



APPENDIX D.2

Alternatives Workshop #2

Alternatives Workshop #2

October 9, 2019



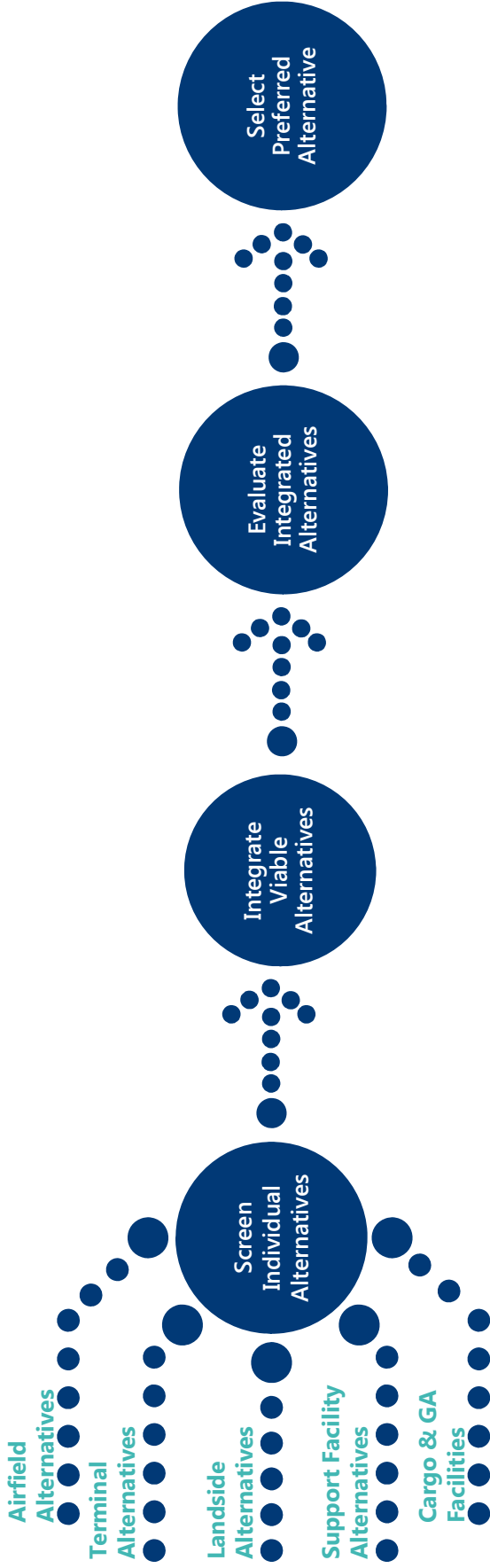
MASTER PLAN 2040



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

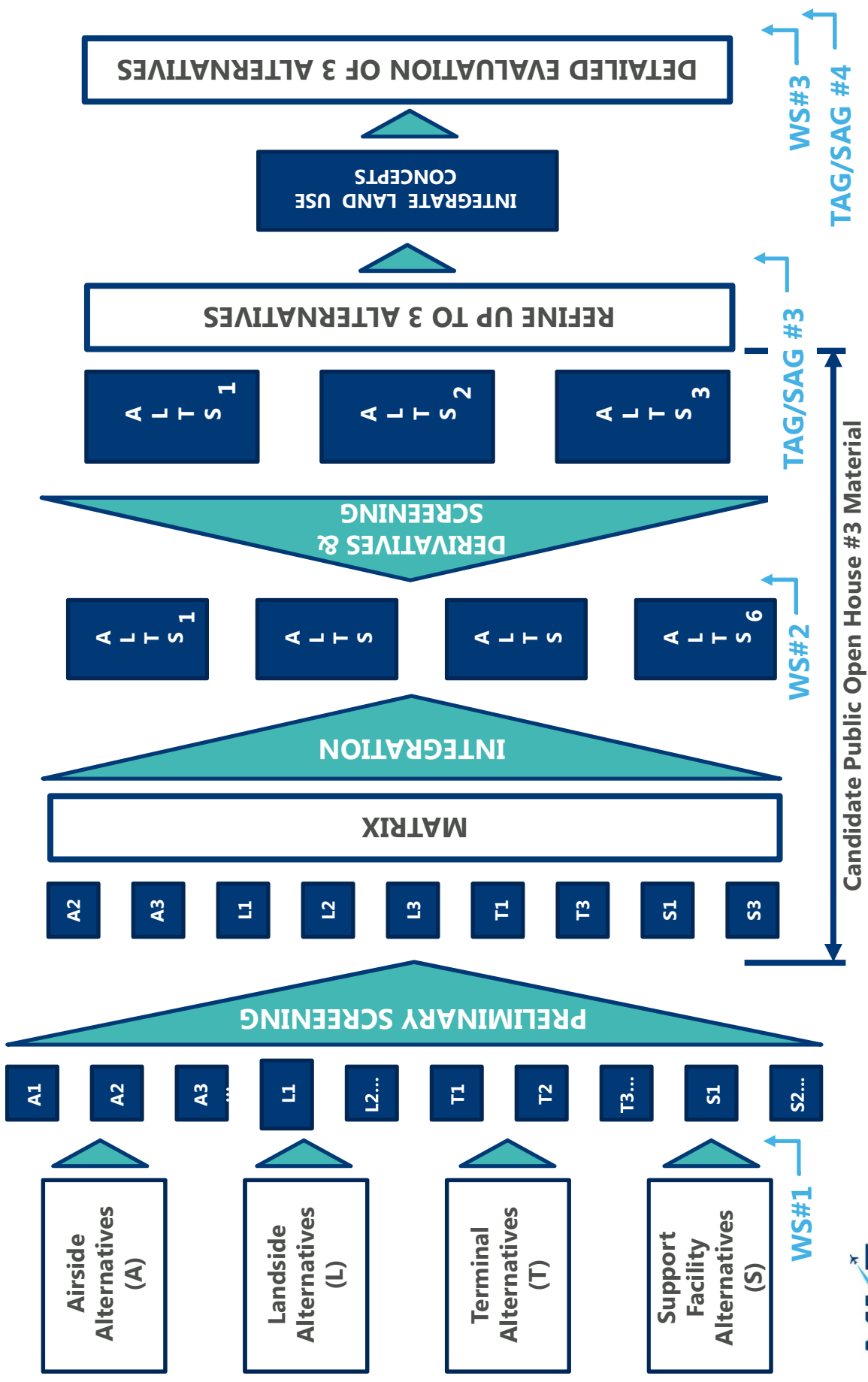


Workshop #1

Workshop #2

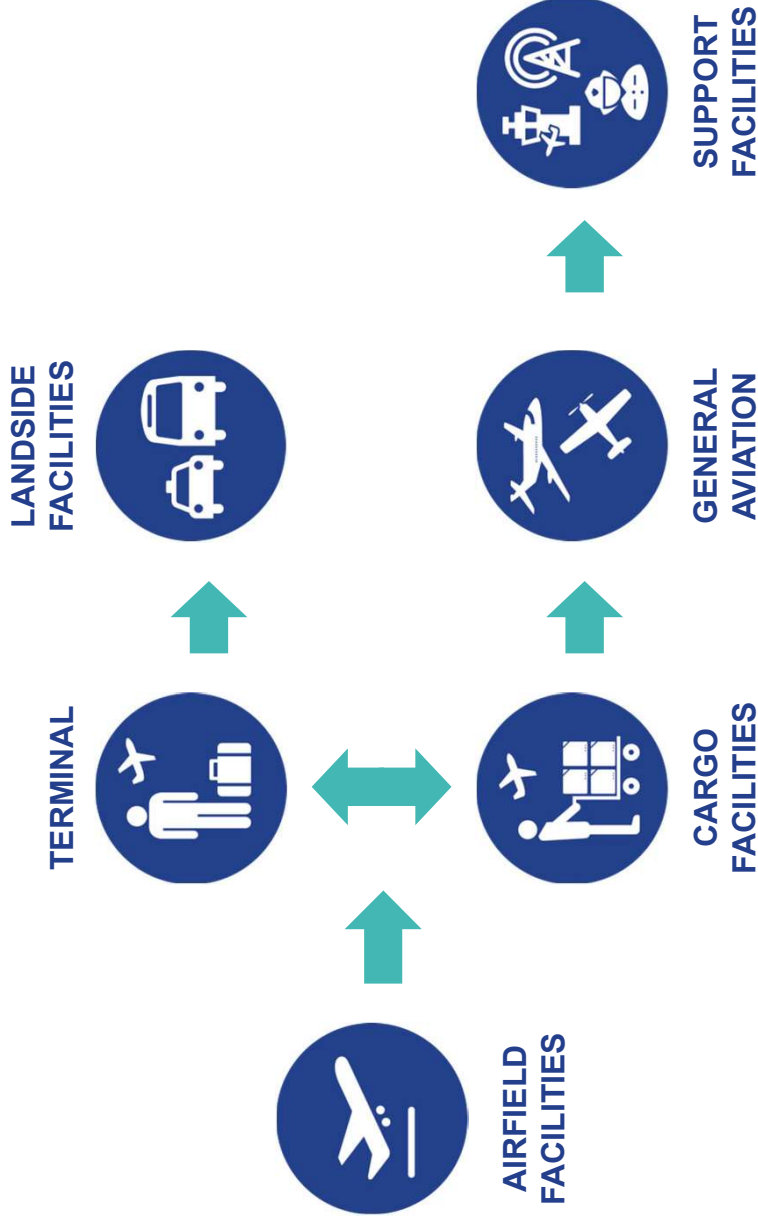
Workshop #3

Alternatives Analysis Process Diagram



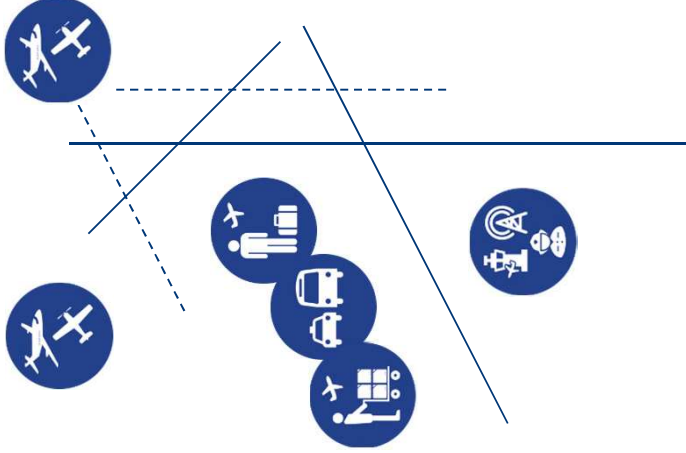
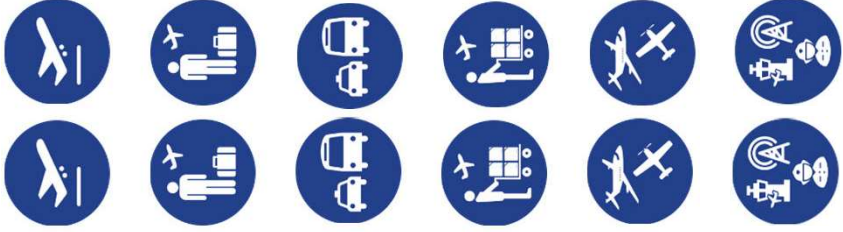
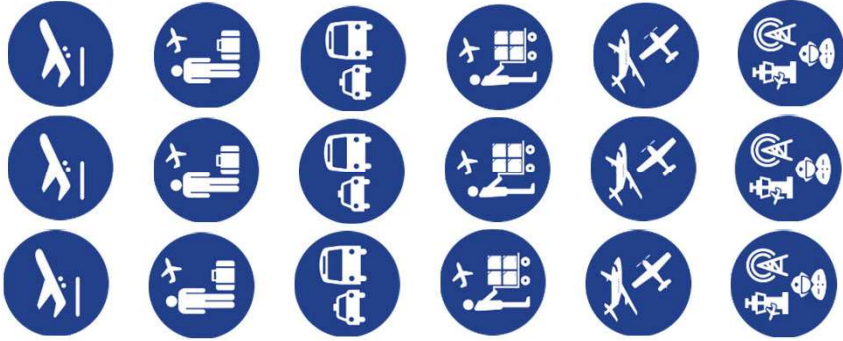
Alternatives Planning Process

- 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



WORKSHOP #2

INITIAL ALTERNATIVES
(SUBJECT MATTER)

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

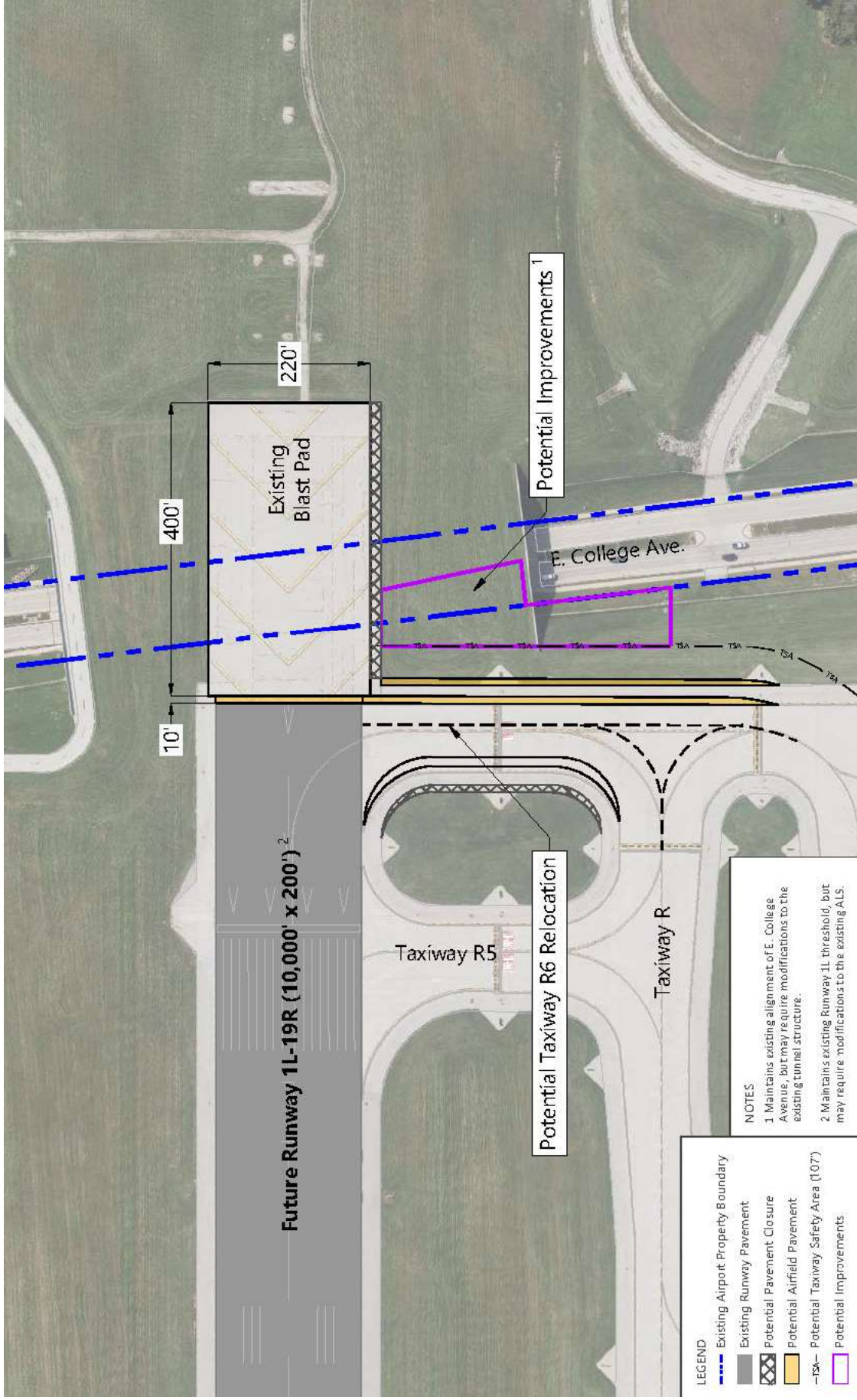
Airfield Alternatives



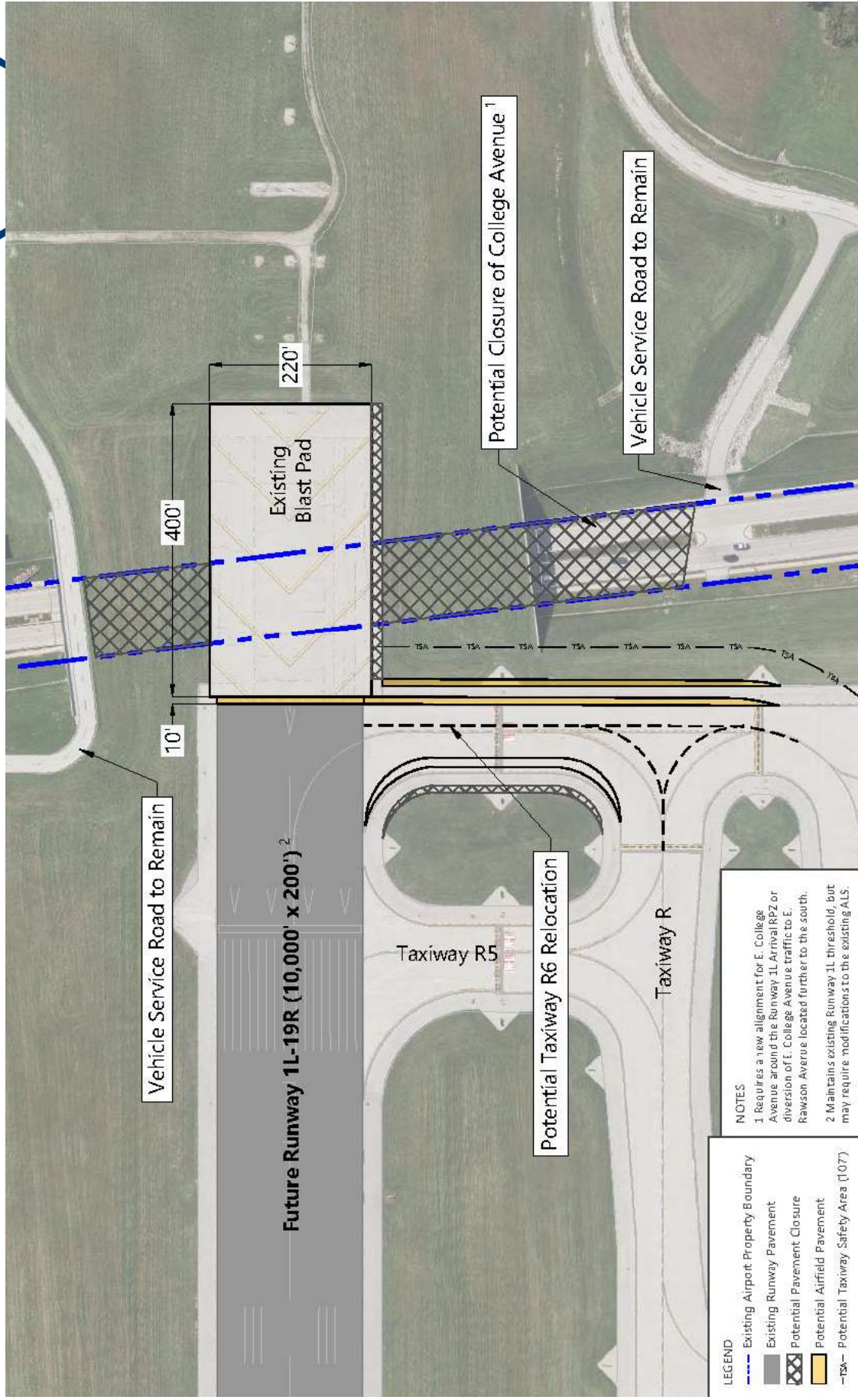
Airfield Challenges

- 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

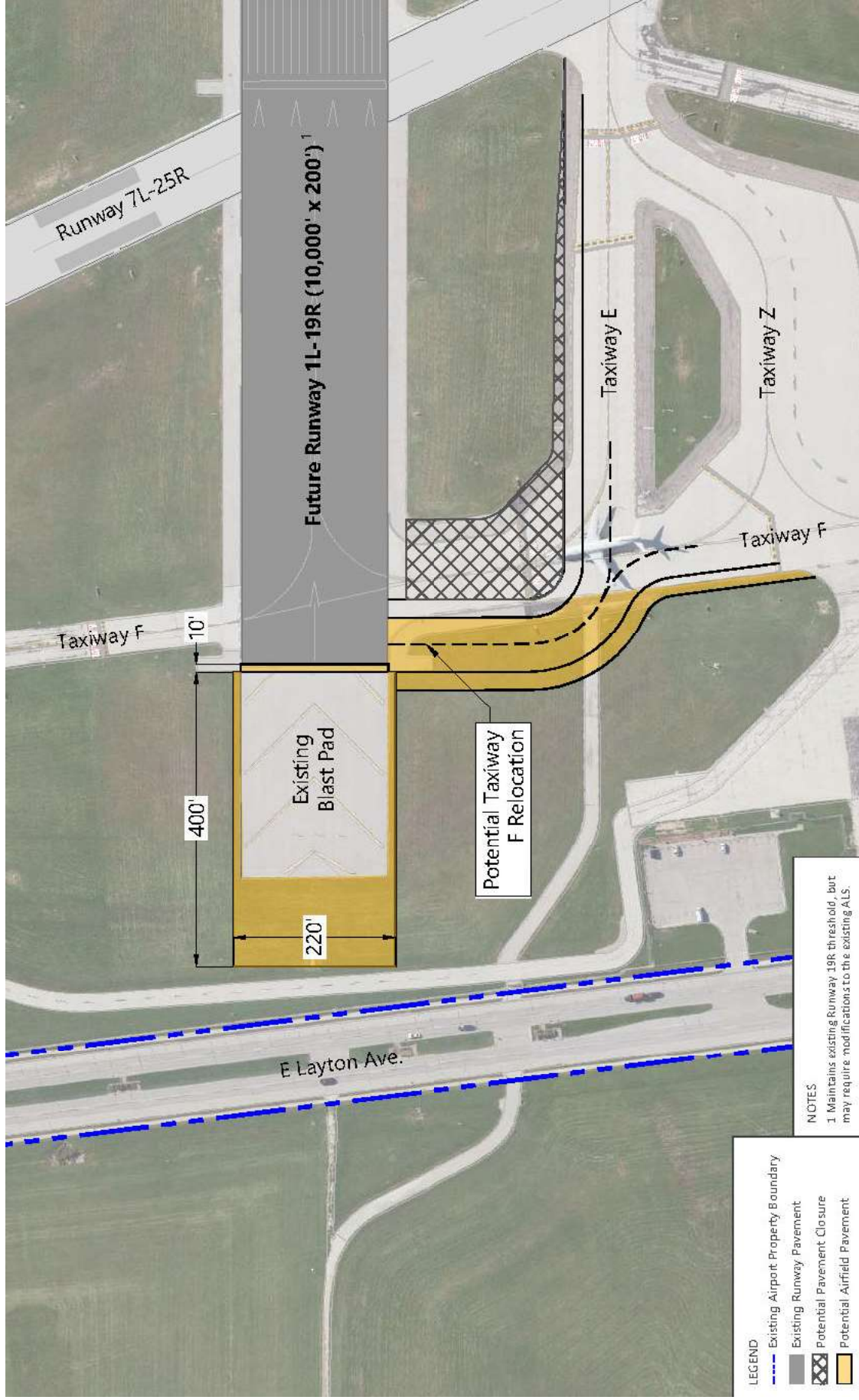
Airfield Alternative – 1L 10ft Extension



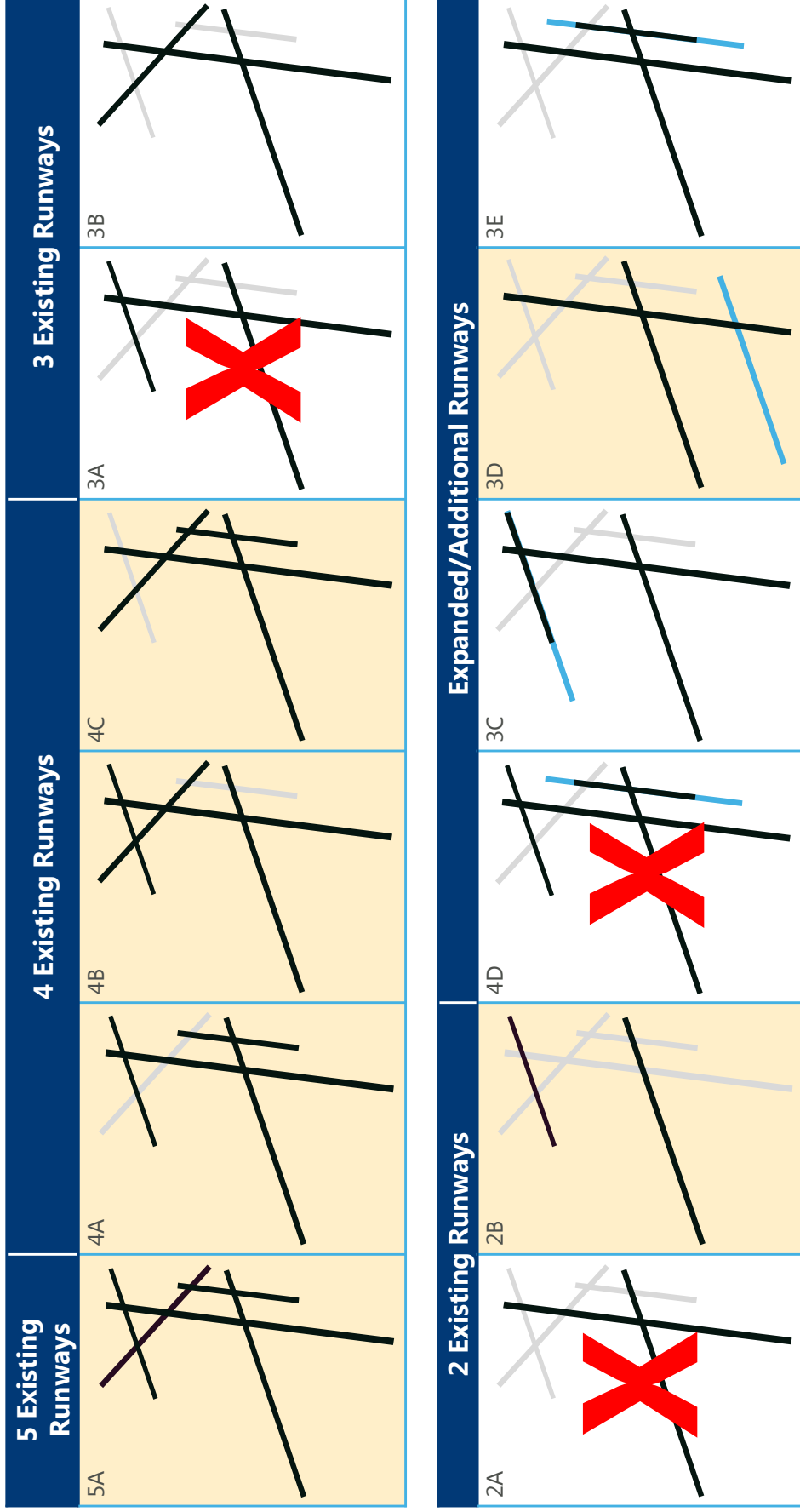
Airfield Alternative – 1L 10ft Extension (Con't)



Airfield Alternative – 19R 10ft Extension



Potential Runway Alternatives



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



Airfield Alternative 3B



LEGEND

- Existing Airport Property Boundary
- Existing Runway Pavement
- Existing Runway Protection Zone
- RPZ Potential Runway Closure
- ZAH Non-Developable Area 7'
- ADG V Potential Airfield Pavement

NOTES
 1. ADG V Area Advisory Circular 150 (AC 150.13A) was used to determine the non-developable area using the building restriction line (745').
 2. Runway safety area (1,000' beyond the end of each runway), ADG V taxiway object free area (100'), and the runway protection zone.



Airfield Alternative 3C



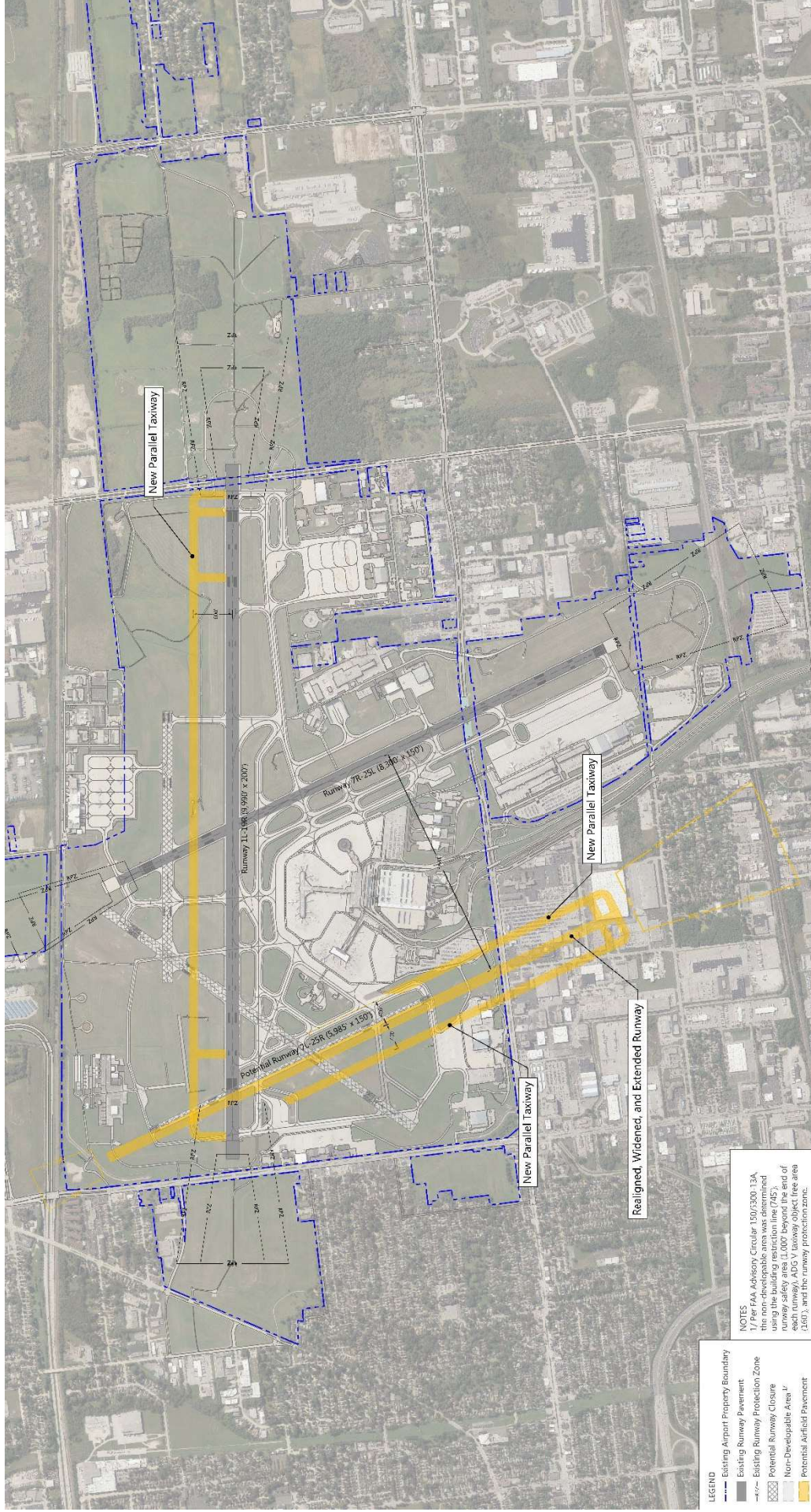
LEGEND

- Existing Airport Property Boundary
- Existing Runway Pavement
- Existing Runway Protection Zone
- RPZ Potential Runway Closure
- ZAH Non-Developable Area 7'
- ZAN Potential Airfield Pavement

NOTES
 1. FAA Advisory Circular 150/5300-13A, the non-developable area was determined using the building restriction line (745').
 2. runway safety area (1,000' beyond the end of each runway), ADG V taxiway object free area (100'), and the runway protection zone.



