



Terminal Planning Study

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PREPARED FOR
Town of Islip
Long Island MacArthur Airport

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1 Executive Summary

The Town of Islip (Town) and Long Island MacArthur Airport (ISP or the Airport) selected Landrum & Brown (L&B) to conduct the West Concourse Terminal Planning Study in 2019. The Town of Islip received Federal Aviation Administration (FAA) funding through the Airport Improvement Plan (AIP) to fund this study.

The Town of Islip is one of ten Suffolk County, Long Island towns. It is New York State's third largest town with a population of 340,000 and total area of 163.1 square miles, of which 105.3 square miles is land and 57.8 square miles (35.46%) water.

The intent of the study is to analyze the functionality of the existing west concourse (Concourse B), validate the forecast based on recent traffic trends at ISP and to define the terminal space requirements for current and future needs. This overall study includes the development of concourse replacement alternatives, an assessment of financial feasibility, and the development of an implementation plan for the proposed improvements.

The existing terminal facilities at ISP includes two concourses, the east concourse (Concourse A) and west Concourse B. Concourse A has 8-gates and was completed in 2004, funded by Southwest Airlines and is leased under contract by Southwest. The main terminal processor is a single level building with ticketing, baggage claim, and other support functions. There are significant deficiencies in the terminal, baggage claim, and Concourse B.

The cost for the Town to lease the Concourse A gates are prohibitive due to high per square foot rent cost imposed by Southwest Airlines. ISP determined that leasing Southwest gate positions was not a viable alternative to provide the additional gate capacity that will be required in the near-term. While Concourse A was not extensively studied as part of this project, it is apparent that significant maintenance will be necessary. Southwest has not made any significant investment to repair/replace or upgrade the building. When Concourse A exceeds its useful life (25 years) it will have a high repair or replacement cost for the Town.

Concourse B is a ground-level building with two jet bridges and was originally developed as prefabricated trailers that have exhausted its useful life. There is one ground-loaded aircraft position that is located near the central terminal building, known as the rotunda. Concourse B can support three simultaneous aircraft operations.

Concourse B provides an unacceptable Level of Service (LOS) due to insufficient holdroom, circulation space, and the lack of passenger amenities such as concession spaces. LOS is a measurement of the quality of service provided inside the terminal in terms of ease of flow, available space, and propensity for delays defined by the International Air Transport Association (IATA). Optimum LOS corresponds to an overall good level of service, where flows are stable, delay levels are acceptable, and a good level of comfort is provided in terms of square feet per passenger. This LOS metric is specifically developed for use in airport design and planning and is used to define spatial requirements and to measure performance.

Additionally, the walking distance from the Security Checkpoint is long and difficult due to multiple vertical transitions. This journey can be difficult for some passengers and lacks redundancy if there are maintenance issues with vertical conveyances. There are no backup or alternate elevators in the event that the elevator at this location fails. In order to provide an optimal LOS, Concourse B would need to be replaced with modern facilities that provide significantly more space.

Multiple alternatives were studied that include replacement of the west concourse (in the same location), an east concourse extension, and a new north terminal complex with direct connectivity to the Long Island Railroad (LIRR). Each alternative has a unique set of benefits and challenges that has been evaluated.

The benefits of a replacement terminal include providing a higher level of passenger service, providing facilities that meet current code, energy efficiency requirements, additional amenities for passengers, and connectivity to the LIRR at the Ronkonkoma Station. New gates will improve the passenger experience, accommodate future growth, and attract additional commercial service carriers, benefiting the Airport and the Town of Islip.

A series of alternatives were developed based on gate requirements and a terminal space program (TSP). Two separate facility programs were developed, the first is based on a 3-gate concourse extension with a new Customs and Border Protection (CBP) FIS/GAF (Federal Inspection Services/General Aviation Facility) and the second is a new North Terminal concept that would replace the existing terminal.

The development of alternatives occurred in two phases; the initial alternatives development phase focused mainly on the gate expansion at the existing terminal but included one placeholder option for the north terminal. The final alternatives development phase maintained the best west concourse expansion alternative and added two refined versions of the north terminal alternative.

Upon extensive stakeholder (including FAA) and public engagement, the Town of Islip and the majority of the stakeholders decided that a new greenfield terminal located on the north side of the airport provided the most long-term benefits for the Airport and Town. The selection of the North Terminal as a preferred concept meant that this project was no longer in alignment with the original FAA grant. This led to close the grant (West Concourse Terminal Narrative Study) and to proceed with a north terminal alternative. The eligible work that was produced as part of this West Concourse Terminal Narrative Study is included in this document.

The north terminal alternative continued forward with the development of a North Terminal site plan as well as floorplans, building sections, and passenger flows. An implementation plan was also developed that defined the phasing approach to construct the new North Terminal on the proposed greenfield site, which included the roadways, parking garages, surface parking lots, the new terminal, aircraft parking apron, taxilanes, and other supporting airside infrastructure.

A financial feasibility analysis followed and was conducted to assess the construction costs, the project timing and cash flow, funding sources, and operating expenses for the North Terminal. Due to the impact to the proposed greenfield site, the potential environmental requirements were studied in order

to define the regulatory setting, purpose and need, and assess various environmental impact categories.

Additionally, a high-level sustainability assessment was conducted in order to define what opportunities at the new site to implement suitability initiatives at the North Terminal, including strategies or methods to reduce energy consumption, reduce waste, and utilize renewable energy such as solar power.

Lastly, a reuse study of the south terminal area was conducted. The purpose of this task was to explore alternate uses for the south terminal site after operations are moved to the North Terminal. The effort identified reuses of the south site such as air cargo, advanced air mobility, and aircraft maintenance.

2 Existing Conditions Assessment

2.1 Concourse B Existing Conditions

The west concourse at ISP (Concourse B) is a ground-level building with two jet bridges. In addition to the two jet bridges, there is one ground-loaded aircraft position that is located near the central terminal building, known as the rotunda. Concourse B can support three simultaneous aircraft operations, including the ground-loaded position.

Built in 1990, Concourse B is constructed from a series of temporary prefabricated trailers that form the circulation spaces, holdrooms, restrooms, and other support facilities. The trailers were never intended nor were they designed to serve passengers for thirty years. Concourse B fails to meet the most basic passenger needs in terms of circulation, seating, amenities, and restrooms. This concourse also has substandard heating and cooling systems and has no generator in the event of power failure.

The concourse is far beyond its useful life, provides a sub-optimal LOS, and needs to be replaced. It has insufficient space and lacks the following customer experience amenities, including:

- Concessions or restaurants
- Retail shops
- Children's play area
- Computer and recharge stations
- Business center or lounge
- Service Animal Relief Area (SARA)
- Information Centers
- Wheelchair Storage
- Upgraded or consistent finishes with the remainder of the terminal

It should be noted that existing amenities in Concourse A cannot reasonably be shared with Concourse B due to long walking distances and level changes.

The existing terminal facilities lack modern airport infrastructure and technology. ISP has limited ability to grow, meet customer expectations, and provide safe terminal and airfield infrastructure. The items listed below are currently lacking and could be implemented in a new north terminal:

- LIRR multimodal connection in proximity to the existing terminal
- Inline baggage connection and associated safety benefits
- FIS/GAF facilities
- State-of-the-art deicing and reclamation

- Sustainability and environmental advantages due to reduced vehicle emissions with direct access to the Ronkonkoma Station (e.g., no shuttles required and ability to access the terminal directly from the station; reducing the need for vehicles).

2.2 Concourse B Gate Positions

There are three gate positions at Concourse B, including B15 (ground loaded), B19 (jet bridge), and B23 (jet bridge). Concourse B is common use, but the gates are typically operated by Frontier Airlines. Additionally, this concourse does not allow for expansion of aircraft parking positions; this means a replacement concourse would be needed to accommodate new gate positions.

Gates B19 and B23 can handle independent A321 operations from an aircraft gate perspective, however, the holdrooms are crowded and provide a low level of service. This crowding issue occurs on a regular basis, when two A321 aircraft, with a seating capacity of up to 185 passengers (at a 90% load factor), are deplaning simultaneously. The holdroom size was not designed to accommodate this number of passengers.

The B23 jet bridge was included as part of the original construction of Concourse B in 1990 and the B19 jet bridge was added later in 2012. The B19 bridge cannot accommodate a Group II aircraft, including ERJs and some E190/195s, limiting operational flexibility. The preconditioned air (PCA) only connects to the aircraft and there is no diverter to switch airflow from the aircraft to the passenger boarding bridge, which negatively impacts passenger comfort.

The existing boarding bridges at Concourse B, shown in **Exhibit 2.2-1, Jet Bridge**, are steep, and the path from the ground level to the aircraft sill is difficult for passengers to traverse, providing a poor LOS. These boarding bridges are outdated and consistently delay the deplaning of aircraft. Due to the sloped configuration toward the ground level concourse building, rainwater intrusion is also a constant maintenance issue.

EXHIBIT 2.2-1 JET BRIDGE



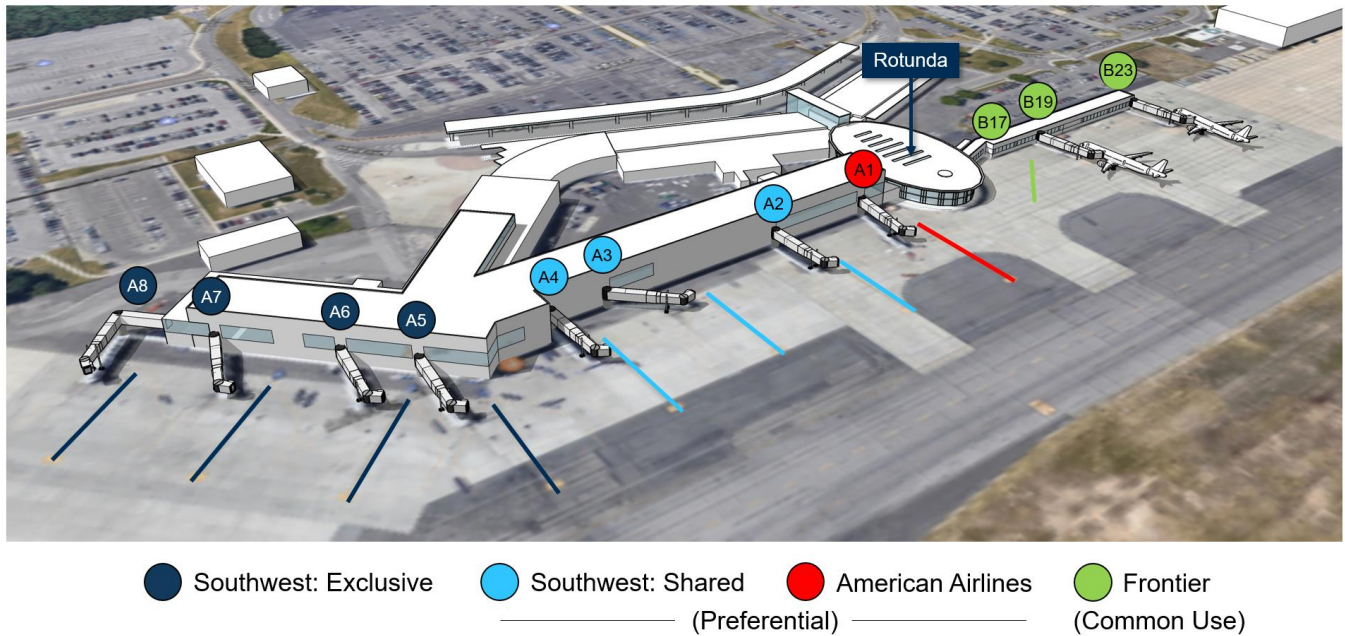
Source: Landrum & Brown Team analysis, 2019

2.3 Concourse A Gate Positions

Concourse A has eight gate positions, shown in **Exhibit 2.3-1, Gate Layout**. Gates A1 – A4 are operated by Southwest and A5 – A8 are exclusive Southwest gates. With the exception of Gate A1, the Concourse A gate positions are designed to accommodate A321 aircraft. Gate A1 was modified to accommodate an ERJ aircraft but could be configured back to an A321 position.

Southwest built Concourse A with their own funding and signed a 25-year lease with the Town of Islip in 2004. This arrangement prevents other carriers from expanding at ISP affordably. When the Southwest lease ends in 2029, Concourse A will transfer ownership to the Town of Islip.

EXHIBIT 2.3-1 GATE LAYOUT

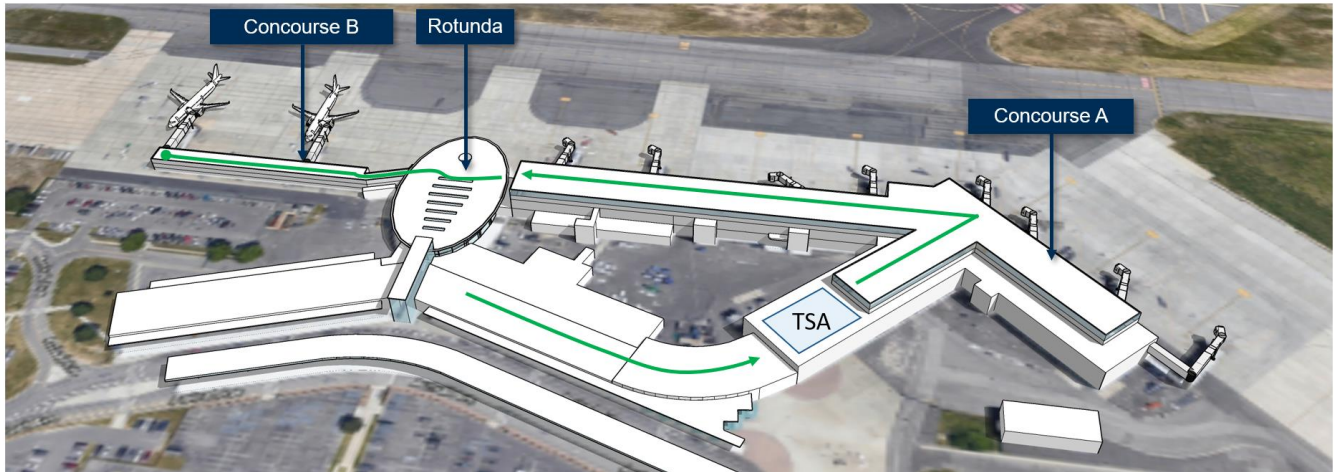


Source: Landrum & Brown Team analysis, 2019

2.4 Concourse B Passenger Flows

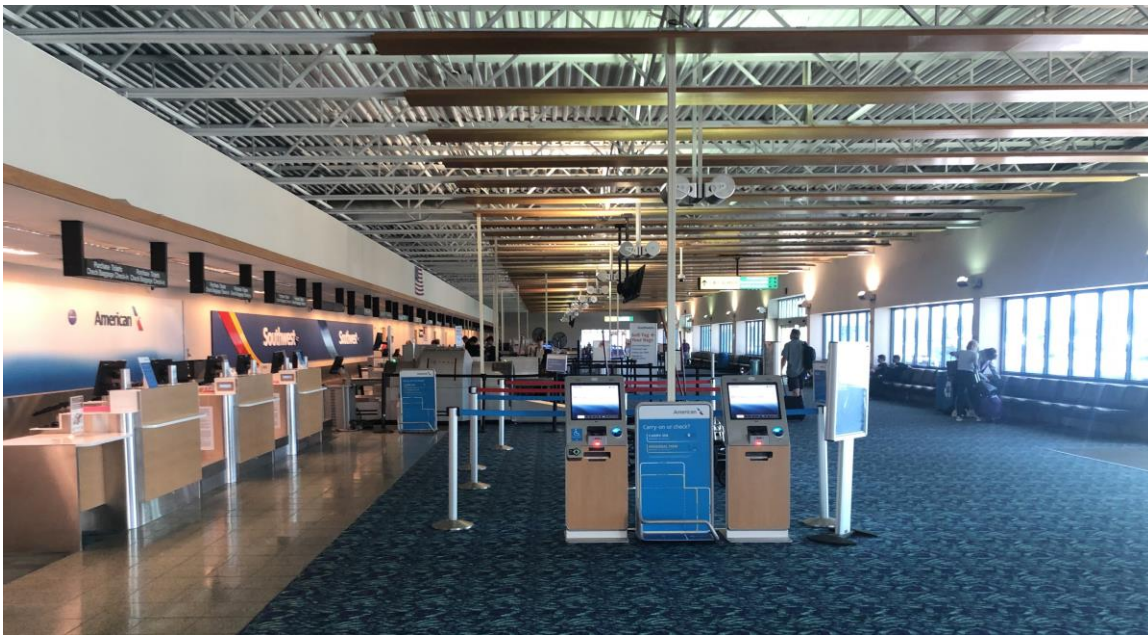
Concourse B has the furthest walking distance from the curb of any gates at ISP. **Exhibit 2.4-1, *Flow and Concourse Location Map*** shows the flow of passengers to Concourse B. Passengers walk from the ticketing area, process through the security checkpoint, escalate up into Concourse A, walk to and escalate down into the rotunda, and then walk up to Concourse B via a ramp. The multiple vertical movements to Concourse B make it difficult for passengers and the lack of elevator redundancy is an issue. If the elevator at this location fails, there is no alternate elevator to use to transport passenger down to Concourse B. The photos of these areas are shown in **Exhibits 2.4-2 through 2.4-6**.

EXHIBIT 2.4-1 FLOW AND CONCOURSE LOCATION MAP



Source: Landrum & Brown, 2019

EXHIBIT 2.4-2 TICKETING



Source: Landrum & Brown, 2019

EXHIBIT 2.4-3 ESCALATORS FROM CHECKPOINT



Source: Landrum & Brown, 2019

EXHIBIT 2.4-4 ESCALATORS FROM CONCOURSE A



Source: Landrum & Brown, 2019

EXHIBIT 2.4-5 ELEVATOR FROM CONCOURSE A



Source: Landrum & Brown, 2019

EXHIBIT 2.4-6 RAMP TO CONCOURSE B



Source: Landrum & Brown, 2019

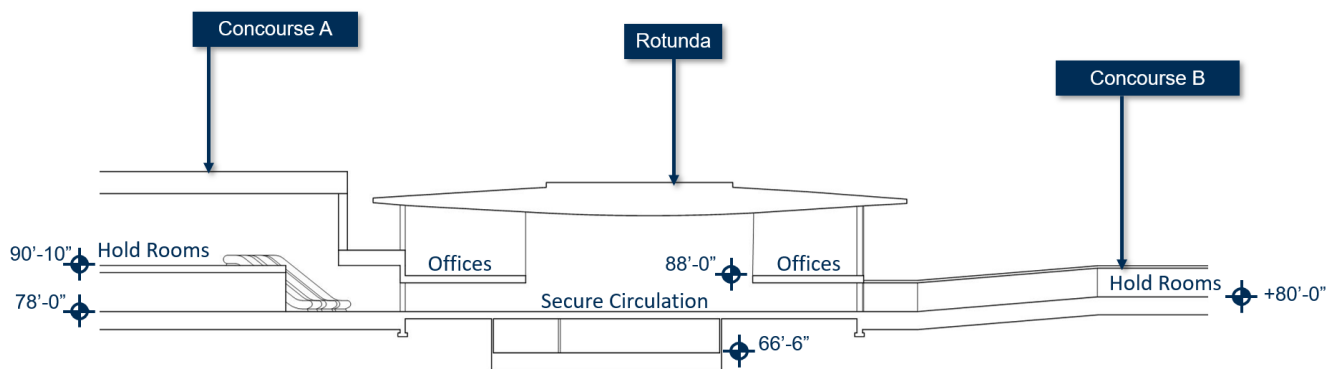
Wayfinding to Concourse B is not intuitive, which is partially due to the relocation of the security checkpoint from its former location in the central rotunda to the current Concourse A facility. As a result, Concourse B passengers must circulate through Concourse A and the rotunda to reach their gates.

ISP has received passenger complaints related to walking distance (horizontal and vertical) to Concourse B. There are three vertical transitions and the distance from the terminal entry to the furthest Concourse B gate is approximately 1,800 feet or a 7.2-minute walk based on a walk-speed of 250 feet/minute.

Golf cart usage has been discussed, however this will be difficult due to a lack of circulation width in Concourse B. There are no moving walkways at ISP. An industry rule of thumb regarding walk distance is that if the distance is more than 1,000 feet then some form of mechanical assistance should be provided.

There is also a lack of elevator redundancy down from Concourse A. This means that, in the event of an escalator failure, there is not enough capacity to transport passengers to and from Concourse A. When the elevator is down, passengers must circulate through the exterior courtyard to Concourse B from the checkpoint, which is a poor customer experience and is problematic during inclement weather. **Exhibit 2.4-6, Concourse Section**, shows the elevation changes from Concourse A to the rotunda, where there is a set of escalators and an elevator (not shown). There is a ramp that transitions up from the rotunda and into Concourse B.

EXHIBIT 2.4-6 CONOURSE SECTION



Source: Landrum & Brown, 2019

2.5 Central Terminal (Rotunda)

The Central Terminal (rotunda), located between Concourse A and Concourse B, is primarily used as a pass through or transitional space for secure passengers and is not a historically protected building. At the center of the rotunda is an exit lane and on the non-secure side there is open space that is utilized for airport events, shown in **Exhibit 2.5-1, Exit Lane**.

A security checkpoint was located in the central rotunda event area prior to the development of Concourse A. The relocation of the checkpoint to Concourse A increased the walking distance for Concourse B passengers. It was determined in past studies that the existing central rotunda does not have sufficient width to support modern TSA equipment.

Town of Islip administration offices and other support spaces are located on the upper level of the rotunda and a CBP General Aviation Facility (GAF) for General Aviation (GA) passengers is located on the ramp level. This GAF is not in an ideal location (and not properly sized per CBP standards) and should be relocated to eliminate mixed uses with commercial service operations. The rotunda building cannot meet the requirements for a FIS or GAF facility due to limited square footage and ceiling heights. Additionally, due to layout and limited usable space in the rotunda, it was difficult to comply with and meet CBP specifications. There are no other spaces within the existing terminal or concourse that can support an FIS/GAF.

Other areas of the rotunda on the ramp level and upper level are vacant (shown in **Exhibit 2.5-2, Vacant Spaces**), including vacated concession spaces. Once Concourse A was constructed and the associated security area activated, most passengers bypassed the rotunda, eliminating the financial viability of concession spaces in the rotunda.

The only passenger amenity located in the rotunda area are vending machines, shown in **Exhibit 2.5-3, Rotunda Vending**. Due to different floor elevations, the rotunda is also not well integrated into the existing concourse facilities, requiring vertical circulation via ramps and escalators to Concourse A and B.

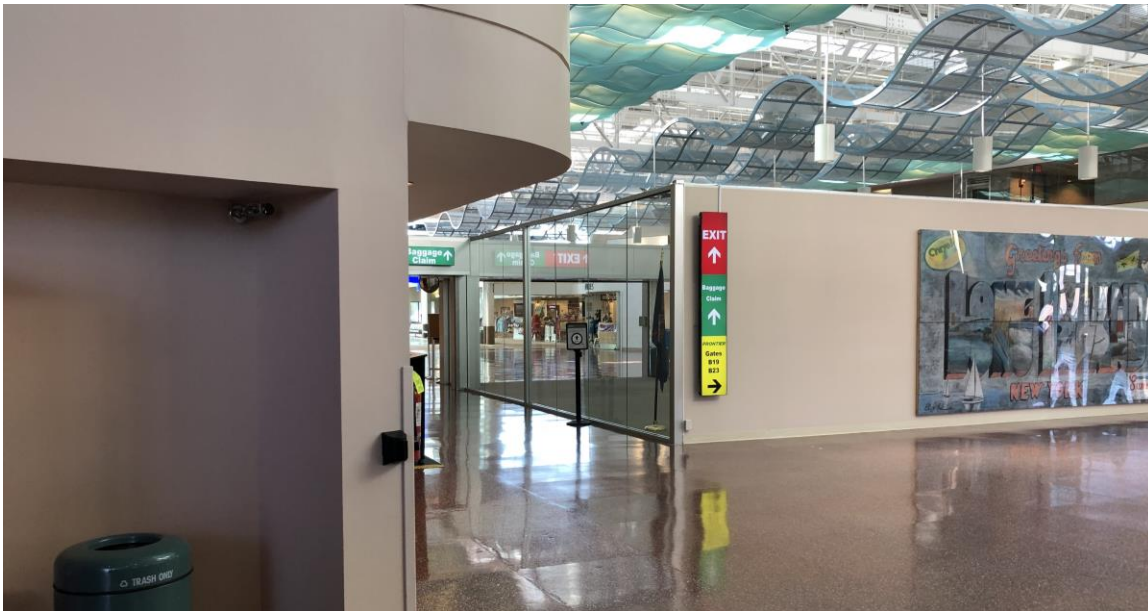
The rotunda is obsolete and no longer operates as a node of passenger activity due to the construction of Concourse A and the relocation of concessions activity and security checkpoint that originally operated in the central rotunda.

Additionally, there are mechanical systems in the basement of the rotunda that require upgrades, as well as costly maintenance upgrades within the central rotunda area, including a roof replacement. The structural system and floor elevations also complicate the potential for a simplified expansion of Concourse B. The high costs of these improvements supported the decision to replace the rotunda being selected as the preferred approach.

An additional constraint of the existing building is the lack of an inline baggage handling system (BHS) that would accommodate proper screening of baggage per TSA standards. Currently, each airline has screening equipment in the ticketing hall which obstructs the view to ticket counters and reduces the amount of available ticketing positions. Baggage is then carried to the back of house – outbound area. Overall, the process is not efficient and not conducive to the Airport's future growth.

The lack of an inline BHS is a significant deficiency that limits the potential growth of aviation activity at ISP. An inline BHS is needed to increase capacity, improve safety, and more efficiently screen checked baggage. Without an inline BHS ISP may not be able to accommodate new carriers or increase passenger activity. Building a new inline BHS at the existing terminal would be costly and there is limited available space at the terminal processor.

EXHIBIT 2.5-1 EXIT LANE



Source: Landrum & Brown, 2019

EXHIBIT 2.5-2 VACANT SPACES



Source: Landrum & Brown, 2019

EXHIBIT 2.5-3 ROTUNDA VENDING



Source: Landrum & Brown, 2019

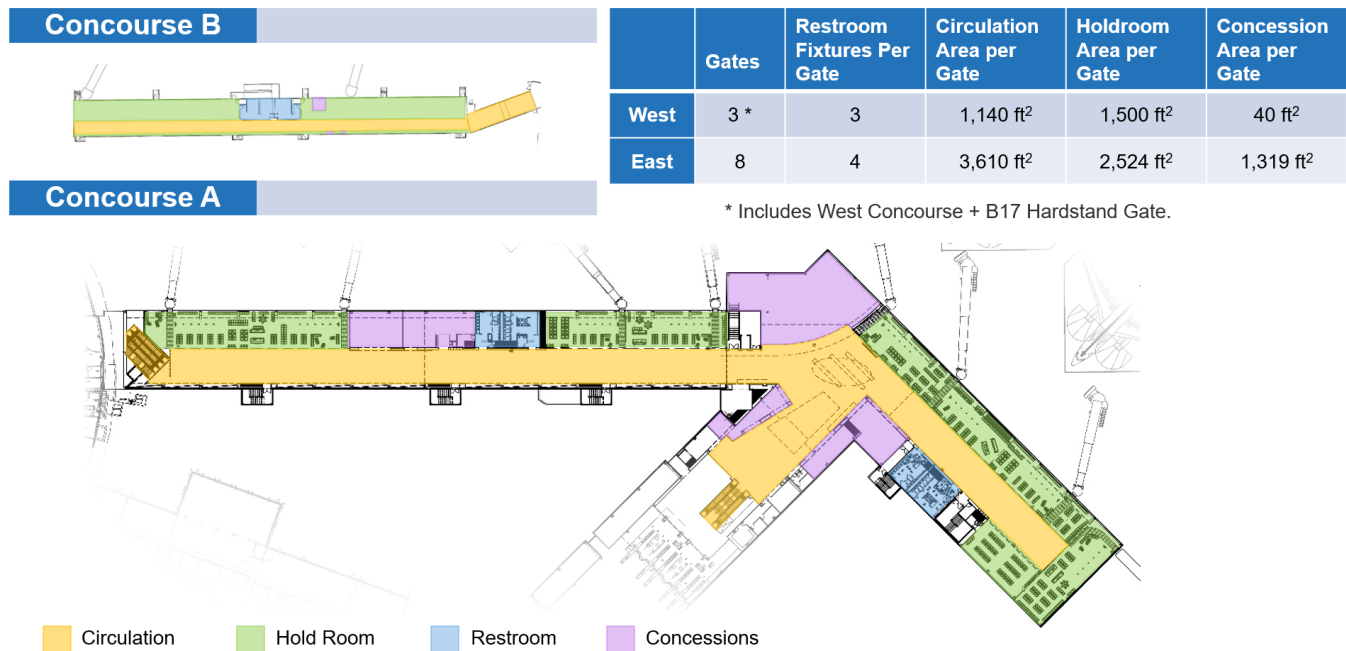
2.6 Concourse B Space Deficiency Overview

Concourse B, constructed in 1990, is an apron level, one story facility and is constructed from prefabricated trailers. It has been determined that this building is beyond its useful lifespan and does not provide an acceptable customer experience.

The primary challenge with Concourse B is poor LOS due to insufficient holdroom and circulation space. The concourse also lacks passenger amenities, including concession spaces. **Exhibit 2.6-1, Concourse Area Comparison** shows on a per gate basis that Concourse B has significantly less space than Concourse A.

The purpose of this comparison is to provide a reference point and to demonstrate the space deficiency of Concourse B. Concourse B has virtually no concession space other than vending, the holdrooms are 40% smaller than Concourse A, and concourse circulation areas are over 68% smaller.

EXHIBIT 2.6-1 CONCURSE AREA COMPARISON



Source: Landrum & Brown, 2019

The overall depth of the holdrooms and circulation corridor are less than half of Concourse A, as shown in **Exhibit 2.6-2, Concourse Depth Comparison**.

The LOS issues on Concourse B is in part caused by airline up-gauging to larger aircraft, which are serving ISP. The larger Airbus A321 has a higher seating capacity than the aircraft that Concourse B was originally designed for. This causes sub-optimal LOS issues in Concourse B.

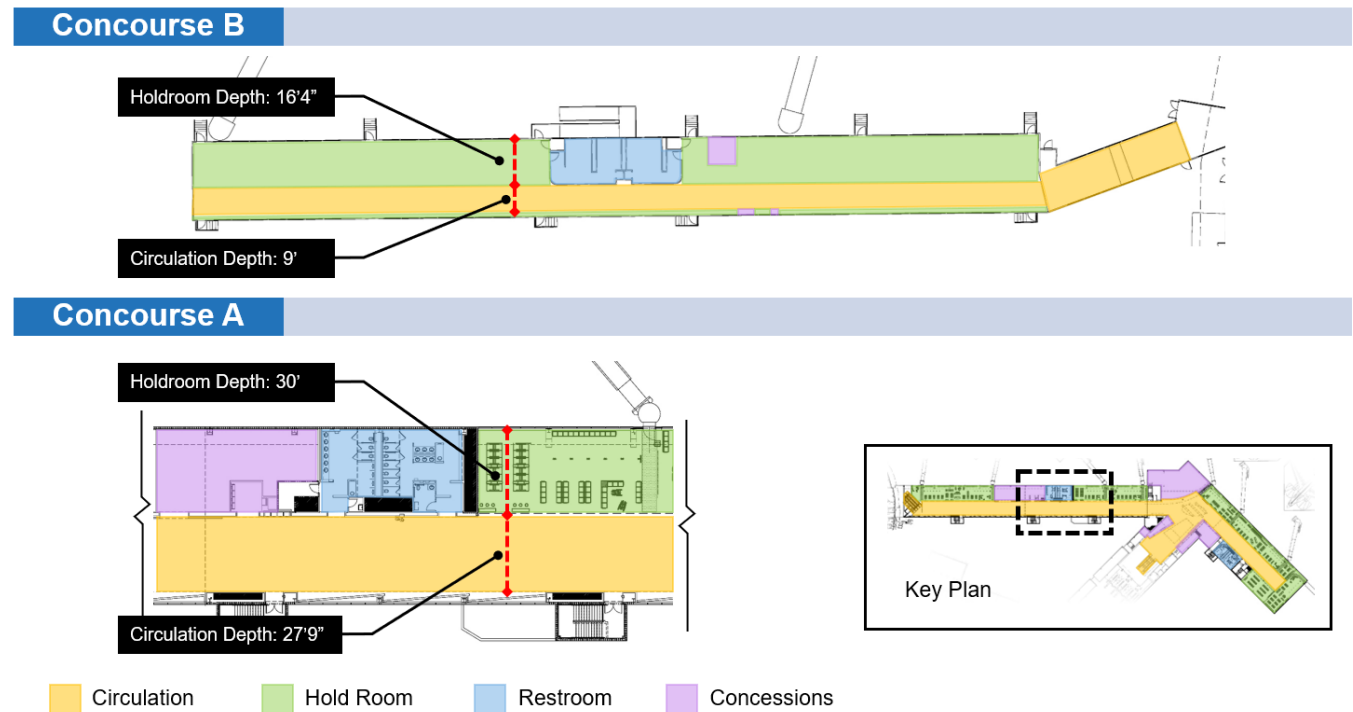
During peak times, there are often two A321 aircraft simultaneously unloading the inbound arriving passengers, meanwhile the outbound departing passengers are dwelling in the Concourse B holdrooms. Concourse B has insufficient space to accommodate these passenger volumes during concurrent gate operations.

In order to provide an optimal LOS, Concourse B would need to be replaced with modernized facilities that provide sufficient circulation and holdroom space, along with improved restrooms, concession spaces, and other terminal support functions.

The new concourse would also require two levels, including international arrivals at the apron level and departures at the upper level, to resolve issues with jet bridge loading, aircraft compatibility, and accommodating commercial international arrivals.

Exhibits 2.6-3 and **2.6-4** show existing holdroom and vending areas in Concourse B. To provide additional seating capacity, seats have been placed along the back wall, further reducing the effective concourse circulation width. Concourse B has vending as well as an abandoned “pop-up” concession vendor.

EXHIBIT 2.6-2 CONCOURSE DEPTH COMPARISON



Source: Landrum & Brown, 2019

By comparison, **Exhibits 2.6-5** and **2.6-6** show the larger holdrooms, circulation spaces, and concessions within Concourse A. Concourse A was constructed 14 years after Concourse B and was designed based on modern airport planning standards for narrowbody aircraft. Concourse A is nearing its end of useful life and there is no planned reinvestment in the building and the maintenance systems that routinely fail. There are also no adequate elevators in Concourses A or B, for when there is an escalator failure.

Concourse A has ample circulation space that was designed for bi-directional passenger flow, the circulation area is also large enough to accommodate passenger queues and exit paths during the gate boarding and deplaning process. This ensures that the circulation areas are never obstructed.

The high ceilings and visual sight lines improve passenger wayfinding through Concourse A. The open layout of Concourse A also provides visibility to gate number and other signage throughout the concourse, improving passenger LOS.

The holdrooms in Concourse A have a minimum depth of 30 feet. These holdrooms were designed to accommodate larger narrowbody aircraft and ensure that there is sufficient space for both seating and standing passengers. The seats in Concourse A also provide outlets for charging electronic devices.

Concourse A has a concession node that includes a sit-down restaurant, fast food, coffee, and news & gifts. While Concourse B passengers must pass through these concessions, none of these amenities

are in proximity to the Concourse B gates and therefore many Concourse B passengers likely do not stop, which reduces the potential revenue generation from the outlets.

EXHIBIT 2.6-3 CONCURSE B HOLDROOMS



Source: Landrum & Brown, 2019

EXHIBIT 2.6-4 CONCURSE B VENDING



Source: Landrum & Brown, 2019

EXHIBIT 2.6-5 CONCOURSE A HOLDROOMS



Source: Landrum & Brown, 2019

EXHIBIT 2.6-6 CONCOURSE A CONCESSIONS



Source: Landrum & Brown, 2019

2.7 Terminal Site Constraints

ISP has site constraints that limit the airports ability for long-term gate expansion, shown in **Exhibit 2.7-1, Site Constraints**. On the west end of the terminal, the gate expansion constraint is the existing Modern Aviation Fixed-Base Operator (FBO) hangar and parking area. Therefore, extending the terminal further west would require the relocation of the FBO. Due to these site contract, replacing and extending Concourse B has limited ability to support long-term gate expansion.

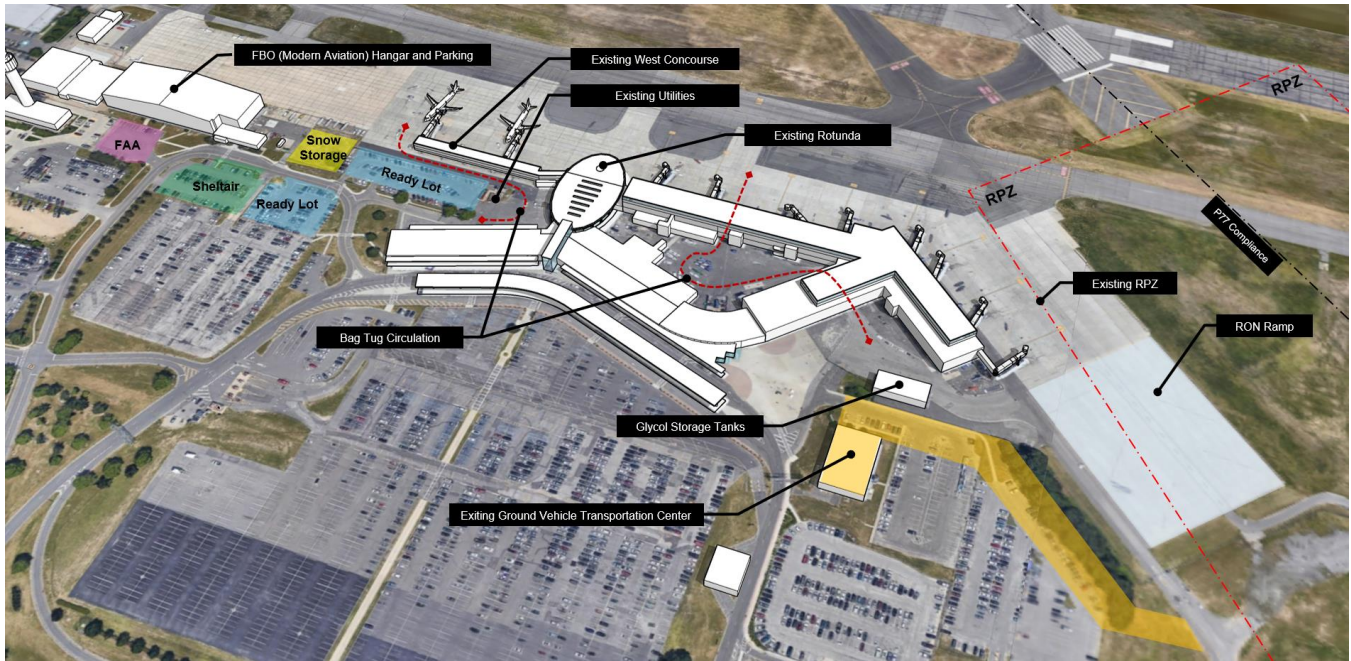
There is no centrally located TSA checkpoint that is convenient to all gates, which means that passengers using Concourse B have a longer walk. The checkpoint is located adjacent to the Concourse A gates. There is also a lack of a deicing technology at the terminal; as such, there is a need for deicing systems that are environmentally reliable and use state of the art technology.

The east end constraint to gate expansion, which refers to an extension of Concourse A, is the existing Runway 33L Protection Zone (RPZ) and the Ground Transportation Center (GTC), shown in **Exhibit 2.7-2, GTC**. L&B conducted a Part 77 analysis to identify the height limitations on the east end of site; this is shown on **Exhibit 2.7-3, Part 77 Analysis**. A line-of-sight analysis was not conducted as part of this study.

This analysis showed that the existing terminal building obstructs the inner transitional and inner approach transitional surfaces in four areas and are mitigated by obstruction lights located on the building. The Part 77 analysis indicated that an eastern site development or gate expansion would increase the number of airspace obstructions.

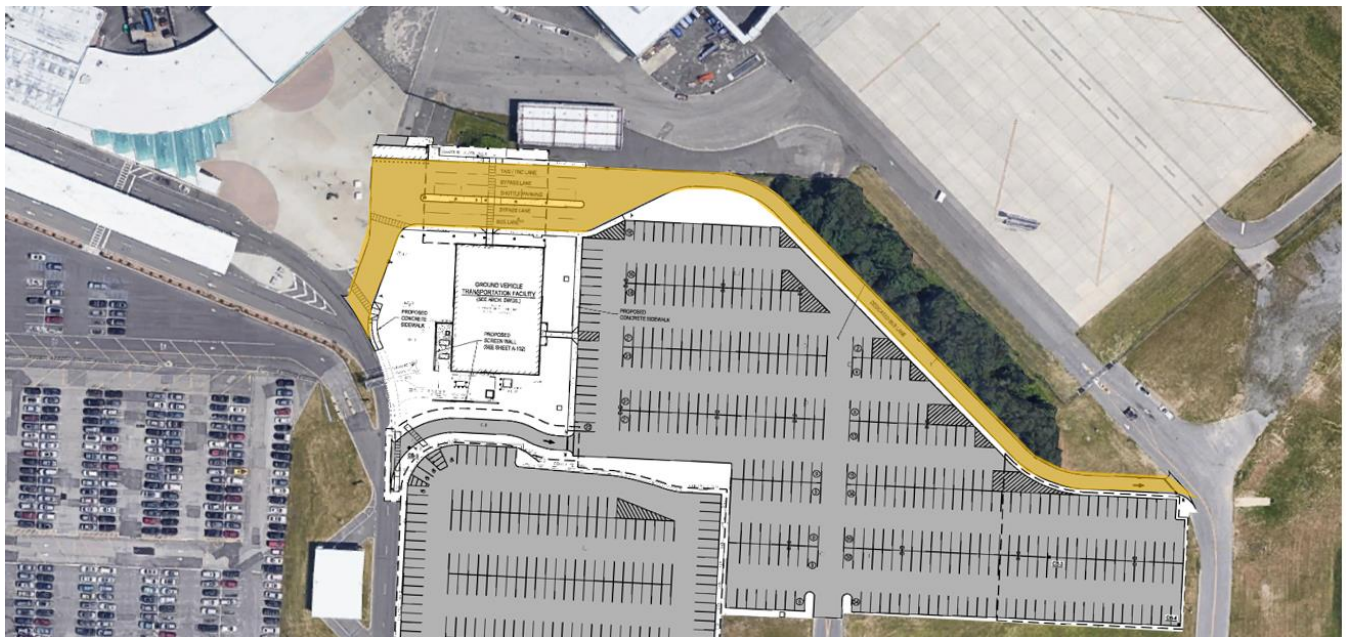
There are other site constraints that limit the replacement options of Concourse B. These include utility infrastructure, the rotunda, bag tug circulation paths, lack of an inline baggage handling system, and the existing Concourse B building itself. These constraints were considered as part of the alternatives development and evaluation process.

EXHIBIT 2.7-1 SITE CONSTRAINTS



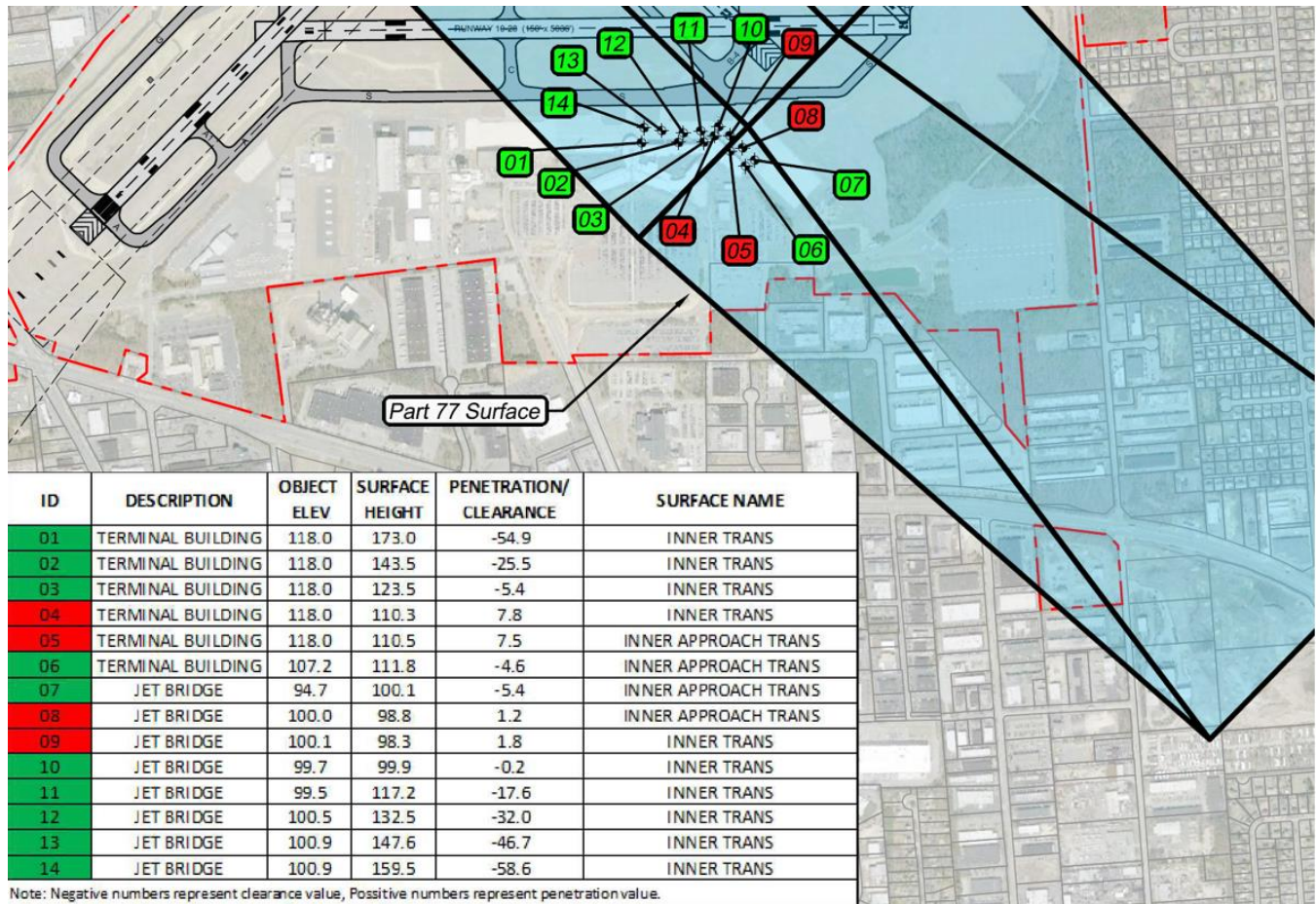
Source: Landrum & Brown, 2019

EXHIBIT 2.7-2 GTC



Source: Landrum & Brown, 2019

EXHIBIT 2.7-3 PART 77 ANALYSIS



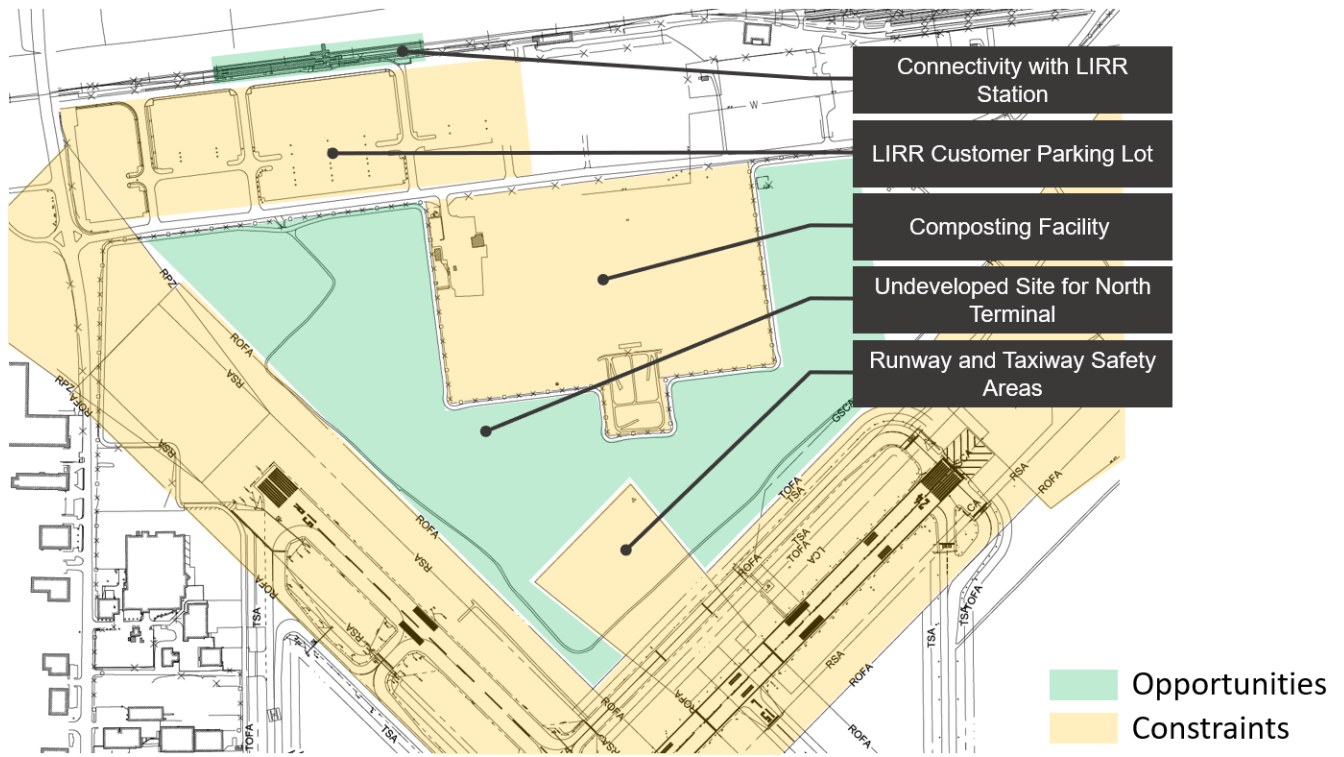
Source: Landrum & Brown, 2019

Exhibit 2.7-4, North Terminal Site Assessment shows the opportunities and constraints at the north terminal site. Site constraints include the existing compost facility, existing LIRR parking (not on airport property, but required to connect the LIRR Ronkonkoma Station to a future terminal building), and runway and taxiway safety areas. The main site constraint is the compost facility, which will eventually require relocation.

There are numerous site opportunities and advantages when moving to a north terminal development option, these include the following:

- LIRR multimodal connection (only benefits passengers with access to LIRR)
- Inline baggage connection
- FIS/GAF facilities
- State-of-the-art deicing and reclamation
- Sustainability and environmental advantages due to reduced vehicle emissions with direct access to the Ronkonkoma Station (e.g., no shuttles required and ability to access the terminal directly from the station; reducing the need for vehicles).

EXHIBIT 2.7-4 NORTH TERMINAL SITE ASSESSMENT



Source: Landrum & Brown, 2019

3 Aviation Activity Forecast

3.1 Approach and Methodology

This section of the study presents the updated forecasts of aviation activity at ISP. The forecast was primarily developed to update the most recent master plan enplaned passenger forecast from 2013 (adopted into the 2017 Master Plan) for the specific purpose of evaluating West Concourse Terminal improvements projects and to be validated against the 2021 FAA Terminal Area Forecast (TAF), released in March 2022. These forecasts present projected annual airport traffic activity levels, for 2019 (estimated) through 2037 with a based year of 2018, which represents a 20-year forecast horizon. Due to the timing of this study, the impact of the COVID-19 pandemic, which significantly impacted air travel in 2020 and 2021, was not included. This forecast was initially completed in 2019 (before the pandemic began). By March 2022, ISP passenger traffic returned to pre-COVID activity levels with both scheduled seats and passenger enplanements exceeding those from March 2019 and January 2020.

The purpose of the forecast has direct implications on the adequacy of the existing terminal and specifically, the west concourse area. The primary components developed and presented in this forecast include passenger enplanements and aircraft operations. Cargo tonnage was not included in the forecast for ISP as it is historically a minimal component of the Airport's activity and this situation is not expected to change. For the purpose of providing a TAF comparison in this effort, aircraft operations (including General Aviation and Air Taxi) were also forecasted. The forecast includes a simple fleet mix for commercial passenger aircraft, but not general aviation since this segment of aviation activity was not the focus of the overall scope of work. Peak period forecast projections, necessary for the terminal facility assessment and requirements, is included and presented as part of this terminal planning study. This section also includes a brief overview of the demand drivers that were explored as part of the forecast development, such as socio-economic characteristics, historical aviation activity trends, evaluation of the catchment area, and potential for leakage from, or recapture of, lost traffic with respect to other New York City regional airports. General methodologies and assumptions considered and used in the forecast are also presented herein.

Traffic levels at the time this forecast was being prepared were showing inconsistent trends. Passenger traffic in 2018 showed a sizable recovery after years of slowing demand, resulting in-part from the 2007 Great Recession, the world financial crisis of 2008-2009, and the subsequent drop experienced in 2019.

3.2 Current Activity Profile, Recent Forecast and General Assumptions

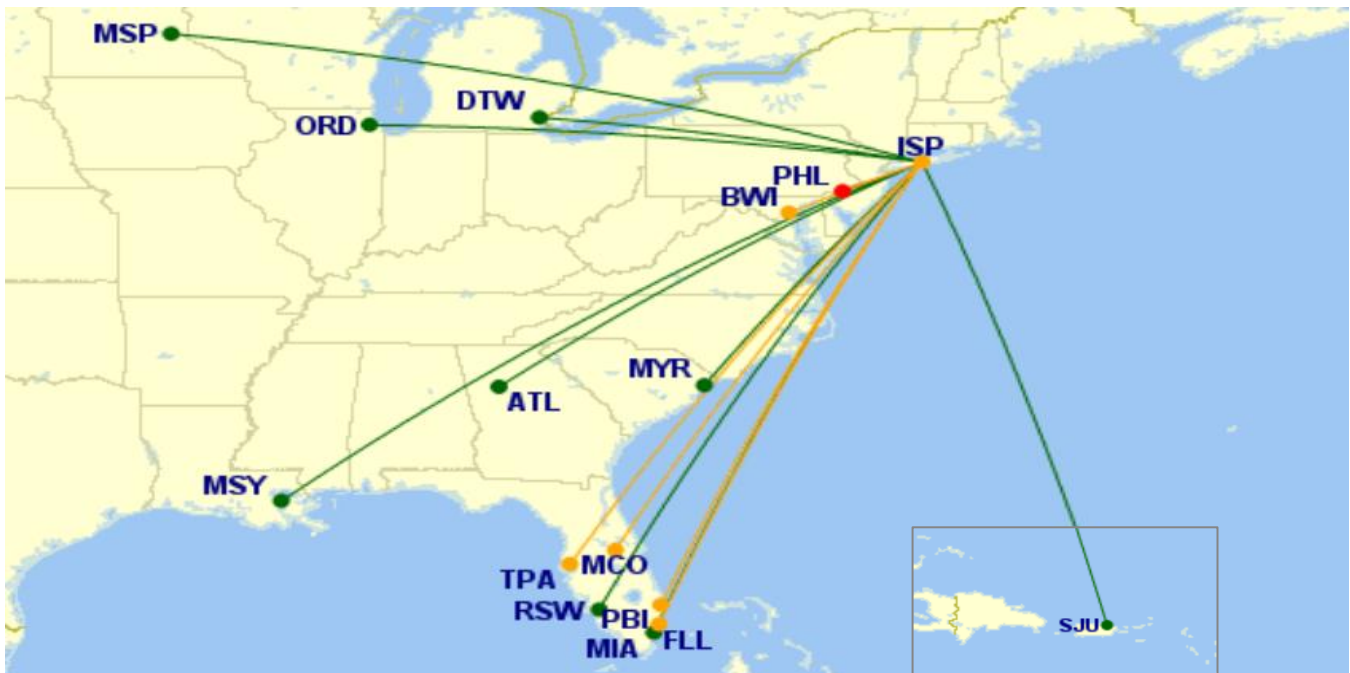
In 2018, ISP reported 830,073 enplaned passengers and 132,524 total aircraft operations. Actual traffic compared to the 2013 Master Plan (MP) showed that in the base year of 2018, enplaned passengers were reported at 18.9% above the MP forecast and the 2018 actual total operations (both take offs and landings, or departures and arrivals) were 12.5% below the MP forecast, which was mainly due to larger aircraft being used for commercial passenger operations and decreased demand for general aviation (GA). Commercial passenger operations in 2018 were reported at 12.0% below the MP

forecast, with GA operations 13.9% below and air taxi (AT) operations 57.1% above the MP forecast. The average aircraft size in seats or “gauge” of commercial aircraft in 2018 was 151 seats, compared to the 123-seat average estimated in the MP forecast. In other words, the number of passengers increased while the number of operations decreased due to the use of larger aircraft.

Before the surge in passengers at ISP in 2018, from 2008 through 2017, passenger traffic demand was decreasing at ISP, which may have been due in part to the lack of a strong enough air service development program with incentives to offset start up risk for new carriers. The introduction of Frontier Airlines and their larger narrowbody fleet in 2017 contributed significantly to the higher number of enplanements reported at ISP and a higher average aircraft gauge for 2018. Average load factor was also higher than projected in 2018 at 79.8% compared to the estimated 75%. In 2018, four airlines had scheduled service at ISP, the smallest of which was Elite Airways, which ended service again in early 2019 and represented less than 1% of passenger traffic in 2018. The 2018 airlines passenger split is shown below, with 2018 air service markets displayed in **Exhibit 3.2-1, ISP Air Service Markets (2018)**:

- Southwest Airlines (WN) 63% 5 markets in 2018 - 2019
- Frontier Airlines (F9) 33% 13 markets in 2018 (8 in 2019)
- American Airlines (AA) 4% 1 market in 2018 - 2019
- Elite Airways (7Q) < 1%

EXHIBIT 3.2-1 ISP AIR SERVICE MARKETS (2018)



Note: Green lines show Frontier markets, Orange/Yellow lines = Southwest and Red line = American
Source: gcmmap.com image, by Landrum & Brown

The MP forecast incorporated a regression analysis in developing the base forecast for ISP enplaned passengers using an inverse economic Yield relationship. The MP forecast predicted that enplaned passenger traffic in a predominant leisure market would increase as average fares and yields to airlines decreased or traffic would decrease if average yields increased. Historical trends supported this general association and the FAA domestic Yield forecast from the FAA Aerospace Forecasts was used to predict future levels of base enplaned passenger demand for this WCT focused forecast.

With the continuing trend observed since the previous MP the same general methodology was applied to update the enplaned passenger forecast for the WCT study. In addition to the passenger forecast methodology the following assumptions and conditions were observed and incorporated into the 2018 forecast update:

- Leakage/Recapture potential may exist
- High case assumed 'New' entrant (Frontier came, early)
- Economic growth factors still positive
 - (Gross Regional Product, Employment, Population, Personal Income)
- Resilience of the industry
- Growth in Air Taxi segment
- ISP is primarily an O&D domestic market
- ISP is a Low-Cost airport compared to NYC airports

Additionally, the following revised assumptions were made or incorporated into the forecast development process:

- 2018 surge wasn't predicted, but yields were still in line with trends
- 2019 slow down should recover to 2018 levels in 2020
- Aircraft Gauge increases will stabilize (Frontier effect normalized)
- Average Load Factor can increase (was fixed in previous MP)
- GA segment decline wasn't predicted, but can recover (FAA growth applied)

3.2.1 Historical Traffic

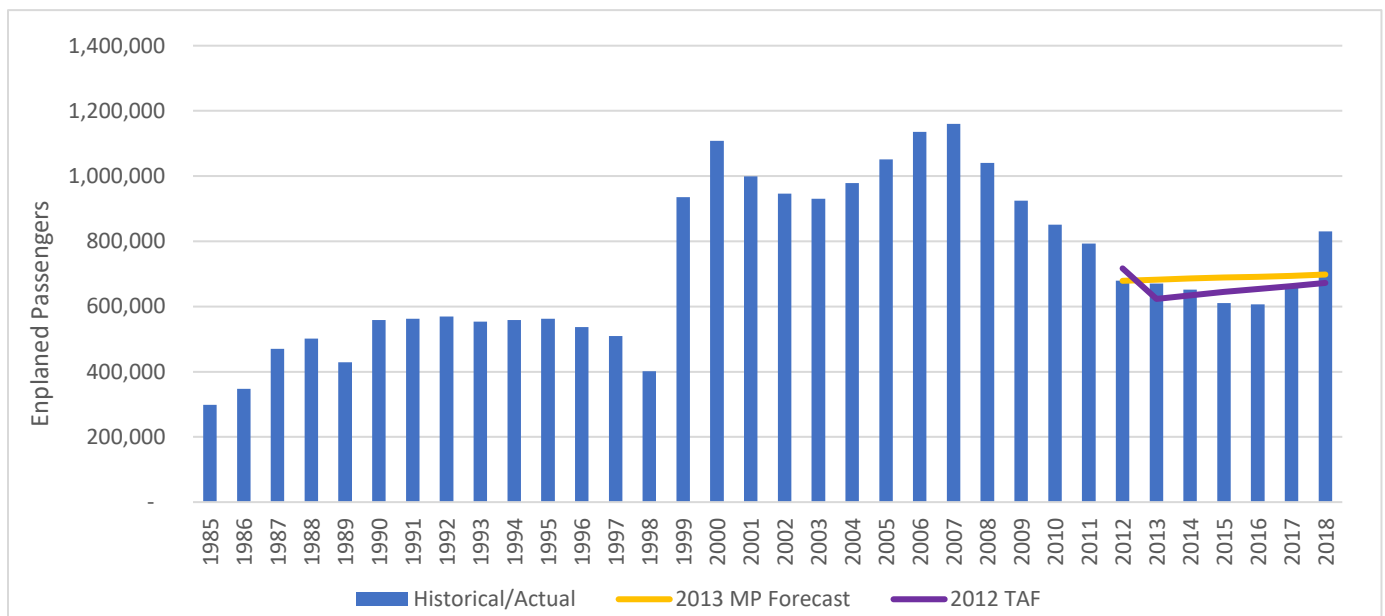
Total passenger traffic in 2018 at ISP yielded 830,076 enplaned passengers, 13,311 commercial passenger operations, and 132,524 total aircraft operations. Passengers reached an historical high at ISP in 2007 with nearly 1.2 million enplaned passengers, which was almost the same in 2000 before the impact of 9/11 was felt at the Airport. From 2007 to 2012 enplaned passenger levels dropped roughly 46.2% to 678,848 with the impact of the economic recession and the rising cost of fuel, before slowing down and eventually showing signs of recovery in 2017.

3.2.1.1 Enplaned Passengers

Enplaned passenger traffic at the airport has been impacted over a longer history with varying trends showing the effects of economic changes, industry shocks, and air service changes. Since 1985, there have been three periods of rising and falling passenger demand at ISP with the growth in 2018 being the fourth recent period change. A major factor to understand in the passenger traffic trend is the impact of Southwest Airlines at ISP and LGA. Aggressive marketing has shifted many Southwest passengers to LGA from ISP where the share of passengers has decreased from 100% in 2008 down to 25% in 2019. Currently, ISP is aggressively marketing to recapture some of that passenger shift.

Exhibit 3.2-2, *ISP Enplaned Passengers History (1985-2018)* presents the historical trend in passenger traffic at ISP with the predicted enplaned passenger forecast levels from 2013 to 2018 for comparison of the 2013 MP forecast and 2012 TAF to actual traffic.

EXHIBIT 3.2-2 ISP ENPLANED PASSENGERS HISTORY (1985 – 2018)



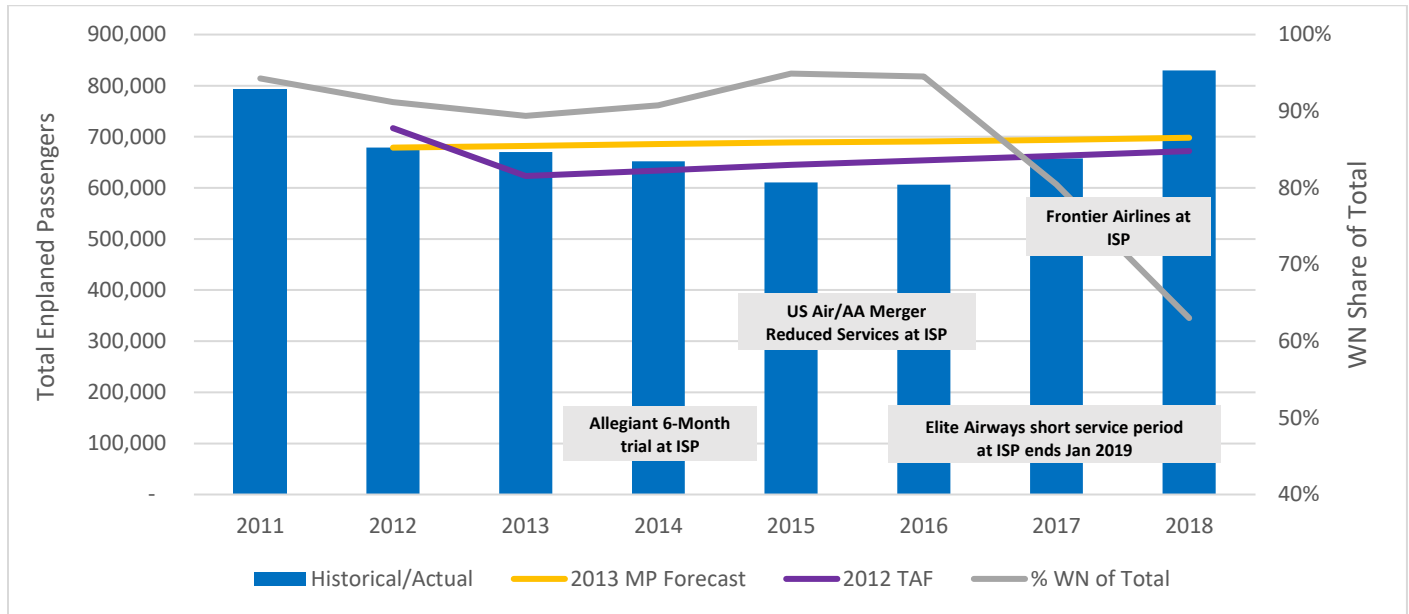
Source: ISP airport data, with Landrum & Brown analysis
 Note: WN is the abbreviated code for Southwest Airlines

The TAF is represented on a fiscal year basis, compared to the calendar years of the MP forecast and historical data, which is evident in the slight variance in 2012. The two forecasts show similar modest growth projections through 2018, but neither fully anticipated the jump in traffic observed in 2018.

In order to understand the developments which led up to the traffic surge in 2018, **Exhibit 3.2-3, *ISP Forecast Tracking and Air Service Changes*** illustrates the key changes in air service at the Airport that ultimately led to Frontier Airlines adding service in 2017 and expanding service in 2018. Demand for additional service offerings at ISP appears evident from the three airlines that started service from 2014 to 2017. The true amount of unmet demand may not have been accurately predicted by Frontier Airlines as the surge in 2018 was followed by what may have been more reasonable levels of service started in 2019 with a reduced schedule of fewer markets and seats.

Recent strategic marketing efforts at ISP have shown some success in de-risking the launching of new service or adding new markets. New service from Frontier and new market service to Nashville (BNA) by Southwest are examples of opportunities at ISP to compete more with LGA and JFK. Breeze Airways added service to Charleston, SC and Norfolk, VA on February 2022.

EXHIBIT 3.2-3 ISP FORECAST TRACKING AND AIR SERVICE CHANGES

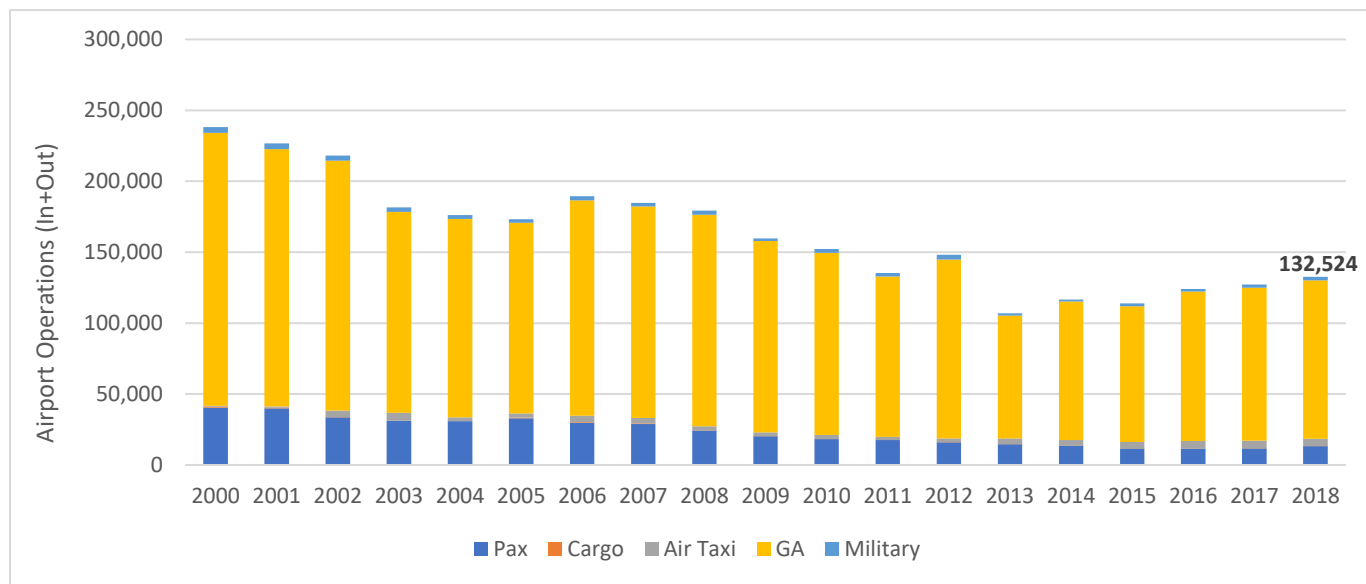


Source: ISP airport data, with Landrum & Brown analysis
 Note: WN is the abbreviated code for Southwest Airlines

3.2.1.2 Operations

Historical aircraft operations at ISP were on a decreasing trend from 2000 to 2013, due partly to a shift in Southwest Airlines operations to LGA, up-gauging of commercial aircraft, and reduced commercial passenger traffic; but the majority of the decrease in aircraft operations was due to a drop in General Aviation demand. **Exhibit 3.2-4, ISP Aircraft Operations History (2000-2018)** shows the trends in aircraft operations segments since 2000, with detailed figures in **Table 3.2-1, ISP Aircraft Operations History by Segment (2000-2018)**.

EXHIBIT 3.2-4 ISP AIRCRAFT OPERATIONS HISTORY (2000-2018)



Source: ISP airport data, with Landrum & Brown analysis

TABLE 3.2-1 ISP AIRCRAFT OPERATIONS HISTORY BY SEGMENT (2000-2018)

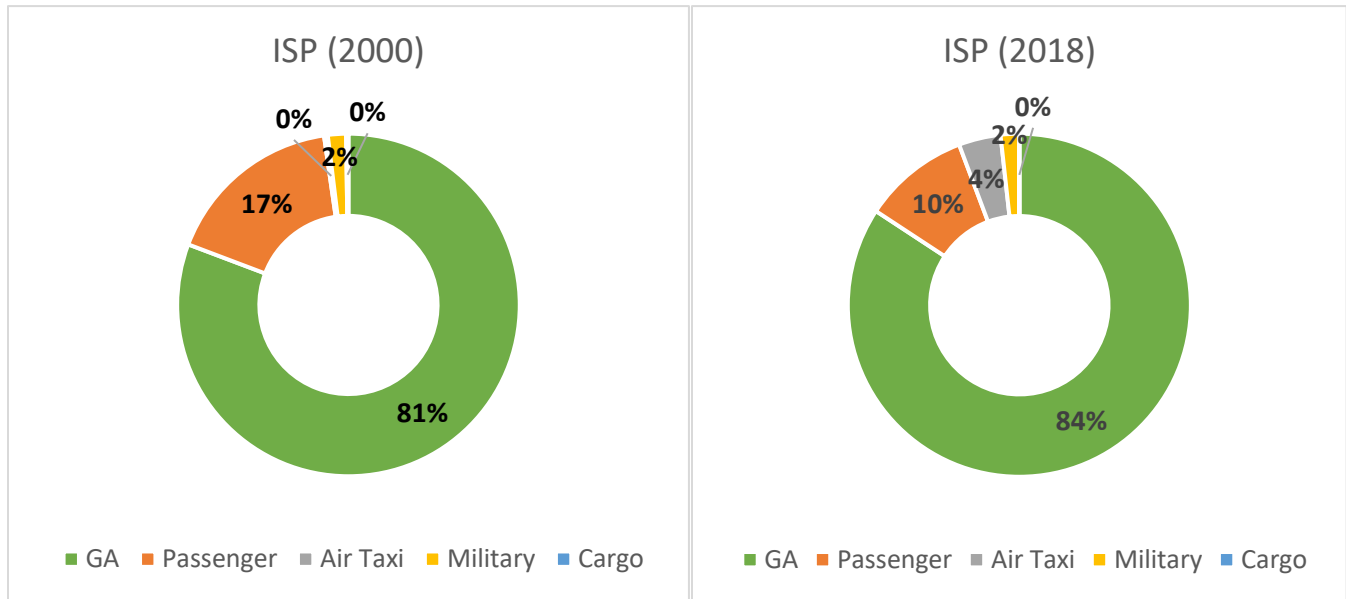
Year	Pax	Cargo	Air Taxi	GA	Military	Total
CY2000	40,411	522	840	192,383	4,083	238,239
2001	39,799	520	958	181,415	3,899	226,591
2002	33,640	140	4,616	176,096	3,561	218,053
2003	31,011	0	5,796	141,551	3,155	181,513
2004	30,953	0	2,717	139,823	2,705	176,198
2005	33,016	285	2,921	134,451	2,462	173,135
2006	29,792	300	4,662	151,744	2,892	189,390
2007	28,944	274	3,844	149,181	2,517	184,760
2008	24,050	132	3,123	149,037	2,888	179,230
2009	20,232	2	2,711	135,052	1,739	159,736
2010	18,266	19	2,999	128,229	2,720	152,233
2011	17,594	5	2,229	112,994	2,443	135,265
2012	16,084	3	2,531	126,241	3,334	148,193
2013	14,663	3	4,140	86,471	1,661	106,938
2014	13,511	14	4,033	97,584	1,392	116,534
2015	11,266	3	4,842	95,818	1,872	113,801
2016	11,452	12	5,398	105,292	2,000	124,154
2017	11,805	8	5,348	107,881	2,187	127,229
2018	13,311	10	5,240	111,648	2,315	132,524

Sources: ISP airport data; U.S. DOT T100 data with L&B analysis

After the 9/11 terrorist attacks shocked the aviation industry from a safety and security perspective, the rising cost of fuel after 2003 and the Great Recession of 2008/2009 GA traffic demand was reduced to a new baseline that started to show signs of new natural growth after 2013. GA aircraft operations made up the largest share of operations at ISP with 84.2% of the 132,524 operations in 2018. Commercial passenger operations represent the second largest segment with 10% followed by the Air Taxi and Military segments at 4% and 2% respectively. There are no scheduled cargo operations at ISP, but there is a very small amount of charter cargo activity.

Exhibit 3.2-5, *ISP Shares of Aircraft Operations by Segment* compares the changes in aircraft segments from 2000 to 2018.

EXHIBIT 3.2-5 ISP SHARES OF AIRCRAFT OPERATIONS BY SEGMENT



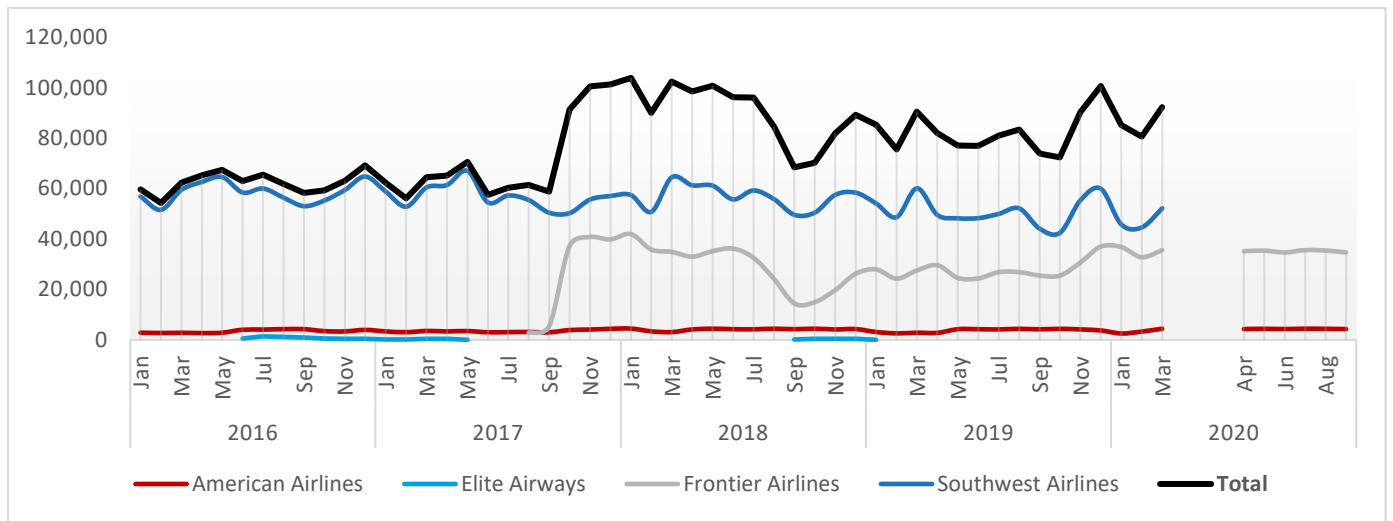
Source: ISP airport data, with Landrum & Brown analysis

3.3 Air Service Development

Near-term scheduled activity showed a decrease of 6.7% for 2019 total scheduled seats, with an estimated increase of 12.6% in scheduled seats for the 2020 (the last three months of 2020 were estimated from previous seasonal trends and the 2020 trend from January to September). In recent years since 2016 scheduled seats have experienced some notable changes; +13.5% in 2017 and +27.3% in 2018 before the -6.7% in 2019 and the estimated +12.6% change for 2020, for an overall estimated increase of 48.5% from 2016 through 2020. The general shares of scheduled seats at ISP have remained similar since Frontier started service at ISP in 2017 with Southwest offering the most seats followed by Frontier and American offering the fewest seats with only service to Philadelphia (PHL). With the expansion of ‘Low Cost’ and ‘Ultra Low Cost’ carriers across the industry, the leisure and O&D demand from ISP seems fitting for the entry of a new carrier to the Airport. While it is known that ISP is competing for additional service from existing carriers, the Airport is also actively engaged in recruiting new carriers and is already under consideration. Breeze Airways began new service in February 2022 from ISP.

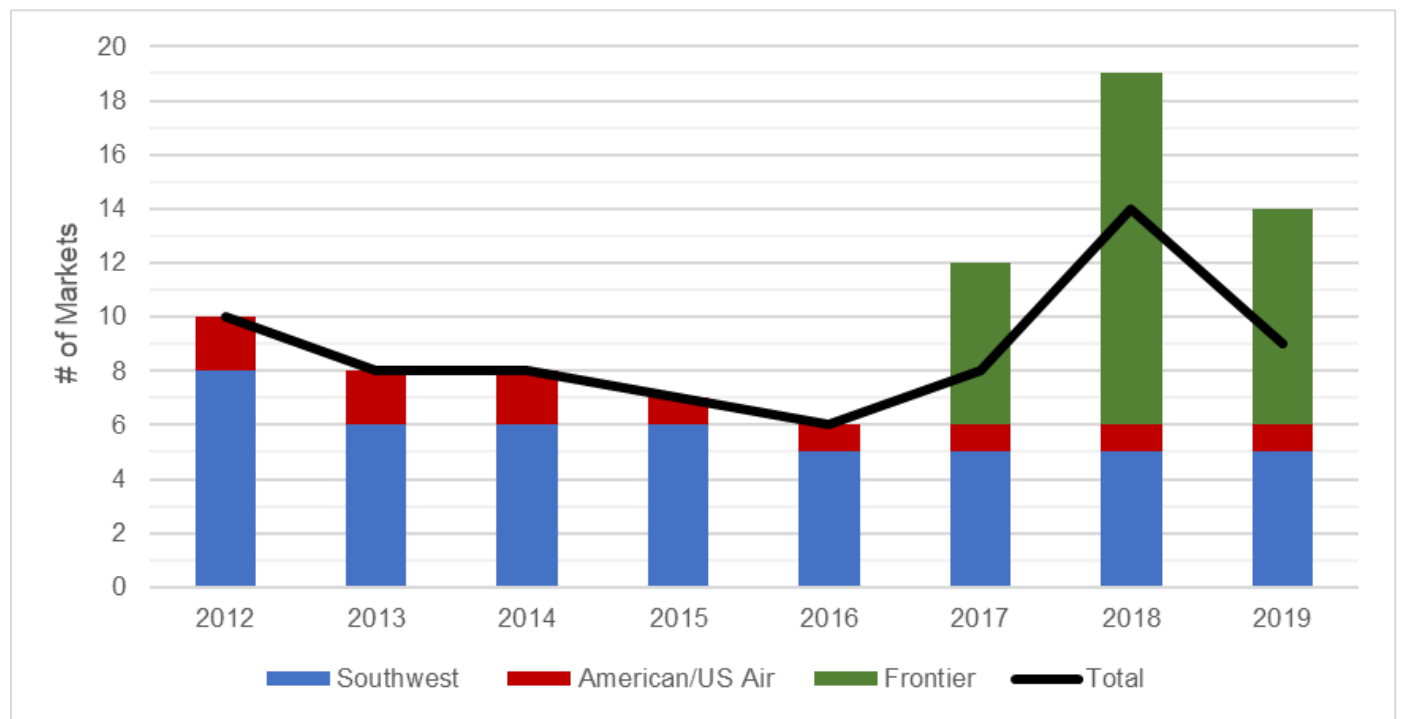
Exhibit 3.3-1, *ISP Scheduled Monthly Departing Seats (2016-2020)* show the monthly and seasonal trends at ISP from 2016 to 2020. **Exhibit 3.3-2 *ISP Destination Markets***, shows the increased number of markets served from ISP with the entry of Frontier Airlines and markets increasing from six to 14 through 2018 before settling in at nine by mid-2019. Historically, increases or decreases in enplaned passenger activity will either precede or be followed by an increase or decrease in scheduled seats by the airlines as they are proactive or reactive to shifts in passenger demand. In markets like ISP with a fairly consistent fleet mix the increase in enplanements will result in similar changes in the number of scheduled annual departures or total annual operations.

EXHIBIT 3.3-1 ISP SCHEDULED MONTHLY DEPARTING SEATS (2016-2020)



Source: Diio Mi schedule data, with Landrum & Brown analysis

EXHIBIT 3.3-2 ISP SCHEDULED MONTHLY DEPARTING SEATS (2016-2020)



Source: Diio Mi schedule data, with Landrum & Brown analysis

3.3.1 Catchment Area

The area providing the population base for aviation demand at the Airport is commonly referred to as the catchment area. Some airports are in close proximity to other competition airports and thus may share catchment areas or have overlapping regions within the broader catchment area. ISP has Nassau and Suffolk counties on Long Island in New York as its primary passenger base. Long Island is part of the New York City Metropolitan Statistical Area (MSA) which had an estimated 19.5 million residents in 2019. Nassau and Suffolk counties had approximately 2.7 million residents of the total. The main focus of the catchment area concern is for commercial passenger demand but can also be relative for cargo demand and GA demand. ISP has direct competition for passenger services with JFK primarily as well as LGA and also has competition for GA demand with Republic Airport less than 20 miles west of the Airport.

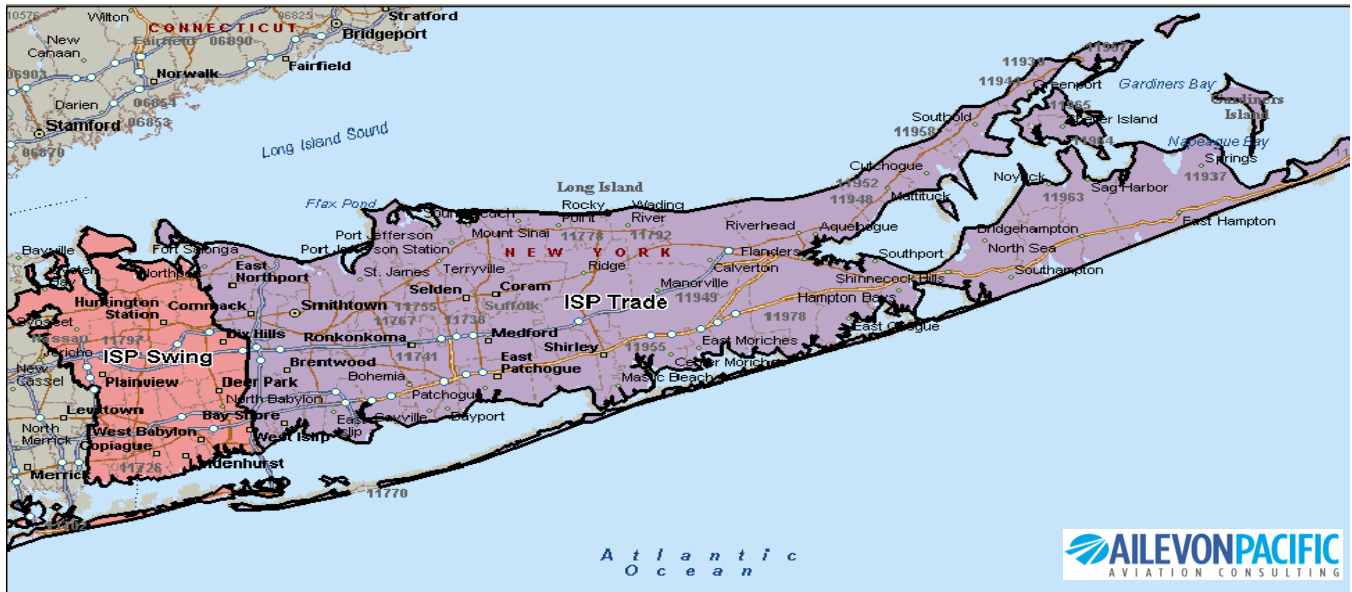
The 2013 MP forecast incorporated a study of the airport catchment area that observed the airport choice and preference for commercial passengers of JFK, LGA and ISP. It was determined that ISP captures only a small share of the 'Swing' area between JFK/LGA and ISP and about one third of the traffic in the 'Trade Area' which is the remaining portion of Long Island to the east. An updated study was performed by AilevonPacific Aviation Consulting in 2016 which confirmed the findings of the 2013 study.

Exhibit 3.3-3, *ISP Catchment Area Map* shows the ISP Swing and ISP Trade areas designated in the AilevonPacific study. When nonstop flights are offered, ISP was retaining about 87% of traffic in the Trade area and 37% in the Swing area according to the 2016 survey. The survey found that ISP captured only 7% of Swing area and 35% of trade area demand due to the strong air service offerings and frequencies at JFK and LGA. In the 2018 base year it is estimated that the ISP capture rate of the Swing area would likely have remained near 7%, but the capture rate of the Trade area may have increased to about 42% with the new service from Frontier and the larger focus on low cost domestic market options in the ISP Trade area.

In considering specifically the New York Metro area O&D passengers¹, ISP was capturing about 4.1% of the market in 2001 and 3.8% in 2007, whereas today ISP captures an estimated 2.2%. There appears to be reasonable opportunity for both existing and new carriers to gain a greater share of traffic in the New York Metro area.

¹ U.S. DOT DB1B data- New York Metro area includes ISP, LGA, JFK, EWR, HPN and SWF airports.

EXHIBIT 3.3-3 ISP CATCHMENT AREA MAP



Source: AilevonPacific Aviation Consulting image

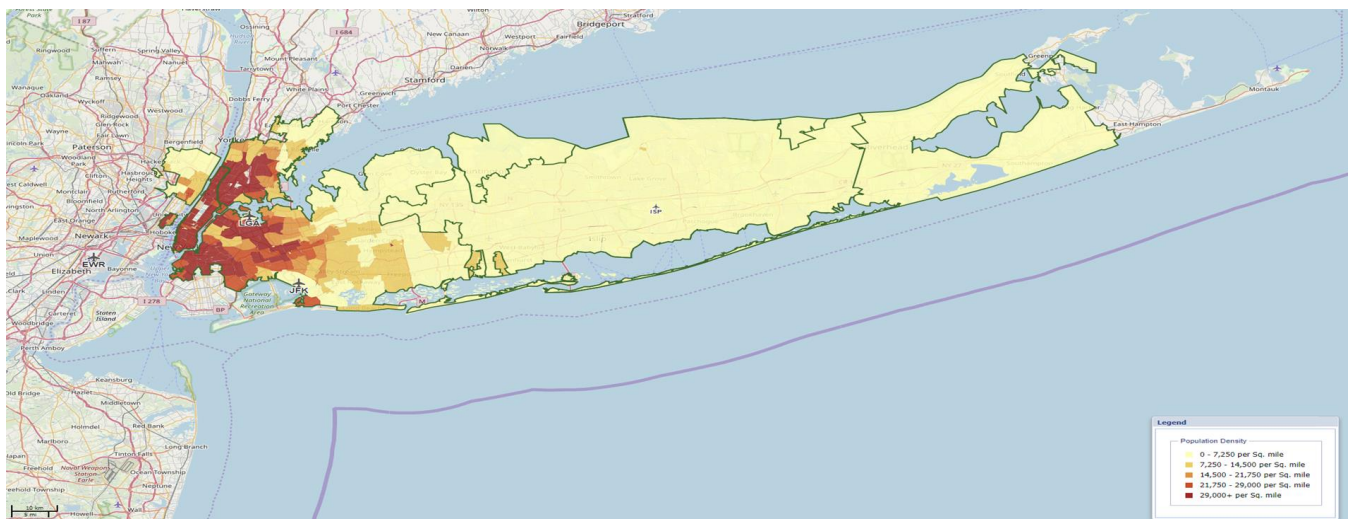
The Long Island Railroad runs throughout Long Island, connecting much of Long Island to New York City where its two large hub airports are a very relevant factor for passengers choosing alternate airports to ISP. The greatest levels of air service offerings are typically located closer to the population centers, which correlates to the majority of the population base living near New York City and the west end of Long Island. See **Exhibit 3.3-4, Local Population Density Map**.

It was also proposed that new market potential exists but would require more carrier and local community commitment due to the proximity to JFK and LGA.

Some key findings from the Catchment area study suggest the following:

- ISP remains the Low-Fare Airport for the NYC Region
- South Florida is the main destination
- Some previous markets could be re-started (with the right fare)
- Average fares at ISP have increased reducing the benefit to ultra-low-cost carriers (ULCCs)
- Although domestic growth is more likely, international opportunities may exist for ISP as a niche market to Europe
- Passengers prefer more non-stop options and greater frequency in general with comparable fares

EXHIBIT 3.3-4 LOCAL POPULATION DENSITY MAP



Source: Landrum & Brown analysis

3.4 2019 Passenger Forecast Update

3.4.1 Methodology and Assumptions

This section presents the forecast of passenger demand at ISP. The passenger forecast is a critical demand element and was prepared as an enplaned passenger forecast. Total passenger traffic represents the sum of passengers enplaning and deplaning commercial passenger aircraft at the Airport. For this forecast update, the enplaned passenger forecast was updated with a similar approach using an econometric regression correlating ISP Revenue Yield to ISP Enplanements to account for the past declines in demand.

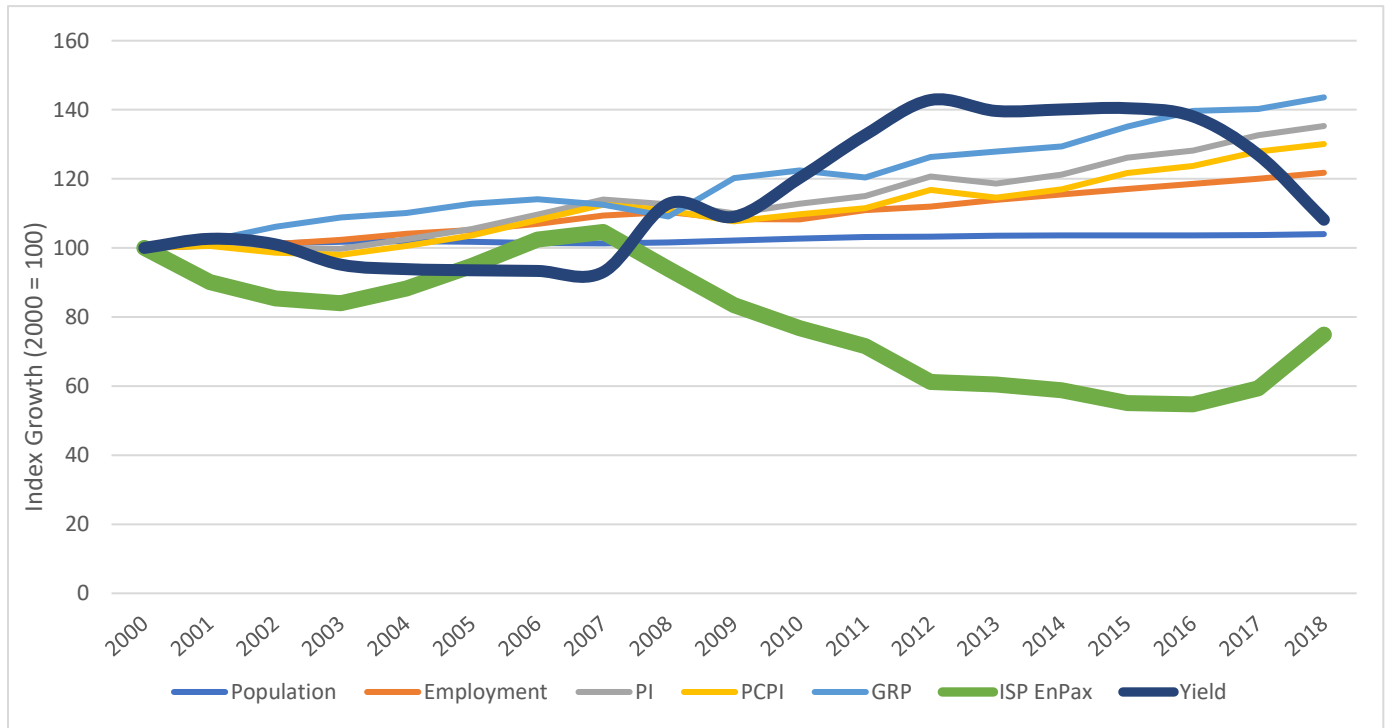
Passenger traffic at ISP is almost entirely origin and destination (O&D) with a minimal number of passengers that connect from one flight to another through ISP and do not begin or end their trip at the Airport. The level of originating passengers reflects the attractiveness of the region as a place to live, a place to visit, and as a place to work and conduct business. A reasonable forecast of originating passengers is critical in order to estimate future demands for terminal facilities such as ticketing, baggage claim, automobile parking, and access roadways. The associated number of passenger aircraft operations is also derived from the passenger forecast and are used as inputs to evaluate airfield and apron requirements.

With the assumption that ISP is an O&D airport, the prepared forecast update will just look at enplaned passengers in general and not presume that there is a measurable amount of connecting passengers to further estimate. Furthermore, ISP is considered a domestic airport and does not currently have international arrival facilities. Some international activity to Canada or the Caribbean may be considered reasonable with the growth in the service offerings from low-cost and ultra-low-cost carriers, but it was assumed that during the forecast period, new initial international markets (if any) would likely be to precleared destinations.

In the previous master plan, the historical relationships between passenger traffic and socioeconomic conditions showed a lack of correlation between directional trends in socioeconomic variables and enplaned passenger levels at the Airport. Essentially, historical growth in the local economy should have predicted similar patterns in passenger demand but the historical datasets did not show correlations for typical socioeconomic data variables. However, there was a reasonable correlation between enplaned passengers and airline yields (profit per seat per mile) based on airfares and operating costs.

The initial intent of this forecasting effort in support of the terminal planning study was to update the previous forecast methodology, if still valid. **Exhibit 3.4-1, Regional Socioeconomic Trends (Nassau and Suffolk Counties)** shows the indexed historical trends for socioeconomic conditions in the base catchment area region of Nassau County and Suffolk County, New York. As was evident in the previous master plan, there still exists a valid correlation between enplaned passengers at ISP and airline Yields.

EXHIBIT 3.4-1 REGIONAL SOCIOECONOMIC TRENDS (NASSAU AND SUFFOLK COUNTIES)



Sources: ISP airport data; Woods and Poole CEDDS data, with Landrum & Brown analysis

The proposed relationship is an inverse where, as yield goes up (revenue per passenger mile flown), demand decreases, and vice versa. The typical socioeconomic variables representative of a growing economy or community (population, gross regional product or GRP, employment, personal income, and per capita personal income or PCPI) all exhibited positive growth trends and were more consistent directionally, whereas enplaned passenger levels were decreasing from 2007 to 2016 during these years of economic growth.

3.4.2 Annual Passenger Forecast

The base enplaned passengers forecast is derived from an econometric regression that exhibits a reasonably strong statistical correlation with an inverse relationship between enplaned passengers and ISP Revenue Yield (const. 2018USD). Historical data from 2000 to 2018 was used in the regression analysis, with forecasted Yields estimated from domestic yield growth in the *FAA Aerospace Forecasts Fiscal Years 2019-2039*, Table 16. **Table 3.4-1 Enplaned Passengers Forecast – Regression Inputs** shows the historical inputs of enplaned passengers at ISP and average passenger yield at ISP for the historical years of 2000 to 2018 and the forecasted yield inputs through 2037.

TABLE 3.4-1 ENPLANED PASSENGERS FORECAST – REGRESSION INPUTS

Calendar Year	Enplaned ISP Passengers	Constant Yield (cents Revenue per passenger mile)
2000	1,108,640	10.14
2001	999,170	10.41
2002	946,640	10.25
2003	930,690	9.65
2004	978,460	9.52
2005	1,051,480	9.49
2006	1,135,300	9.47
2007	1,159,930	9.43
2008	1,040,860	11.44
2009	924,490	11.06
2010	850,600	12.20
2011	793,578	13.46
2012	678,848	14.49
2013	670,399	14.17
2014	652,055	14.21
2015	610,532	14.25
2016	606,491	14.01
2017	657,659	12.88
2018	830,076	10.97
2019F		10.77
2022F		10.55
2027F		10.30
2032F		10.06
2037F		9.76

Sources: ISP airport data; FAA 2019 Aerospace Forecast data and Diio Mi data with Landrum & Brown analysis

Note: Constant yield in 2018USD

The regression analysis provided an adjusted R square value of 0.82 and showed statistical significance with absolute t Stat values greater than 2.0 and P-values less than 0.05. **Table 3.4-2, Enplaned Passengers Forecast – Regression Inputs** provides the resulting statistics from the regression analysis and **Exhibit 3.4-2, ISP Yield Regression Validation** is provided to show the reasonableness of the regression result in comparing the actual historical enplaned passenger levels to the predicted value based on the theoretical regression equation of:

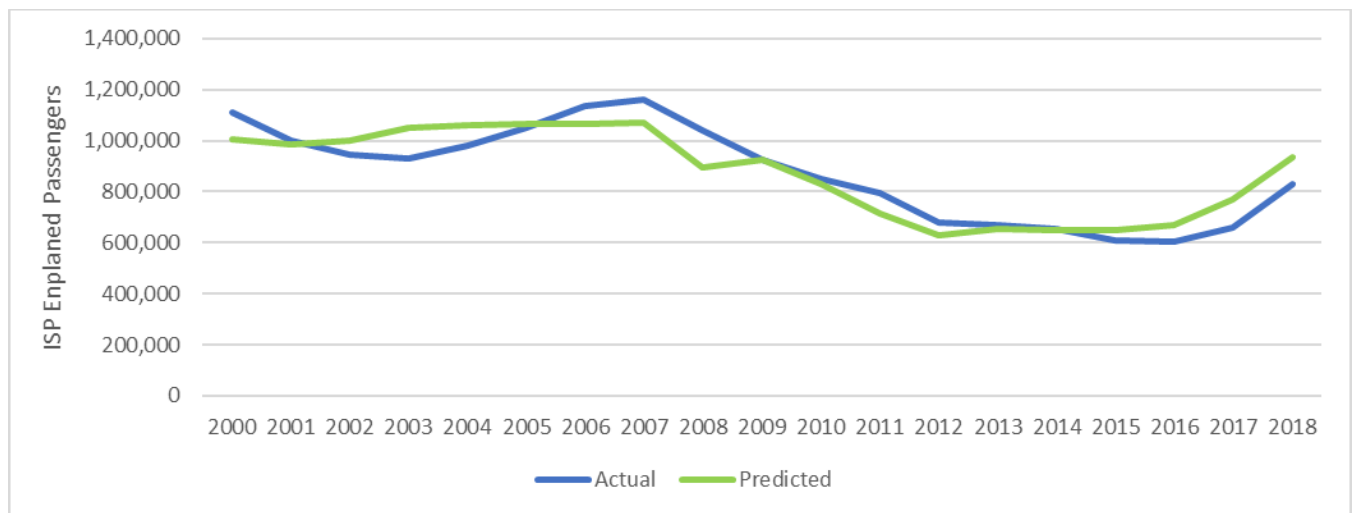
$$ISP \text{ enplaned passengers} = 1,896,123.66 - 87,582.1091 \times YIELD$$

TABLE 3.4-2 ENPLANED PASSENGERS FORECAST – REGRESSION INPUTS

Regression Statistics						
Multiple R	0.91065					
R Square	0.82928					
Adjusted R Square	0.81924					
Standard Error	79385.8					
Observations	19					
			<u>Coefficients</u>	<u>Standard Error</u>	<u>t Stat</u>	<u>P-value</u>
		Intercept	1896123.658	113830.0587	16.65749521	5.8049E-12
		ISP Yield	-87582.1091	9637.914132	-9.08724729	6.17745E-08

Source: ISP airport data, with Landrum & Brown analysis

EXHIBIT 3.4-2 ISP YIELD REGRESSION VALIDATION



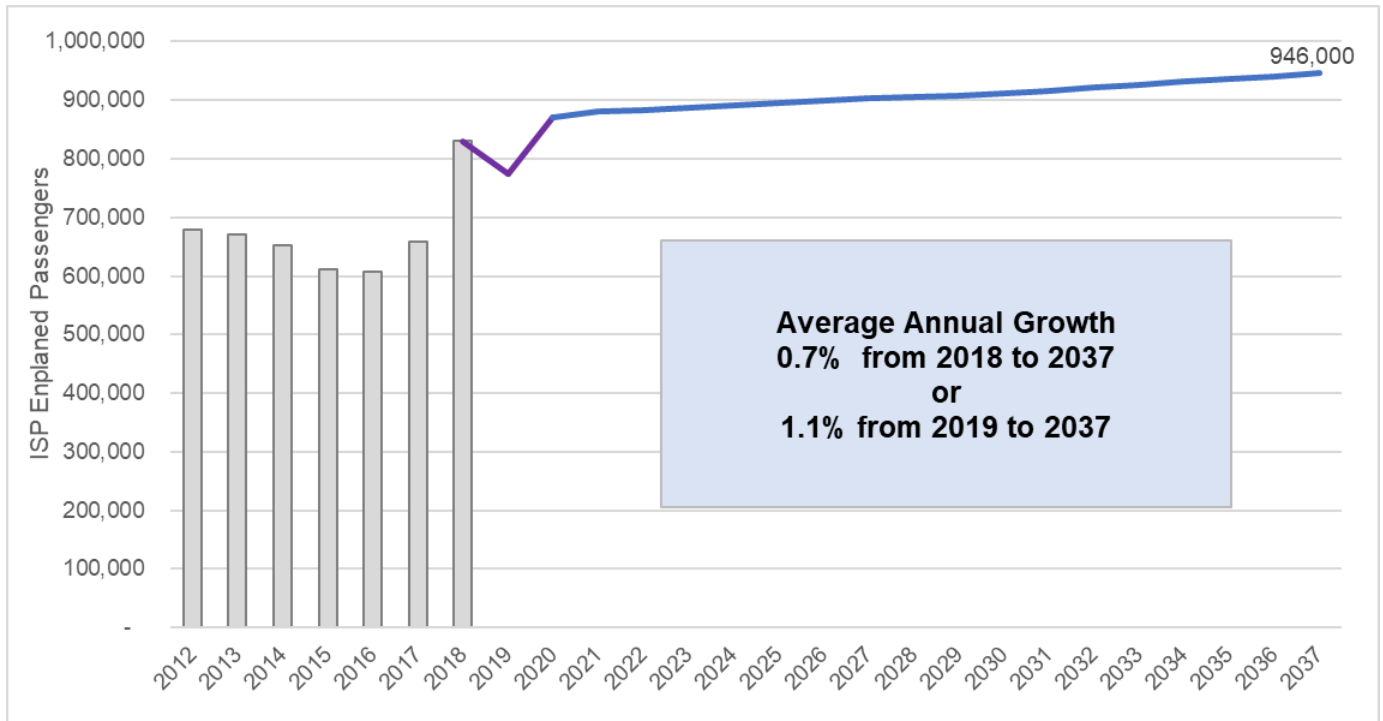
Source: ISP airport data, with Landrum & Brown analysis

The predicted values of enplaned passengers from the regression equation was not used directly to estimate the enplaned passenger forecast, but the year over year growth rates or annual changes from the regression model were applied to the 2020 estimated value and then to each new annual estimate there after to develop the annual enplaned passenger forecast for ISP.

The resulting base forecast projects traffic to increase from 830,076 total enplaned passengers to nearly 946,000 enplaned passengers for ISP in 2037 with an average annual growth rate (AGR) of 0.7% per annum. The forecast incorporated 2019 and 2020 near-term estimates which indicates a reduction in demand for 2019 before a projected recovery in 2020. As the forecast was initially developed before the COVID-19 pandemic, the 2019 decrease and the 2020 recovery estimates were based on the changes in scheduled seats established by the main carriers at the Airport.

Exhibit 3.4-3, *ISP Base Enplaned Passenger Forecast* presents the forecast projections for ISP through the forecast period to 2037. From the decreased demand level in 2019, the forecast projects growth of 1.1% AGR in the base case through 2037. The base case passenger forecast is a statistical econometric forecast and does not include possible external factor benefits such as a new multi-modal connection point like the impact at JFK with the introduction of the AirTrain.

EXHIBIT 3.4-3 ISP BASE ENPLANED PASSENGER FORECAST



Source: ISP airport data, with Landrum & Brown analysis
Note: 2019 and 2020 years are near term estimates.

The base forecast of enplaned passengers presumes that the mix of passengers on commuter aircraft versus air carrier narrowbody aircraft at ISP will remain nearly constant with a small shift to more

narrowbody aircraft during the forecast. Commuter passengers share is projected to be approximately 4.6% during the forecast with 95.4% of passengers on air carrier aircraft.

In June 2022, American Airlines announced a withdrawal at ISP. Discussions with the Airport suggest it is a temporary reduction in service due to Pandemic related system shortages and not demand related. The impact to the forecast of passengers is not expected to be significant and is expected to recover. Operations will like shift from small regional jets to large regional jets or narrowbody jet service due current system shortages and the higher fuel costs which were not present or predicted at the time of this forecast.

3.5 Operations Forecast

This section presents the development of the commercial passenger, air cargo, non-commercial air taxi, general aviation, and military aircraft operations forecasts at ISP. The key focus of this forecast update was on the commercial passenger demand that would impact the airport terminals, specifically the West Concourse. The development of the passenger operations forecast is presented with more detail in this section with general discussions of the simple forecast approaches for the non-commercial operations segments at the Airport.

3.5.1 Methodology and Assumptions

Commercial Passenger Operations are derived from the enplaned passengers forecast which is doubled to account for total passenger and total operations traffic (take offs and landings). The number of commercial passenger operations at an airport is calculated from three factors: total passengers, average load factor (percent of seats occupied) and the average aircraft size or gauge (number of seats). The equation of how this is calculated is shown:

$$\text{Commercial Passenger Operations} = \frac{\text{Total Passengers}}{\text{Average Load Factor (\%)} \times \text{Average Aircraft Size (Seats)}}$$

This relationship permits all reasonable combinations of load factors and average aircraft size given number of passengers. In order to develop reasonable load factor and aircraft gauge assumptions, commercial passenger operations were segmented into air carrier and commuter. For ISP, the air carrier segment includes all large narrowbody aircraft such as the B737 series operated by Southwest Airlines and the Airbus A320 series operated by Frontier Airlines. No widebody aircraft are anticipated to have scheduled operations at ISP during the forecast period. Although international services from ISP were not directly projected in this forecast, likely future considerations were assumed to be to markets in Canada or the Caribbean where narrowbody aircraft are common and sufficient. Commuter activity is expected to occur on small or large regional jets operated for American Airlines. Historically the commuter activity has been on small regional jets (Embraer 145, 50 seats). The future of these small regional jets is uncertain and their removal and replacement with next generation regional jets has been a topic of discussion for a number of years. At the time of this forecast American Airlines did not have a retirement plan in place and thus they are projected to be the future feeder aircraft during the forecast or a similar sized replacement when developed within the industry.

Various sources of data were used to develop the historical passenger operations, load factor, and aircraft gauge data. Diio Mi schedule data; FAA, ATADS and U.S. Department of Transportation (U.S. DOT), Schedule T-100 data was used to develop total departures and seats for each segment. Average Seats per Departure (ASPD) for each of the major group of passenger activity was calculated from total departures and total departing seats. Aircraft load factors were calculated for each group of passenger operations by dividing total enplaned passengers by total departing seats. To calculate total operations, the total number of departures was multiplied by a factor of two.

Air Taxi Operations were forecast with a similar approach applied in the 2013 MP forecast with adoption of the projected growth rates from the 2019 FAA Aerospace Forecast. The turbojet 20-year growth rate of 2.2% was assumed to be the most reasonable comparison segment that was forecasted to show modest growth in the 2019 FAA Aerospace Forecast. This segment follows projected growth in the business jet market which has been the most consistent growth segment of non-commercial activity since the long decline in civil aviation demand around 2000.

General Aviation Operations were also forecast with the application of the same market share approach as 2013 MP with updated 2019 FAA Aerospace Forecast GA operations projections. Total GA operations in the TAF for all U.S. airports was used as the total demand source and a constant share of U.S. demand of 0.42% was assumed (based on a historical average over the last eight years and nearly the same share for the last three years). Segment splits between Itinerant and Local were not developed as they were not included in the focus of the project scope.

Cargo and Military Operations forecasts were each updated to represent status quo 'no growth' forecast with the assumption of constant future activity levels based on 2018 activity. For Military operations that are not well rooted in any socioeconomic or measurable indicators the last reported year of activity is generally kept as the constant forecast level moving forward and is the commonly accepted method of the FAA. This is not typically the approach with cargo freighter operations, but in the case of ISP with just 10 reported cargo operations in 2018 and an average of eight annual operations over the last 10 years, the lack of scheduled cargo service makes a solid point that a forecast is not necessary and thus a constant level of operations based on 2018 activity was applied.

3.5.2 Annual Operations Forecast

3.5.2.1 Commercial Passenger Operations

Total commercial passenger operations were derived from the enplaned passengers forecast. To estimate the total commercial passenger operations (arrivals and departures) enplaned passenger levels were doubled to arrive at total passengers which is essentially 2x the enplaned passengers. The total passengers forecast was divided by the average passengers per operation which is the average aircraft size in seats each year during the forecast period multiplied by the estimated load factor. During the forecast periods the average gauge was projected to increase slightly from 154 seats in 2018 to 158 seats by 2037 with a similar fleet mix. Load Factors were projected to increase from 80% to 83% during the forecast period. Total commercial passenger operations are forecast to increase from 13,311 operations in 2018 to 14,430 by 2037, representing 0.4% AGR (0.5% AGR from 2019-2037).

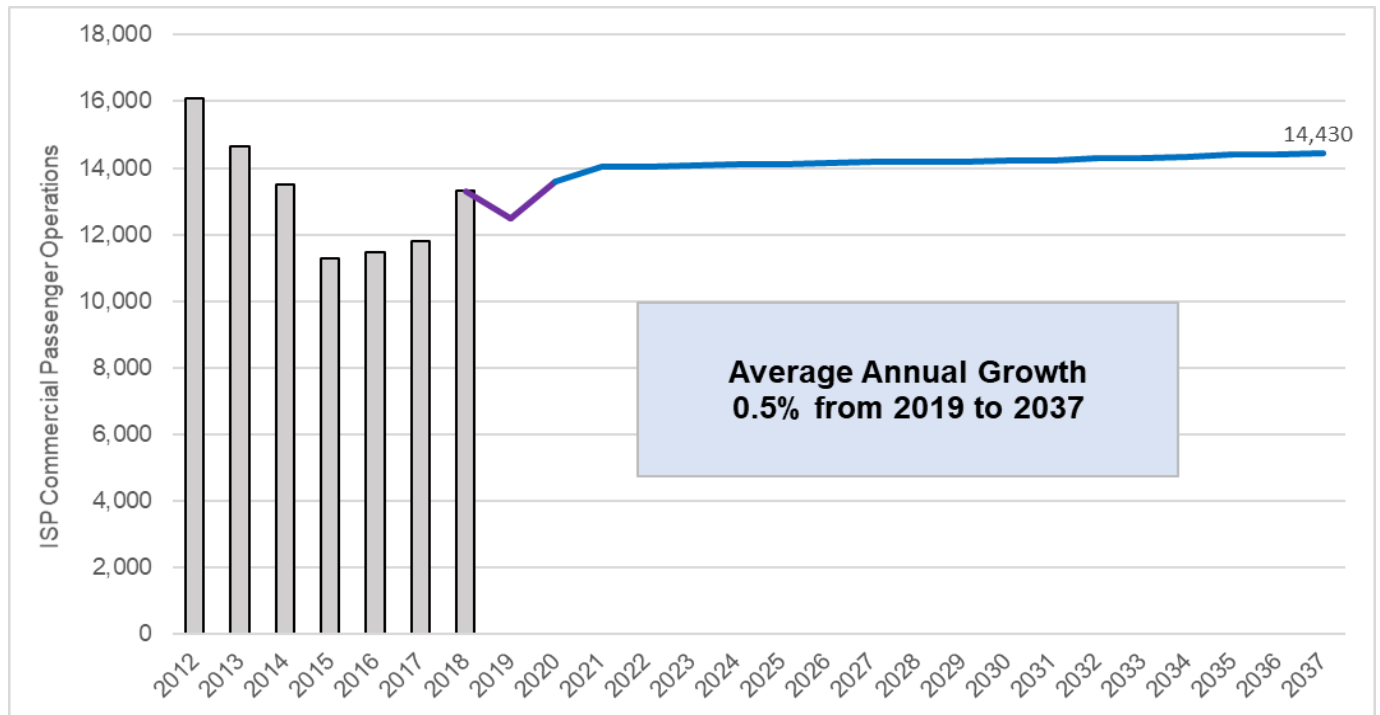
The fleet mix for ISP assumes a modest shift to more usage of Boeing 737-800 and Boeing 737 Max 8 aircraft by Southwest, more Frontier flights on Airbus A321 aircraft with American still operating feeder service with a small RJ 50 seat aircraft. **Table 3.5-1, ISP Commercial Passenger Fleet Mix Forecast** presents the summary of the projected fleet mix at ISP with small changes in the overall passenger fleet. The air carrier segment represents approximately 86% of passenger operations on narrowbody aircraft with 14% in the commuter segment using small regional jets. **Exhibit 3.5-1 ISP Base Commercial Passenger Operations Forecast** presents the overall forecast graphically.

TABLE 3.5-1 ISP COMMERCIAL PASSENGER FLEET MIX FORECAST

Aircraft Group	Aircraft Type	Seats	2018	2019	2022	2027	2032	2037
Air Carrier	Airbus A319	150	64	-	-	-	-	-
	Airbus A320	180	1,388	545	1,330	1,300	1,270	1,240
	Airbus A321	230	1,685	2,319	2,620	2,730	2,840	2,960
	Boeing 727-200	149	10	-	-	-	-	-
	Boeing 737-700	143	5,721	5,277	5,430	5,290	5,090	4,810
	Boeing 737-800	175	2,485	2,521	2,590	2,630	2,670	2,710
	Boeing B737 Max8	175	82	98	150	240	380	620
	Sub Total		11,435	10,760	12,120	12,190	12,250	12,340
Commuter	CRJ-200	50	13	-	-	-	-	-
	CRJ-700	65	9	-	-	-	-	-
	Embraer-145	50	1,854	1,712	1,930	1,980	2,030	2,090
	Sub Total		1,876	1,712	1,930	1,980	2,030	2,090
	Total		13,311	12,472	14,050	14,170	14,280	14,430

Source: ISP airport data, with Landrum & Brown analysis

EXHIBIT 3.5-1 ISP BASE COMMERCIAL PASSENGER OPERATIONS FORECAST



Source: ISP airport data, with Landrum & Brown analysis
 Note: 2019 and 2020 years are near term estimates.

3.5.2.2 Non-Passenger Operations and Total Operations Summary

Air Taxi Operations at ISP since 2012 had experienced an AGR of 12.9% but the most recent three years showed little change. Operations were forecast with application of the 2019 FAA Aerospace Forecast’s 20-year average turbojet growth of 2.2% AGR to the 2018 baseline activity level. This general average growth estimates air taxi operations at ISP to increase from 5,240 in 2018 to 7,920 in 2037.

General Aviation Operations at ISP had been showing decreased demand until 2013. Since 2013 GA operations have rebounded and have increased at about 5.2% AGR. GA Operations were forecast with the assumed constant market share of 0.42% of total U.S. GA operations forecast by the FAA. GA operations are estimated to increase from 111,648 in 2018 to 119,130 operations in 2037 for a small 0.3% AGR.

Cargo and Military Operations Forecasts (as discussed in the methodology section) are assumed to maintain a ‘status quo’ activity level and are not forecasted to show growth during the forecast period. The constant future activity levels based on 2018 activity estimate a constant 10 Cargo operations and 2,320 Military operations each year.

TABLE 3.5-2 ISP TOTAL OPERATIONS FORECAST SUMMARY

Calendar Year	Commercial Passenger	Cargo	Air Taxi	General Aviation	Military	Total
Historical						
2012	16,084	3	2,531	126,241	3,334	148,193
2013	14,663	3	4,140	86,471	1,661	106,938
2014	13,511	14	4,033	97,584	1,392	116,534
2015	11,266	3	4,842	95,818	1,872	113,801
2016	11,452	12	5,398	105,292	2,000	124,154
2017	11,805	8	5,348	107,881	2,187	127,229
2018	13,311	10	5,240	111,648	2,315	132,524
Forecast						
2022	14,050	10	5,720	113,920	2,320	136,010
2027	14,170	10	6,370	115,600	2,320	138,470
2032	14,280	10	7,110	117,340	2,320	141,050
2037	14,430	10	7,920	119,130	2,320	143,810
AGR 2018-2037	0.4%	0.0%	2.2%	0.3%	0.0%	0.4%

Source: ISP airport data, with Landrum & Brown analysis

The cumulative total of all aircraft operations at ISP (passenger and non-passenger) are forecast to increase from 132,524 in 2018 to 143,810 by 2037 representing 0.4% AGR. **Table 3.5-2, ISP Total Operations Forecast Summary Forecast** shows the summary of the projected operations at ISP by traffic segment through 2037 at five-year horizons.

3.6 Peak Period Forecast

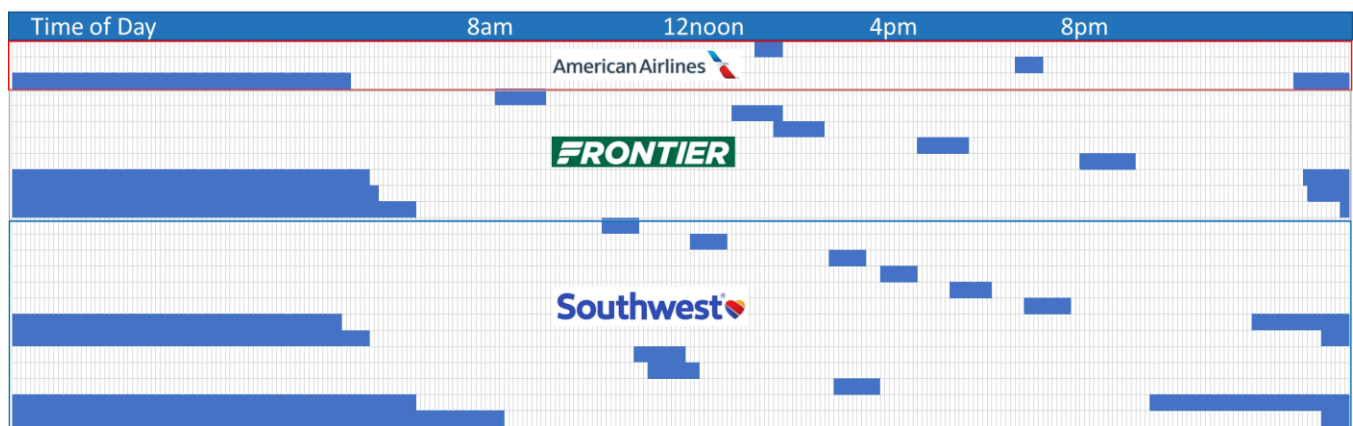
Traffic demand patterns imposed upon an airport are subject to seasonal, monthly, daily, and hourly variations. These variations result in peak periods when the greatest amount of demand is placed upon facilities required to accommodate passenger and aircraft movements. Peaking characteristics are critical in the assessment of existing facilities to determine their ability to accommodate forecast increases in passenger and operational activity throughout the study period. The objective of developing peak period forecasts is to provide a design level that sizes facilities so they are neither underutilized nor overcrowded too often. The focus of this study was on passenger functions and therefore non-passenger peak period demand was not analyzed or forecast in this report.

In order to evaluate the peaking patterns at an airport, annual enplanements and commercial passenger operations forecasts are converted to monthly, daily, and hourly equivalents. At ISP, the design day approximates activity levels that occur on a typical day in the peak month.

Scheduled seat activity data was used with review of previous analysis in the previous master plan. A small increase in projected Design Day and Peak Hour passenger levels is anticipated after 2020 in line with the increase in the overall passenger forecast. Part of the small increase in peak hour demand is due to some use of larger aircraft and higher load factors during market maturation.

A review of a typical day in the peak months at ISP provided insight into the passenger operations profile for development of the design day and peak hour forecast. The peak month at ISP is generally in December for seasonal leisure travel, with the design day being an average weekday. **Exhibit 3.6-1 ISP Example of Typical Flight Schedule (2018/2019)** shows the common daily distribution of flights at ISP by the three operating carriers (Southwest, Frontier and American). The profile shows the limited demand during the mid-day with the peak demand for gates and holdrooms occurring during the morning departure rush and for overnight parking.

EXHIBIT 3.6-1 ISP EXAMPLE OF TYPICAL FLIGHT SCHEDULE (2018/2019)



Source: Diio mi scheduled data, with Landrum & Brown analysis

Table 3.6-1, ISP Peak Period Enplaned Passenger Forecast presents peak passenger demand levels and the peak month, design day, and peak hour ratios used to develop the peak period enplanement forecasts for ISP. Peak period forecasts are shown in five-year horizons during the forecast period through 2037 beginning with 2022 as the first horizon year.

Table 3.6-2 ISP Peak Period Commercial Passenger Operations Forecast presents the peak month, design day, and peak hour ratios used to develop the peak period passenger operations forecasts at ISP.

Peak hour enplaned passengers at ISP are forecast to increase from 582 in 2018 to 784 peak hour enplaned passengers in 2037 for a raw increase of 34.7% during the forecast. Comparable is the 40.0% raw increase in Peak hour commercial passenger operations at ISP, which are forecast to increase from five in 2018 to seven peak hour passenger operations in 2037.

TABLE 3.6-1 ISP PEAK PERIOD ENPLANED PASSENGERS FORECAST

Total Enplanements	2018	2019	2022	2027	2032	2037
Annual	830,076	774,400	882,900	902,700	921,800	946,000
Peak Month Percent of Annual	9.6%	10.2%	10.2%	10.2%	10.2%	10.2%
Peak Month	80,004	78,989	90,056	92,075	94,024	96,492
Design Day Percent of Peak Month	3.4%	3.4%	3.5%	3.5%	3.5%	3.5%
Design Day	2,723	2,689	3,152	3,223	3,291	3,377
Peak Hour Percent of Design Day	21.4%	16.5%	23.5%	23.5%	23.4%	23.2%
Peak Hour	582	442	741	757	770	784

Source: ISP airport data, with Landrum & Brown analysis

TABLE 3.6-2 ISP PEAK PERIOD PASSENGER OPERATIONS FORECAST

Commercial Passenger Operations	2018	2019	2022	2027	2032	2037
Annual	13,311	12,472	14,050	14,170	14,280	14,430
Peak Month Percent of Annual	10.0%	10.2%	10.1%	10.1%	10.1%	10.1%
Peak Month	1,330	1,272	1,419	1,431	1,442	1,457
Design Day Percent of Peak Month	3.2%	3.4%	3.5%	3.5%	3.5%	3.5%
Design Day	43	43	50	50	51	51
Peak Hour Percent of Design Day	11.6%	12.7%	13.0%	13.0%	13.0%	13.0%
Peak Hour	5	5	6	7	7	7

Source: ISP airport data, with Landrum & Brown analysis

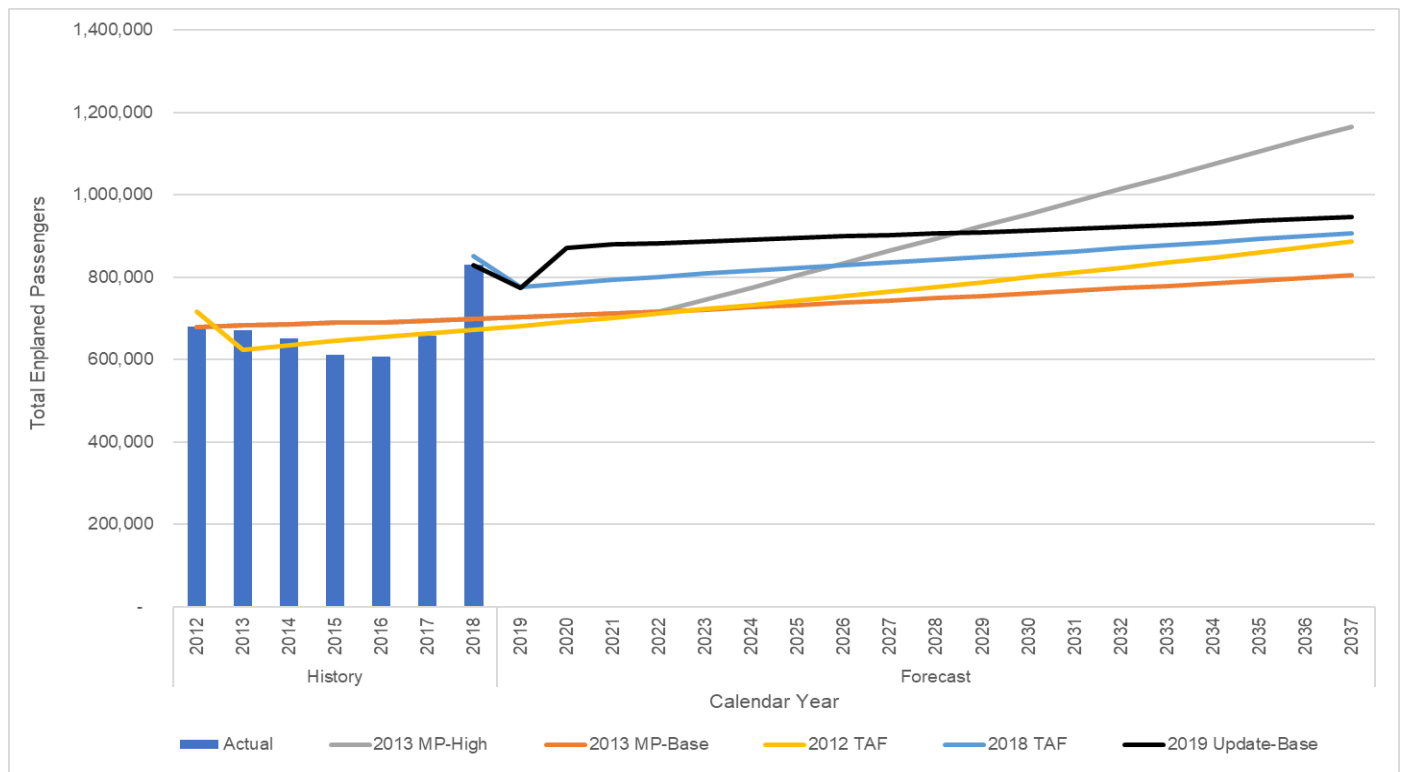
3.7 Base Forecast Summary

The base case enplaned passenger forecast update for ISP prepared for this WCT study as an update to the 2013 MP forecast projects long-term enplaned passenger growth of 0.7% AGR for ISP from 2018 to 2037, reaching nearly 946,000 total enplaned passengers in 2037. The overall airline mix is projected to remain similar with 86% air carrier/narrowbody jet operations and 14% commuter/regional jet operations². Commercial passenger operations are forecast to reach 14,430 in 2037 representing a 0.4% AGR with total operations (passenger, cargo, air taxi, GA, and military) growing at approximately the same rate of 0.4% AGR and reaching 143,810 operations.

² In June 2022 it was announced that American Airlines would be withdrawing operations at ISP. This is anticipated to be a temporary condition related to system shortages. The forecast was completed in 2019 based on existing conditions. The impact of American Airlines scheduling decision related to the fleet mix at ISP is noted and a future forecast update for a future project effort can incorporate this and other current developments. Continuing revisions to previous forecast models based on information past the submittal dates are not reasonable.

Peak period demand projections for commercial passenger activity are expected to increase more noticeably than overall growth in passenger enplanements and commercial passenger operations. Peak hour enplaned passengers are estimated to increase in demand from 582 to 784 enplaned passengers with peak hour passenger operations increasing from five to seven operations by 2037 during the forecast period. **Exhibit 3.7-1 ISP Base Enplaned Passenger Forecasts Comparison Chart** shows a comparison of the 2019 forecast update and the previous 2013 MP forecasts and the 2012 FAA TAF and 2018 FAA TAF. The base enplaned passenger forecast of 946,000 in 2037 is approximately 4.3% higher than the 2018 FAA TAF, 6.8% higher than the 2012 FAA TAF and 17.6% higher than the 2013 MP forecast for 2037.

EXHIBIT 3.7-1 ISP BASE ENPLANED PASSENGER FORECASTS COMPARISON CHART



Sources: ISP airport data; FAA TAF with Landrum & Brown analysis

3.8 Alternative Forecasts

In addition to the base case enplaned passengers forecast which was prepared as an update to the 2013 MP forecast, the forecast development process also determined that there are some possible opportunities for additional growth that may reasonable to consider. These efforts were to provide a range of optimistic growth rates for long range planning possibilities. Although the base case projects very modest growth at ISP, the aggressive marketing efforts by the Airport to attract additional service coupled with the many opportunities for a rebalancing of New York metro traffic shares are compelling circumstances that are reflected in the following alternative forecasts. It is prudent to note that after

completion of this study Breeze Airways officially announced (Dec 6, 2021) new service from ISP would commence in February 2022, the first for Breeze Airways in New York.

One factor is the leakage rate of Long Island residents that choose one of the three primary New York airports instead of ISP. With capacity constraints only tightening at JFK and LGA in particular, opportunity to decrease existing leakage rates may be a reasonable factor to consider, especially given marketing efforts by the Airport to enhance air service. For this effort various ranges of leakage recapture rates were explored to see the impact on demand at ISP were certain conditions met such as stricter capacity impediments at JFK and LGA (such as no increases in available slots or runway capacity) and successful marketing and incentivization by the Airport. Improved connectivity and reduce travel times may be a factor in increasing customer demand as well.

New airline entrants to the ISP market is also a reasonable factor to consider that could improve air traffic demand at the Airport. Frontier was a new entrant to ISP in 2017. The primary considerations include; how likely are the existing airlines expand and is there another new entrant to consider during the forecast. Frontier and Southwest both serve ISP for mainly leisure market demand and there may exist increased opportunity for expanding service to more leisure and other traditional point to point direct service markets. For purposes of this alternative forecast, focus on opportunities for Frontier service expansion with a greater focus on leisure markets and its true low-cost operating business model.

Two high case alternative forecast scenarios were eventually considered for future demand comparisons and the impact they would have on facility capacity.

High Scenario #1 considers two alternative growth factors (LGA leakage recapture and Aggressive Frontier Airlines growth). This alternative high scenario was projected to show traffic increase at ISP to nearly 1.7 million annual enplaned passengers. Approximately 460,000 additional annual recapture enplanements and 310,000 Frontier enplanements were estimated in this scenario by 2037.

This scenario assumes that ISP could potentially recapture approximately 33% (one third) of the enplaned passenger leakage to LGA. It was assumed that this could begin to occur by 2027 assuming strict capacity limitations at LGA and reach the max 1/3 recapture in five years by 2032. The recapture benefit was assumed to then grow with the natural base growth from there on. Additionally, this scenario assumes that through 2024 Frontier traffic levels could double at ISP to be more comparable to some Tier 2 markets with higher levels of Frontier activity. Comparable airports considered were PHX, AUS, RDU and CLE, with competition between Frontier and Southwest airlines, traffic levels nearly twice that or more than twice that of ISP, and not a Florida leisure destination.

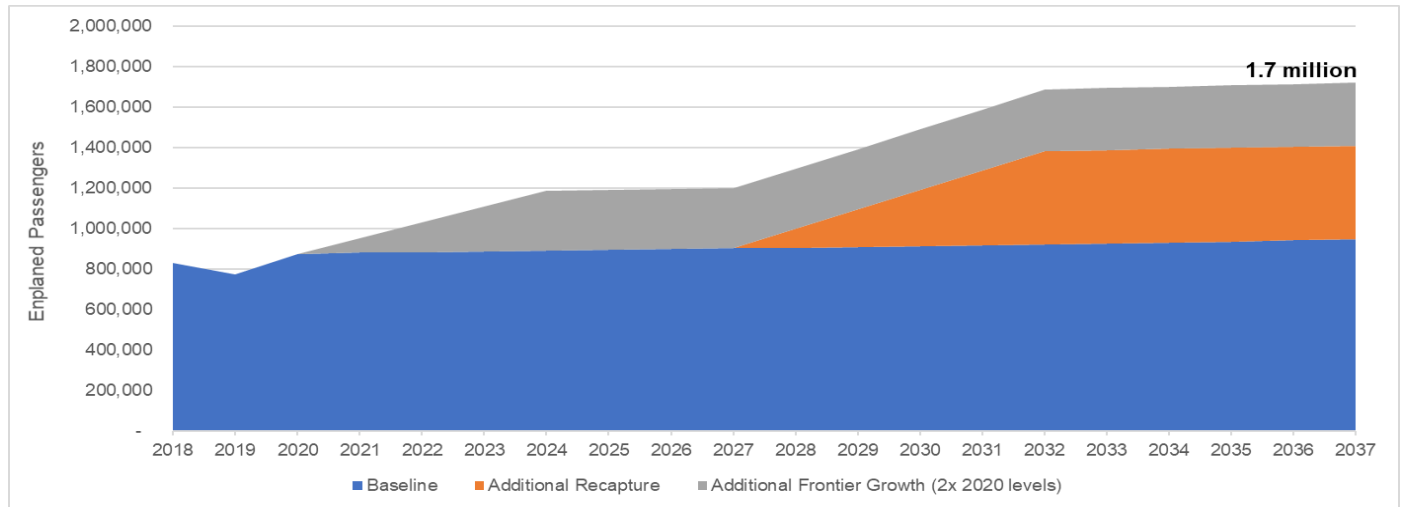
High Scenario #2 considers the growth opportunity of High Scenario #1 and also includes the entry of Breeze Airways, which would provide additional regional market connections and serve as an east coast base with more significant traffic levels. This truly high case scenario was projected to increase traffic at ISP to nearly 4.3 million annual enplaned passengers by 2037.

This scenario assumes the occurrence of the same recapture from LGA and Frontier expansion as shown in High Scenario #1 with the addition of a new low-cost carrier entering the market at ISP and establish a regional service base. For the purposes of exploration, daily operations of the new low-cost

carrier were assumed to be on next generation large regional jets or their future replacements with seat capacities in the range of 90 to 120 seats and daily operations starting at six departures per day and increasing to around 20 departures daily with an average load factor of 83%. Approximately 2.5 million additional enplanements were estimated in this scenario for a new regional LCC at ISP.

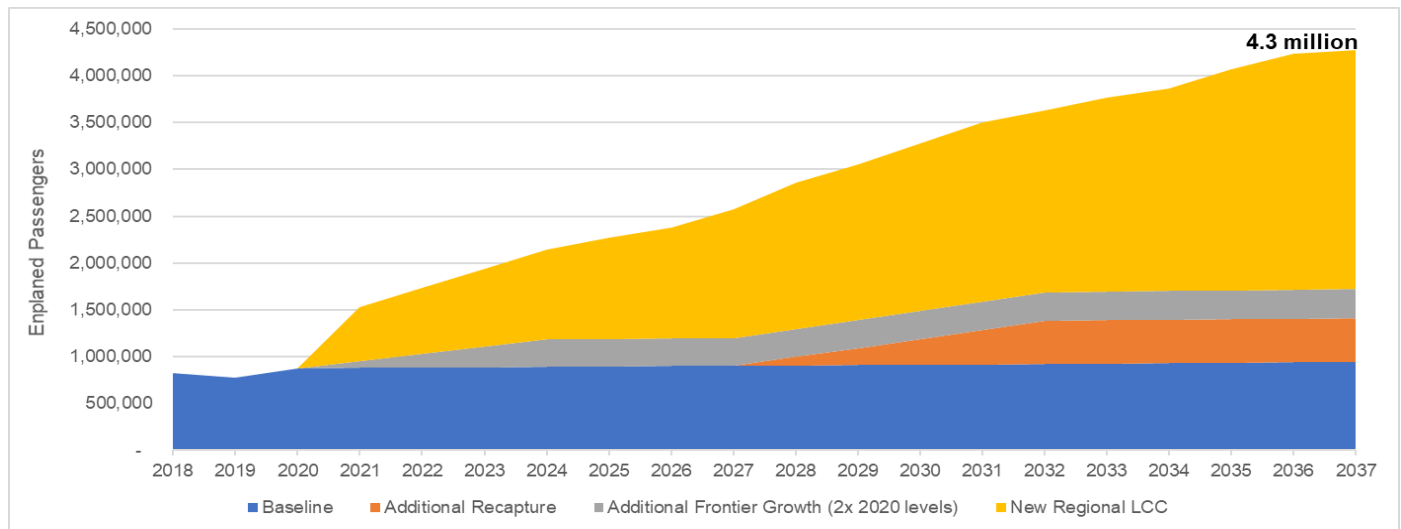
Exhibit 3.8-1 ISP Alternative High Scenario #1 and **Exhibit 3.8-2 ISP Alternative High Scenario #2** show graphical enplaned passenger forecast scenarios in very optimistic conditions as theoretical opportunities at ISP.

EXHIBIT 3.8-1 ISP ALTERNATIVE HIGH SCENARIO #1



Sources: ISP airport data; Landrum & Brown analysis

EXHIBIT 3.8-2 ISP ALTERNATIVE HIGH SCENARIO #1



Sources: ISP airport data; Landrum & Brown analysis

3.9 TAF Comparison

The FAA publishes its own forecast annually for each U.S. airport, including ISP. The Terminal Area Forecast (TAF) is “prepared to assist the FAA in meeting its planning, budgeting, and staffing requirements. In addition, state aviation authorities and other aviation planners use the TAF as a basis for planning airport improvements.”³

For all classes of airports, forecasts for total passenger enplanements, based aircraft, and total aircraft operations are considered consistent with the TAF if they meet the following criterion:⁴

- Forecasts differ by less than 10% in the five-year forecast period
- Forecasts differ by less than 15% in the ten-year forecast period

The TAF is prepared on a U.S. Government Fiscal Year (FY) basis (October through September) rather than calendar year. The forecast presented herein was developed on a calendar year basis. When an airport’s traffic is growing rapidly, a timing difference between the FY base year and the calendar base year can be significant but, in this case, the base forecast is not exhibiting significant growth and the forecasts are therefore compared ‘as is’ in relative years. 2018 was used as the base year and 2018 traffic levels are shown the same as FAA TAF figures for a comparable starting point.

The FAA provides templates in order to compare forecasts prepared by airport sponsors to the TAF. These templates are provided in Appendix B and C from the FAA Office of Aviation Policy and Plans (APO) document, *Forecasting Aviation Activity by Airport*. For the purposes of this study where focus was not intended nor place on all traffic segments, the forecast comparisons were only prepared in the Appendix C format. Additionally, the forecast comparison to the FAA TAF is being presented against the 2018 FAA TAF (available at the time the forecast was started) and the 2020 TAF. The 2020 FAA TAF includes the impact of COVID-19 which was not foreknown at the time the 2019 forecast update was prepared and shows more current data and trends for the long-term comparison.

Table 3.9-1, TAF Forecast Comparison Table – Appendix C (2018 FAA TAF) presents a comparison of the enplanements, commercial operations and total operations prepared in the 2019 forecast update for ISP to the 2018 FAA TAF. Overall the forecast variances are within the variance guidelines through ten years of the forecast with less than 10% differences in all comparison years.

Table 3.9-2, TAF Forecast Comparison Table – Appendix C (2021 FAA TAF) presents a comparison of the enplanements, commercial operations and total operations prepared in the 2019 forecast update for ISP to the 2021 FAA TAF. The enplanement forecast variance to the 2021 FAA TAF is slightly higher for +5 years at 11.0% which is a reflection of the recovery from the pandemic, and with the allowable variance for +10 and +15 years. The commercial and total operations variances are within the guidelines of less than 10% and 15% differences for each comparison year except for +5 years for total operations.

³ Federal Aviation Administration, Terminal Area Forecast Summary

⁴ Federal Aviation Administration, Review and Approval of Aviation Forecasts, June 2008.

TABLE 3.9-1 TAF FORECAST COMPARISON TABLE – APPENDIX C (2018 FAA TAF)

Segment	Forecast Year	Sponsor Forecast	2018 FAA TAF	% Variance Sponsor vs 2018 TAF
Passenger Enplanements				
Base year	2018	851,231	851,231	0.0%
Base year + 5 years	2023	887,180	808,650	9.7%
Base year + 10 years	2028	905,864	841,364	7.7%
Base year + 15 years	2033	923,637	877,892	5.6%
Commercial Operations*				
Base year	2018	19,180	19,180	0.0%
Base year + 5 years	2023	19,932	18,457	8.0%
Base year + 10 years	2028	20,704	19,236	7.6%
Base year + 15 years	2033	21,583	20,122	7.3%
Total Operations				
Base year	2018	132,178	132,178	0.0%
Base year + 5 years	2023	136,496	134,566	1.4%
Base year + 10 years	2028	138,961	135,608	2.5%
Base year + 15 years	2033	141,587	136,759	3.5%

TABLE 3.9-2 TAF FORECAST COMPARISON TABLE – APPENDIX C (2021 FAA TAF)

Segment	Forecast Year	Sponsor Forecast	2021 FAA TAF	% Variance Sponsor vs 2021 TAF
Passenger Enplanements				
Base year	2018	849,167	849,167	0.0%
Base year + 5 years	2023	887,180	799,329	11.0%
Base year + 10 years	2028	905,864	956,550	5.3%
Base year + 15 years	2033	923,637	1,014,486	8.7%
Commercial Operations*				
Base year	2018	19,180	19,180	0.0%
Base year + 5 years	2023	19,932	19,466	2.4%
Base year + 10 years	2028	20,704	21,344	3.0%
Base year + 15 years	2033	21,583	22,192	2.7%
Total Operations				
Base year	2018	132,178	132,178	0.0%
Base year + 5 years	2023	136,496	153,891	11.3%
Base year + 10 years	2028	138,961	156,300	11.1%
Base year + 15 years	2033	141,587	158,342	10.6%

Sources: ISP airport data; 2021 FAA TAF with Landrum & Brown analysis

Note: * Commercial operations indicated as passenger operations, cargo, and air taxi operations

4 Facility Requirements

Terminal facility requirements were developed using a Terminal Space Program (TSP) model developed by Landrum & Brown. Two separate programs were developed, the first is based on a 3-gate concourse extension with a new FIS / GAF facility and the second is a new North Terminal program to replace the existing terminal.

The TSP was limited to 3 gates because the existing site constraints limit the airport to a 3-gate replacement to Concourse B. The intent is to demolish and replace Concourse B because the current facility is beyond its useful life, as described in the Existing Conditions section of this report. There are no feasible options to improve Concourse B because the facility was built from trailers that were only intended for temporary use.

The TSP is based upon the planning guidelines published in the IATA Airport Development Reference Manual (ADRM) 10th Edition as well as guidelines provided by the Airport Cooperative Research Program (ACRP).

The TSP is supplemented with information about facilities provided at comparable airports and a knowledge of industry-wide trends in construction of passenger terminals. The TSP also accounts for planning and operational input provided by ISP and airport stakeholders.

The requirements were based on the volume of activity (e.g., passengers or baggage) to be accommodated during peak periods and/or industry-accepted standards and allowances. Requirements based on activity were derived by mathematically relating the projected peak volume of activity to a number of other variables, including:

- Passenger dwell times and flow rates
- Baggage volumes and flow rates
- Maximum allowable queue sizes or times
- Space required per unit of queue
- Space required per unit volume

Assumptions for processing rates, queue length, and spatial requirements were based on IATA LOS “optimum” standards. LOS is a measure of the quality of service provided inside the terminal in terms of ease of flow and propensity for delays. Optimum LOS corresponds to an overall good level of service, where flows are stable, delay levels are acceptable, and a good level of comfort is provided. Professional judgment was employed throughout the TSP to reflect conditions local to ISP.

4.1 Three Gate Extension TSP

The gross floor areas presented in **Table 4.1-1** through **Table 4.1-3** represent the principal target values and planning requirements provided to meet the projected demand for three narrowbody gate positions and a CBP facility capable of handling 400 international arriving passengers in the peak hour.

The 400 arriving passengers in the peak hour was used because it was the minimum defined by CBP in their program guidelines. 400 passengers also represents two simultaneous arriving narrowbody aircraft at ISP, which was considered a plausible scenario by ISP.

The follow items are not included in the program totals:

- Any required renovation areas of the existing building
- New security checkpoint (if required, concept dependent)
- New airport offices (if required, concept dependent)
- Baggage systems (if required) including inline baggage systems

The requirements are pure programmatic results, based on projected peak hour volumes at defined stages during the planning period. These parameters constitute guidance to define facility needs, but the ability to accommodate site-specific information provides for the best assessment of future needs.

It is important to note that the particular configuration of the facility can have considerable impact on future space needs beyond that which can be determined by analyzing the volumes of activity. A team of airport terminal specialists (planners and architects) must properly assess and recognize the organizational and functional flows, the physical distribution of spaces and passenger processing areas, as well as the support facilities within the passenger terminal building and the implications and interactions of each area to effectively use the programmatic results in a useful manner.

