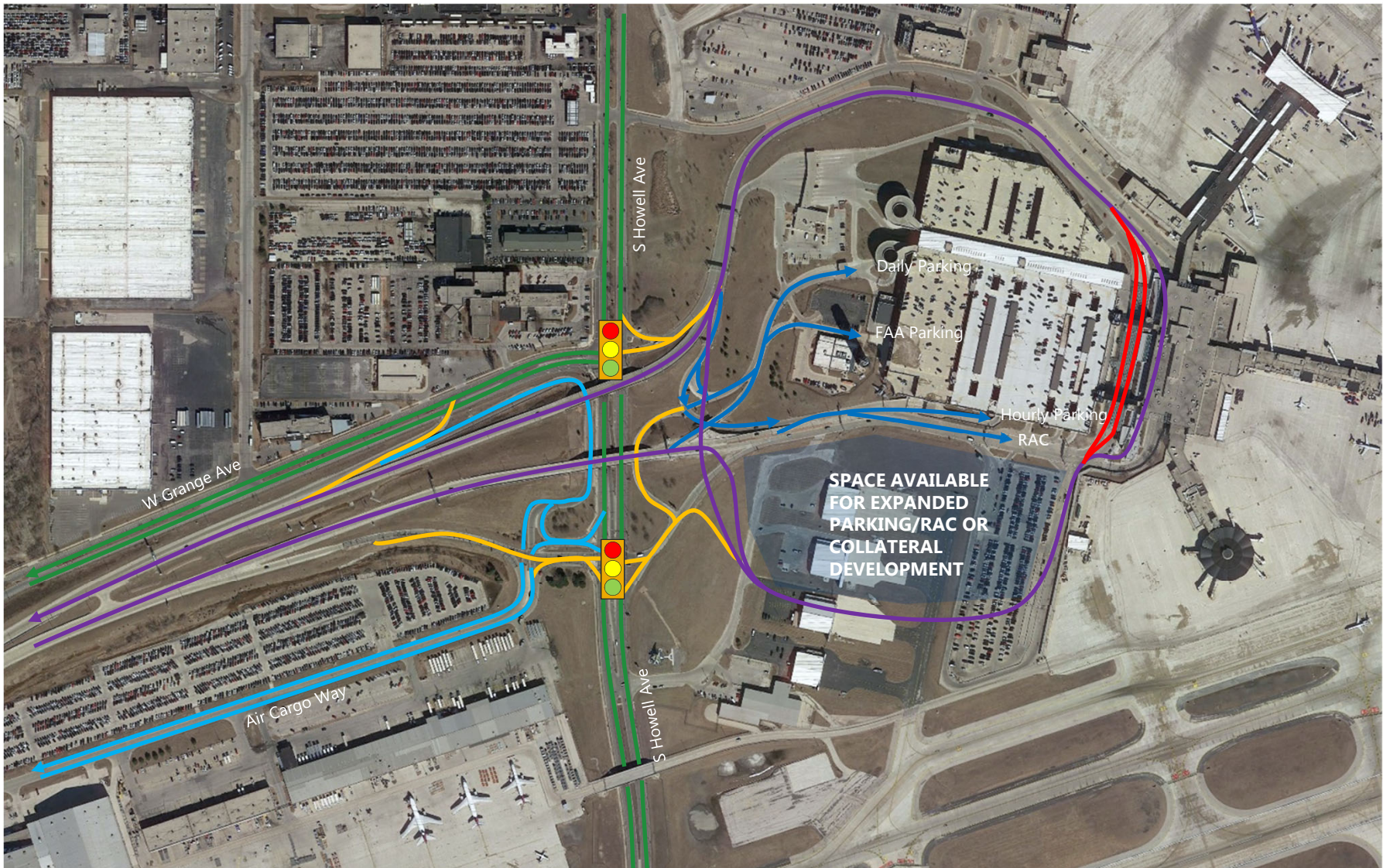
Cons:

- Difficult right to left weave to get from lot exit to recirculation ramp
- Taxi staging area in a highly visible area