Airfield Alternative 3C-Ultimate



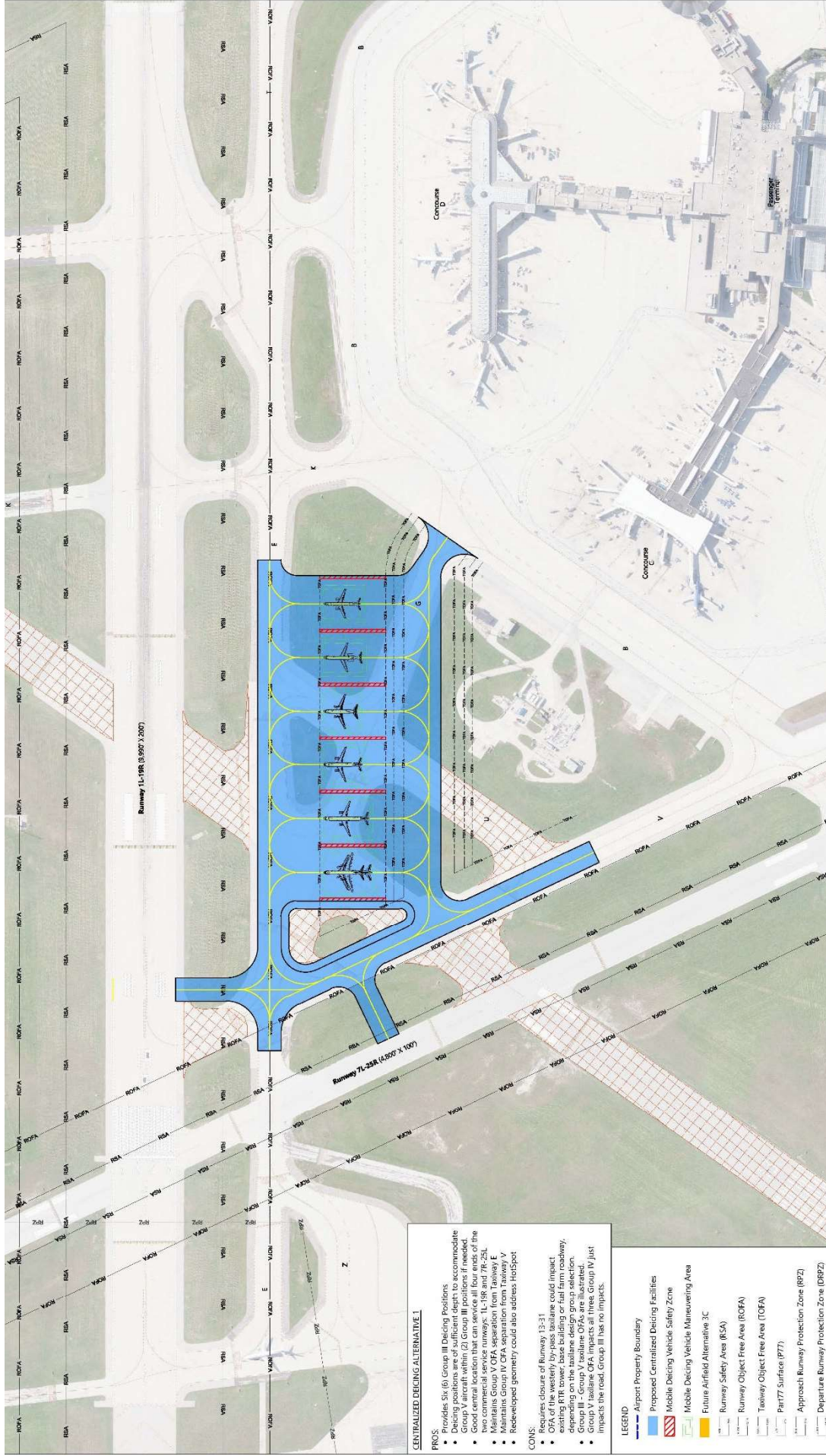
Airfield Alternative 3E



Deicing Alternatives



Centralized Deicing Alternative 1



CENTRALIZED DEICING ALTERNATIVE 1

PROS:

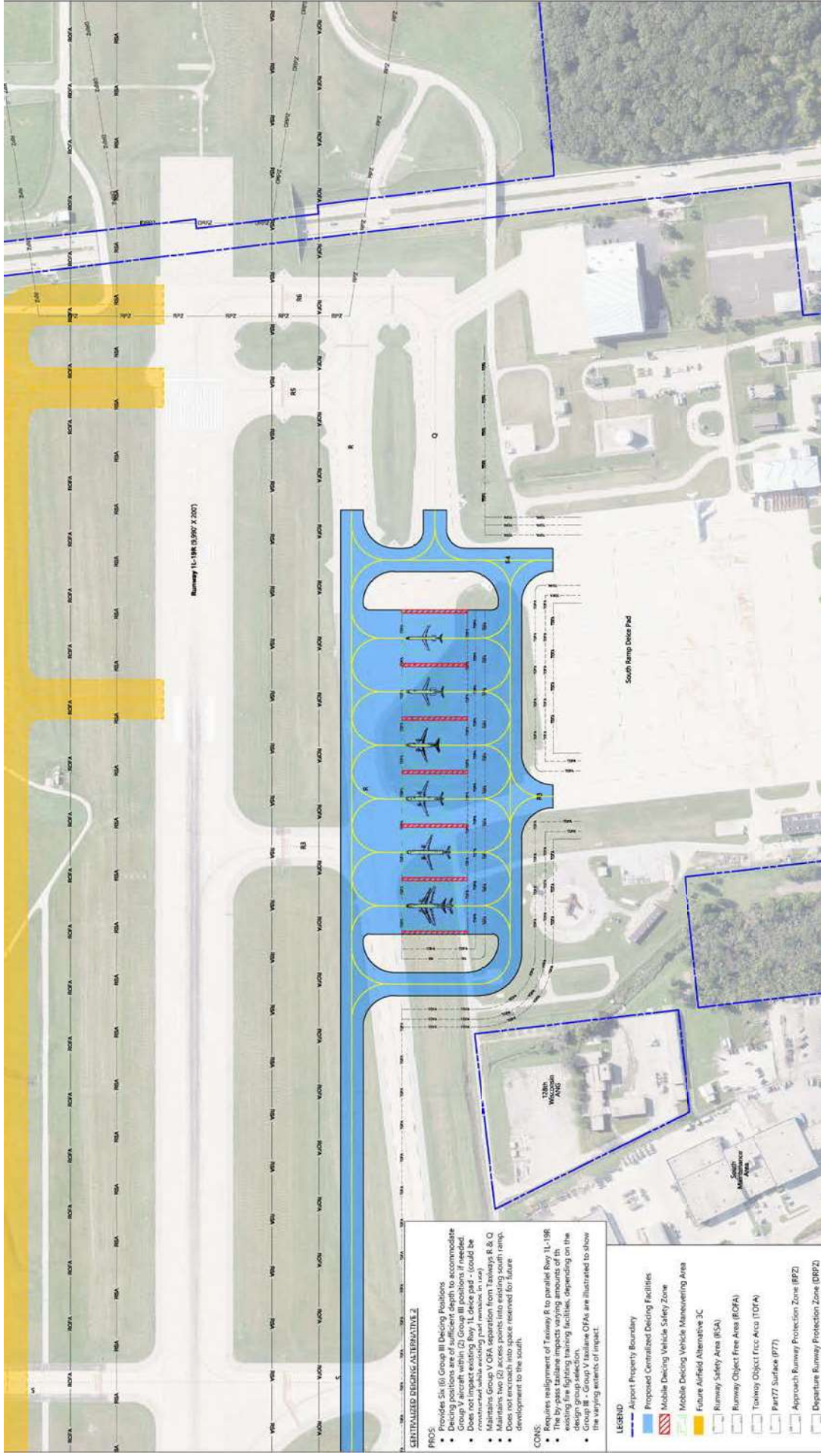
- Provides Six (6) Group III Deicing Positions
- Deicing positions within (3) Group III positions if needed
- Good central location that can service all four ends of the two commercial service runways: 1L-19R and 7L-25L
- Maintains Group V OFA separation from Taxiway E
- Maintains Group IV OFA separation from Taxiway V
- Reconfigured geometry could also address Hotspot

CONS:

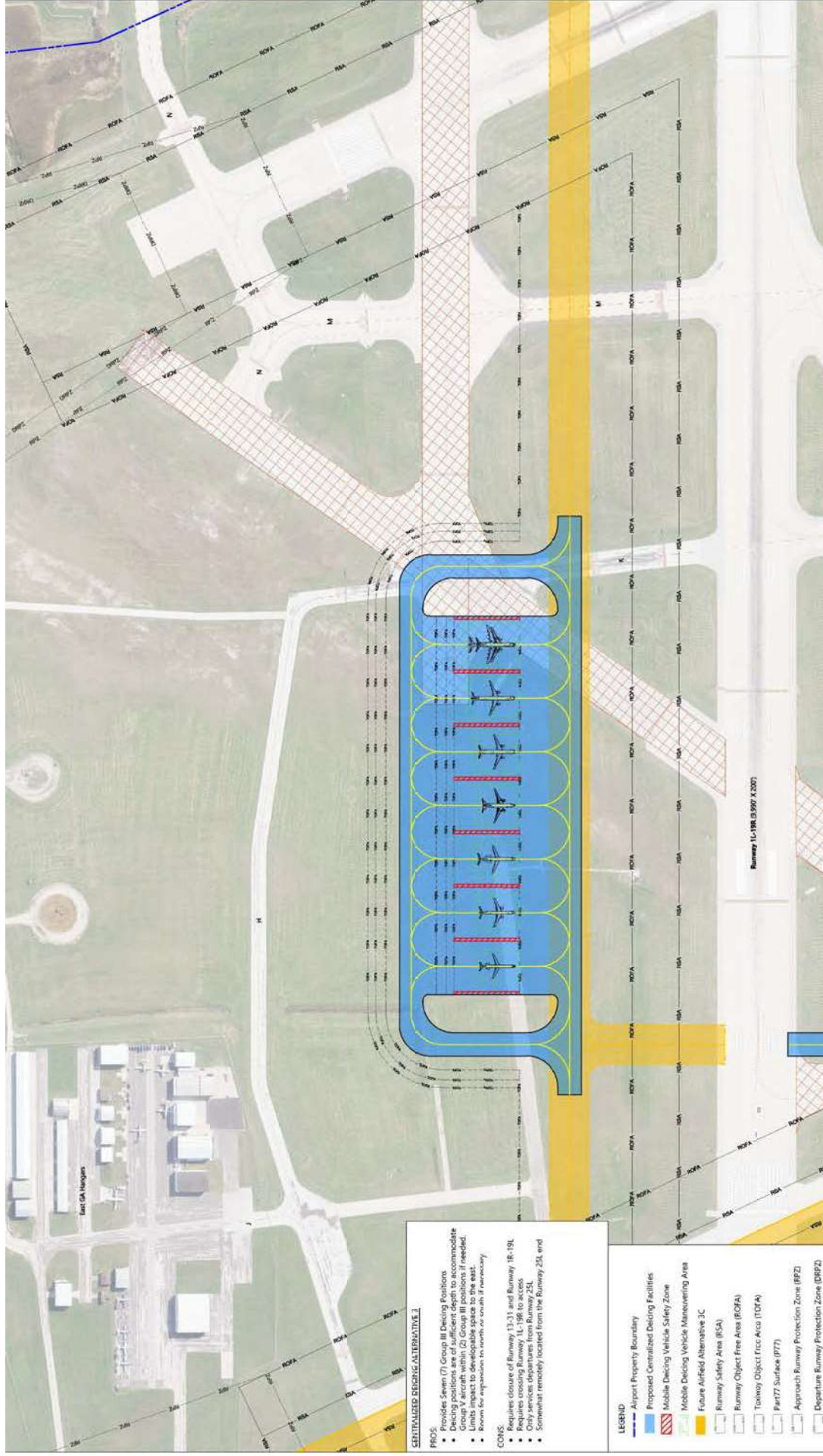
- Requires closure of Runway 13-31
- Requires new taxiway to be constructed, impact on existing RTT tower, base building or fuel farm roadway, depending on the taxiway design group selection.
- Group III - Group V taxiway OFAs are illustrated.
- Group V taxiway OFA impacts all three Group IV Jct
- Impacts the road. Group III has no impacts.

- LEGEND**
- Airport Property Boundary
 - Proposed Centralized Deicing Facilities
 - Mobile Deicing Vehicle Safety Zone
 - Mobile Deicing Vehicle Maneuvering Area
 - Future Airfield Alternative 3C
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Taxiway Object Free Area (TOFA)
 - Part 77 Surface (P77)
 - Approach Runway Protection Zone (ARPZ)
 - Departure Runway Protection Zone (DRPZ)

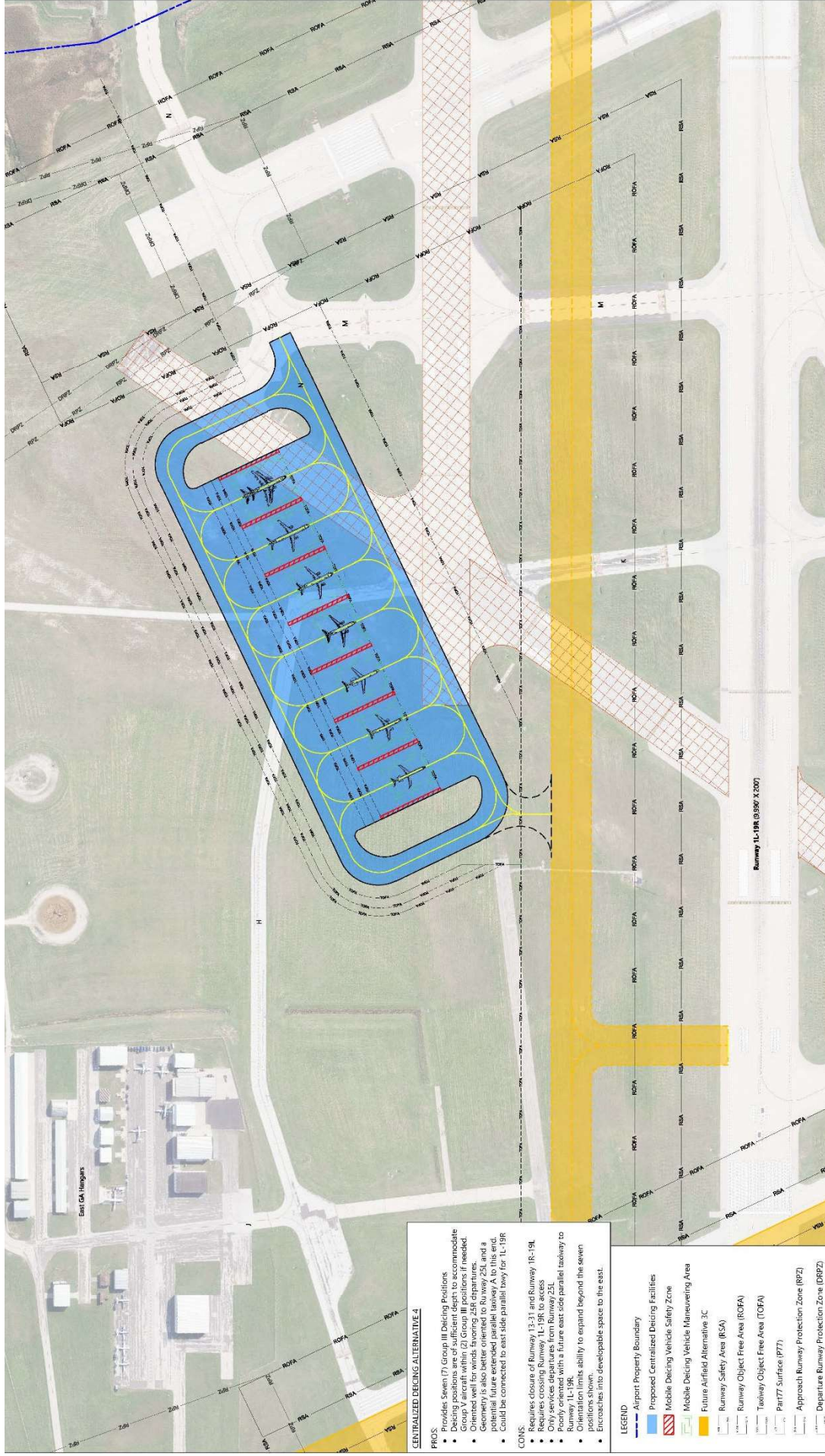
Centralized Deicing Alternative 2



Centralized Deicing Alternative 3



Centralized Deicing Alternative 4



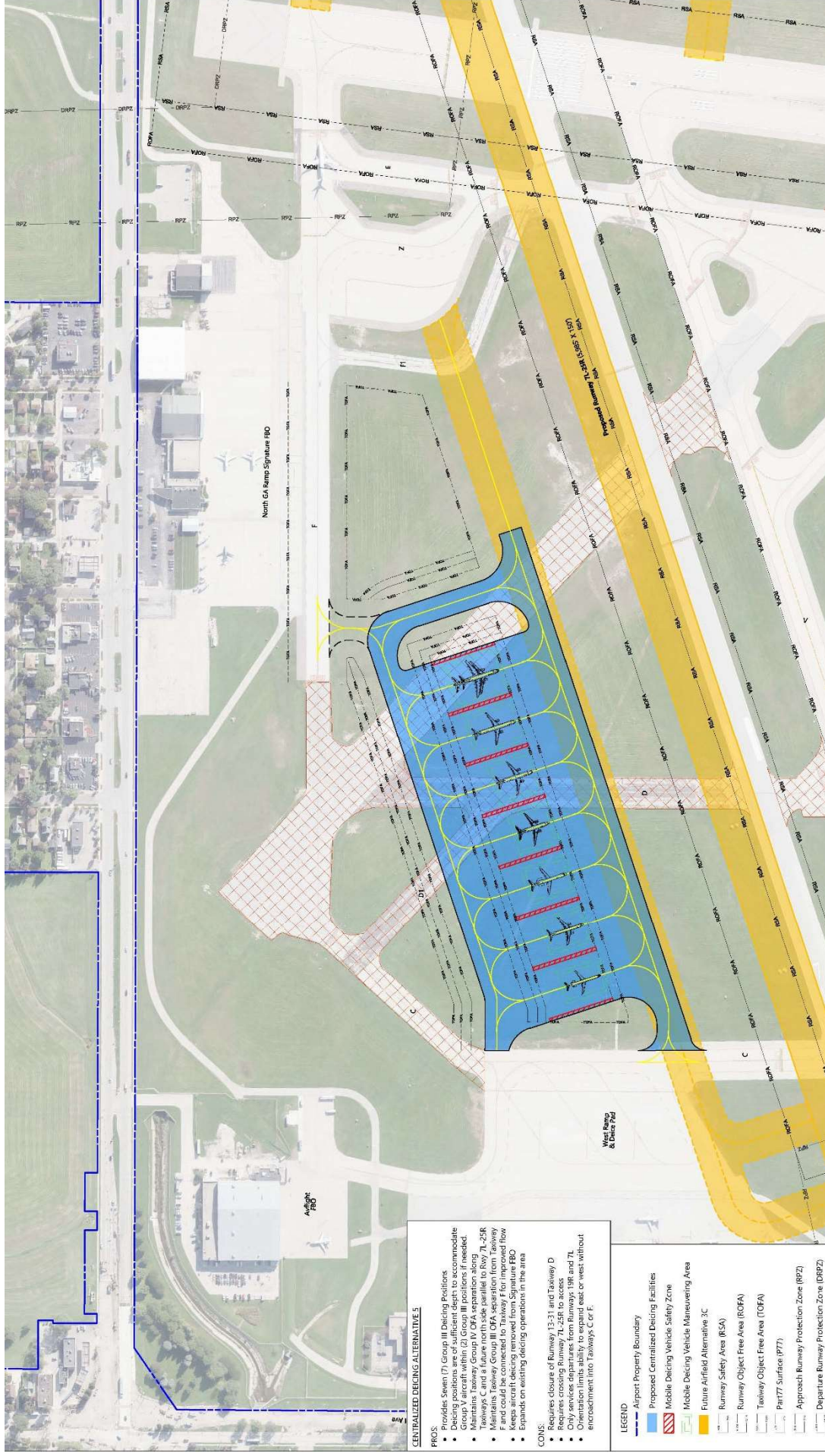
CENTRALIZED DEICING ALTERNATIVE 4

- PROS:**
- Provides Seven (7) Group III Deicing Positions
 - Deicing positions are oriented to the east-southeast to allow access to mobile deicing vehicles from Runway 13-31
 - Oriented well for winds favoring 25R departures
 - Geometry is also better oriented to Runway 25L and a potential future extended parallel taxiway A to the end of Runway 13-31
 - Could be connected to east side parallel taxiway for 1L-15R

- CONS:**
- Requires closure of Runway 13-31 and Runway 1R-19L
 - Requires crossing Runway 1L-19R to access
 - Runway 13-31 is 1,000 feet from Runway 25L
 - Runway 13-31 is 1,000 feet from Runway 25R
 - Runway 13-31 is 1,000 feet from Runway 25L and 25R
 - Orientation limits ability to expand beyond the seven positions shown
 - Encroaches into developable space to the east.

- LEGEND**
- Airport Property Boundary
 - Proposed Centralized Deicing Facilities
 - Mobile Deicing Vehicle Safety Zone
 - Mobile Deicing Vehicle Maneuvering Area
 - Future Airfield Alternative 3C
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Taxiway Object Free Area (TOFA)
 - Part 77 Surface (P77)
 - Approach Runway Protection Zone (ARZ)
 - Departure Runway Protection Zone (DRZ)

Centralized Deicing Alternative 5



CENTRALIZED DEICING ALTERNATIVE 5

PROS:

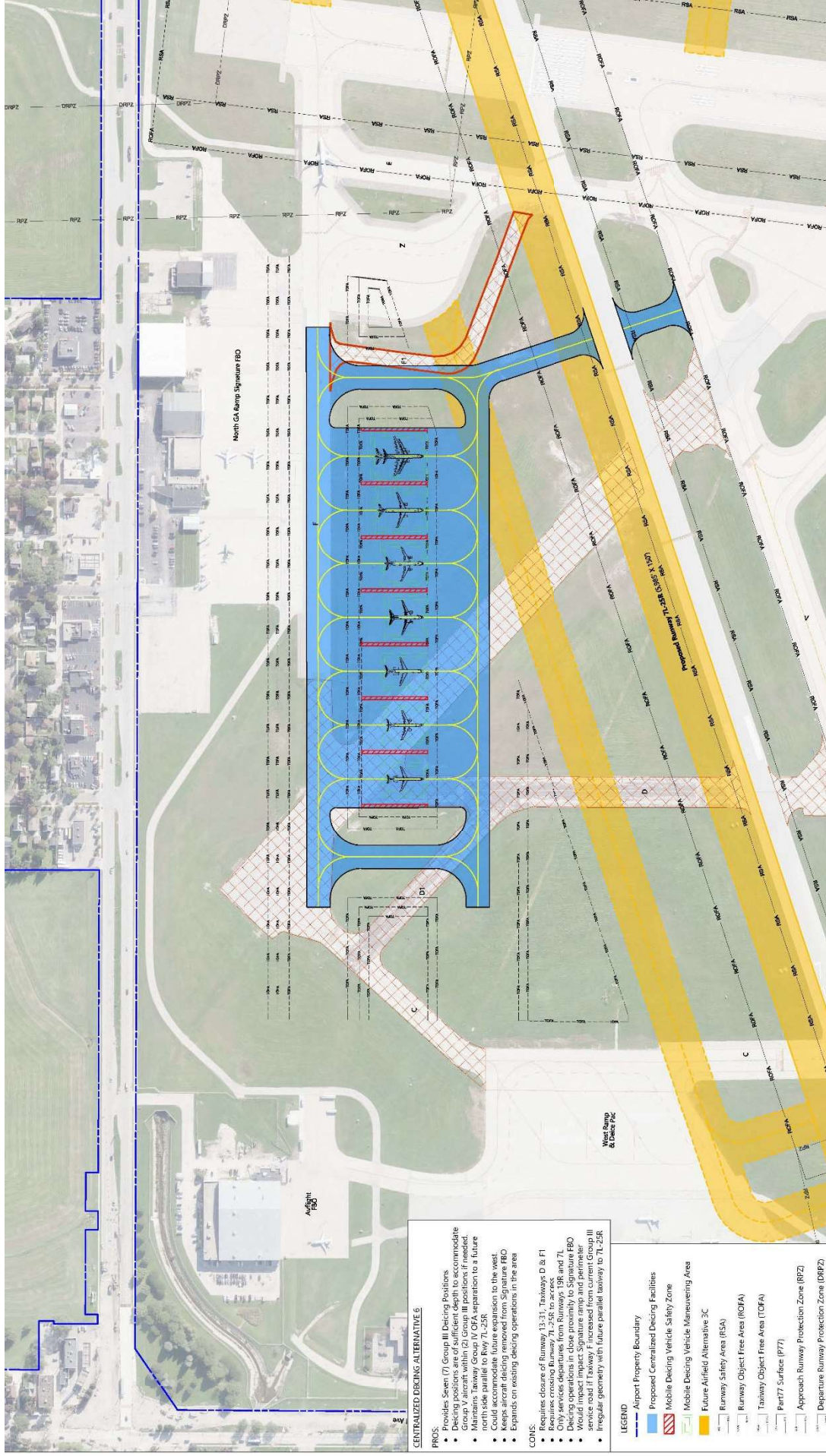
- Provides Seven (7) Group III Deicing Positions
- Deicing positions within Group III are accessible
- Maintains Taxiway Group IV OFA separation along Taxiways C and a future north side parallel to Row 7L-25R
- Maintains Taxiway Group III OFA separation from Taxiway F and could be connected to improve flow
- Expands on existing deicing operations in the area

CONS:

- Requires closure of Runway 13/31 and Taxiway D
- Requires crossing Runway 7L/25R to access
- Only services departures from Runways 15R and 7L
- Orientation limits ability to expand east or west without encroachment into Taxiways C or F.

- LEGEND**
- Airport Property Boundary
 - Proposed Centralized Deicing Facilities
 - Mobile Deicing Vehicle Safety Zone
 - Mobile Deicing Vehicle Maneuvering Area
 - Future Airfield Alternative 3C
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Taxiway Object Free Area (TOFA)
 - Part 77 Surface (P77)
 - Approach Runway Protection Zone (ARPZ)
 - Departure Runway Protection Zone (DRPZ)

Centralized Deicing Alternative 6



CENTRALIZED DEICING ALTERNATIVE 6

PROS:

- Provides Seven (7) Group III Deicing Positions
- Deicing positions are of sufficient depth to accommodate Group III aircraft
- Maintains Taxiway Group IV OFA separation to a future north side parallel to Rwy 7L-25R
- Could accommodate future expansion to the west
- Keeps aircraft deicing removed from Signature RBO
- Expands on existing deicing operations in the area

CONS:

- Requires closure of Runway 13-31, Taxiways D & FI
- Only services deplanures from Runways 19R and 7L
- Deicing operations in close proximity to Signature RBO
- Would impact Signature ramp and perimeter service road T
- Taxiway F increased from current Group III irregular geometry with future parallel taxiway to 7L-25R

- LEGEND**
- Airport Property Boundary
 - Proposed Centralized Deicing Facilities
 - Mobile Deicing Vehicle Safety Zone
 - Mobile Deicing Vehicle Maneuvering Area
 - Future Airfield Alternative 3C
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Taxiway Object Free Area (TOFA)
 - Part 77 Surface (P77)
 - Approach Runway Protection Zone (ARFZ)
 - Departure Runway Protection Zone (DRFZ)

Landside Alternatives



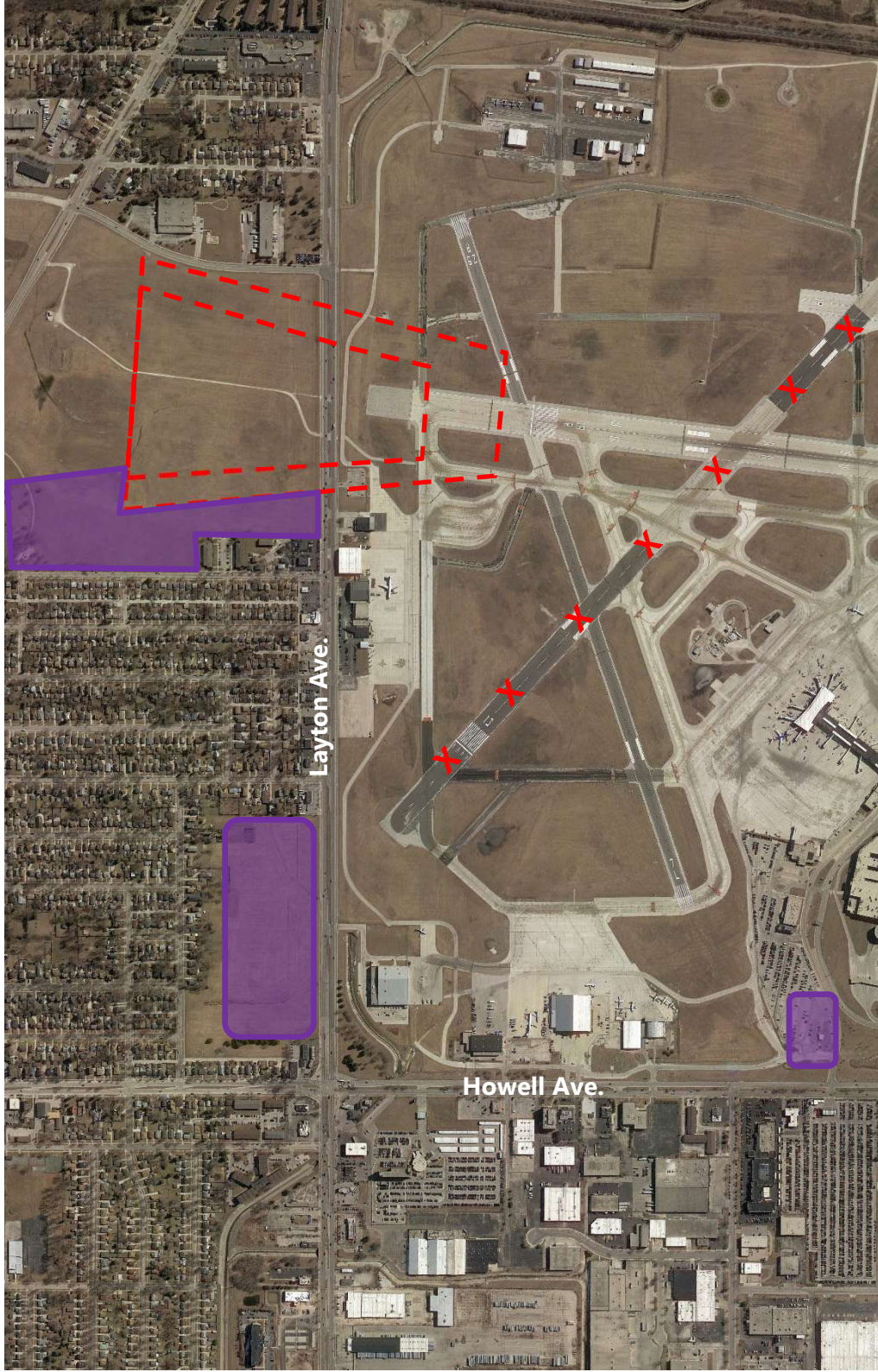
Landside Challenges

- 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)

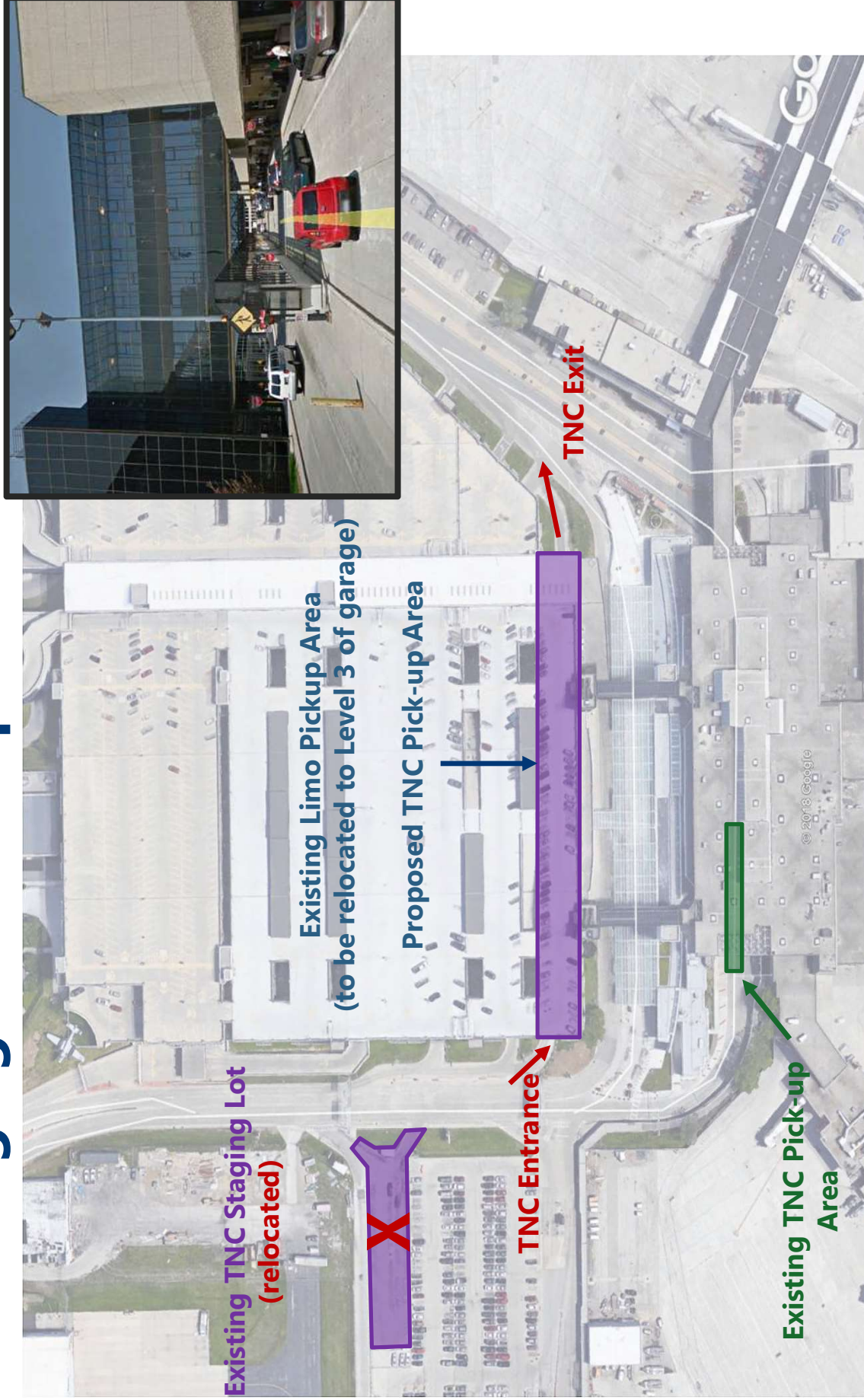
TNC Staging Lot Alternative



TNC Staging Alternatives

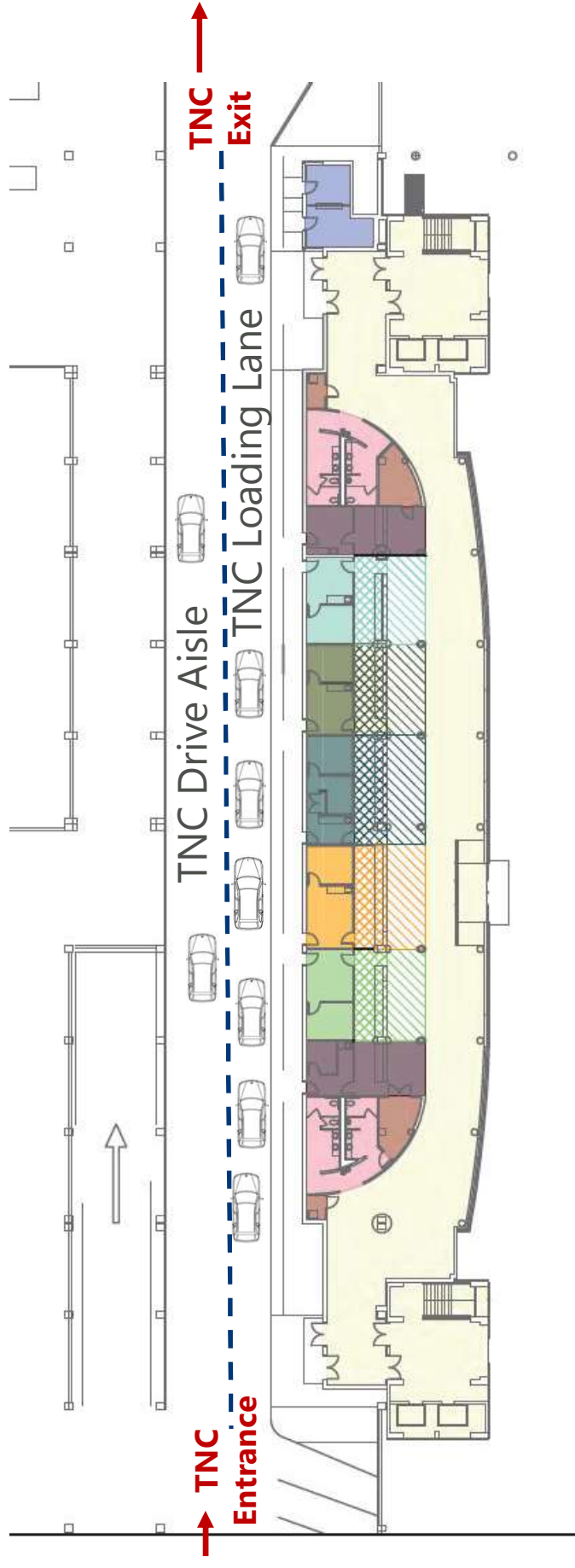


TNC Staging and Pickup Alternative

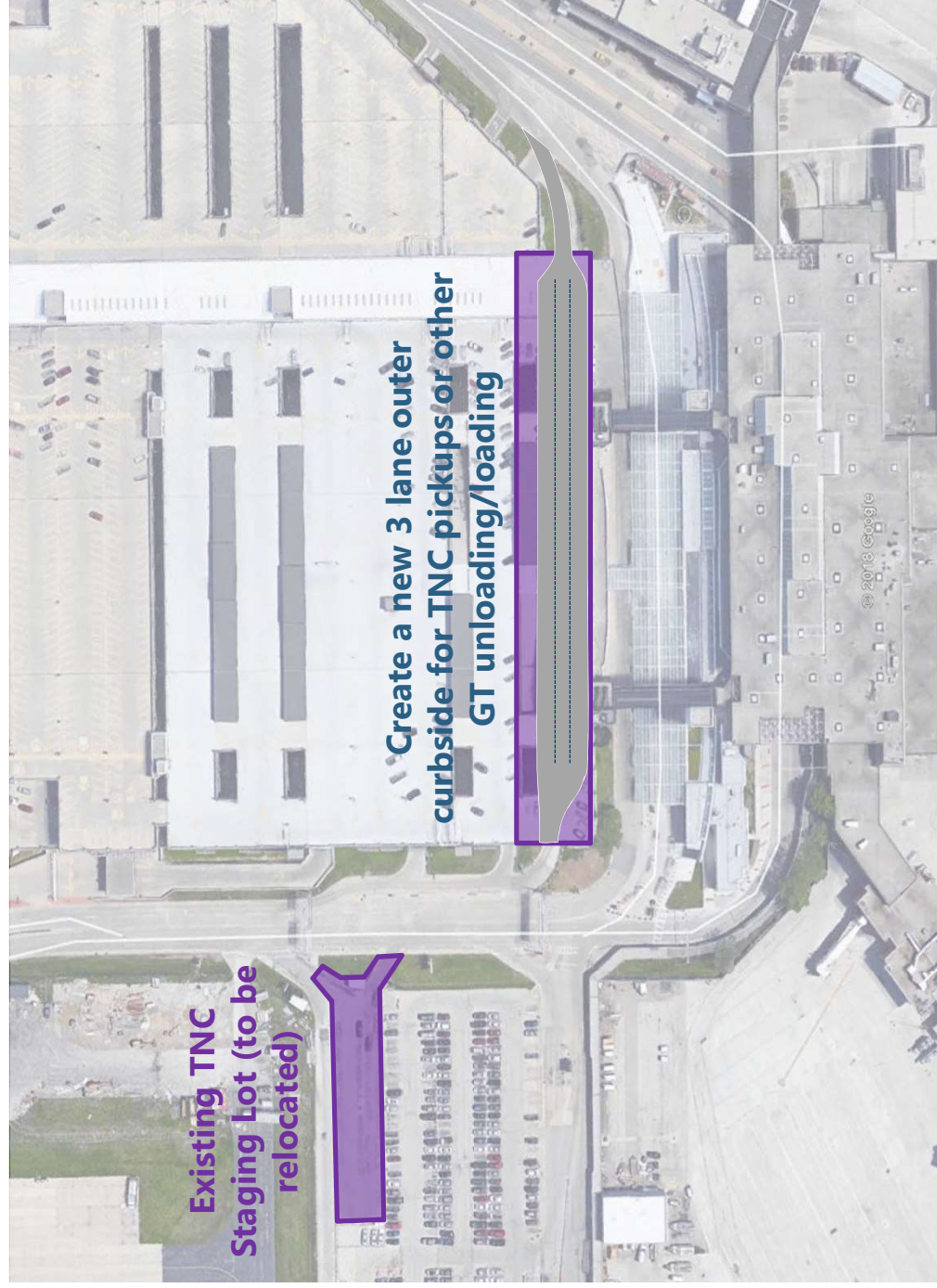


TNC Staging and Pickup Alternative (Con't)