TABLE 4.1-1 THREE GATE EXTENSION PROGRAM – PART 1

Space Designation	Units	SF
Airline Spaces		
Contact Gate Holdrooms	3	8,460
First Class Lounges	-	-
Baggage Make-up Renovations		10,000
New CBIS/CBRA (Inline Baggage System)		6,000
Public Spaces		
Passenger Security Screening		
Number of Screening Units	4	5,500
Queue		3,200
Support Space		900
Restrooms		
Concourse		1,500
Concourse Departure Corridor		9,310
Concourse Sterile corridor (including sterile vertical circ.)		5,780
Airline Spaces		50,650

Source: Landrum & Brown, 2021

TABLE 4.1-2 THREE GATE EXTENSION PROGRAM – PART 2

Space Designation	Units	SF
Concession Space		
Retail airside		1,180
F&B Airside		320
Concession Support		380
Subtotal Concessions Spaces		1,880
Circulation		94
Concessions Spaces		1,974

Source: Landrum & Brown, 2021

TABLE 4.1-3 THREE GATE EXTENSION PROGRAM – PART 3

Space Designation		
	Units	SF
CBP FIS and GAF		
Primary Processing and Inspection		5,934
Unified Secondary Processing and Inspection		2,516
Detention Suite		1,800
Agricultural Inspections and Lab Spaces	1	380
Canine Enforcement Spaces and Kennels		1,509
Operational Support Spaces		7,148
Staff Support		184
International Baggage Claim		
Number of ADG III (CAT C) units (>130lf<230lf)	1	6,680
Restrooms		1,400
FIS Circulation		1,261
CBP		28,812
Terminal Support Spaces		
Airline Operations		7,500
Airport Operations		2,000
Maintenance		1,200
Mechanical / Electrical		9,000
Vertical Penetration		2,100
Terminal Support Spaces		21,800
Total Building Area		103,236

Source: Landrum & Brown, 2021

4.2 New North Terminal TSP

A separate North Terminal program was created with the purpose to develop a new north terminal program as a full replacement of the existing terminal facilities, including a new FIS and GAF facility. This option was developed due to the existing deficiencies in the existing terminal complex. It was recognized that ISP cannot operate two separate commercial terminal facilities by maintaining existing Concourse A and a potential new North Terminal.

The North Terminal TSP will support a demand range of 1.8 – 2.0 Million Annual Passengers (MAP) with 8 total contact gate positions. The gross floor areas presented in **Table 4.2-2** through **Table 4.2-4** represent the principal target values and planning requirements provided to meet the projected demand. However, for planning and programming purposes, L&B assumed an 8-gate 1.8 – 2.0 MAP initial build. Terminal area requirements were not developed for demand beyond 2.0 MAP because this level of activity was beyond the forecast horizon, however, this study did explore expansion beyond 8 gates in order to assess flexibility to support future growth.

The North Terminal TSP provided additional ISP airport administration and office space, which will be located on the upper level of the North Terminal. L&B based the programmatic requirement on existing conditions, shown in **Table 4.3-1, Existing Airport Offices**. The intention of the program is to meet and exceed the amount of airport office space, including conference areas.

TABLE 4.3-1 EXISTING AIRPORT OFFICES

Existing Room Type	Square Feet
ISP20 Reception / Waiting	400
ISP21 Conference	300
ISP23 Storage	300
ISP26 Special Events	150
ISP27 Accounting Office	300
ISP28 Admin Super	250
ISP29 Accounting Office 150 SF	150
ISP30 Construction Office 511 SF	550
ISP31 Secretary 174 SF	200
ISP32 Small Conf Rm. 177 SF	200
ISP33 Airport Commissioner 452 SF	450
ISP34 Deputy Commissioner 413 SF	450
ISP35 Conference Room 789 SF	800
ISP36 Law Enforcement 297 SF	300
ISP37 Police Chief 277 SF	300
ISP39 Kitchenette / break Room 408 SF	450
ISP43 Departures Bridge 365 SF	400
Total	5950

Source: Landrum & Brown, 2022, ISP Airport

TABLE 4.2-2 NORTH TERMINAL PROGRAM – PART 1

Space Designation	2020 Existing		1.8 – 2.0 MAP	
	Units	SF	Units	SF
Airline Spaces				
Check-in (areas from counter face to back wall)		2,900		1,800
Curb Check Positions	4	200	5	700
Full - Service Check-in and Bag Drop	48		22	
Ticketing Counter Queue		5,300		2,900
Self - Service Kiosks	-	-	19	1,000
Airline Ticketing Offices (ATO)		6,530		4,180
Outbound Baggage (sorting area w/ carousels)		10,300		4,000
Early Baggage Storage				
Hold Baggage Screening				
Level 1 EDS Units		-	3	9,000
Level 2 Workstations		-	2	200
Level 3 ETD Units		-	11	4,000
Physical Search		-		100
Domestic Baggage Claim				
Number of CAT ADG III (CAT C) units	4		2	
Bag Claim Frontage Total (Linear Feet)	580		415	
Claim Hall area		22,400		12,200
Inbound Baggage Drop-off		4,200		3,300
Baggage Service Offices		320		1,200
Contact Gate Holdrooms	11	25,200	8	22,540
First Class Lounges			0	-
Airline Operations		11,200		16,500
<i>Subtotal Airline Spaces</i>		<i>88,550</i>		<i>103,620</i>
<i>Circulation</i>		<i>15,700</i>		<i>15,600</i>
Airline Spaces		104,250		119,220

Source: Landrum & Brown, 2019

TABLE 4.2-3 NORTH TERMINAL PROGRAM – PART 2

Space Designation	2020 Existing		1.8 – 2.0 MAP	
	Units	SF	Units	SF
Public Spaces				
Check-in Lobby (circulation)		4,800		4,200
Arrivals Greeters Hall		7,200		8,200
Concourse Departure Corridor		2,500		2,430
Concourse Sterile corridor				6,980
Restrooms				
Check-in Lobby (Passenger & ATO)		1,100		2,100
Concourse		4,175		3,800
Sterile Corridor				-
Baggage Claim				
International		-		1,400
Domestic		1,300		2,000
Passenger Security Screening				
Number of Screening Units	5	4,100	5	9,800
Security Screening Queue & Lobby		3,400		4,200
Security Screening Support Areas		1,900		2,100
<i>Subtotal Public Spaces</i>		<i>60,475</i>		<i>77,210</i>
<i>Circulation</i>		<i>22,900</i>		<i>11,600</i>
Public Spaces		83,375		88,810
Concession Space				
Pre-Security - Departures		710		1,589
Post-Security				13,508
Arrivals Lobby		1,320		795
Concessions Support		5,000		3,973
<i>Subtotal Concessions Spaces</i>		<i>20,430</i>		<i>19,865</i>
<i>Circulation</i>		<i>-</i>		<i>3,000</i>
Concessions Spaces		20,430		22,865

Source: Landrum & Brown, 2019

TABLE 4.2-4 NORTH TERMINAL PROGRAM – PART 3

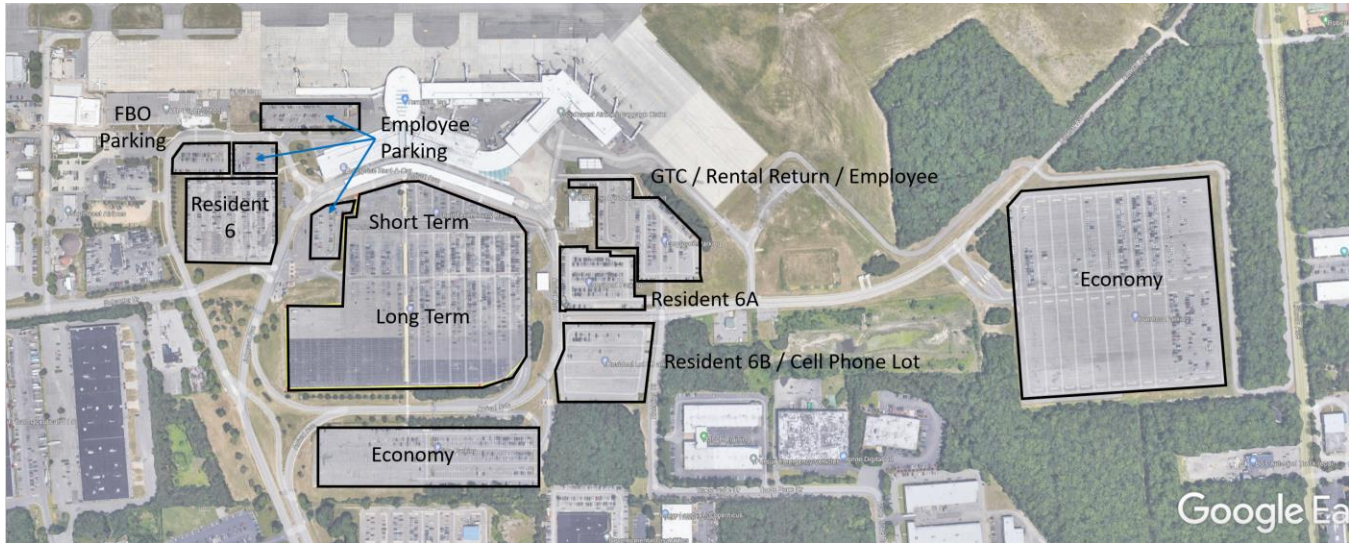
Space Designation	2020 Existing		1.8 – 2.0 MAP	
	Units	SF	Units	SF
CBP FIS and GAF				
Primary Inspection				
Primary Processing Booths			6	
Global Entry kiosks			0	
APC Kiosks			0	
Primary Processing and Inspection		2,000		5,934
Unified Secondary Processing and Inspection		-		2,600
Detention Suite		-		1,800
Agricultural Inspections and Lab Spaces		-		400
Canine Enforcement Spaces and Kennels		-		1,600
Operational Support Spaces		-		7,200
Staff Support		-		200
International Baggage Claim				
Number of ADG VI (CAT F) units (>330lf<460lf)			0	
Number of ADG V (CAT E) units (>230lf<300lf)			0	
Number of ADG III (CAT C) units (>130lf<230lf)		-	1	
Bag Claim Frontage Total (Feet)		-	183	
Claim Hall area		-		6,680
FIS Circulation		-		600
<i>Customs & Border Protection (CBP)</i>			2,000	27,014
Terminal Support Spaces				
Airport Administration, Offices, etc.		5,950		7,500
Airport Operations		11,890		5,500
Maintenance		3,440		5,200
Building Systems		51,900		25,800
Vertical Circulation		5,000		5,200
Misc. (SARA, Chapel, Play Areas, Business Center, etc.)		11,630		1,800
<i>Terminal Support Spaces</i>			89,810	51,000
<i>Total Building Area</i>			299,865	308,909

Source: Landrum & Brown, 2019

4.3 Landside Parking Requirements

The approach that was taken for the development of landside parking requirements for the North Terminal was to provide, at a minimum, the same total number of parking stalls that exist today, shown in **Exhibit 4.3-1, Existing Parking Areas** with the total parking stall by type listed in **Table 4.3-1, North Terminal Parking Requirements**. These requirements assume that the existing parking is designed to support a 1.8 MAP demand level and will be utilized for Phase 1.

EXHIBIT 4.3-1 EXISTING PARKING AREAS



Source: Landrum & Brown, 2022, ISP Airport

TABLE 4.3-1 NORTH TERMINAL PARKING REQUIREMENTS

Parking Type	Existing & Future Phase 1 (1.8 MAP)
Public (Short)	250
Public (Long)	1,600
Public (Economy)	2,150
Resident Parking	600
Employee	400
Rental Ready Return	400
Total	5,400

Source: Landrum & Brown, 2022, ISP Airport

5 Alternatives Development and Evaluation

The initial objective of this task was to replace Concourse B and this report documents the effort to develop Concourse B replacement options. However, it was determined that this path to replace gates at Concourse B was not the preferred option. The reason that the replacement of Concourse B was not selected as the preferred option was because existing Concourse A and Concourse B area have numerous site constraints that limit long-term expansion and because the existing terminal is obsolete and in need of replacement. The effort to replace and improve the existing facilities was determined to be not worthwhile, and that a new terminal at the north of the airport would be the preferred approach.

Another important factor to consider is that these options are intended to not only add gates but also improve LOS by providing the following amenities:

- Concessions or restaurants
- Retail shops
- Children's play area
- Computer and recharge stations
- Business center or lounge
- Service Animal Relief Area (SARA)
- Information Centers
- Wheelchair Storage
- Upgraded or consistent finishes with the remainder of the terminal

The development of alternatives occurred in two phases; the initial alternatives focused primarily on the gate replacement at Concourse B but also included an extension to Concourse A and one placeholder option for the north terminal. The final alternatives maintained the best Concourse B replacement alternative and added two versions of the north terminal alternative.

5.1 Initial Alternatives Overview

Based on stakeholder engagement and an evaluation of the concepts, ISP has identified the north terminal as the ideal location for long-term development. However, the focus of the initial alternatives was to develop a preferred direction for near-term gate replacement at Concourse B.

There are four alternatives for gate replacement at the existing terminal, including Concourse B replacement and Concourse A extension and one north terminal alternative for a total of five alternatives. The initial alternatives include a placeholder for the north terminal, as the programmatic requirements and site evaluation for a north terminal was not yet completed at the time of this alternative study.

A preferred south option to replace Concourse B was preserved if a north terminal option is not feasible. Alternative 2 was selected as the preferred approach because it provides the best passenger experience and removed the obsolete rotunda building and provides near-term gate expansion.

- Alternative 1 (Eliminated) – Concourse B replacement, maintains the existing rotunda, but may require Concourse A gates during construction phasing.
 - Eliminated due to existing constraints, costs and passenger flow issues associated with the central terminal
 - Pros
 - Opportunity to renovate central terminal for offices or concession space
 - Cons
 - Central terminal infrastructure upgrade and renovation cost
 - Requires additional vertical transition
 - Phasing requires use of east concourse gates
- Alternative 2 (Preferred South) – Concourse B and rotunda are replaced. This alternative connects to the existing Southwest concourse but may require Concourse A gates during construction phasing.
 - Selected as the preferred south option to replace Concourse B
 - Pros
 - No upgrade costs for central terminal
 - No vertical change on concourse
 - New security checkpoint
 - Add more gates without impact to FBO
 - Cons
 - Phasing requires use of east concourse gates
- Alternative 3 (Eliminated) – Concourse B replacement behind the existing concourse and maintains the existing rotunda. Maintains operation of the existing concourse during construction.
 - Includes Alternative 3A and Alternative 3B
 - Alternative 3A would construct a replacement of Concourse B and maintain the rotunda but require two level changes.

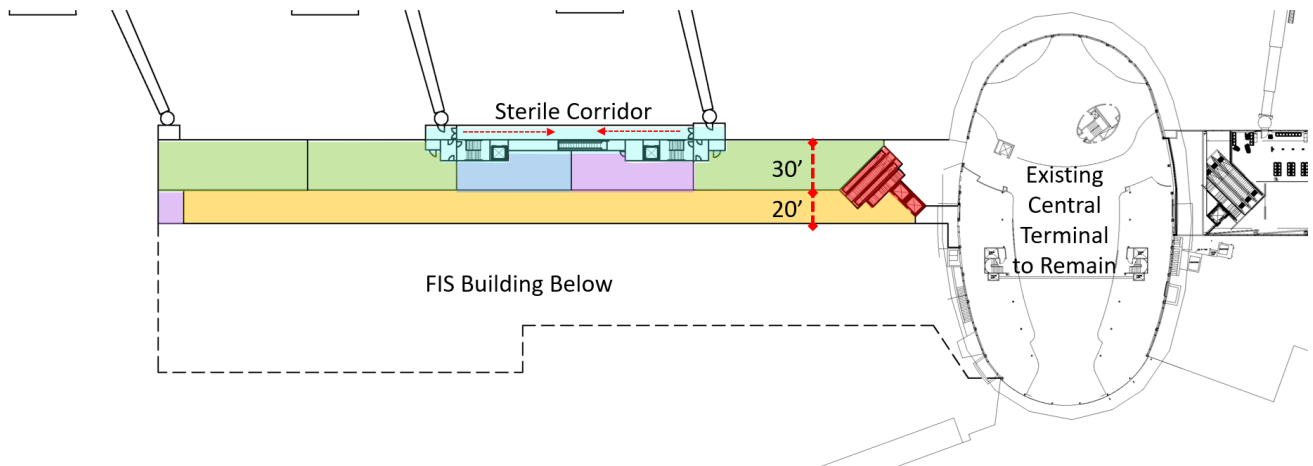
- Alternative 3B would eliminate the level change between Concourse A and Concourse B by building a corridor outside the rotunda.
- Eliminated due to existing constraints, costs and passenger flow issues associated with the central terminal
 - Pros
 - Enables operations during construction
 - Opportunity to renovate central terminal for offices or concession space
 - Cons
 - Central terminal infrastructure upgrade and renovation cost
 - Requires additional vertical transition
 - Expansion encroaches upon inbound bag area
- Alternative 4 (Eliminated) – Extend Concourse A to provide additional gate capacity with no impact to the rotunda and existing Concourse B on-going operating during construction. The intent of this option is to replace the gates at Concourse B by extending Concourse A.
 - There are three variations, including Alternative 4A, 4B and 4C
 - Alternative 4A extends south to avoids conflict with runway expansion
 - Alternative 4B continues the building extension to the southeast but risks airspace conflicts due to Part 77 penetrations by aircraft tails
 - Alternative 4B shifts the concourse extension further south to potentially avoid airspace conflicts due to Part 77 penetrations by aircraft tails
 - Eliminated due to concourse extension and aircraft parking position impact to runway and airspace
 - Pros
 - Enables operations during construction
 - Balanced walking distance from existing security checkpoint
 - Cons
 - Impact to airspace due to Part 77 penetrations by aircraft tails at the runway end
 - Impact to proposed new GTC
 - International passengers do not exit near existing arrivals & long walk for domestic arrivals to bag claim

- Southwest lease issues
- Alternative 5 (Preferred North) – Develop a North Terminal
 - Selected as the preferred north option
 - Pros
 - New innovative technology
 - GAF/FIS
 - Inline baggage
 - Improve customer service
 - Close to LIRR – Walkable distance
 - Creates a true TOD connection
 - Greenfield site enables long-term gate expansion
 - Energy improvements including LEED standards
 - Reduce carbon footprint
 - Cons
 - High relative cost to build a new terminal
 - No connectivity and split operations to main terminal
 - Timeframe for construction

5.1.1 Alternative 1

Alternative 1 includes the replacement existing Concourse B directly over the existing structure. This alternative would demolish the existing structure but maintains the rotunda in order to reduce construction costs. This concept would require the existing vertical movements noted in the existing configuration as a deficiency although additional elevators could be added to provide redundancy. An additional elevator would provide a means to transport passengers in the event that the other elevator fails. The phased approach for this alternative may require Concourse A gates during construction phasing. **Exhibit 5.1-1** through **Exhibit 5.1-3** shows the gate and apron level floorplans and a building cross section to show how the passenger flows would work.

EXHIBIT 5.1-1 ALTERNATIVE 1 GATE LEVEL



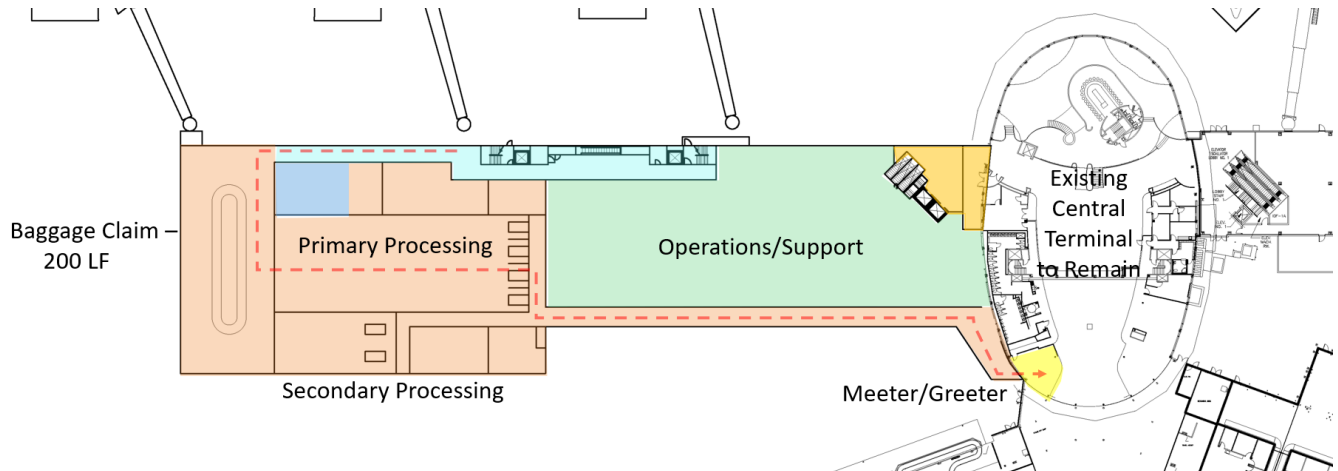
New Building Area

Secure Circulation	8,500 SF	Vertical Circulation	1,000 SF
Holdroom	7,900 SF		
Restroom	1,400 SF		
Concessions	1,800 SF		
Sterile Corridor	3,300 SF		

- Additional Vertical Transition Required
- Phasing required Frontier use of Gates A2-A4 during construction
- Central Terminal to remain as existing

Source: Landrum & Brown, 2019

EXHIBIT 5.1-2 ALTERNATIVE 1 APRON LEVEL



New Building Area

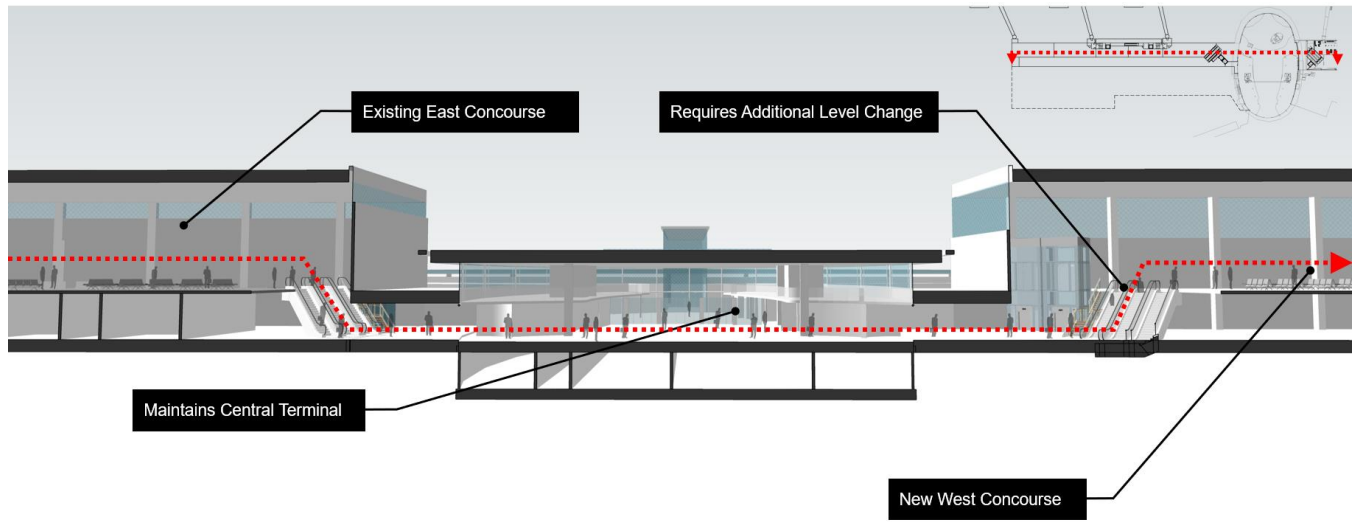
CBP Area	30,000 SF
Operations Space	20,000 SF
Restroom	1,400 SF
Sterile Corridor	4,300 SF
Secure Circulation	1,700 SF

Renovation Area

Meeter/Greeter	2,000 SF
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Source: Landrum & Brown, 2019

EXHIBIT 5.1-3 ALTERNATIVE 1 SECTION

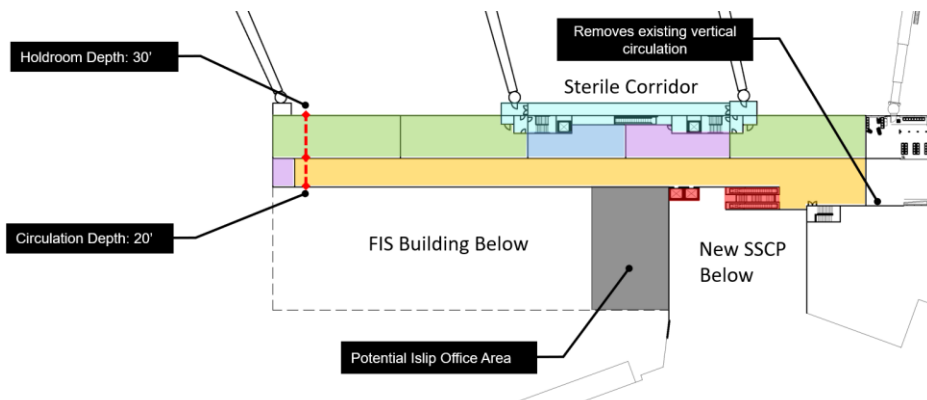


Source: Landrum & Brown, 2019

5.1.2 Alternative 2

Alternative 2 explores a replacement option for both existing Concourse B and the rotunda. This alternative is a direct extension to existing Concourse A and eliminates the vertical transition between the two concourses. This alternative may require Concourse A gates during construction phasing. This concept allows for a seamless transition from Concourse A to B with no vertical changes. **Exhibit 5.1-4** through **Exhibit 5.1-6** shows the gate and apron level floorplans and a building cross section to show how the passenger flows would work.

EXHIBIT 5.1-4 ALTERNATIVE 2 GATE LEVEL

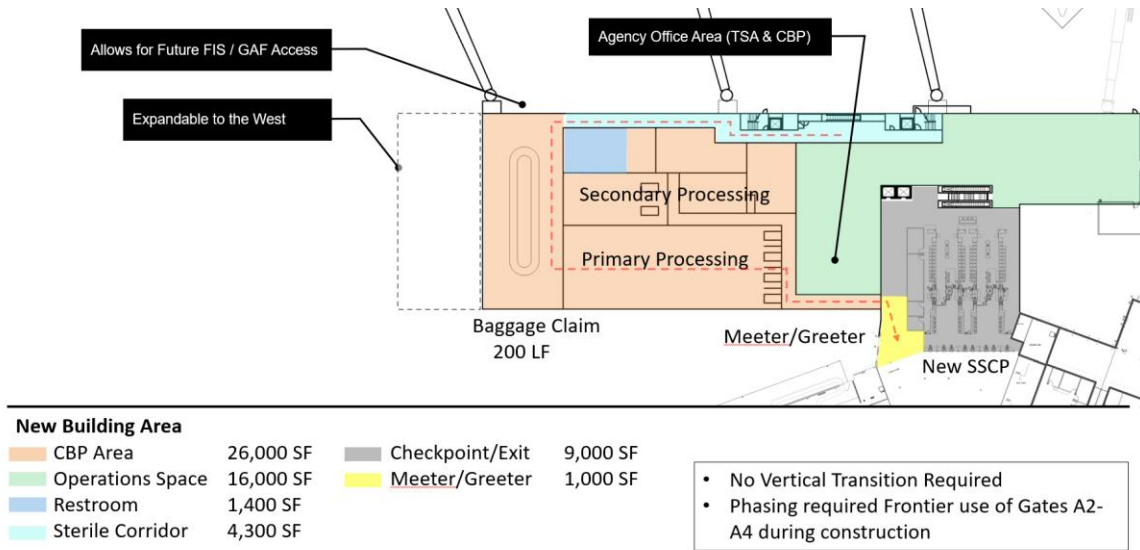


New Building Area	
Secure Circulation	8,800 SF
Holdroom	8,300 SF
Restroom	1,400 SF
Concessions	1,800 SF
Sterile Corridor	3,300 SF
Vertical Circulation	1,000 SF

- Demolition of the Central Terminal building
- No Vertical Transition Required
- Phasing required Frontier use of Gates A2-A4 during construction
- Less length allows for future expansion to west

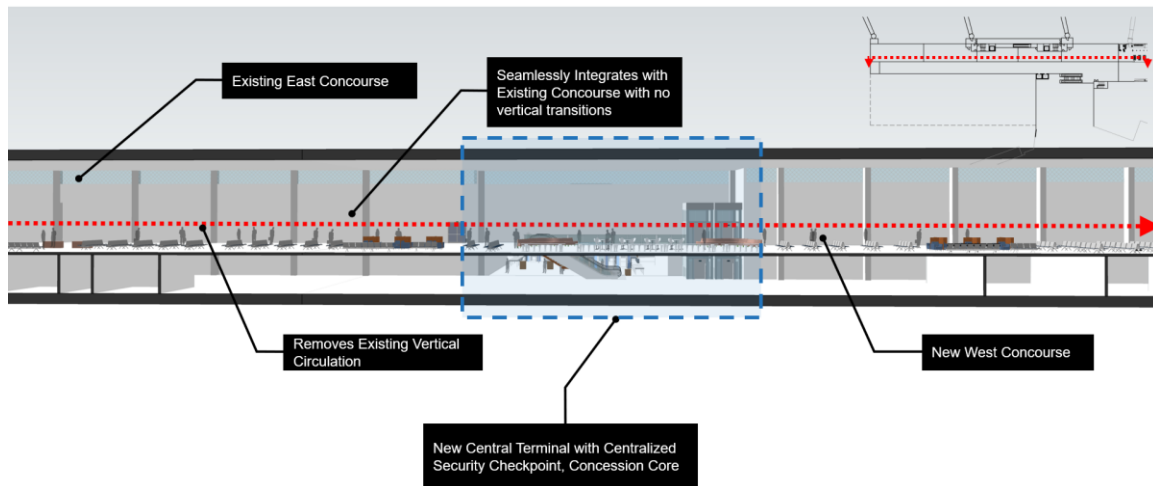
Source: Landrum & Brown, 2019

EXHIBIT 5.1-5 ALTERNATIVE 2 APRON LEVEL



Source: Landrum & Brown, 2019

EXHIBIT 5.1-6 ALTERNATIVE 2 SECTION



Source: Landrum & Brown, 2019

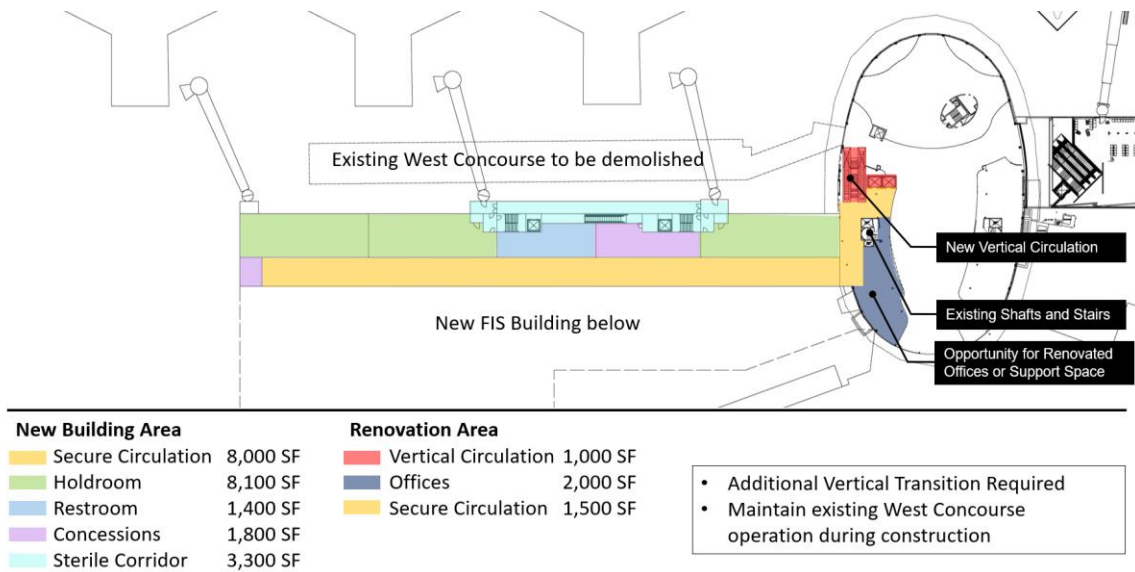
5.1.3 Alternative 3

Alternative 3 explores how the existing Concourse B could remain operational during the construction of the new Concourse B by building the new facility directly south of the existing Concourse B building. Upon completion, the existing building would be demolished, and additional apron pavement would be required. This alternative also maintains the rotunda in order to reduce construction costs. **Exhibit 5.1-**

7 through **Exhibit 5.1-9** shows the gate and apron level floorplans and a building cross section to show how the passenger flows would work.

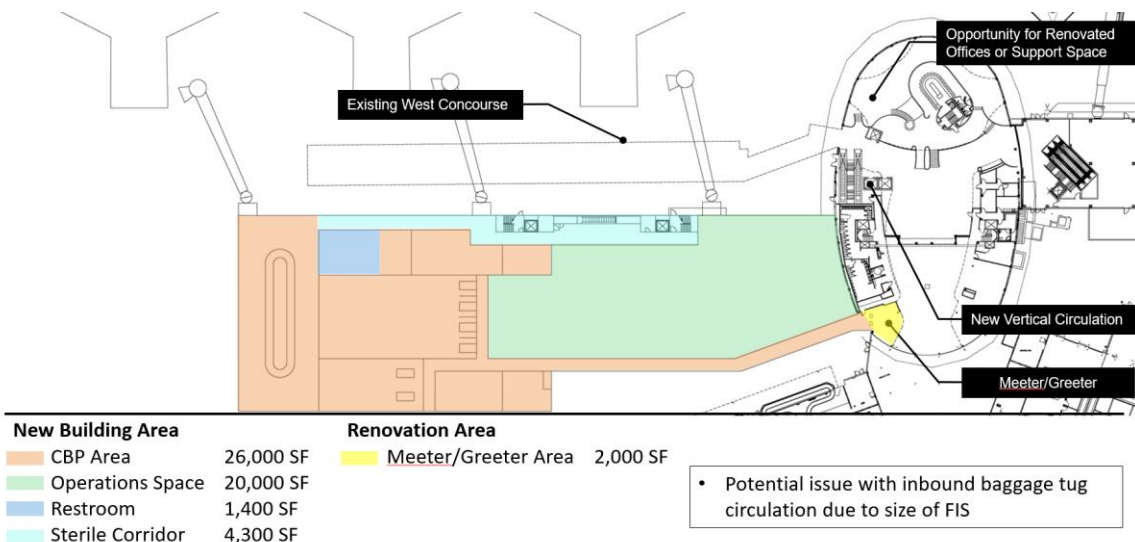
Exhibit 5.1-10, Alternative 3B Gate Level shows a plan alteration that would provide an upper level corridor within the rotunda that would eliminate the level change from Concourse A.

EXHIBIT 5.1-7 ALTERNATIVE 3A GATE LEVEL



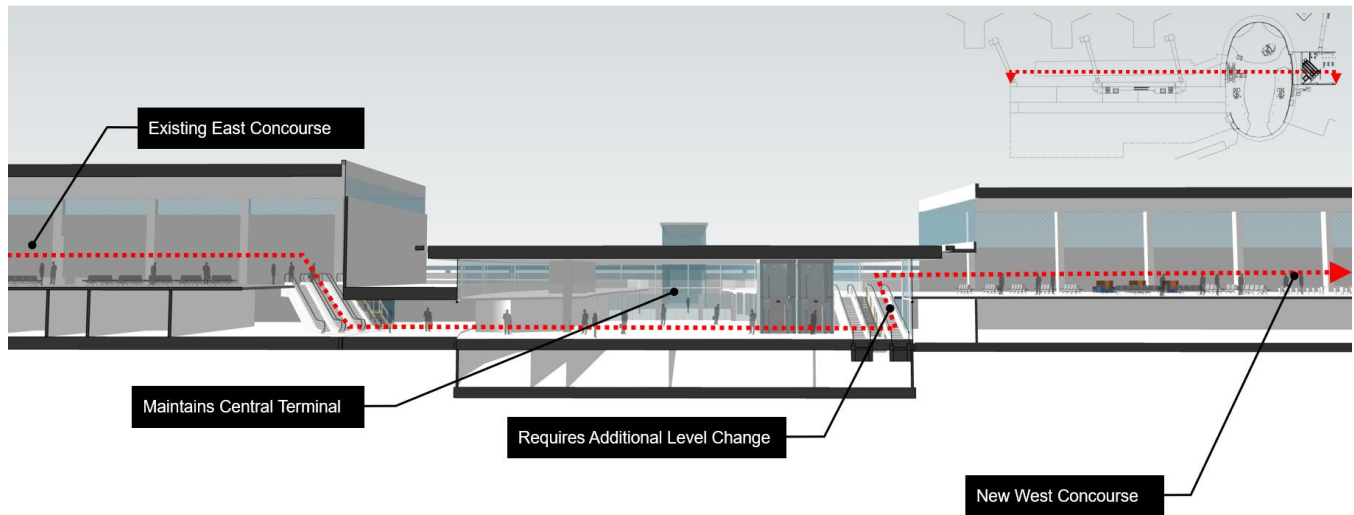
Source: Landrum & Brown, 2019

EXHIBIT 5.1-8 ALTERNATIVE 3 APRON LEVEL



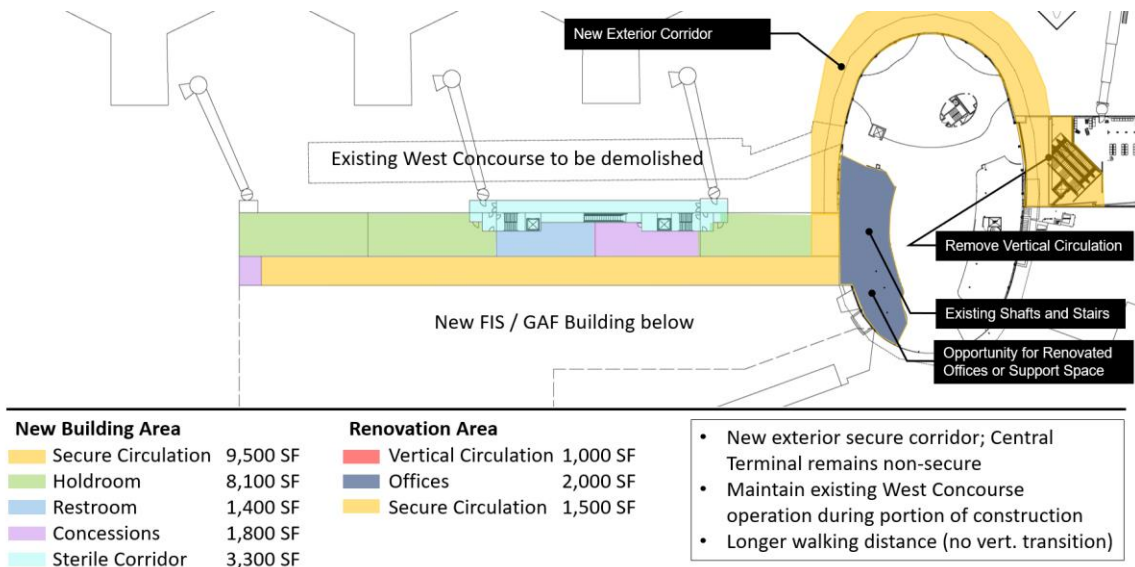
Source: Landrum & Brown, 2019

EXHIBIT 5.1-9 ALTERNATIVE 3A SECTION



Source: Landrum & Brown, 2019

EXHIBIT 5.1-10 ALTERNATIVE 3B GATE LEVEL



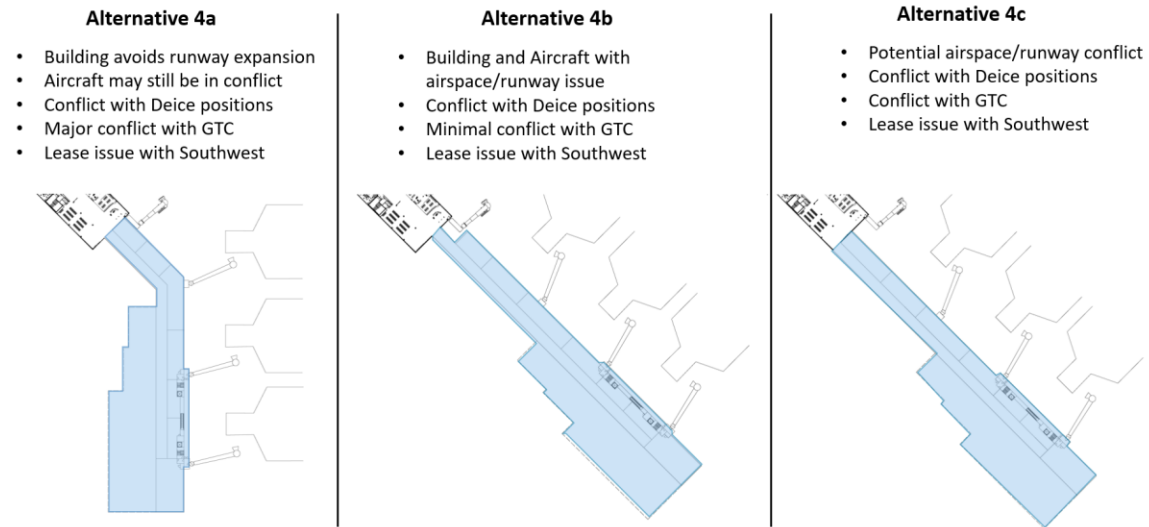
Source: Landrum & Brown, 2019

5.1.4 Alternative 4

Alternative 3 explores how gate capacity could be added without impacting Concourse B or the rotunda. This alternative extends Concourse A to the east for additional gate capacity. **Exhibit 5.1-11** through **Exhibit 5.1-18** shows the gate and apron level floorplans and a building cross section to show how the passenger flows would work. The benefit of this concept is proximity to existing concessions

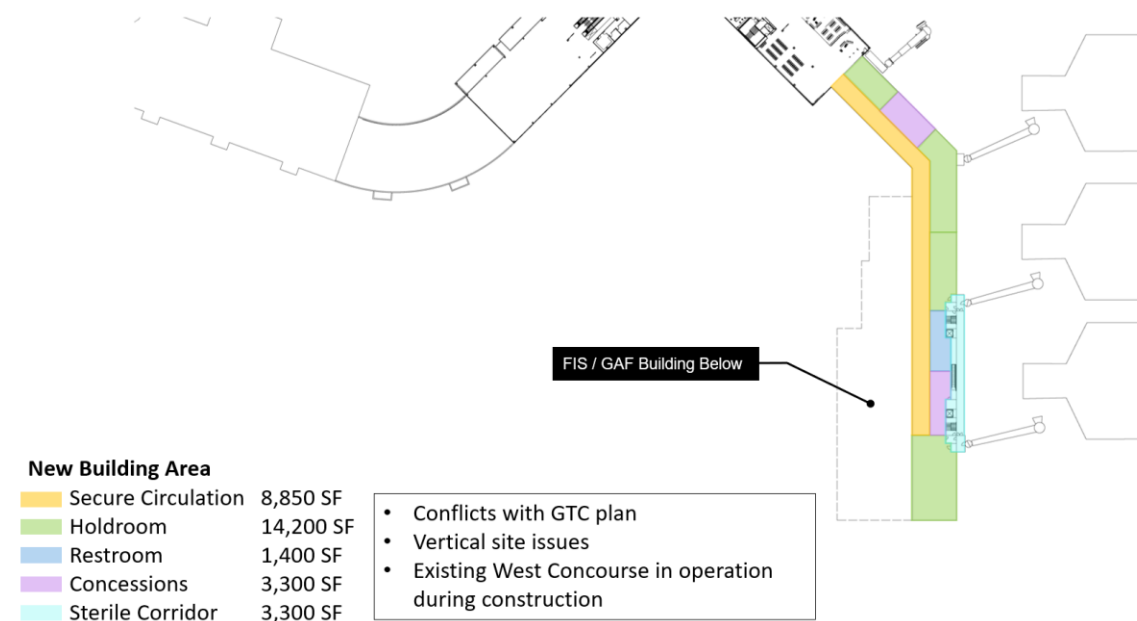
and the security checkpoint. However, due to airspace constraints noted in the earlier section, this concept would be difficult to implement.

EXHIBIT 5.1-11 ALTERNATIVE 4 OVERVIEW



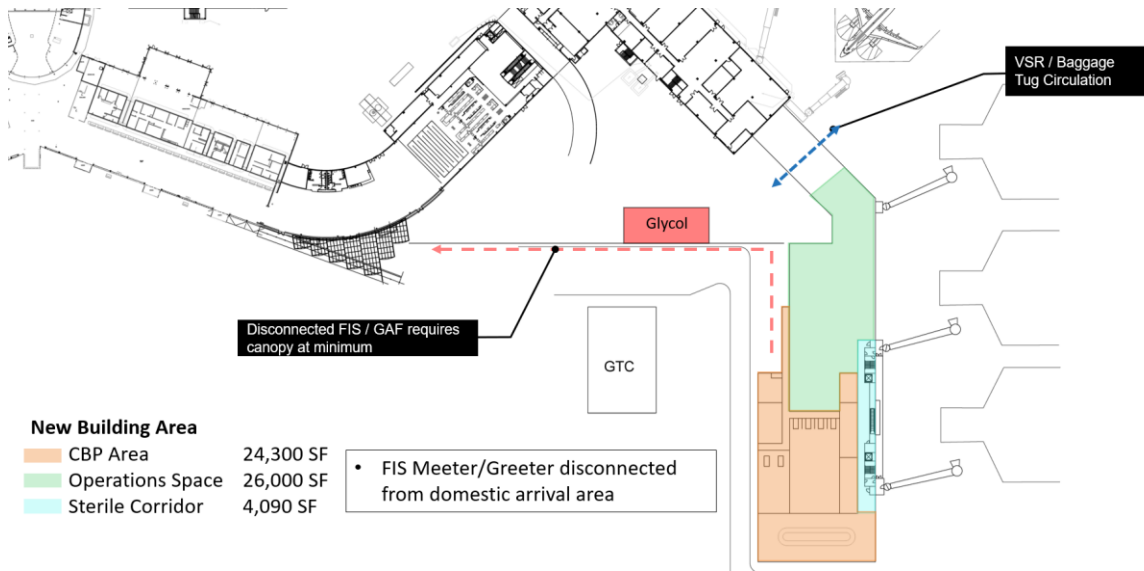
Source: Landrum & Brown, 2019

EXHIBIT 5.1-12 ALTERNATIVE 4A GATE LEVEL



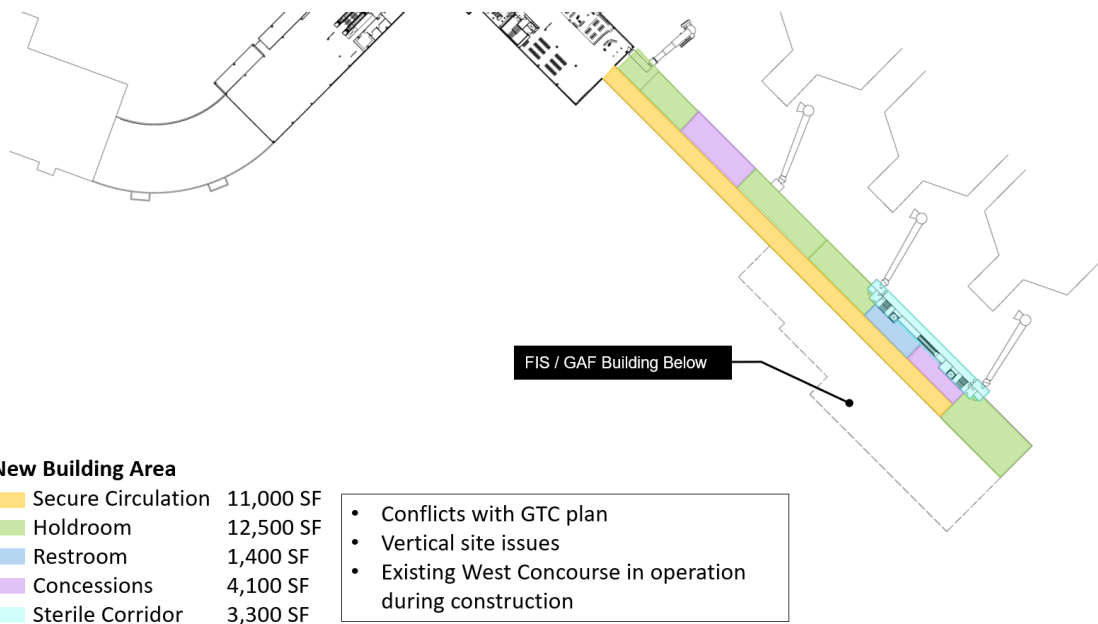
Source: Landrum & Brown, 2019

EXHIBIT 5.1-13 ALTERNATIVE 4A APRON LEVEL



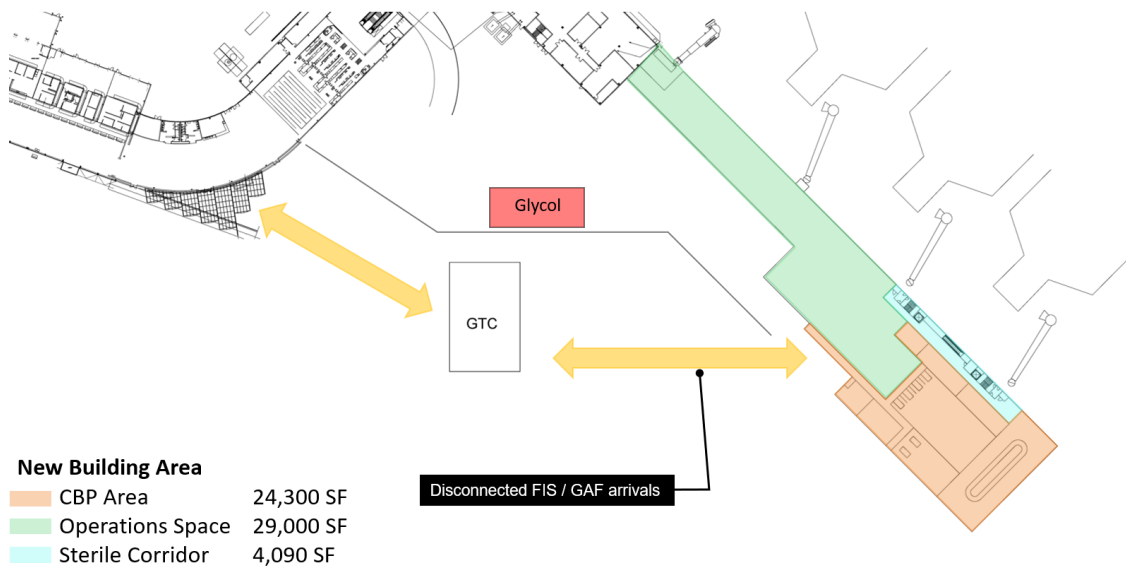
Source: Landrum & Brown, 2019

EXHIBIT 5.1-14 ALTERNATIVE 4B GATE LEVEL



Source: Landrum & Brown, 2019

EXHIBIT 5.1-15 ALTERNATIVE 4B APRON LEVEL



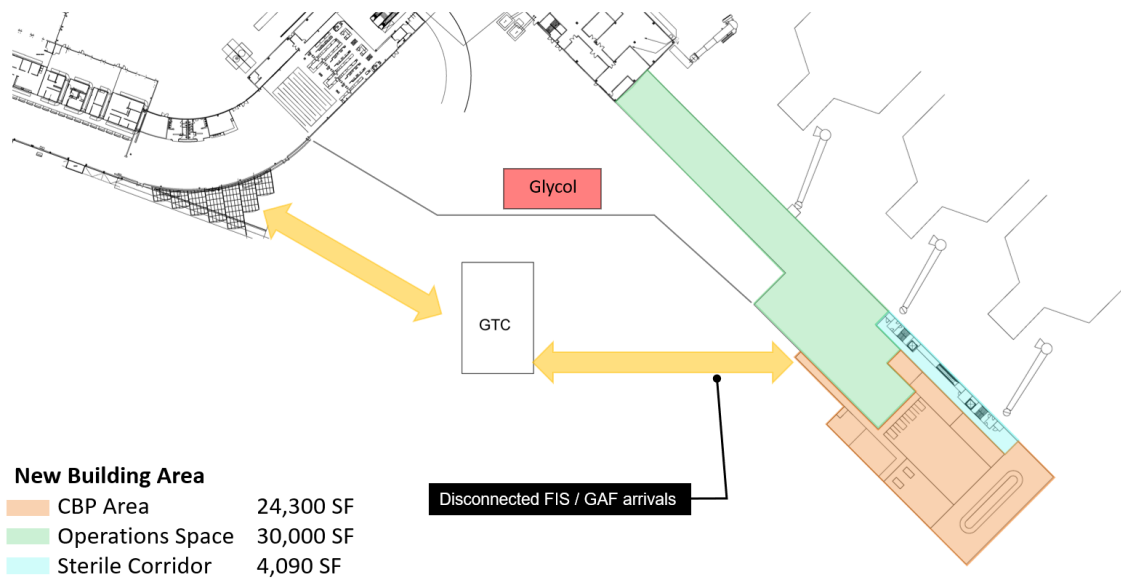
Source: Landrum & Brown, 2019

EXHIBIT 5.1-16 ALTERNATIVE 4C GATE LEVEL



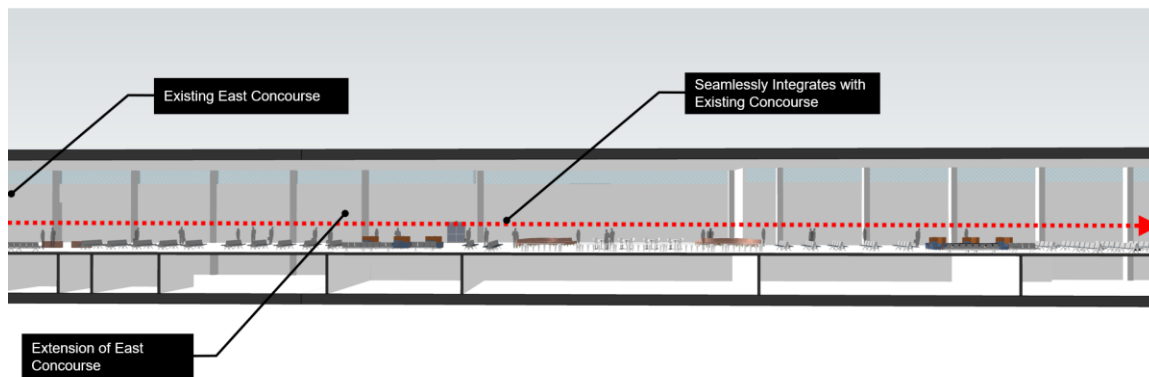
Source: Landrum & Brown, 2019

EXHIBIT 5.1-17 ALTERNATIVE 4C APRON LEVEL



Source: Landrum & Brown, 2019

EXHIBIT 5.1-18 ALTERNATIVE 4 SECTION

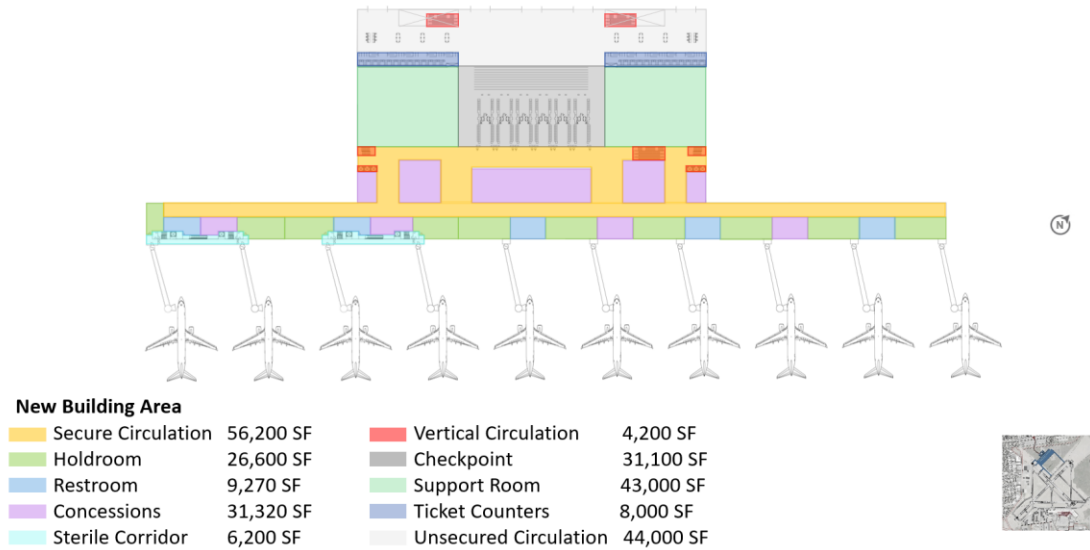


Source: Landrum & Brown, 2019

5.1.5 Alternative 5

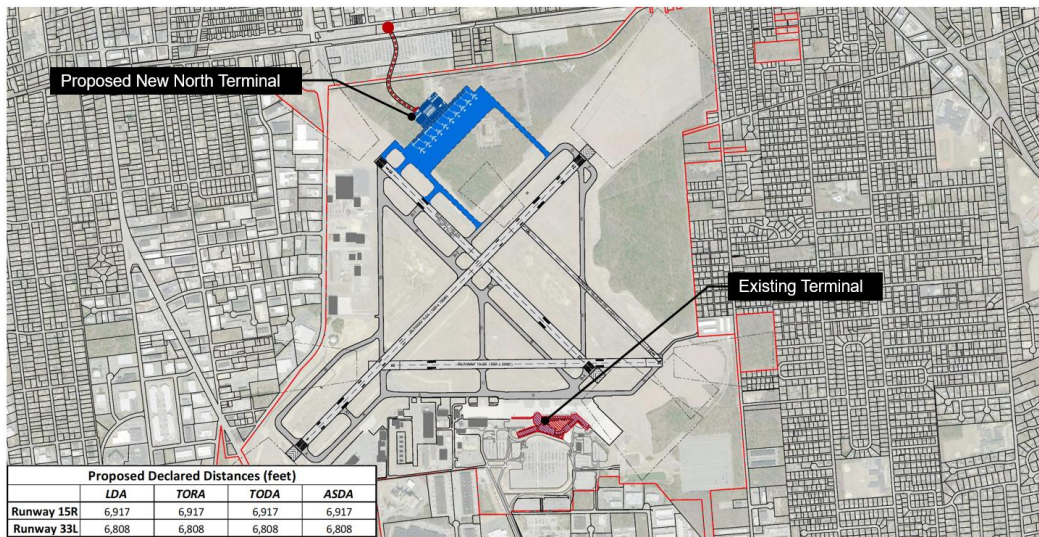
Alternative 5 is a placeholder concept for the North Terminal. The North Terminal would replace the existing terminal facilities to the south and provide a new FIS facility. **Exhibit 5.1-19, Alternative 5** shows a placeholder terminal configuration that was roughly based on the Master Plan north terminal concept, shown in **Exhibit 5.1-20, Master Plan North Terminal**. This is a placeholder because a final space program had not yet been developed at the time of this analysis. The North Terminal is explored further in the Final Alternatives section.

EXHIBIT 5.1-19 ALTERNATIVE 5



Source: Landrum & Brown, 2019

EXHIBIT 5.1-20 MASTER PLAN NORTH TERMINAL



Source: Landrum & Brown, 2019

5.1.6 Initial Alternative Evaluation

A pros and cons evaluation was conducted in coordination with ISP and other airport stakeholders, shown in **Exhibit 5.1-21, Pros and Cons Analysis**. The team determined that Alternative 2 should be carried forward as the only south terminal option and that there should be further exploration of Alternative 5, the North Terminal in the next stage of alternative development.

EXHIBIT 5.1-21 PROS AND CONS ANALYSIS

Description	Concept Layout	Pros	Cons
<p>Alternative 1 (Eliminated) West expansion, keep Central Terminal</p>		<ul style="list-style-type: none"> • Opportunity to renovate central terminal for offices or concession space 	<ul style="list-style-type: none"> • Central terminal infrastructure upgrade and renovation cost • Requires additional vertical transition • Phasing requires use of east concourse gates
<p>Alternative 2 (Preferred South) West expansion, replace Central Terminal</p>		<ul style="list-style-type: none"> • No upgrade costs for central terminal • No vertical change on concourse • New security checkpoint • Add more gates without impact to FBO 	<ul style="list-style-type: none"> • Phasing requires use of east concourse gates
<p>Alternative 3 (Eliminated) West expansion build behind existing concourse</p>		<ul style="list-style-type: none"> • Enables operations during construction • Opportunity to renovate central terminal for offices or concession space 	<ul style="list-style-type: none"> • Central terminal infrastructure upgrade and renovation cost • Requires additional vertical transition • Expansion encroaches upon inbound bag area
<p>Alternative 4 (Eliminated) East expansion</p>		<ul style="list-style-type: none"> • Enables operations during construction • Balanced walking distance from existing security checkpoint 	<ul style="list-style-type: none"> • Impact to airspace at the runway end • Impact to proposed new GTC • Intl passengers do not exit near existing arrivals & long walk for domestic arrivals to bag claim • Southwest lease issues
<p>Alternative 5 (Preferred North) North relocation</p>		<ul style="list-style-type: none"> • Close to LIRR • Greenfield site enables long-term gate expansion 	<ul style="list-style-type: none"> • High relative cost to build a new terminal • No connectivity and split operations to main terminal • Timeframe for construction

Source: Landrum & Brown, 2019

5.2 Final Concepts

Six final terminal concepts were initially developed, shown in **Exhibit 5.2-1, Concept Overview**. These alternatives include five different north terminal alternatives and maintains Alternative 2 (renamed to Concept F below) as a south terminal expansion option.

EXHIBIT 5.2-1 CONCEPT OVERVIEW

Concept A North	Concept B North	Concept C North	Concept D North	Concept E North	Concept F South

Source: Landrum & Brown, 2019

The north terminal relocation concepts have been the focus due to the numerous benefits of relocating the terminal. The existing Concourse A and Concourse B area has various site constraints that limit expansion. There are also numerous high cost items that will be required to continue operating the existing terminal, including numerous maintenance upgrades, replacement of Concourse B and future replacement or upgrades to Concourse A. The existing terminal processor is obsolete and requires replacement and also needs an in-line BHS. The north terminal provides a solution to all of these issues while providing a direct connection to the LIRR and new transit-oriented development.

North terminal Concept B, shown in **Exhibit 5.2-2, Concept B** and Concept E, shown in **Exhibit 5.2-3, Concept E** were selected for further evaluation and refinement while Concept F was maintained and unchanged from the initial alternatives to ensure there was an at the existing terminal to either replaced Concourse B or expand Concourse A. Concept B and E provided opportunities to minimize the walk distances from the LIRR station as well as maximize the acreage of development area.

North Terminal Concept B and Concept E were selected because they provided the best customer experience, aircraft operations, and long-term flexibility to expand and support transit-oriented design. This was assessed through a stakeholder review and questionnaire process as well as input from L&B and ISP airport.

Concept B includes a linear terminal and concourse facility aligned with Runway 15L – 33R. This concept has expansion opportunities to the north and to the east. This concept only impacts a portion of the existing compost site area if development opportunity is deferred. Concept B has the following advantages:

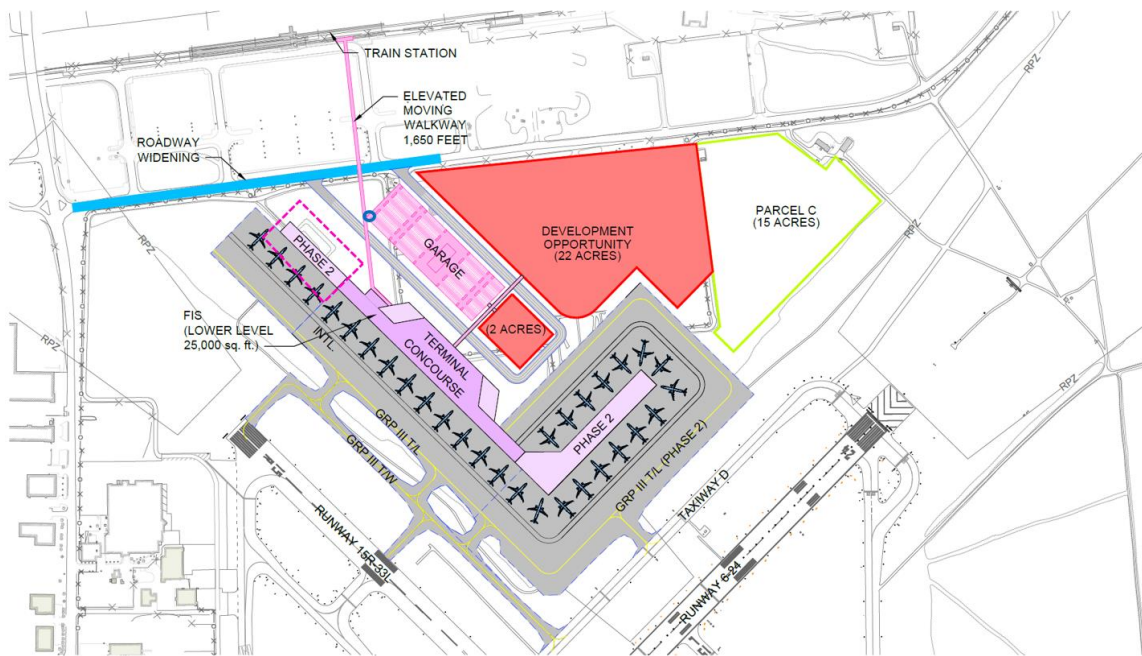
- Major terminal and airfield safety and efficiency improvements
- Shortest walk to/from LIRR improve the passenger experience by allowing a faster connection to the terminal facilities
- Best parking garage flexibility for Airport
- Simplified and flexible phasing will ease the implementation of the project
- Does not impact Parcel C, which may possibility allow for earlier implementation because the relocation of the compost site will not be immediately required
- Great development connectivity

Concept E is a double loaded pier layout that would begin with a single pier and could add up to two additional piers. This concept has a longer walking distance to the LIRR due to the terminal location and placement of the development opportunities. Concept E has the following advantages:

- Major terminal and airfield safety and efficiency improvements
- Transit oriented design with extensive supporting land uses, including mixed office and retail and numerous other potential uses that enhance this area as a transit hub
- Acceptable LIRR walk distance provides a reasonable level of service to passengers

- Phasing flexibility will ease the implement of the project
- Sustainable development long-term
- Strong customer experience
- Leverage infrastructure investment to increase aviation activity and convenience
- Development connectivity and investment across entire project

EXHIBIT 5.2-2 CONCEPT B



Source: Landrum & Brown, 2019

EXHIBIT 5.2-3 CONCEPT E



Source: Town of Islip, 2019

5.2.1 Final Concept Evaluation

The evaluation process shown in **Exhibit 5.2-5, Final Evaluation** indicate that the north terminal options scored higher than the south option to replace Concourse B. As of July 31st, 2020, a preferred alternative has not been selected.




The west concourse extension, Concept F, had a lower score in every category except for cost. This was due to the various deficiencies associated with existing terminal processing facilities, location of the existing terminal and comparing a concourse replacement concept to a new terminal concept.

Scoring was evaluated based on the following factors that were identified as the key comparison criteria at the beginning of the study with the Airport and stakeholders:

- Connectivity and walking distance to the LIRR
- Size (acreage) of development opportunity
- Long-term flexibility and gate capacity
- Phasing feasibility
- Customer experience
- Ability to implement new technology

- Cost

EXHIBIT 5.2-5 FINAL EVALUATION

	Concept B North	Concept E North	Concept F South
			
Connectivity to LIRR	1	1	-1
Development Opportunity	1	1	-1
Long-Term Flexibility	1	1	-1
Phasing	1	1	-1
Customer Experience	1	1	0
Technology	1	1	0
Cost	-1	-1	0
Score	5	5	-4

Source: Landrum & Brown, 2019

6 Preferred Concept

As noted in the previous chapter, the further refinement of Concept B and E resulted in a new hybrid layout of the North Terminal, named Concept G. This hybrid solution includes the following benefits and provides the best of attributes of all the North Terminal concepts that were evaluated:

- Hybrid includes the benefits of both preferred stakeholder alternatives (Concept B & E)
- Linear concourse provides optimal operational/functional layout (airline preferred)
- Walking distance to the LIRR via an elevated 1,800 LF pedestrian spine (equates to 5-8 minutes)
- Easily phased approach

The configuration of Concept G provides a reasonable walk distance to the LIRR, maximizes the available site area for non-aeronautical commercial development (not associated with this study) and allows for incremental expansion of gate capacity with minimal disruption to ongoing operations.

Concept G provides the best of both concepts with minimal sacrifice. In order to maintain area for commercial development and landside access to the terminal, the walking distance from the LIRR is longer than the 1,650 feet in Concept B but less than the 1,900 feet in Concept E.

6.1 Site Plan

Concept G was selected as the preferred approach, combining Concept B and E, shown in **Exhibit 6.1-1** through **Exhibit 6.1-4**. These exhibits show the following aspects of the preferred North Terminal concept:

- Overview of the airside components
- Connection to the LIRR
- Overview of the landside components
- Commercial development (non-aeronautical revenue) opportunities

6.1.1 Preferred Alternative - Airside

Exhibit 6.1-1, Concept G Airside Overview shows the airside site elements, which include maintaining the existing Airport Surveillance Radar (ASR). New infrastructure will be required to support the new terminal including airside utilities, lighting, and pavement. The majority of existing airside support facilities will need to be relocated to the north, including a new fuel farm. A new ramp tower may also be required to support aircraft operations at the new terminal in future phases as demand and aircraft increases.

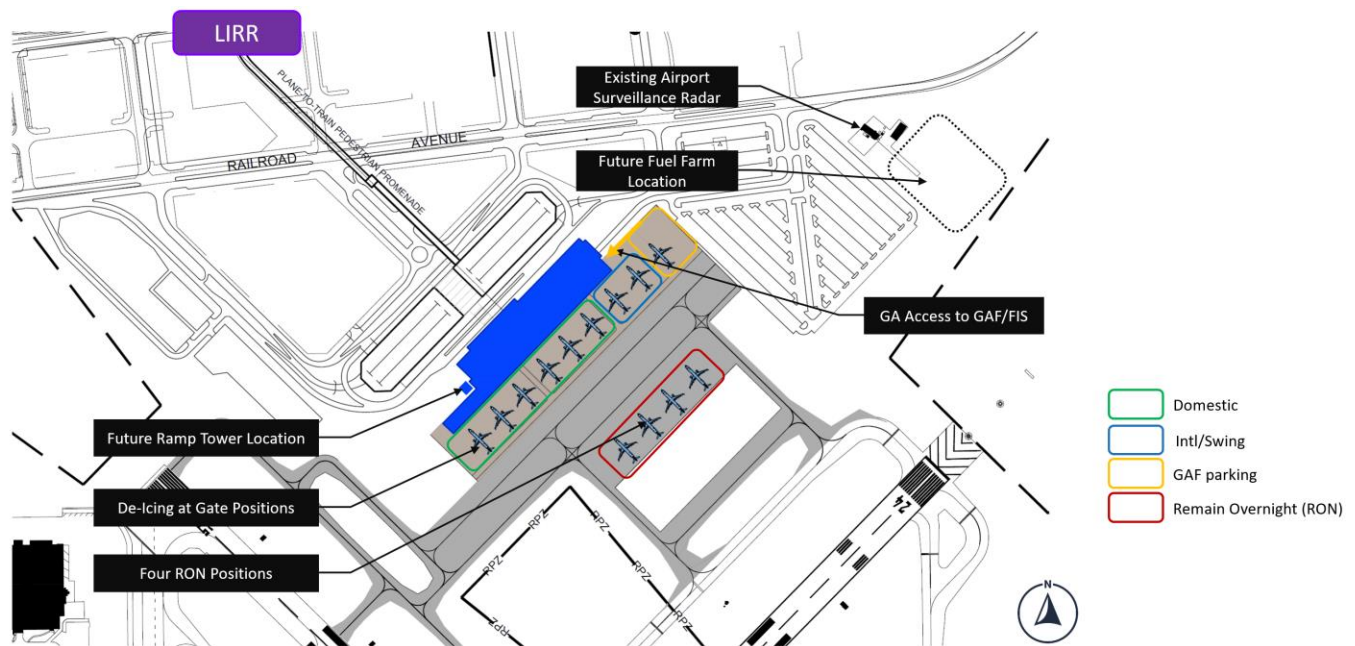
The airport plans to de-ice at each gate positions, rather than a dedicated de-icing pad. This configuration is more efficient and cost effective for ISP. There is additional apron area dedicated for

Remain Overnight (RON) gate positions providing operational flexibility. In total there will be eight new contact gate positions, six domestic and two international swing gate positions.

The swing gate positions may operate as international or domestic, providing flexibility for 8 simultaneous domestic operations if there are no international flights. If the airport anticipates more international operations in the future, the terminal could be designed with additional swing gates to support more international arriving flights.

The terminal will include a direct access point to the GAF/FIS for GA aircraft. There is dedicated apron area for GA aircraft with a pathway and direct access point into the GAF/FIS for international arrivals processing of GA passenger. This will continue to allow GA international arrivals processing but within a new FIS facility that will have capacity to process commercial aviation passengers.

EXHIBIT 6.1-1 CONCEPT G AIRSIDE OVERVIEW



Source: Landrum & Brown, 2021

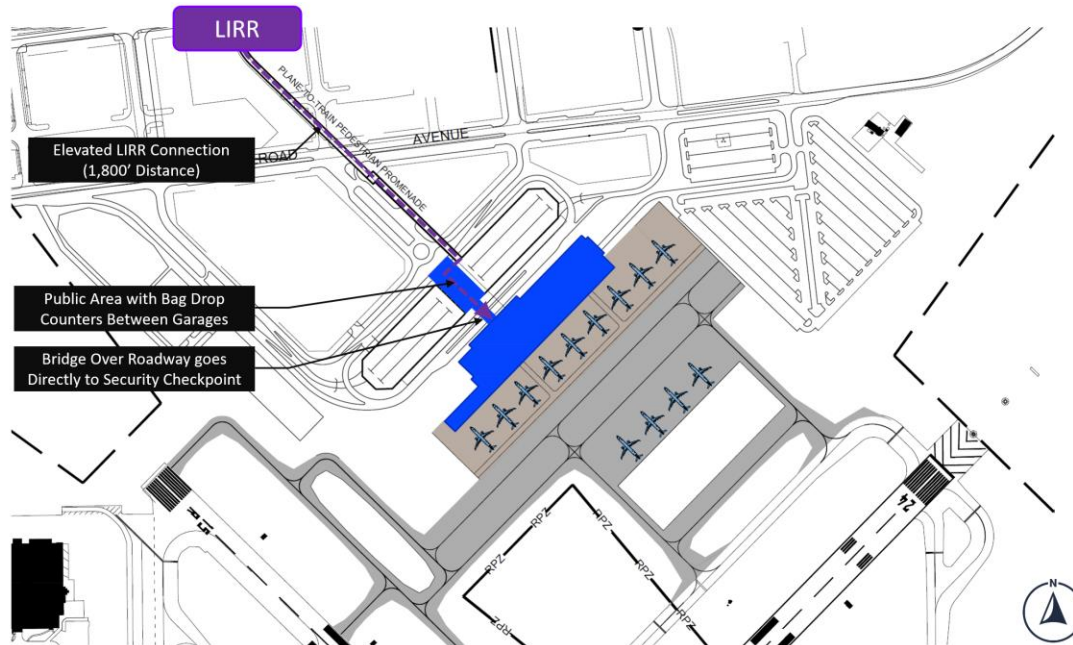
6.1.2 Preferred Alternative – LIRR Connectivity

Exhibit 6.1-2, Concept G LIRR Connection shows the LIRR train access plan. An elevated, enclosed, and conditioned walkway with moving sidewalks will provide a direct and unimpeded path from the LIRR to the new terminal. The intent of the walkway is to also provide access to possible non-aeronautical commercial development in the future between the LIRR Ronkonkoma Station and the new terminal.

The total distance will be 1,800 feet with a total walk time of 5-8 minutes, most of which will be assisted by moving sidewalks. This connection will enable a higher proportion of passengers to access the LIRR train service more easily. Presents new opportunities to attract New York City and Nassau County travelers. Provides access to travel and employment opportunities to disadvantaged communities like

Brentwood and Wyandanch. LIRR connectivity reduces carbon emission and number of automobiles using the roads and highways.

EXHIBIT 6.1-2 CONCEPT G LIRR CONNECTION



Source: Landrum & Brown, 2021

6.1.3 Preferred Alternative - Landside

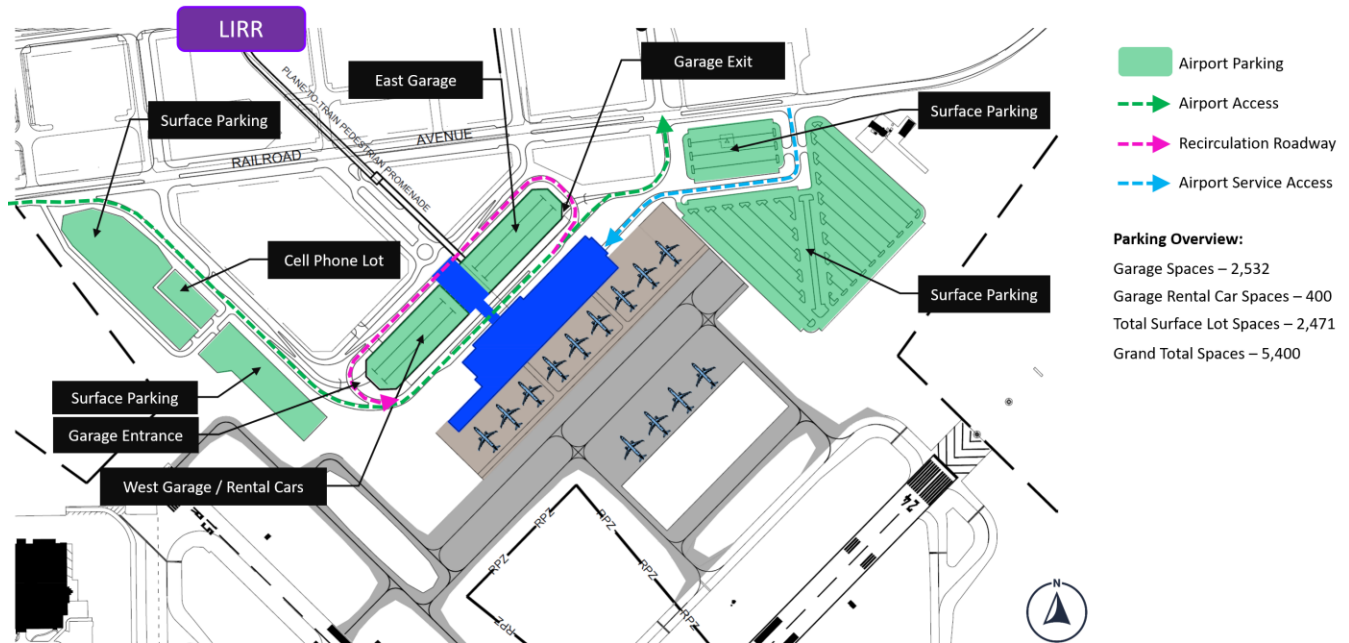
Exhibit 6.1-3, Concept G Landside Overview shows the vehicular traffic flows through the new terminal site and surrounding proposed commercial development area and defines the total number of proposed parking stalls. The north area landside plan includes new parking garage(s) directly across from the terminal for short-term passenger parking and rental car ready stalls. Connection to LIRR encourages more travelers to use mass transit instead of automobiles. Locating rental car operations within the garage will eliminate the need for busing and provide a better experience for passengers. The rental Quick Turn Around (QTA) area will remain on the south terminal existing location. The entry for the garage (rental car and passenger vehicle) is anticipated to be on the west side of the garage and the exit would be to the east (past the new terminal curbfront).

Multiple long-term parking lots are identified for long-term parking which will have a lower daily parking rate than short-term. In addition, it is anticipated that the existing economy, resident, and employee parking lots will remain in the existing south locations with a bus shuttle system required.

To ensure optimal airport access and convenience, there is a dedicated airport access roadway as well as a recirculation loop. The recirculation loop will allow drivers to drop off passengers or recirculate. The loop will also support commercial vehicle recirculation. Additionally, there is a separate entrance from commercial traffic dedicated to servicing the airport, including deliveries.

A cell phone lot is identified on the airport entrance road with easy access to the terminal curbfront.

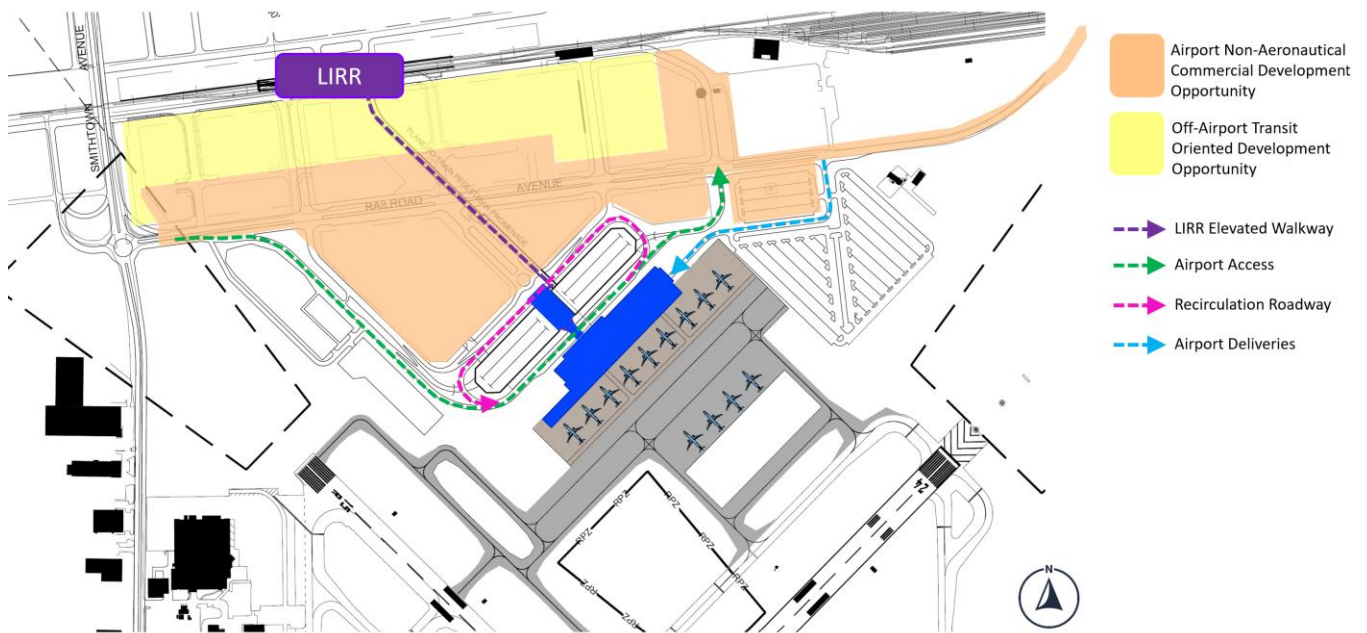
EXHIBIT 6.1-3 CONCEPT G LANDSIDE OVERVIEW



Source: Landrum & Brown, 2021

Exhibit 6.1-4, Concept G Future Commercial Development illustrates the planned areas for on-airport future non-aeronautical commercial development (orange) and off-airport transit-oriented development (yellow). An important factor in providing transit-oriented development was to ensure the airport has adequate space for future development. The red line shown in this exhibit defines the boundary of aeronautical vs. non-aeronautical land uses, the area south of the red line can only be used for aviation functions. The landside vehicular circulation for the future commercial development should be separate from the airport roadways to eliminate any traffic concerns and eliminate any vehicular confusion.

EXHIBIT 6.1-4 CONCEPT G FUTURE COMMERCIAL DEVELOPMENT



Source: Landrum & Brown, 2021

6.2 Floor Plans

The new terminal is a three-level building, consisting of the following levels. The floorplans for each level are shown in **Exhibit 6.2-1** through **Exhibit 6.2-3**.

- Level 1 – Ground / Apron Level
- Level 2 – Concourse / LIRR Connection Level
- Level 3 – Upper Level

6.2.1 Ground/Apron Level

Exhibit 6.2-1, Ground / Apron Level is Level 1 of the terminal and is located at the same elevation as the apron and gate area. Level 1 includes many of the building support systems as well as passenger areas. Level 1 includes the following areas:

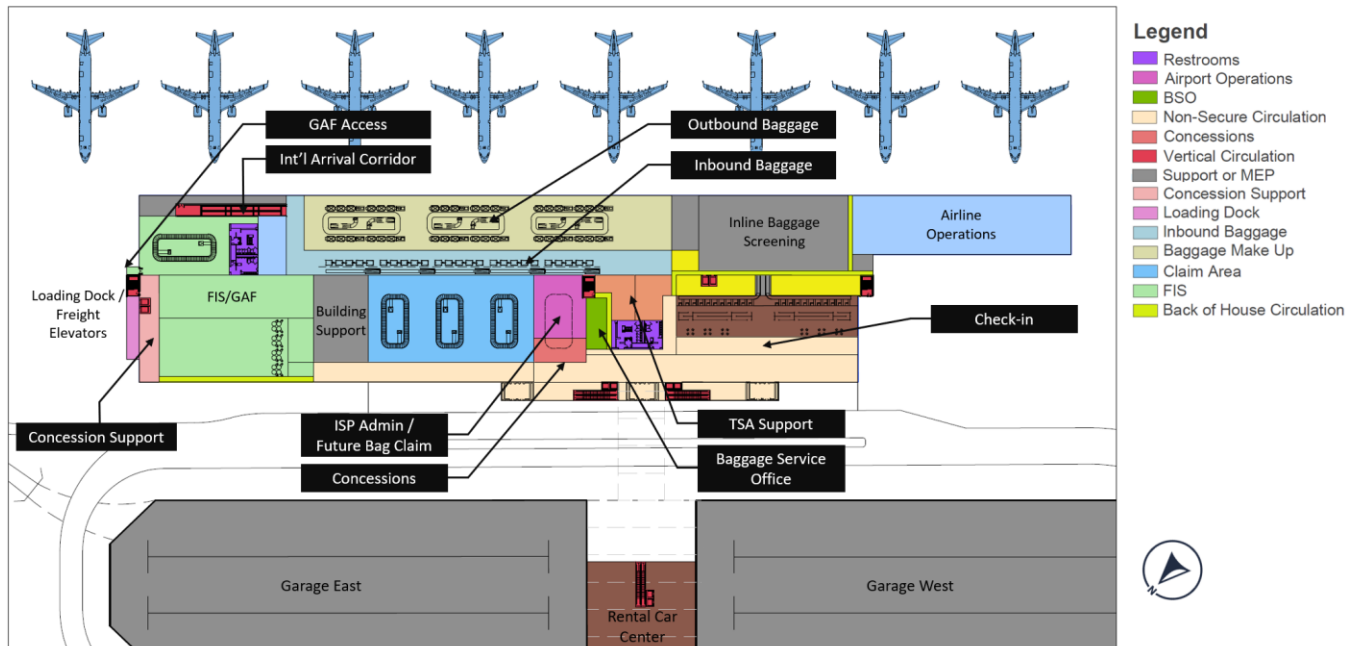
- FIS/GAF Facility – This state-of-the-art facility shall process international commercial passengers from the aircraft, through the sterile corridor and down the vertical ramp to the FIS facility. It is anticipated that this facility shall be a “Baggage First” facility, including all parameters according to the most current CBP Airport Technical Design Standards. Internal General Aviation (GA) passengers should access the facility directly from the airside apron area with access into the facility.

- Check-in/Ticketing – The check-in/ticketing area is flexible to adapt to changes in the airline industry including biometrics, self-baggage drop, amongst others. The open lobby should be clear of any structural columns to allow for maximum flexibility in check-in design.
- Domestic Baggage Claim/Inbound Baggage – The preferred plan includes 3 sloped plate baggage claim units that are fed from the inbound baggage conveyors overhead or underneath (to be determined in design). An additional unit can be incorporated in the future as demand increases without further building area. A flexible zone has been identified for a fourth claim unit but can be utilized as concession, ISP Admin support or other uses.
- Inline Bag Screening (TSA) – The Central Baggage Inspection Services (CBIS) and Central Baggage Resolution Area (CBRA) are located conveniently behind the ticketing area to minimize baggage conveyor routing. An additional baggage conveyor can be routed from the LIRR spine transit center (between the garages) for passenger convenience for additional baggage drop locations. All bags are screened and cleared and then moved to the Outbound Baggage units.
- Outbound Baggage – Once cleared, the bags are routed to one of three units with ample baggage tug cart positions for three cart trains. Tug circulation is clear around both sides of the baggage makeup units with safe and efficient one-way flow.
- Airline Operations – Includes Airline Ticket Office (ATO) space directly behind the ticketing area via a non-secure back of house corridor. Airline operations space should be located along the airside apron and spaced as evenly as possible for easy assembly of ramp support agents within eyesight of the aircraft.
- Loading Dock / Receiving – The loading dock is located on the east side of the facility with a dedicated landside vehicular service road. The dock details of compactor, trash and recycling container quantities should be assessed in the design phase. The loading dock area should be lowered 4 feet below the dock platform (which is at the overall building elevation) to allow for truck unloading. Airport and concession support areas are located directly behind the loading dock and have space for an employee and goods screening checkpoint area. Upon clearance to the secure side, a freight elevator is included for access directly up to the service corridor behind the concourse concession spaces for easy transport of goods and removal of trash behind the scenes and away from passenger view.

Level 1 terminal support areas include:

- Building Systems (Mechanical Electrical Plumbing - MEP), restrooms, TSA support, Baggage Service Offices (BSO), back of house circulation, concession support areas, vertical circulation, and non-secure circulation space.

EXHIBIT 6.2-1 GROUND / APRON LEVEL



Source: Landrum & Brown, 2022

6.2.2 Concourse / LIRR Connection Level

Exhibit 6.2-2, Concourse / LIRR Connection Level is Level 2 of the terminal and is located directly above Level 1. Level 2 has an enclosed and conditioned pedestrian bridge connection across the terminal curbside and into the parking garage and transit spine. The TOD transit spine is the area between the parking garage that will connect the walkway from the LIRR to the pedestrian bridge into the terminal. The bridge and transit spine are the primary path for passengers traversing to and from the LIRR elevated walkway. Level 2 including the following areas:

- Security Checkpoint – The central security checkpoint is sized for flexible future phasing as demand increases. The checkpoint has the capability of 5 lanes with expansion to 7 in the future. TSA offices and support are immediately adjacent to the checkpoint and have easy access to a stairwell that provides access to the baggage makeup room and other support space below. The security checkpoint queue is located prior to the lanes with circulation on both sides for the concourse exit lane area (east) and ISP Admin area (west).
- Holdrooms – The holdrooms are planned to be open and blended with concessions to increase the customer experience. The blended lines between the holdrooms, concessions and circulation provide an open flexible concourse that can adapt to changes in the aviation industry, aircraft fleet mix changes and intuitive wayfinding.
- Concessions – The majority of concessions (revenue generating spaces) are located post-security to take advantage of passenger dwell times. A central concession area is located immediately adjacent to the security checkpoint and concourse exit areas to allow for maximum

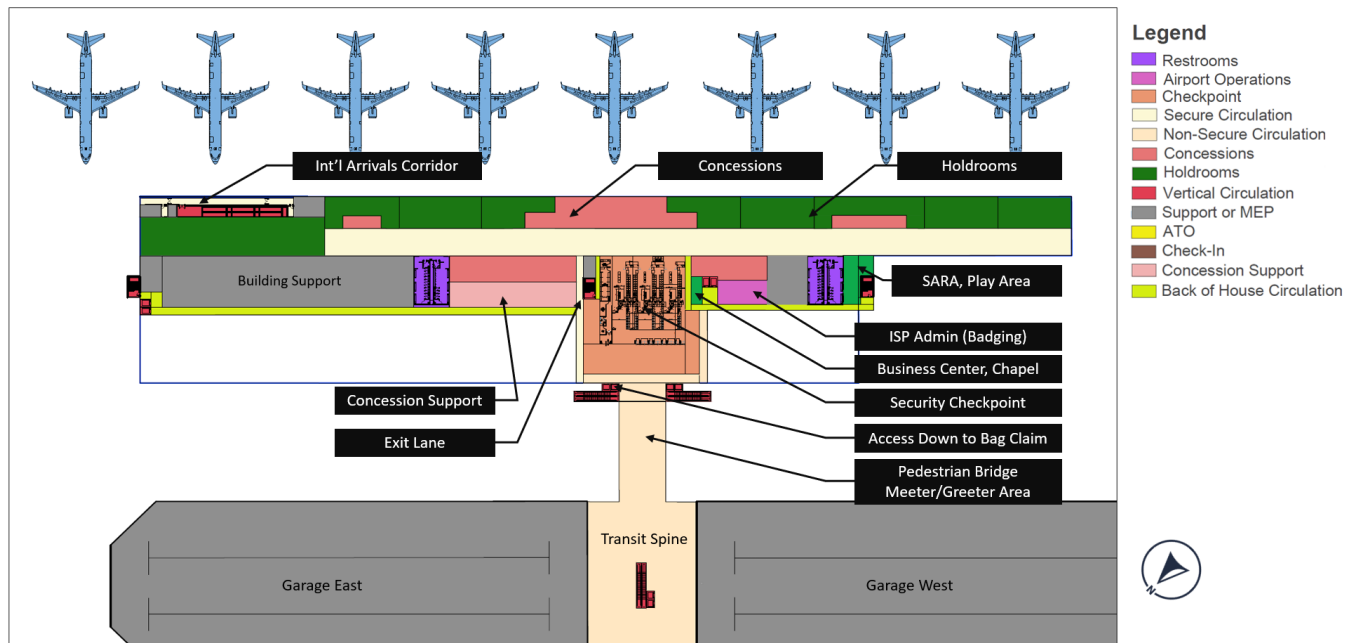
“foot fall” and revenue generation. The concourse concessions outlets can be supported from a back-of-house corridor with access to the lower level receiving and loading dock. Additional kiosk, bar/restaurant outlets are anticipated along the concourse exterior curtain wall with views of the airfield and mixed within the holdroom spaces.

- Pedestrian Bridge/Transit Spine – A pedestrian bridge connects the terminal with the LIRR transit spine, parking garages and rental car center. A true TOD with easy access to the terminals through various modes of transportation. By traversing over the terminal curbside lanes, this provides a safer option for pedestrian access and easy, intuitive wayfinding. Travelers from the LIRR or parking garage can go straight to the security checkpoint and concourse without making any vertical transitions.
- Meeter/Greeter Area – Located within the pedestrian bridge is the “meeter/greeter” area. This area provides a comfortable, hospitality-style area for people to wait for those arriving. A non-secure concession (coffee shop or vending) should be located immediately adjacent to this area.

Level 2 includes the following terminal support areas:

- MEP spaces, restrooms, TSA support, back of house circulation, concession support areas, vertical circulation, and airport administration spaces. There are also passenger amenities such as Service Animal Relief Areas (SARA), business center, children’s play area and a chapel on Level 2.

EXHIBIT 6.2-2 CONCOURSE / LIRR CONNECTION LEVEL



Source: Landrum & Brown, 2022

6.2.3 Upper Level

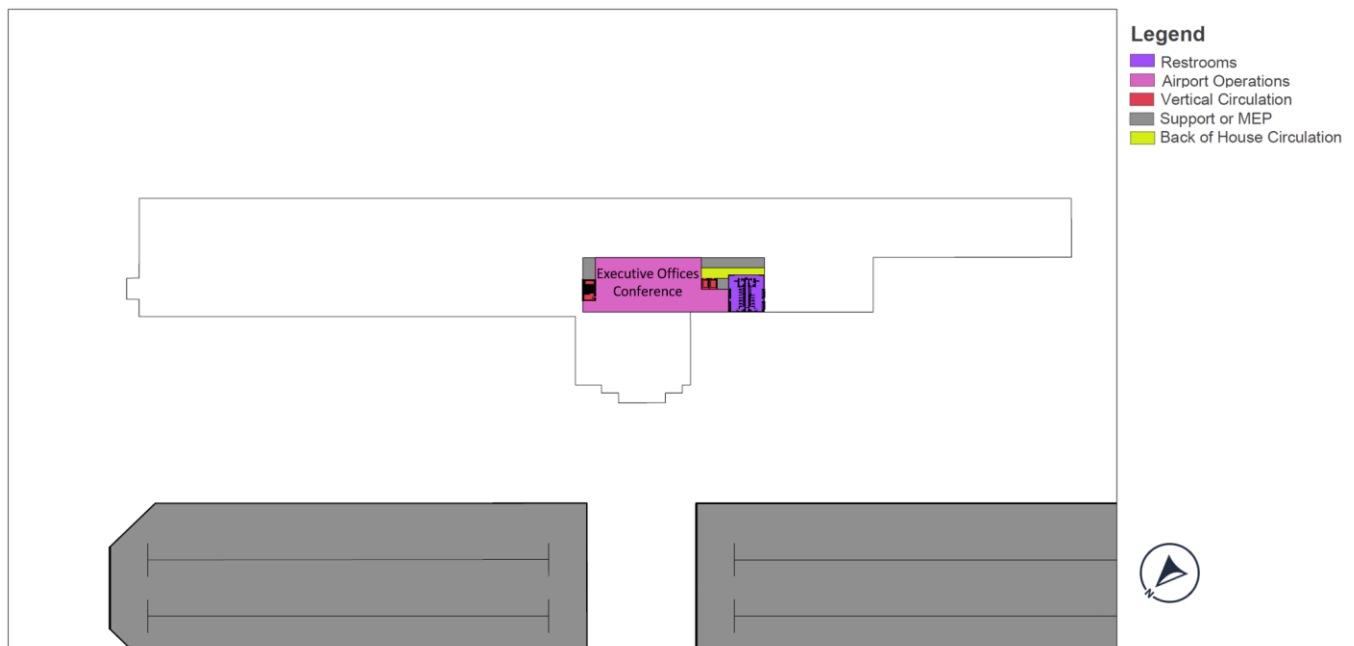
Exhibit 6.2-3, *Upper Level* is Level 3 of the terminal and is located above the Level 2 security checkpoint. Level 3 is dedicated to airport operations and includes the following spaces:

- Airport Executive Offices – This includes the replacement of the existing Town of Islip Aviation administration area. This is located on the third floor to take advantages of exterior views outward toward the airfield and internally down into the landside security checkpoint and meeter/greeter area. This is accessed by dedicated elevators and include public restrooms.
- Conference Center – A large conference room that can be divisible into 2 separate rooms should be located directly off the public circulation area. This allows for Town of Islip use or for the general public to rent out providing a revenue generating space. This area is intended for use by airport executives and provide a dedicated spaces for the airport to host meetings, conferences, and other events.

Level 3 includes terminal support areas:

- MEP spaces, restrooms and back of house circulation.

EXHIBIT 6.2-3 UPPER LEVEL

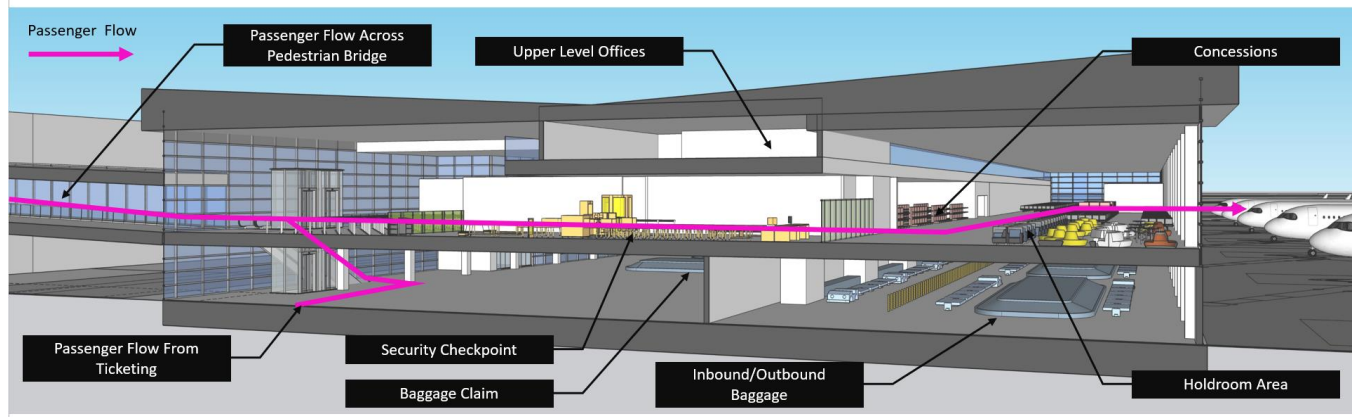


Source: Landrum & Brown, 2022

6.3 Building Section

Exhibit 6.3-1, *Building Section* depicts a vertical slice through the proposed terminal building along the pedestrian bridge and the security checkpoint on Level 2. The passenger flow arrow shows the flow of passenger across the pedestrian bridge and up from ticketing, through the checkpoint and into the gate and holdroom areas. Level 1 areas can be seen, including the baggage claim devices and inbound and outbound bag areas. The Upper Level offices are located above the security checkpoint with views outward.

EXHIBIT 6.3-1 BUILDING SECTION



Source: Landrum & Brown, 2022

6.4 Passenger Flows

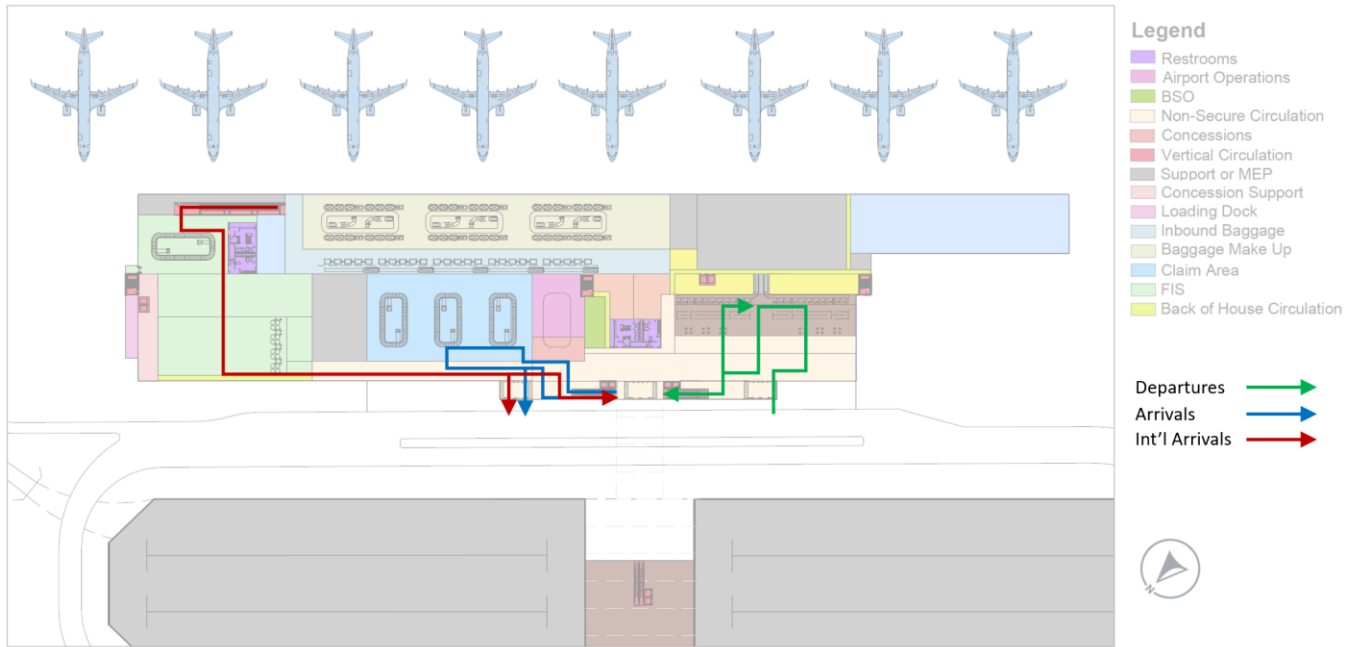
Section 6.4 highlights the flow of passengers through each level of the preferred terminal concept.

6.4.1 Ground / Apron Level Passenger Flow

Exhibit 6.4-1, *Ground / Apron Level Passenger Flow* shows departing, arriving and international passengers flowing through the terminal.

- Departing passengers enter the ground level of the terminal from the curb or the concourse level pedestrian bridge, complete check-in, or bag drop, then flow upstairs to the security checkpoint.
- Arriving passengers flow down from the concourse level into baggage claim to collect their checked baggage, then out to the ground level curb or back upstairs to the pedestrian bridge to access the parking garage or transit spine.
- International arriving passengers flow down from the concourse level sterile ramp and into the FIS baggage claim, then to immigration and customs processing, then exit to the curb or upstairs to the pedestrian bridge to access the parking garage or transit spine.

EXHIBIT 6.4-1 GROUND / APRON LEVEL PASSENGER FLOW



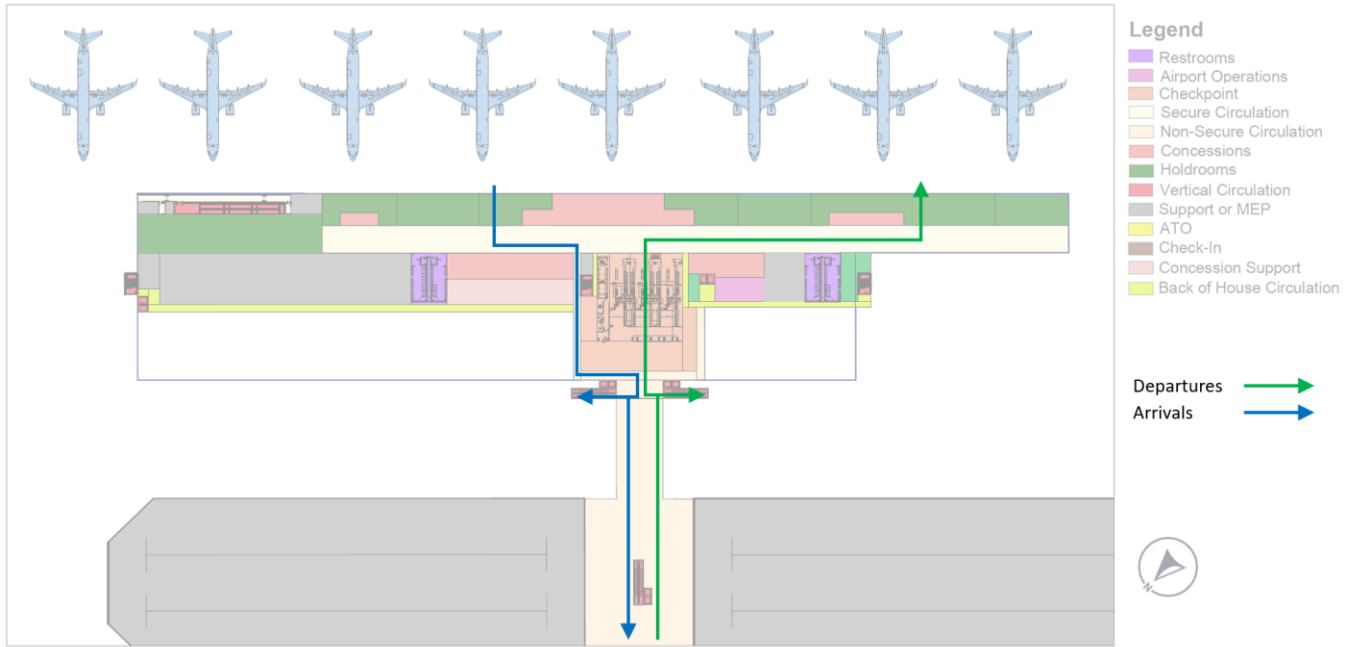
Source: Landrum & Brown, 2022

6.4.2 Concourse / LIRR Connection Level Passenger Flow

Exhibit 6.4-2, Concourse / LIRR Connection Level Passenger Flow shows departing and arriving passenger flows on the concourse level.

- Departing passengers enter the security checkpoint from the pedestrian bridge or up from the ground level ticketing area, after security passengers enter the secure concourse area and to holdrooms, concessions and other passenger amenities.
- Arriving domestic passengers enter the secure concourse area after deplaning their aircraft and flow to the exit, located adjacent to the security checkpoint and then proceed to the parking garage or transit spine, or down to the ground level curb or baggage claim.

EXHIBIT 6.4-2 CONCOURSE / LIRR CONNECTION LEVEL PASSENGER FLOW

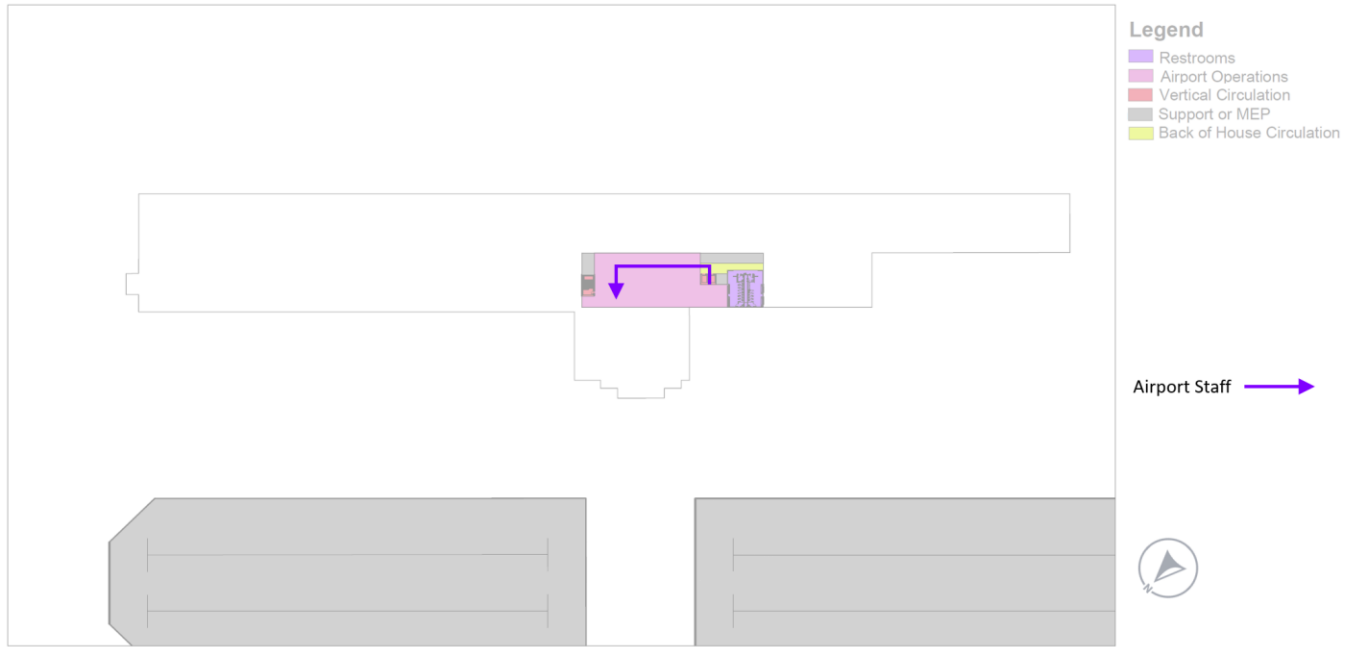


Source: Landrum & Brown, 2022

6.4.3 Upper Level Passenger Flow

Exhibit 6.2-3, *Upper Level Flow* show the path of airport staff utilizing elevators to access the upper level of the terminal. This is a non-passenger area but could be accessible to the public for certain airport related events.

EXHIBIT 6.4-3 UPPER LEVEL FLOW



Source: Landrum & Brown, 2022

7 Implementation Plan – Preferred Alternative

This section describes the proposed phasing approach to construct the new North Terminal, shown in **Exhibit 7.1-1** through **Exhibit 7.1-4**. The implementation approach is to allow for small incremental concourse growth as demand warrants or new airline carriers fly to ISP in a cost-effective manner. This approach assumes the existing compost facility will be relocated. The following phases have been defined to implement a North Terminal:

- Phase 0 – Enabling phase
- Phase 1 – North Terminal operational with 8 contact gates
- Phase 2 – Add 4 gates for a total of 12 contact gates
- Phase 3 – Add 4 gates for a total of 16 contact gates

7.1 Phasing

Exhibit 7.1-1, Phase 0 includes the enabling projects that will allow the North Terminal to be constructed. The purpose of this phase is to build all utilities, landside and airside components needed to operate a new terminal building, including the following:

- Closing the existing compost facility
- Site demolition and clearing
- Integration of all required site utilities to support the terminal
- Construction of landside roadways
- Airside infrastructure

Exhibit 7.1-2 through **Exhibit 7.1-4** show Phases 1 through Phase 3 of the North Terminal.

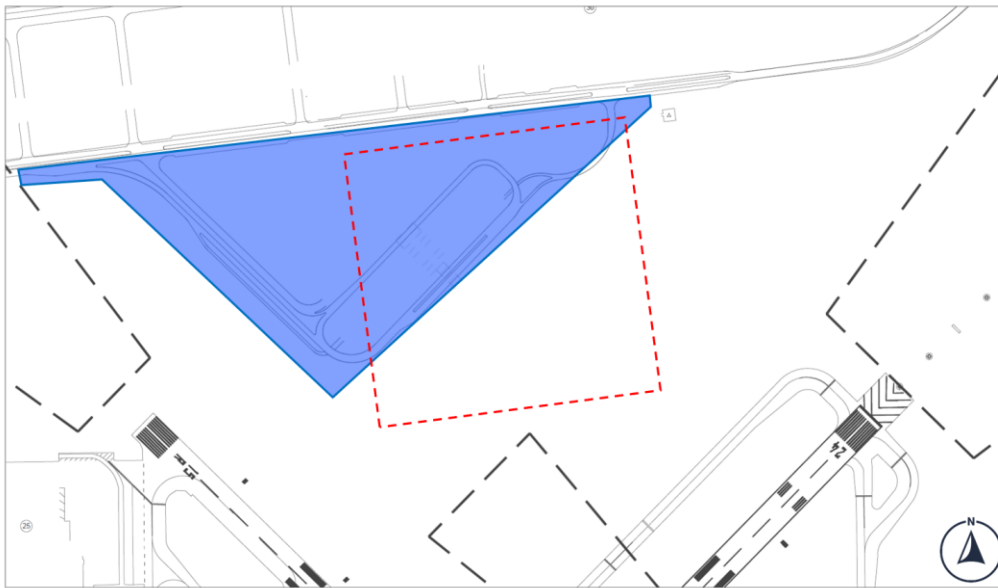
Phase 1 includes the completed 8 contact gate terminal facility with a parking garage, surface lot parking and airside ramp area and taxiways. Phase 1 represents a full operational and complete North Terminal, including 4 Remain Overnight (RON) positions and associated airside taxiways, taxilanes and aircraft parking ramp. Phase 1 should accommodate passenger levels up to 2.0 MAP.

Phase 2 incorporates four new gates with the construction of a south concourse extension, for a total of 12 gates. Phase 2 should accommodate up 2.5 MAP.

Phase 3 includes an additional four gates with the construction of a north concourse extension for a total of 16 gates. Phase 3 should allow for passenger capacity up to 3.5 MAP.

The airport will retain space for additional long-term gate expansion at the North Terminal (beyond the 16 gates in Phase 3) with additional concourse expansion to support new gates and aircraft operations beyond the forecast horizon is possible.

EXHIBIT 7.1-1 PHASE 0



Gate Overview

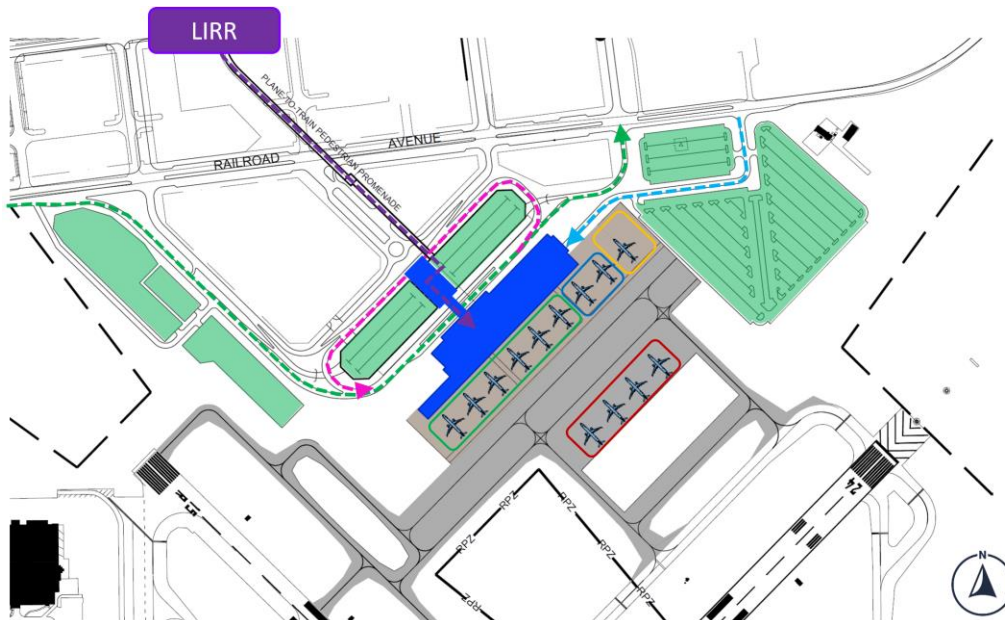
New	Total
0	0

Enabling Phase

- Closing Compost
- Utilities
- Roadways
- Airside Infrastructure

Source: Landrum & Brown, 2022

EXHIBIT 7.1-2 PHASE 1



Gate Overview

New	Total	RON
8	8	4

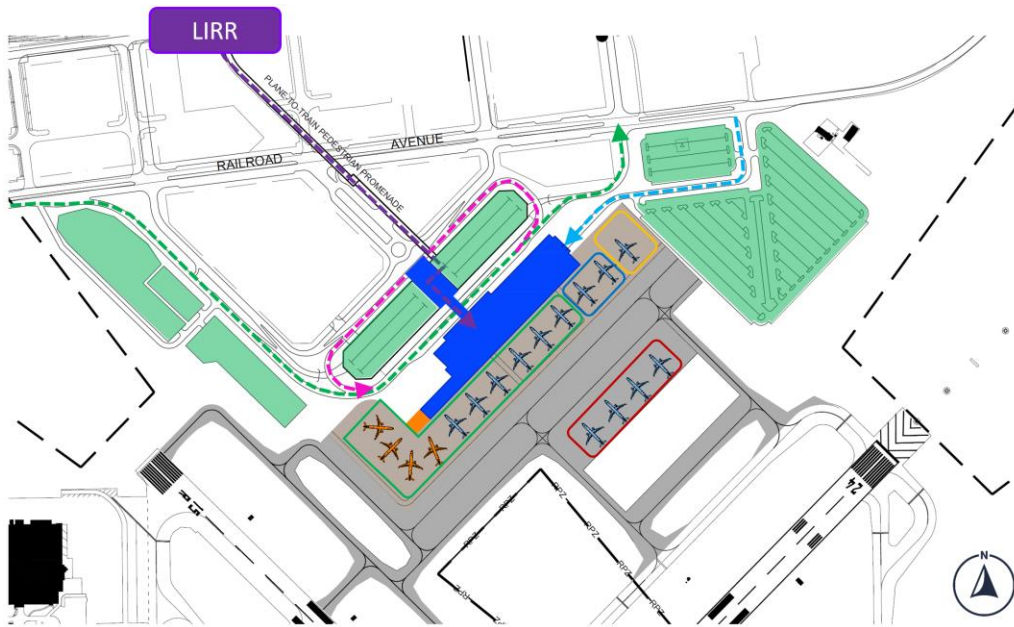
1.8 – 2.0 MAP

Legend:

- Phase 1
- Airport Vehicle Parking
- > LIRR Elevated Walkway
- - -> Airport Access
- - -> Recirculation Roadway
- - -> Airport Service Access
- Domestic
- Intl/Swing
- GAF parking
- Remain Overnight (RON)

Source: Landrum & Brown, 2022

EXHIBIT 7.1-3 PHASE 2



Gate Overview

New	Total	RON
4	12	4

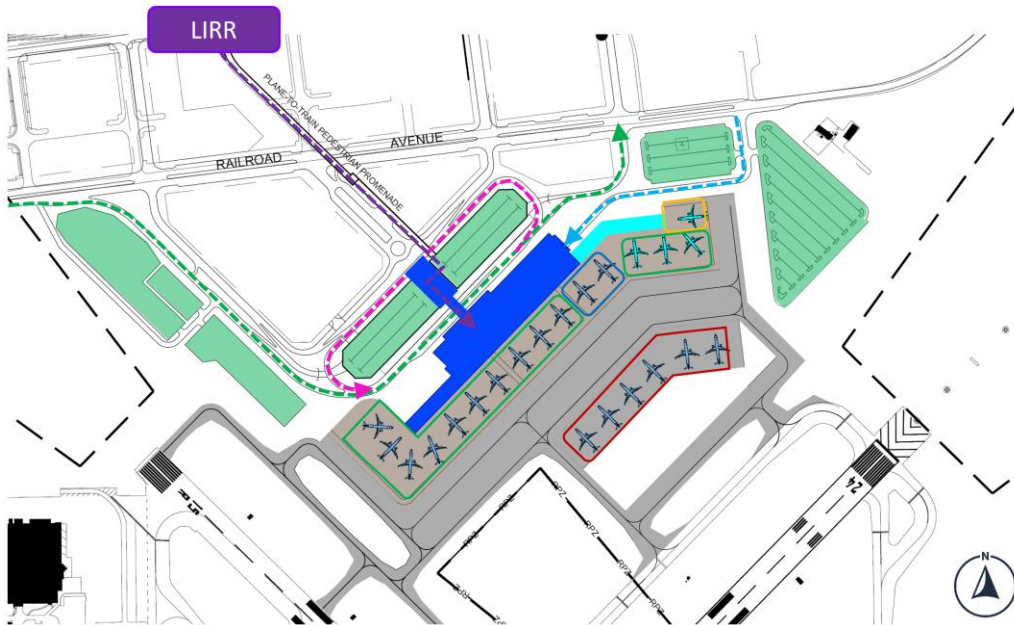
2.5 MAP

Legend:

- Completed
- Phase 2
- Airport Parking
- - - LIRR Elevated Walkway
- - - Airport Access
- - - Recirculation Roadway
- - - Airport Service Access
- Domestic
- Intl/Swing
- GAF parking
- Remain Overnight (RON)

Source: Landrum & Brown, 2022

EXHIBIT 7.1-4 PHASE 3



Gate Overview

New	Total	RON
4	16	6

3.5 MAP

Legend:

- Completed
- Phase 3
- Airport Parking
- - - LIRR Elevated Walkway
- - - Airport Access
- - - Recirculation Roadway
- - - Airport Service Access
- Domestic
- Intl/Swing
- GAF parking
- Remain Overnight (RON)

Source: Landrum & Brown, 2022

7.2 Schedule – Preferred Alternative

The anticipated program schedule is dependent on many factors and decisions in collaboration with the Town of Islip, FAA, and overall stakeholders. The below schedule represents the approximate timeframes and milestones anticipated for full completion of the Phase 1 North Terminal project.

Environmental Review - Approx. 1.5 years

- This is dependent on the level of environmental review determined by the FAA. Refer to Section 9 for further detail.

Design – Approx. 1.5 years

- Separated into multiple packages, including but not limited to utilities, landside roadways, parking, airside infrastructure and the new terminal building.

Construction – Approx. 2.5 to 3 years

- This will be constructed according to the final breakdown of design packages and is dependent on the chosen delivery method for the overall program.

Proposed Non-Aeronautical Commercial Development – Time duration unknown

- The Town of Islip is working with a developer to implement the proposed non-aeronautical land uses between the LIRR Ronkonkoma station and the new terminal, including a portion of the LIRR Transit Spine. It is anticipated that this area may have a mix of office, retail and hospitality functions that create a Transit Oriented Development (TOD).

8 Financial Analysis – Preferred Alternative

8.1 Introduction

8.1.1 Goals of Financial Analysis

The central goal of the financial analysis is to determine the financial viability of proposed capital projects included in the capital program presented by Landrum & Brown on December 9, 2021. The capital program encapsulates several projects related to construction of a new terminal on the north side of the Airport along with the necessary supporting infrastructure. The program includes terminal and airside development, updates to the landside configuration, new parking facilities, and utility connection and improved customer experience with TOD connection.

Financial viability of a program can be defined in a number of different ways, depending on the program, sponsor's goals, objectives, constraints, and risk profile. Establishing the correct parameters is key to performing any meaningful assessment of viability. For the North Terminal development at ISP, we have assessed the impact to the following key parameters after delivery of the North Terminal: (1) total revenue per enplanement and (2) debt service coverage ratio (DSCR). As the program details are further developed, subsequent versions of the financial analysis will incorporate a detailed evaluation of the various risks to the Airport. Given the number of open variables, in particular related to program scoping and funding sources, any attempts to quantify risk at this juncture would not be meaningful.

It should be noted that the financial analysis completed to date is based on the information currently available. This information is expected to change as the program is further developed and as the viability and quantum of funding sources are assessed. **As a result, the ultimate financial plan could look different from what is presented in this analysis.**

8.1.2 Method of Financial Analysis

To assess the financial feasibility of the North Terminal, Frasca & Associates ("FRASCA") has created a fully integrated pro forma financial model. The financial model allows the user to run multiple scenarios related to assumptions pertaining to project costs, funding sources and amounts, revenues, operating expenses (opex), along with several other variables. In order to evaluate the long-term impact of the program, the financial model projects out to 2034, which is a full six years past the final phase of construction.

The trajectory of the pro forma projections is determined by the model assumptions. The model assumptions are derived from several sources ranging from supplied data, historical trends, the current aviation and economic environment, and general subject matter expertise. Understanding that even with the most thoroughly vetted assumptions, it is impossible to prognosticate with perfect accuracy, the analysis contemplates multiple scenario ranges wherein certain assumptions are flexed up and down in order to assess the impact on the financial outputs. At this juncture in the analysis, the most impactful variation in assumption values lies in the value of total project costs and the quantum of funding sources.

As noted earlier, it is important to understand that the model results and subsequent conclusions are heavily contingent upon the model assumptions, and these assumptions are likely to change as the due diligence process continues. When these changes occur, FRASCA will update the model accordingly and revisit the model outputs.

8.2 Construction Costs – Preferred Alternative

8.2.1 Original Cost Estimates (Not Used in Model)

Table 8.2-1, Original Project Cost shows the original project costs as provided by Landrum and Brown in December of 2021. The current set of cost estimates is not escalated due to expected cost savings and reduction in soft costs in the subsequent round of cost estimates.

TABLE 8.2-1 ORIGINAL PROJECT COST

Capex by Phase (\$)	
Concept G - Phase 1	Total Costs
Terminal (Phase 1 - 8 Gates) Total	177,556,000
LIRR Connectivity	54,774,000
Parking	110,117,000
Airport Roads	19,368,000
Airfield Costs (Phase 1)	99,587,000
Utility Connections - Airport Required	11,818,000
Total Costs - Concept G - Phase 1 (Airport Only)	\$ 473,220,000
Utility Connections - Non-Airport	10,000,000
Non-Airport Roads	2,557,000
Total Costs - Concept G - Phase 1 (Non-Airport Only)	\$ 12,557,000
Total Costs - Concept G - Phase 1	\$ 485,777,000
Composting Facility Relocation	40,000,000
Total Costs - Concept G - Phase 1 + Compost	\$ 525,777,000
Phase 1 Soft Costs	257,210,108
Total Costs - Concept G - Phase 1 (Hard and Soft)	\$ 782,987,108
Concept G - Phase 2	Total Costs
Terminal (Phase 2 - 4 Gates) Total	\$ 6,240,000
Airfield Costs (Phase 2)	\$ 11,451,000
Total Costs - Concept G - Phase 2	\$ 17,691,000
Phase 2 Soft Costs	8,654,437
Total Costs - Concept G - Phase 2 (Hard and Soft)	\$ 26,345,437
Grand Total - Phase 1 and 2	Total Costs
Total Costs - Concept G - Phase 1 & 2 (Hard and Soft)	\$ 809,332,546

Source: Landrum & Brown, prepared 12/9/21, with Airport edits

8.2.2 Updates to Cost Estimates

At the direction of the Airport, FRASCA updated the original cost estimates by paring back the scope of the LIRR connectivity projects and Airport parking facility along with entirely eliminating projects that fell outside the responsibility of the Airport, such as non-Airport utilities and roads and the composting facility closure and possible relocation. While original, full cost estimates for these items are useful for understanding the scope of the broader capital program, they are not directly relevant to evaluating the financial feasibility of the Airport's proposed balance sheet.

The adjustments consisted of the following:

- Reduced scope of LIRR connectivity by \$37M
- Replaced parking structure with surface lot, removing \$90M in estimated costs
- Removed non-airport utility connections and non-airport roads, carving out \$13M
- Eliminated composting facility relocation, amounting to \$40M in savings
- **Total reductions amount to \$180M in hard costs and another \$87M in soft costs**

There remains the potential to make further reductions to the envisioned capital program. Such reductions would only further enhance the program's financial viability. Conversely, construction cost escalation or augmenting of scope are also possible and such changes could strain the financial viability of the program.

8.2.3 Updated Cost Estimates (Used in Model)

Table 8.2-2, Updated Cost Estimates represents the envisioned Airport capital program with the adjustments described in the above section. These cost numbers form the basis for the current model projections. As stated, the current set of cost estimates is not escalated due to expected cost savings and reduction in soft costs in the subsequent round of cost estimates.

TABLE 8.2-2 UPDATED COST ESTIMATES

Capex by Phase (\$)	
Concept G - Phase 1	
	Total Costs
Terminal (Phase 1 - 8 Gates) Total	177,556,000
LIRR Connectivity	18,075,420
Parking	20,117,000
Airport Roads	19,368,000
Airfield Costs (Phase 1)	99,587,000
Utility Connections - Airport Required	11,818,000
Total Costs - Concept G - Phase 1 (Airport Only)	\$ 346,521,420
Utility Connections - Non-Airport	-
Non-Airport Roads	-
Total Costs - Concept G - Phase 1 (Non-Airport Only)	\$ -
Total Costs - Concept G - Phase 1	\$ 346,521,420
Composting Facility Relocation	-
Total Costs - Concept G - Phase 1 + Compost	\$ 346,521,420
Phase 1 Soft Costs	169,518,279
Total Costs - Concept G - Phase 1 (Hard and Soft)	\$ 516,039,699
Concept G - Phase 2	
	Total Costs
Terminal (Phase 2 - 4 Gates) Total	\$ 6,240,000
Airfield Costs (Phase 2)	\$ 11,451,000
Total Costs - Concept G - Phase 2	\$ 17,691,000
Phase 2 Soft Costs	8,654,437
Total Costs - Concept G - Phase 2 (Hard and Soft)	\$ 26,345,437
Grand Total - Phase 1 and 2	
	Total Costs
Total Costs - Concept G - Phase 1 & 2 (Hard and Soft)	\$ 542,385,136

Source: Landrum & Brown, prepared 12/9/21, with Airport edits

8.3 New Terminal Capital Improvement Program (CIP) – Preferred Alternative

8.3.1 Projects and Timing of Cash Flows

In addition to total project costs, an additional key assumption is the timing of the project cash flows. The current financial model assumes that roughly 65% of the Phase 1 project cash flows occur in FY 2026 and the remaining 35% occur in FY 2027, ultimately allowing for a date of beneficial occupancy in FY 2028. Phase 2 project cash flows are assumed to all take place in FY 2028 and are intended to expand upon the developments in Phase 1. The cash flow timing assumptions are general estimates and have been validated by the Airport. The exact timing of these cash flows will be further refined over the coming months.

Adjustments to the timing of the cash flows will not have a drastic impact on the financial feasibility so long as such changes are coordinated in advance of any related bond issuance. The primary risk lies in an event wherein planned construction work were significantly delayed after bonds had been issued. This would result in a mismatch between new debt service obligations and the additional revenues associated with the North Terminal intended to service the debt.

A detailed breakout of project cash flows by cost center and year are shown in **Exhibit 8.5-1, Project Cash Flow by Cost Center**.

8.3.2 Funding Sources

Table 8.3-1, Fairly Certain Funding Sources and **Table 8.3-2, Possible Funding Sources** highlight the envisioned funding sources categorized by certainty of acquisition. The amounts shown here represent the entirety of all available funding sources based on current investigative efforts by the Airport. In the “Pro Forma Projections” section of this report, a “Reduced Grant” scenario is depicted. Out of all the funding sources, none are viewed as “all or nothing”; should any of the fundings sources fail to materialize for the full amount shown below, there is still the potential to receive a reduced amount. As the capital plan is further refined and the availability of each funding source becomes more apparent, it will be important to confirm that the funding sources do not exceed the eligible project costs.

TABLE 8.3-1 FAIRLY CERTAIN FUNDING SOURCES

Project	Funding Source	Amount
Customs Facility	NY State	\$20M
Customs Facility	ESD, County and Town	\$5M
In Line Baggage	TSA	\$20M
New Terminal	NY State	\$40M
New Terminal	Federal AIP Program (Total)	\$35M
New Terminal	Airport PFC Program	\$15M
TOTAL		\$135M

Source: Airport assumptions and FRASCA analysis

TABLE 8.3-2 POSSIBLE FUNDING SOURCES

Project	Funding Source	Amount
New Terminal	BIL ATP FAA (\$15M X 5 years)	\$75M
New Terminal	NY State Upstate Aviation Terminal Grant Program	\$150M
General	Community Program	\$20M
General	Empire State Development	\$20M
General	Raise for Infrastructure	\$25M
TOTAL		\$290M

Remaining funding needs: \$120M

Source: Airport Assumptions and FRASCA Analysis

After accounting for all the “fairly certain” and “potential” funding sources, there is a remaining balance of \$120M. This balance could be covered by several alternative funding sources, which are listed in **Table 8.3-3, Alternative Funding Sources**. Each alternative funding source has different attributes related to the funding structure to the Airport, ease of acquiring, incremental revenue generation required, and time investment from the Airport. It should be noted that out of all the alternative funding sources highlighted below, only debt would require additional incremental revenue generation. It is also possible for several of these funding sources to be structured together. For example, town-backed debt could be issued to provide an upfront funding source and then serviced on a reoccurring basis, from a public-private-partnership (P3) and/or ground lease payments.

TABLE 8.3-3 ALTERNATIVE FUNDING SOURCES

Funding Source	Funding Structure to Airport	Ease of Acquiring	Incremental Revenue Generation Needed	Airport Time Investment
Tax-exempt debt	<i>Upfront</i>	<i>High</i>	<i>Highest</i>	<i>Low</i>
Federal earmark	<i>Upfront</i>	<i>Moderate</i>	<i>None</i>	<i>Low</i>
Alternative revenue generating transaction/P3	<i>Upfront and/or Annual</i>	<i>Moderate</i>	<i>None</i>	<i>High (upfront)</i>
Leasing airport facility/land	<i>Annual</i>	<i>High</i>	<i>None</i>	<i>Moderate</i>

Source: FRASCA Analysis

8.4 Pro Forma Projections – Preferred Alternative

8.4.1 Approach

A typical pro forma projection of airport financials would involve coming up with independent growth assumptions for aeronautical and non-aeronautical revenues and projecting those revenues over the forecast period. For this particular analysis, the central task is to assess the minimum revenue per enplanement needed to service any debt and opex associated with a full buildout of the North Terminal. The sum of debt service and opex represent the total cost requirements that must be covered by all revenue sources. Currently, the Town-backed debt does not have an additional coverage requirement; therefore, the debt service requirement used in the model calculations is set at 100% of debt service. This total revenue requirement then subtracts the developer payments associated with the 40+-Acre site and South Terminal developments. The remaining balance represents the revenue that must be covered from aeronautical and non-aeronautical sources. This balance is then divided by the forecast enplanements to arrive at total revenue requirement per enplanement.

As stated in the Introduction section, this assessment of financial viability is contingent upon evaluating the impact of the North Terminal on the following parameters: (1) total revenue per enplanement and (2) debt service coverage ratio (DSCR). The focus on total revenue requirements is due to the fact that the Airport has the ability to meet those requirements through any combination of aeronautical and non-aeronautical revenues. At this point in the process, we believe it is premature to prescribe any particular aeronautical revenue/CPE number. Rather, the focus is on meeting the Airport's goal of minimizing any future CPE increases beyond current levels. The analysis, thus far, suggests that projected non-aeronautical revenues from the new terminal developments, combined with the developer payments, will be sufficient to moderate any significant growth in CPE beyond current levels. Solving for the required revenues via this calculation also ensures that all of the projected debt service will be adequately serviced in the pro forma projections as the total debt service is built into the revenue requirements.

8.4.2 Projection of Funding Sources

Table 8.4-1, Projection of Funding Sources highlights each funding source and the underlying pro forma assumptions. These amounts are inclusive of all airport cash flows, including existing airport cash flows.

TABLE 8.4-1 PROJECTION OF FUNDING SOURCES

Item	Starting Assumption	Growth Assumption	Pro Forma FY2030 Value
PFC Revenues	Balance provided by Airport	Enplanements * PFC collection rate (87%) * PFC Charge (\$4.39)	\$3.8M
Cash Fund	Balance provided by Airport	Assume no future cash balance available aside from \$10M carveout assumption validated by the Airport	N.A.
Bond Debt Service	Bond issued beginning of FY in which construction is expected to begin. One bond issued per year for a total of 3 issuances. Also adds existing bond debt service.	Level debt service with a 30-year maturity and a 5.0% interest rate	\$13.5M
Developer Payments	Assumed all-in annual developer payment on a per acre basis for the 40+-Acre and South Terminal development sites. Payment made as of site DBO and continued each year.	Per-acre development fee escalated each year at 2.5%	\$2.7M

Source: Airport Data and FRASCA Analysis

8.4.3 Projection of traffic, operating expenses, and revenues

Table 8.4-2, Pro Forma Assumptions highlights the underlying pro forma assumptions for enplanement traffic, operating expenses, and revenues. These amounts are inclusive of all airport cash flows, including existing airport cash flows.

TABLE 8.4-2 PRO FORMA ASSUMPTIONS

Item	Starting Assumption	Growth Assumption	Pro Forma FY2030 Value
Enplanement Traffic	FY 2022 estimated enplanements provided by Airport	Forecast provided by Airport, through FY 2030 (avg. growth of 1.3% YoY). Assumed 1.0% YoY growth beyond FY 2030.	992,000
Operating Expenses	FY 2022 estimated enplanements provided by Airport	YoY CPI escalation plus one-time step up as new facilities come online. Growth rate assumptions closely mirror those provided by independent consultant.	\$20.3M
Minimum Required Revenues	Total yearly requirements (total debt service + total opex - developer payments)	Total yearly requirements (total debt service + total opex - developer payments)	\$31.0M

Source: Airport Data and FRASCA Analysis

The current analysis contemplates two primary scenarios, one with full grant funding and one with a \$50M reduction in grant funding associated with the Airport Terminal Program (ATP) Grant. Each of the two sets of outputs includes two sections. The first section corresponds to the project cash flows associated with the North Terminal by funding source. The second section represents the total revenues required to meet all of the Airport’s expenditures, pre- and post-North Terminal.

The outputs for the “Full Grant Funding” scenario are shown in **Exhibit 8.5-2, Full Grant Funding Scenario**. The outputs for the “Reduced Grant Funding” scenario are shown in **Exhibit 8.5-2, Partial Grant Funding Scenario**.

In the “Reduced Grant Funding” scenario, it is assumed that CPE levels would increase beyond what is projected in the “Full Grant Funding” scenario; although, they would still be in line with CPE levels at ISP peer airports. We have also contemplated a steeper downside scenario wherein grant funding comes in far below the levels envisioned in the other two scenarios. Such a scenario would require the Airport to capture additional revenue opportunities beyond what is shown in this report, delay non-essential components of the capital program, or raise CPE levels above those of peer airports.

8.5 Summary of Findings and Conclusion

8.5.1 Summary of findings and conclusion

The financial viability of a capital program is multi-faceted and will depend on a number of elements such as the goals, objectives, constraints, and risk profile of the program sponsor. These elements take time to develop and often are not entirely defined until the scope of the capital program is fully

established. Given where the Airport is in the evolution of their North Terminal capital program, the two feasibility parameters that can be confidently identified are the program's impact on total revenue per enplanement and the DSCR. Our analysis has assessed the program's impact on these parameters. We can conclude, thus far, that the financing and implementation of the North Terminal, as outlined in this report, allows these parameters to remain in line with the Airport's goals and objectives. Specifically, it would (1) allow for any increase in total revenue requirements per enplanement to be primarily covered through enhanced non-aeronautical revenues, thereby mitigating any significant increase in airline CPE over current levels and (2) ensure that the Airport is able to fully cover all current and future debt service obligations.

Subsequent versions of the financial analysis will also consider the various risks to the Airport associated with the North Terminal. At this point, any attempts to quantify risk would not be meaningful as there are still a number of open variables that must first be addressed.

Finally, it should be reiterated that the financial analysis completed to date is based on the information currently available and is meant to provide high-level direction related to the development of the capital program. This information is expected to change as the program is further defined and our analysis will be updated accordingly.

EXHIBIT 8.5-1 PROJECT CASH FLOW BY COST CENTER

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Phase 1 (\$ 000's)												
Terminal	\$ -	\$ -	\$ -	\$ -	\$ 177,159	\$ 87,257	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LIRR	-	-	-	-	18,035	8,883	-	-	-	-	-	-
Parking	-	-	-	-	20,072	9,886	-	-	-	-	-	-
Roads	-	-	-	-	19,325	9,518	-	-	-	-	-	-
Airfield	-	-	-	-	99,364	48,941	-	-	-	-	-	-
Utilities Airside and Landside	-	-	-	-	11,792	5,808	-	-	-	-	-	-
Other Non-Airport	-	-	-	-	-	-	-	-	-	-	-	-
Other/Compost	-	-	-	-	-	-	-	-	-	-	-	-
Total	\$ -	\$ -	\$ -	\$ -	\$ 345,747	\$ 170,293	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Phase 2 (\$ 000's)												
Terminal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,293	\$ -	\$ -	\$ -	\$ -	\$ -
Airfield	-	-	-	-	-	-	17,053	-	-	-	-	-
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 26,345	\$ -	\$ -	\$ -	\$ -	\$ -

Source: Airport Assumptions

EXHIBIT 8.5-2 FULL GRANT FUNDING SCENARIO

	TOTAL	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Project Cash Flows by Funding Source (\$ 000's)														
Total - Phase 1 & 2 (hard and soft)														
AIP Total	\$ 35,000	\$ -	\$ -	\$ -	\$ -	\$ 18,000	\$ 17,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ATP & NY Upstate Terminal Grant	225,000	-	-	-	-	153,852	71,148	-	-	-	-	-	-	-
TSA Baggage Grant	20,000	-	-	-	-	13,400	6,600	-	-	-	-	-	-	-
FIS Grant	25,000	-	-	-	-	16,750	8,250	-	-	-	-	-	-	-
State Grant	40,000	-	-	-	-	26,800	13,200	-	-	-	-	-	-	-
Infra Bill	25,000	-	-	-	-	25,000	-	-	-	-	-	-	-	-
Community Program and ESD	40,000	-	-	-	-	20,000	20,000	-	-	-	-	-	-	-
PFC Pay Go	13,254	-	-	-	-	13,254	-	-	-	-	-	-	-	-
PFC to DS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Financing	108,969	-	-	-	-	51,736	30,888	26,345	-	-	-	-	-	-
Cash	10,162	-	-	-	-	6,955	3,207	-	-	-	-	-	-	-
Total	\$542,385	\$ -	\$ -	\$ -	\$ -	\$345,747	\$170,293	\$26,345	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Scenario Output (w/ Misc. Revenue)													
Required total airport-wide revenue generation (\$ 000's)	\$ 20,392	\$ 20,514	\$ 19,393	\$ 19,641	\$ 19,873	\$ 20,132	\$ 25,359	\$ 27,443	\$ 27,053	\$ 26,601	\$ 26,945	\$ 27,294	\$ 27,557
Required total airport-wide revenue generation per enplanement	\$ 22.76	\$ 22.79	\$ 19.67	\$ 19.79	\$ 20.03	\$ 20.29	\$ 25.55	\$ 27.65	\$ 27.26	\$ 26.54	\$ 26.62	\$ 26.69	\$ 26.68

*Note: Grant funding amounts are estimated and will require formal approval

**Note: Miscellaneous revenue includes potential base rent and revenue share from 40+-acre site development and South Terminal redevelopment

***Note: Miscellaneous revenues from 40+-acre site start in 2028 and revenues from South Terminal site start in 2030

Source: Airport Assumptions and FRASCA Analysis

EXHIBIT 8.5-3 PARTIAL GRANT FUNDING SCENARIO

	TOTAL	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Project Cash Flows by Funding Source (\$ 000's)														
Total - Phase 1 & 2 (hard and soft)														
AIP Total	\$ 35,000	\$ -	\$ -	\$ -	\$ -	\$ 18,000	\$ 17,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ATP & NY Upstate Terminal Grant	125,000	-	-	-	-	89,000	36,000	-	-	-	-	-	-	-
TSA Baggage Grant	20,000	-	-	-	-	13,400	6,600	-	-	-	-	-	-	-
FIS Grant	25,000	-	-	-	-	16,750	8,250	-	-	-	-	-	-	-
State Grant	40,000	-	-	-	-	26,800	13,200	-	-	-	-	-	-	-
Infra Bill	25,000	-	-	-	-	25,000	-	-	-	-	-	-	-	-
Community Program and ESD	40,000	-	-	-	-	20,000	20,000	-	-	-	-	-	-	-
PFC Pay Go	13,254	-	-	-	-	13,254	-	-	-	-	-	-	-	-
PFC to DS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Financing	208,969	-	-	-	-	116,588	66,036	26,345	-	-	-	-	-	-
Cash	10,162	-	-	-	-	6,955	3,207	-	-	-	-	-	-	-
Total	\$542,385	\$ -	\$ -	\$ -	\$ -	\$345,747	\$170,293	\$ 26,345	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Scenario Output (w/ Misc. Revenue)													
Required total airport-wide revenue generation (\$ 000's)	\$ 20,392	\$ 20,514	\$ 19,393	\$ 19,641	\$ 19,873	\$ 20,132	\$ 33,262	\$ 35,345	\$ 34,956	\$ 34,504	\$ 34,848	\$ 35,197	\$ 35,460
Required total airport-wide revenue generation per enplanement	\$ 22.76	\$ 22.79	\$ 19.67	\$ 19.79	\$ 20.03	\$ 20.29	\$ 33.52	\$ 35.62	\$ 35.22	\$ 34.42	\$ 34.42	\$ 34.42	\$ 34.34

*Note: Grant funding amounts are estimated and will require formal approval

**Note: Miscellaneous revenue includes potential base rent and revenue share from 40+-acre site development and South Terminal redevelopment

***Note: Miscellaneous revenues from 40+-acre site start in 2028 and revenues from South Terminal site start in 2030

Source: Airport Assumptions and FRASCA Analysis

9 Potential Environmental Requirements – Preferred Alternative

This chapter provides a preliminary review of the environmental considerations for the North Terminal Alternative at Long Island MacArthur Airport (ISP or the Airport). The purpose of considering environmental factors in airport master planning is to help the sponsor thoroughly evaluate airport development alternatives and to provide information that will help expedite subsequent environmental processing.⁵

9.1 Regulatory Setting

9.1.1 National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) affects airport planning by requiring that environmental impacts of proposed airport development be considered early and throughout the planning process. Environmental feasibility is as important as economic or engineering feasibility in determining how an airport will be developed. This Environmental Requirements section identifies the potential environmental resource categories that may require further investigation. This information serves to support the decision-making process and to aid future NEPA reviews. For subsequent NEPA requirements, the analysis of environmental impacts would be prepared pursuant to Federal Aviation Administration (FAA) Order 1050.1F, *Environmental Impacts: Policies and Procedures*; and FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*.