Landside Roadways Alternative 4



Landside Roadways Alternative 5



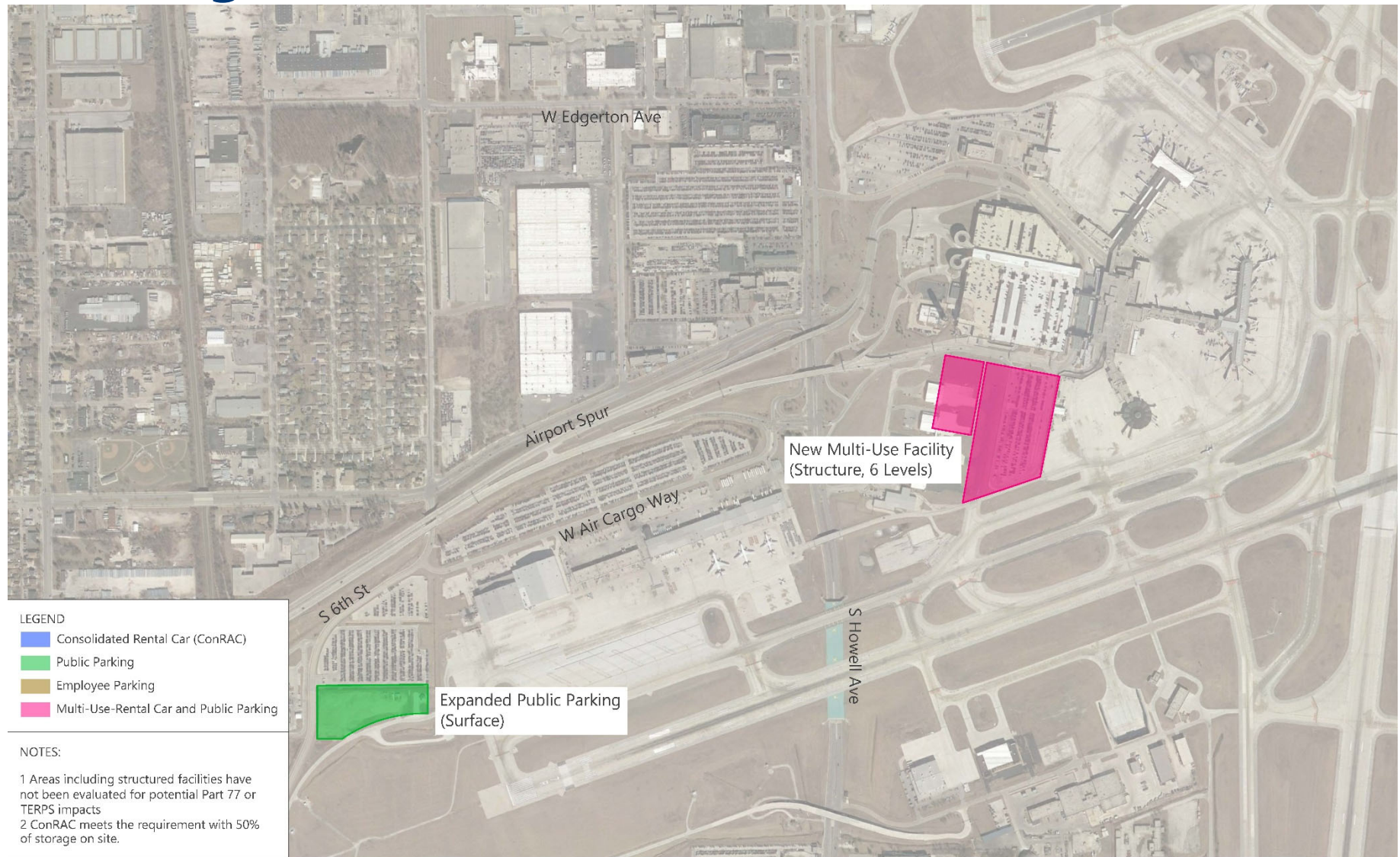
Landside Roadways Alternative 6



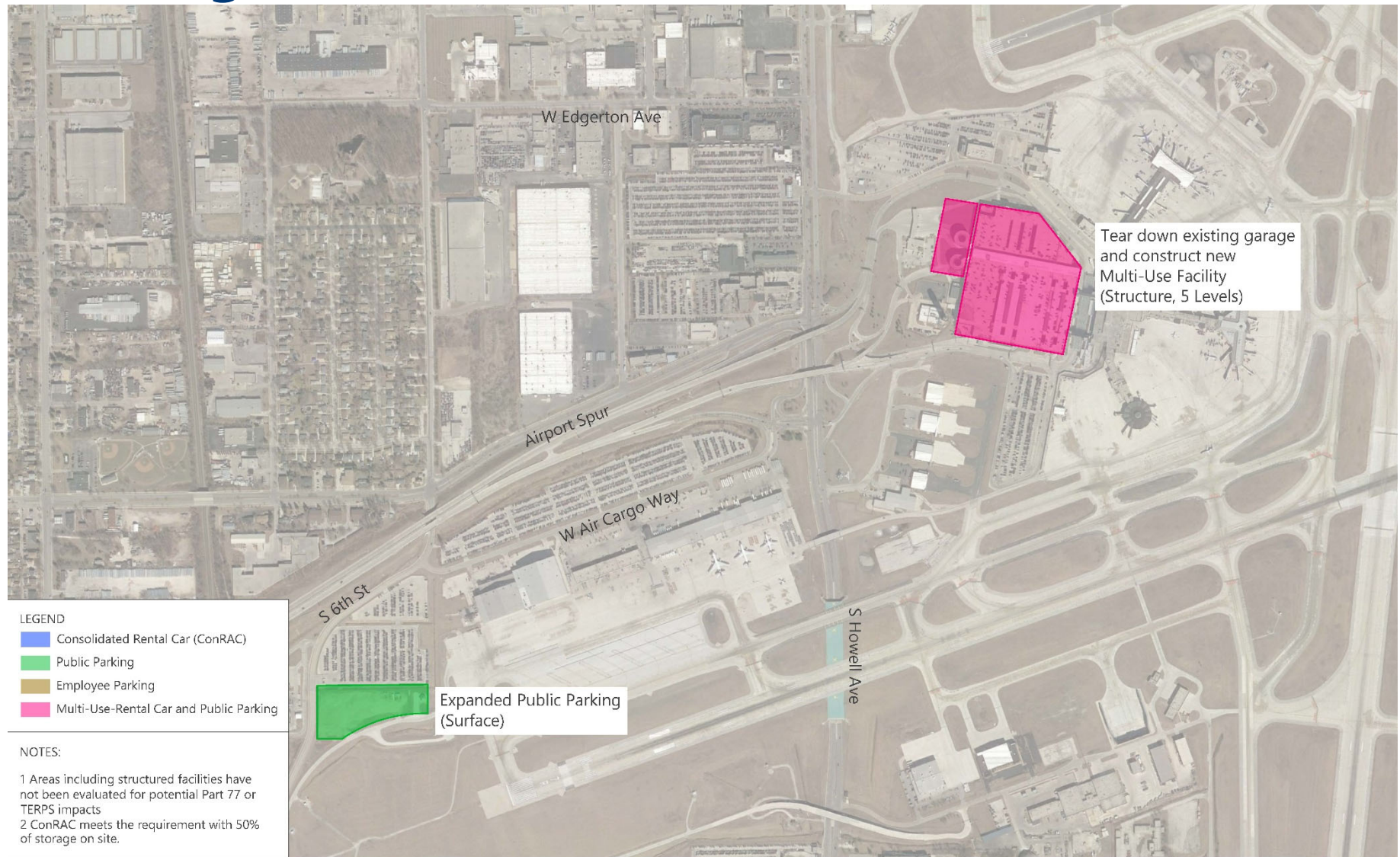
Landside Roadways Alternative 7



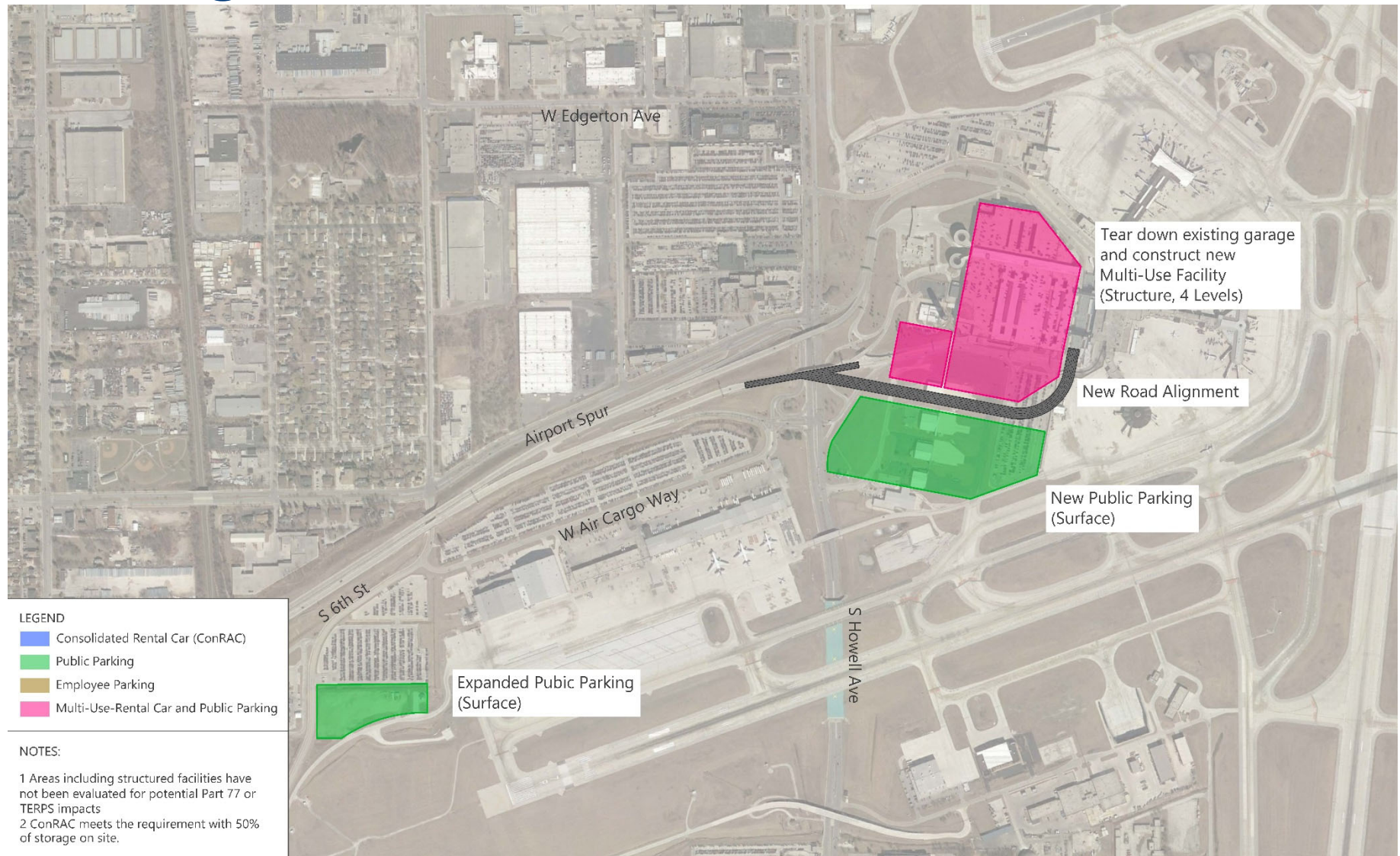
Parking and Rental Car Alternative 1



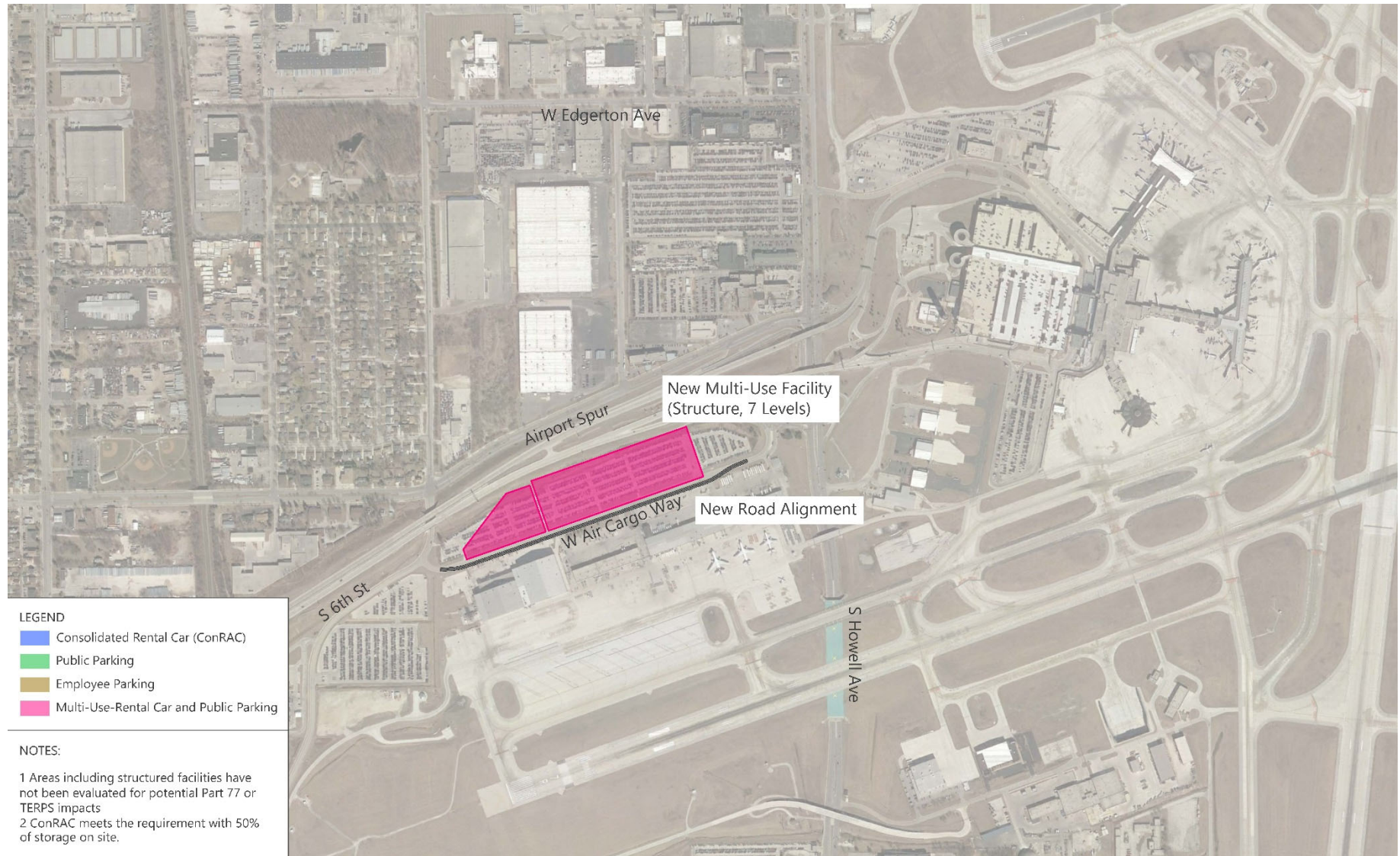
Parking and Rental Car Alternative 2



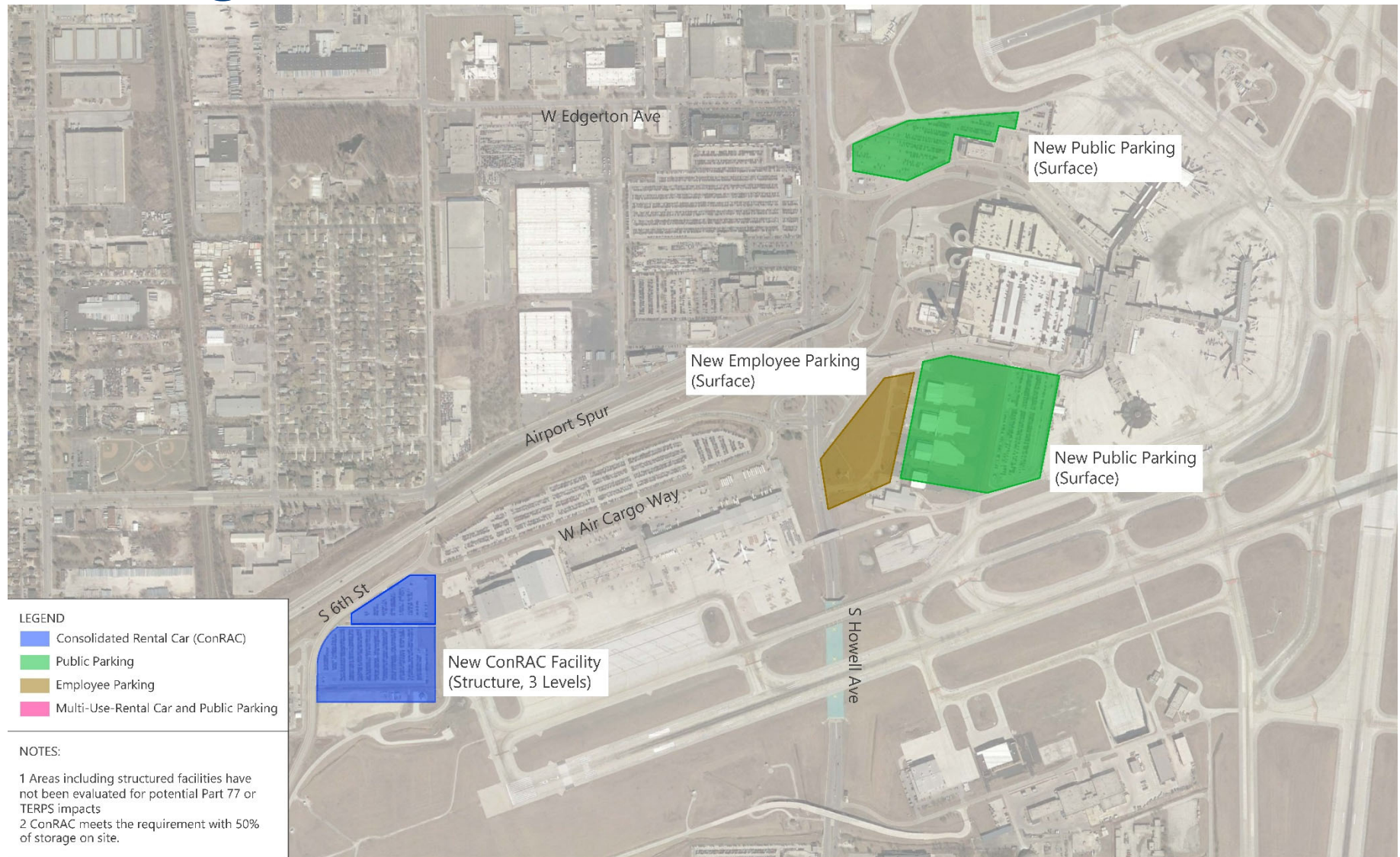
Parking and Rental Car Alternative 3



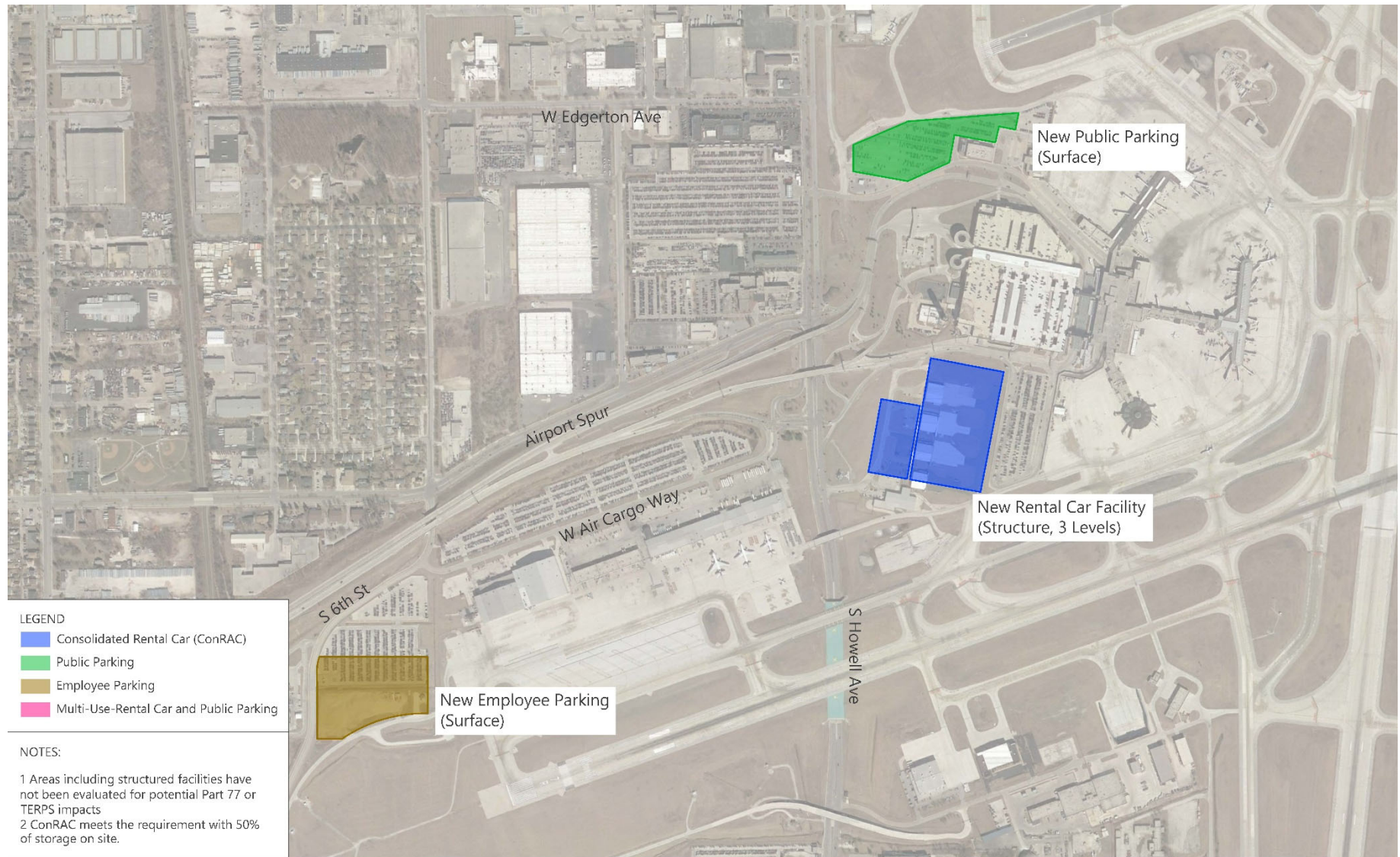
Parking and Rental Car Alternative 4



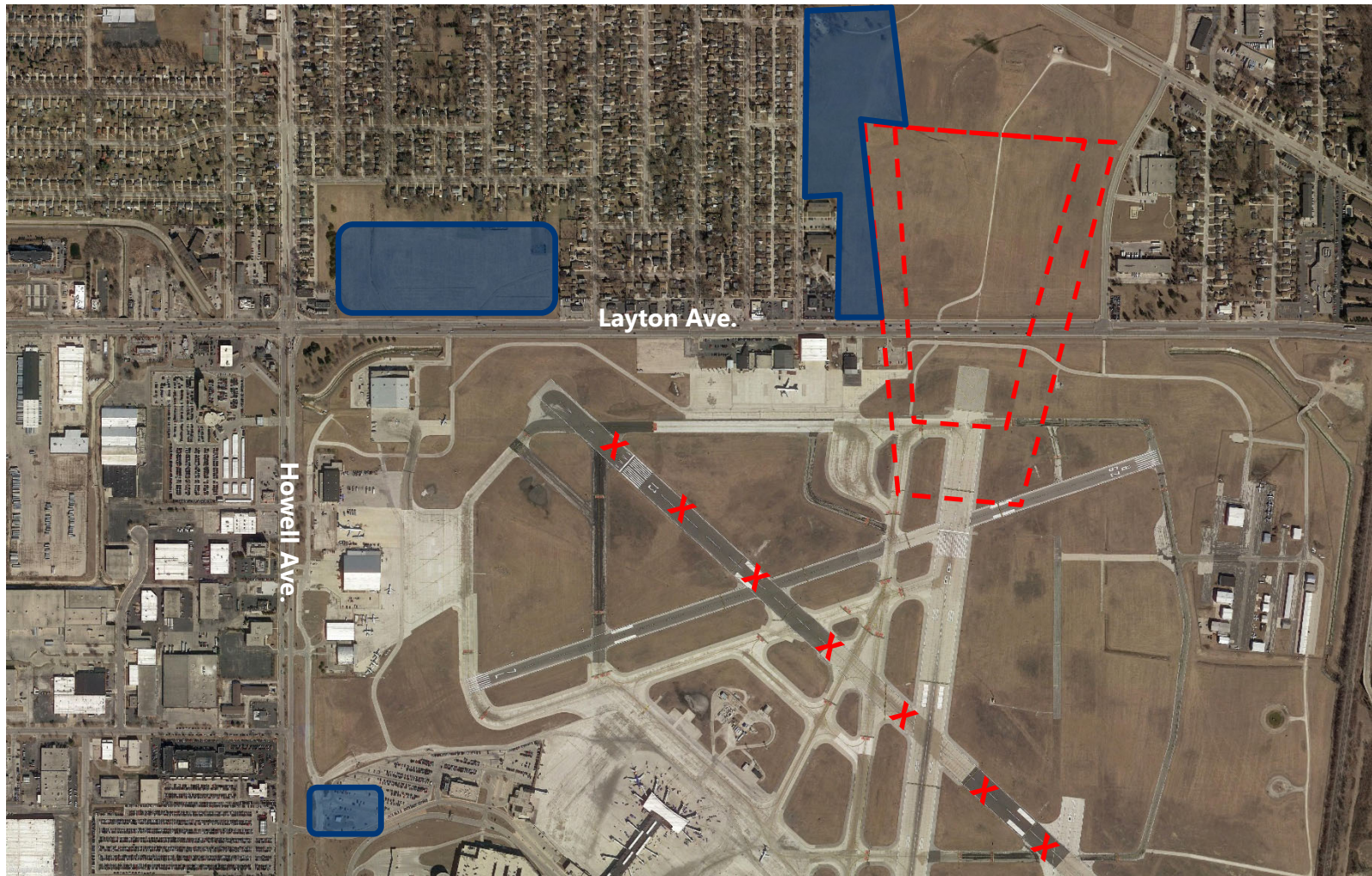
Parking and Rental Car Alternative 5



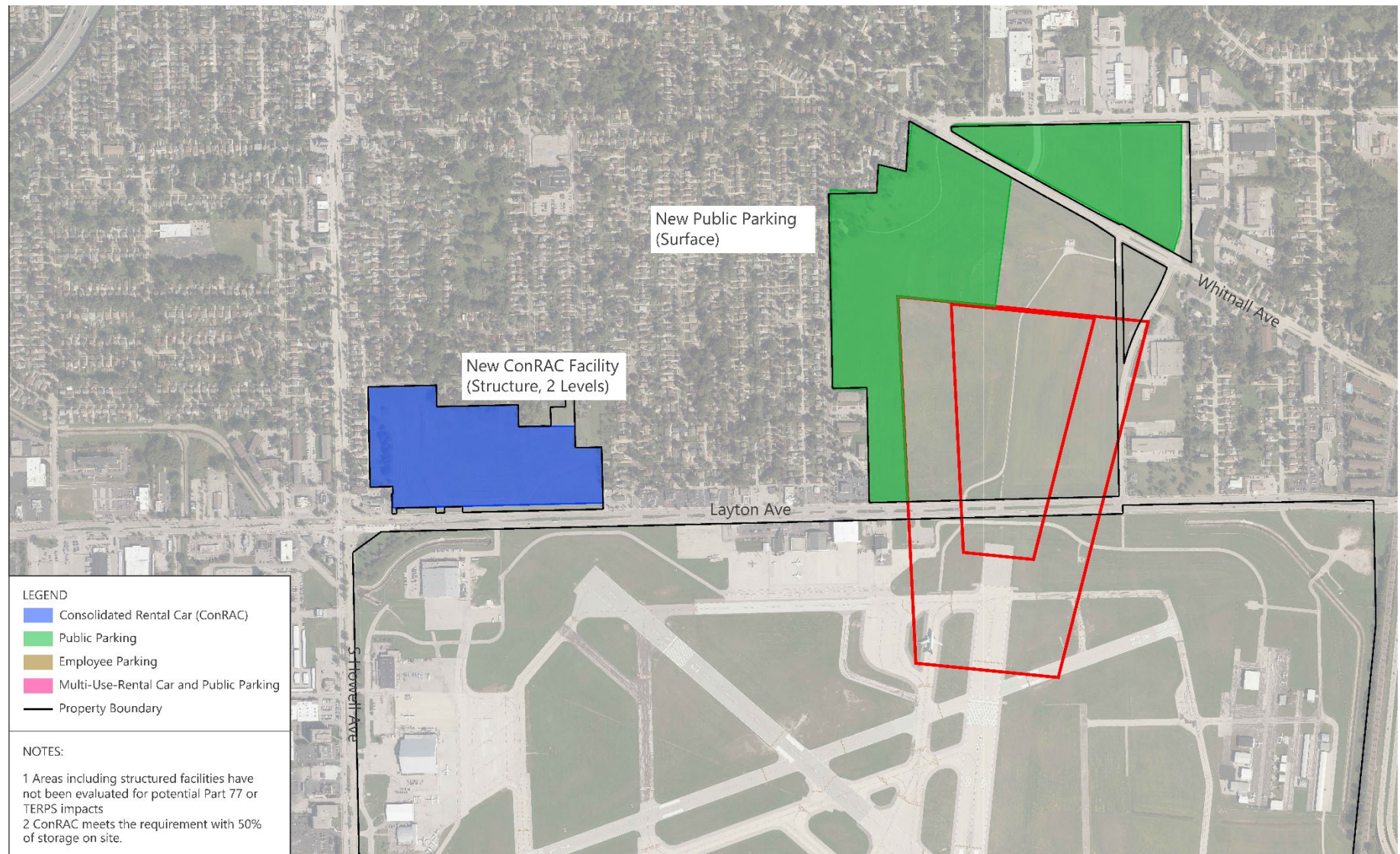
Parking and Rental Car Alternative 6



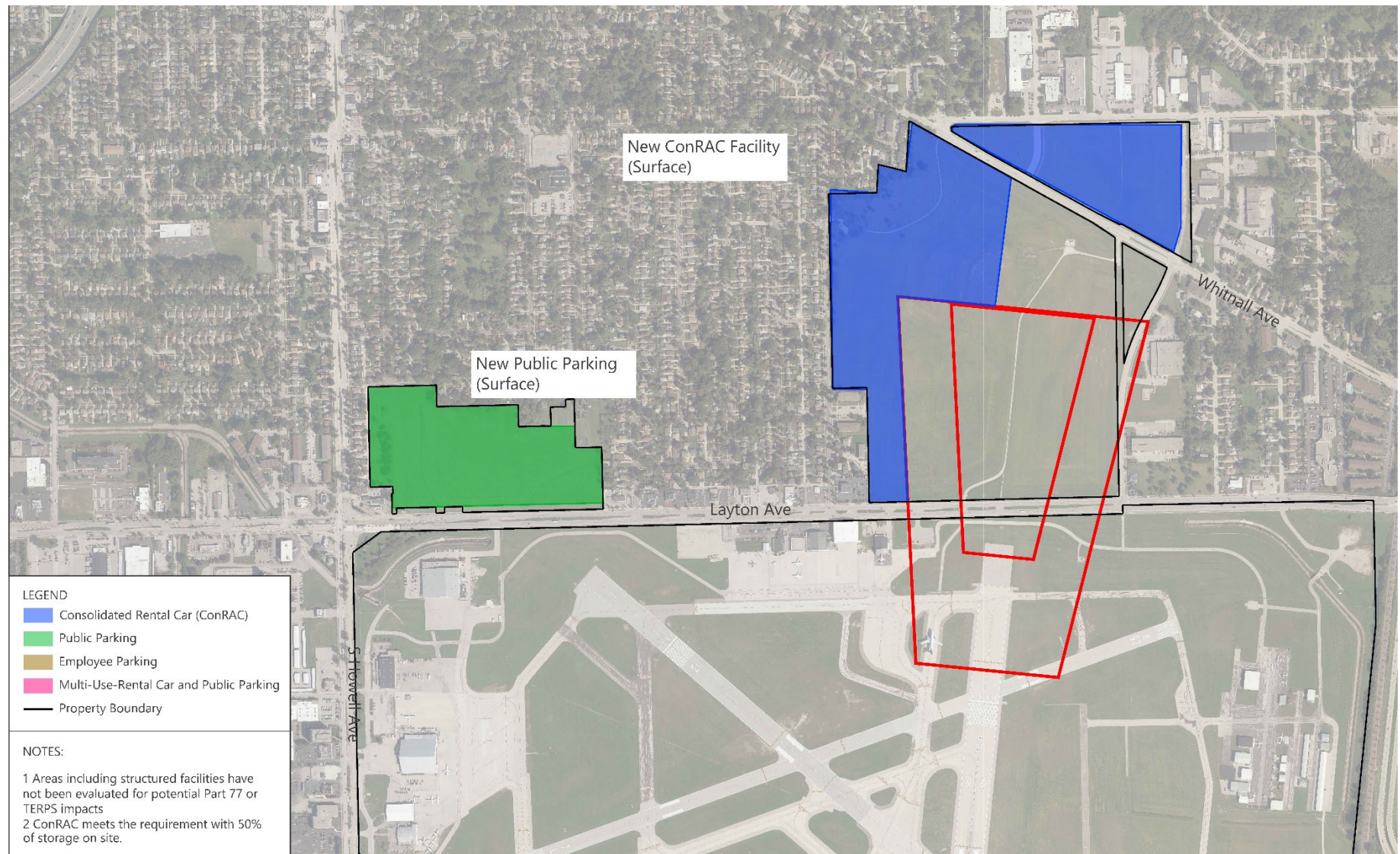
Remote Parking Alternatives



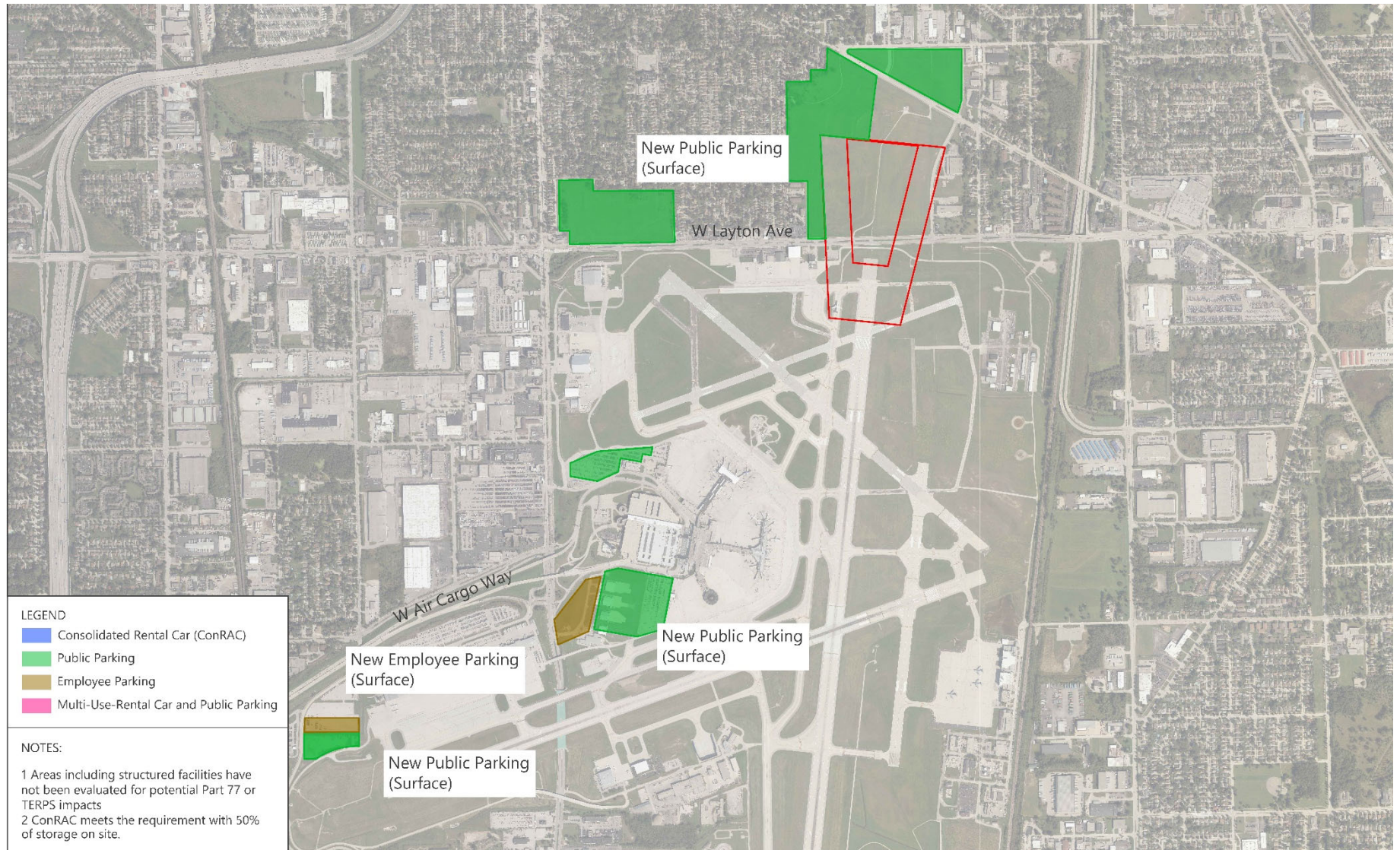
Remote Parking Alternative 1



Remote Parking Alternative 2



All Surface Parking Options



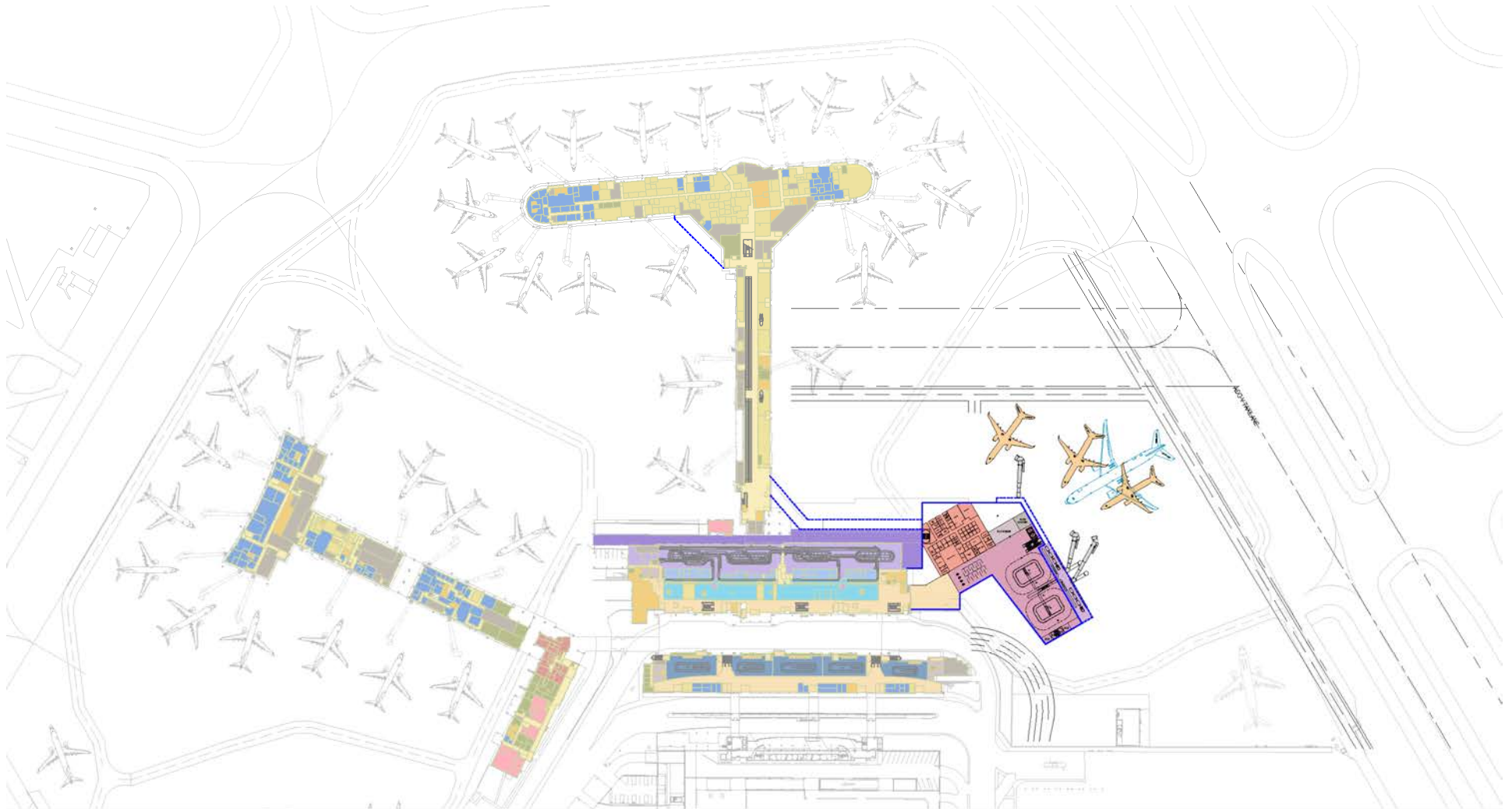
Terminal Alternatives



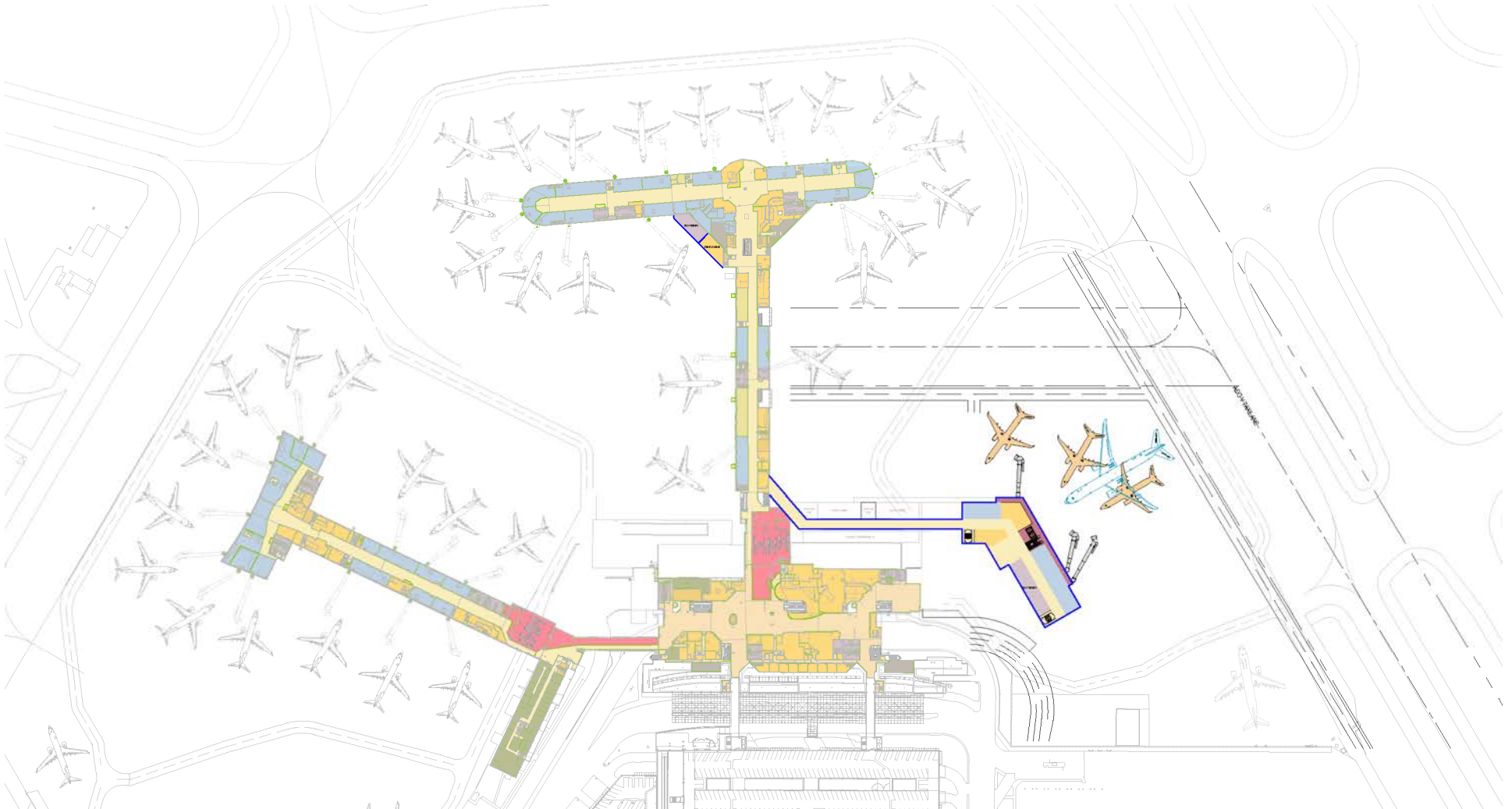
Terminal Challenges

- Qualitative
 - Concourse E integration
 - SSCP Consolidation potential
 - Integration of near-term gating considerations (Gate Optimization Study)
- Quantitative
 - Aircraft spacing allowing for maximum parking flexibility
 - Holdroom and passenger amenities spaces/dimensions
 - Additional check-in positions required after 2028
 - Additional SSCP lanes required by 2028 (Concourse C, if no consolidation)
 - Additional 10,000-15,000 sq ft baggage make-up space required (through 2040)
 - Additional gates: +4 to +10 gates, depending on operational assumptions (does not include Concourse E)
 - MKE Administrative space requirements

Terminal Alternatives – Conc. E Apron Level



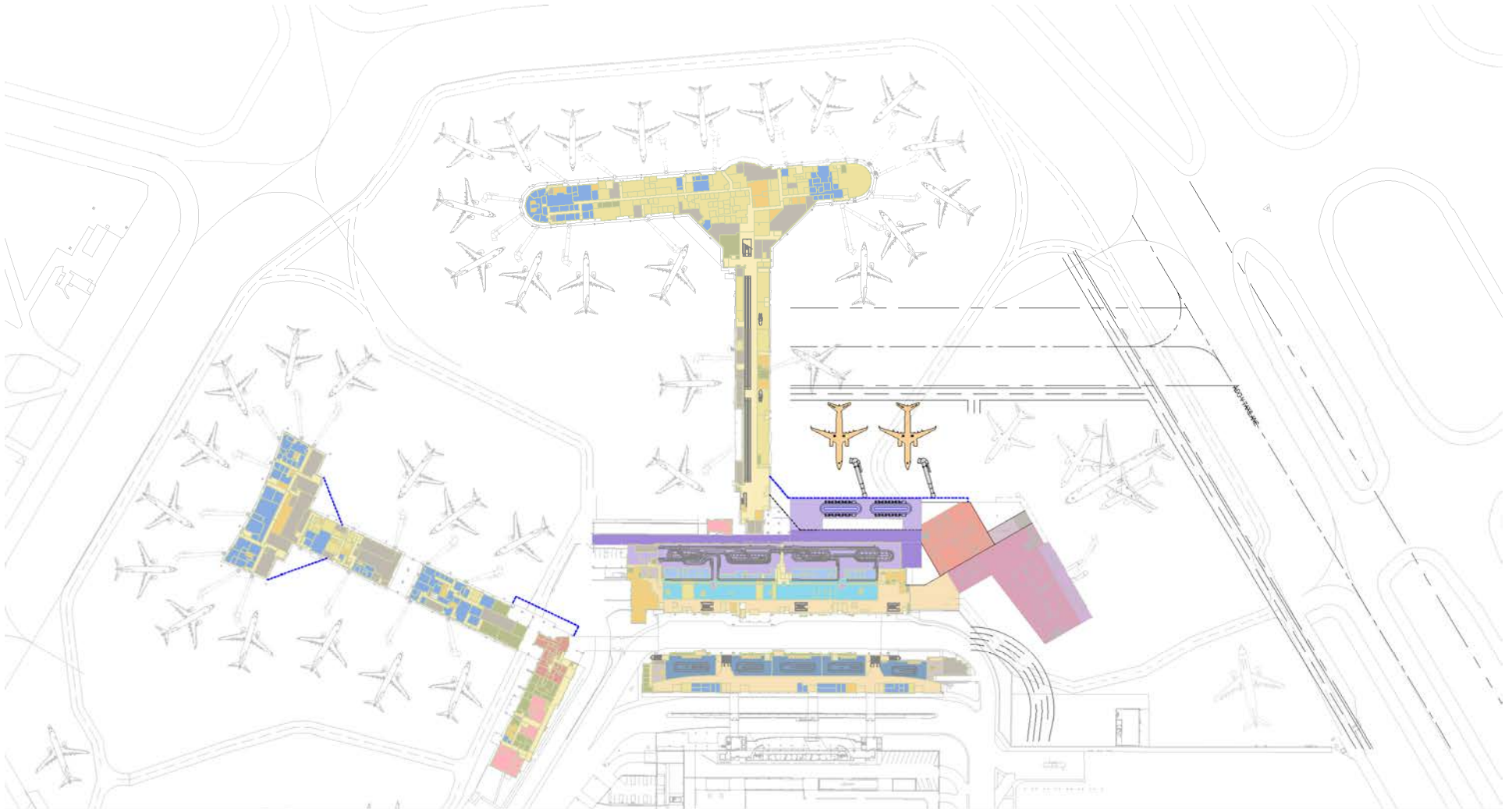
Terminal Alternatives – Conc. E Concourse Level