- 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

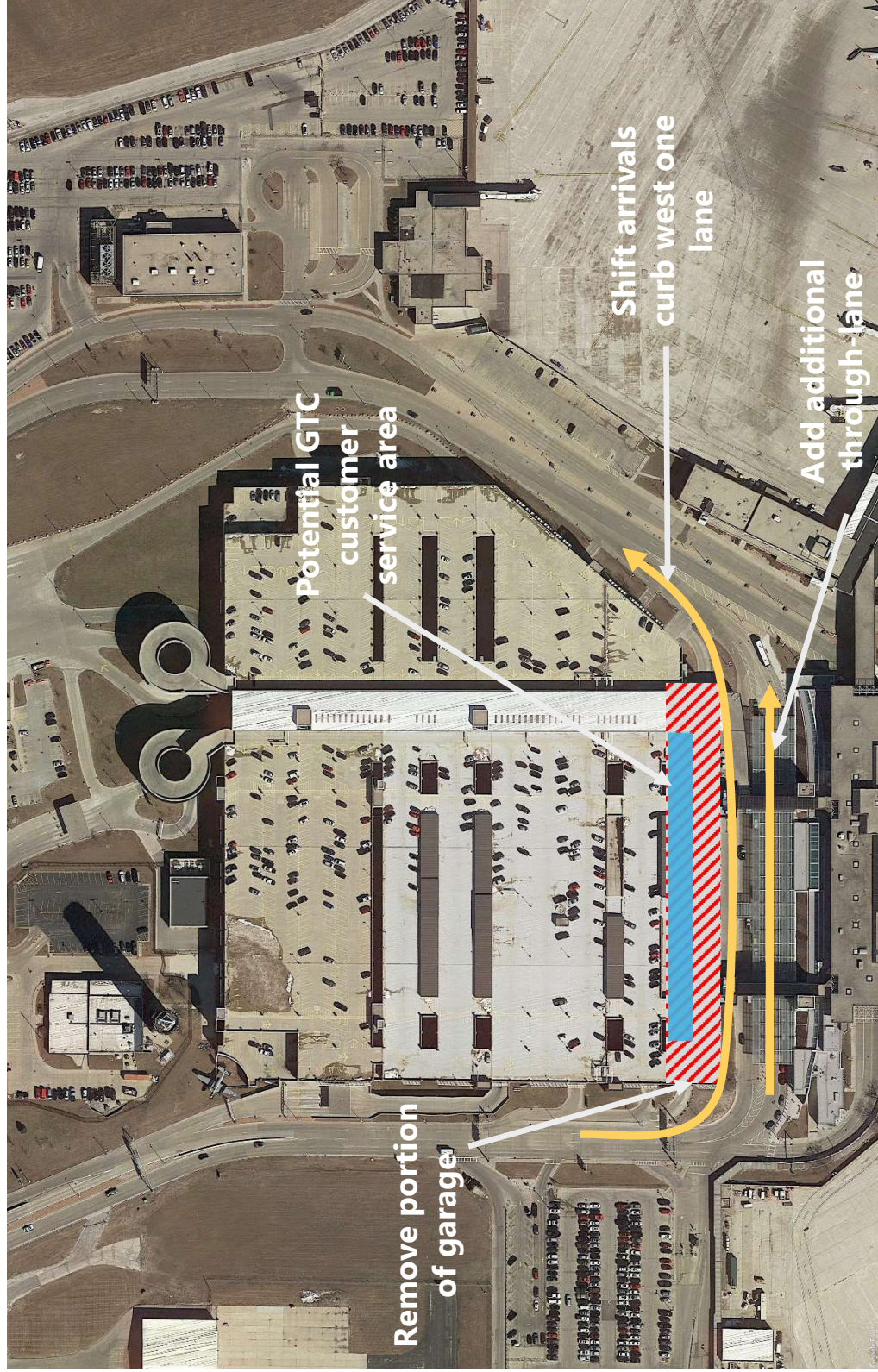


Ground Transportation Alternative



- 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

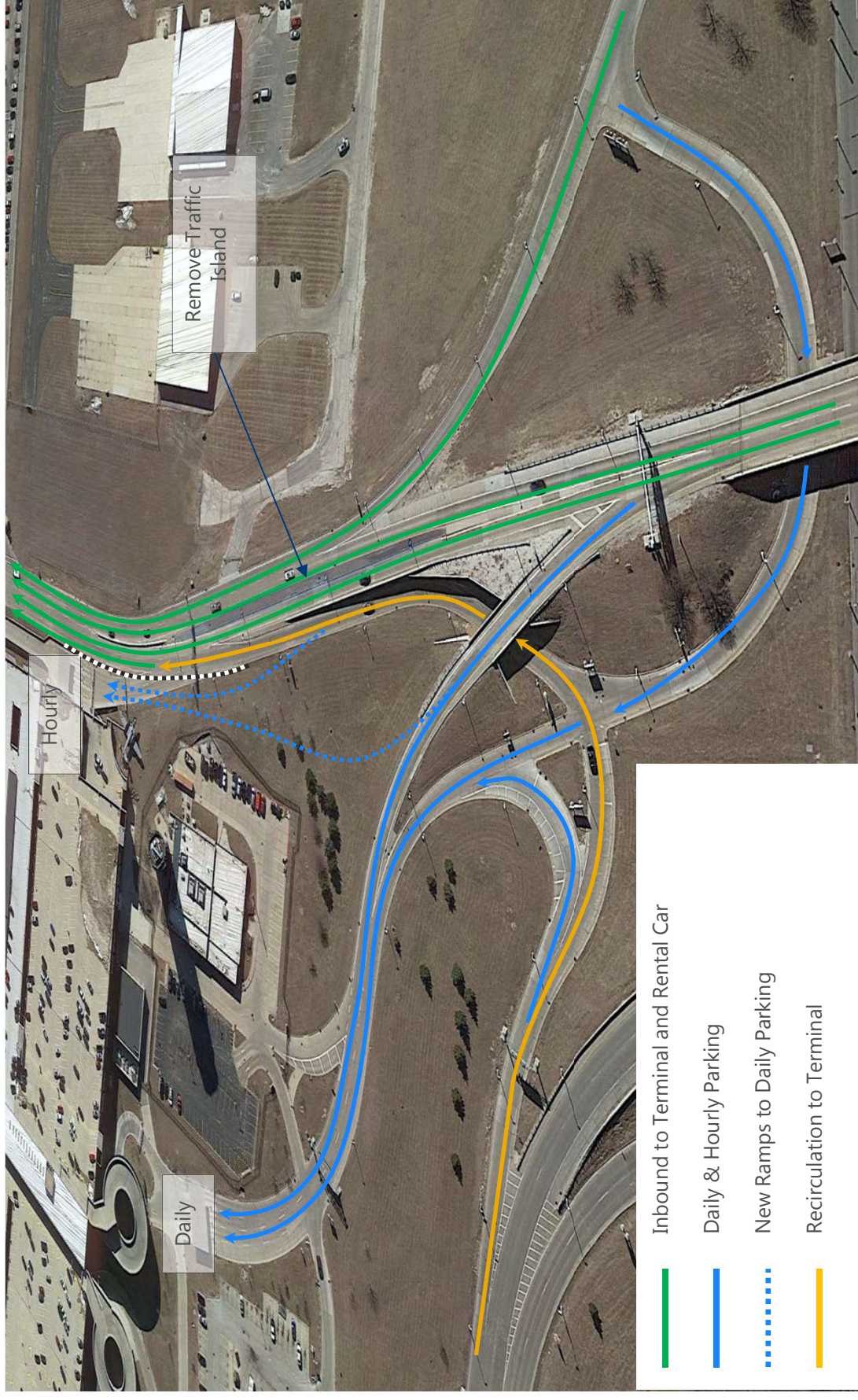
Additional Curbfront Alternative



Parking Garage Roadway Alternative



Landside Roadways Alternative 1



Landside Roadways Alternative 2

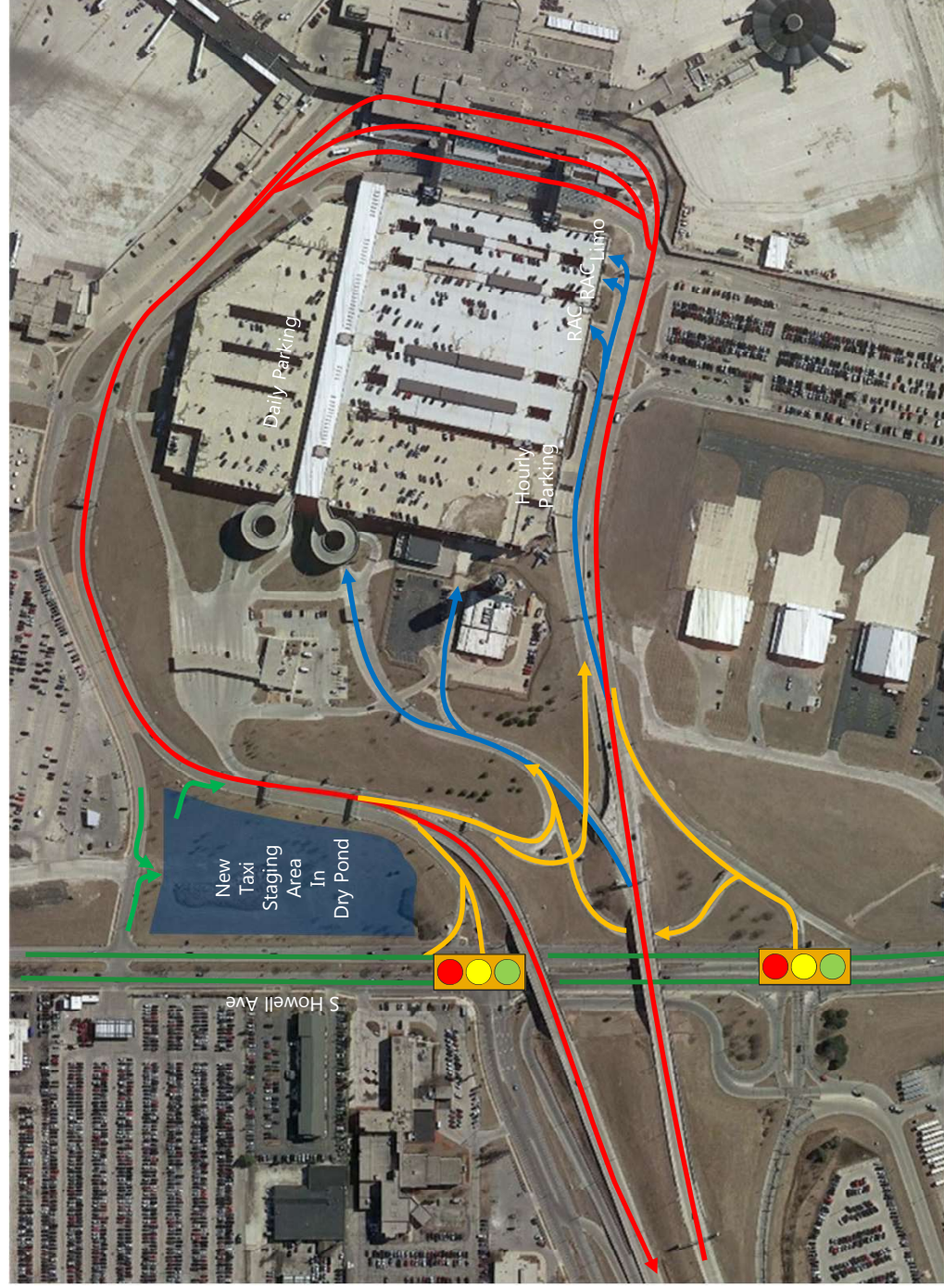


Landside Roadways Alternative 2



- 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

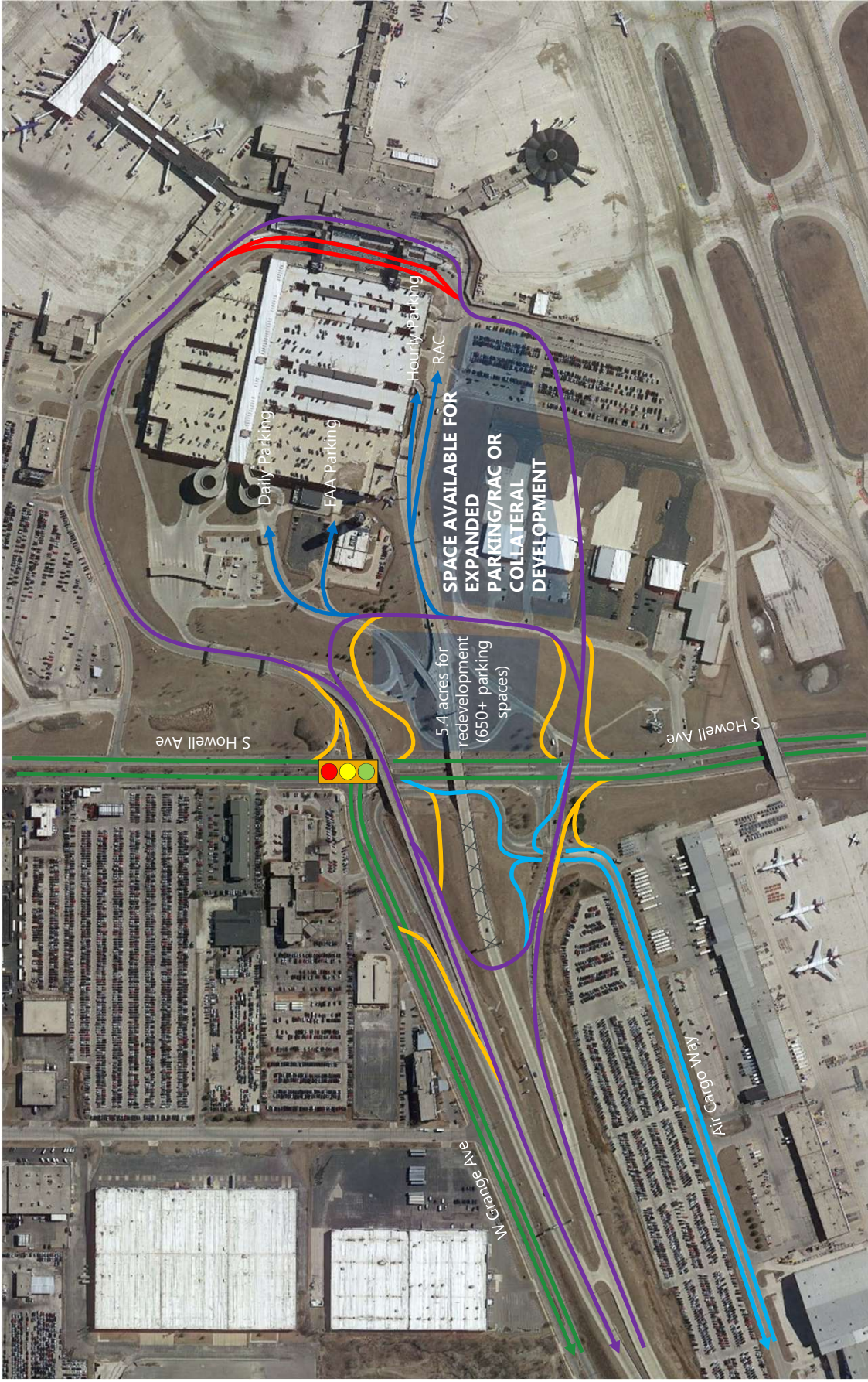
Pros:

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

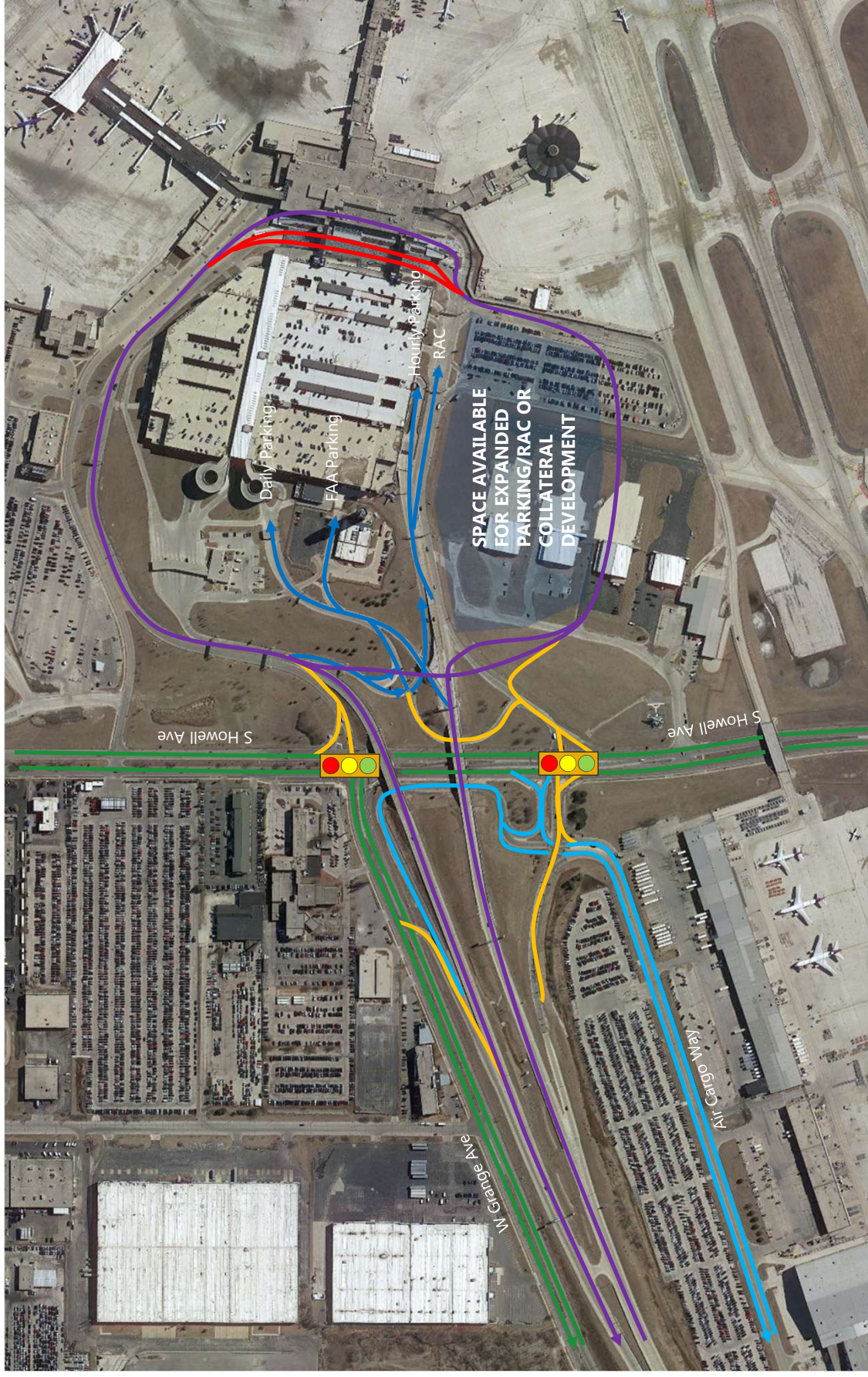
Cons:

- 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



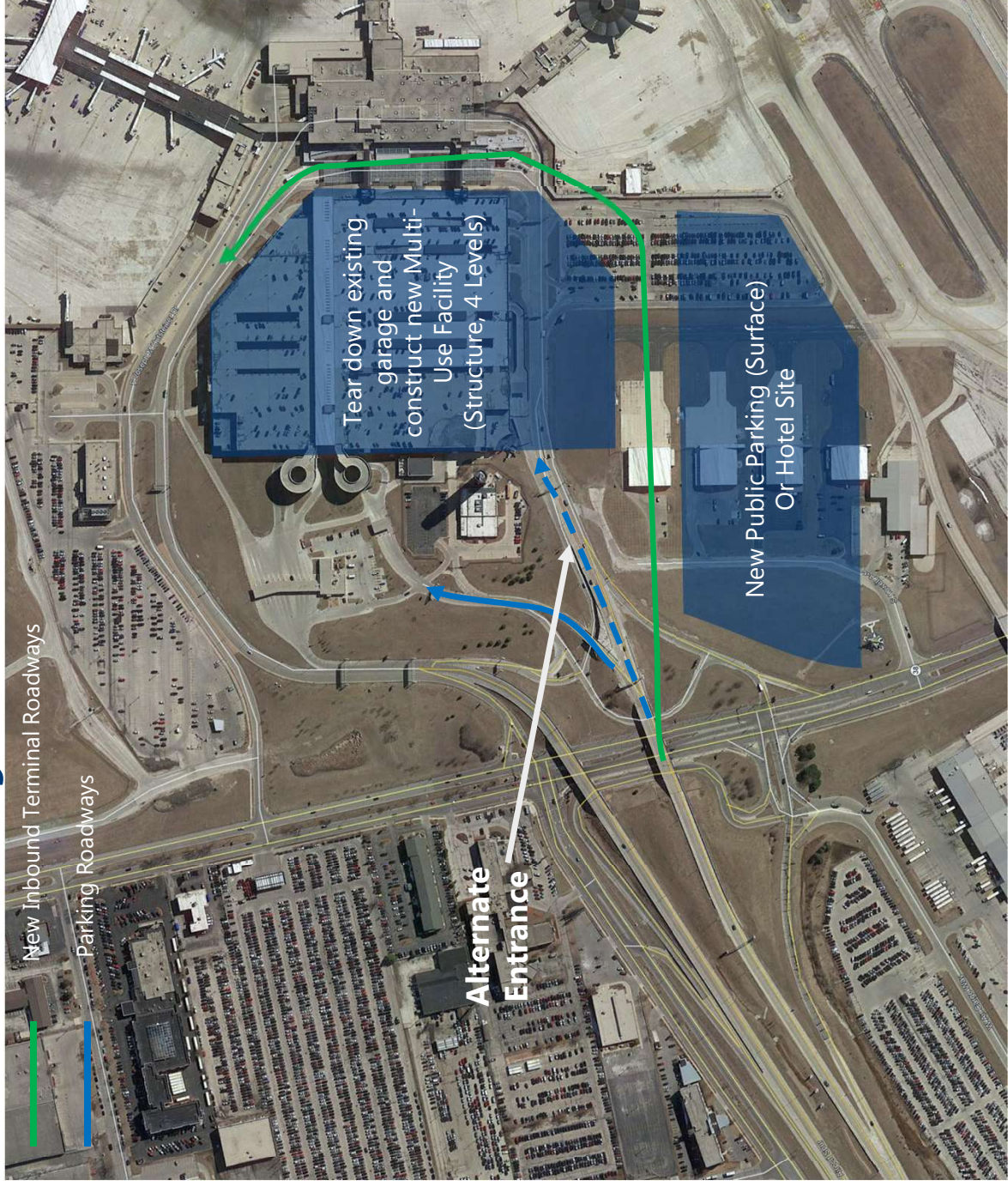
Landside Roadways Alternative 5



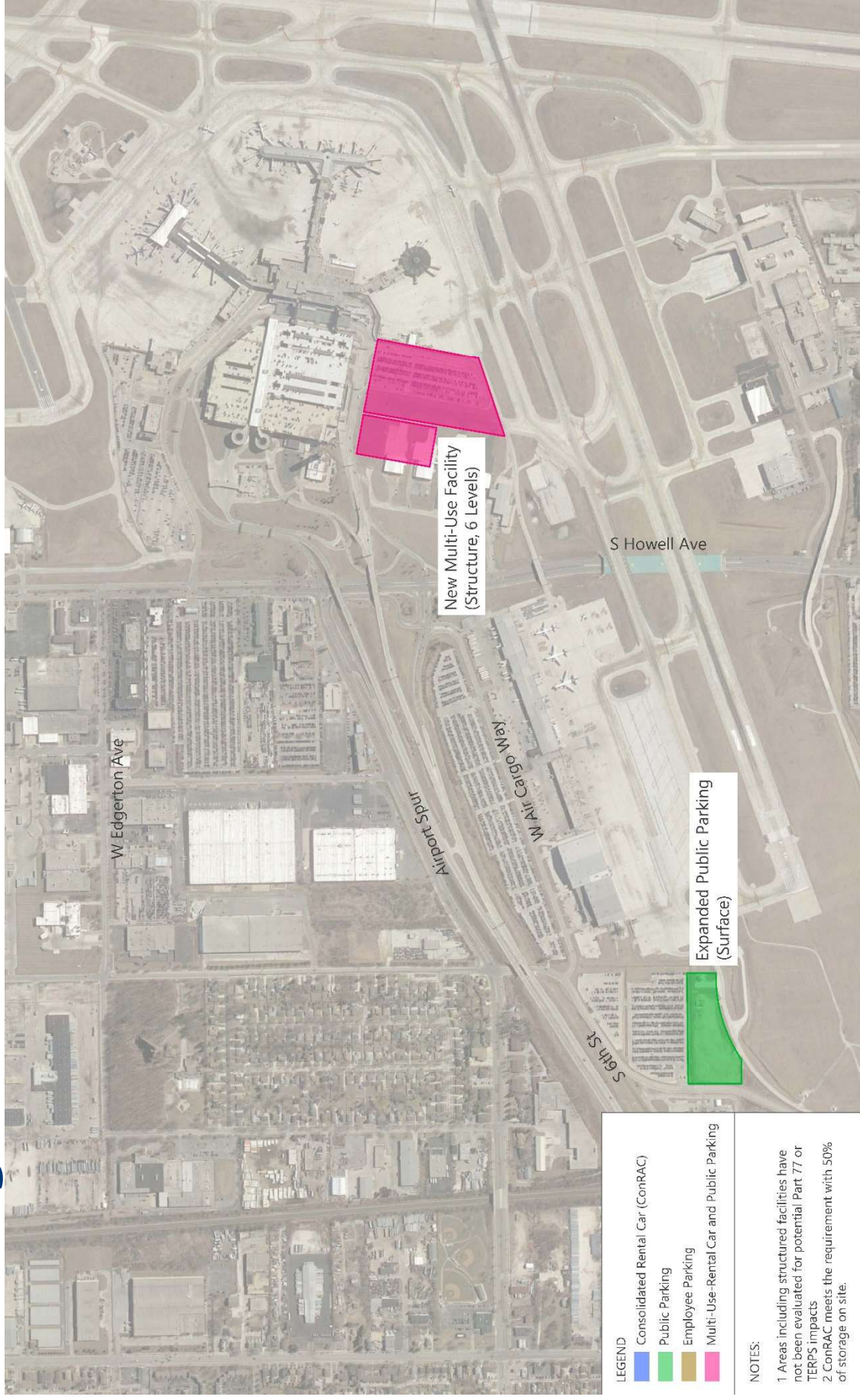
Landside Roadways Alternative 6



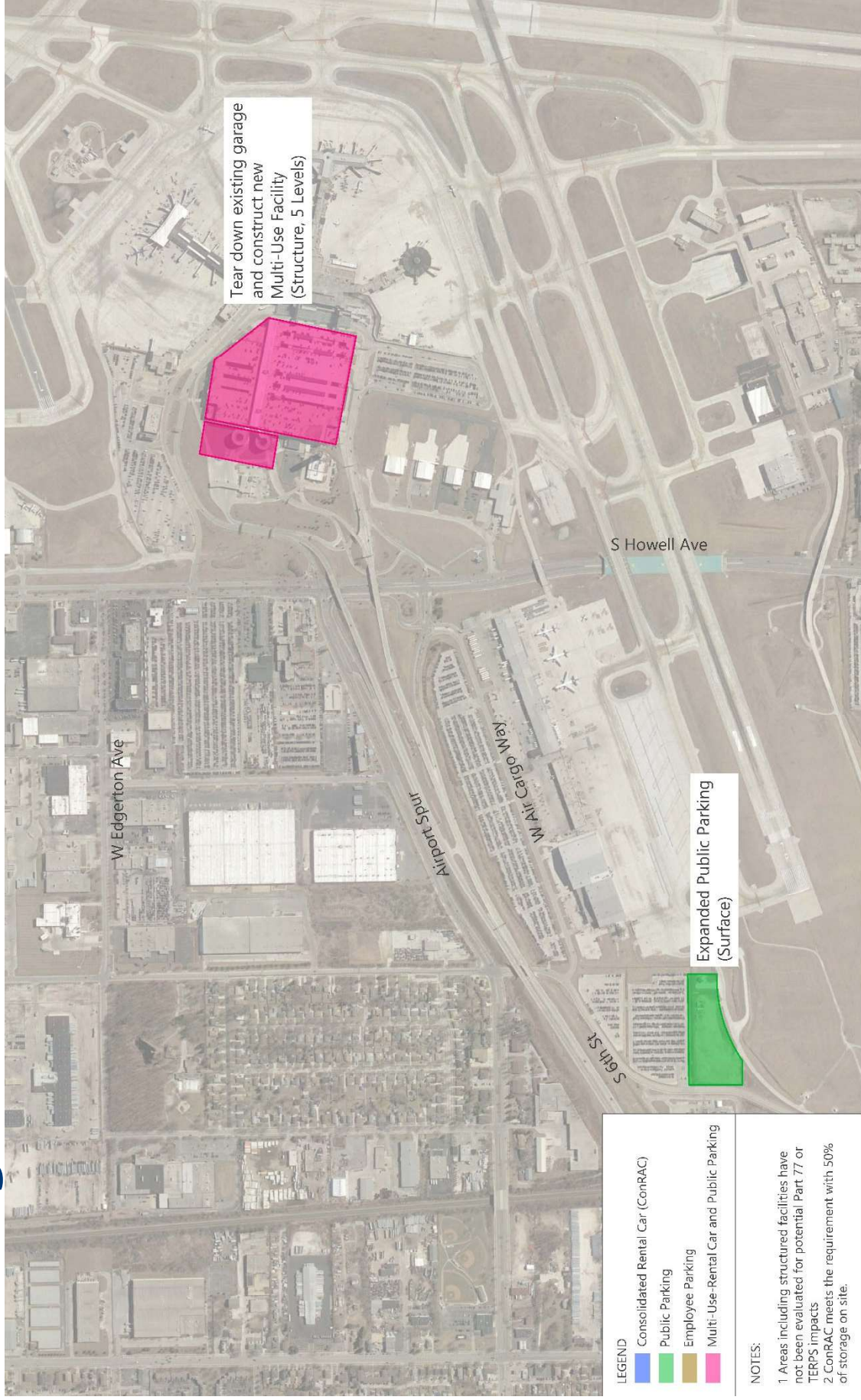
Landside Roadways Alternative 7



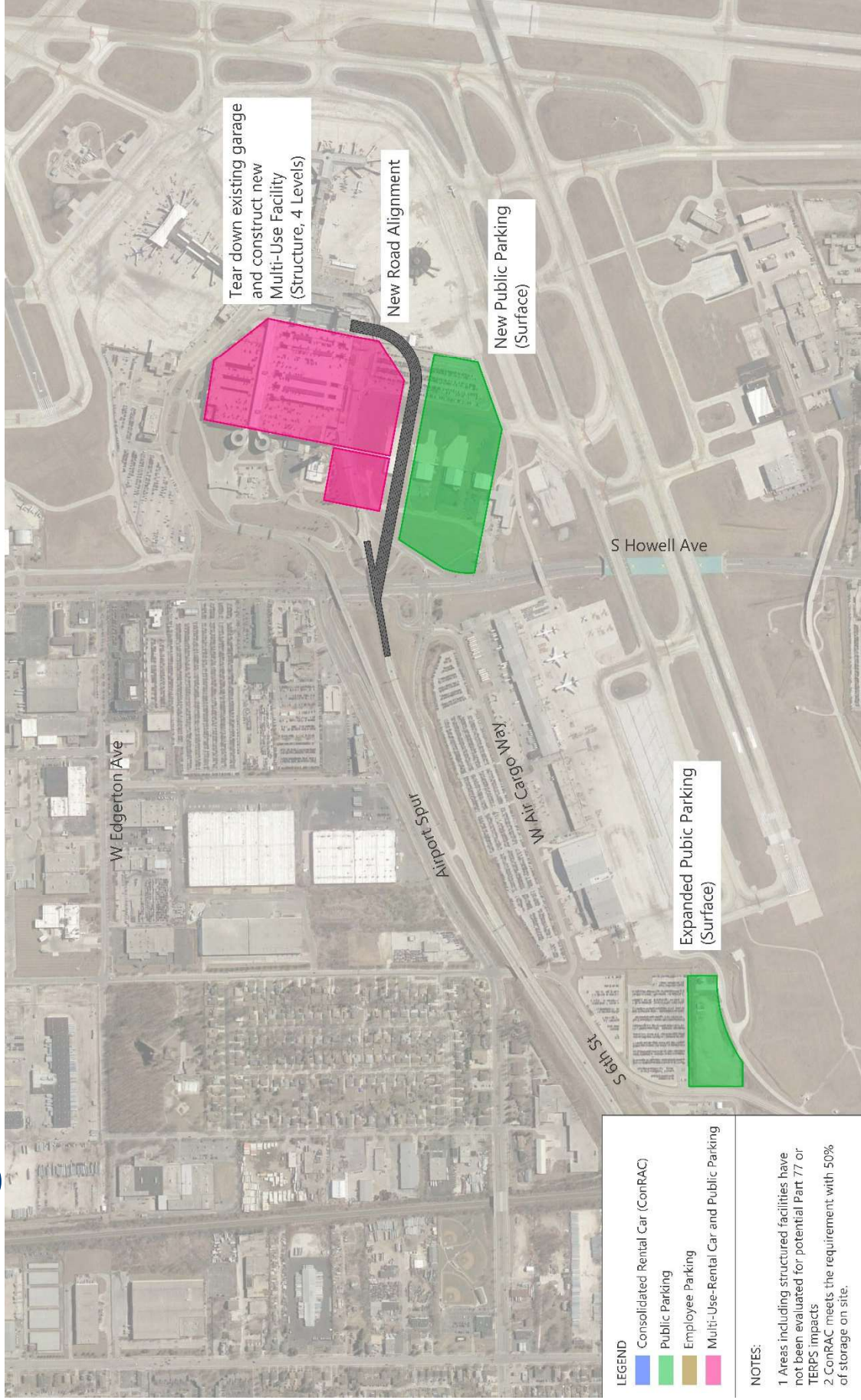
Parking and Rental Car Alternative 1



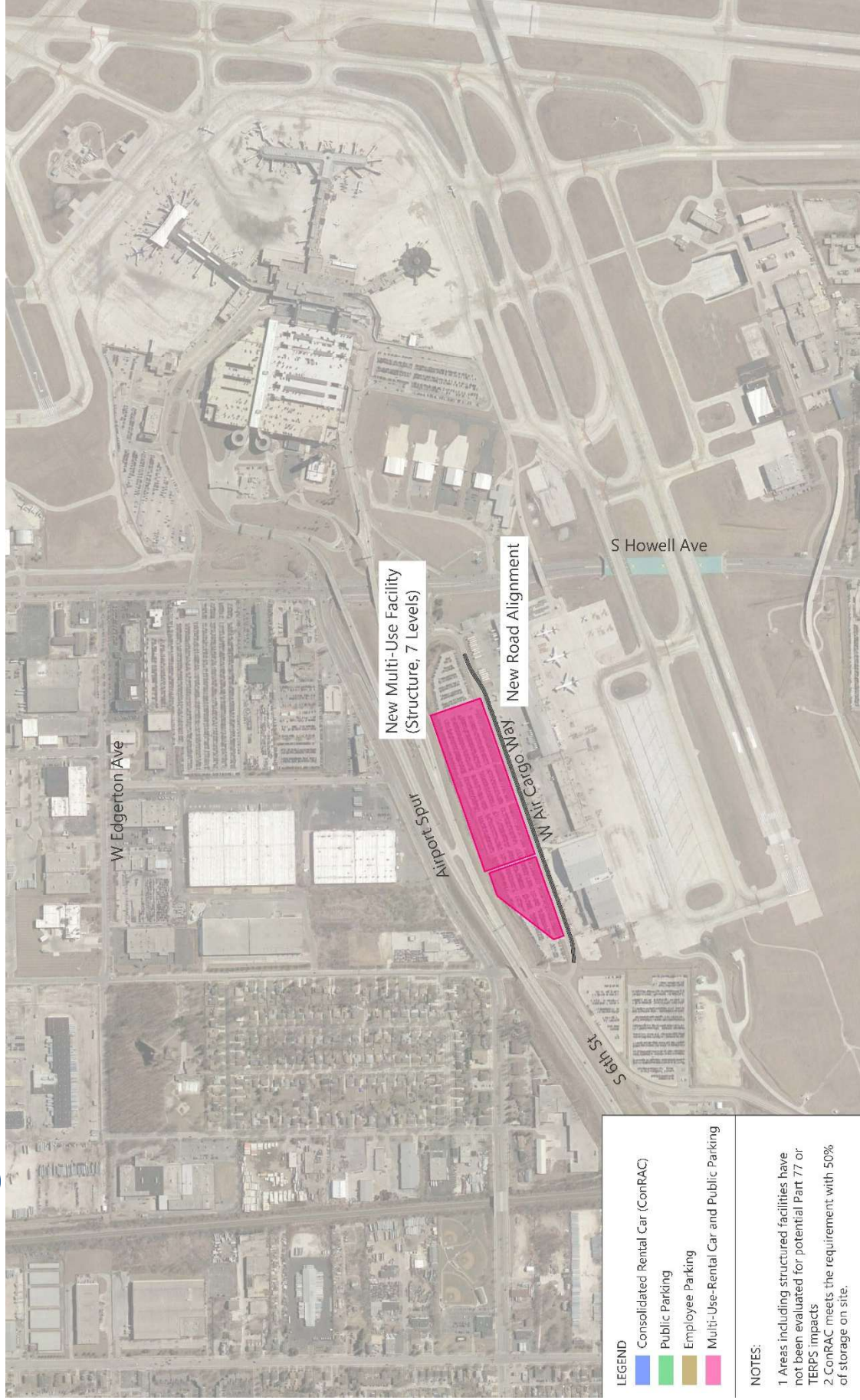
Parking and Rental Car Alternative 2



Parking and Rental Car Alternative 3



Parking and Rental Car Alternative 4



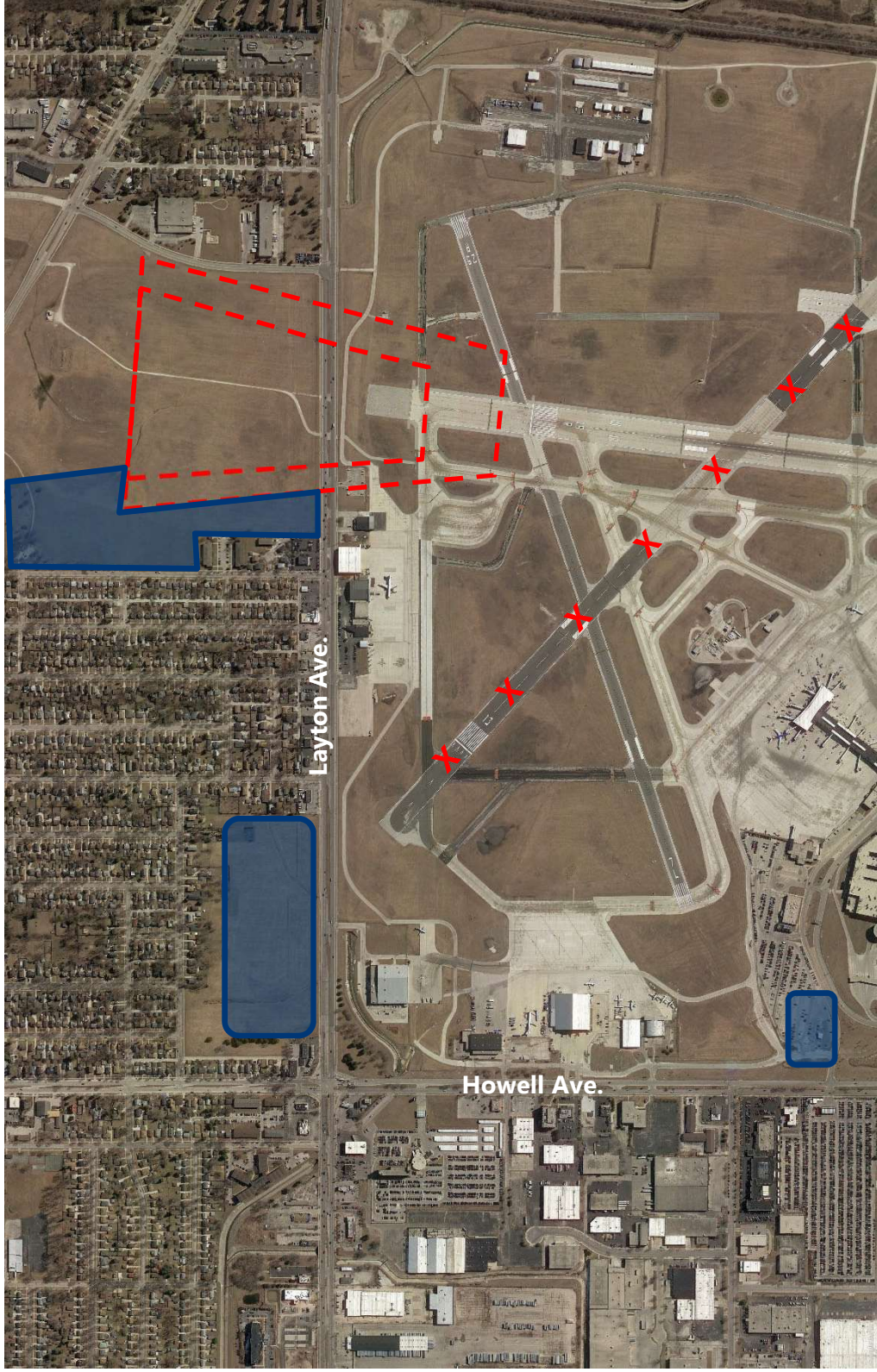
Parking and Rental Car Alternative 5



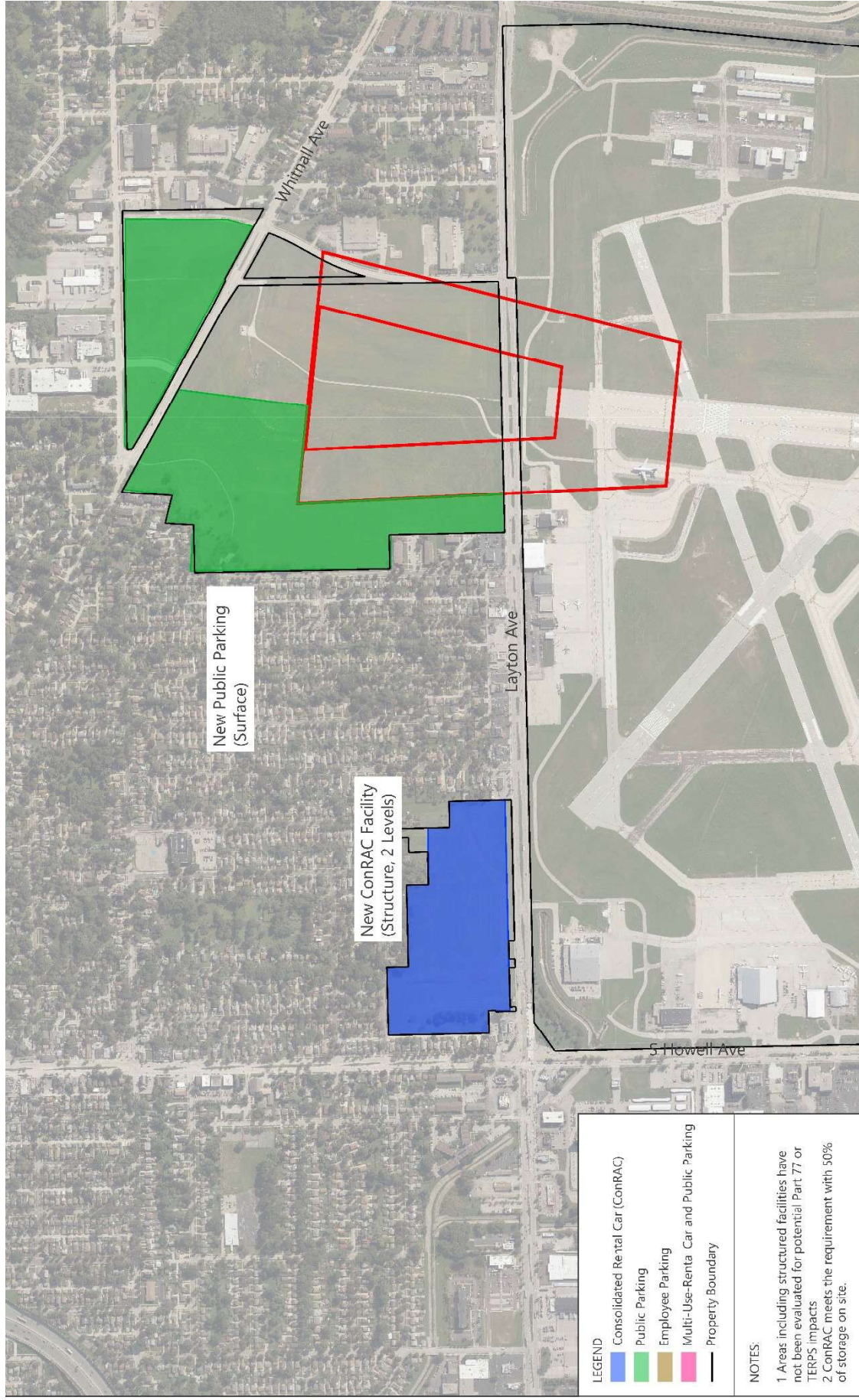
Parking and Rental Car Alternative 6



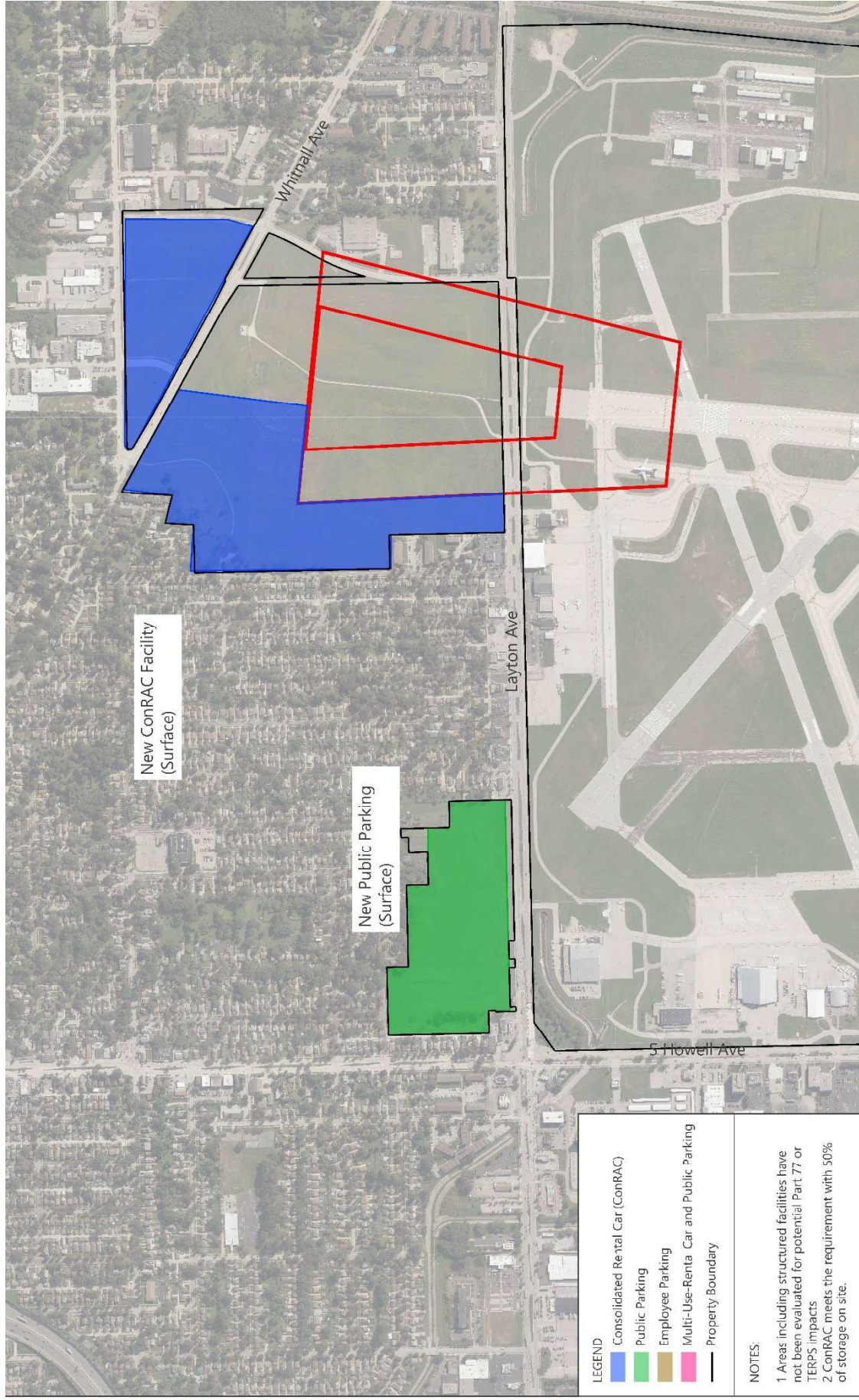
Remote Parking Alternatives



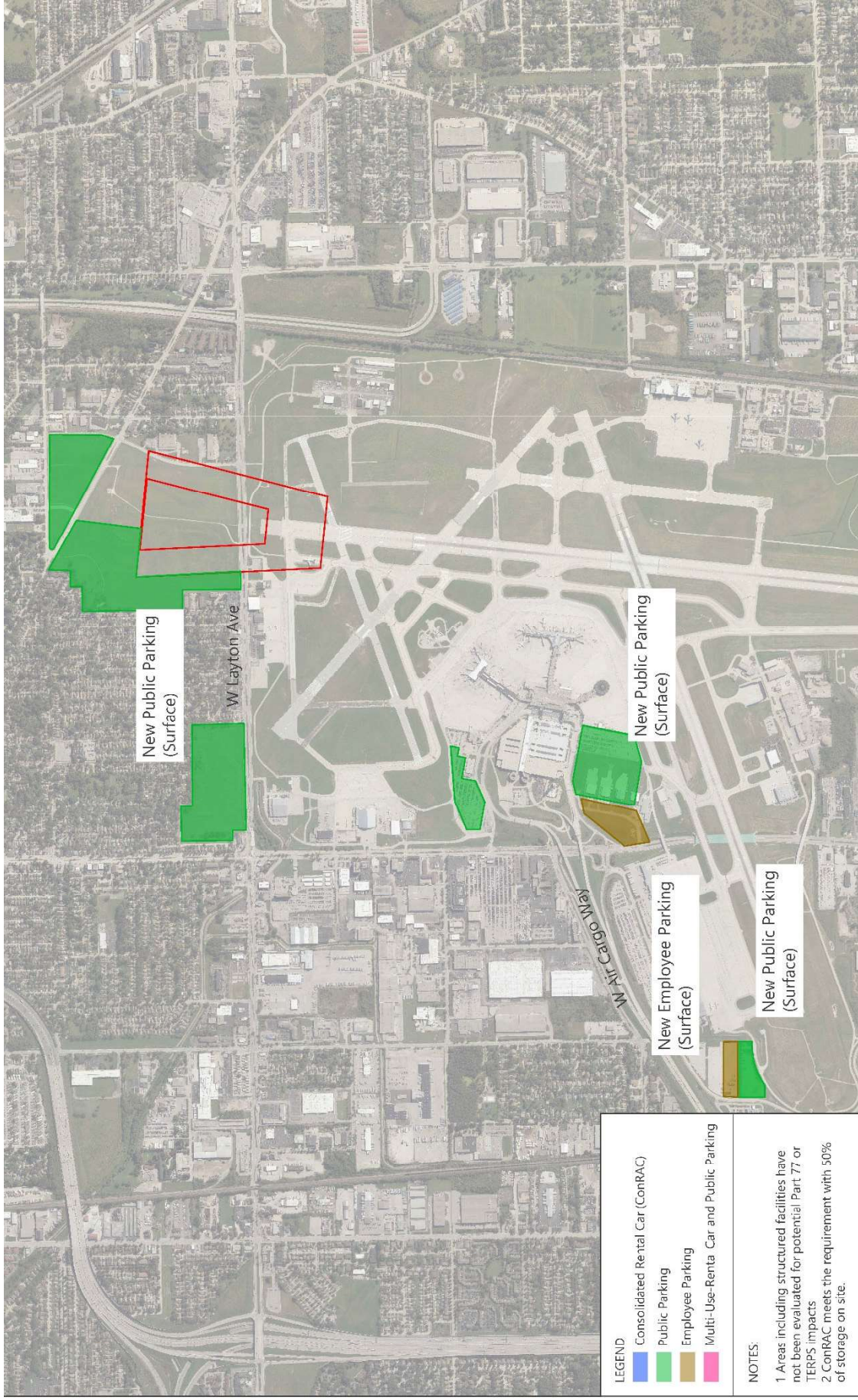
Remote Parking Alternative 1



Remote Parking Alternative 2



All Surface Parking Options



Terminal Alternatives



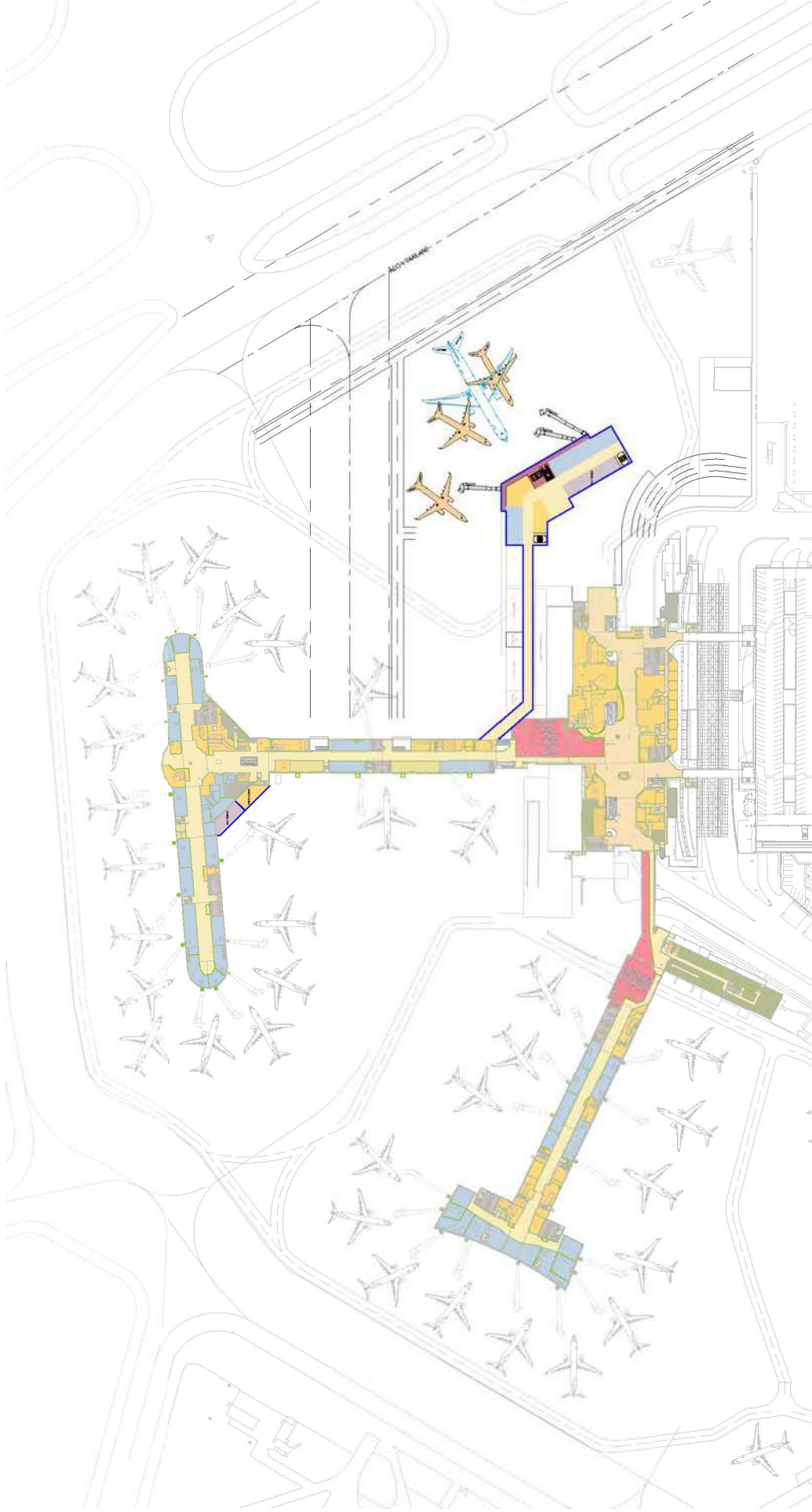
Terminal Challenges

- 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



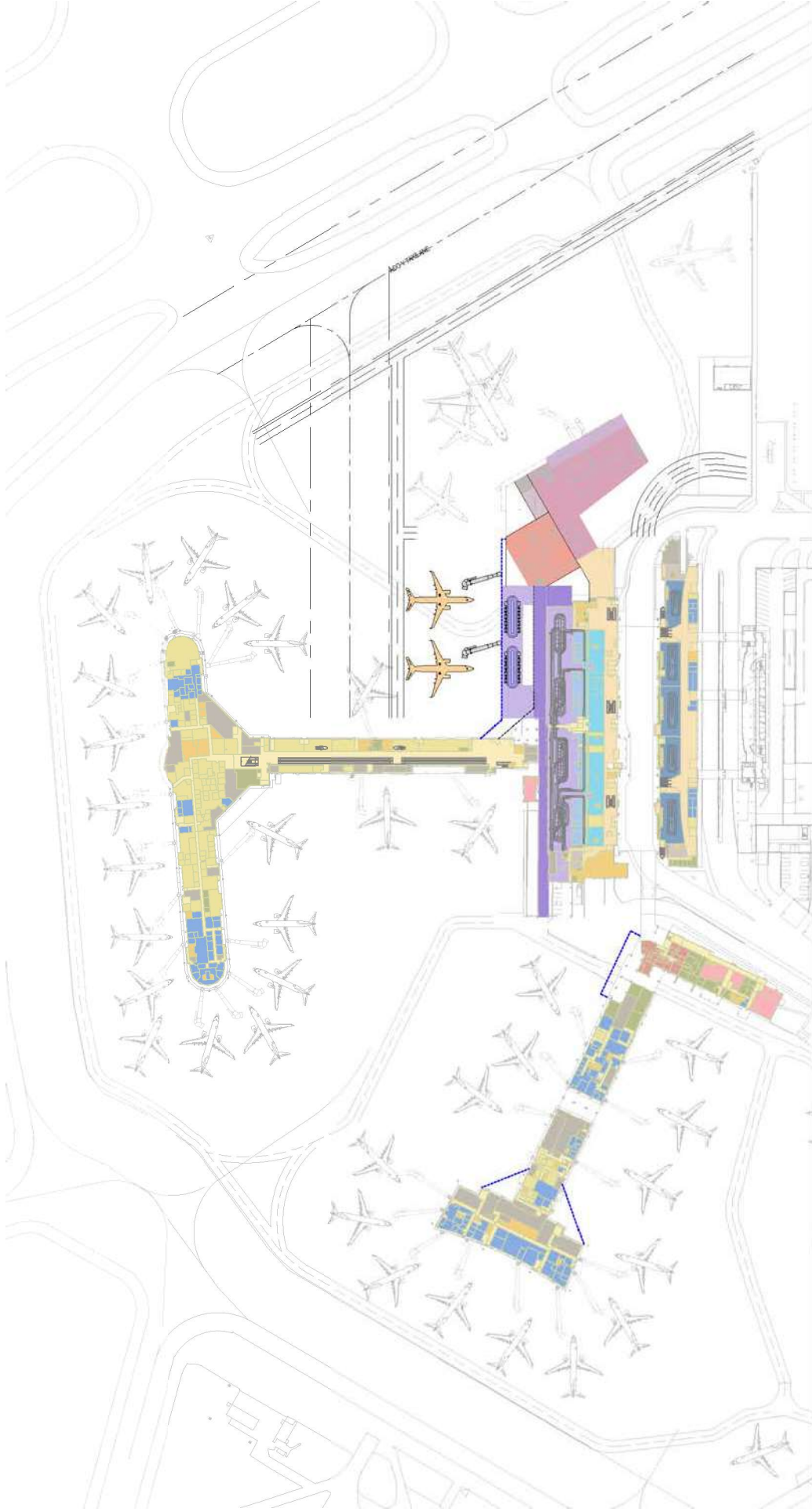
Terminal Alternatives – Conc. E Concourse Level



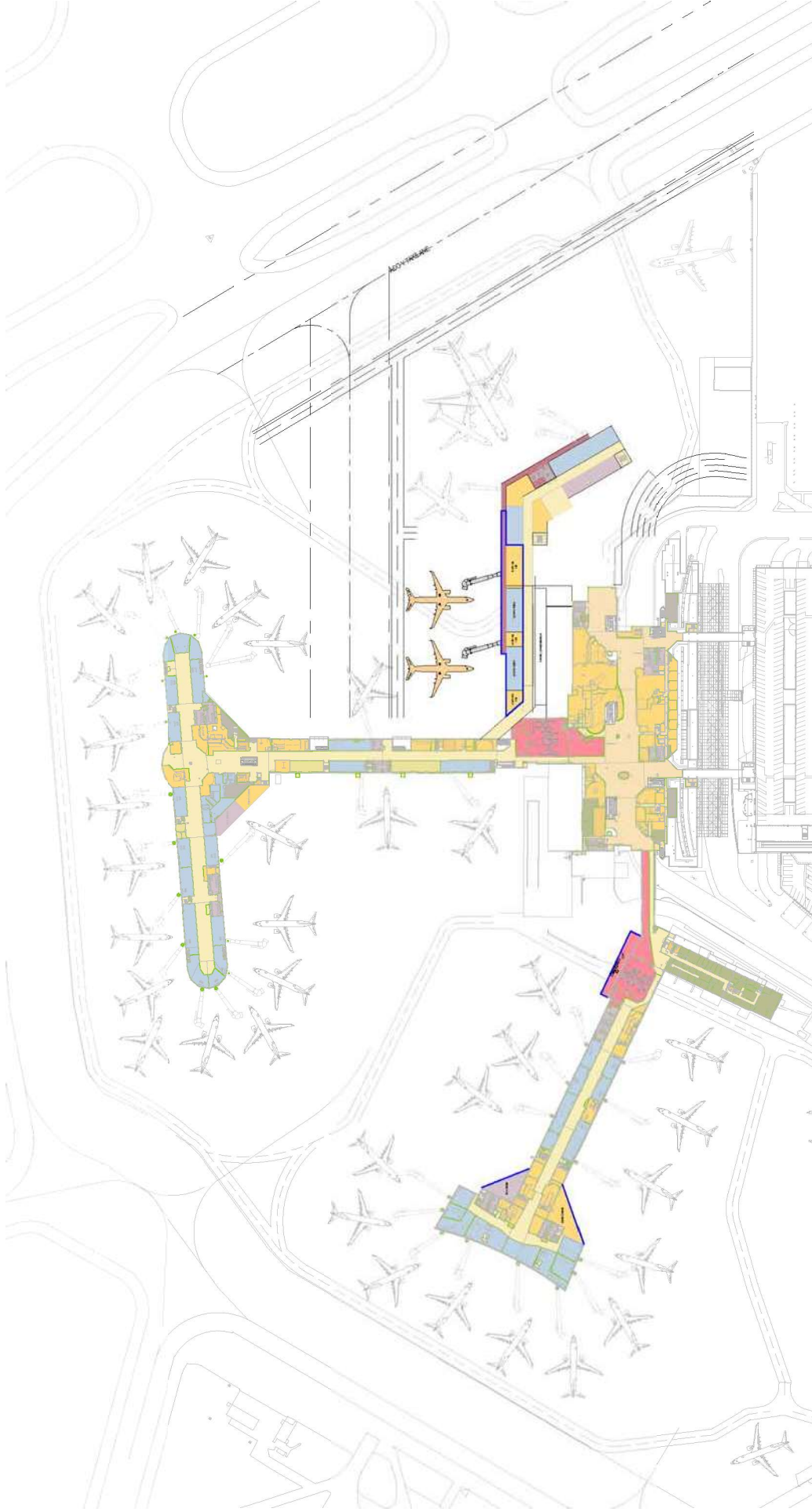
Terminal Alternatives – Conc. E Full Build