FAA Order 1050.1F states that, unless otherwise exempted, proposed actions and decisions by FAA officials are subject to NEPA review. Specific FAA actions subject to NEPA review can include, but are not limited to, grants, loans, contracts, leases, construction and installation actions, procedural actions, research activities, rulemaking and regulatory actions, certifications, licensing, permits, plans submitted to the FAA that require the FAA's approval, and legislation proposed by the FAA. As such, any airport development that requires an FAA action would be required to undergo an environmental review in accordance with NEPA prior to implementation.

Federal regulations outline three major levels of NEPA review relevant to airport development.

- Categorical Exclusion – applies to those actions that have been found (under normal circumstances) to have no potential for significant environmental impact.
- Environmental Assessment (EA) – applies to those actions that have been found by experience to sometimes have significant environmental impacts. The list of actions normally requiring an EA can be found in Chapter Four of FAA Order 1050.1F. The purpose of an EA is to determine whether the proposed project would have significant impacts. Upon review of the EA findings, the FAA either issues project approval in the form of a Finding of No Significant Impact (FONSI) or

⁵ U.S. Department of Transportation, Federal Aviation Administration; Advisory Circular 150/5070-6B, Change 2; January 27, 2015.

directs the preparation of an Environmental Impact Statement (EIS) to further investigate potential environmental impacts in detail before project approval can be granted.

- Environmental Impact Statement (EIS) – applies to those actions that have been found by experience to usually have significant environmental impacts. The FAA may issue a Record of Decision (ROD) after the Final EIS has been released.

9.1.2 FAA Reauthorization Act of 2018

Section 163(d) of the FAA Reauthorization Act of 2018 limits the authority of the FAA to approve ALP changes only when the change would affect one of three zones of interest. FAA retains ALP approval authority for portions of ALPs or ALP revisions that:

- i. Materially impact the safe and efficient operation of aircraft at, to, or from the airport;
- ii. Adversely affect the safety of people or property on the ground adjacent to the airport as a result of aircraft operations; or
- iii. Adversely affect the value of prior Federal investments to a significant extent.

If a project doesn't affect one of the three zones of interest, the FAA will accept rather than approve the ALP. In such cases in which ALP approval is not required, no federal action would occur that would be subject to NEPA.

9.1.3 Other Special Purpose Laws

Airport development may be subject to other state and federal environmental regulations. Where applicable, other regulations are discussed in the following sections as they may overlap with or be in addition to the requirements of NEPA.

9.2 Purpose and Need

Purpose and Need is a NEPA term that refers to a section of an environmental document, which describes the purpose of, and need for, the proposed Federal action. The problem to be addressed is identified (need), the requested Federal action is noted as a possible solution to the problem (purpose), and information that supports that a problem exists is presented (or referenced). The planning process should provide information sufficient to provide a basis for describing the Purpose and Need for proposed Federal actions. Airport planning provides the basis for a project's purpose and need in environmental evaluation and the alternatives that the FAA will carry into its NEPA analysis.⁶

9.3 Environmental Impact Categories

This preliminary review identifies potential environmental impacts associated with the development alternatives that are recommended in this Master Plan Update study. The FAA examines the NEPA

⁶ U.S. Department of Transportation, Federal Aviation Administration; Advisory Circular 150/5070-6B, Change 2; January 27, 2015.

environmental impact categories to determine applicability for its actions. As identified in FAA Order 1050.1F, the NEPA environmental impact categories are:

- Air Quality
- Biological Resources (including fish, wildlife, and plants)
- Climate
- Coastal Resources (Coastal Barriers and Coastal Zones)
- Department of Transportation Act Section 4(f) Resources
- Farmlands
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Historical, Architectural, Archeological, and Cultural Resources
- Land Use
- Natural Resources and Energy Supply
- Noise and Compatible Land Use
- Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety Risks
- Visual Effects (including Light Emissions)
- Water Resources
 - Floodplains
 - Groundwater
 - Surface Water
 - Wetlands
 - Wild and Scenic Rivers

9.3.1 Air Quality

The Airport is located within Suffolk County, New York, which is included in the New York-New Jersey-Long Island, NY-NJ-CT Air Quality Region. The U.S. Environmental Protection Agency (EPA) previously determined that the levels of the eight-hour concentration of ozone exceeded the federal standards defining healthful air quality and the area is classified as moderate non-attainment. Suffolk County was previously determined to be non-attainment for fine particulate matter (PM_{2.5}); however, the County was redesignated as attainment in April 2014 and now operates under a maintenance plan for this pollutant. Suffolk County was determined to be in attainment for all other federally regulated air quality standards in effect at the time of the preparation of this document.⁷

Two primary laws apply to air quality: NEPA and the CAA including the 1990 Amendments. Any assessment of air quality associated with a Federal action would need to be prepared in accordance

⁷ U.S. Environmental Protection Agency, Nonattainment Status for Each County by Year for New York, Online at: https://www3.epa.gov/airquality/greenbook/anayo_ny.html, Accessed on March 10, 2022.

with the guidelines provided in the FAA's *Air Quality Procedures for Civilian Airports & Air Force Bases*,⁸ and pursuant to FAA Order 5050.4B and FAA Order 1050.1F. An air quality assessment prepared pursuant to these orders and guidelines would be compliant with all the relevant provisions of NEPA, the CAA, and the New York State Implementation Plan (SIP).

The air quality significance threshold from FAA Order 1050.1F is exceeded if the action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the EPA under the Clean Air Act (CAA), for any of the time periods analyzed, or if there is an increase in the frequency or severity of any such existing violations.

To determine the net emissions resulting from construction and operation of the North Terminal Alternative, an emissions inventory would need to be prepared for each alternative, including the no-build alternative. A General Conformity evaluation would be required to determine net emissions from construction and implementation. The emissions inventory would be compared to the relevant *de minimis* thresholds for the pollutants of concern. If emissions exceed applicable *de minimis* thresholds, dispersion analysis may be required.

9.3.2 Biological Resources

Biological resources include fish, wildlife, plants, and their respective habitats. A biotic community is an assemblage of living things residing together, including both plants and animals. The Endangered Species Act of 1973 (ESA),⁹ as amended, provides for the protection of certain plants and animals, as well as the habitats in which they are found.

Information from the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation (IPaC) system was obtained to determine the species that are found within range of ISP. **Table 9.3-1, List of Threatened, Endangered and Candidate Species** lists those species that may be found within airport property based on the IPaC search. Information collected from the USFWS website indicated that no designated critical habitats for threatened or endangered species was known to exist within the Study Area. It should be noted that the bald eagle is no longer protected under the ESA; however, the species remains protected under the Bald and Golden Eagle Protection Act, which prohibits the disturbance of a bald or golden eagle or their nests. Certain bird species are also protected under the Migratory Bird Treaty Act.

Prior to construction of the North Terminal Alternative, survey of potential habitat and/or presence of protected species should be conducted. An updated list of species should be obtained in the event that species' status has changed. Depending upon the findings, consultation may be required between the FAA and USFWS to determine the potential for impacts to protected species in accordance with Section 7 of the ESA. The New York Natural Heritage Program should be consulted to identify any state protected species.

⁸ FAA and USAF, *Air Quality Procedures for Civilian Airports & Air Force Bases*, April 1997.

⁹ 16 U.S.C. §1531 et seq. (1973).

TABLE 9.3-1 LIST OF THREATENED, ENDANGERED AND CANDIDATE SPECIES

TAXONOMIC GROUP	COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS
Mammal	Northern long-eared bat	Myotis septentrionalis	Threatened
Birds	Piping plover	Charadrius melodus	Threatened
Birds	Red knot	Calidris canutus rufa	Threatened
Insect	Monarch butterfly	Danaus plexippus	Candidate
Flowering Plant	Sandplain Gerardia	Agalinis acuta	Endangered
Flowering Plant	Seabeach Amaranth	Amaranthus pumilus	Threatened

Source: USFWS Information for Planning and Conservation (IPaC) website, <https://ipac.ecosphere.fws.gov/>, Accessed February 18, 2022.

9.3.3 Coastal Resources

According to the FAA Order 1050.1F Desk Reference, the activities potentially affecting coastal barrier resources and coastal zones must be assessed in a NEPA review. The *Coastal Barrier Resources Act of 1982* requires that no new Federal expenditures or financial assistance may be made available for construction projects within the boundaries of the Coastal Barriers Resource System. The *Coastal Zone Management Act of 1972* established the Federal Coastal Zone Management Program to encourage and assist states in preparing and implementing management programs to "preserve, protect, develop, and, where possible, to restore or enhance the resources of the nation's coastal zone."

The Airport is not within the Coastal Barrier Resources System according to data accessed from the Fish and Wildlife Service office. The closest protected area in the Coastal Resource Barrier System is the Fire Island National Seashore (Designated NY-59P) located south of ISP.

Pursuant to the *Coastal Zone Management Act of 1972*, New York State adopted its Waterfront Revitalization and Coastal Resources Act (WRCRA, 1981), which created the New York State Coastal Management Program (CMP) under direction of the New York State Department of the State (NYS DOS). The program encourages coordination among all levels of government to promote sound waterfront planning and requires government to consider the goals of the program in making land use decisions.

Because of the location of the North Terminal Alternative, no significant adverse impacts to coastal barrier resources are expected with the construction and implementation of this alternative. If project elements would impact an area protected by the CMP or change the manner in which land, water or other coastal resources are used or change the environmental quality of coastal resources, coordination may be required with the New York Department of State (Division of Coastal Resources) to obtain a Coastal Zone Consistency Review.

9.3.4 Climate

Per FAA Order 1050.1F, the discussion of potential climate impacts should be documented in a separate section of the NEPA document, distinct from air quality. Where the proposed action or

alternative(s) would result in an increase in GHG emissions, the emissions should be assessed either qualitatively or quantitatively.

Changes in GHG emissions may occur due to the proposed North Terminal Alternative due to emissions from construction vehicles and any changes in aircraft, automobile traffic, or ground support equipment that may occur. The net change in GHG emissions should be calculated and disclosed in the relevant NEPA document either qualitatively or quantitatively. There is currently no threshold of significance for GHG emissions per FAA requirements.

9.3.5 Department of Transportation Act Section 4(f) Resources

The Federal statute that governs impacts in this category is commonly known as the Department of Transportation (DOT) Act of 1966, Section 4(f) provisions. Section 4(f) of the DOT Act was recodified and renumbered as Section 303(c) of U.S. Code Title 49 (49 USC). FAA Orders 5050.4B and 1050.1F continue to refer to this statute as Section 4(f) to avoid confusion. Section 4(f) provides that the “Secretary of Transportation will not approve any program or project that requires the use of any publicly-owned land such as a public park, recreation area, or wildlife/waterfowl refuge of national, state, or local significance or land from an historic site of national, state, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use.”¹⁰ A direct taking of land occurs when land from a 4(f) site is permanently incorporated into a transportation facility. A constructive taking occurs when proximity impacts of a project on a 4(f) property are so severe that the activities, features, or attributes that qualify the property or resources for protection under Section 4(f) are substantially impaired.

Section 6(f) of the Land and Water Conservation Act (LWCA) is also pertinent. Section 6(f) prohibits recreational facilities funded under the LWCA from being converted to non-recreational use unless approval is received from the director of the grantor agency.

Heckscher State Park, Bayard Cutting Arboretum State Park, Connetquot River State Park, and the Seatuck National Wildlife Refuge are all located southwest of ISP and are potential Section 4(f) and or Section 6(f) properties. In addition, two properties in the Town of Islip are listed on the National Register of Historic Places (Werehome at 5500 S. Bay Avenue and Winganhauppauge 77 St. Marks Lane). Both sites are approximately five miles southwest of ISP. A review of 4(f) and 6(f) resources should be conducted to determine if any such resources would be impacted by the North Terminal Alternative.

9.3.6 Farmlands

The Farmland Protection Policy Act (FPPA) of 1981 was enacted to minimize the extent to which Federal actions and programs contribute to unnecessary and irreversible conversion of farmland to non-agricultural uses. The Council on Environmental Quality (CEQ) Memorandum on the Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing NEPA also urges the FAA to analyze the effects of a proposed action on any prime or unique farmland within the NEPA analysis. The Study area for the North Terminal Development has been partially disturbed by past development activity.

¹⁰ FAA Order 1050.1F Desk Reference, Section 5, February 2020.

Additionally, there are no areas on airport property or in the area of investigation currently being used for agriculture.

Since ISP is within a highly urbanized area and no Airport property is currently being used as farmland, no impacts to prime or unique farmland are expected to occur with the implementation of the North Terminal Alternative. Coordination with the U.S. Department of Agriculture (USDA) National Resources Conservation Service (NRCS) may be required to confirm no farmland impacts would occur.

9.3.7 Hazardous Materials, Pollution Prevention, and Solid Waste

The two statutes of most importance to the FAA for actions to construct and operate airport facilities are Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources' trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment.

The FAA has not established a significance threshold for hazardous materials, pollution prevention, and solid waste, however, the FAA Order 1050.1F Desk Reference does list factors to consider when determining if there is a significant impact to hazardous materials and solid waste. These factors are if the action would have the potential to:

- Violate applicable Federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management;
- Involve a contaminated site (including but not limited to a site listed on the National Priorities List);
- Produce an appreciably different quantity or type of hazardous waste;
- Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or
- Adversely affect human health and the environment.

The potential impacts from hazardous materials should be evaluated as part of the environmental documentation process for the North Terminal Alternative. Additional analysis for the proposed development areas such as environmental due diligence audits or environmental site assessments may need to be performed due to the potential to disturb any possible soil contaminants from past activity. Coordination with the New York State Department of Environmental Conservation (NYSDEC), USEPA and other agencies may be necessary.

If any of the development projects associated with the North Terminal Alternative may also include demolition activities this may require coordination with the NYSDEC. Coordination would ensure proper assessments are conducted and abatement practices are followed if necessary, prior to any demolition. Any impacts to solid waste management programs and processes should also be addressed.

9.3.8 Historical, Architectural, Archeological, and Cultural Resources

The *National Historic Preservation Act* of 1966 (NHPA)¹¹ and the *Archeological and Historic Preservation Act* of 1974¹² are primary Federal laws governing the preservation of historic and prehistoric resources, encompassing art, architecture, archaeological, and other cultural resources. Section 106 of the NHPA requires that, prior to approval of a Federal or Federally-assisted project, or before the issuance of a license, permit, or other similar approval, Federal agencies take into account the effect of the project on properties that are on or eligible for listing on the National Register of Historic Places (NRHP).

As described in 36 CFR 800.4(a)(1) and in 36 CFR 800.16(d) the Area of Potential Effect (APE) for historic resources should be defined for the North Terminal Alternative. An assessment should be conducted to determine if any historic or archaeological sites are located within the APE. A determination in accordance with 36 CFR 800.4 and 36 CFR 800.5 would need to be included in the environmental documentation. Consultation with the State Historic Preservation Office may be required.

9.3.9 Land Use

The FAA has not established a significance threshold for land use. The determination that significant land use impacts exist is normally dependent on the significance of other impact categories. Conflicts may also occur when the proposed action or alternative(s) creates development that is incompatible with existing and/or future planned uses in the study area. Therefore, an evaluation of the land use and zoning compatibility should be conducted for the proposed North Terminal Alternative. In addition, the Town of Islip as the owner and operator of ISP is required to provide written assurance to the FAA that appropriate action has been or will be taken to the extent reasonable to restrict the use of land adjacent to, or in the immediate vicinity of the Airport, to activities and purposes compatible with normal airport operations in accordance with 49 United States Code (U.S.C.) § 47107(a)(10), formerly Section 511(a)(5) of the Airport and Airway Improvement Act of 1982.¹³

9.3.10 Noise and Noise-Compatible Land Use

The FAA Order 1050.1F Desk Reference states the significance threshold for noise and noise compatible land use is if the action would increase noise by the Day Night Average Sound Level (DNL) 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe. Additionally, the FAA gives special consideration to the evaluation of the significance of noise impacts on noise sensitive areas within Section 4(f) properties where the land use compatibility guidelines in 14 CFR part 150 are not relevant to the value, significance, and enjoyment of the area in question.

As part of the NEPA process, a noise analysis would need to be conducted to determine the potential impacts due to any projects under consideration. If a noise increase was determined to be a significant

¹¹ Public Law 89-665; 16 U.S.C. 470 et seq.

¹² Public Law 86-523, 16 U.S.C. 469-469c-2

¹³ FAA Order 1050.1E Environmental Impacts: Policies and Procedures. Appendix A, *Analysis of Environmental Impact Categories*, Section 4.1b, March 20, 2006; as set forth in the Aviation Safety and Noise Abatement Act of 1979, as amended (49 U.S.C. 47501-47507).

impact, as defined in FAA Order 1050.1F, to any of the surrounding properties, mitigation would need to be provided. If the preliminary analysis shows that no changes to aircraft operating levels, fleet mix, runway use, flight paths, or other operational factors would change, a quantitative noise analysis may not be required.

9.3.11 Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety Risks

Socioeconomics is an umbrella term used to describe aspects of a project that are either social or economic in nature, or a combination of the two. A socioeconomic analysis evaluates how elements of the human environment such as population, employment, housing, and public services might be affected by the proposed action and alternative(s).

The FAA has not established a significance threshold for socioeconomic impacts, environmental justice, and children’s environmental health and safety risks. However, factors to consider when reviewing a potential action include:

- The potential to induce substantial economic growth in the area, either directly or indirectly;
- Disruption or division of the physical arrangement of an established community;
- Extensive relocation when sufficient replacement housing is unavailable;
- Extensive relocation of community businesses that would cause severe economic hardship for affected communities;
- Disruption to local traffic patterns and substantial reduction in the levels of service of roads serving an airport and its surrounding communities;
- Produces a substantial change in the community tax base;
- Impacts to the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population; or
- Lead to a disproportionate health or safety risk to children.

9.3.12 Visual Effects

Although there are no Federal special purpose laws or requirements specific to light emissions or visual effects, there are special purpose laws and requirements that may be relevant. In addition to NEPA, laws protecting resources that may be affected by visual effects include sensitive wildlife species, Section 106 of the NHPA, Section 4(f) of the DOT Act, and Section 6(f) of the LWCF Act. The NEPA document should include information about the visual changes and any changes to light intensity that would occur as a result of the North Terminal Alternative.

9.3.13 Water Resources

9.3.13.1 Wetlands

Section 404 of the Clean Water Act (CWA) governs the dredging and filling of navigable waters of the U.S. The term, “Waters of the U.S.” includes traditional navigable waters and tributaries, interstate waters, and wetlands connected or adjacent to navigable waters of the U.S.¹⁴ Section 401 of the CWA requires that a Water Quality Certificate for a project to ensure it does not violate State water quality standards. Non-jurisdictional wetlands do not involve navigable waters and dredge and fill activities in these wetlands do not require U.S. Army Corps of Engineers (USACE or Corps) approvals, but these wetlands are natural resources FAA must assess under NEPA.

FAA Order 1050.1F states the significance threshold for wetlands is if the action would:

- Adversely affect a wetland’s function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;
- Substantially alter the hydrology needed to sustain the affected wetland system’s values and functions or those of a wetland to which it is connected;
- Substantially reduce the affected wetland’s ability to retain floodwaters or storm runoff, thereby threatening public health, safety, or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);
- Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;
- Promote development of secondary activities or services that would cause the circumstances listed above to occur; or
- Be inconsistent with applicable state wetland strategies.

There are two existing ponds located within the Study Area at the existing composting facility. These ponds are likely artificially constructed features that would not be subject to permitting under current rules implementing the CWA. To confirm potential for wetland impacts and permitting requirements, prior to commencing any construction for the North Terminal Alternative, a wetland and stream delineation may need to be performed to specifically identify if any wetlands exist in the area of disturbance. If any wetlands and/or streams are found and are connected to jurisdictional waters, they would be regulated by the USACE. If not, they would likely constitute isolated wetlands and would fall under the regulation of the New York State Department of Environmental Conservation (NYSDEC). If water features are identified, coordination with the USACE and NYSDEC should be conducted and a Jurisdictional Determination (JD) and permitting may be required in accordance with the CWA. A JD is generally valid for five years from the date of approval. If permitting is required, USACE and NYDEC review times may vary depending upon the amounts and types of wetlands to be permitted; however, the permitting process could take 180 days or more. Therefore, field surveying and coordination should be conducted at the appropriate timeframe to obtain any necessary permits to meet the project implementation schedule.

¹⁴ Revised Definition of “Waters of the United States” Proposed Rule, Federal Register, Vol 86, No. 232, December 7, 2021.

9.3.13.2 *Floodplains*

Floodplains are defined by Executive Order 11988, Floodplain Management, as “the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one-percent or greater chance of flooding in any given year” (i.e., area inundated by a 100 year flood). U.S. Department of Transportation Order 5650.2 defines the beneficial values served by floodplains to include “natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, and forestry.” Federal Emergency Management Agency (FEMA) maps are the primary reference for determining the extent of the base floodplain.

ISP as depicted on the FEMA Flood Insurance Rate Map (FIRM) Panel #36103C069OH. ISP is not located within the 100-year floodplain.

9.3.13.3 *Surface Water*

Potential future water quality impacts are associated with the creation of impervious surfaces due to the construction and use of new airport facilities and new pavement areas for aircraft and for automobile parking. Under the CWA Section 402, a National Pollutant Discharge Elimination System (NPDES) Permit may be required for construction that disturbs one or more acres to minimize impacts from stormwater runoff. The North Terminal Alternative has the potential to impact more than one acre due to construction, and therefore would require a permit. The process includes submittal of a Notice of Intent to be covered under the construction general permit and the development of a stormwater pollution prevention plan (SWPPP) or updates to the existing NPDES and SWPPP indicating the procedures used to reduce or eliminate the potential impacts on water quality from construction activities.

9.3.13.4 *Groundwater Resources*

Groundwater is subsurface water that occupies the space between sand, clay, and rock formations. The term aquifer is used to describe the geologic layers that store or transmit groundwater to wells, springs, and other water sources. Federal activities affecting groundwater are primarily governed by the Safe Drinking Water Act (SDWA); however, other state and local regulations may also be relevant.

FAA Order 1050.1F states the significance threshold for groundwater is an action that would:

- Exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or
- Contaminate public drinking water supply such that public health may be adversely affected.

Factors to be considered in this analysis are whether the action would have the potential to:

- Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values;
- Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or

- Present difficulties based on water quality impacts when obtaining a permit or authorization.

Nassau and Suffolk counties obtain their drinking water from three major aquifers underlying Long Island which constitute a sole source aquifer. There are nine locations on Long Island that are designated under the Special Groundwater Protection Area (SGPA) Program as described in Article 55-0113 (2012) of the New York Environmental Conservation Law. Prior to commencing any construction of the North Terminal Alternative, a review of existing groundwater resources, including any SGPA boundaries and wellhead protection areas, should be conducted to confirm no groundwater resources would be impacted.

9.3.13.5 *Wild and Scenic Rivers*

The Wild and Scenic Rivers Act of 1968 provides protection for certain free-flowing rivers, which have “outstanding or remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.” The 1979 Environmental Message Directive on Wild and Scenic Rivers (August 2, 1979) from the President, directs Federal agencies to avoid or mitigate adverse effects on rivers identified in the Nationwide Rivers Inventory (NRI) as having potential for designation under the Wild and Scenic Rivers Act. The NRI is a listing of more than 3,400 free-flowing river segments that are believed to possess one or more outstanding remarkable natural or cultural values judged to be of more than local or regional significance.

According to the NRI database accessed on the U.S. Department of the Interior, NPS website, there are no NRI river segments or rivers designated as part of the National Wild and Scenic River System on Long Island.¹⁵

9.4 Summary and Environmental Strategy

FAA Advisory Circular 150/5070-6b¹⁶ states, “The purpose of considering environmental factors in airport master planning is to help the sponsor thoroughly evaluate airport development alternatives and to provide information that will help expedite subsequent environmental processing. By using existing maps of the airport area, prior environmental documents, and the Internet, planners and environmental specialists can get an excellent overview of sensitive environmental resources in and around the airport.”

Based on this review of potential environmental requirements, it is expected that a NEPA environmental review document would be required prior to the development of the North Terminal Alternative in order to identify and quantify the potential adverse environmental impacts. The determination of purpose and need and potential environmental impacts would need to be disclosed for the project and any alternatives. Coordination with the FAA will determine the federal action in accordance with Section 163 of the FAA Reauthorization Act and confirm the appropriate type of environmental documentation as required by NEPA. The potential mitigation requirements and permitting would be identified through coordination with the appropriate environmental regulatory agencies, i.e., USEPA, USFWS, USACE, NYNHP, NYSDEC, and the SHPO.

¹⁵ National Wild and Scenic Rivers Systems, Online at: <https://www.rivers.gov/new-york.php>, Accessed on March 10, 2022.

¹⁶ FAA Advisory Circular 150 5070-6b, Change 1, *Airport Master Plans*, Chapter 5 Environmental Considerations, 501 General (a). January 27, 20015.

- Air Quality
 - General Conformity Evaluation
 - Appropriate measures recommended to reduce construction air quality impacts on surrounding communities
- Biotic Communities
 - Coordination with the USFWS and NYNHP to determine potential impacts to threatened and endangered species
- Hazardous Waste
 - Coordination with the NYSDEC to ensure proper assessments are conducted and abatement practices are followed if necessary
- Historical, Architectural, Archeological, and Cultural Resources
 - Appropriate surveys and coordination with SHPO may need to be conducted
- Water Resources
 - Update current NPDES Permit.
 - Coordination with the USEPA concerning sole source aquifer
 - Coordination with USACE and NYSDEC to determine permitting requirements under Sections 401 and 404 of the CWA.

In addition to the above listed requirements, most projects or activities proposed by a state agency or unit of local government, and all discretionary approvals (permits) from a NYS agency or unit of local government, require an environmental impact assessment as prescribed by 6 NYCRR Part 617 State Environmental Quality Review (SEQR).

10 Sustainability Assessment

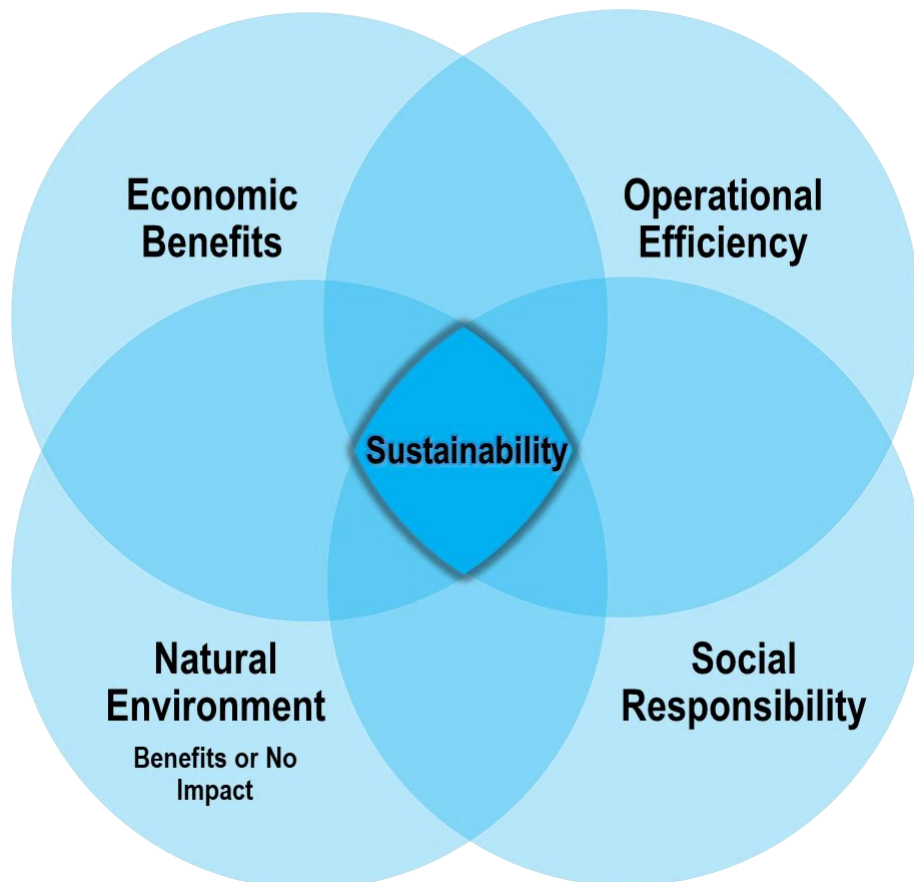
Airport sustainability is a broad term that encompasses a wide variety of practices applicable to the operation and management of airports. The term refers to practices that ensure airport operational efficiencies; financial benefits, including maintenance of high and stable levels of economic growth and employment; no impact, or benefits to the natural environment; and social progress that recognizes the needs of all stakeholders.

This section is designed to identify existing sustainable practices employed by the Airport, and in order to build on existing practices, identify additional areas where sustainable programs or features could potentially be integrated into the overall program.

10.1 Definition of Sustainability

The common definition of sustainability is the “Triple Bottom Line,” or balance of environmental, financial, and social goals. In an airport environment, it is important to also consider the critical fourth category of operational efficiency, as shown on **Exhibit 10.1-1, Eons Approach to Airport Sustainability**.

EXHIBIT 10.1-1 EONS APPROACH TO AIRPORT SUSTAINABILITY



This approach was developed by Airports Council International (ACI) and is commonly referred to as “EONS,”¹⁷ which stands for a balance of:

- Economic viability,
- Operational efficiency,
- Natural resource considerations (benefits or no impact),
- Social responsibility

Sustainable practices are measures incorporated into projects, which are designed to produce balanced operational, environmental, financial, and social benefits. Sustainable practices reduce impact on the environment by reducing the use of raw or material resources (materials, fossil fuels, energy consumption, etc.), reducing air emissions, reducing waste, and reducing water pollution, as key examples, which in turn increase operational efficiency and provide positive benefit to the surrounding community. Thoughtful and early planning to incorporate sustainable practices in planning, design, and construction projects helps to reduce impacts while also creating financial and operational benefits.

10.2 Sustainability within the Airport Industry

Airports today are challenged to look ahead and plan to meet projected increases in demands for capacity and service, while also preserving economic viability and addressing potentially formidable constraints to growth. To meet this challenge, airports need strategies that allow for sustained aviation growth while controlling costs and pursuing a goal of reducing environmental impacts over time.

Managing operating costs and capacity, reducing environmental risks and liability, and ensuring customer and employee satisfaction, while demonstrating a commitment to the health and vitality of their communities is the new order of business. Sustainability programs combine operational, environmental, social, and economic concerns into a balanced approach to meeting the unique challenges facing airports today.

10.3 Sustainability Benefits

Sustainability goals and strategies have achieved priority at global levels as more airports in more countries are realizing the benefits of striving for, and achieving, efficiency in all aspects of airport management and operations. Airports at the forefront of sustainability are given a prominent place on the “aviation global stage” and are viewed as world leaders in operational efficiency. Efficient operating practices and reduced operational costs are major attractants to airline partners.

There are opportunities for applying principles of sustainability in all areas of airport operations - airside, landside, terminals, and hangars, just to name a few. New buildings, runways and taxiways, and maintenance facilities can be designed with sustainable principles in mind. Sustainability can also be applied as a component of retrofit and repair activities. The most beneficial opportunities for employing

¹⁷ Airports Council International – North America (ACI-NA) Sustainability Working Group, 2008.

sustainable principles is during the initial planning and design phases of an airport development project, but there are potentially even more opportunities to consider in facility replacement and maintenance.

To ensure their success, sustainability programs must begin during planning and design and continue through construction and operation/maintenance, as well as decommissioning and demolition. This approach takes into account the lifetime impacts of processes and equipment and minimizes not only total costs but also lifetime environmental impacts. The expense of “green” technologies, which may often be perceived as a detriment to implementation due to higher upfront costs compared to traditional systems, often produce lower life-cycle costs as compared to traditional systems; and in some cases, significant cost savings can be generated when sustainable practices are incorporated instead of traditional practices.

Sustainability programs make good business sense by providing:

- Greater asset utilization
- Reduced costs of asset management and asset development
- Reduced life-cycle costs
- Optimization of new and better technologies
- Improved work environment for employees leading to higher productivity
- Benefits to local communities and the environment
 - Reduced environmental footprint
 - Improved benefits to and greater support from the community

10.4 Current Airport Sustainability Initiatives

A core value of the Airport is to ensure the safety and operating efficiency of ISP while also minimize the impact on its surroundings wherever possible. The current sustainability initiatives at ISP serve to improve efficiency and reduce waste – and are also mindful of the overall health of passengers and employees. The sustainability initiatives at ISP include the following:

- Deicing Fluid Collection and Treatment System¹⁸
 - An integral part of the stormwater system at ISP is the deicing fluid collection system, which includes a glycol treatment facility built in 2011. Typical gate deicing involves glycol runoff from the ramp being collected in the existing stormwater system located under the terminal ramp through a series of catch basins and concrete pipes. The glycol travels through the drainage to a submerged wetlands treatment facility located southeast of the terminal building where microscopic organisms consume it and return the effluent back into the stormwater. Ultimately, the water moves to a recharge basin where a blower then forces air into the wetlands while chemical nutrient is dispensed to keep the microscopic organisms thriving.

¹⁸ Long Island MacArthur Airport Master Plan Update February 2017

- Connection to possible micro grid
- Air Pathogen Reduction System
 - Heating Ventilation and Cooling System (HVAC) in the terminal building upgraded with a continuously operating air purification system
- Anti-microbial films installed at all high-touch areas in the terminal
- Exterior LED airfield ramp lighting
- Interior LED terminal lighting
- Reuse of construction millings in pavement projects
- Future installation of solar canopy at the rental car area of the Ground Transportation and Vehicle Center
- Future improvement of direct connectivity with the Long Island Railroad (LIRR) for passengers and employees
- Connection to sewer

10.5 Potential Future Sustainability Initiatives for the Terminal Program

In order to build on existing initiatives, it is recommended that the Airport work with its key stakeholders to develop a statement of Sustainability Vision and Goals for the terminal program, which would allow the future identification of areas where sustainability initiatives, programs, or features could be integrated into the design and construction of the facility, as well as ongoing operations and maintenance activities for both the Airport and its concessionaires/tenants within the terminal.

The following are examples of elements that could be included in a Sustainability Vision and Goals statement for the terminal program. These examples offer a preliminary framework for consideration based on global airport best practices. It is recommended that this preliminary list be expanded, as needed, and also refined for ISP's unique operating environment.

- Specify a minimum level of sustainability certification for the terminal, either to be actually achieved by the design team, or to be used as a design standard in lieu of actual certification
 - Examples of sustainability certifications include LEED, Envision, Fitwel, Sustainable Sites, Parksmart, Green Globes, Living Building Challenge, WELL, and others
- Develop sustainable design and construction guidelines for integration into Master Specifications in order to address the following:
 - Construction waste management practices and recycling of construction materials
 - Reduce truck/haul trips to and from the project site
 - Specify preference for local/regional construction materials

- Ensure outdoor air quality and construction pollution prevention
- Reduce the overall Urban Heat Island Effect of the airfield through use of vegetated roofs and/or white roofs, for example
- Incorporate renewable energy, such as solar, from on-site and/or off-site sources
- Maximize energy efficiency and water-use efficiency within the terminal
 - Maximize daylighting and views
 - Incorporate dynamic glass
 - LED lighting
 - Water-efficient fixtures
- Improve the human experience for passengers and employees in the terminal
 - Create a sense-of-place in keeping with the Long Island/Islip regional and cultural setting
 - Incorporate local art
 - Maximize touchless interfaces
 - Recycling programs
- Ensure sustainable site management through use of water-efficient landscaping, for example
- Improve connectivity to local/regional transportation for passengers and employees
- 2040 Goal – 0 emissions
 - Incorporation of LEED components and standards

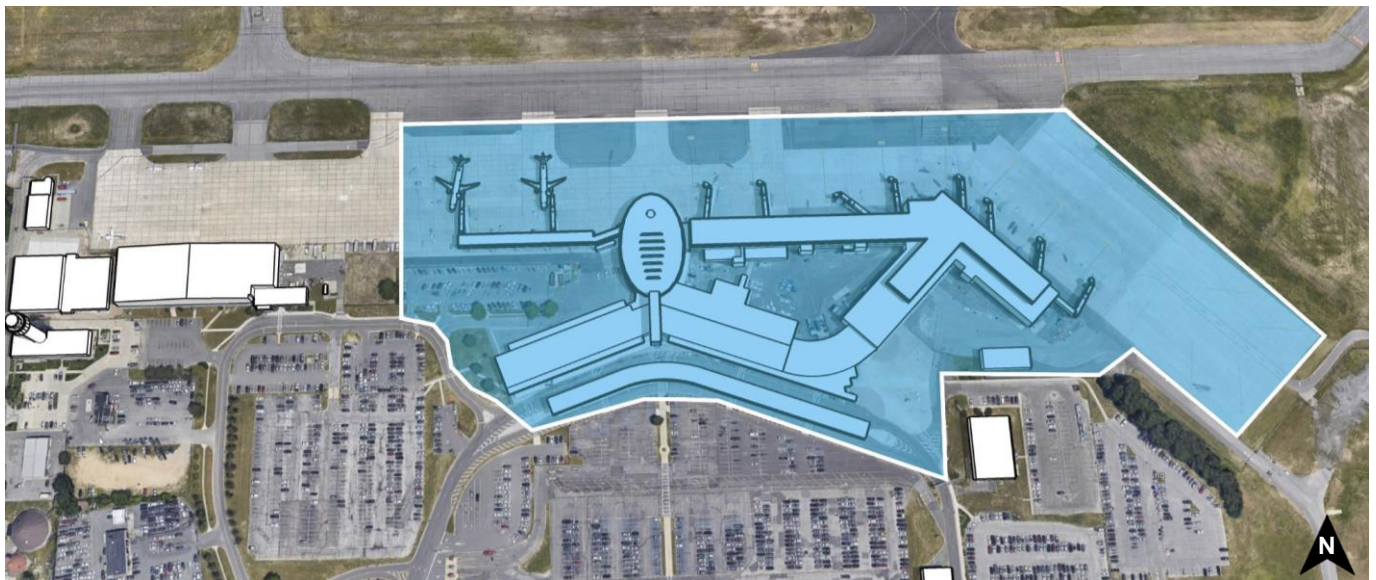
11 South Terminal Reuse Study

The Town of Islip is exploring opportunities regarding the land use reuse opportunities for the existing terminal area at Long Island MacArthur Airport (ISP or the Airport). A new North Terminal will replace the existing terminal facilities located to the south. The existing southern terminal facilities will be abandoned and demolished once the North Terminal begins operations, unless a reuse scenario is identified that could use all or a portion of the existing terminal facilities.

The Town of Islip and Airport has requested a Reuse Study that investigates the unique characteristics of 27-acre site, shown in **Exhibit 11.0-1, Study Area**, and explores the land use development potential. The study will identify what opportunities exist within the current land use character, while meeting current and emerging airport needs.

This Reuse Study provides an analysis of the study area, including site specific content that provides a historical overview of the parcel, its current character, opportunistic considerations, and suggests a variety of appropriate land use reuse options. The potential land use options are supported by evaluations, justifications, requirements, and next steps. This study serves as a strategic roadmap to help the Town of Islip define viable development options for the identified study area.

EXHIBIT 11.0-1 STUDY AREA



Source: Landrum & Brown, 2022

11.1 Overview of Study Area

The existing terminal area will be the focus of the Reuse study. The study assumes the entire passenger terminal building, jet bridges, concourses, vehicle curbs and rental return lot will be abandoned and demolished. The existing airside access and portions of the existing ramp area are

likely to be maintained and will be an asset when determining future land use options. The vehicle surface parking lots, currently serving the commercial terminal passengers, are not included in the study area¹⁹. However, any automobile parking currently located inside the “loop” could be moved to Lot 10 in the future, if some or all of it is needed by the future reuse option identified for the “study area.”

11.1.1 Study Area Context

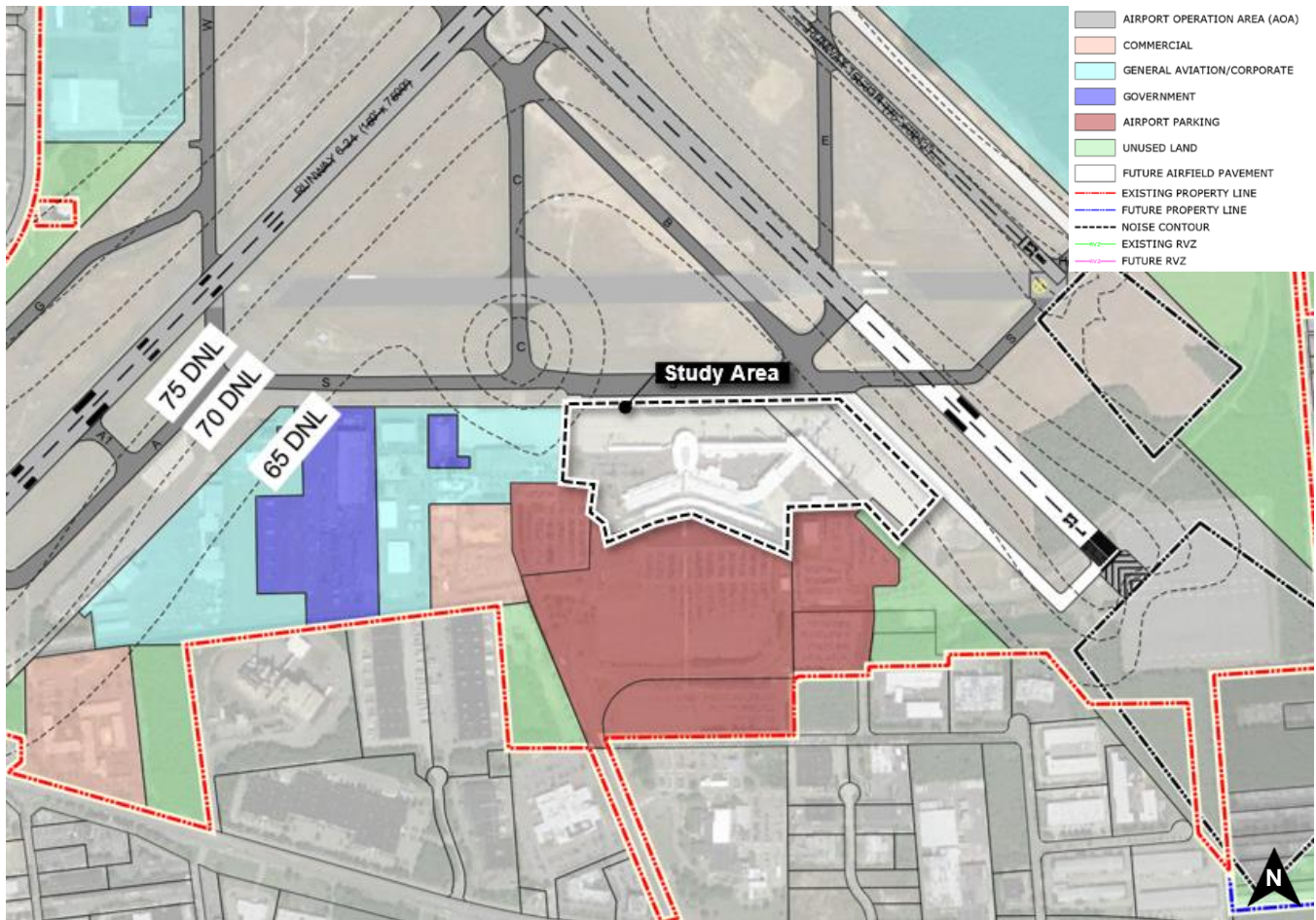
The following section depicts the study area’s location within the larger context of the surrounding on-airport land use and off-airport land use.

The study area’s northern limits have direct airside access along Taxiway S and Taxiway B. General Aviation forms the study area’s west boundary, which consists of the Modern Aviation FBO Hangar and ramp. The southern edge of the study area borders the existing passenger terminal surface parking lots. **Exhibit 11.1-1, On-Airport Land Use** depicts the on-airport land use surrounding the study area.

Exhibit 11.1-2, Off-Airport Land Use shows areas beyond the airport property. Surrounding land use context and patterns will also help determine reuse options to consider. Once the north terminal becomes operational, a significant volume of the Airport’s traffic will no longer originate in the south. Instead, much of the surrounding land uses and adjacent developments in this area will serve “southern” Airport users. Located directly south of the Airport property is a mixture of industrial and institutional lands.

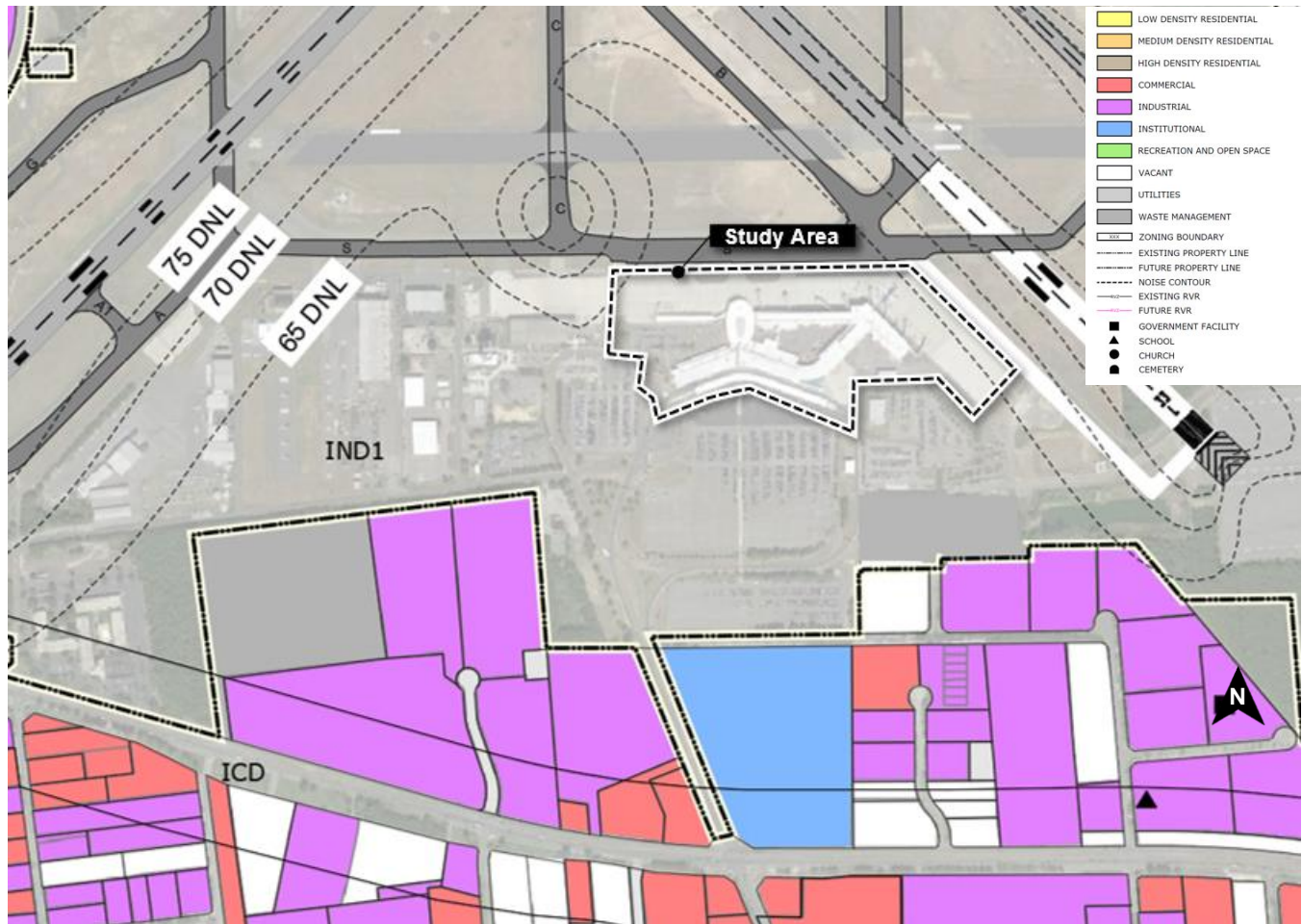
¹⁹ These lots include resident parking (lot 6), long-term parking, employee parking, the rental car storage area (lots 6A and 6B – to the east side of the loop), and the economy lot (which will be saved for a future employee parking area).

EXHIBIT 11.1-1 ON-AIRPORT LAND USE



Source: Landrum & Brown, 2022

EXHIBIT 11.1-2 OFF-AIRPORT LAND USE



Source: Landrum & Brown, 2022

11.2 Methodology

11.2.1 Guiding Strategies

When analyzing the study area, it was important to take into consideration guiding strategies to help develop the best land use reuse options. These guiding strategies included:

Consistency with the Current Master Plan: The 2017 Master Plan’s future vision is a crucial guiding strategy for integrating future reuse options into the current airport land use design. This strategy acts as a filter for eliminating the types of possible land use options that have already been achieved or are already reserved for other areas at the airport. Reuse options must also consider the opportunity to meet any airport needs identified by the 2017 Master Plan.

Strategic Investment: Airports have land use needs that require immediate attention and others that are best aligned with future planning efforts. The long-term land use potential was taken into

consideration when creating land use options. Some reuse options may be best suited for immediate needs, waiting on outside factors to align down the road, or are flexible for land use changes over time.

Practical Approach: Employing practicality as a guiding strategy helps ensure that any recommended land uses make site-specific sense. Practical land uses are both marketable and functional in nature.

Maximize Land Use Potential: This strategy is aimed at identifying the characteristics of the study area that are best suited to maximize the Airport's earning potential. The study area size, airport location, and land use flexibility factor into airport revenue potential.

Integrate Land Uses: The integration of a land use strategy takes into consideration the Airport's current land use design when recommending appropriate land uses. This strategy highlights which potential land uses would be incompatible with surrounding uses and which flow nicely into the immediate and broader overall land use design.

Enhance Airport Operations: Given that the study area occupies space within and at the edge of the Airport property, careful consideration of current airport operational characteristics must factor into site-specific land use suitability.

Additionally, the study area was evaluated against the following site evaluation criteria to help guide the analysis, determining what potential land uses were best suited for the study area, and what land uses were not appropriate for the study area:

- Proximity and connection to the terminal
- Proximity and connection to the airfield
- Opportunity to meet airport needs
- Land use compatibility
- Adjacent land uses
- Parcel size
- Challenges with potential land use modification
- Airport Layout Plan land designation
- Parcel marketability to a third-party developer
- Availability of utilities
- Availability to additional parking area
- Landside access (roadways)

11.2.2 Aeronautical Use vs Non-Aeronautical Use

The study area has direct access to the airfield and offers approximately 2,000 linear feet of apron frontage. The existing apron has the potential to be maintained and utilized by an aeronautical related tenant, offering apron depths of 250 feet.

Careful consideration must be paid to any reuse options that result in a land use change from aeronautical to non-aeronautical use. When a sponsor submits an ALP update that requests a change in land use from aeronautical to non-aeronautical, the FAA must determine whether the proposal is subject to the agency's authority, as defined/limited by Section 163. This determination involves a two-step process and requires extensive coordination with FAA. Specifically, in order to ensure the FAA exercises its regulatory authority consistently and within statutory constraints, the FAA must not only examine and reach a determination regarding its ALP approval authority (under section 163d), but also determine how the land was acquired (i.e., if Federal funds were used to acquire the land) and if a release of obligations may be required under section 163a-c).

Based on its site elements, access to the airside facilities, and Section 163 requirements, it is recommended that that potential reuse options focus only on aeronautical uses.

11.3 Reuse Options

The following section presents three options for the reuse of the southern terminal area. These initial options will create a roadmap to help guide the Town of Islip's/Airport's future planning efforts for the 27-acre study area. The range of land use possibilities were developed using the aforementioned six guiding principles, overall compatibility with the study area's driving strategy for aeronautical use, and stakeholder coordination. The options assume the existing facilities are demolished and are ready to accommodate new development, unless a reuse scenario is identified that could use all, or a portion of, the existing terminal facilities.

The following three land uses were evaluated as possible reuse considerations:

- Air Cargo Development
- Advanced Air Mobility (AAM)
- Aircraft Maintenance Facility

11.3.1 Air Cargo Development

The first reuse option recommends that the study area be reserved for air cargo development, as the study area has the size and access (airside and landside) to attract a wide range of cargo related development, shown in **Exhibit 11.3-1, Air Cargo Development**.

Justification

The study site has the appropriate size, airside access, and landside elements required to attract an air cargo integrator operator to the Airport. The Airport's existing air cargo operations consist primarily of belly-haul cargo, carried in the cargo holds of commercial passenger aircraft; this type of cargo is usually comprised of small parcels and U.S. Mail. An air cargo integrator operator type development would allow the Airport the opportunity to diversify their revenue stream and attract air freight. Given its proximity to the Metropolitan New York area and the rise in air cargo supply chain needs, the Airport is well-positioned to attract a major cargo operation to the 27-acre study area.

Site Evaluation

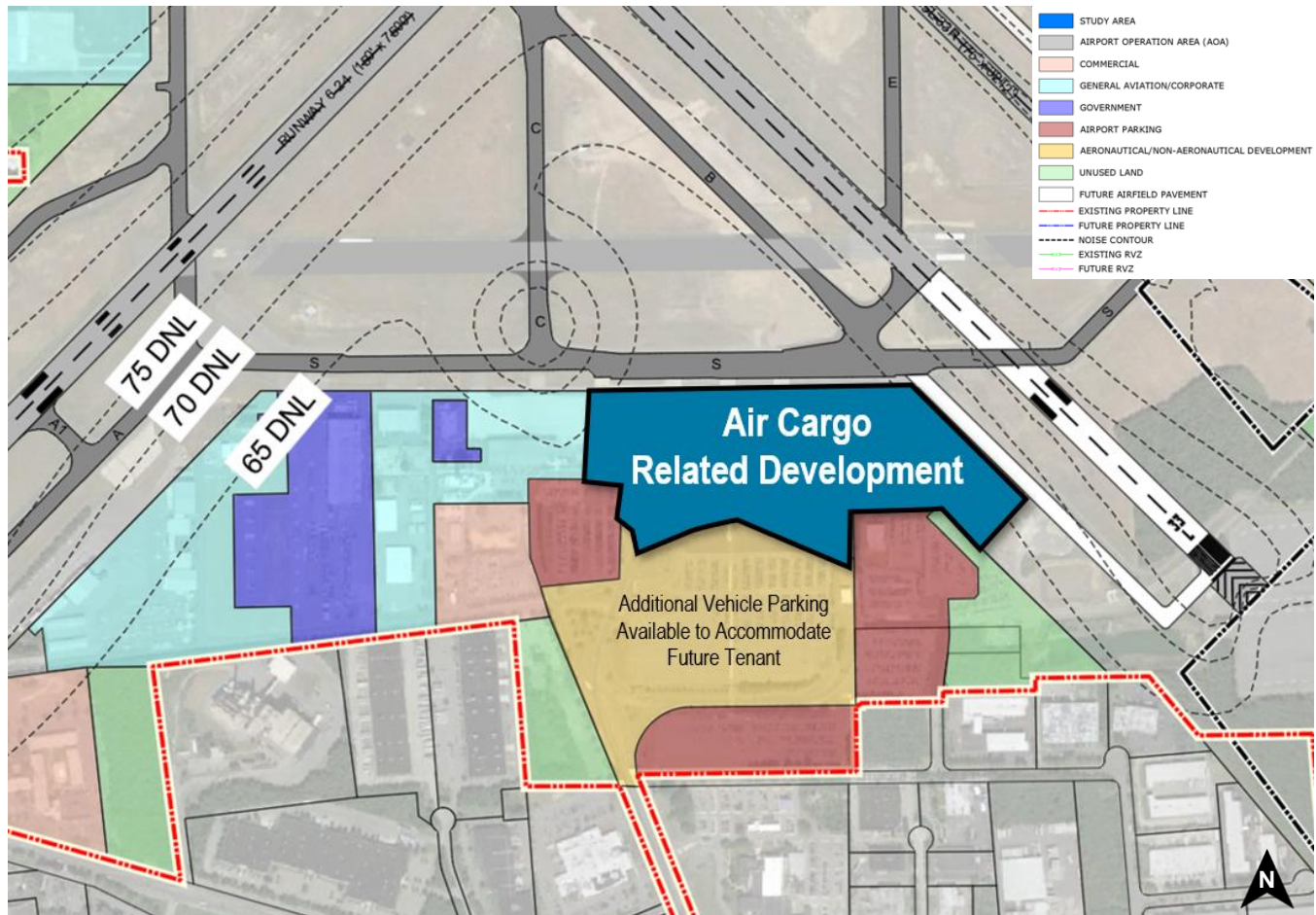
The study area has existing taxiway access along two sides and can easily accommodate a cargo related campus in the 27-acre site. The existing ramp depth allows for traditional ADG-IV cargo aircraft and any associated ground service equipment to operate easily and meet all required loading/unloading procedures. A future cargo operator would utilize Runway 6-24 via Taxiway S and Taxiway A for arrivals and departures. Therefore, operational takeoff requirements will need to be validated for any potential cargo operator to confirm a departure length of 7,006 feet meets their need/requirements. Pushback operations would occur on Taxiway S and be coordinated by the air traffic control tower.

A typical cargo warehouse facility would be situated south of the apron, with the landside, truck docks, and employee parking located adjacent to and south of the warehouse. If additional area (beyond what is available within the study area) is required to accommodate the required employee and truck parking, then the parking lot area located directly south of the study area (within the loop road) could be used to accommodate this need. Any displacement of existing parking uses that might result from an air cargo facility development need could be accommodated in existing Lot 10.

Requirements/Next Steps

Perform a comprehensive air cargo feasibility study to examine the airport's resources, region, and market demand to gauge the potential for attracting an air cargo operator.

EXHIBIT 11.3-1 AIR CARGO DEVELOPMENT



Source: Landrum & Brown, 2022

11.3.2 Advanced Air Mobility

The second reuse option recommends that the study area be reserved for Urban Air Mobility (UAM)/Advanced Air Mobility (AAM) operations. The study area has the size, location, and access (airside and landside) required to serve a variety of future aviation development trends, including space for UAM/AAM operations, shown in **Exhibit 11.3-2, Advanced Air Mobility Development**.

Justification

UAM, also known as AAM, refers to urban transportation systems that move people by air and is a new mode of air transportation that is quickly evolving. These transportation systems were developed in response to traffic congestion. Urban air mobility is a subset of a broader Advanced Air Mobility concept, which includes intra-city passenger transport. NASA describes Advanced Air Mobility as small drones, electric aircraft, and automated air traffic management (among other technologies) that perform a wide variety of missions, including cargo and logistics. To a large degree, these aircraft are similar to helicopters in that they fundamentally operate with vertical take-off and landing characteristics.

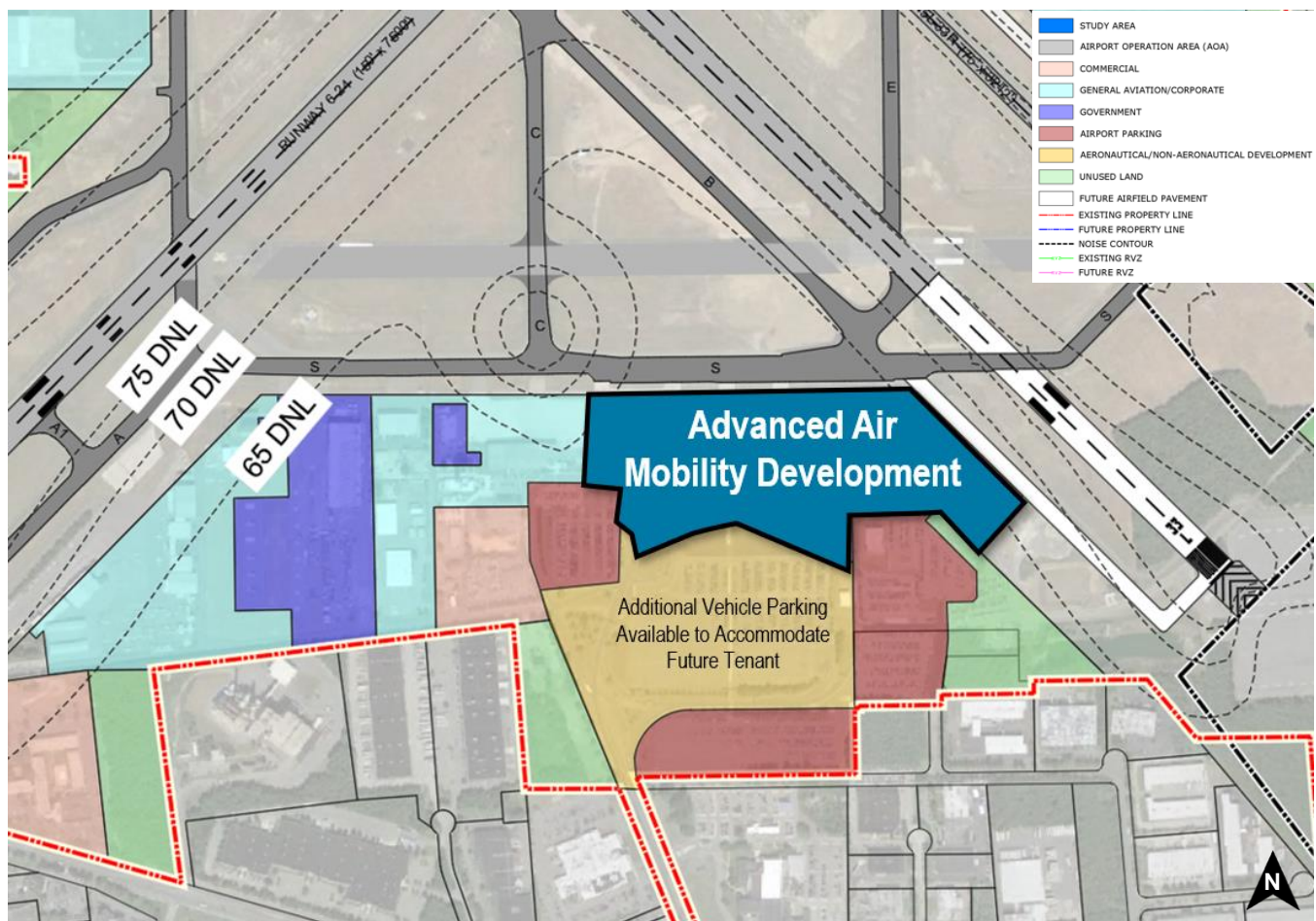
Site Evaluation

While it's not currently possible to predict the exact requirements for UAM/AAM facilities at ISP, the study area is considered appropriately sized and located to accommodate these new technologies. Facility designs for future UAM/AAM vertiports will be similar to current heliport regulations and site plans. The study area could accommodate several vertiports, parking positions, and a processing terminal building. The operator would function independent from the north passenger terminal facility. Analysis to determine and plan the future flight paths would be required. However, the study area is positioned such that direct UAM/AAM flight paths could be directed to the south, thereby avoiding conflict with commercial aircraft flight paths.

Requirements/Next Steps

Work with FAA and local market representatives to determine the market required to accommodate this emerging technology at ISP.

EXHIBIT 11.3-2 ADVANCED AIR MOBILITY DEVELOPMENT



Source: Landrum & Brown, 2022

11.3.3 Aircraft Maintenance

The third reuse option recommends that the study area be reserved for an aircraft maintenance development. This development could be operated by an existing ISP airline or operated by a third-party independent aircraft maintenance, repair, and overhaul (MRO) company. The study area has the size, location, and access (airside and landside) required to serve a MRO company and all associated facilities, shown in **Exhibit 11.3-3, Aircraft Maintenance**.

Justification

As previously stated, the study area should be reserved for aeronautical/airport related development. Although the need to provide space for aircraft maintenance is not identified by the 2017 Master Plan, reserving MRO space for an airline(s) using the new north terminal area could be a good strategic move. The new north terminal presents an opportunity to attract new airlines and provide additional operational capacity at the airport to serve their existing and anticipated future needs. With this new operational capacity, as well as existing operational activity, comes the need to service the associated aircraft. As such, an independent MRO company, such as Aviation Technical Services (ATS), could supplement MRO facilities for military, commercial, and regional aircraft operators across the country, who need additional capacity or do not have dedicated MRO facilities. This option allows the Town of Islip to promote aeronautical development with proven revenue potential.

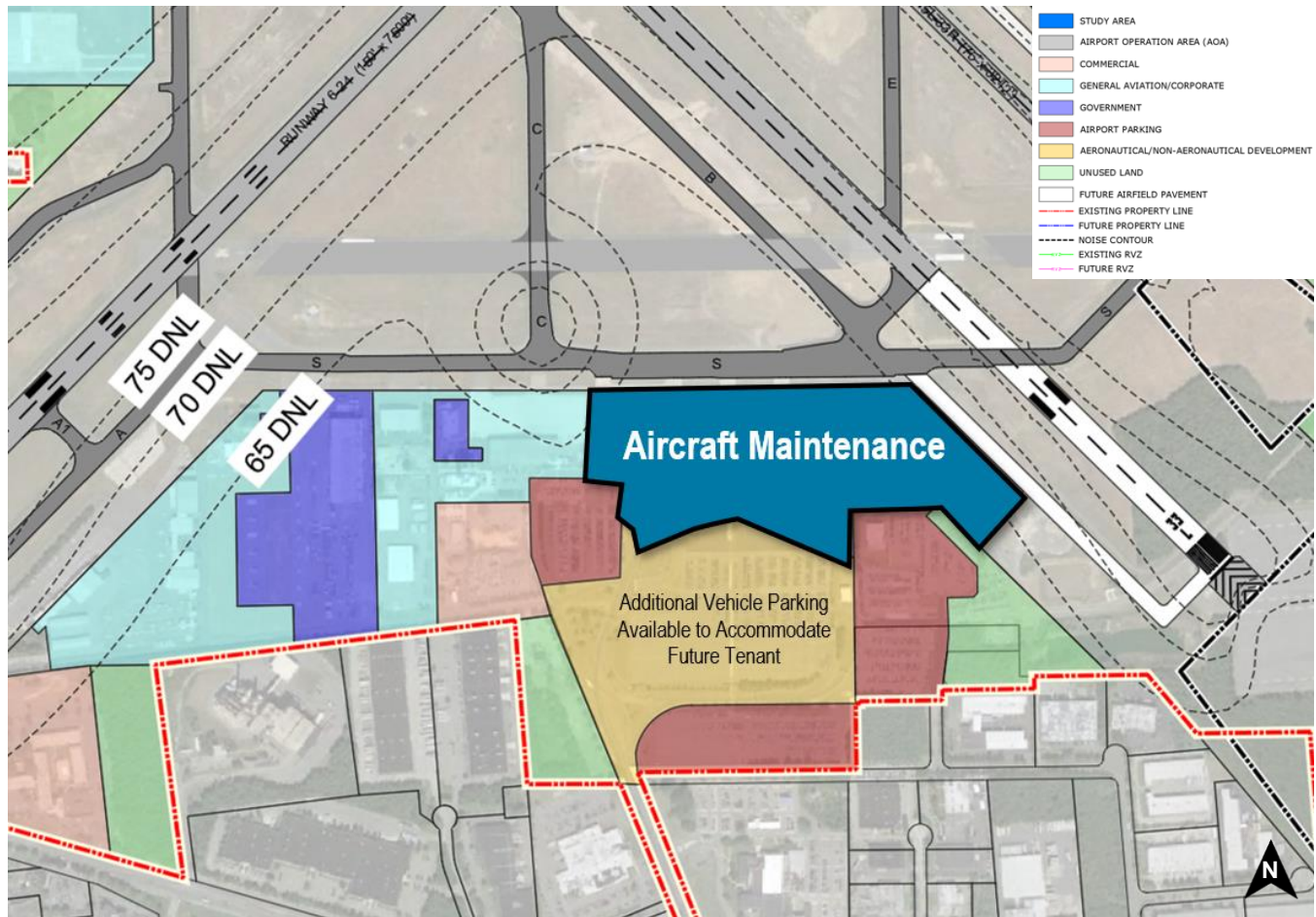
Site Evaluation

The study area has direct airside access and sufficient ramp space to accommodate MRO facilities and operations. The existing ramp area and adjacent property offers adequate depth and area to park several aircraft for an extended period of time, as well as multiple hangar facilities, offices, and support buildings. The area to the south of the facility could be used for employee parking and could accommodate additional truck parking.

Requirements/Next Steps

Work with the Airport's airlines and local market representatives to determine the market required to accommodate and support possible MRO services at ISP.

EXHIBIT 11.3-3 AIRCRAFT MAINTENANCE



Source: Landrum & Brown, 2022

11.4 Next Steps

The role of this study is to serve as a guiding document for the Airport to respond to future development options as the parcel becomes available for reuse. All options outlined in this study should be considered viable for future land uses. It is recommended the study area be identified as “Reserved for Aviation Related Development” on the Airport Layout Plan (ALP). This recommendation allows the Airport to maintain flexibility when considering different development options, so they can maximize the highest-best use for the study area.

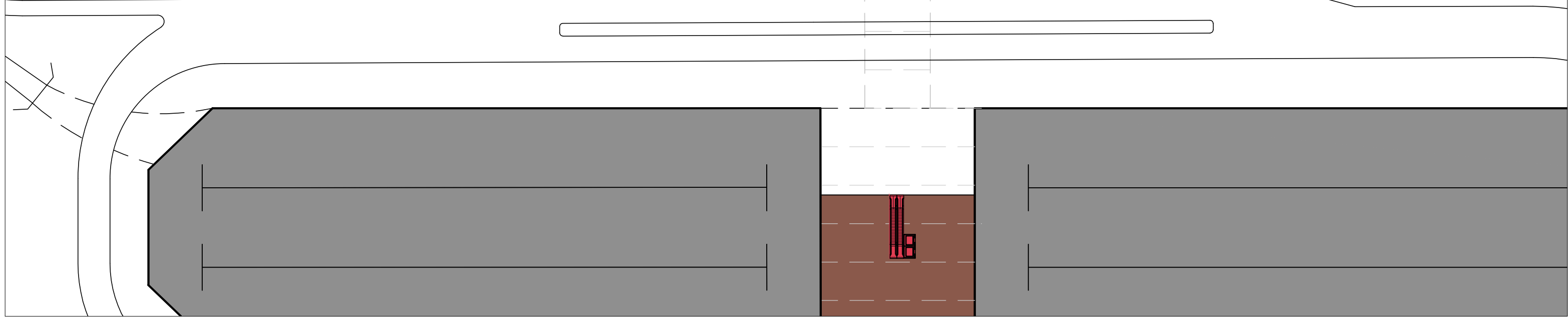
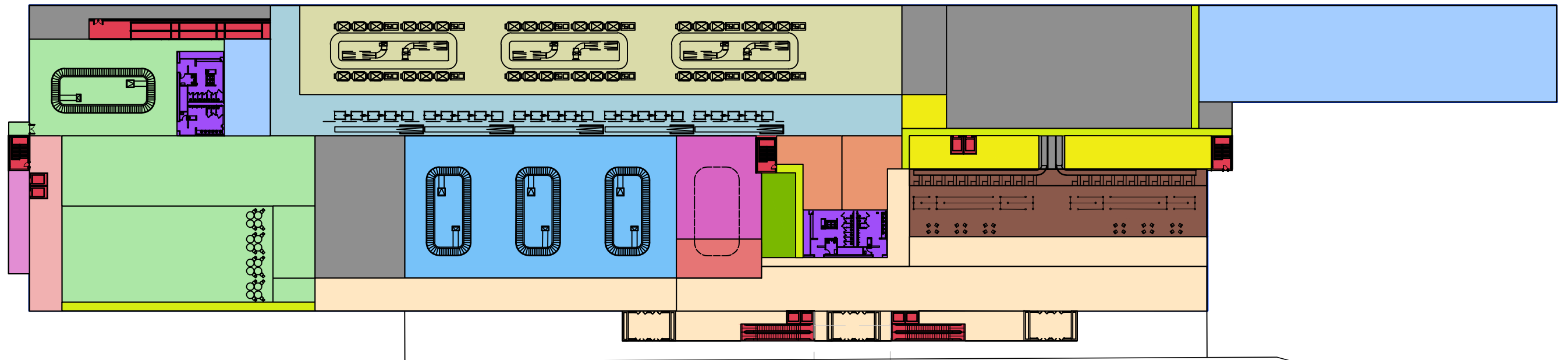
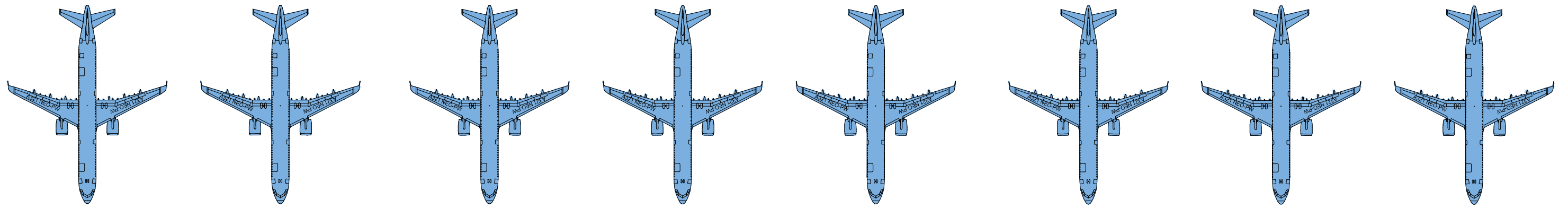


12 Appendix A – Preferred Concept Plans

PREPARED FOR
Town of Islip
Long Island MacArthur Airport

Prepared by:
Landrum & Brown, Incorporated





Concept G
Apron Level

File: 2022 0201_Concept G.dwg Layout: Claim Last Saved: 2/3/2022 5:01 PM Plotted On: 4/19/2022 9:39 AM

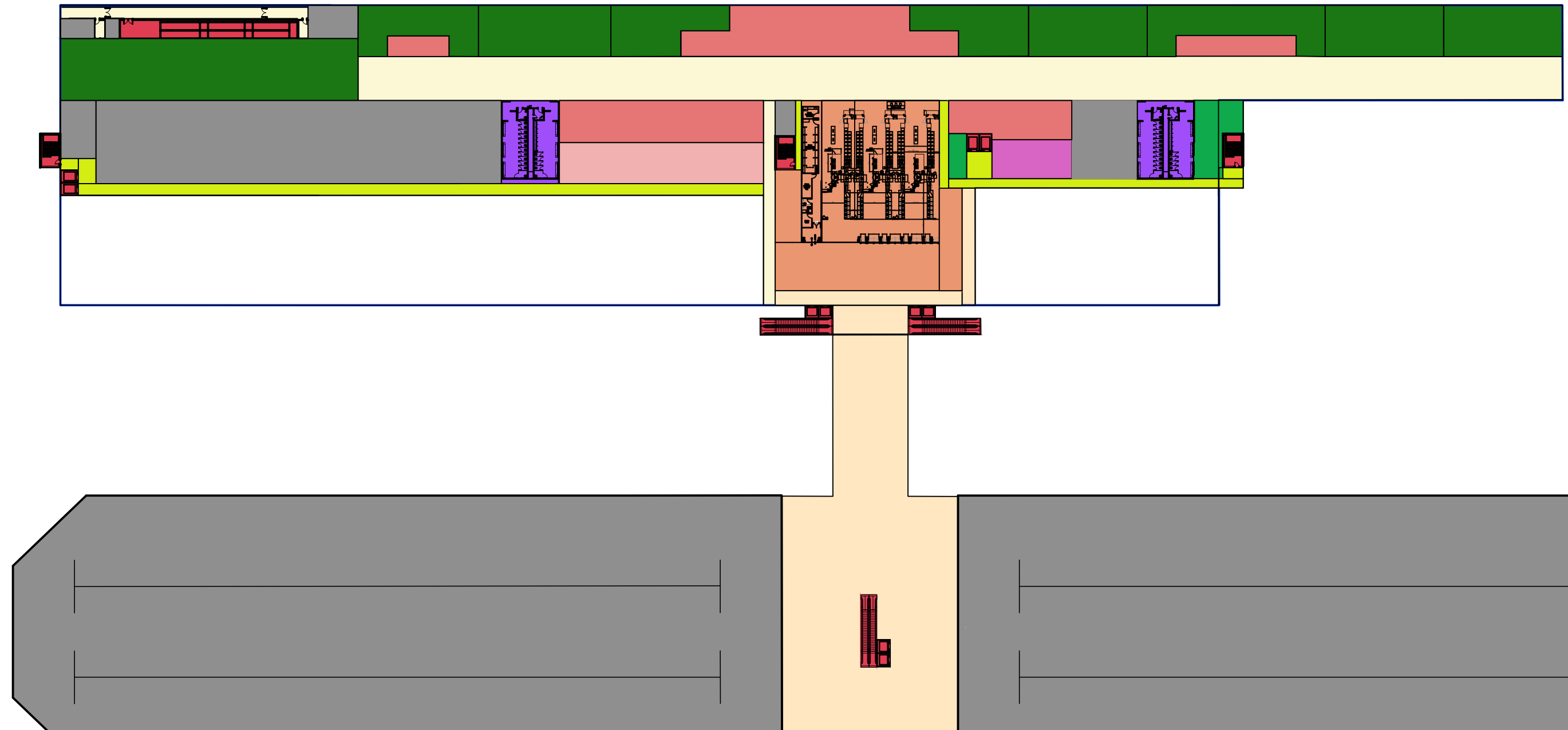
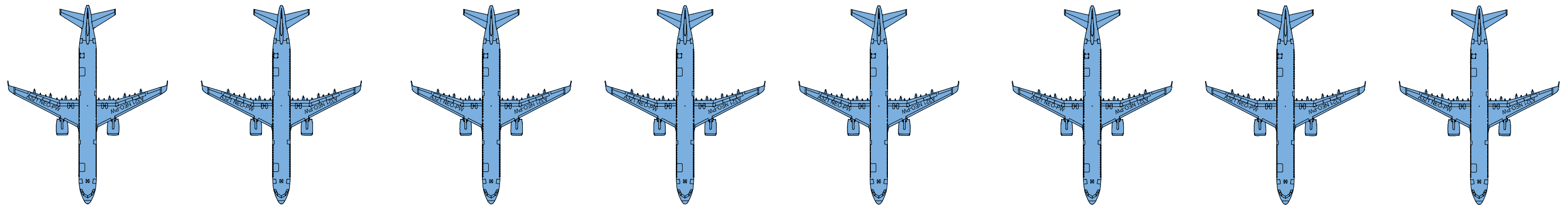
Legend

- | | | | | |
|--------------------|------------------------|----------------------|--------------------|---------------------------|
| Restrooms | Secure Circulation | Vertical Circulation | Concession Support | Claim Area |
| Airport Operations | Non-Secure Circulation | Support or MEP | Loading Dock | FIS |
| BSO | Concessions | ATO | Inbound Baggage | Back of House Circulation |
| Checkpoint | Holdrooms | Check-In | Baggage Make Up | |



Scale: 1"=75'-0"

Prepared by: Landrum & Brown
CONFIDENTIAL - For discussion Purposes Only



Concept G Gate Level

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Legend

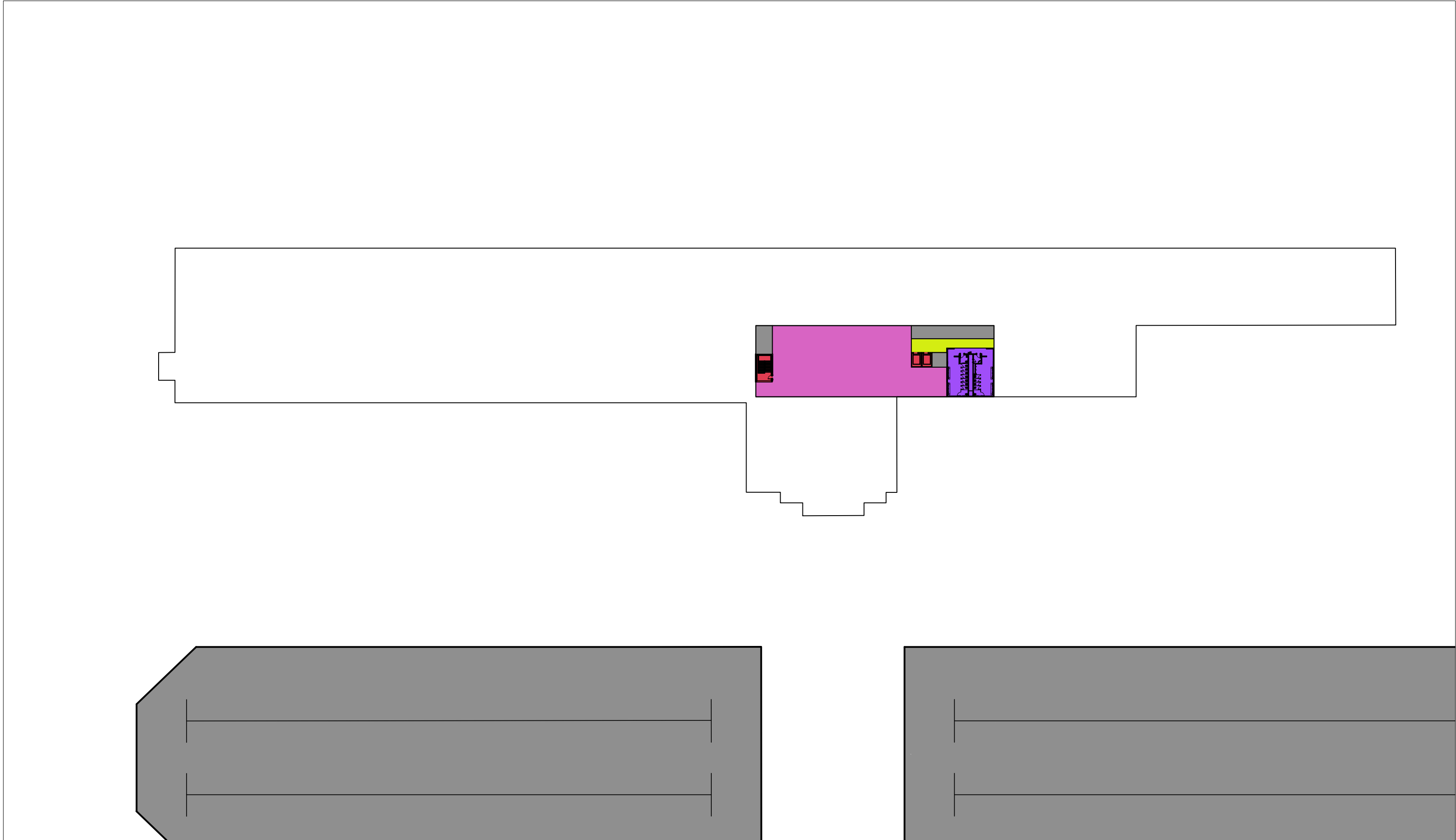
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|--------------------|------------------------|----------------------|--------------------|---------------------------|
| Restrooms | Secure Circulation | Vertical Circulation | Concession Support | Claim Area |
| Airport Operations | Non-Secure Circulation | Support or MEP | Loading Dock | FIS |
| BSO | Concessions | ATO | Inbound Baggage | Back of House Circulation |
| Checkpoint | Holdrooms | Check-In | Baggage Make Up | |



Scale: 1"=75'-0"

Prepared by: Landrum & Brown

CONFIDENTIAL - For discussion Purposes Only



Concept G
Upper Level

File: 2022 0201_Concept G.dwg Layout: Upper Level Last Saved: 2/3/2022 5:01 PM Plotted On: 4/19/2022 9:40 AM

Legend

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|--------------------|------------------------|----------------------|--------------------|---------------------------|
| Restrooms | Secure Circulation | Vertical Circulation | Concession Support | Claim Area |
| Airport Operations | Non-Secure Circulation | Support or MEP | Loading Dock | FIS |
| BSO | Concessions | ATO | Inbound Baggage | Back of House Circulation |
| Checkpoint | Holdrooms | Check-In | Baggage Make Up | |



Scale: 1"=75'-0"

Prepared by: Landrum & Brown

CONFIDENTIAL - For discussion Purposes Only



13 Appendix B – Presentations

PREPARED FOR
Town of Islip
Long Island MacArthur Airport

Prepared by:
Landrum & Brown, Incorporated





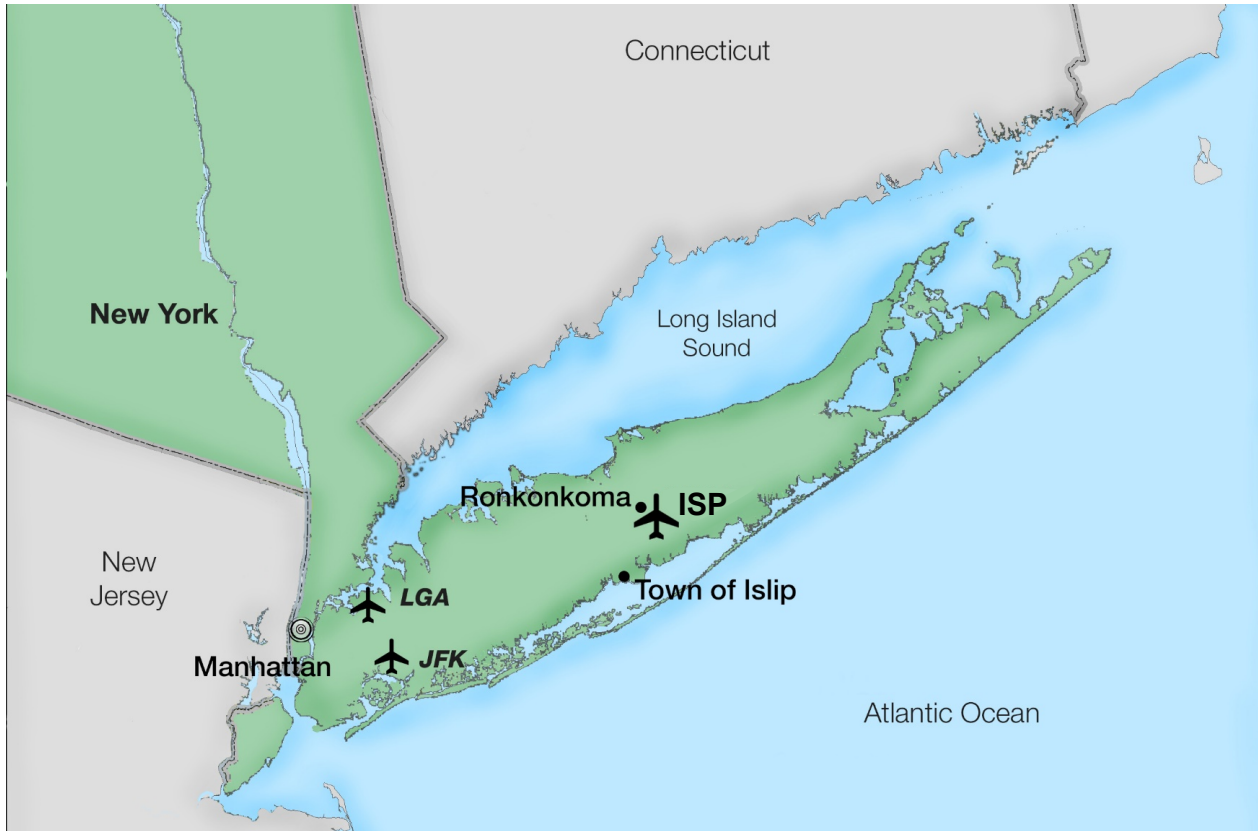
ISP – West Concourse Planning Study

Grant 3-36-0046-103-2019: Conduct a Terminal Area Narrative Report

Pre-Design Conference/ Kick-off | September 17, 2019



Agenda



Introductions

Project Purpose

- Goals/ Objectives
- Scope of Work
- Phasing
- Assumptions

Next Steps

- Schedule

Open Discussion



Introductions

Team members

Landrum & Brown – Environmental/ Sustainability, Financial Analysis, Aviation Activity/ Forecasts, Facility Requirements, Terminal Space planning, Terminal Development/ Wayfinding, Aircraft Gating & PBB, Landside Planning, Ancillary Support Facilities, Stakeholder Outreach

Johnson, Kukata & Lucchesi Engineers, PC – Civil Utilities, Structural, Cost Estimating, Implementation, Conditions Assessment, Stakeholder Outreach

CAGE Inc. – Baggage Handling Systems

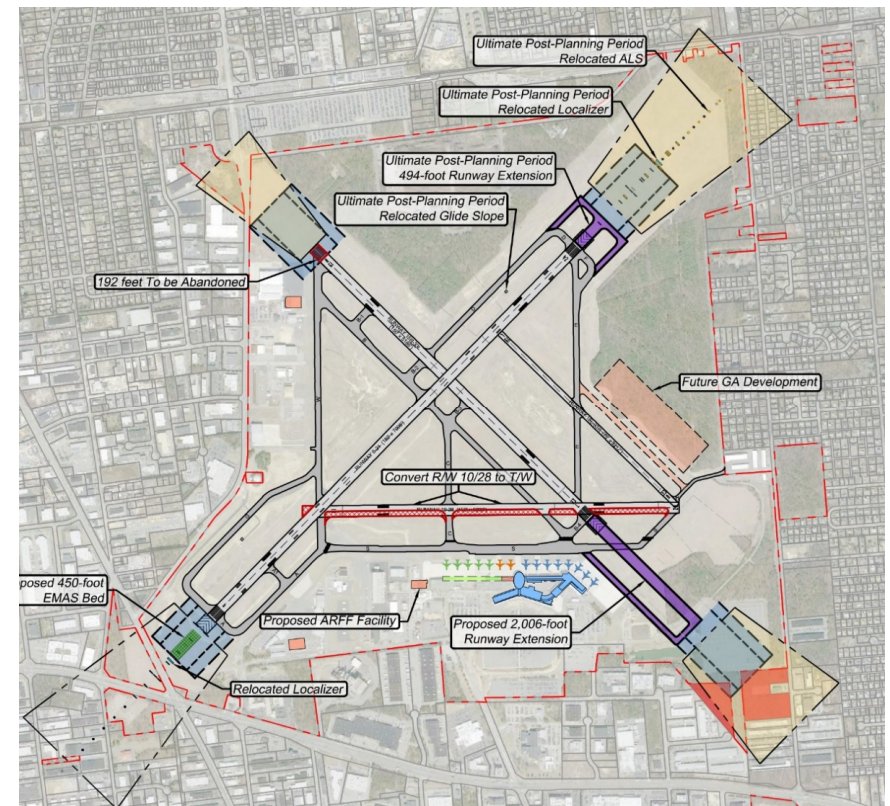
Ross & Baruzzini, Inc. – Building Systems: IT/ Security, Mechanical, Electrical, Plumbing, Fire Protection



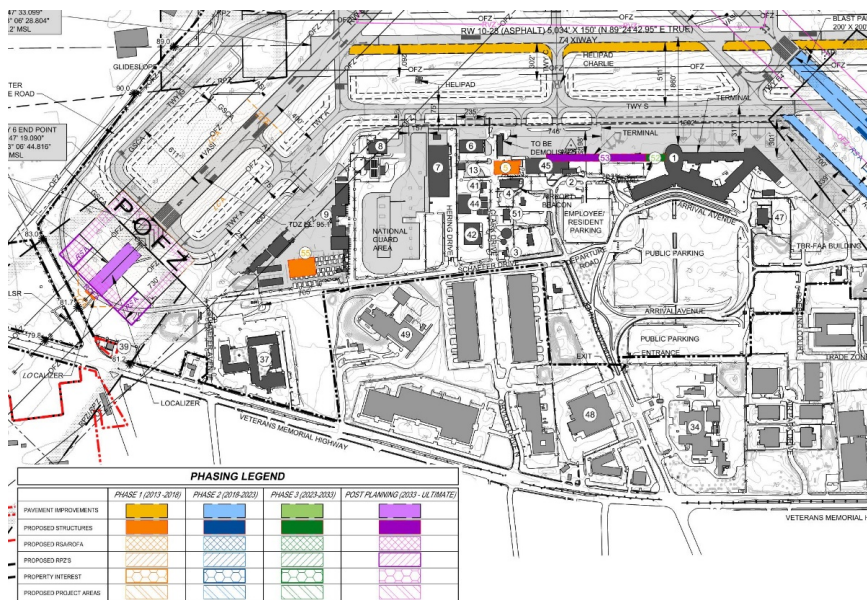
Project Purpose - Goals

Goals

- Advanced Planning & Programming
- Refinement of 2017 Master Plan
- Program Definition Document
 - Create a guiding manual for the Airport to utilize in the future design phase that aligns with the strategic goals and vision of ISP
 - “Bridge the gap” between Master Plan and design phases



Project Purpose - Objectives



Objectives

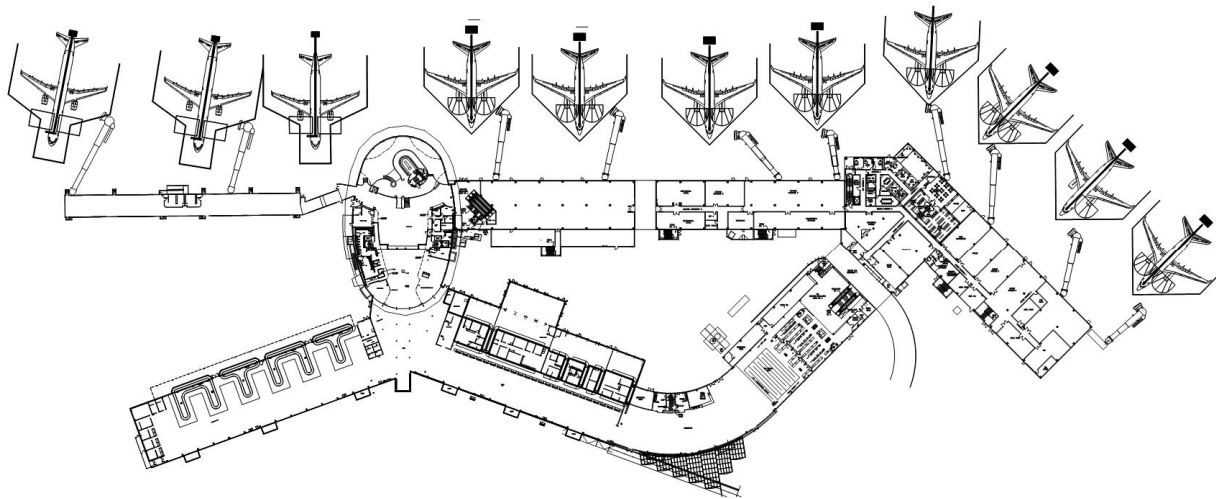
- Apply holistic planning approach
 - Implementation and phasing
- Increase gating capacity
 - 3 contact gates
- Enhance the passenger experience
 - Intuitive wayfinding/ flows, LoS, new technologies, and amenities
- Enhance operational efficiency
 - Identify area and functional deficiencies
 - Identify building systems beyond useful life
- Plan for future flexibilities
- Implement stakeholder engagement plan
 - Keep stakeholders updated, engaged, and respond to their feedback



Project Purpose – Scope of Work

Scope of Work

- 1) Existing Conditions Assessment/ Inventory
 - Situational Assessment
 - Collection of Existing Data
 - Inventory of Existing Conditions and Site Validation
 - Development of AutoCAD Base Files



Project Purpose – Scope of Work

Scope of Work

- 2) Aviation Activity Analysis/ Forecast
 - Aviation Demand Forecast
 - Develop Design Day Flight Schedules
- 3) Facility Requirements
 - Assumptions and Methodologies
 - Develop Program of Facility Requirements



Project Purpose – Scope of Work



Scope of Work (cont.)

- 4) Alternative Development and Evaluation
 - Identification of Emerging Trends
 - Gate Configuration – Conceptual Alternatives
 - Concourse Configuration – Conceptual Alternatives
 - Alternative Evaluation and Selection of a Preferred Concept



Project Purpose – Scope of Work

Scope of Work (cont.)

5) Preferred Concept

- Refinement of Preferred Concept
- Development of Access Control Program

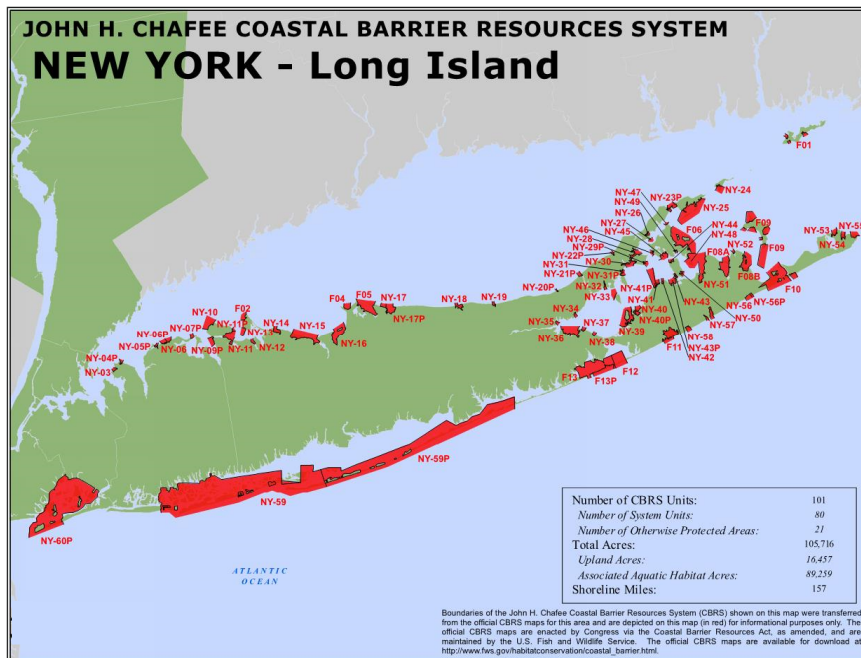
6) Implementation Plan

- Development of Implementation Schedule
- Rough Order of Magnitude (ROM) Cost
- Phasing Plan



Project Purpose – Scope of Work

Scope of Work (cont.)



7) Financial Feasibility Analysis Plan

- Types/areas of building components that align with AIP/PFC funding
- Total costs of the Project
- Timing of cash flows associated with the construction of the Project
- Financing sources and terms

8) Environmental/ Sustainability Impacts

- Identification of Potential Environmental Requirements
- Sustainability Assessment



Project Purpose – Scope of Work

Program Definition Document (PDD) Outline
Executive Summary
Existing Conditions Assessment/Inventory
Aviation Activity Analysis/Forecasts
Facility Requirements
Alternatives Development and Evaluation
Preferred Concept
Implementation Plan
Financial Feasibility Analysis
Environmental /Sustainability Impacts
Appendix

Scope of Work (cont.)

9) Final Deliverable

- Development of the Program Definition Document

10) Stakeholder Engagement/ Coordination and Grant Administration Support

- Stakeholder Engagement Process, Project Meetings, & Grant Administration Support



Compliance



Compliance

- 14 CFR Part 139 Airport Certification
- 14 CFR Part 77 Safe, Efficient Use, and Preservation of the Navigable Airspace
- 49 CFR Part 1542 Airport Security
- Advisory Circular 150/5360-13A Airport Terminal Planning



Phasing

ISP Existing Terminal and Concourse Key Issues and Constraints:



Existing Issues and Constraints:

- A. Phased Approach - Maintain Existing Operations
- B. Building / Structural System Integration
- C. Relocate Existing Parking / Roadways
- D. Customer Experience - Long Walk From Existing Security

Phasing


- Maintain operation & passenger experience
- West Concourse passenger flow & egress
- East Concourse exit and connection
- Central Terminal connection – Structural, floor elevations, systems
- Landside access (emergency access, utilities, trash, etc.)
- Airside access (aircraft access to gate; safe operation)



Assumptions

Assumptions

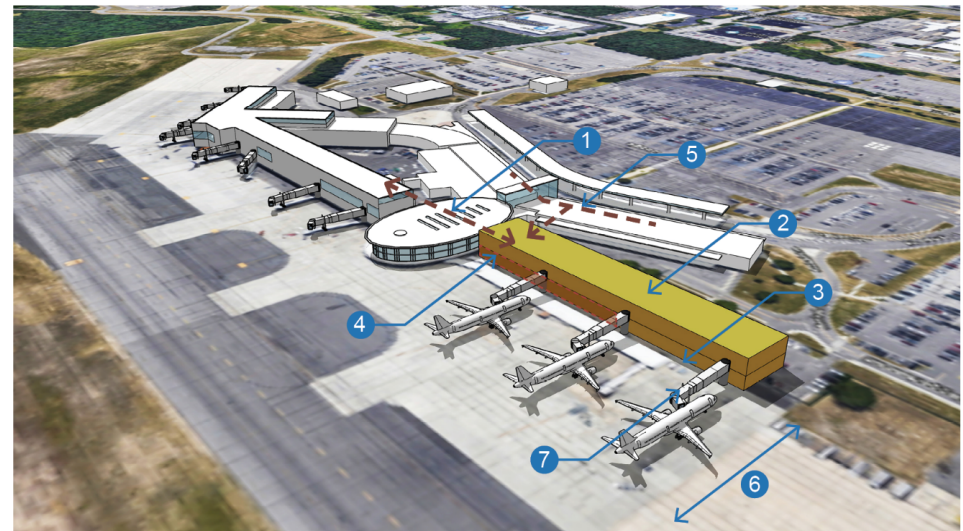
- New two-level concourse with 3 contact gates.
- Federal Inspection Station (FIS)
- Accommodate ADG-III sized aircraft
- Provide a high-level customer experience
- Potential Elements:
 - New concessions (Food/Bev and Retail)
 - Amenities (i.e. charging stations, business center, children's play)
 - Restrooms incl. Service Animal Relief Area (SARA)
 - Integration of existing building architecture/functions
 - Baggage Handling Systems (BHS) improvements

 (Inbound – baggage cart route, FIS claim unit and exterior canopy)

Anticipated Program Needs:

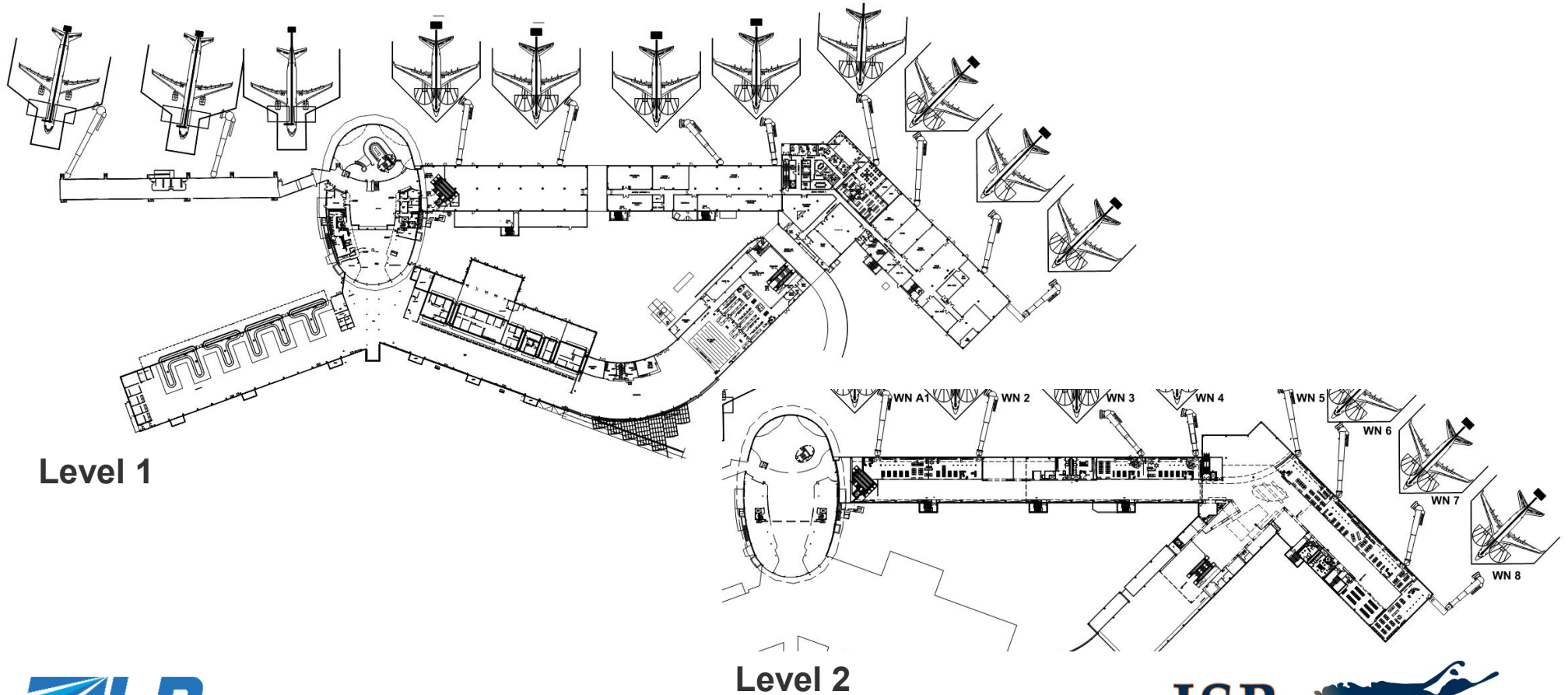
1. Connection Between East + West Concourses
2. New Holdrooms, Concessions, Restrooms, Support
3. Airside Operations
4. Potential CBP FIS
5. Inline Baggage System
6. Enlarged Apron Area For Aircraft Flexibility
7. PBB Needs Assessment

ISP West Concourse Key Plan:



 ISP
Long Island MacArthur Airport

Open Dialogue – Existing Constraints/Issues



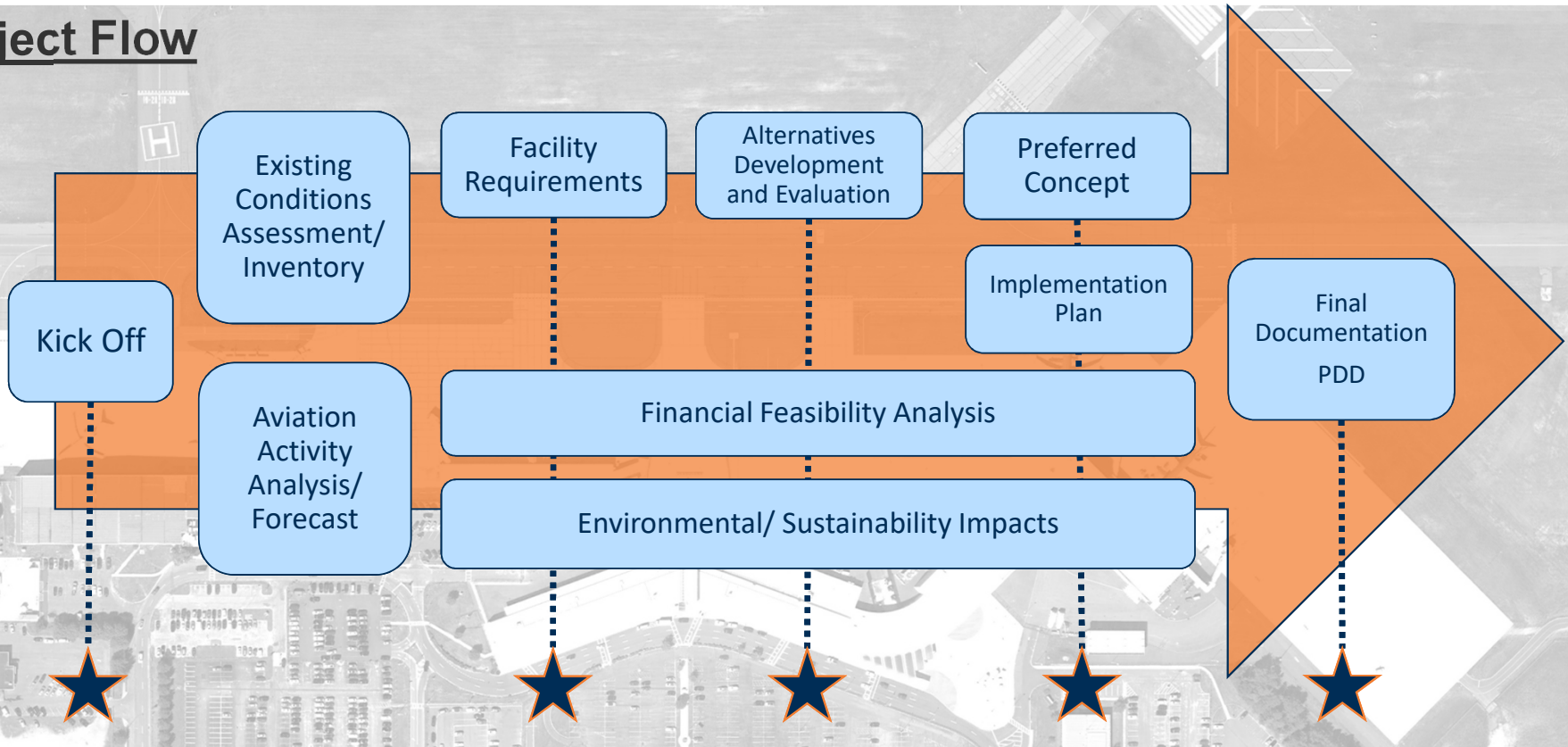
Level 1

Level 2



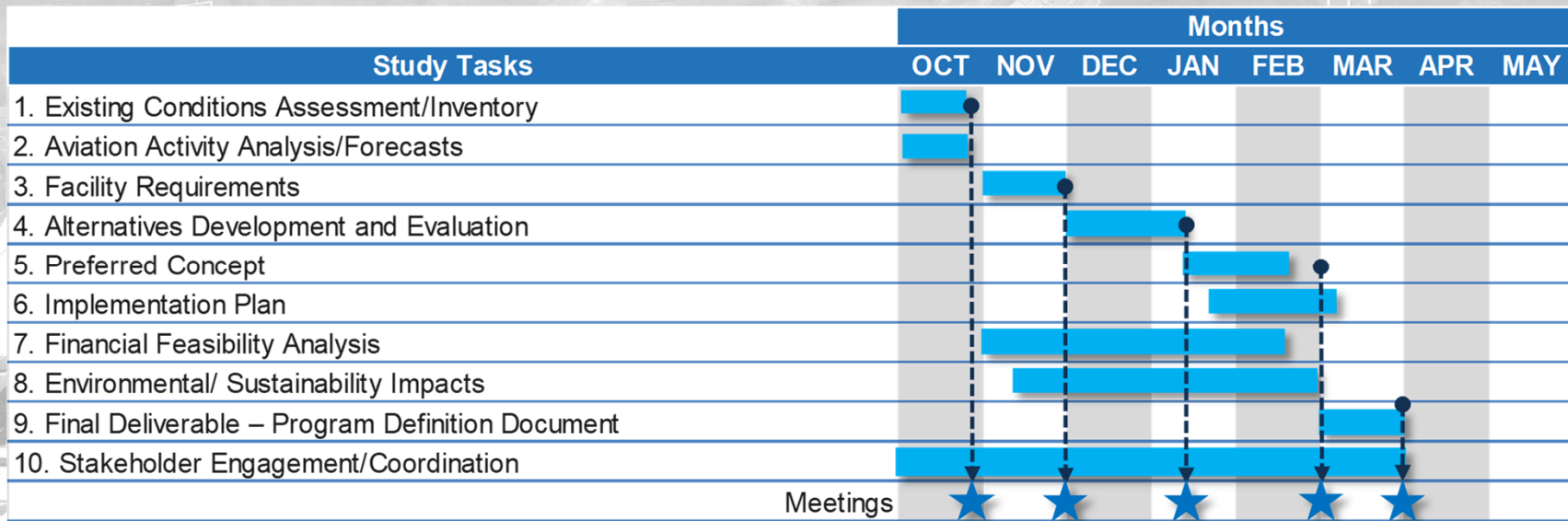
Next Steps

Project Flow



Next Steps

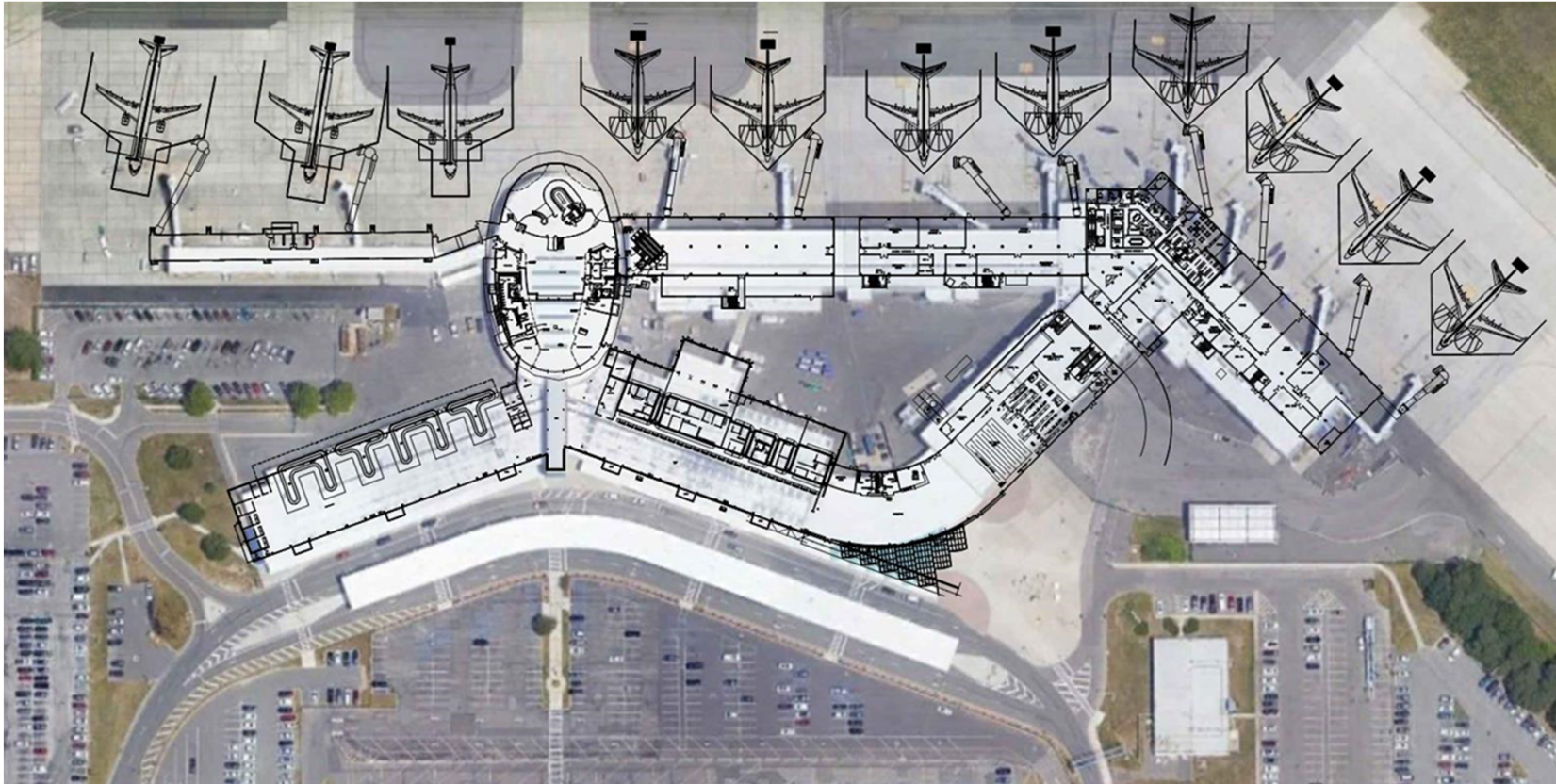
Schedule



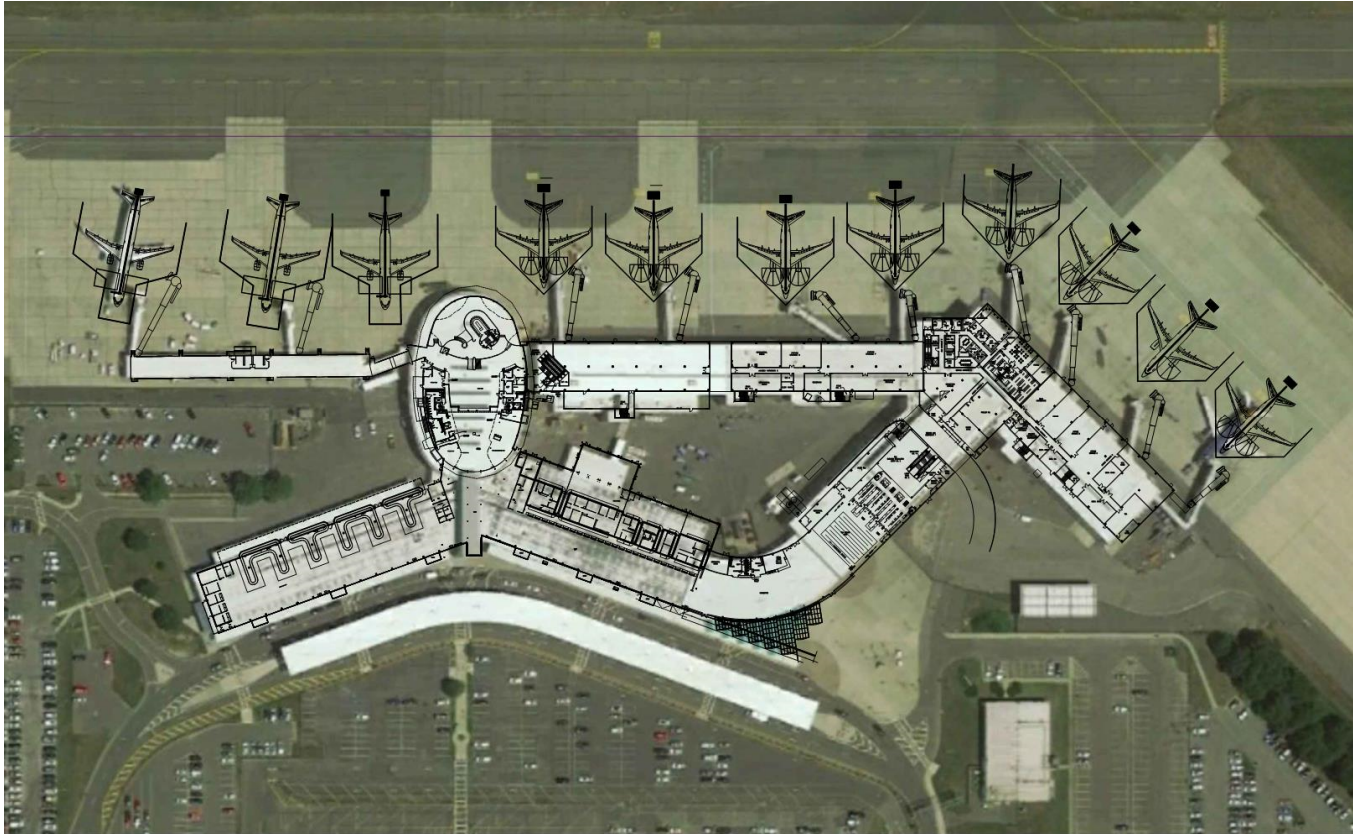
Conclusion



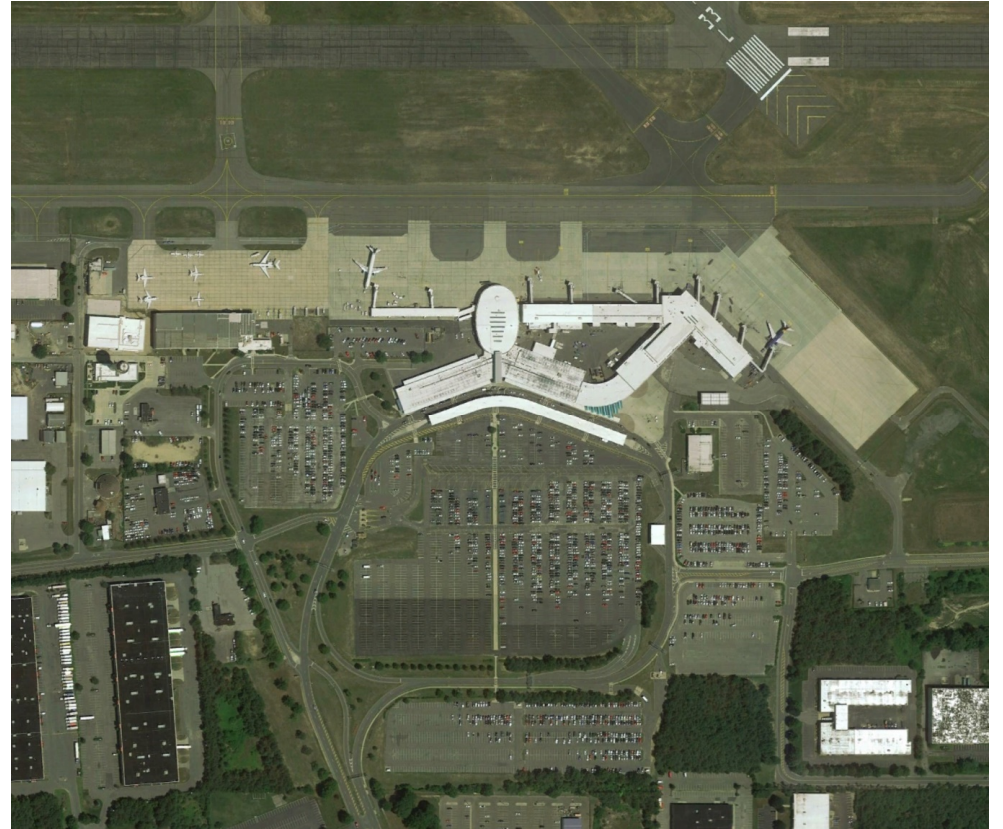
Reference



Reference



Reference



ISP West Concourse Planning Study Pre-Design Conference

FAA Project: Grant 3-36-0046-103-2019:

September 17, 2019

Conduct a Terminal Area Narrative Report

ISP Conference Room

Attendees:		
Name	Company/Representation	Email
Jose Moreno	FAA	Jose.moreno@faa.gov
Dave Angileri	ISP Airport	Dangileri@islipny.gov
Mike Fischer	ISP Airport	mfischer@islipny.gov
Shelley LaRose	ISP Airport	SLaRose@islipny.gov
Steve Siniski	ISP Airport	ssiniski@islipny.gov
Patrick O'Leary	ISP Airport	POLeary@islipny.gov
Robert Schneider	ISP Airport	rschneider@islipny.gob
Mahesh Kukata	JKL	mkukata@adci-corp.com
Andrea Luft	JKL	ALuft@jklengineers.com
Logan Smith	L&B	lsmith@landrum-brown.com
Monica Geygan	L&B	mgeygan@landrum-brown.com
Clint Laaser	L&B	claaser@landrum-brown.com

The meeting notes below were taken during the pre-design conference between ISP Airport, JKL and L&B. The purpose of the meeting was to kick-off the West Concourse Planning Study.

FAA Project: Grant 3-36-0046-103-2019: Conduct a Terminal Area Narrative Report

Introductions

- Project Team
 - Landrum & Brown (L&B) –
 - Environmental/ Sustainability, Financial Analysis, Aviation Activity/ Forecasts, Facility Requirements, Terminal Space planning, Terminal Development/ Wayfinding, Aircraft Gating & PBB, Landside Planning, Ancillary Support Facilities, Stakeholder Outreach
 - Johnson, Kukata & Lucchesi Engineers, PC (JKL) –
 - Civil Utilities, Structural, Cost Estimating, Implementation, Conditions Assessment, Stakeholder Outreach
 - Cage, Inc (CAGE) –
 - Baggage Handling Systems
 - Ross & Baruzzini, Inc. (R&B) –
 - Building Systems: IT/ Security, Mechanical, Electrical, Plumbing, Fire Protection
- ISP Team Members & Roles
- Project Communication Protocol

Project Purpose

- Goals/Objectives
- Scope of Work
- Assumptions

Next Steps

- Anticipated Schedule
- Budget - Total planning cost: \$530,851 (\$477,765 FAA, \$26,543 PFC & \$26,543 State match)

Open Discussion

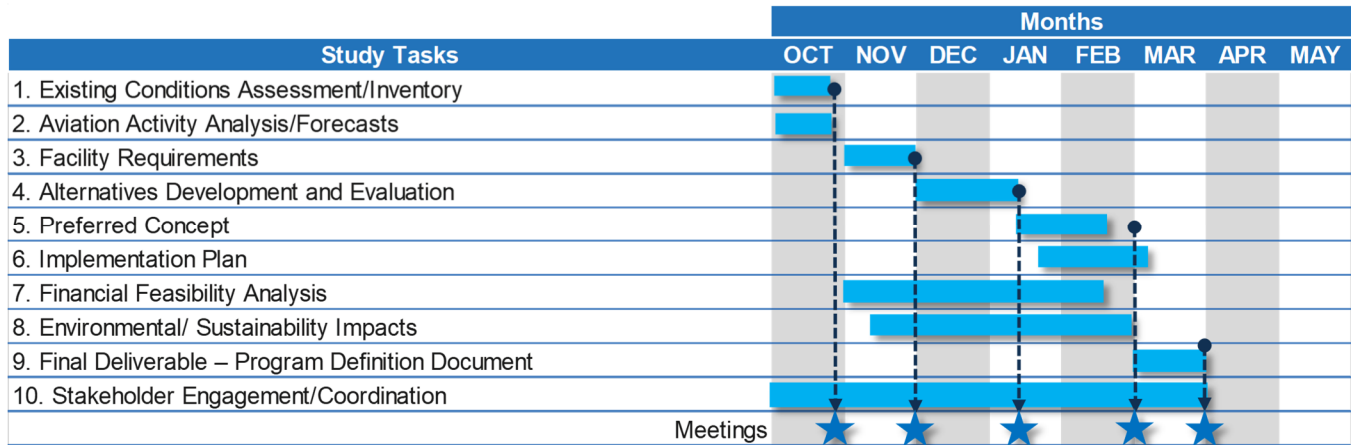
- **Jose Moreno:**
 - Forecast – Question: Will a full forecast be developed and submitted to the FAA? L&B Answer: No, this is simply an update and validation of the original MP forecast. The north terminal will be an expansion to the north if the existing facility cannot handle the capacity.
 - Question: What sustainability aspects will be looked at? L&B Answer: L&B will look at the local regulations and opportunities relative to building sustainability. The sustainability desires of the Airport and stakeholders will be included in the final deliverable (PDD) for use by future design team.
 - Rochester (ROC) airport has a system to help hearing impaired passenger integrated controlled lighting systems, the passenger can see a lighting system (blue, red, white and green). If they see a blue - nothing is happening; white – attendant there but no activity; green - gate is ready to board and are on an overhead pointing in which direction they should be going. They received FAA funding for this recently.
- **Rob Schneider:**
 - While the study is focused on alternatives for redevelopment of the utilization of the West Concourse, options should include other locations to minimize phasing disruption and/or cost. These alternatives could include extension of the east concourse, use of the preferential gates, and/or potential north terminal. L&B should look at all options that can achieve the objectives. Previous feasibility study studied a north terminal in coordination with CBP regarding what a north terminal build-out would look like. Southwest originally had an option to develop a north terminal and there was an alternative in the MP showing a north terminal.
 - Frontier is going to experience 30% growth and move from 4 to 9 flights soon (by end of 2019). There are other planned service announcements coming soon. ISP anticipates continued capture of more market share from Nassau county and other nearby counties.
 - Gates A2, A3, A4 seldom used (but owned by WN) while A5, A6, A7, A8 are exclusive to Southwest. Gate A1 is leased by American Airlines.
 - Access to the baggage claim will be important during phasing, and utilities are a concern. All rental cars (currently in the lot behind the west concourse) will be relocated to the new ground transportation center in Building 150.
 - Central Terminal GA CBP is in the wrong location and major concerns regarding the CBP operation and conflict between GA and commercial service. GA FIS should be relocated to north (or other site to be determined).
 - New concepts should ensure proper clearances for the aircraft allow for optimized operation and look at the spatial constraints, including taxi lanes and GSE circulation.
 - Look at 33L RPZ for any new East Concourse expansion options.
 - There are other adjacent capital improvement projects in the works including the Central Terminal renovation and systems upgrade programs. This study will coordinate potential alternatives with relative planned terminal improvements and provide clarity on what improvements to proceed with.

- **Mahesh Kukata:**
 - Major objective is to meet the forecast gate requirements, look at what demand can be met in the existing facility and if more space is needed, look at the feasibility of the north terminal.
 - Options should include best use/integration of West Concourse to the Central Terminal. An option to remove all (or part) of the Central Terminal could be entertained, although cost will determine final concept. The building will require a 90,000 SF roof replacement in the near term.
 - There are limitation constraints west of the West Concourse due to Sheltair Aviation ISP facility.
- **Clint Laaser:**
 - This study is focused on gate capacity/demand and developing options that will allow for growth in the near and long term. It does not include any landside connection to other components or potential future north terminal.
 - A potential phasing option for the West Concourse could include a new concourse behind the existing concourse to allow for continued use of the existing West Concourse during construction.
 - Study will include how to maintain a secure connection around or through the existing rotunda.
 - Walking distance is a concern from the security checkpoint located on the far east to the far west concourse gates as expressed through recent passenger complaints.
 - MEP upgrade program will not have enough capacity to support new west concourse expansion.
 - Phasing will need to study existing utilities and trash behind the existing west concourse gates.
 - An east concourse expansion would need to consider the existing RPZ and Part 77 compliance.
 - Goal is to determine a preferred concept by December 2019 (or early 2020).
 - The vertical elevation differences between the east and west concourses will be a planning/design challenge discussed in this study.
- **Shelley LaRose:**
 - Need to include the SARA as part of the potential amenities to be considered as part of the study
 - Many airlines are combining visual paging with announcements to be ADA compliant.
 - Look at elevator and escalator redundancy.
 - We will want stakeholders involved throughout the entire process.
 - Aggressive capital program through 2023.

Site Tour

- Existing Central Terminal restaurant on second floor has not been open for a long time. There are no known ADA issues with the space.
- The Central Terminal does not have historic designation.
- West Concourse – currently serving (2) A321 aircraft sometimes simultaneously (Frontier). The building exceeds capacity during this peak time with low Level of Service.
- Recent passenger complaints regarding walking distance (horizontal and vertical) from security checkpoint to west concourse. Golf cart usage has been discussed although will be difficult due to lack of width in the west concourse.
- Existing passenger boarding bridge issues – steep, path from ground level up to sill is difficult for people and issues with rain.
- 2016 market share study noted market share of: 87% of Suffolk County; 36% of Nassau County. Airport is working on westward expansion into NYC market.
- Southwest has 7.5 years remaining on their lease. East Concourse built in 2005 with a 20-year term.
- Southwest has 3 aircraft on ground during peak.
- East concourse expansion constraints to look at: RPZ, Glycol tank location, Ground Transportation Center proximity (including RAC Ready/Return).
- Existing Security Checkpoint – 4 lanes with AIT. Previous checkpoint had room for 5 lanes prior to AIT. Space appears to have enough length for ASL if installed in the future.
- Potential West Concourse first floor uses could include: FIS, Operations, Airline Ramp Operations, other
- Concessionaires include Paradies and Host but are through the Southwest contract (not Town of Islip)
- Current GA FIS is not in ideal location and should be relocated to eliminate mixed uses with commercial service.

Tentative Schedule:



Kickoff: September 17, 2019

- Goals/Objectives
- Initial Site Tour

Workshop 1: November 7, 2019

- Existing Conditions Assessment/Inventory
- Aviation Activity Analysis/Forecast

Workshop 2: TBD – December 2019

- Facility Requirements
- Initial Concept Discussion

Workshop 3: TBD – January/February 2020

- Alternatives Development and Evaluation

Workshop 4: TBD – February/March 2020

- Preferred Concept Refinement
- Implementation Plan
- Environmental/Sustainability Impacts
- Financial Feasibility Analysis

Workshop 5: TBD - April 2020

- Final Study Findings
- Final Deliverable Review



ISP – West Concourse Planning Study

Grant 3-36-0046-103-2019: Conduct a Terminal Area Narrative Report

Workshop #1 | November 14, 2019

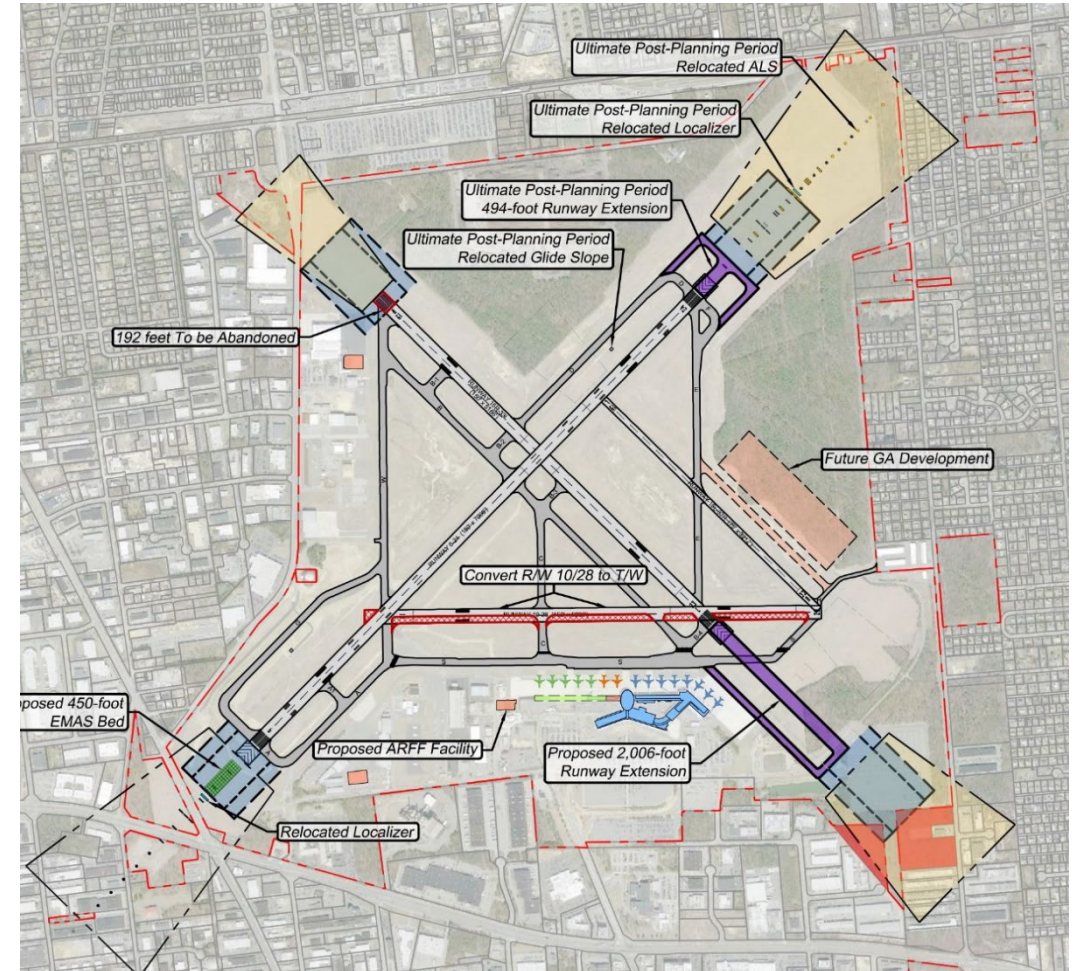


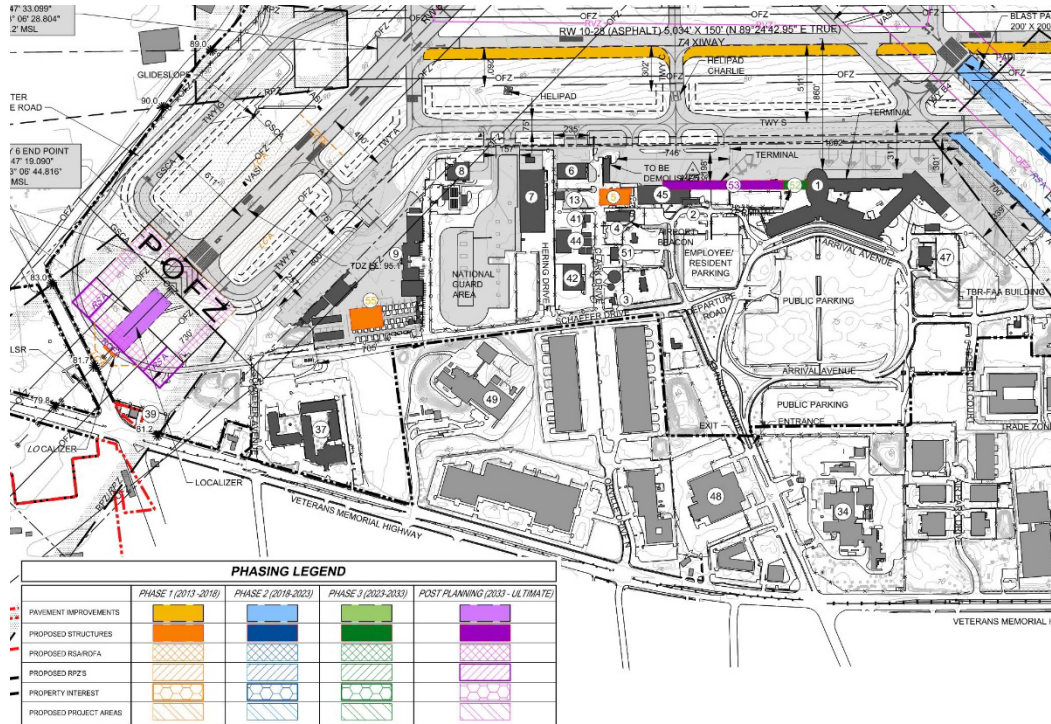
- **Overview**
 - Review of Goals, Objectives and Assumptions
- **Existing Conditions Assessment/Inventory (Task 1)**
 - Existing Conditions Inventory, Site Validation & Situational Assessment
 - Constraints (Interior and Exterior)
- **Aviation Activity Analysis/Forecast (Task 2)**
 - Aviation Demand Forecasts
- **Facility Requirements Methodology (Task 3.1)**
 - Planning Considerations And Assumptions
 - IATA, KPI, ACRP Planning Tools
- **Next Steps**
 - Concepts
 - Schedule



Goals

- Advanced Planning & Programming
- Refinement of 2017 Master Plan
- Program Definition Document
 - Create a guiding manual for the Airport to utilize in the future design phase that aligns with the strategic goals and vision of ISP
 - “Bridge the gap” between Master Plan and design phases



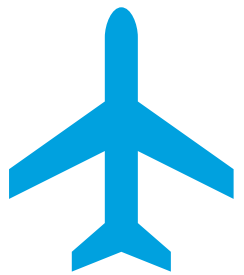


Objectives

- Apply holistic planning approach
 - Implementation and phasing
- Increase gating capacity
 - 3-4 contact gates
- Enhance the passenger experience
 - Intuitive wayfinding/ flows, Level of Service (LoS), new technologies, and amenities
- Enhance operational efficiency
 - Identify area and functional deficiencies
 - Identify building systems beyond useful life
- Plan for future flexibilities
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 - Keep stakeholders updated, engaged, and respond to their feedback



Existing Conditions Assessment/Inventory (Task 1)



Collection of Existing Data

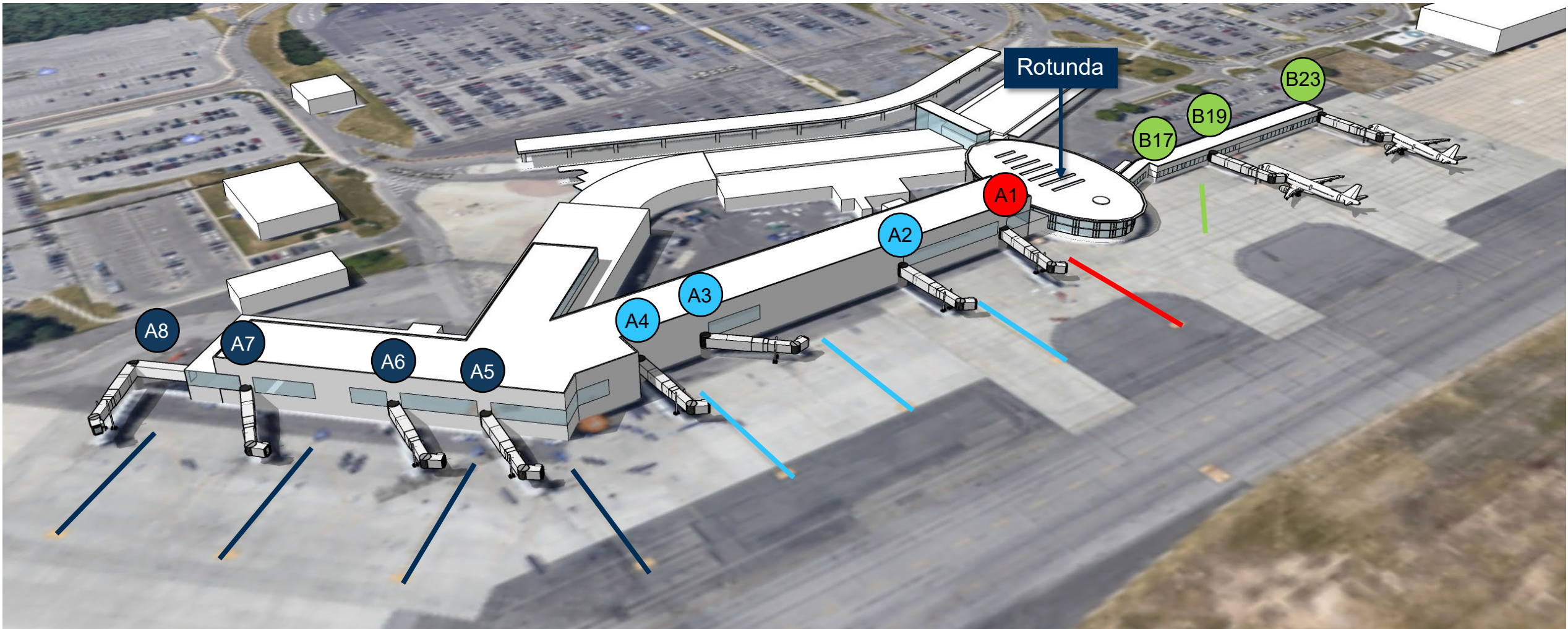
- Obtain all existing drawings from the Airport
 - MacArthur Airport Air Terminal Building, drawings dated August 1964
 - Construction of Terminal Building Concourses, drawings dated August 1989
 - Terminal Building Fire Sprinkler Addition, drawings dated June 2008 (Central Terminal and West Concourse)
- Review Master Plan
- Reference to Feasibility Study performed by AECOM

Inventory Existing Conditions and Site Validation

- Existing Conditions photo documentation
- Critical tie-in points photographed and surveyed
- Constraints include close proximity to SheltAir and provides limited space for full buildout



Existing Conditions – Gates



● Southwest: Exclusive

● Southwest: Shared

● American Airlines

● Frontier

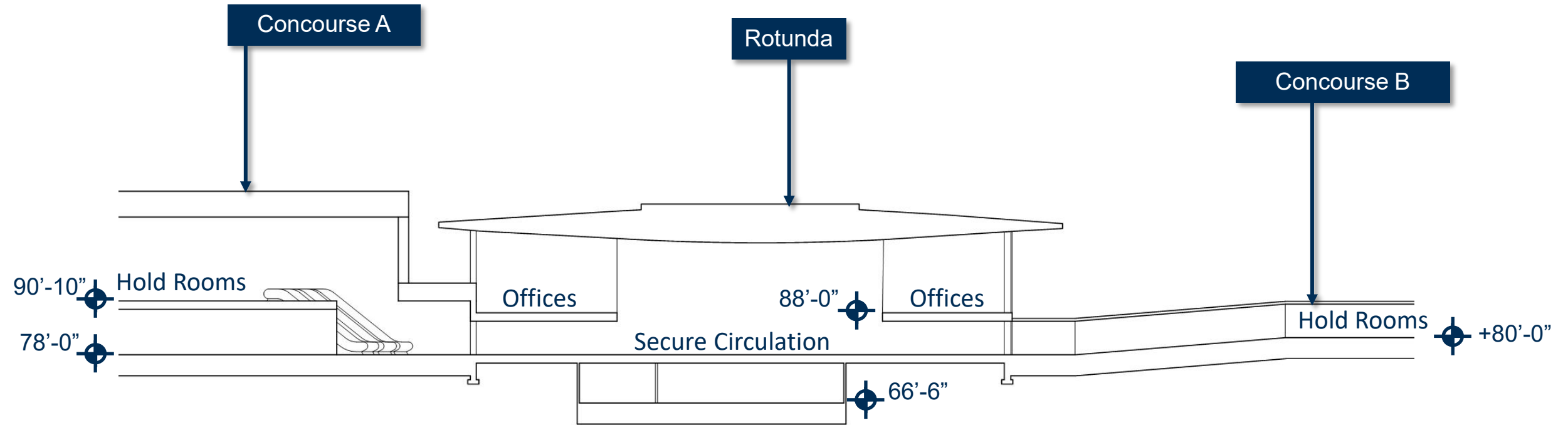
————— (Preferential) —————

(Common Use)

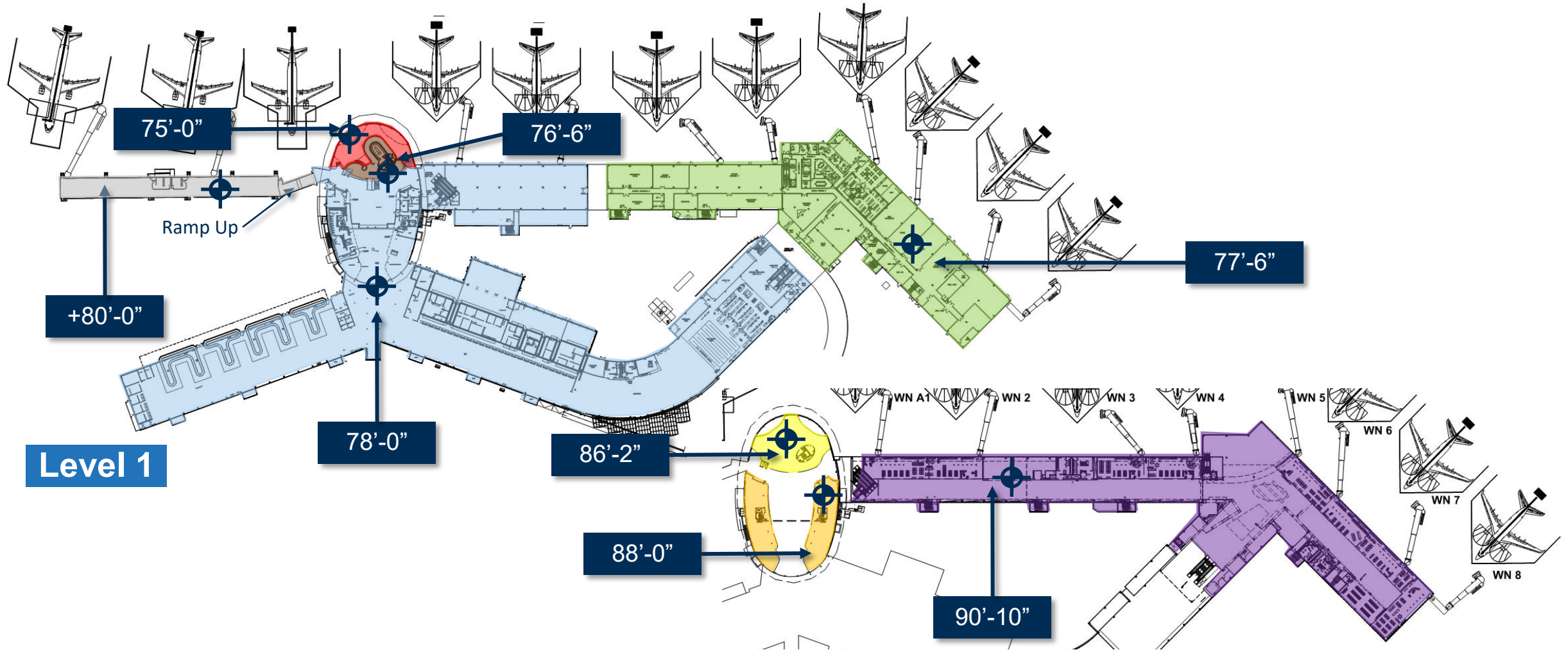
Primary / Key Issues

Connectivity between the East and West Concourse

- The different structural systems and floor heights to/from the central terminal present a challenge to integrate a new concourse while presenting a unified terminal design aesthetic.