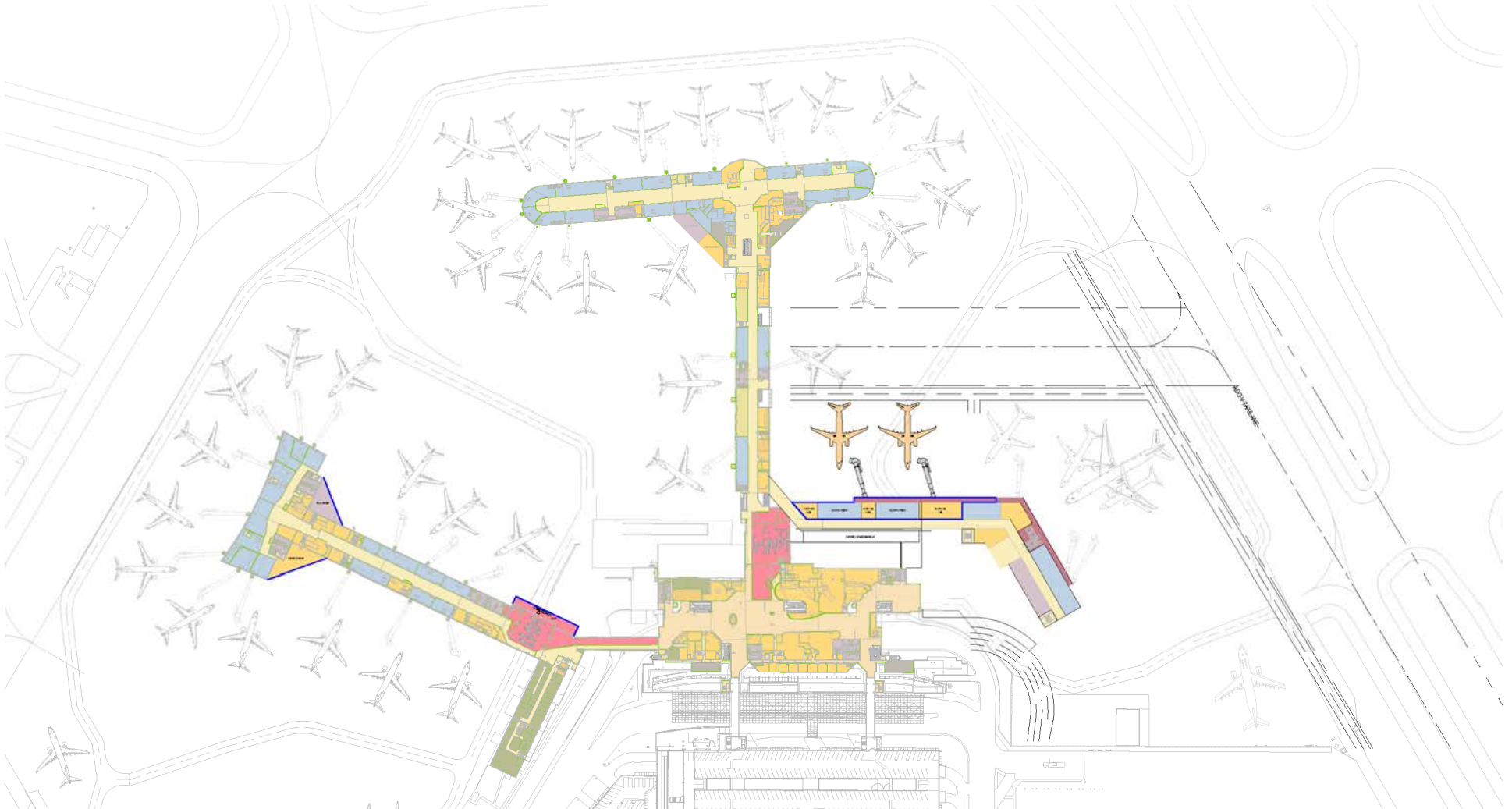
Terminal Alternatives – Conc. E Full Build



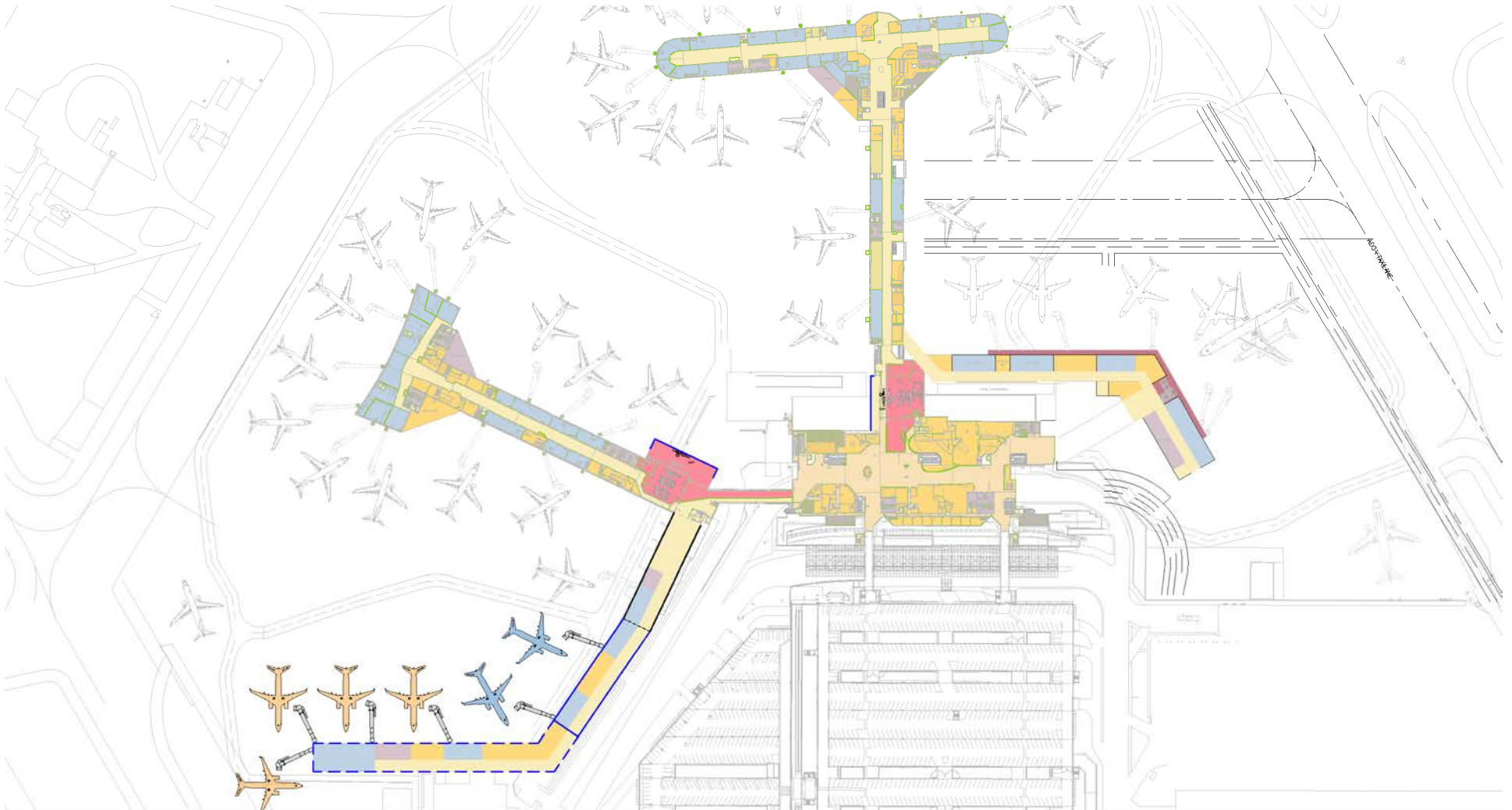
Terminal Alternatives – Conc C/D Apron Level



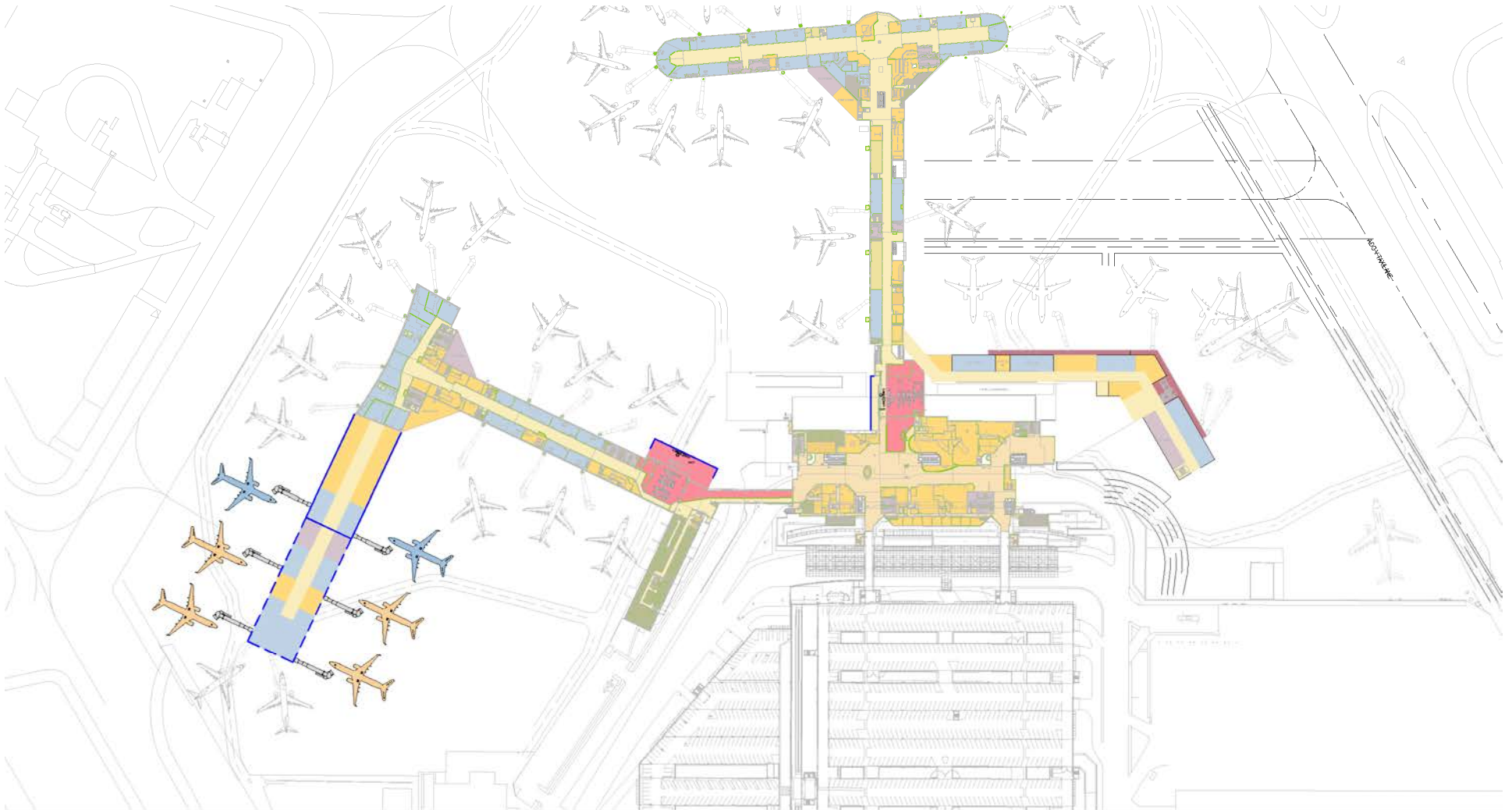
Terminal Alternatives – Conc C/D Conc Level



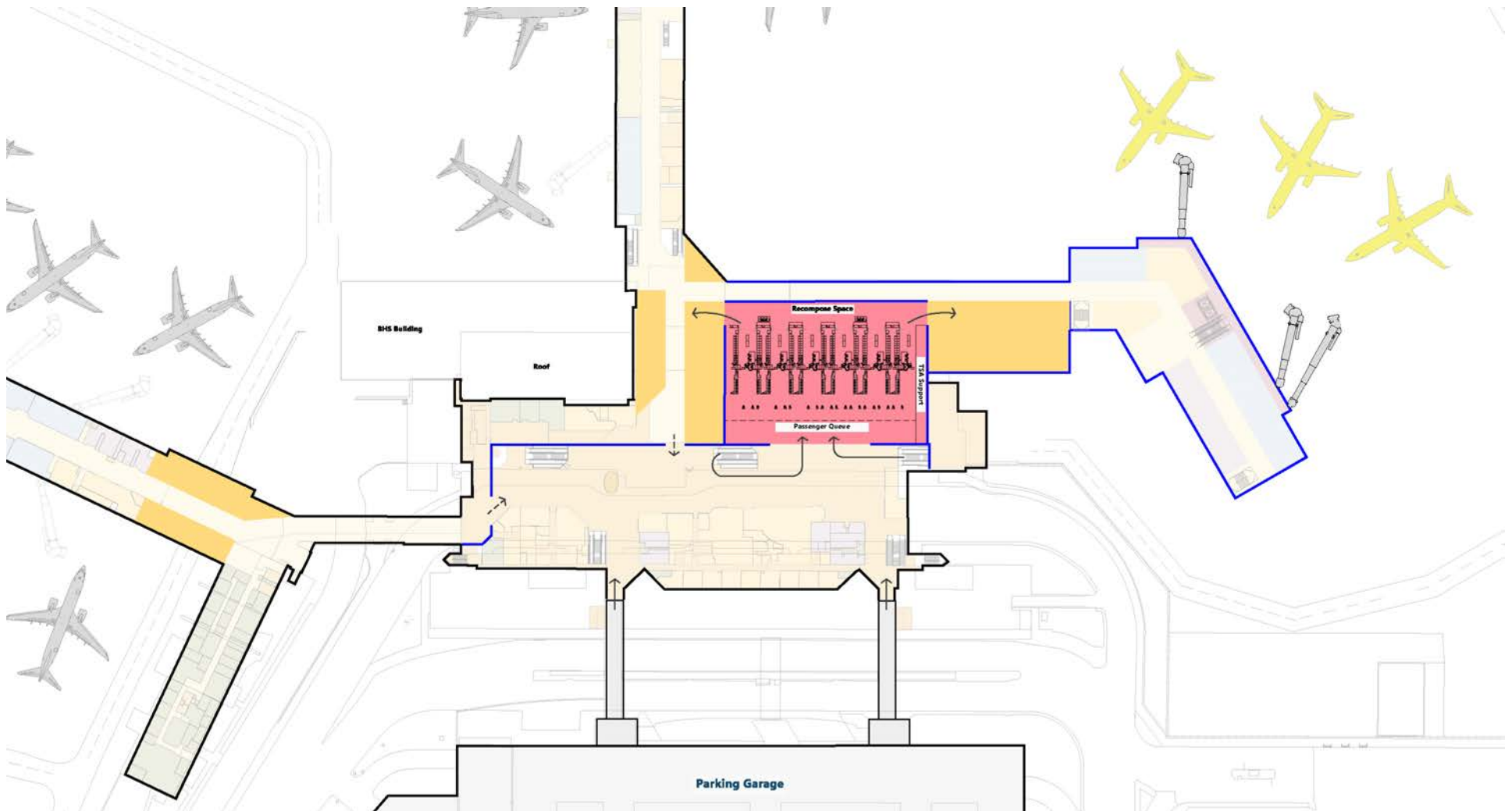
Terminal Alternatives – Concourse C North



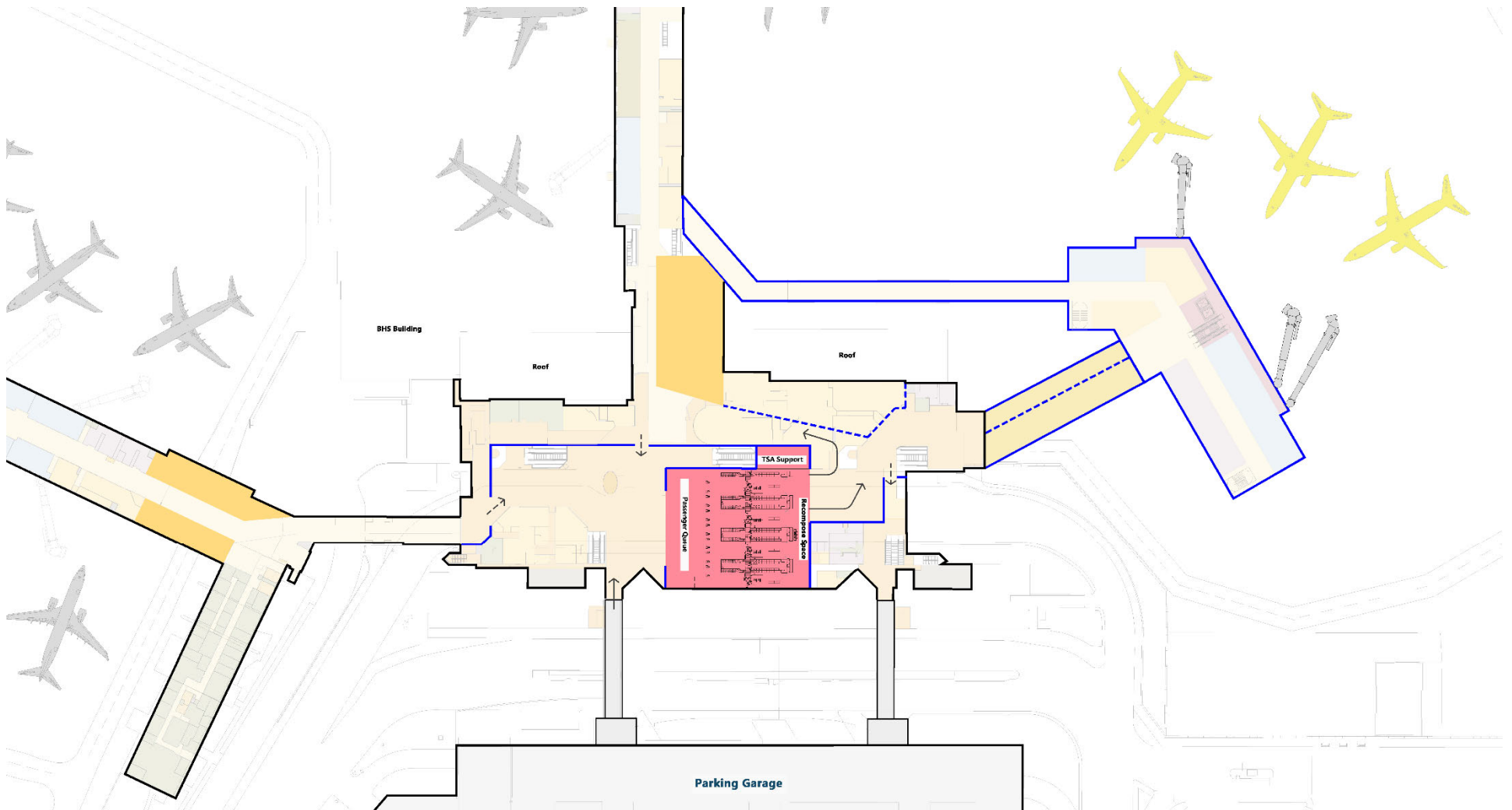
Terminal Alternatives – Concourse C Extended