Terminal Alternatives – Conc C/D Apron Level



Terminal Alternatives – Conc C/D Conc Level



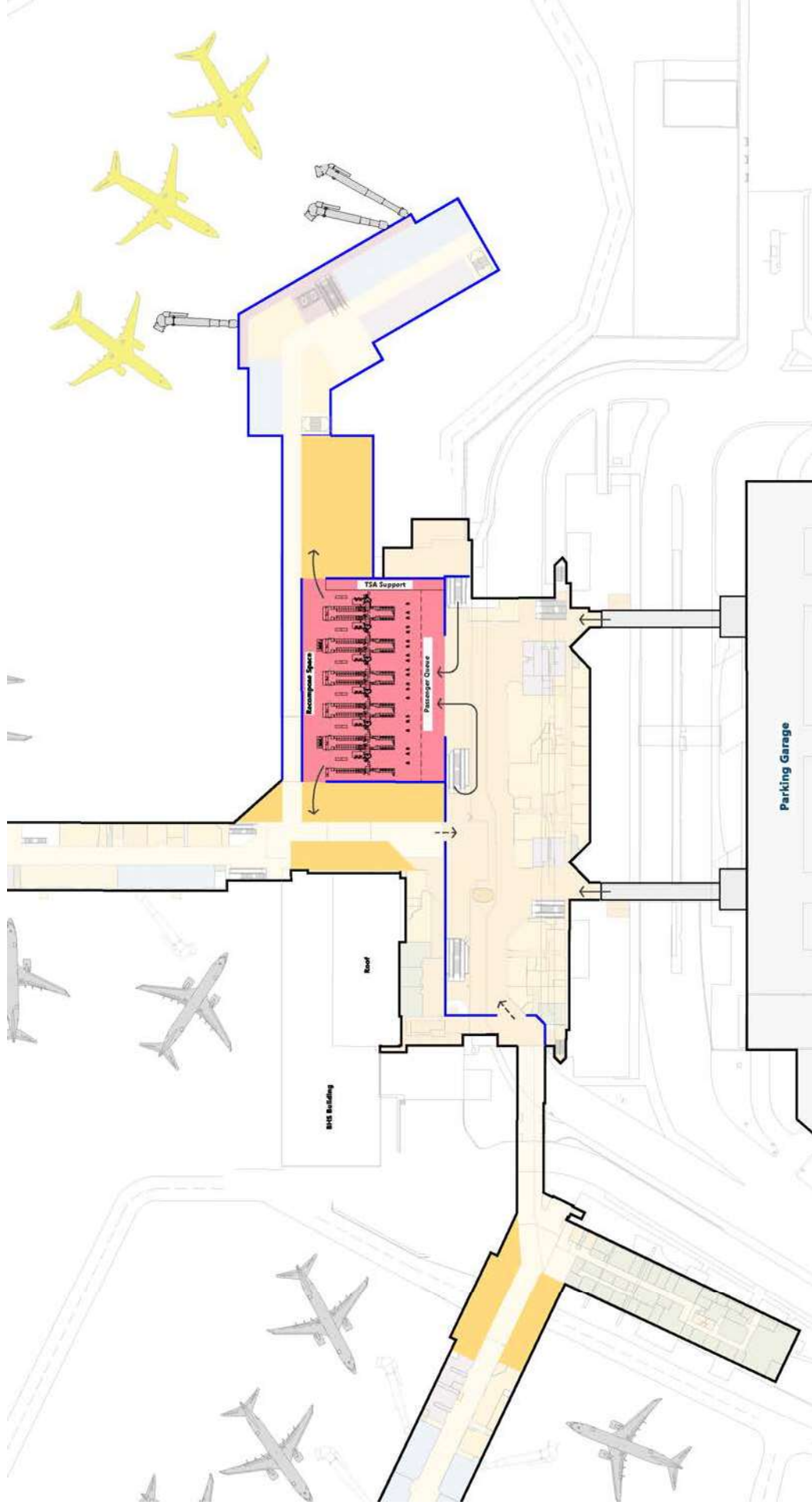
Terminal Alternatives – Concourse C North



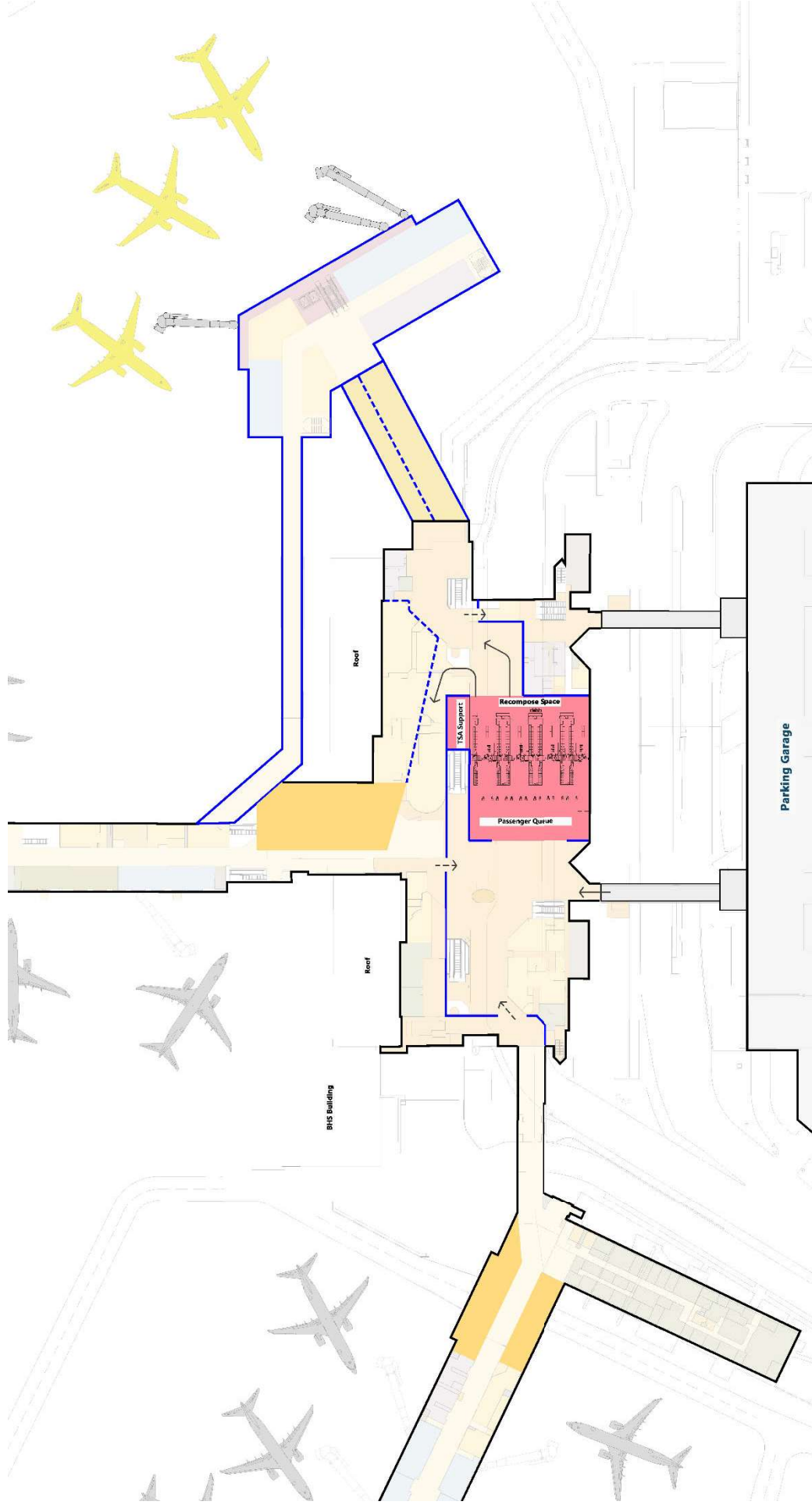
Terminal Alternatives – Concourse C Extended



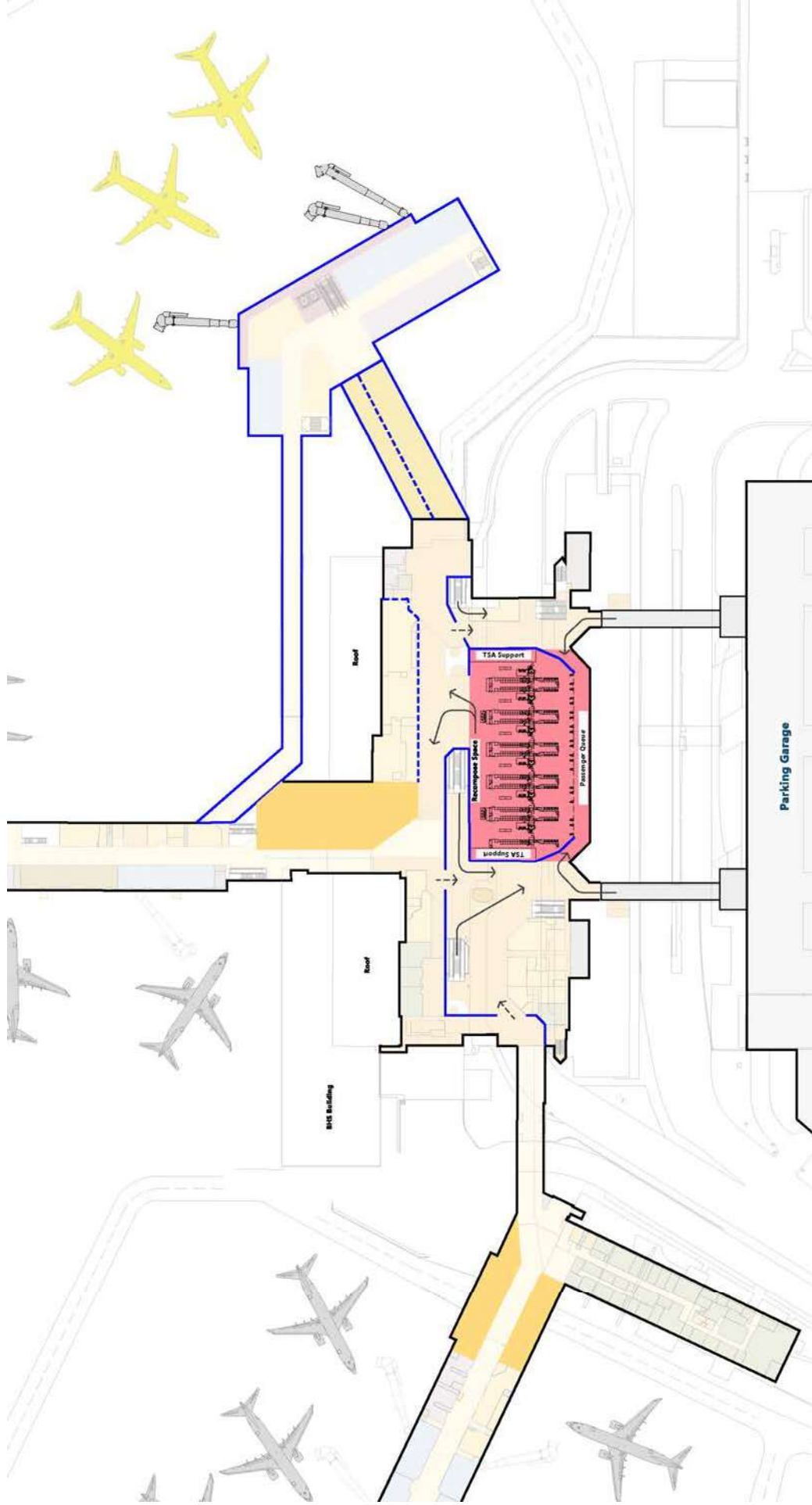
Consolidated Checkpoint Alternative 1



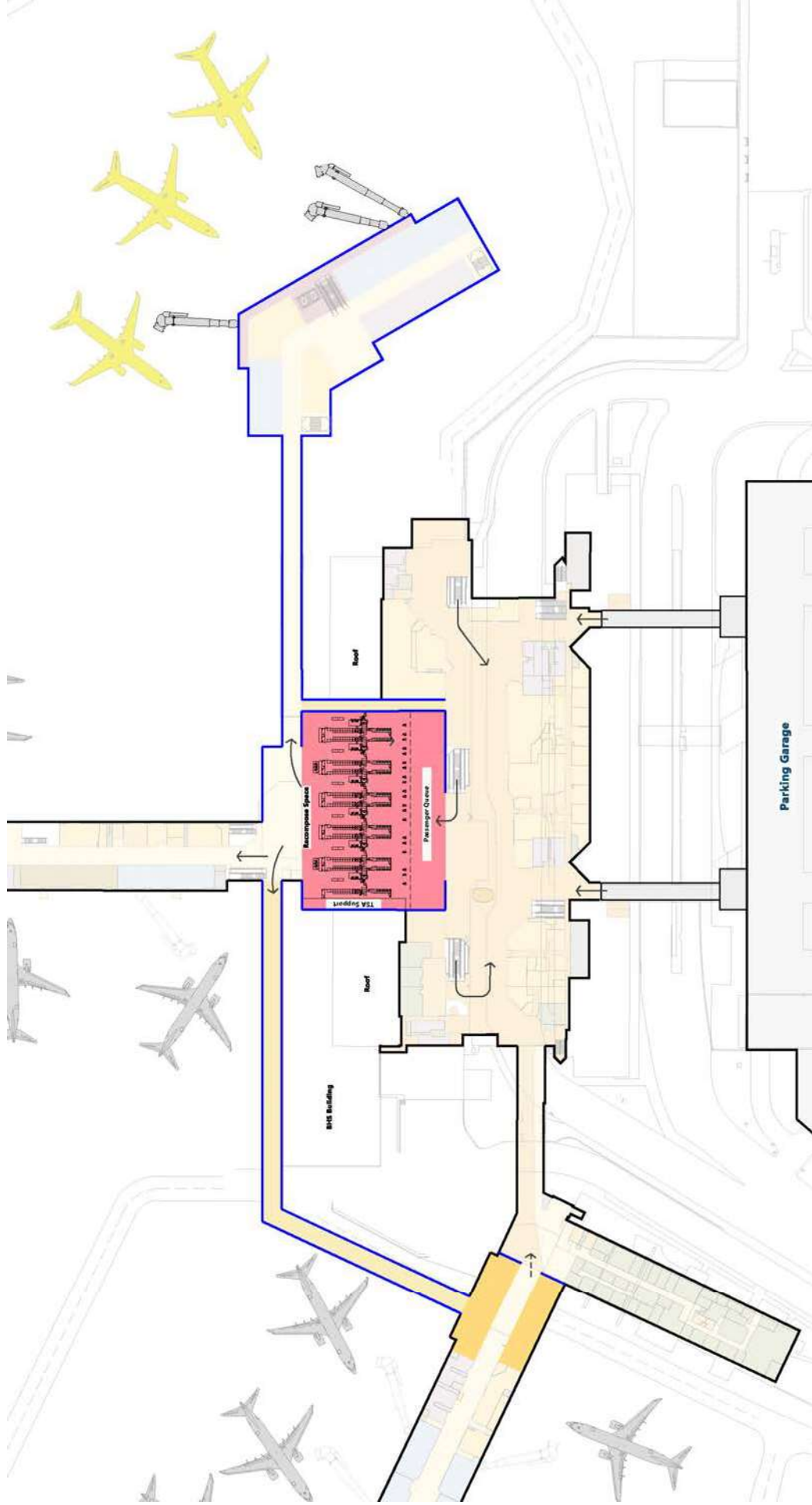
Consolidated Checkpoint Alternative 2



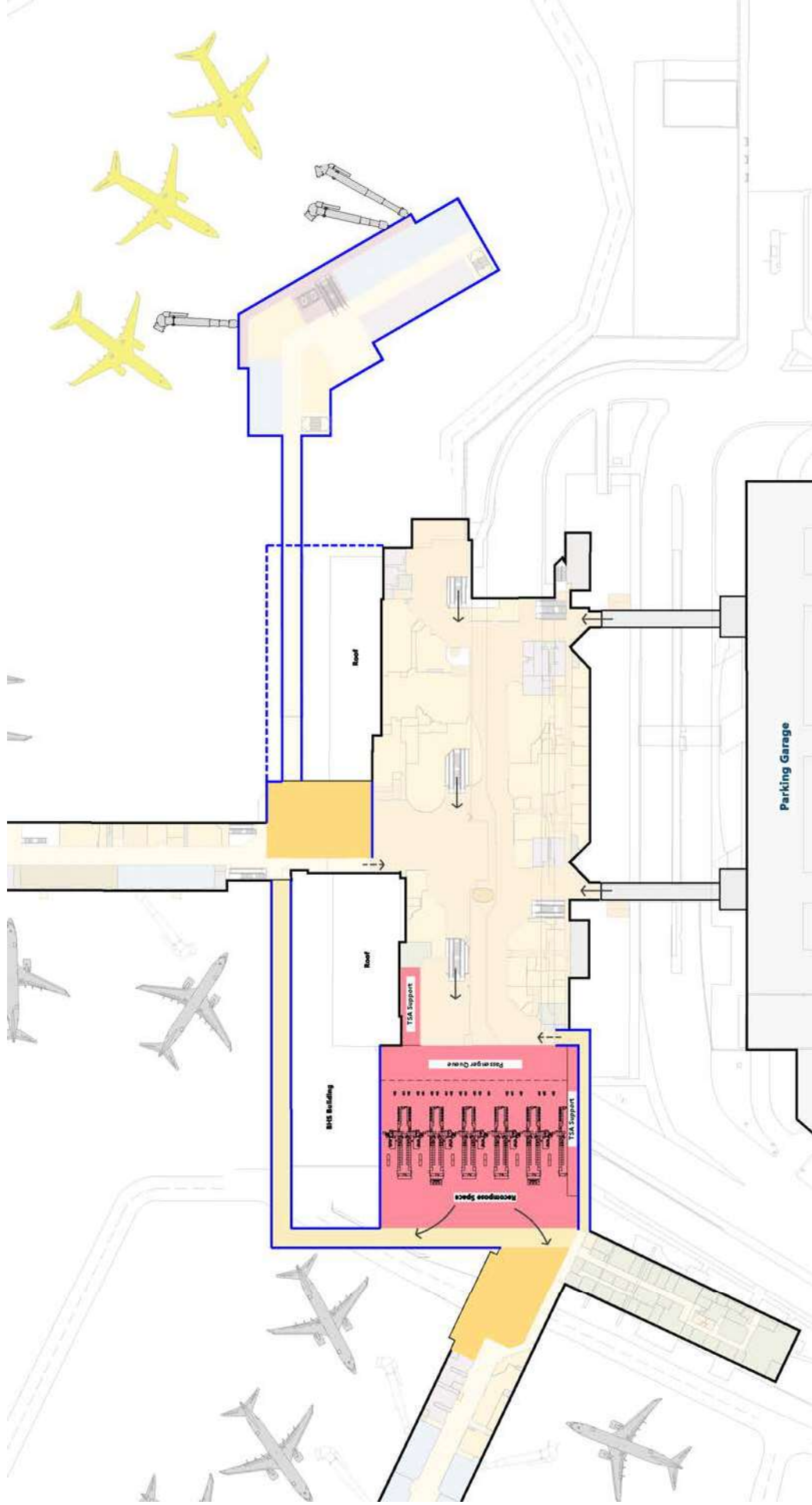
Consolidated Checkpoint Alternative 3



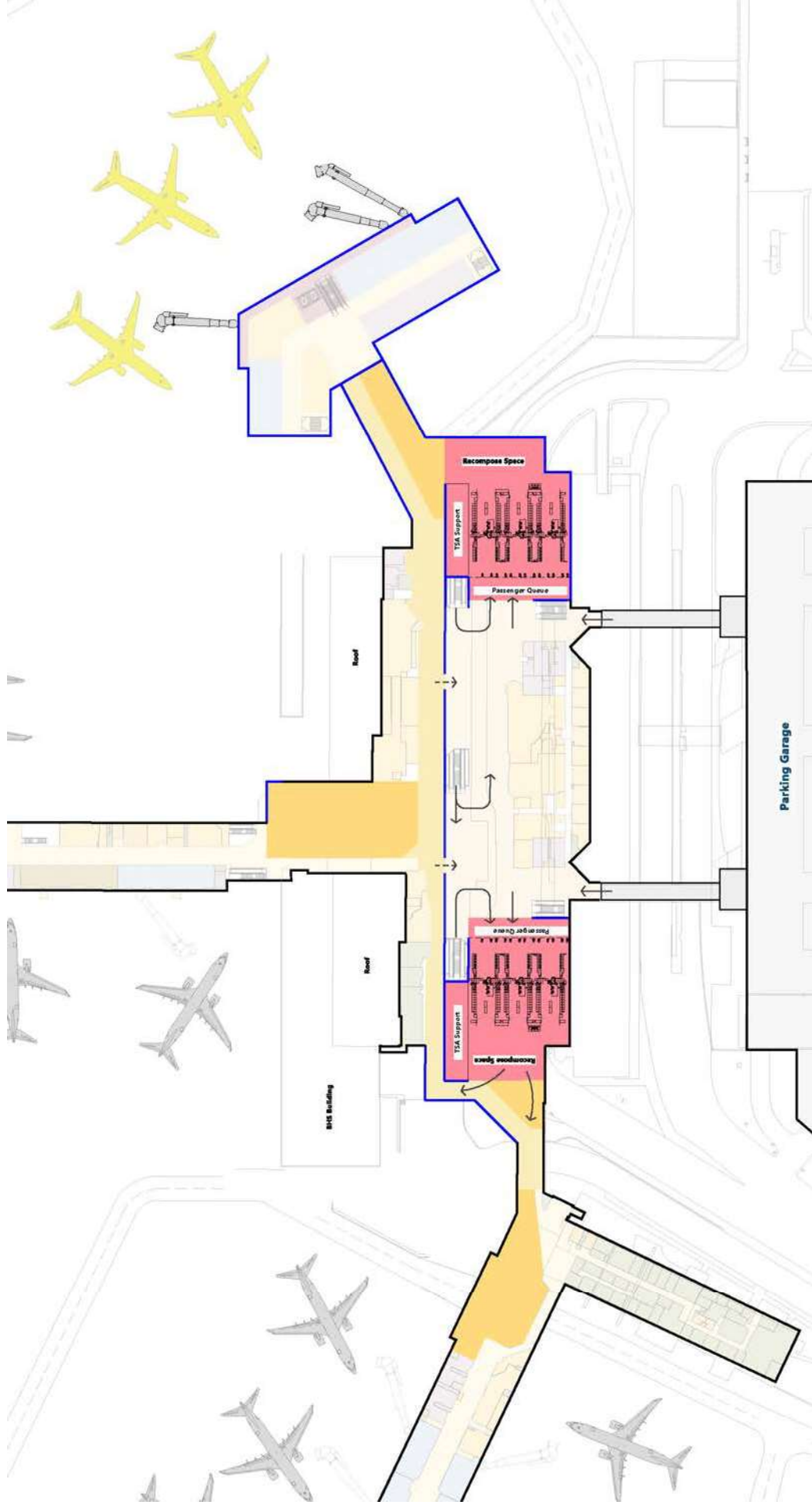
Consolidated Checkpoint Alternative 4



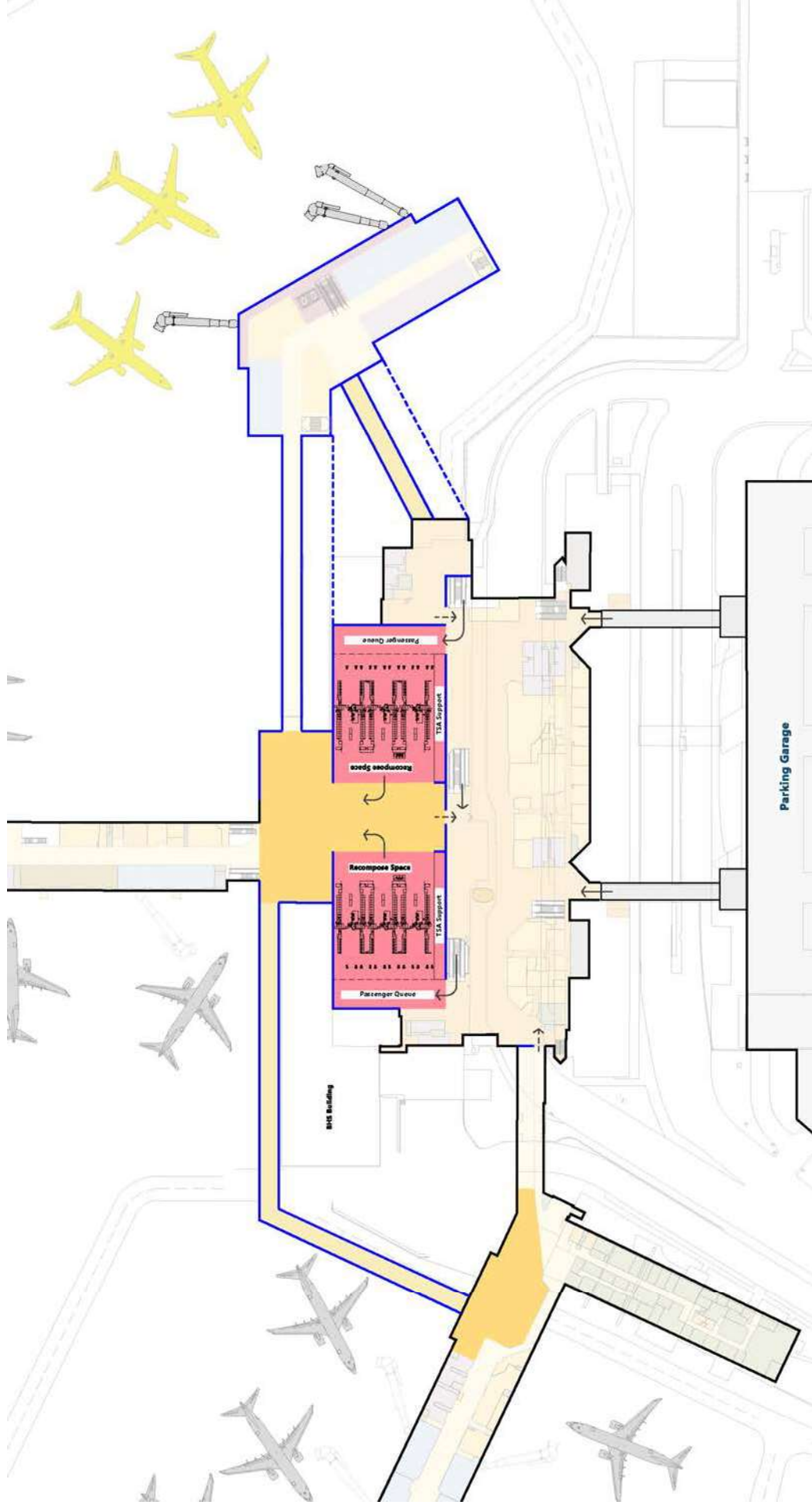
Consolidated Checkpoint Alternative 5



Consolidated Checkpoint Alternative 6



Consolidated Checkpoint Alternative 7



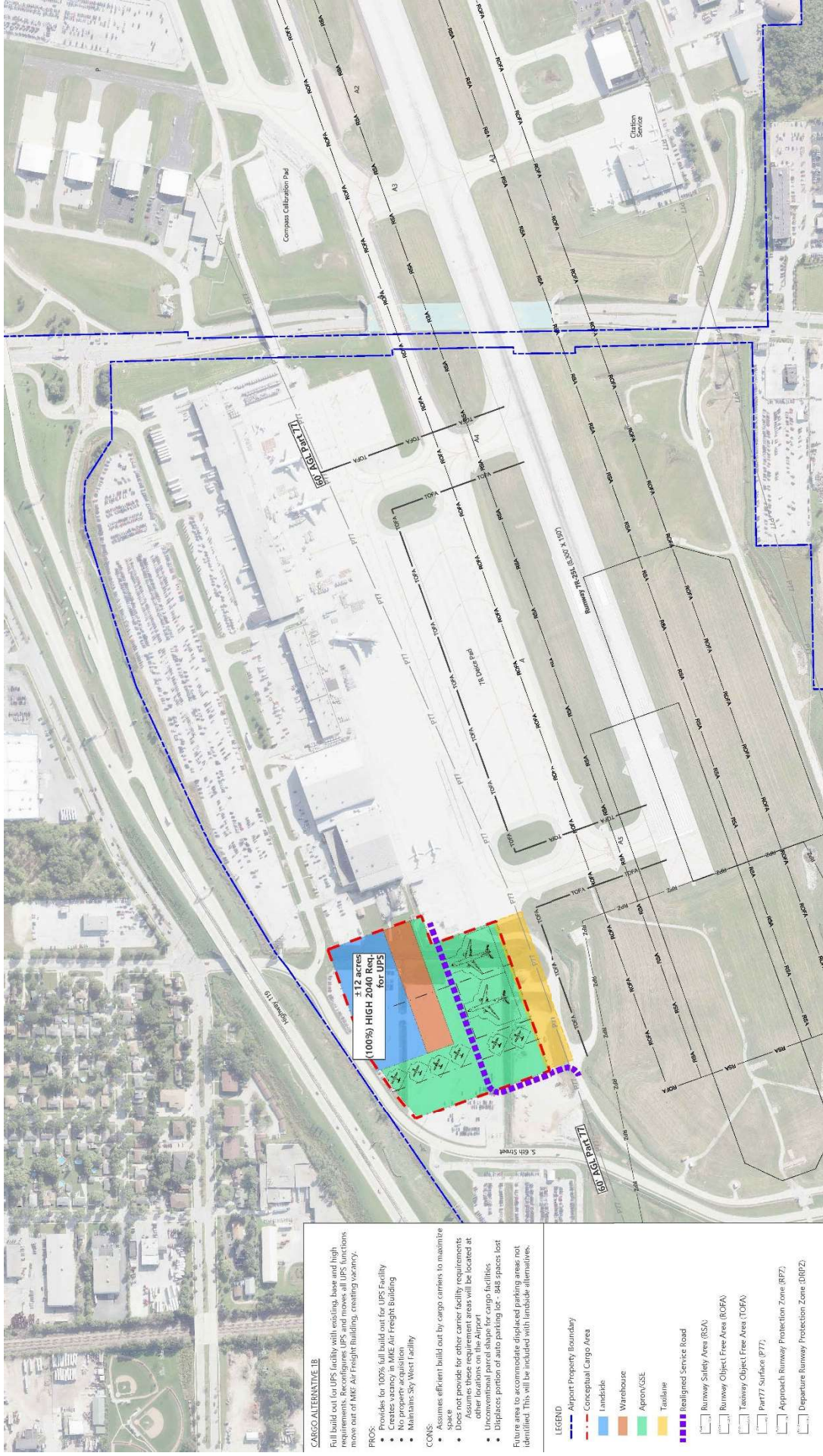
Cargo Alternatives



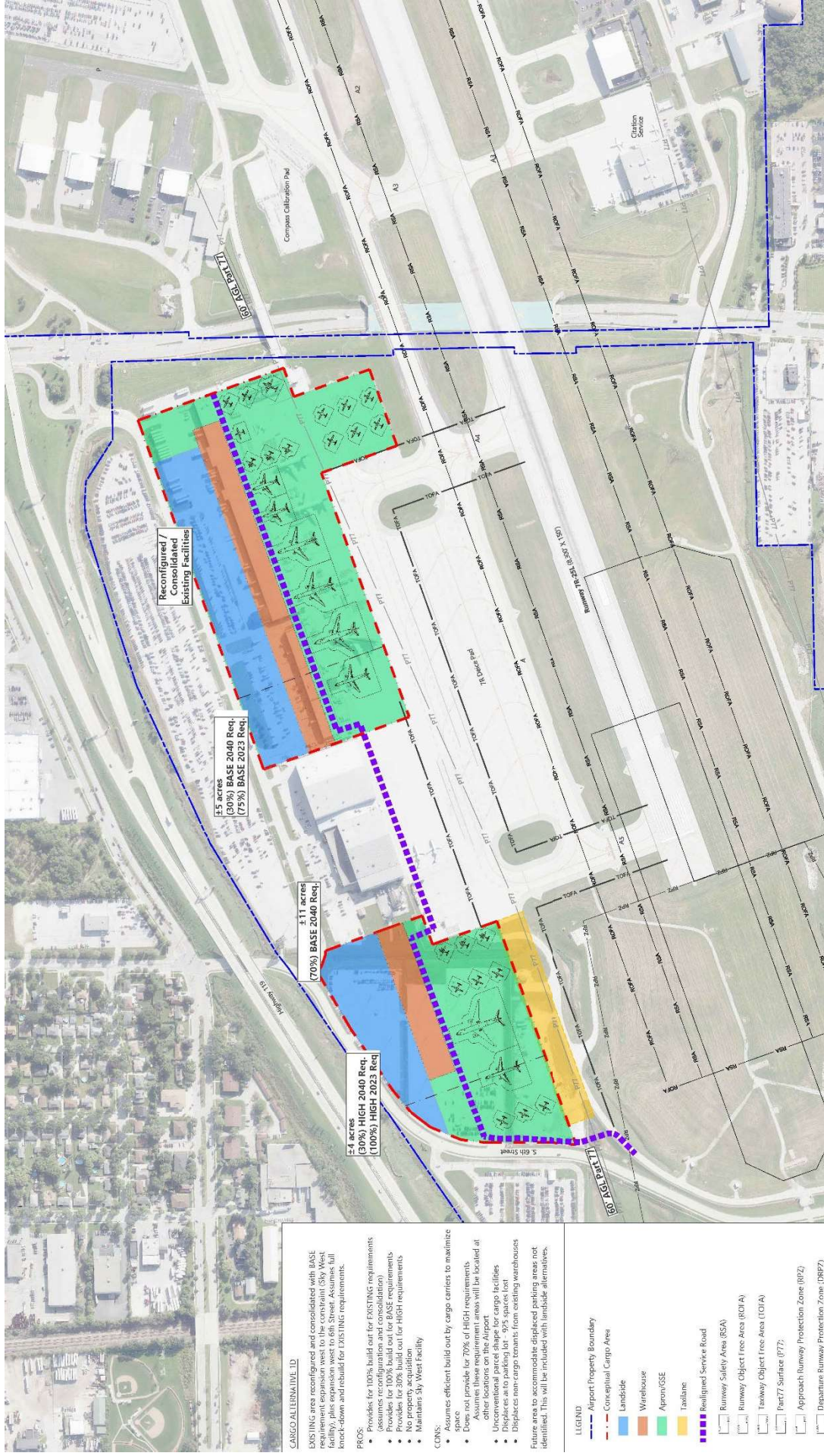
Cargo Facilities Challenges

- 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)

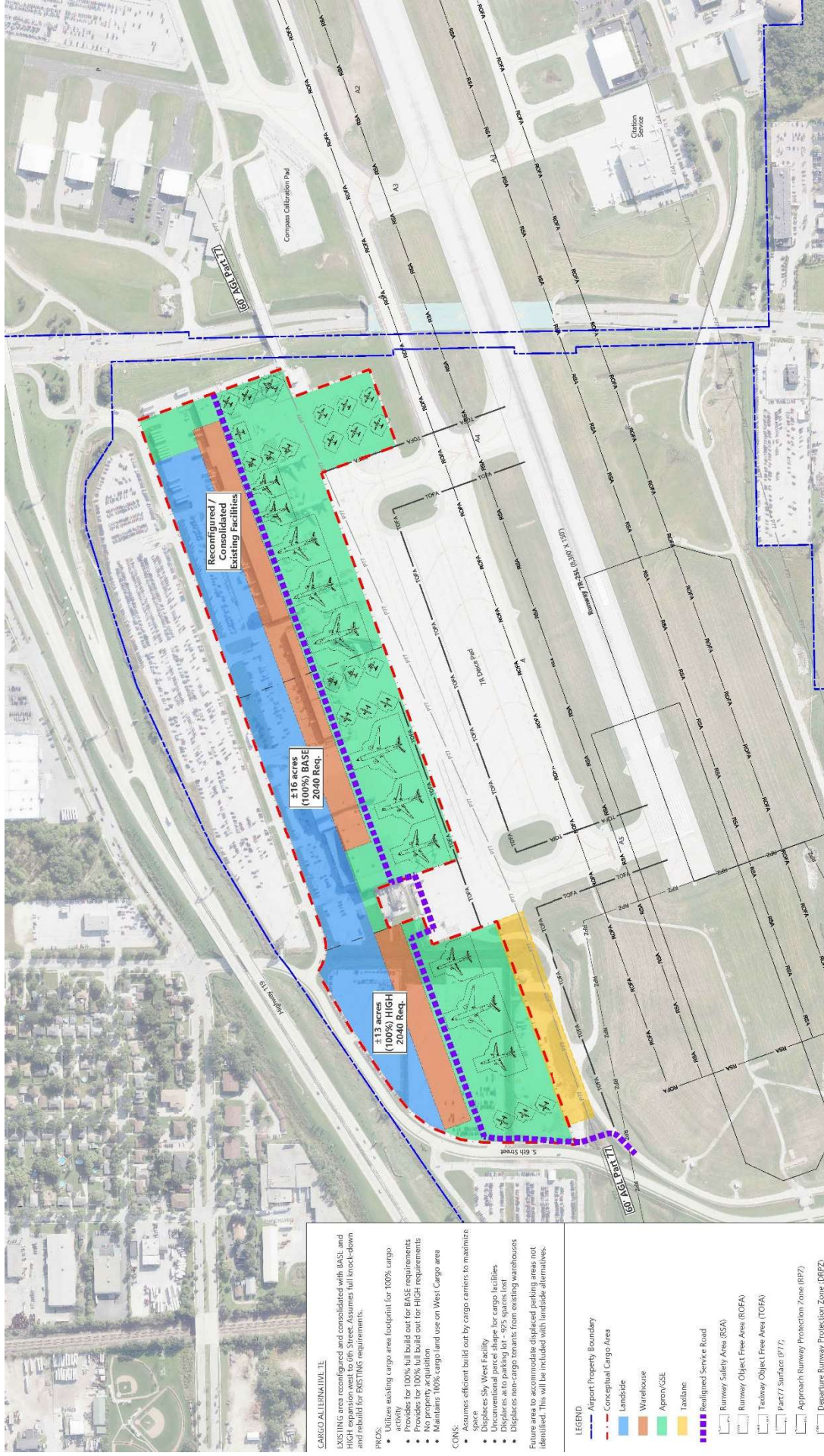
Cargo Alternatives – Cargo West



Cargo Alternatives – Cargo West (Con't)



Cargo Alternatives – Cargo West (Con't)



CARGO ALTERNATIVE 1E
 EXISTING area reconfigured and consolidated with BASE and HIGH expansion west to 6th Street. Assumes full knock-down and rebuild for EXISTING requirements.