Floor Elevations



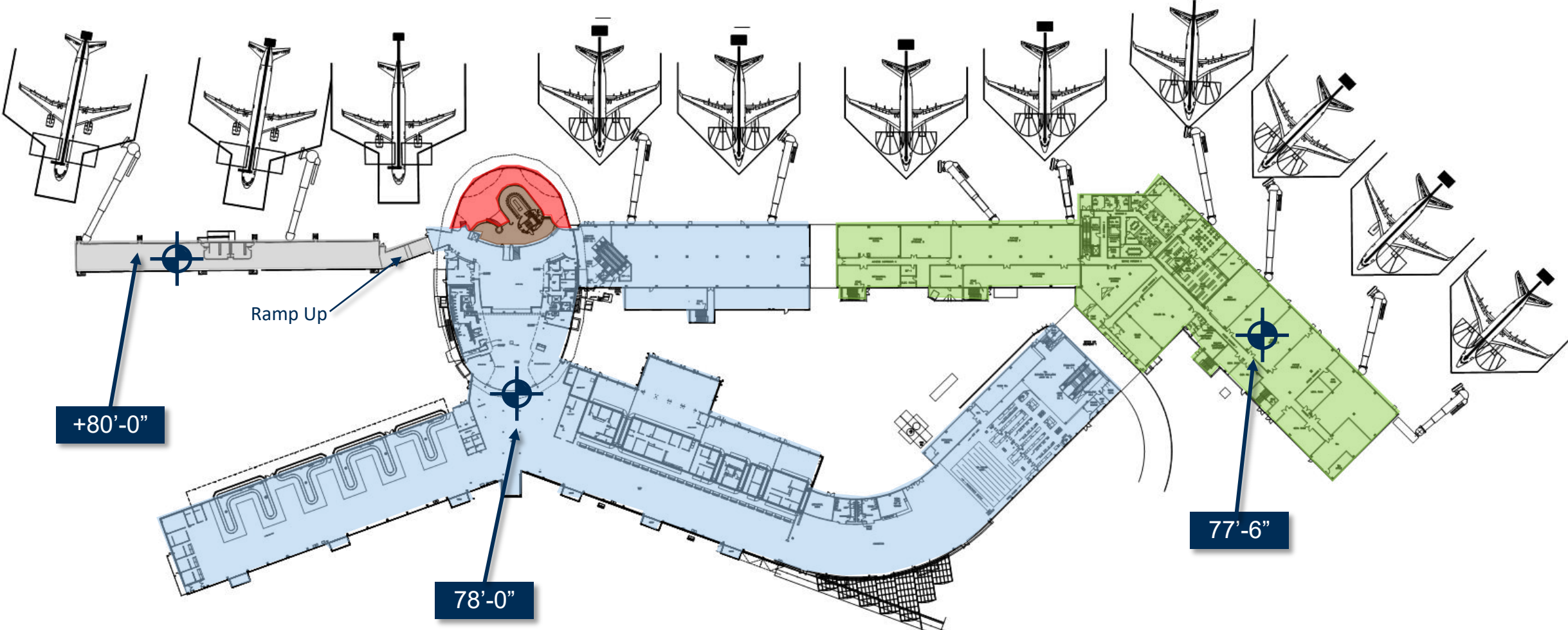
Level 1

Level 2

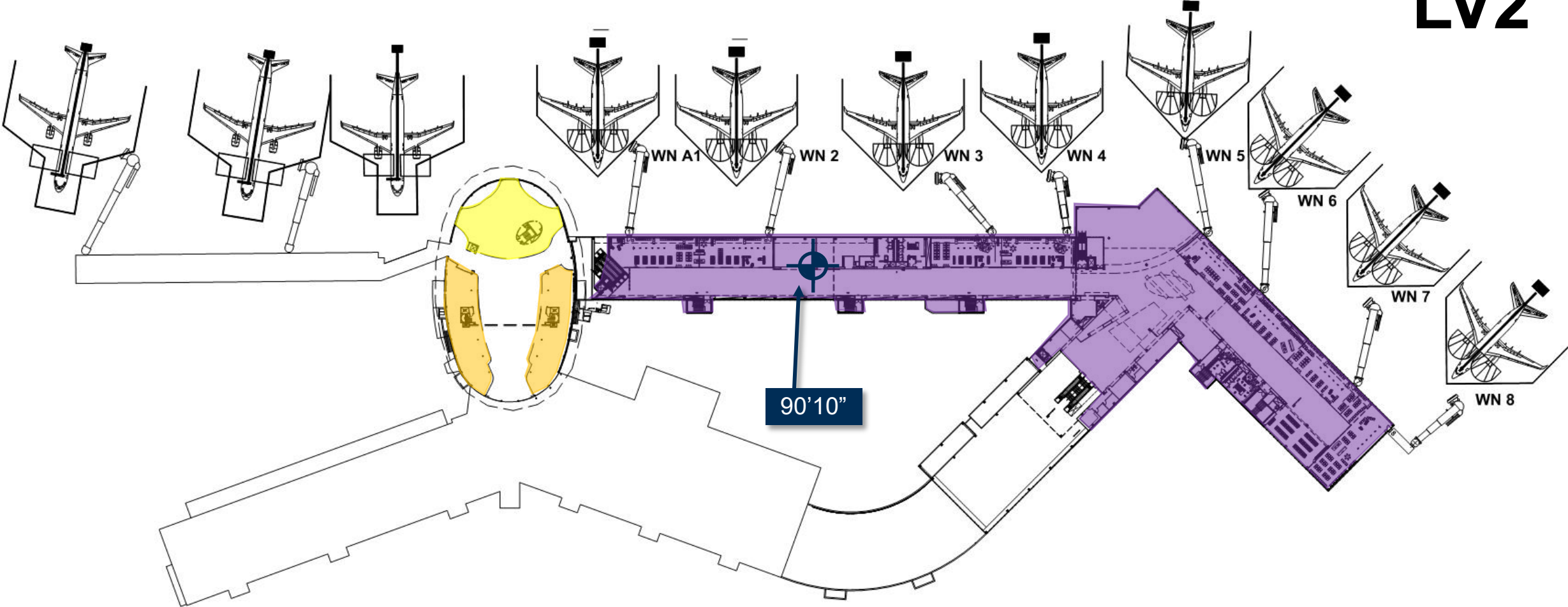


Floor Elevations

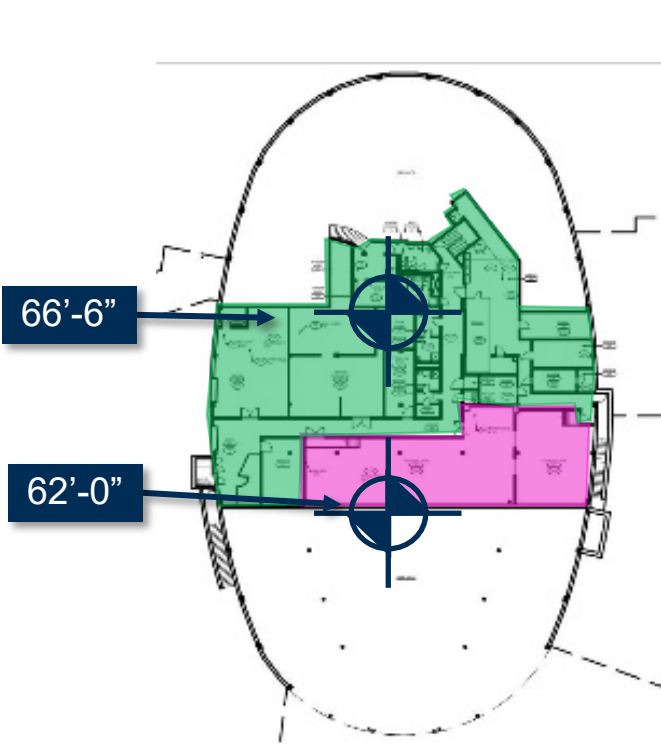
LV1



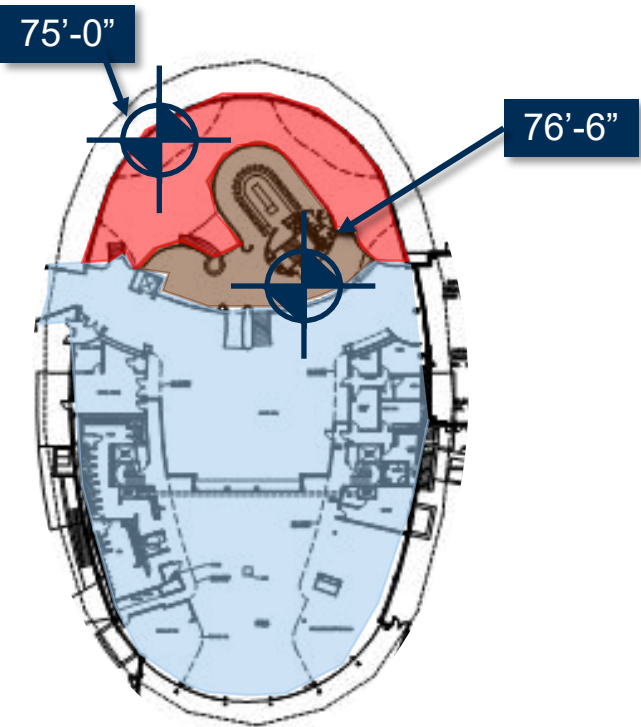
LV2



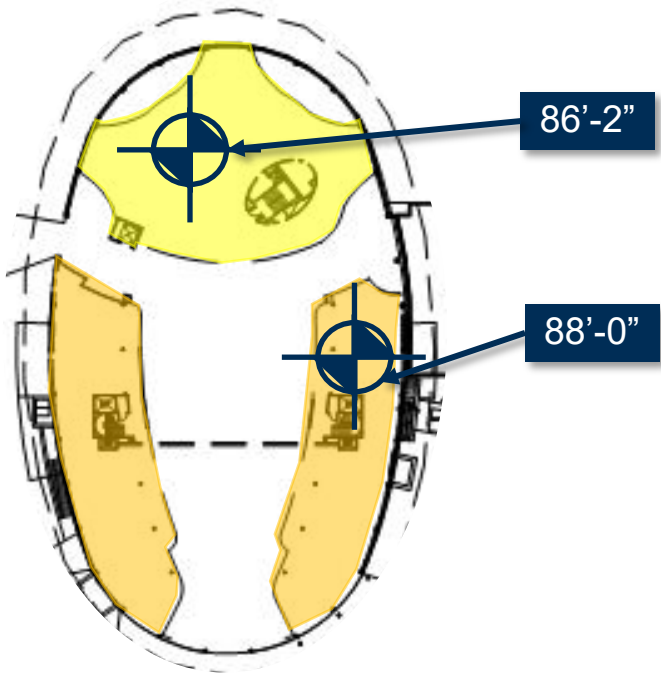
Rotunda



LVB



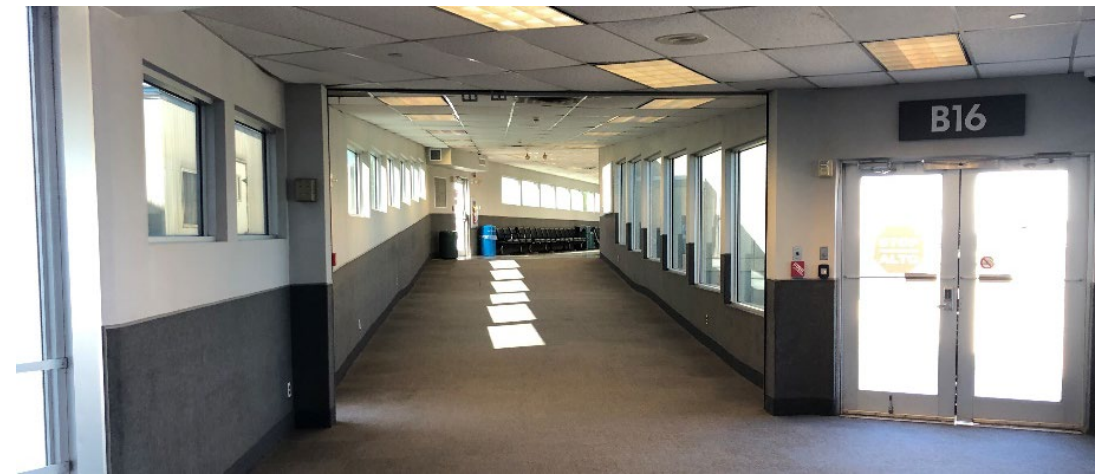
LV1



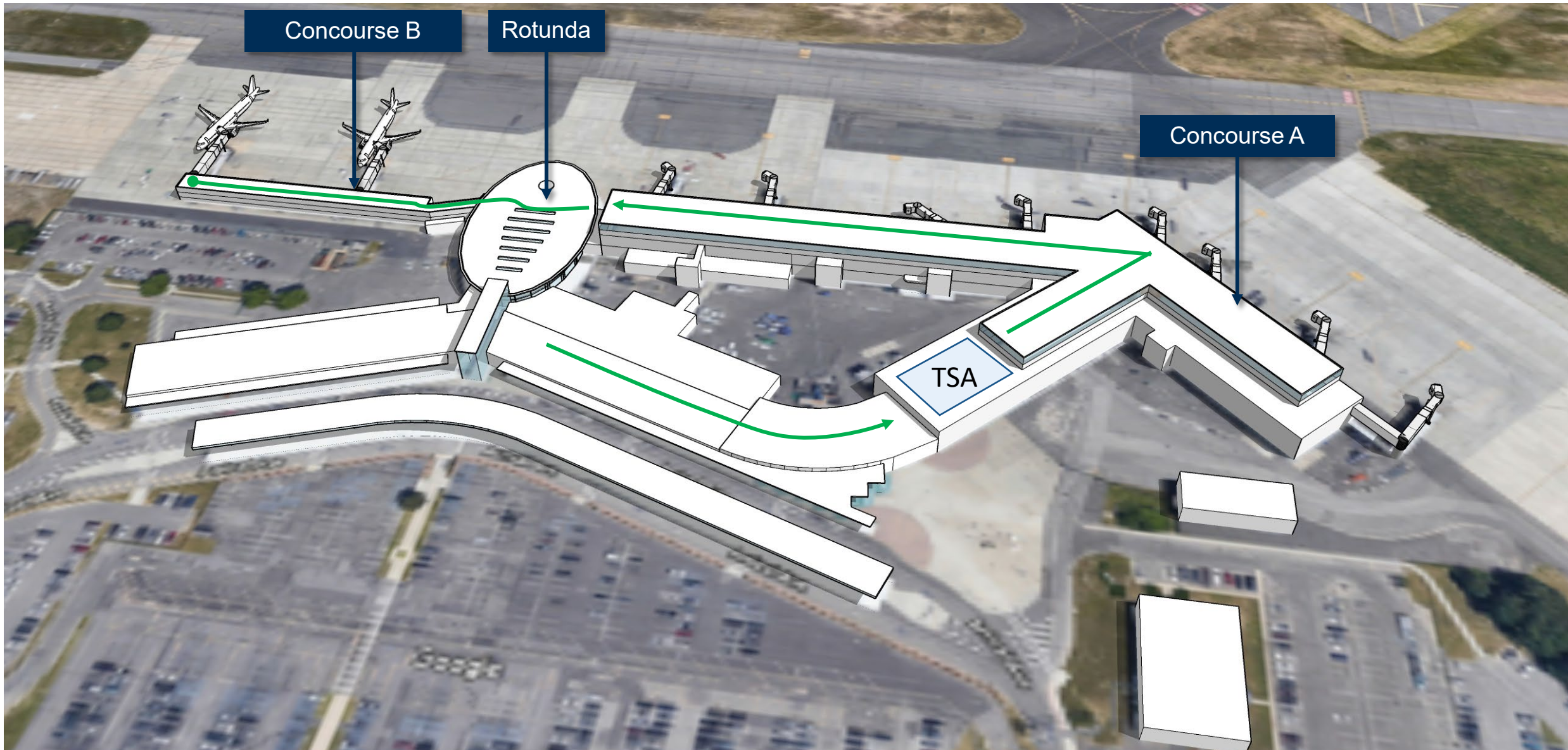
LV2



Site Validation



Walking Distance to West Concourse



Primary / Key Issues

Existing Infrastructure (including components thereof) have reached the end of useful life

- Pre-fabricated facility installed in 1990
- **Mechanical:**
 - Six (6) Barge air conditioning window units were installed in the west concourse for both heating and cooling of the facility when opened.
 - In September 2013, three (3) of the Barge units were removed and replaced with new 7.5-ton Fire Efficiency Gas Heat with Electric Cool Lennox Units.
- **Electrical:**
 - Originally designed for temporary use (10 years maximum), however, has been implemented as a permanent facility.
- **Plumbing:**
 - Only one (1) men's and one (1) women's restroom exists in the west concourse.
 - There is no separate nursing/lactation, companion or family restroom with changing tables in West Concourse.
 - Existing sanitary system consists of a quadruple septic tank system, 2 distribution pools and 8 leaching pools. Approximately 3,000 gallons of solids are pumped out every 3 months. System would require expansion to facilitate growth.



Primary / Key Issues

Existing Infrastructure (including components thereof)

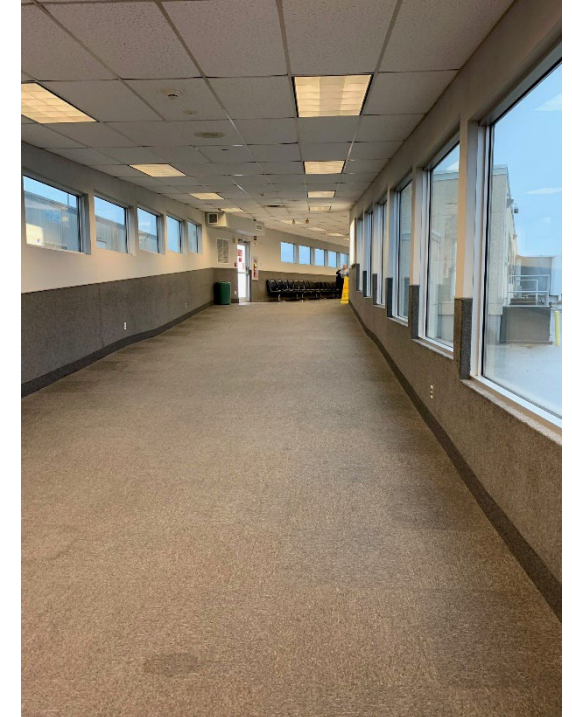
- Fire Alarm: existing system is outdated and replacement parts are difficult to find
- Building Automation (BIM)
- Security
- Flight Information Display – recent upgrade
- CCTV – recent upgrade
- Passenger Boarding Bridges



Primary / Key Issues

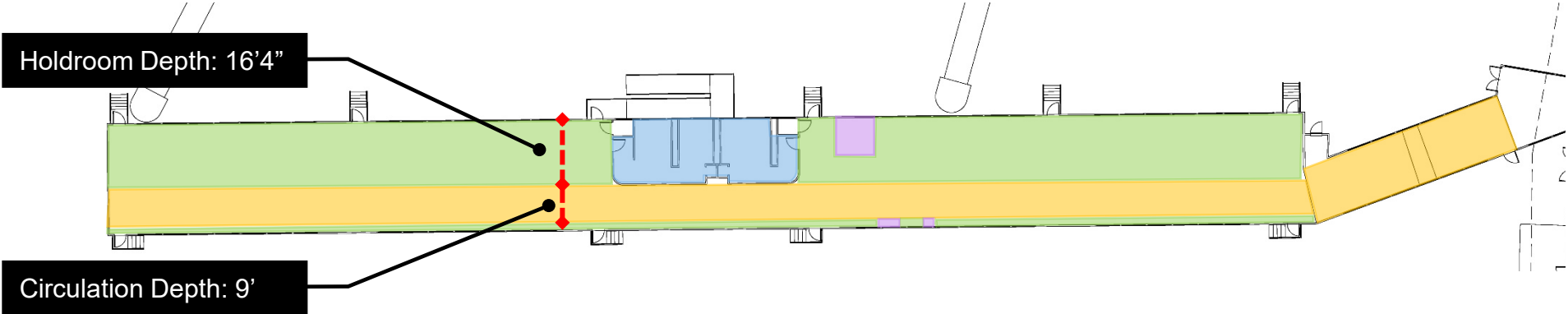
Insufficient dwell and circulation areas

- Up to four (4) flights (2-inbound, 2-outbound) A-321 sized aircraft in the concourse at one time
 - Narrow walkway: Space is one long corridor, no separate hold rooms
 - Would not be sufficient for CBP facilities, as is, per standards and requires a sterile corridor

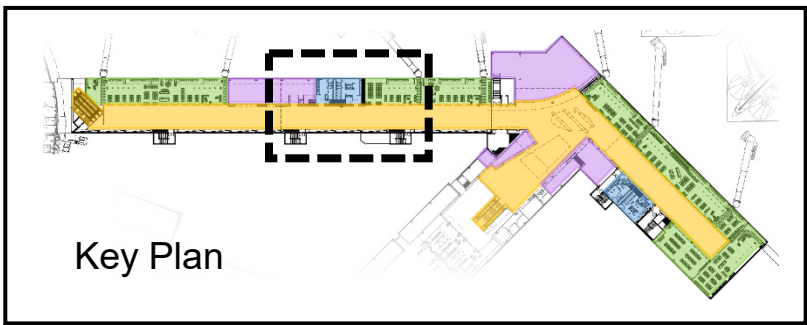
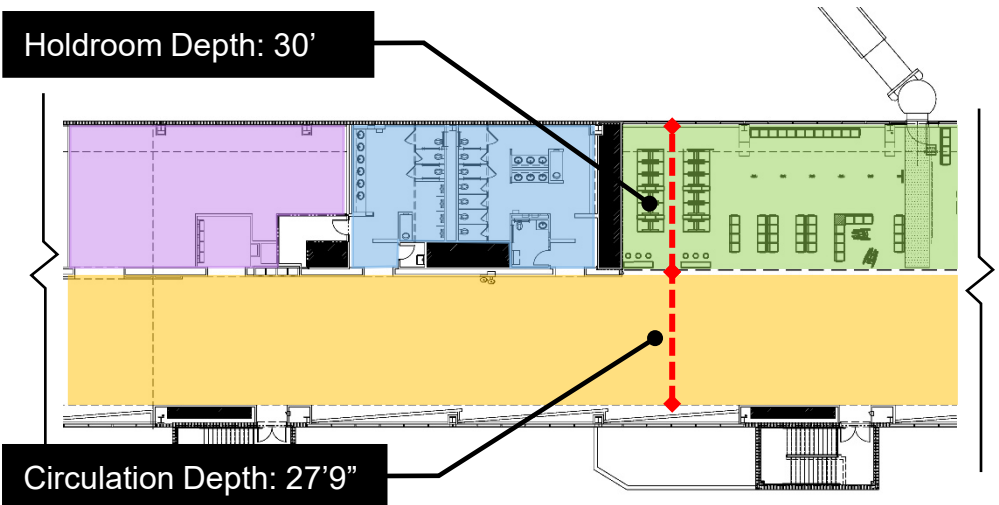


Existing Conditions – Concourse Depth

Concourse B



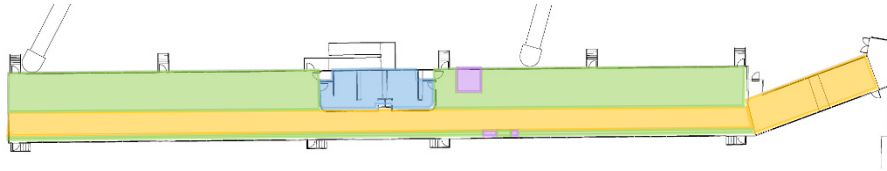
Concourse A



- Circulation
- Hold Room
- Restroom
- Concessions

Existing Conditions – Concourse Area

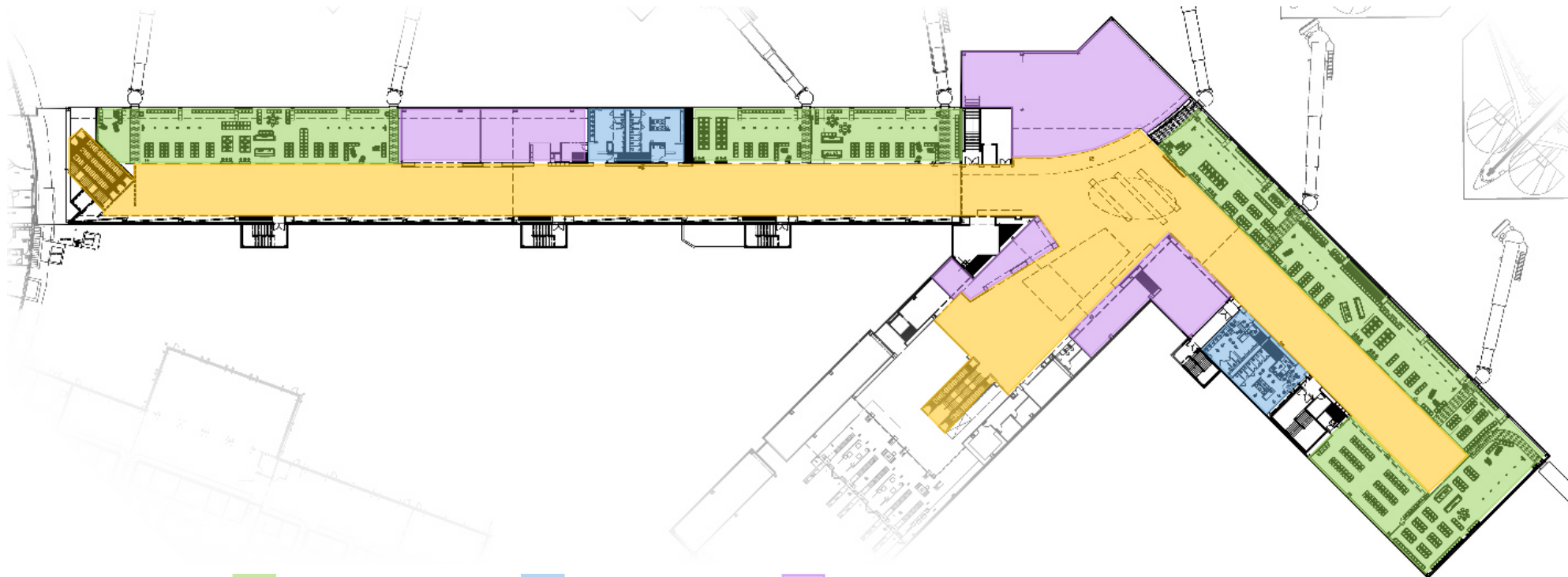
Concourse B



	Gates	Restroom Fixtures Per Gate	Circulation Area per Gate	Holdroom Area per Gate	Concession Area per Gate
West	3 *	3	1,140 ft ²	1,500 ft ²	40 ft ²
East	8	4	3,610 ft ²	2,524 ft ²	1,319 ft ²

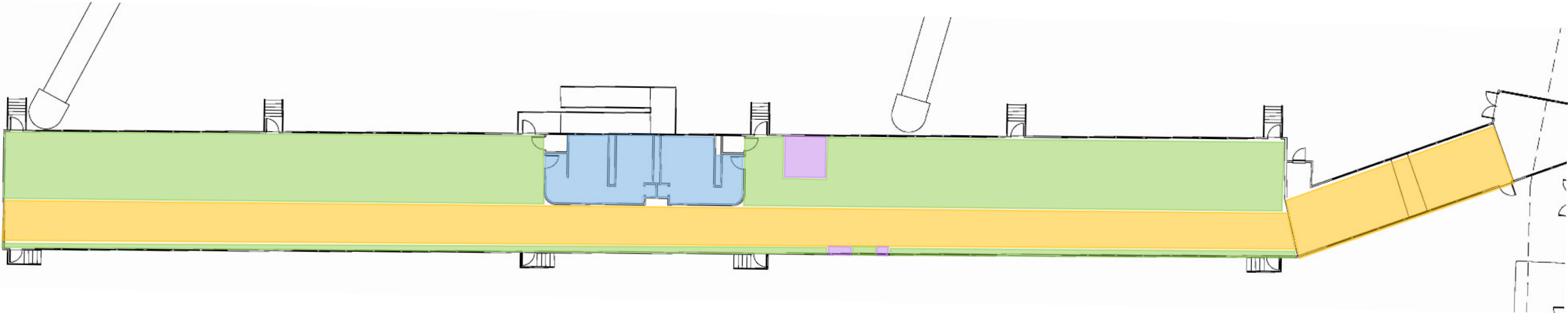
Concourse A





* Includes West Concourse + B17 Hardstand Gate.



Circulation
 Hold Room
 Restroom
 Concessions

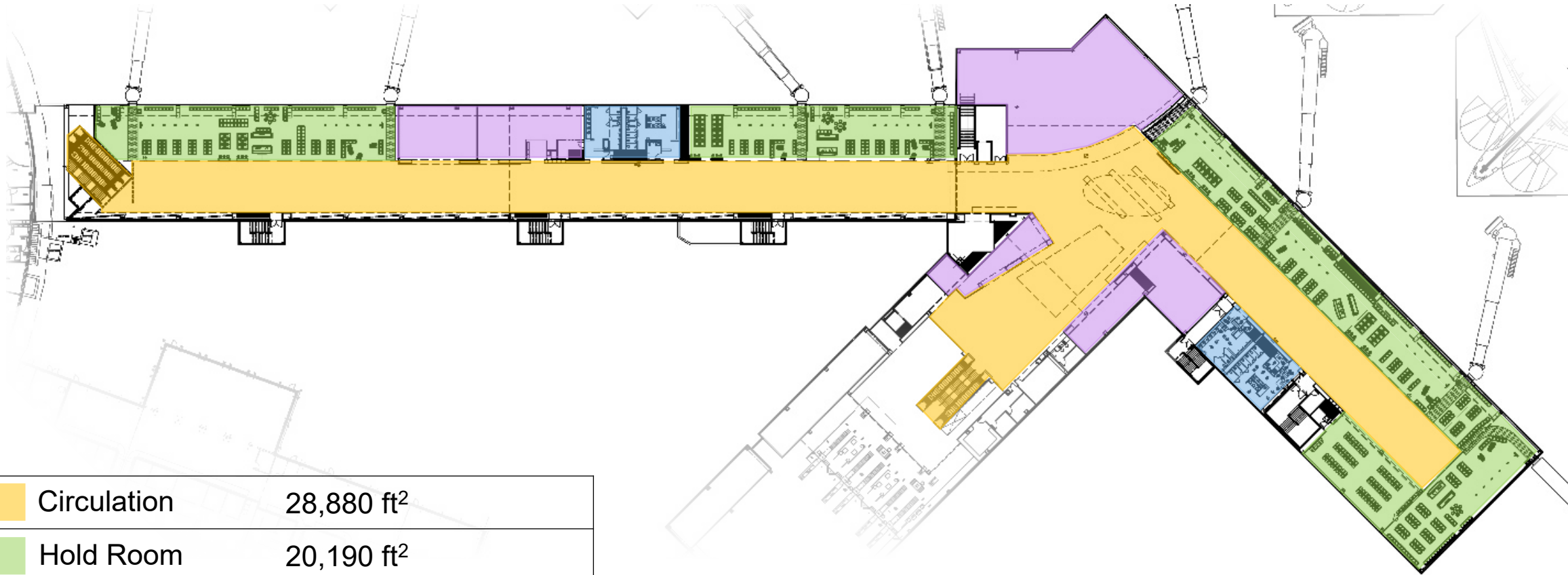
Existing Conditions – West Concourse Zones







	Circulation	3,420 ft ²
	Hold Room	4,500 ft ²
	Restroom	650 ft ² (Fixtures: 10)
	Concessions	120 ft ²



Existing Conditions – East Concourse Zones



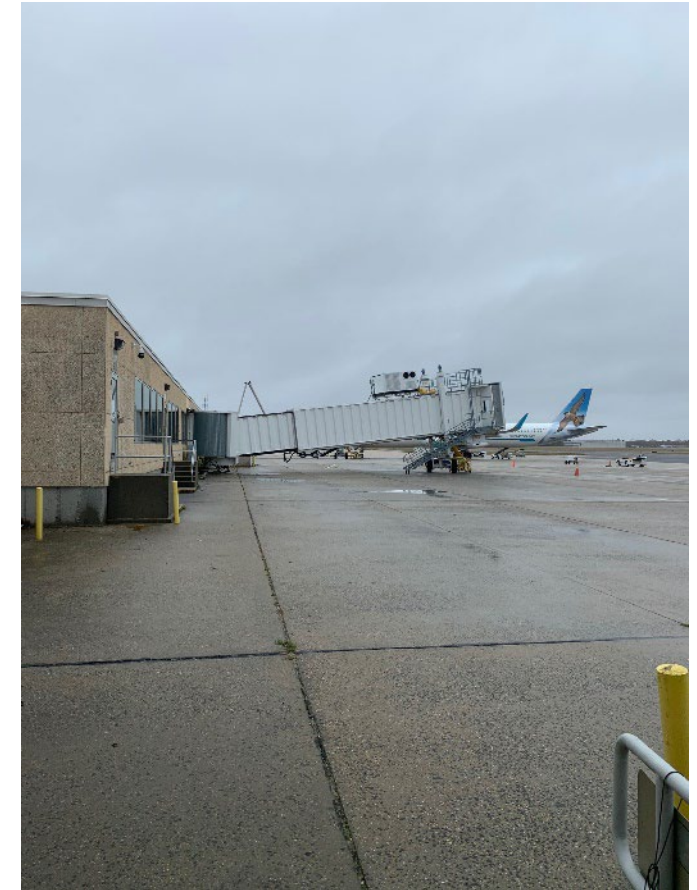
	Circulation	28,880 ft ²
	Hold Room	20,190 ft ²
	Restroom	2,640 ft ² (Fixtures: 30)
	Concessions	10,550 ft ²



Primary / Key Issues

Code/Occupancy Issues

- Pre-fabricated facility installed in 1990
- Passenger Boarding Bridges
- Larger aircraft (A321) have larger seat counts and causes issues at peak times with arrival/departure capacity.





Steep, path from ground level up. Difficult for people and issues during rainy weather.

PBB's are antiquated and past their useful life.

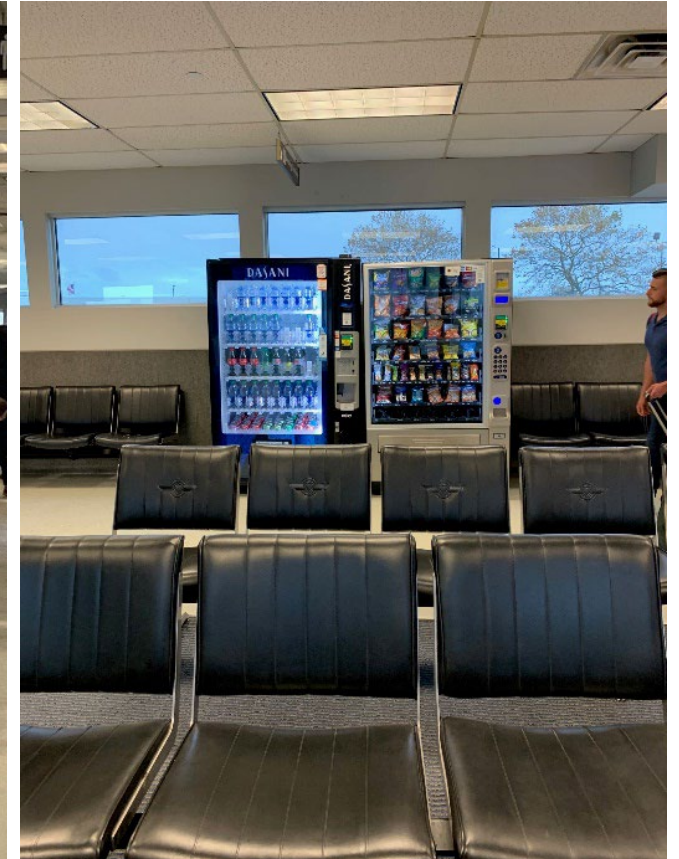


Primary / Key Issues

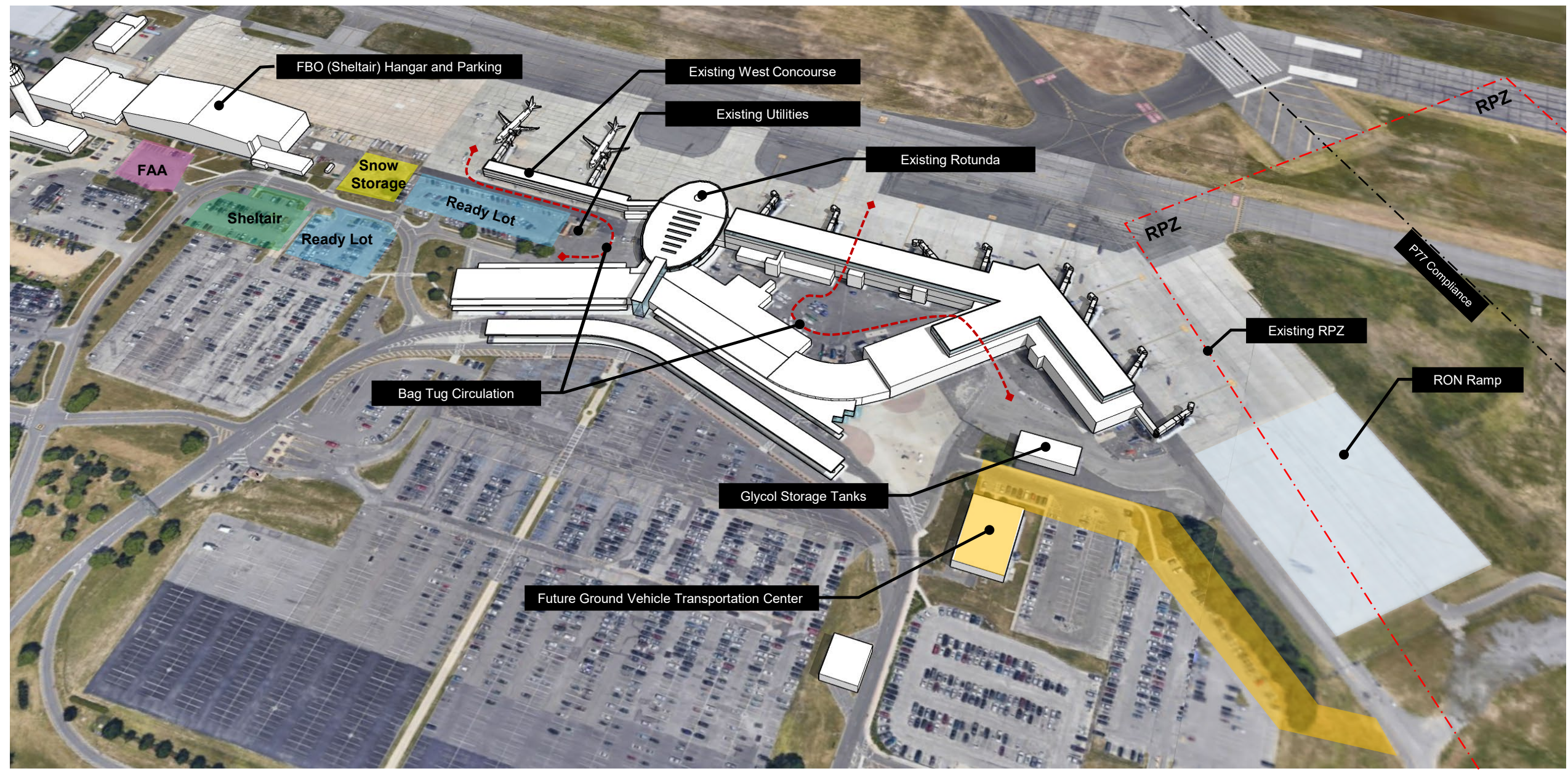
Lack of Customer Experience

Insufficient space for the following:

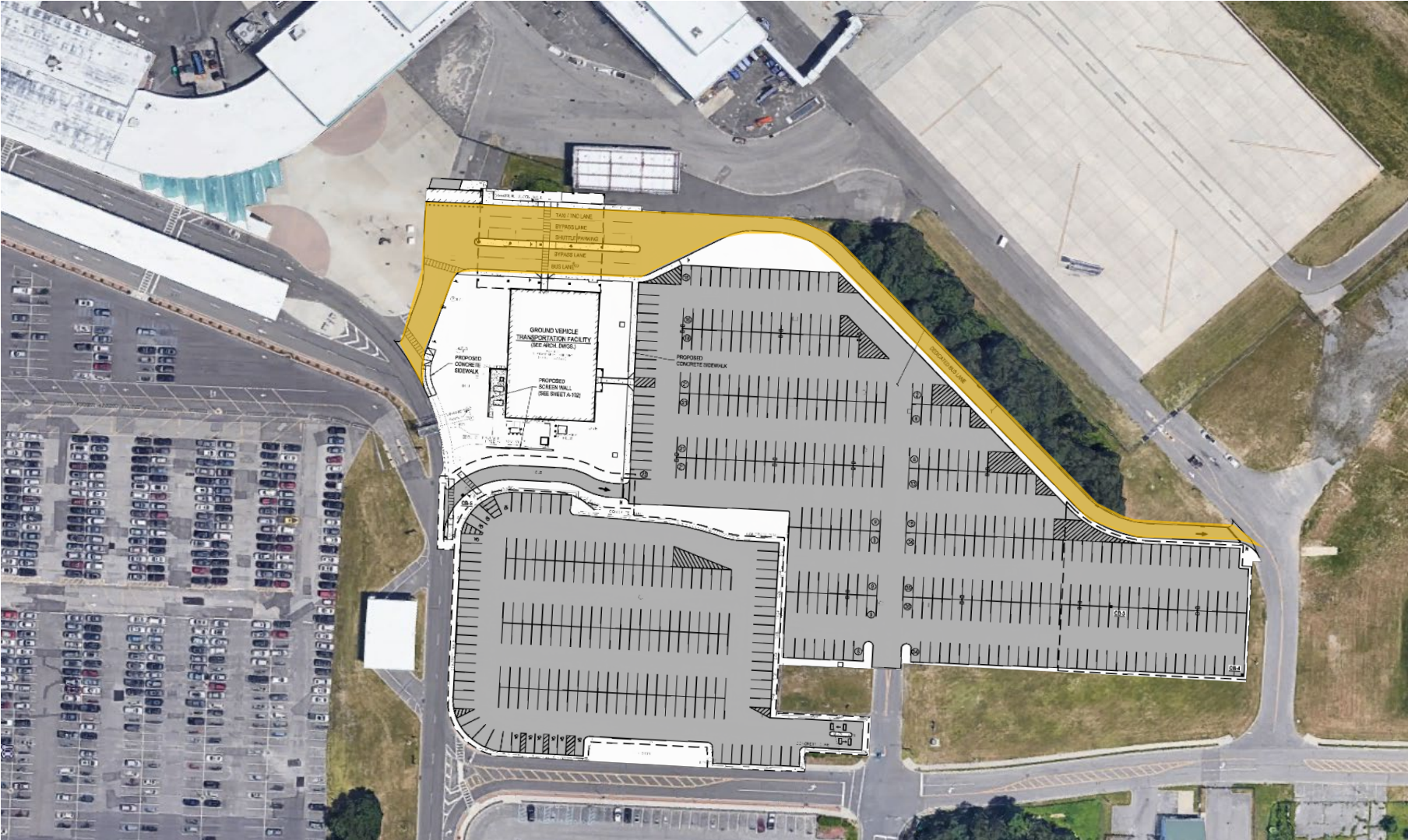
- Concessions or restaurants
- Retail shops
- Children’s play area
- Computer and recharge stations
- Business center or lounge
- Service Animal Relief Area (SARA)
- Signage and wayfinding
- Information Centers
- Wheelchair Storage
- Upgrade finishes
- *Connectivity to the LIRR (landside)*



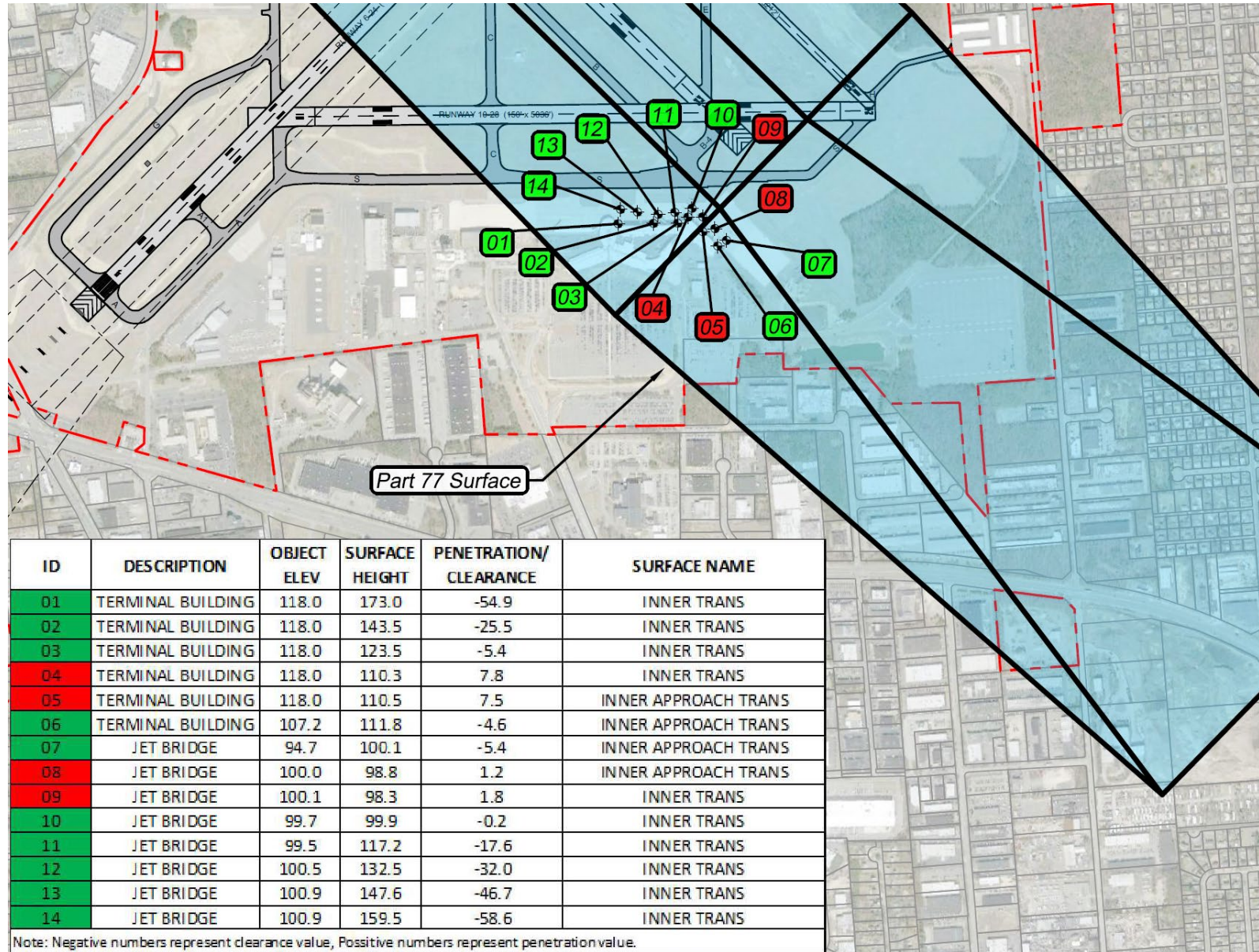
Existing Conditions – Site Constraints



Ground Vehicle Transportation Center



- A total of four Part 77 obstacles on existing terminal building
- Obstructions to:
 - Inner Transitional
 - Inner Approach Transitional
- Currently mitigated with obstruction lights on building.
- East development will increase the airspace issue





Aviation Activity Analysis/Forecast (Task 2)



- Review recent historical ISP data to 2013 MP Forecast and FAA TAF Forecast
- Validate or Refine/Update forecast projections with most recent airport and aviation data, economic data and industry conditions
- Review and Validate or Refine/Update commercial passenger peak period activity forecast
- Update design day flight schedules (next step)

ISP Aviation Traffic (Then and Now)

2012

678,848 Enplaned Passengers
15,740 Commercial Passenger Operations
148,451 Total Operations

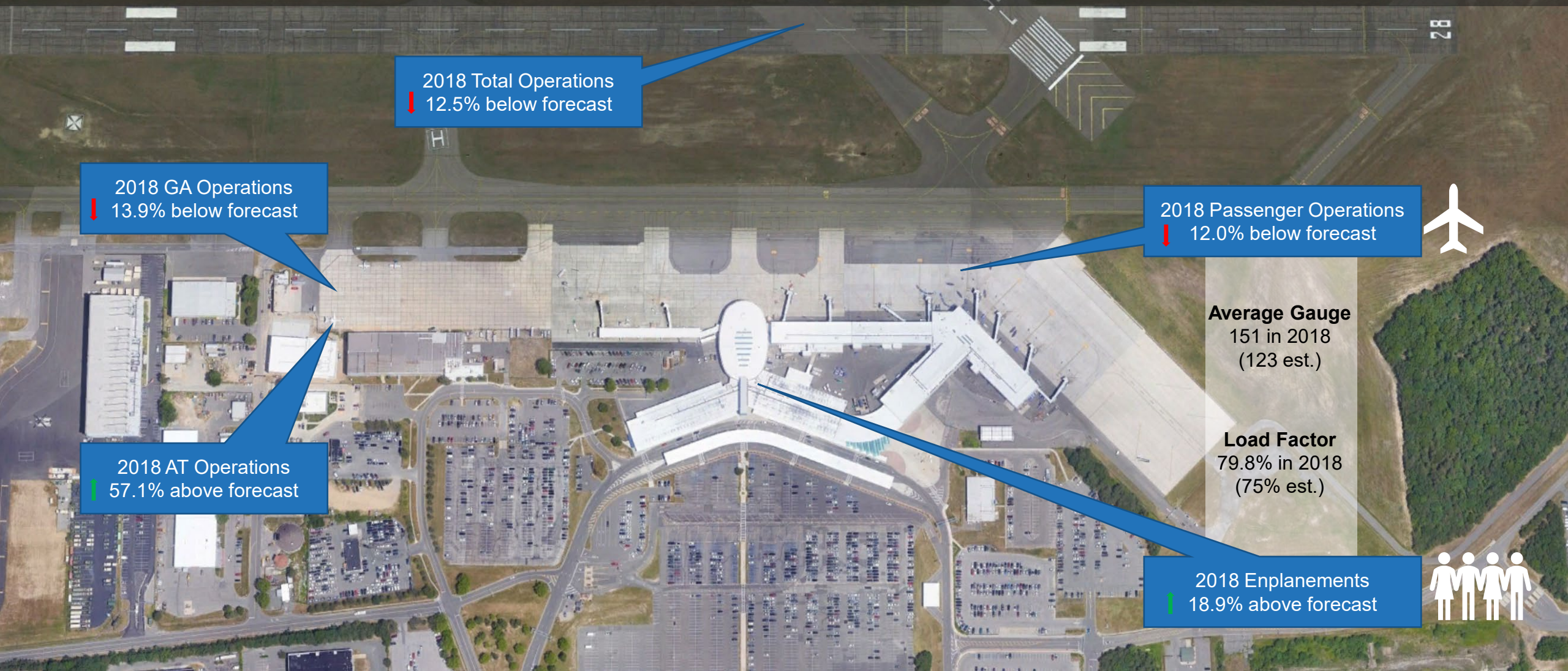
2018

830,076 Enplaned Passengers
13,311 Commercial Passenger Operations
132,524 Total Operations



Aviation Activity Analysis

ISP Traffic Review since the 2013 Master Plan:
High Level Summary of Actual Traffic from 2013 to 2018 compared to Forecasted Traffic



2018 Total Operations
↓ 12.5% below forecast

2018 GA Operations
↓ 13.9% below forecast

2018 Passenger Operations
↓ 12.0% below forecast

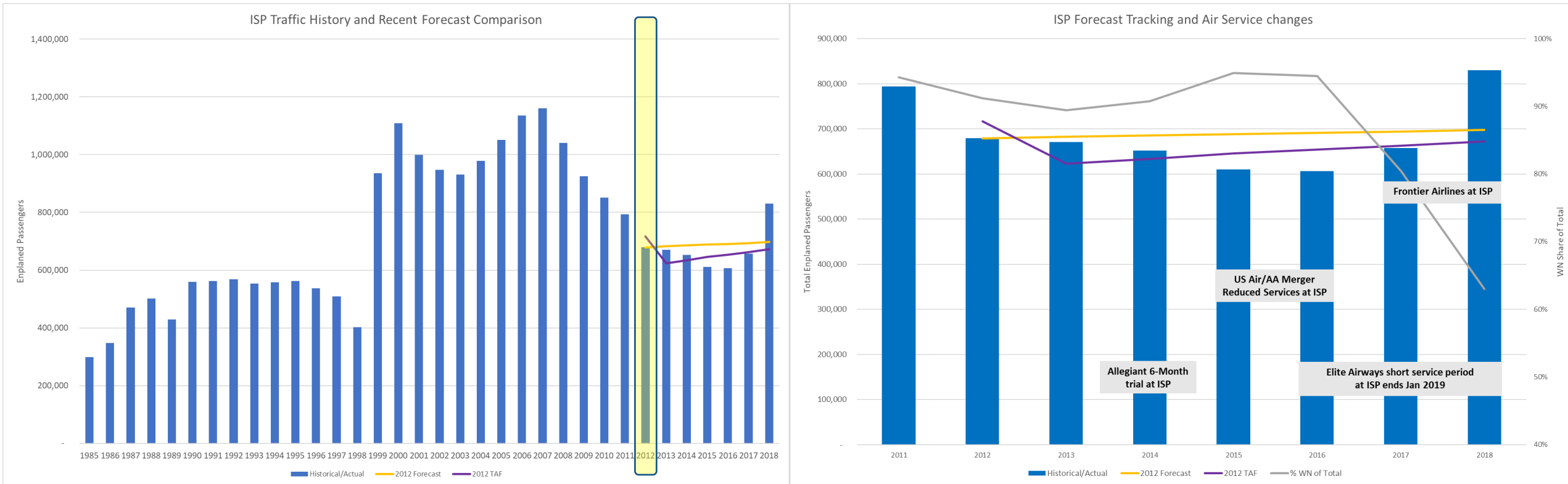
2018 AT Operations
↑ 57.1% above forecast

Average Gauge
151 in 2018
(123 est.)

Load Factor
79.8% in 2018
(75% est.)

2018 Enplanements
↑ 18.9% above forecast

Enplanements review: 2013 MP Forecast and FAA TAF Forecasts



- Traffic declined through 2016, growth began in 2017 with Frontier service (long term ?)
- 2018 exceeded expectations, but 2019 expected to be down from 2018

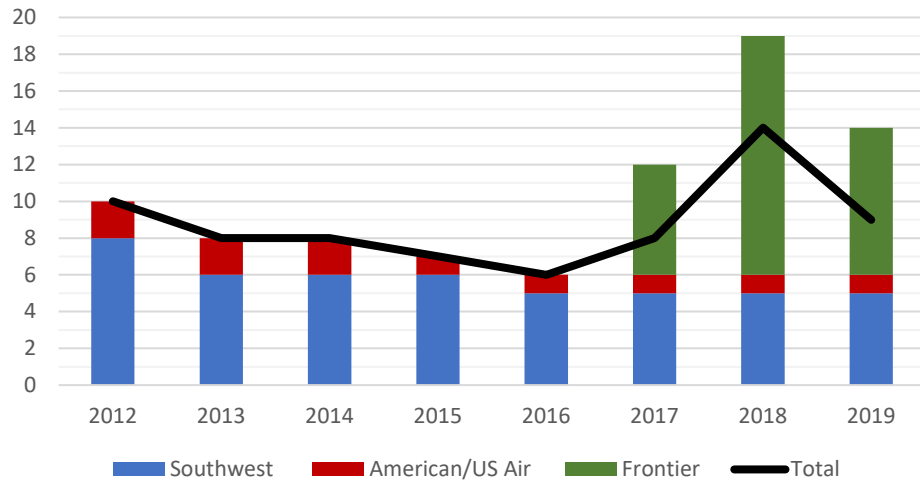


(5) years of declining demand became (9) years

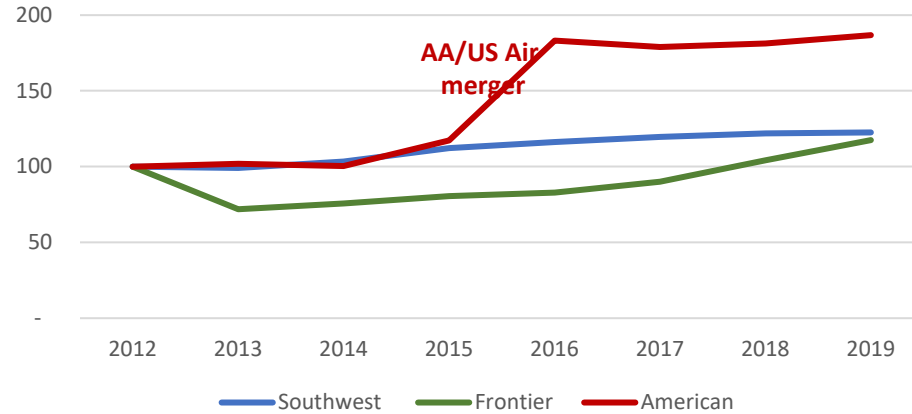


- Expansion opportunities exist at ISP but realization is uncertain
- Historical trends show little change in air service expansion at ISP
- Frontier has been flexible with frequency and seasonality of markets

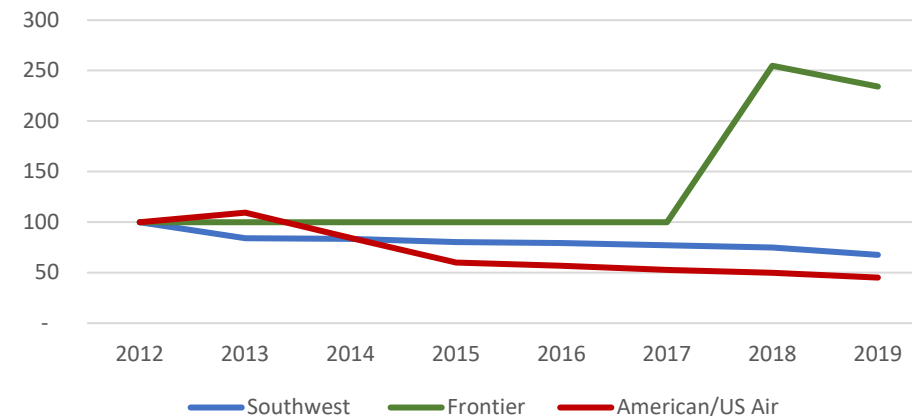
ISP Airline Markets



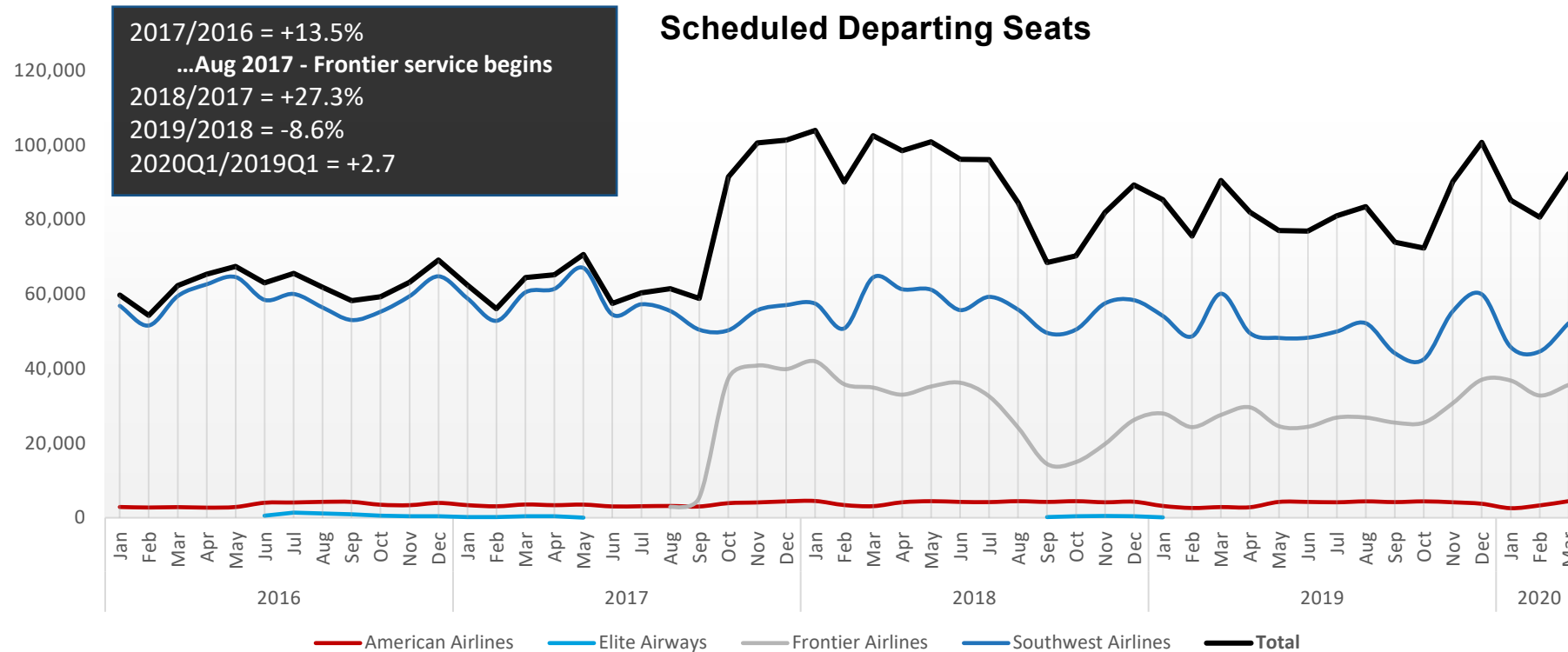
Airline System Growth Index by Scheduled Departures 2012 = 100



ISP Airline Growth Index by Scheduled Departures 2012 = 100



Near-term scheduled activity and 2019 traffic through July suggests 8.2% drop in enplanements for 2019, with a 2.0% increase for 2020



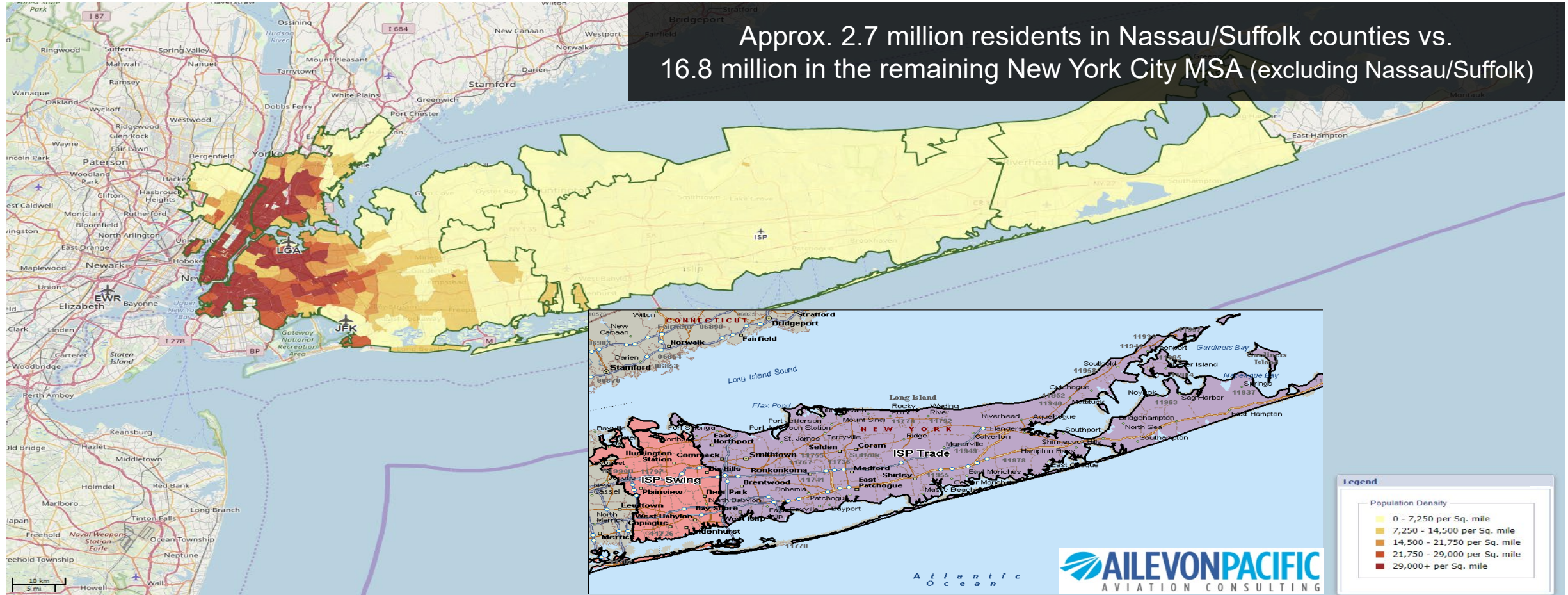
Key assumptions of the 2013 MP Forecast and Today:

- **Still Valid Today**
 - Leakage/Recapture potential may exist
 - High case assumed 'New' entrant (Frontier came, early)
 - Economic growth factors still positive
 - Resilience of the industry
 - Growth in Air Taxi segment
 - ISP is an O&D domestic market
- **Revised Assumptions**
 - 2018 surge wasn't predicted (how sustainable is it?)
 - Aircraft Gauge increases will stabilize
 - Average Load Factor can increase
 - GA segment decline wasn't predicted, but can recover
- Other factors to consider
 - New market potential exists, but requires more commitment by carriers due to proximity to LGA & JFK
 - More Consolidation in the industry has occurred since 2013 (US Air/American)



Aviation Activity Analysis-Catchment Area

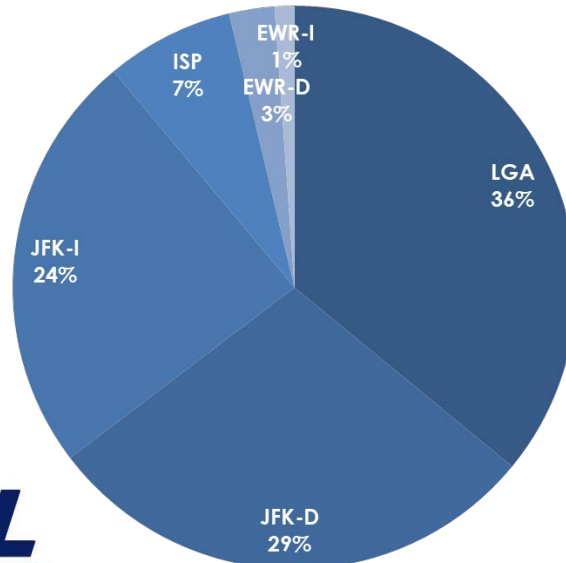
- Air Service/Catchment Area assumed to be consistent between 2019 and 2012
- The primary passenger base is still Nassau and Suffolk counties on Long Island, NY



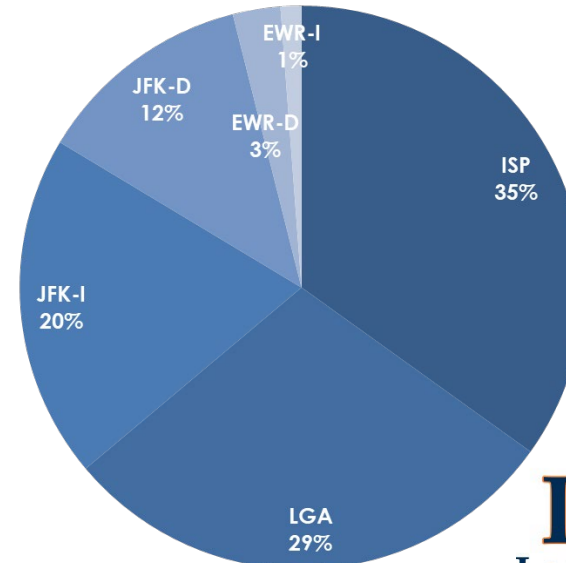
- ISP remains a Low-Fare Airport for the NYC/Long Island Region
- South Florida is the main destination
- Some previous markets could be re-started (with the right fare)
- Average fares at ISP have increased reducing the benefit to ULCCs
- Although domestic growth is more likely, international opportunities may exist for ISP as a niche market to Europe
- Passengers prefer more non-stop options and greater frequency in general with comparable fares

ISP only captures 7% of the **SWING** region demand

ESTIMATED PER DAY AIRPORT USAGE -ISP SWING



ESTIMATED PDEW AIRPORT USAGE-ISP TRADE



ISP captures about 35% of the **TRADE** region demand



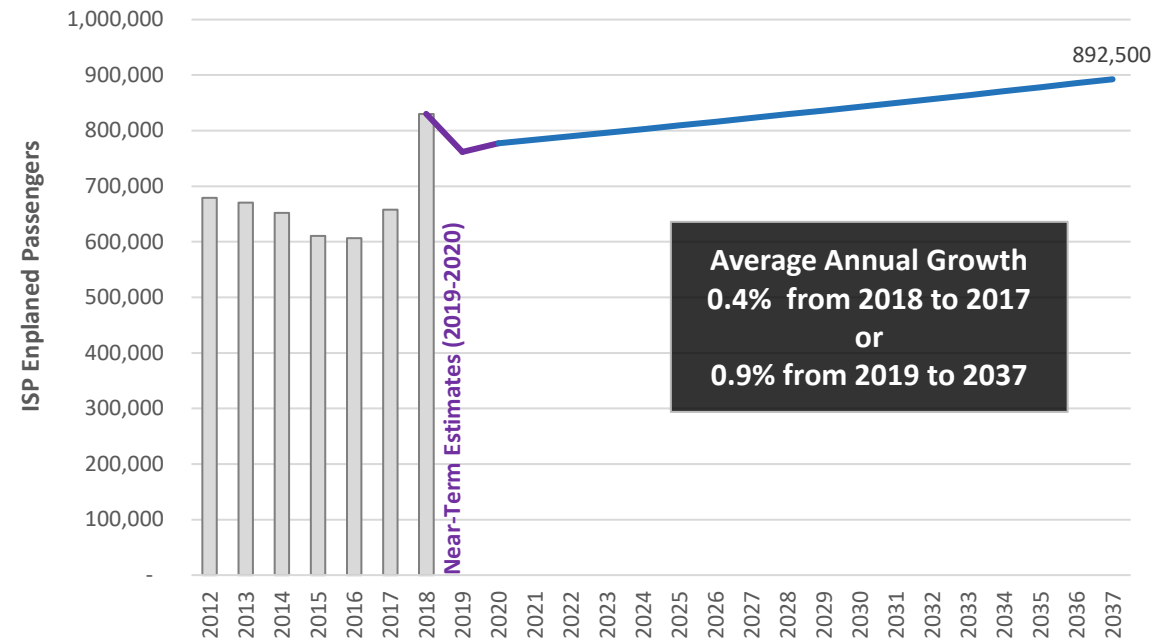
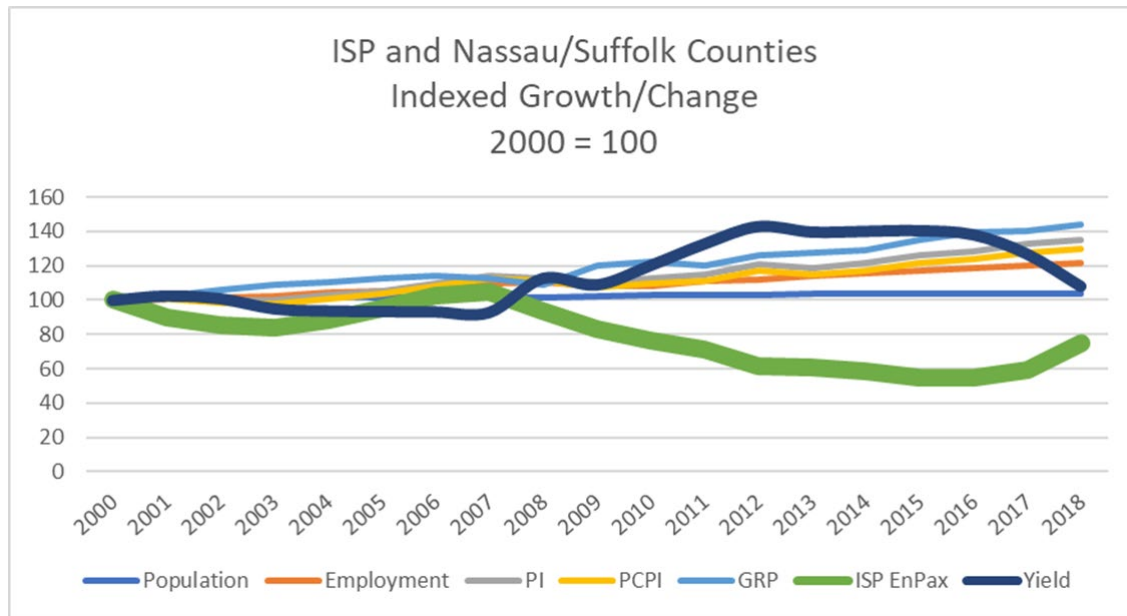
Forecast Updates within the 2013 MP Forecast horizon (to 2037)

- **Enplanements forecast** – updated with similar approach using an econometric regression correlating ISP Revenue Yield to ISP Enplanements to account for the past declines in demand
- **Passenger Operations forecast** – updated with revised enplanements forecast and revised assumptions on new average aircraft gauge and new load factor projections
- **Air Taxi Operations forecast** – applied similar reasoning using 2019 FAA Aerospace Forecast turbojet 20-year growth rate of 2.2%
- **General Aviation Operations forecast** – applied same market share approach as 2013 MP with updated 2019 FAA Aerospace Forecast GA operations projections
- **Cargo and Military Operations forecasts** – updated with constant future activity levels based on 2018 activity



Commercial Passenger Activity Forecast Updates:

- **Enplanements forecast** – econometric regression show statistical correlation with inverse relationship between enplanements and ISP Revenue Yield (const. 2018USD) R-square = 0.83



Nearly 900,000 enplaned passengers estimated for ISP in 2037



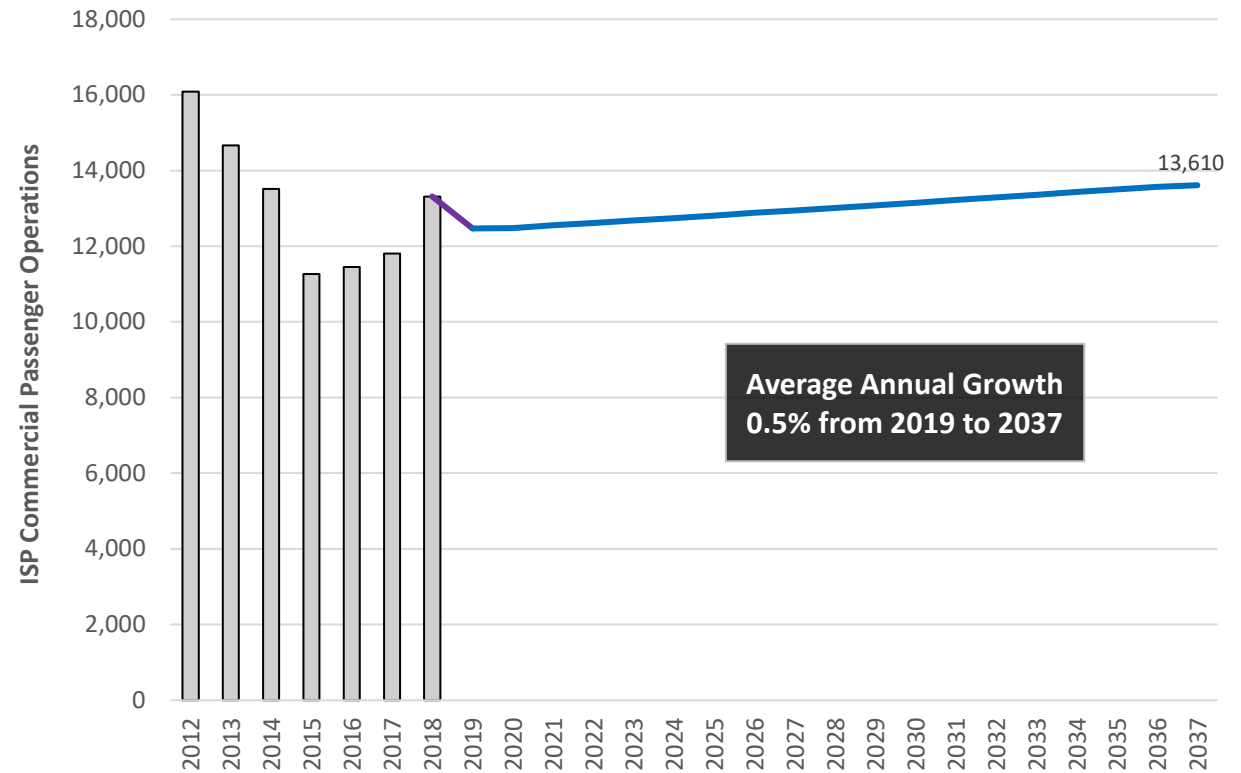
Commercial Passenger Activity Forecast Updates:

- **Passenger Operations forecast** – updated with revised enplanements forecast and revised assumptions on average aircraft gauge and load factor increasing to 158 seats and 83%, respectively by 2037

- **Future fleet is larger than predicted in the 2013 MP**

~85% Narrowbody and 15% regional jets

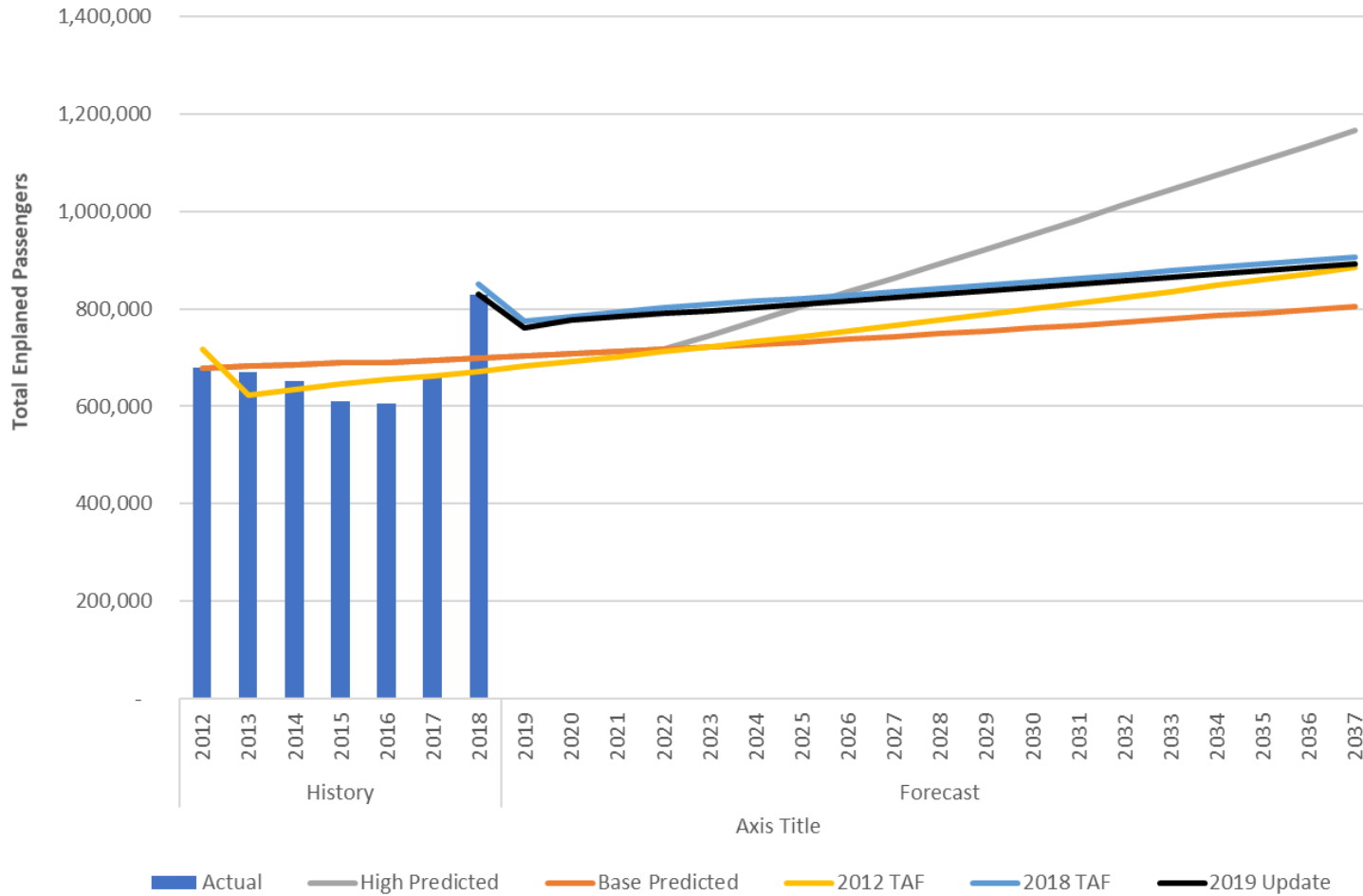
- Frontier (A320/A321 aircraft)
- Southwest (B737,738 and 7M8 aircraft)
- American (ERJ145 aircraft)



13,610 passenger operations estimated for ISP in 2037



ISP Forecast Comparisons - Previous vs. Updated



Key points:

- 2012 and 2018 TAF have consistent long term estimates for 2037
- 2019 Update estimates 2019 and 2020 traffic from actual Jan-Jul 2019 data and scheduled data through September 2020.
- 2019 Update forecast applied Passenger Revenue Yield correlation and also has a similar long term 2037 estimate.
- 2013 MP forecast, 2018 TAF and 2019 Update forecasts all maintain similar growth (line slopes) from 2020 to 2037

Long term enplanement growth of 0.9% AGR for ISP from 2019 to 2037



Non-Commercial Passenger Activity Forecast Updates:

- **Air Taxi Operations forecast** – applied similar approach growing non-commercial AT operations at FAA Aerospace Forecast updated turbojet growth of 2.2% AGR
- **General Aviation Operations forecast** – applied same market share approach as 2013 MP with updated FAA Aerospace Forecast projections with a 0.42% share of U.S. GA operations
- **Cargo and Military Operations Forecasts** – applied same ‘status quo’ approach; updated with constant future activity levels based on 2018 activity



Total Operations Forecast

2013 MP Forecast

<u>Calendar Year</u>	<u>Passenger</u>	<u>Cargo</u>	<u>Air Taxi</u>	<u>General Aviation</u>	<u>Military</u>	<u>Total</u>
Historical						
2005	33,016	285	2,921	134,451	2,462	173,135
2006	29,792	300	4,662	151,744	2,892	189,390
2007	28,944	274	3,844	149,181	2,517	184,760
2008	24,050	132	3,123	149,037	2,888	179,230
2009	20,232	2	2,711	135,052	1,739	159,736
2010	18,266	19	2,999	128,229	2,720	152,233
2011	17,594	5	2,229	112,994	2,443	135,265
2012	15,740	12	2,824	126,544	3,331	148,451
Forecast						
2017	15,110	50	3,240	129,100	3,330	150,830
2022	15,220	50	3,720	131,700	3,330	154,020
2027	15,410	50	4,270	134,400	3,330	157,460
2032	15,680	50	4,900	137,100	3,330	161,060
2037	15,970	50	5,630	139,800	3,330	164,780
Average Annual Growth Rate:						
2005-2012	-10.0%	-36.4%	-0.5%	-0.9%	4.4%	-2.2%
2012-2037	0.1%	5.9%	2.8%	0.4%	0.0%	0.4%

2019 Forecast

<u>Calendar Year</u>	<u>Passenger</u>	<u>All-Cargo</u>	<u>Air Taxi</u>	<u>General Aviation</u>	<u>Military</u>	<u>Total</u>
Historical						
2012	16,084	3	2,531	126,241	3,334	148,193
2013	14,663	3	4,140	86,471	1,661	106,938
2014	13,511	14	4,033	97,584	1,392	116,534
2015	11,266	3	4,842	95,818	1,872	113,801
2016	11,452	12	5,398	105,292	2,000	124,154
2017	11,805	8	5,348	107,881	2,187	127,229
2018	13,311	10	5,240	111,648	2,315	132,524
Forecast						
2022	12,610	10	5,720	113,920	2,320	134,570
2027	12,940	10	6,370	115,600	2,320	137,240
2032	13,290	10	7,110	117,340	2,320	140,060
2037	13,610	10	7,920	119,130	2,320	142,990
Average Annual Growth Rate:						
2012-2037	-0.7%	4.9%	4.7%	-0.2%	-1.4%	-0.1%
2018-2037	0.1%	0.0%	2.2%	0.3%	0.0%	0.4%

142,990 total operations estimated for ISP in 2037



2013 MP Forecast

Total Enplanements:	<u>2012</u>	<u>2017</u>	<u>2022</u>	<u>2027</u>	<u>2032</u>	<u>2037</u>
Annual	678,848	694,000	716,600	743,000	772,700	804,400
<i>Peak Month Percent of Annual</i>	9.3%	10.4%	10.4%	10.4%	10.4%	10.4%
Peak Month	63,256	71,907	74,249	76,984	80,062	83,346
<i>Design Day Percent of Peak Month</i>	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
Design Day	2,153	2,448	2,527	2,621	2,725	2,837
<i>Peak Hour Percent of Design Day</i>	17.9%	17.4%	16.9%	16.4%	15.9%	15.4%
Peak Hour	386	426	428	430	434	437
Passenger Operations:	<u>2012</u>	<u>2017</u>	<u>2022</u>	<u>2027</u>	<u>2032</u>	<u>2037</u>
Annual	15,740	15,110	15,220	15,410	15,680	15,970
<i>Peak Month Percent of Annual</i>	9.2%	9.2%	9.2%	9.2%	9.2%	9.2%
Peak Month	1,448	1,390	1,400	1,418	1,443	1,469
<i>Design Day Percent of Peak Month</i>	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
Design Day	49	47	48	48	49	50
<i>Peak Hour Percent of Design Day</i>	13.0%	12.7%	12.4%	12.1%	11.8%	11.5%
Peak Hour	6	6	6	6	6	6

CHANGES IN PEAK PERIOD CONDITIONS:

- Larger average aircraft than before
- Higher average load factors now
- LCC market flexibility (service offerings changing frequently with external demand shifts)
 - How will Frontier stabilize air service?

2019 Forecast

Total Enplanements:	<u>2018</u>	<u>2019</u>	<u>2022</u>	<u>2027</u>	<u>2032</u>	<u>2037</u>
Annual	830,076	762,000	789,900	822,700	856,900	892,500
<i>Peak Month Percent of Annual</i>	9.6%	10.2%	10.2%	10.2%	10.2%	10.2%
Peak Month	80,004	77,724	80,570	83,915	87,404	91,035
<i>Design Day Percent of Peak Month</i>	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
Design Day	2,723	2,646	2,743	2,856	2,975	3,099
<i>Peak Hour Percent of Design Day</i>	21.4%	16.7%	18.0%	18.0%	18.0%	18.0%
Peak Hour	582	442	494	514	536	558
Passenger Operations:	<u>2018</u>	<u>2019</u>	<u>2022</u>	<u>2027</u>	<u>2032</u>	<u>2037</u>
Annual	13,311	12,472	12,610	12,940	13,290	13,610
<i>Peak Month Percent of Annual</i>	10.0%	10.2%	10.2%	10.2%	10.2%	10.2%
Peak Month	1,330	1,272	1,286	1,320	1,356	1,388
<i>Design Day Percent of Peak Month</i>	3.2%	3.4%	3.4%	3.4%	3.4%	3.4%
Design Day	43	43	44	45	46	47
<i>Peak Hour Percent of Design Day</i>	11.6%	12.7%	12.1%	12.1%	12.1%	12.1%
Peak Hour	5	5	5	5	6	6

UPDATED EXPECTATIONS:

- Small increase in projected Design Day and Peak Hour passenger levels
- Similar or fewer passenger operations due to larger aircraft and consolidated destination



- **2037 Enplanements** estimate for ISP increased 11.0% to 892,500 from 804,400
 - Long term growth rate through 2037 decreased to 0.4% from 0.7% AGR (due to 2018 peak/2019 drop)
- **2037 Passenger Operations** estimate for ISP decreased 14.8% to 13,610 from 15,970
 - Long term growth rate through 2037 remains the same at 0.1% AGR
- **2037 Total Operations** estimate for ISP decreased 13.2% to 142,990 from 164,790
 - Long term growth rate through 2037 remains the same at 0.4% AGR
- **2037 Peak Hour Demand** estimate includes a small increase in passenger demand with no increase in total aircraft operations (next step: DDFS and Gate demand)

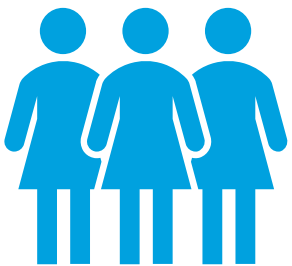
In general, long term projected growth is comparable to the 2013 MP Forecast with the following differences observed;

- New 2018 base level established with the recent jump in passenger traffic from Frontier service
- Larger passenger aircraft fleet reducing passenger operations
- Increase in AT operations has offset much of the reduction in GA operations





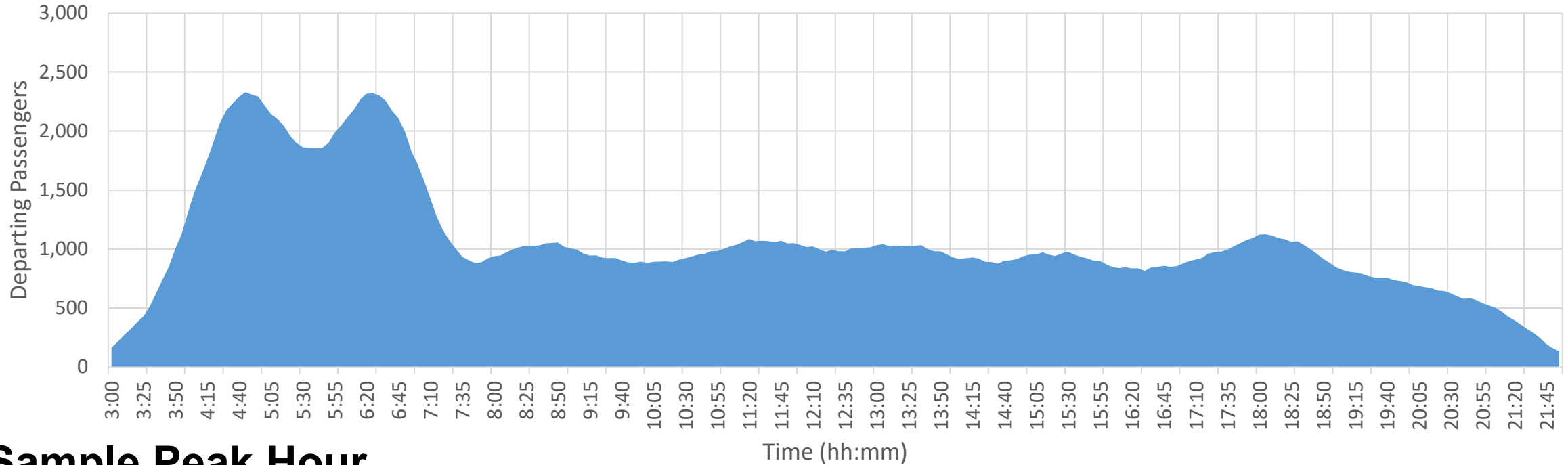
Facility Requirements Methodology (Task 3.1)



SAMPLE PEAK HOUR

Peak Hour Passengers

Our forecasting data will include peak hour passenger demand for the proposed expansion. This data will be used as part of the space programming efforts to determine the required square footage of the concourse expansion.



Sample Peak Hour



IATA Level of Service (LoS)

IATA metrics are the basis for space programming for airside passenger areas such as holdrooms and circulation spaces. These metrics define the amount of square footage needed per passenger to maintain an Optimum LoS:

LoS Guidelines		SPACE GUIDELINES [sqm/PAX]			MAXIMUM WAITING TIME GUIDELINES Economy Class [minutes]			MAXIMUM WAITING TIME GUIDELINES Business Class / First Class / Fast Track [minutes]			OTHER GUIDELINES & REMARKS		
		LoS Parameter:	Over-Design	Optimum	Sub-Optimum	Over-Design	Optimum	Sub-Optimum	Over-Design	Optimum	Sub-Optimum	Over-Design	Optimum
Gate Holdrooms	Seating	>23.7	19.4-23.7	<19.4	n/a			n/a			Optimum proportion of seated		
	Standing	>16.1	12.9-16.1	<12.9	n/a			n/a			50-70%*		
Immigration Control (Inbound Passport Control) (queue width: 1.2m)	Staffed Emigration Desk	>12.9	10.8-12.9	<10.8	<5	5-10	>10	<1	First Track 1-5	>5			
	Automatic Boarder Control	>12.9	10.8-12.9	<10.8	<1	1-5	>5	n/a					
Customs Control		>19.4	14.0-19.4	<14.0	<1	1-5	>5	<1	1-5	>5	Waiting times refer to a procedure when 100% of the passengers are being checked by Customs		
Public Arrival Hall		>24.8	21.5-24.8	<21.5	n/a			n/a			Optimum proportion of seated 15-20%*		

Source: IATA ADRM, 11th Edition (March 2019)



SAMPLE PROGRAM

Concourse Areas

The follow sample shows the programmatic requirements for the main concourse areas. The program provides the square footage basis for planning purposes:

Sample Program Sheet	2019 Existing		2019		2025		2030	
	Units	SF	Units	SF	Units	SF	Units	SF
Concourse Spaces								
Contact Gate Holdrooms		134,615	38	96,200	48	123,700	51	131,200
Airline Operations		345,875		182,900		238,300		252,400
Concourse Central Circulation		154,702		149,500		191,500		203,200
Restrooms		17,286		9,500		11,400		13,300

Contact Gate Lounges	
SF per ADG VI (CAT F)	6500
SF per ADG V (CAT E)	5000
SF per ADG IV (CAT D)	3700
SF per ADG III (CAT C)	2500
SF per ADG I&II (CAT A&B)	900



ACRP Report 130: Guidebook for Airport Terminal Restroom Planning and Design

Restroom programming will utilize ACRP Report 130 to determine the number of fixtures required for the concourse area. Our in-house programming models will be used to determine the total square footage required.

FAA AIRPLANE DESIGN GROUP (ADG)	TYPICAL SEATS	TYPICAL AIRCRAFT	EQA INDEX
I Small Regional	25	Metro	0.2
II Medium Regional	50	SF340/CRJ	0.4
III Large Regional	75	DHC8/E175	0.5
III Narrowbody	145	A320/B377/MD80	1.0
IIIa B757 (winglets)	185	B757	1.3
IV Widebody	280	B767/MD11	1.9
V Jumbo	400	B747,777,787/A330,340	2.8
VI Super Jumbo	525	A380/B747-8	3.6

		TOTAL MALE FIXTURES BY EQA			
		O&D		Hub	
Pax Utilization		50%	60%	50%	60%
Peak 20 min %		33% to 50%	33% to 50%	60%+	60%+
EQA	3.0	6	6	6	6-7
	4.0	6	6	6-8	7-9
	5.0	6	6-7	7-10	9-12
	6.0	6-7	6-9	9-12	11-14
	7.0	6-9	7-10	10-14	12-16
	8.0	7-10	8-12	12-16	14-19
	9.0	7-11	9-13	13-18	16-21
	10.0	8-12	10-15	15-20	18-24
	11.0	9-14	11-16	16-22	19-26
	12.0	10-15	12-18	18-24	21-28
	13.0	11-16	13-19	19-25	23-31
	14.0	11-17	14-21	21-27	25-33
	15.0	12-18	15-22	22-29	26-35
16.0	13-20	16-24	24-31	28-38	



KPI

These include any airport or airline defined performance standard that the program must meet. These KPI could differ from IATA or other airport planning standards in terms of:

- Throughput capacity or wait time standards
- Space per passenger standards
- Enhanced holdroom size and seating
- More spacious restrooms
- Concessions programs
- Concourse circulation width

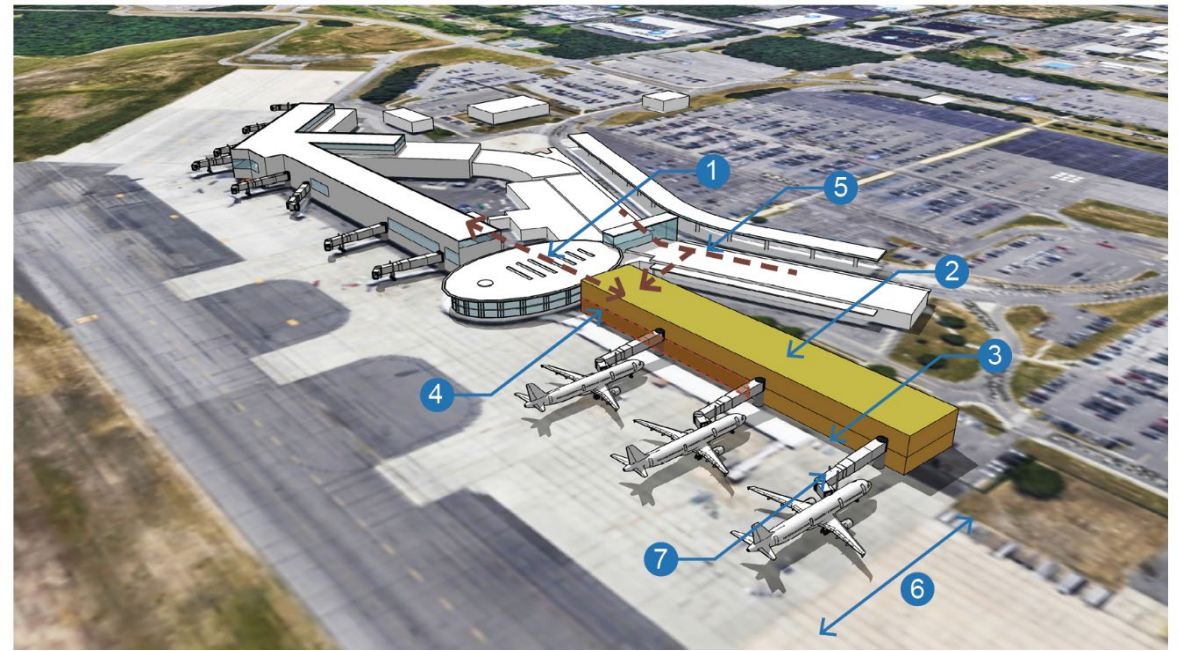


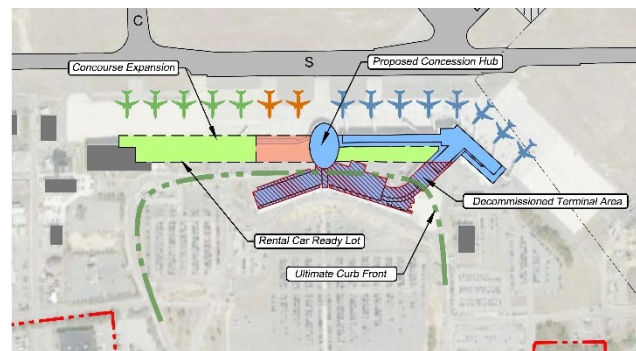
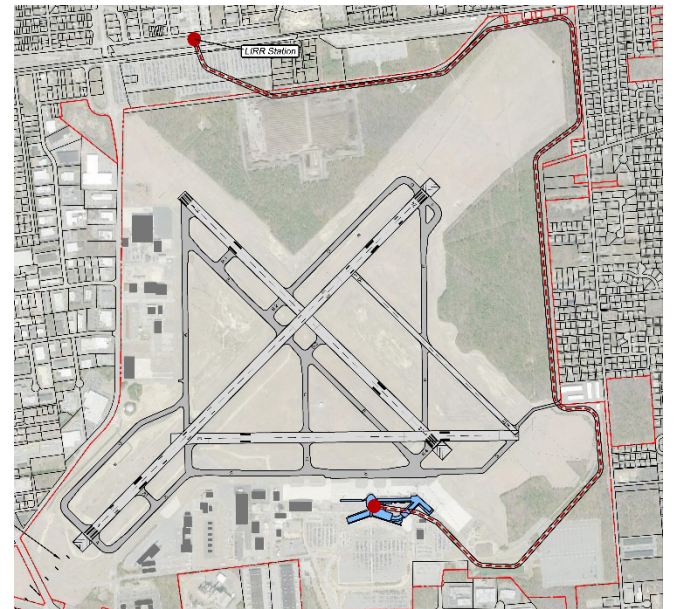
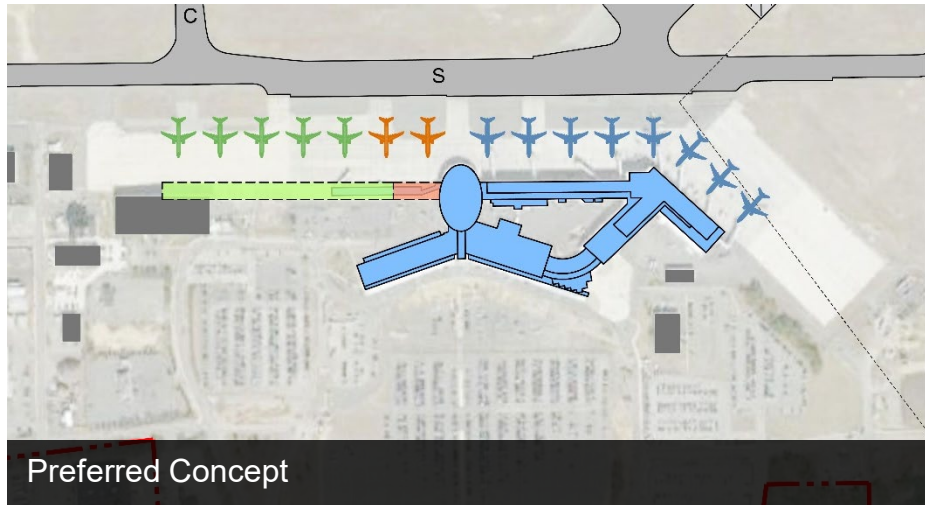
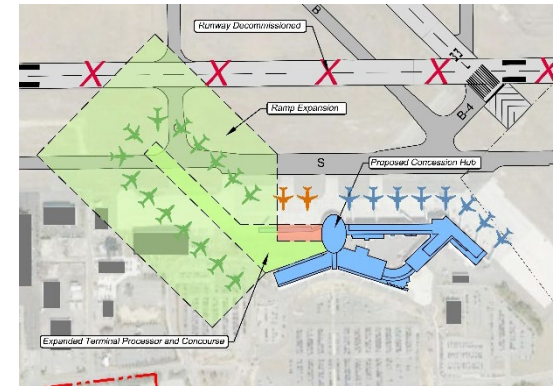
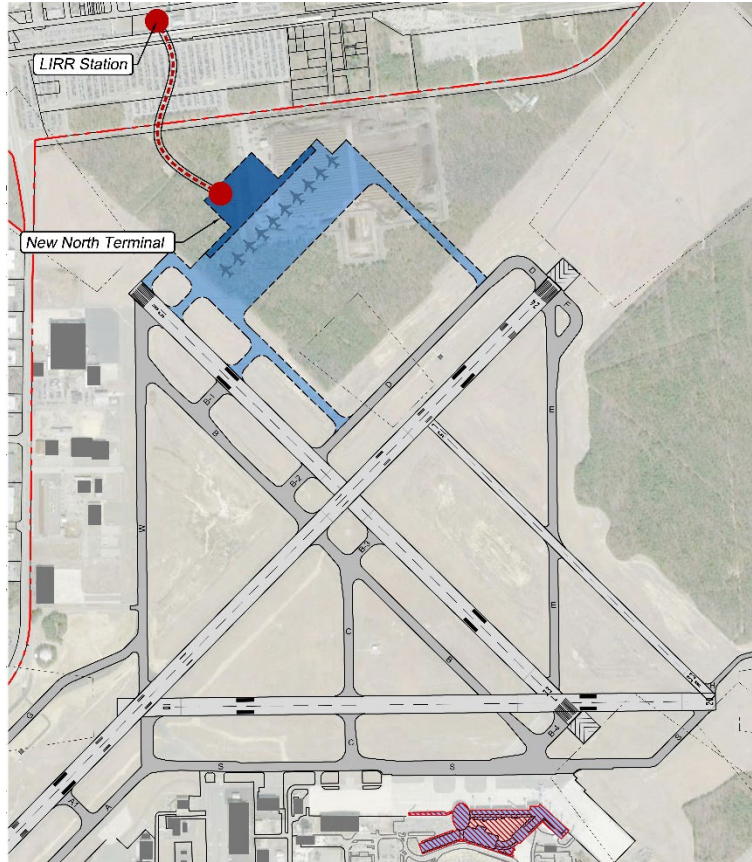
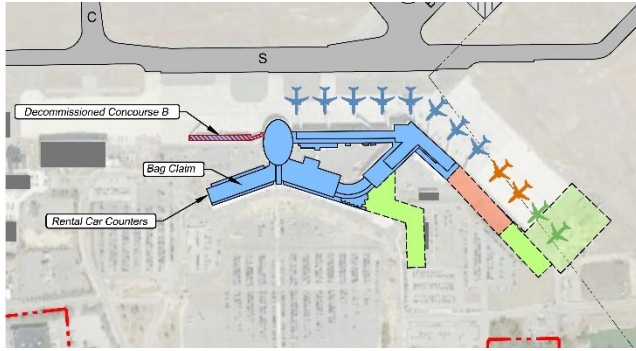


Next Steps



- Questionnaire/Survey with Airline stakeholders
- Development of Concepts







Other (not shown): North Terminal Concept

Workshop 1: November 14

- Task 1: Existing Conditions Assessment/Inventory
- Task 2: Aviation Activity Analysis/Forecast
- Intro to Task 3: Facility Requirements

Workshop 2: December 18

- Task 3: Facility Requirements
- Task 4: Alternative Development & Evaluation
 - Gate & Concourse Concepts
 - Evaluation and Selection of Preferred Concept

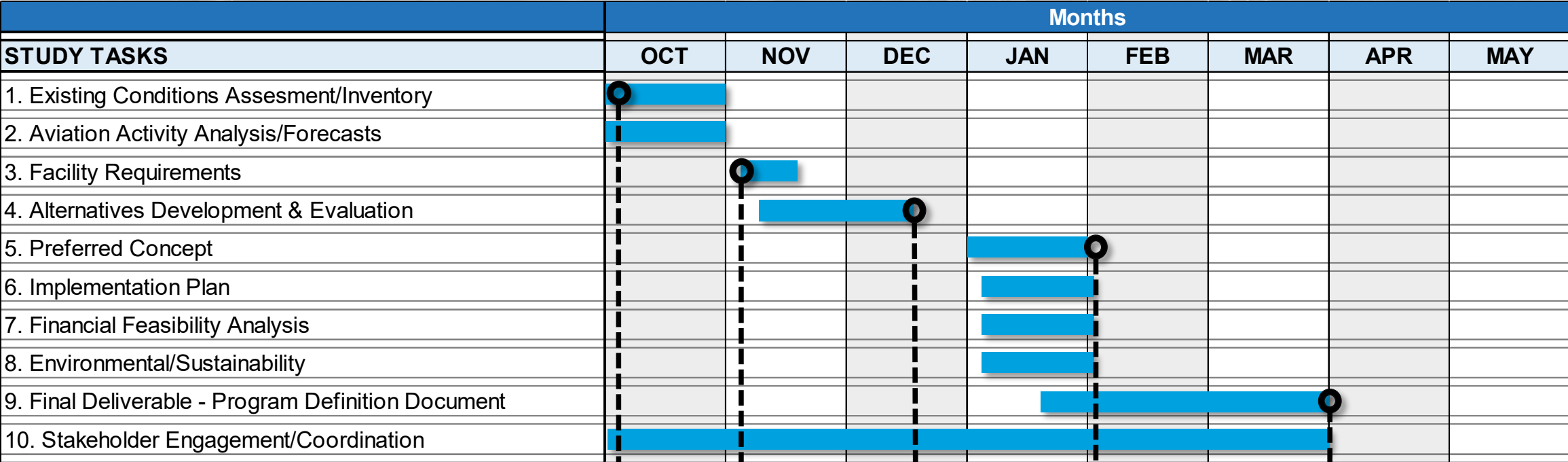
Workshop 3: Mid-February

- Task 5: Preferred Concept
- Task 6: Implementation
- Task 7: Financial Feasibility Analysis
- Task 8: Environmental/Sustainability Impacts

Workshop 4: Mid-March

- Present Final Materials to Stakeholders



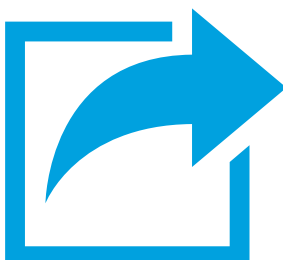


● Meeting





OPEN DISCUSSION



ISP West Concourse Planning Study Workshop #1

FAA Project: Grant 3-36-0046-103-2019:

November 14, 2019

Conduct a Terminal Area Narrative Report

ISP Conference Room

Attendees:		
Name	Company/Representation	Email
Shelley LaRose	ISP Airport	SLaRose@islipny.gov
Robert Schneider	ISP Airport	rschneider@islipny.gov
Gerri Mulligan	ISP Airport	gmulligan@islipny.gov
Mahesh Kukata	JKL	mkukata@adci-corp.com
Andrea Luft	JKL	ALuft@jklengineers.com
Logan Smith	L&B	lsmith@landrum-brown.com
Clint Laaser	L&B	claaser@landrum-brown.com
Brian Poe	L&B	bpoe@landrum-brown.com

The meeting notes below were taken during Workshop #1 between ISP Airport, JKL and L&B. The agenda for the meeting is provided below as reference:

Agenda:

- **Introductions**
- **Overview**
 - Review of Goals, Objectives and Assumptions
- **Existing Conditions Assessment/Inventory (Task 1)**
 - Existing Conditions Inventory, Site Validation & Situational Assessment
 - Constraints (Interior and Exterior)
- **Aviation Activity Analysis/Forecast (Task 2)**
 - Aviation Demand Forecasts
- **Facility Requirements Methodology (Task 3)**
 - Planning Considerations and Assumptions
 - IATA, KPI, ACRP Planning Tools
- **Next Steps**
 - Potential High Case Forecast Development
 - Program Requirements (Task 3)
 - Concept/Alternative Development (Task 4)
 - Schedule

Open Discussion:

- **Rob Schneider:**
 - Currently, there is no elevator redundancy to get down from the east concourse to the west concourse level. The planning study should include potential solutions for the redundancy issue.
 - What is quantity requirement for the nursing/lactation station for an airport this size? Are distances an issue? L&B will check this code requirement.

- West concourse existing jet bridges are being extended north which will decrease the slope, the rotunda position will not move. This change will also involve shifting the lead-in lines back.
- B23 was installed with the original West Concourse building and B19 installed in 2012. These bridges cannot slope appropriately down to a Group II aircraft. The PC Air connects to the aircraft only. When installed, the TOI did not spec a PCA Unit with a diverter to switch airflow from the aircraft to the PBB.
- Gate B15 opens November 14, 2019; Frontier expects a 30% increase in service
- 2018 concession revenue is approximately \$6.6 Million
- ISP will provide marketing success survey data to L&B
- Town of Islip wants to be prepared for future international services; which includes a new combined commercial FIS/GAF facility (shell only) planned/designed per the ATDS guidelines. Plan for 400 pax/hour shell space linked to two gates on the west concourse only. The actual fit-out of the facility will occur later.
- A second TSA checkpoint should be added if the additional gates are built. Existing checkpoint is limited to two lanes utilizing AIT equipment. When it first opened, it included 3 lanes but without AIT.
- **Mahesh Kukata:**
 - The West Concourse Planning study should work in tandem with the MEP upgrade project. If it makes sense to alter the Central Terminal for better integration into the new West Concourse, we should identify those changes now to avoid spending money on temporary systems upgrades.
 - Extending the runway could resolve some of the Part 77 issues. To extend the east concourse further, a runway extension is required. This may not be a cost effective and valid short term solution.
 - Alternatively, use a narrow concourse, angled layout or step back to the southwest on the east extension to avoid the airside issue.
 - Southwest started service in 1999-2000. What happened prior to 2000 is no longer relevant in terms of projecting demand. When Southwest started, they had a much higher peak which was sustained until they dropped portions of their service. This shows that there is potential demand to capture additional service over the next few years.
 - Southwest will not likely utilize international gates.
 - Could the high demand in 2018 be an outlier and would it be better off to start with an average of the past 10 years? We should determine if FAA would look at both a high and conservation forecast approach.
 - Potentially prohibitive to work with the existing central terminal. Due to the age, vertical elevations and MEP/systems deficiencies, it may be more efficient to remove the Central Terminal and expand properly for the future.
 - One approach to phasing could include utilization of the preferential gates (A2-A4) for relocation of West Concourse aircraft to temporarily relocate gates during construction.
- **Clint Laaser:**
 - Presented the existing conditions and facility assessment to the group.
 - The walking distance is longer but acceptable in comparison to other facilities. However, the issue is the change in vertical elevations and lack of redundancy of the vertical conveyance. Minimizing the level changes is critical to improving customer service.
 - Inclusion of the commercial CBP facility has major implications on circulation and space requirements for the concourse expansion.
 - 60' depth is typical for a single loaded concourse, which includes 25-30' of circulation and 30'-35' hold room depth.
 - Current restroom facilities fixture counts are low for peak demand and lower level of customer experience in comparison to the east concourse.
 - L&B will include programming to replace the existing jet bridges which will resolve the associated deficiencies.
- **Shelley LaRose:**

meeting minutes



- Next steps should include a questionnaire to stakeholders. The stakeholder list was provided to L&B on 11/21 and include the following stakeholders: Airlines, ATCT, CBP, FAA, Fire, Concessions, TSA, ISP departments. – updated list was subsequently provided
 - Provide draft survey and draft email to ISP prior to sending out;
 - Planning level MEP concept plans are needed for any facility build-out options. The group should determine if there is an existing code issue that can be correct in the terminal expansion to avoid needing additional fire rescue vehicles.
 - The walk time from the security checkpoint to the west concourse area is only 3 minutes but passengers feel it's a much longer walk.
 - Improvements will be implemented soon on the baggage claim and curbside vestibules.
 - Islip leadership goal is to have the passengers in the terminal for less time, currently airlines suggest arriving at the airport up to three hours early, so there is excessive dwell time currently in the terminal adding to congestion during peak periods. Islip wants to be the “efficient” option for travelers’ curb to gate.
 - Suggestion for study of future technologies, innovations and processes for concessions in the new concourse. Would rather have a high-tech system for delivering concessions goods (including food, newspapers, etc.) instead of hard-wall concession outlets, which would save area (SF) needs and capital cost. Examples include online ordering with gate delivery.
 - One potential benchmark terminal that ISP is looking to is the new Austin South Terminal for Low Cost Carriers (LCC).
 - Airlines are starting to implement dual boarding. How can this be accomplished given airlines want to get passengers on and off as quickly as possible? Southwest is doing this at Burbank amongst others that include air stairs at the back door. Frontier may start this in the future. Passengers needing extra assistance need to use the jet bridge. For airlines, the savings of 10 minutes can save \$30M a year on costs.
 - There may be a quicker connection option to the LIRR where buses travel from the existing terminal curbside to the Ronkonkoma station via bus that travels through the SIDA area.
 - Revenue (per passenger) around \$7 (including parking) it has been as high as \$9 per passengers. Brian Poe will check the ARM.
 - Shelley likes the vertical height of the east concourse and suggest doing the same for the west concourse (or east extension) but likely more compact or narrow building width.
 - AECOM developed concept drawings for the central terminal building recently. This study could be used to help inform connectivity.
 - Town of Islip aviation staff office area should be included in the central terminal area program requirements.
 - Islip has been in recent air service discussions and have a clear marketing plan in place. The forecast will also be used to develop the air quality study.
 - Update: After 11/20/19 discussion with NYSDEC, ISP [will be re-evaluating the project and course of action.](#)
 - 80% of passengers hail from Suffolk County.
 - In terms of cost per enplanement, ISP is currently at \$10.50. Other NY Metro airports are much higher, including LaGuardia (LGA) which will be approaching \$46 in the coming years as the redevelopment program continues.
 - Increased marketing is helping ISP to lure business travelers by 26% over the past few years.
 - The sustainability requirements for this study should consider new laws regarding renewable energy. Need to explain in the Program Definition Document (PDD) the level of sustainability required and ensure compliance with NY laws regarding sustainability requirements.
- **Brian Poe:**
 - Presented the forecast validation. ADO will need to approve forecast.
 - **Logan Smith:**
 - Presented the facility requirements methodology (Task 3). This conversation will be discussed in further detail in the next Workshop #2.

meeting minutes



- **Andrea Luft:**
 - There may be additional existing conditions files (including AutoCAD or scanned in physical copies into PDFs) that will be collected beyond the list shown on the data collection slides.
 - We will look at connecting fire/emergency systems for the west and east concourse.
 - MEP documents are in the process of being completed and will be ready for review soon. There is a new BIM system being implemented.
- **General Discussion Points:**
 - West Terminal renovation could eliminate the need for some fire tanker trucks now said to be required
 - Rotunda and West Terminal access concerns: slopes, walking distances and non-ADA compliant narrow hallways without handrails

Schedule:

Kickoff: September 17, 2019

- Goals/Objectives
- Initial Site Tour

Workshop 1: November 14, 2019

- Existing Conditions Assessment/Inventory
- Aviation Activity Analysis/Forecast
- Facility Requirements Methodology

Workshop 2: December 18, 2019 at 9:00 am

- Facility Requirements
- Initial Concept Discussion

Stakeholder (“Key Influencers”) Workshop & Workshop 3: February 5, 2020 at 10:00 am and 1:30 pm

- Alternatives Development and Evaluation

Workshop 4: TBD – March 2020

- Preferred Concept Refinement
- Implementation Plan
- Environmental/Sustainability Impacts
- Financial Feasibility Analysis

Workshop 5 & Stakeholder Workshop: TBD - April 2020

- Final Study Findings
- Final Deliverable Review



ISP – Conduct a Terminal Area Narrative Report

Grant 3-36-0046-103-2019

Workshop #2 | December 18, 2019



- **Overview**
 - Review of Goals, Objectives and Assumptions
- **Aviation Activity Analysis/Forecast (Task 2)**
 - Forecast Review
- **Facility Requirements (Task 3)**
 - Program Requirements
 - TSA/CBP Requirements
- **Alternative Development & Evaluation (Task 4)**
 - Emerging Trends
 - Concept Development
 1. Gate Configuration
 2. Concourse Configuration
 3. Alternative Evaluation & Selection of a Preferred Concept
 - Concept Summary
- **Next Steps**
 - Concept Development (Task 4 and 5)
 - Stakeholder Questionnaire/Surveys
 - Schedule:
 - Workshop #3 & Stakeholder Meeting: February 5, 2020
 - Workshop #4: TBD – anticipated March 2020
 - Workshop #5 & Stakeholder Meeting: TBD – anticipated April 2020





Aviation Activity Analysis/Forecast (Task 2)



Aviation Activity Analysis

ISP Traffic Review since the 2013 Master Plan (adopted 2017):

2018 Total Operations
▮ 12.5% below forecast

2018 GA Operations
▮ 13.9% below forecast

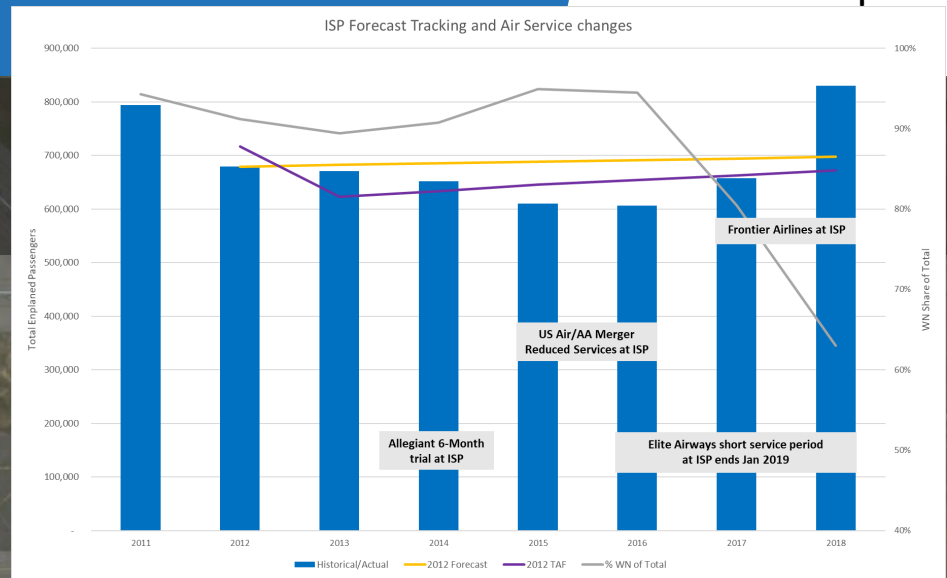
2018 AT Operations
▮ 57.1% above forecast

2018 Passenger Operations
▮ 12.0% below forecast

Average Gauge
 151 in 2018
 (123 est.)

Load Factor
 79.8% in 2018
 (75% est.)

2018 Enplanements
▮ 18.9% above forecast



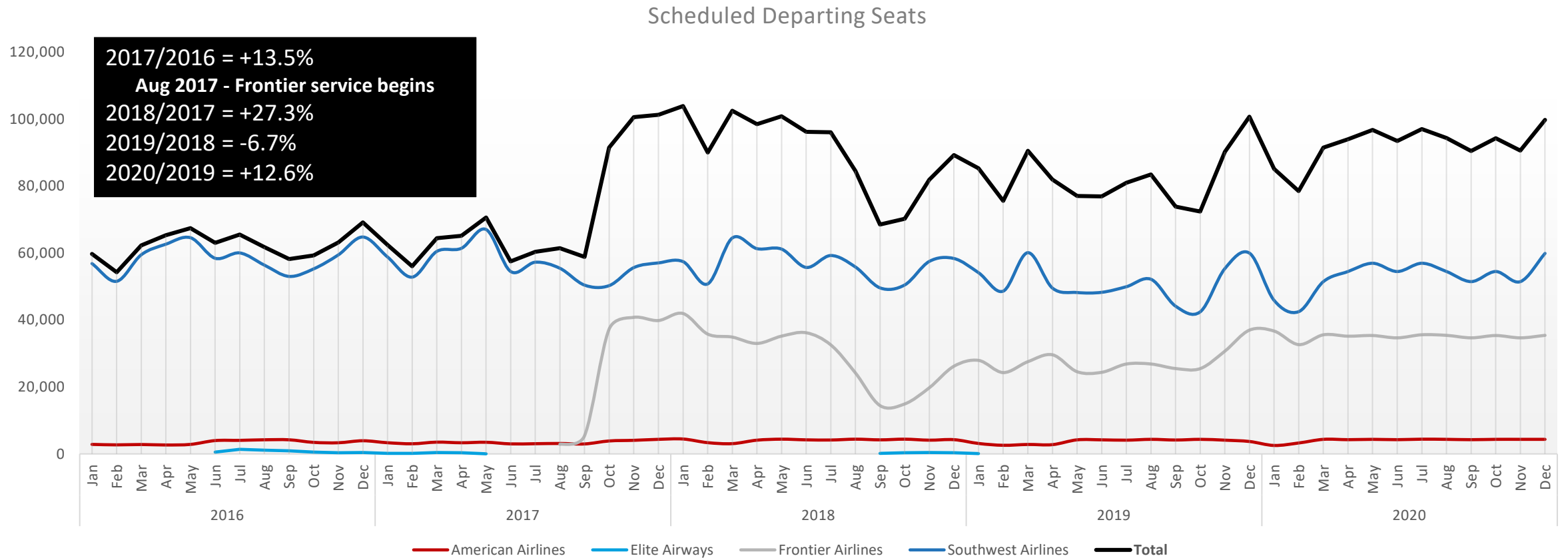
2012
 678,848 Enplaned Passengers
 15,740 Commercial Passenger Operations
 148,451 Total Operations

2018
 830,076 Enplaned Passengers
 13,311 Commercial Passenger Operations
 132,524 Total Operations



Aviation Activity Analysis – Scheduled Seats

Near-term scheduled activity shows 2019 scheduled seats decreasing by 6.7% with an estimated increase of 12.6% in scheduled seats for 2020



- Still Valid Today from 2017 MP

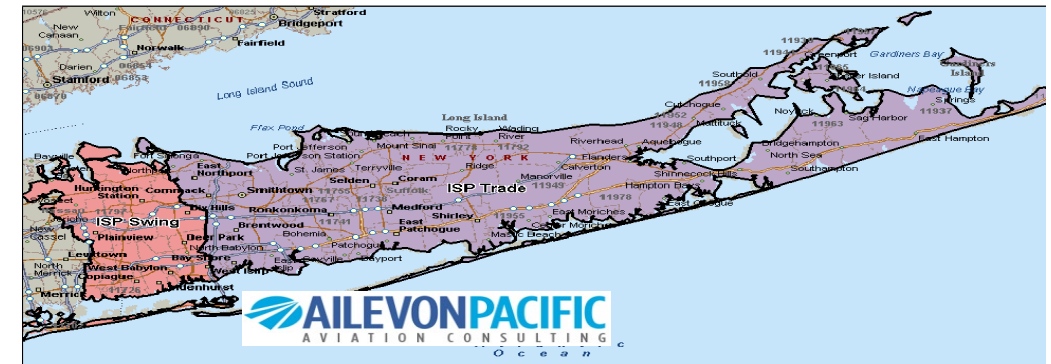
- Leakage/Recapture potential may exist
- High case assumed 'New' entrant (Frontier came, early)
- Economic growth factors still positive
- Resilience of the industry
- Growth in Air Taxi segment
- ISP is an O&D domestic market
- ISP is a Low-Fare airport

- Revised Assumptions

- 2018 surge wasn't predicted
- 2019 slow down should recover to 2018 levels in 2020
- Aircraft Gauge increases will stabilize
- Average Load Factor can increase
- GA segment decline wasn't predicted, but can recover

- Other factors to consider

- ISP captures only 7% of Swing area and 35% of trade area demand
- New market potential exists, but requires more carrier commitment due to proximity to LGA & JFK



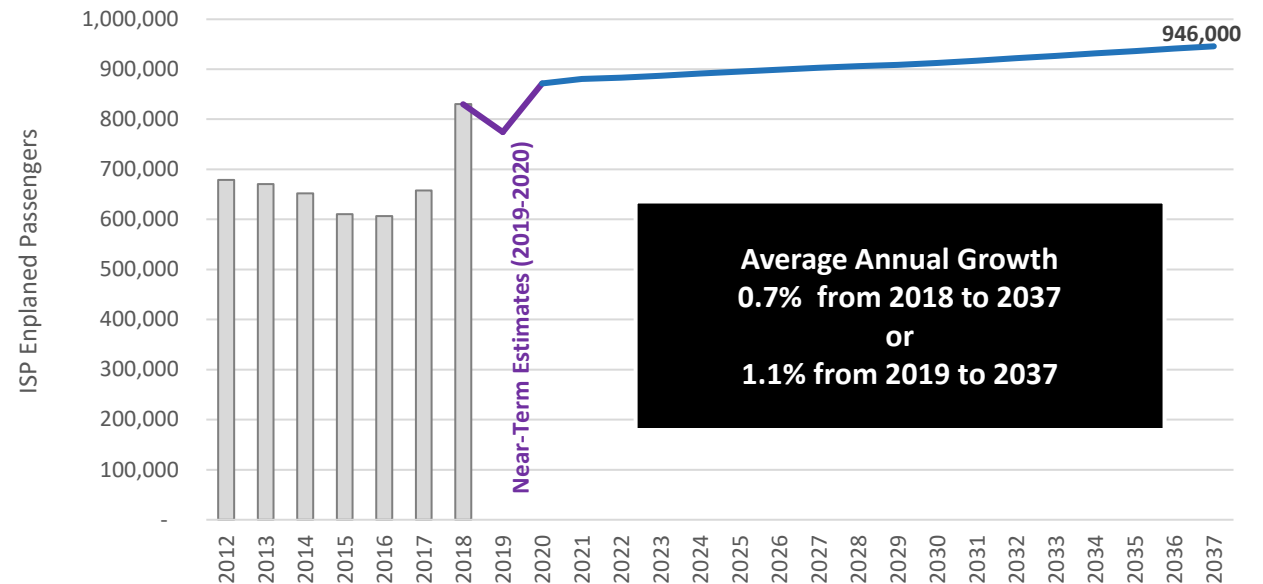
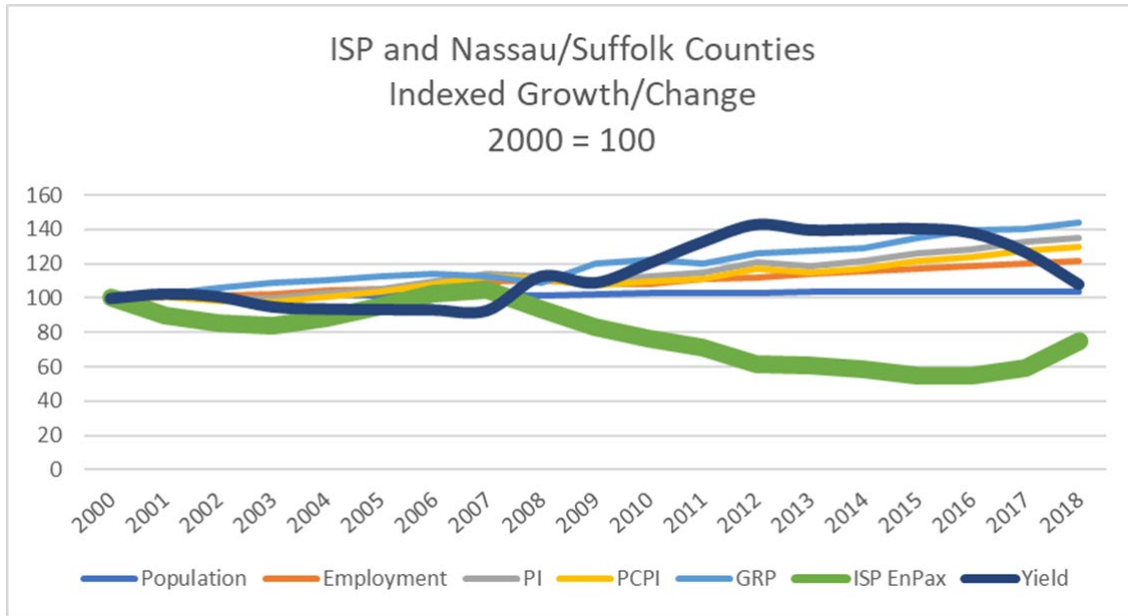
Forecast Updates within the 2017 MP Forecast horizon (to 2037)

- **Enplanements forecast** – updated with similar approach using an econometric regression correlating ISP Revenue Yield to ISP Enplanements to account for the past declines in demand
- **Passenger Operations forecast** – updated with revised enplanements forecast and revised assumptions on new average aircraft gauge and new load factor projections
- **Air Taxi Operations forecast** – applied similar reasoning using 2019 FAA Aerospace Forecast turbojet 20-year growth rate of 2.2%
- **General Aviation Operations forecast** – applied same market share approach as 2017 MP with updated 2019 FAA Aerospace Forecast GA operations projections
- **Cargo and Military Operations forecasts** – updated with constant future activity levels based on 2018 activity



Commercial Passenger Activity Forecast Updates:

- **Base Enplanements Forecast** – econometric regression show statistical correlation with inverse relationship between enplanements and ISP Revenue Yield (const. 2018USD) R-square = 0.83



Nearly 946,000 enplaned passengers estimated for ISP in 2037 in the base case



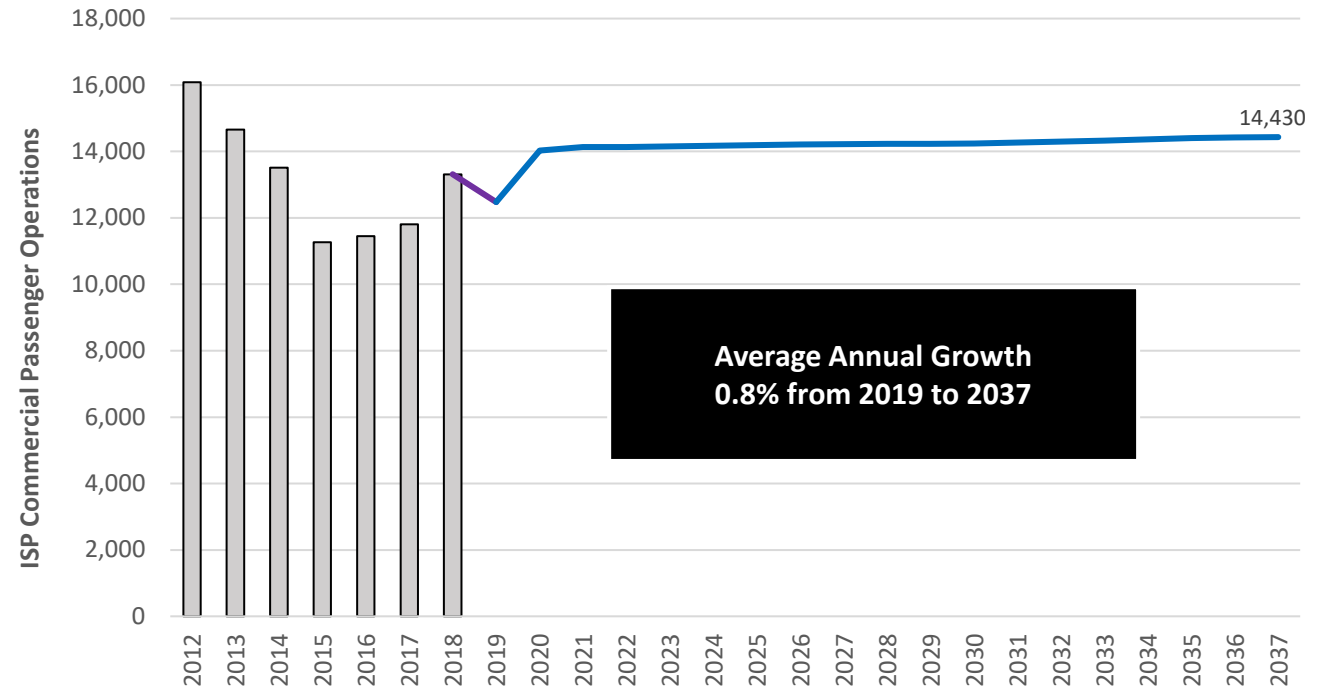
Commercial Passenger Activity Forecast Updates:

- **Base Passenger Operations Forecast** – updated with revised enplanements forecast and revised assumptions on average aircraft gauge and load factor increasing to 158 seats and 83%, respectively by 2037

- **Future fleet is larger than predicted in the 2017 MP**

~86% Narrowbody and 14% regional jets

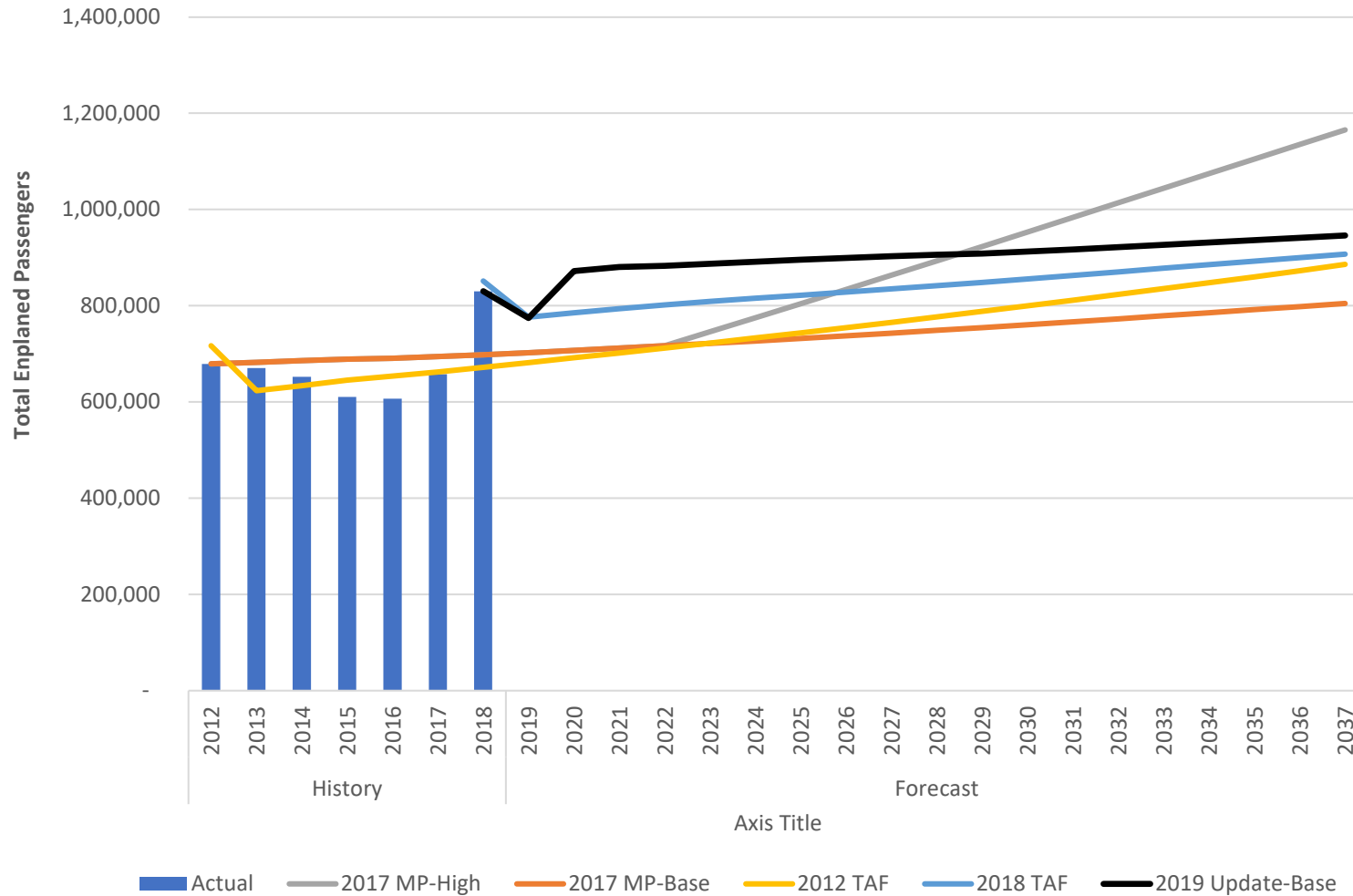
- Frontier (A320/A321 aircraft)
- Southwest (B737,738 and 7M8 aircraft)
- American (ERJ145 aircraft)



14,430 passenger operations estimated for ISP in 2037 in the Base Case



ISP Forecast Comparisons - Previous vs. Updated



Key points:

- 2012 and 2018 TAF have consistent long term estimates for 2037
- 2019 Update estimates 2019 and 2020 traffic from actual Jan-Jul 2019 data and scheduled data through September 2020.
- 2019 Update-Base forecast applied Passenger Revenue Yield correlation and also has a similar long term 2037 estimate.
- 2017 MP-Base, 2018 TAF and 2019 Update-Base forecasts all maintain similar growth (line slopes) from 2020 to 2037
- **TAF enplanement variances of +9.7% and +7.7% at 5 and 10 years.**

Base Case long term enplanement growth of 1.1% AGR for ISP from 2019 to 2037



Non-Commercial Passenger Activity Forecast Updates:

- **Base Case Air Taxi Operations forecast** – applied similar approach growing non-commercial AT operations at FAA Aerospace Forecast updated turbojet growth of 2.2% AGR (7,920 ops)
- **General Aviation Operations forecast** – applied same market share approach as 2017 MP with updated FAA Aerospace Forecast projections with a 0.42% share of U.S. GA operations (119,130 ops, 0.3% CAGR)
- **Cargo and Military Operations Forecasts** – applied same ‘status quo’ approach; updated with constant future activity levels based on 2018 activity (10 Cargo ops, 2,320 Military)
- **Base Case Total Operations forecast** – cumulative (143,810 ops in 2037, 0.4% CAGR)



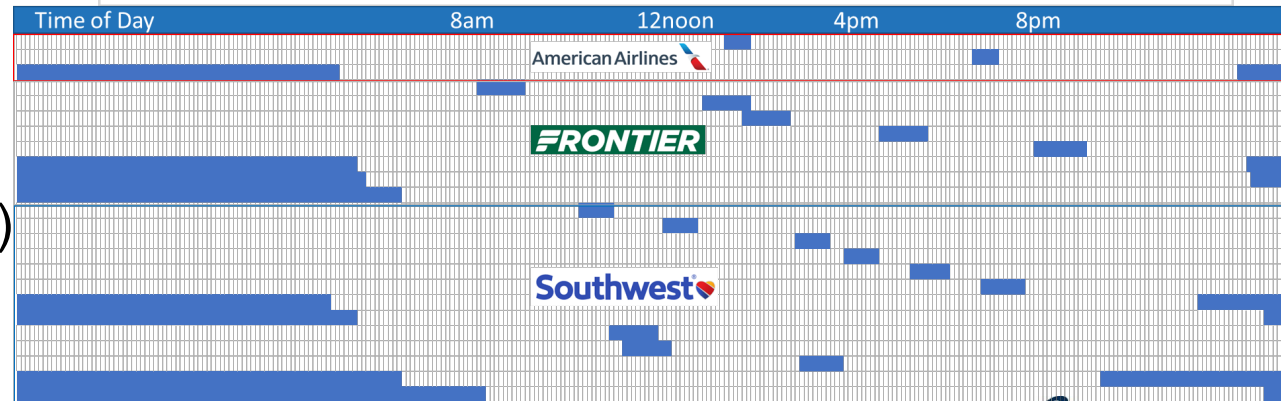
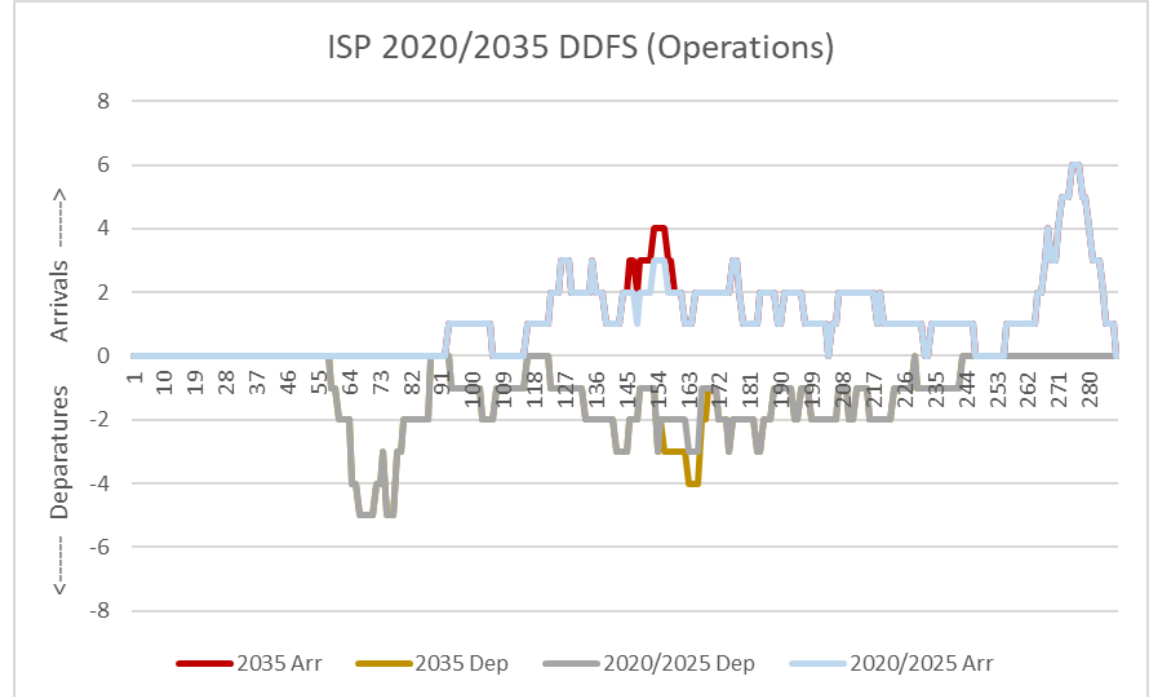
Changes in Peak Period Conditions:

- Small increase in projected Design Day and Peak Hour passenger levels after 2020
- Fewer passenger operations due to larger aircraft and higher load factors
- MP PH enpax increased from 437 to 784 by 2037, with PH operations increased from 6 to 7

Total Enplanements:	<u>2018</u>	<u>2019</u>	<u>2022</u>	<u>2027</u>	<u>2032</u>	<u>2037</u>
Annual	830,076	774,400	882,900	902,700	921,800	946,000
<i>Peak Month Percent of Annual</i>	9.6%	10.2%	10.2%	10.2%	10.2%	10.2%
Peak Month	80,004	78,989	90,056	92,075	94,024	96,492
<i>Design Day Percent of Peak Month</i>	3.4%	3.4%	3.5%	3.5%	3.5%	3.5%
Design Day	2,723	2,689	3,152	3,223	3,291	3,377
<i>Peak Hour Percent of Design Day</i>	21.4%	16.5%	23.5%	23.5%	23.4%	23.2%
Peak Hour	582	442	741	757	770	784
Passenger Operations:	<u>2018</u>	<u>2019</u>	<u>2022</u>	<u>2027</u>	<u>2032</u>	<u>2037</u>
Annual	13,311	12,472	14,130	14,220	14,300	14,430
<i>Peak Month Percent of Annual</i>	10.0%	10.2%	10.1%	10.1%	10.1%	10.1%
Peak Month	1,330	1,272	1,427	1,436	1,444	1,457
<i>Design Day Percent of Peak Month</i>	3.2%	3.4%	3.5%	3.5%	3.5%	3.5%
Design Day	43	43	50	50	51	51
<i>Peak Hour Percent of Design Day</i>	11.6%	12.7%	13.0%	13.0%	13.0%	13.0%
Peak Hour	5	5	6	7	7	7