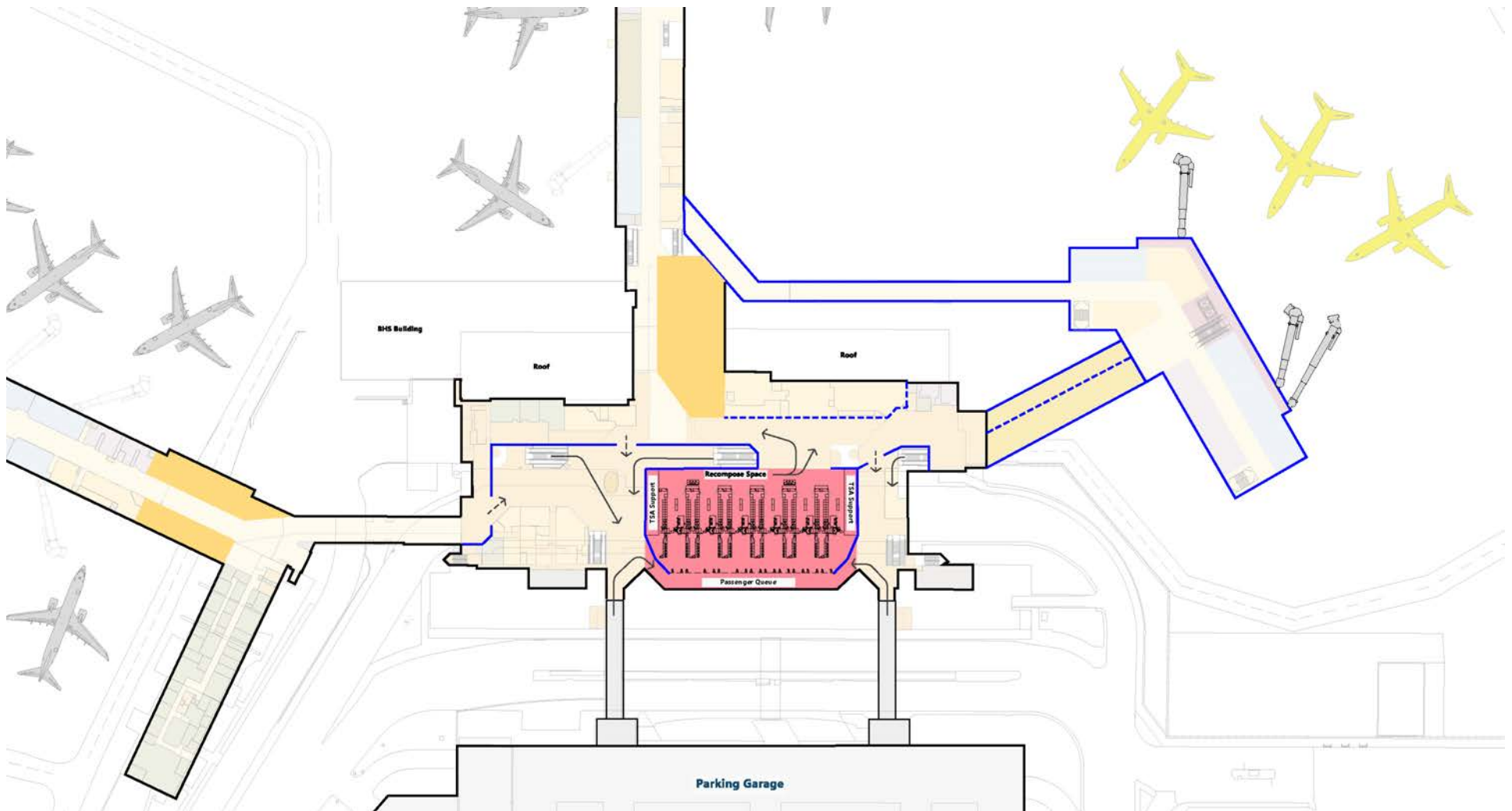
Consolidated Checkpoint Alternative 1



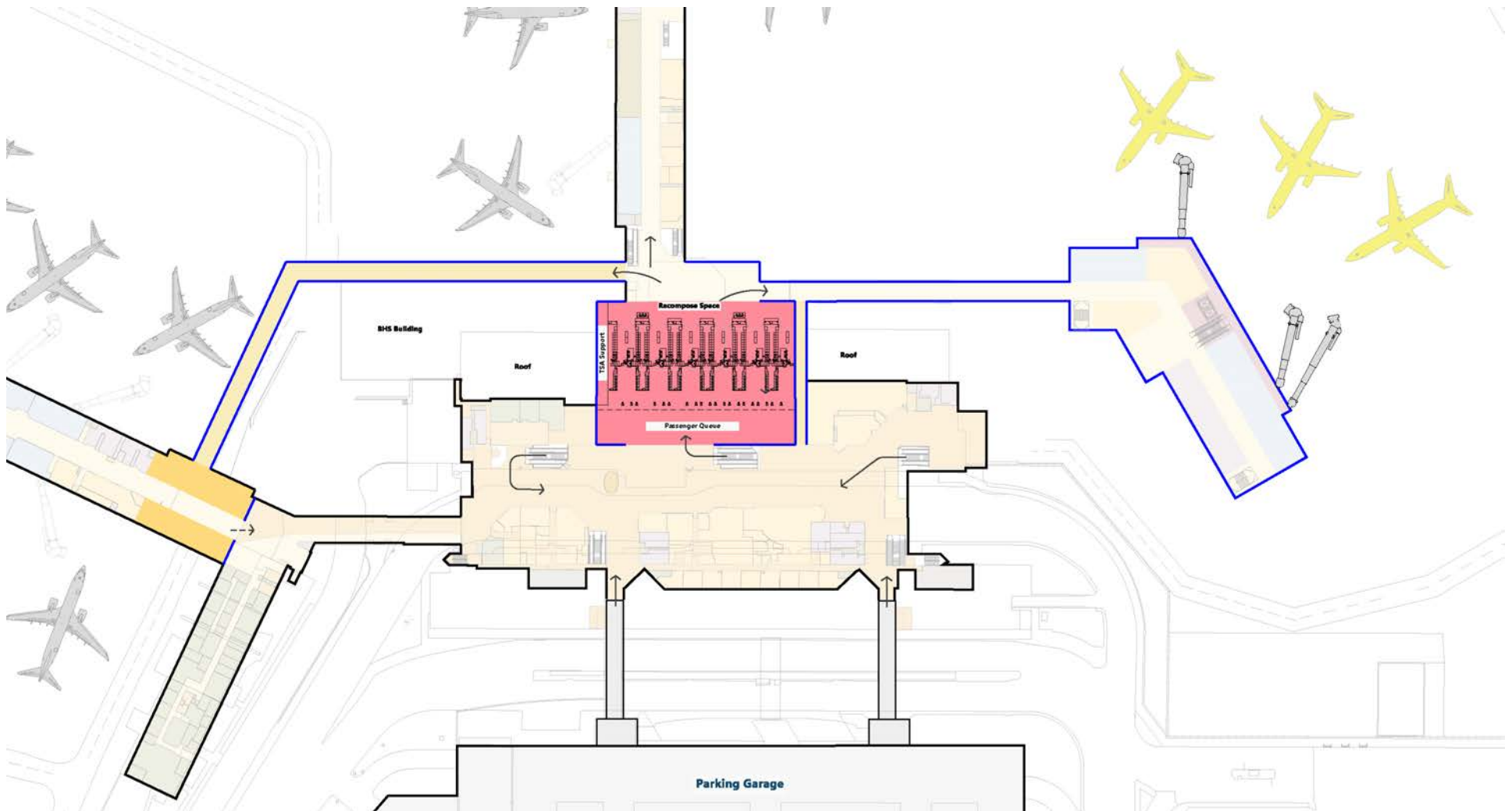
Consolidated Checkpoint Alternative 2



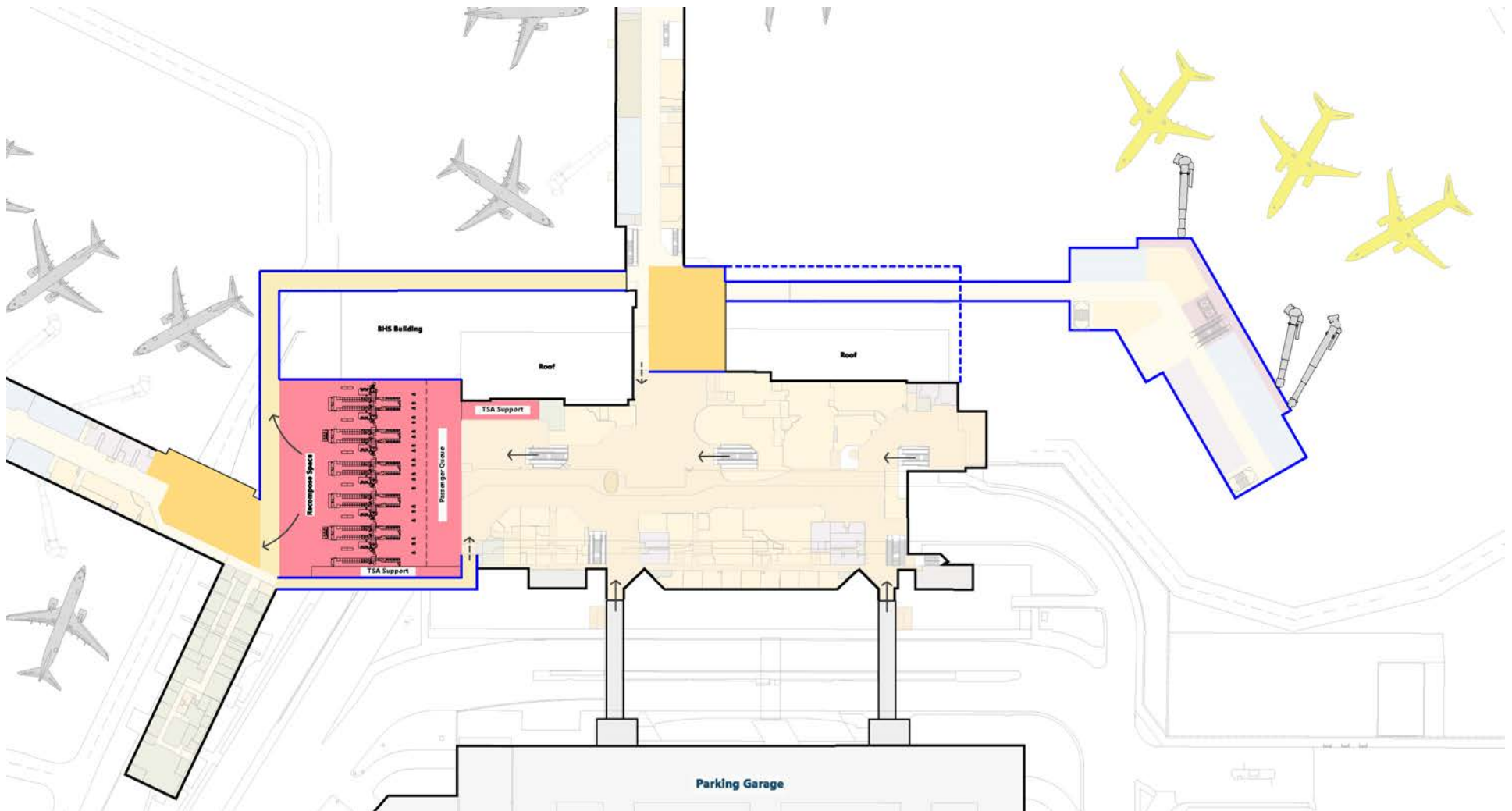
Consolidated Checkpoint Alternative 3



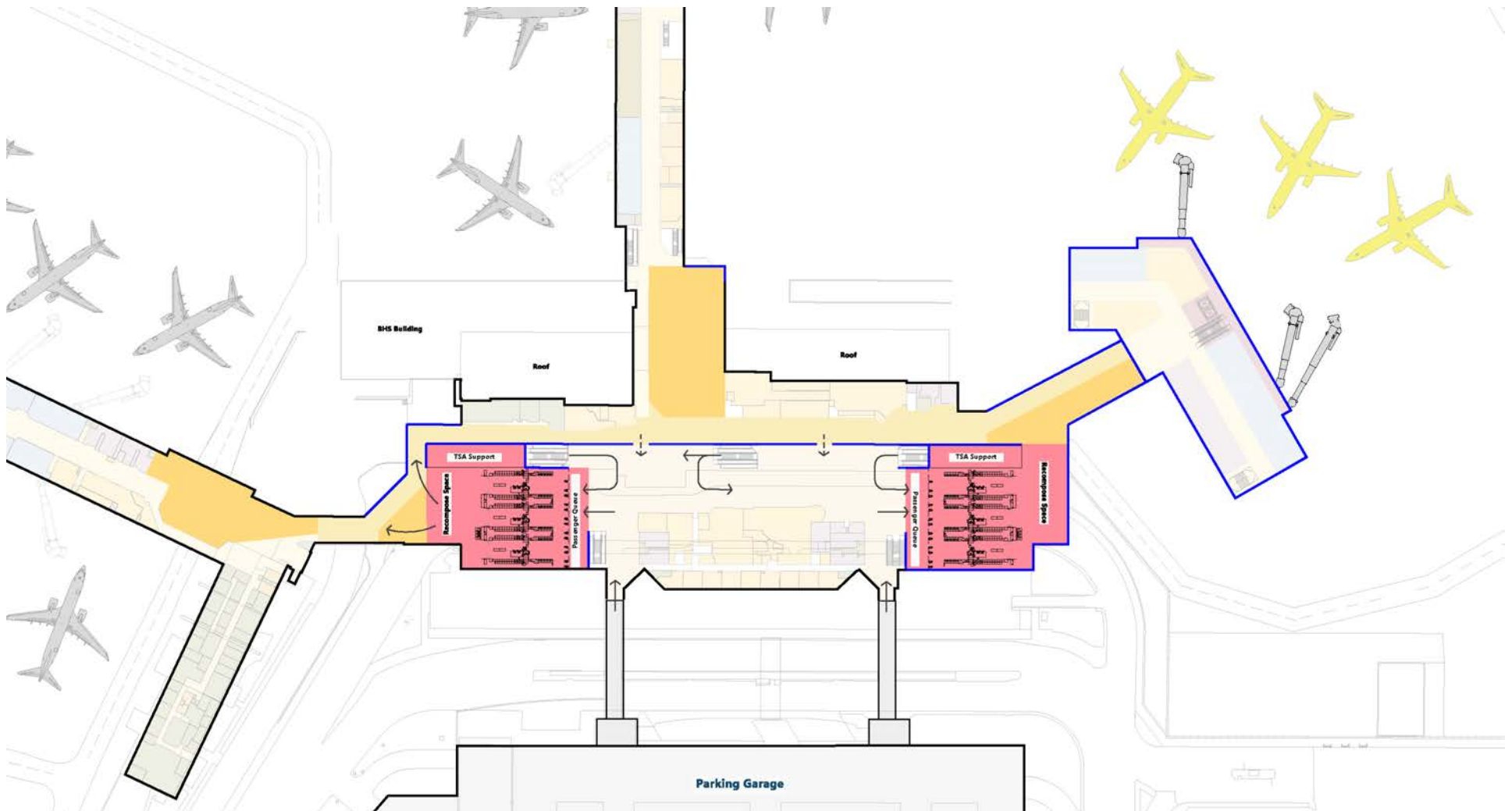
Consolidated Checkpoint Alternative 4



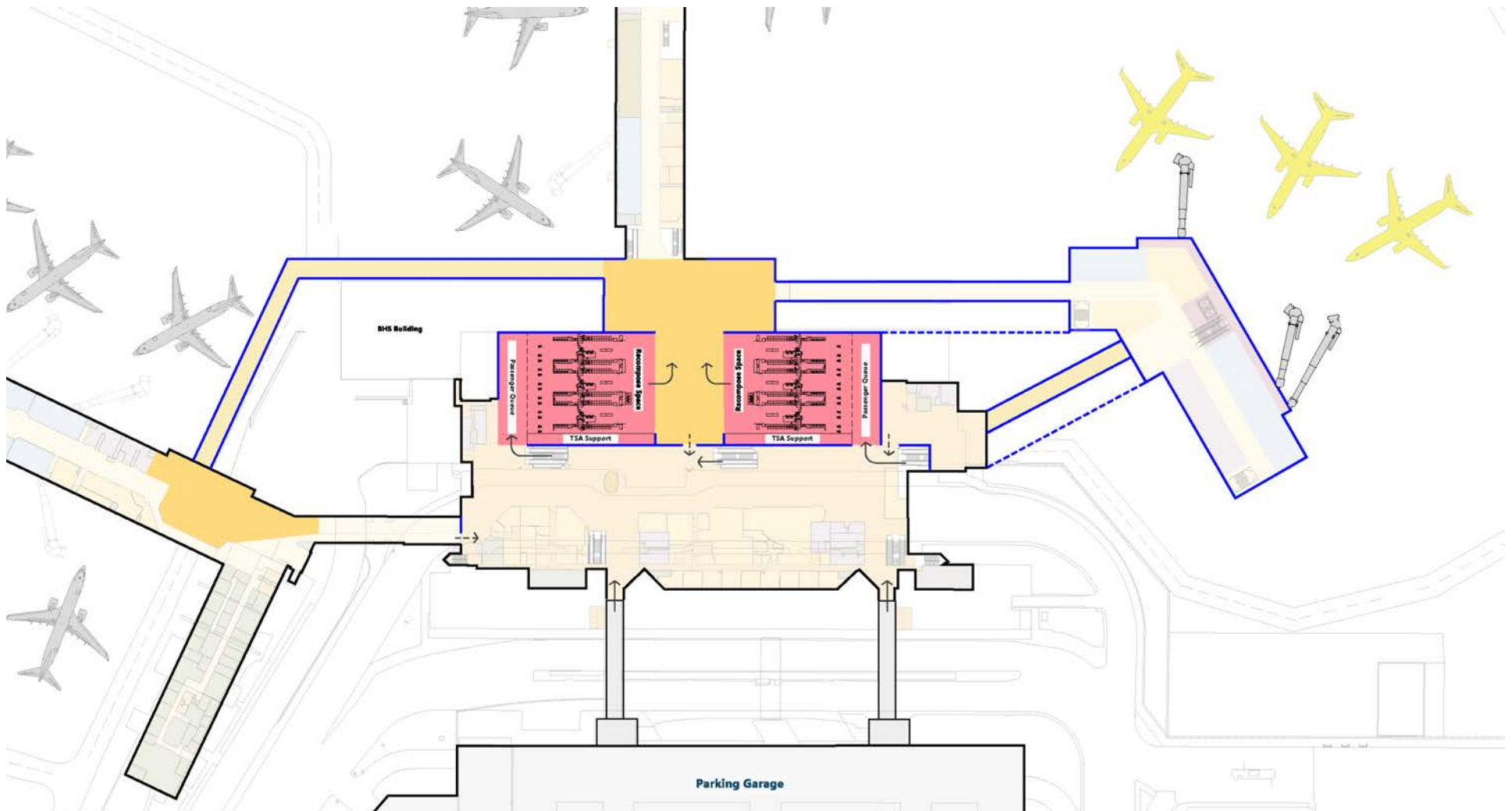
Consolidated Checkpoint Alternative 5



Consolidated Checkpoint Alternative 6



Consolidated Checkpoint Alternative 7



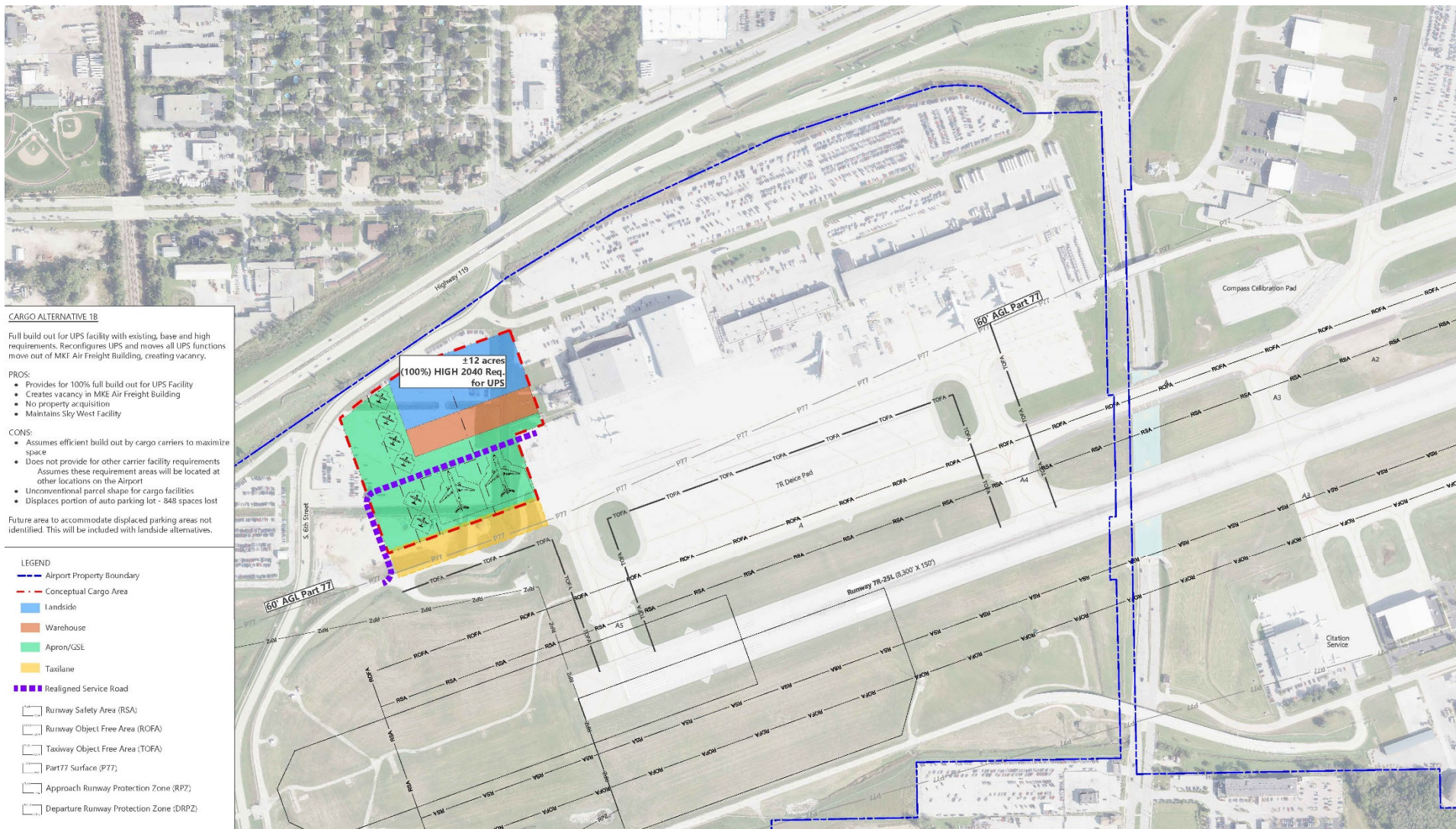
Cargo Alternatives



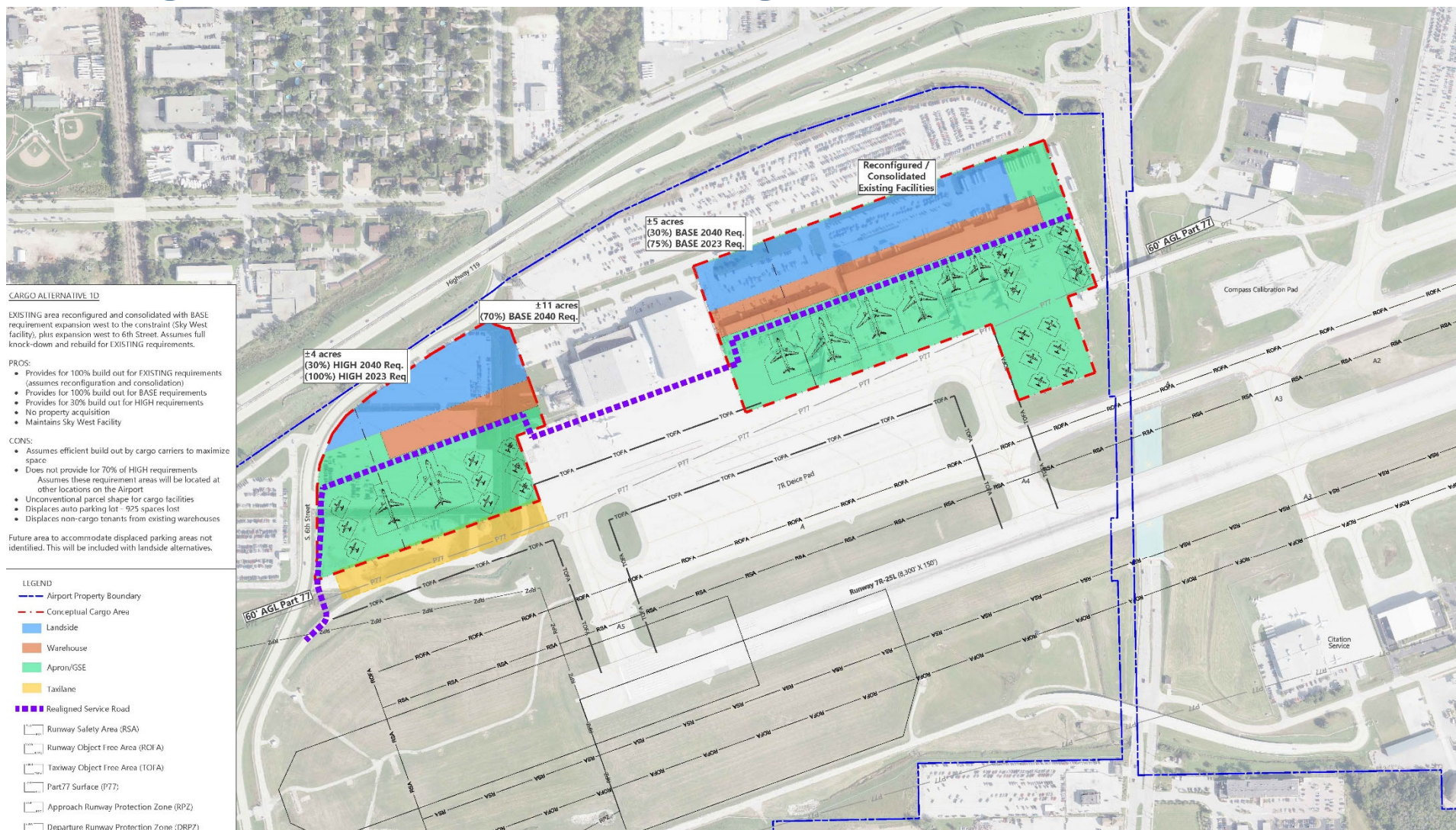
Cargo Facilities Challenges

- Qualitative
 - Inefficient facility configuration for some tenants
 - Dispersed facilities
 - Long term growth opportunities/capabilities
 - Ramp congestion and facility adjacency challenges
- Quantitative
 - Cargo ramp expansion
 - Existing unmet need/demand → new Freight Runners Express and new UPS facilities in planning
 - Landside adequacy for larger transportation vehicles (truck maneuvering)

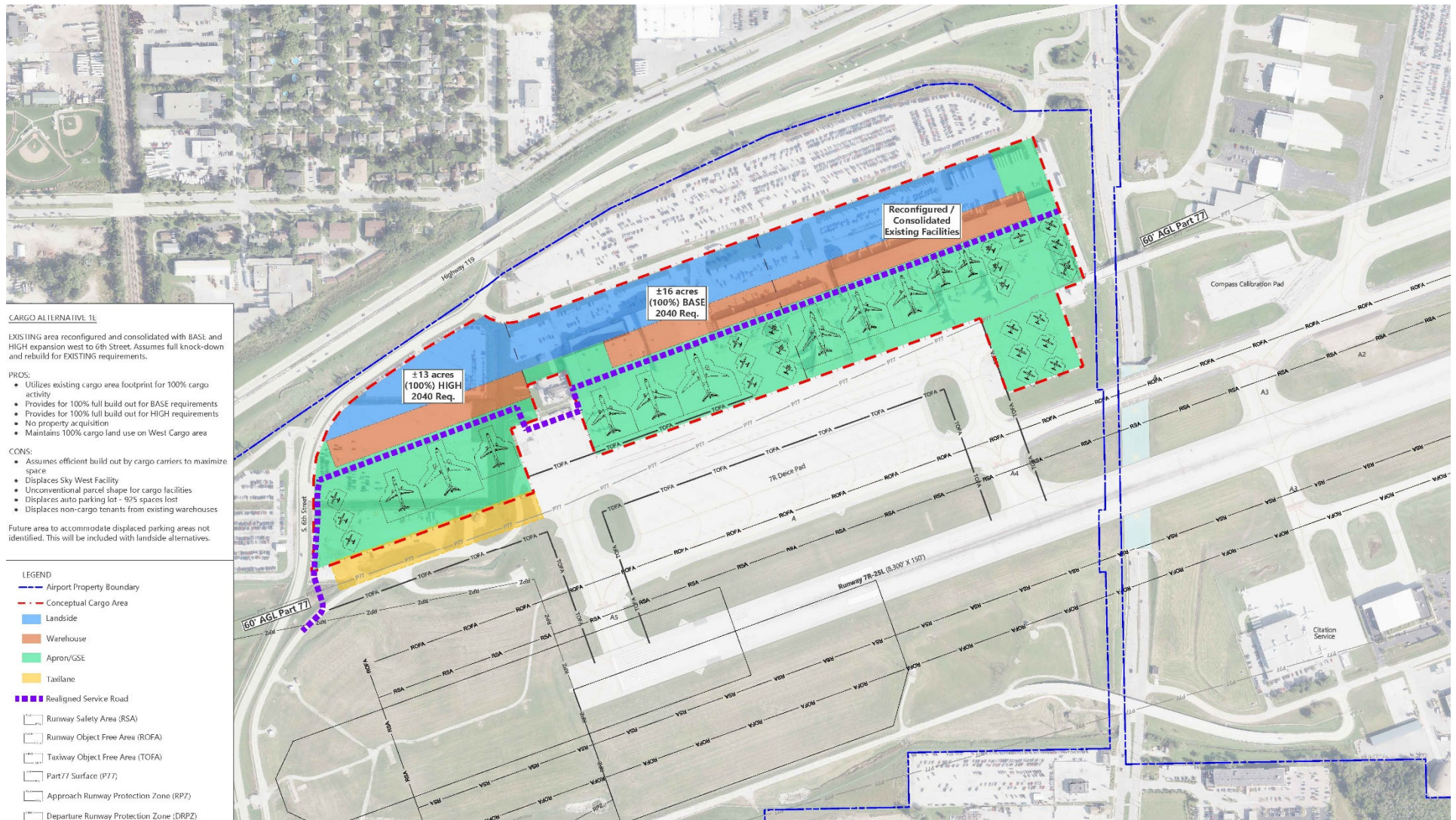
Cargo Alternatives – Cargo West



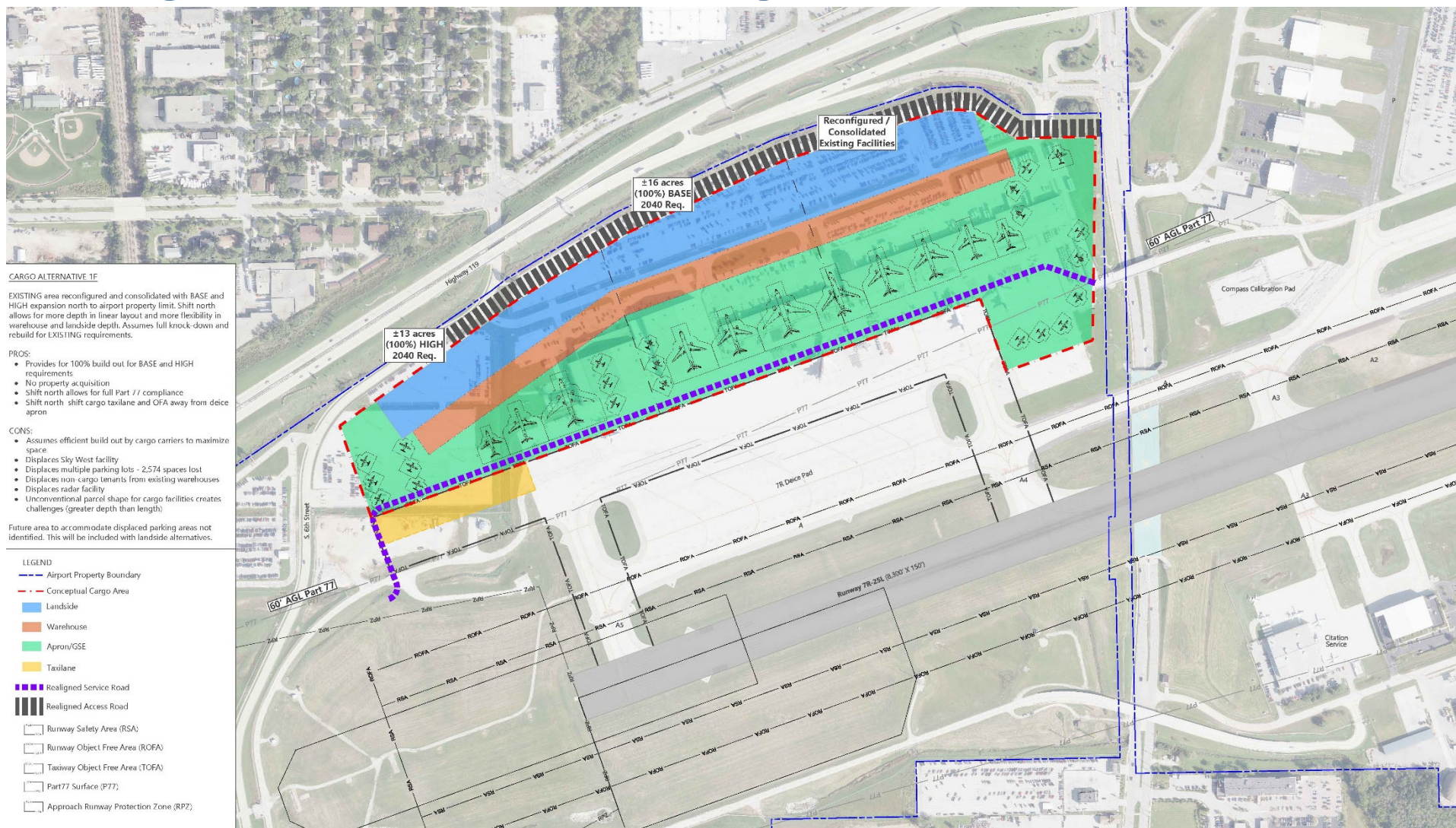
Cargo Alternatives – Cargo West (Con't)