PHOS:

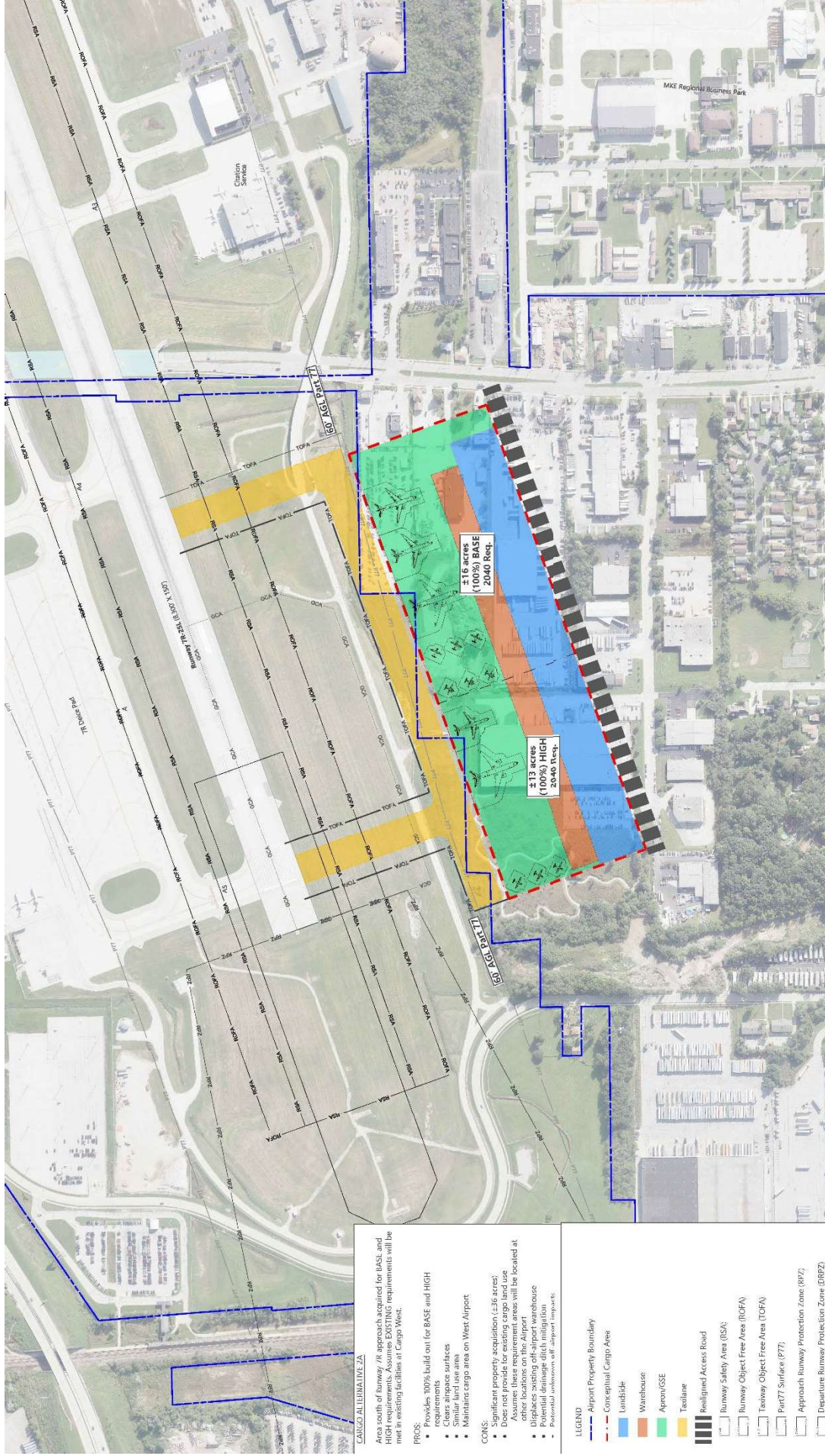
- Utilizes existing cargo area footprint for 100% cargo activity
- Provides for 100% full build out for BASE requirements
- Provides for 100% full build out for HIGH requirements
- Maintains 100% cargo land use on West Cargo area

CONS:

- Requires efficient build out by cargo carriers to maximize space
- Displaces Sky West Facility
- Unconventional parcel shape for cargo facilities
- Displaces into parking lot - 952 spaces lost
- Displaces non-cargo tenants from existing warehouses
- Future area to accommodate displaced parking areas not identified. This will be included with landside alternatives.

- LEGEND**
- Airport Property Boundary
 - - - Conceptual Cargo Area
 - Landside
 - Warehouse
 - Apron/GSE
 - Taxiway
 - Reconfigured Service Road
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Taxiway Object Free Area (TOFA)
 - Part 75 Surface (P75)
 - Approach Runway Protection Zone (ARPZ)
 - Departure Runway Protection Zone (DRPZ)

Cargo Alternatives - South



CARGO ALTERNATIVE 2A
 Area south of runway 16 approach, acquired for BASE and HIGH requirements. Assumes EXISTING requirements will be met in existing facilities at Cargo West.

PROS:

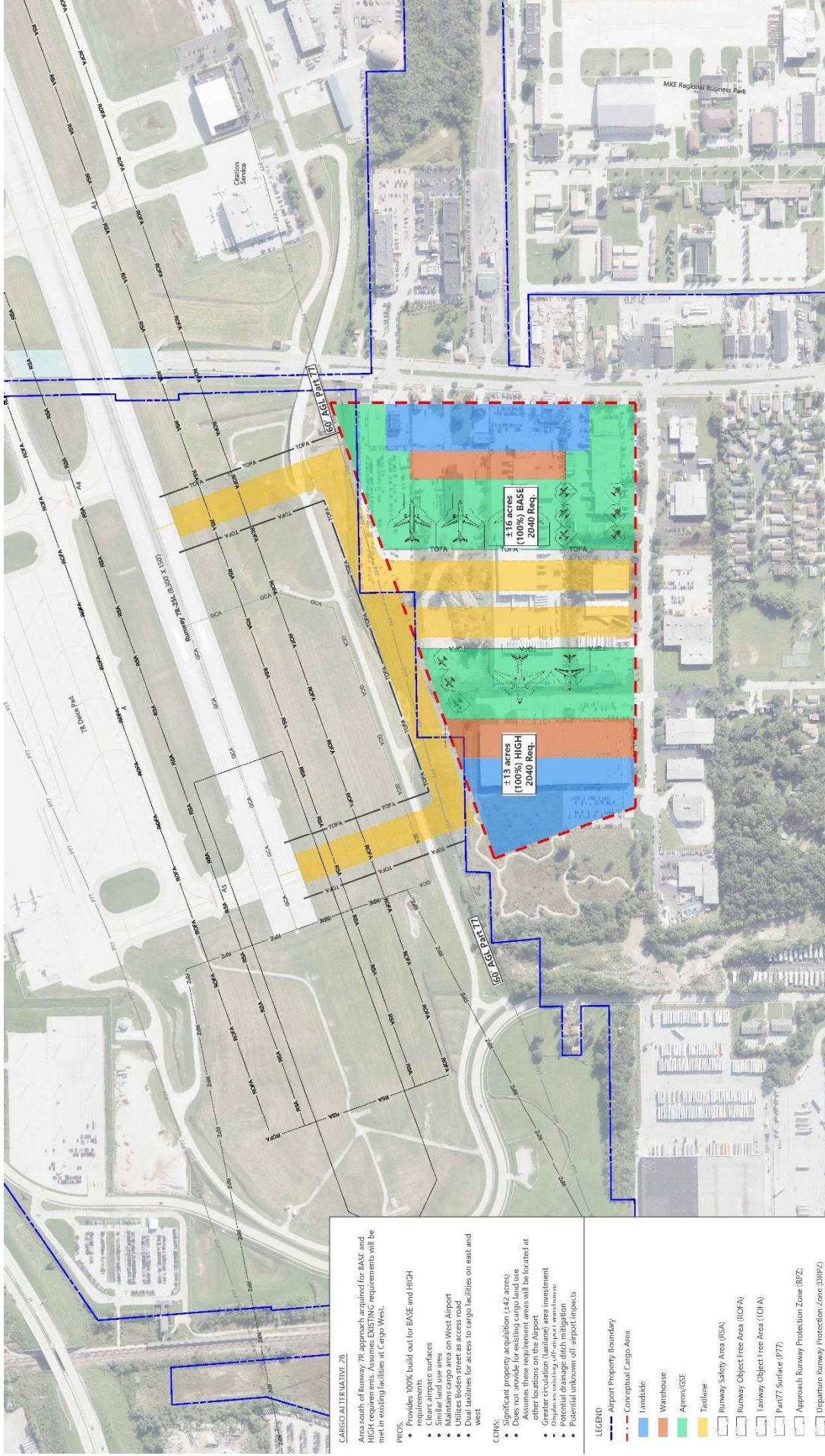
- Provides 100% build out for BASE and HIGH requirements
- Clear airspace surfaces
- Similar land use area
- Maintains cargo area on West Airport

CONS:

- Significant property acquisition (2.36 acres)
- Does not provide for existing cargo land use
- Other cargo facilities will be located at other locations on the Airport
- Displaces existing off-airport warehouse
- Potential drainage ditch mitigation
- Potential unknown off-airport impacts

- LEGEND**
- Airport Property Boundary
 - - - Conceptual Cargo Area
 - Landside
 - Warehouse
 - Apron/GSE
 - Taxiway
 - ▨ Reallocated Access Road
 - ▭ Runway Safety Area (RSA)
 - ▭ Runway Object Free Area (ROFA)
 - ▭ Taxiway Object Free Area (TOFA)
 - ▭ Pav77 Surface (P77)
 - ▭ Approach Runway Protection Zone (ARPZ)
 - ▭ Departure Runway Protection Zone (DRPZ)

Cargo Alternatives – South (Con't)



CARGO ALTERNATIVE 2B
 Area south of Runway 78 approach required for BASE and HIGH requirements. Assume EXISTING requirements will be met in existing facilities at Cargo West.

PROS.

- Provides 100% build out for BASE and HIGH requirements
- Similar land use areas
- Maintains cargo area on West Airport
- Utilizes bottom street as access road
- Dual taxiways for access to cargo facilities on east and west.

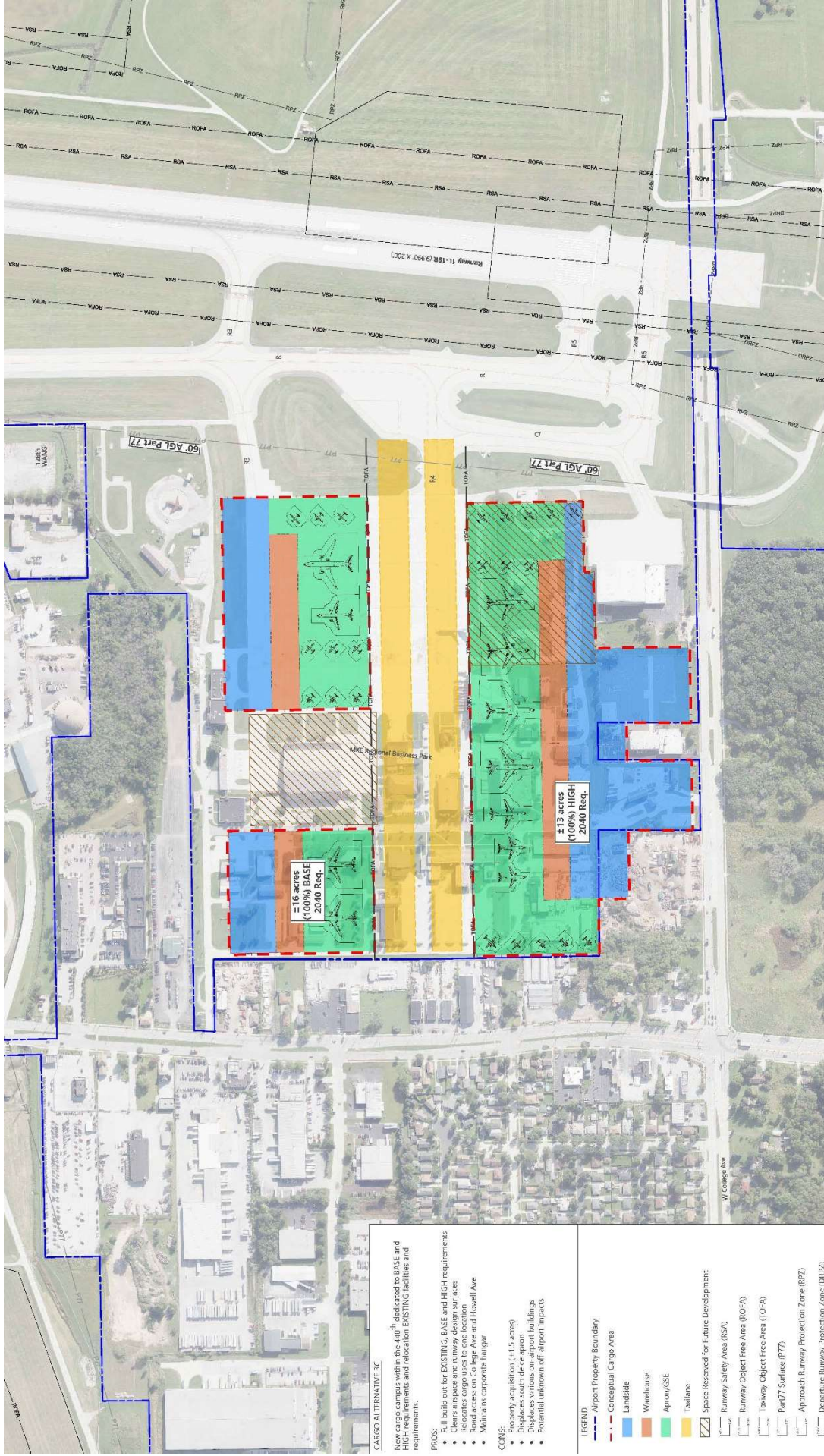
CONS.

- Significant property acquisition (442 acres)
- Does not provide for existing cargo build out
- Other cargo facilities will be located at other locations on the Airport
- Greater circulation (taxiway) area investment
- Disruption to existing air-operations
- Potential damage to infrastructure
- Potential unknown off-airport impacts

- LEGEND**
- Airport Property Boundary
 - - - Conceptual Cargo Area
 - Landslide
 - Warehouse
 - Apron/GSE
 - Taxiway
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Runway Object Free Area (OFA)
 - Port 77 Surface (P77)
 - Approach Runway Protection Zone (ARZ)
 - Departure Runway Protection Zone (DRZ)



Cargo Alternatives – Former 440th



CARGO ALTERNATIVE 3C
 New cargo campus within the 440th dedicated to BASE and HIGH requirements and relocation EXISTING facilities and requirements.

PROS:

- Full build out for EXISTING, BASE and HIGH requirements
- Clears airspace and runway design surpluses
- Maintains corporate hangar
- Road access on College Ave and Howell Ave

CONS:

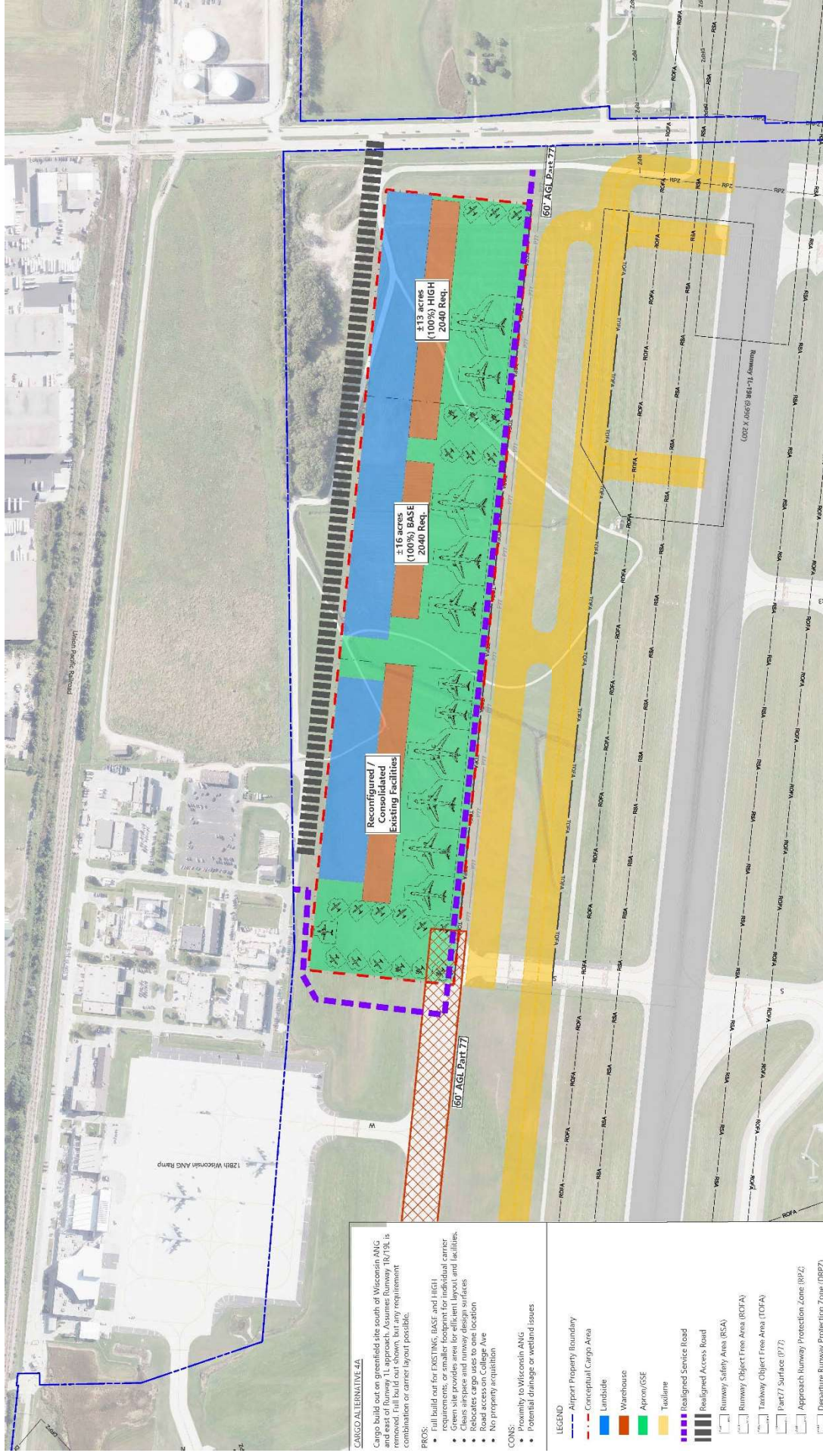
- Property acquisition (1.15 acres)
- Displaces south side apron
- Displaces existing on-airport buildings
- Potential unknown off-airport impacts

LEGEND

- Airport Property Boundary
- - - Conceptual Cargo Area
- Landside
- Warehouse
- Apron/USE
- Taxiway
- Space Reserved for Future Development
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Taxiway Object Free Area (TOFA)
- Part 77 Surface (P77)
- Approach Runway Protection Zone (ARZ)
- Departure Runway Protection Zone (DRPZ)



Cargo Alternatives - East



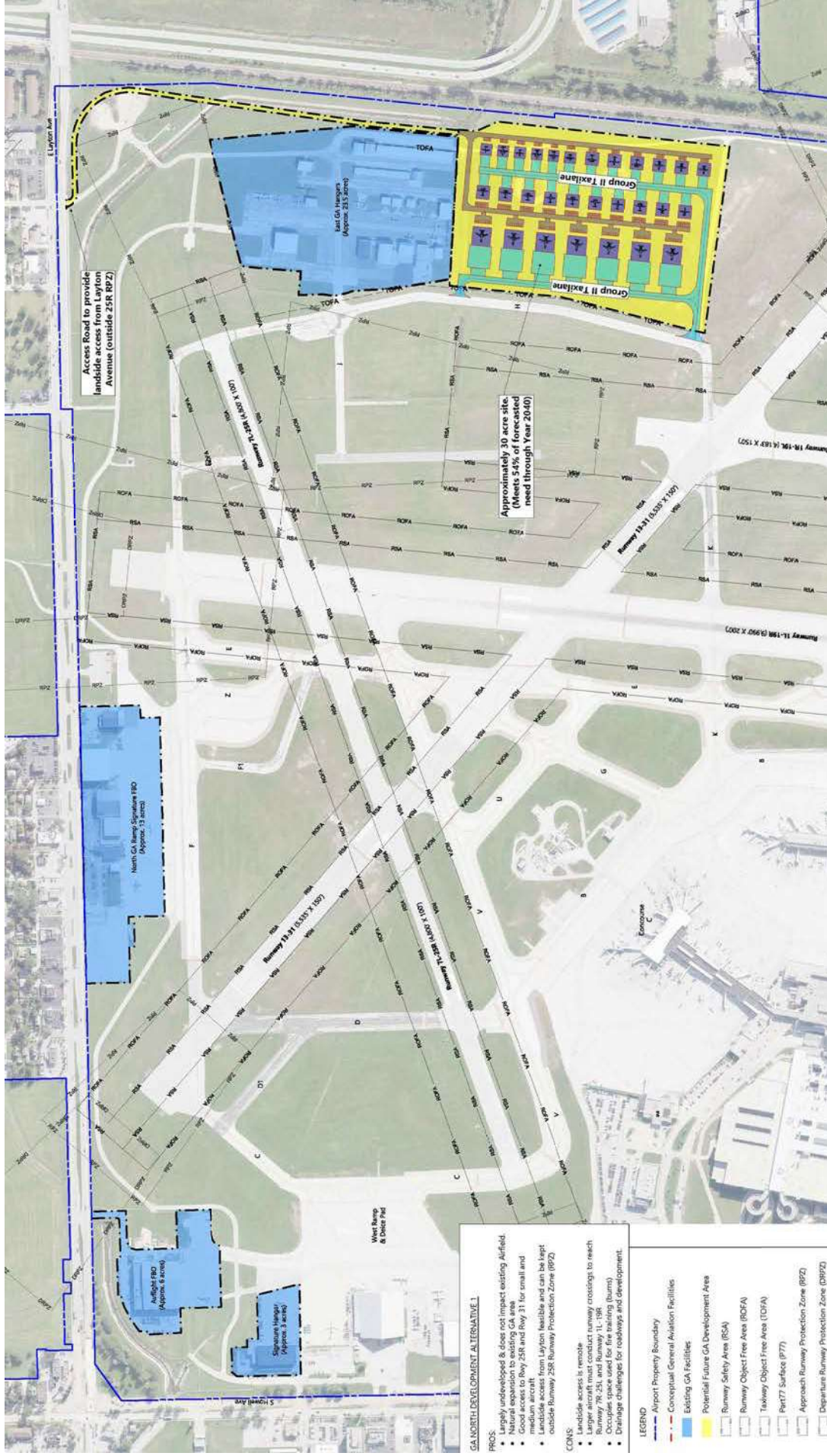
General Aviation Alternatives



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



GA NORTH DEVELOPMENT ALTERNATIVE 1

PROS:

- Largely undeveloped & does not impact existing Auligat.
- Natural expansion to existing GA area
- Good access to Rwy 25R and Rwy 31 for small and medium aircraft
- Landside access from Layton feasible and can be kept outside Runway 25R Runway Protection Zone (RPZ)

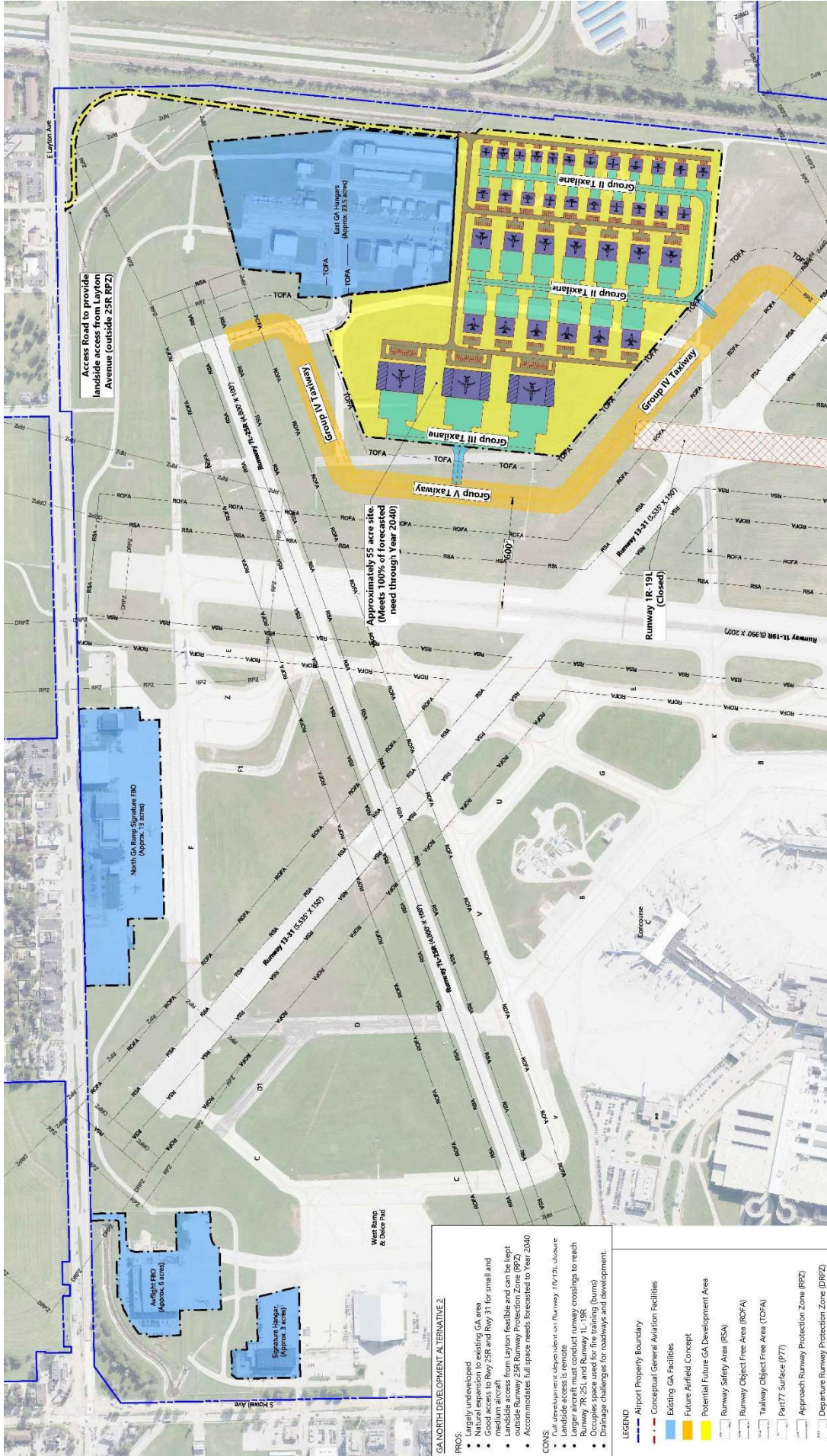
CONS:

- Landside access is remote
- Larger airfield construction roadway crossings to reach Runway 25R and Rwy 31
- Occupies space used for fire training (burns)
- Drainage challenges for roadways and development.