- ISP Design Day Flight Schedules (DDFS) with forecast increases suggest upgauging through 2025 and one additional flight in 2035
- Gating Requirements from the 2020/2025 DDFS suggest **peak demand of 8 gates** with late night arrivals and RONs ... (1) American, (3) Frontier and (4) Southwest
- Peak Gate Demand during the day require (3) gates with no integrate buffer and (4) with a buffer assuming common use ..or.. (6) gates with preferential use for Southwest... (3) Southwest, (3) common



- **2037 Enplanements** estimate for ISP increased 17.6% to 946,000 from 804,400
 - Long term growth rate through 2037 increased to 1.1% from 0.7% AGR from estimated 2019 traffic level
- **2037 Passenger Operations** estimate for ISP decreased 9.8% to 13,610 from 15,970
 - Long term growth rate through 2037 remains the same at 0.1% AGR
- **2037 Total Operations** estimate for ISP decreased 12.7% to 143,805 from 164,790
 - Long term growth rate through 2037 remains the same at 0.4% AGR
- **2037 Peak Hour Demand** estimate includes a small increase in passenger demand with no increase in total aircraft operations
- **2037 Gate Demand** estimate suggests (8) gates are required

In general, long term projected growth is comparable to the 2017 MP Forecast with the following differences observed;

- New 2018 base level established with the recent jump in passenger traffic from Frontier service
- Larger passenger aircraft fleet reducing passenger operations
- Increase in AT operations has offset much of the reduction in GA operations

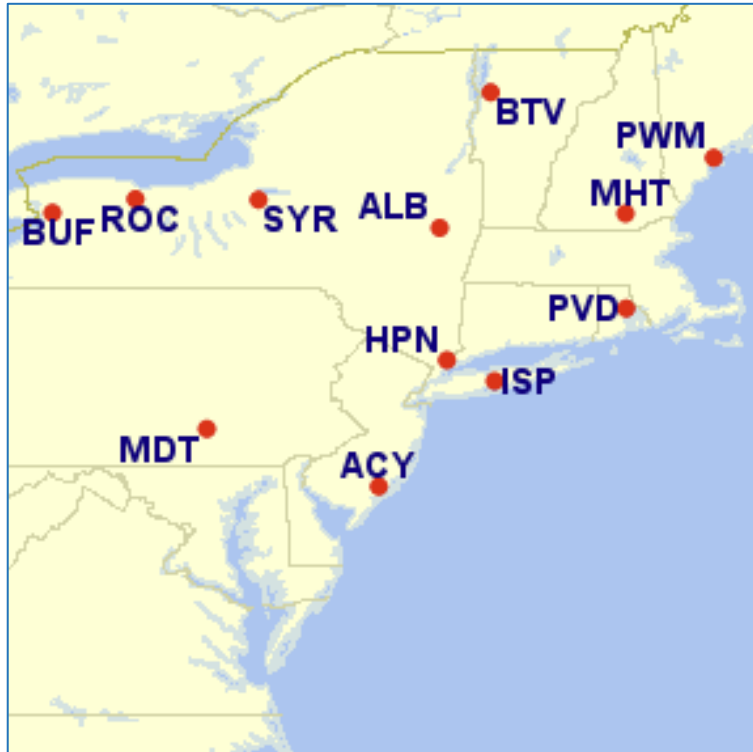


Benchmark Airports – Passengers vs. Gates

<u>Code</u>	<u>2018 Enpax</u>	<u>Gates</u>	<u>Enpax/Gate</u>	<u>Avg. Seats</u>	<u>Turns/Gate/Day</u>
ACY	568,958	9 gates	63,218	198	1.3
MDT	636,756	12 gates	53,063	70	2.9
BTV	658,879	9 gates	73,209	75	3.8
HPN	789,283	6 gates	131,547	71	7.3
ISP	830,076	10 gates	83,008	151	2.2
MHT	911,225	14 gates	65,088	99	2.6
PWM	1,062,873	14 gates	75,920	85	3.5
SYR	1,139,568	16 gates	71,223	77	3.6
ROC	1,281,908	21 gates	61,043	80	3.0
ALB	1,440,674	14 gates	102,905	87	4.6
PVD	2,117,409	18 gates	117,634	122	3.8
BUF	2,523,158	23 gates	109,703	105	4.1



Benchmark Airports – Passengers vs. Gates



Airport Code	2018 Enplanements	Gates	Enplanements/ Gate	Avg. Gauge (seats)	Avg. Turns per Gate Daily
ACY	568,958	9	63,218	198	1.1
MDT	636,756	12	53,063	70	2.6
BTV	658,879	9	73,209	75	3.4
HPN	789,283	6	131,547	71	6.4
ISP	830,076	10	83,008	151	1.9
MHT	911,225	14	65,088	99	2.2
PWM	1,062,873	14	75,920	85	3.1
SYR	1,139,568	16	71,223	77	3.2
ROC	1,281,908	21	61,043	80	2.6
ALB	1,440,674	14	102,905	87	4.0
PVD	2,117,409	18	117,634	122	3.3
BUF	2,523,158	23	109,703	105	3.6



Follow up discussion:

- 1) Potential for Recapture and aggressive Frontier Growth

- 2) Potential for a new carrier at ISP
 - Terminal requirements, impacts due to fleet, peak hour operations impact

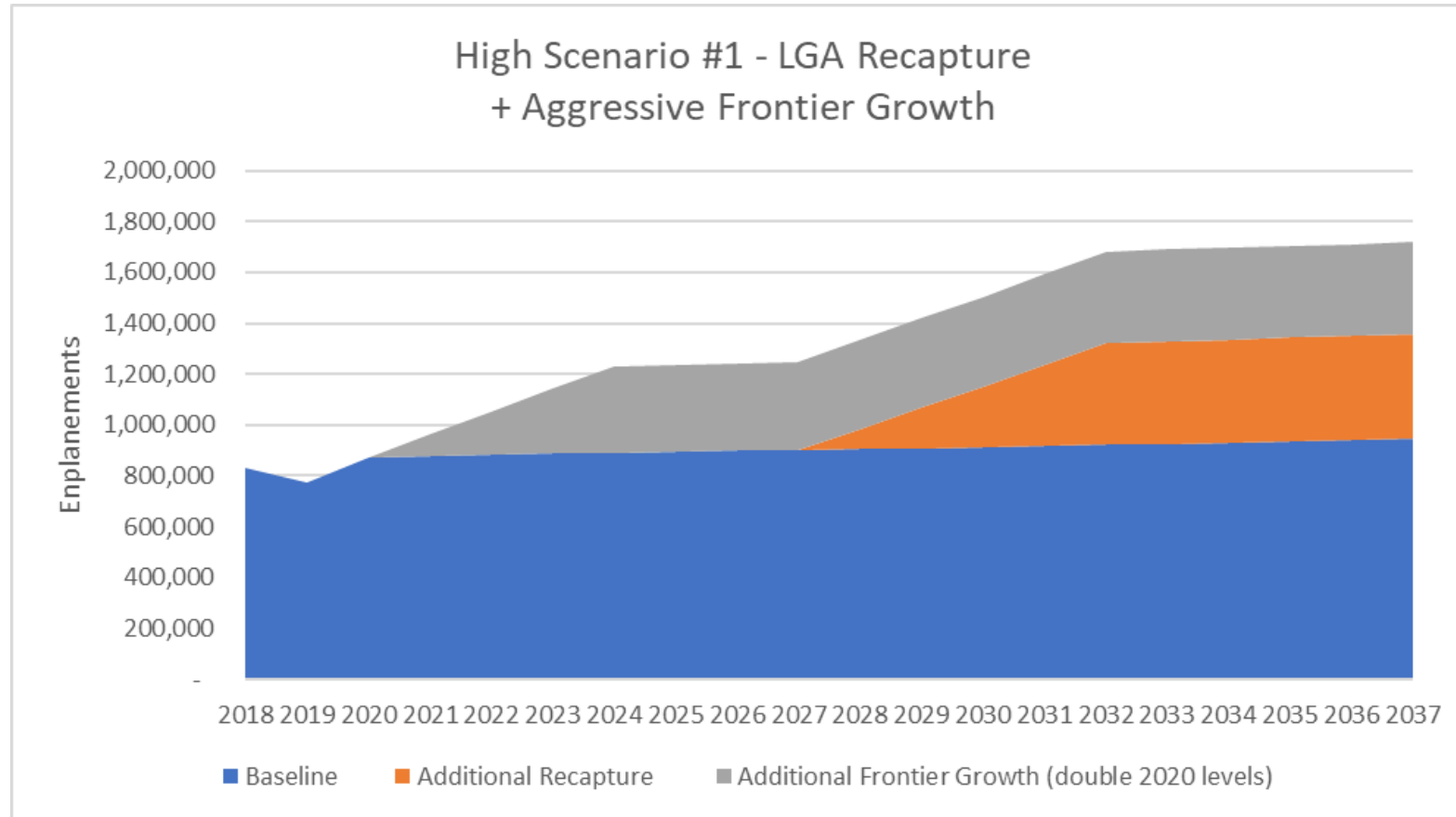
- 3) Potential for international flights or new international carrier at ISP
 - FIS/CBP requirements

- 4) New Air Taxi Operator based at ISP
 - GA facility requirements, peak hour operations impact



Key Assumptions:

- 1) Recapture 1/3 of LGA leakage demand after 2028 (assumes Market Study traffic distribution estimates)
- 2) Frontier growth doubles from 2020 levels between 2021-2024 (comparable to Tier 2 Market highs)



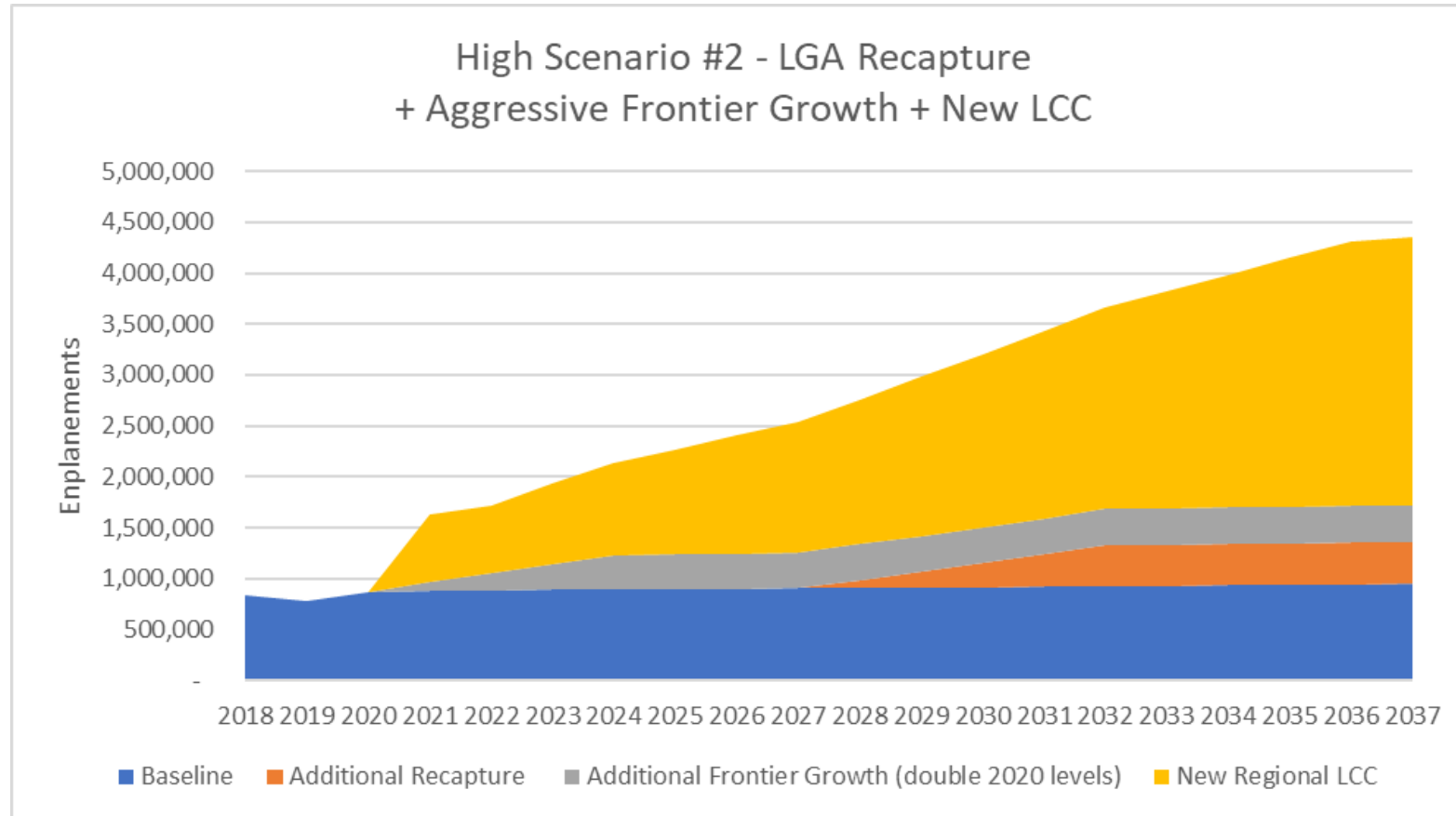
**1.7 million
Enplanements by 2037**



Key Assumptions:

1-2) ... same as High Case Scenario #1

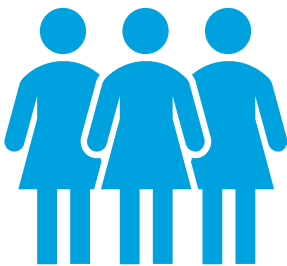
3) New LCC Carrier base development at ISP (E190/A220 fleet) with 6 gates growing to 20 gates (4/turns/gate)



**4.3 million
Enplanements by 2037**



Facility Requirements (Task 3)



Program Requirements – 3 Gate Extension

Space Designation	PAL 1	
	Units	SF
Public Spaces		
Contact Gate Holdrooms	3	8,460
Rest Rooms		
Concourse		1,500
Concourse Departure Corridor		9,310
Concourse Sterile corridor (including sterile vertical circ.)		5,780
Airline Spaces		25,050
Space Designation	PAL 1	
	Units	SF
Concession Space		
Retail airside		1,180
F&B Airside		320
Concession Support		380
<i>Subtotal Concessions Spaces</i>		1,880
<i>Circulation</i>		94
Concessions Spaces		1,974
Space Designation	PAL 1	
	Units	SF
CBP		
Primary Processing and Inspection		5,934
Unified Secondary Processing and Inspection		2,516
Detention Suite		1,800
Agricultural Inspections and Lab Spaces	1	380
Canine Enforcement Spaces and Kennels		1,509
Operational Support Spaces		7,148
Staff Support		184
International Baggage Claim		
Number of ADG III (CAT C) units (>130lf<230lf)	1	6,680
Rest Rooms		1,400
FIS Circulation		1,261
CBP		28,812
Terminal Support Spaces		
Airline Operations		7,500
Airport Operations		2,000
Maintenance		1,200
Mechanical / Electrical		9,000
Vertical Penetration		2,100
Terminal Support Spaces		21,800
Total Building Area		77,636

3 Gate Concourse Expansion Program:

- Public Spaces: 25,050 SF
- Concessions: 1,974 SF
- CBP: 28,812 SF
- Support: 21,800 SF
- **Total: 77,636 SF**

The follow items are not included in the above totals:

- Any required renovation areas of the existing building
- New security checkpoint (if required, concept dependent)
- New airport offices (if required, concept dependent)
- Baggage systems (if required)

Space Designation	PAL 1	
	Units	SF
Public Spaces		
Contact Gate Holdrooms	3	8,460
Rest Rooms		
Concourse		1,500
Concourse Departure Corridor		9,310
Concourse Sterile corridor (including sterile vertical circ.)		5,780
<i>Airline Spaces</i>		<i>25,050</i>

Public Space Assumptions

- 30' holdroom depth (East = 30' depth)
- 20' circulation width (East = 28' depth)
- Restrooms include 6 male and 6-7 female fixtures
 - (East Concourse (A5-A8) = 7 Male / 7 Female fixtures)

Space Designation	PAL 1	
	Units	SF
Concession Space		
Retail airside		1,180
F&B Airside		320
Concession Support		380
<i>Subtotal Concessions Spaces</i>		<i>1,880</i>
<i>Circulation</i>		<i>94</i>
<i>Concessions Spaces</i>		<i>1,974</i>

Concession Assumptions

- Based on annual passengers per gate
- 60% retail and 40% food and beverage
- 25% of total is concession support

Space Designation	PAL 1	
	Units	SF
Terminal Support Spaces		
Airline Operations		7,500
Airport Operations		2,000
Maintenance		1,200
Mechanical / Electrical		9,000
Vertical Penetration		2,100
<i>Terminal Support Spaces</i>		<i>21,800</i>

Terminal Support Assumptions

- Airline operations – 2,500 SF per gate
- Airport operations – Based on two-way peak hour passengers (estimated)
- Additional space as a percentage of total estimated building area:
 - Maintenance – 2%
 - Mechanical / Electrical – 15%
 - Vertical Penetration – 3.5%

Program Requirements – 3 Gate Extension

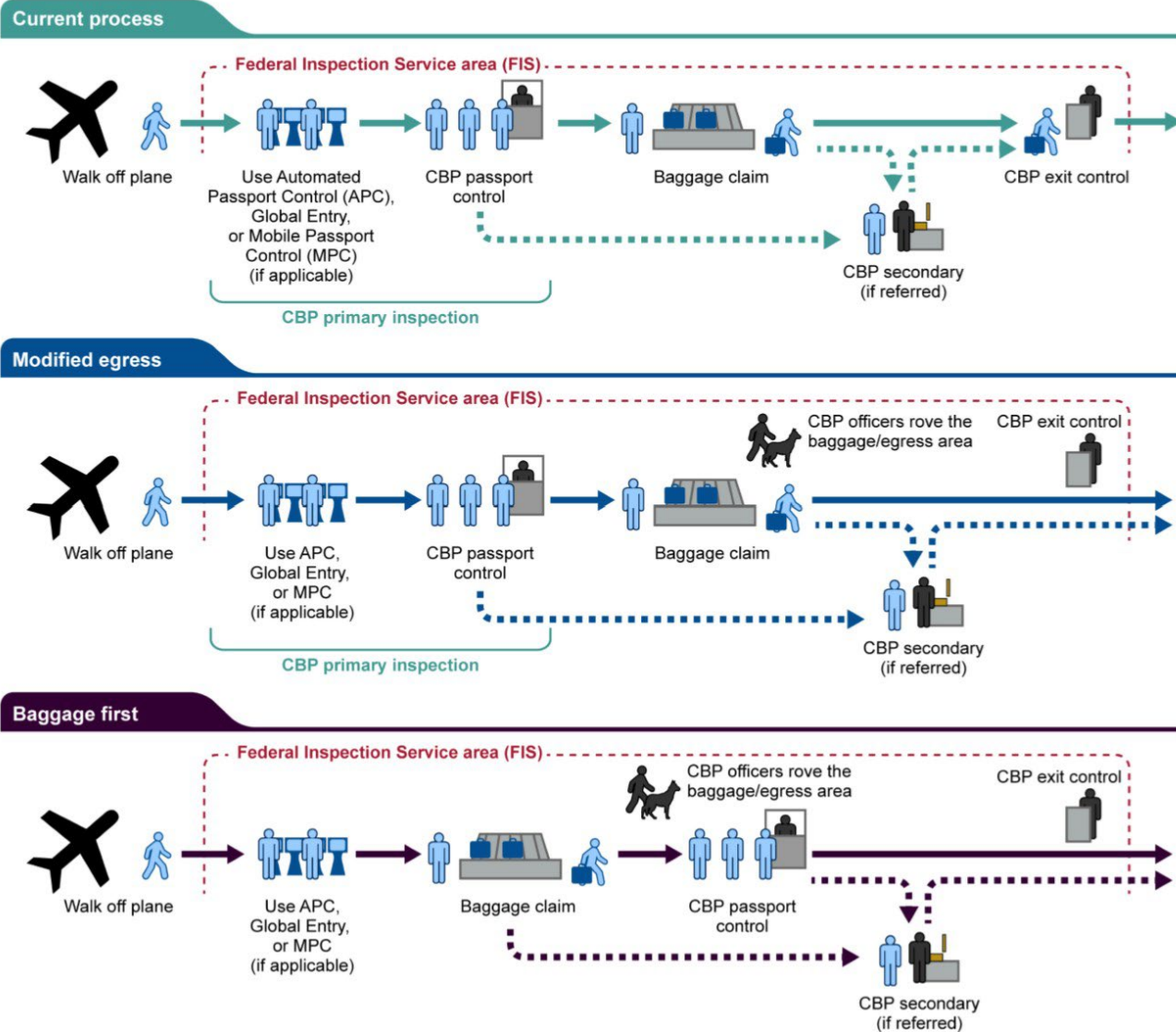
Space Designation	PAL 1	
	Units	SF
CBP		
Primary Processing and Inspection		5,934
Unified Secondary Processing and Inspection		2,516
Detention Suite		1,800
Agricultural Inspections and Lab Spaces	1	380
Canine Enforcement Spaces and Kennels		1,509
Operational Support Spaces		7,148
Staff Support		184
International Baggage Claim		
Number of ADG III (CAT C) units (>130lf<230lf)	1	6,680
Rest Rooms		1,400
FIS Circulation		1,261
	<i>CBP</i>	<i>28,812</i>

CBP Assumptions

- Assumes 400 passengers per hour capacity
- Restrooms include 6 male and 6-7 female fixtures
- Single baggage claim device with 200 linear feet of claim frontage

CBP – Baggage First

Figure 8: Evolution of U.S. Customs and Border Protection (CBP) Air Traveler Inspection Process



Goals:

- Strengthen border security while improving processing efficiency
- Reduce CBP Staffing needs by consolidation
- Reduce passenger wait time
- Eliminate “additional stop” at CBP exit control

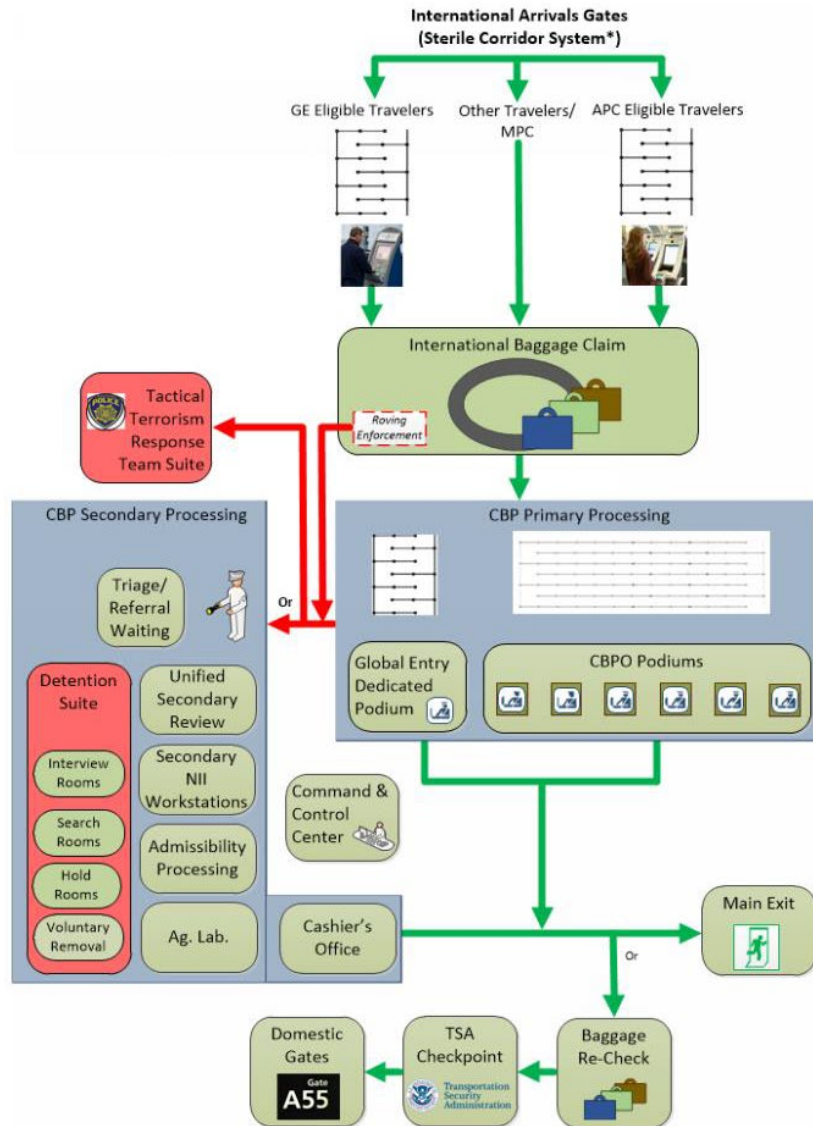


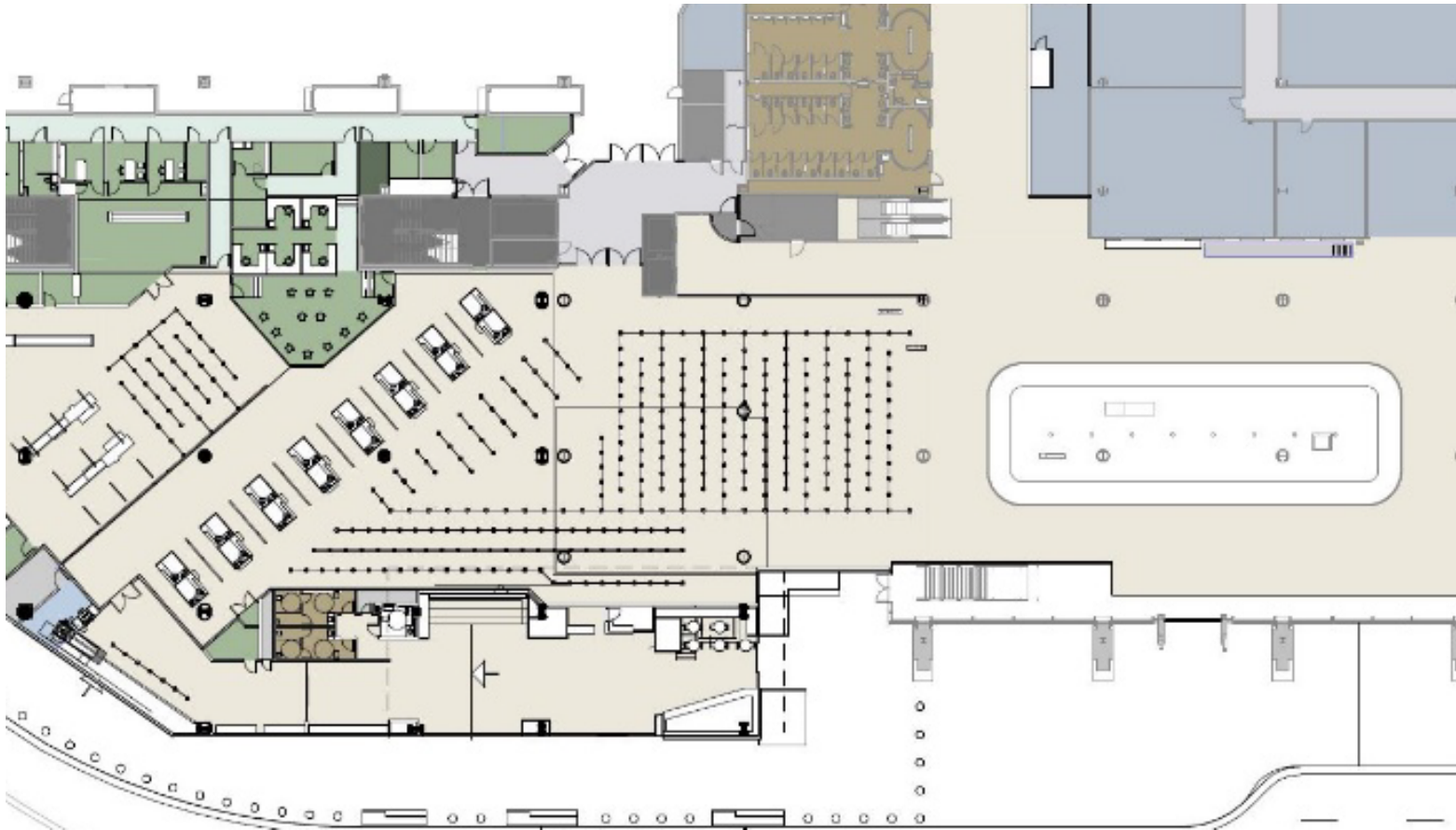
Figure 2.2. Flow of Traffic in "Baggage First" Passenger Processing Facilities

Advantages:

1. CBP Staff Efficiency
 - Co-located staff allows for more at primary processing
2. Allows for CBP roaming officers in baggage claim to identify threats earlier (prior to primary processing)
3. Reduce overall passenger wait times (# of steps)

Disadvantages:

1. Dwell time in baggage claim is longer
 - Passengers arrive before baggage
 - Ensure proper dwell area and amenities in baggage claim to deter congestion



SAN – CBP Baggage First

- 800-1000 pax/hour
- First US “Baggage First” facility
- New CBP Guidelines
- Efficiency of CBP Staffing
- Less interaction for passengers
- Quicker processing
- Others: SEA, MCO

CBP - AECOM – Recommended Option C

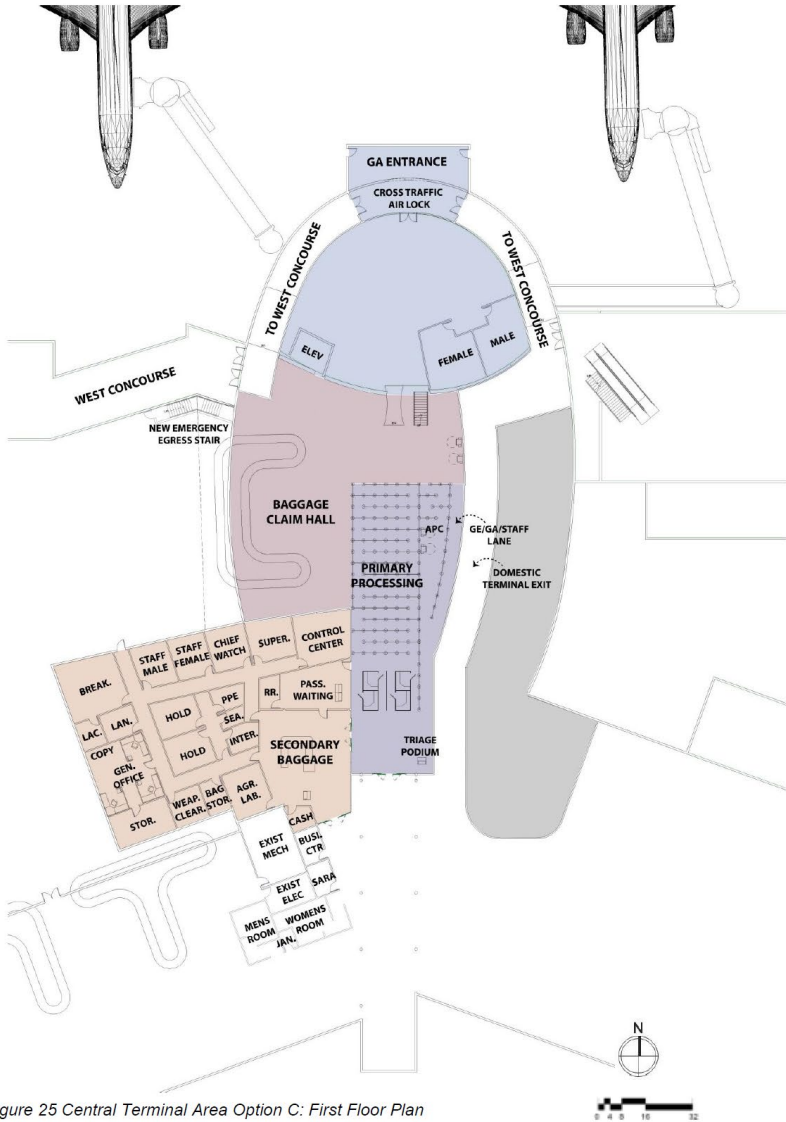


Figure 25 Central Terminal Area Option C: First Floor Plan

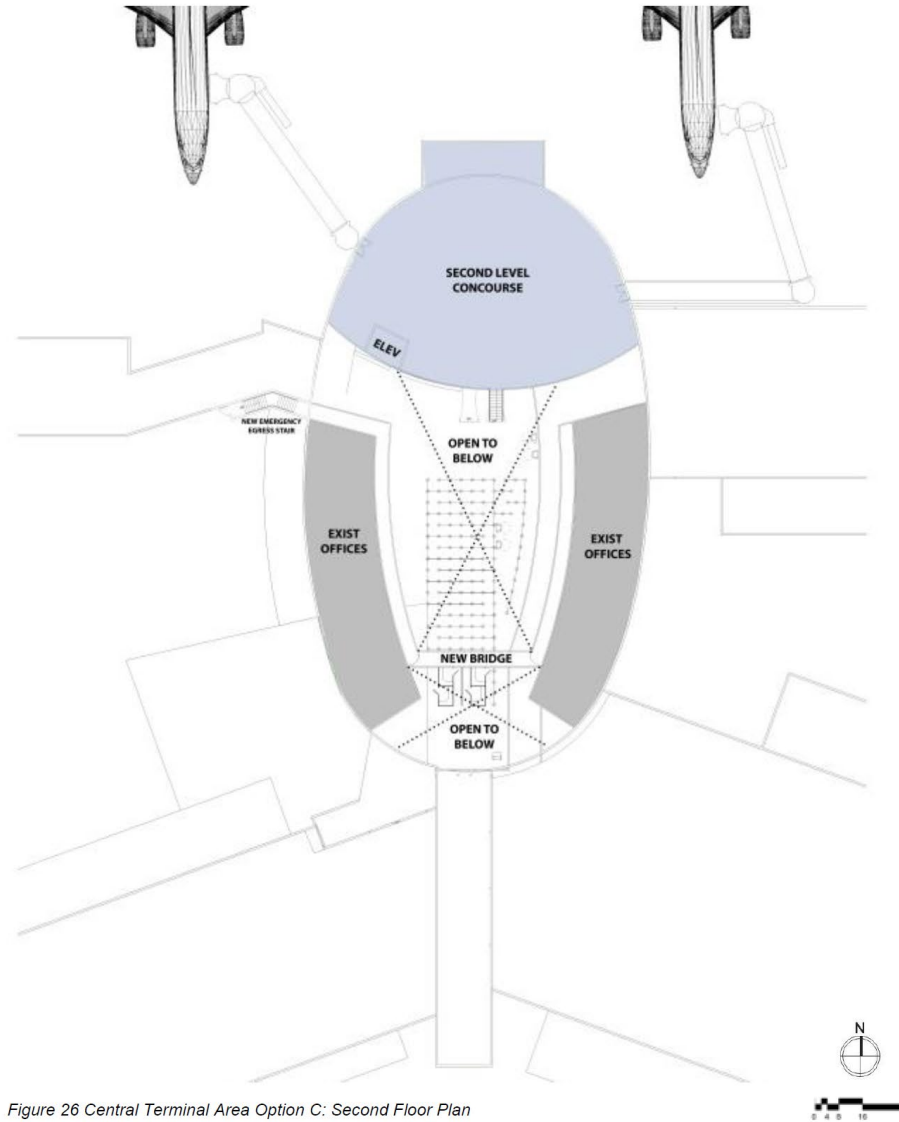


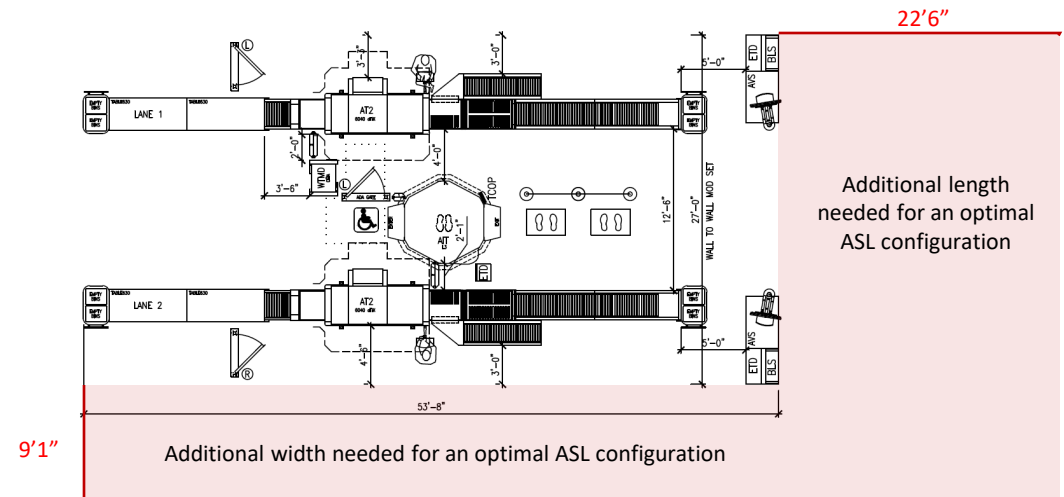
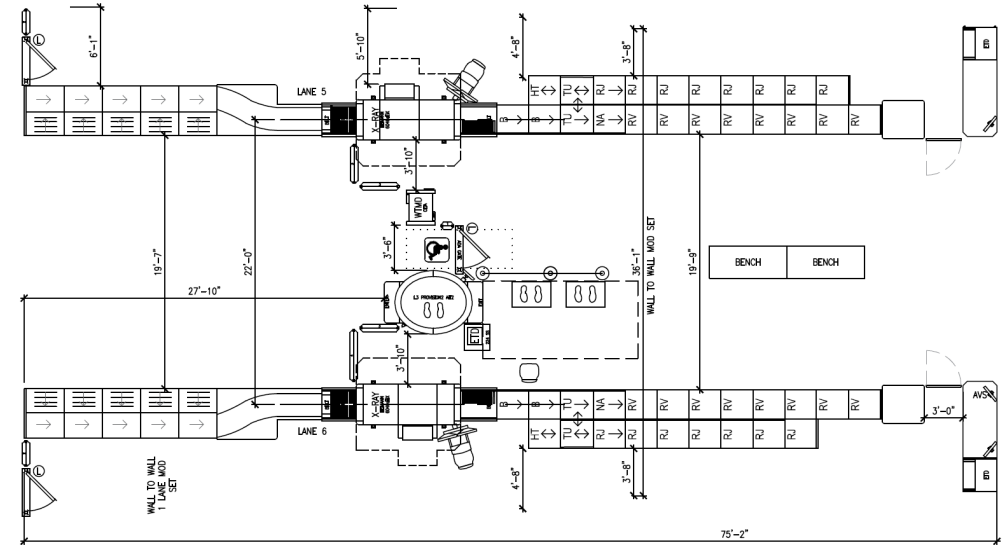
Figure 26 Central Terminal Area Option C: Second Floor Plan

- **Option C Cost – \$18.3 Million**
 - Reconfigure existing central terminal area to support CBP facility
- **Near Term Infrastructure Costs for Central Terminal Area – \$8.9 Million**
 - Required facility upgrades

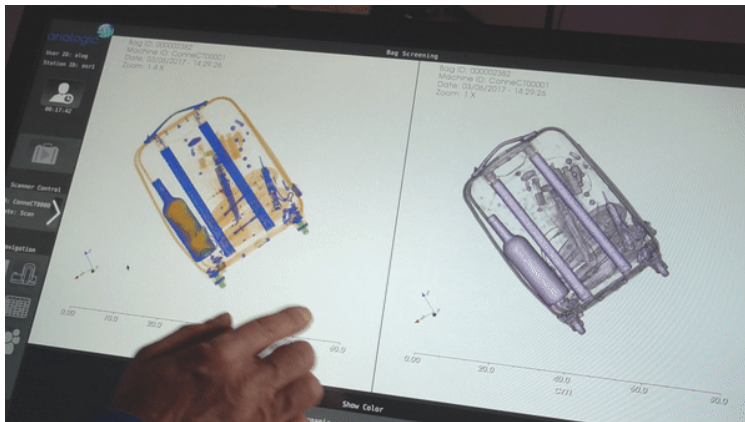
Near Term Required Central Terminal Area Infrastructure Improvements				
Electrical Up Grades + 800kW Emergency Generator	\$ 2,359,125.00			
Replace HVAC Systems	\$ 2,955,000.00			
Replace Boiler and Chiller Plant	\$ 3,055,000.00			
Replace Duct & Pipe Insulation	\$ 33,000.00			
Relocate Exhaust Fan	\$ 5,500.00			
Plumbing System Upgrades	\$ 66,282.00			
New Roof for Central Terminal Area	\$ 500,000.00			
Total Infrastructure Costs	\$ 8,973,907.00			

TSA – Automated Screening Lanes

- ASL Footprint (75'2" x 36'1"): 2,700 SF
- Standard Footprint (53'8" x 27'0"): 1,600 SF
- Space requirements for ASL's are 68% higher when using the optimal configuration
- ASL length and width may be reduced in a sub-optimal configuration



- Existing AT X-Rays are a bottleneck at security checkpoints and limit passenger throughput
- CT provides a 3D image of passenger carry-on items
- This may allow passengers to keep laptops in bag and in the future allow all liquids to stay in bags
- This reduces the number of “bins” to be screening and increases overall throughput



Source: Analogic



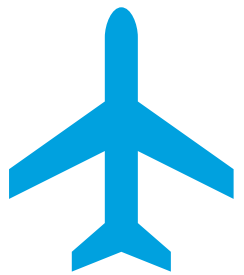
Source: L3

- Additional spaces for consideration:
 - Airport Office (space/quantity requirements)
 - Conference Area (Airport only vs Leasable)
 - Business Lounge
 - Kids Play Area





Emerging Trends (Task 4)



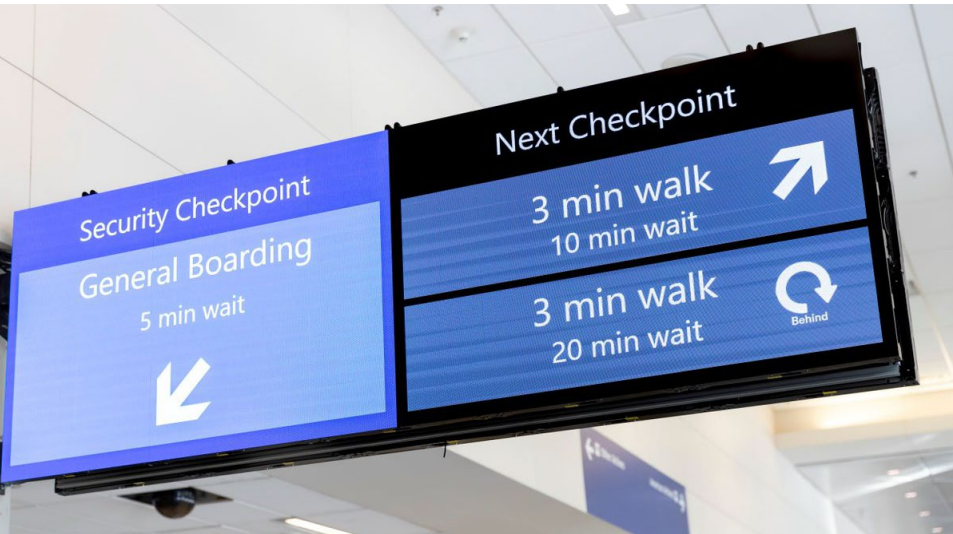
Rank of Most Important Items

	Global Passengers Ranking	North American Passengers Ranking
Waiting time in check-in queue/line	1	1
Ease of finding your way through airport	2	2
Waiting time at security inspection	5	3
Cleanliness of washrooms/toilets	3	4
Internet access/Wi-Fi	4	5
Comfort of waiting/gate areas	8	6
Availability of washrooms/toilets	9	7
Restaurant/Eating facilities	16	8
Feeling of being safe and secure	7	9
Courtesy and helpfulness of security staff	11	10
Courtesy and helpfulness of airport staff	10	11

11 most important items by North American and Global Passengers

Courtesy of ACI World

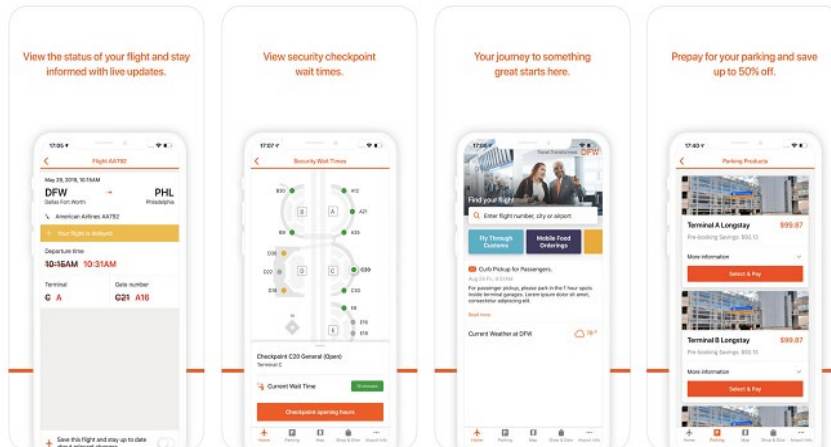




Dallas Fort Worth International Airport (DFW)

Mobile App & Dynamic Signage with Real Time updates:

- Queue wait time continually updated
- Wait time by passenger type
- Cannot capture queue if it extends outside the catchment area
- Provides walking time with wait time to adjacent checkpoints

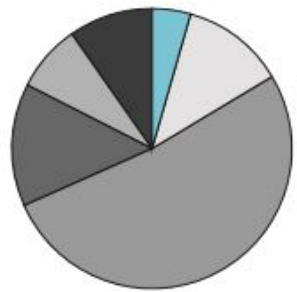


Curb to Gate (Delta – ATL)

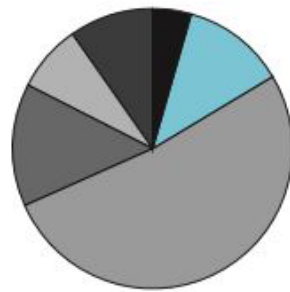
- International only (now); domestic (future)
- Biometric facial recognition
- Verifies faces based upon US CBP data base
- Passport numbers are entered into frequent flyer profile
- Check-in, baggage and TSA ID checks
- Saves 9 minutes off the boarding process



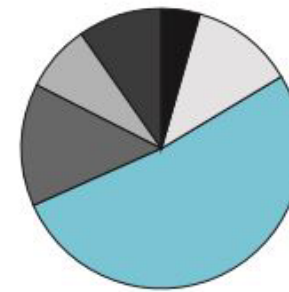
IMPORTANCE OF THE HOLDROOM A FLYER'S HOME IN THE AIRPORT



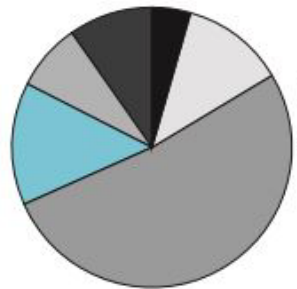
Ticketing/Check-in
4 minutes



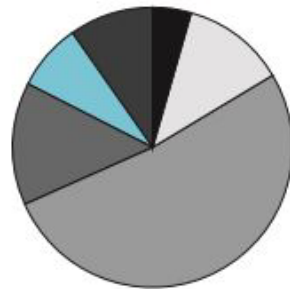
Security
10-12 minutes



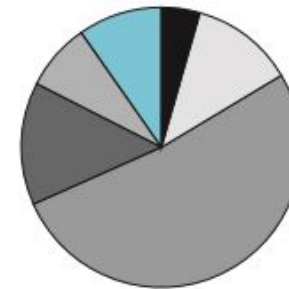
Holdroom
44 minutes



Food: Order + Eat
12-18 minutes



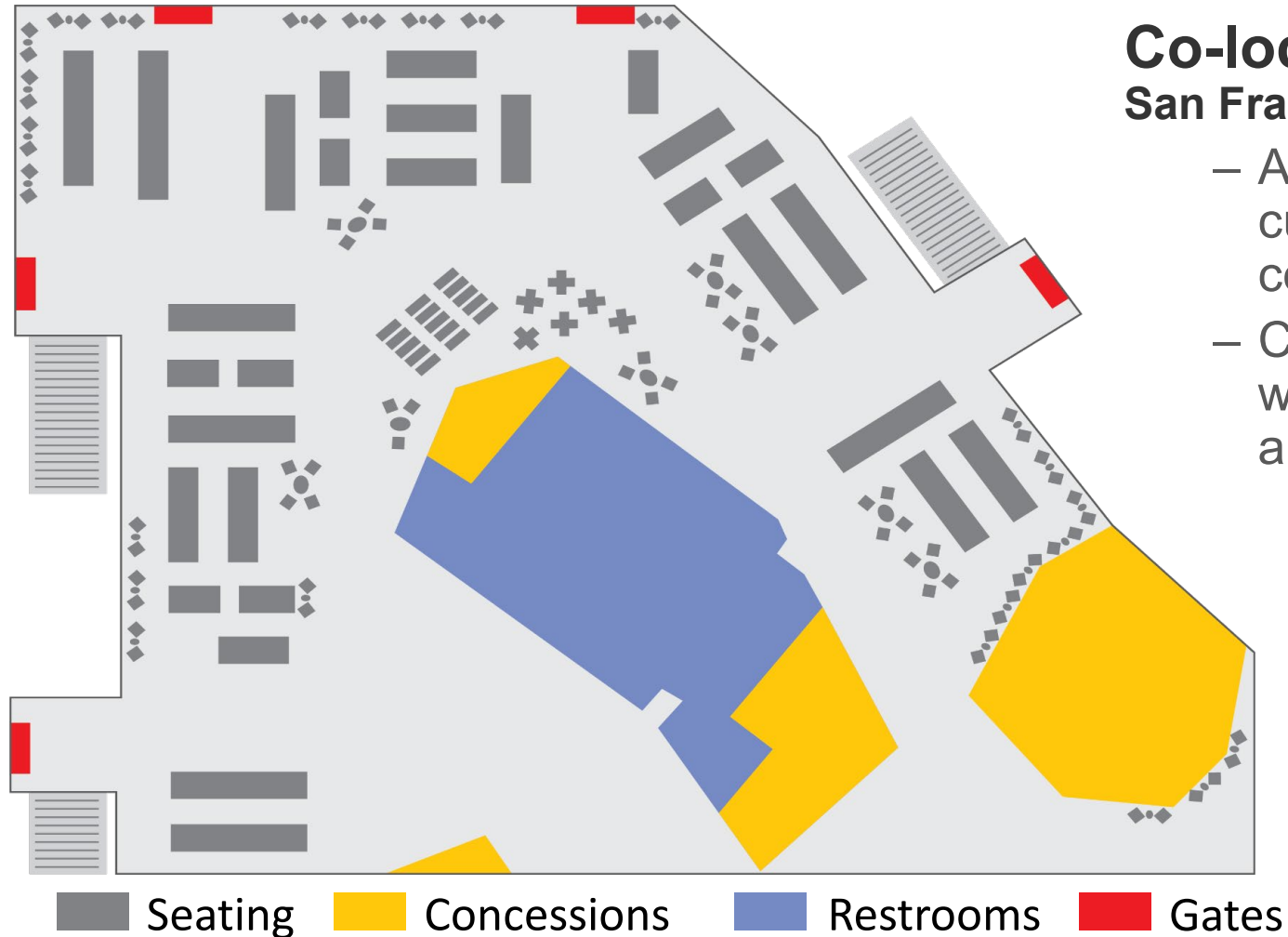
Drink: Order + Consume
7-12 minutes



Retail: Seek + Select
4-6 minutes (*domestic*)
12-16 minutes (*international*)

– Holdrooms dwelling consist of around 50% of passenger time





Co-located Concessions & Holdrooms San Francisco (SFO)

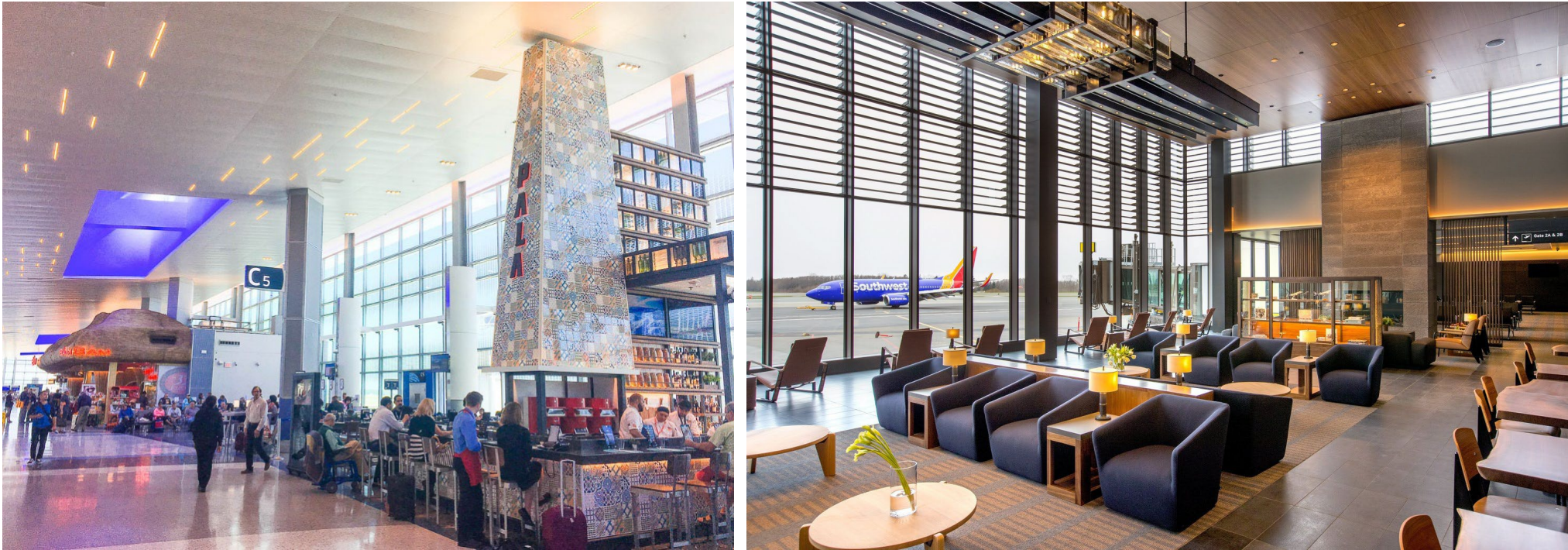
- A recent trend in airport planning enhances customer satisfaction and increases concession revenue.
- Co-located concessions serves passengers without losing line-of-sight of their holdroom and boarding announcements



Restaurant Ordering System (Fixed IPAD and Mobile Systems)

Philadelphia (PHL)

- Touch-screen ordering systems are being utilized in airport restaurants to enhance the user experience and allow customers to browse menu items and place their orders
- Easier to do in one carrier concourse



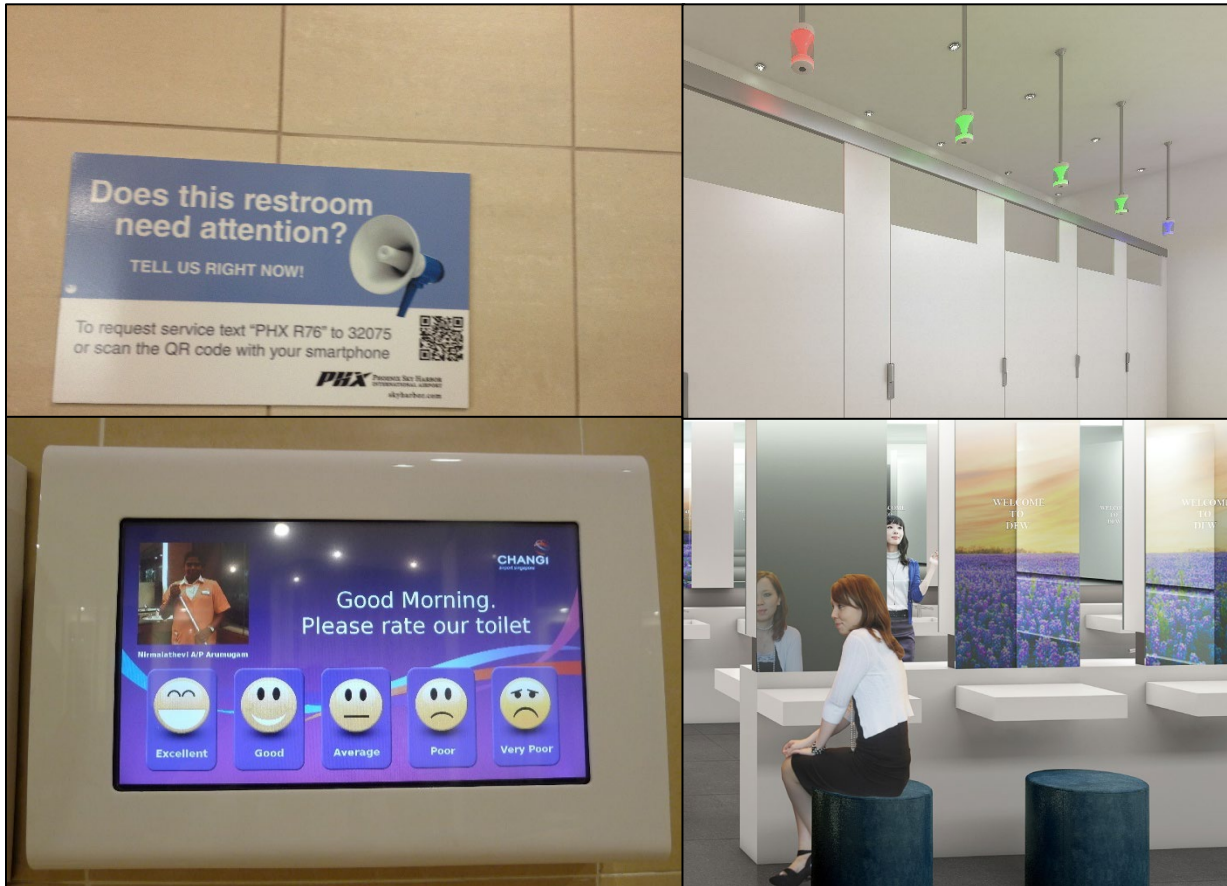
Hospitality Influence *(Holdrooms Inspired by hotel lobbies)*

- Environment focused on enhancing the passenger dwelling experience
- Enhance the holdroom with elements such as art, entertainment, and comfortable seating



Minneapolis/ St. Paul (MSP)

- Stalls with out-swinging doors and niches for rolling luggage
 - Baby changing stations with sinks and towel dispensers
 - Shallow trough sinks to minimize splashing
 - Lighting that comes from the side instead of above
 - Each restroom zone has waiting areas for travel companions
 - Mosaic art display from regional artists
- The restroom is often the first place visited on arrival and the last stop before boarding, leaving a lingering impression of the airport**



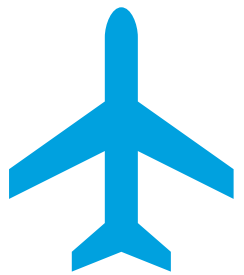
Minneapolis/ St. Paul (MSP)

Smart Restrooms

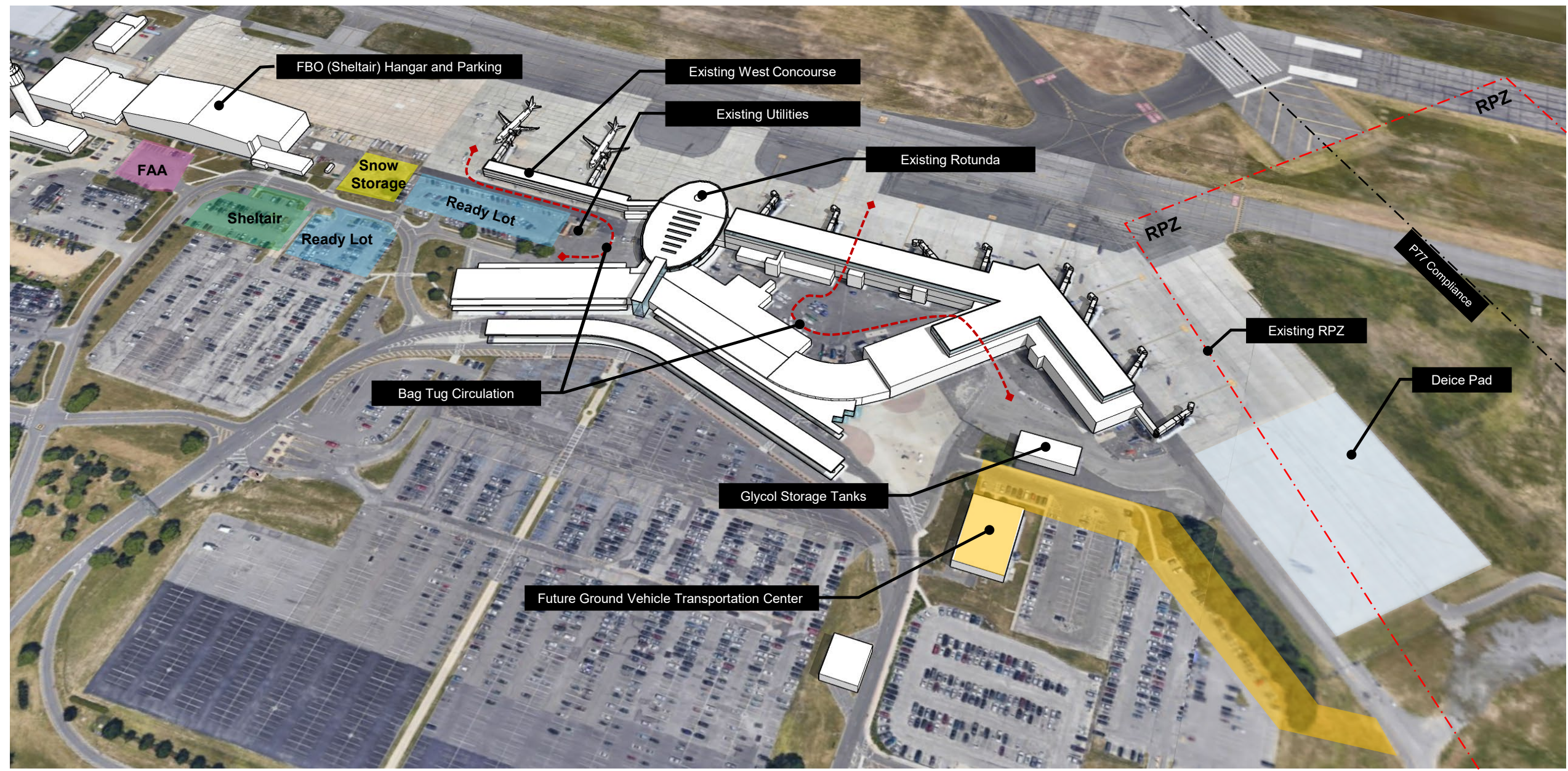
- Clean & restock restrooms right after surges using tracking
- Provide ways for passenger to let you know how you're doing
- Let Pax know when the restroom was last serviced and how much time it takes to walk to the next restroom
- System that informs passenger of open stalls
- Smart mirrors – Marketing and Other types of information



Concept Development (Task 4)



Existing Conditions – Site Constraints



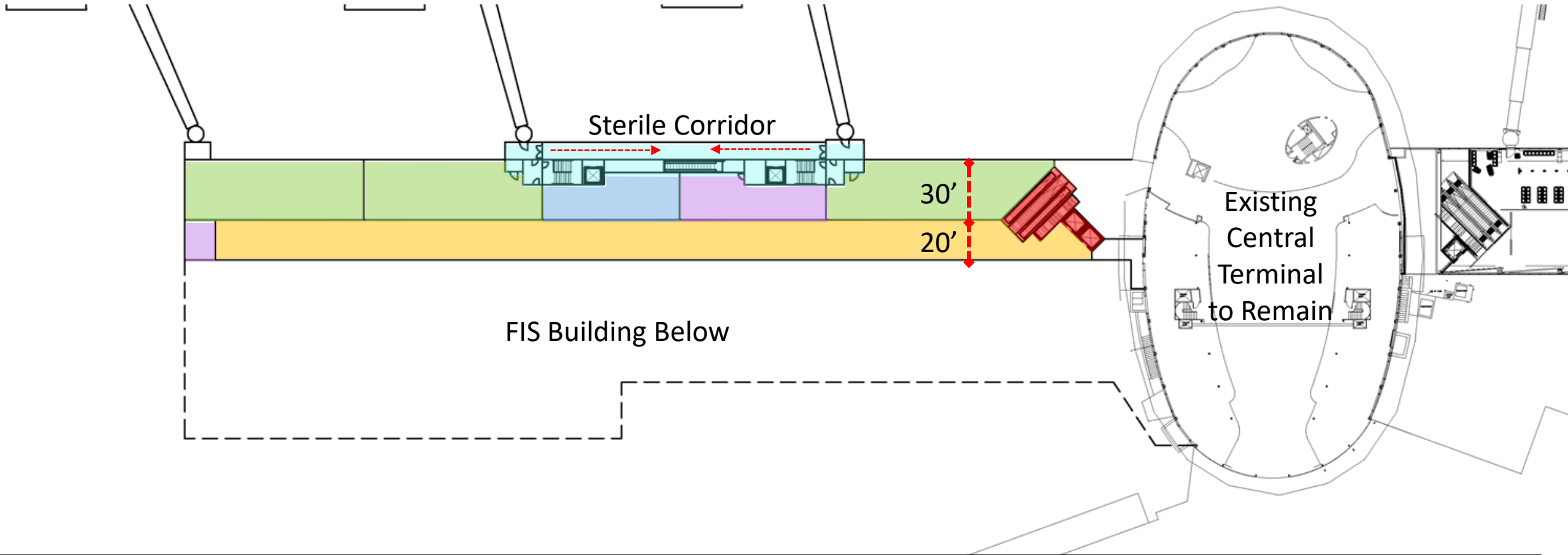


Other (not shown): North Terminal Concept







- **Alternative 1 – New West Concourse With Existing Central Terminal**
- **Alternative 2 – New West Concourse With New Central Terminal**
- **Alternative 3 – New West Concourse Behind Existing**
- **Alternative 4 – New East Concourse Extension**
- **Alternative 5 – New North Terminal**



Alternative 1 – Gate Level

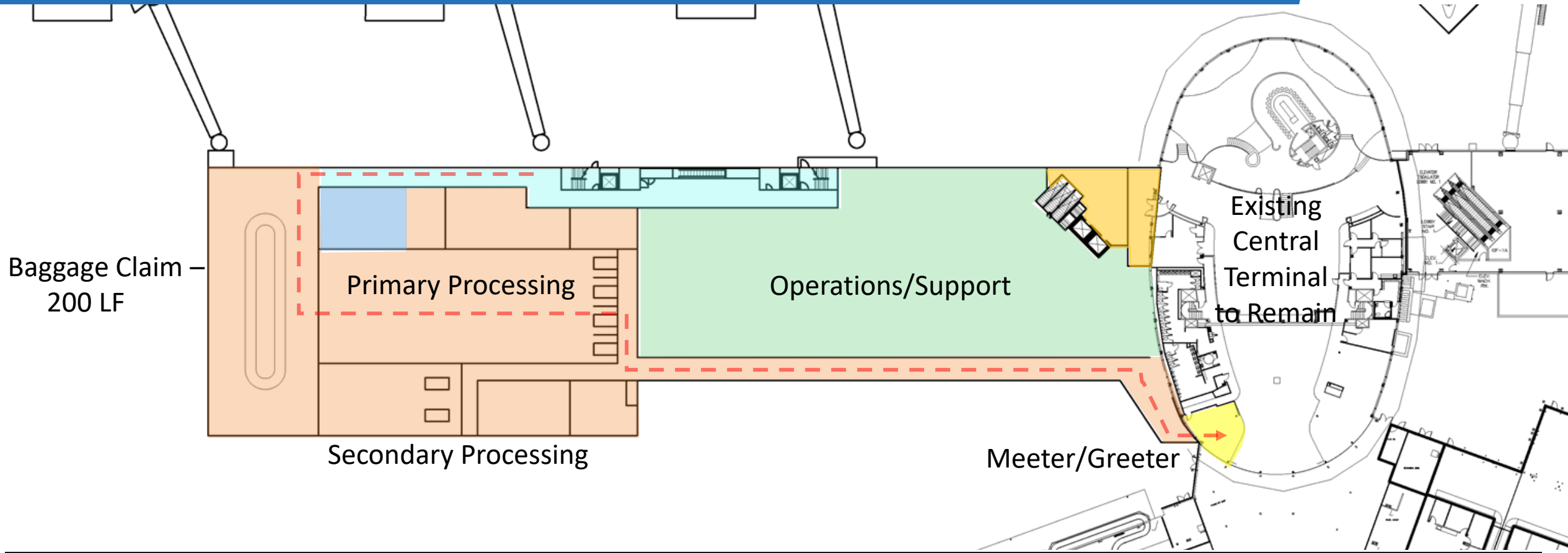


New Building Area

 Secure Circulation	8,500 SF	 Vertical Circulation	1,000 SF
 Holdroom	7,900 SF		
 Restroom	1,400 SF		
 Concessions	1,800 SF		
 Sterile Corridor	3,300 SF		

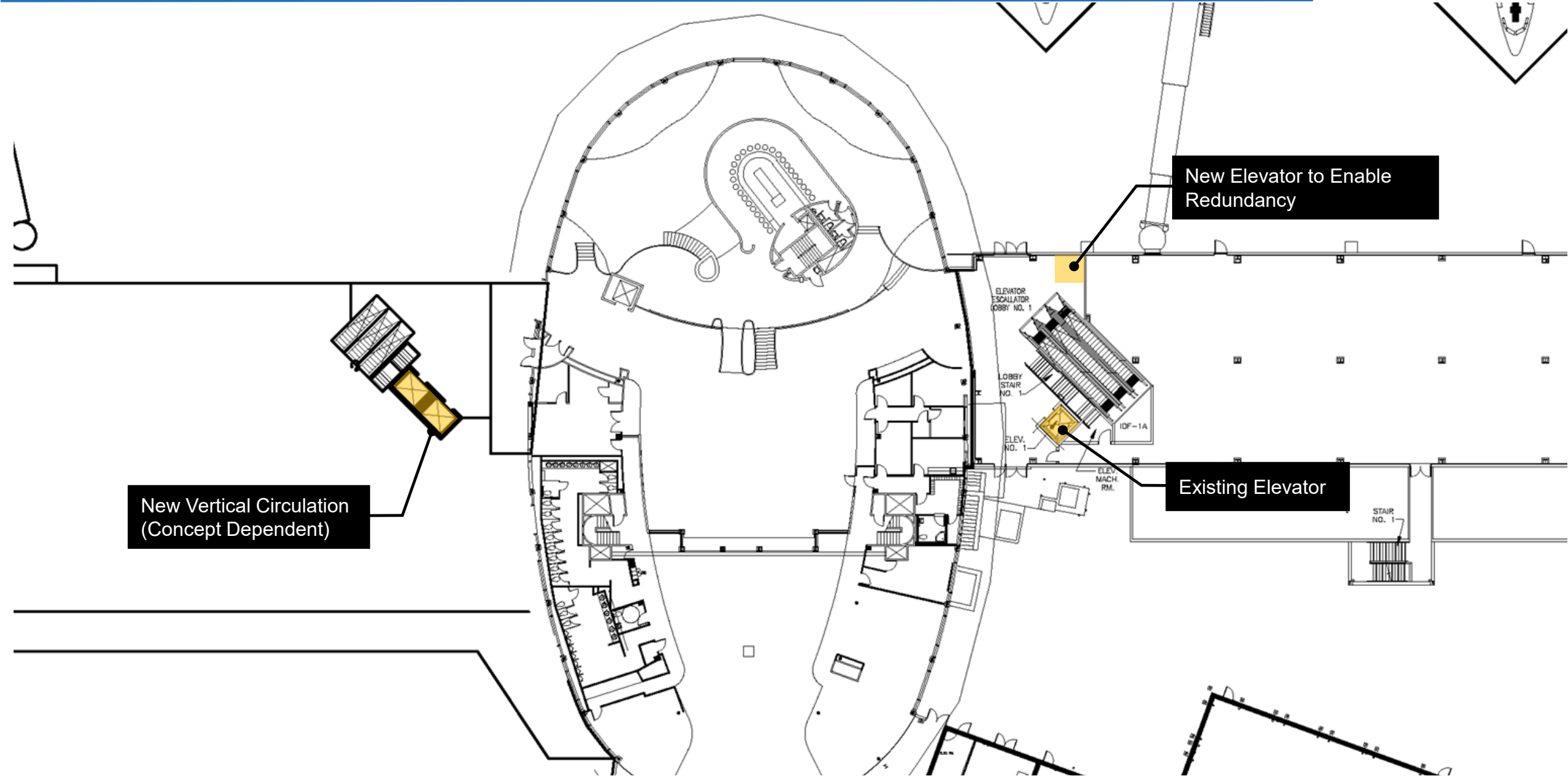
- Additional Vertical Transition Required
- Phasing required Frontier use of Gates A2-A4 during construction
- Central Terminal to remain as existing

Alternative 1 – Apron Level



New Building Area		Renovation Area	
 CBP Area	30,000 SF	 Meeter/Greeter	2,000 SF
 Operations Space	20,000 SF		
 Restroom	1,400 SF		
 Sterile Corridor	4,300 SF		
 Secure Circulation	1,700 SF		

Alternative 1 – Elevator Redundancy

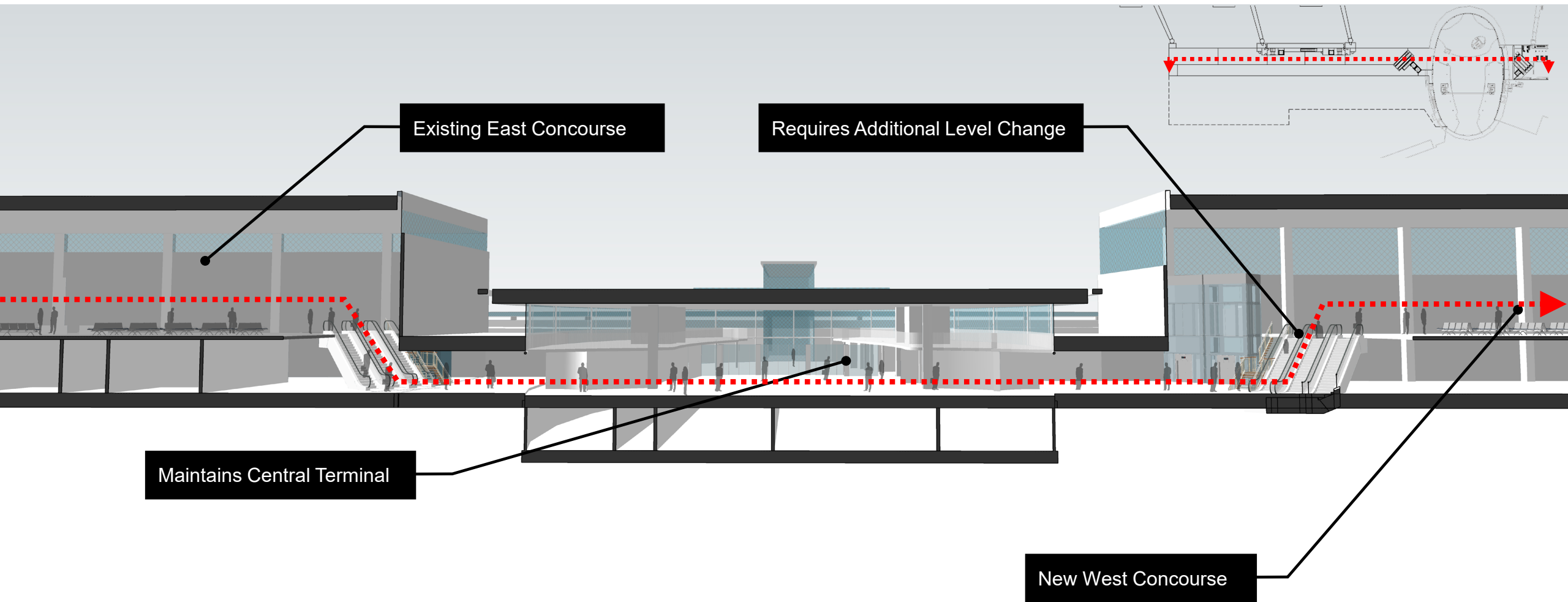


New Elevator to Enable Redundancy

Existing Elevator

New Vertical Circulation (Concept Dependent)

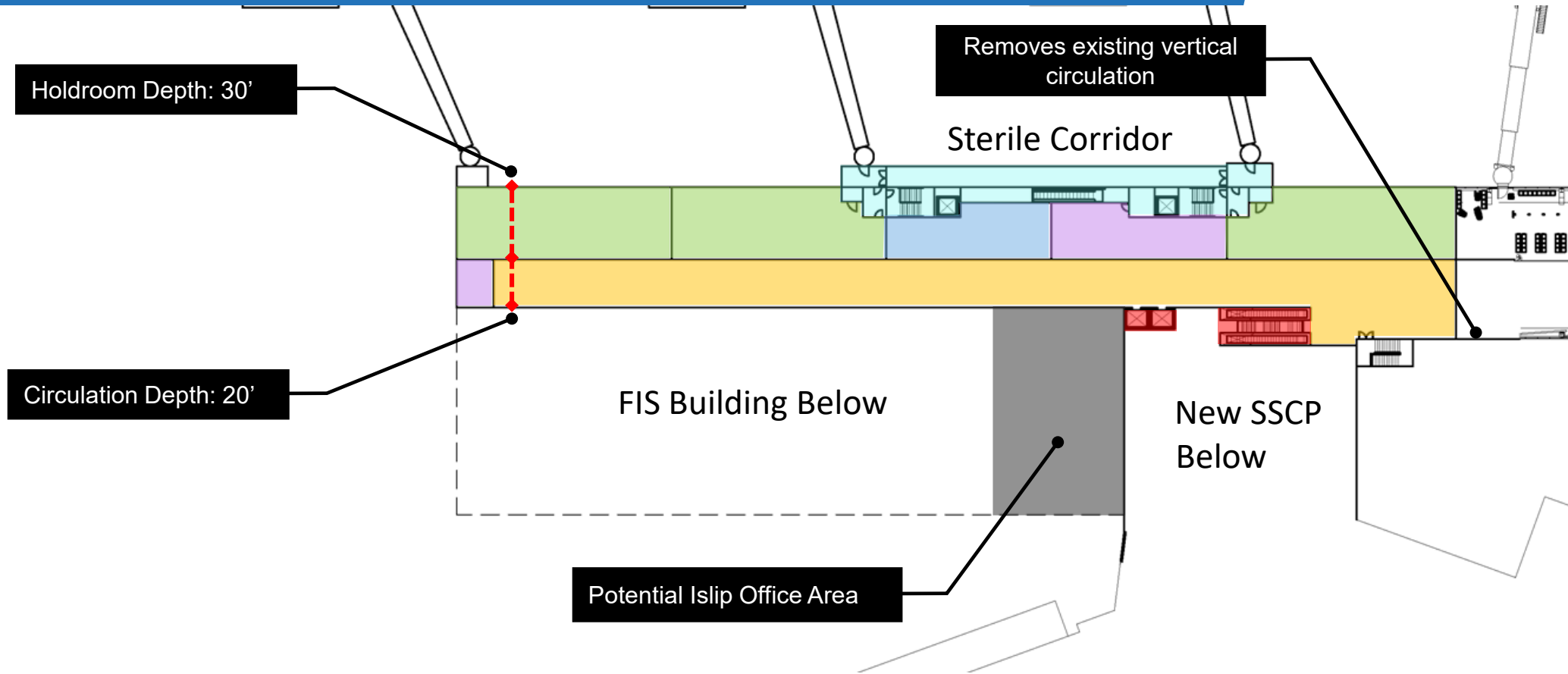
Alternative 1 – Section



Alternative 2 – New Central Terminal



Alternative 2 – Gate Level

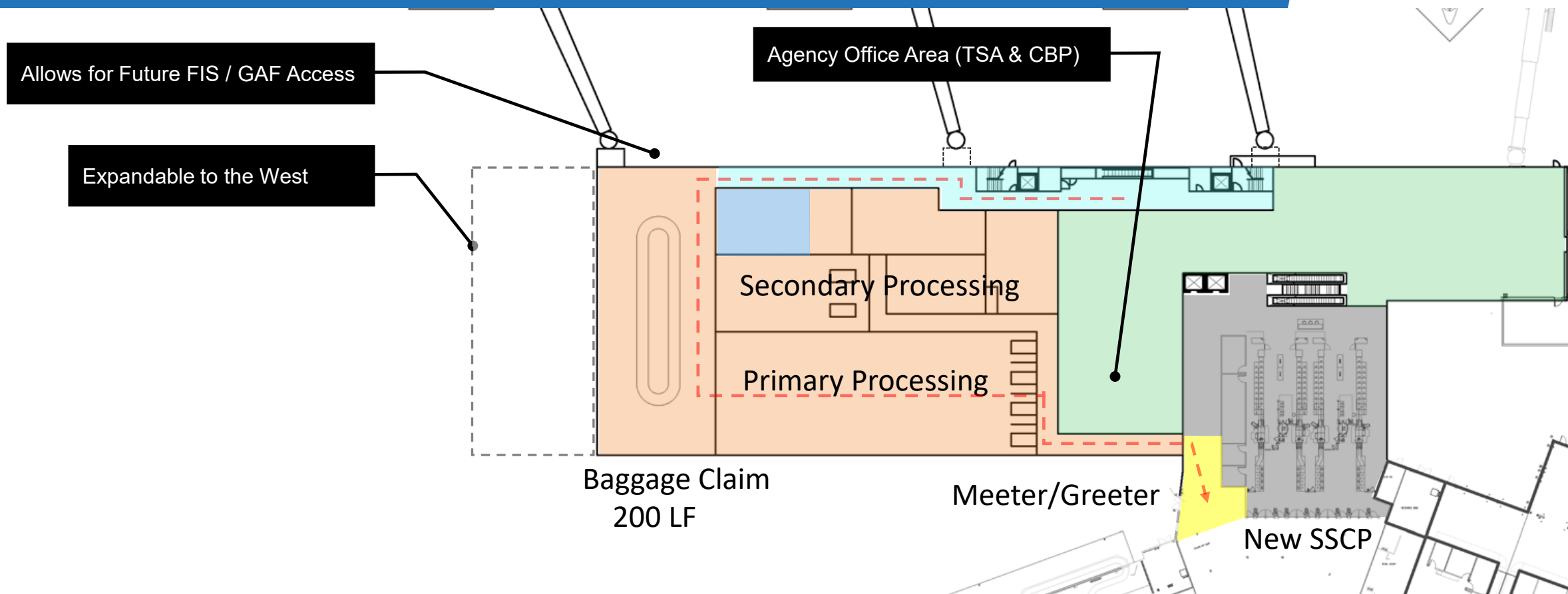


New Building Area

Secure Circulation	8,800 SF	Vertical Circulation	1,000 SF
Holdroom	8,300 SF		
Restroom	1,400 SF		
Concessions	1,800 SF		
Sterile Corridor	3,300 SF		

- Demolition of the Central Terminal building
- No Vertical Transition Required
- Phasing required Frontier use of Gates A2-A4 during construction
- Less length allows for future expansion to west

Alternative 2 – Apron Level

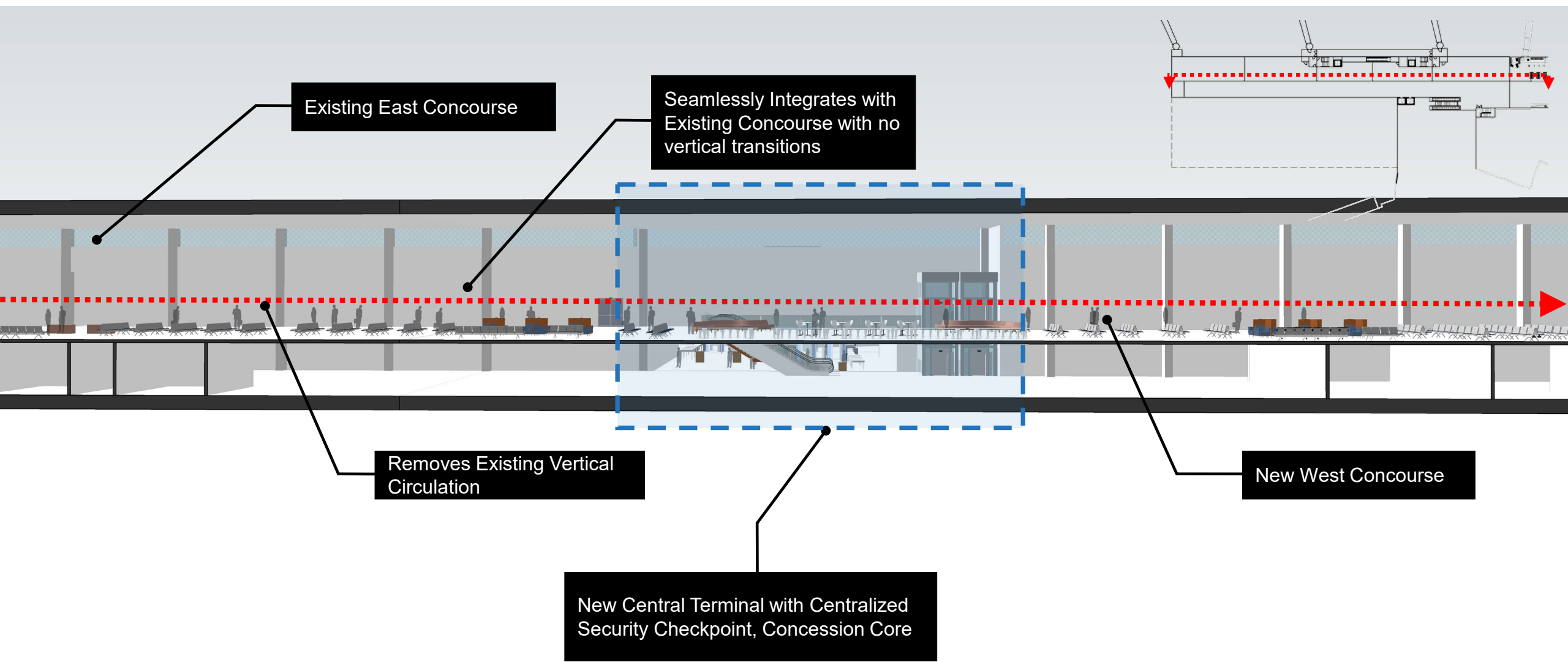


New Building Area

CBP Area	26,000 SF	Checkpoint/Exit	9,000 SF
Operations Space	16,000 SF	Meeter/Greeter	1,000 SF
Restroom	1,400 SF		
Sterile Corridor	4,300 SF		

- No Vertical Transition Required
- Phasing required Frontier use of Gates A2-A4 during construction

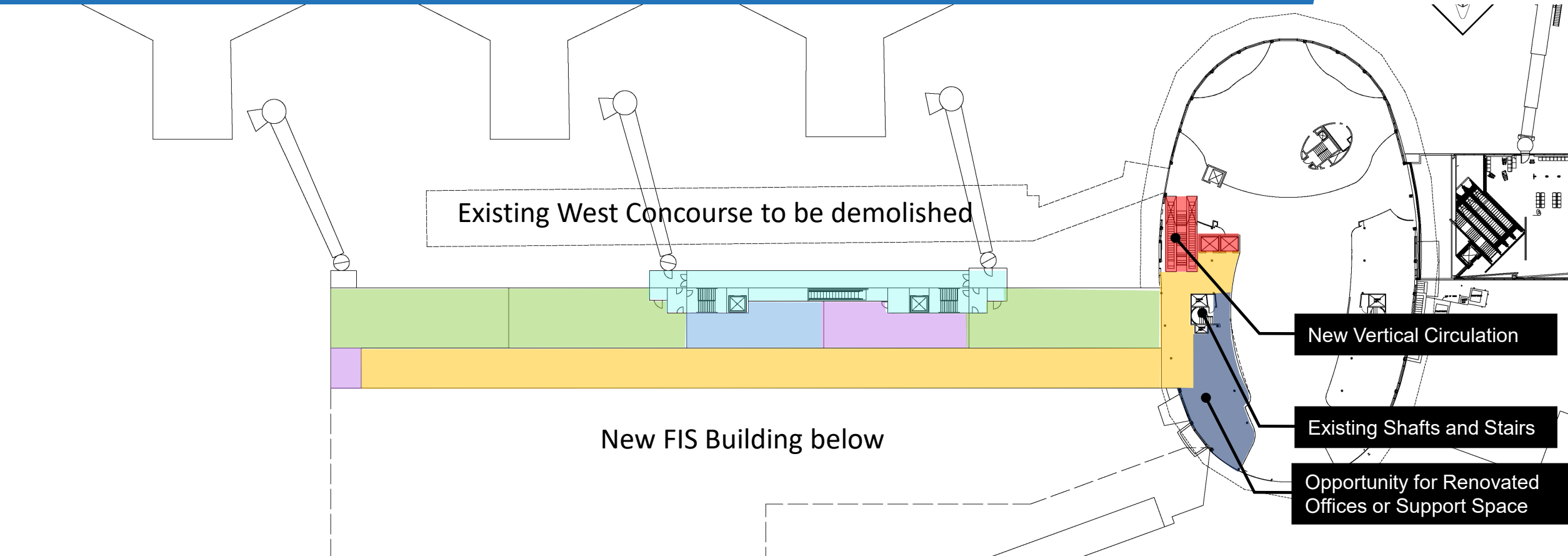
Alternative 2– Section Perspective



Alternative 3 – West (behind)



Alternative 3a – Gate Level



New Building Area

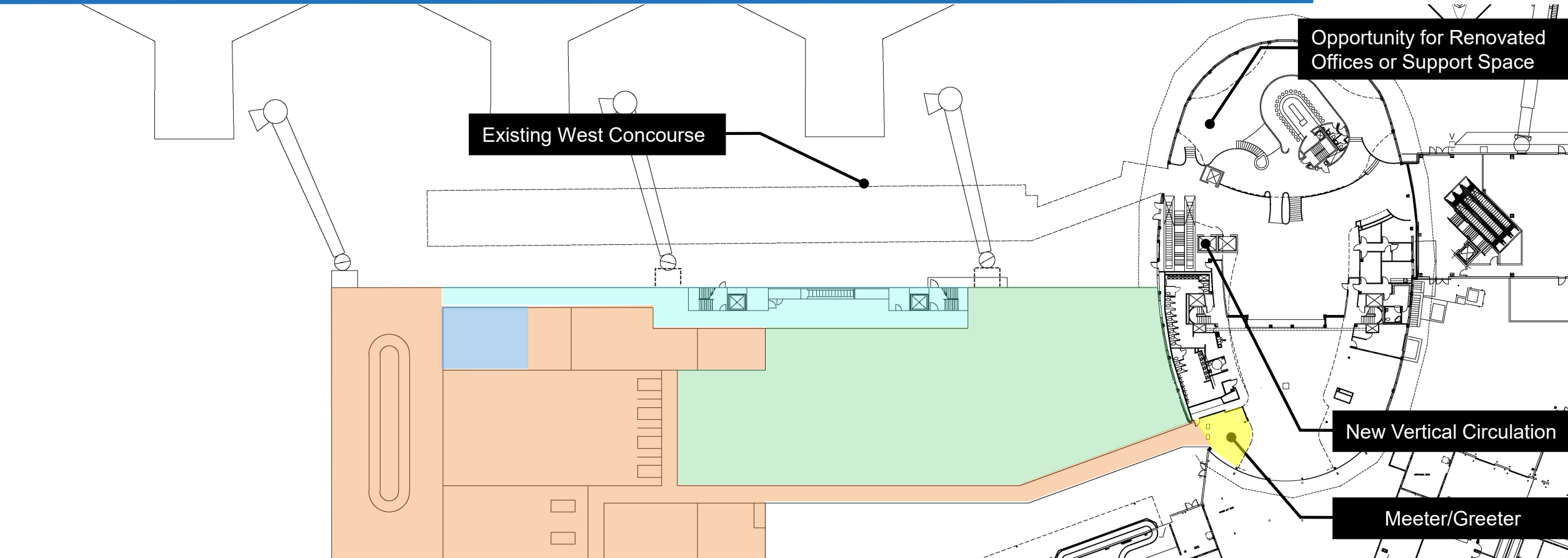
Secure Circulation	8,000 SF
Holdroom	8,100 SF
Restroom	1,400 SF
Concessions	1,800 SF
Sterile Corridor	3,300 SF

Renovation Area

Vertical Circulation	1,000 SF
Offices	2,000 SF
Secure Circulation	1,500 SF

- Additional Vertical Transition Required
- Maintain existing West Concourse operation during construction

Alternative 3a – Apron Level



New Building Area

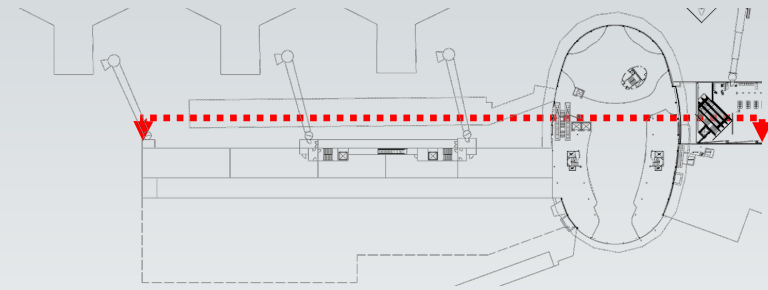
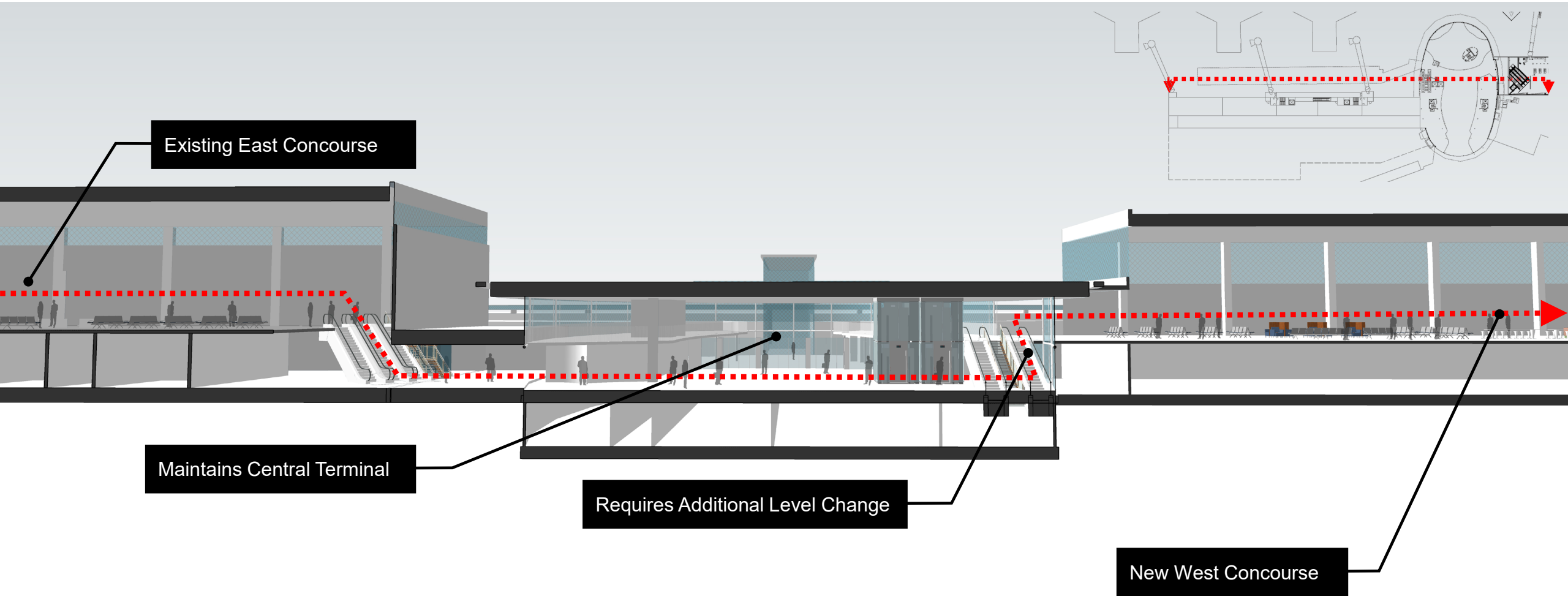
CBP Area	26,000 SF
Operations Space	20,000 SF
Restroom	1,400 SF
Sterile Corridor	4,300 SF

Renovation Area

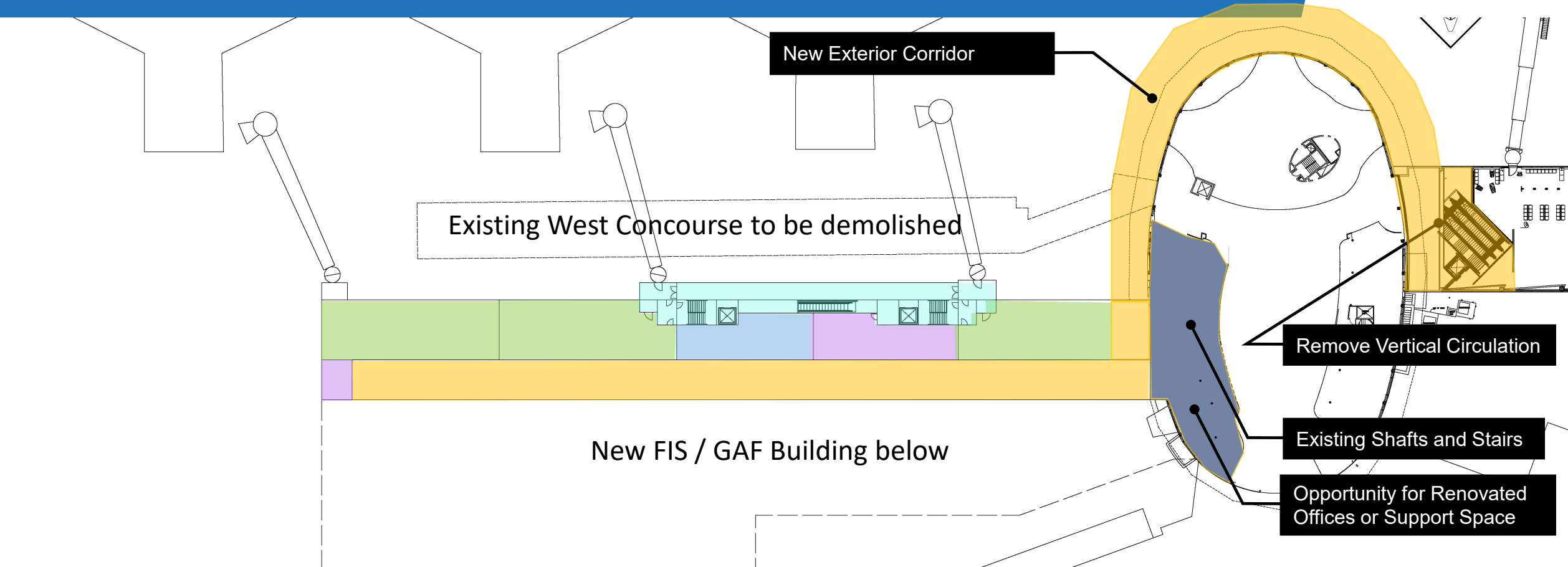
Meeter/Greeter Area	2,000 SF
---------------------	----------

• Potential issue with inbound baggage tug circulation due to size of FIS

Alternative 3a– Section Perspective



Alternative 3b – Exterior Corridor Option



New Building Area	
Secure Circulation	9,500 SF
Holdroom	8,100 SF
Restroom	1,400 SF
Concessions	1,800 SF
Sterile Corridor	3,300 SF

Renovation Area	
Vertical Circulation	1,000 SF
Offices	2,000 SF
Secure Circulation	1,500 SF

- New exterior secure corridor; Central Terminal remains non-secure
- Maintain existing West Concourse operation during portion of construction
- Longer walking distance (no vert. transition)

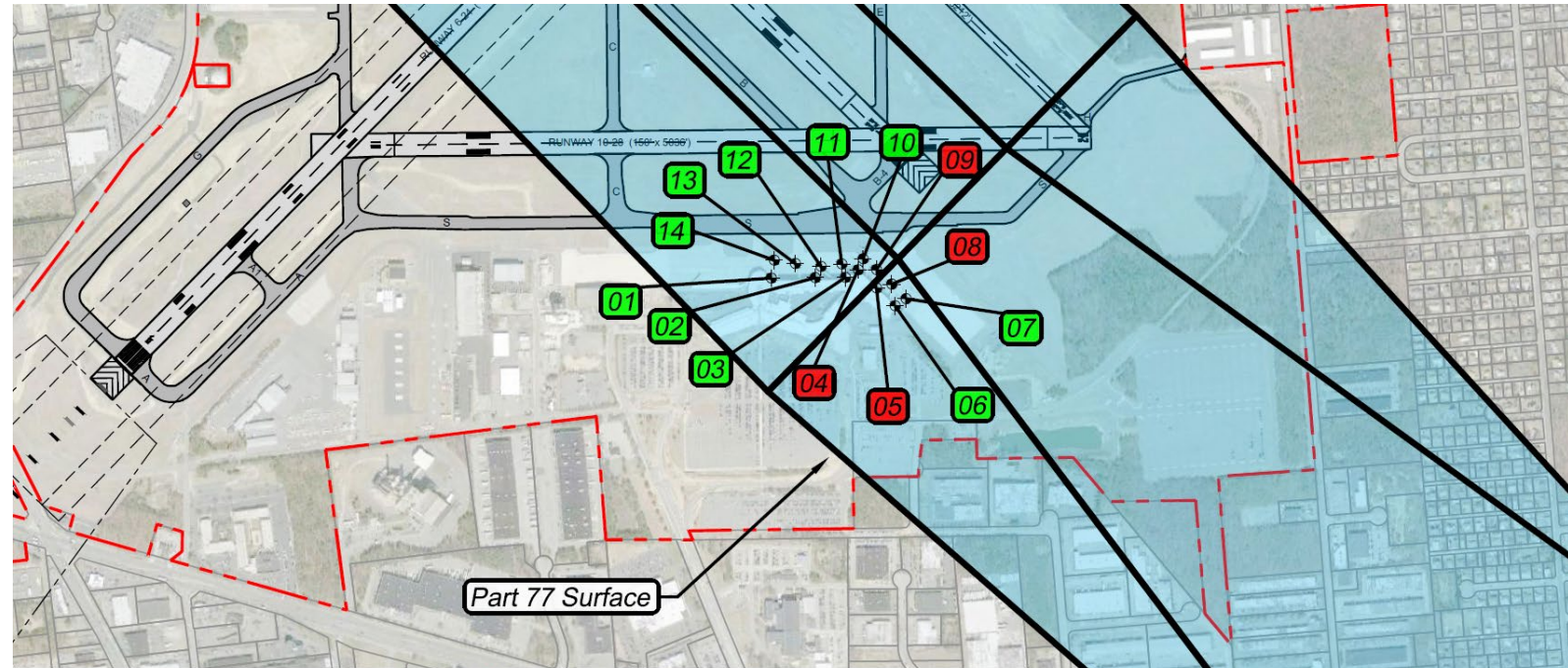
Alternative 4 – East



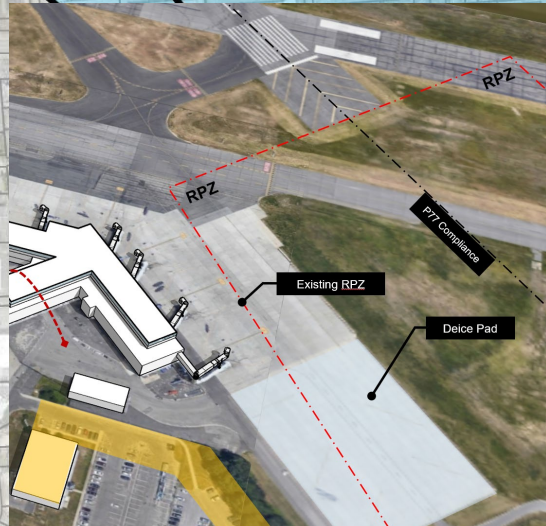
Alternative 4 – East - Airspace Constraints

Master Plan Analysis:

- A total of four Part 77 obstacles on existing terminal building
- Obstructions to:
 - Inner Transitional
 - Inner Approach Transitional
- Currently mitigated with obstruction lights on building.
- East development will increase the airspace issue

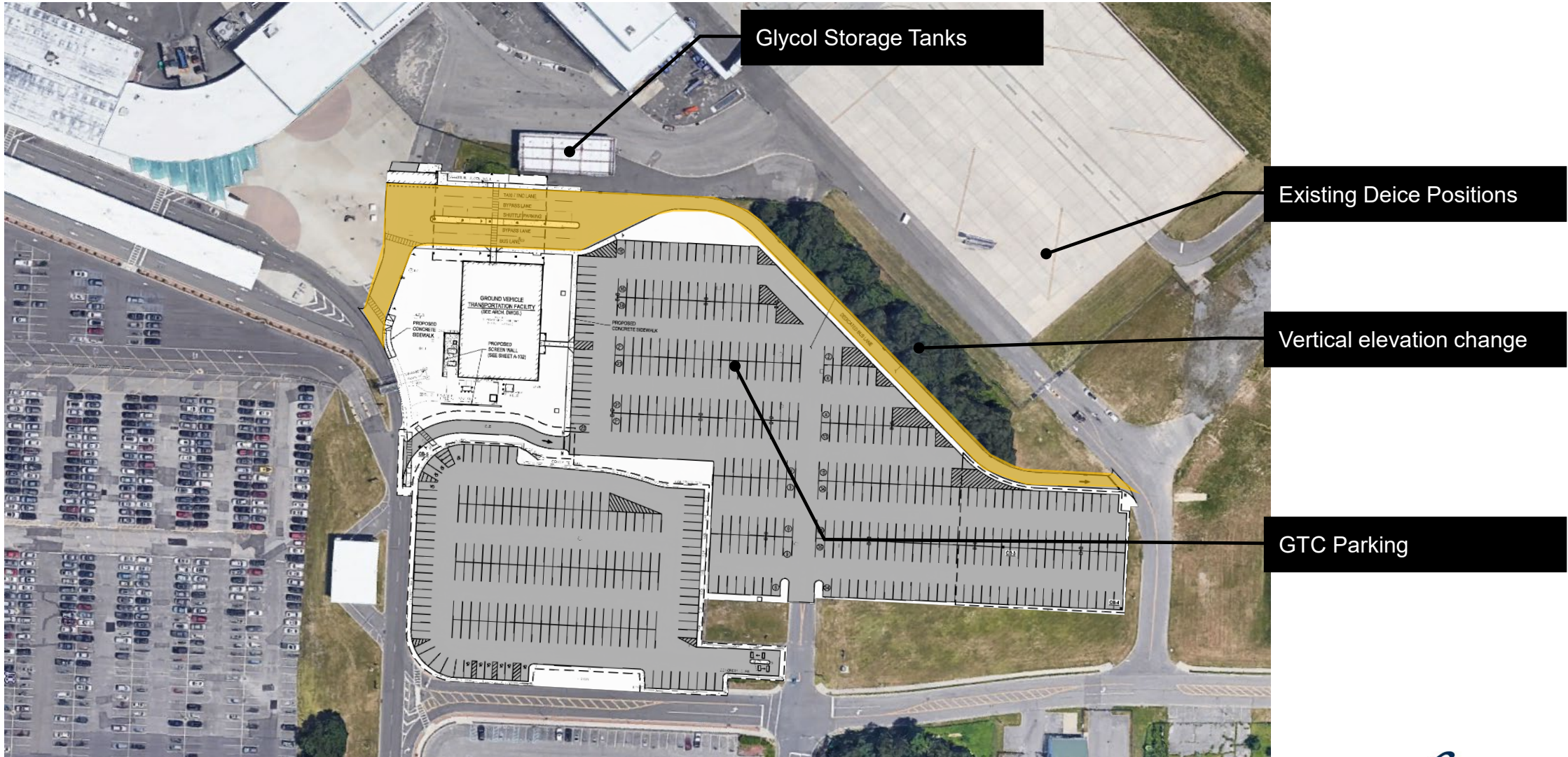


ID	DESCRIPTION	OBJECT ELEV	SURFACE HEIGHT	PENETRATION/ CLEARANCE	SURFACE NAME
01	TERMINAL BUILDING	118.0	173.0	-54.9	INNER TRANS
02	TERMINAL BUILDING	118.0	143.5	-25.5	INNER TRANS
03	TERMINAL BUILDING	118.0	123.5	-5.4	INNER TRANS
04	TERMINAL BUILDING	118.0	110.3	7.8	INNER TRANS
05	TERMINAL BUILDING	118.0	110.5	7.5	INNER APPROACH TRANS
06	TERMINAL BUILDING	107.2	111.8	-4.6	INNER APPROACH TRANS
07	JET BRIDGE	94.7	100.1	-5.4	INNER APPROACH TRANS
08	JET BRIDGE	100.0	98.8	1.2	INNER APPROACH TRANS
09	JET BRIDGE	100.1	98.3	1.8	INNER TRANS
10	JET BRIDGE	99.7	99.9	-0.2	INNER TRANS
11	JET BRIDGE	99.5	117.2	-17.6	INNER TRANS
12	JET BRIDGE	100.5	132.5	-32.0	INNER TRANS
13	JET BRIDGE	100.9	147.6	-46.7	INNER TRANS
14	JET BRIDGE	100.9	159.5	-58.6	INNER TRANS



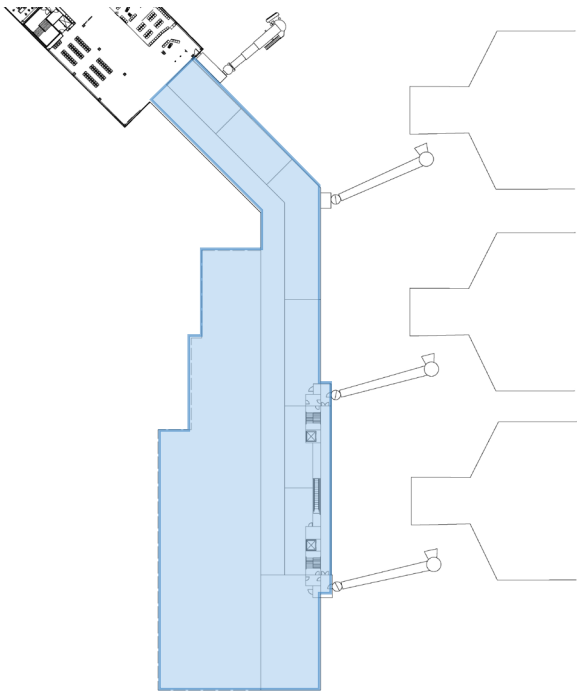
Note: Negative numbers represent clearance value, Positive numbers represent penetration value.





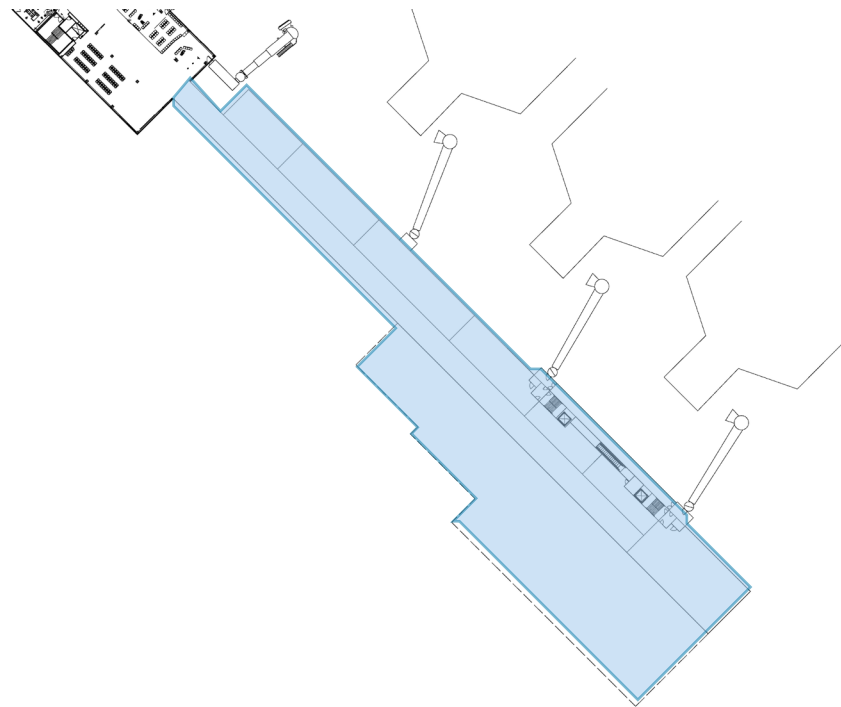
Alternative 4-1

- Building avoids runway expansion
- Aircraft may still be in conflict
- Conflict with Deice positions
- Major conflict with GTC
- Lease issue with Southwest



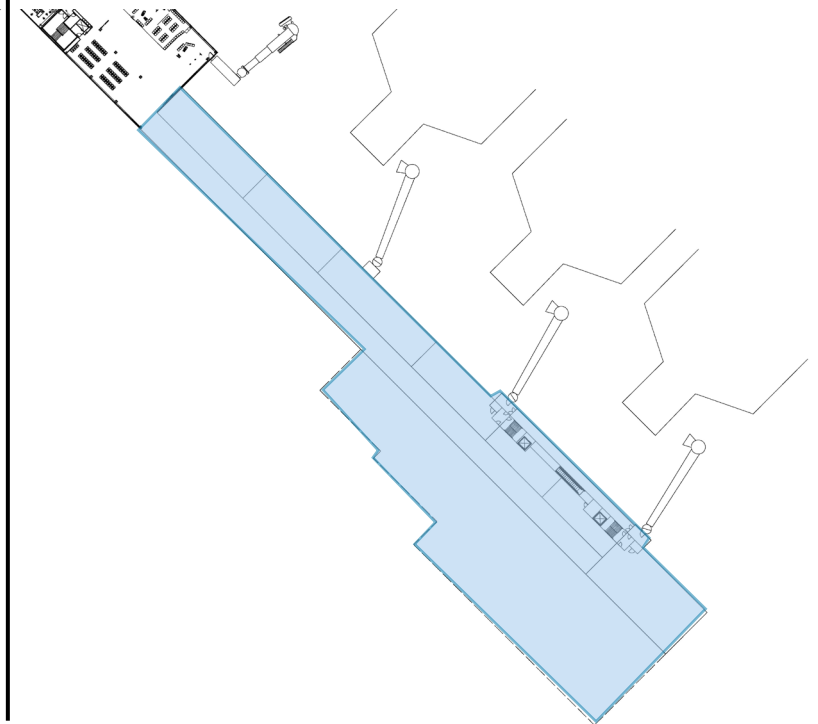
Alternative 4-2

- Building and Aircraft with airspace/runway issue
- Conflict with Deice positions
- Minimal conflict with GTC
- Lease issue with Southwest

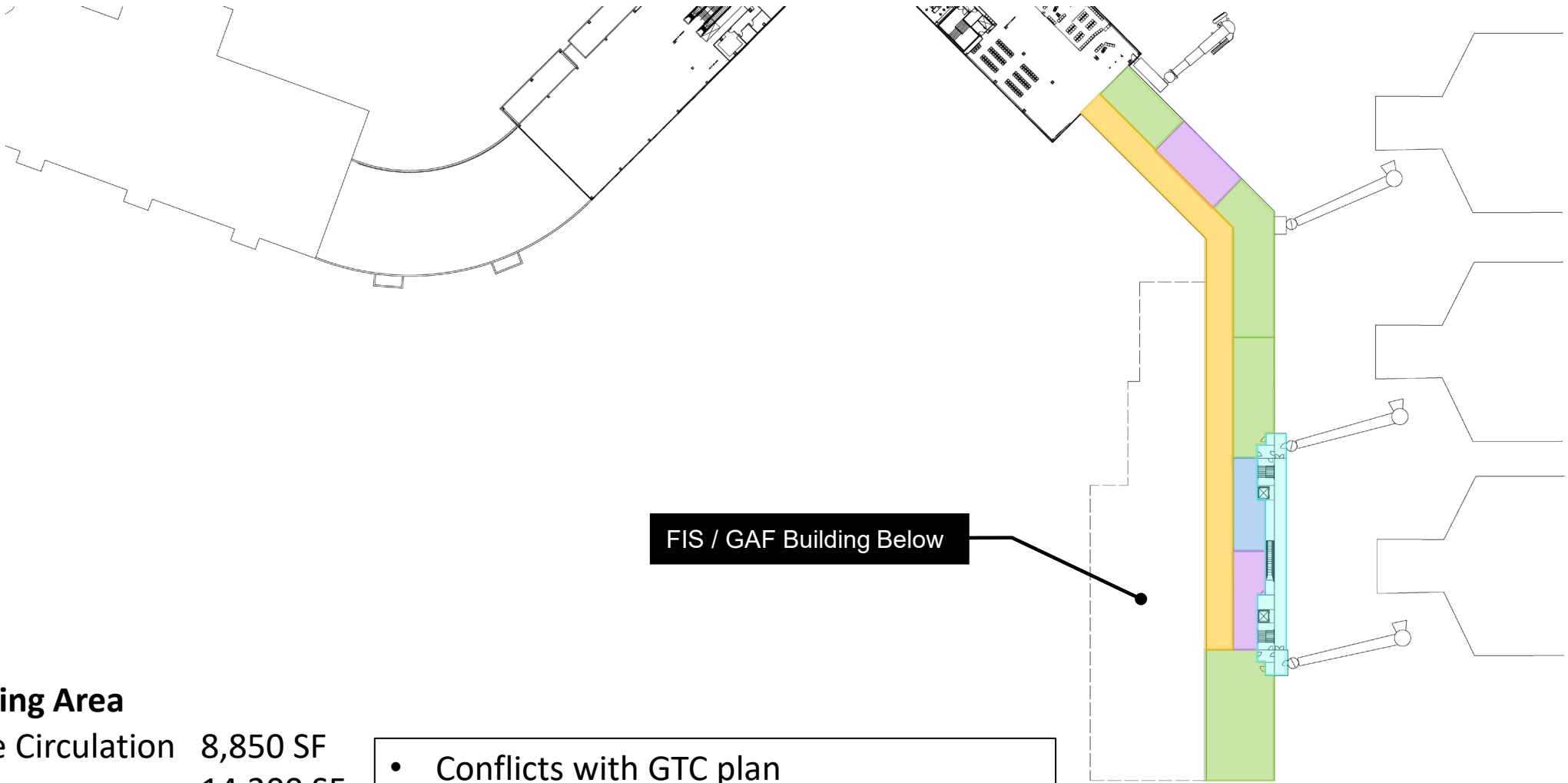


Alternative 4-3

- Potential airspace/runway conflict
- Conflict with Deice positions
- Conflict with GTC
- Lease issue with Southwest



Alternative 4-1 – Gate Level



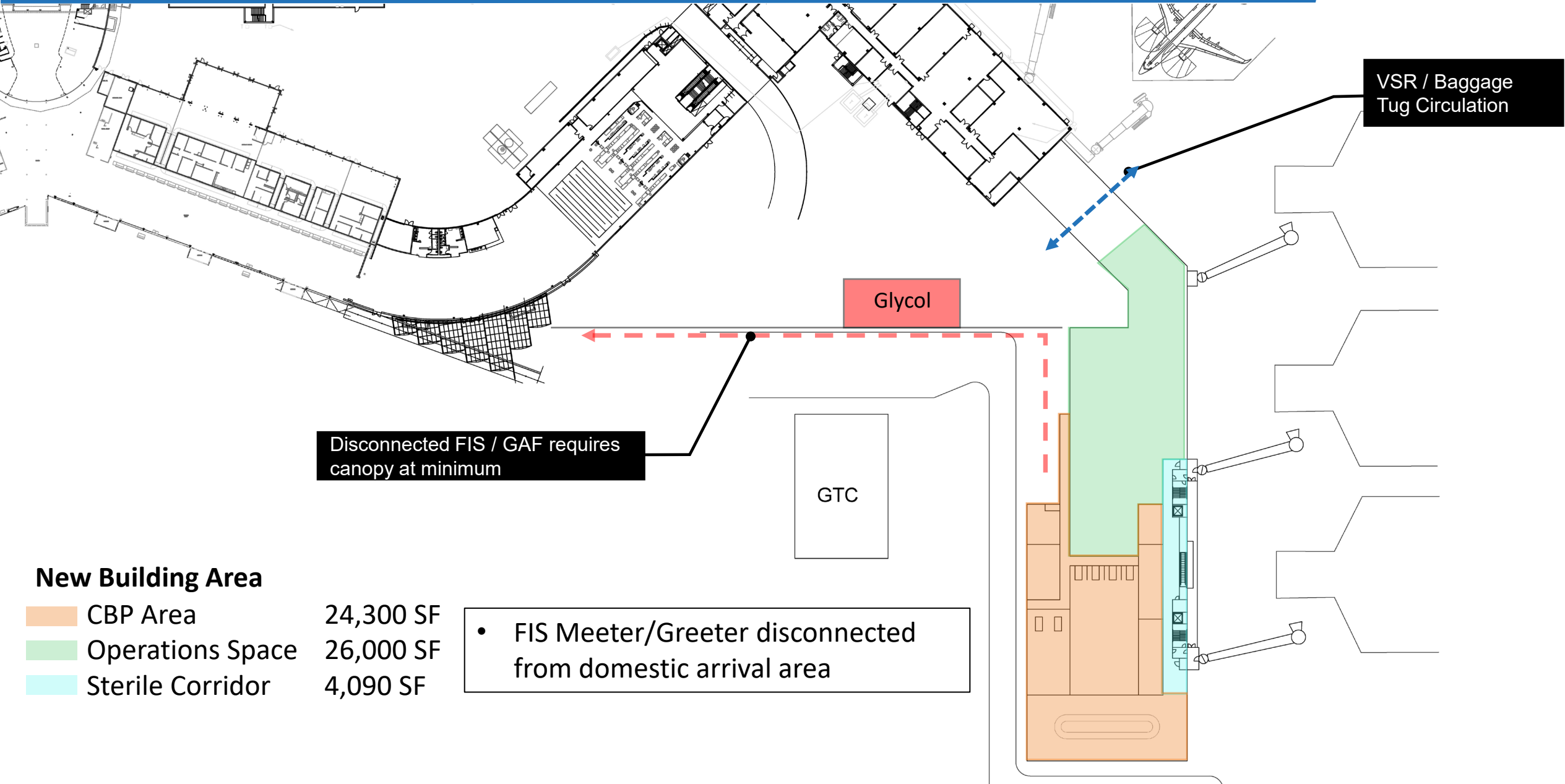
FIS / GAF Building Below

New Building Area

Secure Circulation	8,850 SF
Holdroom	14,200 SF
Restroom	1,400 SF
Concessions	3,300 SF
Sterile Corridor	3,300 SF

- Conflicts with GTC plan
- Vertical site issues
- Existing West Concourse in operation during construction

Alternative 4-1 – Apron Level

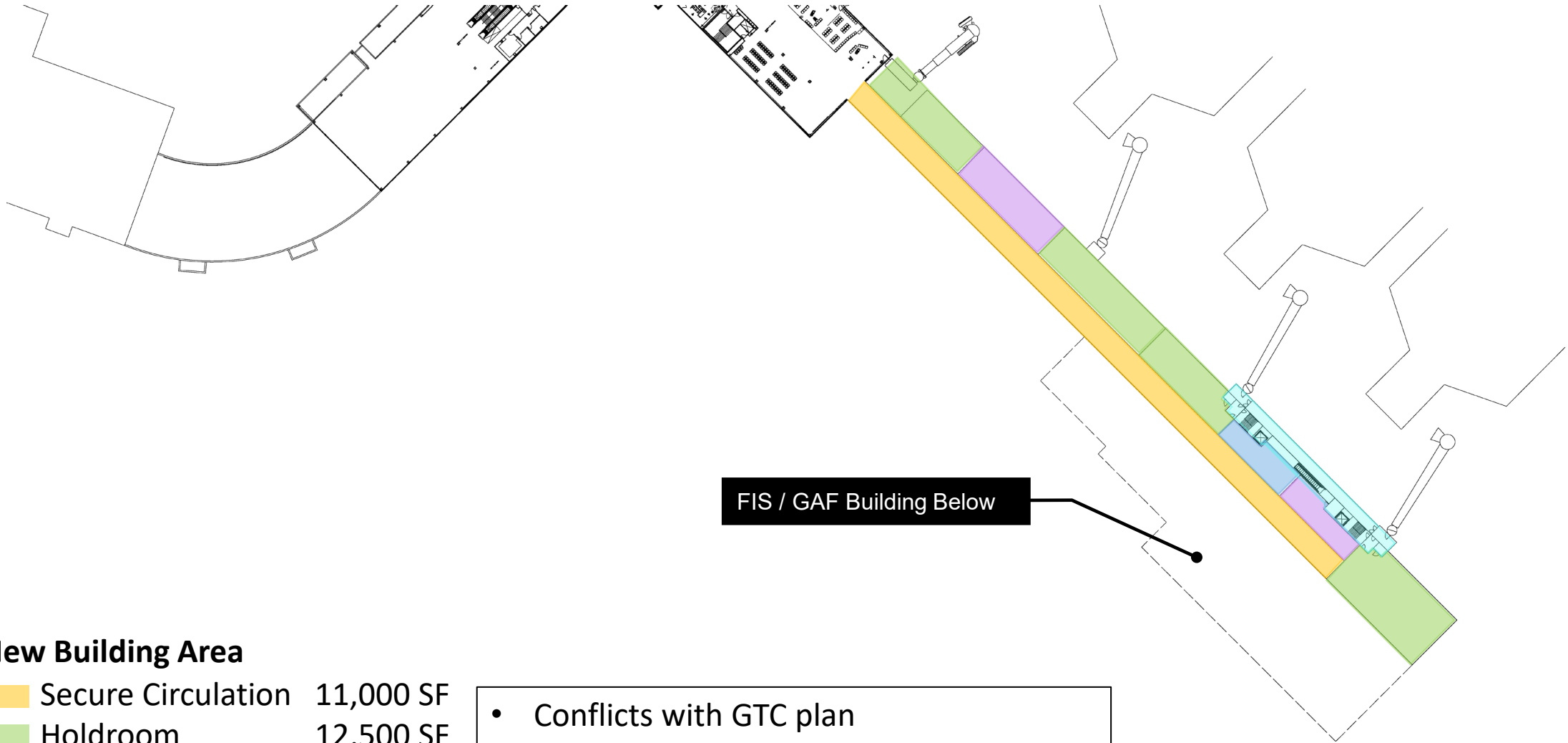


New Building Area

CBP Area	24,300 SF
Operations Space	26,000 SF
Sterile Corridor	4,090 SF

- FIS Meeter/Greeter disconnected from domestic arrival area

Alternative 4-2 – Gate Level

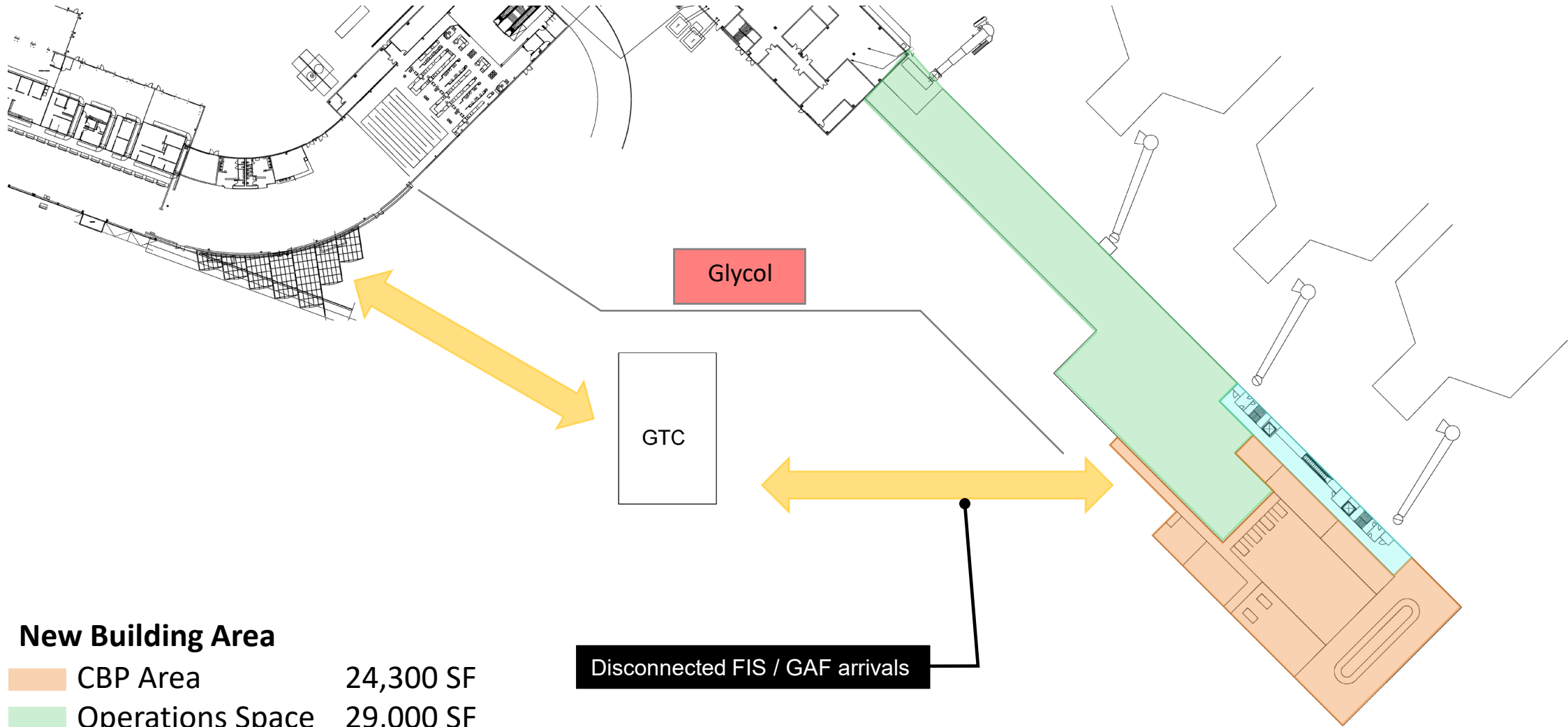


New Building Area

Secure Circulation	11,000 SF
Holdroom	12,500 SF
Restroom	1,400 SF
Concessions	4,100 SF
Sterile Corridor	3,300 SF

- Conflicts with GTC plan
- Vertical site issues
- Existing West Concourse in operation during construction

Alternative 4-2 – Apron Level

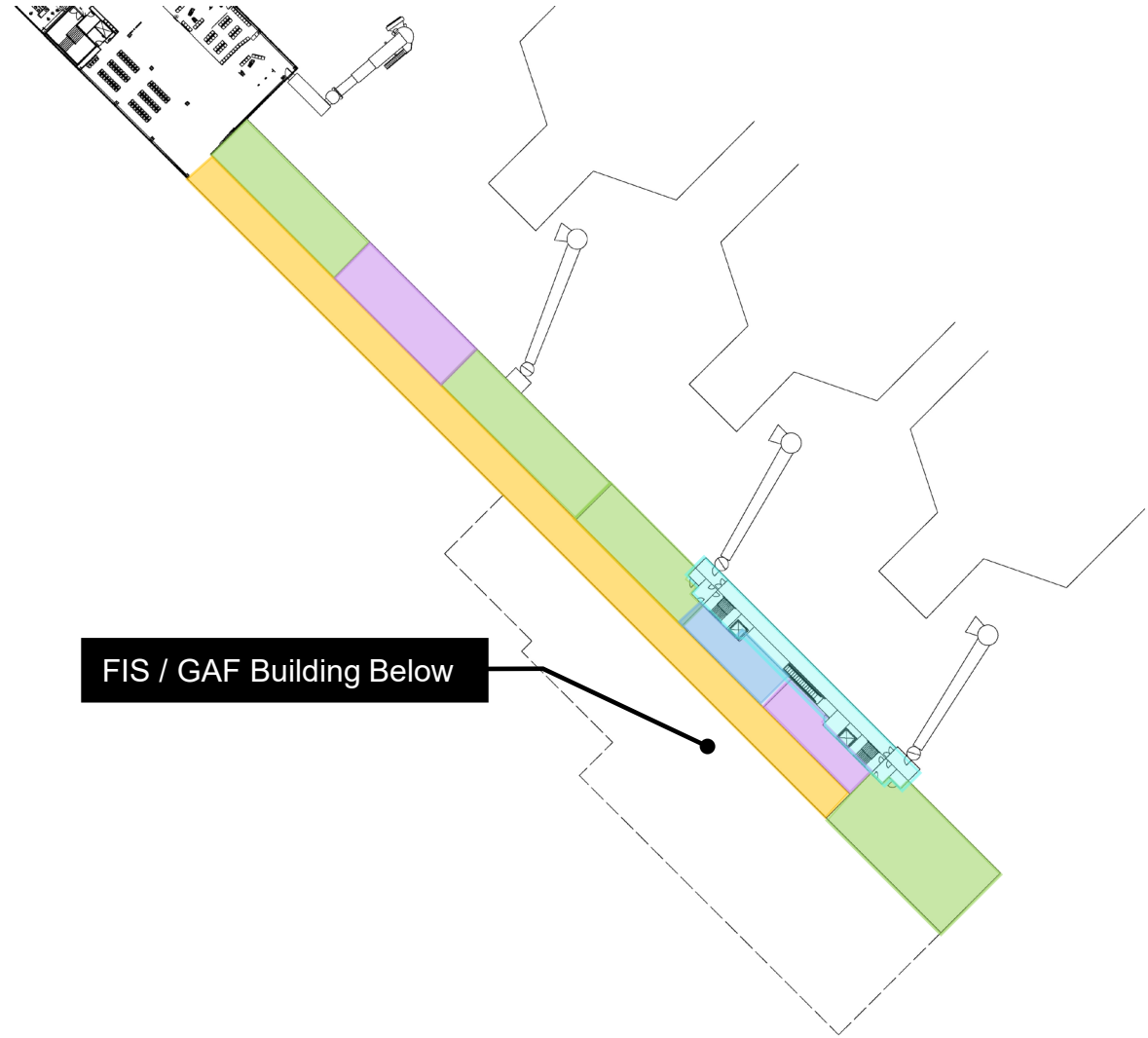
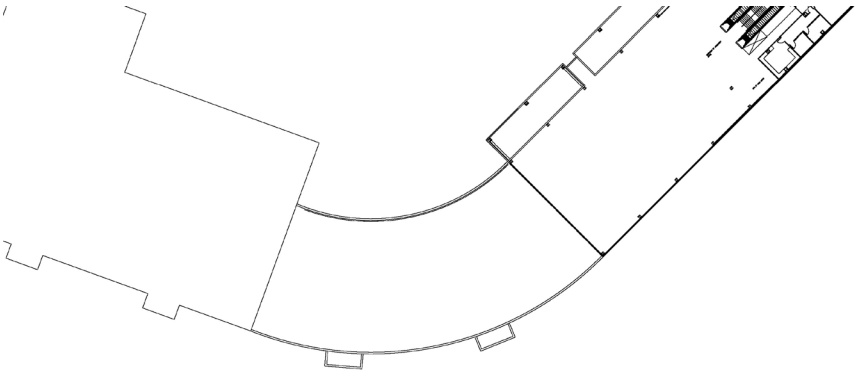


New Building Area

CBP Area	24,300 SF
Operations Space	29,000 SF
Sterile Corridor	4,090 SF

Disconnected FIS / GAF arrivals

Alternative 4-3 – Gate Level

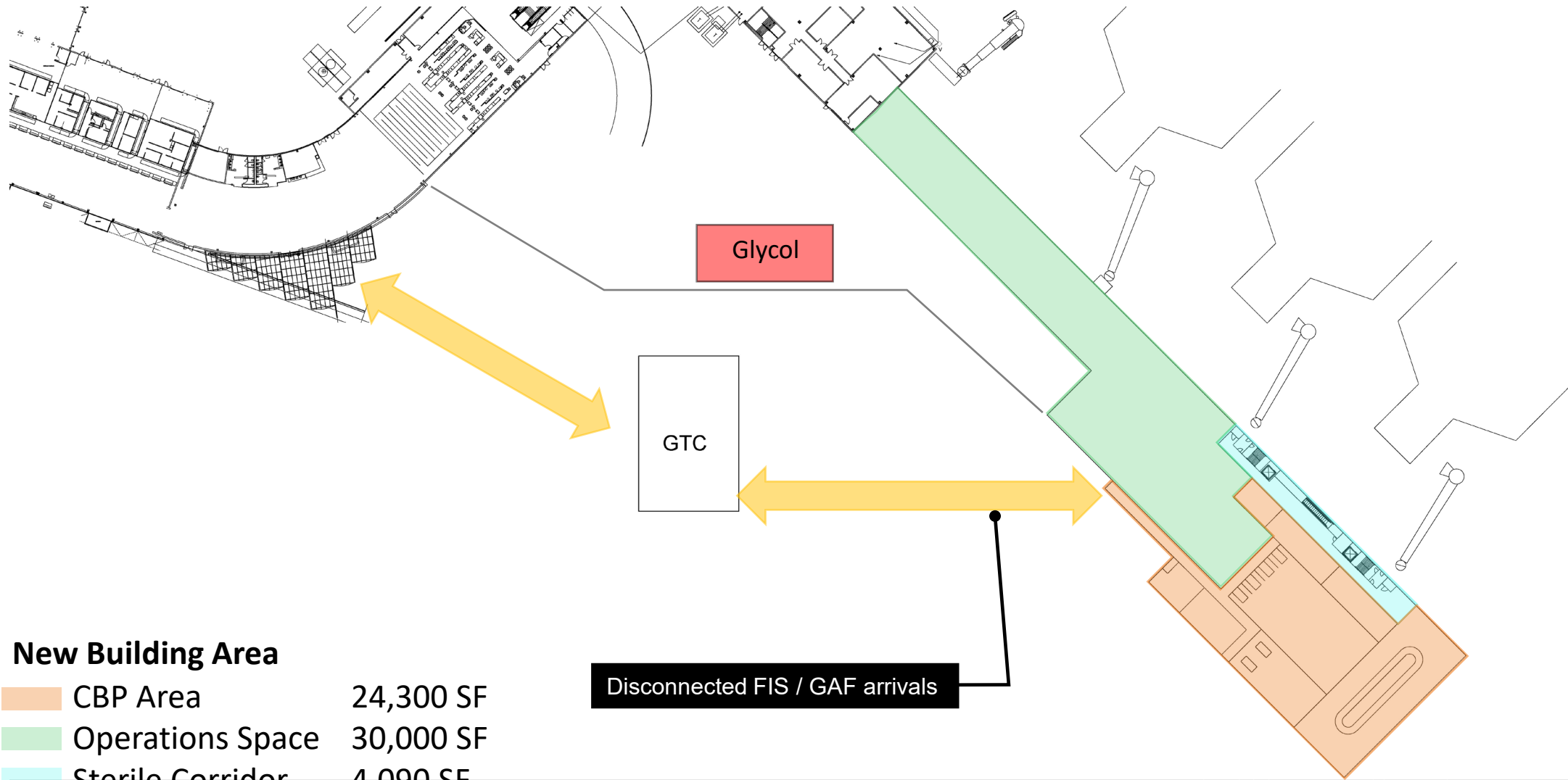


FIS / GAF Building Below

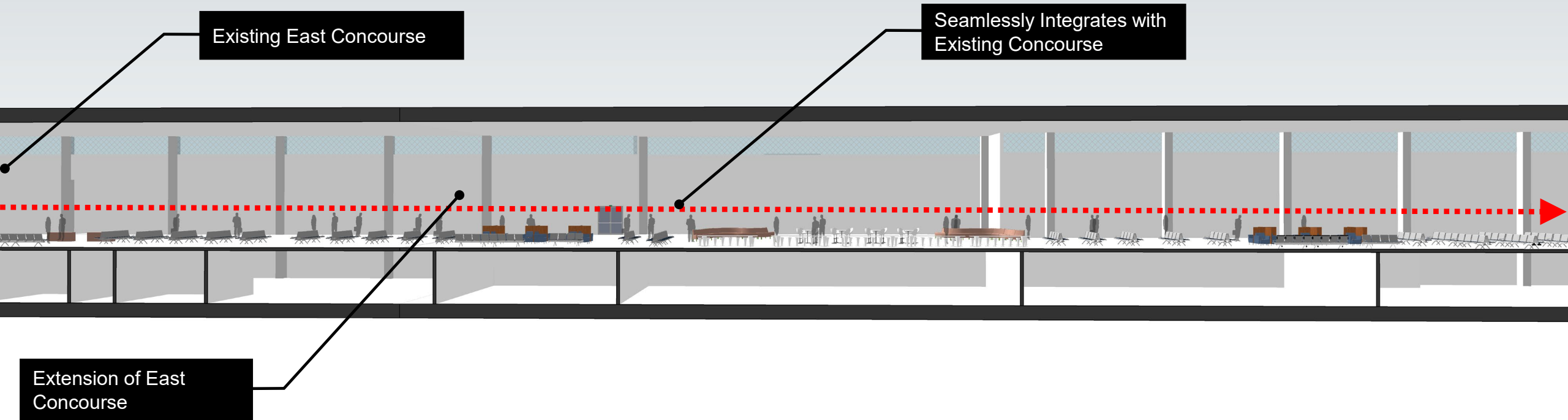
New Building Area

Secure Circulation	11,000 SF
Holdroom	13,600 SF
Restroom	1,400 SF
Concessions	4,100 SF
Sterile Corridor	3,300 SF

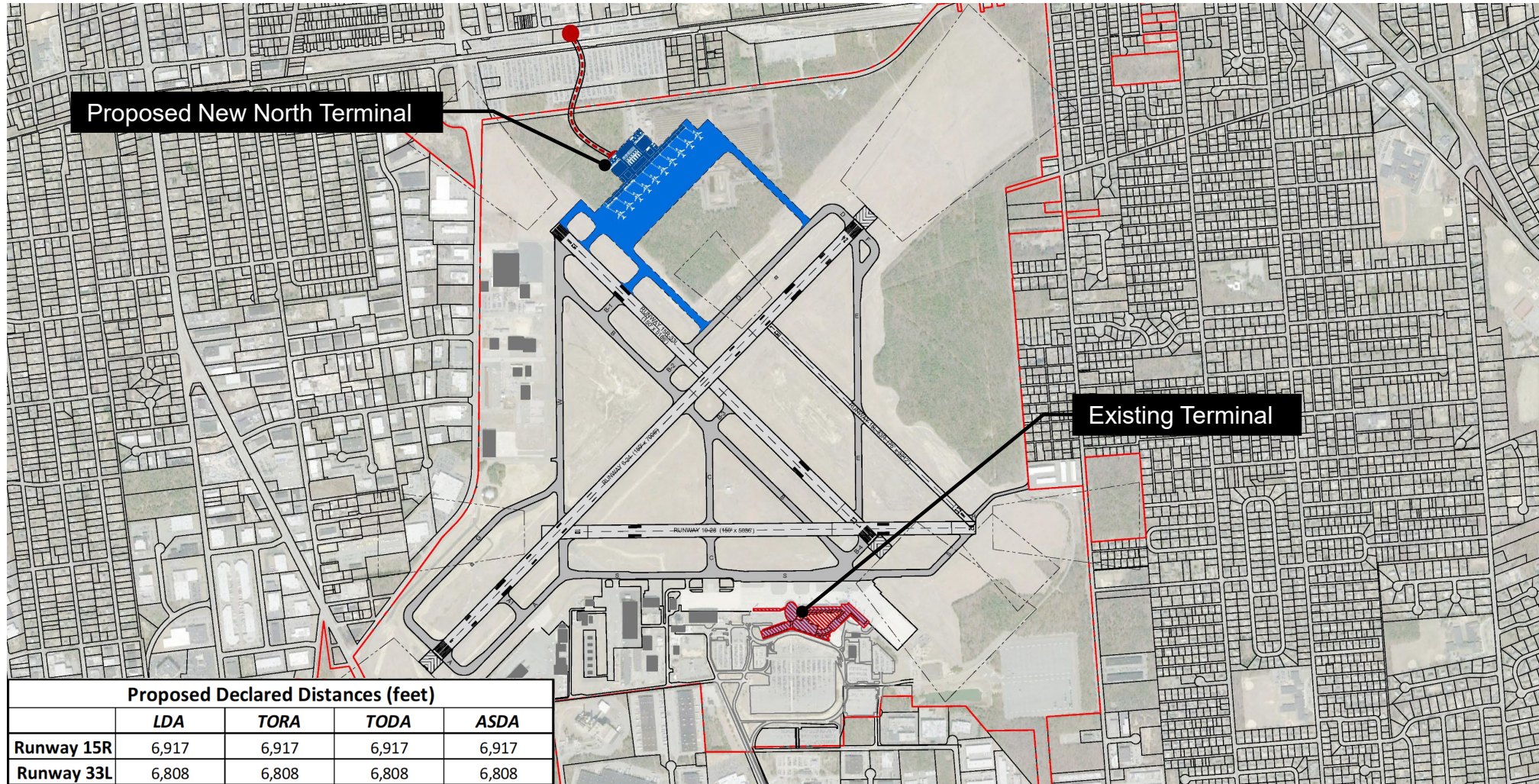
Alternative 4-3 – Apron Level



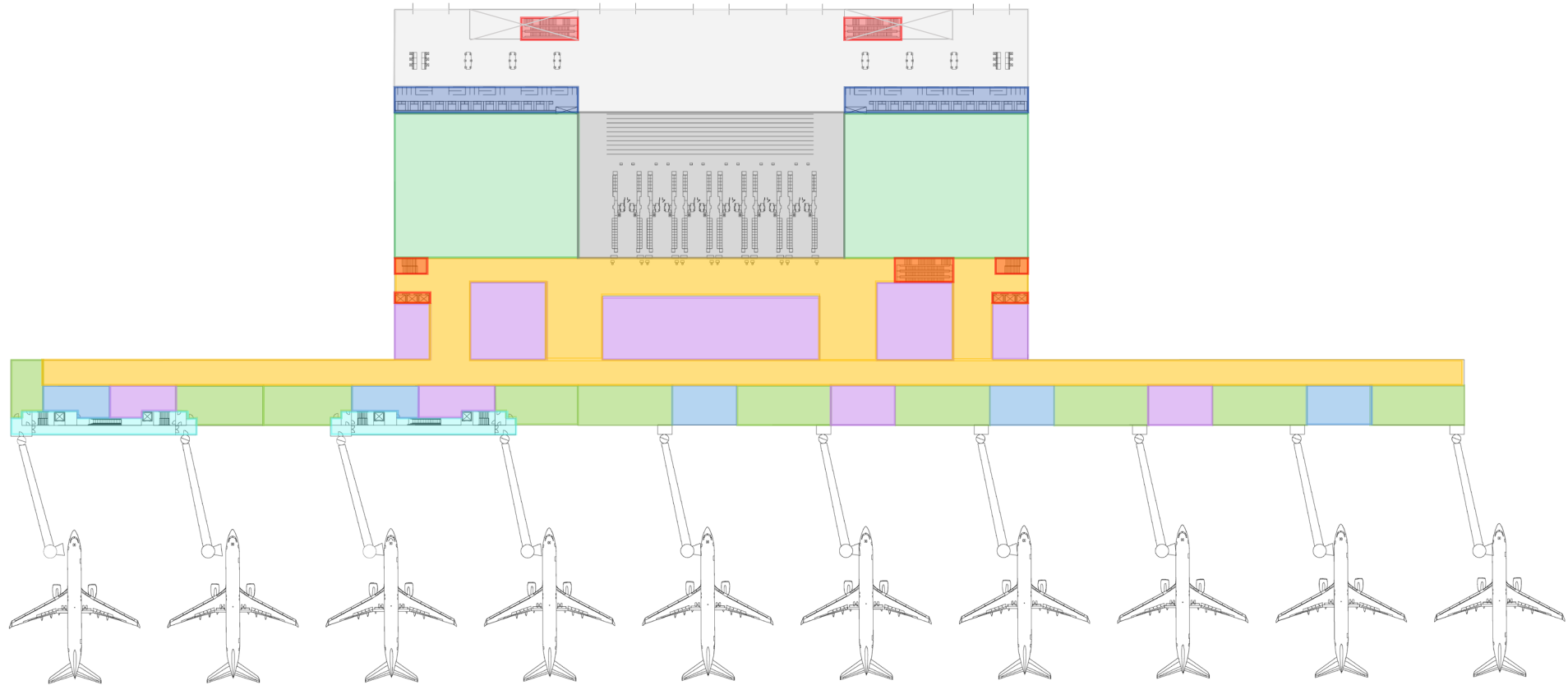
Alternative 4– Section













Alternative 5 – Master Plan

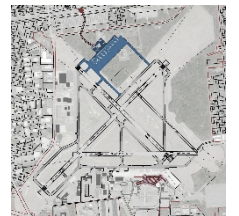


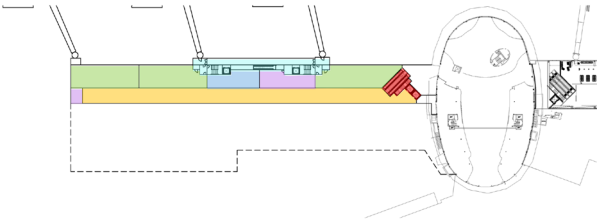
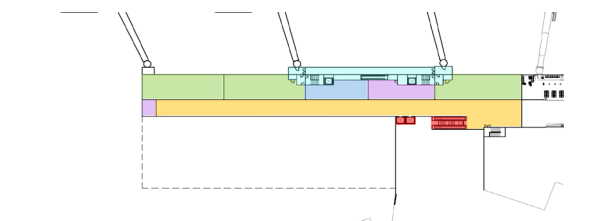
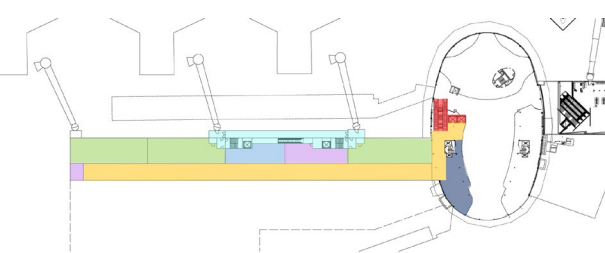

Alternative 5 – Gate Level



New Building Area

 Secure Circulation	56,200 SF	 Vertical Circulation	4,200 SF
 Holdroom	26,600 SF	 Checkpoint	31,100 SF
 Restroom	9,270 SF	 Support Room	43,000 SF
 Concessions	31,320 SF	 Ticket Counters	8,000 SF
 Sterile Corridor	6,200 SF	 Unsecured Circulation	44,000 SF



Description	Concept Layout	Pros	Cons
<p>Alternative 1 (Eliminated) West expansion, keep Central Terminal</p>		<ul style="list-style-type: none"> • Opportunity to renovate central terminal for offices or concession space 	<ul style="list-style-type: none"> • Central terminal infrastructure upgrade and renovation cost • Requires additional vertical transition • Phasing requires use of east concourse gates
<p>Alternative 2 (Preferred South) West expansion, replace Central Terminal</p>		<ul style="list-style-type: none"> • No upgrade costs for central terminal • No vertical change on concourse • New security checkpoint • Add more gates without impact to FBO 	<ul style="list-style-type: none"> • Phasing requires use of east concourse gates
<p>Alternative 3 (Eliminated) West expansion build behind existing concourse</p>		<ul style="list-style-type: none"> • Enables operations during construction • Opportunity to renovate central terminal for offices or concession space 	<ul style="list-style-type: none"> • Central terminal infrastructure upgrade and renovation cost • Requires additional vertical transition • Expansion encroaches upon inbound bag area
<p>Alternative 4 (Eliminated) East expansion</p>		<ul style="list-style-type: none"> • Enables operations during construction • Balanced walking distance from existing security checkpoint 	<ul style="list-style-type: none"> • Impact to airspace at the runway end • Impact to proposed new GTC • Intl passengers do not exit near existing arrivals & long walk for domestic arrivals



Next Steps



Stakeholder Outreach Surveys:

- TSA
 - CBP
 - Airlines
 - ISP Departments
 - Concessionaires & Advertising
 - FAA
-
- Draft resubmitted on December 16, 2019
 - Need to send this week if possible
 - Request responses by January 15, 2020



~~Workshop 1: November 14 – COMPLETE~~

- ~~— Task 1: Existing Conditions Assessment/Inventory~~
- ~~— Task 2: Aviation Activity Analysis/Forecast~~
- ~~— Intro to Task 3: Facility Requirements~~

Workshop 2: December 18 - **TODAY**

- Task 3: Facility Requirements
- Task 4: Alternative Development & Evaluation
 - Forecast Update
 - Emerging Trends
 - Concept Development

Workshop 3 (and Stakeholder): February 5

- Task 5: Preferred Concept
- Task 6: Implementation
- Task 7: Financial Feasibility Analysis
- Task 8: Environmental/Sustainability Impacts

Workshop 4: TBD – March

Workshop 5 (and Stakeholder): TBD - April



ISP - Conduct a Terminal Area Narrative Report Workshop #2

FAA Project: Grant 3-36-0046-103-2019:

December 18, 2019

ISP Conference Room

Attendees:		
Name	Company/Representation	Email
Shelley LaRose	ISP Airport	SLaRose@islipny.gov
Robert Schneider	ISP Airport	rschneider@islipny.gov
Gerri Mulligan	ISP Airport	gmulligan@islipny.gov
Steve Siniski	ISP Airport	ssiniski@islipny.gov
Michael Stack	ISP Airport	mstack@islipny.gov
Andrea Luft	JKL	ALuft@jklengineers.com
Logan Smith	L&B	lsmith@landrum-brown.com
Clint Laaser	L&B	claaser@landrum-brown.com
Brian Poe	L&B	bpoe@landrum-brown.com

The meeting notes below were taken during Workshop #2 between ISP Airport, JKL and L&B. The agenda for the meeting is provided below as reference:

Overview

- Review of Goals, Objectives and Assumptions

Aviation Activity Analysis/Forecast (Task 2)

- Forecast Review

Facility Requirements (Task 3)

- Program Requirements
- TSA/CBP Requirements

Concept Development (Task 4)

- Emerging Trends
- Concept Development
 - West Concourse
 - Central Terminal
 - East Concourse
 - GAF/FIS
 - North Terminal
- Concept Summary

Next Steps

- Concept Development (Task 4 and 5)
- Stakeholder Questionnaire/Surveys
- Schedule:
 - Workshop #3: February 5, 2020
 - Workshop #4 & Stakeholder Workshop: TBD – anticipated March 2020

meeting minutes



- Workshop #5 & Stakeholder Workshop: TBD – anticipated April 2020

Discussion:

• **Rob Schneider:**

- Frontier has been slowly changing their frequencies to daily as opposed to only a few days a week.
- Based on ASM and Load Factor, the estimation is right under 1 million passengers for the baseline forecast.
- ISP currently captures 1.8% of the New York City metro area market.
- ISP captures 87% of non-stop destinations.
- “Baggage First” process for FIS is desired
- JVC broadcasting looking at possibly converting a concession space into a business lounge
- Include possibility of a Kids play area. This has been previously discussed within existing East Concourse, likely near A8 (Adventure Land is a potential contractor).