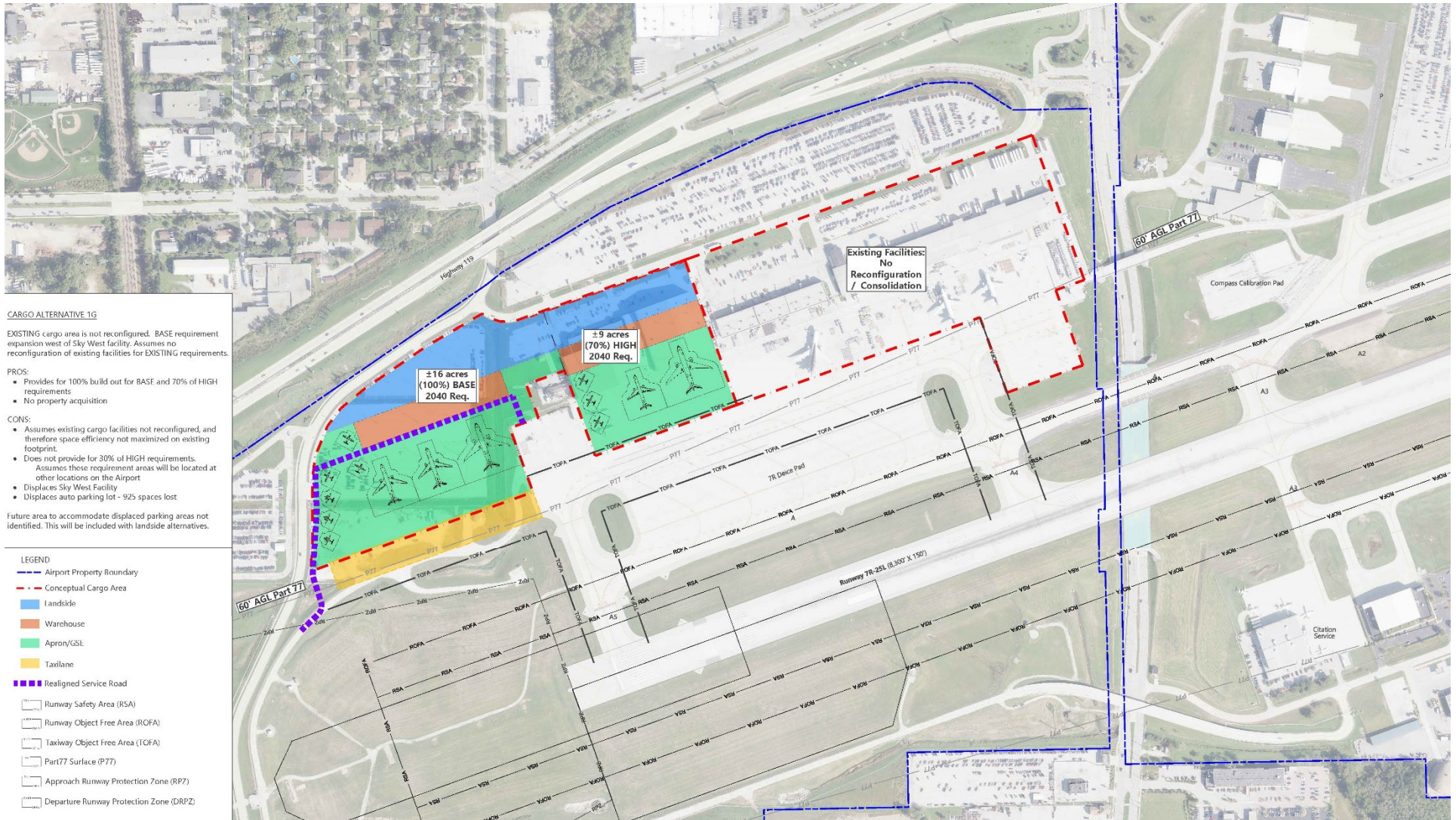
Cargo Alternatives – Cargo West (Con't)



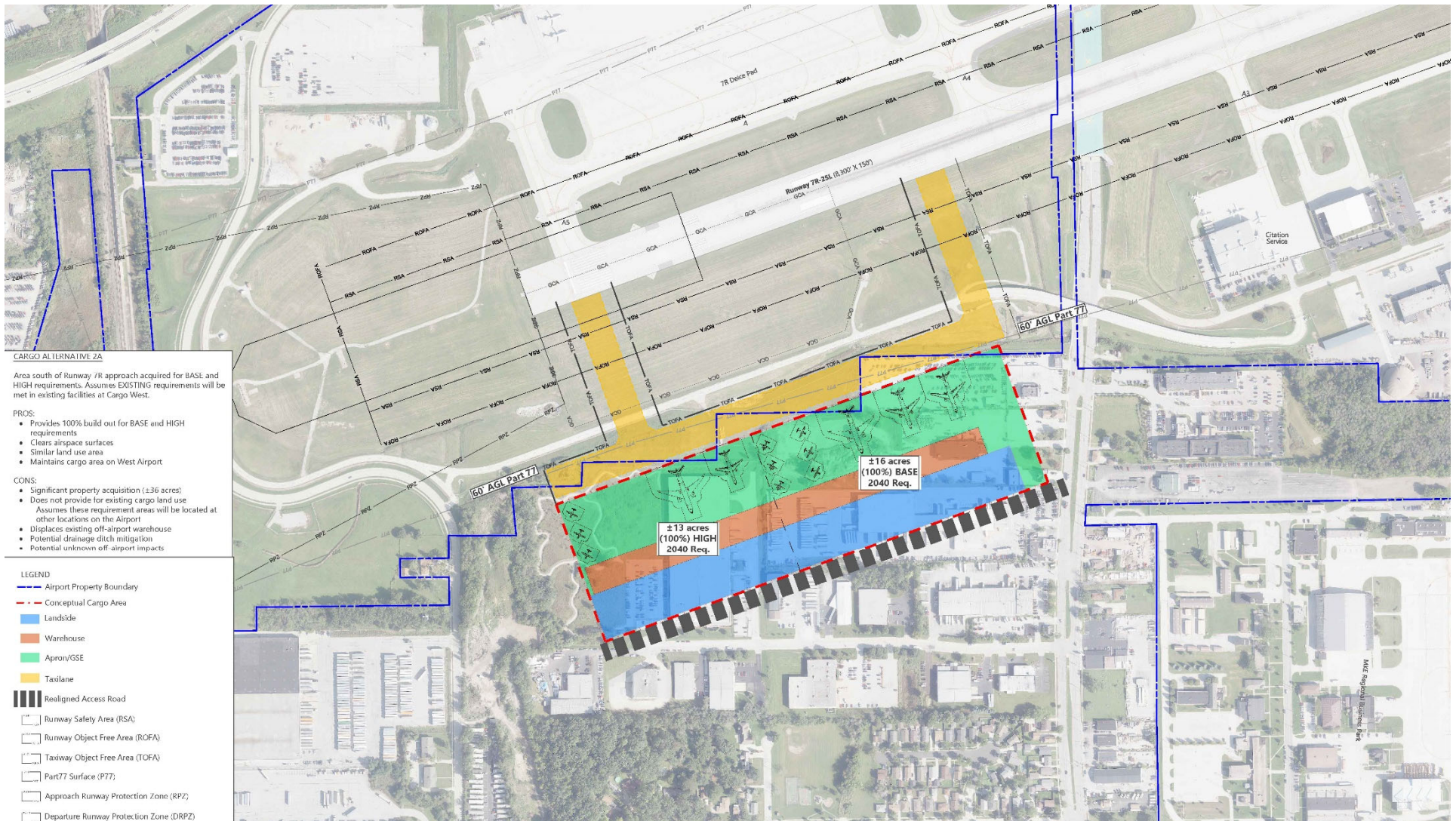
Cargo Alternatives – Cargo West (Con't)



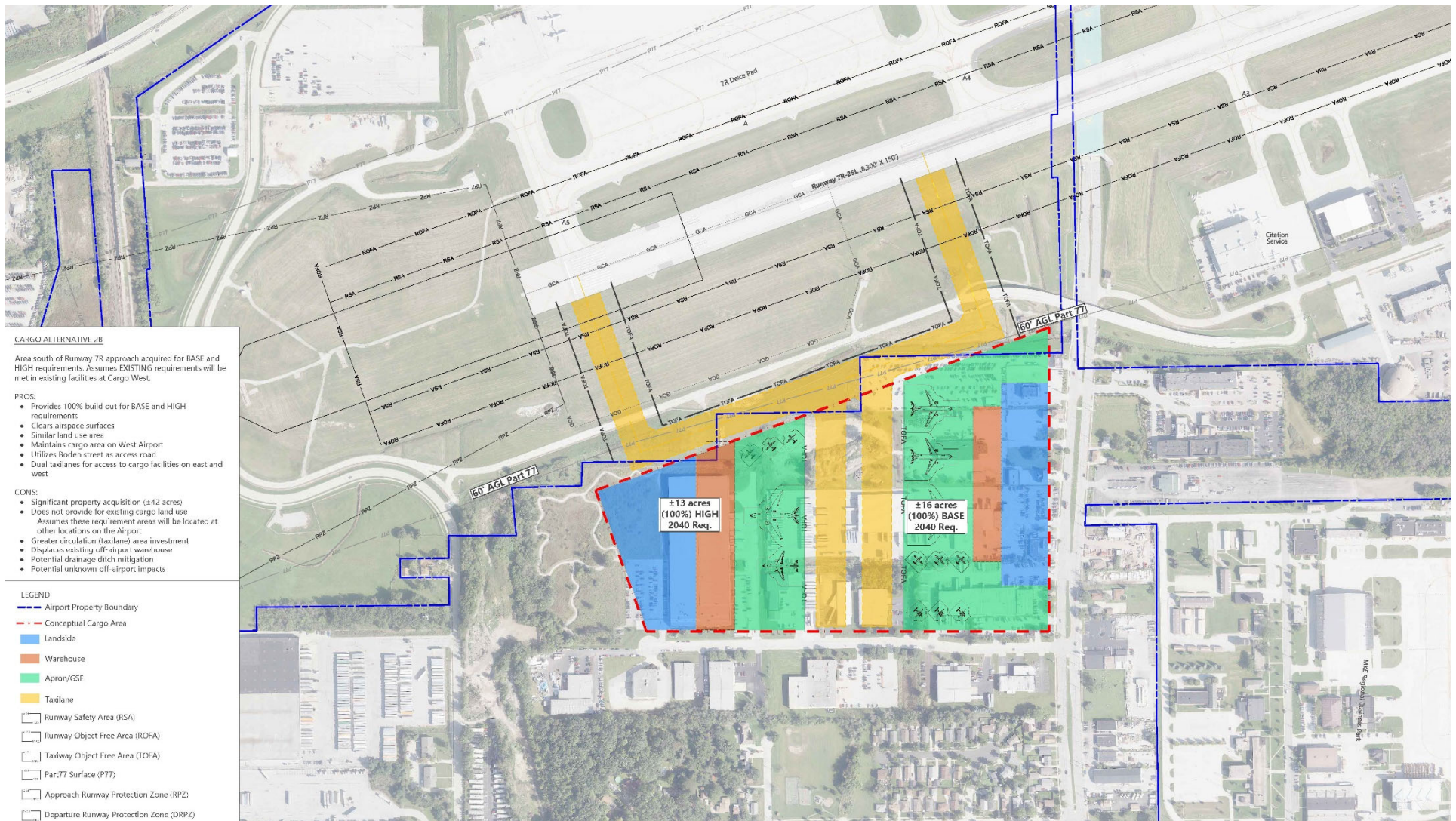
Cargo Alternatives – Cargo West (Con't)



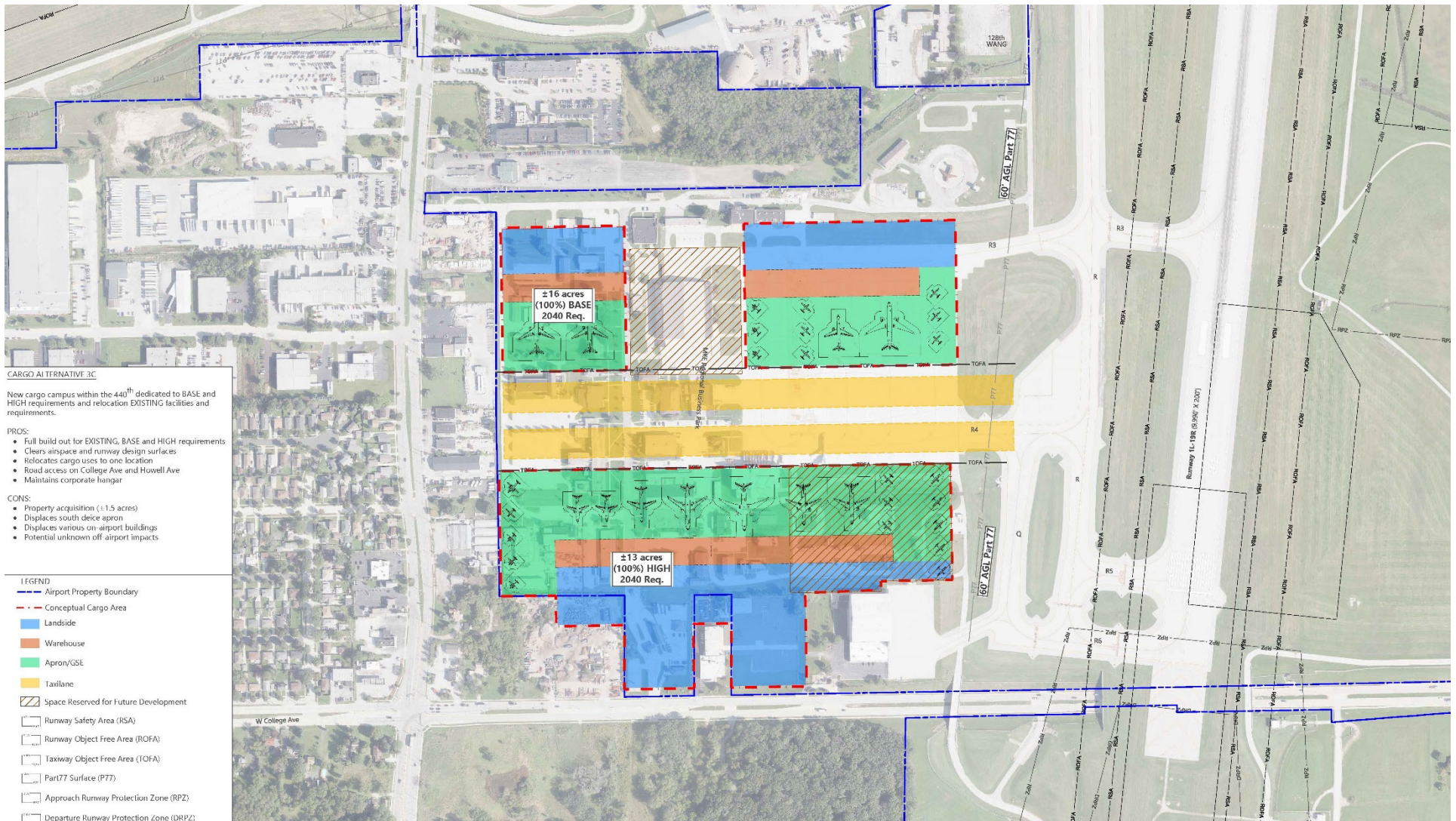
Cargo Alternatives - South



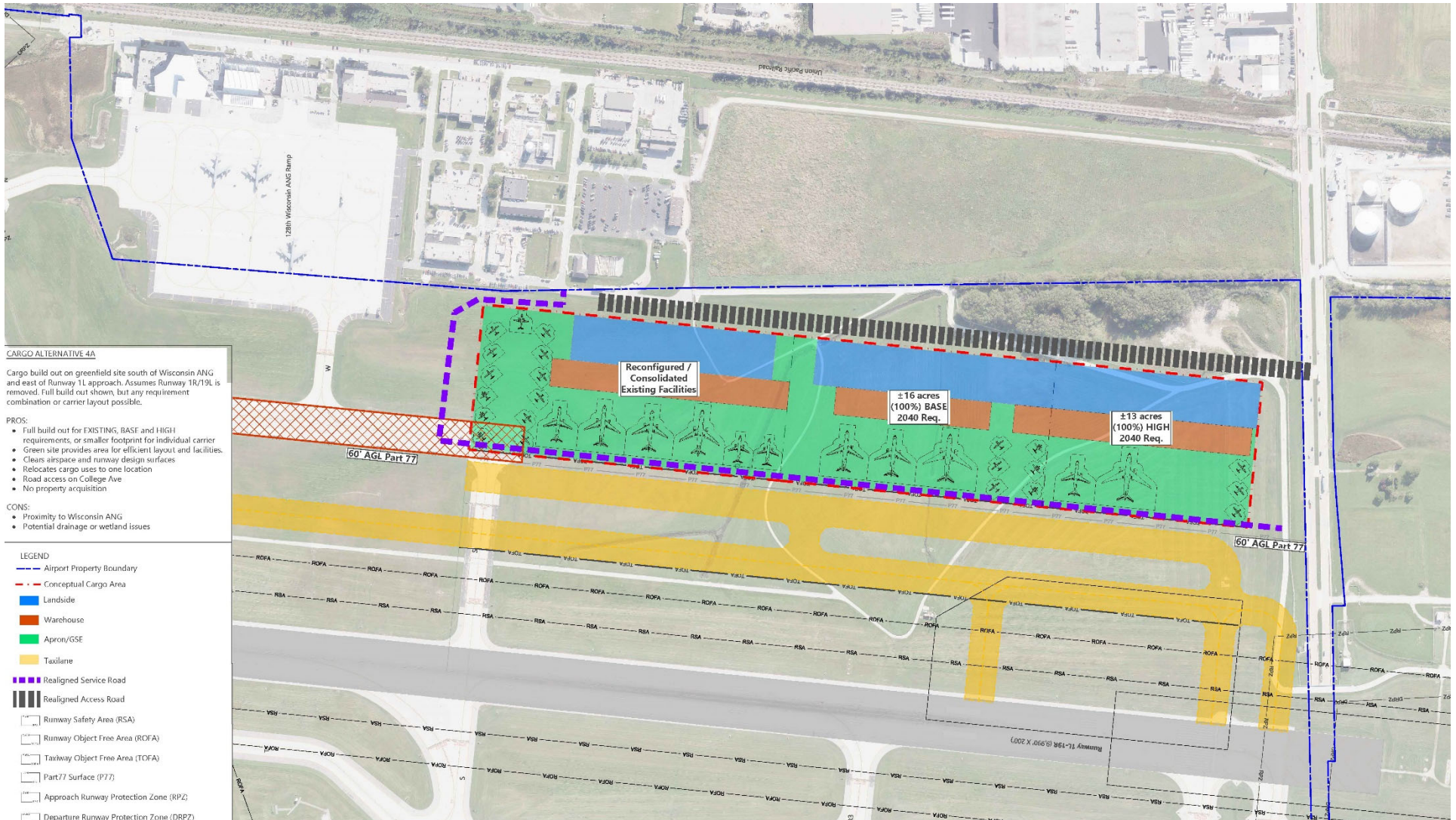
Cargo Alternatives – South (Con't)