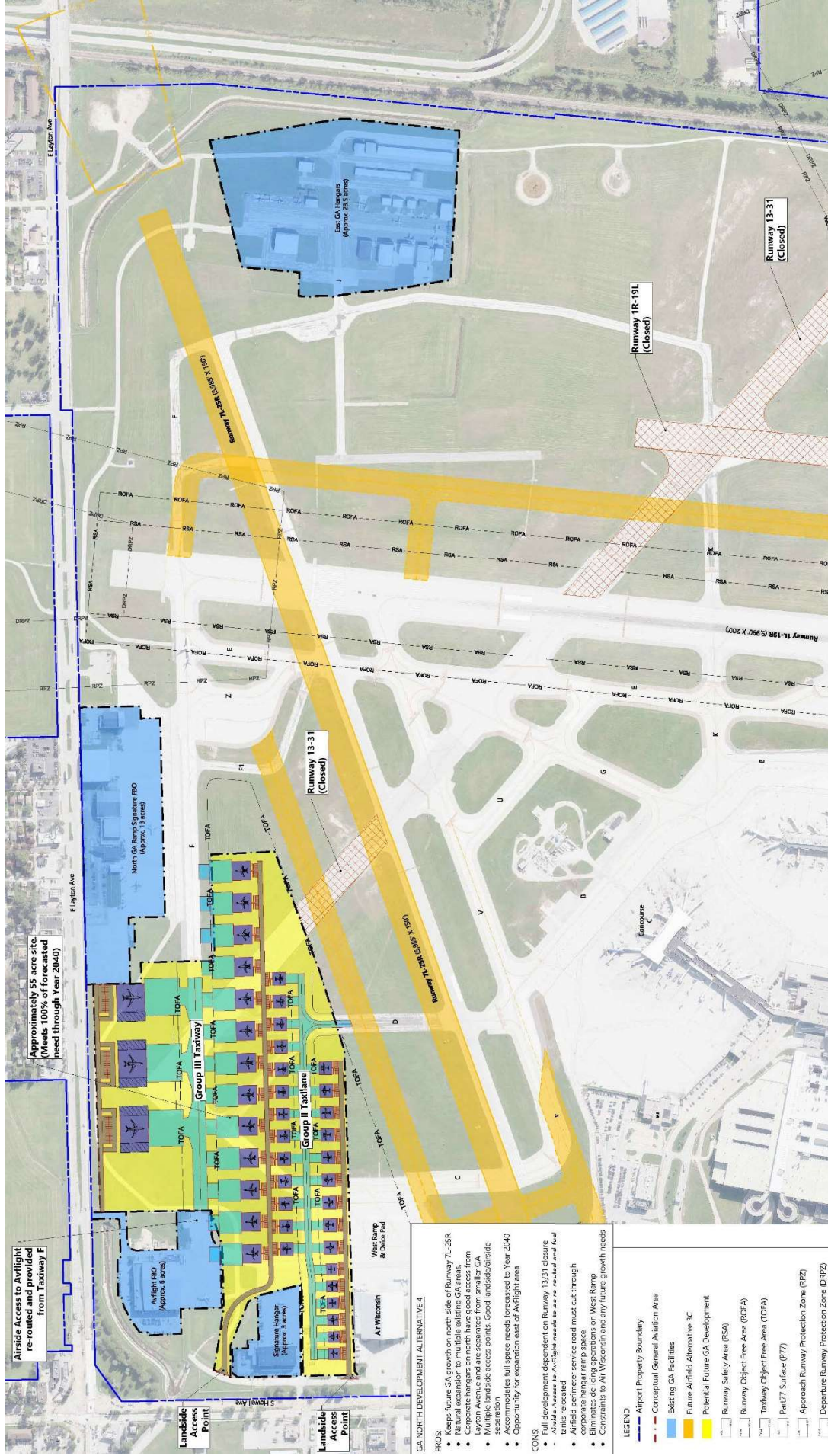
LEGEND

- Airport Property Boundary
- - - Conceptual General Aviation Facilities
- Existing GA Facilities
- Potential Future GA Development Area
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Taxiway Object Free Area (TOFA)
- Perf77 Surface (P77)
- Approach Runway Protection Zone (RPZ)
- Departure Runway Protection Zone (DRPZ)

General Aviation Alternative 2



General Aviation Alternative 4



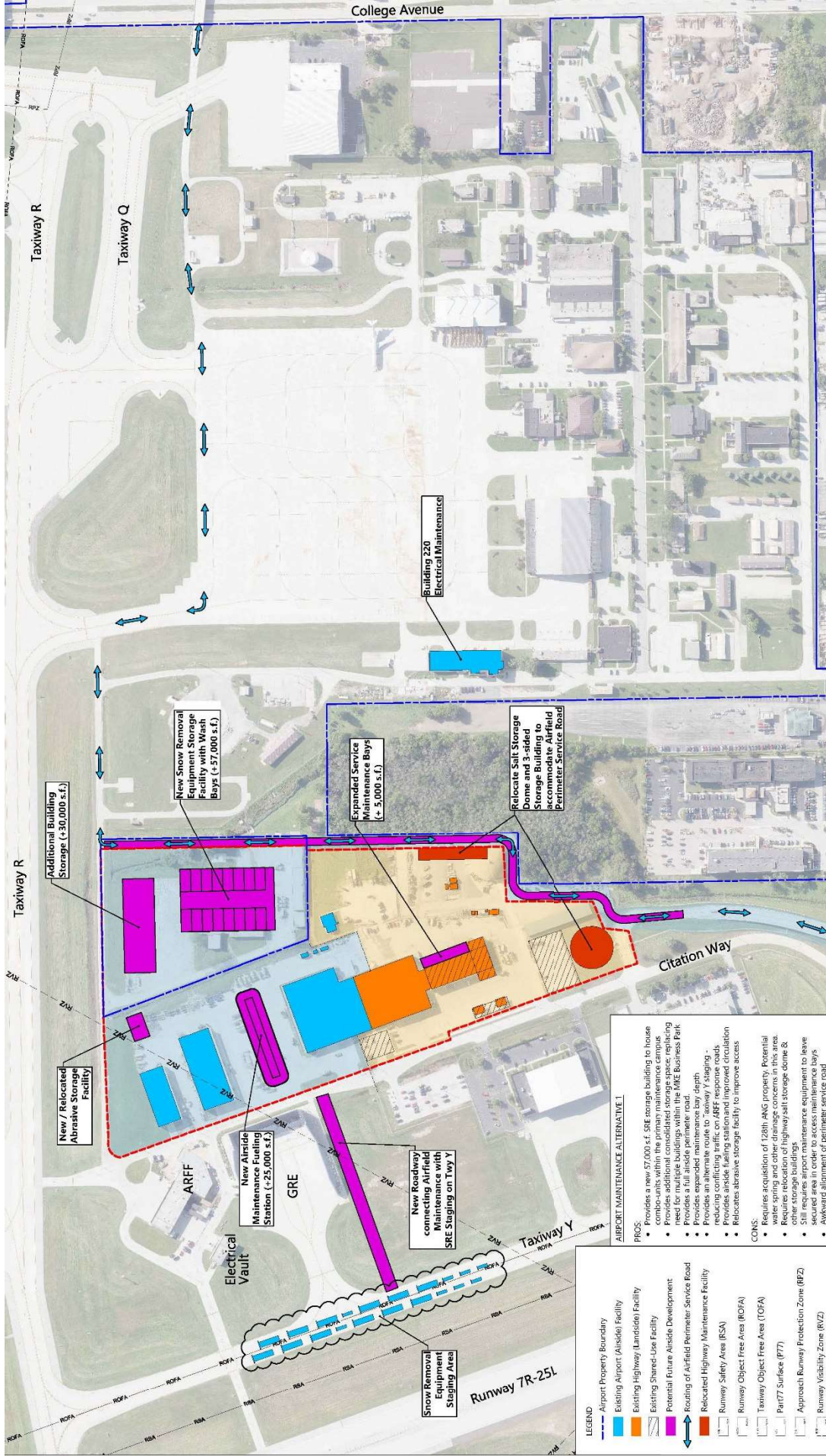
Support Facilities Alternatives



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



AIRPORT MAINTENANCE ALTERNATIVE 1

PROS:

- Provides a new 57,000-s.f. SRE storage building to house combo units within the primary maintenance campus
- Provides additional consolidated storage space, replacing need for multiple buildings within the MKE Business Park
- Provides a full airside perimeter road, depth
- Provides an alternate route to Taxiway Y staging - reducing conflicting traffic on ARFF response roads
- Provides airside fueling station and improved circulation
- Relocates abrasive storage facility to improve access

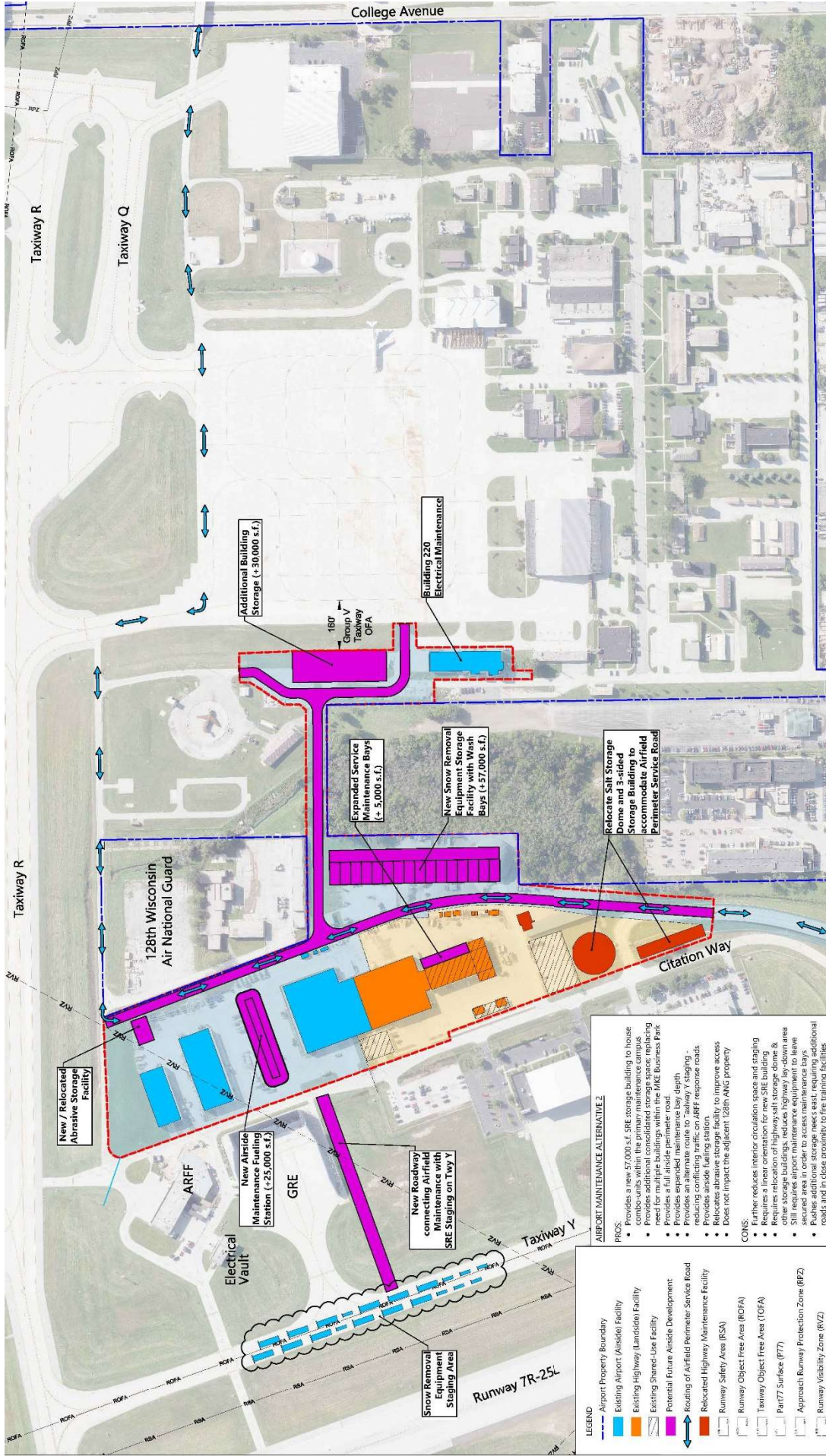
CONS:

- Requires acquisition of 128th ANG property. Potential water spring and other drainage concerns in this area.
- Requires relocation of highway salt storage dome &
- SRE requires aircraft maintenance equipment to leave secured area in order to access maintenance bays
- Awkward alignment of perimeter service road

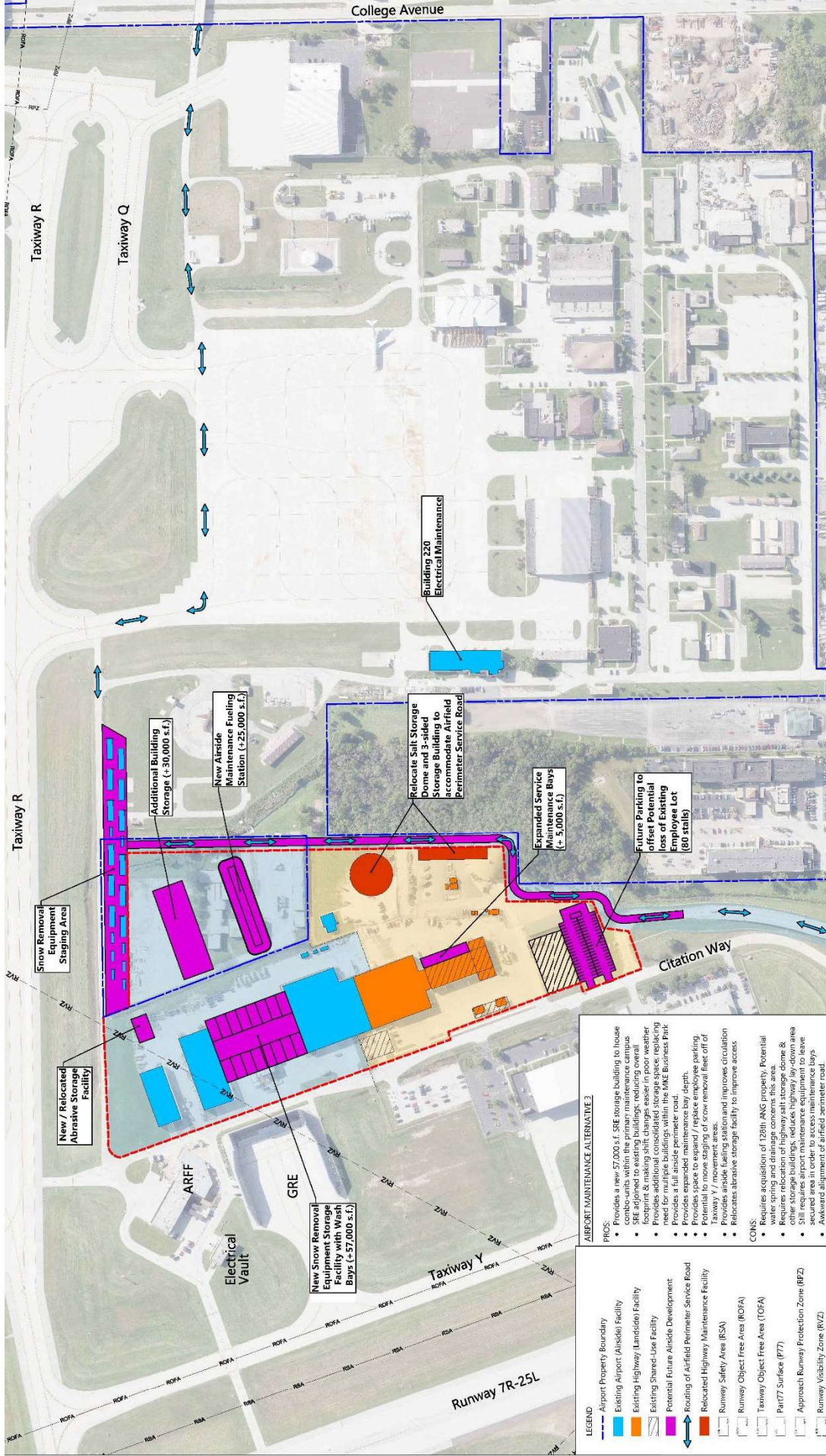
- LEGEND**
- Airport Property Boundary
 - Existing Airport (Airside) Facility
 - Existing Highway (Airside) Facility
 - Potential Future Airside Development
 - Relocated Highway Maintenance Facility
 - Relocated Airfield Perimeter Service Road
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Runway Object Free Area (TOFA)
 - Part 77 Surface (P77)
 - Approach Runway Protection Zone (RPZ)
 - Runway Visibility Zone (RVZ)



Support Facilities Alternative 2



Support Facilities Alternative 3



AIRPORT MAINTENANCE ALTERNATIVE 3

PROS:

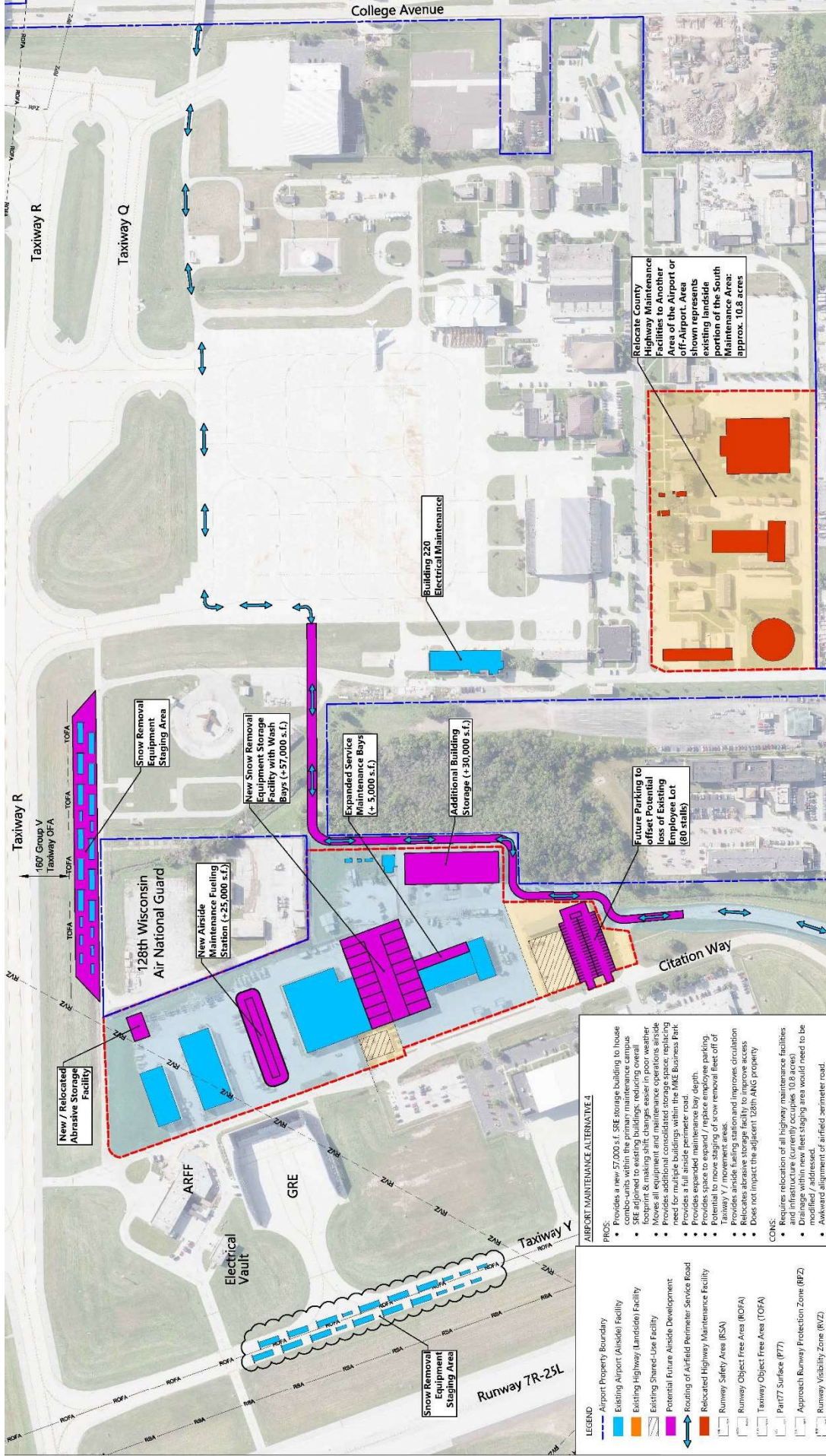
- Provides a new 27,000 s.f. SRE storage building to house combo units within the primary maintenance campus
- Provides a new 25,000 s.f. fueling station to replace existing footprint & making shift changes easier in poor weather
- Provides additional consolidated storage space, replacing need for multiple buildings within the MKE Business Park
- Provides a full airside perimeter road
- Provides space to expand / replace employee parking
- Potential to move staging of snow removal fleet off of Taxiway Y / movement areas
- Provides airside fueling station and improves circulation
- Relocates abrasive storage facility to improve access

CONS:

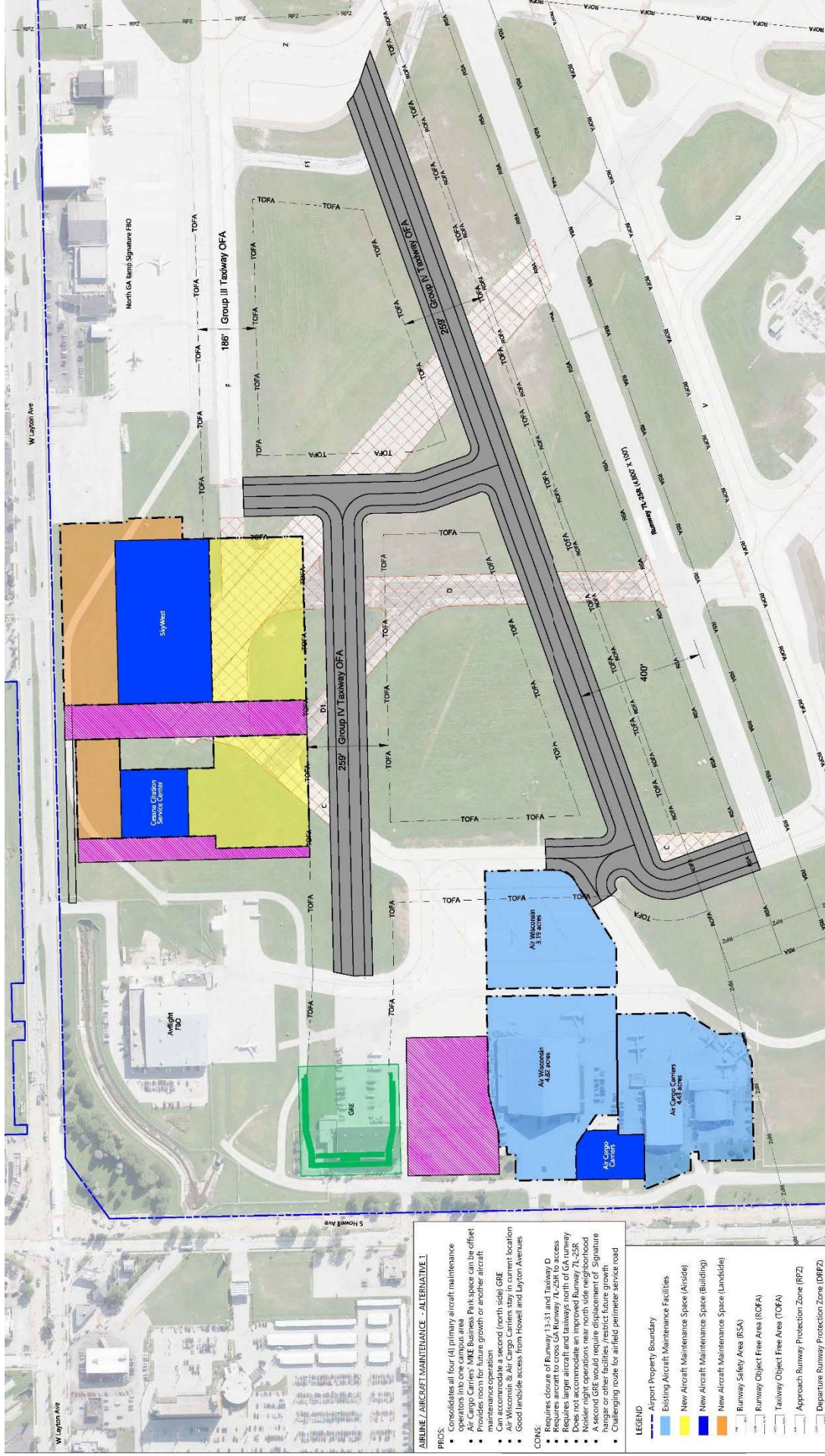
- Requires acquisition of 126th ANS property. Potential water spring and drainage concerns this area.
- Requires acquisition of 126th ANS property. Potential water spring and drainage concerns this area.
- Other storage buildings, features, highway lay-down area
- SIH requires airport maintenance equipment to leave secured area in order to access maintenance bays
- Awkward alignment of airfield perimeter road.

- LEGEND**
- Airport Property Boundary
 - Existing Airport (Airside) Facility
 - Existing Highway (Airside) Facility
 - Existing Shared-Use Facility
 - Potential Future Airside Development
 - Relocated Airfield Perimeter Service Road
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Taxiway Object Free Area (TOFA)
 - Part 77 Surface (P77)
 - Approach Runway Protection Zone (RPZ)
 - Runway Visibility Zone (RVZ)

Support Facilities Alternative 4



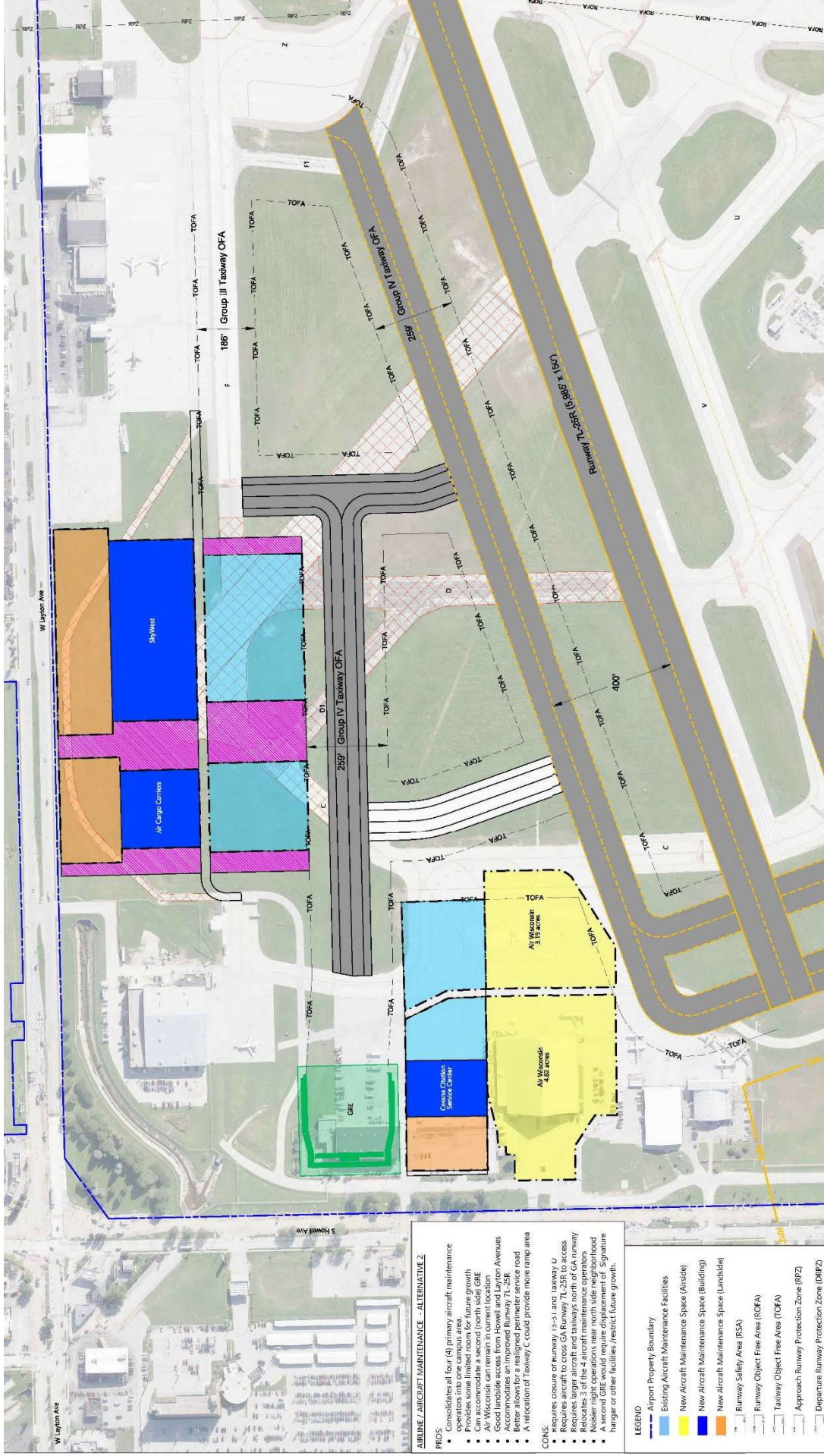
Aircraft Maintenance Alternative 1



- PROS:**
- Consolidates all four (4) primary aircraft maintenance operators into one campus area
 - Air Cargo Carriers' MKE Business Park space can be offset
 - Provides room for future growth or another aircraft
 - Can accommodate a second (north side) GRE
 - Air Wisconsin & Air Cargo Carriers stay in current location
 - Good landside access from Howell and Layton Avenues
- CONS:**
- Requires closure of Runway 13-31 and Taxiway D
 - Requires aircraft to cross GA Runway "A" to access
 - Requires larger aircraft and taxiways north of GA runway
 - Does not accommodate an improved Runway 20-26ed
 - A second GRE would require displacement of Signature hangar or other facilities / restrict future growth
 - Challenging route for airfield perimeter service road

- LEGEND**
- Airport Property Boundary
 - Existing Aircraft Maintenance Facilities
 - New Aircraft Maintenance Space (Aiside)
 - New Aircraft Maintenance Space (Building)
 - New Aircraft Maintenance Space (Landside)
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Taxiway Object Free Area (TOFA)
 - Approach Runway Protection Zone (RPSA)
 - Departure Runway Protection Zone (DRPZ)

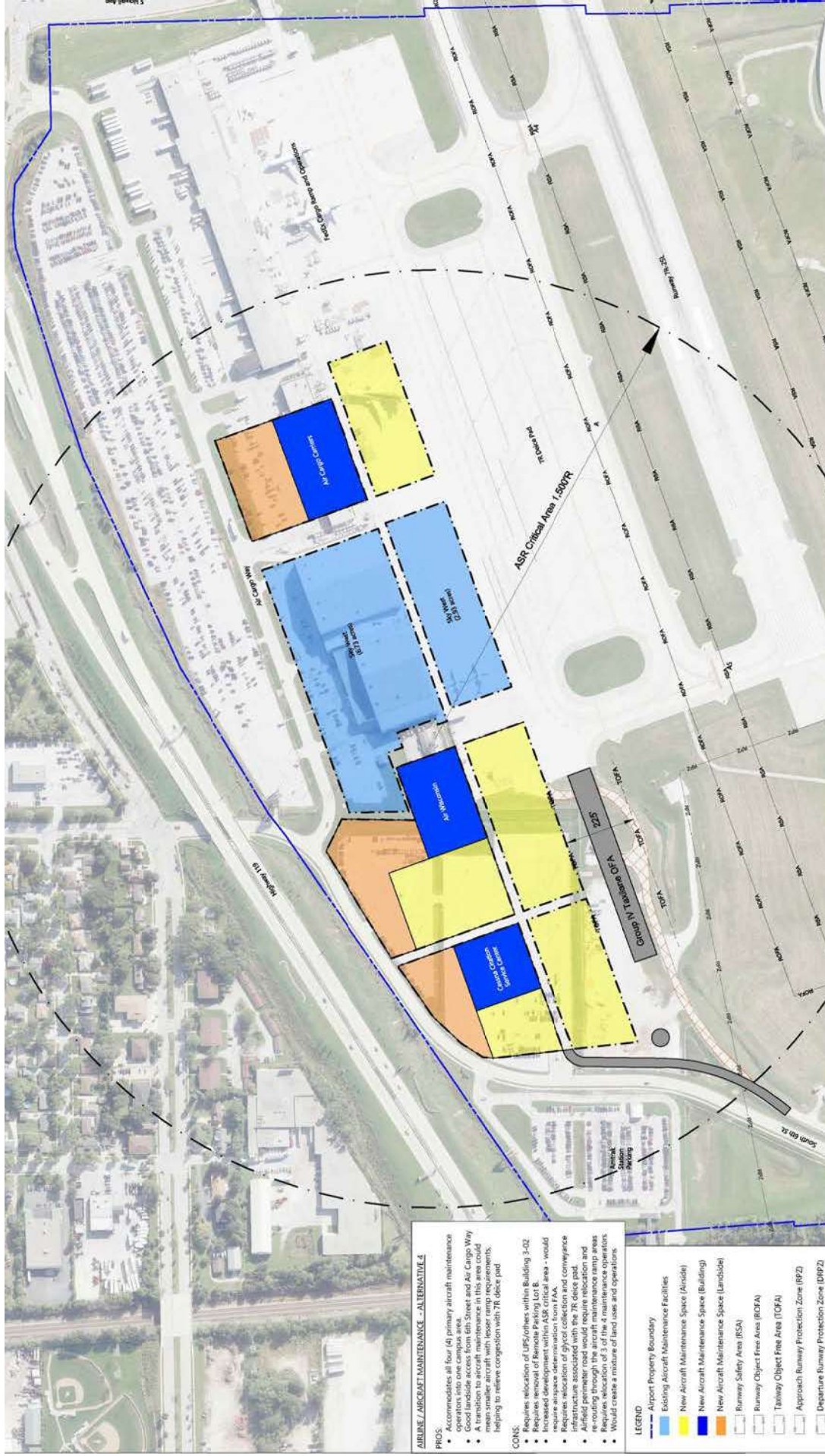
Aircraft Maintenance Alternative 2



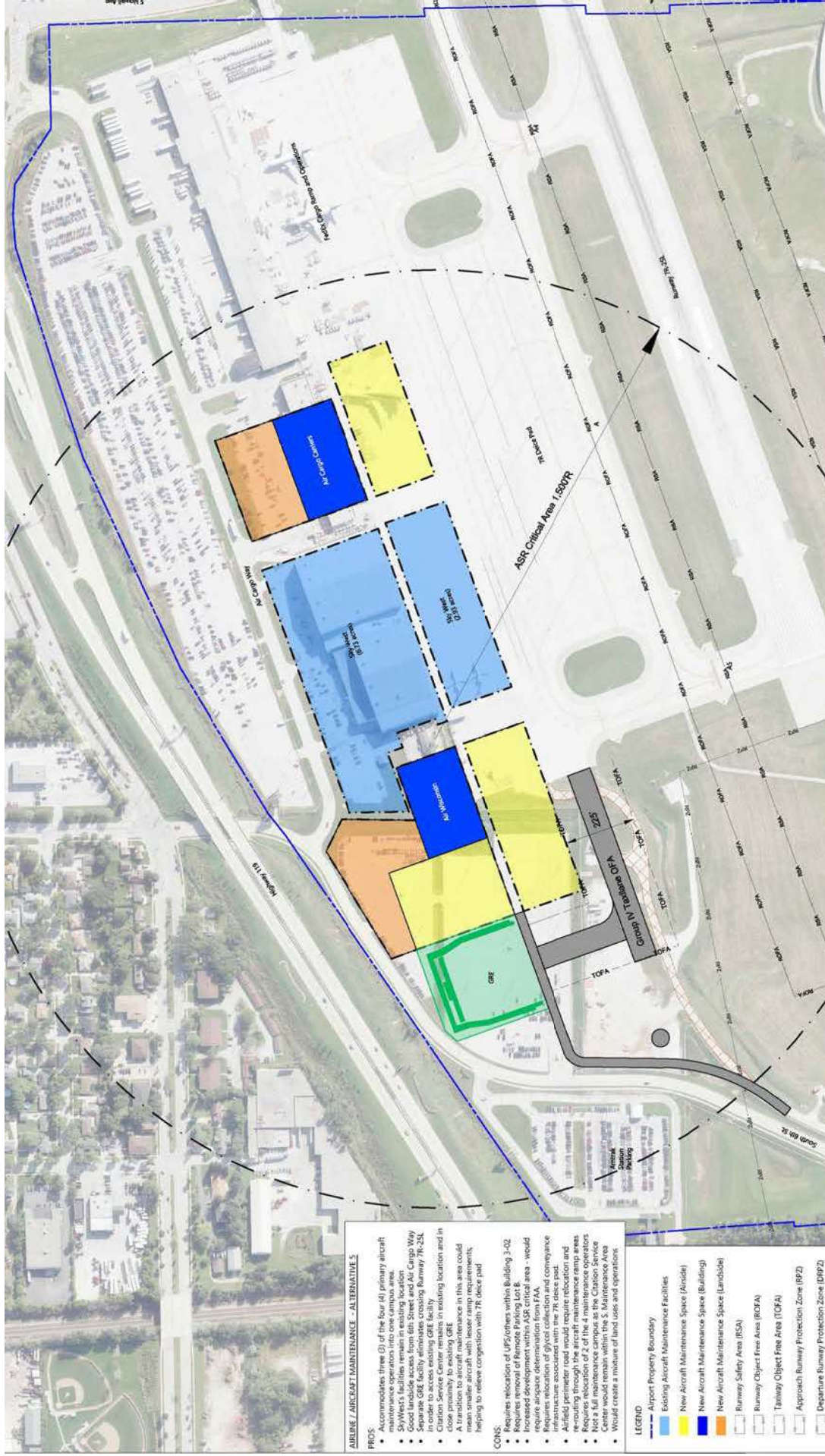
- PROS:**
- Consolidates all four (4) primary aircraft maintenance operators into one campus area.
 - Provides some limited room for future growth
 - Air Wisconsin a second (north side) GRE
 - Good landscape access from Howell and Layton Avenues
 - Accommodates an improved Runway 7L-25R
 - Better allows for a realigned perimeter service road
 - A relocation of Taxiway C could provide more ramp area
- CONS:**
- Requires closure of runway 13-31 and runway U
 - Requires aircraft to cross GA Runway 7L-25R to access taxiway
 - Relocates 3 of the 4 aircraft maintenance operators
 - Noisier night operations near north side neighborhood
 - A second GRE would require displacement of Signature hangar or other facilities/restrict future growth.