• **Clint Laaser:**

- Reviewed the Task 4 concepts, including East, West (multiple concepts) and North Terminal.
- Question: Some AECOM concepts suggested curbside for GA departure or is it all airside?
Answer: No, it is expected that cleared GA passengers would go to the terminal curbside with the commercial passengers. Arriving GA flights would be parked airside near the new FIS and a vestibule would be allow access to the facility.
- Alternative 4 (East expansion) contains many constraints (airside and landside) and not desirable for future study. The group agreed with this stance.
- Alternative 1 and 3 maintain the existing Central Terminal, however, this would require MEP upgrades and an undesirable vertical circulation up/down between concourses. Alternative 3b would allow a flat concourse walkway around the perimeter of the central terminal, however, the walk would be further, still require existing building MEP upgrades and undesirable circulation flows.
- Include conference area in the planning exercise that would be used by Town of Islip Aviation staff but could also be leased to the traveling public.
- Alternative 2 allows for most flexibility for the future, includes flexibility for a new Security Checkpoint and aircraft gating (without the existing Central Terminal building). This concept allows for more West Concourse contact gates than any other concept within the west constraint near the GA facility.
- L&B will develop a condensed version of this PowerPoint for stakeholder’s review.

• **Shelley LaRose:**

- Forecast – Base Scenario forecast shows no significant growth. Consider higher growth rate in this study for the potential of new entry airlines.
- Looking back at 2000 there was a market for service that Southwest pulled out from, if we use this historical information, it’s reasonable to assume ISP could re-capture the capacity that previously existed. Reductions due to fuel prices, 9/11 and other issues were major reasons for the pullback. Southwest stayed at ISP because it is profitable, as compared to other similar sized airports that Southwest left due to low financial profits.
- Airline carriers are not sharing growth strategy for additional services commitment to ISP.
- Include the impact of LIRR system updates over the next few years which provide additional and more consistent service to/from Ronkonkoma Station.
- Review the AECOM previous study. The concept shown (Option C) was not the Airports desired plan. Andrea has forwarded the updated plan since this workshop.
- Update AECOM cost estimate for terminal MEP to \$13 million from independent estimate for more of an apples-apples comparison.
- Include the following program elements in the future plan: business lounge and kids play area

meeting minutes



- Bathroom operations/cleanliness are very important and outweigh the “design” and size importance for ISP
- Interested in wayfinding upgrades including wait time or walking distance times shown on monitors (as shown in the “emerging trends” portion of the PowerPoint).
- Ready lot near west concourse to be moved Q1 2020. Do not need to include this as a constraint or issue for this project.
- Mechanical/Utility courtyard outside of Central Terminal will need relocation for Alternative 1 concept.
- For the Alternatives: use “Customs Building” instead of “FIS”, if dedicated GAF piece use a different color to show the differences in use.
- Existing terminal concepts – Preference for Alternative 2 that includes a new Security Checkpoint (SSCP)
- Desire by ISP – Conference area that accommodates up to 200 people for press conferences, secure access to Airport offices, but conference area can be shared with leasable space.
- **Next Steps – Move forward with Alternative 2 for the existing terminal and Alternative 5 for the North Terminal (with acknowledgement of the high cost of implementation); the connectivity to the LIRR and flexibility of additional gates allows for airline growth (both existing airlines and new entries)**
- Include a benchmarking slide of NY airports (ROC, SYR, ALB) at a similar or aspirational size.
- **Brian Poe:**
 - Brian presented the group an update to the Forecast.
 - Cites airport examples, where flights for Frontier have historically dropped after ramping up operations, running 12 flights per day and dropping to 6. This is the reason for the conservative nature of the baseline schedule, primarily due to the unpredictable history of Frontier.
 - For FAA justification, all assumptions need to have support via data or commitments from the airlines (existing or new entry).
 - Base case scenario does not include new entrant carriers.
 - Base case scenario is only 150,000 passengers higher.
- **Logan Smith:**
 - Reviewed the Program Requirements (Task 3) and Emerging Trends.
 - Program is dependent on the finalization of the Design Day Flight Schedules and forecast.
- **Andrea Luft:**
 - Will provide the other AECOM FIS/GAF/CBP options for L&B to consider
 - Reformat the stakeholder questionnaire. L&B sent the revised stakeholder survey on 12/19. Need to give the stakeholders a minimum of 30 days for response. This may require the February 5 stakeholder meeting to move into March.
- **Steve Siniski:**
 - Include vertical access from the upper level to the ramp and support spaces at the new gates.
- **General Discussion Points:**
 - Utilize the wording “Airport Support” instead of “Offices” to be more open ended in terms of potential space uses.

Project Schedule:

Kickoff: September 17, 2019

- Goals/Objectives
- Initial Site Tour

Workshop 1: November 14, 2019

- Existing Conditions Assessment/Inventory
- Aviation Activity Analysis/Forecast

meeting minutes



- Facility Requirements Methodology

Workshop 2: December 18, 2019

- Facility Requirements
- Initial Concept Discussion

Workshop 3: TBD

- Alternatives Development and Evaluation

Workshop 4 & Stakeholder (“Key Influencers”) Workshop – TBD

- Preferred Concept Refinement
- Implementation Plan
- Environmental/Sustainability Impacts
- Financial Feasibility Analysis

Workshop 5 & Stakeholder Workshop: TBD

- Final Study Findings



ISP – Conduct a Terminal Area Narrative Report

Grant 3-36-0046-103-2019

Pre-Workshop #3 | September 29, 2020



Agenda

2

- **Goals & North Terminal Benefits**
- **Master Plan North Terminal Layout**
- **Forecast & Program Requirements**
- **Key Criteria for Evaluation**
- **Initial North Terminal Concepts**
- **Concept Comparison**
- **Schedule**
- **Open Discussion**



Goals & North Terminal Benefits

Goals

- Assess the north quadrant site opportunities and constraints
- Develop key criteria for evaluation
- Revise the space program
- Develop North Terminal site layouts
- Evaluate and Identify a preferred layout of the North Terminal
- Demonstrate benefits of North Terminal vs. Existing Terminal

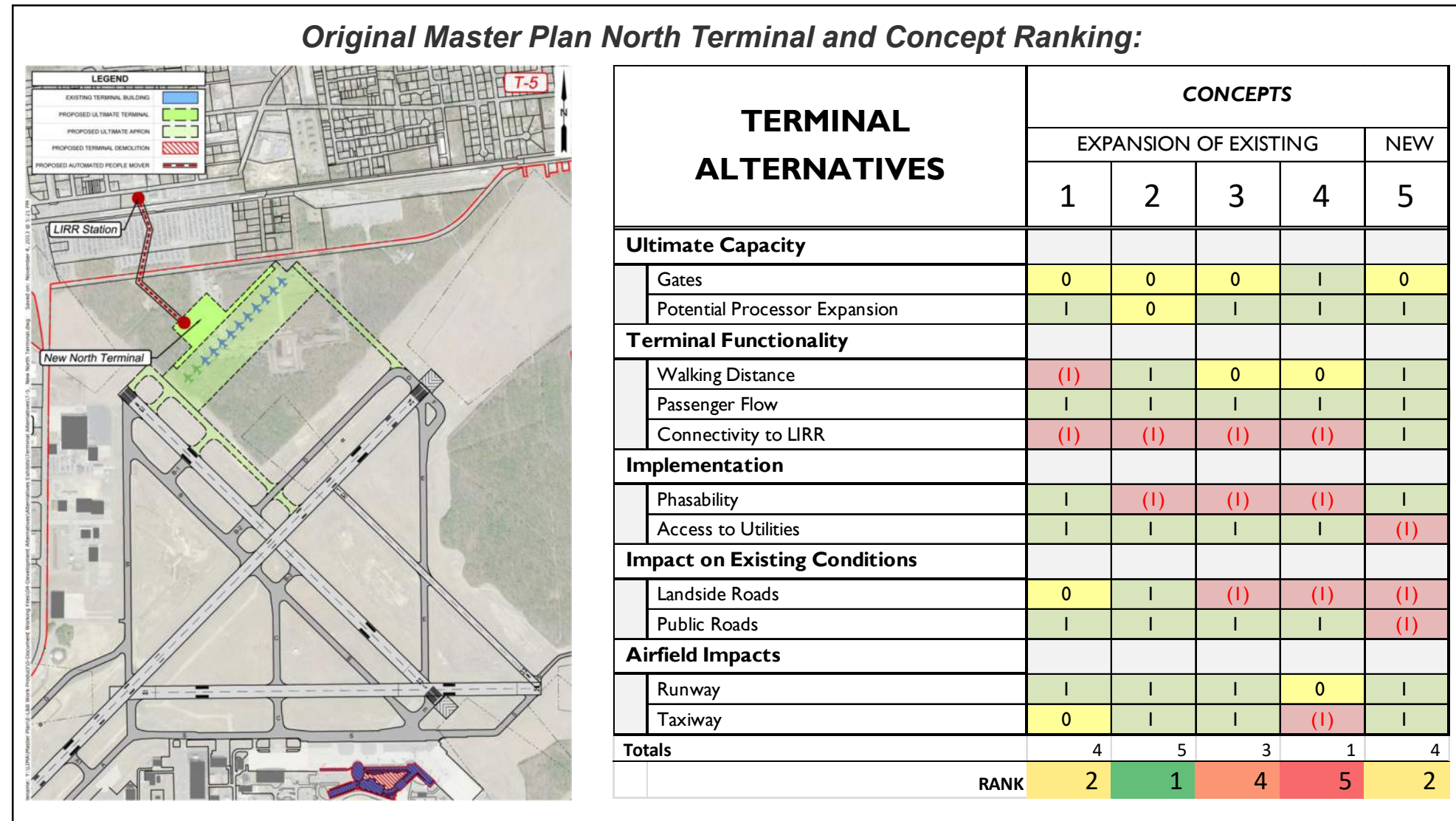
North Terminal Benefits

- Connectivity to LIRR and community
- Ability to capture more catchment area (LIRR connection)
- Gate growth opportunity
- Opportunity for non-aero revenue generation
- Customer experience and right-sized facility
- Cost sharing of North Terminal development (potential developer)



Master Plan North Terminal Layout

- The North Terminal ranked high among the previous Master Plan concepts.
- Collateral development opportunities and future gate expansion weigh in favor of a North Terminal



Source: Master Plan



Forecast

- Baseline Forecast as developed in Fall 2019
- Requires 8-10 gates over the forecast horizon
- Earliest opening day likely at 2025-2027 (PAL 3) - dependent on overall project schedule and approvals
- Concept plans will include flexibility for ultimate buildout growth for new entries or accelerated growth

Opening Day

Demand Level:	2017 – PAL 1	2022 – PAL 2	2027 – PAL 3	2037 – PAL 4	2050 – PAL 5
Estimated Number of Gates	8	8	9	9	10
Annual Passengers	1,660,152	1,765,800	1,805,400	1,843,600	1,892,000
Peak Month Passengers	160,008	180,112	184,151	188,047	192,984
Design Day Passengers	5,447	6,304	6,445	6,582	6,754
Peak Hour Arriving	693	779	792	804	821
Peak Hour Departing	582	741	757	770	784



Space Program – 8-10 Gate Terminal

- A program of requirements was developed to estimate the baseline square footage of the new terminal based on passenger demand levels in PAL 1 – PAL 5
- The total square footage requirement ranges from 282,000 to 332,000 SF.
- Existing terminal SF is close to initial requirements, however, the SF is not located in the proper areas for airport growth and flexibility.
- Detailed interior terminal layouts will be developed for next meeting that align with the program requirements.

Opening Day

Space Designation	2020 Existing SF	PAL 1 SF	PAL 2 SF	PAL 3 SF	PAL 4 SF	PAL 5 SF
Airline Spaces	104,250	111,160	119,220	126,740	127,130	134,640
Public Spaces	83,375	83,110	88,810	93,770	94,070	99,120
Concessions Spaces	20,430	21,577	22,865	23,411	23,941	24,485
US Customs & Border Protection Services (CBP)	2,000	27,514	27,514	27,514	27,514	27,514
Terminal Support Spaces	89,810	39,100	41,200	43,400	43,500	45,900
Total Building Area	299,865	282,461	299,609	314,835	316,155	331,659



Space Program – 8-10 Gate Terminal

Space Designation	2020 Existing		PAL 1		PAL 2		PAL 3		PAL 4		PAL 5	
	Units	SF	Units	SF	Units	SF	Units	SF	Units	SF	Units	SF
Airline Spaces												
Check-in (areas from counter face to back wall)		2,900		1,400		1,800		1,800		1,800		1,800
Curb Check Positions	4	200	5	700	5	700	5	700	5	700	5	700
Full - Service Check-in and Bag Drop Positions	48		18		22		22		23		23	
Ticketing Counter Queue		5,300		2,400		2,900		2,900		3,000		3,000
Self - Service Kiosks	-	-	14	700	19	1000	19	1000	19	1000	19	1000
Airline Ticketing Offices (ATO)		6,530		3,420		4,180		4,180		4,370		4,370
Outbound Baggage (sorting area w/ carousels)		10,300		24,000		24,000		26,200		26,200		28,400
Hold Baggage Screening												
Level 1 EDS Units		-	2	6000	3	9000	3	9000	3	9000	3	9000
Level 2 Workstations		-	1	100	2	200	2	200	2	200	2	200
Level 3 ETD Units		-	6	2,200	11	4,000	11	4,000	11	4,000	11	4,000
Physical Search		-		100		100		100		100		100
Domestic Baggage Claim												
Number of ADG VI (CAT F) units (>330lf<460lf)	0		0		0		0		0		0	
Number of ADG V (CAT E) units (>230lf<300lf)	0		0		0		0		0		0	
Number of CAT ADG III (CAT C) units (>130lf<230lf)	4		2		2		2		2		2	
Minimum Bag Claim Frontage Total (Linear Feet)	580		370		415		420		430		440	
Claim Hall area		22,400		12,200		12,200		12,200		12,200		12,200
Inbound Baggage Drop-off		4,200		3,300		3,300		3,300		3,300		3,300
Baggage Service Offices		320		1,100		1,200		1,200		1,300		1,300
Contact Gate Holdrooms	11	25,200	8	22,540	8	22,540	9	25,360	9	25,360	10	28,170
Airline Operations		11,200		16,500		16,500		18,000		18,000		19,500
<i>Subtotal Airline Spaces</i>		<i>88,550</i>		<i>96,660</i>		<i>103,620</i>		<i>110,140</i>		<i>110,530</i>		<i>117,040</i>
<i>Circulation</i>		<i>15,700</i>		<i>14,500</i>		<i>15,600</i>		<i>16,600</i>		<i>16,600</i>		<i>17,600</i>
Airline Spaces		104,250		111,160		119,220		126,740		127,130		134,640



Space Program – 8-10 Gate Terminal

Space Designation	2020 Existing		PAL 1		PAL 2		PAL 3		PAL 4		PAL 5	
	Units	SF	Units	SF	Units	SF	Units	SF	Units	SF	Units	SF
Public Spaces												
Check-in Lobby (circulation)		4,800		3,600		4,200		4,200		4,400		4,400
Arrivals Greeters Hall		7,200		7,300		8,200		8,400		8,500		8,700
Concourse Departure Corridor		32,500		32,430		32,430		36,490		36,490		40,540
Concourse Sterile corridor (including sterile vertical circ.)				6,980		6,980		6,980		6,980		6,980
Restrooms												
Check-in Lobby (Passenger & ATO)		1,100		1,900		2,100		2,100		2,100		2,100
Concourse		4,175		3,800		3,800		3,800		3,800		3,800
Baggage Claim												..
International		-		1,400		1,400		1,400		1,400		1,400
Domestic		1,300		1,900		2,000		2,000		2,000		2,100
Passenger Security Screening												
Number of Screening Units	5	4,100	4	7,800	5	9,800	5	9,800	5	9,800	5	9,800
Security Screening Queue & Lobby		3,400		3,400		4,200		4,200		4,200		4,200
Security Screening Support Areas		1,900		1,700		2,100		2,100		2,100		2,100
<i>Subtotal Public Spaces</i>		<i>60,475</i>		<i>72,210</i>		<i>77,210</i>		<i>81,470</i>		<i>81,770</i>		<i>86,120</i>
<i>Circulation</i>		<i>22,900</i>		<i>10,900</i>		<i>11,600</i>		<i>12,300</i>		<i>12,300</i>		<i>13,000</i>
<i>Public Spaces</i>		<i>83,375</i>		<i>83,110</i>		<i>88,810</i>		<i>93,770</i>		<i>94,070</i>		<i>99,120</i>
Concession Space												
Pre-Security - Departures		710		1,494		1,589		1,625		1,659		1,703
Post-Security		13,400		12,700		13,508		13,811		14,104		14,474
Arrivals Lobby		1,320		747		795		812		830		851
Concessions Support		5,000		3,735		3,973		4,062		4,148		4,257
<i>Subtotal Concessions Spaces</i>		<i>20,430</i>		<i>18,677</i>		<i>19,865</i>		<i>20,311</i>		<i>20,741</i>		<i>21,285</i>
<i>Circulation</i>		<i>-</i>		<i>2,900</i>		<i>3,000</i>		<i>3,100</i>		<i>3,200</i>		<i>3,200</i>
<i>Concessions Spaces</i>		<i>20,430</i>		<i>21,577</i>		<i>22,865</i>		<i>23,411</i>		<i>23,941</i>		<i>24,485</i>



Space Program – 8-10 Gate Terminal

Space Designation	2020 Existing		PAL 1		PAL 2		PAL 3		PAL 4		PAL 5	
	Units	SF	Units	SF	Units	SF	Units	SF	Units	SF	Units	SF
US Customs & Border Protection Services (CBP)												
Primary Processing and Inspection		2,000		5,934		5,934		5,934		5,934		5,934
Unified Secondary Processing and Inspection		-		2,600		2,600		2,600		2,600		2,600
Detention Suite		-		1,800		1,800		1,800		1,800		1,800
Agricultural Inspections and Lab Spaces		-		400		400		400		400		400
Canine Enforcement Spaces and Kennels		-		1,600		1,600		1,600		1,600		1,600
Operational Support Spaces		-		7,200		7,200		7,200		7,200		7,200
Staff Support		-		200		200		200		200		200
International Baggage Claim												
Number of ADG III (CAT C) units (>130lf<230lf)		-	1		1		1		1		1	
Bag Claim Frontage Total (Feet)		-	183		183		183		183		183	
Claim Hall area		-		6,680		6,680		6,680		6,680		6,680
Transfer Baggage Re-check												
Check-in Positions		-	1	100	1	100	1	100	1	100	1	100
Check-in Lobby		-		400		400		400		400		400
FIS Circulation		-		600		600		600		600		600
US Customs & Border Protection Services (CBP)		2,000		27,514		27,514		27,514		27,514		27,514
Terminal Support Spaces												
Airport Operations (Also include Non public restrooms and circulation)		17,840		4,200		4,200		4,500		4,500		4,900
Maintenance		3,440		4,900		5,200		5,500		5,500		5,800
Building Systems		51,900		24,400		25,900		27,200		27,300		28,600
Vertical Circulation		5,000		4,900		5,200		5,500		5,500		5,800
Misc. (Chapel, Play Areas, Business Center, etc.)		11,630		700		700		700		700		800
Terminal Support Spaces		89,810		39,100		41,200		43,400		43,500		45,900
Total Building Area		299,865		282,461		299,609		314,835		316,155		331,659

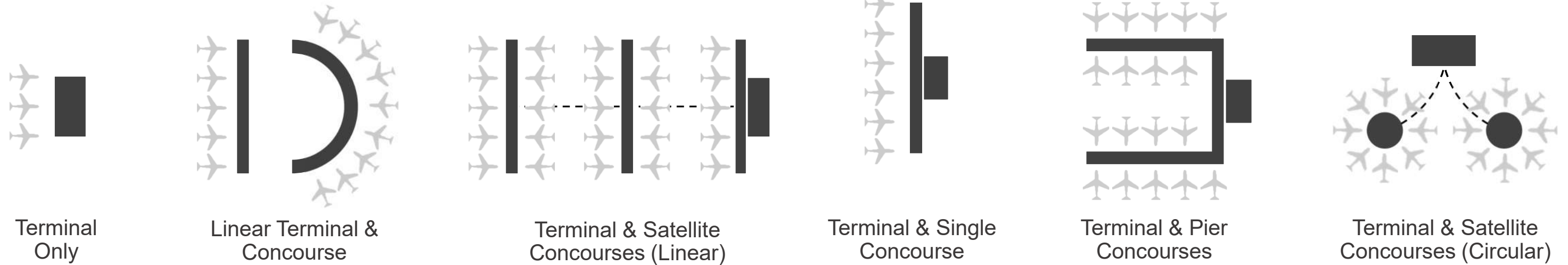


Key Evaluation Criteria

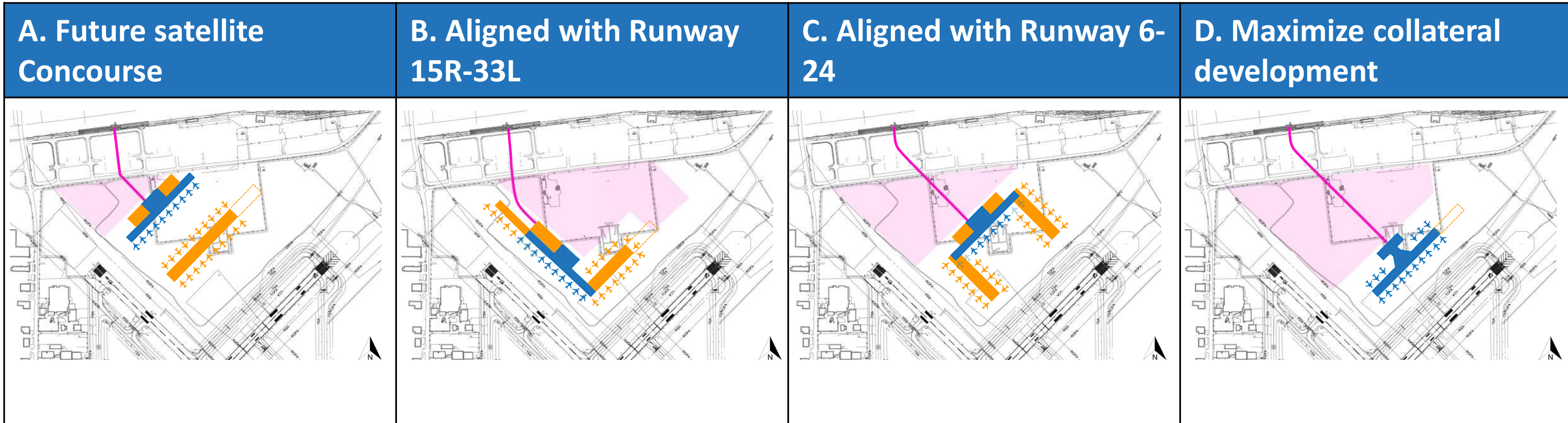
- Connectivity to LIRR and community
 - Path is enjoyable (not confusing)
- Minimize walking distances
 - LIRR to Terminal - ideal is no more than 1/3 mile (1,800 linear feet or less)
 - Terminal entry to furthest gate
- Development Opportunity
 - Maximize non-aero revenue potential
 - Terminal with ample concessions opportunity
- Growth Flexibility
 - Additional airside gates and landside potential
 - Ability to enhance existing airlines and attract new entries
 - Simple phasing for future gate buildout with no “throwaway”
- Customer experience and right-sized facility
- Ability for new technology/systems
 - Inline baggage systems, updated building systems, current technologies
- Implementation Cost



New Terminal Configurations



North Terminal Concept Families



Each concept balances pros/cons of each key evaluation criteria

- Walking distance from LIRR
- Development opportunity potential
- Ultimate growth potential

* Note: Airside geometry to be refined in next steps



Collateral Development Zone



Elevated Walkway from LIRR



Initial Build (Initial 10 Gates)



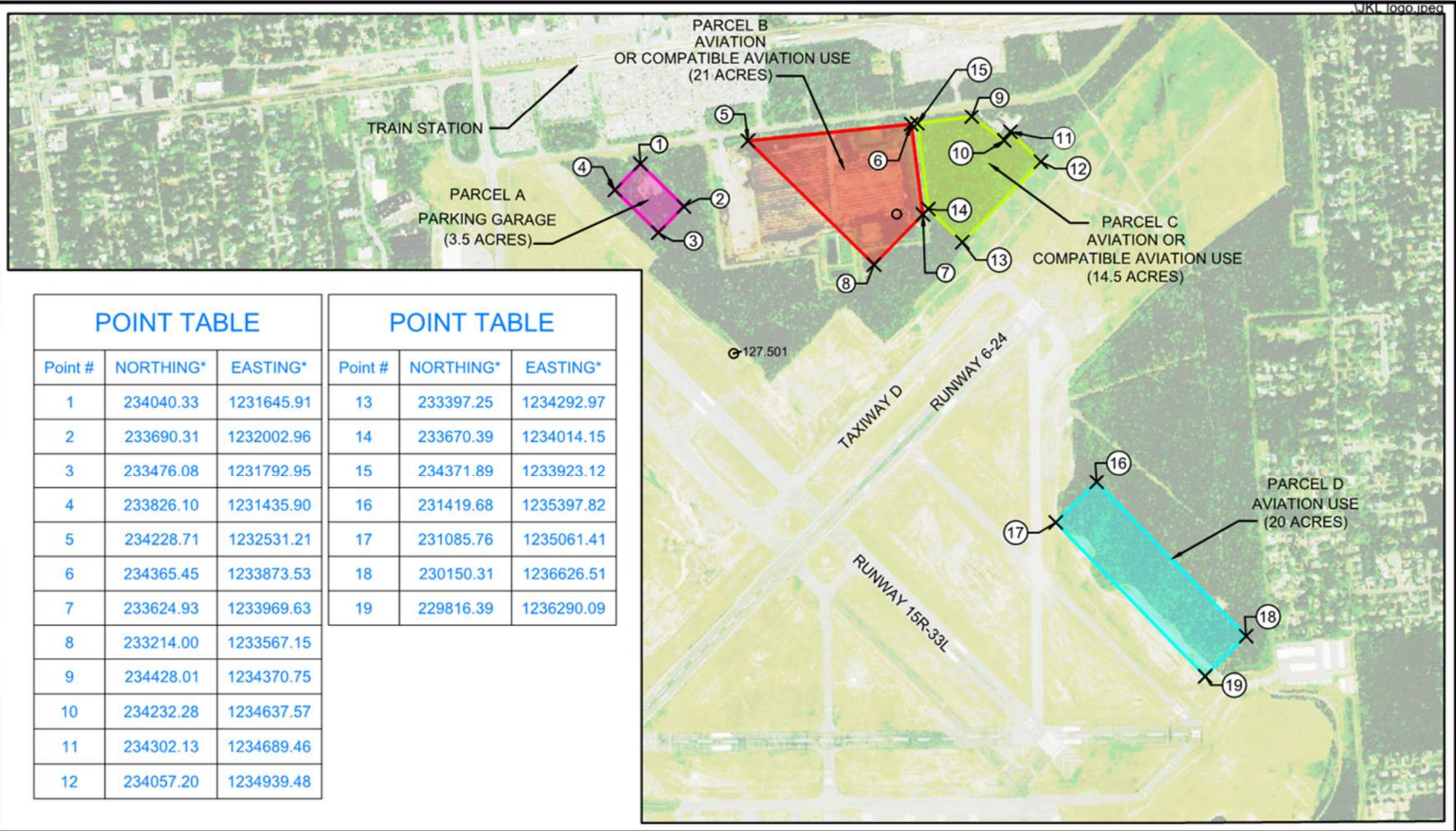
Long-Term Expansion (Adds 20 Gates)



Site Parcels



DEVELOPMENT AND LEASE OF PARCELS A, B, C AND D



- Parcel A – 3.5 Acre (Garage)
- Parcel B – 21 Acre (Aviation Or Compatible)
- Parcel C – 14.5 Acre (Aviation Or Compatible)
- Parcel D – 20 Acre (Aviation Use)

POINT TABLE		
Point #	NORTHING*	EASTING*
1	234040.33	1231645.91
2	233690.31	1232002.96
3	233476.08	1231792.95
4	233826.10	1231435.90
5	234228.71	1232531.21
6	234365.45	1233873.53
7	233624.93	1233969.63
8	233214.00	1233567.15
9	234428.01	1234370.75
10	234232.28	1234637.57
11	234302.13	1234689.46
12	234057.20	1234939.48

POINT TABLE		
Point #	NORTHING*	EASTING*
13	233397.25	1234292.97
14	233670.39	1234014.15
15	234371.89	1233923.12
16	231419.68	1235397.82
17	231085.76	1235061.41
18	230150.31	1236626.51
19	229816.39	1236290.09

Parcel Impacts:

- A = Varies
- B = All concepts
- C = Varies in Phase 2 only
- D = No impact



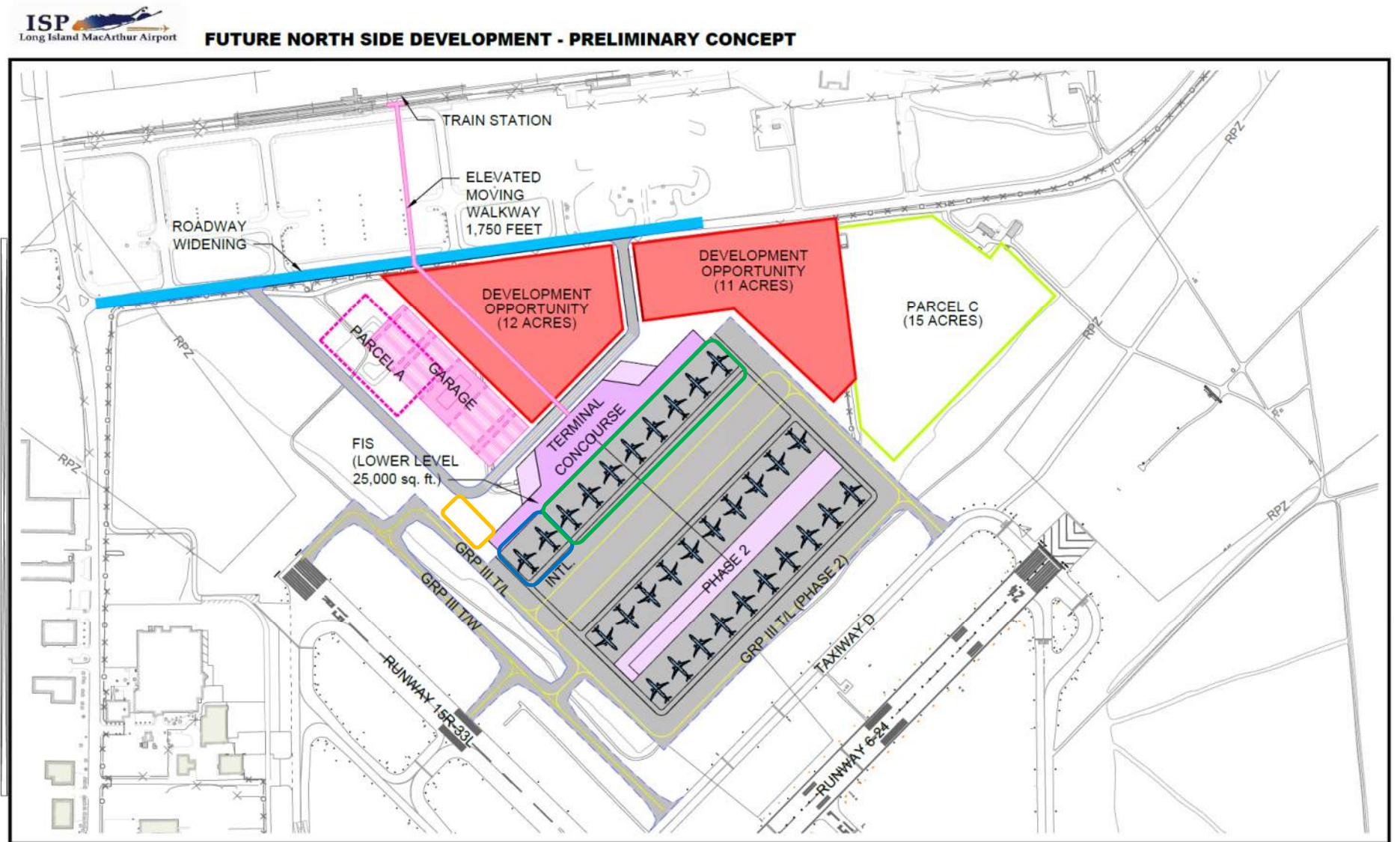
FILE NAME: D:\ISP_General\COMMENTS\North_Development\C-FUTURE\MAP_UPDATED.dwg LAYOUT NAME: Phase 1_UPDATE_Thumbnails PLOTTED: Friday, February 14, 2020 - 3:33pm

Concept A

A - Future Satellite Concourse

- LIRR connection = 1,750 LF
- Ultimate gate count = 30 gates
- Parcel B Development Opportunity = 23 acres

- | | |
|-------|---|
| Pros: | <ul style="list-style-type: none"> • Acceptable walk to LIRR • Large area for future airside expansion • Easy phasing for future growth • Does not impact Parcel C • Parcel A could still be intact for garage |
| Cons: | <ul style="list-style-type: none"> • Requires tunnel to access future satellite |



Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking



Concept B

B – Aligned with Runway 15R-33L

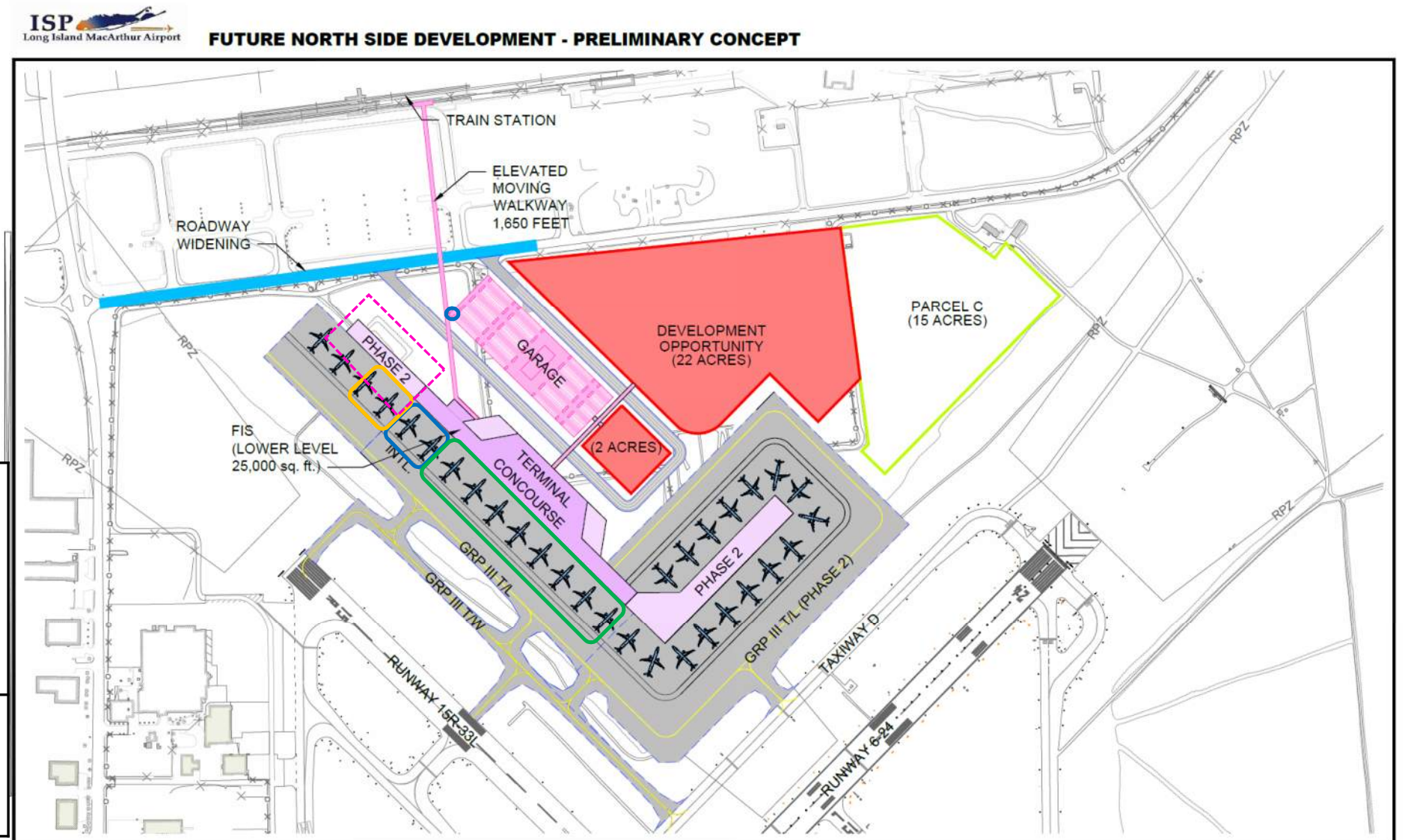
- LIRR connection = 1,650 LF
- Ultimate gate count = 30 gates
- Parcel B Development Opportunity = 24 acres
- Parcel A Garage alternative possible – longer walk from baggage claim

Pros:

- Shortest walk to/from LIRR
- Best garage flexibility for Airport & LIRR use
- Easy phasing
- Does not impact Parcel C
- Great development connectivity

Cons:

- Unbalanced ultimate gate distance



Phase 1 - Domestic



Phase 1 – Intl/Swing



GAF parking



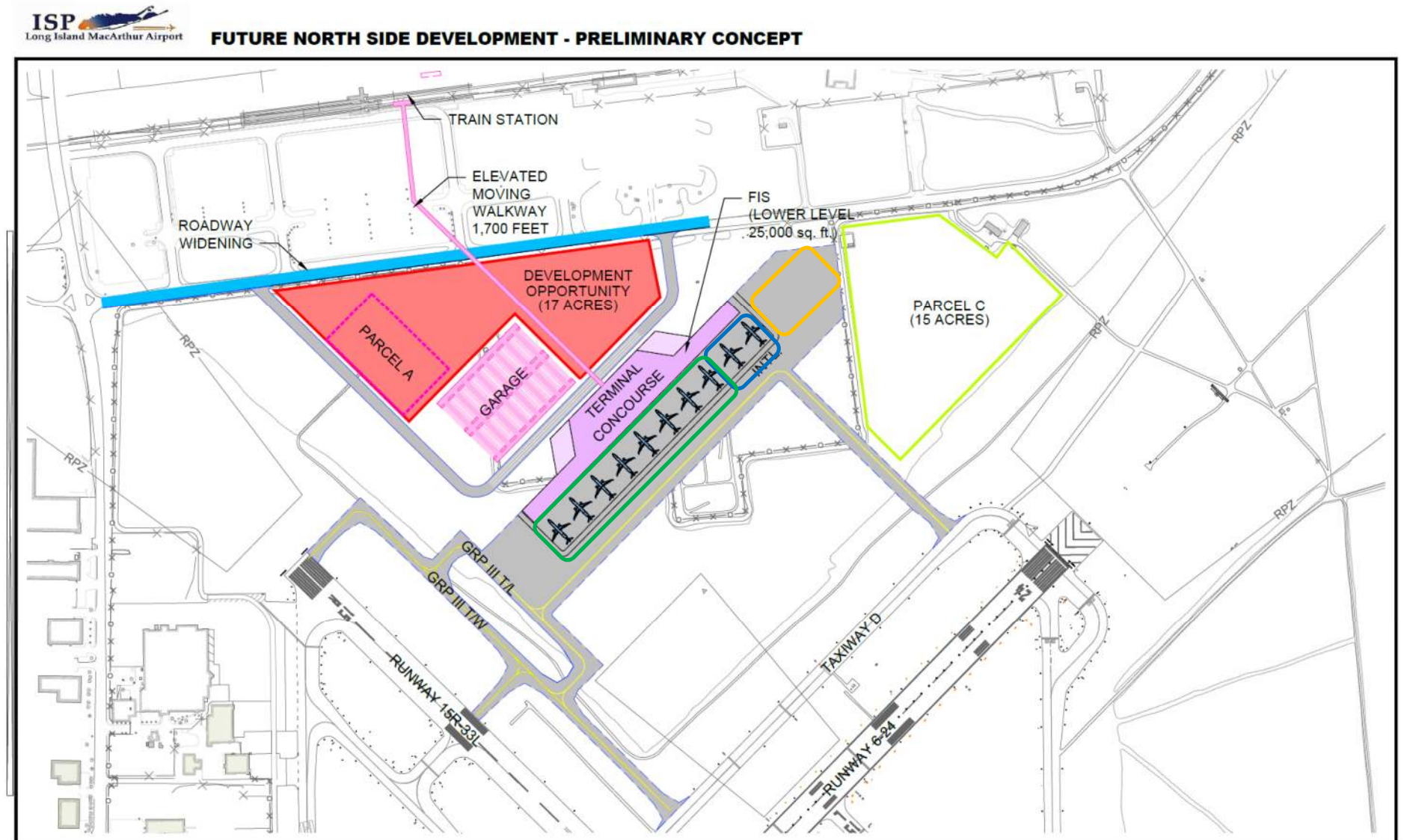
Concept C – Phase 1

C – North Pier Concept

- LIRR connection = 1,700 LF
- Ultimate gate count = 34 gates
- Parcel B Development Opportunity = 17 acres

- Pros:**
- Acceptable walk to/from LIRR
 - Great development connectivity
 - Dedicated area on east for GA parking away from commercial

- Cons:**
- Least amount of development area
 - Ultimate phasing is most difficult
 - Ultimate buildout impact on Parcel C



Phase 1 - Domestic



Phase 1 – Intl/Swing



GAF parking



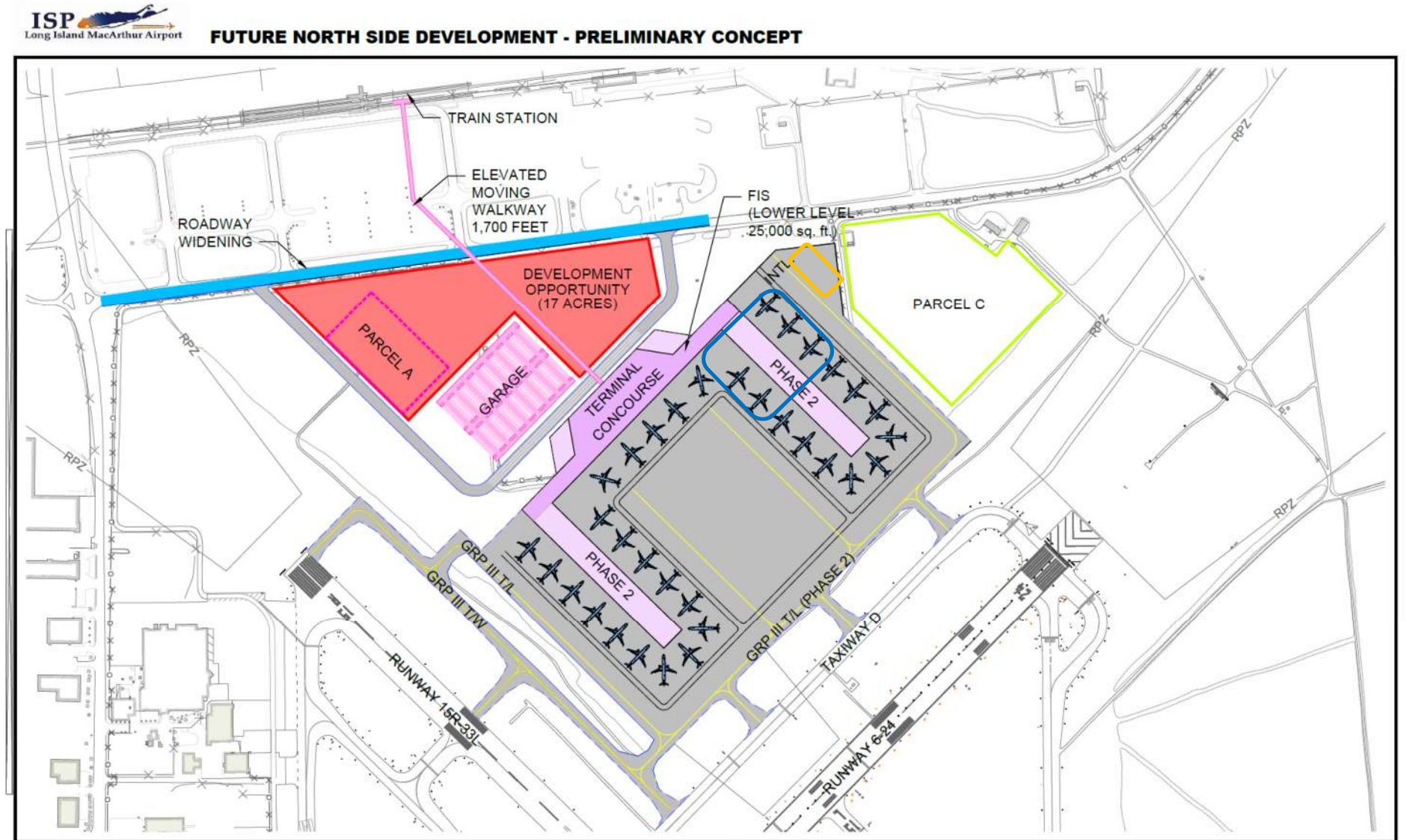
Concept C – Phase 2

C – North Pier concept

- LIRR connection = 1,700 LF
- Ultimate gate count = 34 gates
- Parcel B Development Opportunity = 17 acres

- Pros:**
- Acceptable walk to/from LIRR
 - Great development connectivity
 - Dedicated area on east for GA parking away from commercial

- Cons:**
- Least amount of development area
 - Ultimate phasing is most difficult
 - Ultimate buildout impact on Parcel C



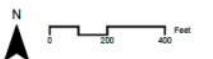
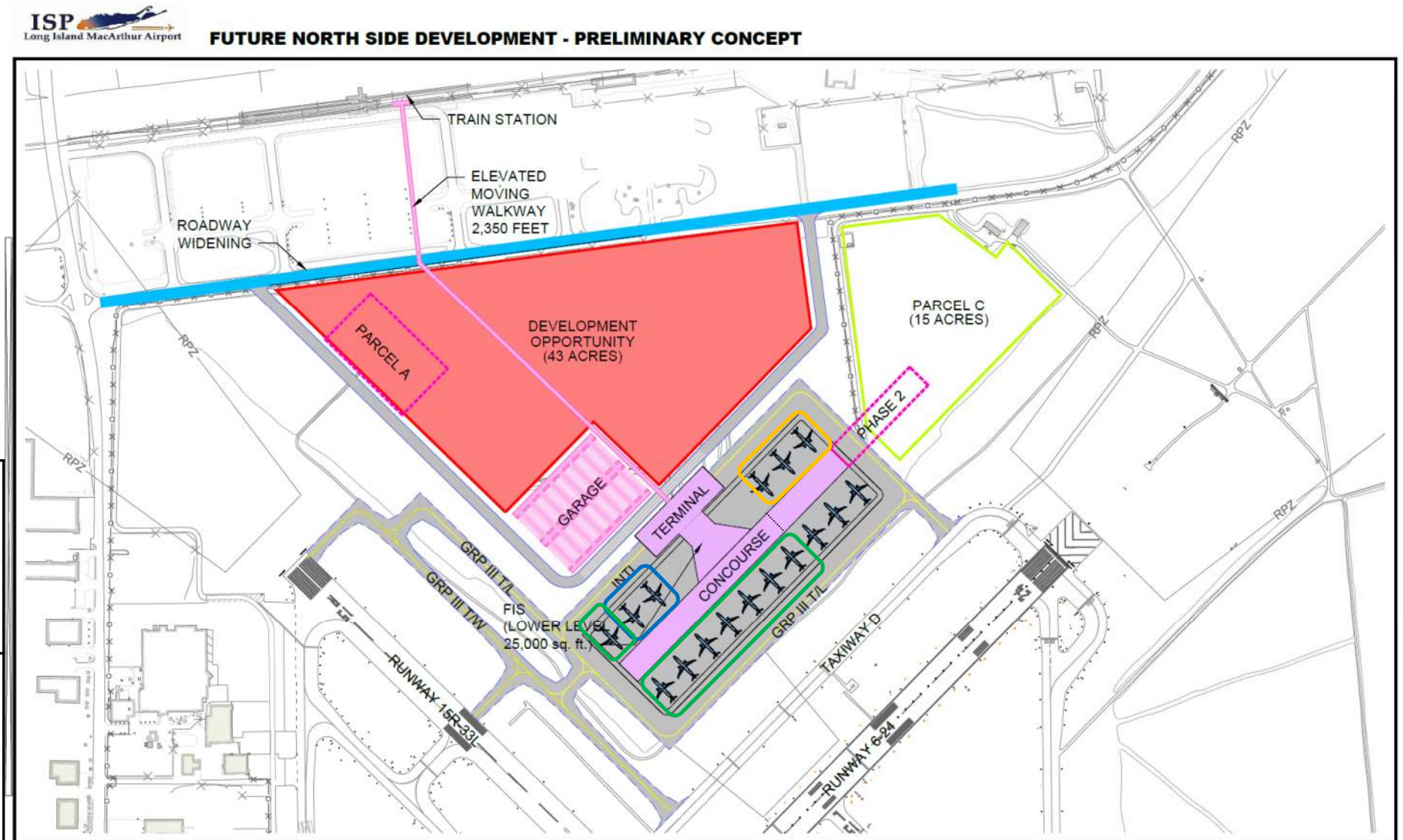
Phase 2 - Intl/Swing GAF parking



D – Maximize Development

- LIRR connection = 2,350 LF
- Ultimate gate count = 25 gates
- Parcel B Development Opportunity = 43 acres
- Multiple options for Phase 1 vs 2

- | | |
|--------------|--|
| Pros: | <ul style="list-style-type: none"> • Largest area for collateral development • Longer curbside / entry road • Better separation of GA parking vs commercial |
| Cons: | <ul style="list-style-type: none"> • Longer walk from the LIRR (almost 1/2 mile) • Limited airside expansion area • Expansion requires impact to Parcel C |



Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking

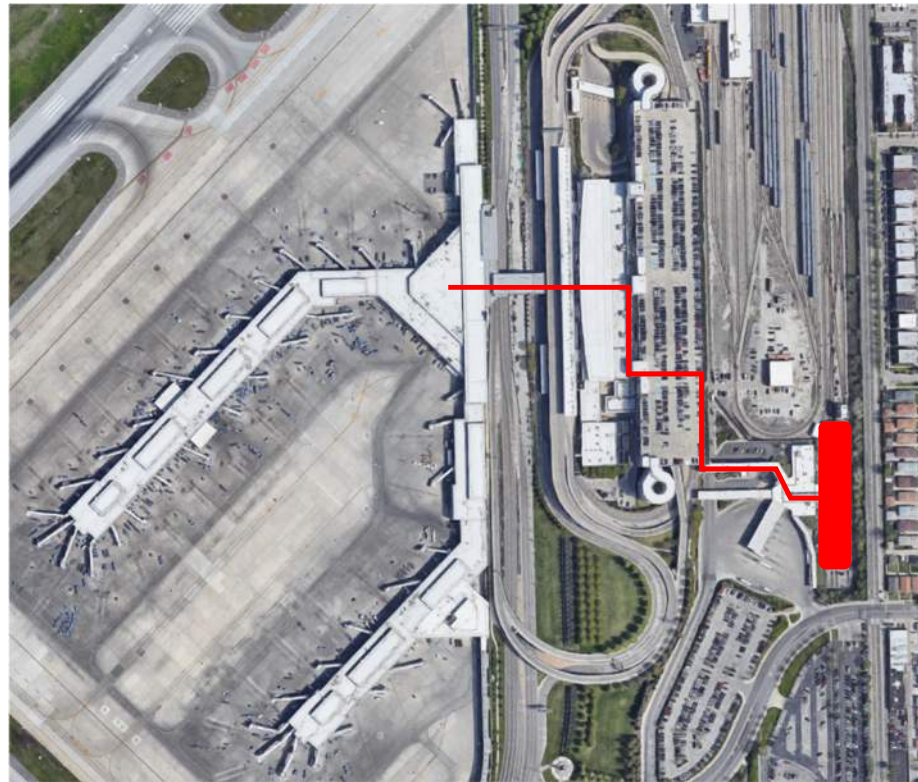


Key Evaluation Criteria

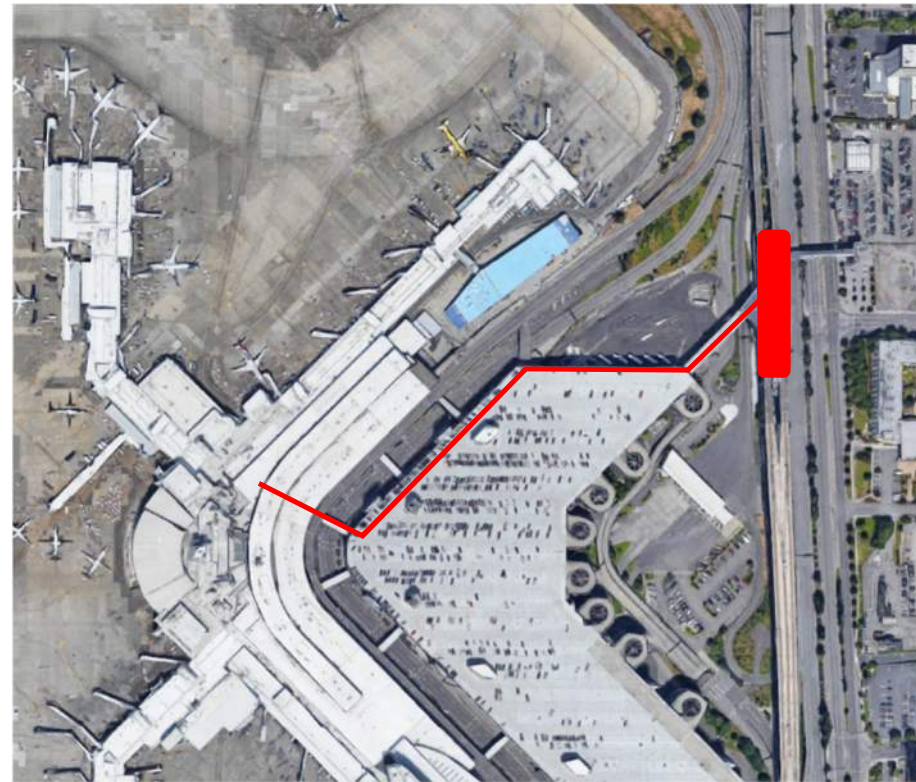
- Connectivity to LIRR and community
 - Path is enjoyable (not confusing)
- **Minimize walking distances**
 - LIRR to Terminal - ideal is no more than 1/3 mile (1,800 linear feet or less)
 - Terminal entry to furthest gate
- **Development Opportunity**
 - Maximize non-aero revenue potential
 - Terminal with ample concessions opportunity
- **Growth Flexibility**
 - Additional airside gates and landside potential
 - Ability to enhance existing airlines and attract new entries
 - Simple phasing for future gate buildout with no “throwaway”
- Customer experience and right-sized facility
- Ability for new technology/systems
 - Inline baggage systems, updated building systems, current technologies
- Implementation Cost



Walking Distance – Airport/Transit



MDW – Chicago Midway



SEA – Seattle Tacoma

Case Examples - MDW and SEA:

- Both are approx. 1,500 LF from central node to transit station
- Walks are uninspiring through parking garages
- No moving walk assistance (SEA – golf carts)

** Relevant examples for medium/small hub airports with transit connection are few.*

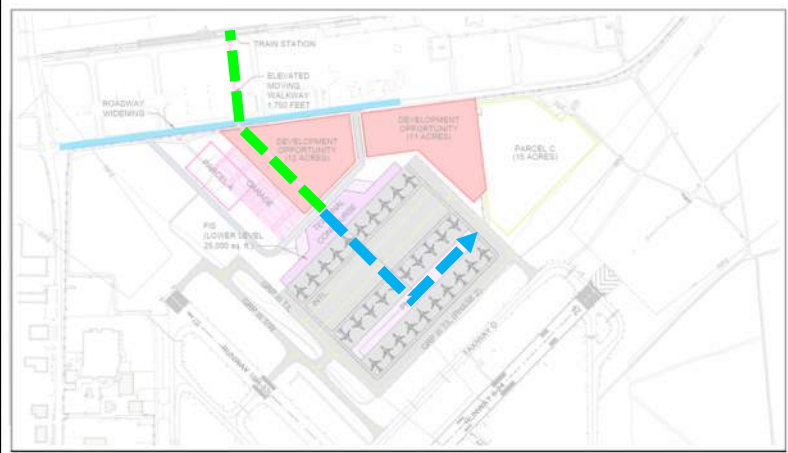
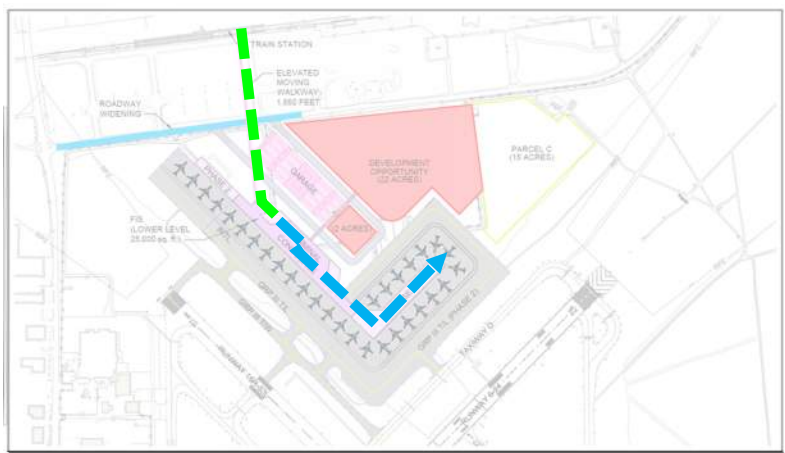
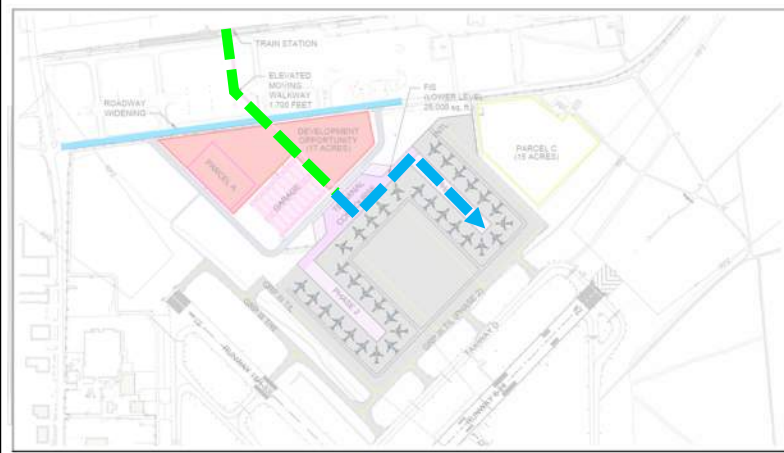
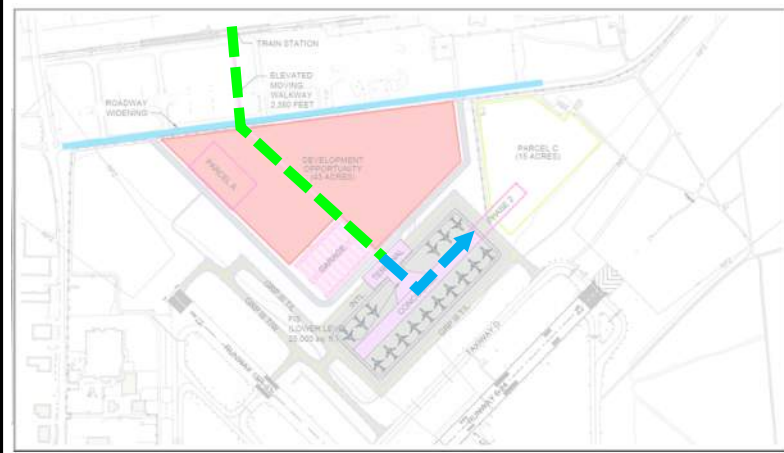
Typical Metrics –

- ¼ mile - Under 1,300 LF – 5-10 minute walk – reasonable walk (over 1,000 LF moving walks)
- ½ mile - 1,300 –2,600 LF – 10-15 minute walk – moving walks recommended
- Over ½ mile – Over 2,650 LF - 15+ minute walk – people mover or other means recommended
- ISP Today – 3.4 miles - 8-10 minute car ride + 5 minute wait time = 15 minutes average
- ISP Target – approx. 1/3 mile – no more than 1,800 LF – no more than 10 minute walk

Experience is important – avoid walks through parking garages or dark areas



Walking Distance – Transit and Ultimate Gate

A. Future satellite Concourse	B. Aligned with Runway 15R-33L	C. North Pier Concept	D. Maximize collateral development
			
From LIRR: 1,750 FT	From LIRR: 1,650 FT	From LIRR: 1,700 FT	From LIRR: 2,350 FT
To Ult. Gate: 1,750 FT	To Ult. Gate: 2,100 FT	To Ult. Gate: 1,700 FT	To Ult. Gate: 1,150 FT
Total: 3,500 FT	Total: 3,750 FT	Total: 3,400 FT	Total: 3,500 FT

To/From LIRR:

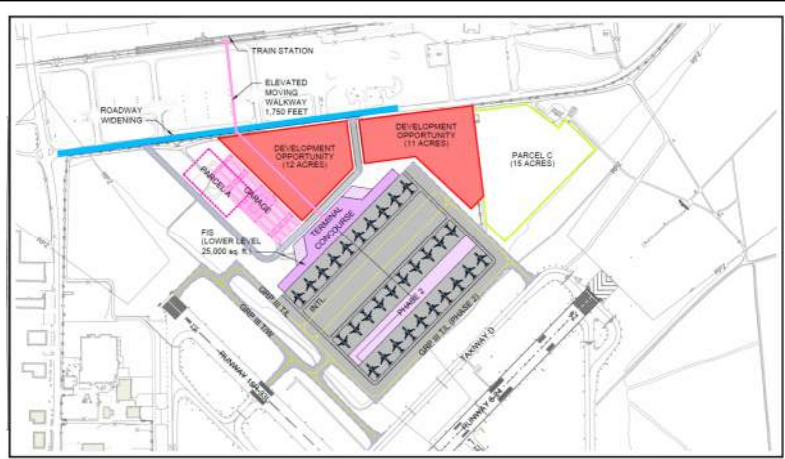
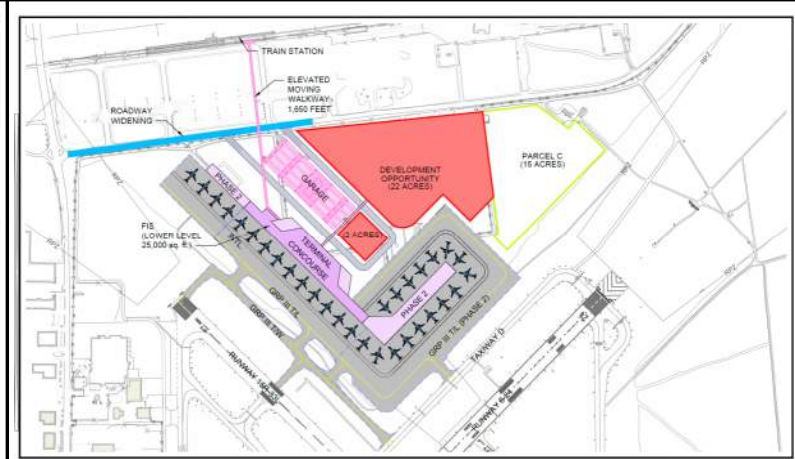
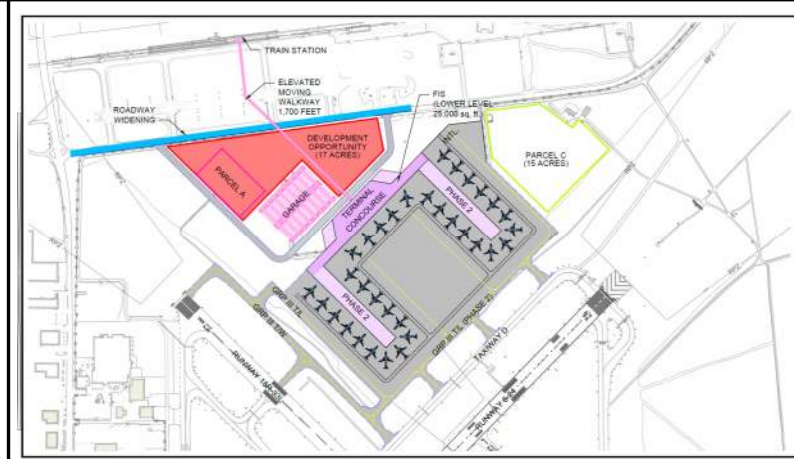
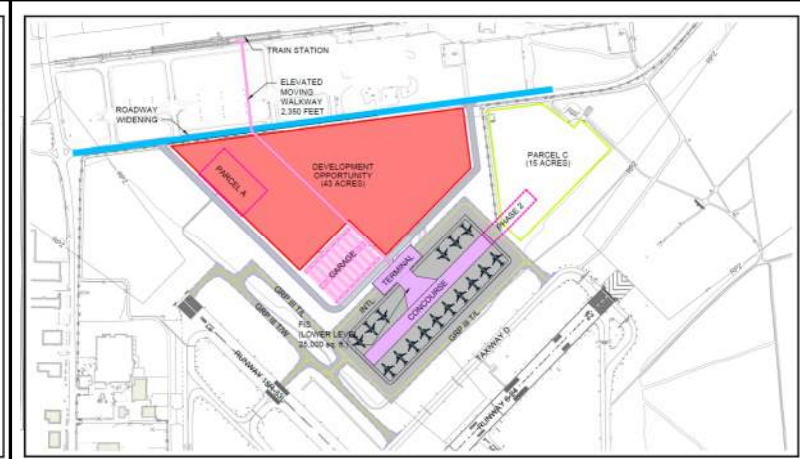
- ISP Today – 3.4 miles - 8-10 minute car ride + 5 minute wait time = 15 minutes average
- ISP Target – approx. 1/3 mile – no more than 1,800 LF – no more than 10 minute walk
- Pleasant experience, avoiding walks through parking garages



--- Walk from LIRR
--- Walk to Furthest Gate



Development Opportunity

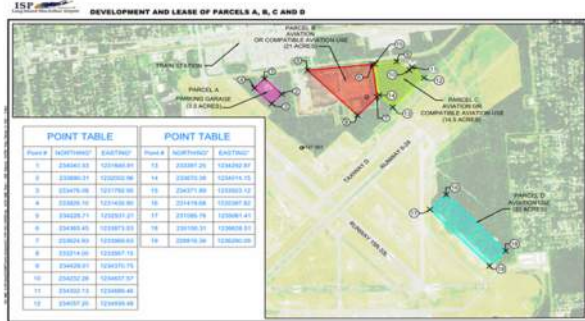
A. Future satellite Concourse	B. Aligned with Runway 15R-33L	C. North Pier Concept	D. Maximize collateral development
			
Total: 23 Acres	Total: 24 Acres	Total: 17 Acres	Total: 43 Acres

- Parcel A (3.5 acres)**
 - Slightly moved / Keep
- Parcel B (21 acres)**
 - Reduced by 3 acres
- Parcel C (14.5 acres)**
 - Untouched

- Parcel A (3.5 acres)**
 - Moved / Option to Keep
- Parcel B (21 acres)**
 - Increase by 3 acres
- Parcel C (14.5 acres)**
 - Untouched

- Parcel A (3.5 acres)**
 - Moved
- Parcel B (21 acres)**
 - Decrease by 4 acres
- Parcel C (14.5 acres)**
 - Altered in Ultimate

- Parcel A (3.5 acres)**
 - Moved
- Parcel B (21 acres)**
 - Increase by 22 acres
- Parcel C (14.5 acres)**
 - Altered in Ultimate



Ultimate Growth Flexibility

A. Future satellite Concourse	B. Aligned with Runway 15R-33L	C. North Pier Concept	D. Maximize collateral development
<p>Phase 1: 10 gates Phase 2+: 30 gates</p>	<p>Total: 10 gates Phase 2+: 30 gates</p>	<p>Total: 10 gates Phase 2+: 34 gates</p>	<p>Total: 10 gates Phase 2+: 25 gates</p>

- Simple Phasing
- Balanced gate walk
- Parcel C Impact? - No

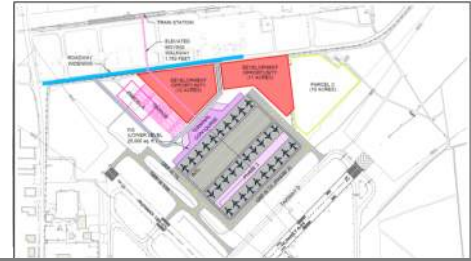
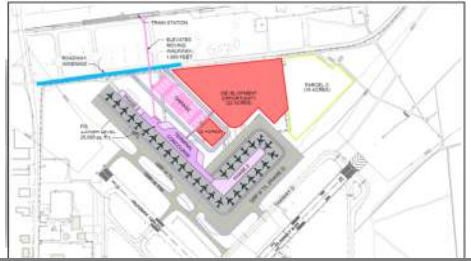
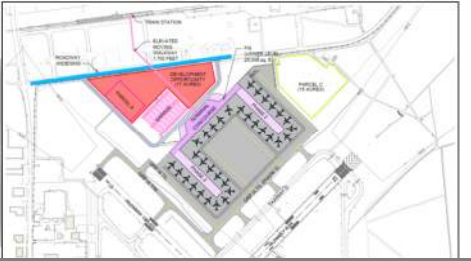

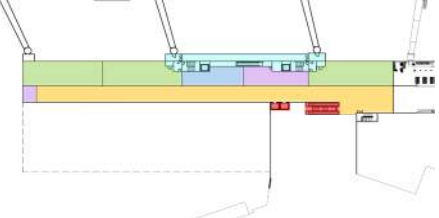
- Simple Phasing
- Unbalanced gate walk
- Parcel C Impact? - No

- Phasing not ideal
- Balanced gate walk
- Parcel C Impact? - Yes

- Simple phasing
- Unbalanced gate walk
- Parcel C Impact? - Yes



Concept Comparison

	Concept A North	Concept B North	Concept C North	Concept D North	Existing Terminal Expansion
					
Connectivity to LIRR	1	1	1	0	-1
Development Opportunity	1	1	0	1	-1
Long-Term Flexibility	1	0	1	0	-1
Phasing	1	1	-1	1	-1
Customer Experience	1	1	1	1	0
Technology	1	1	1	1	0
Cost	-1	-1	-1	-1	0
Score	5	4	2	3	-4



Decisions

- Maximize potential development area vs. Minimal walking distance
- Ultimate Gate Count – Concepts range from 25-34. What is target?
- Parcel A – Do we need to maintain RFP location or ability to move?

Next Steps

- North Terminal Area concept refinement based upon today's conversation
- New Terminal benchmarking
- Terminal interior layouts aligned with program requirements
- Airside geometry refinement
- Outreach strategy



- Workshop #3: TBD – October 2020
- Workshop #4: TBD – November 2020
 - North Terminal concept refinement and phasing
 - Initial cost estimation and project schedule
 - Environmental/Sustainability impacts
- Stakeholder Meeting: TBD
 - Goal is to have one preferred alternative
- Workshop #5: TBD – January/February 2020
 - Concept refinement (as required after stakeholder meeting)
 - Financial Feasibility Analysis
 - Final cost estimation
- Draft Deliverable: February 2021
- Final Deliverable: March 2021 (includes ISP review and comment resolution)

** Schedule provided for discussion. Based upon extended schedule to Q1/2021 for stakeholder outreach after holidays. Can be expedited to December completion as originally noted if desired.*





ISP – Conduct a Terminal Area Narrative Report

Grant 3-36-0046-103-2019

Pre-Workshop #3 | September 29, 2020



ISP - Conduct a Terminal Area Narrative Report Pre-Workshop #3

FAA Project: Grant 3-36-0046-103-2019

September 29, 2020

Remote / Microsoft Teams

Attendees:		
Name	Company/Representation	Email
Shelley LaRose	ISP Airport	SLaRose@islipny.gov
Robert Schneider	ISP Airport	rschneider@islipny.gov
Gerri Mulligan	ISP Airport	gmulligan@islipny.gov
Steve Siniski	ISP Airport	ssiniski@islipny.gov
Mahesh Kukata	JKL	mkukata@adci-corp.com
Andrea Luft	JKL	ALuft@jklengineers.com
Logan Smith	L&B	lsmith@landrum-brown.com
Clint Laaser	L&B	claaser@landrum-brown.com
Mark Perryman	L&B	mperryman@landrum-brown.com
Monica Geygan	L&B	mgeygan@landrum-brown.com

The meeting notes below were taken during the Pre-Workshop #3 between ISP Airport, JKL and L&B.

Discussion:

- Additional benefits of the North Terminal site location to consider -
 - LIRR has just put \$100 million dollars into their system that benefits the Ronkonkoma Station and connectivity for the Islip airport.
 - Third Track project provides more frequent, efficient, reliable connectivity to NYC.
 - East Side Access provides direct LIRR access to Grand Central Terminal (2022)
 - L&B will include this in presentation content materials for stakeholder outreach that will emphasize the importance of connectivity for passengers to the LIRR Ronkonkoma Station.
- Key Criteria for Evaluation - Technology –
 - Islip MacArthur is currently on the forefront of technology use for a safe and healthy terminal, including air purification, UV technology (or other) and sensors to measure high levels of airborne contaminants. The future facility should include technologies to ensure a healthy, safe building for passengers.
- Compost Facility –
 - Does the FAA have any regulatory position regarding the use of aviation functions on aviation properties? Can we identify statements, regulations or grant assurances by FAA that would allow determination that the compost facility should/could be removed?
 - Town of Islip has not determined that the compost facility site is available for other use.
 - Team should show methods of energy savings or positive environmental impact that would offset the potential loss of the compost facility. The governor will require a 50% reduction in carbon emissions, so we need to look at renewable energy or reduction of the carbon footprint.
 - Inclusion of sustainability improvements that help to offset the loss of the compost facility will help this case. This could include relocation of the compost facility or reduction of the compost area but with increased benefits of the new terminal (LEED Gold).
 - Proximity of the compost facility to a new passenger terminal could/will have negative effects to the passenger experience (sight, smell, other)

- Landside Parking –
 - Is there enough parking in the concepts to support the 30 ultimate gates shown?
 - Not all the parking will likely be required in the first phase, but this site could be expanded. It could also include hotel or other non-aero revenue as part of this development.
 - Some concepts easily work with the Parcel A site while others will be more difficult due to distance from the LIRR to Terminal walking path. In Concept B, the plan can remove the Parcel A site (from the previous RFP) and include the parking across the curb front roadway but will good connection to the LIRR walking pathway.
 - Goal is to place the parking area between (or along the path) from the LIRR station and airport terminal to allow for parking for each separate group, helping to generate more non-aero revenue generation.
- Potential Issue for Pedestrian Walkway to LIRR –
 - Easement to the LIRR station and if it will be permitted. This should be further studied in later phases and discussed with the appropriate parties.
- GAF/FIS –
 - Is the GAF integrated into the FIS?
 - Yes, there is a separate parking area for the GA aircraft so that both commercial and GA can use the combined FIS facility. The concepts will separate aircraft parking operation to its best ability. This will also assist with maximization of CBP agent productivity and support areas. There are some functions that will remain separate (but adjacent) and the plan will follow the CBP Airport Technical Design Standards (ATDS) guidelines.
 - Will there be a way to expand the number of commercial international/FIS capable gates?
 - Current plans show (2) domestic/international swing gates, however, the plan can be adjusted to include more gates connected to the sterile corridor. L&B will produce terminal concepts in response to this.
- Ultimate Gate Allocation –
 - The team should determine what the realistic “ultimate build” gate count should be.
 - This will help to balance airside/landside and determine what can be achieved at this facility and allow for land to be utilized for it’s best use both in the short and long term.
- Transit Station Connectivity –
 - Few relevant examples for small or medium hub airports with direct regional transit connection. It was noted that PVD – Providence RI would be a good example to include for benchmarking purposes. The path between LIRR and terminal should ideally have access to the parking area but not go directly through it to allow for a positive walking journey (not like the SEA and MDW examples).
- Concept Comparison - ISP agrees with the evaluation matrix, with the following exceptions/changes:
 - Concept A – Phasing should be “0”, Possibly re-evaluate Customer Experience and Cost;
 - A satellite terminal could be more costly due to the tunnel, making phasing more difficult and potentially a lower customer experience.
 - Concept B – Long-Term flexibility should be “1”
 - The above changes would rank Concept A as a total of “4” and Concept B as a total of “5”

L&B Team next steps -

- Refinement of Concept B as the preferred concept
- Development of North Terminal floorplans
- Sustainability and environmental offset ideas regarding the compost facility.
- Development of initial cost estimate and project timeline

Schedule –

- Meetings –
 - Target December for a stakeholder meeting, which will allow for 2 internal workshops prior (October and November). Dates TBD but a tentative schedule is included below for discussion.

meeting minutes



Tentative Study Schedule:

- Kick-off Meeting: September 17, 2019 (complete)
- Workshop #1: November 14, 2019 (complete)
- Workshop #2: December 18, 2019 (complete)
- Pre-Workshop #3: September 29, 2020 (complete)
- **Workshop #3: TBD - Late October (Week of 10/26-10/30)**
 - *Attendees to include FAA*
 - Review of study findings to date
 - Alternative development and evaluation
- Workshop #4: TBD –Late November 2020 – (weeks of 11/16-11/20;11/23-11/24;11/30-12/3)
 - *Include draft PPT or Pre-Meeting one week prior*
 - *Attendees to include FAA*
 - Preferred concept refinement and phasing
 - Initial Terminal interior layouts
 - Environmental/Sustainability impacts
 - Initial cost estimation and project schedule
- Stakeholder Meeting: TBD - December 2020 (Week of 12/14-12/18) or January 2021
 - *Would this include Town Board?*
 - Review of study findings
 - Goal is to have one preferred alternative
- Workshop #5: TBD – Mid/Late January 2021
 - *Include draft PPT or Pre-Meeting one week prior*
 - *Attendees to include FAA*
 - Financial Feasibility Analysis
 - Final Cost Estimation
- Town Board or Community Outreach?: TBD - February 2021
- Draft Deliverable: Late February 2021
- Final Deliverable: Late March 2021 (includes 3-week ISP review and 1-week comment resolution)



ISP – Conduct a Terminal Area Narrative Report

Grant 3-36-0046-103-2019

Terminal Concept Options



Overview

Background:

- Existing West Concourse is a 1990's prefabricated building installed as a temporary solution
- Today it is often overcrowded with heating/cooling challenges and operational deficiencies
- In late 2019, we began development of a Terminal Narrative Report for replacement opportunities (supported by FAA)

Objectives:

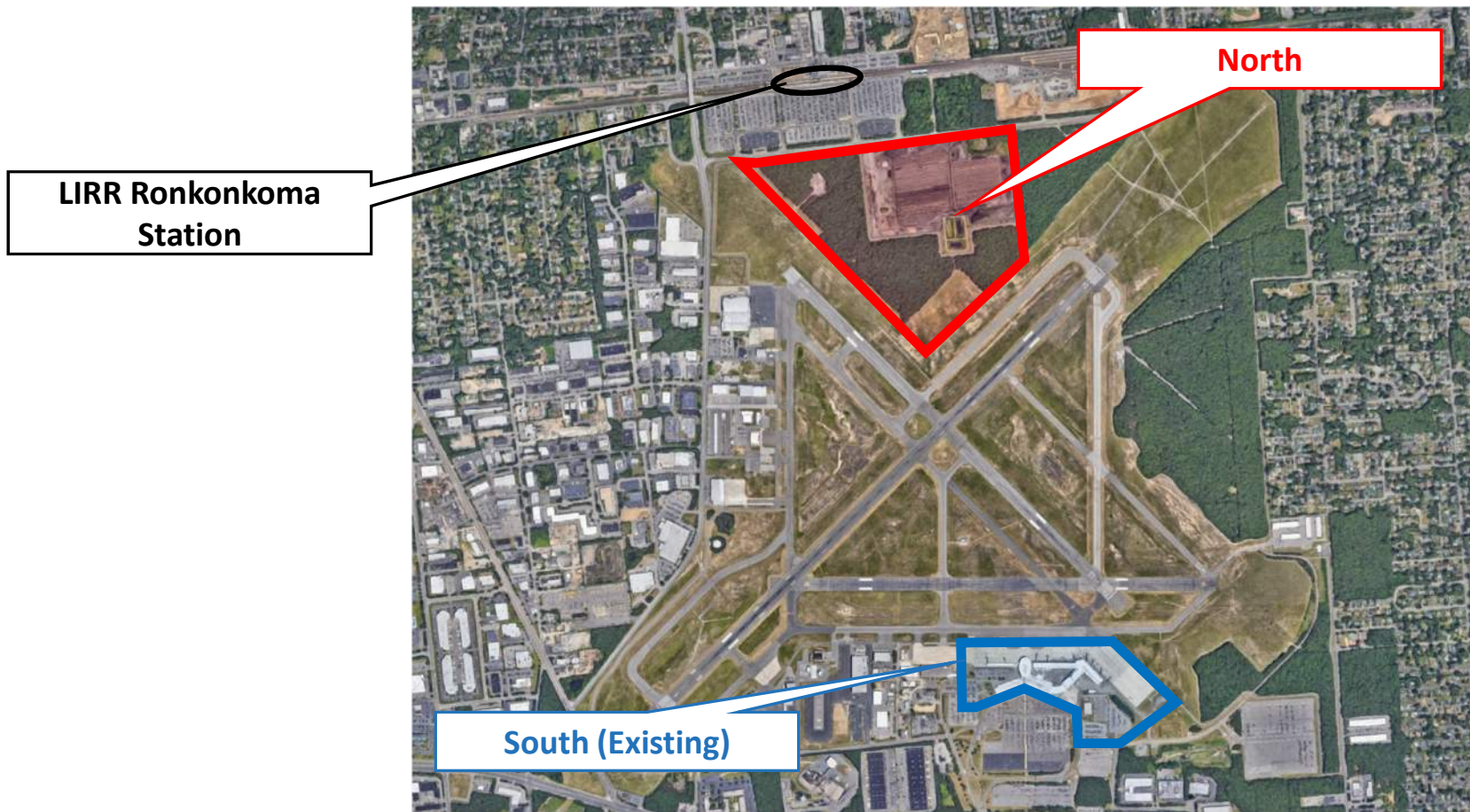
- Increase gate capacity
- Need to accommodate modern commercial service aircraft
- Enhance the passenger experience
 - Enhance Level of Service (LoS)
 - Improve passenger circulation and shorter walking distances
 - Implement new technologies and amenities
- Enhance operational and functional efficiency
- Plan for 20 year future

Primary Deficiencies:

- Lack of connectivity to LIRR (currently taxi or TNC)
- Operational capacity issues due to lack of space
- Low Customer Experience
 - Long walking distances
 - Space constraints
- Baggage Handling System is at capacity
- Lacking proper GAF/FIS facility that meets federal facility requirements



Long Island MacArthur Airport



Key Criteria for Evaluation

4

Key Evaluation Criteria

- **Connectivity to LIRR and community**
 - \$100 Million investment increases capacity by 46% (East Side Access and Third Track)
 - Provides more nonstop service between Ronkonkoma and NYC
 - Increase connectivity to CT/NY and NJ
 - Simplified and enjoyable connection/walk between LIRR and terminal
- **Minimize walking distances**
 - LIRR to Terminal - ideal is no more than 1/3 mile (1,800 linear feet or less)
 - Terminal entry to furthest gate
- **Development Opportunity**
 - Maximize non-aero revenue potential
 - Terminal with ample concessions opportunity
- **Growth Flexibility**
 - Additional airside gates and landside potential
 - Ability to enhance existing airlines and attract new entries
 - Simple phasing for future gate buildout with no “throwaway”
- **Customer experience and right-sized facility**
- **Ability for new technology/systems**
 - Inline baggage systems, updated building systems, current technologies
- **Implementation Cost**



Concept Notes

5

General Notes:

- All concepts include:
 - Aircraft gating options (Group III)
 - FIS / GAF
 - Structured parking for North Concepts

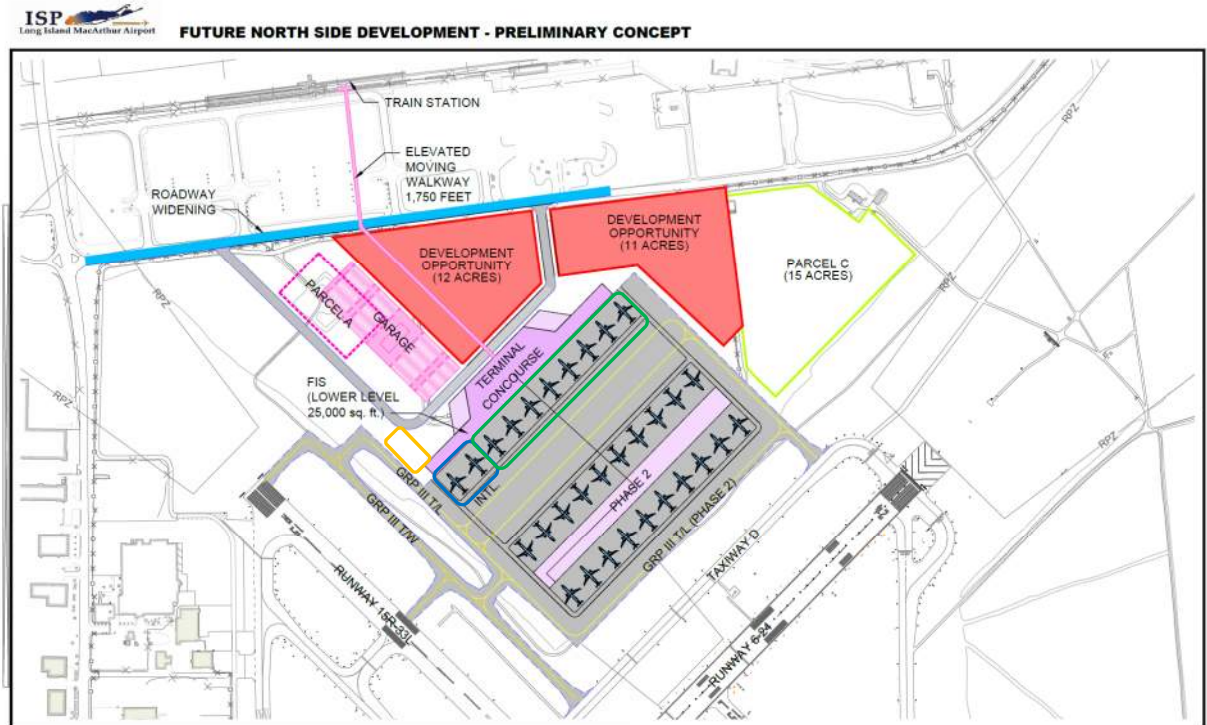


North - Concept A

A - Future Satellite Concourse

- LIRR connection = 1,750 LF
- Ultimate gate count = 30 gates
- Parcel B Development Opportunity = 23 acres

- | | |
|-------|---|
| Pros: | <ul style="list-style-type: none"> • Acceptable walk to LIRR • Large area for future airside expansion • Easy phasing for future growth • Does not impact Parcel C • Parcel A could still be intact for garage |
| Cons: | <ul style="list-style-type: none"> • Requires tunnel to access future satellite |



Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking

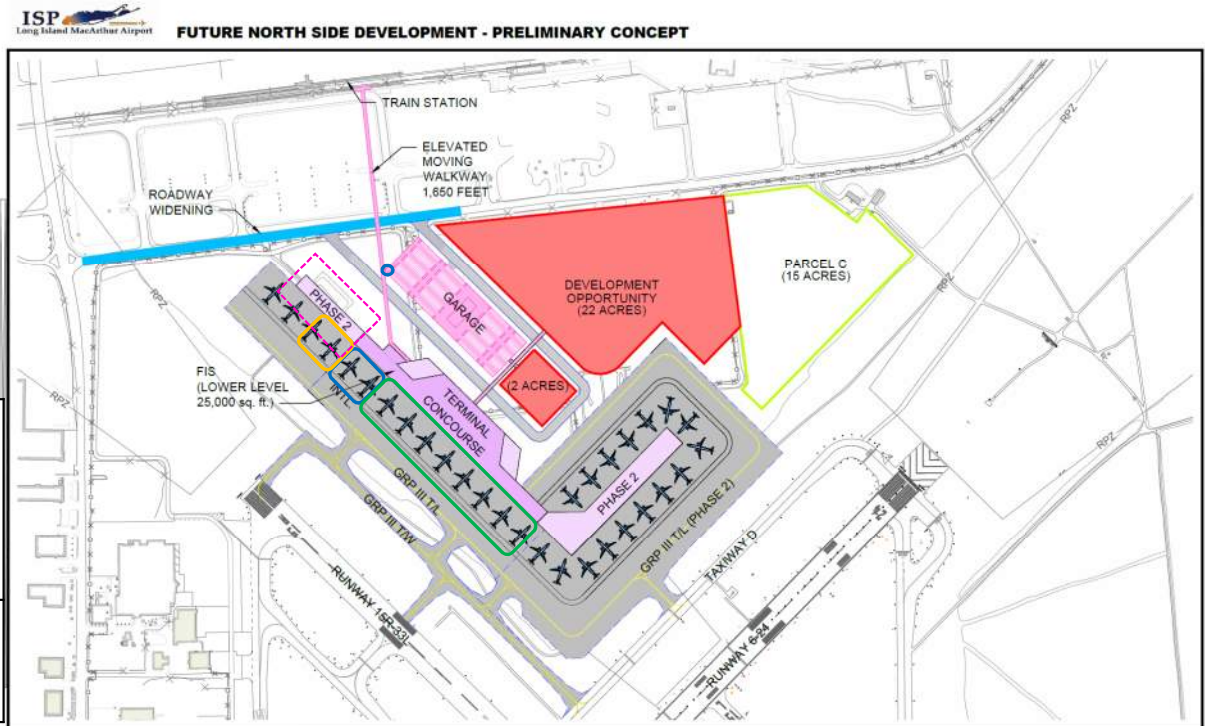


North - Concept B

B – Aligned with Runway 15R-33L

- LIRR connection = 1,650 LF
- Ultimate gate count = 30 gates
- Parcel B Development Opportunity = 24 acres
- Parcel A Garage alternative possible – longer walk from baggage claim

- | | |
|-------|--|
| Pros: | <ul style="list-style-type: none"> • Shortest walk to/from LIRR • Best garage flexibility for Airport & LIRR use • Easy phasing • Does not impact Parcel C • Great development connectivity |
| Cons: | <ul style="list-style-type: none"> • Unbalanced ultimate gate distance |



Phase 1 - Domestic



Phase 1 – Intl/Swing



GAF parking

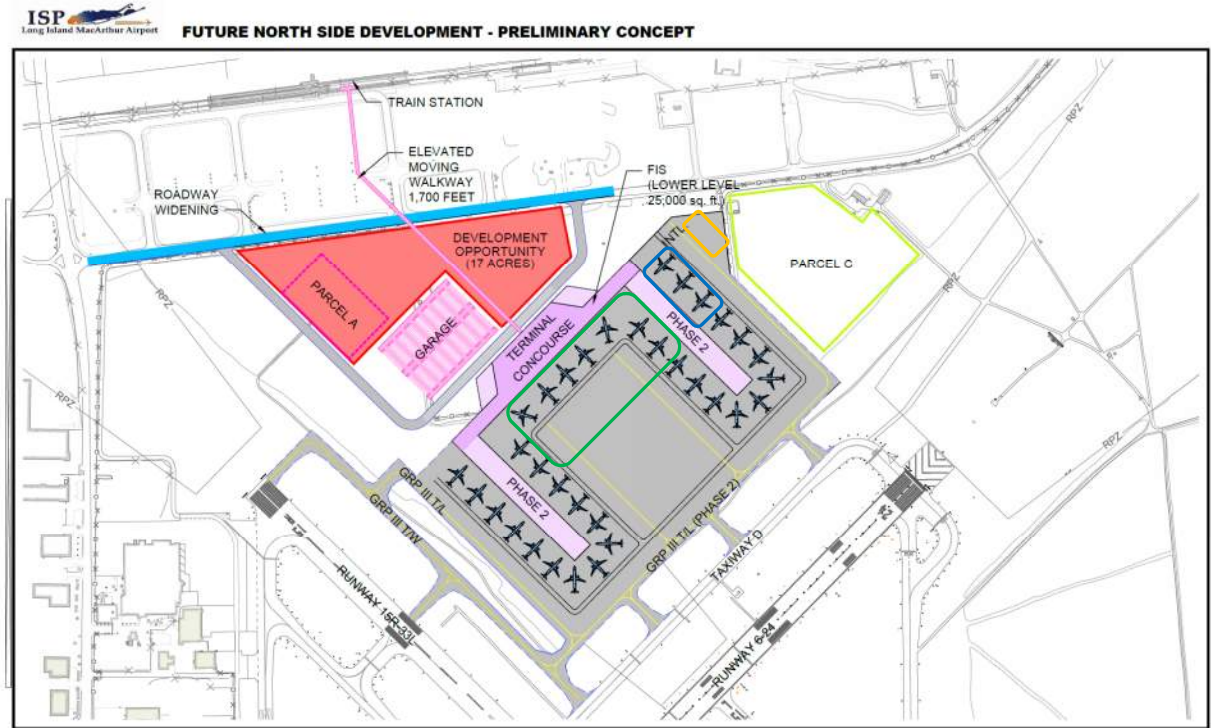


North - Concept C

C – North Pier concept

- LIRR connection = 1,700 LF
- Ultimate gate count = 34 gates
- Parcel B Development Opportunity = 17 acres

Pros:	<ul style="list-style-type: none">• Acceptable walk to/from LIRR• Great development connectivity• Dedicated area on east side for GA parking away from commercial
Cons:	<ul style="list-style-type: none">• Least amount of development area• Ultimate phasing is most difficult• Ultimate buildout impact on Parcel C



Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking

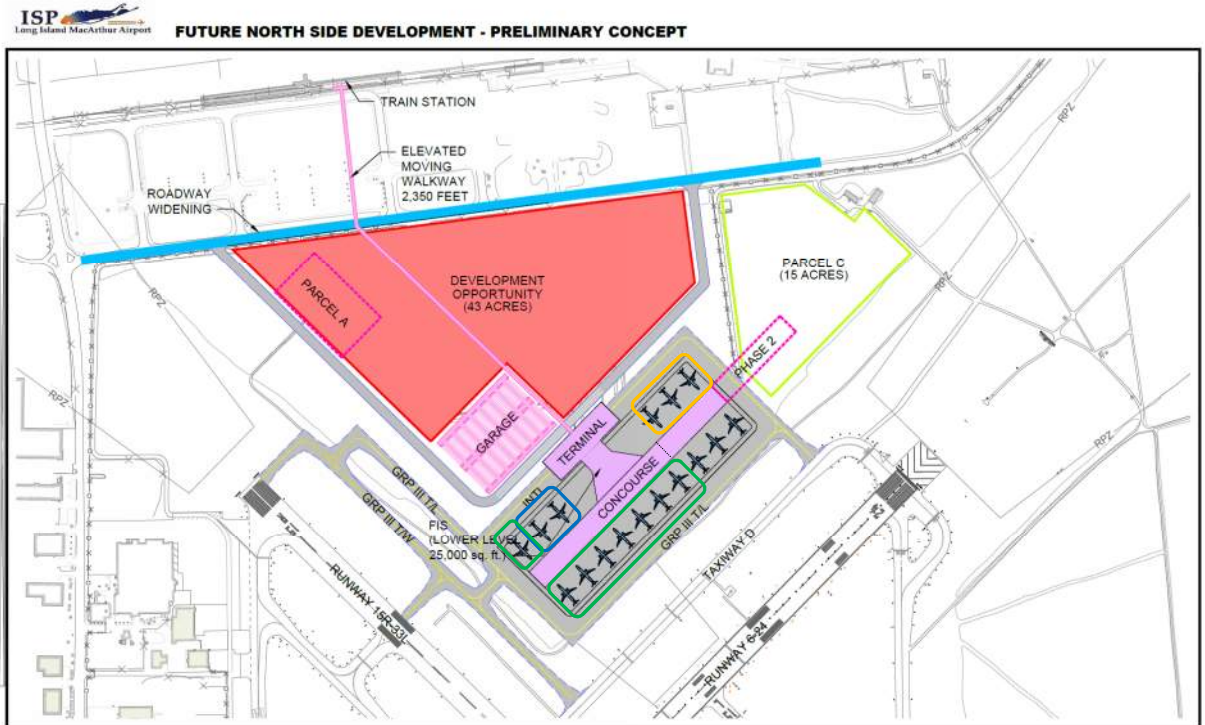


North - Concept D

D – Maximize Development

- LIRR connection = 2,350 LF
- Ultimate gate count = 25 gates
- Parcel B Development Opportunity = 43 acres
- Multiple options for Phase 1 vs 2

- | | |
|--------------|--|
| Pros: | <ul style="list-style-type: none"> • Largest area for collateral development • Longer curbside / entry road • Better separation of GA parking vs commercial |
| Cons: | <ul style="list-style-type: none"> • Longer walk from the LIRR (almost ½ mile) • Limited airside expansion area • Expansion requires impact to Parcel C |



Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking



North - Concept E

E – Maximize Development

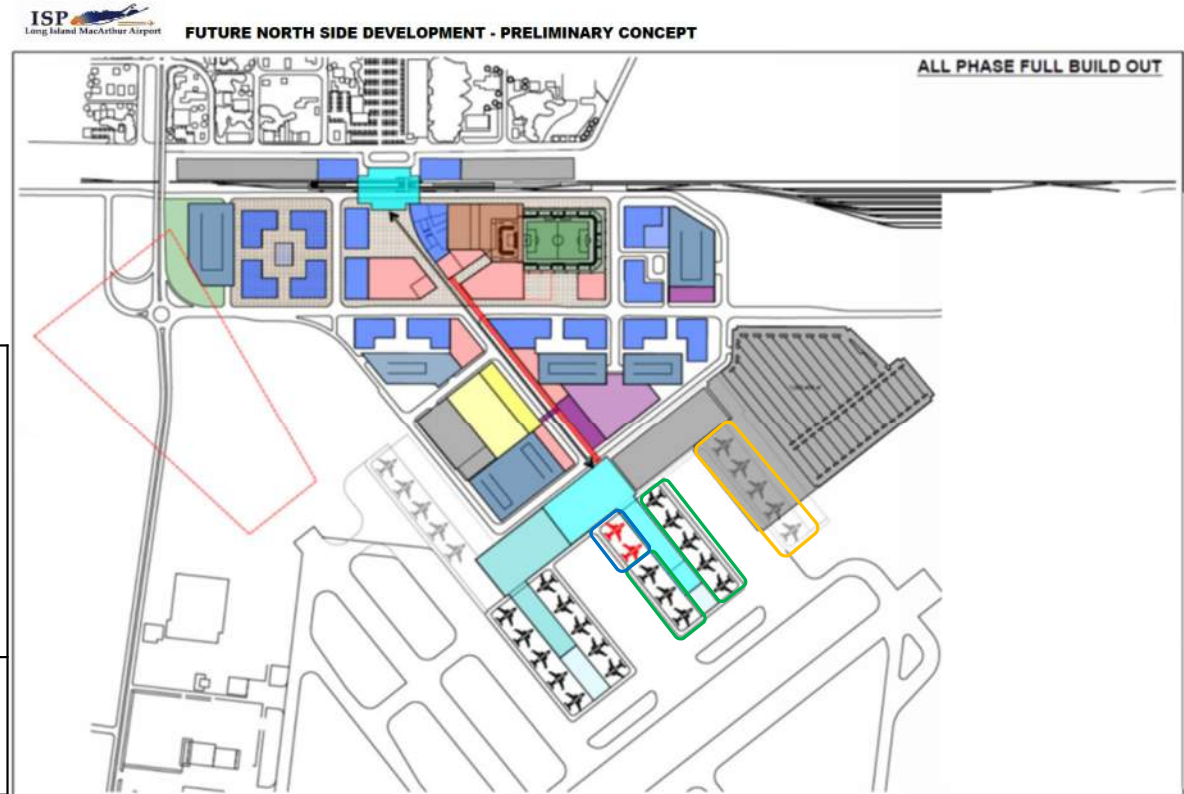
- LIRR connection = 1,900 LF
- Ultimate gate count = 20 gates
- Parcel B Development Opportunity = 26.3 acres (18.8 Commercial + 7.5 Convention)
- Parcel C intact

Pros:

- Transit oriented design
- Acceptable LIRR walk distance
- Phasing flexibility
- Sustainable development long-term
- Strong customer experience
- Leverage infrastructure investment
- Development connectivity and investment across entire project

Cons:

- Project legal & operating complexity
- Requires multiple stakeholder coordination



Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking



South – Concept F – New Central Terminal

11

F – South Location

- LIRR connection = 6,864 LF
- Ultimate gate count = 11 gates
- Development Opportunity = Minimal

Pros:







- Leverage existing infrastructure
- Overall cost

Cons:

- Lack of LIRR connectivity
- Minimal development opportunity
- Long-term flexibility
- Phasing



Concept Comparison

	Concept A North	Concept B North	Concept C North	Concept D North	Concept E North	Concept F South
						
Connectivity to LIRR	1 1,750	1 1,650	1 1,700	0 2,350	1 1,900	-1 6,864
Development Opportunity	1 23	1 24	0 17	1 43	1 26.3	-1 Min.
Long-Term Flexibility	1 30	1 30	1 34	0 25	1 20	-1 11
Phasing	0	1	-1	1	1	-1
Customer Experience	1	1	1	1	1	0
Technology	1	1	1	1	1	0
Cost	-1	-1	-1	-1	-1	0
Score	4	5	2	3	5	-4









Next Steps - Preferred Concept(s)

- Overall, which 2-3 concepts are most preferred? Explain why.

Consider the following in your determination:

- Functionality – parking (vehicle or aircraft), security, concessions, concourse, baggage
- Customer experience
- Overall operational logistics
- Long-term flexibility/goals

- Provide any additional comments or concerns about the concepts by April 23, 2021.

Concept A North	Concept B North	Concept C North	Concept D North	Concept E North	Concept F South
					





ISP – Conduct a Terminal Area Narrative Report

Grant 3-36-0046-103-2019

Terminal Concept Options





Succeeding today, **transforming tomorrow.**

*Midway Crossing Islip MacArthur Airport
North Terminal Development*

December 2020



North Terminal – Phase One

Program

- NextGen Airport for Multiple Carriers
- North terminal with eight (8) aircraft gates
 - Ability to expand to 20 gates in the ultimate phase of the master plan
- Ability to grow from current usage of 800,000 enplanements to over 3 million
- Easy plane-to-train connection with 1,900 foot walk to LIRR Ronkonkoma Station
- LIRR begins express service to Manhattan 2022
- Connection to the convention district , commercial district and hotel
- International capability



Personal Rapid Transportation



Frankfurt Airport, Germany



Frankfurt Airport, Germany

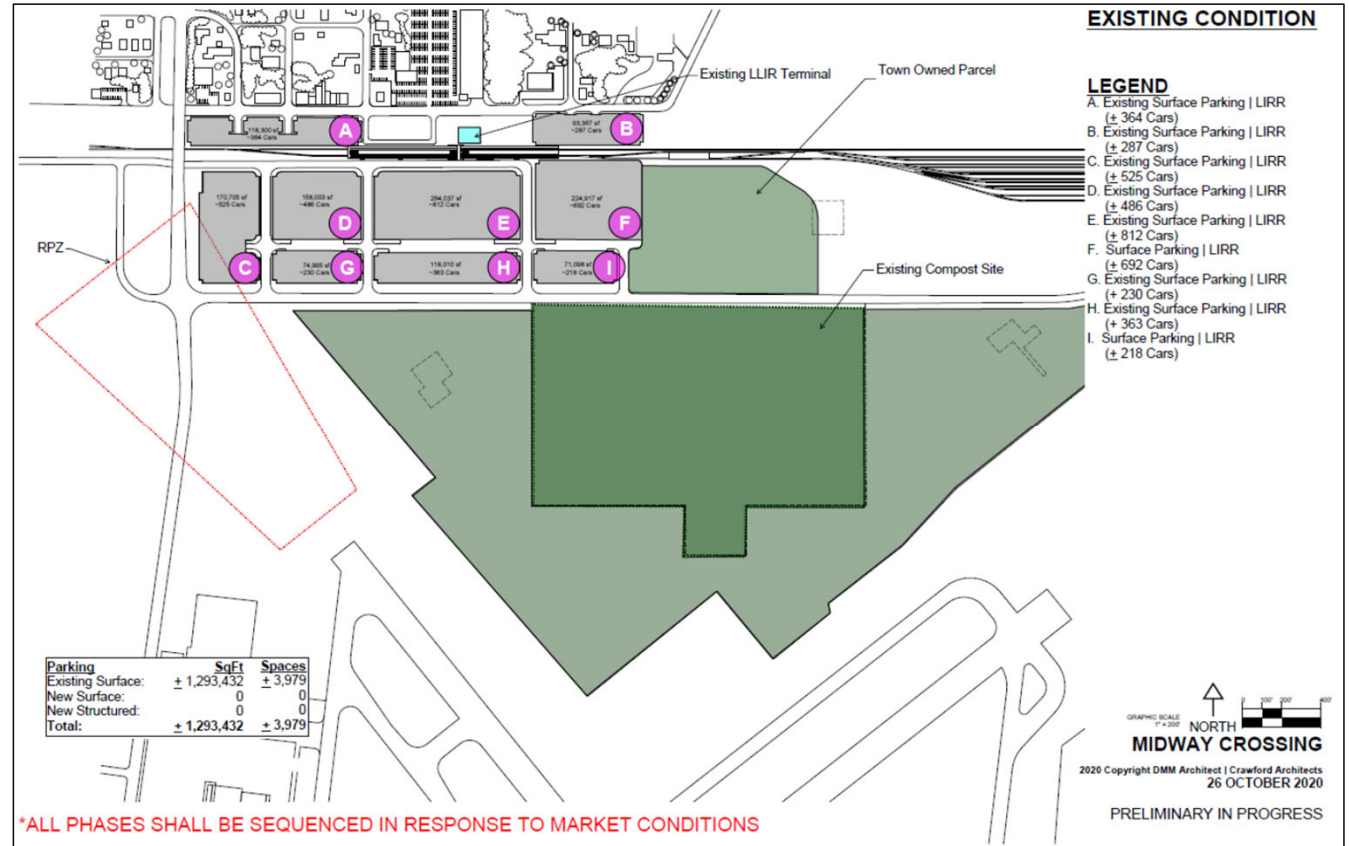


Hyperconnected Micro City

Existing Site Plan

Parking at Grade

EXISTING PARKING AT GRADE		
Lot A		364
Lot B		287
Lot C		525
Lot D		486
Lot E		812
Lot F		692
Lot G		232
Lot H		363
Lot I		218
		3979






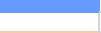






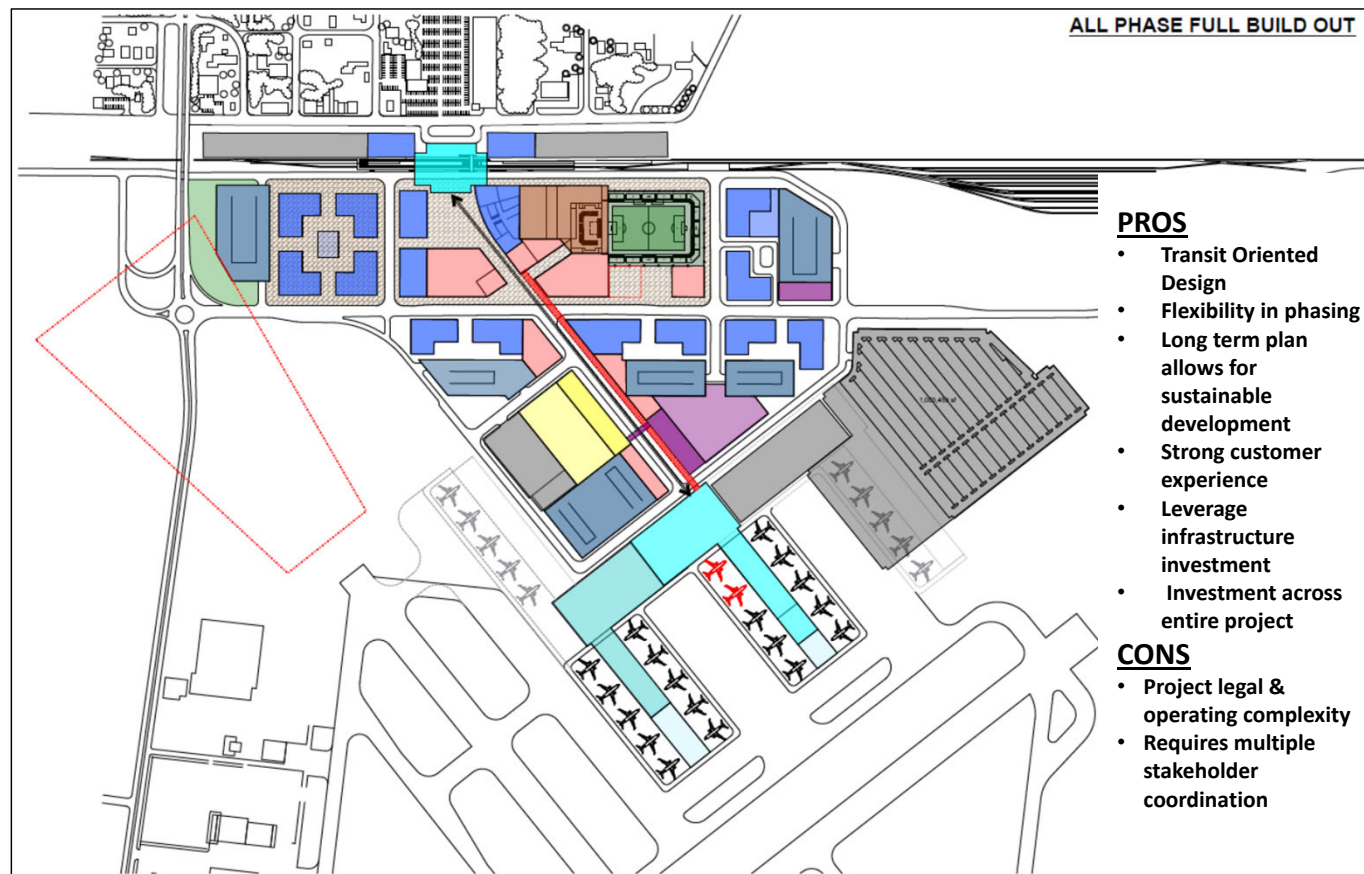
An aerial architectural rendering of a proposed site plan for Concept "E". The scene shows a large, modern campus with several multi-story office buildings, a long, low-profile structure, and a large parking lot filled with cars. The campus is situated on a flat, open area with some greenery and a road in the foreground. In the background, there are more buildings and a large, open field. The text "Proposed Site Plan – Concept 'E'" is overlaid in white on the left side of the image.

Proposed Site Plan – Concept "E"

Proposed Site Plan – Midway Crossing

Full Build Site Plan

LEGEND	
	Train to Plane Connection Airport Terminal to LIRR
	Airport Terminal - Phase 2
	Commercial Office
	Commercial Retail
	Convention Use
	Hotel & Hospitality
	Entertainment
	Athletic
	Structured Parking
	Parking at Grade



PROS





- Transit Oriented Design
- Flexibility in phasing
- Long term plan allows for sustainable development
- Strong customer experience
- Leverage infrastructure investment
- Investment across entire project

CONS

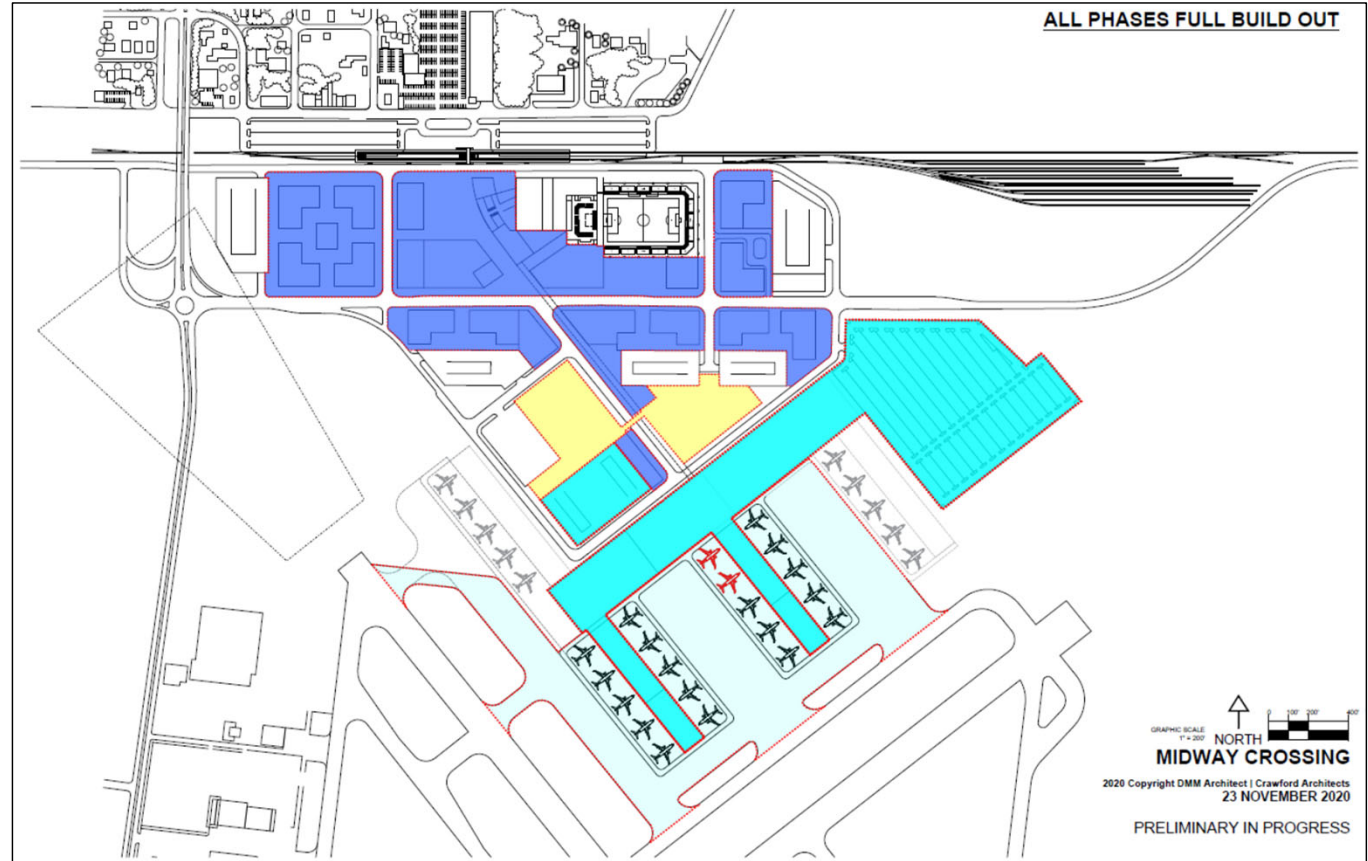
- Project legal & operating complexity
- Requires multiple stakeholder coordination

Midway Crossing – Project Land Use

PROPOSED ISP LAND USE	ACRES	SQ.FT
TERMINAL & PARKING	36.0	1,529,664
TAXIWAYS	40.0	1,737,628
COMMERCIAL & HOTEL	18.8	819,293
CONVENTION	7.5	328,562
TOTAL	102.3	4,415,147

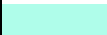

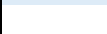


LEGEND	
	Air Side Use
	Commercial Use
	Convention Use
	Entertainment

NOTE: Commercial land use total of 18.8 acres is total for all land South of Railroad Avenue of ISP land and excludes all Suffolk County Land

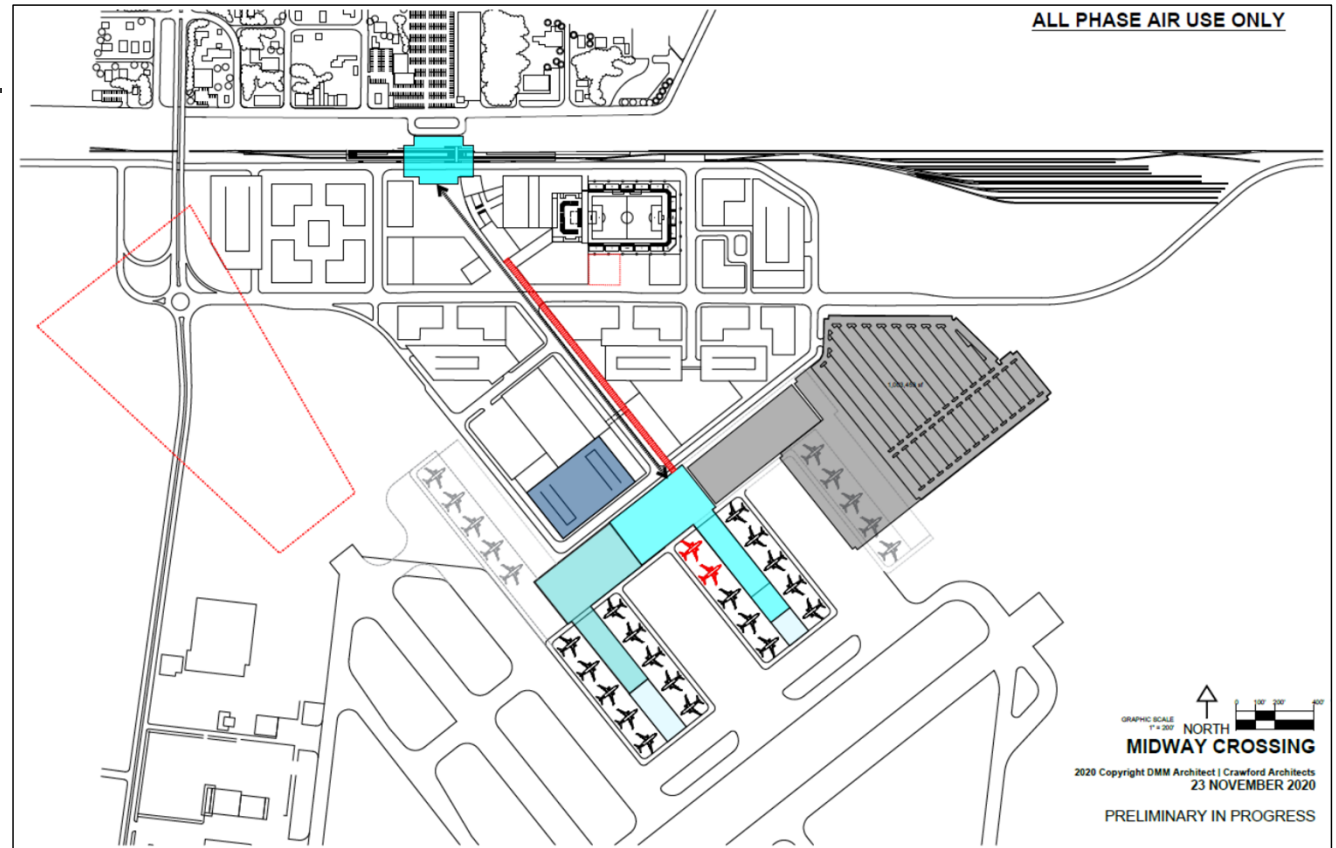


Proposed Site Plan – Concept E

Air Uses with LIRR Connection

LONG TERM DESIGN FLEXIBILITY	
	Phase 1 Terminal - 8 Gates Includes FIS and GAF
	Phase 2 Terminal - 6 Gates
	Phase 3 Terminal Expanse 2 or 4 Gates
	Parcel "C" - Future Uses TBD
	Train to Plane People Mover 1,900' Total Distance

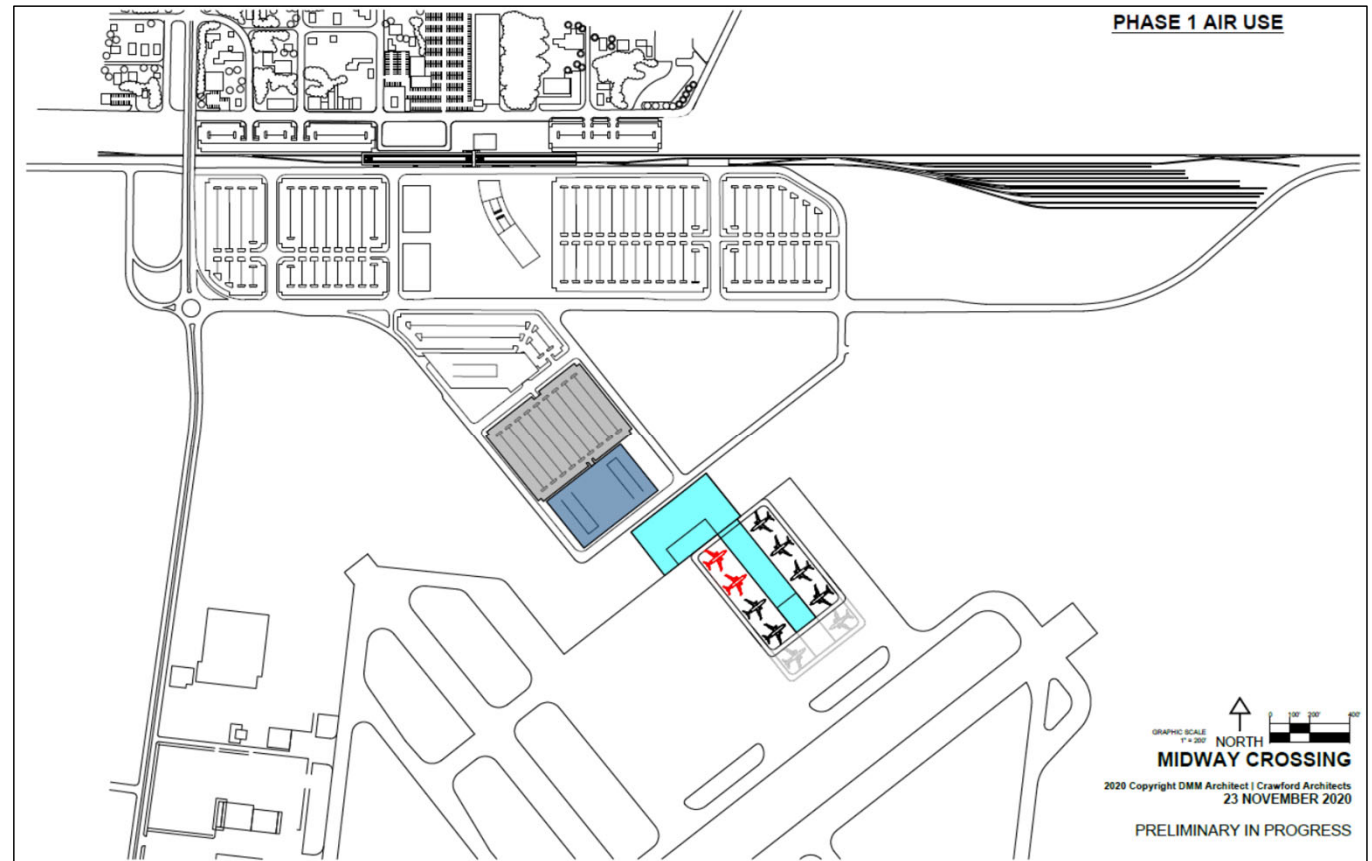
Scalable Design which allows Gate configurations in 8, 10, 12, 14, 16, 18, or 20 gate configuration



Phase One – Air Uses Only

North Terminal – Phase One

- 140,000 Gross Square Feet
- 6 Domestic Gates
- 2 International Gates
- Structured Parking Deck adjacent to terminal
- Parking at Grade supplements capacity

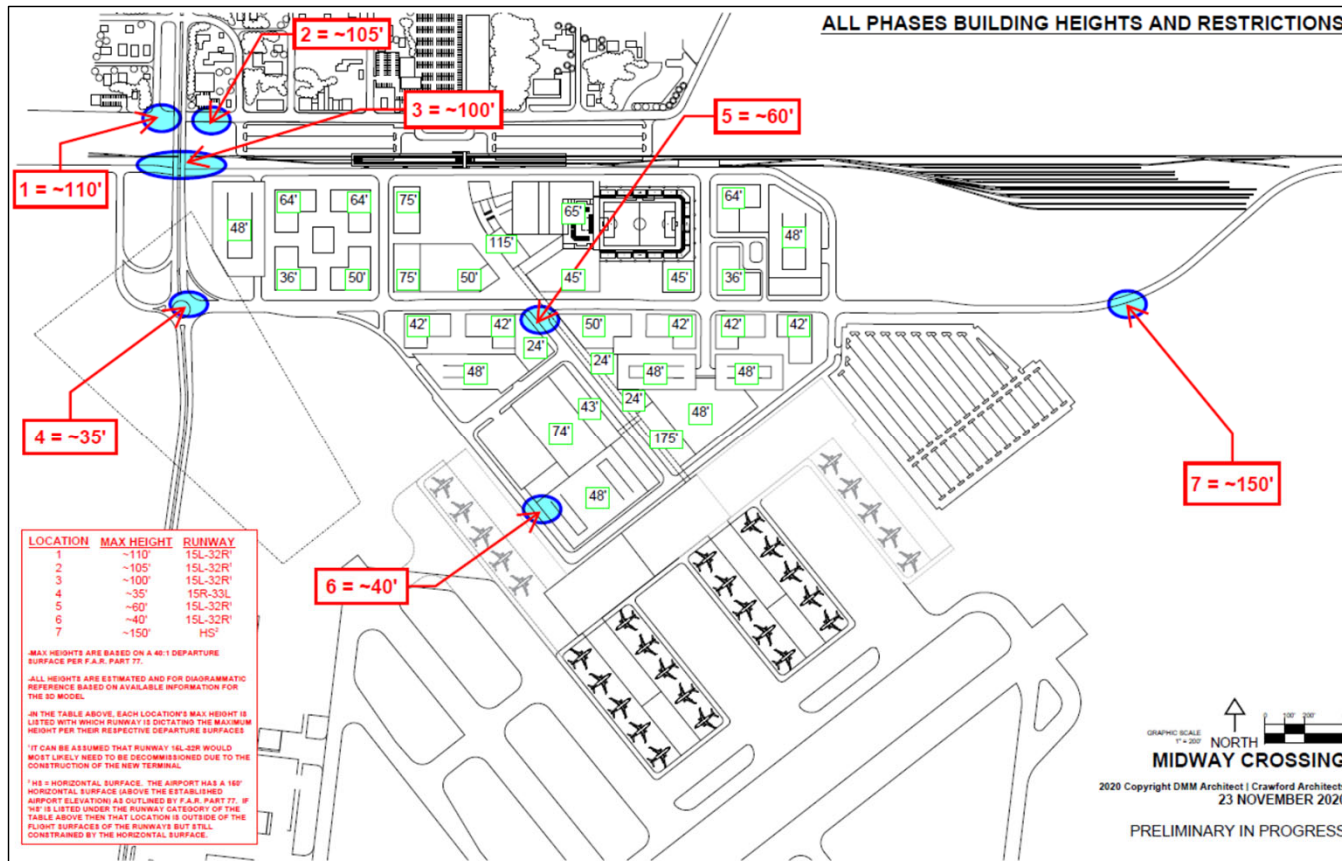


North Terminal Concept Budget

Midway Crossing - North Terminal Conceptual Budget & Schedule							
10/7/2020							
Budget	GSF	\$/GSF	Costs	Phase	Comments or Source	Date	
1	Terminal Phase 1 (8 Gates)	140,000	\$ 557	\$ 77,980,000	1	Using \$557/GSF per New Design GSF per Crawford & ADCI Corp	Project
2	Access Road	NIC	\$ -	\$ -	1	Not in Contract	Project
3	Apron / Taxi Lane	300,000	\$ 70	\$ 20,850,000	1	Per Crawford's & ADCI Corp Design Drawings	FAA
4	Taxiway	180,000	\$ 17	\$ 3,000,000	1	Merchant/ADP Budget - Original	FAA
5	Airport Parking Total - Phase 1 Initial	2,500	\$ 6,500	\$ 16,250,000	1	Surface Parking i.l.o Structured Parking - JLL	FAA
6	APM at Second Level from LIRR to North Terminal for Phase 1	1	N/A	\$ -	1	Not in Contract	FAA
	Total Construction Hard Cost for Phase 1			\$ 118,080,000	1		
7	Design, PM/CM and Overhead & Profit,	20%		\$ 23,616,000	1	Allowance at Conceptual Design Phase	Project
8	Payment & Performance Bonds and Insurance	3%		\$ 3,542,400	1	Allowance at Conceptual Design Phase	Project
9	Construction Contingency	5%		\$ 5,904,000	1	Allowance at Conceptual Design Phase	Project
10	Owner Contingency	3%		\$ 3,542,400	1	Allowance at Conceptual Design Phase	Project
11	Developers Fee	7%		\$ 10,827,936	1	Allowance at Conceptual Design Phase	Project
12	Total Soft Cost for Phase 1			\$ 47,432,736	1		
	Total Hard & Soft Costs (No Finance Costs)			\$ 165,512,736	1		Project/FAA

North Terminal & Air Uses

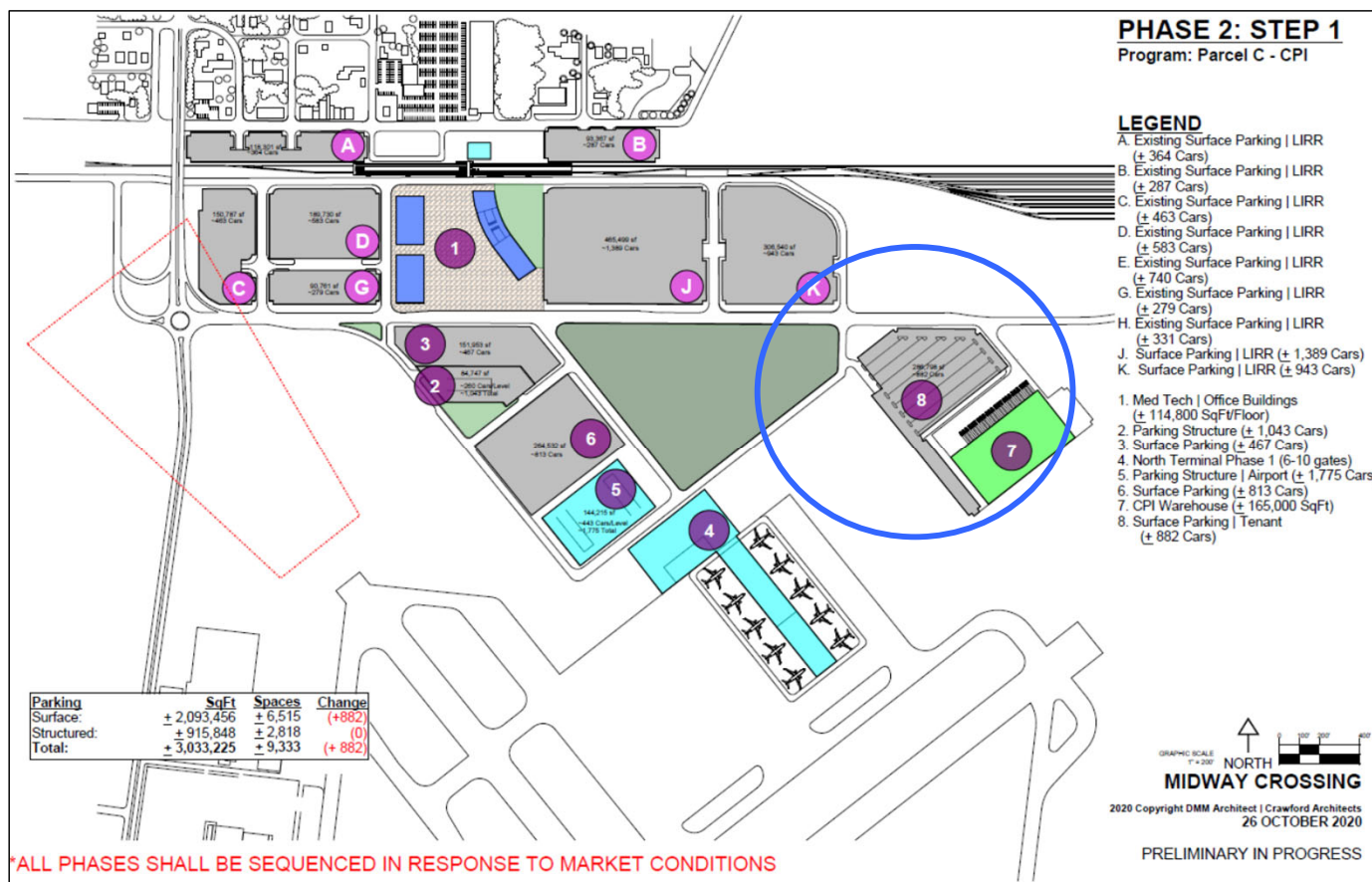
Building Height Index



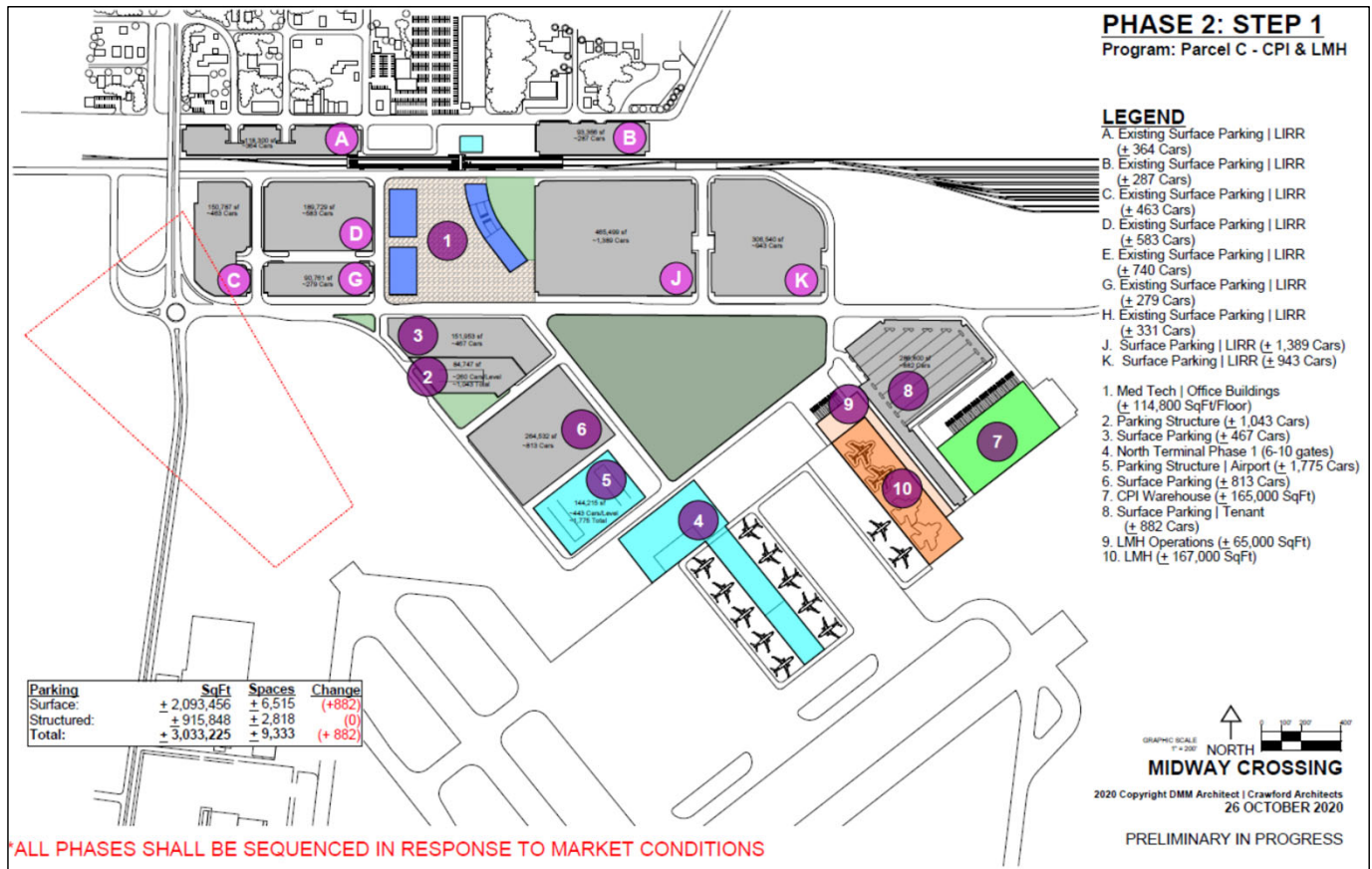
An aerial architectural rendering of a proposed site plan for Parcel 'C'. The scene shows a cluster of modern, multi-story office buildings with glass facades and flat roofs. A large, multi-level parking lot is situated in the foreground, filled with numerous cars. To the right, there is a large, rectangular parking structure with multiple levels. The buildings are surrounded by landscaped areas with trees and walkways. In the background, a large, open field with a grid-like pattern of roads or paths is visible, along with some industrial or warehouse buildings. The sky is clear with a few birds flying. The overall scene is presented in a semi-transparent, light-colored overlay on a darker background.

Proposed Site Plan – Parcel “C” Alternate
Land Use

Parcel "C" – Alternate Use



Parcel "C" – Alternate Use with Line Maintenance Facility



Environmental Review: NEPA | SEQRA Permitting

Agencies must establish a clear, supportable record of their decision-making.

The JLL Development Partner Team will lead efforts for the submission of applications for permits from Town, County, State and Federal Agencies, which includes the preparation of environmental analysis (EA) forms. Should reviewing agencies find that the proposed actions may result in adverse environmental impacts, our team will represent the applicant in preparing the required Environmental Impact Statements (EIS), including mitigation measures for both NEPA|SEQRA Review.

The National Environmental Policy Act (NEPA) enacted in 1970 requires environmental impact analyses of proposed airport actions that are subject to FAA decision. Under NEPA, an environmental impact statement (“EIS”) is required for major federal actions when found to significantly affecting the quality of the human environment.

SEQRA: Many states have their own “mini-NEPA” statute to require environmental review of state and local actions. New York's **State Environmental Quality Review Act** (SEQRA) requires all state and local government agencies to consider environmental impacts equally with social and economic factors during discretionary decision-making. This means these agencies must assess the environmental significance of all actions they have discretion to approve, fund or directly undertake.

Avoiding Segmentation. Segmentation is contrary to NEPA/SEQRA. Segmentation is environmental review of an action such that different stages of an action are analyzed independently (as a part) rather than as an entire set of activities (as a whole).