Cargo Alternatives – Former 440th



Cargo Alternatives - East



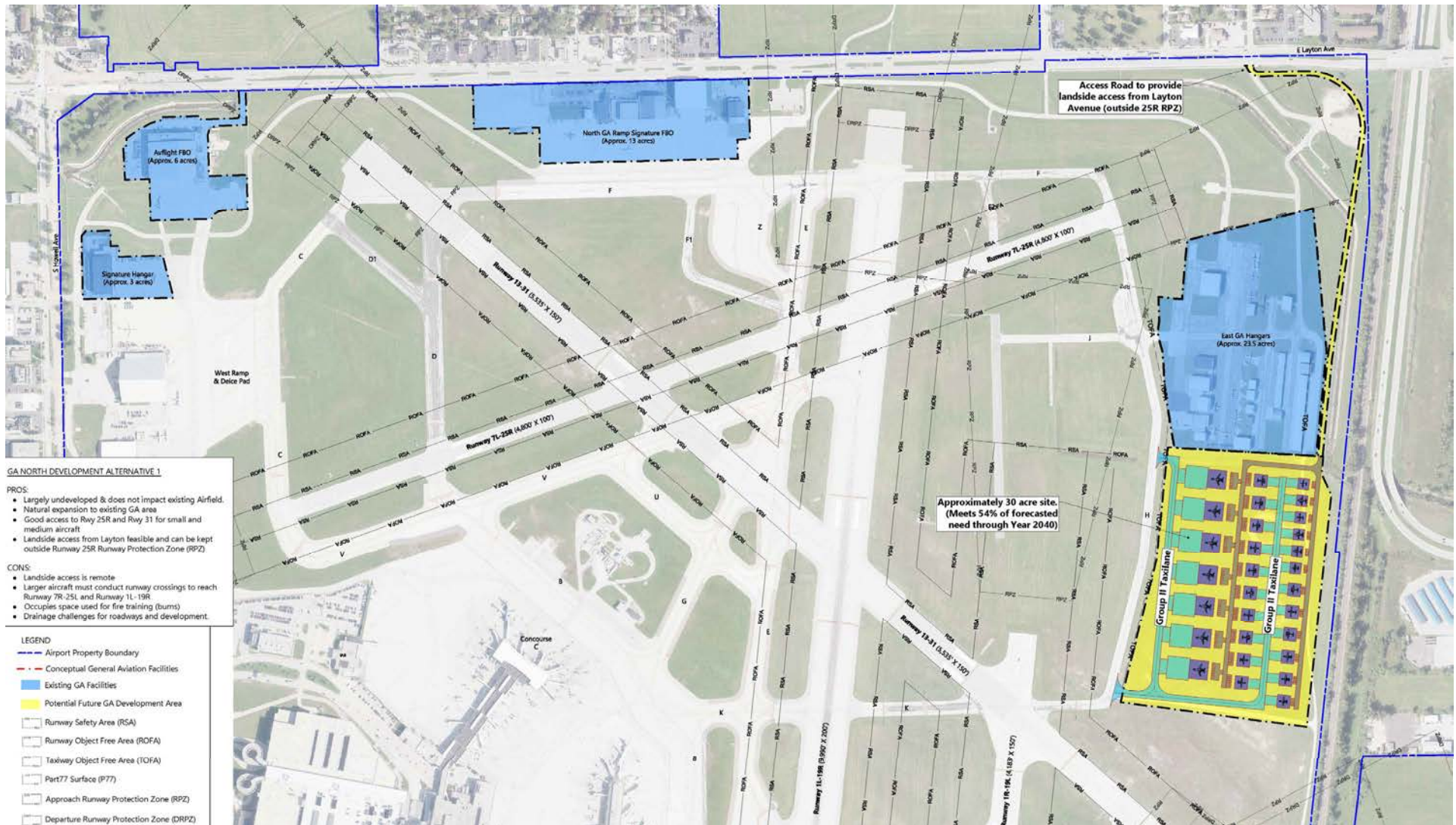
General Aviation Alternatives



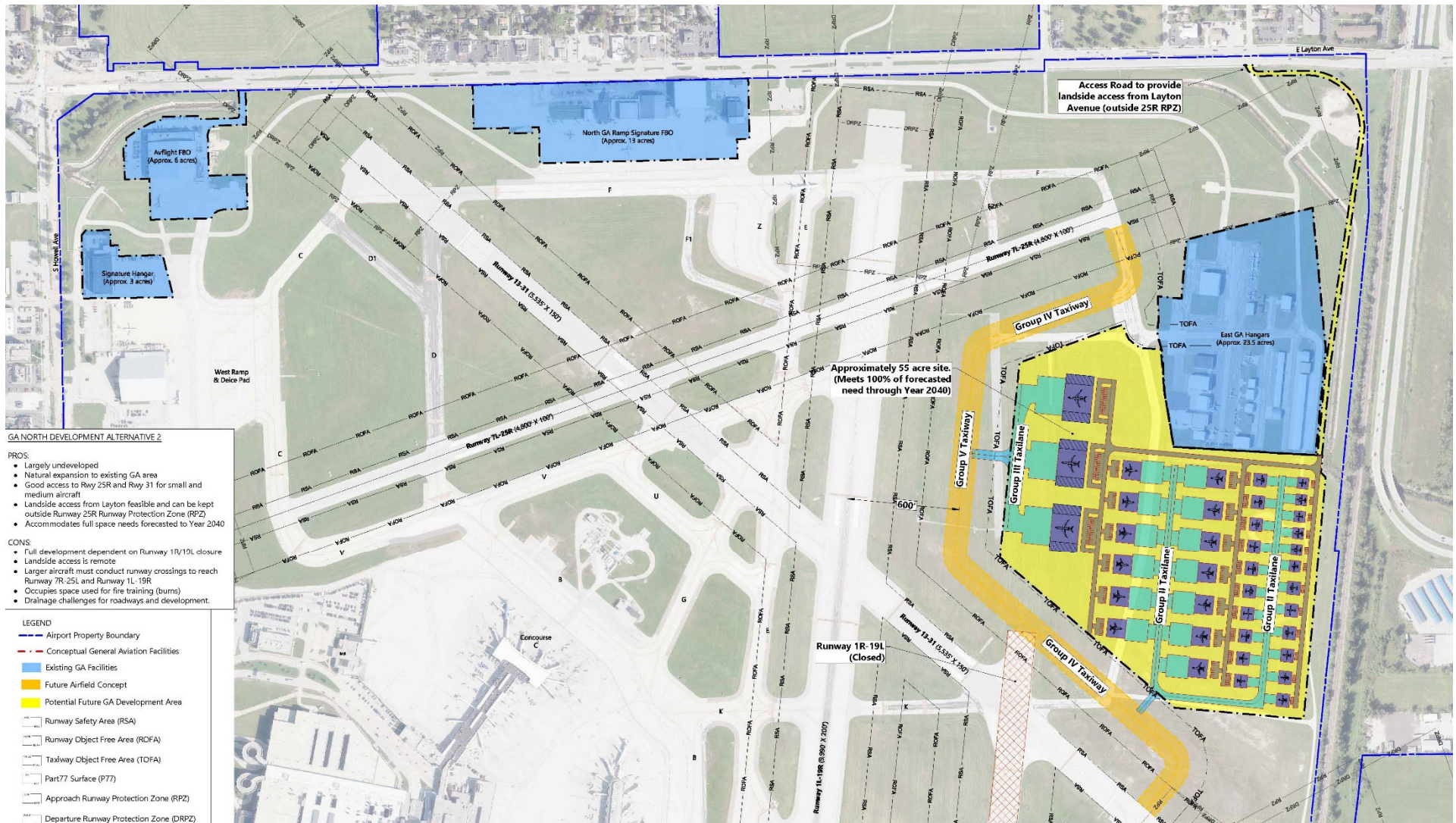
GA Facilities Challenges

- Qualitative
 - Inefficient facility configuration for some tenants
 - Dispersed facilities
 - Long term growth opportunities/capabilities
 - Opportunity for consolidation
 - Airfield/runway/landside (non-secure) access
- Quantitative
 - GA ramp expansion
 - Existing unmet need/demand
 - Development of third FBO at MKE

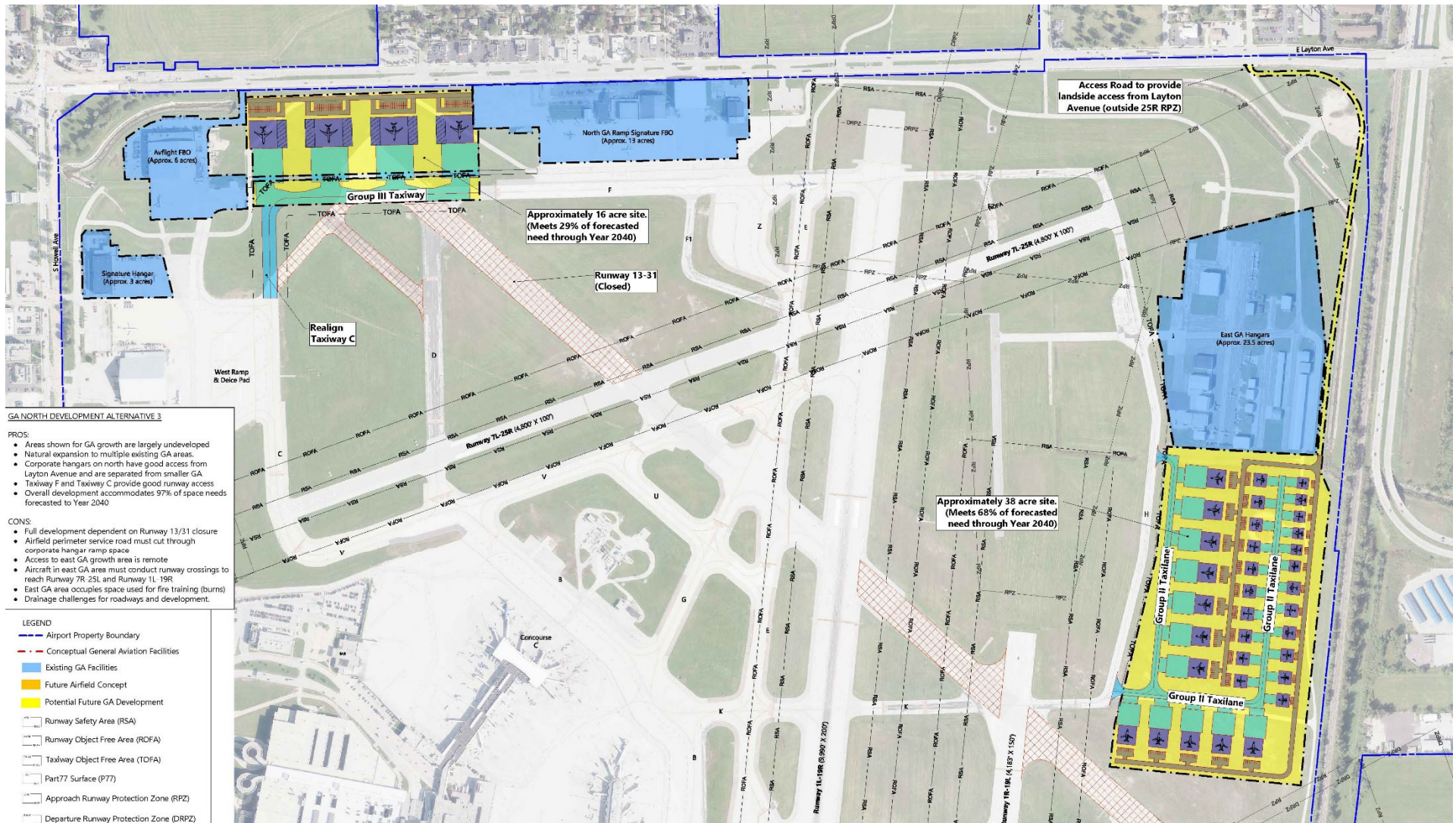
General Aviation Alternative 1



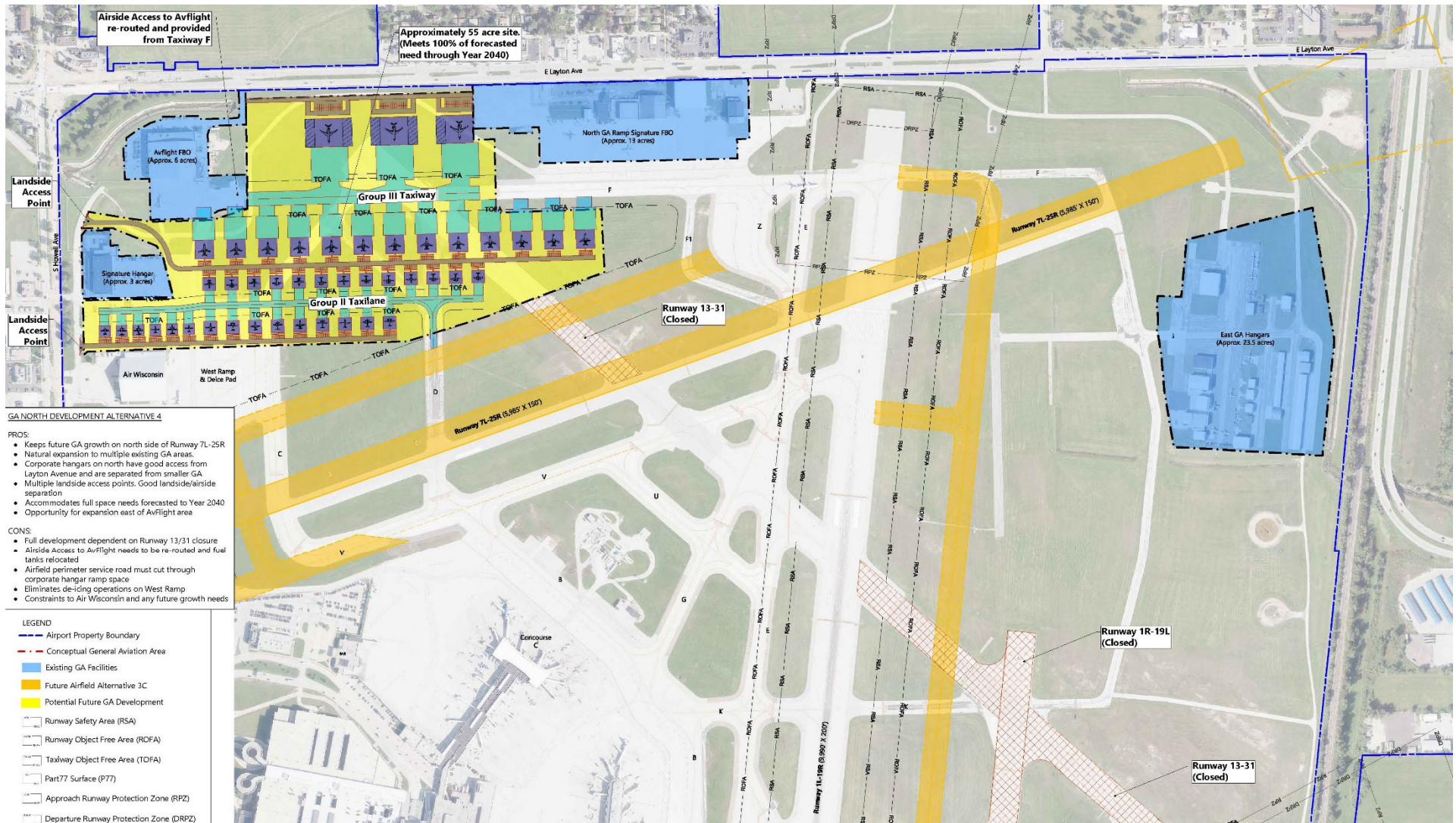
General Aviation Alternative 2



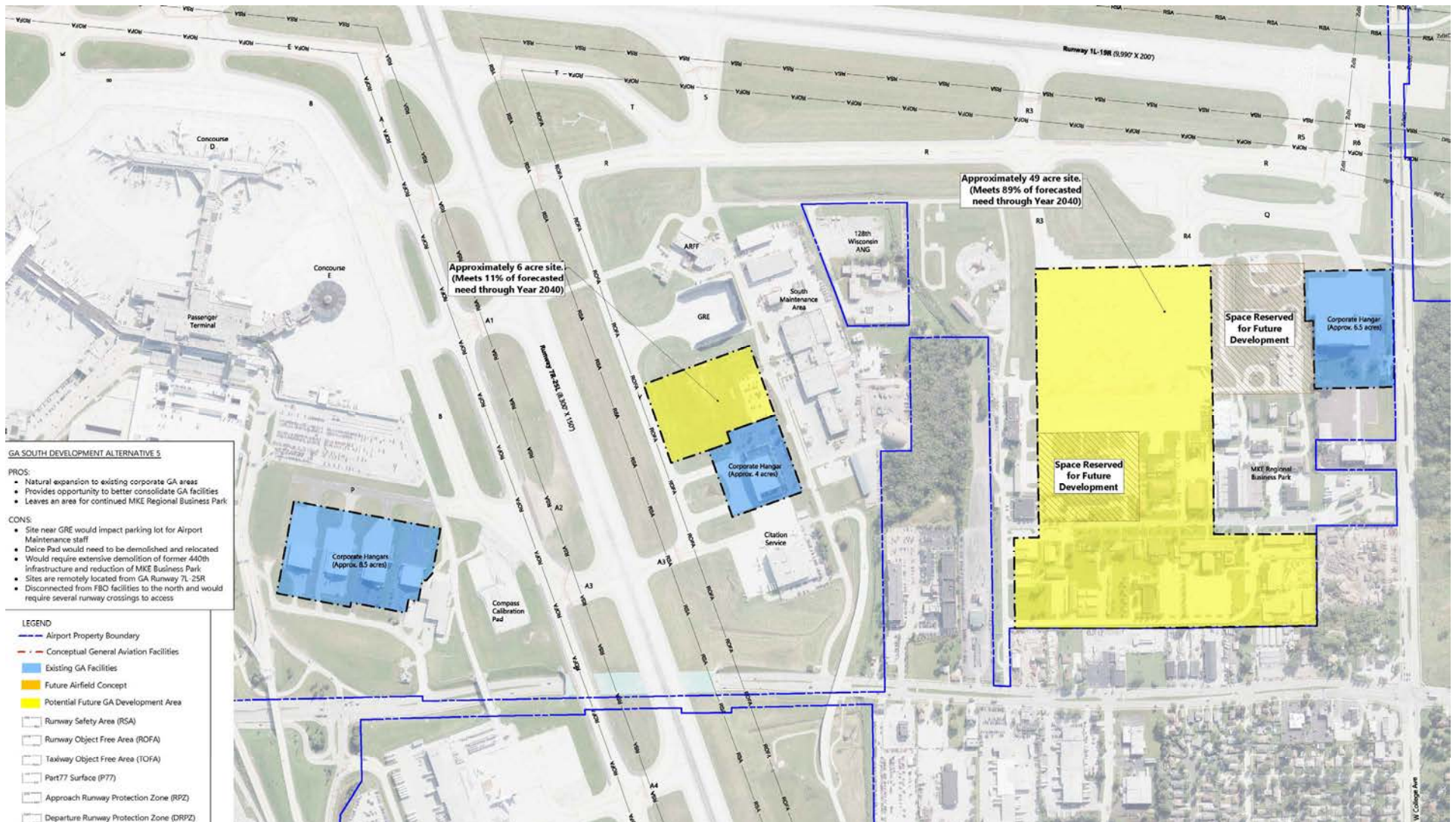
General Aviation Alternative 3



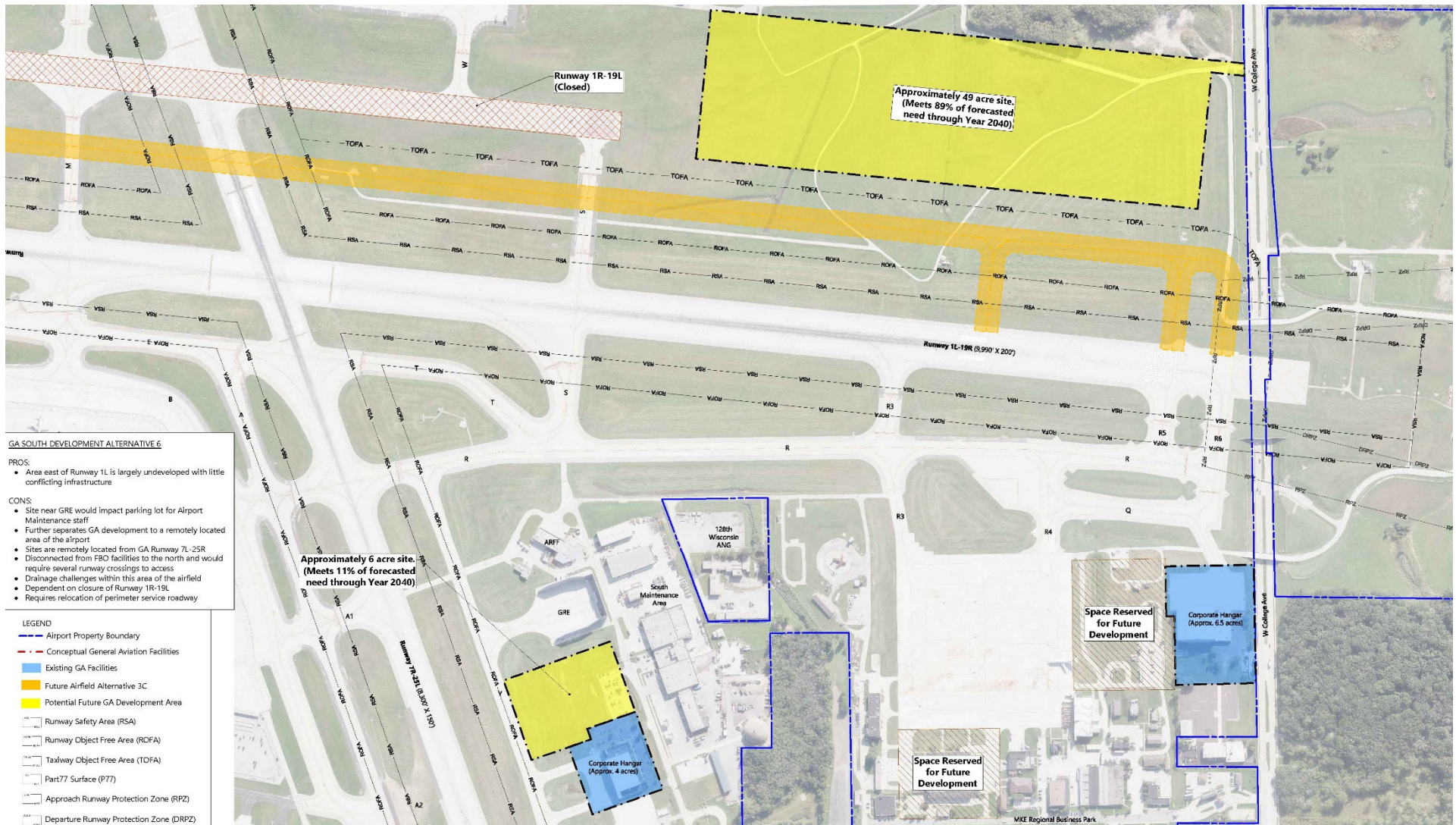
General Aviation Alternative 4



General Aviation Alternative 5



General Aviation Alternative 6



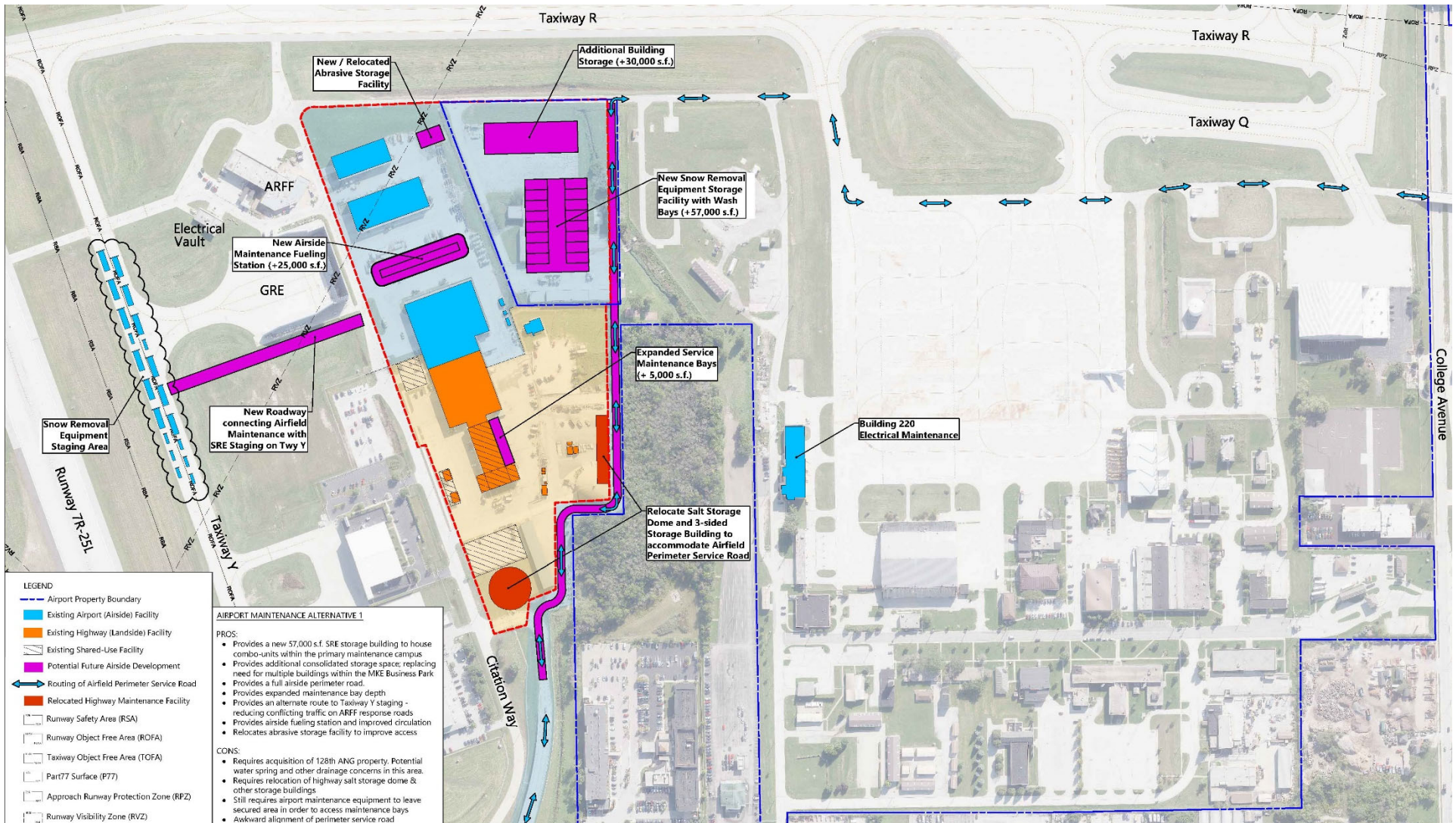
Support Facilities Alternatives



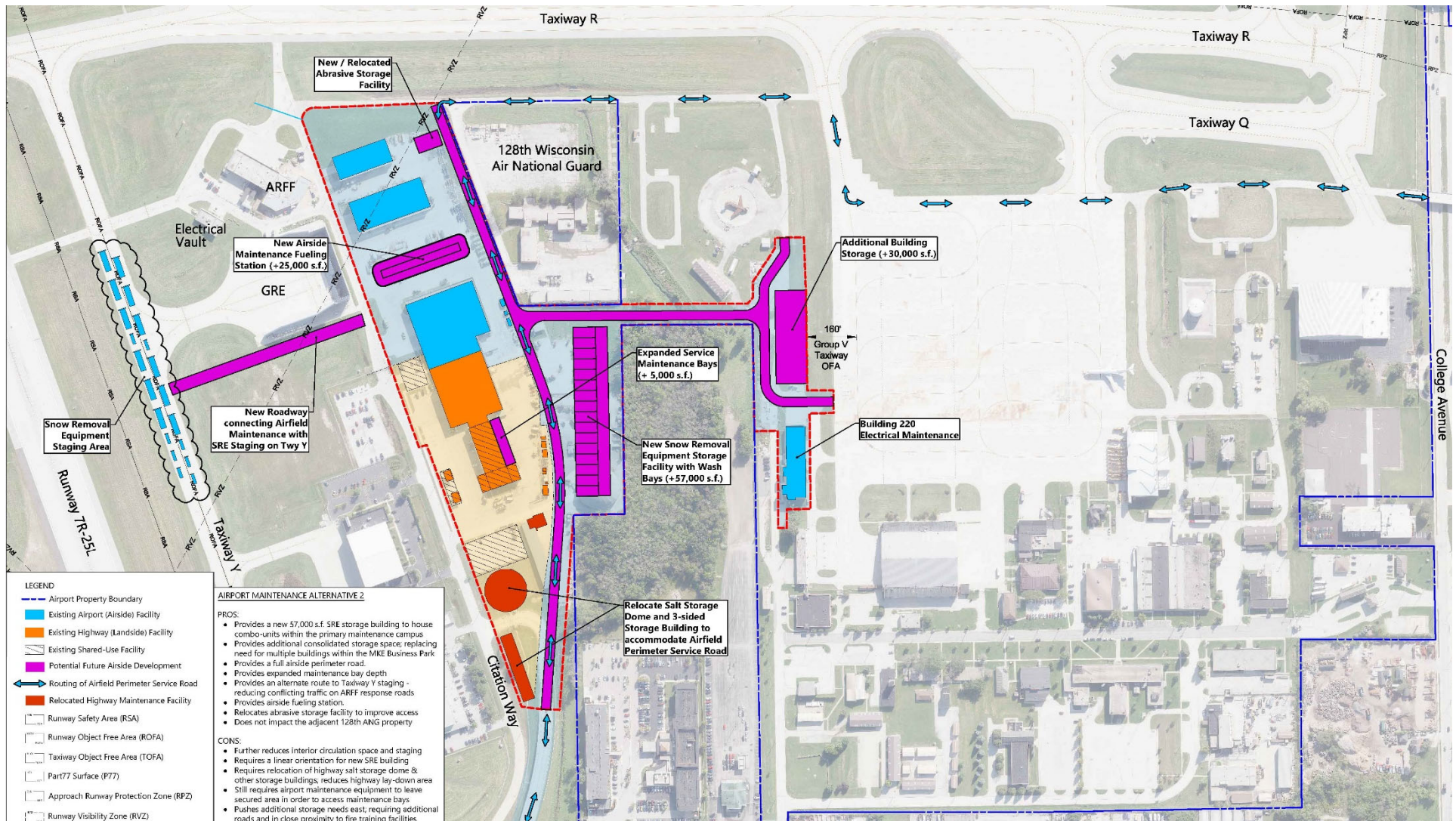
Support Facilities Challenges

- Qualitative
 - Preserve flexibility for demand-based expansion
 - Meet pent-up demand and ability to accommodate future needs
 - Supplemental GRE capability (ground noise coverage)
 - Future ARFF index change
 - Potential relocation of facilities to allow for “highest and best use” of existing land/facilities
 - Snow removal vehicle staging on Taxiway Y
- Quantitative
 - Maintenance area expansion and consolidation of facilities