- LEGEND**
- Airport Property Boundary
 - Existing Aircraft Maintenance Facilities
 - New Aircraft Maintenance Space (Aiside)
 - New Aircraft Maintenance Space (Building)
 - New Aircraft Maintenance Space (Landside)
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Taxiway Object Free Area (TOFA)
 - Approach Runway Protection Zone (RPZ)
 - Departure Runway Protection Zone (DRPZ)

Aircraft Maintenance Alternative 4



Aircraft Maintenance Alternative 5



AIRLINE / AIRCRAFT MAINTENANCE - ALTERNATIVE 5

PROS:

- Accommodates three (3) of the four (4) primary aircraft
- SkyWest's facilities remain in existing location
- Good land-side access from 6th Street and Air Cargo Way
- Separate ORE facility eliminates crossing Runway 7R-25L
- In order to access existing ORE facility
- Close proximity to existing ORE in existing location and in
- A transition to aircraft maintenance in this area could mean smaller aircraft with lesser ramp requirements, helping to relieve congestion with 7R deice pad

CONS:

- Requires relocation of UPS/other's within Building 3-Q2
- Requires removal of Remote Parking Lot B
- Increased development density in this area - would require rezoning and re-evaluation from FAA
- Requires relocation of glycol collection and conveyance infrastructure associated with the 7R deice pad.
- Airfield perimeter road would require relocation and reworking along the perimeter of the new ramp areas
- Requiring relocation of 2 of the 4 maintenance areas
- Not a full maintenance campus as the Clanton Service Center would remain within the S. Maintenance Area
- Would create a mixture of land use and operations.

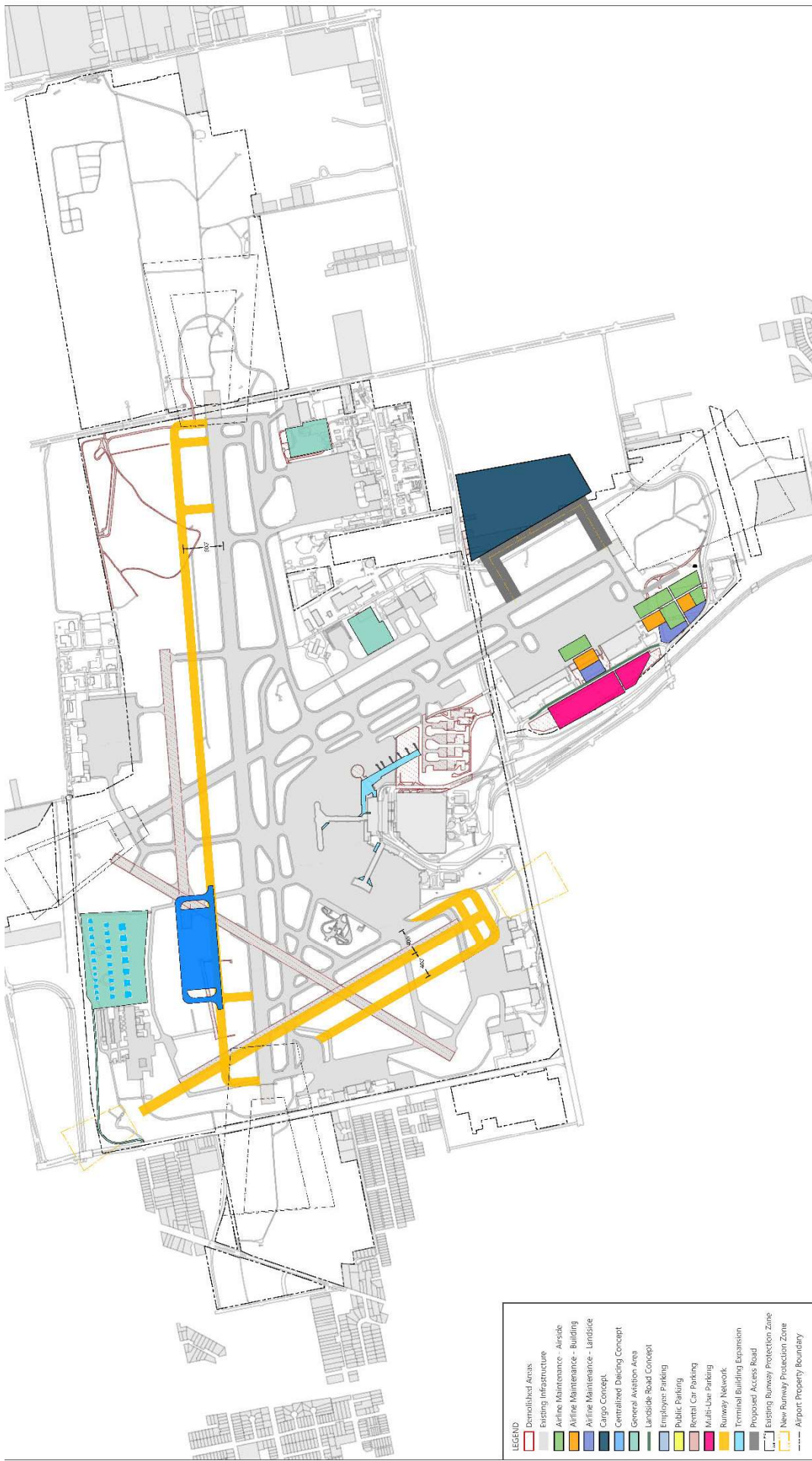
- LEGEND**
- Airport Property Boundary
 - Existing Aircraft Maintenance Facilities
 - New Aircraft Maintenance Space (Aside)
 - New Aircraft Maintenance Space (Building)
 - New Aircraft Maintenance Space (Landscape)
 - Runway Safety Area (RSA)
 - Runway Object Free Area (ROFA)
 - Taxiway Object Free Area (TOFA)
 - Approach Runway Protection Zone (RPZ)
 - Departure Runway Protection Zone (DRPZ)



Preliminary Integrated Alternatives



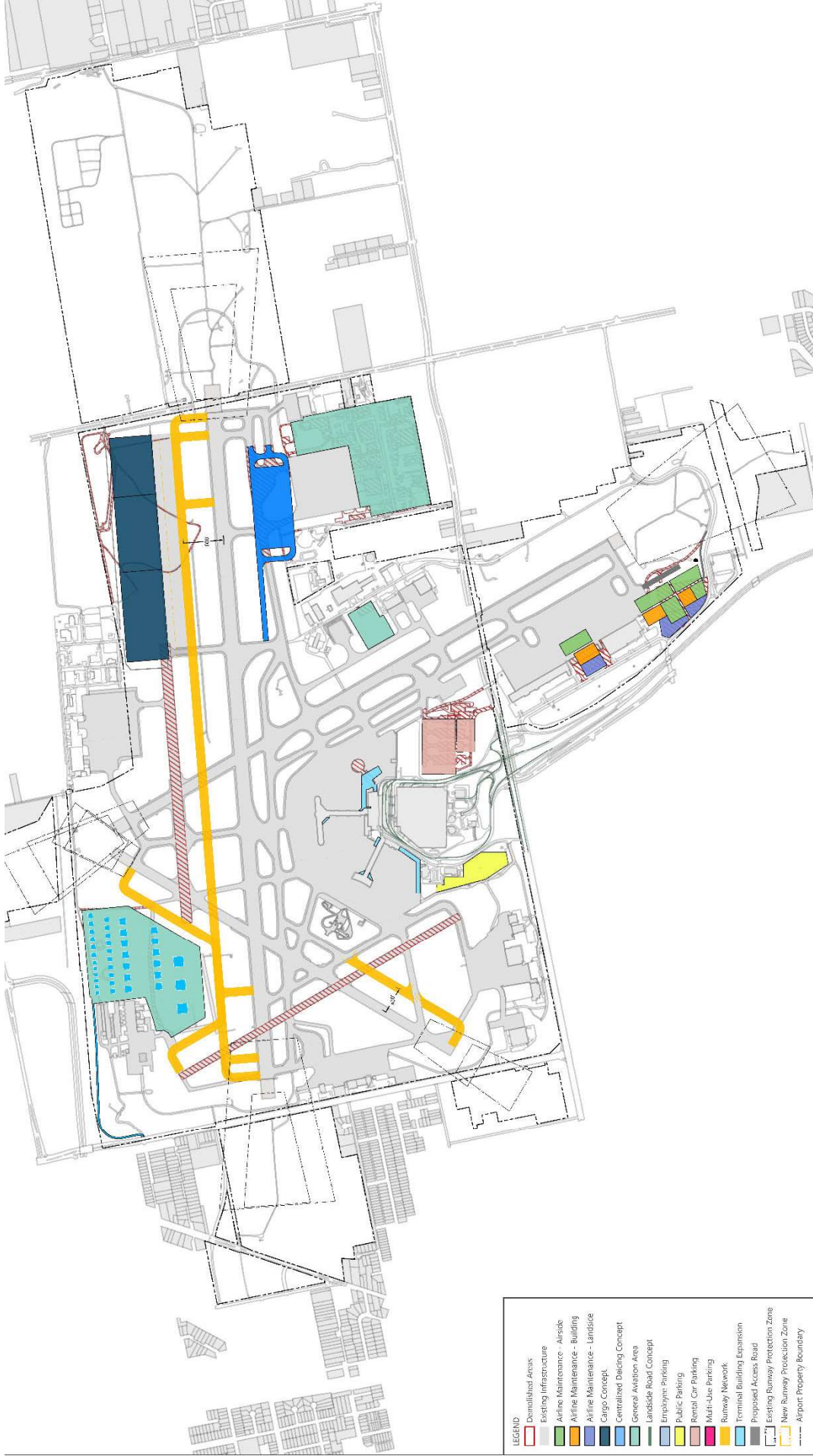
Integrated Alternative 1



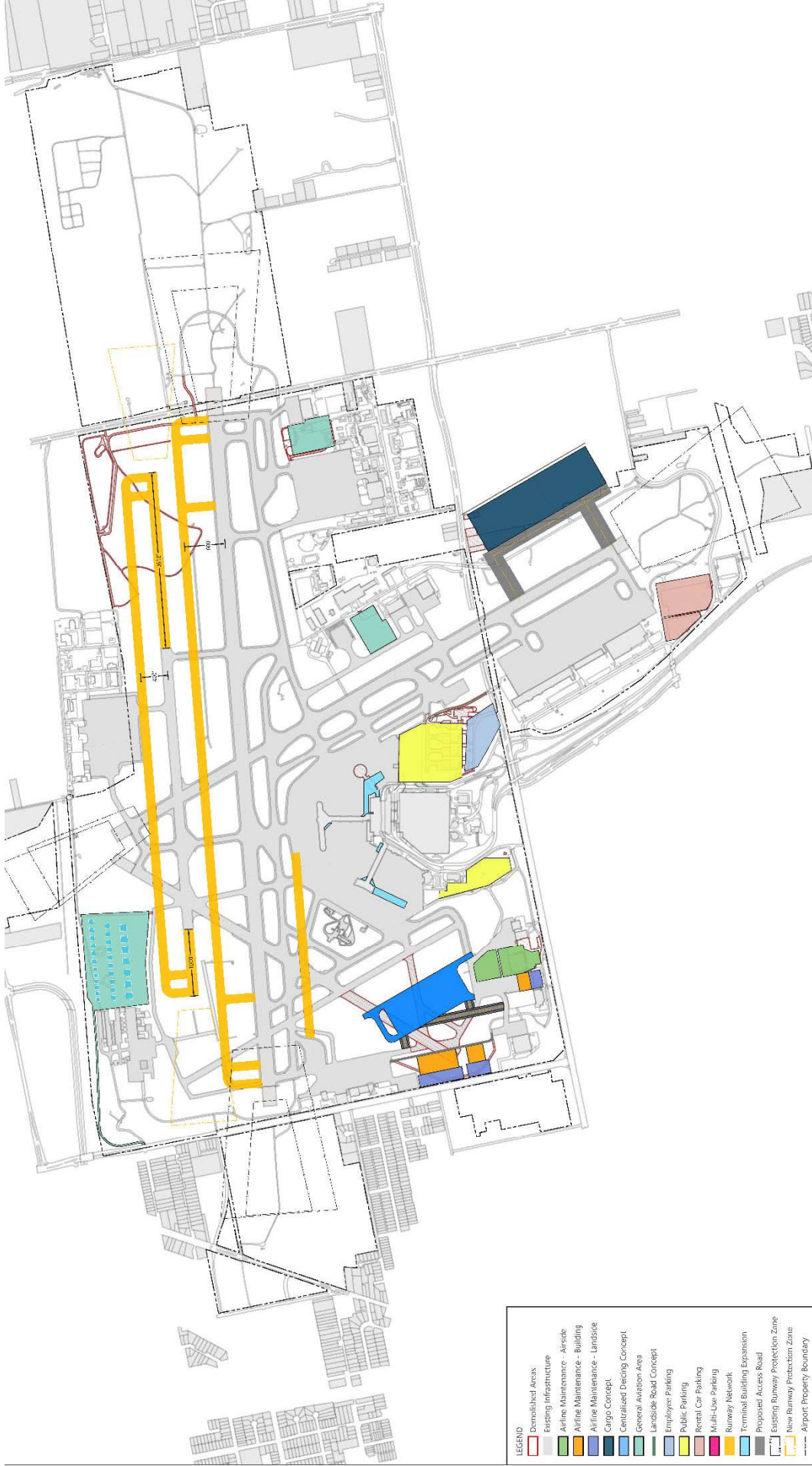
LEGEND

| | |
|---------------|---------------------------------|
| [Red outline] | Demolished Areas |
| [Red outline] | Existing Infrastructure |
| [Green] | Airline Maintenance - Airside |
| [Green] | Airline Maintenance - Building |
| [Blue] | Airline Maintenance - Landside |
| [Blue] | Cargo Concept |
| [Blue] | Centralized Dicing Concept |
| [Blue] | General Aviation Area |
| [Blue] | Landside Road Concept |
| [Blue] | Employee Parking |
| [Yellow] | Public Parking |
| [Yellow] | Rental Car Parking |
| [Yellow] | Multi-Use Parking |
| [Yellow] | Runway Network |
| [Orange] | Terminal Building Expansion |
| [Pink] | Proposed Access Road |
| [Dashed line] | Existing Runway Protection Zone |
| [Dashed line] | New Runway Protection Zone |
| [Dashed line] | Airport Property Boundary |

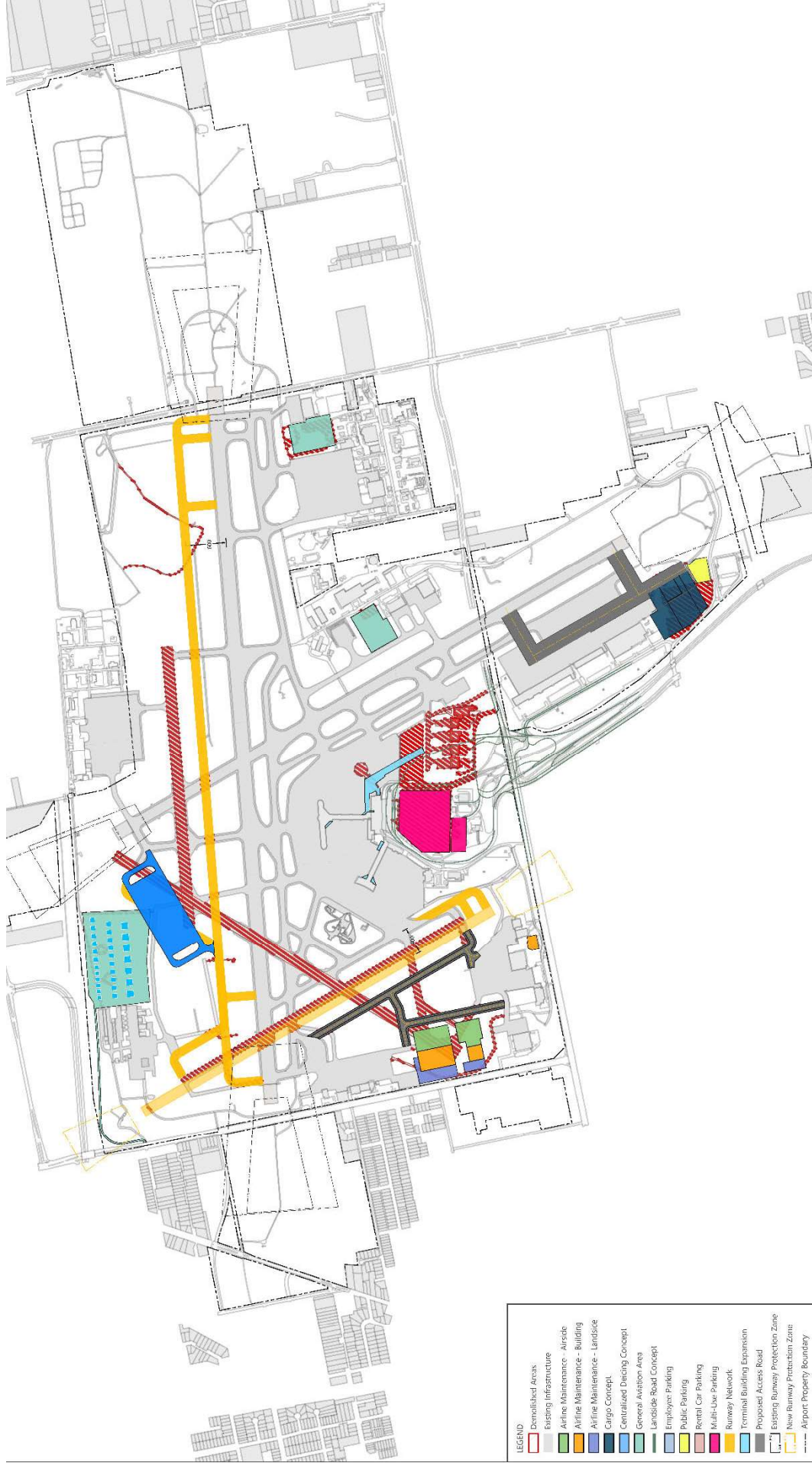
Integrated Alternative 2



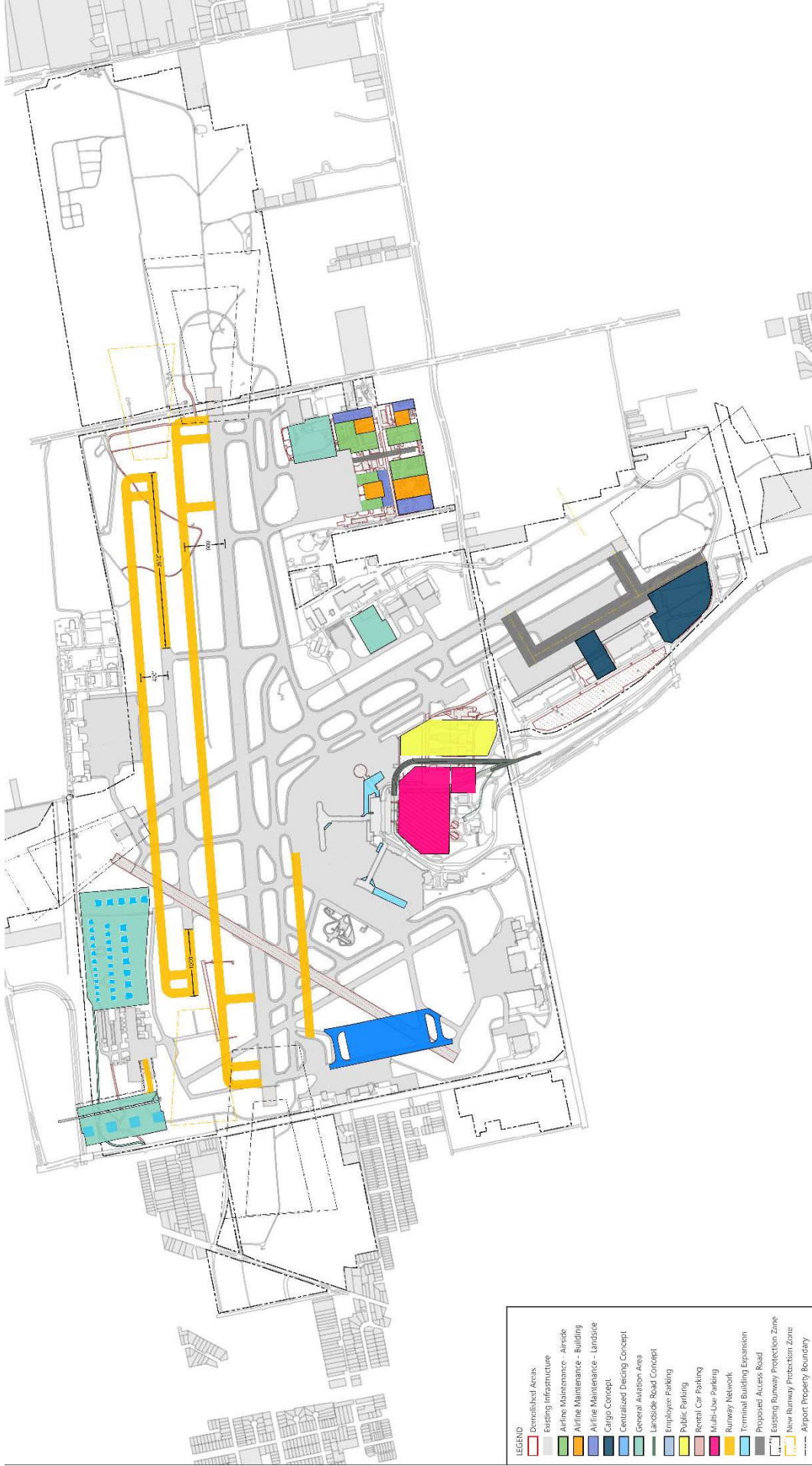
Integrated Alternative 3



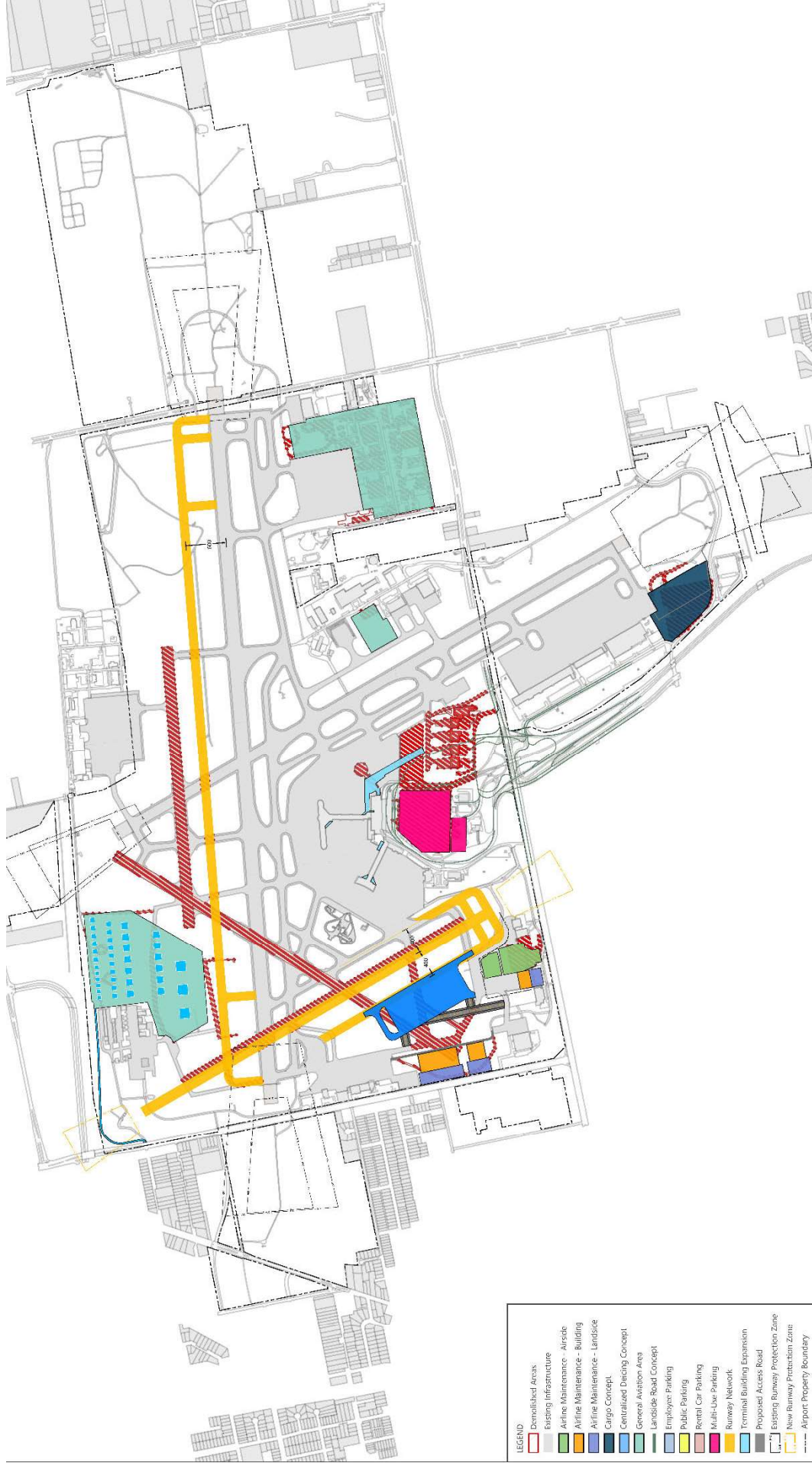
Integrated Alternative 4



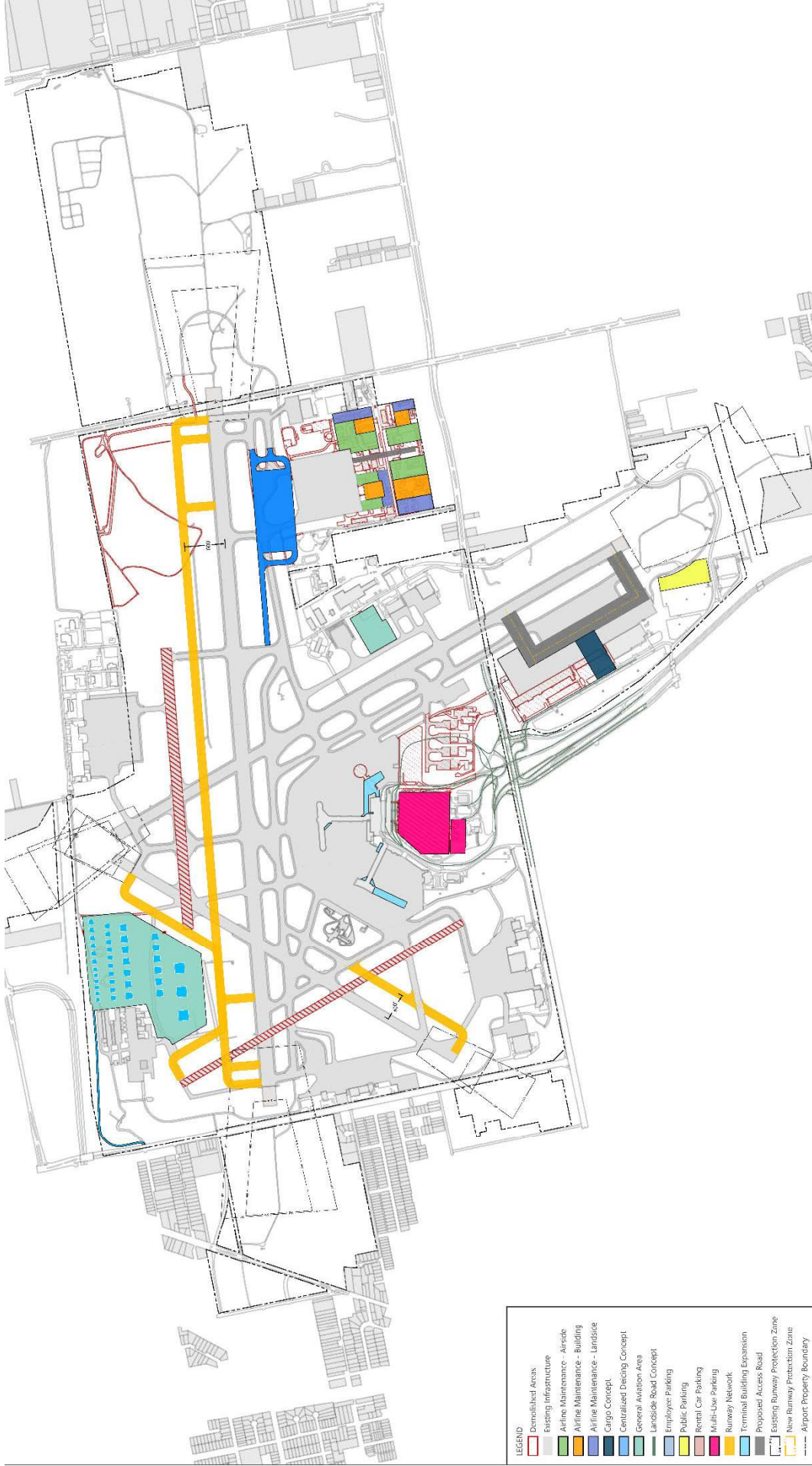
Integrated Alternative 5



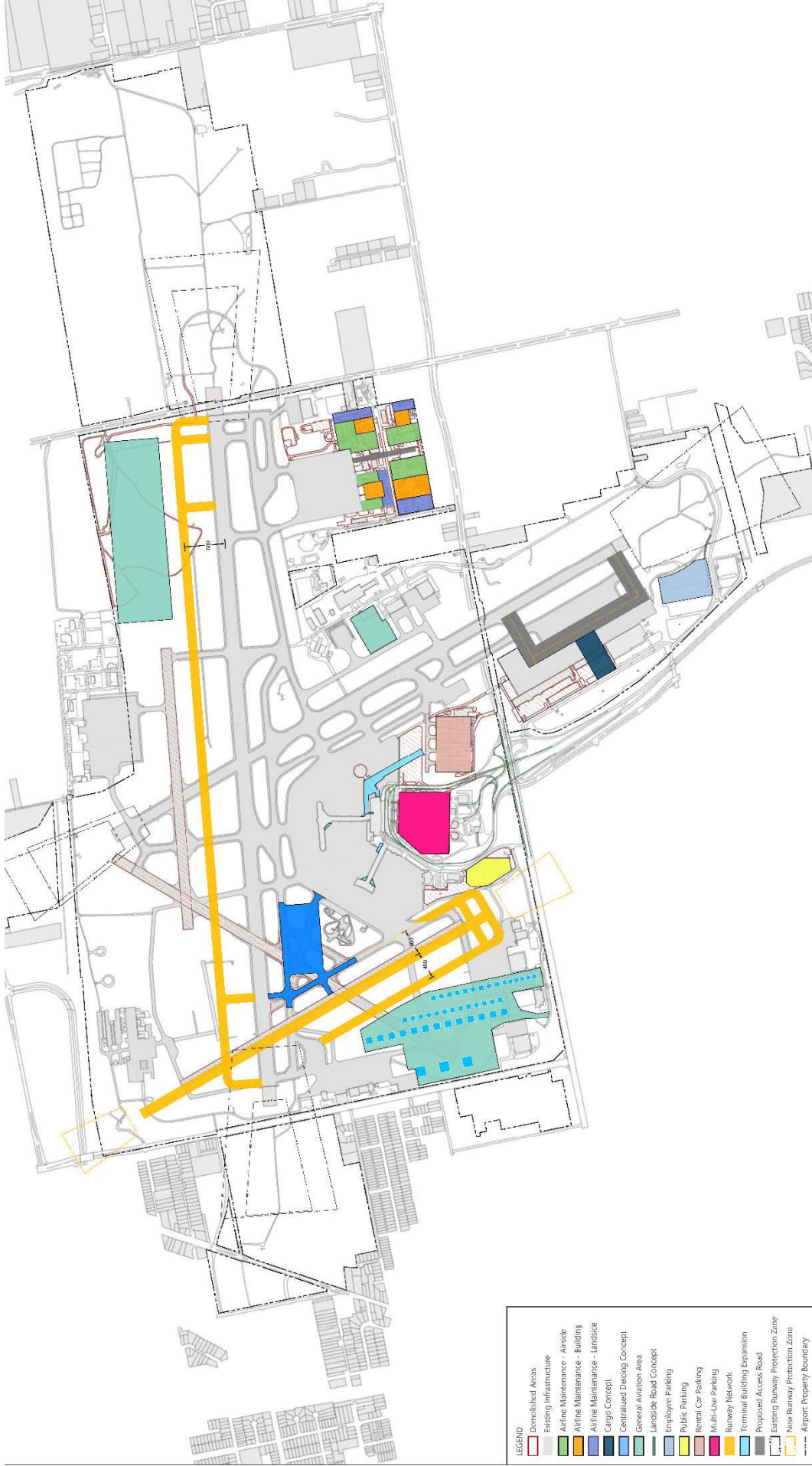
Integrated Alternative 6



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