Environmental Review: NEPA | SEQRA Permitting

JLL Master Development Team

- Prepare a Master Plan
- Prepare Applications and Environmental Analysis (EA) to Town of Islip
- Prepare Applications and Environmental Analysis (EA) to FAA
- Prepare Environmental Impact Statement (EIS) for use in NEPA
- Prepare Environmental Impact Statement (EIS) for use in SEQRA
 - Public Scoping
 - Draft EIS
 - Final EIS
- Coordinate, Design, Permit proposed Infrastructure Improvements for Transportation and Utilities
 - Water | Sewer | Electric | Gas | Telecommunication | Alternative Energies
 - Federal Highway Administration | NYSDOT | SCDPW | Town Highways
 - LIRR | Suffolk Transit | Train-to-Plane



ISP – Conduct a Terminal Area Narrative Report

Terminal Concepts – Executive Summary



Overview

Background:

- Existing West Concourse is a 1990's prefabricated building installed as a temporary solution
- Today it is often overcrowded with heating/cooling challenges and operational deficiencies
- In late 2019, we began development of a Terminal Narrative Report for replacement opportunities (supported by FAA)

Objectives:

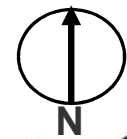
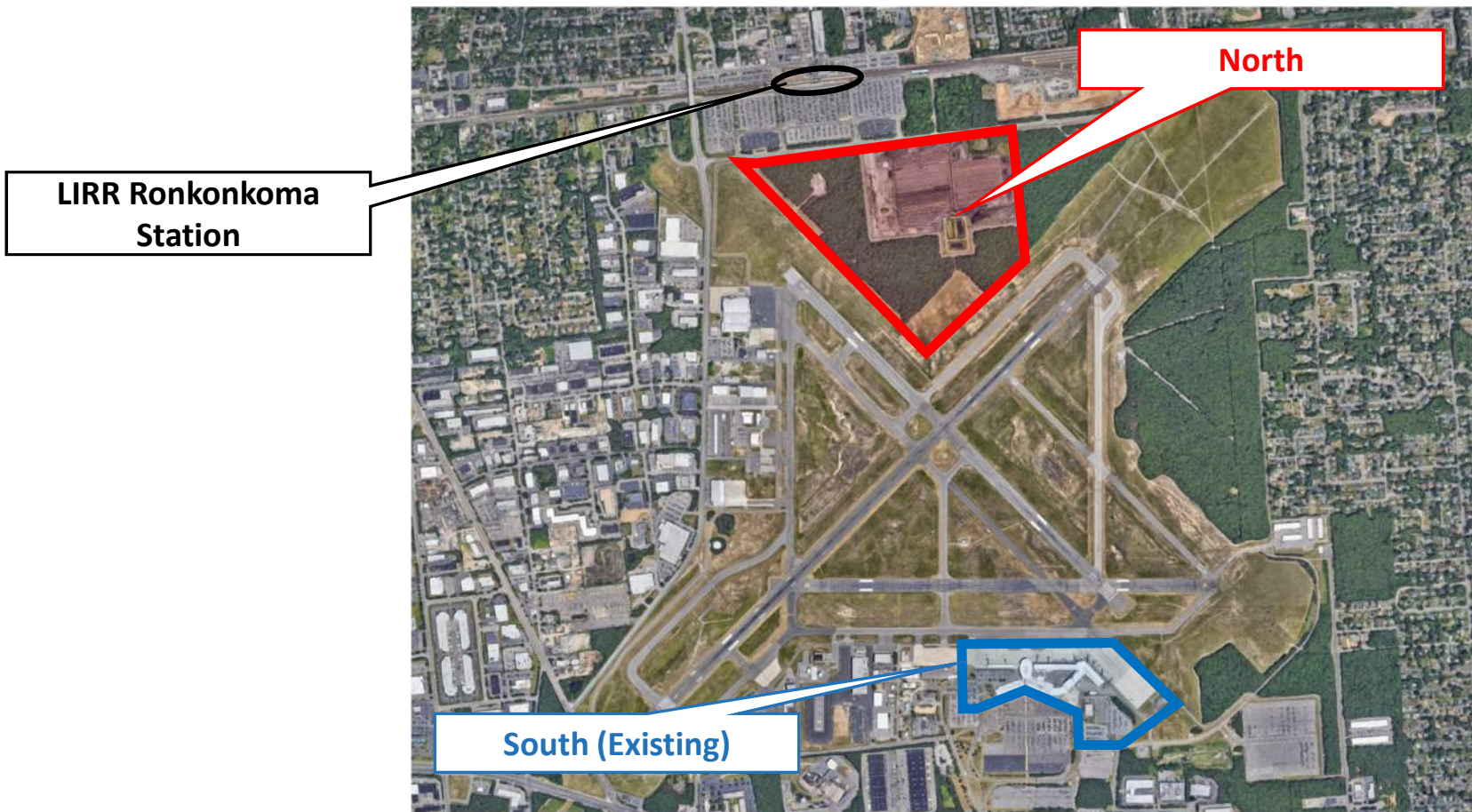
- Increase gate capacity
- Need to accommodate modern commercial service aircraft
- Enhance the passenger experience
 - Enhance Level of Service (LoS)
 - Improve passenger circulation and shorter walking distances
 - Implement new technologies and amenities
- Enhance operational and functional efficiency
- Plan for 20 year future

Primary Deficiencies:

- Lack of connectivity to LIRR (currently taxi or TNC)
- Operational capacity issues due to lack of space
- Low Customer Experience
 - Long walking distances
 - Space constraints
- Baggage Handling System is at capacity
- Lacking proper GAF/FIS facility that meets federal facility requirements



Long Island MacArthur Airport



Key Criteria for Evaluation

4

Key Evaluation Criteria

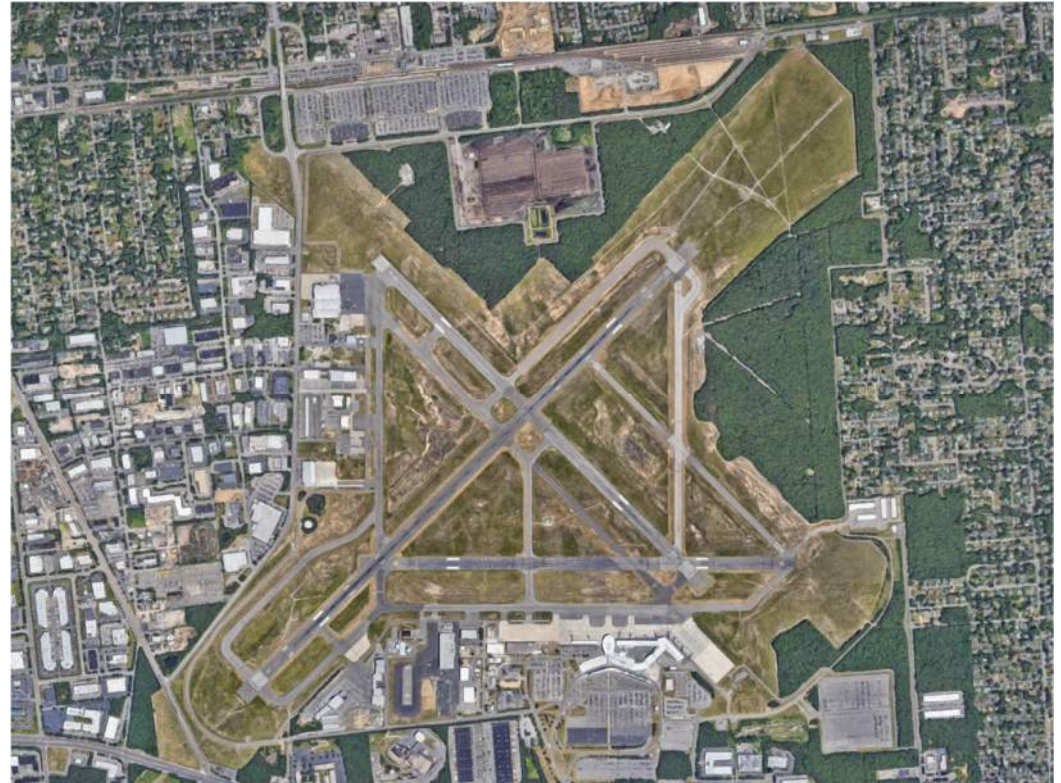
- **Connectivity to LIRR and community**
 - \$100 Million investment increases capacity by 46% (East Side Access and Third Track)
 - Provides more nonstop service between Ronkonkoma and NYC
 - Increase connectivity to CT/NY and NJ
 - Simplified and enjoyable connection/walk between LIRR and terminal
- **Minimize walking distances**
 - LIRR to Terminal - ideal is no more than 1/3 mile (1,800 linear feet or less)
 - Terminal entry to furthest gate
- **Development Opportunity**
 - Maximize non-aero revenue potential
 - Terminal with ample concessions opportunity
- **Growth Flexibility**
 - Additional airside gates and landside potential
 - Ability to enhance existing airlines and attract new entries
 - Simple phasing for future gate buildout with no “throwaway”
- **Customer experience and right-sized facility**
- **Ability for new technology/systems**
 - Inline baggage systems, updated building systems, current technologies
- **Implementation Cost**



Concept Notes

General Notes:







- All concepts include:
 - Aircraft gating options (Group III)
 - FIS / GAF
 - Structured parking for North Concepts



Stakeholder Process

Stakeholder Meeting – March 24, 2021

- Included 6 terminal site options
- Concepts included South (existing) and North terminal options
- Questionnaire for comment after the meeting

Concept A North	Concept B North	Concept C North	Concept D North	Concept E North	Concept F South
					

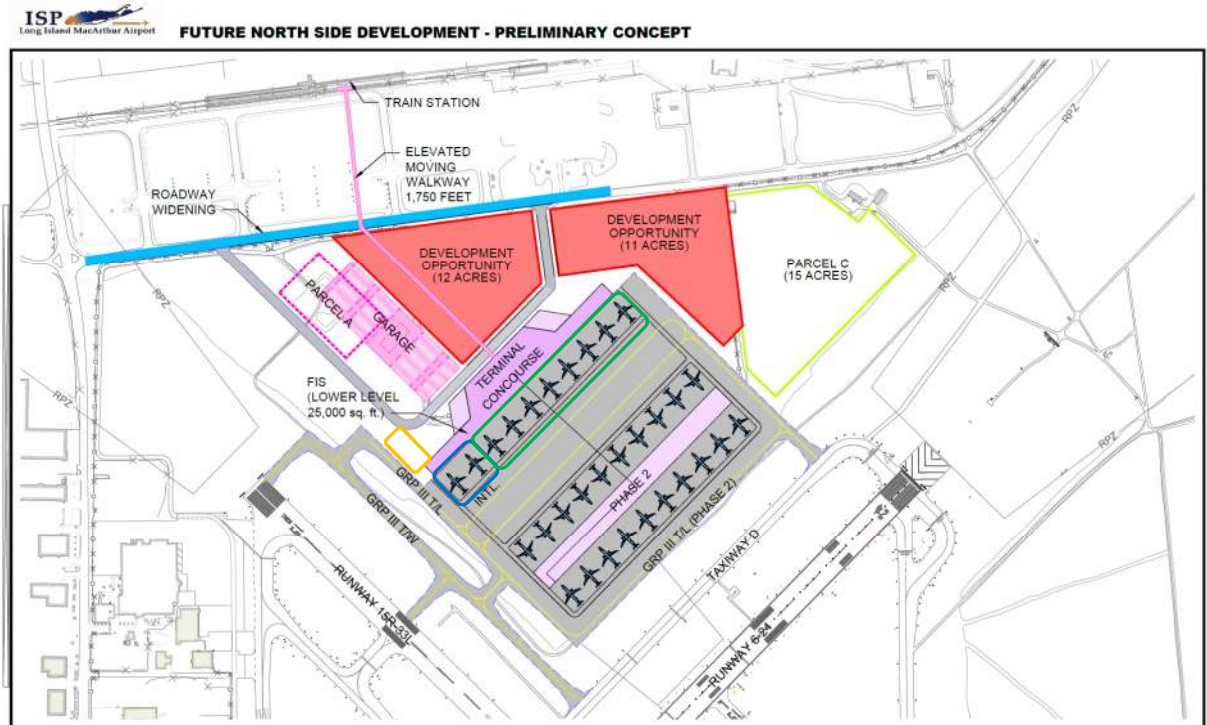


North - Concept A

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Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking

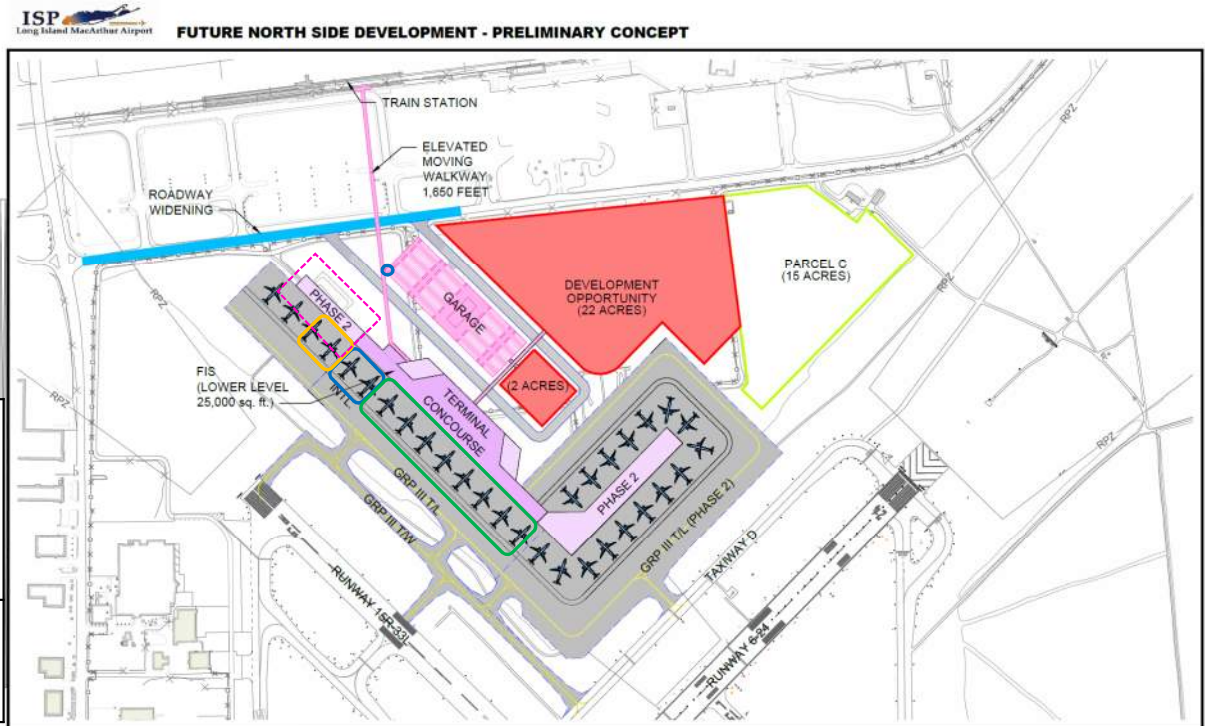


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B – Aligned with Runway 15R-33L

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- Ultimate gate count = 30 gates
- Parcel B Development Opportunity = 24 acres
- Parcel A Garage alternative possible – longer walk from baggage claim

- Pros:**
- Shortest walk to/from LIRR
 - Best garage flexibility for Airport & LIRR use
 - Easy phasing
 - Does not impact Parcel C
 - Great development connectivity
- Cons:**
- Unbalanced ultimate gate distance



Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking

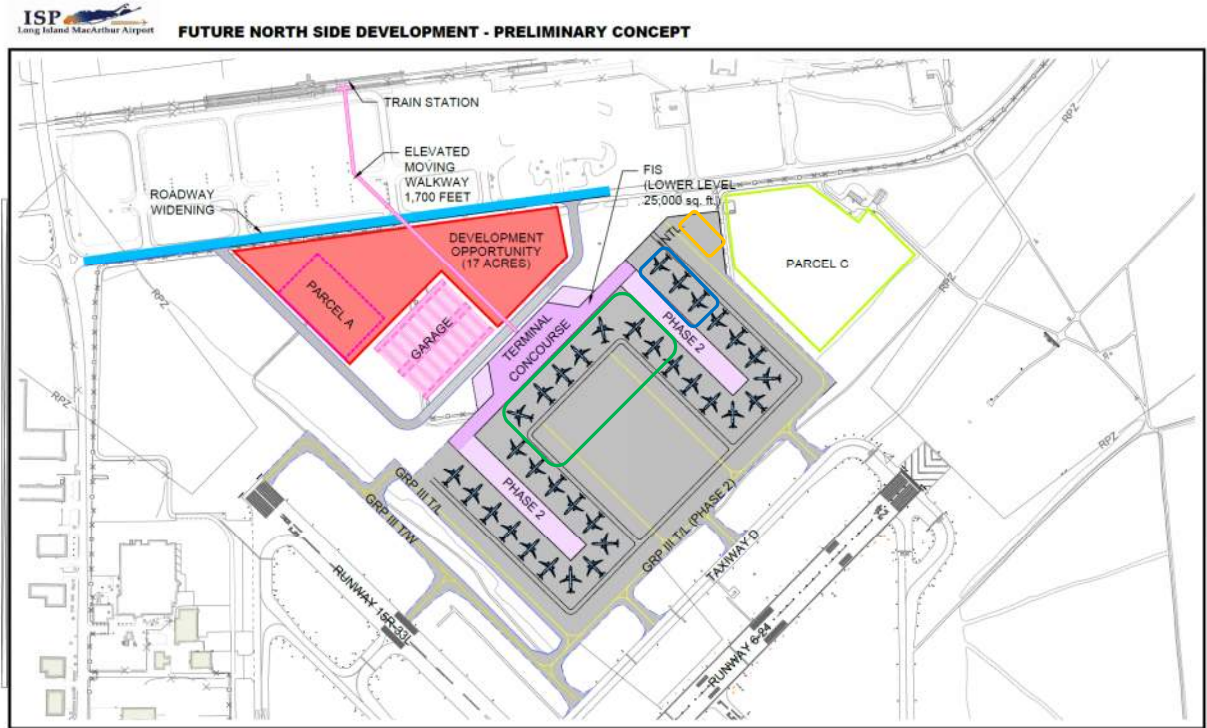


North - Concept C

C – North Pier concept

- LIRR connection = 1,700 LF
- Ultimate gate count = 34 gates
- Parcel B Development Opportunity = 17 acres

Pros:	<ul style="list-style-type: none">• Acceptable walk to/from LIRR• Great development connectivity• Dedicated area on east side for GA parking away from commercial
Cons:	<ul style="list-style-type: none">• Least amount of development area• Ultimate phasing is most difficult• Ultimate buildout impact on Parcel C



Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking



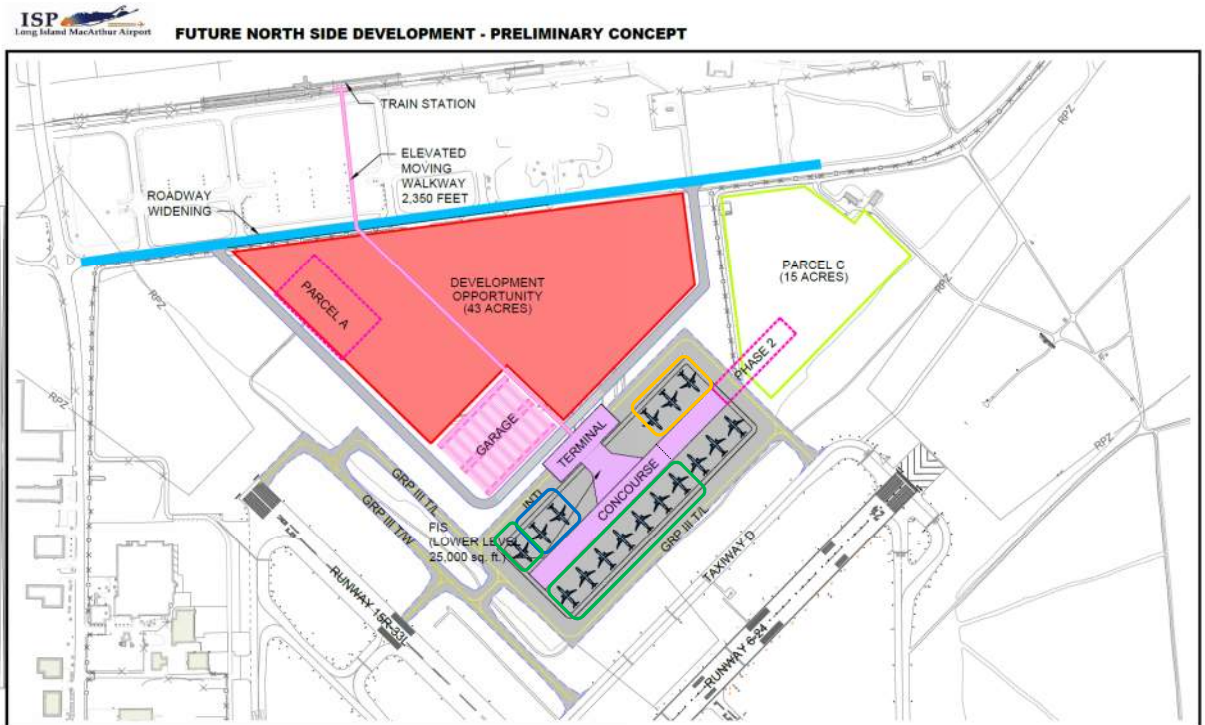
North - Concept D

10

D – Maximize Development

- LIRR connection = 2,350 LF
- Ultimate gate count = 25 gates
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- Multiple options for Phase 1 vs 2

- | | |
|-------|--|
| Pros: | <ul style="list-style-type: none">• Largest area for collateral development• Longer curbside / entry road• Better separation of GA parking vs commercial |
| Cons: | <ul style="list-style-type: none">• Longer walk from the LIRR (almost ½ mile)• Limited airside expansion area• Expansion requires impact to Parcel C |



Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking



North - Concept E

E – Maximize Development

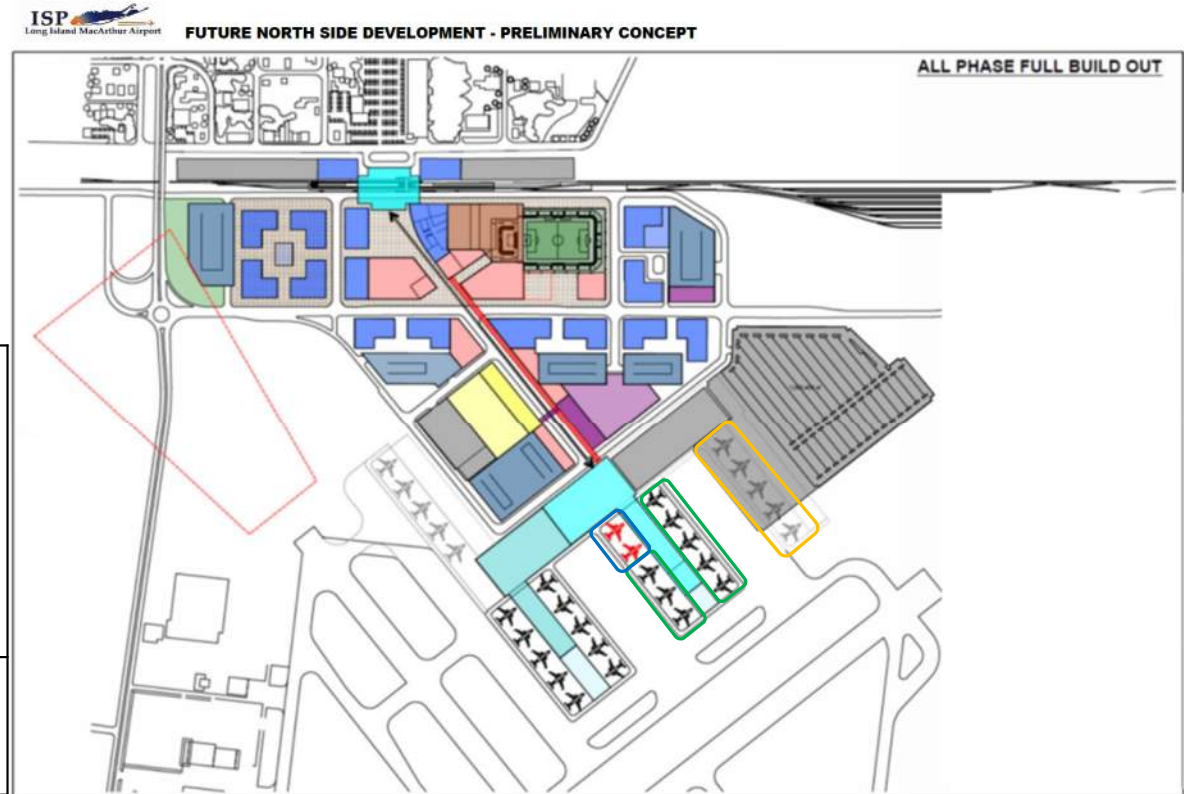
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- Parcel C intact

Pros:

- Transit oriented design
- Acceptable LIRR walk distance
- Phasing flexibility
- Sustainable development long-term
- Strong customer experience
- Leverage infrastructure investment
- Development connectivity and investment across entire project

Cons:

- Project legal & operating complexity
- Requires multiple stakeholder coordination



Phase 1 - Domestic



Phase 1 - Intl/Swing



GAF parking



South – Concept F – New Central Terminal

12

F – South Location

- LIRR connection = 6,864 LF
- Ultimate gate count = 11 gates
- Development Opportunity = Minimal

Pros:

- Leverage existing infrastructure
- Overall cost







Cons:

- Lack of LIRR connectivity
- Minimal development opportunity
- Long-term flexibility
- Phasing



Concept Comparison – March 24, 2021

13

	Concept A North	Concept B North	Concept C North	Concept D North	Concept E North	Concept F South
						
Connectivity to LIRR	1 1,750	1 1,650	1 1,700	0 2,350	1 1,900	-1 6,864
Development Opportunity	1 23	1 24	0 17	1 43	1 26.3	-1 Min.
Long-Term Flexibility	1 30	1 30	1 34	0 25	1 30	-1 11
Phasing	0	1	-1	1	1	-1
Customer Experience	1	1	1	1	1	0
Technology	1	1	1	1	1	0
Cost	-1	-1	-1	-1	-1	0
Score	4	5	2	3	5	-4





ISP – Conduct a Terminal Area Narrative Report

Stakeholder Engagement Results

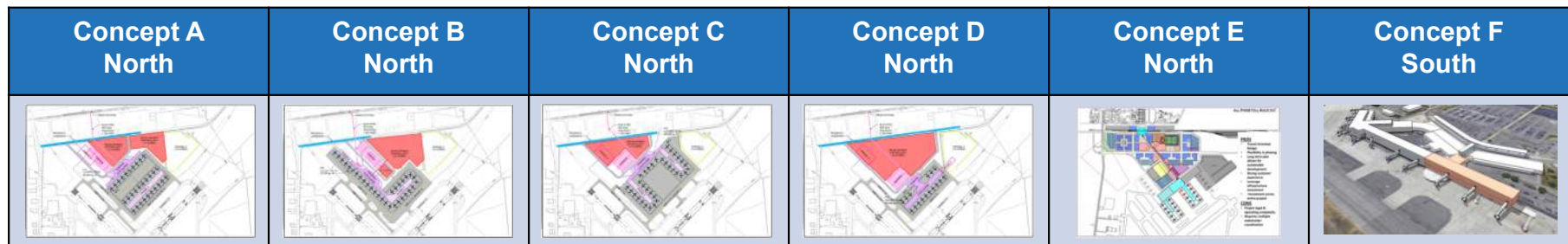


Stakeholders – Preferred Concept







15

- Questionnaire –
 - Submitted on March 24, 2021
 - Comments received by May 1, 2021
 - Wide range of stakeholder responses and disciplines
 - 13 out of 26 stakeholder group responses received

- Focus –
 - Functionality
 - Customer Experience
 - Operational
 - Long Term Flexibility









Executive Summary - Rankings

Stakeholders	Concept A North	Concept B North	Concept C North	Concept D North	Concept E North	Concept F South
						
Stakeholder - 1	2	1	4	3	5	6
Stakeholder - 2	3	2	1	4	5	6
Stakeholder - 3	5	1	6	4	2	3
Stakeholder - 4	5	2	4	3	1	6
Stakeholder - 5	5	2	3	4	1	6
Stakeholder - 6	4	2	3	5	1	6
Stakeholder - 7	4	5	2	3	1	6
Stakeholder - 8	5	2	4	3	1	6
Stakeholder - 9		3		2	1	
Stakeholder - 10	2	3	4	5	1	6
Stakeholder - 11	5	3	4	2	6	1
Stakeholder - 12	1	2	3	4	5	6
Stakeholder - 13	1	1	1	1	1	6
Final Ranking	5 47	1 29	4 44	3 43	2 31	6 69

1 – most preferred to 6 – least preferred



Executive Summary – Concept B

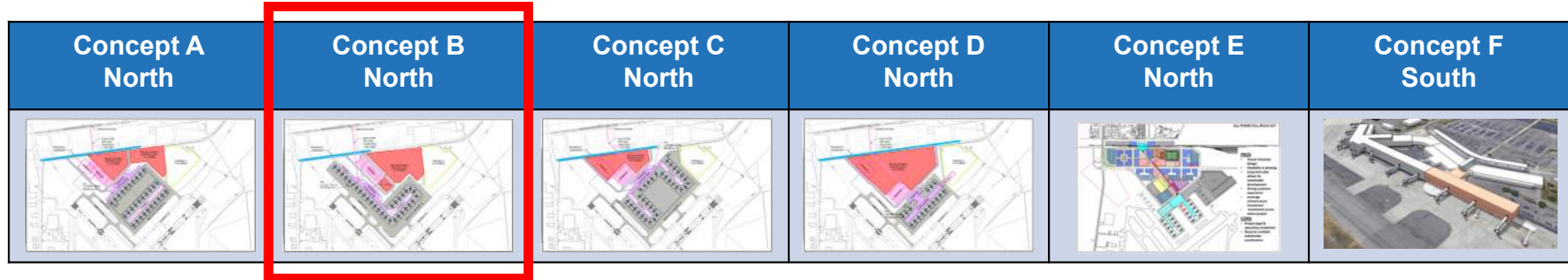
Concept A North	Concept B North	Concept C North	Concept D North	Concept E North	Concept F South
					

Functionality	<ul style="list-style-type: none"> • Airside <ul style="list-style-type: none"> • Provides direct aircraft access to air operations area/runways with minimal movement on ramp • Aircraft gated positions not in an alley, easy pushback • Snow removal simplified • Concessions <ul style="list-style-type: none"> • Grouped/condensed to a smaller area, which allows for effective and efficient management of the units • When expanded, the layout would allow for great visibility for restaurants at the 45 degree turn • Allows for a single operator of both food & beverage and retail, allows for synergies to expand the offering to be complementary and not competing • The shortest distance for passengers using the LIRR • Provides a large gate count for future airlines • Room to grow / great expansion capabilities (holistic and individual components) • No need to relocate the compost facility for Phase 1 • FIS/GAF developed in Phase 1
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Executive Summary – Concept B

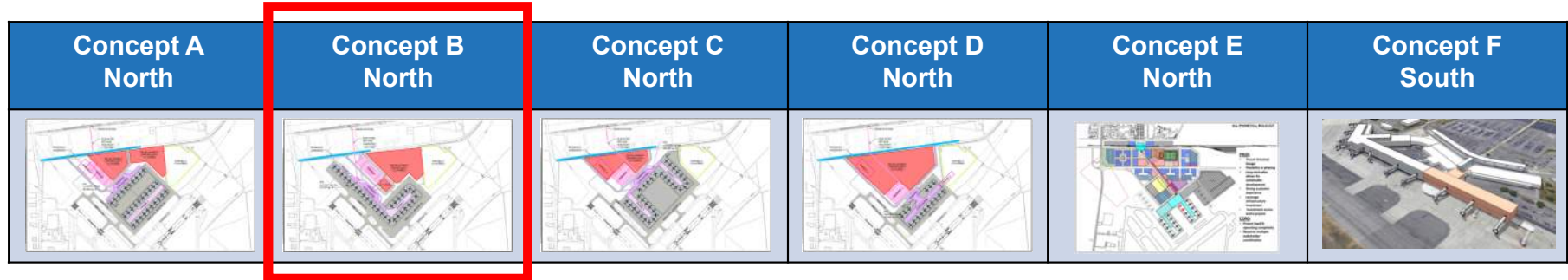
18



Customer Experience	<ul style="list-style-type: none">• Quicker access to runways and terminal area to allow passengers to get to their destination quicker• Allows concessionaires to execute marketing activations visible to the entire airport• Closest to the railway, which simulates a metropolitan environment, similar to most renowned airports• It allows for maximum gate availability and easier access from the LIRR• Easily accessible for passengers
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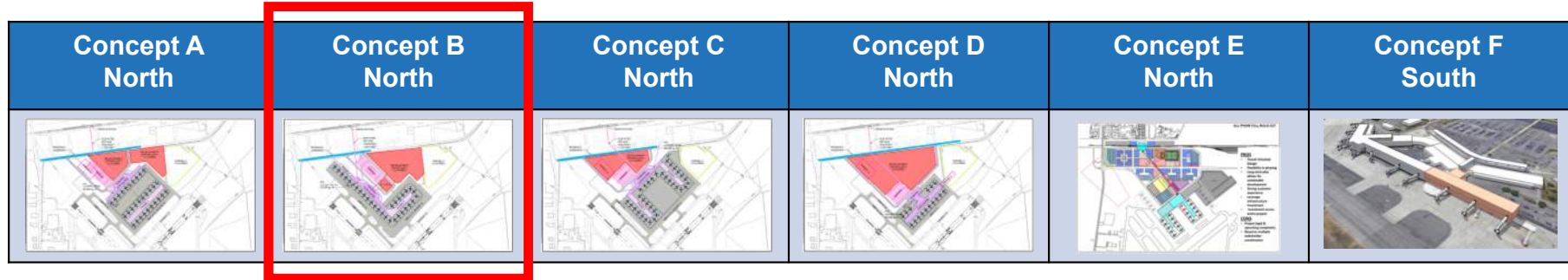
Executive Summary – Concept B



Operational	<ul style="list-style-type: none">• Less enplanement risk as airlines adjust gates and operations• North side of field with wind predominantly out of the north will help with snow operation• More aircraft gates• TSA Operational Flexibility - Expansion capabilities for screening locations and TSA Admin staff to be on site
--------------------	---









Executive Summary – Concept B



Long-term Flexibility	<ul style="list-style-type: none">• Expansion flexibility for on contact gate areas and phasing of construction depending on funding availability• Allows for the phasing of gates, which could limit over saturation of concessions until the traffic requires concessionaires to build more targeted/specific restaurants and shops• Allows for more operational growth• It is difficult to see a need for this amount of gates. The cost to build and the annual increase in O&M for the additional space is seen as unnecessary at this time.• The eight gates in the East Terminal have not been used to their full potential since they were built; why add more?
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Executive Summary - Concept E







Concept A North	Concept B North	Concept C North	Concept D North	Concept E North	Concept F South
					

Functionality	<ul style="list-style-type: none"> • Provides passengers and the local community with a state of the art campus • The airport benefits from the most non aviation revenue from this concept • Concessions are grouped or condensed to a smaller area, which allows for effective and efficient management of the units • Easy access to all areas of the building • Seamless airport experience for the traveler • Efficient use of space on the ramp • Close proximity to the runways • Better overall customer experience with the mixed use area development • Good connectivity to LIRR / Transit oriented • Amount of opportunity for future projects and growth • The most functional for both the traveling public as well as the surrounding public • FIS/GAF developed in Phase 1
----------------------	--



Executive Summary - Concept E







22

Concept A North	Concept B North	Concept C North	Concept D North	Concept E North	Concept F South
					

Customer Experience	<ul style="list-style-type: none">• Condensed concessions create a "commercial zone", with multiple options/choices that are not gate-specific, allowing passengers to have equitable access to shops and amenities• It is more robust compared with other concepts• Allows for the most options and services for customers using both the airport and the general public at large• Provides the best customer experience based on efficient layout and close proximity to all amenities• Best customer experience from the train to plane
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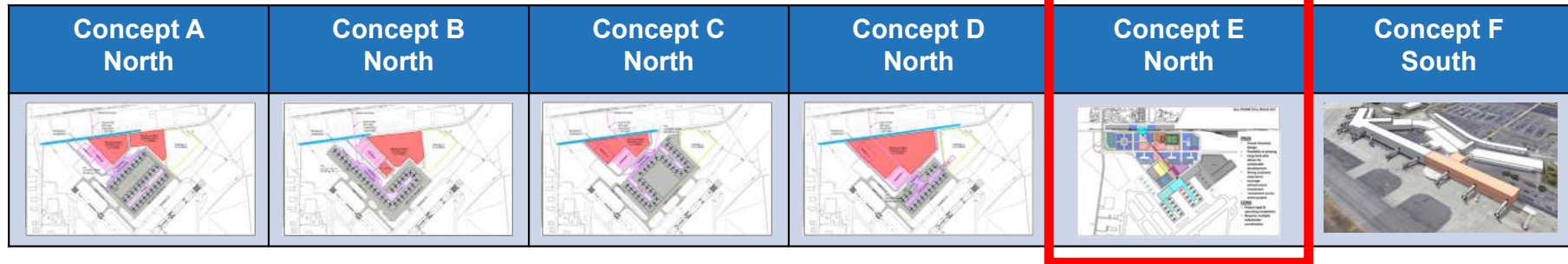
Executive Summary - Concept E

Concept A North	Concept B North	Concept C North	Concept D North	Concept E North	Concept F South
					

Operational	<ul style="list-style-type: none"> • Concessions are grouped/condensed to a smaller area, which allows for effective and efficient management of the units • Simple setup of the commercial gates however push-back into alley could cause congestion/delays • Snow removal is difficult in alleys • Pier layout presents maintenance challenges • Phase 1 walk to gates is further than Concept B • TSA Operational Flexibility - Expansion capabilities for screening locations and TSA Admin staff to be on site • Quicker access to the airfield • North side of field with wind predominantly out of the north will help with snow operation • Sustained development
--------------------	--



Executive Summary - Concept E



Long-term Flexibility	<ul style="list-style-type: none">• Allows for the phasing of gates, which could limit over saturation of concessions until the traffic requires concessionaires to build more targeted/specific restaurants and shops• It fills the immediate need for commercial gates and CBP but leaves room for additional growth in the future• Strong potential for long term flexibility• Future progress in development• Sustained development• There are concerns with the development surrounding the airport. If it fails, the airport could fail.
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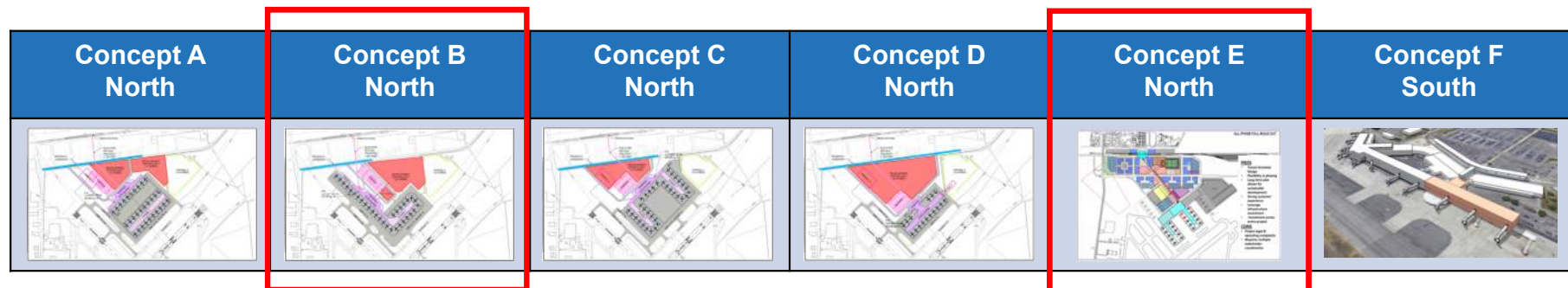


Stakeholders – Preferred Concept

25

Stakeholder Preferred Alternative Summary:

- Most Preferred – Concept B and E
 - Mid Range – Concept A, C and D
 - Least Preferred – Concept F
-
- Aligns with initial rankings presented on March 24, 2021 (with a few stakeholder exceptions)





ISP – Conduct a Terminal Area Narrative Report

Stakeholder Engagement Results – Questionnaire Requests



Executive Summary - Requests

27

What **other passenger amenities** would your organization like to see incorporated into a new terminal/concourse development?

- Dynamic Signage - Gate flight screens & FIDS
- Charging Stations
- Restrooms –
 - Updated and larger
 - 100% touchless bathroom environment
- Concessions –
 - Contactless food service
 - More concession choices
- Pet relief area
- Filtered water bottle fountains
- Clocks
- Observation area for public
 - Possibly revenue generating (i.e. fee to enter or take pictures)
- Business center / quiet area
- Large auditorium
- Passenger speed walker
- Information Display –
 - Easy touch screen
 - LED map



What **new technologies** should be incorporated into a new terminal / concourse development?

- Improved WIFI
- Television screens
- Check in kiosks
- Self baggage checks
- Automated passenger boarding
- Electric vehicle (EV)
- Biometric door access system
- Well designed in-line BHS is a must
- Latest TSA technology for both checkpoint and checked baggage and a facility capable of incorporating administrative TSA staff to be on site
- Minimize wait time in the terminal



Executive Summary - Requests

29

What **health and safety amenities** should be included in a new terminal / concourse development?

- Air filtration/purification system
- All the latest and greatest technology are desired
- 100% touchless environment as possible
- Hand sanitizer station
- ARFF substation for both EMS and fire related emergencies
- Fire rescue station and police in terminal



Executive Summary - Requests

30

Please indicate **environmental or sustainability** requirements (LEED, other) your organization would like incorporated into a new terminal / concourse development?

- Solar panels
- Electric charging for GSE Vehicles
- Vehicle storage area for law enforcement vehicles (with electric charging capability)
- Microgrid
- Emissions reduction (GHG)
 - 2025 – 60% of 1990 levels
 - 2050 – 15% of 1990 levels
- Renewable energy solutions – 70% by 2030
- Electrical demand – zero emissions by 2040



Executive Summary - Requests

31

Anticipated **aircraft sizing** for the next 10 years?

- All stated ADG Group III aircraft
 - A320, 180/186 passengers
 - A321, 230 passengers
 - 737
 - 737 800 MAX

Desired type of **jet bridge**?

- Nose loader bridges or possibly dual boarding bridge systems
- Easy functioning new jet bridges
- Any standard jet bridge (JBT or Thyssenkrupp). No glass bridges



Executive Summary - Requests

32

What **deicing** needs are required for your operation?

- Prefer push off gate (current condition), however, deicing pad also acceptable
- A designated deicing area with a environmentally friendly reclamation basin
- The ability to do airlines' own deicing



Other **exterior / site** requirements?

Landside

- Curbside pickup
- ADA compliant
- Emergency access gates and roads with accessible fire hydrant locations
- Outside food area
- Walking park
- Dog park
- Employee parking
- 5000 public parking stalls with availability to expand
- Potential for resident parking
- Custodial/Outdoor maintenance equipment storage

Airside

- Accessible fire hydrant locations
- A designated area for the collection of snow with a snow melter and run-off collection basin



Executive Summary - Requests

34

Ticketing / Check-in

Counter space requirements (quantity):

- Varied depending on stakeholder

Number of kiosks (quantity)

- Varied depending on stakeholder

Type of scales desired:

- Between each position, digital

Baggage Claim

Preferred type of claim unit

- Sloped

Concessions

- Storage or support space location should be in close proximity to concessions



Operations

Airline Operations Offices (including breakroom) size (SF):

- Breakroom, locker room and bathroom with shower. Large enough to be used by at least 15-20 people

TSA requirements:

- TSA will lease the appropriate space based on the assigned airport staff with the ability to expand as air operations increase. TSA HQ would provide the exact requirements at time of development which may include, training rooms, break room, storage rooms, IT rooms, and admin offices



Operations

Other Operation requirements:

- GSE storage
- Water cabinets
- Large storage area on the first floor with a loading dock for deliveries
- Large main operation area for the department, centrally located in the terminal with easy access to all points of the building, including adequate ISP staff locker and break room
- Smaller rooms for storage and sink access would be needed at different locations in the terminal
- Centrally located large freight elevator
- Wheelchair storage for terminal operations
- (2) public elevators for redundancy
- Limit walk times for passengers
- Focus on low or no maintenance solutions



Electrical Requirements

- Battery powered equipment
- Multiple ganged outlets
- Solar panels
- Must be in accordance with the TSA Checkpoint Design Requirements Guide to ensure the installation of all TSA equipment and ability to expand
- Electric and water outlets around the entire exterior of building

Mechanical Requirements

- An entry vestibule system that keeps the air inside and outside separated
- HVAC system that allows for both heating and A/C
- Floor drains in the bathrooms for cleaning purposes



Cabling / IT / Communications Requirements

- As much lead time as possible for IT department planning
- Must be in accordance with TSA screening needs equipment, to include, but not limited to, ASLs or equivalent technology, CT, as well as leased spaces that need VOIP and internet capabilities.
- All cabling and communications requirements must be flexible enough to upgrade and expand as needed.





ISP – Conduct a Terminal Area Narrative Report

Terminal Concepts – Executive Summary





ISP – Terminal Area Study

Public Meeting

June 22, 2021



Agenda

2

- Introductions
- Background
- Overview and Objectives
- Key Criteria
- Concept Options
- Concept Comparison
- Next Steps
- Question & Answer



Background

3

Background:

- Existing West Concourse is a 1990's prefabricated building installed as a temporary solution
- Today it is often overcrowded with heating/cooling challenges and operational deficiencies
- In late 2019, we began development of a Terminal Narrative Report for replacement opportunities, in collaboration with FAA



Overview & Objectives

4

Objectives:

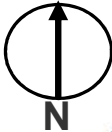
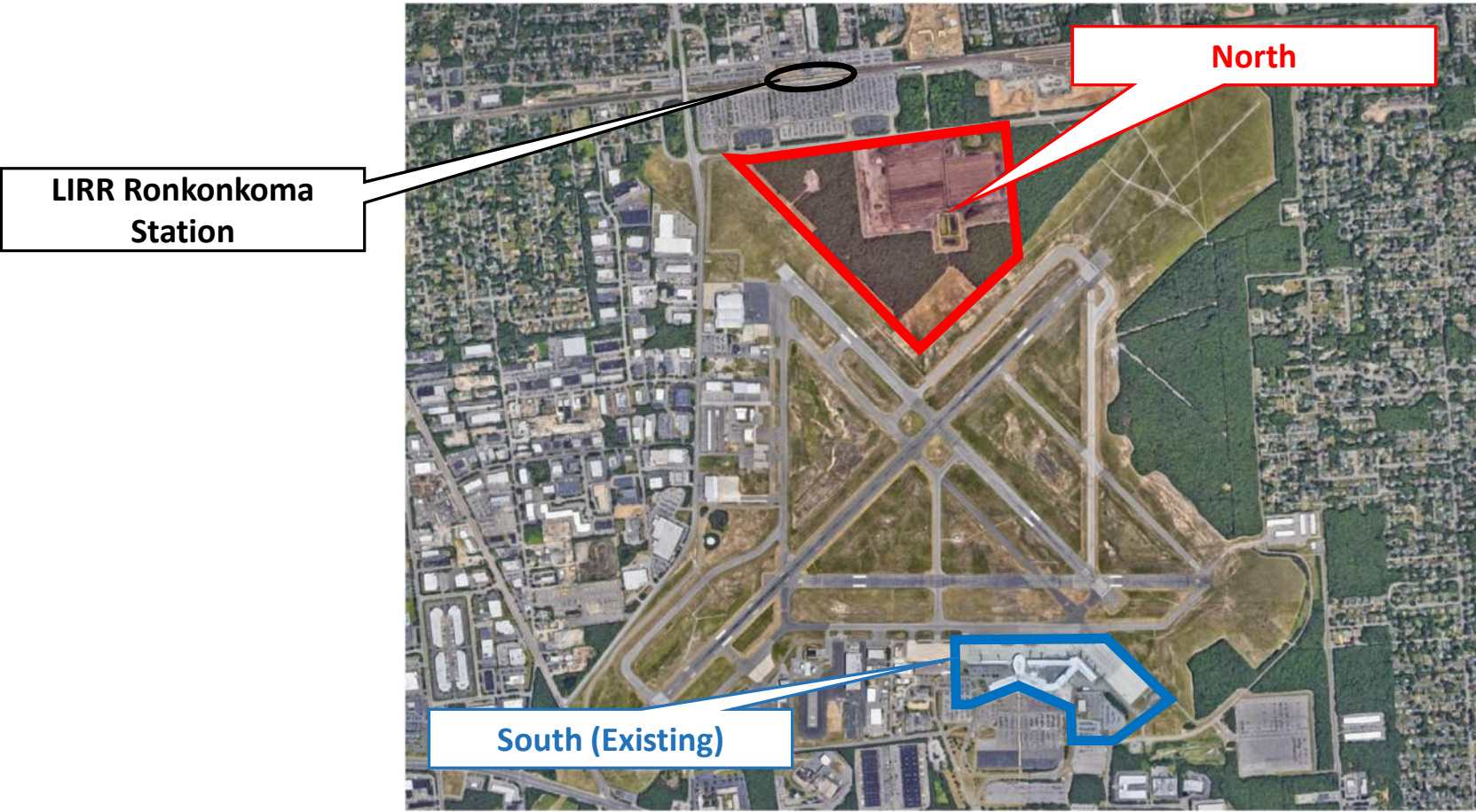
- Increase gate capacity
- Need to accommodate modern commercial service aircraft
- Enhance the passenger experience
 - Enhance Level of Service (LoS)
 - Improve passenger circulation and shorter walking distances
 - Implement new technologies and amenities
- Enhance operational and functional efficiency
- Plan for 20 year future

Primary Deficiencies:

- Lack of connectivity to LIRR (currently taxi or TNC)
- Operational capacity issues due to lack of space
- Low Customer Experience
 - Long walking distances
 - Space constraints
 - Poor accessibility
- Baggage Handling System is at capacity
- Lacking proper GAF/FIS facility that meets federal facility requirements



Long Island MacArthur Airport



Key Criteria for Evaluation

6

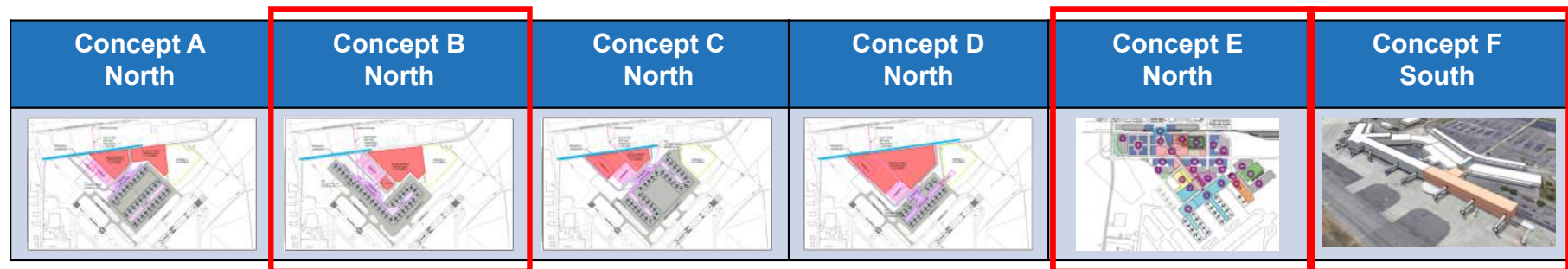
Key Evaluation Criteria

- **Connectivity to LIRR and community**
 - \$100 Million investment increases capacity by 46% (East Side Access and Third Track)
 - Provides more nonstop service between Ronkonkoma and NYC
 - Increase connectivity to CT/NY and NJ
 - Simplified and enjoyable connection/walk between LIRR and terminal
- **Minimize walking distances**
 - LIRR to Terminal - ideal is no more than 1/3 mile (1,800 linear feet or less)
 - Terminal entry to furthest gate
- **Development Opportunity**
 - Maximize non-aero revenue potential
 - Terminal with ample concessions opportunity
- **Growth Flexibility**
 - Additional airside gates and landside potential
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 - Simple phasing for future gate buildout with no “throwaway”
- **Customer experience and right-sized facility**
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 - Inline baggage systems, updated building systems, current technologies
- **Implementation Cost**

Concept Options

Development of multiple options for existing terminal modifications (South) and new terminal (North)

* Concepts B, E & F are the only concepts that met the criteria



Key Criteria –

- Functionality
- Customer Experience
- Operational
- Long Term Flexibility

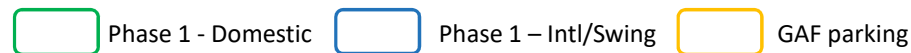
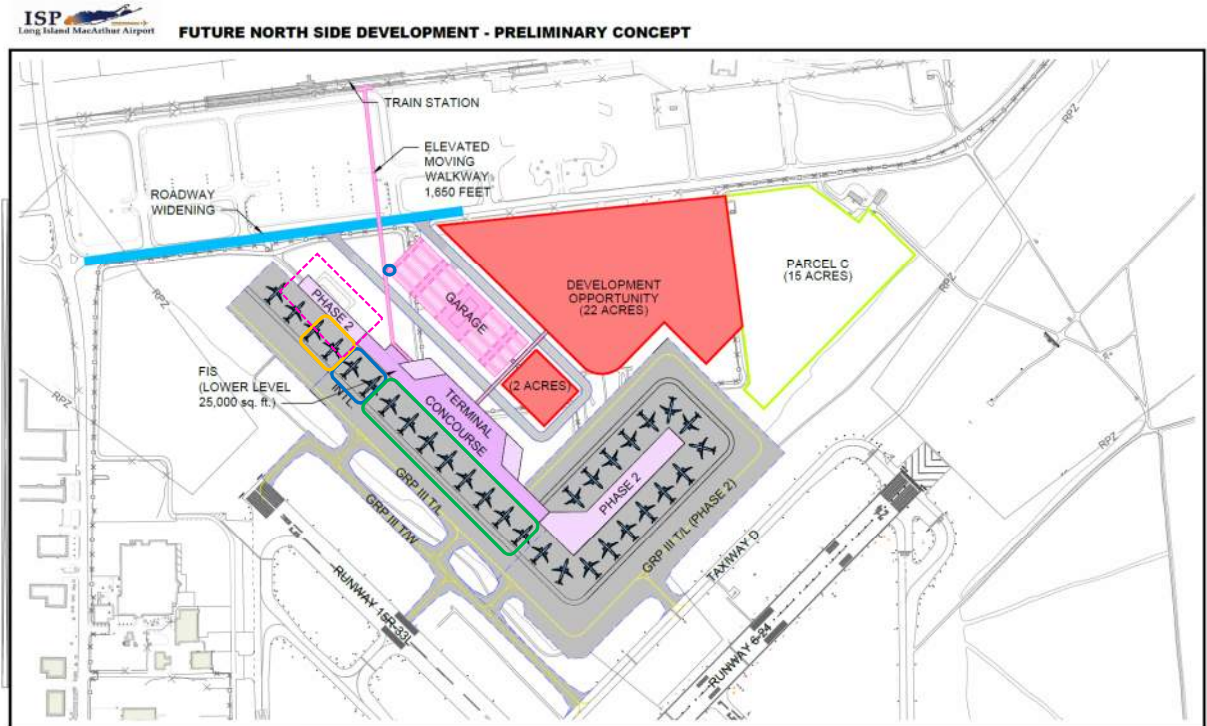
North - Concept B

B – Aligned with Runway 15R-33L

- LIRR connection = 1,650 LF
- Potential Expansion Capabilities = 30 gates
- Parcel B Development Opportunity = 24 acres
- Parcel A Garage alternative possible – longer walk from baggage claim

Advantages

- Shortest walk to/from LIRR
- Best garage flexibility for Airport & LIRR use
- Simplified and flexible phasing
- Does not impact Parcel C
- Great development connectivity



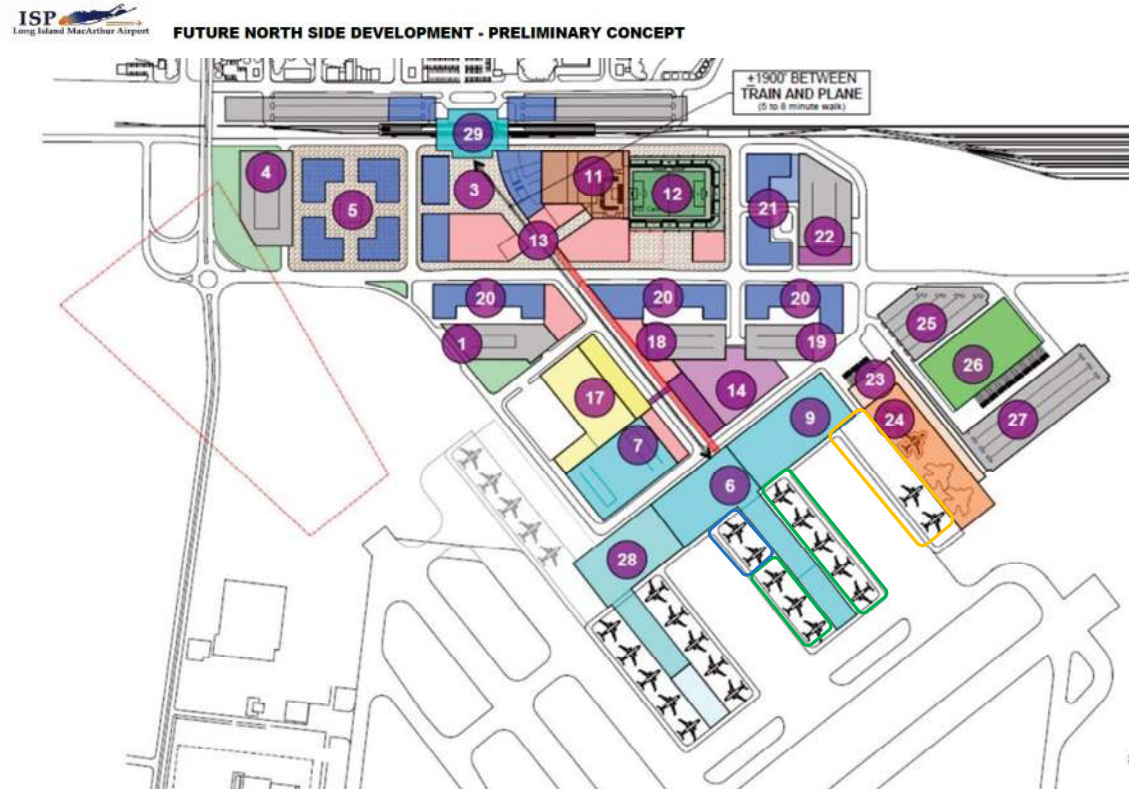
North - Concept E

E – Maximize Development

- LIRR connection = 1,900 LF
- Potential Expansion Capabilities = 30 gates
- Parcel B Development Opportunity = 26.3 acres (18.8 Commercial + 7.5 Convention)
- Parcel C intact

Advantages

- Transit oriented design
- Acceptable LIRR walk distance
- Phasing flexibility
- Sustainable development long-term
- Strong customer experience
- Leverage infrastructure investment
- Development connectivity and investment across entire project



Phase 1 - Domestic Phase 1 – Intl/Swing GAF parking

South – Concept F – New Central Terminal

10

F – South Location

- LIRR connection = 6,864 LF
- Potential Expansion Capabilities = 11 gates
- Development Opportunity = Minimal

Advantages




- Leverage existing infrastructure
- Overall cost

Disadvantages

- Lack of LIRR connectivity
- Minimal development opportunity
- Long-term flexibility
- Phasing



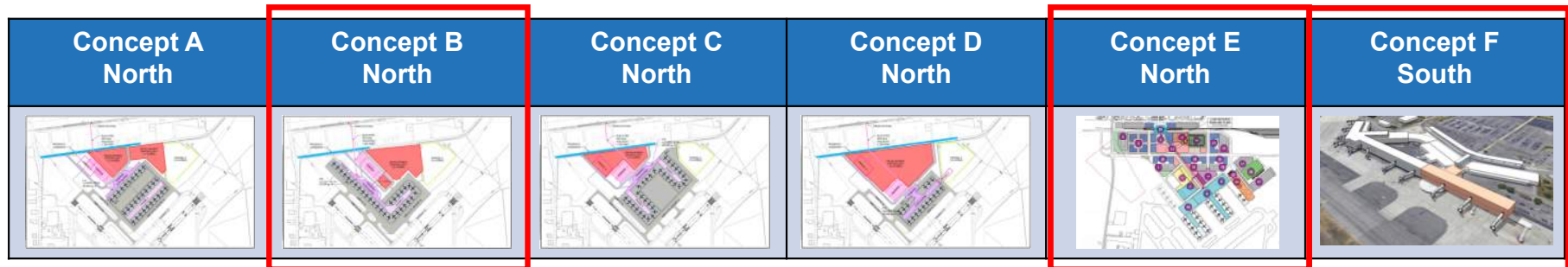
Concept Comparison

	Concept B North	Concept E North	Concept F South
			
Connectivity to LIRR	1 1,650	1 1,900	-1 6,864
Development Opportunity	1 24	1 26.3	-1 Min.
Long-Term Flexibility	1 30	1 30	-1 11
Phasing	1	1	-1
Customer Experience	1	1	0
Technology	1	1	0
Cost	-1	-1	0
Score	5	5	-4

Concept Comparison

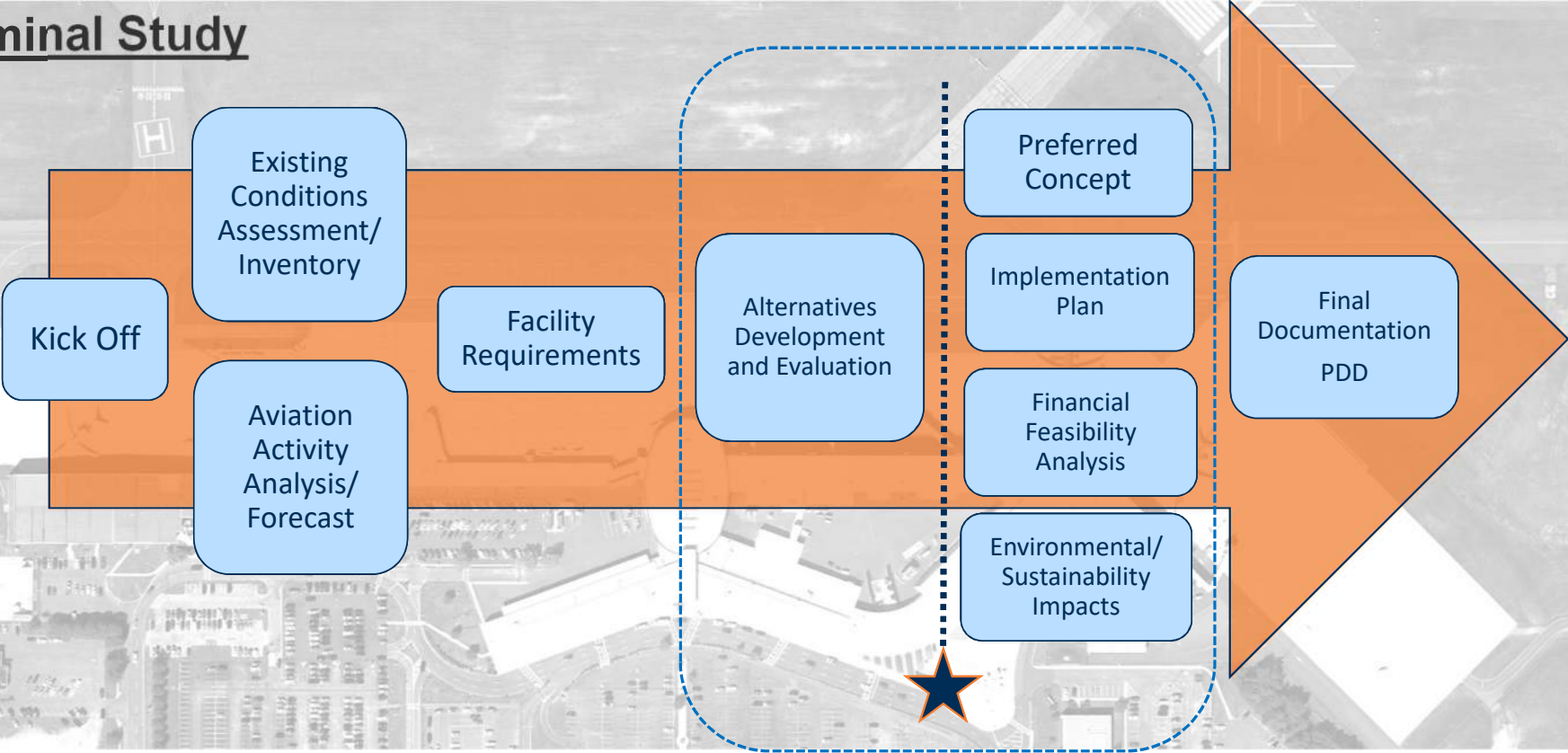
- Stakeholder Process –
 - Submitted on March 24, 2021
 - Comments received by May 1, 2021
 - Wide range of stakeholder responses and disciplines

- Focus –
 - Functionality
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 - Operational
 - Long Term Flexibility



Next Steps

Terminal Study



Next Steps

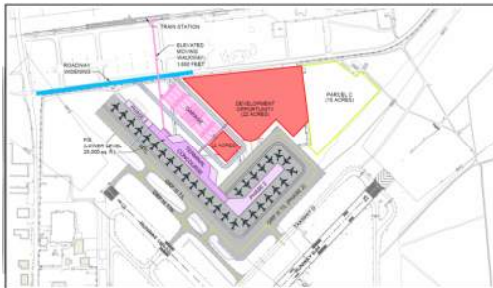
14

2021

- Finalize Terminal Narrative Report
- FAA Coordination
 - Update Airport Layout Plan

2022

- Environmental Study
- Continued coordination with FAA & stakeholders



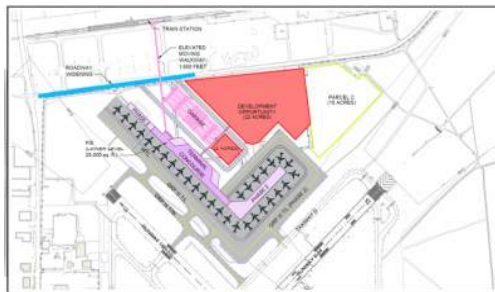
Next Steps

We want your feedback!

Please remember to provide comments on the Questionnaire regarding the concepts and your general thoughts on future development.

<http://macarthurairport.com/airport-info/terminal-narrative>

Please provide comments no later than July 16, 2021 utilizing the above link or QR code.





ISP –Terminal Area Report

Question & Answer





ISP – Terminal Area Study

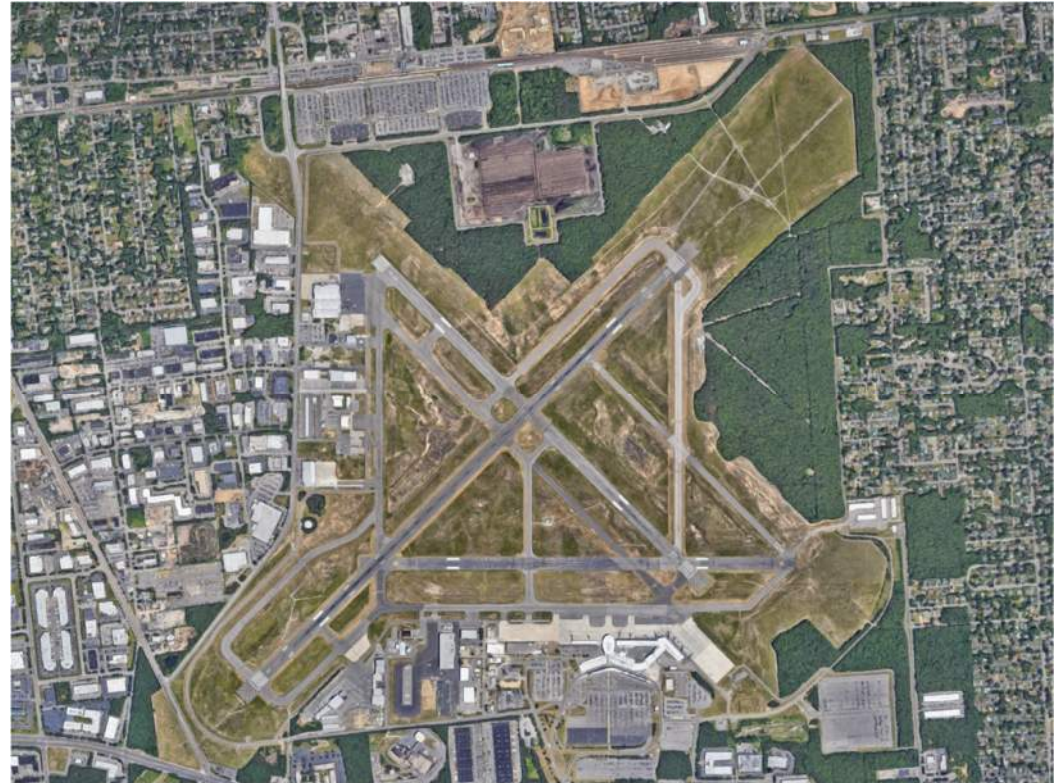
FAA Briefing
July 12, 2021



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2

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 - TAF Forecast
 - Close-Out Document
 - Future Project Component Funding



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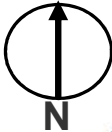
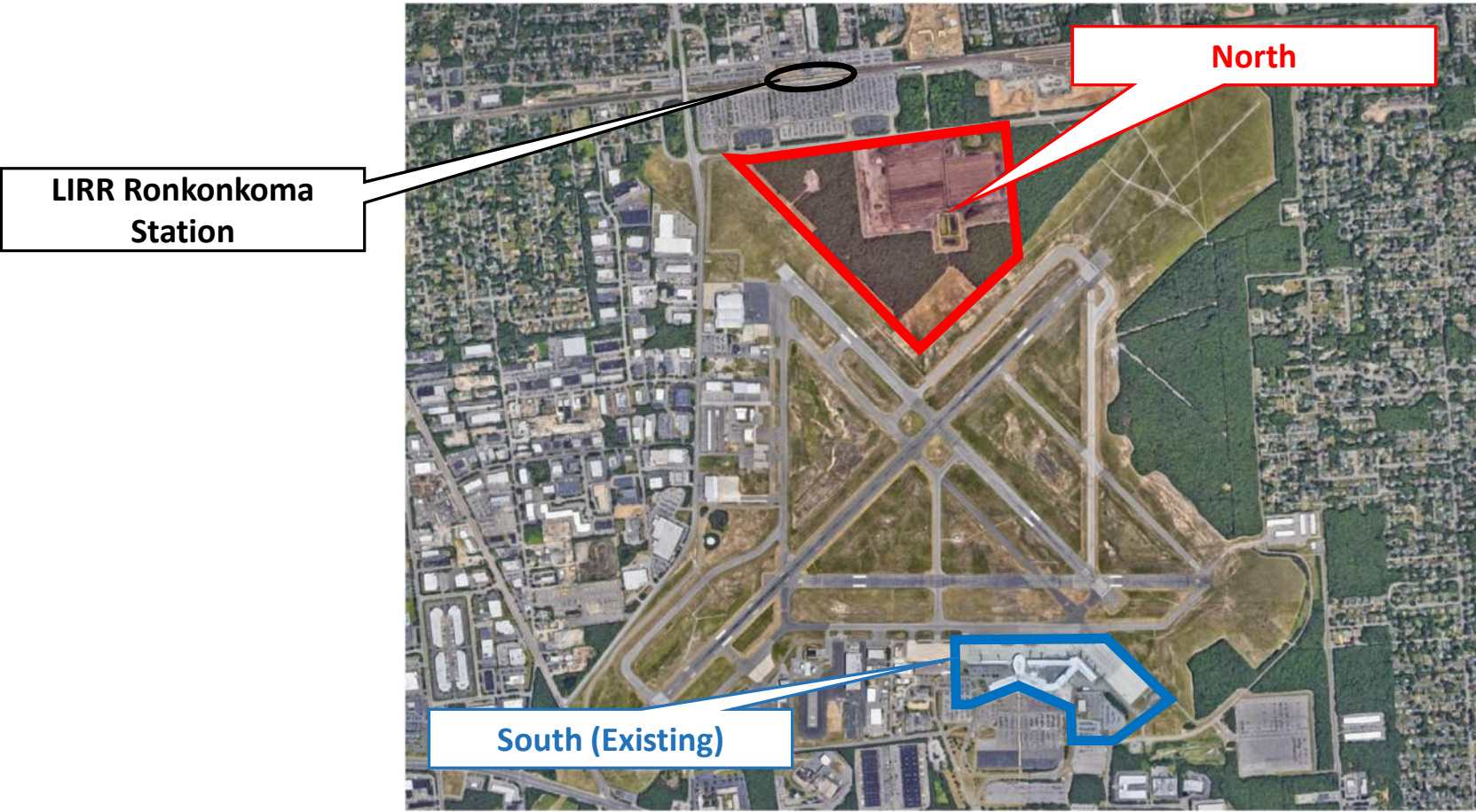
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Long Island MacArthur Airport



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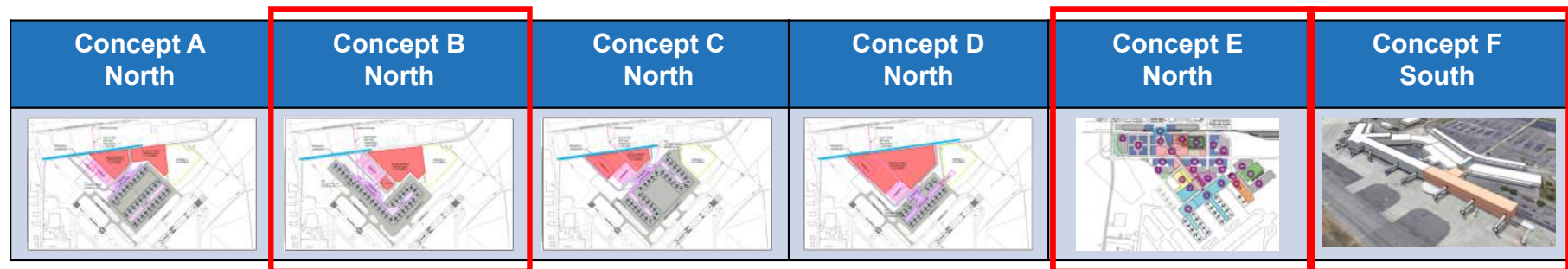
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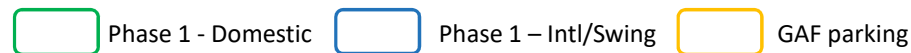
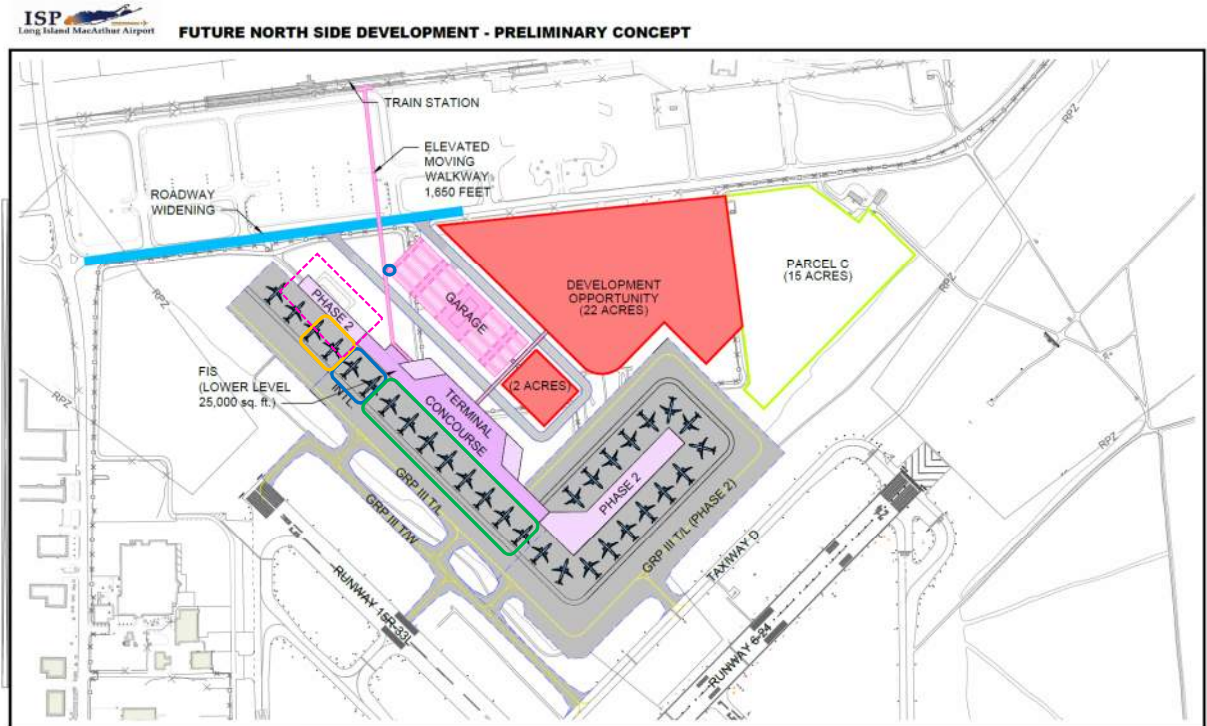
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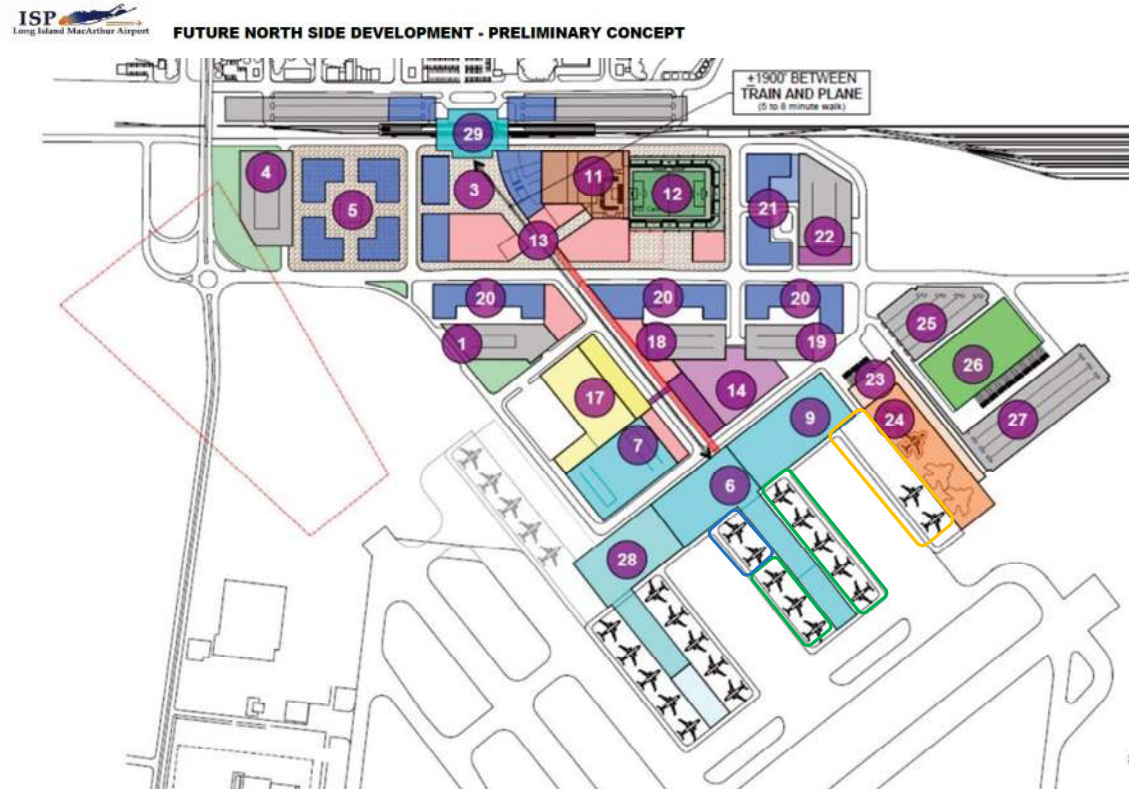
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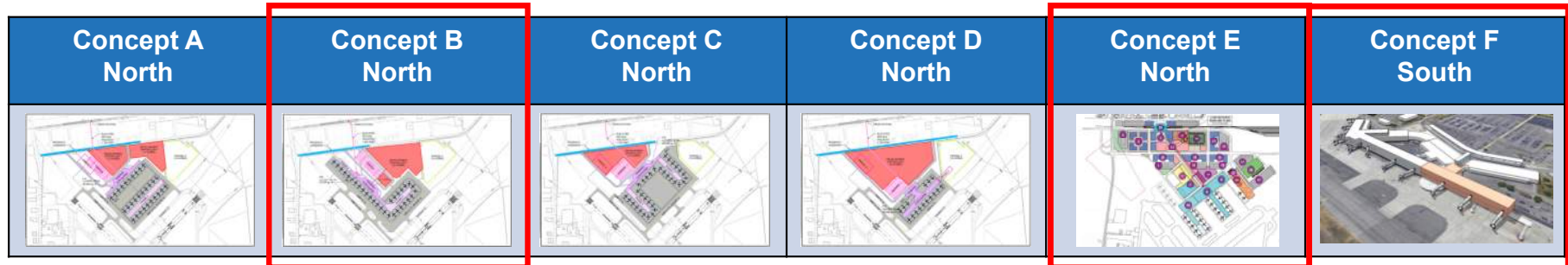
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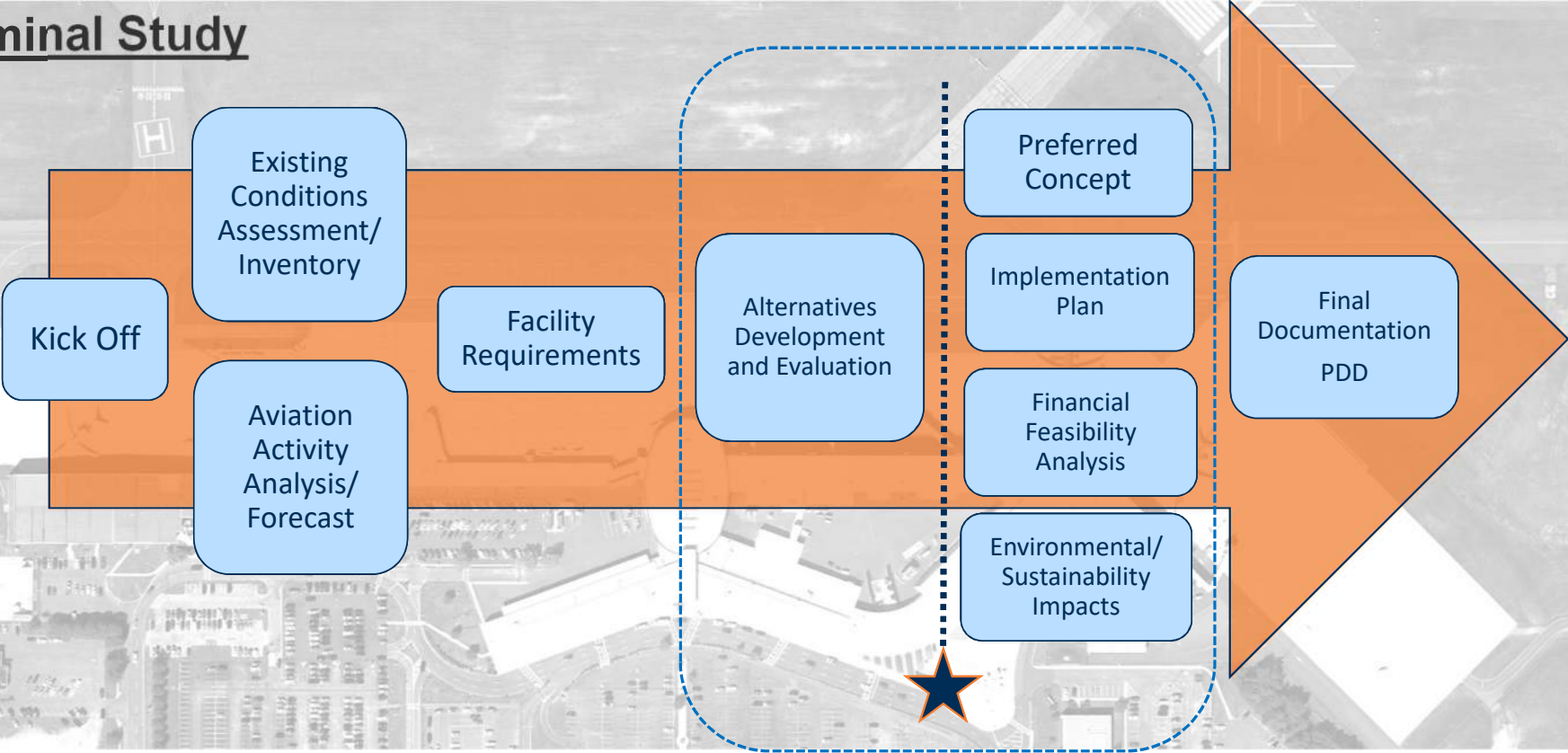
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 - Customer Experience
 - Operational
 - Long Term Flexibility



Next Steps

Terminal Study



Next Steps

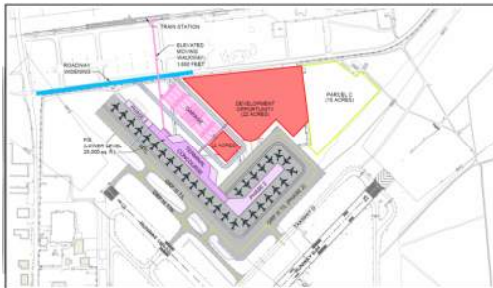
14

2021

- Finalize Terminal Narrative Report
- FAA Coordination
 - Update Airport Layout Plan

2022

- Environmental Study
- Continued coordination with FAA & stakeholders



Next Steps

15

Forecast

- 2020 TAF was removed in June and then reposted on 7/6. Confirming if there was any change?
- Will a 2020 Updated TAF be released given COVID impacts?
- Do you anticipate major changes in upcoming 2021 TAF?
- Timing of 2021 TAF release?

Terminal Area Narrative Close-Out Report

- FAA Close-out Report submittal by end of August
- Final Terminal Area Narrative Study submittal to FAA for review - TBD

Future Project Component Funding

- AIP Eligibility



ISP – Terminal Area Report

FAA Briefing
July 12, 2021



Forecast

Demand Level:	2017 – PAL 1	2022 – PAL 2	2027 – PAL 3	2037 – PAL 4	2050 – PAL 5
Estimated Number of Gates	8	8	9	9	10
Annual Passengers	1,660,152	1,765,800	1,805,400	1,843,600	1,892,000
Peak Month Passengers	160,008	180,112	184,151	188,047	192,984
Design Day Passengers	5,447	6,304	6,445	6,582	6,754
Peak Hour Arriving	693	779	792	804	821
Peak Hour Departing	582	741	757	770	784

meeting minutes



ISP - Terminal Area Narrative Report FAA Briefing

FAA Project: Grant 3-36-0046-103-2019

July 12, 2021

Remote / Microsoft Teams

Attendees:		
Name	Company/Representation	Email
Shelley LaRose	ISP Airport	SLaRose@islipny.gov
Robert Schneider	ISP Airport	rschneider@islipny.gov
Gerri Mulligan	ISP Airport	gmulligan@islipny.gov
Steve Siniski	ISP Airport	ssiniski@islipny.gov
Jose Moreno	FAA	Jose.moreno@faa.gov
Evelyn Martinez	FAA	Evelyn.martinez@faa.gov
Sukhbir Gill	FAA	Sukhbir.Gill@faa.gov
Paul Whealan	FAA	Paul.j.whealan@faa.gov
Madelyn Sheehan	FAA	Madelyn.t.sheehan@faa.gov
Jonathan DeLaune	FAA	Jonathan.delaune@faa.gov
Andrea Luft	JKL	ALuft@jklengineers.com
Logan Smith	L&B	Logan.smith@landrumbrown.com
Clint Laaser	L&B	clint.laaser@landrumbrown.com
Brian Poe	L&B	Brian.poe@landrumbrown.com
Monica Geygan	L&B	Monica.geygan@landrumbrown.com

Discussion:

- Ensure alignment with FAA
- How do we proceed with the closing of the existing terminal area grant?
 - Process closeout this fiscal year?
 - Closeout in 2022 (early f – A portion of recovery money could be recouped)
 - Not enough time to closeout in 2021
- Discuss north terminal planning concept
- Workshop on June 22 but little feedback, also uploaded online and able to leave comments
 - Beginning to receive more comments electronically
- Overview & Objectives, Key Criteria, etc.
 - What if the LIRR was not there? Main concern is lack of connectivity, is this a big concern?
 - Only a maximum number of gates on the south side, on the north side there is an opportunity to build a lot of additional gates. Looking 20+ years the existing site can only go up to 11 gates (including east/west concourse).
 - What is the big picture/vision in terms of ultimate gate size?
 - What about distance for passenger not walking from LIRR?
 - If there were a north terminal, we would abandon the south terminal building, in a phased approach.
 - What are the current site limitation of the north terminal?
 - Compost site to be relocated somewhere in the town of Islip
 - Some sites have been researched
 - Some north terminal options would only impact a portion of the facility
 - Concept B
 - Phased relocation
 - Old FAA facilities
 - Concept B Overview

meeting minutes



- Any analysis of airport surfaces?
 - Yes, reviewed at a high level
 - Haven't evaluated penalties the parked aircraft / buildings could have
- Aircraft type?
 - A321
 - Group IV is an option on ends
- Concept E Overview
 - No questions about this concept
- Concept F Overview
 - Rotunda is not a historical landmark.
 - No conflict with the compost facility
- Evaluation:
 - A variety of layouts (five layouts) for the north were explored, but B and E were the best layouts in terms of aircraft parking, connection to LIRR and revenue potential.
 - Five south layouts were developed and evaluated, Concept F was the preferred configuration.
 - Stakeholders assisted in the selection of the three concepts (B, E and F).
- Next Steps
 - Scope of works that was prepared for the west terminal development
 - Forecast validation
 - Forecast may be separate from aviation activity
 - First effort is to complete the west terminal effort, including forecast analysis
 - Need to decide how the team is planning to complete that scope of work, including the forecast validation
 - Prefer to see the forecast separate, not as part of any draft/final report
 - Reviewed at the regional level, potentially sent to HQ
 - 10% above the TAF in first 5 years has to go to HQ
 - Continue to advance north terminal in parallel with west expansion, how will FAA interact with this in terms of a review process and acceptance of a forecast / documentation?
 - Because this is a substantial project, it will require review from Jose and the regional office.
 - Issued Grant 103 in 2019, the idea was to terminate this grant
 - Why would we be reviewing anything further if we are doing to terminate it?
 - Is there anything that is eligible that can be paid out of the grant? But why continue work if it will be terminated?
 - What are we doing with the old grant? Should Jose still review?
 - Yes we want to close it, and need to know what is needed to deliver to FAA?
 - What is it that we should be planning for, so if one terminal project required a TW, such they ISP would be eligible.
 - Any of the planning documentation will be the basis of of NEPA
 - Even though FAA is not funding the planning document, FAA has action that result, AIP and PFC.
 - PFC, new policy, intermodal connections, LIRR is a factor. Will send new documentation.
 - What else does ISP need to do to wrap up Grant 103?
 - To close the grant (scope specific to west concourse). Need to explain what happened, can't move forward, there are other alternatives that are a better fit. Need to report this to Jose. Then progress to closing out this Grant, submit closeout documentation, then FAA will recovery funds early next year.

- For this current planning effort, need to coordination with Jose even though it is not federally funded, need to look at future ALP update and NEPA Section 163.
- What the planning effort is going to look like and where FAA can approve the federal actions.
- First items Jose needs is a report that looks at the different items in the original scope of work, concludes in the alternatives section the original approach is no longer feasible, therefore we are completing the project.
 - Task 9.1 has the items FAA is looking at. This is the TOC of the report. Up to the point we are at today, items on back end would not be included. This will be use usable unit of work for this grant and then move to the closeout package.
- Main concern is the documentation of the forecast, what is the basis of the main terminal? What can facilitate / justify the 20 year plan that would require the north terminal expansion?
 - We can submit this earlier than the Report for Grand 103, we will do this separately
 - 2020 TAF, we don't know why it was removed. No explanation internally.
 - FAA will have to get back to use on the Next Step questions (slide 15)
 - Answers will impact how we approach our forecast
 - Already exceeding the 2021 expected levels of activity, close to 2022 forecast
 - Jose will bring these questions to regional / HQ
 - Need very good backup documentation if there is a robust forecast, needs to be very well supported if there is a significant increase in the forecast relative to the TAF
 - What is the threshold in terms of a significant change in passenger levels relative to a relocated terminal?
 - Jose will look at examples and respond
 - Need to look at % capacity of terminal being used
 - TSA capacity
- Is this grant going to be terminated (prematurely closed) because things have changed
 - Are we putting on hold portions of this scope?
 - When do you get to the point where we've agreed it should not continue?
 - It's just being closed, not terminated
- Send Jose email with questions
- End of August send draft closeout report for Grant 103
- Look at NEPA 163
- ALP Update
- Worthwhile to look at alternatives relative to 7460 analysis, north looks great, but can't be built due to obstructions, we want to know that before we make a final decision
 - Need to look at all the potential restrictions, all imaginary surfaces should be reviewed
 - Design aircraft may change?
- Need a separate call to talk about terminating Grant 103
- Consider a feasibility study, to evaluate the airspace. Three or four strategic points should be reviewed.



ISP – Terminal Area Study

Narrative Study Update and Concepts Meeting
September 28, 2021



Overview & Objectives

2

Objectives:

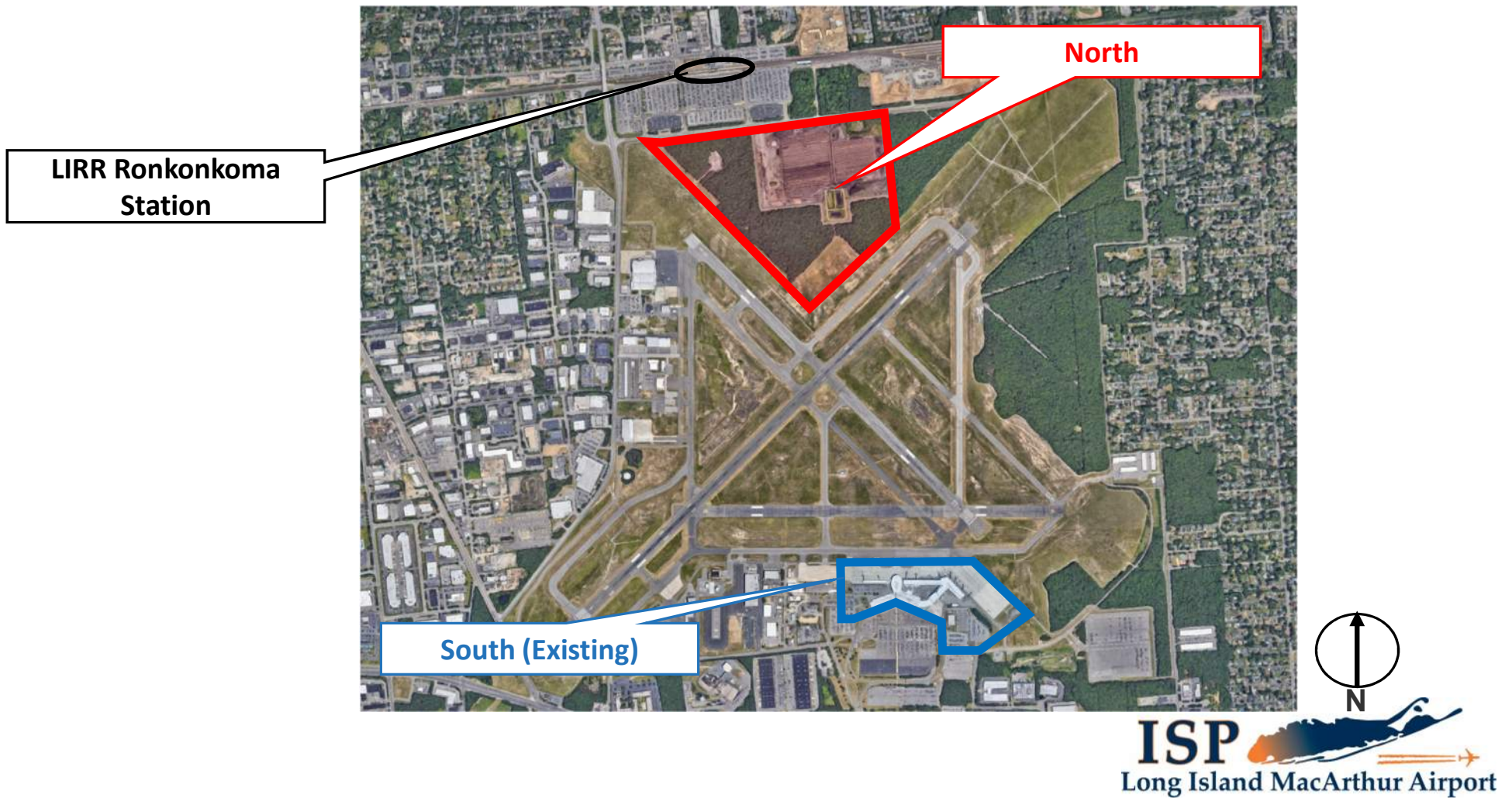
- Increase gate capacity
- Need to accommodate modern commercial service aircraft
- Enhance the passenger experience
 - Enhance Level of Service (LoS)
 - Improve passenger circulation and shorter walking distances
 - Implement new technologies and amenities
- Enhance operational and functional efficiency
- Plan for 20 year future

Primary Deficiencies:

- Lack of connectivity to LIRR (currently taxi or TNC)
- Operational capacity issues due to lack of space
- Low Customer Experience
 - Long walking distances
 - Space constraints
 - Poor accessibility
- Baggage Handling System is at capacity
- Lacking proper GAF/FIS facility that meets federal facility requirements



Long Island MacArthur Airport



Key Criteria for Evaluation

4

Key Evaluation Criteria

- **Connectivity to LIRR and community**
 - \$100 Million investment increases capacity by 46% (East Side Access and Third Track)
 - Provides more nonstop service between Ronkonkoma and NYC
 - Increase connectivity to CT/NY and NJ
 - Simplified and enjoyable connection/walk between LIRR and terminal
- **Minimize walking distances**
 - LIRR to Terminal - ideal is no more than 1/3 mile (1,800 linear feet or less)
 - Terminal entry to furthest gate
- **Development Opportunity**
 - Maximize non-aero revenue potential
 - Terminal with ample concessions opportunity
- **Growth Flexibility**
 - Additional airside gates and landside potential
 - Ability to enhance existing airlines and attract new entries
 - Simple phasing for future gate buildout with no “throwaway”
- **Customer experience and right-sized facility**
- **Ability for new technology/systems**
 - Inline baggage systems, updated building systems, current technologies
- **Implementation Cost**

Program

Space Designation	PAL 2	
	Units	SF
Airline Spaces		
Check-in (areas from counter face to back wall)		1,800
Curb Check Positions	5	700
Full - Service Check-in and Bag Drop Positions	22	
Ticketing Counter Queue		2,900
Self - Service Kiosks	19	1000
Airline Ticketing Offices (ATO)		4,180
Outbound Baggage (sorting area w/ carousels)		24,000
Hold Baggage Screening		
Level 1 EDS Units	3	9000
Level 2 Workstations	2	200
Level 3 ETD Units	11	4,000
Physical Search		100
Domestic Baggage Claim		
Number of ADG VI (CAT F) units (>330lf<460lf)	0	
Number of ADG V (CAT E) units (>230lf<300lf)	0	
Number of CAT ADG III (CAT C) units (>130lf<230lf)	2	
Minimum Bag Claim Frontage Total (Linear Feet)	415	
Claim Hall area		12,200
Inbound Baggage Drop-off		3,300
Baggage Service Offices		1,200
Contact Gate Holdrooms	8	22,540
Airline Operations		16,500
<i>Subtotal Airline Spaces</i>		<i>103,620</i>
<i>Circulation</i>		<i>15,600</i>
Airline Spaces		119,220

Space Designation	PAL 2	
	Units	SF
Public Spaces		
Check-in Lobby (circulation)		4,200
Arrivals Greeters Hall		8,200
Concourse Departure Corridor		32,430
Concourse Sterile corridor (including sterile vertical circ.)		6,980
Restrooms		
Check-in Lobby (Passenger & ATO)		2,100
Concourse		3,800
Baggage Claim		
International		1,400
Domestic		2,000
Passenger Security Screening		
Number of Screening Units	5	9,800
Security Screening Queue & Lobby		4,200
Security Screening Support Areas		2,100
<i>Subtotal Public Spaces</i>		<i>77,210</i>
<i>Circulation</i>		<i>11,600</i>
Public Spaces		88,810
Concession Space		
Pre-Security - Departures		1,589
Post-Security		13,508
Arrivals Lobby		795
Concessions Support		3,973
<i>Subtotal Concessions Spaces</i>		<i>19,865</i>
<i>Circulation</i>		<i>3,000</i>
Concessions Spaces		22,865

Program

Space Designation	PAL 2	
	Units	SF
US Customs & Border Protection Services (CBP)		
Primary Processing and Inspection		5,934
Unified Secondary Processing and Inspection		2,600
Detention Suite		1,800
Agricultural Inspections and Lab Spaces		400
Canine Enforcement Spaces and Kennels		1,600
Operational Support Spaces		7,200
Staff Support		200
International Baggage Claim		
Number of ADG III (CAT C) units (>130lf<230lf)	1	
Bag Claim Frontage Total (Feet)	183	
Claim Hall area		6,680
Transfer Baggage Re-check		
Check-in Positions	1	100
Check-in Lobby		400
FIS Circulation		600
US Customs & Border Protection Services (CBP)		27,514
Terminal Support Spaces		
Airport Operations (Also include Non public restrooms and circulation)		4,200
Maintenance		5,200
Building Systems		25,900
Vertical Circulation		5,200
Misc. (Chapel, Play Areas, Business Center, etc.)		700
Terminal Support Spaces		41,200

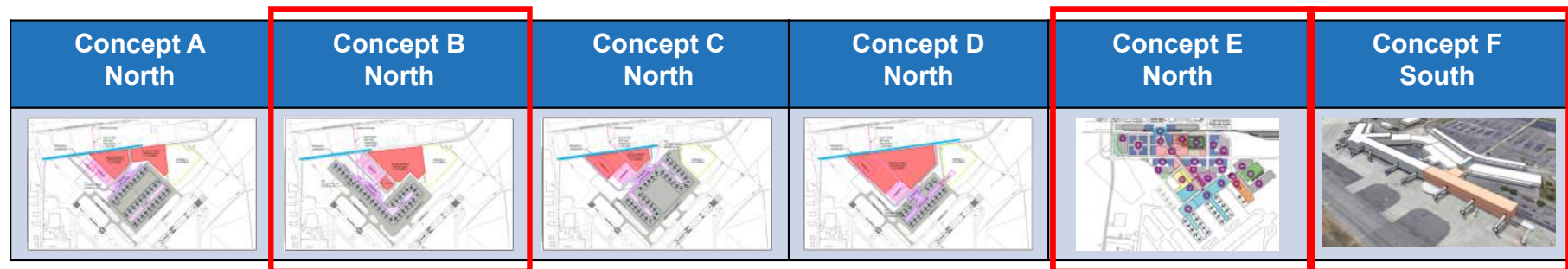
- Total Program
 - Incremental Growth
 - PAL 2
 - 8 Holdroom Gates
 - Total SF: 299,609 SF *

* Can be reduced with further building system planning and dependent on concept.

Concept Options

Development of multiple options for existing terminal modifications (South) and new terminal (North)

* Concepts B, E & F are the only concepts that met the criteria



Key Criteria –

- Functionality
- Customer Experience
- Operational
- Long Term Flexibility

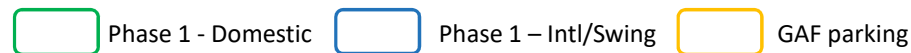
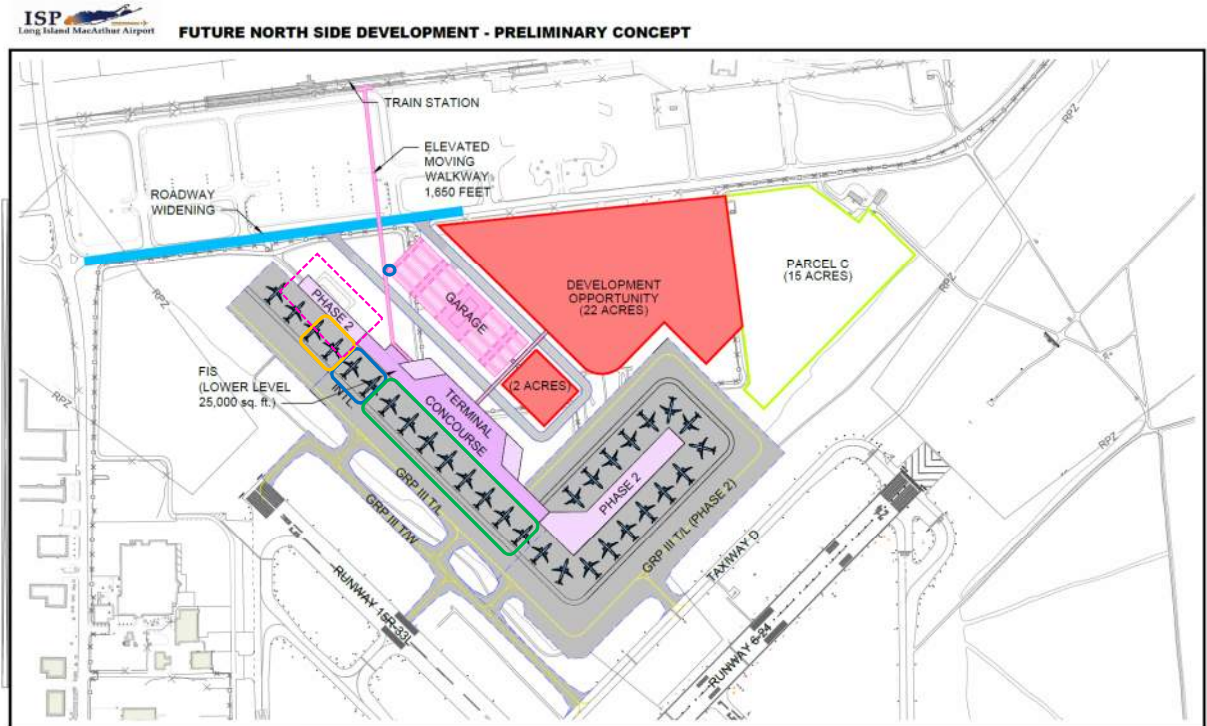
North - Concept B

B – Aligned with Runway 15R-33L

- LIRR connection = 1,650 LF
- Potential Expansion Capabilities = 30 gates
- Parcel B Development Opportunity = 24 acres
- Parcel A Garage alternative possible – longer walk from baggage claim

Advantages

- Shortest walk to/from LIRR
- Best garage flexibility for Airport & LIRR use
- Simplified and flexible phasing
- Does not impact Parcel C
- Great development connectivity



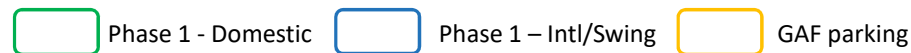
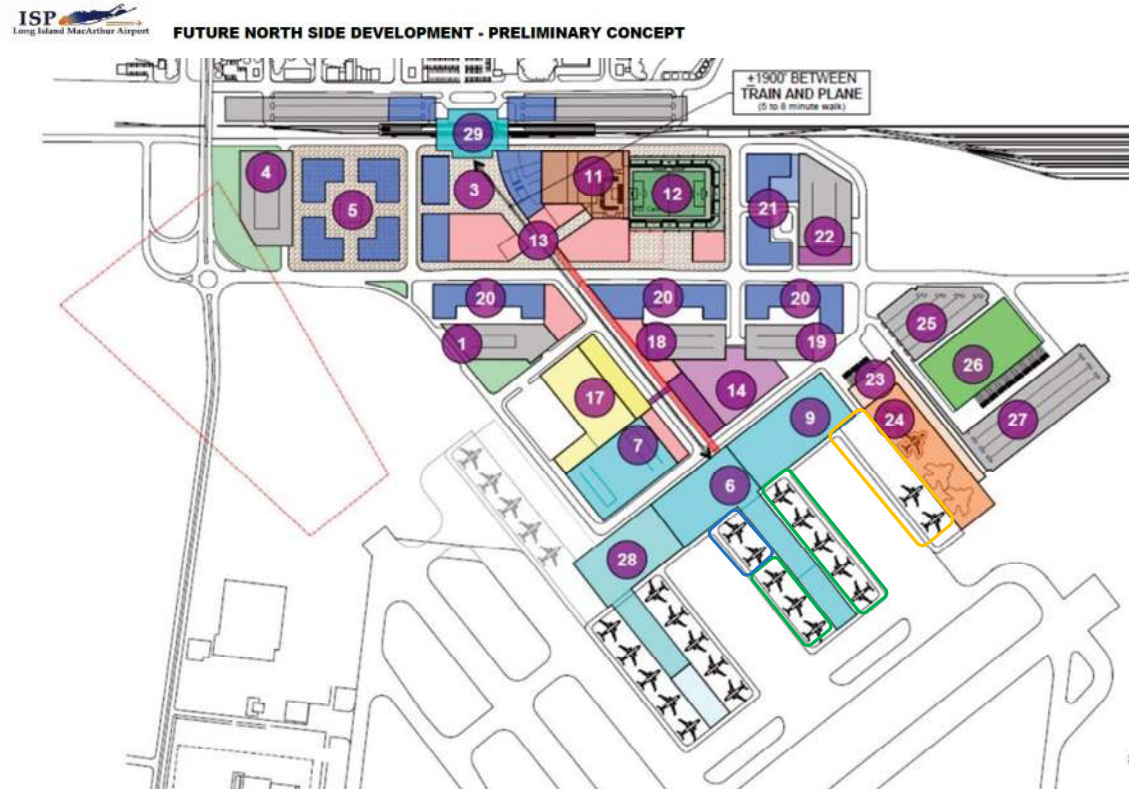
North - Concept E

E – Maximize Development

- LIRR connection = 1,900 LF
- Potential Expansion Capabilities = 35 gates
- Parcel B Development Opportunity = 26.3 acres (18.8 Commercial + 7.5 Convention)
- Parcel C intact

Advantages

- Transit oriented design
- Acceptable LIRR walk distance
- Phasing flexibility
- Sustainable development long-term
- Strong customer experience
- Leverage infrastructure investment
- Development connectivity and investment across entire project



South – Concept F – New Central Terminal

10

F – South Location

- LIRR connection = 6,864 LF
- Potential Expansion Capabilities = 11 gates
- Development Opportunity = Minimal

Advantages

- Leverage existing infrastructure
- Overall cost

Disadvantages

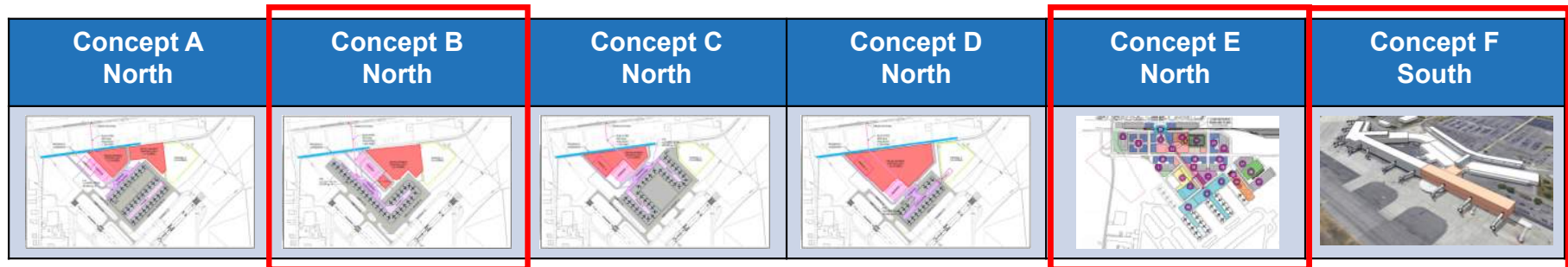
- Lack of LIRR connectivity
- Minimal development opportunity
- Long-term flexibility
- Phasing





Concept Comparison

- Stakeholder Process –
 - Submitted on March 24, 2021
 - Comments received by May 1, 2021
 - Wide range of stakeholder responses and disciplines
 - Public Workshop – June 22, 2021

- Focus –
 - Functionality
 - Customer Experience
 - Operational
 - Long Term Flexibility



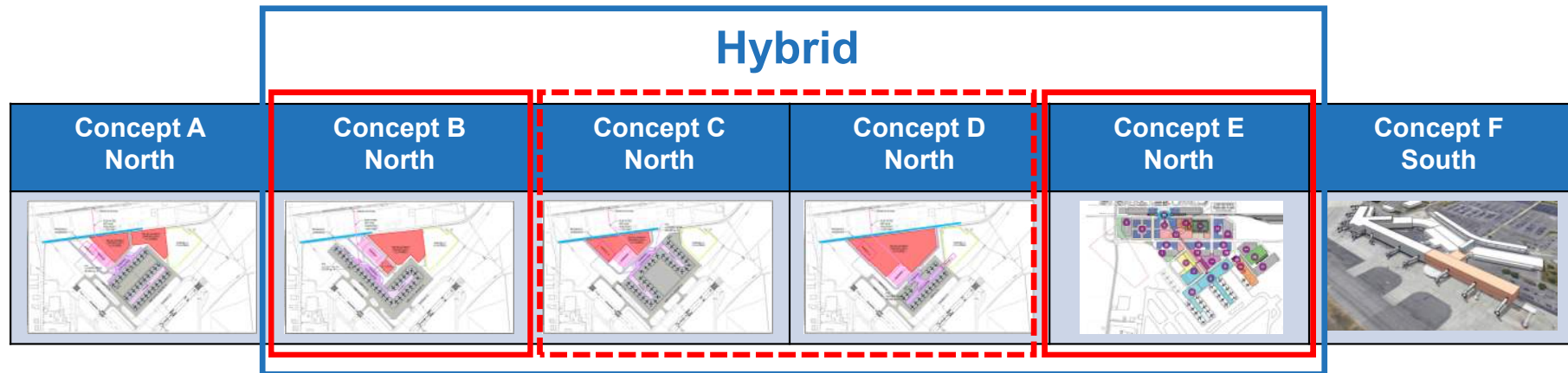
Concept Comparison

	Concept B North	Concept E North	Concept F South
			
Connectivity to LIRR	1 1,650	1 1,900	-1 6,864
Development Opportunity	1 24	1 26.3	-1 Min.
Long-Term Flexibility	1 30	1 35	-1 11
Phasing	1	1	-1
Customer Experience	1	1	0
Technology	1	1	0
Cost	-1	-1	0
Score	5	5	-4

Concept Refinement

13

- Hybrid North Concept – Concept G
 - Hybrid solution that takes the benefits of both preferred stakeholder alternatives (Concept B & E)
 - Linear concourse - optimal operational/functional layout (airline preferred)
 - Commercial Development – maximize potential non-aeronautical revenue
 - Walking distance to the LIRR - under 2,000 LF which equates to 5-8 minutes
 - Easy phased approach



North - Concept G (Hybrid)

G – Hybrid

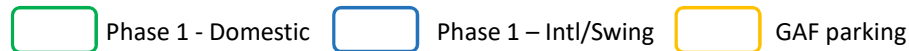
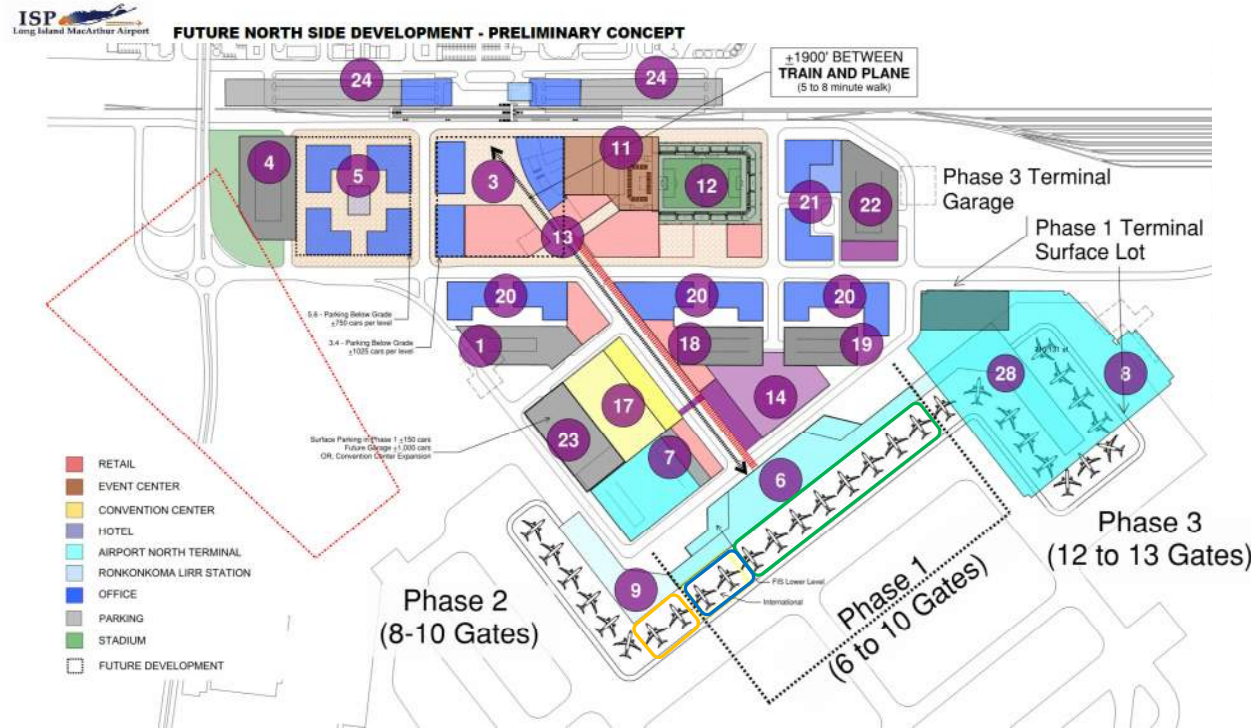
- LIRR connection = 1,900 LF
- Potential Expansion Capabilities = 33 gates
- Parcel B Development Opportunity = 26.3 acres (18.8 Commercial + 7.5 Convention)
- Parcel C required in Phase 3

Advantages

- Linear concourse provide optimal operational layout (Concept B)
- Optimize Commercial Development (Concept E)
- Customer experience – central concessions and short walk distances
- Easily phased approach for incremental growth

Disadvantages

- Requires compost facility relocation



Concept Refinement Summary

Commercial Development (* including non-airport property. Concepts E and G potentially create 25% more travelers)

B – 24 acres (39 acres*)

E – 26.3 acres (41.3 acres*)

G – 26.3 acres (41.3 acres*)

Gates Expansion Possibilities (All include 8 gates for Phase 1 including FIS and Inline Baggage System)

B – 30

E – 35

G – 33

LIRR Connectivity

B – 1,650 LF

E – 1,900 LF

G – 1,900 LF

Terminal Cost Implications (determined by building size)

B – 276,000 SF

E – 282,000 SF

G – 276,000 SF

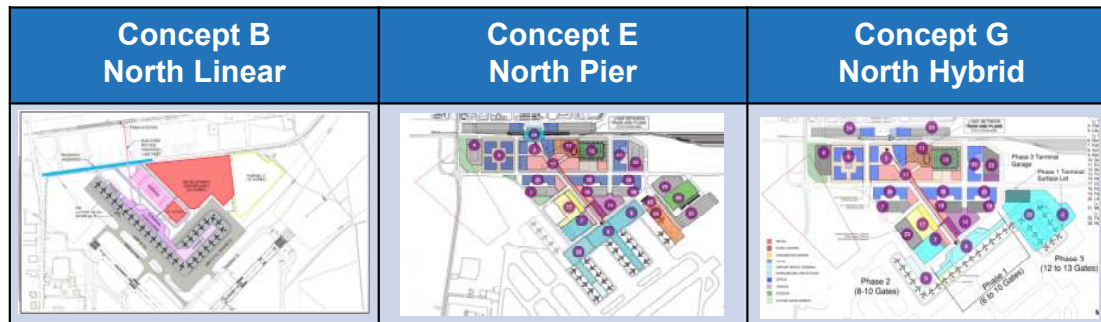
Terminal Design Flexibility

- Stakeholders prefer the linear concourse for optimal operational and functional flexibility
- Customers will prefer the linear concourse for the central concession hub and easy walking distances
- Airport Maintenance prefer the linear concourse for easy construction/repair of terminal and airfield facilities and snow removal

B – Linear

E – Pier

G – Linear

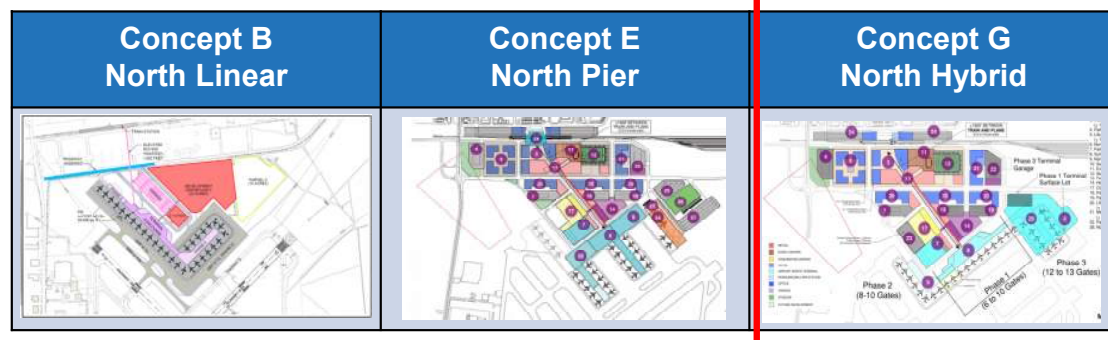


Concept Refinement Summary

16

Potential Fatal Flaws *(to be determined)*

- Stakeholder support of concept
- Potential interference with Airside Surfaces
- LIRR walking path –
 - Must be elevated, covered or moving walkways.
 - At grade, crosswalks are dangerous.
- Vehicular Egress from the Airport Loop Road
 - Congestion and Left Turn Conflicts (Concept E & G Lacks Detail)
- Parking allocations: Customer, Resident and Employee
- Rental Car Facilities (north vs. south)
- MRO Facility potential



Summary - Opportunities

17

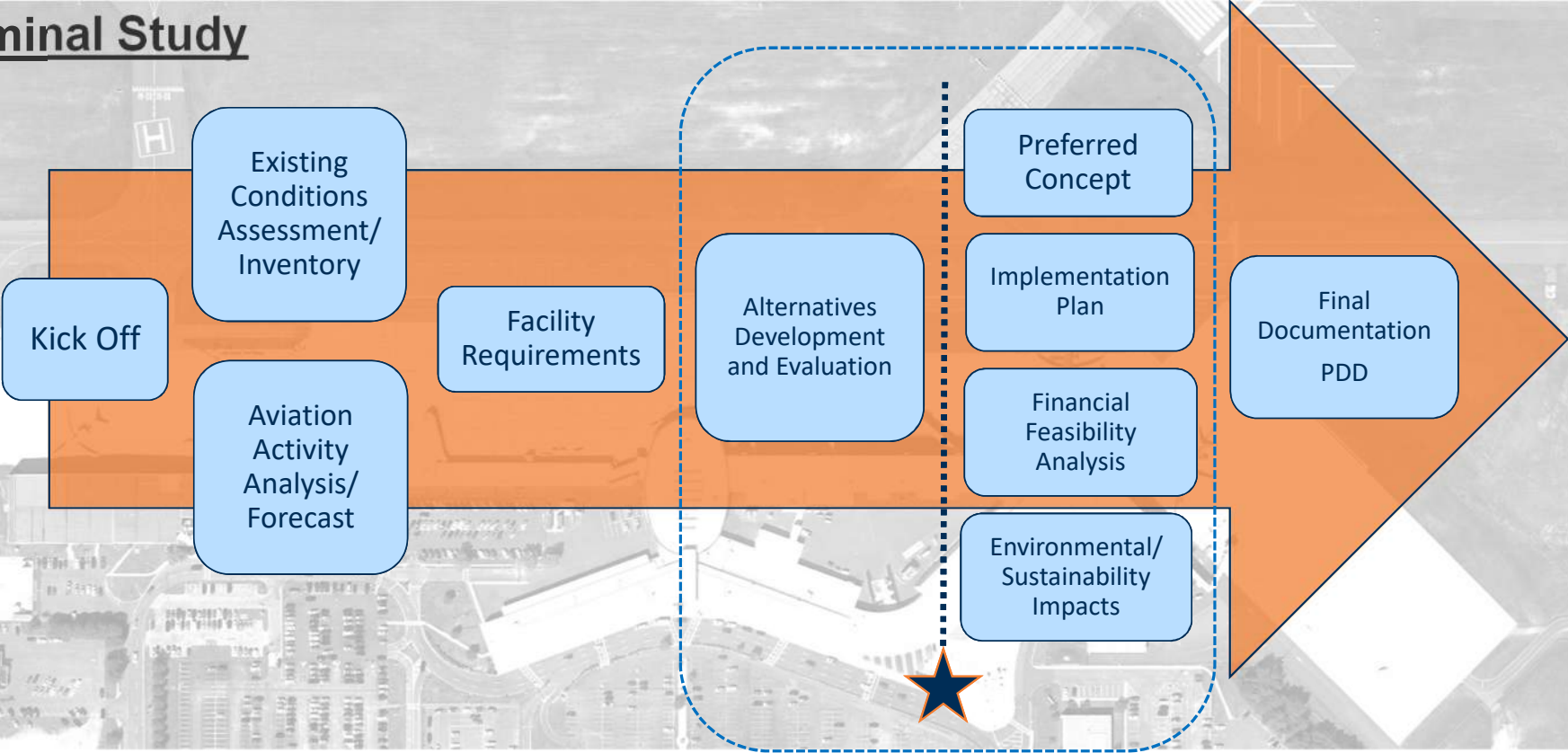
*** The Town's obligation is to justify North Terminal Concept(s) to FAA as part of the Narrative Study.**

The following categories are opportunities available to ISP.