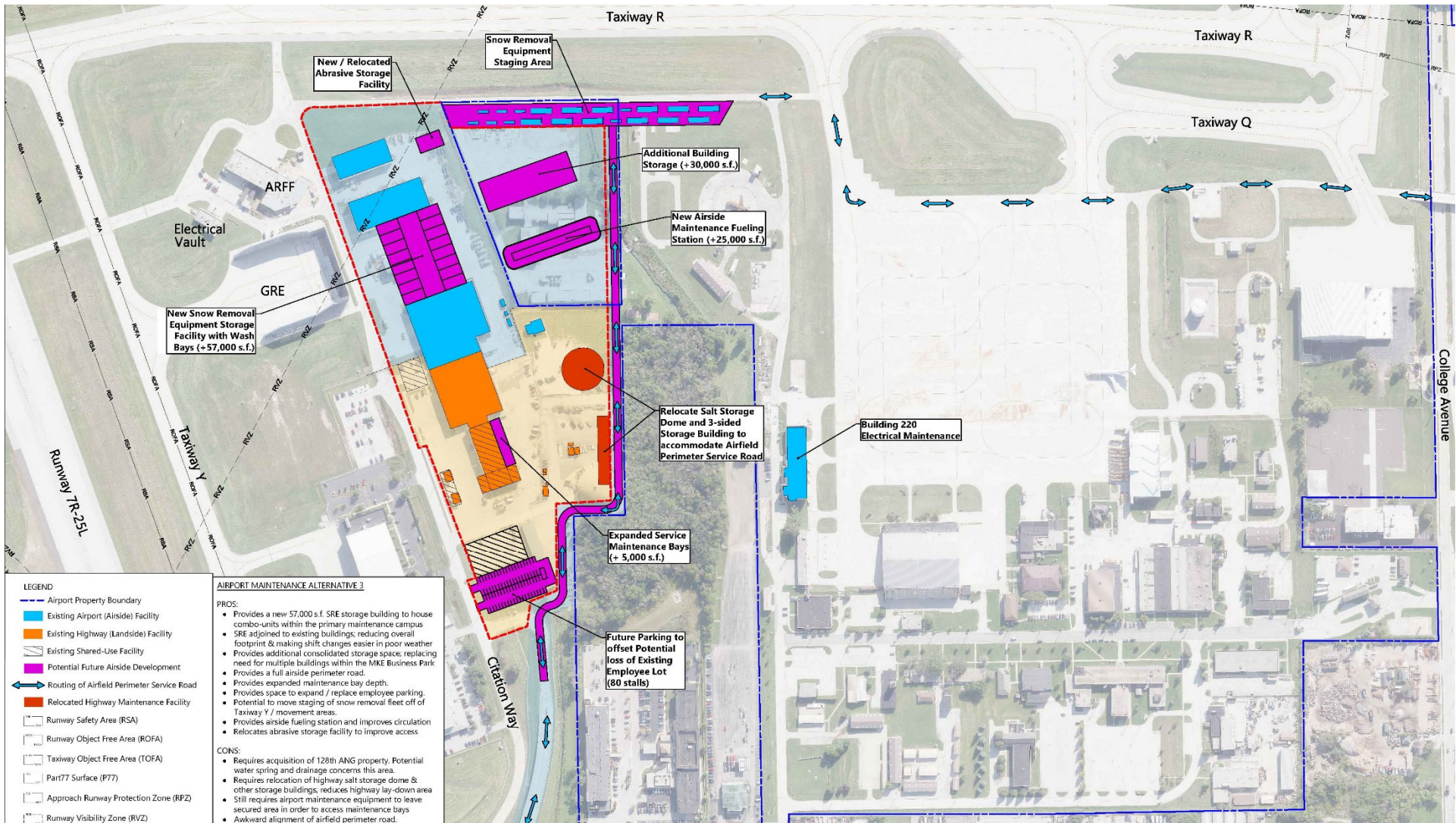
Support Facilities Alternative 1



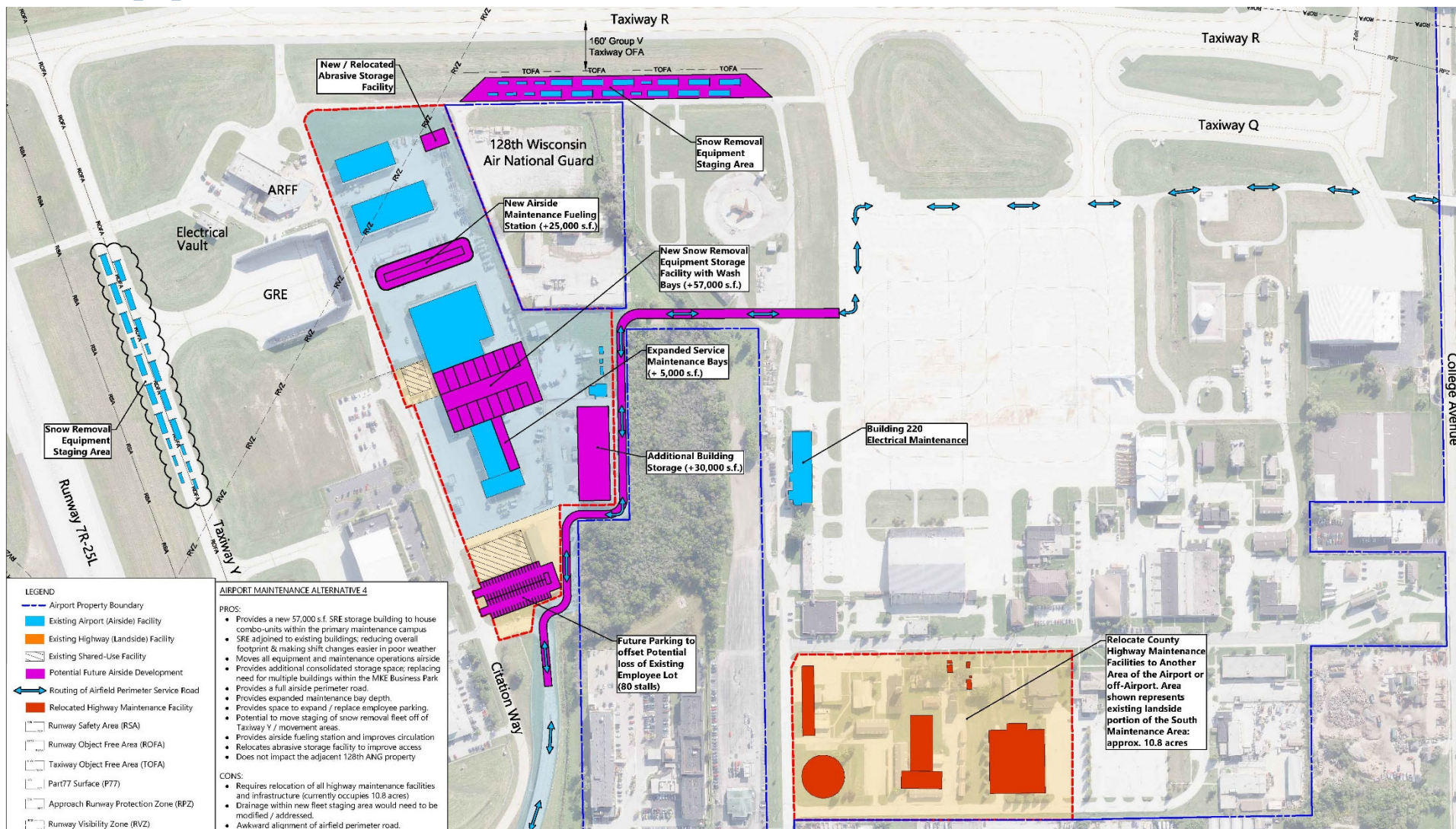
Support Facilities Alternative 2



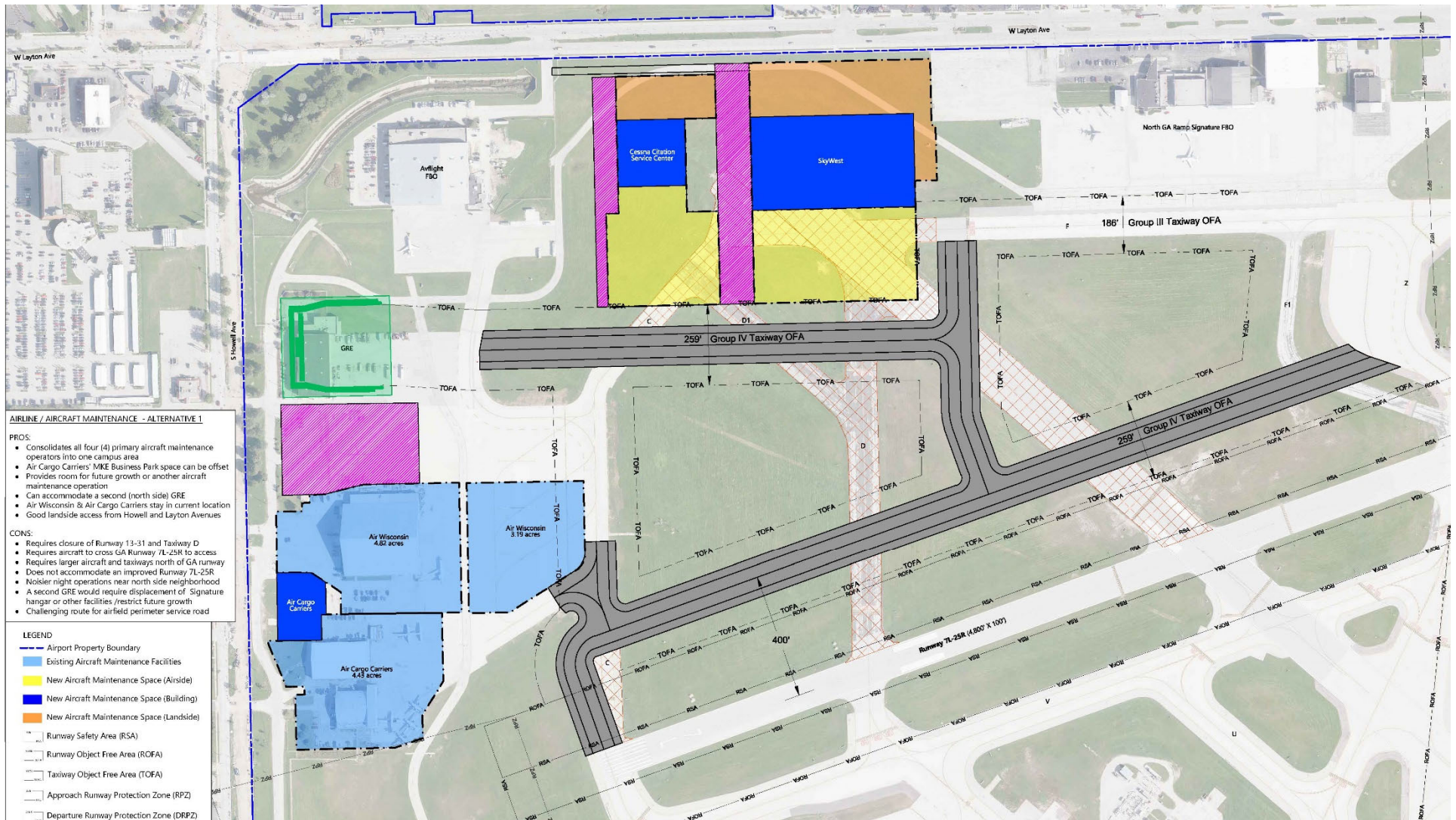
Support Facilities Alternative 3



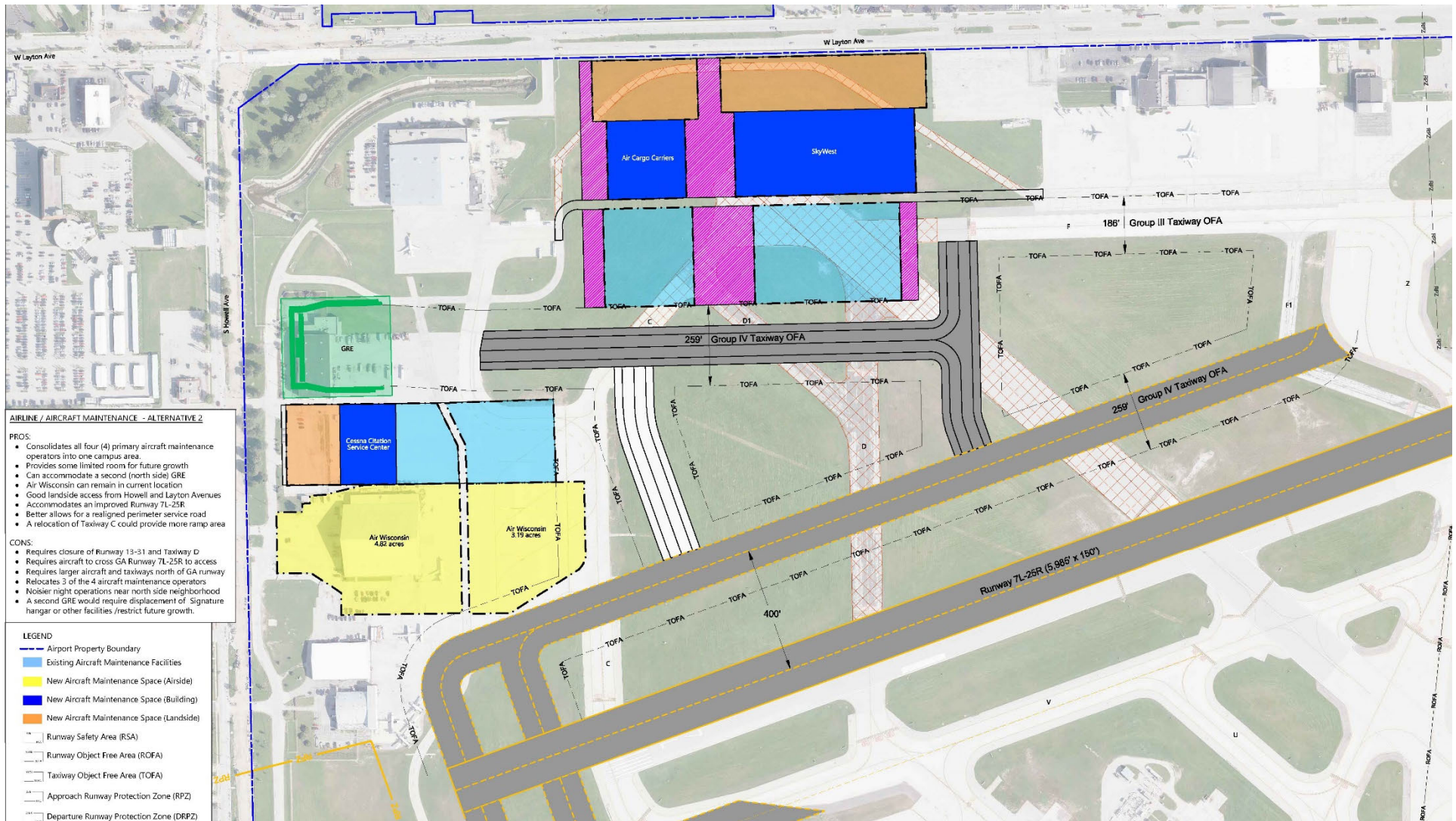
Support Facilities Alternative 4



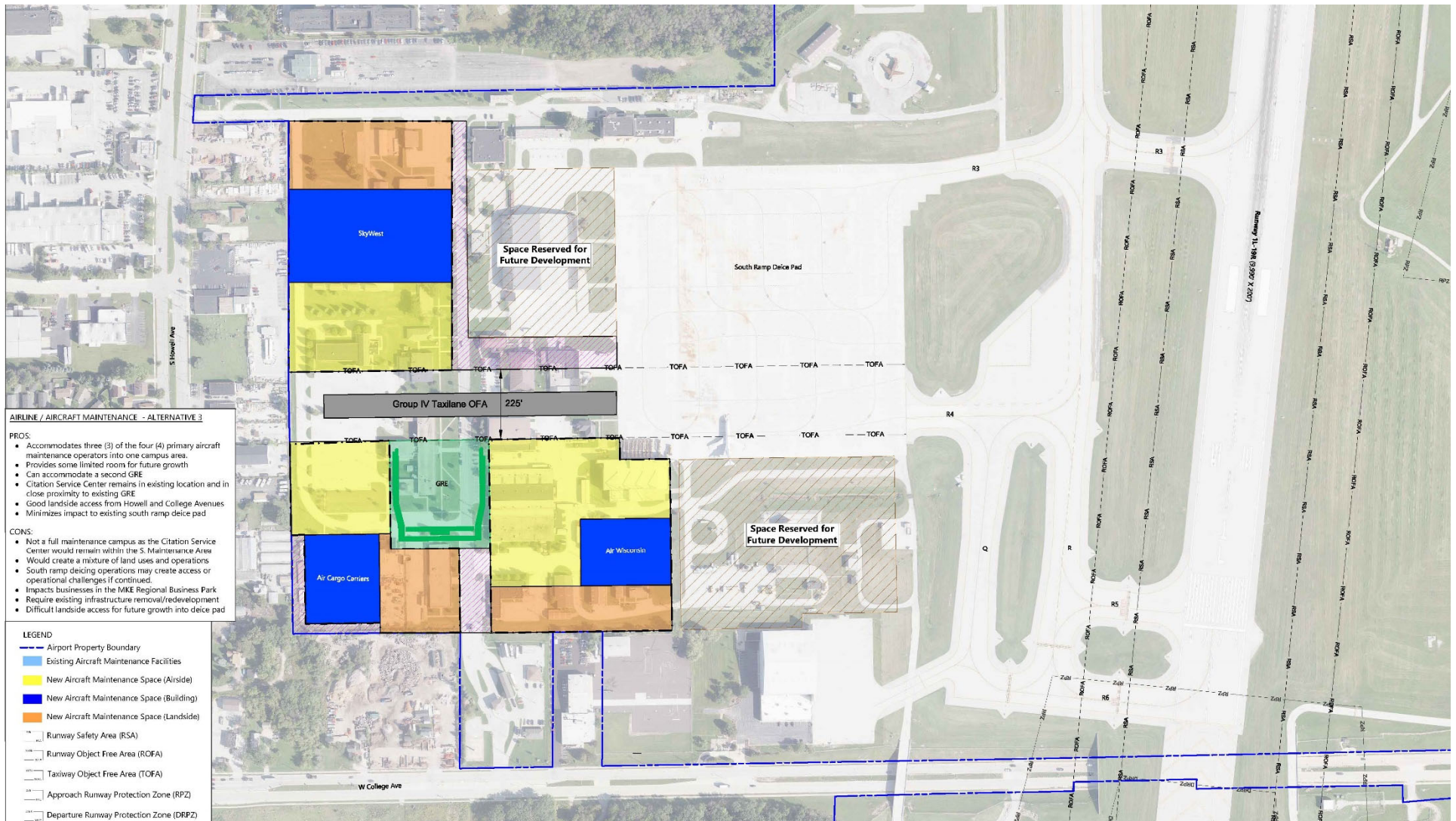
Aircraft Maintenance Alternative 1



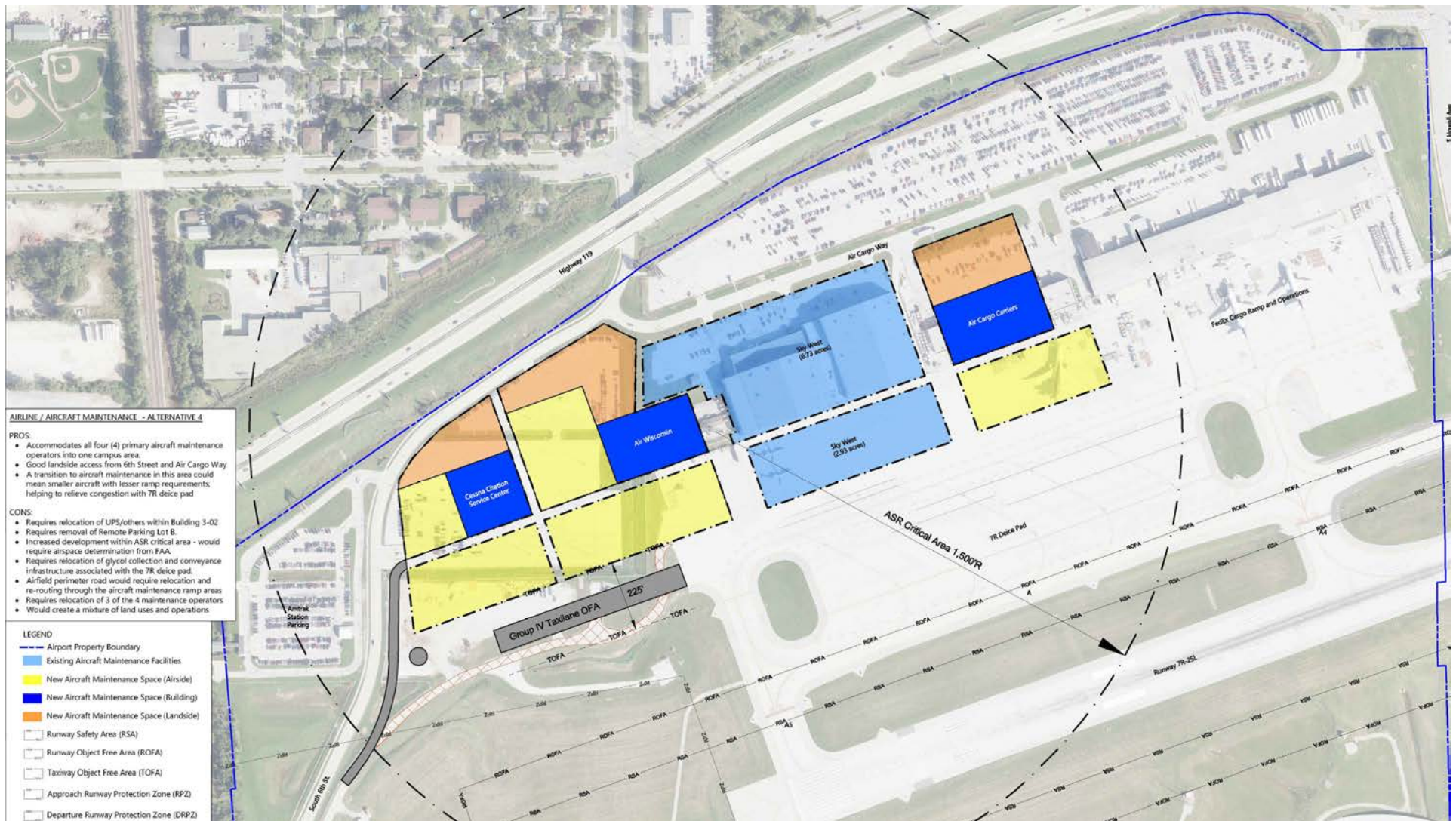
Aircraft Maintenance Alternative 2



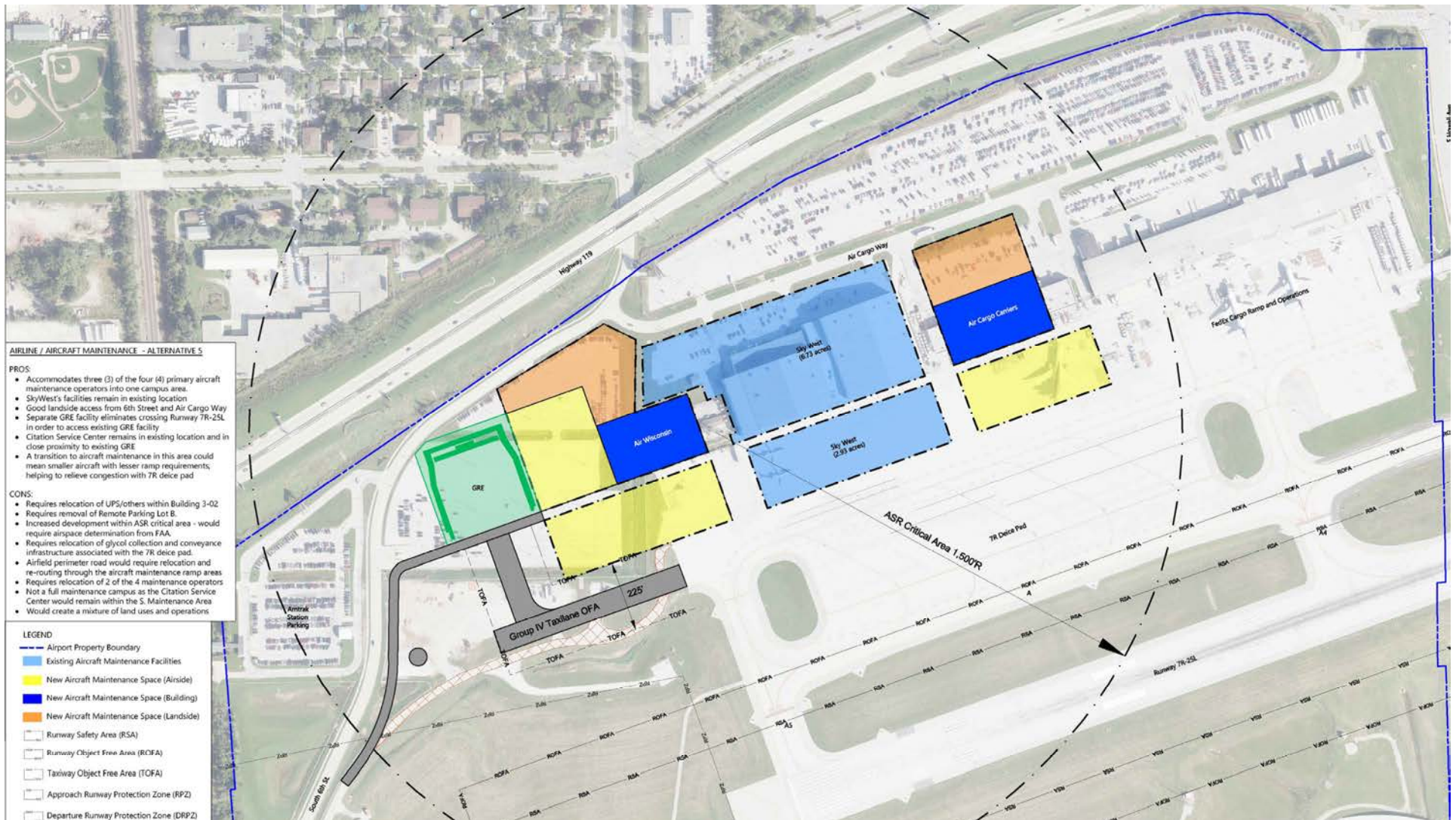
Aircraft Maintenance Alternative 3



Aircraft Maintenance Alternative 4



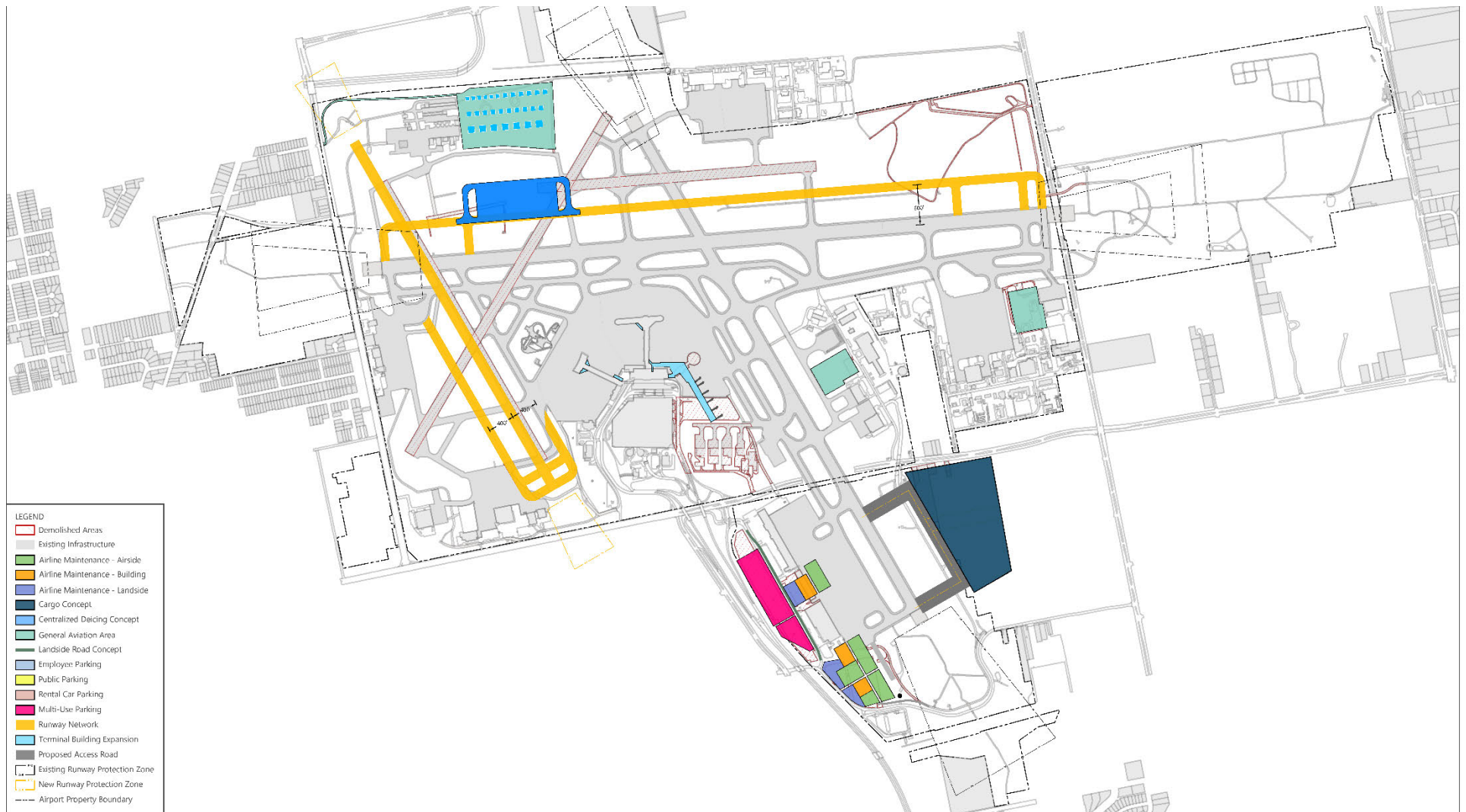
Aircraft Maintenance Alternative 5



Preliminary Integrated Alternatives



Integrated Alternative 1



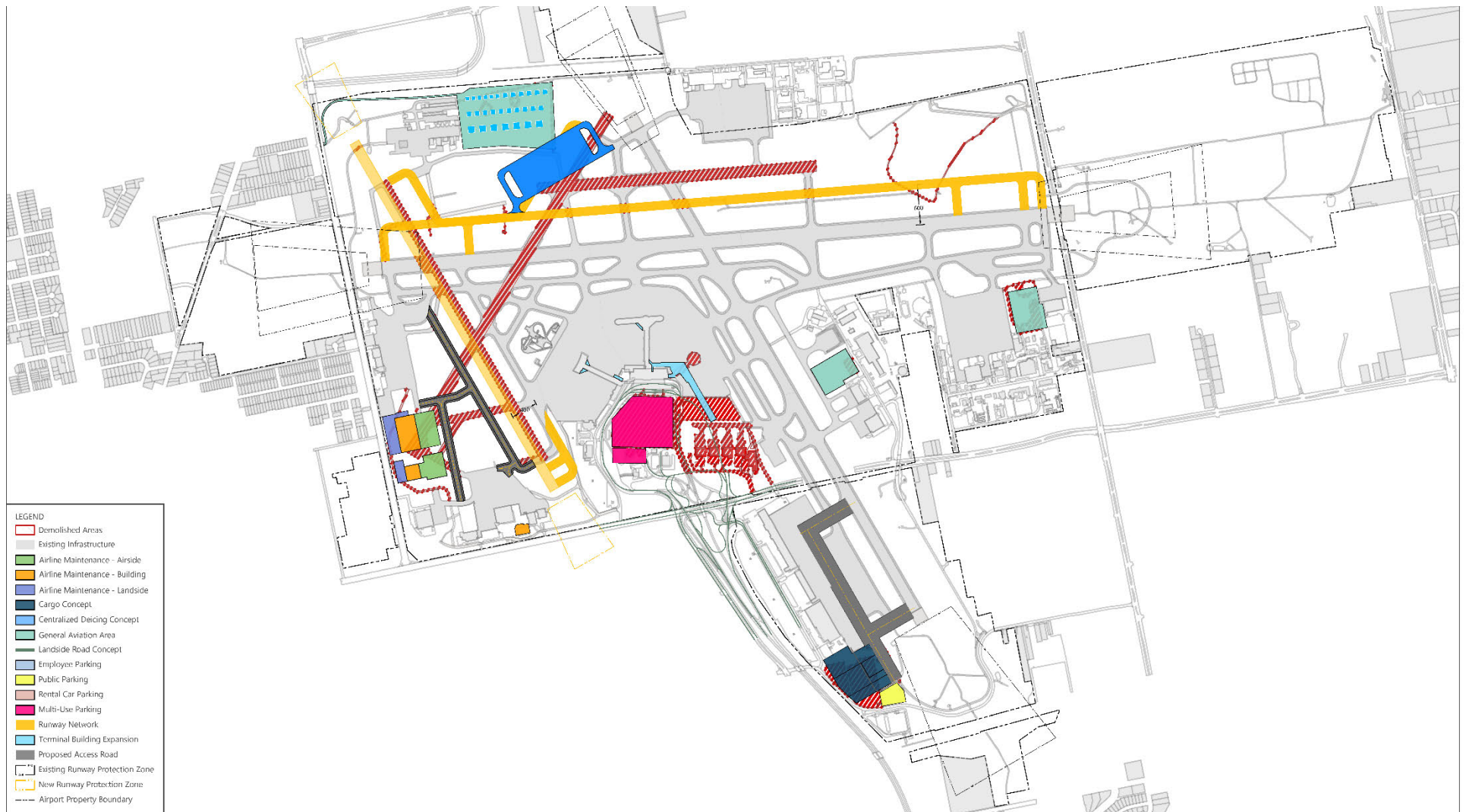
Integrated Alternative 2



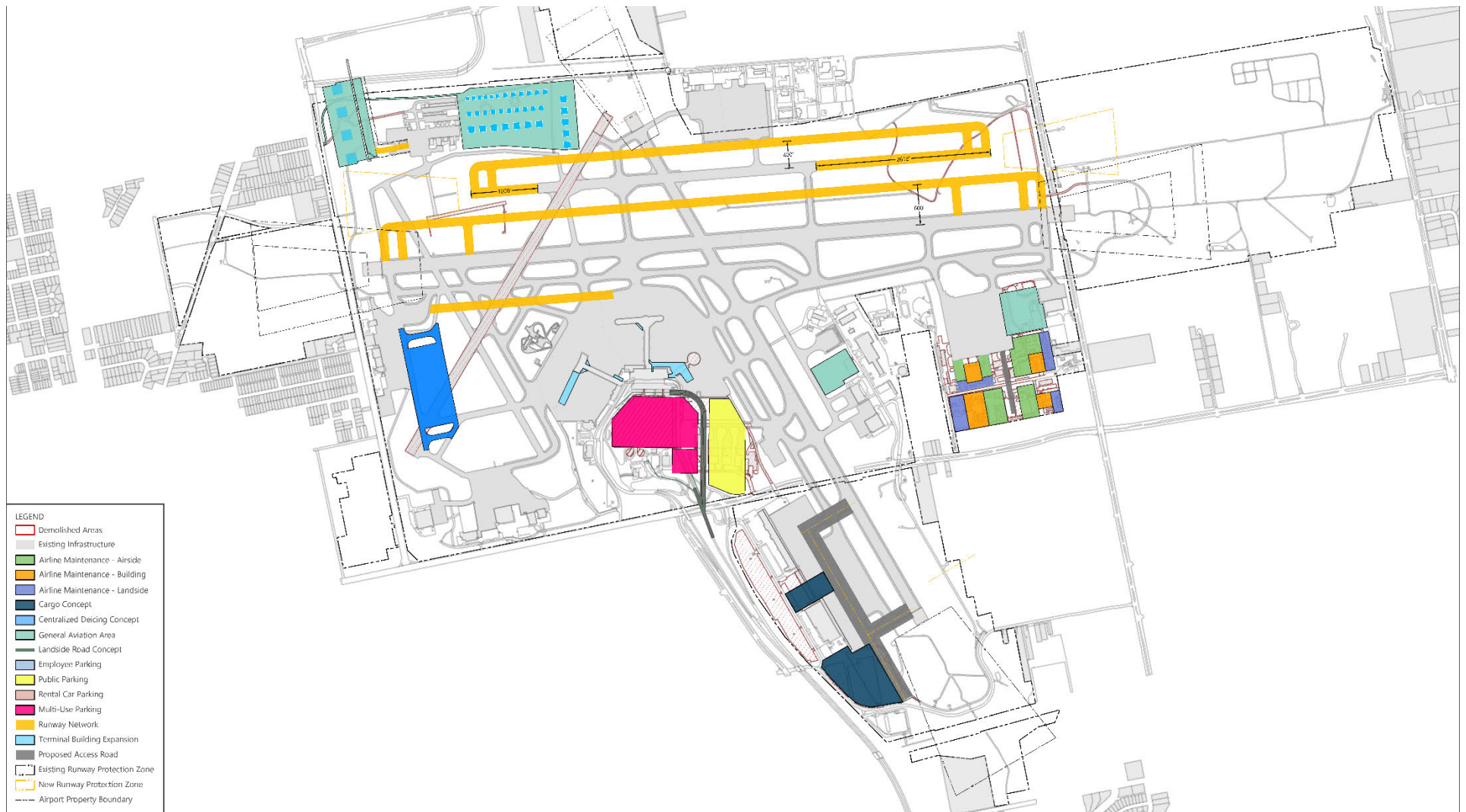
Integrated Alternative 3



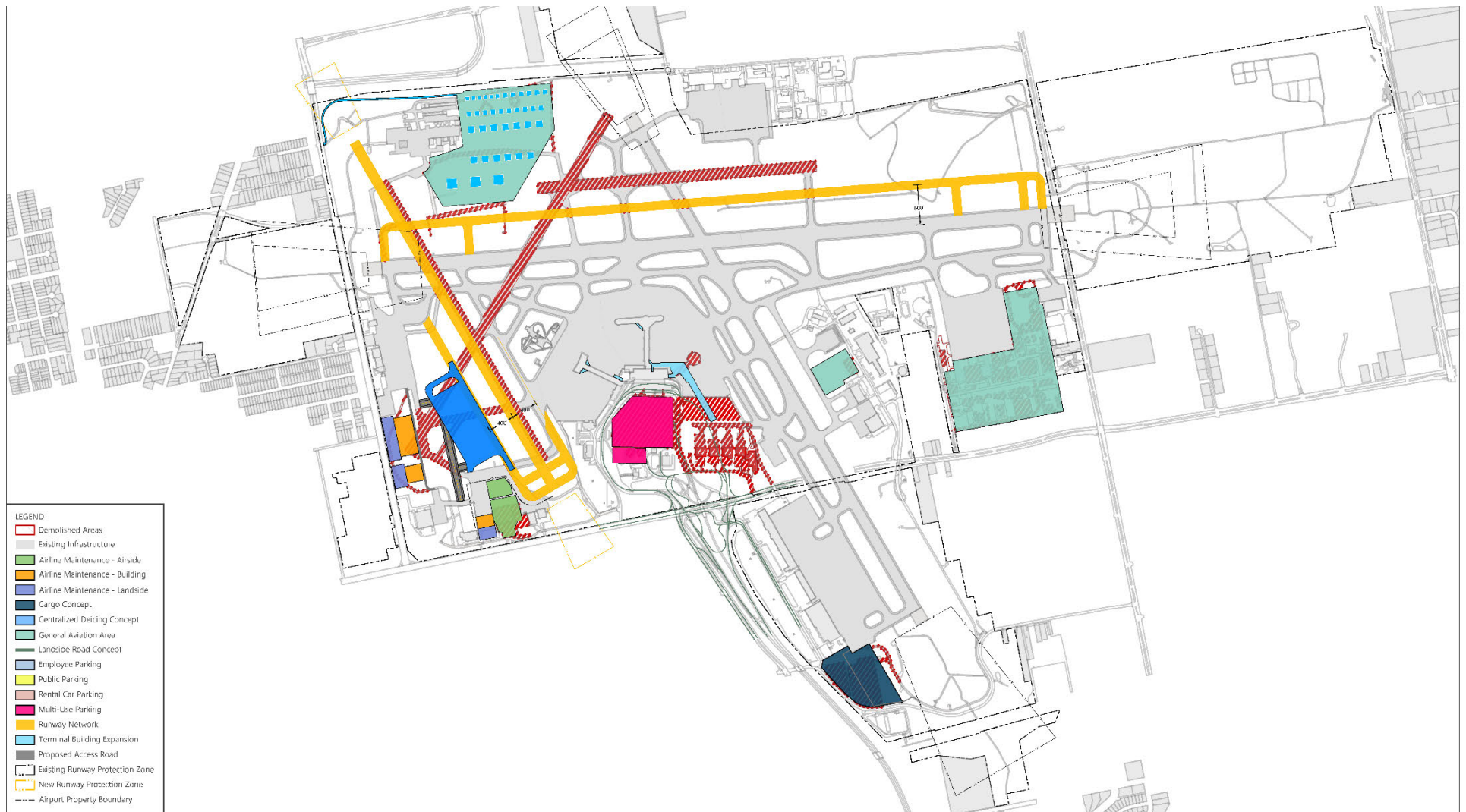
Integrated Alternative 4



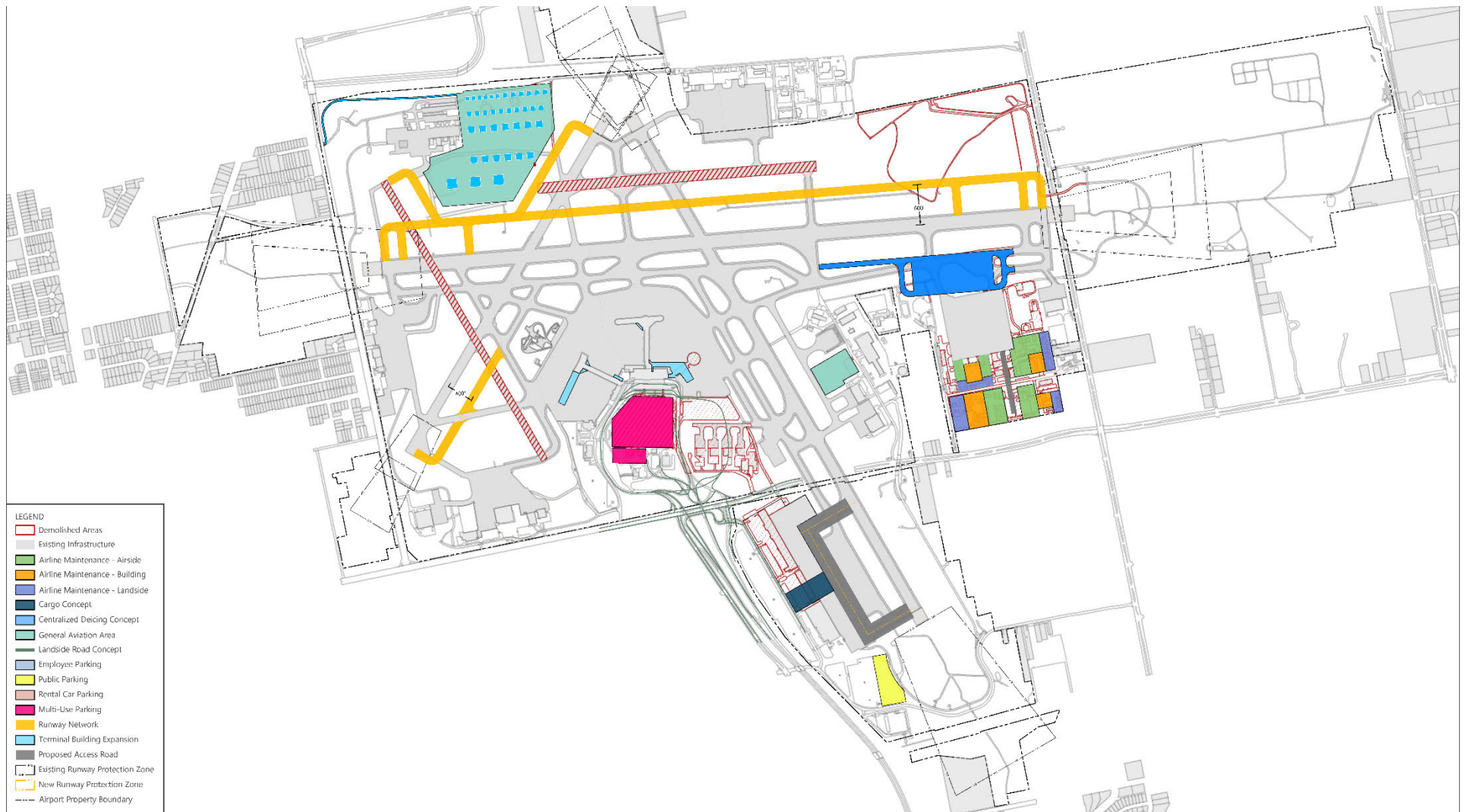
Integrated Alternative 5



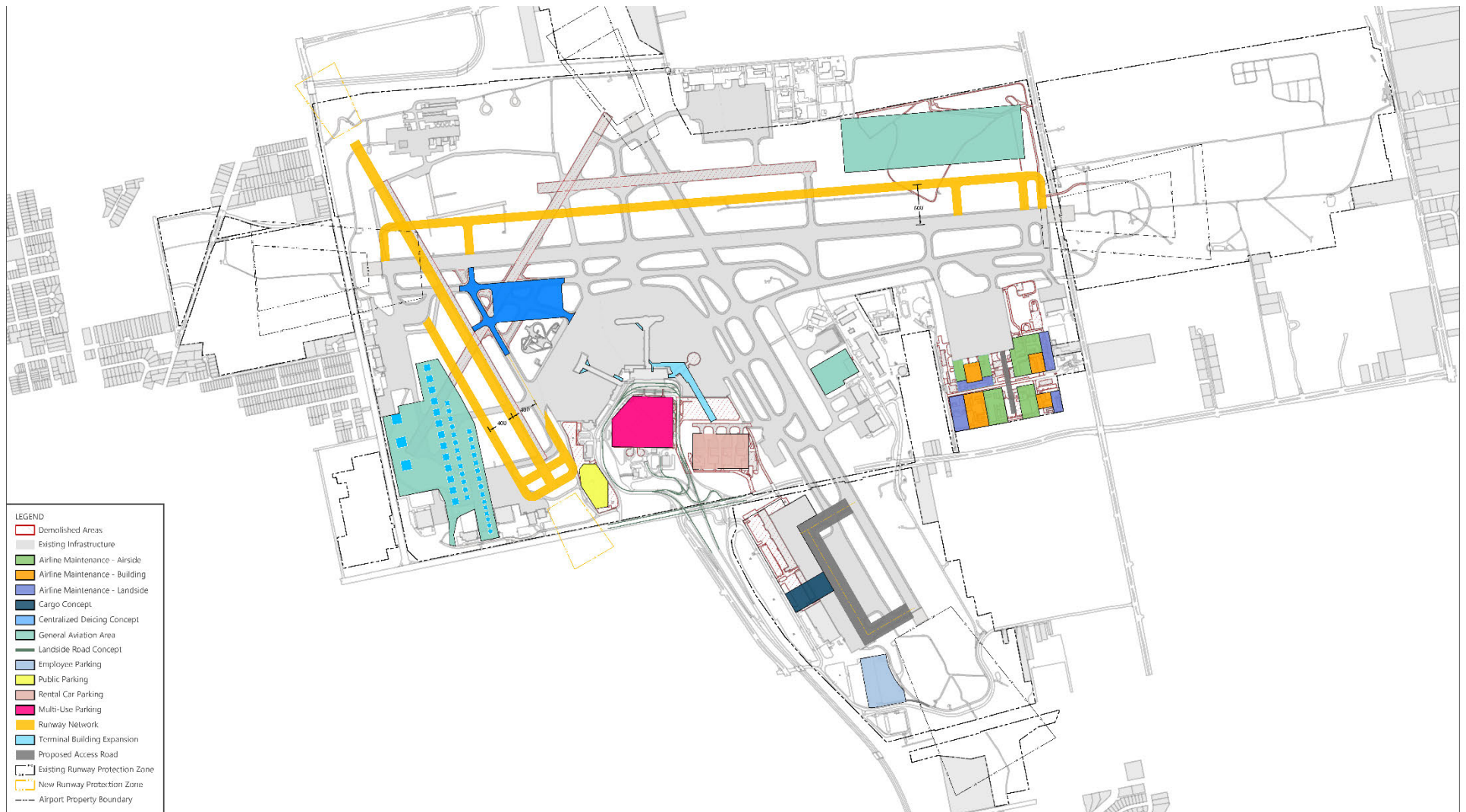
Integrated Alternative 6



Integrated Alternative 7



Integrated Alternative 8



Next Steps



Next Steps – Near Term

- Present alternatives process to TAG and SAG (November 18)
 - Subject Matter Alternatives
 - Six Integrated Alternatives
 - Screening Results
 - Three Shortlisted Alternatives (MKE consensus)
- Public Open House Workshop (January 2020)
 - Alternatives Process
 - Condensed Subject Matter Alternatives
 - Six Integrated Alternatives
 - Three Shortlisted Alternatives (to be confirmed)

What is Ahead in Workshop #3

GOAL: Review results of evaluation of 3 shortlisted alternatives

- Refine integrated alternatives (Workshop #2 input)
- Conclusions of integrated alternative/derivative screening (6 Alts → 3 Alts)
- Review of evaluation criteria
- Review of evaluation results

ACTION: At or following WS #3, select preferred alternative

- Refine preferred alternative
- Initiate Airport Layout Plan (ALP) preparation
- Implementation planning
- Financial analysis