1. Stakeholder Support
2. Identification of deficient and outdated facilities on the south side terminal.
3. Opportunity for a connection to the LIRR with a multi-modal development opportunity
4. Improve safety through the terminal relocation
5. Demand – show increase in flights and passengers

Next Steps

Terminal Study



Tentative Schedule

- October 2021 – Airspace Review of North Terminal Options
- Q4/2021- FAA tentatively will issue a new Terminal Area Forecast (TAF)
 - Information is required to complete narrative study capacity and demand analysis
- December 2021 – Selection of Preferred Alternative
 - Preferred Alternative refinement, including interior layouts and implementation plan
- Q1/2022 - Airport Layout Plan (ALP) Update
- Q2/2022 – Submission of Narrative Report and ALP to FAA for review and approval
 - Typical FAA review is 6-8 months



ISP –Terminal Area Report

September 28, 2021



Commercial Development

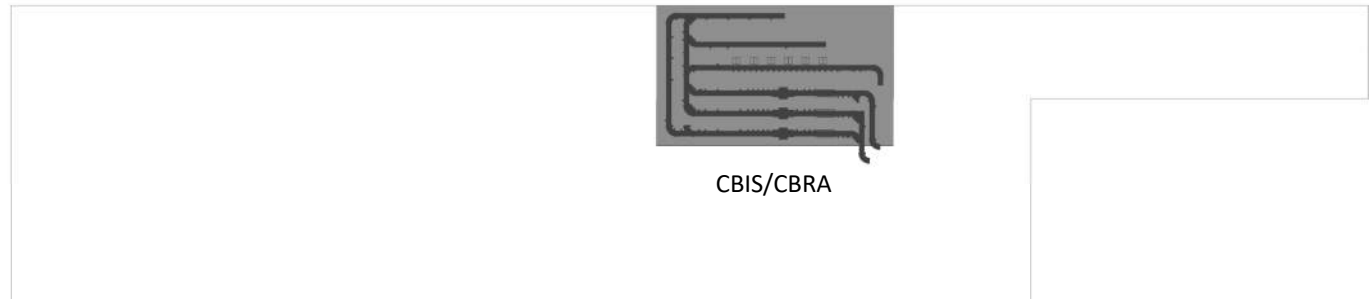
North: Approx. **XXX** acres



South: Approx. 100 acres



North - Concept B – Basement Level



CBIS/CBRA

Total Concept B Area: 276,000 SF



Concept B Basement Level

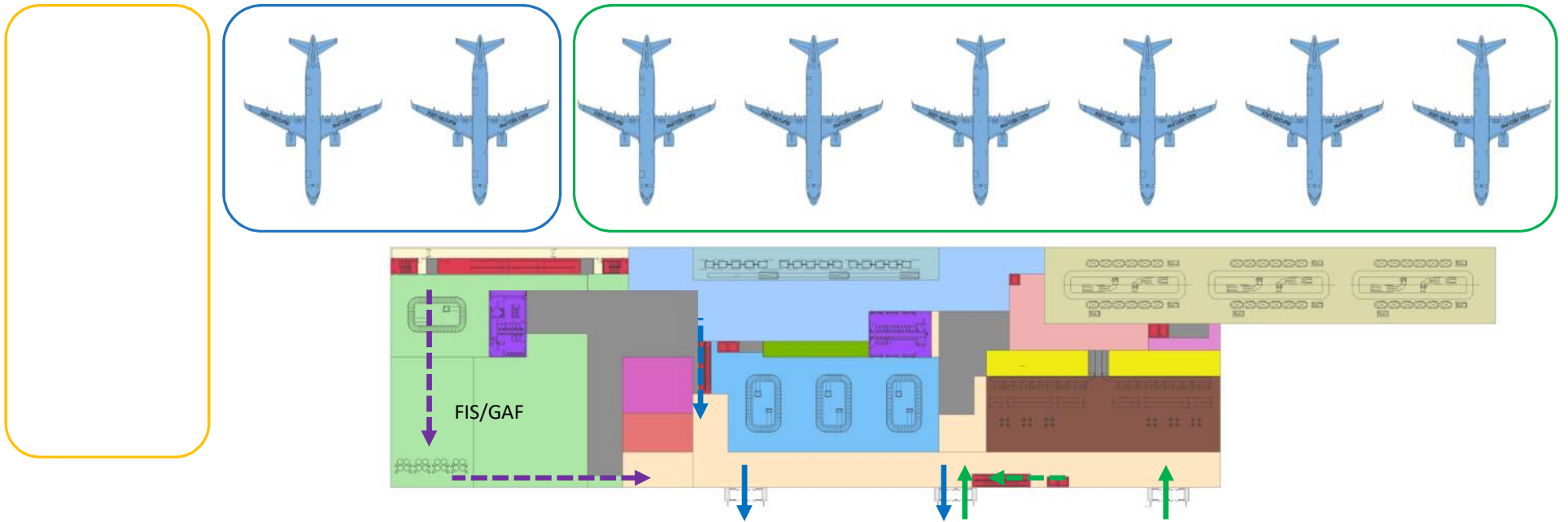
File: 2017_002_ConceptB_Schematic_ConceptB - Basement Level.dwg, Last Saved: 03/02/2017 11:50:46 AM, User: JLD

Legend

- | | | | | |
|--------------------|------------------------|----------------------|--------------------|------------|
| Restrooms | Secure Circulation | Vertical Circulation | Concession Support | Claim Area |
| Airport Operations | Non-Secure Circulation | Support or MEP | Loading Dock | FIS |
| BSO | Concessions | ATO | Inbound Baggage | |
| Checkpoint | Holdrooms | Check-In | Baggage Make Up | |



North - Concept B – Apron Level



Total Concept B Area: 276,000 SF

 Phase 1 - Domestic
 Phase 1 – Intl/Swing
 GAF parking

Legend

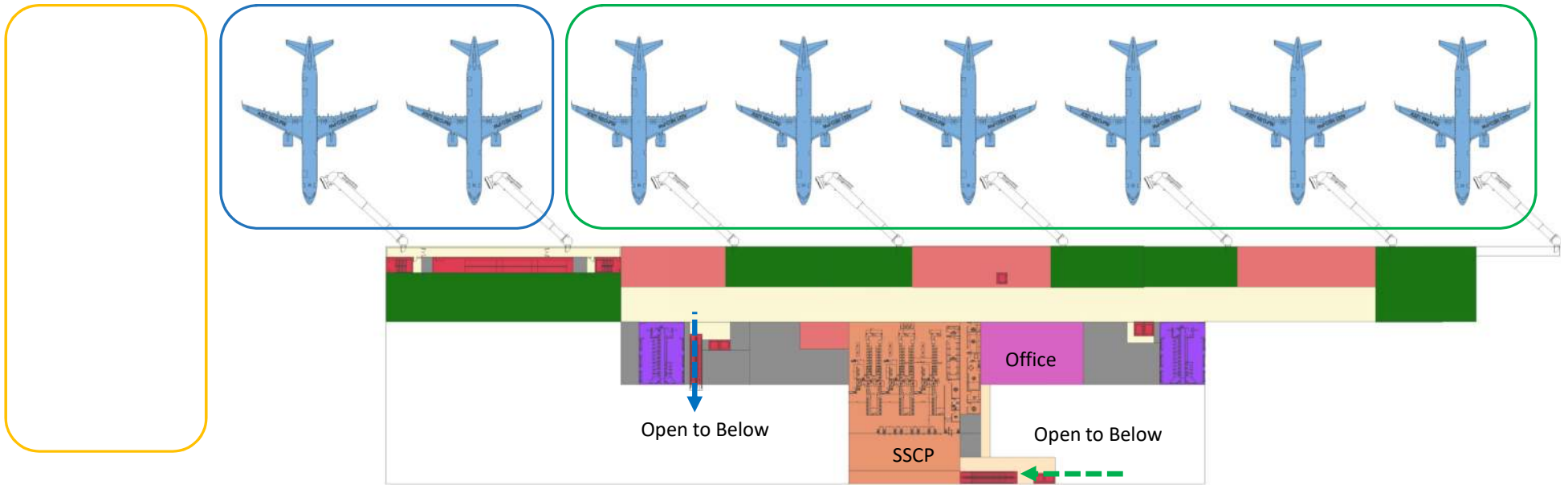
- | | | | | |
|---|---|---|---|---|
| Restrooms | Secure Circulation | Vertical Circulation | Concession Support | Claim Area |
| Airport Operations | Non-Secure Circulation | Support of MEP | Loading Dock | FIS |
| BSO | Concessions | ATO | Inbound Baggage | |
| Checkpoint | Holdrooms | Check-In | Baggage Make Up | |

**Concept B
Apron Level**

File: 2011007_Concept B-Concept B-Plan_L&B.dwg 6/22/2011 11:01 AM Plotter: 6/22/2011 11:01 AM



North - Concept B – Concourse Level



Total Concept B Area: 276,000 SF

 Phase 1 - Domestic
 Phase 1 – Intl/Swing
 GAF parking

Legend

- | | | | | |
|---|--|---|--|---|
| Restrooms | Secure Circulation | Vertical Circulation | Concession Support | Claim Area |
| Airport Operations | Non-Secure Circulation | Support or MEP | Loading Dock | FIS |
| BSO | Concessions | ATO | Inbound Baggage | |
| Checkpoint | Holdrooms | Check-In | Baggage Make Up | |

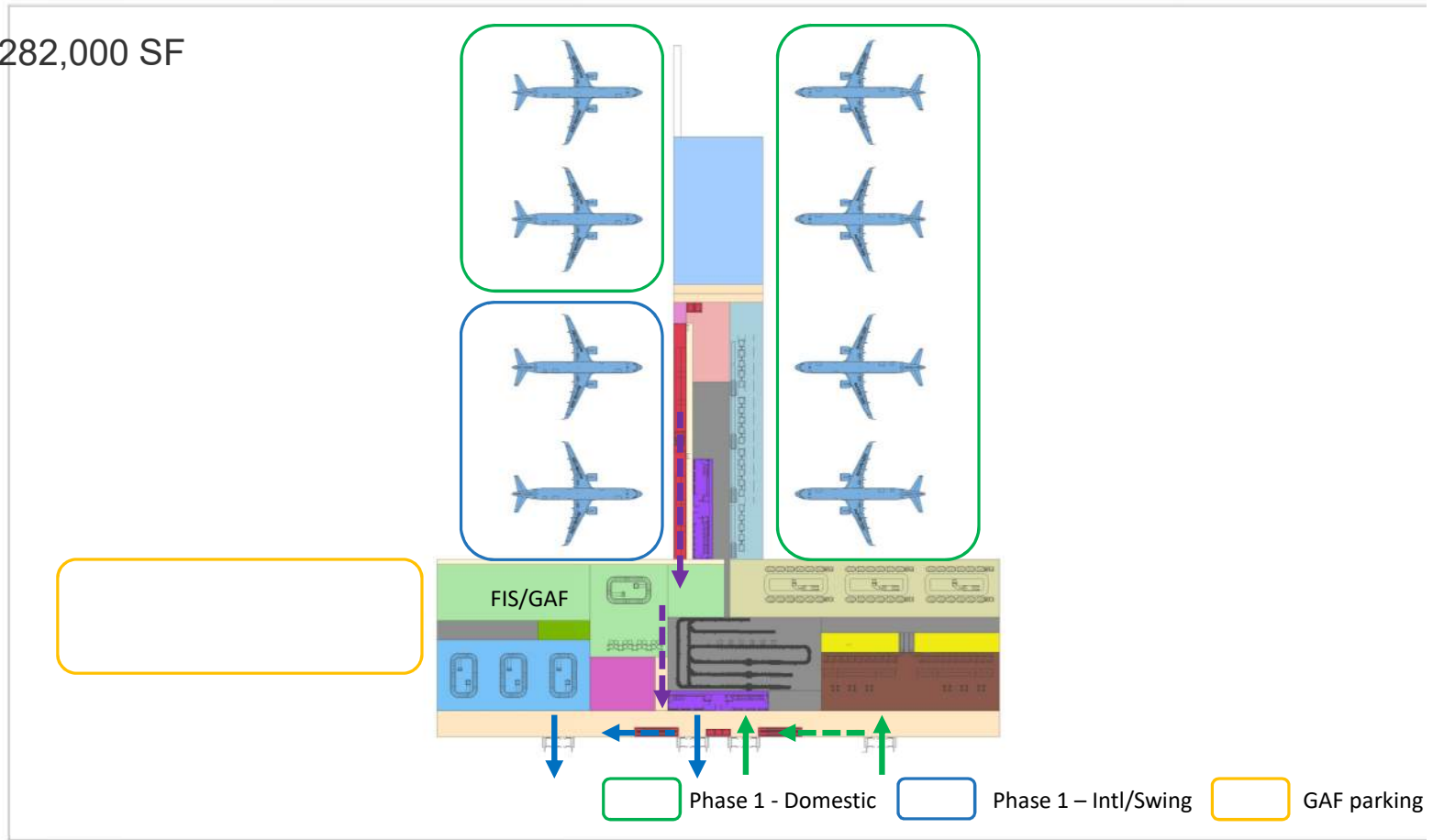
**Concept B
Gate Level**

File: 0011807_Concept B_Airport Level_Concept B - Gate Level_Landmark 02/20/11 1:18 PM/Printed On: 02/20/11 1:20 PM



North - Concept E – Apron Level

Total Concept E Area: 282,000 SF



Concept E
Apron Level

Legend

Restrooms	Secure Circulation	Vertical Circulation	Concession Support	Claim Area
Airport Operations	Non-Secure Circulation	Support or MEP	Loading Dock	FIS
BSO	Concessions	ATC	Inbound Baggage	
Checkpoint	Holdrooms	Check-in	Baggage Make Up	



Scale: 1"=100'-0"
 Prepared by: L&B
 CONFIDENTIAL - For discussion Purposes Only

ISP – Town Briefing – 9/28/2021

- Shelley, Rob
- Mea Knapp, JR Dicioccio, Peter Kirsch, Stephen Kaplan
- Clint, Logan, Monica
- Mahesh, Andrea

General Notes:

- What is your definition of gate capacity?
 - Group III aircraft
 - 10 existing gates with jet bridges
- Do we have any numbers regarding % of passengers using the LIRR?
 - A relatively small amount, likely because it is not convenient
 - 2019 the LIRR sales was 1,500 tickets (get away pass)
- Denver to MacArthur, but have a NYC meeting, how would someone know about the get away pass. Most people using the get away pass are outbound. Inbound passengers likely will not be knowledgeable about the get away pass.
- Do airlines like Southwest try to sell a get away pass?
 - No, this is a potential problem
- What is the per capital spend at airport concessions?
 - Airport is doing about \$6-8 per enplaned passenger, this is likely in line with other smaller airports with limited amenities
 - However, this is low compared to larger hub airports. This could be up to \$15-25.
- It shows Concept E as only having a ultimate capacity of 20 gates, we said it was 35.
 - 35 is correct
- The runway to the west, 15R, that is an existing runway. Both B and E utilize the existing runways.
 - All gates will be power in gates
 - A lot of airports have parking on both sides of pier concourses and taxi on the outer edge
 - There is no current or future tug operation
 - Aircraft is pushed back via a tug and then power out but all aircraft power in
- If phase two never happens you never develop Phase 2? The other areas could be RON positions or other airport support areas but would not have anything there in Phase 1.
- Where is there great development opportunity with Concept B
 - Some quantity of development opportunity as Concept E
 - Walkway is disconnected from the development opportunity
 - The airlines told us that the shortest route to the transit station was a higher priority item
- Concept E phasing, start with the middle first is the best approach. Developing the east concourse first would increase walking distance. Could build 6, 9 and the grayed out area.
 - 28 and 9 is ultimate growth capacity, there is no known current need for that additional capacity
 - Alleyways is a problem due to pushbacks and snow removal and jet bridge/apron/terminal maintenance

- All three require compost relocation, just a matter of when but initial build in B could maintain existing compost
- Phase 1 and Phase 2 are flexible but wanted first phase to have a short walking distance
- E and G not clear if airside surfaces are clear.
 - JLL prepared E and G and said that G is the best layout they can develop
 - No allocation for employee parking, nor for rental car facilities, maintenance facilities.
 - Biggest challenge is that commercial development could take 10-20 year, passenger experience going through on going construction isn't ideal
- Has JLL given us metrics / requirements? It's clear they want develop all around and not to one side. If L&B and JKL can there be an optimized plan, would it look like G or something different?
 - Thinks we could live with G but issues need to be resolved. JLL can't move any of the buildings out of the way, not sure how we resolve the roadway issues and passenger experience issues.
 - JLL needs to authorize L&B to redevelop / improve the plan if concept G goes back out to stakeholders
 - Walkways need to be elevated
- G is better than E and is similar to B
- Going north even without midway crossing
 - \$40m to move the compost facility, don't have a spot for it yet and must be relocated
 - If compost must stay where it is, a terminal cannot coexist
 - Is there going to be money to move North without the support / commercial development / midway crossing
 - Question is the amount of congressional support



DRAFT - CONFIDENTIAL

ISP – North Terminal Phasing
Overview
November 12, 2021

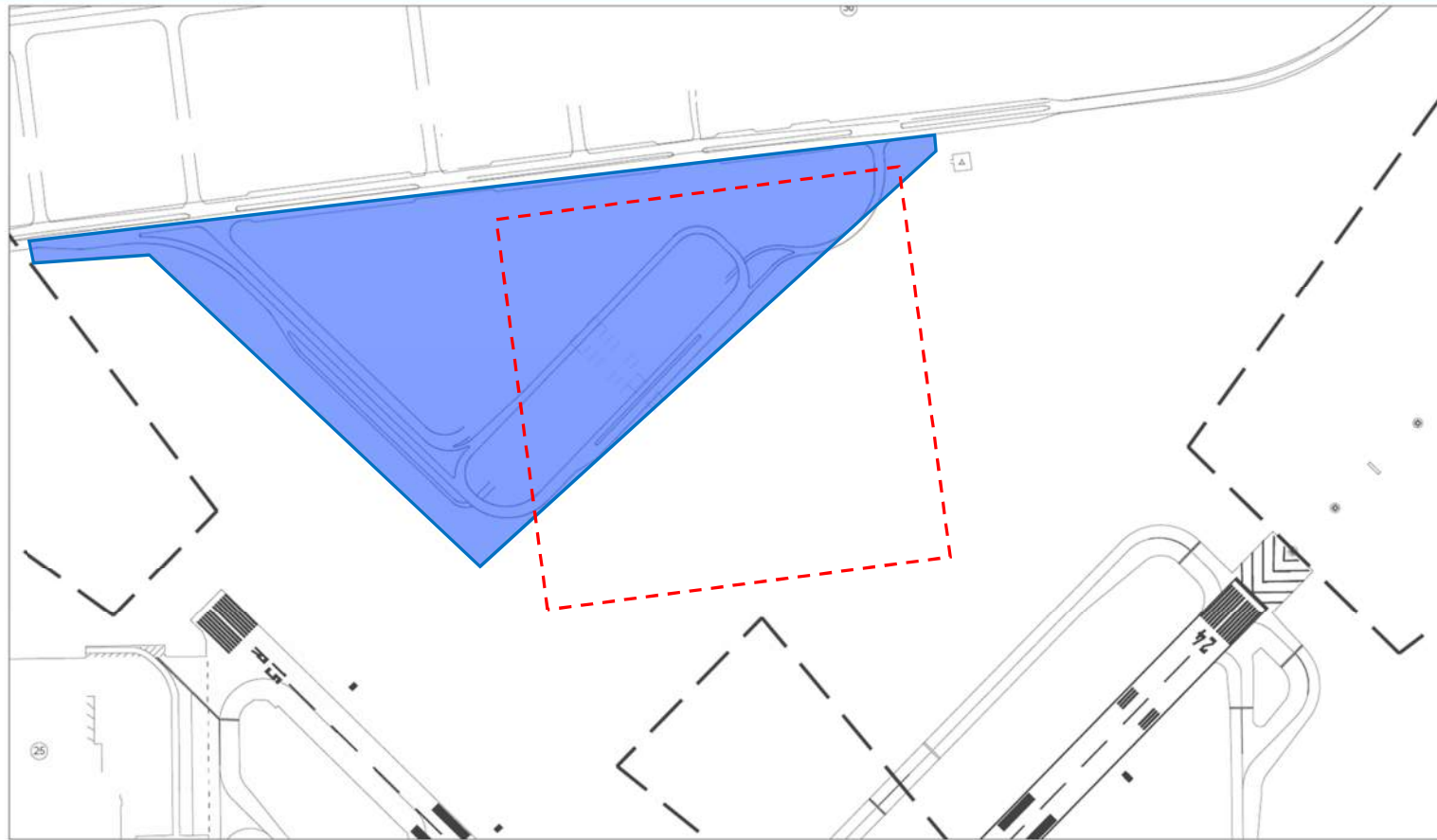


Phasing Overview

Phase Overview	<u>Contact Gates</u>	<u>RON</u>	<u>Activity level</u>
Phase 0 – Remove compost facility & build infrastructure	0 total gates		
Phase 1 – Initial 8 gates	8 total gates	4 positions	1.8 - 2.0 MAP
Phase 2 – Concourse extension adds 4 gates	12 total gates	4 positions	2.5 MAP
Phase 3 – Concourse extension adds 4 gates	16 total gates	6 positions	3.5 MAP
Phase 4 – New pier adds 7 gates	23 total gates	9 positions	5 MAP
Ultimate – New pier adds 6 gates	29 total gates	10 positions	7.0-8.0 MAP

Phase 0 – Enabling

3



Gate Overview

New	Total
0	0

Enabling Phase

- Relocation of Compost
- Utilities
- Roadways
- Airside
- Other

Concept G
Phase 0 - 0 Gates

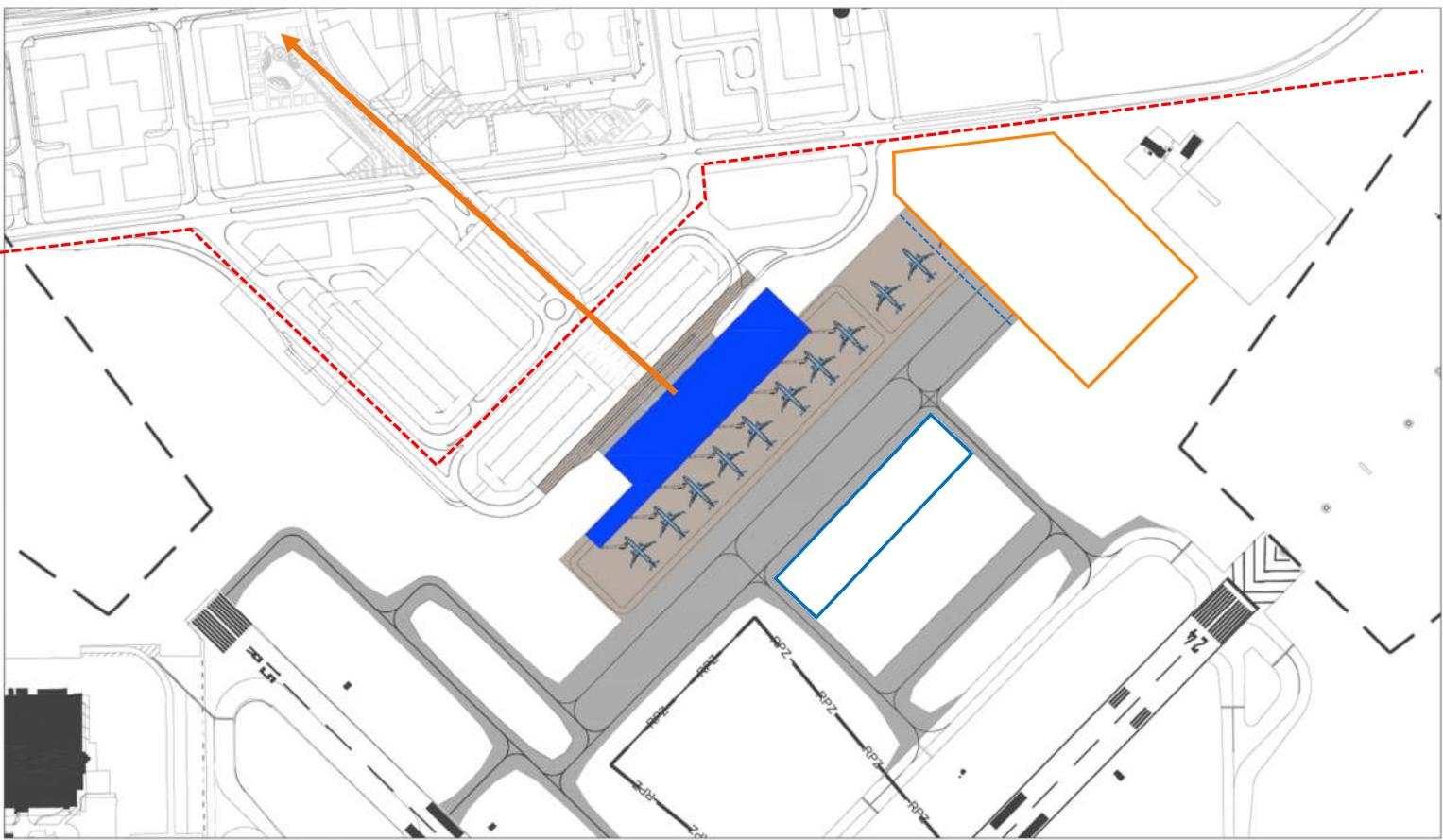
Legend
■ Phase 1



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CONFIDENTIAL - For discussion Purposes Only

ISP
Long Island MacArthur Airport

Phase 1



Gate Overview

New	Total	RON
8	8	4

Legend:

Phase 1

Concept G
Phase 1 - 8 Gates

Legend
■ Phase 1



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Phase 2



Gate Overview

New	Total	RON
4	12	4

Legend:

- Completed
- Phase 2

Concept G
Phase 2 - 12 Gates

Legend
 Phase 2
 Completed



Scale: 1"=300'
 CONFIDENTIAL - For discussion purposes only



Phase 3



Gate Overview

New	Total	RON
4	16	6

Legend:

- Completed
- Phase 3

Concept G
Phase 3 - 16 Gates

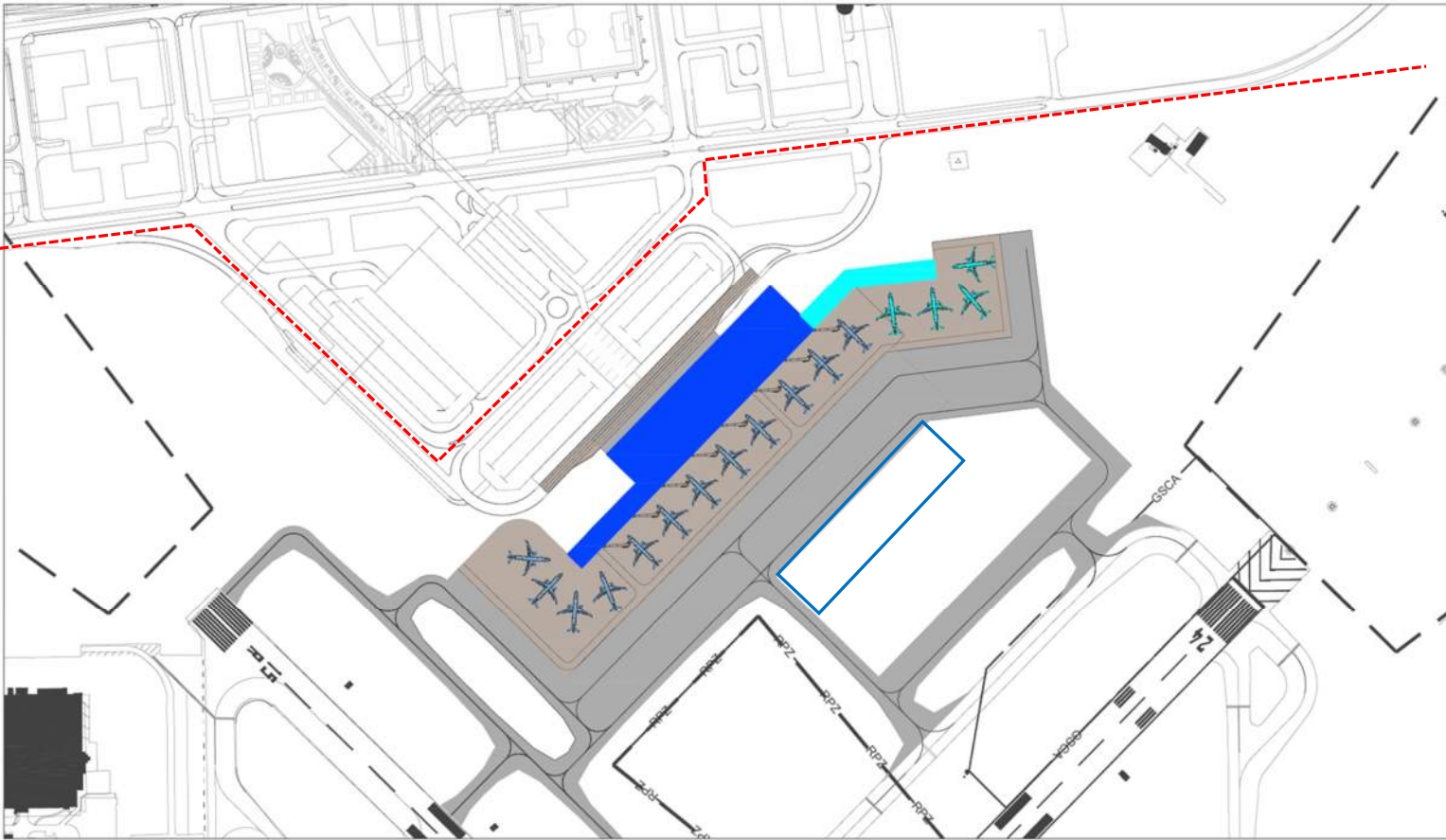
Legend
 Phase 3
 Completed



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Phase 3 - Alternate



Gate Overview

New	Total	RON
4	16	6

Legend:

- Completed
- Phase 3

Concept G
Phase 3 - 16 Gates

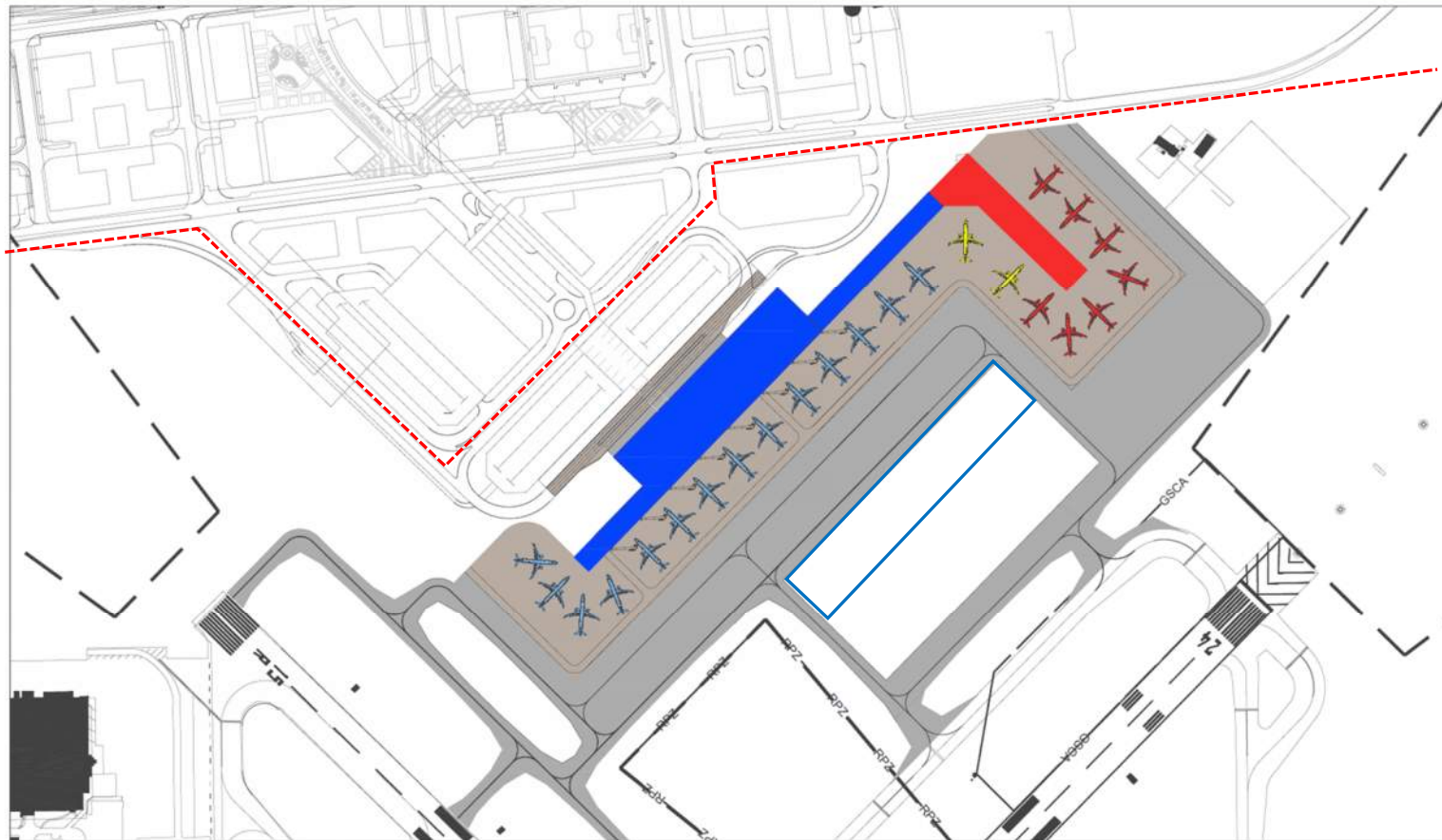
Legend
 Phase 3
 Completed



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Phase 4



Gate Overview

New	Total	RON
7	23	9

Legend:

- Completed
- Phase 4
- Relocated Gates

Concept G
Phase 4 - 23 Gates

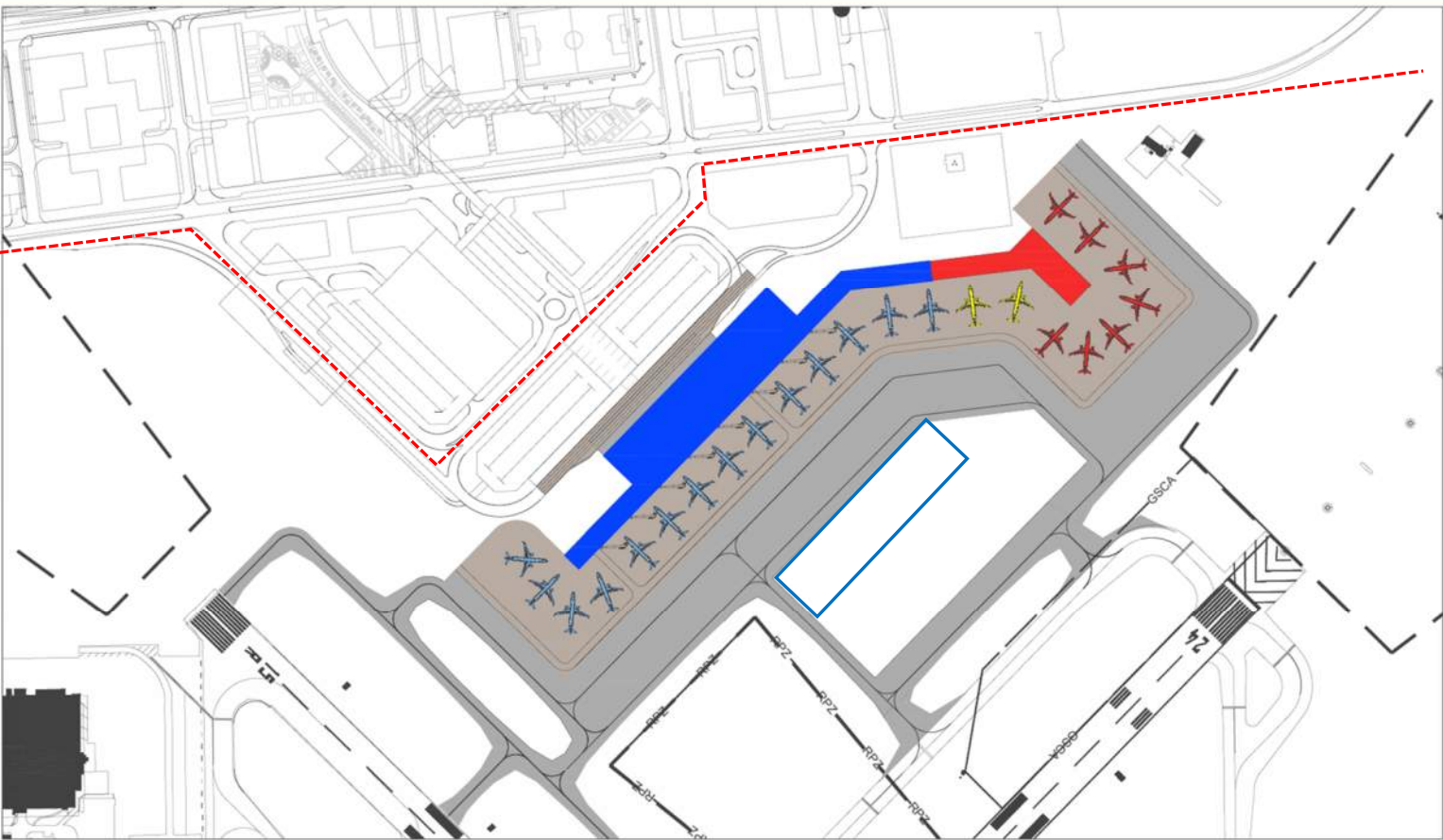
Legend
■ Phase 4
■ Completed
■ Relocated Phase 3 Gate Positions



Scale: 1"=200'-0"
Prepared by: L&B Group
 CONFIDENTIAL - For discussion Purposes Only



Phase 4 - Alternate



Gate Overview

New	Total	RON
7	23	9

Legend:

- Completed
- Phase 4
- Relocated Gates

Concept G
Phase 4 - 23 Gates

Legend
■ Phase 4
■ Completed
■ Relocated Phase 3 Gate Positions



Scale: 1"=1000'
 CONFIDENTIAL - For discussion Purposes Only



Ultimate



Gate Overview

New	Total	RON
6	29	10

Legend:

- Completed
- Ultimate
- Relocated Gates

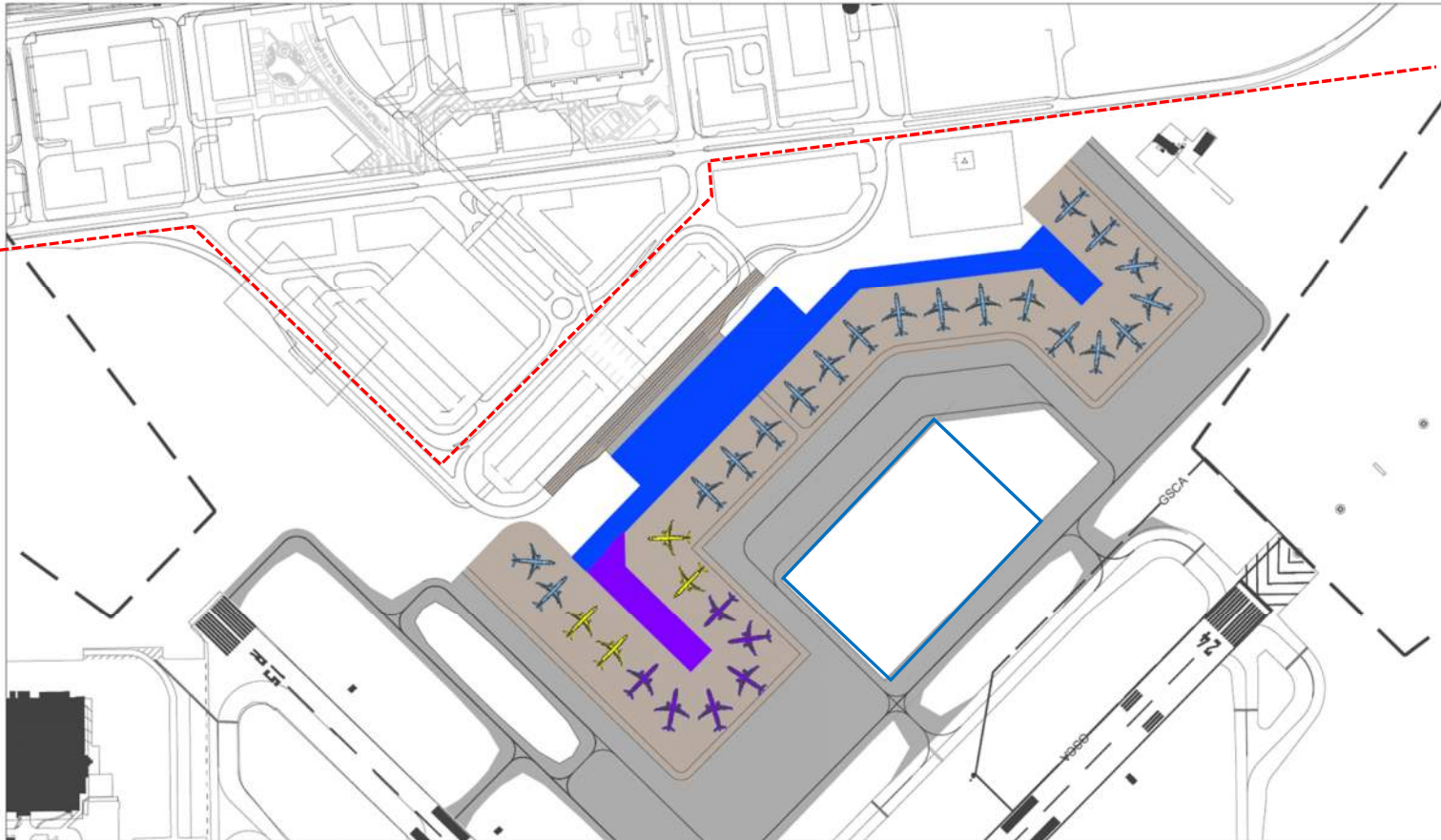
Concept G
Ultimate - 29 Gates

Legend
■ Ultimate
■ Completed
■ Relocated Gate Positions



Scale: 1" = 300'
 CONFIDENTIAL - For discussion Purposes Only

Ultimate - Alternate



Gate Overview

New	Total	RON
6	29	10

Legend:

- Completed
- Ultimate
- Relocated Gates

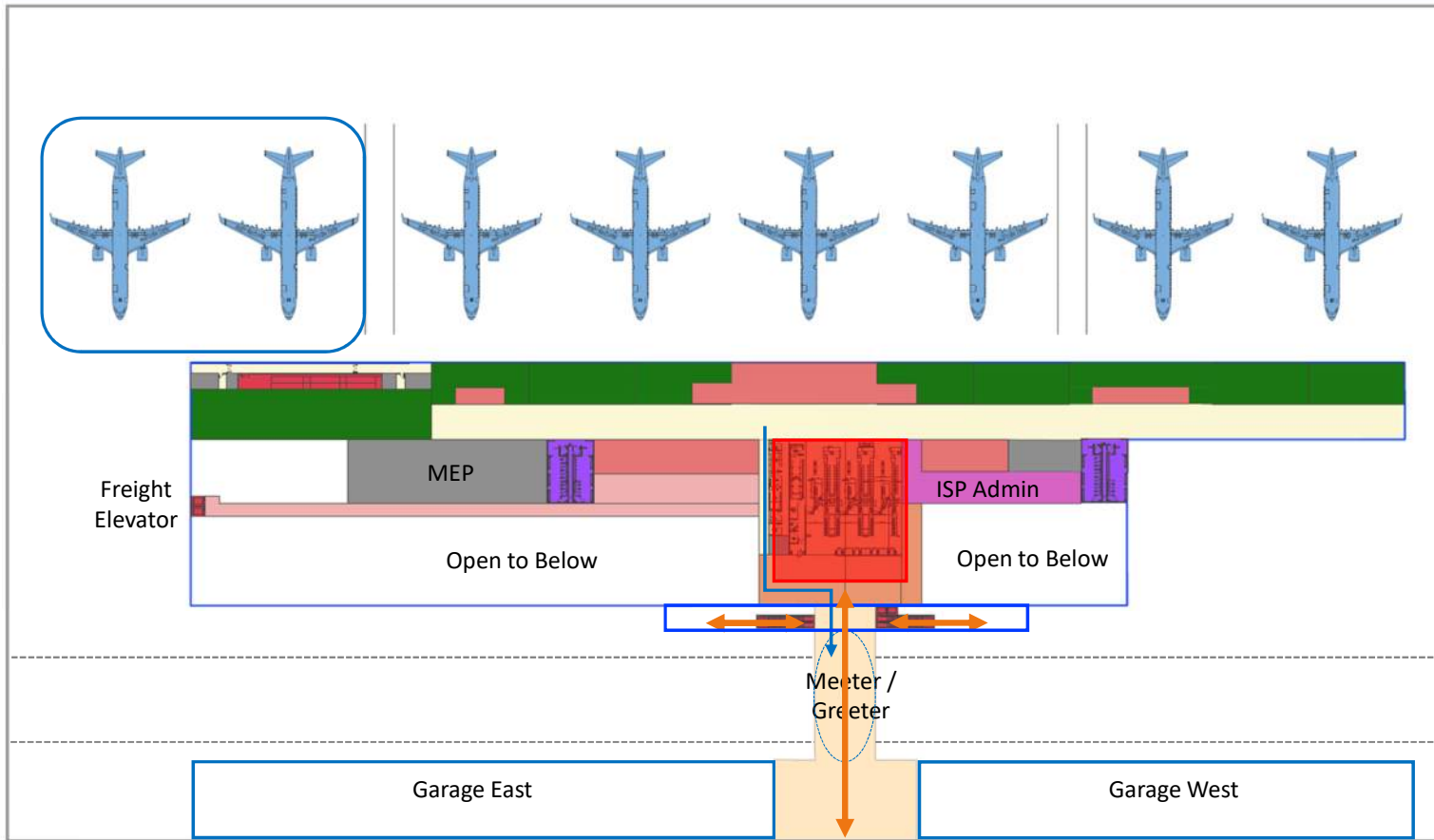
Concept G
Ultimate - 29 Gates

Legend
■ Ultimate
■ Completed
■ Relocated Phase 3 Gate Positions



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Gate Level



Gate Level
NY 201701200001 Long Island MacArthur Airport - 11/20/17 11:00:00 AM

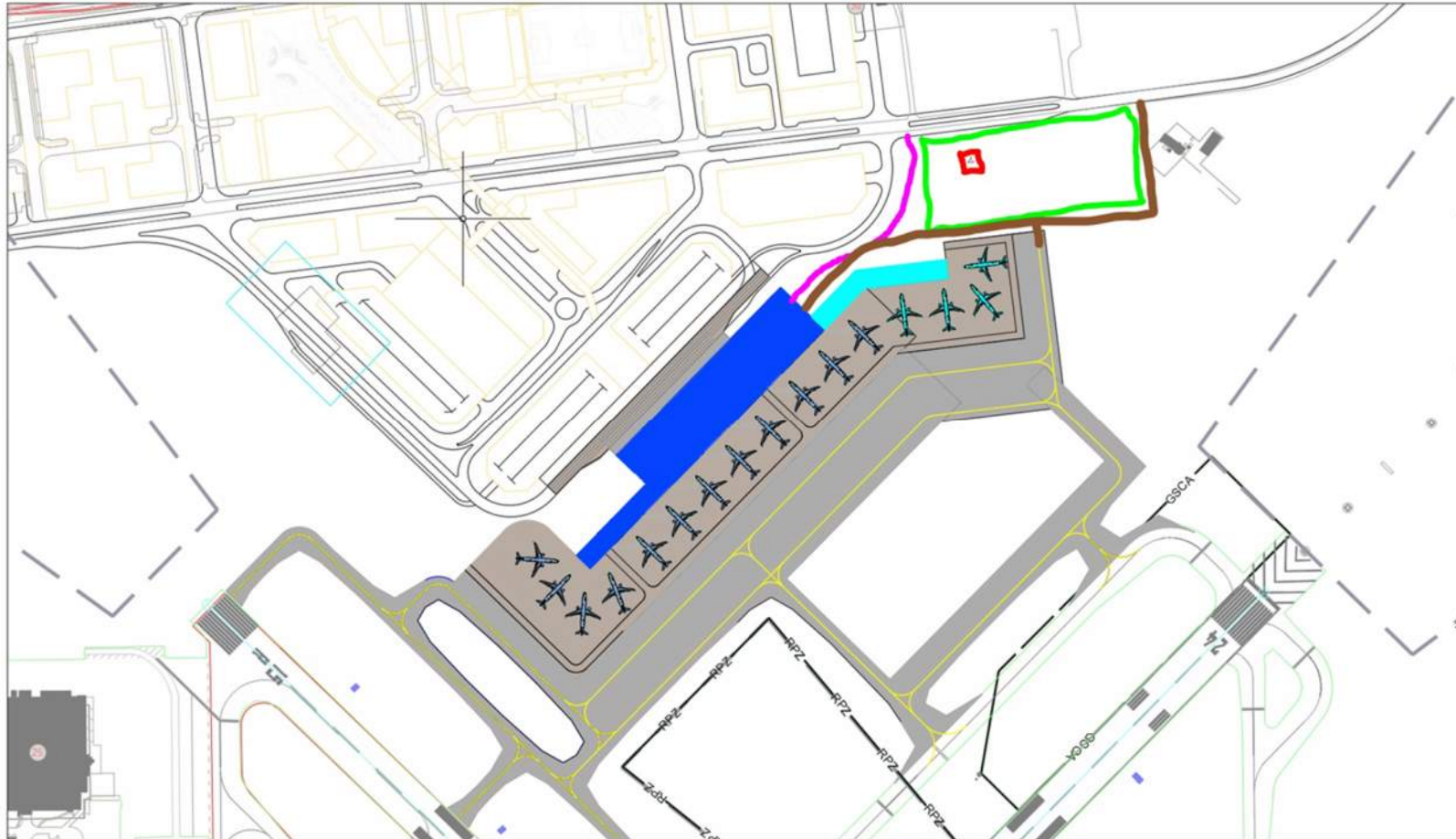
- Legend**
- Restrooms
 - Secure Circulation
 - Vertical Circulation
 - Concession Support
 - Claim Area
 - Airport Operations
 - Non-Secure Circulation
 - Support or MEP
 - Loading Dock
 - FIS
 - BSC
 - Concessions
 - ATO
 - Inbound Baggage
 - Checkpoint
 - Holdrooms
 - Check-in
 - Baggage Make Up



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 CONFIDENTIAL - For discussion Purposes Only



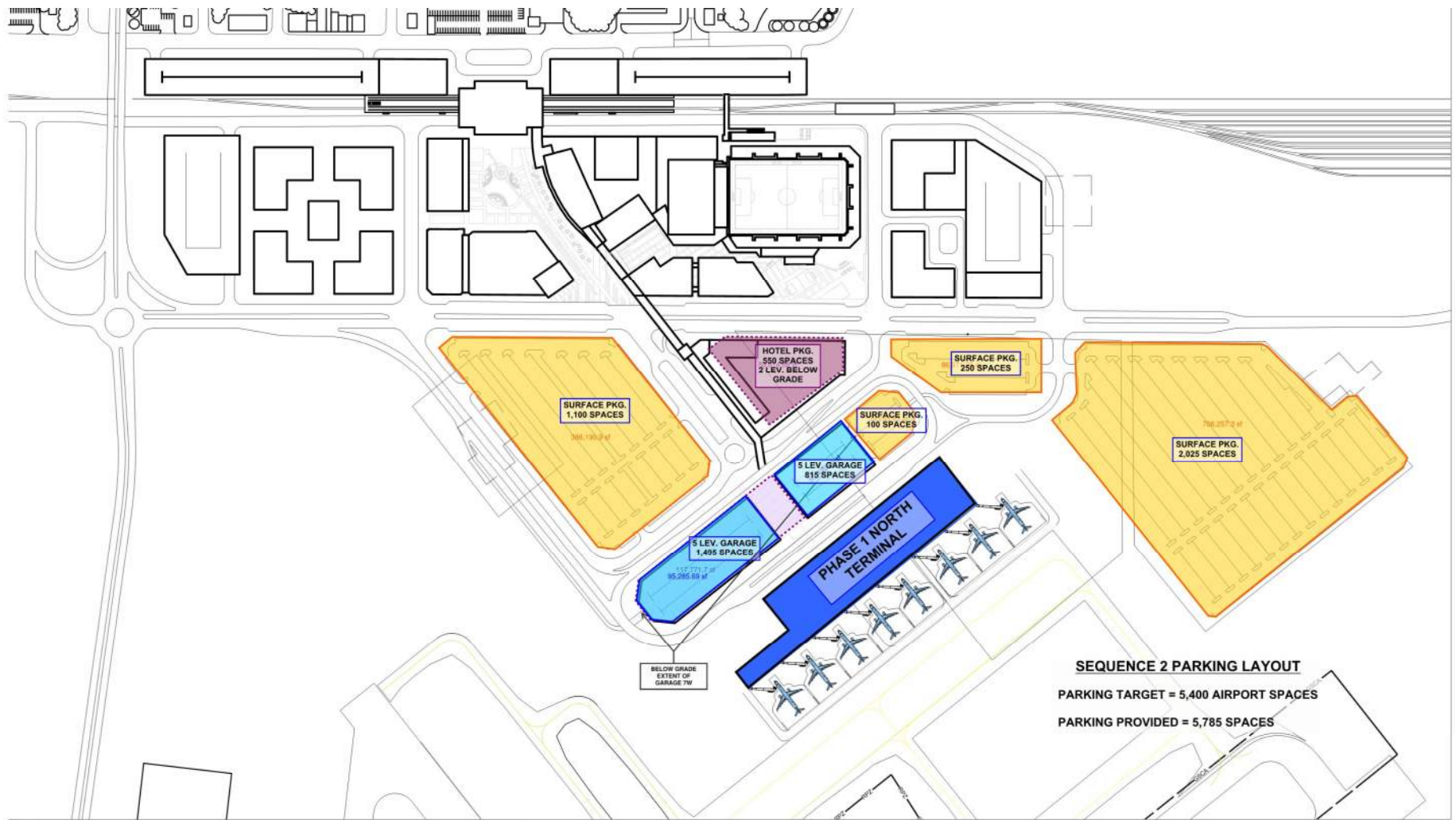
Parcel C



JLL Parking Approach



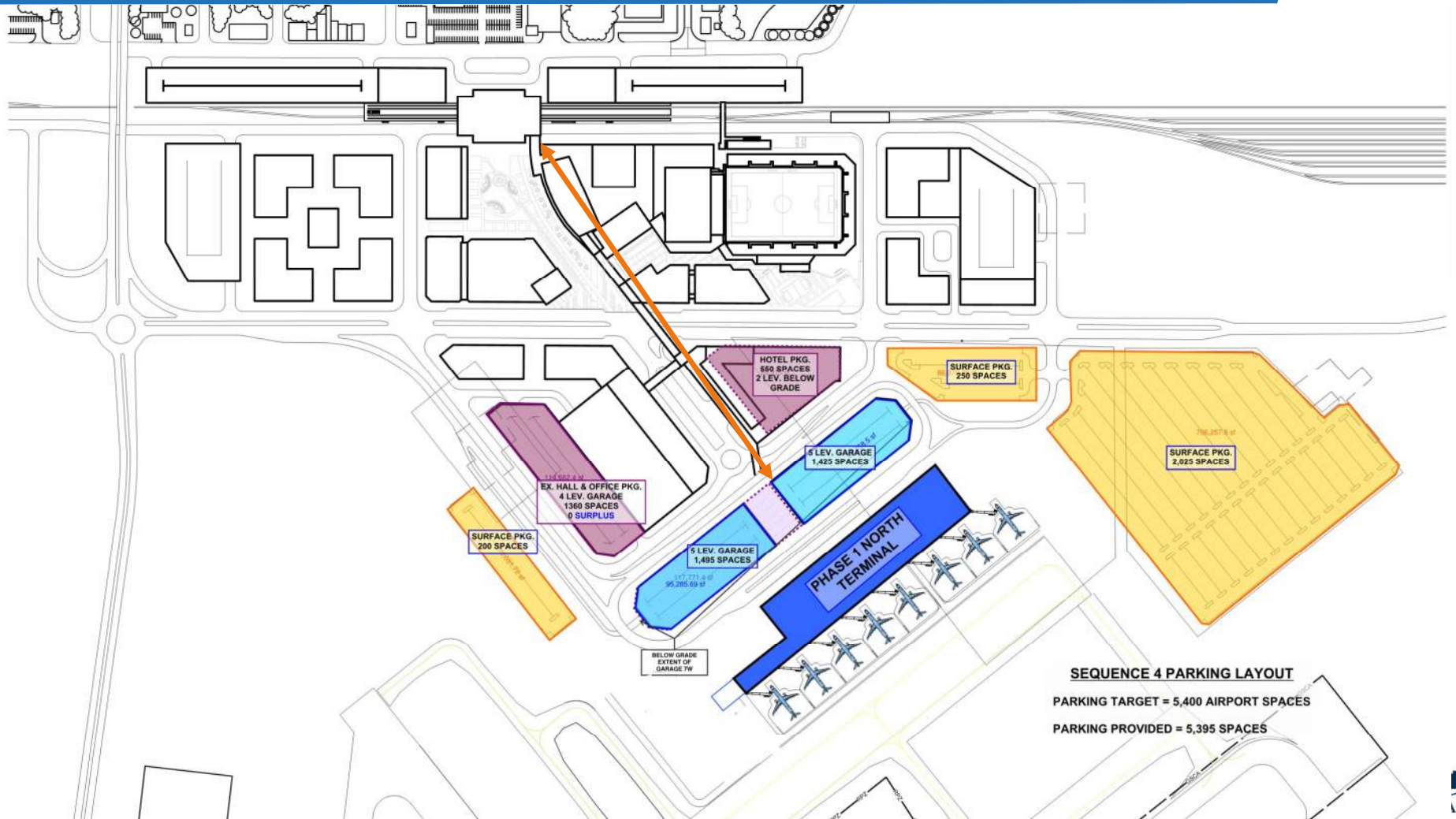
JLL Parking Approach



JLL Parking Approach



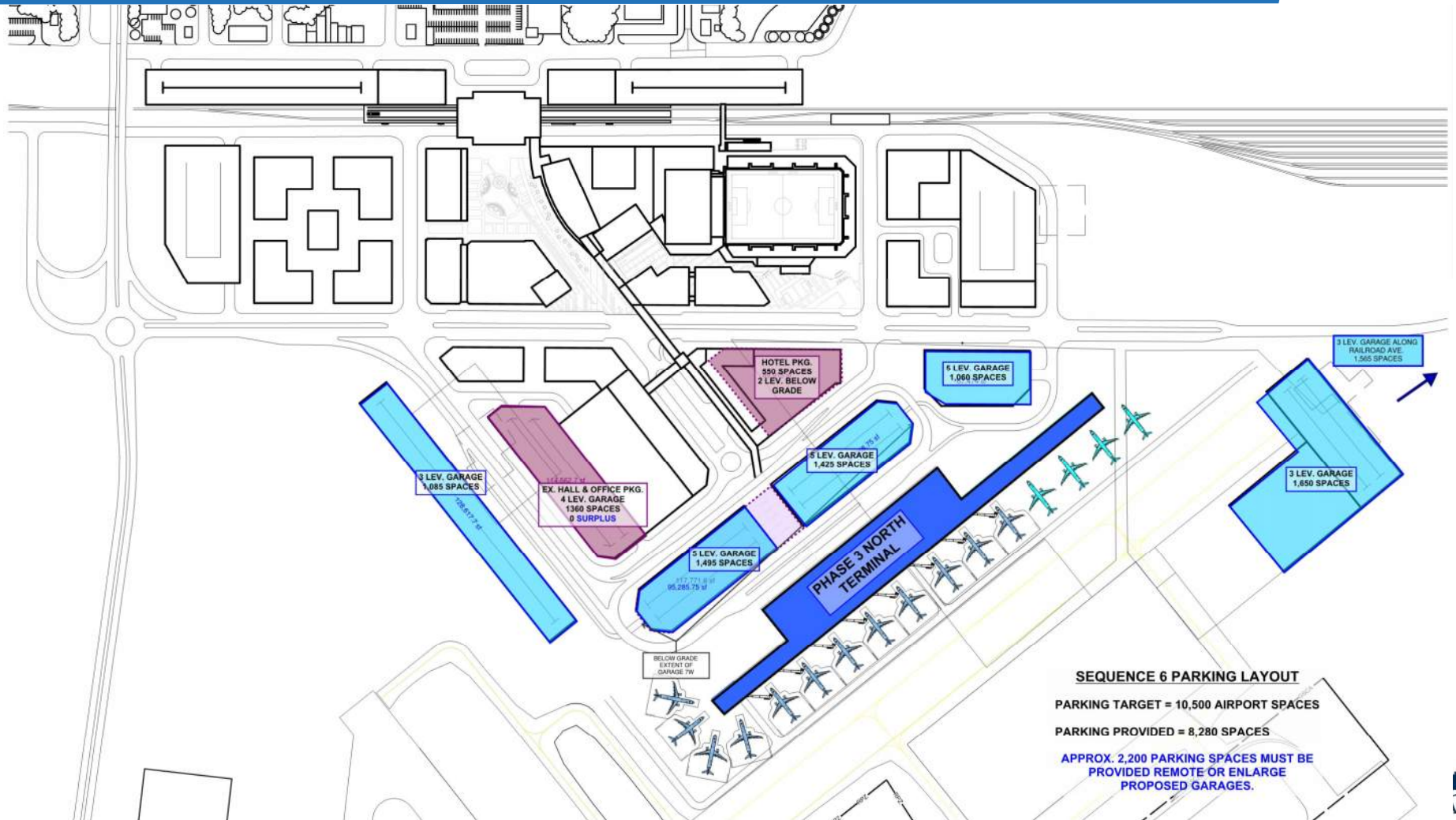
JLL Parking Approach



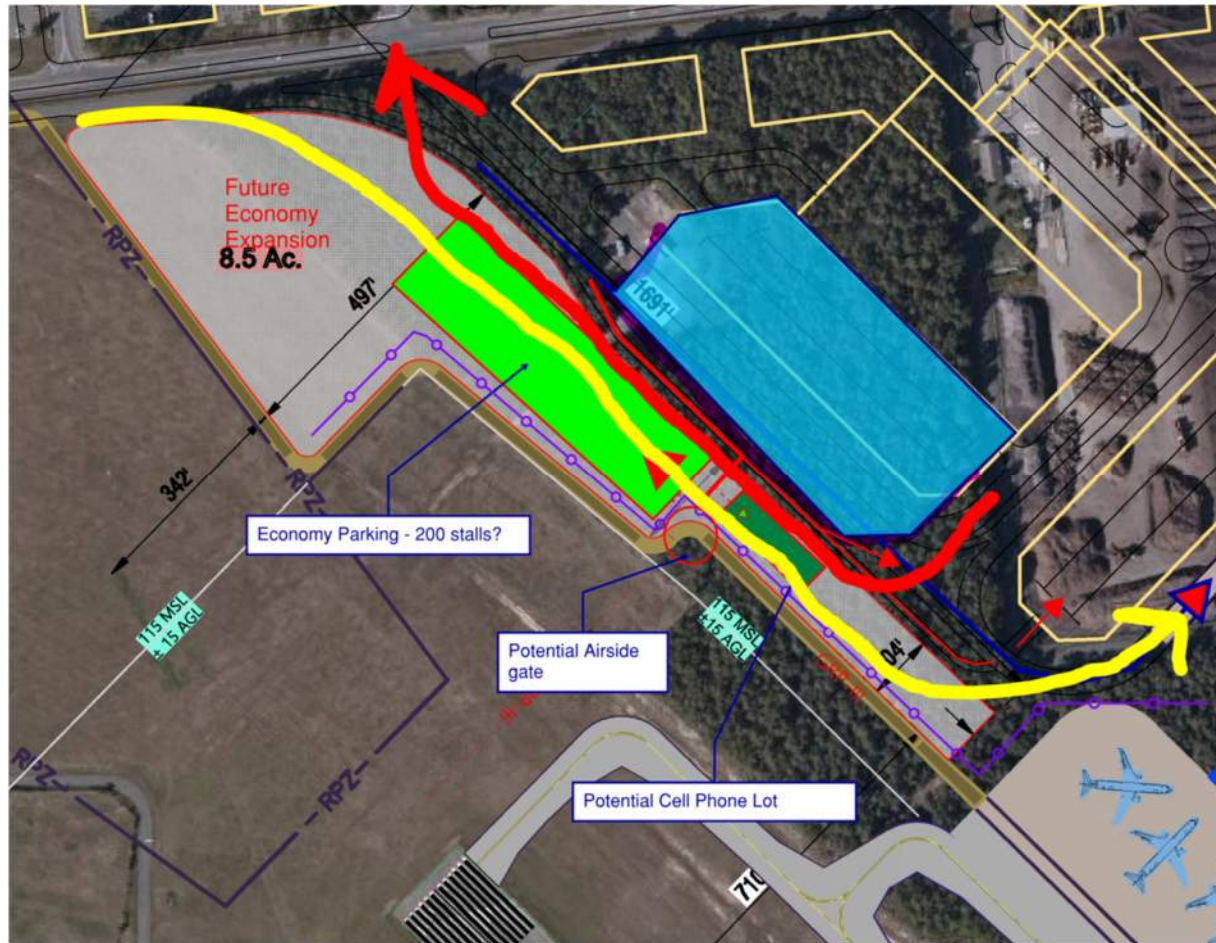
JLL Parking Approach



JLL Parking Approach



15R / Airport Roadway Approach



ISP - Conduct a Terminal Area Narrative Report Refined North Terminal Concept Stakeholder Presentation

FAA Project: Grant 3-36-0046-103-2019

November 30, 2021

Remote / Microsoft Teams

Attendees:		
Name	Company/Representation	Email
Shelley LaRose	ISP Airport	SLaRose@islipny.gov
Robert Schneider	ISP Airport	rschneider@islipny.gov
Gerri Mulligan	ISP Airport	gmulligan@islipny.gov
Steve Siniski	ISP Airport	ssiniski@islipny.gov
Andrea Luft	JKL	ALuft@jklengineers.com
Logan Smith	L&B	lsmith@landrum-brown.com
Clint Laaser	L&B	claaser@landrum-brown.com
Jose Moreno	FAA - Planning	jose.moreno@faa.gov
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Mike Gillock	Southwest	Mike.Gillock@wnco.com
Diogenes Fermin	Southwest	Diogenes.Fermin@wnco.com
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Joe Modica		
Lou Ferech		
Evelyn	ADO	
April Converse		
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J Daunt		
Teresa Mattera		
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Matt L		
Mike Fischer	ISP Custodial	mfischer@islipny.gov
Dorma		
Rich Lerner		
R. Robson		
M. Stack		
Zack		
Robert McAdams		

meeting minutes



The meeting notes below were taken during the ISP stakeholder meeting via Zoom.

Discussion:

- Fred Catanese
 - Is the promenade enclosed? The train the plane promenade, we're looking at an enclosed walkway that is elevated.
 - It's a long way to walk, especially with kids and luggage
 - Need a place to drop bags at the train terminal
 - It will take longer than 5-7 minutes with kids
 - Others mentioned that many other airports have longer walks between terminals
 - Any east side access, does RR avenue deadend?
 - We would look to complete the improvements on RR ave to the east and east, but this pieces comes in the next phase with the traffic analysis during environmental assessment
 - Is there a way to get to the badging area via a non-secure pathway?
 - Yes, from both the upper and lower level
- Ron
 - How many people would be using the train connection?
 - Currently 1,800 people have the connection passes
 - Non-stop service to the city every 20 minutes once all LIRR upgrades are complete
- Mike Gillock
 - How long is the train ride?
 - Express services will be 60 minutes, currently it's an hour and 20 minutes.
 - Skeptical amount moving north, tough to envision the need for a bigger terminal than what we already have.
 - How much infrastructure finding can ISP get?
 - 21.6m earmark
 - Unsure of other sources
- John
 - Where is short/long term parking, what goes in the garage?
 - Garage structures are more expensive prime parking, parking further from the terminal at surface parking will be less expensive. Right now we are just trying to accommodate the same number of spaces as on the south side.
- Kim Valdes
 - How tall is the parking structure?
 - 5 floors with one level under ground
 - Not more than 40' above ground level
 - Need to file 7460 regarding radar, there is concern about the proximity of the building to the radars
 - Fuel farm just below the radar, this may not be permitted next to the radar, due to explosion risk
- Tosin Kasali
 - How will the concessions be configured?
 - Numerous centralized concessions areas with a view of the airfield, connected to support areas with back of house access and a loading dock
- Jeff
 - What is the target timeline for these phases?
 - These efforts take a long time, environmental would take a couple of years, then design process, then funding, etc. The earliest would be 2026-2027.
- Joe
 - Electrical access under the checkpoint? The footprint isn't always the same when new equipment is introduced, impacts data and power locations.
 - Checkpoint is on the second level
 - This could include underfloor raceways or access squares

meeting minutes



L&B Team next steps:

Schedule:

ISP - Conduct a Terminal Area Narrative Report Refined North Terminal Concept Stakeholder Presentation

FAA Project: Grant 3-36-0046-103-2019

December 7, 2021

Remote / Microsoft Teams

Attendees:		
Name	Company/Representation	Email
Shelley LaRose	ISP Airport	SLaRose@islipny.gov
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Gerri Mulligan	ISP Airport	gmulligan@islipny.gov
Steve Siniski	ISP Airport	ssiniski@islipny.gov
Andrea Luft	JKL	ALuft@jklengineers.com
Logan Smith	L&B	lsmith@landrum-brown.com
Clint Laaser	L&B	claaser@landrum-brown.com
Monica Geygan	L&B	Monica.geygan@landrumbrown.com
Jose Moreno	FAA - Planning	jose.moreno@faa.gov
Kim Valdes	FAA - Tech Ops	kimberlee.valdes@faa.gov

The meeting notes below were taken during the ISP stakeholder meeting via Zoom.

Discussion:

- What is our approach to closing the FAA Grant?
 - Grant 103-19 – Received a request to close the grant and FAA is in agreement. The study demonstrated that there was no reason to continue the evaluation of the south terminal, which was the original intent of Grant 103. Both parties agree to close the grant.
 - The next steps will be to:
 - 1. Submit the report, the report is complete and will be submitted. FAA must review the report.
 - 2. If the report is accepted, the closing procedures will be, no differently than other grants. The 2-3 invoices, FAA will need to determine what amount was used on the south terminal vs other efforts
 - 3. The airport may need to reimburse the FAA
 - 4. The airport needs to submit a closing package
- What happens if we have to go back to the original work if the board doesn't approach the north terminal plan. Do we want to keep the grant open? Or would ISP apply for a new grant? December 16th is the vote, so we'll know what happening very soon.
- Was the original Report 103 completed? No it's not fully completed.
- Report included up to the alternatives, doesn't include the implementation plan and the preferred alternative. Doesn't include the phasing and cost estimation pieces.
- How many customers do we think will come to ISP coming via the LIRR in the future?

meeting minutes



- We have the third track and in 2022 east side access, nonstop service to NYC every thirty minutes.
- Connection to grand central
- ISP captures 1.8% of the NY metro market. When WN was here, at their height (40 different destinations) they captures 4% of the metro market.
- 2.8m total passengers within the study period (total pax, total catchment)
 - 1.8-2m Phase 1
 - 2.5m Phase 2 with 4+ gates
- Is there any provision for maintenance areas at the north?
 - No, south areas would be used for maintenance
 - Airlines have not indicated a need, Breeze does this in Nashville and Breeze will do this in Baltimore
- The elevated walkway would have walking space that is not dependent on mechanical assistance
- Air carriers are getting away from traditional counters, the area between the garages would also for fast bag drop.
 - Resident parking to stay on south, rental car maintenance to stay on south
- Where is the boundary of airport property shown on the Concept G commercial development slide?
 - Revise upper right parcel from yellow to orange
 - Verify the encumbrances on the land aside from AIP, are there any land acquisitions?
 - 163 Impacts
 - When you have a parcel that is non-AIP vs AIP then you have a hybrid review, some parts FAA might not have authority over it. This is research that can be done at the planning stage, this will include deeds and land research to support this.
 - ISP legal resources will be doing this, reach out to Amy
 - Refer to Exhibit A on the Master Plan Update, but there was one parcel that was mistakenly listed as released
- FAA facilities in area of north, do these need to be relocated? The RTR would require relocation, need to list this. The ASR would likely stay where it is today. The ASR requires study to determine if the proposed development impacts the ASR.
 - Add these items to Phase 0, there are a lot of items in the enabling package.
 - Compost facility and many other items
- Where are we missing GA positions with commercial operations?
 - From a CBP perspective we need a commercial FIS facility and we need to accommodate GA international arrivals?
- Compost facilities
 - 100% located on airport property
 - Town of ISP rents the property for use
 - Are
 - No environmental under NEPA that would be required?
 - Should be folded into overall NEPA effort that would normally be done
 - Environmental should include all phases of development all parcels impacted
- Governor would like to fund this compost relocation separately and get this project going. Didn't think it needed to be linked to the overall NEPA effort. Can this be done early/separately?
 - It would be moved to a state of the art indoor facilities
 - Governor what's to announce that she is clearing the path for a north terminal and a connection to the train and a call to action to Schumer to fund the new terminal
- We have not completed planning or environmental review. Can't yet say what is going to happen here. Don't want to be in the same situation as the Port Authority with the air train
- Include the smaller expansion in the NEPA (Phase 2) that is within the planning horizon.
 - For non aviation development that may happen within the planning horizon, if that property is released, will any of that property be connection?
 - Need to do section 163 to see what FAA has authority over, but doesn't feel like it would be included.
- We are on the right track with FAA coordination. In term of Transit Oriented Development
 - ISP has fully disclosed the plans with FAA and this will make the overall process easier

meeting minutes



- It's an attractive transportation hub, one concern is the demand, will the demand materialize? This is a key issue.
- Talk to FAA admin (or staff) to better understand this project, as we come closer to the final document submission, does this help or hurt?
 - Is there an external force that might say this is not a good plan?
 - Want to avoid stumbling blocks moving forward
 - In terms of marketing this project, FAA does have the ability to forward projects that might have interest from the DOT. This is one option.
 - This goes through a few steps and could spread awareness, ISP could provide a project brief if there is interest by DOT
 - Could go directly to the director but it would be better to push through the FAA process to share this information as a partner in the effort

L&B Team next steps:

Schedule:



ISP – North Terminal Concept Refinement

ALP & South Existing Land Reallocation - Kickoff

February 16, 2022



Agenda



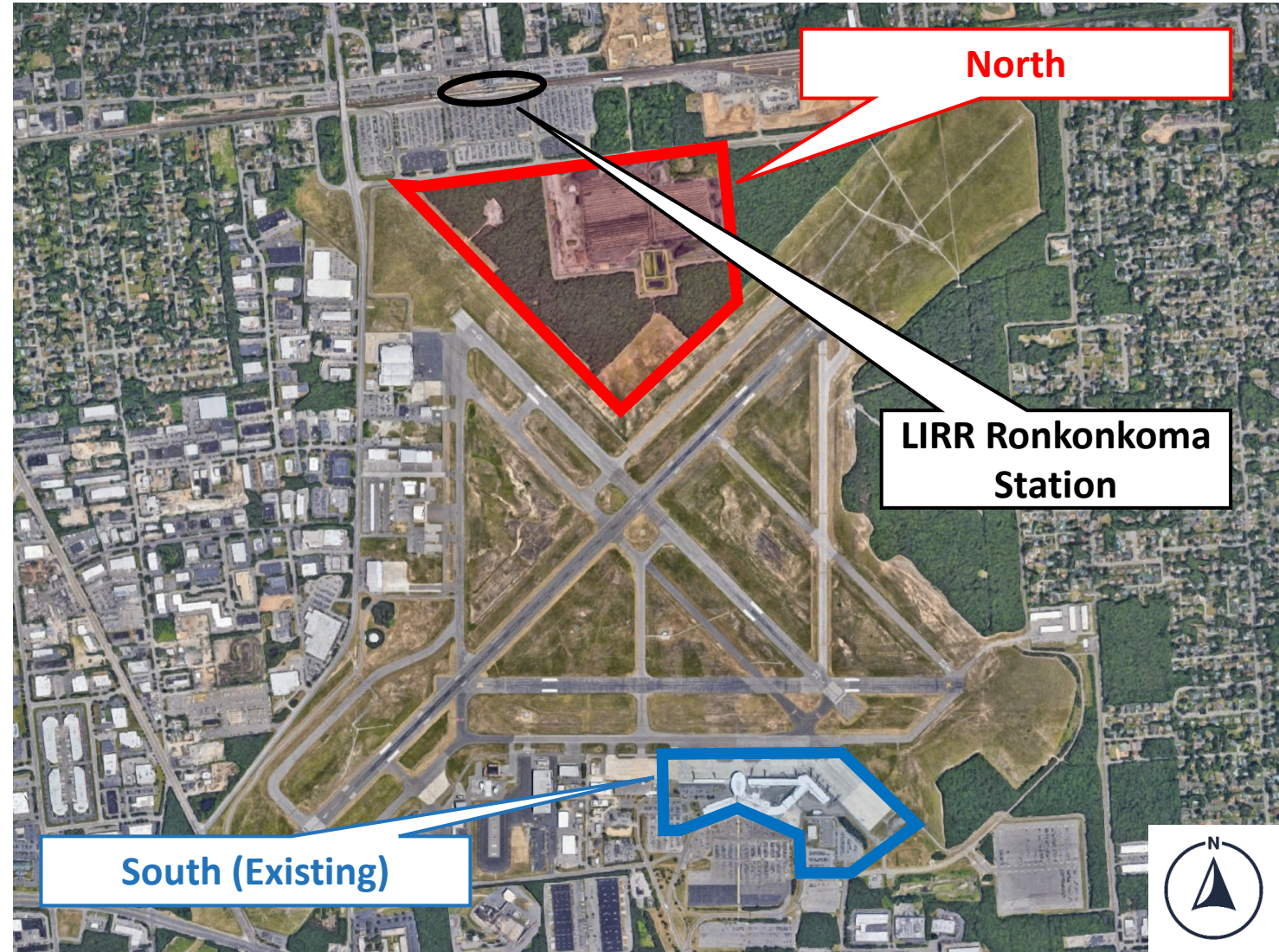
ISP –North Terminal Concept Refinement

Kickoff:

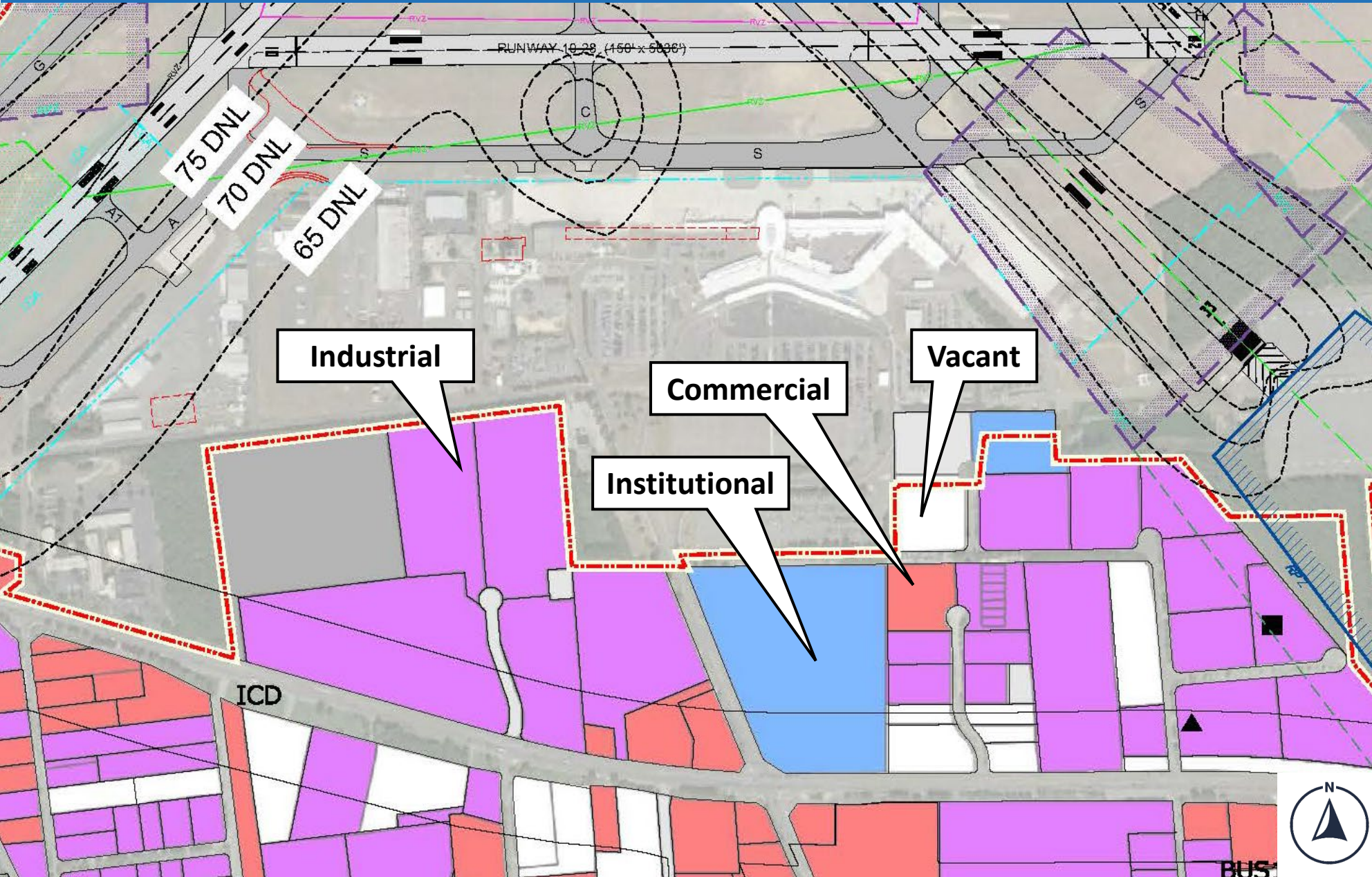
- Existing South Terminal Area;
Conceptual Reuse
- ALP Update; Verify Elements

Existing South Terminal Area - Reuse

- New terminal site results in abandoned land uses to South
- Identify potential replacement land use/reuse options
- Identify existing on-airport adjacent land uses
- Identify existing off-airport adjacent land uses
- Verify “Study Area”
- Discuss future land use development ideas/opportunities
- Discuss other strategic plans for the airport and surrounding area



Existing Off-Airport Adjacent Land Uses



OFF-AIPIORT LAND USE LEGEND

- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- INSTITUTIONAL
- RECREATION AND OPEN SPACE
- VACANT
- UTILITIES
- WASTE MANAGEMENT
- ZONING BOUNDARY
- EXISTING PROPERTY LINE
- FUTURE PROPERTY LINE
- NOISE CONTOUR
- EXISTING RVR
- FUTURE RVR
- GOVERNMENT FACILITY
- SCHOOL
- CHURCH
- CEMETERY

EXISTING

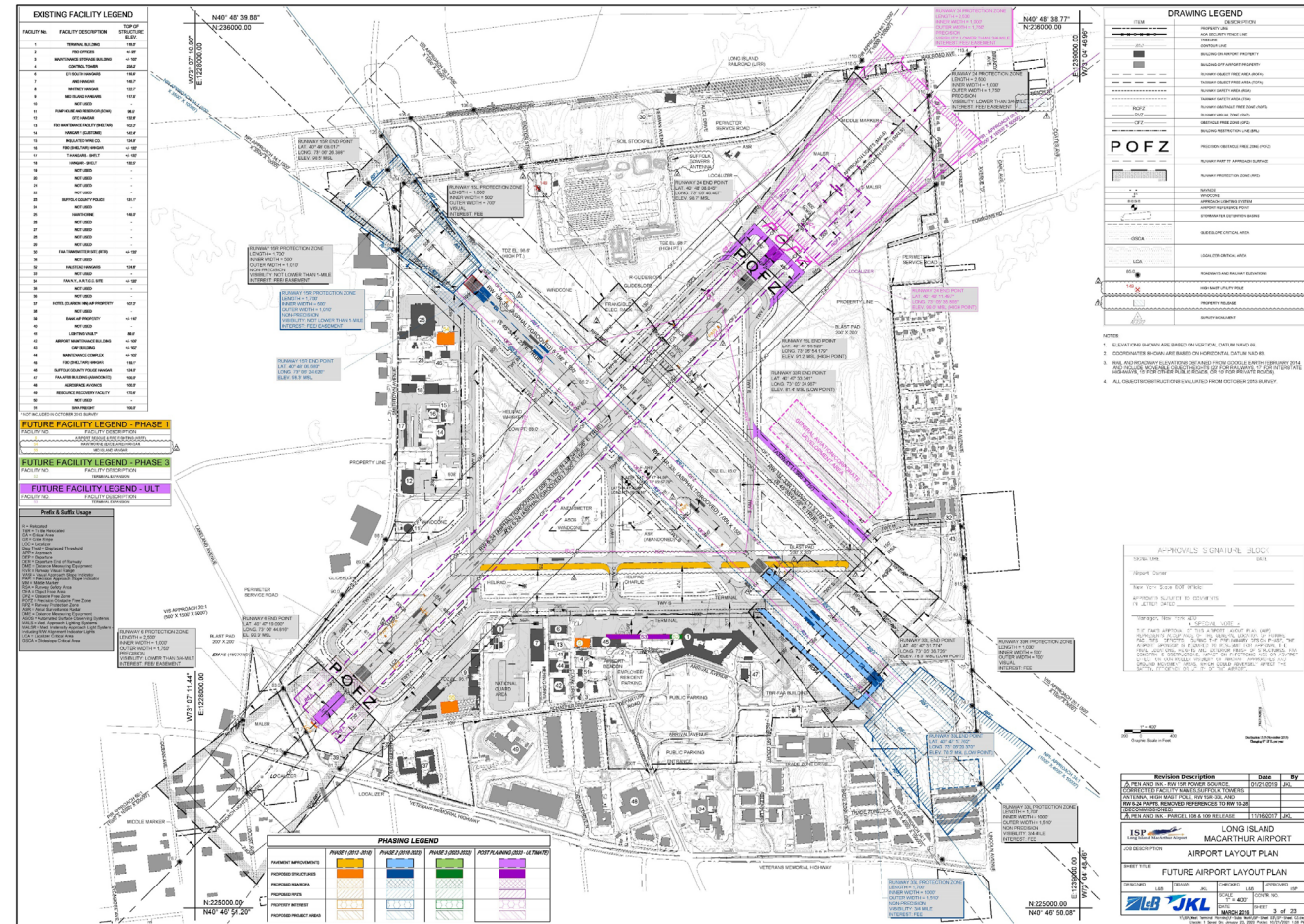
- On-Airport Adjacent Land Uses
 - Government
 - Commercial
 - General Aviation
 - Rental Cars
 - Aviation Related Auto Parking
 - Employee/Resident
 - Identify what is staying
- Off-Airport Adjacent Land Uses
 - Industrial
 - Commercial
 - Institutional

FUTURE Possibilities

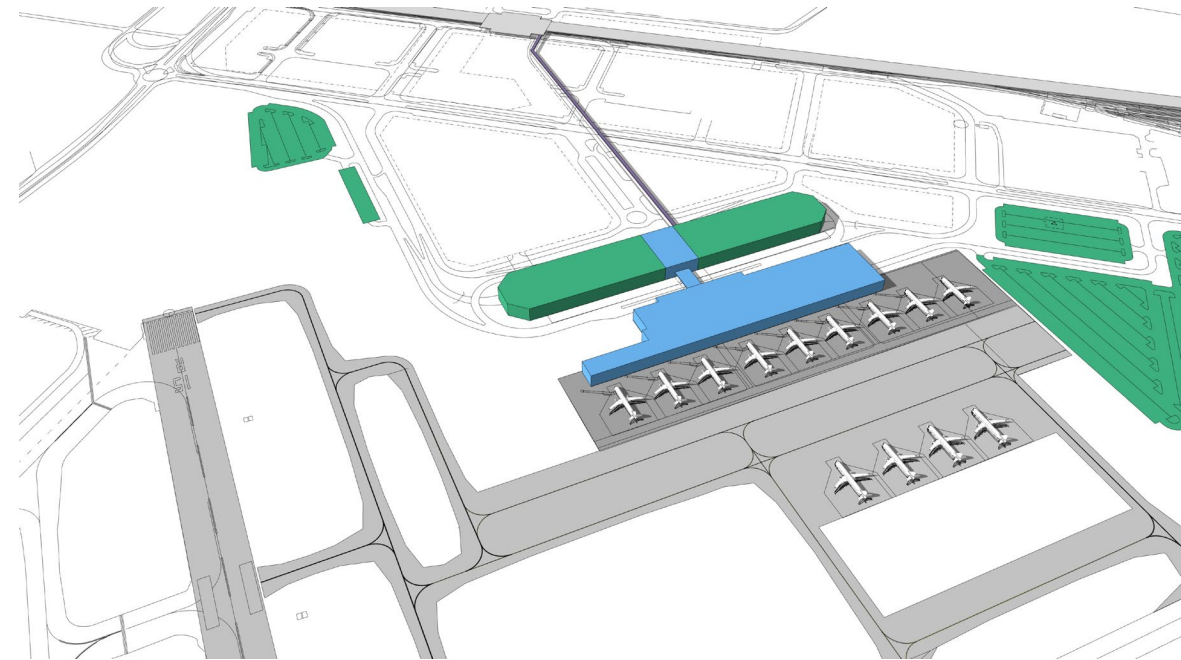
- **Cargo**
- Aircraft Maintenance
- Airport Maintenance
- Institutional (FAA Facility?)
- General Aviation (Flight School?)
- National Guard Expansion
- Commercial/Business Park
- Other ???

– ALP Drawing Set sheets to be updated:

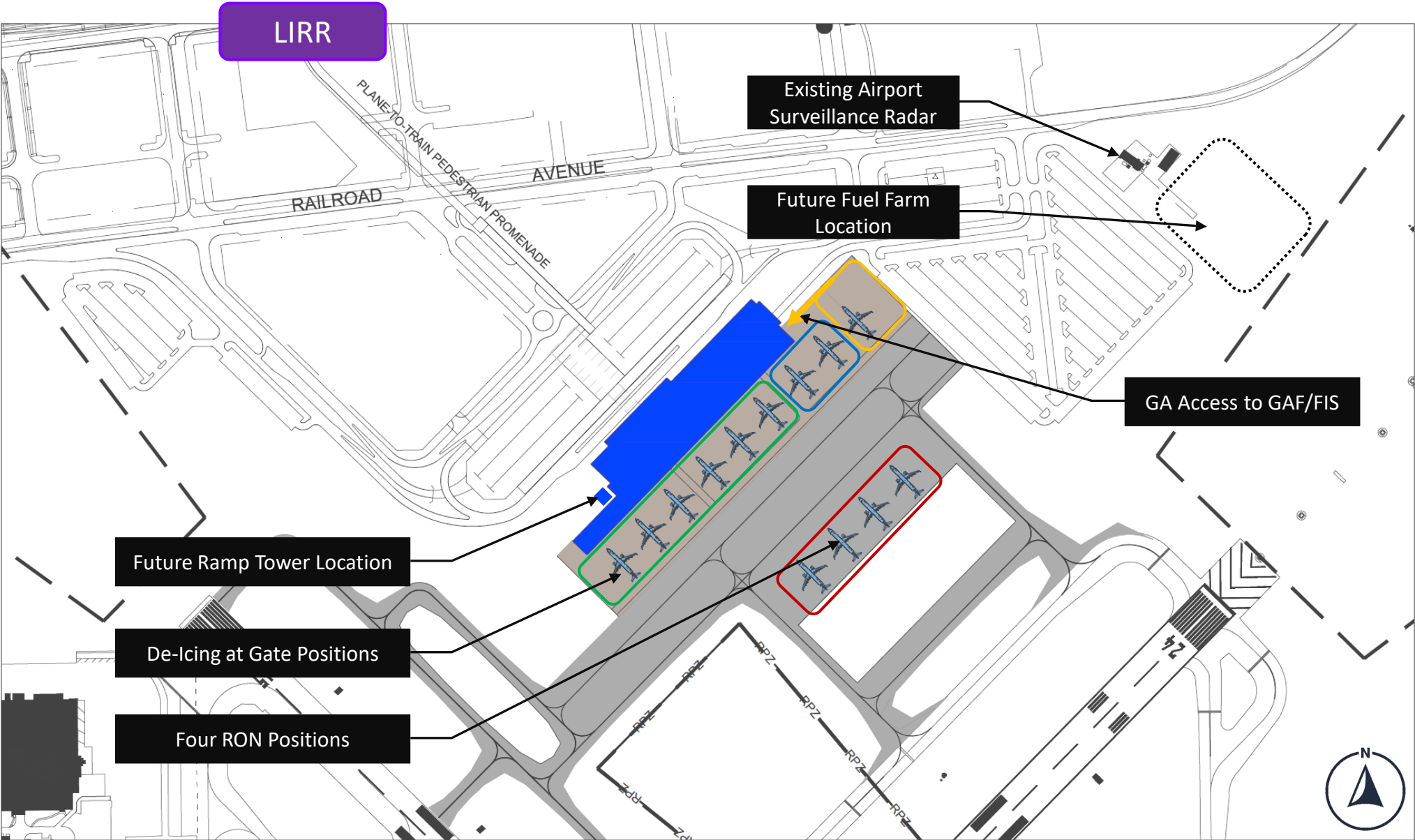
- Cover Sheet
- Existing Airport Layout Plan
- Future Airport Layout Plan
- Airport Data Sheet
- Runway 24 Approach Plan and Profile
- Runway 15R Approach Plan and Profile
- Runway 15L-33R Approach Plan and Profile
- Runway 15L-33R & 15R-33L Departure Surfaces
- Exhibit “A” Property Map
- On-Airport Land Use Plan



- North Terminal
 - Airside
 - LIRR Connection
 - Landside
 - Commercial Development
 - Full Build (Phases 1 +2) -or- Phases 1 & 2 (complicated with future ALP phasing)
 - Convert years to Planning Activity Levels (PALs) for ALP phasing
- Existing South Terminal Reuse Plan
- Revise to show Runway 10-28 as an existing taxiway
- Update Exhibit “A” Property Map
 - Parcel 108 & 109 Release (2017 Pen & Ink Update)
 - Other?
- Update drawings to reflect 2019 Pen & Ink Update
 - RW 15R power source
 - Corrected facility Names
 - Suffolk towers antenna
 - High mast pole
 - RW 15R-33L and RW 6-24 PAPI's
 - Remove all references to RW 10-28
- What else needs to be updated while we are at it?

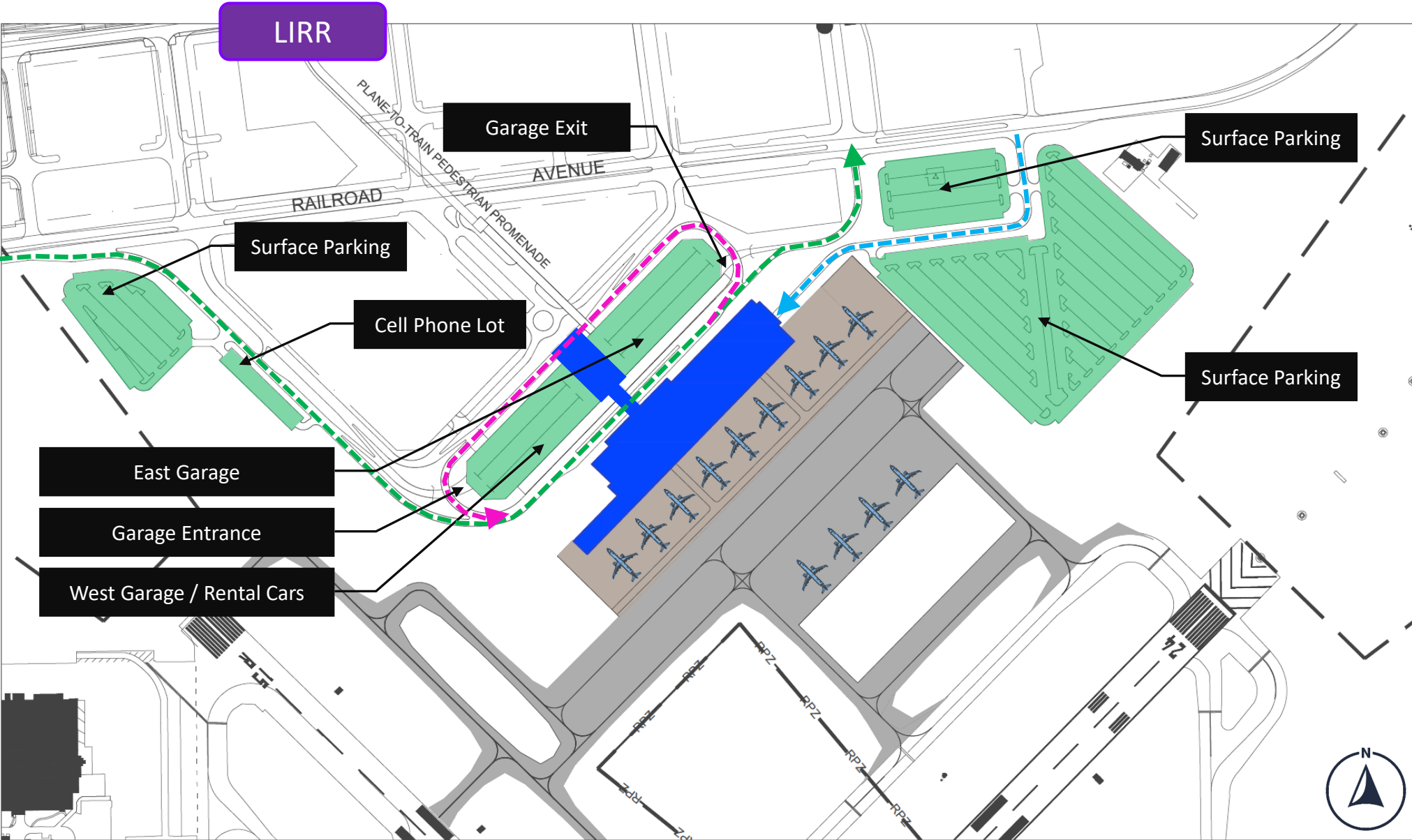


Concept G (Hybrid) Airside Overview



-  Domestic
-  Intl/Swing
-  GAF parking
-  Remain Overnight (RON)

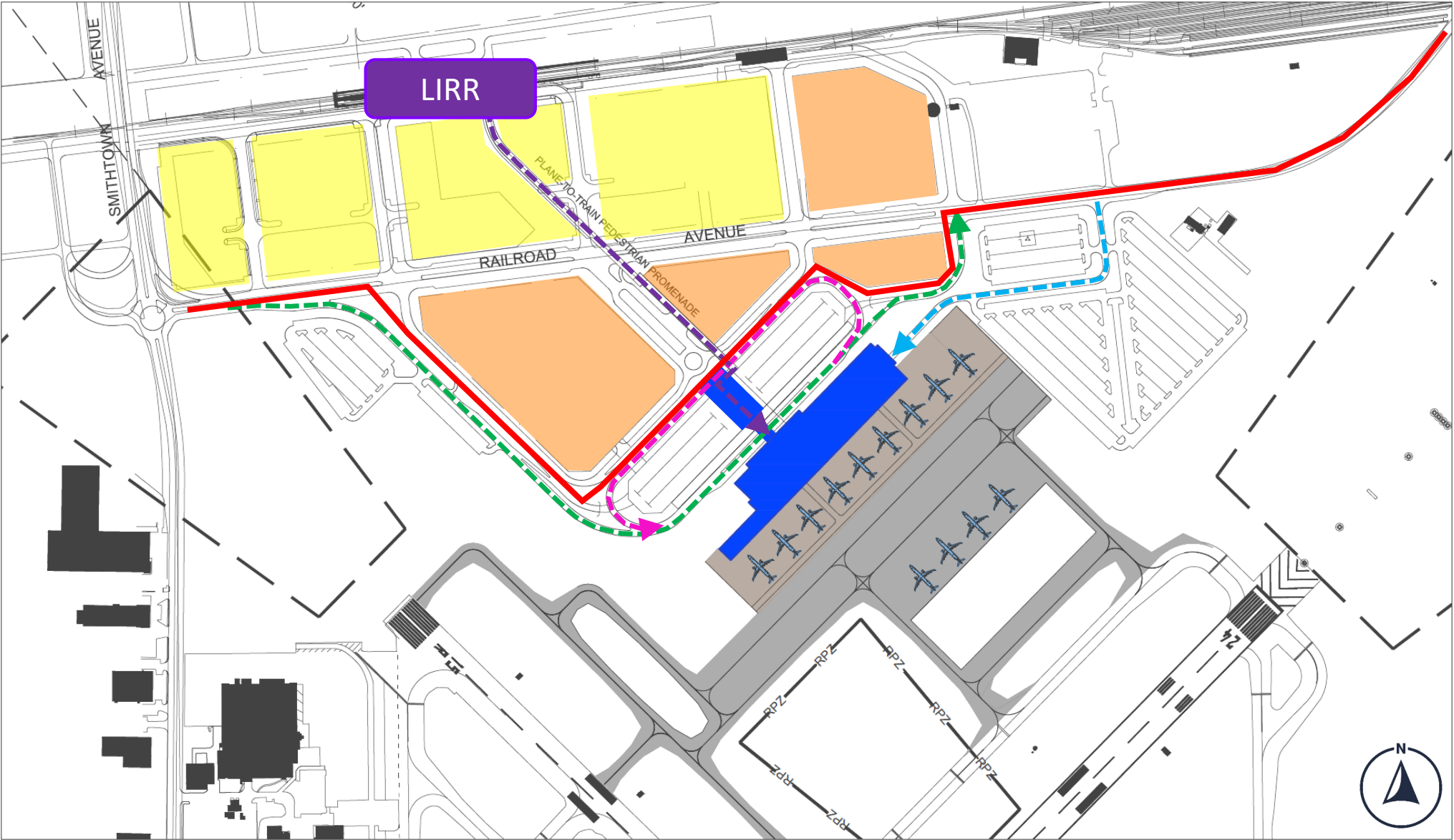
Concept G (Hybrid) Landside Overview




- Airport Parking
- Airport Access
- Recirculation Roadway
- Airport Service Access

Parking Overview:
Garage Spaces – 2,532
Garage Rental Car Spaces – 400
Total Surface Lot Spaces – 2,468
Grand Total Spaces – 5,400

Concept G (Hybrid) Commercial Development



-  Airport Non-Aeronautical Commercial Development Opportunity
-  Off-Airport Transit Oriented Development Opportunity
-  LIRR Elevated Walkway
-  Airport Access
-  Recirculation Roadway
-  Airport Deliveries
-  Aeronautical vs Non-Aeronautical Use Boundary



ISP – North Terminal Concept Refinement

ALP & South Existing Land Reallocation - Kickoff

February 16, 2022



Task 5.5 and 11.1 Schedule

- Draft ALP Update Complete by end of March 2022
- Review Period in April
- Submit to FAA in late April 2022

Long Island MacArthur Airport - Terminal Area Narrative - Project Tracker Schedule - TENTATIVE

14-Feb-22	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	
Week (date)	3-Jan	10-Jan	17-Jan	24-Jan	31-Jan	7-Feb	14-Feb	21-Feb	28-Feb	7-Mar	14-Mar	21-Mar	28-Mar	4-Apr	11-Apr	18-Apr	25-Apr	2-May	9-May	16-May	23-May	30-May	6-Jun	13-Jun	20-Jun	27-Jun	4-Jul	11-Jul	18-Jul	25-Jul	
Coordination Meetings																															
Task 5 - Refinement of Pref Concept (New Terminal Interior Concept Layouts)																															
Task 5.4 - Airspace, Imaginary Surface, Safety Review of Terminal Concepts																															
Task 5.5 - Existing South Terminal Area; Identify Conceptual Reuse Options																															
Task 6.1 - Implementation Schedule																															
Task 6.2 - ROM Cost																															
Task 6.3 - Phasing Plan																															
Task 7.1 - Financial Feasibility Plan																															
Task 8.1 - Environmental Reqs Task 8.2 - Sustainability Assessment																															
Task 9 - Narrative Reports																															
Task 11 ALP Update																															

ISP - Terminal Area Narrative – ALP Kickoff & South Reallocation Study

February 16, 2022

Remote / Microsoft Teams

Attendees:		
Name	Company/Representation	Email
Shelley LaRose	ISP Airport	SLaRose@islipny.gov
Robert Schneider	ISP Airport	rschneider@islipny.gov
Andrea Luft	JKL	ALuft@jklengineers.com
Mahesh Kukata		
Logan Smith	L&B	Logan.smith@landrumbrown.com
Clint Laaser	L&B	clint.laaser@landrumbrown.com
Monica Geygan	L&B	Monica.geygan@landrumbrown.com
Chris Sandfoss		
Sarah Potter		
Peter Kirsch		

Discussion:

- Environmental
 - Meeting upcoming on March 4. Clint will forward the invite to Peter Kirsch.
- South Area Allocation –
 - Boundary Area on Slide 3 – Should be smaller for this study as it should not include the new ground transportation center
 - Keep Existing Terminal
 - Should we reuse the existing terminal? Shelley stated it should be demolished.
 - Parking
 - Keep Resident Parking and Employee Parking
 - Maintain Long-Term Parking (at least a portion) for continued commercial use with shuttle to the north terminal.
 - Options (must be retained for Aviation Use):
 1. General Aviation - Corporate Hangars
 2. Cargo Development (Central Distribution Center – possible Amazon, other). There could be issue with inadequate runway length for some cargo aircraft.
 3. Overflow Parking for North Terminal
 4. Convention Center?
 - Aircraft Maintenance would not need to be included here.
- ALP Update
 - Property Deeds
 - Need property deeds – send to Peter Kirsch. Peter and Clint both received an email from Amy Murphy (Town of Islip Attorney). Clint will re-forward the email to Monica. Monica will check the files from the Master Plan process. **Action Item: Peter and Monica to have separate call regarding this.**
 - Property Issues – Some parcels were never swapped properly from a legal perspective.

meeting minutes



- Reverter clause on some of the parking area on the northside of Railroad Ave. **Action Item: Shelley will check with JR on this documentation.**
- Exhibit A Property Map
 - Exhibit “A” Property Map will need to be updated. This was not part of the original scope. Rob suggested that we use the unused money from the Financial Task 7. **Action Item: Clint and Monica to confirm if that \$40K(ish) is enough to cover the work and if we have the resources available to do this.**
 - JKL has done some Pen and Ink’s since the last Property Map.
 - JKL needs to send all current drawings/maps. **Action Item: Monica to reach out to Joe Wenck**
 - #54, #55 and Firehouse, #41 Electrical Vault have been built. Any other “future”? – No
 - #47 should be the Ground Transportation Center (Joe Wenck has the latest file)
 - Will need to update all the FBO’s – Sheltair is now Modern.
 - ISP can update the Existing Facility Legend if we send it. **Action Item: JKL – Andrea will review with Rob/Shelley**
- North Area –
 - Only show the parking in green
 - Don’t show the yellow/orange diagrams that separate the airport and non-airport properties.
 - Phase 1 + 2 – Shown by phase or Planning Activity Level
 - Phase 3 – (up to 16 gates) should be shown in dashed for the “Future Planning Horizon”
 - Take the years off the ALP. Only show the Planning Activity Level or Phase.
- Former Runway 10-28
 - This has not been converted to Taxiway. It has been decommissioned from runway though. Existing condition shown only. Mahesh has the latest AutoCAD file.
 - Could be used as a future TW if the South Use is Cargo. This will be folded into the South Area discussion.
- LIRR Connection
- Just show dashed with no detail and called Plane-to-Train Pedestrian Promenade.
- North Area Scope Area – Part 163 FAA Approval
 - Airport scope should be the redline minus the parking areas (cell phone lot and parking area east of the terminal). Needs to include the fuel farm (make sure to go around the parking).
 - Connector would be outside the Environmental
 - Vertical parking structures – Needs to be included on the ALP but undetermined if it needs to be within the 163 study area.

Next Steps:



ISP – North Terminal Program

Environmental and Sustainability

March 4, 2022



- **Scope Review**
- **Environmental / NEPA**
 - Requirements and Process
 - Considerations
- **Sustainability**
 - Planning Process
 - Considerations (Airside, Landside, Terminal)
 - Certifications

Task 8.1 – Identification of Potential Environmental Requirements

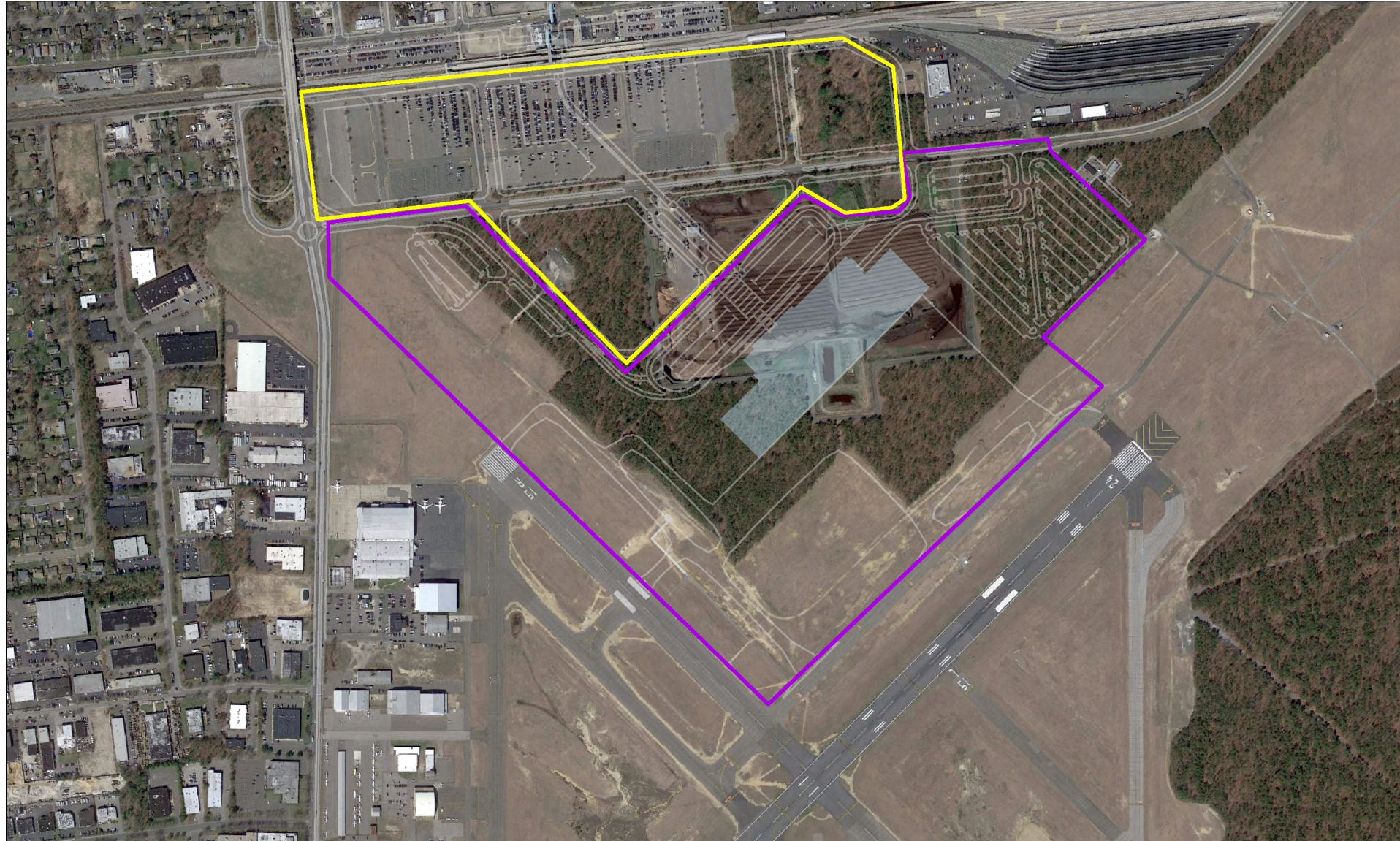
- Based upon the selected preferred concept, review and identify any environmental factors that the Project could affect.
- This would include any enabling actions, including but not limited to, construction staging, relocations of roadways or parking, and other potential projects related to the preferred concept.
- Recommend the appropriate level of environmental documentation required (CATEX or EA) for coordination with the FAA.
- Deliverable: PowerPoint slides identifying environmental requirements

Task 8.2 – Sustainability Assessment

- Identify existing sustainable practices employed by the Airport.
- The Project will build on these programs and identify if there are other areas where sustainable programs or features can be employed into the overall program.
- Deliverable: PowerPoint slides summarizing the sustainability assessment effort

Task 8: Environmental/Sustainability Impacts

North Terminal Development Area



-  North Terminal Development Area
-  Non Aeronautical Development Area

Environmental / NEPA Processing Requirements

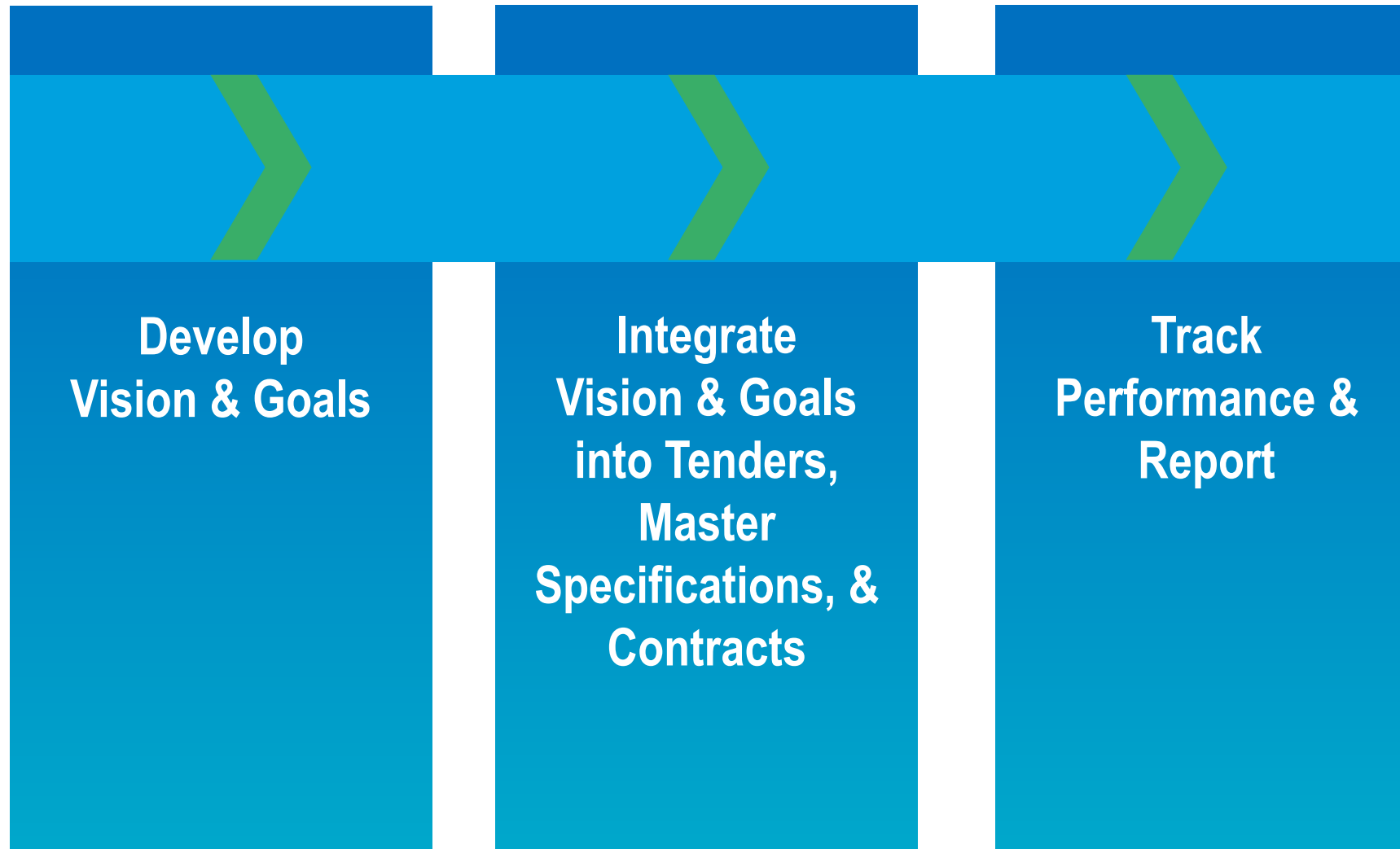
- FAA Section 163 Review
- NEPA Documentation – may require an Environmental Assessment (EA)
 - Timeframe approximately 1 year to complete
- Potential Environmental Resource Categories of Interest
 - Air Quality
 - Community Resources / Parks / Recreation
 - Historic / Archaeological Resources
 - Threatened and Endangered Species
 - Wetlands / Water Quality
 - Noise & Land Use
 - Socioeconomic Impacts / Environmental Justice
 - Visual Impacts

Other Environmental Considerations

- Potential inclusion of connected/enabling actions
 - Off-airport commercial development
 - Light rail connection/promenade
 - Composting facility
 - South terminal site redevelopment
 - Roadway improvements
- Potential Agency Coordination Requirements
 - Section 106 / State Historic Preservation Agency
 - U.S. Fish & Wildlife Service / Endangered Species Act Section 7

- Vision & Goals for New Programs
- Airport Sustainability Plans
 - Development, Implementation, and Tracking
- Sustainability Cost-Benefit Model
 - Evaluate sustainable strategy options
 - Assess feasibility of emerging and/or innovative sustainable designs and practices
- Solar Photovoltaic Glare Hazard Modeling for Aeronautical Use
- LEED Consulting Advisory Panel - Expert Panel

Sustainability Planning Process



Airside Initiatives

- Sustainable Design and Construction Guidelines
 - Balanced Earthwork Plan
 - Construction Recycling
 - Local/Regional Content
 - Outdoor Air Quality
- LED lighting
- Green/vegetated roofs
- Solar PV
- On-site and off-site renewable energy sources



ORD Lighting Control Vault Green Roof

- Sustainable Design and Construction Guidelines
- LED Lighting
- Water efficient landscaping
- Vegetated/green roofs
- Sustainable Site Management
- Solar PV
- On-site and off-site renewable energy sources
- EV Charging for passengers and employees
- Connectivity to local/regional transportation

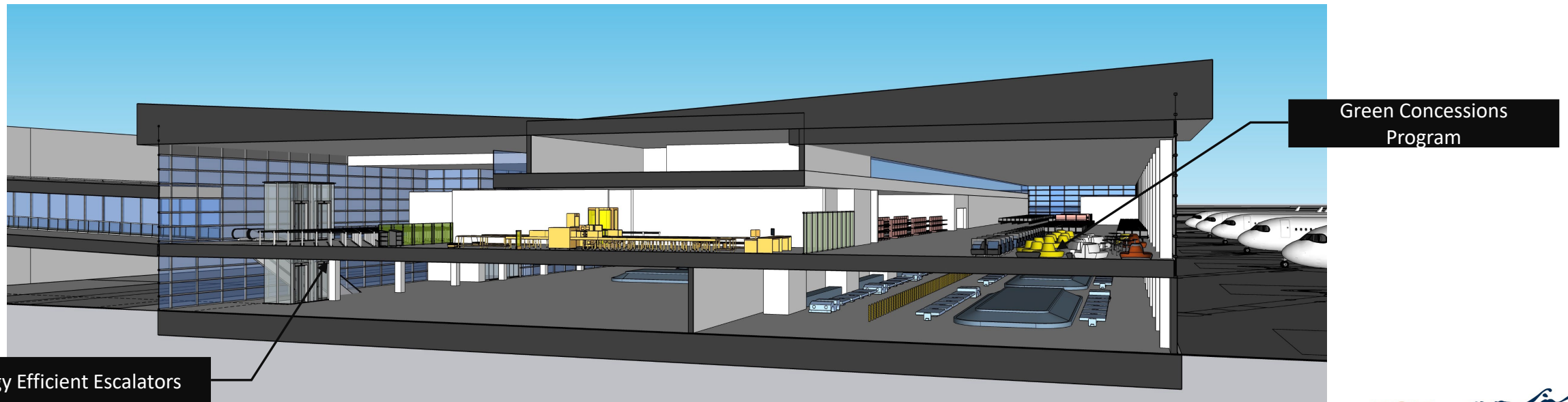
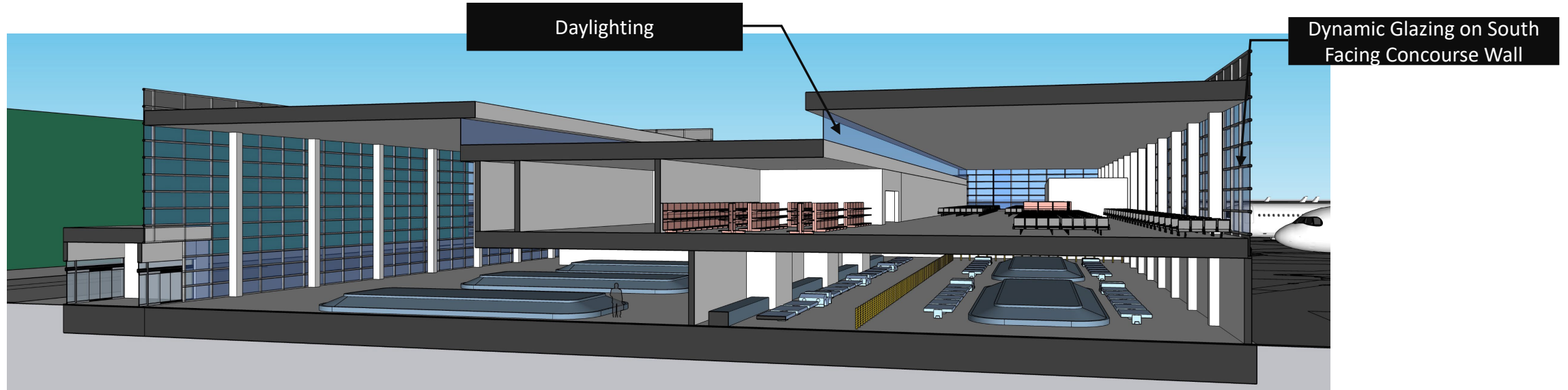


Kolkata International Airport

- Daylighting/views
- Dynamic Glass
- Water Efficient Fixtures
- LED Lighting/light sensors
- Energy-efficient escalators
- Recycling & Composting
- Touchless Interfaces
- Green Concessions Programs
- Sense of Place



MDW Concourse A



- SAN LEED Platinum Terminal
- SFO LEED Platinum Terminal 1 & Gold Terminal 2
- ATL LEED Gold International Terminal
- LGA LEED Gold Terminal B
- Istanbul LEED Gold Airport Terminal
- BNA LEED Silver Concourse D



LGA Terminal B

Other Sustainability Certifications



ENVISION™



**THE Sustainable
SITES
Initiative®**



**LIVING
BUILDING
CHALLENGE™**



meeting minutes



ISP - Terminal Area Narrative – Environmental and Sustainability

March 4, 2022
Remote / Microsoft Teams

Attendees:

Name	Company/Representation	Email
Shelley LaRose	ISP Airport	SLaRose@islipny.gov
Robert Schneider	ISP Airport	rschneider@islipny.gov
Andrea Luft	JKL	ALuft@jklengineers.com
Logan Smith	L&B	Logan.smith@landrumbrown.com
Clint Laaser	L&B	clint.laaser@landrumbrown.com
Sara Christen	L&B	Sara.christen@landrumbrown.com
Chris Sandfoss	L&B	Chris.Sandfoss@landrumbrown.com
Sarah Potter	L&B	Sarah.Potter@landrumbrown.com
Peter Kirsch		

Discussion:

- Environmental
 - xxx
- Sustainability
 - xxx
- Other
 - xxx

Next Steps:



South Terminal Reuse Options

Land Use Discussion

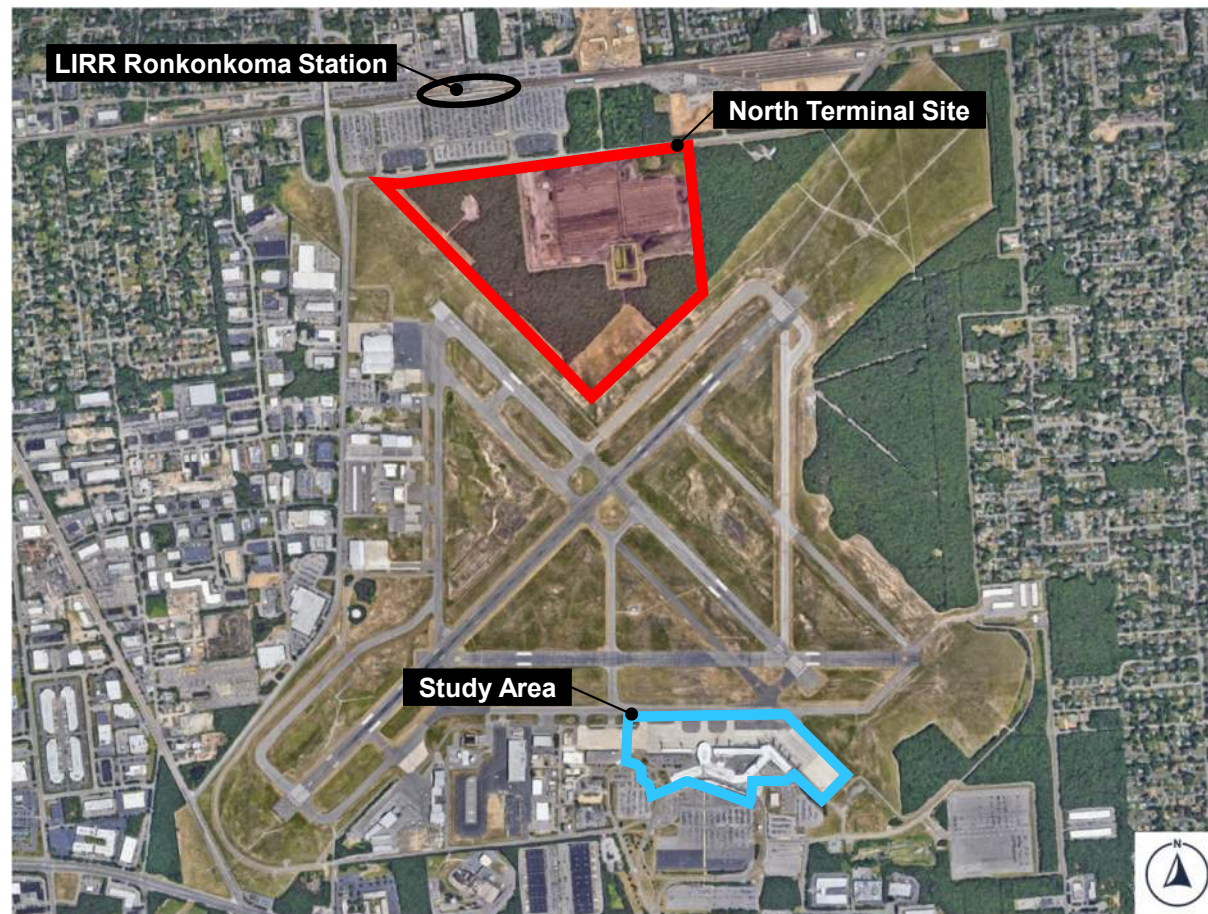
April 20, 2022



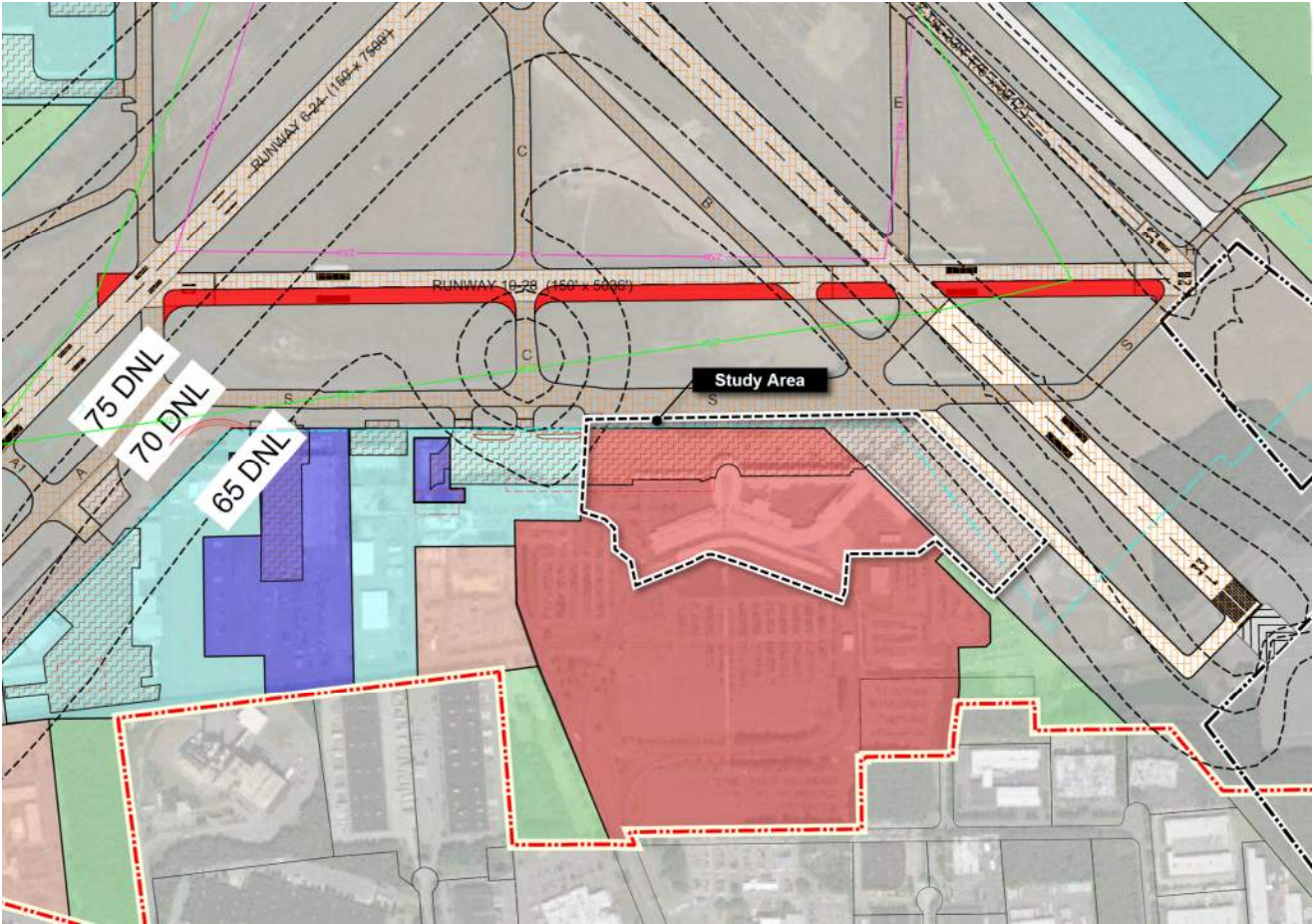
Existing South Terminal Area - Reuse

2

- New terminal site results in abandoned land uses to South
- This study identifies what opportunities exist within the current land use character while meeting current and emerging airport needs.
- Study should serve as a **strategic roadmap** to help the Town define the viable development options for abandoned study site.



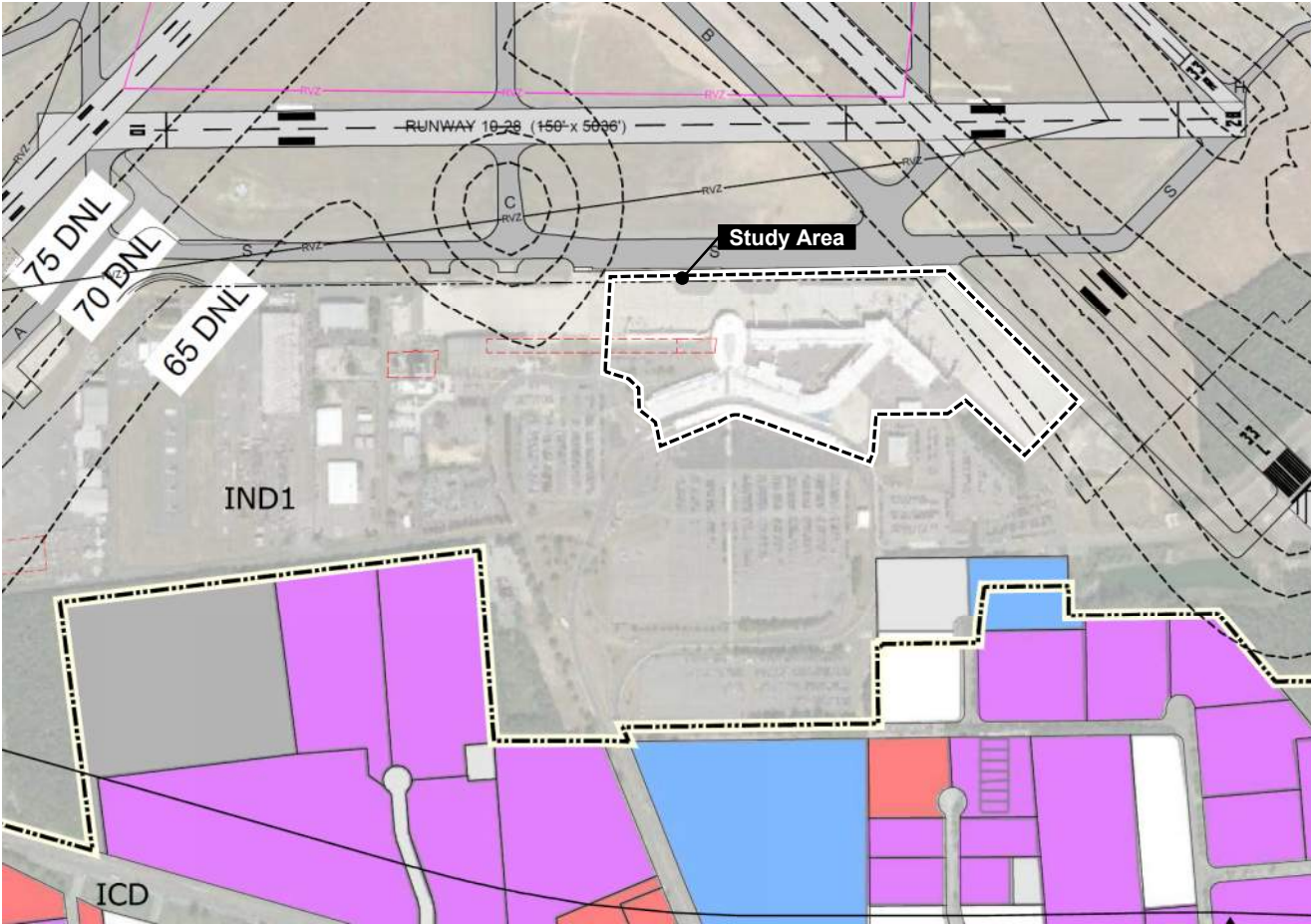
Existing On-Airport Adjacent Land Uses



ON-AIRPORT LAND USE LEGEND

- AIRPORT OPERATION AREA (AOA)
- COMMERCIAL
- GENERAL AVIATION
- GOVERNMENT
- TERMINAL AREA
- UNUSED LAND
- FUTURE AIRFIELD PAVEMENT
- AIRFIELD PAVEMENT DEMO
- MOVEMENT AREA
- NON-MOVEMENT AREA
- EXISTING PROPERTY LINE
- FUTURE PROPERTY LINE
- NOISE CONTOUR
- EXISTING RVZ
- FUTURE RVZ

Existing Off-Airport Adjacent Land Uses



OFF-AIRPORT LAND USE LEGEND

- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- INSTITUTIONAL
- RECREATION AND OPEN SPACE
- VACANT
- UTILITIES
- WASTE MANAGEMENT
- ZONING BOUNDARY
- EXISTING PROPERTY LINE
- FUTURE PROPERTY LINE
- NOISE CONTOUR
- EXISTING RVR
- FUTURE RVR
- GOVERNMENT FACILITY
- SCHOOL
- CHURCH
- CEMETERY

Planning Considerations

5



Maximize Land Use Potential

Aim to find the right sized, best use for each sites, setting up ISLIP for potential revenue earning properties



Consistent with Master Plan

Sites will aim to achieve the previous planning objectives for the sites and adjacent parcels



Enhance Airport Operations

Careful consideration of current airport operational characteristics must factor into site-specific land use suitability to enhance airport operations



Strategic Investment

Potential land uses will look to address both the near-term and long-term airport needs



Integrate Land Use

Ensure proposed uses do not conflict with existing and planned uses onsite and surrounding



Practical Approach

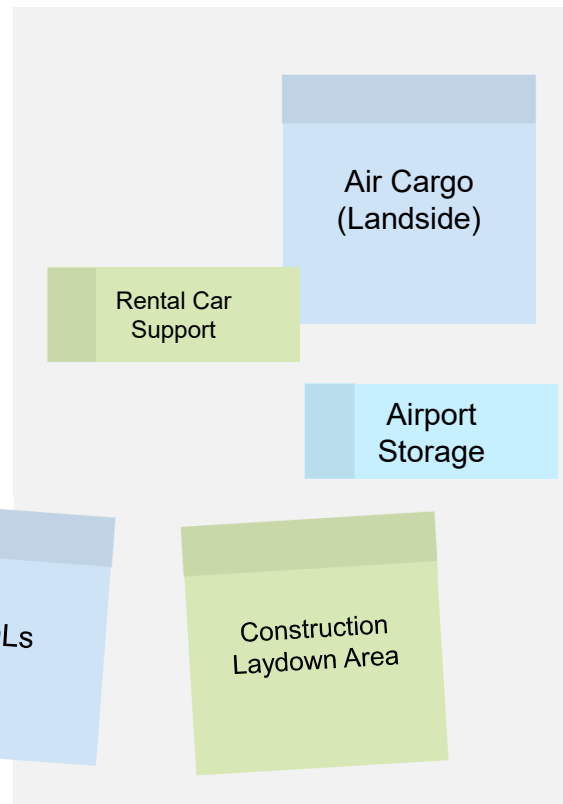
Initial land use recommendations will make sense in the context of the sites. Land uses that are both marketable and functional.

Initial Reuse Land Uses

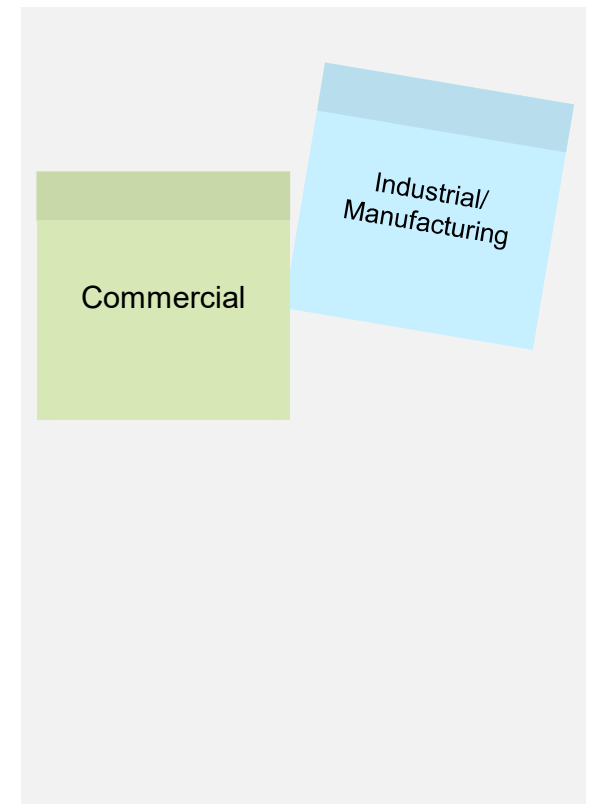
AIRSIDE



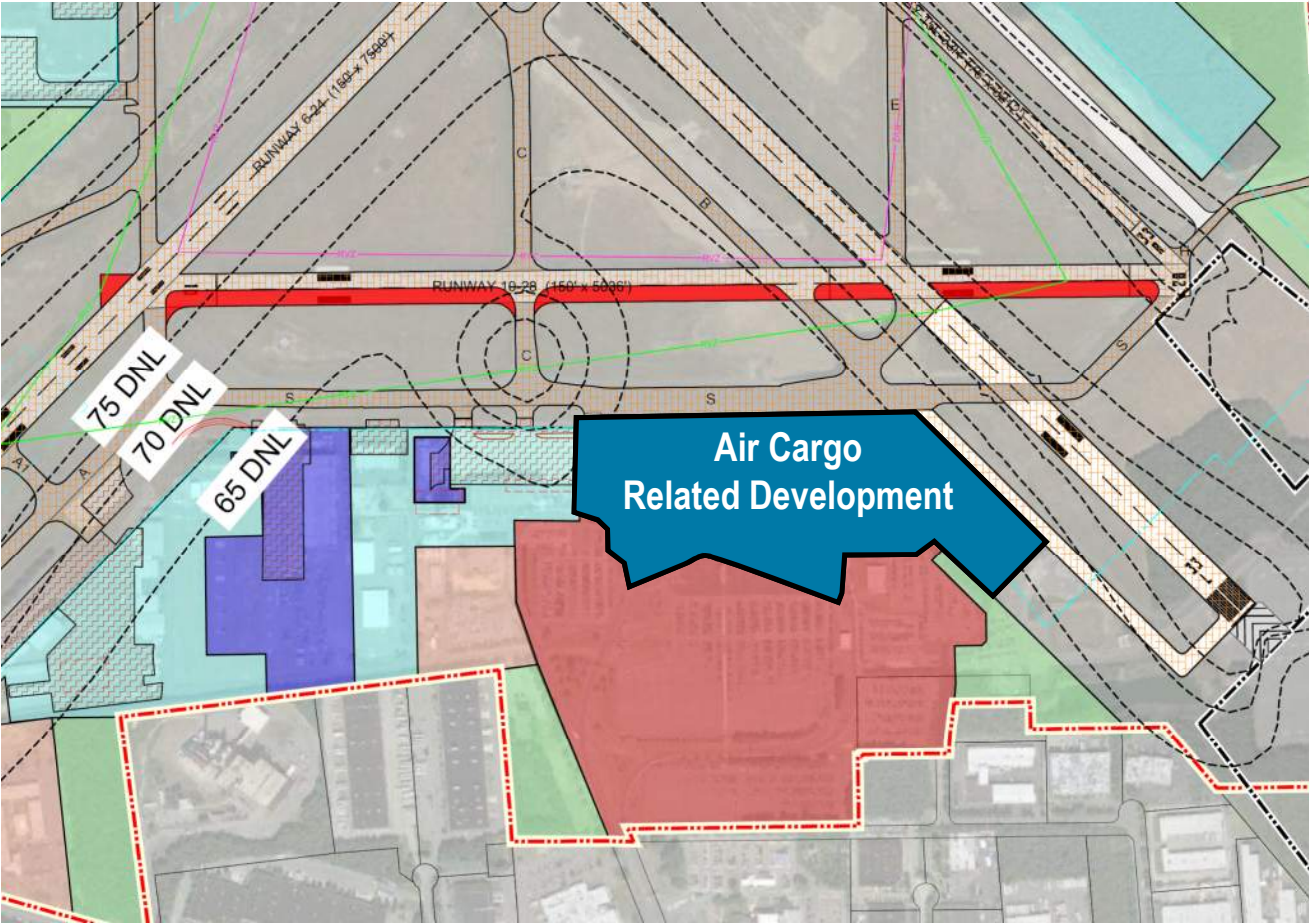
LANDSIDE



NON-AVIATION



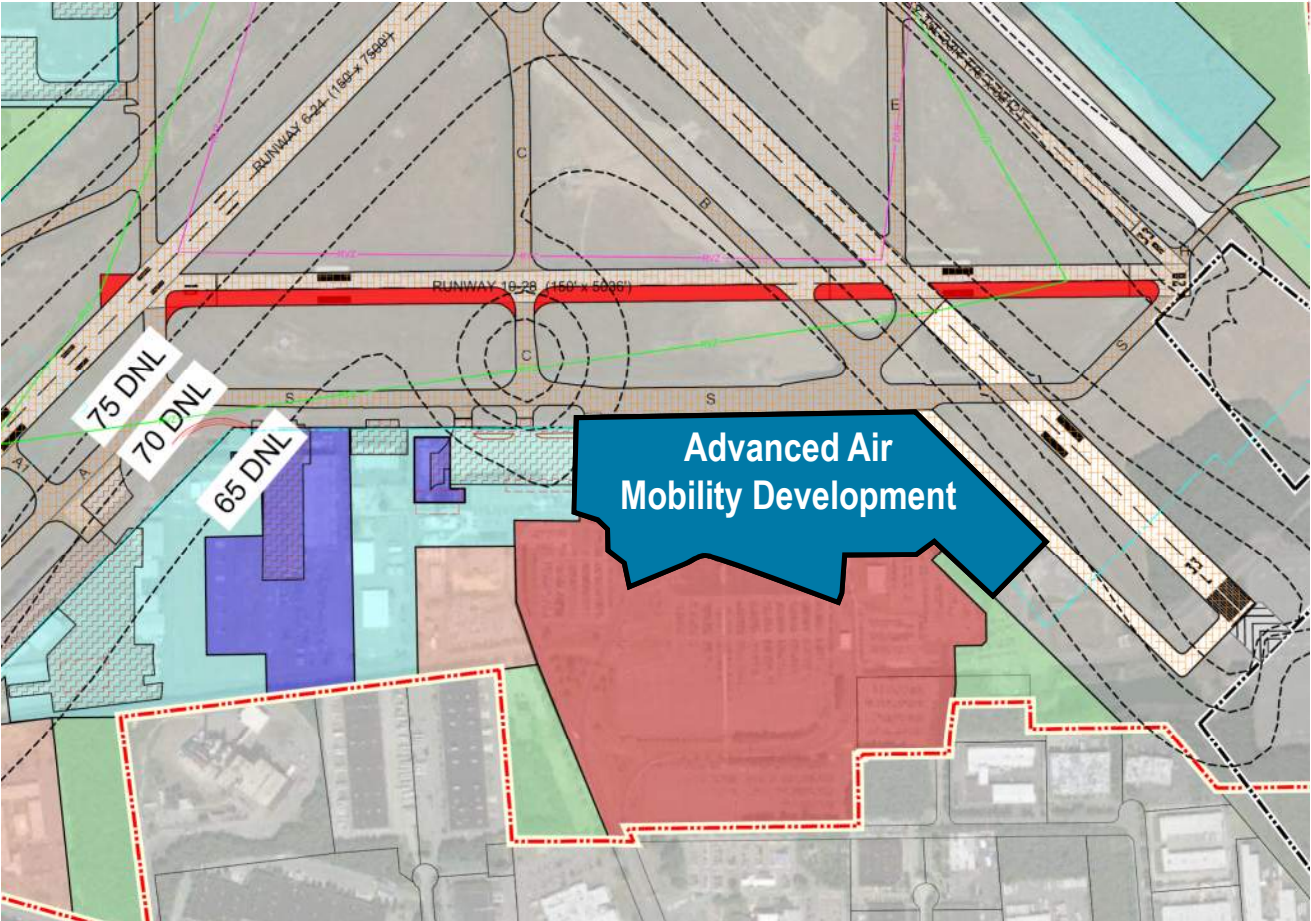
Reuse Alternative 1



**ON-AIRPORT
LAND USE LEGEND**

- AIRPORT OPERATION AREA (AOA)
- COMMERCIAL
- GENERAL AVIATION
- GOVERNMENT
- TERMINAL AREA
- UNUSED LAND
- FUTURE AIRFIELD PAVEMENT
- AIRFIELD PAVEMENT DEMO
- MOVEMENT AREA
- NON-MOVEMENT AREA
- EXISTING PROPERTY LINE
- FUTURE PROPERTY LINE
- NOISE CONTOUR
- EXISTING RVZ
- FUTURE RVZ

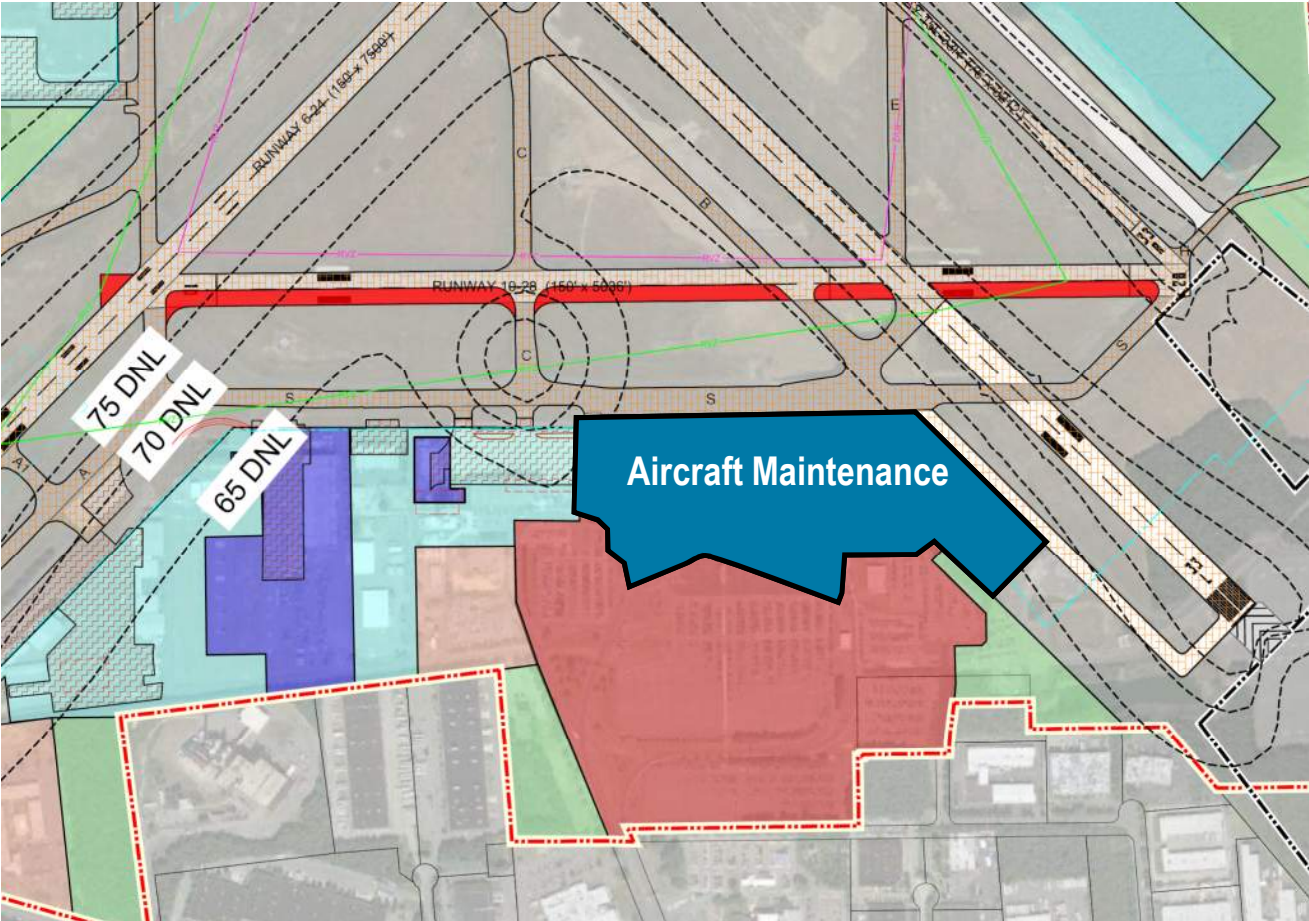
Reuse Alternative 2



**ON-AIRPORT
LAND USE LEGEND**

- AIRPORT OPERATION AREA (AOA)
- COMMERCIAL
- GENERAL AVIATION
- GOVERNMENT
- TERMINAL AREA
- UNUSED LAND
- FUTURE AIRFIELD PAVEMENT
- AIRFIELD PAVEMENT DEMO
- MOVEMENT AREA
- NON-MOVEMENT AREA
- EXISTING PROPERTY LINE
- FUTURE PROPERTY LINE
- NOISE CONTOUR
- EXISTING RVZ
- FUTURE RVZ

Reuse Alternative 3



- ON-AIRPORT LAND USE LEGEND**
- AIRPORT OPERATION AREA (AOA)
 - COMMERCIAL
 - GENERAL AVIATION
 - GOVERNMENT
 - TERMINAL AREA
 - UNUSED LAND
 - FUTURE AIRFIELD PAVEMENT
 - AIRFIELD PAVEMENT DEMO
 - MOVEMENT AREA
 - NON-MOVEMENT AREA
 - EXISTING PROPERTY LINE
 - FUTURE PROPERTY LINE
 - NOISE CONTOUR
 - EXISTING RVZ
 - FUTURE RVZ

Next Steps

10

- Based on comments received today, finalize Reuse alternatives
- Finalize Reuse document and share for formal review
- Determine Land Use designation for ALP

ISP Terminal Narrative - Coordination – 04/20/2022

Attendees:

- ISP - Shelley LaRose, Rob Schneider
- L&B - Clint Laaser, Logan Smith, Monica Geygan, Cody Meyer
- JKL - Andrea Luft

Notes:

- South Terminal Reuse
 - Slide 4 –
 - Entry road needs to be included within the Airport Boundary Line (both for Exhibit A and future exhibits)
 - Foreign Trade – the blue area should not be part of the Airport boundary. Need to move the boundary line slightly north.
 - Slide 5 –
 - Planning Considerations – Slide 5 – First paragraph (Maximize Land Use Potential) should not be ISLIP. Should we MacArthur Airport or Town of Islip.
 - Shelley noted they have many requests lately for Corporate hangars and T-Hangars.
 - Slide 6 – Landside –
 - Keep Resident Parking, Long Term Parking, Employee Parking, Rental Cars. Save Economy Lot for the Employee Parking area. Lot 6A and 6B (east side of the loop) retained with Rental Car. Keep Resident Lot 6 – remains
 - Anything inside the “loop” could be moved to Lot 10 in the future. Lot 10 could be “Future parking”. Then anything inside the existing roadway loop could be tied to future uses in the “study area”.
 - Slide 7 – Air Cargo
 - No comment
 - Employee lot, freight traffic required.
 - Rob stated no cargo carriers have been asking to come to ISP. May not be realistic but would be great if possible.
 - Slide 8 – Advanced Air Mobility Development
 - Rob likes this idea. Cody stated it is very marketable and could provide a quick connection to the greater region (CT, RI, NY, NJ)
 - eVTOL could potentially reuse the existing terminal (or a portion of it) and the vehicle parking adjacent. Also, close proximity to the Ground Transportation Center.
 - Slide 9 – Aircraft Maintenance
 - Similar to cargo for revenue potential
 - Shelley stated that one of the FBO’s is trying recruit Falcon for maintenance. They would want this more immediately than the South Terminal area would allow.
 - Least favorite alternative but could technically be more possible than Cargo.

- Monica - Some uses could be combined that don't need this full area.
- General Aviation – could be viable location. May be able to defer the previous MP alternative for the GA use on the east quadrant. Would need to be careful of the runway crossing involved.
- Rob – Parking needed to support any of this development? This would need to be further studied
- Runway 19-28 is closed. Andrea has more recent linework for updating the ALP.
- Just show “Reserved for Aviation Related Development” on the ALP. Will include the options in the document but don't need to pick. Rob/Shelley like this approach.
- Shelley - East Side of Airport needs to be addressed? Flightways? Would like the space on the east larger for Corporate GA hangars and corporate hangars.
- L&B to send the PPT deck to Rob/Shelley
- Other
 - Joint meeting with JLL and Frasca to present the breakdown of all of the
 - Explain why off-airport road were removed
 - We are not in 30-60-90% design but our cost is comparable to industry standards
 - L&B may be requested to join meeting in coming weeks.
- FAA Document Comments
 - Response to comments regarding Concourse B example of what could be done to improve this portion of the building
 - Rob not sure what to include here
 - We purposely did not put anything about the north in the document, nor did we include cost for the west concourse
 - Life expectancy of critical systems, refer to AECOM, don't have anything from southwest, but when they constructed the building, only 15 years of investment into the terminal for critical systems



14 Appendix C – Stakeholder Outreach

PREPARED FOR
Town of Islip
Long Island MacArthur Airport

Prepared by:
Landrum & Brown, Incorporated



Question	FAA	Airline A	HMSHost	ISP Admin
1. Please rank you preferred concepts below. (1 – most preferred to 6 – least preferred)	<p>Concept A North - 2</p> <p>Concept B North - 1</p> <p>Concept C North - 4</p> <p>Concept D North - 3</p> <p>Concept E North - 5</p> <p>Concept F South - 6</p>	<p>Concept A North - 3</p> <p>Concept B North - 2</p> <p>Concept C North - 1</p> <p>Concept D North - 4</p> <p>Concept E North - 5</p> <p>Concept F South - 6</p>	<p>Concept A North - 5</p> <p>Concept B North - 1</p> <p>Concept C North - 6</p> <p>Concept D North - 4</p> <p>Concept E North - 2</p> <p>Concept F South - 3</p>	<p>Concept A North - 5</p> <p>Concept B North - 2</p> <p>Concept C North - 4</p> <p>Concept D North - 3</p> <p>Concept E North - 1</p> <p>Concept F South - 6</p>
2. Explain why your top 2-3 concepts are preferred. Please consider the following in your determination:	<p>Functionality including (vehicle or aircraft) security, concessions, concourse & baggage</p> <p>Provides direct aircraft access to air operations area with minimal movement on ramp</p> <p>Customer Experience</p> <p>Quicker access to runways and terminal area to allow passengers to get to their destination quicker</p> <p>Long-term flexibility</p> <p>Provides flexibility to expand or contract gate areas and allows for phasing of construction depending on funding availability</p>	<p>Based on FA Properties Response:</p> <p>Functionality including (vehicle or aircraft) security, concessions, concourse & baggage</p> <p>- Large number of gates</p> <p>- Most Flexibility</p> <p>Customer Experience</p> <p>- Ease of passenger use</p> <p>- Large indoor gate area</p> <p>Operational</p> <p>- Good use of ramp space</p> <p>- Sufficient space for GSE</p> <p>Long-term flexibility</p> <p>- Based on future Frontier Airlines expansion needs</p>	<p>Functionality including (vehicle or aircraft) security, concessions, concourse & baggage</p> <p>- Concessions are grouped or condensed to a smaller area, which allows for effective and efficient management of the units</p> <p>- Simplified layout with good visibility, and when expanded, the layout would allow for great visibility for restaurants at the 45 degree turn</p> <p>- Allows for a single operator of both food & beverage and retail, even more synergies and ideas to expand the offering to be complementary and not competing</p> <p>Customer Experience</p> <p>- Condensed concessions create a "commercial zone", with multiple options/choices that are not gatespecific, allowing passengers to have equitable access to shops and amenities</p> <p>- Allows concessionaires to execute marketing activations visible to the entire airport</p> <p>- Closest to the railway, which simulates a metropolitan environment, similar to most renowned airports</p> <p>Operational</p> <p>- Less enplanement risk as airlines adjust gates and operations</p> <p>- Concessions are grouped or condensed to a smaller area, which allows for effective and efficient management of the units</p> <p>Long-term flexibility</p> <p>- Allows for the phasing of gates, which could limit over saturation of concessions until the traffic requires concessionaires to build more targeted/specific restaurants and shops</p>	<p>Functionality including (vehicle or aircraft) security, concessions, concourse & baggage</p> <p>Concept E is the boldest of the group and provides passengers and the local community with a state of the art campus. Additionally the airport benefits from the most revenue from the concept. In terms of jobs + future development.</p> <p>Concept B would be most convenient for passengers using the LIRA</p> <p>Customer Experience</p> <p>The amenities and shopping options provide through Concept E appear to be more robust than all other concepts combined. While the connection to the LIRA may not be as convenient as Concept B, it is still for easier than the other options.</p> <p>Operational</p> <p>Concept E's ease of use is clear and it appears to offer the best conditions for snow removal given the simple setup of the commercial gates and short runs to move snow. The access to the airfield is quick and as far as passengers are concerned, parking is nearby.</p> <p>Long-term flexibility</p> <p>In terms of flexibility, the phasing plan of Concept E is a plus. It fills the immediate need for commercial gates and CBP but still leaves room for additional growth in the future. Compares to Concept B, the flexibility + options for development are simpler.</p>
3. Any additional comments or concerns regarding the concepts?	N/A	<p>ISP airport as it is now is outdated. All improvements welcome. Plans I have seen are all well thought out.</p> <p>Larger gate areas and newer jet bridges for larger</p> <p>AC types are needed.</p>	<p>Storage or support space locations should be in close proximity to concessions/N/A</p> <p>Access to a loading dock and freight elevator in the new terminal would be ideal</p>	N/A
4. What other passenger amenities would your organization like to see incorporated into a new terminal / concourse development?	N/A	<p>Gate fit screens electronic</p> <p>Arrival and Departure screens</p> <p>Charging stations</p>	N/A	<p>Observation area for the public - possibly revenue generating i.e. fee to enter + view/take pics</p> <p>virtual information booth</p>
5. What new technologies should be incorporated into a new terminal / concourse development?	N/A	<p>Industrial Lenses bathroom facilities</p> <p>Improve WiFi</p> <p>Television Screens</p>	N/A	<p>Contactless food service</p> <p>Public charging stations for electronic devices</p>
6. What health and safety amenities should be included in a new terminal / concourse development?	N/A	Air filtration system	N/A	N/A
7. Please indicate environmental or sustainability requirements (LEED, other) your organization would like incorporated into a new terminal / concourse development?	N/A	N/A	N/A	N/A
8. Anticipated aircraft sizing for the next 10 years?	N/A	A320 180-186 Pax	N/A	N/A
9. Desired type of jet bridge?	N/A	A321 320 Pax N/A	N/A	N/A
10. What decking needs are required for your operation?	N/A	Prefer push off gate as is Decking pad acceptable as well	N/A	N/A
11. Other exterior / site requirements?	N/A	Landscape: Curbside pick up	N/A	N/A
12. Ticketing / Check-in	N/A	<p>Counter:</p> <p>6 to 8 positions</p> <p>Number of kiosks:</p> <p>4</p> <p>Types of scales desired:</p> <p>Between each position</p> <p>Airline Ticketing Office size (sf):</p> <p>As is for now digital</p>	N/A	N/A
13. Baggage Claim	N/A	<p>Preferred type of claim unit (curb):</p> <p>Sloped</p> <p>Baggage Makeup requirements:</p> <p>As is for now</p>	N/A	N/A
14. Operations	N/A	<p>GSE Storage requirements:</p> <p>Garage / Bagroom areas</p> <p>Other operations requirements:</p> <p>GSE Storage</p> <p>Water cabinets</p>	N/A	N/A
15. Electrical Requirements	N/A		N/A	N/A
16. Cabling / IT / Communications Requirements	N/A	As much lead time as possible for I.T. dept planning	N/A	N/A

Question	Islip Custodial Department	ISP Fire Rescue	ISP Maintenance	ISP admin2
1. Please rank your preferred concepts below. (1 – most preferred to 6 – least preferred)	<p>Concept A North - 5 Concept B North - 2 Concept C North - 3 Concept D North - 4 Concept E North - 1 Concept F South - 6</p>	<p>Concept A North - 4 Concept B North - 2 Concept C North - 3 Concept D North - 5 Concept E North - 1 Concept F South - 6</p>	<p>Concept A North - 4 Concept B North - 5 Concept C North - 2 Concept D North - 3 Concept E North - 1 Concept F South - 6</p>	<p>Concept A North - 5 Concept B North - 2 Concept C North - 4 Concept D North - 3 Concept E North - 1 Concept F South - 6</p>
2. Explain why your top 2-3 concepts are preferred. Please consider the following in your determination:	<p>Functionality including (vehicle or aircraft), security, concessions, concourse & baggage Terminal layout for Concept E, although lacking in gate space, is laid out with easy access to all areas of the building.</p> <p>Customer Experience In my opinion Concept E allows for the most options and services for the both the customers using the airport and the general public at large.</p> <p>Concepts B and C allows for maximum gate availability and easier access from the LIRR.</p> <p>Operational I have no opinion in this area.</p> <p>Long-term flexibility I have no opinion in this area.</p>	<p>Functionality including (vehicle or aircraft), security, concessions, concourse & baggage Concept E provides a seamless airport experience for the traveler with a better terminal layout, efficient use of space on the ramp, close proximity to the runways, and a better overall customer experience having the convention area. This is efficient still maintains close proximity to the LIRR and future growth if needed.</p> <p>Concept B provides a large gate count for future airlines, considerable space for growth, and close proximity to the runways. This concept has the shortest distance to the LIRR.</p> <p>Customer Experience Concept E will provide the best customer experience based on efficient layout and close proximity to all amenities.</p> <p>Operational Operationally both are strong candidates but I prefer the ramp area layout on concept E. The long terminal/ramp area on concept B creates the issues that we sometimes encounter at our current terminal.</p> <p>Long-term flexibility While I think concept B has the better use of space for long term plans and there is a strong potential for long term flexibility in concept E.</p>	<p>Functionality including (vehicle or aircraft), security, concessions, concourse & baggage Concept E - Amount of opportunity for future projects and growth Concept C 17 acres of development, easy access</p> <p>Customer Experience E will create more jobs, need more security</p> <p>Operational E Future progress in development C more development</p> <p>Long-term flexibility E Future progress in development C more development</p>	<p>Functionality including (vehicle or aircraft), security, concessions, concourse & baggage Concept E seems to be the most functional for both the traveling public as well as the surrounding public.</p> <p>Concept B - proximity to LIRR</p> <p>Customer Experience E + B seem to be the best and most similar in design for the best customer experience due to LIRR + shopping proximity Train to plane / transportation</p> <p>Operational Both E + B being on North side of field with wind predominately out of the North will help tremendously with snow operations</p> <p>Long-term flexibility B - Allows for more growth E - not sure if this will be enough space down the road</p>
3. Any additional comments or concerns regarding the concepts?	<p>Areas that I think should be incorporated in the initial design would be an entry system that keeps the air inside and outside separated. As it stands now we are overpowered by the outside air during all seasons.</p> <p>An HVAC system that allows for both heating and A/C when needed to cover the changes in the season that sometimes requires that you have either/or:</p> <ul style="list-style-type: none"> - Electric and water outlets around the entire exterior of the building. - Floor Drains in the bathrooms for cleaning purposes. - Snow melting area on the ramp for use during snow removal. <p>To be more specific about items that I would like to see in any new terminal and designed from the start would be:</p> <ul style="list-style-type: none"> - WiFi - Charging stations - Pet relief area - 100% touchless bathroom environment, Faucets, flushometers, hand dryers - soap and hand sanitizer dispensers. - Clocks - Filtered water bottle fountains 	<p>My feeling is that concept E is the best plan for all users. It provides a great layout out for airside operations, close proximity to LIRR, and the best layout for air traveler. The convention center will only improve on the passenger experience and create a stronger draw to the airport. While some of the other concepts provided strong arguments on certain aspects the main overall objective is best reached in concept E</p>	N/A	N/A
4. What other passenger amenities would your organization like to see incorporated into a new terminal / concourse development?	Without a doubt, having more choices for concessions would be a great addition to the pax experience.	Various restaurants, business center, and large auditorium	Speed walker for passengers	Pet relief area business center / quiet area more food and beverage options
5. What new technologies should be incorporated into a new terminal / concourse development?	Depending on budget, there are tons of technological devices that aid the airlines and concessions to offer hands off approaches to the customer when going through the process of flying. These range from check in kiosks and self baggage checks, to automated pax boarding.	Electric vehicle (EV) charging stations.	Easy touch screen, led maps, T.V. more wifi	USB charging stations improved WiFi touchless sinks
6. What health and safety amenities should be included in a new terminal / concourse development?	Without a doubt all the latest and greatest technology should be installed and utilized in the construction of any new building to maximize all sanitary concerns. Every effort should be made to create as close to a 100% touchless environment as possible	ARFF substation for both EMS and fire related emergencies.	EMT fire rescue station in terminal and more police	air purification system touchless restroom door/sinks/toilets hand sanitizer station
7. Please indicate environmental or sustainability requirements (LEED, other) your organization would like incorporated into a new terminal / concourse development?	N/A	N/A	Solar panels - Cutting power cost go green	N/A
8. Anticipated aircraft sizing for the next 10 years?	N/A	N/A	747 737	N/A
9. Desired type of jet bridge?	N/A	Noise loader bridges or possibly dual boarding bridge systems	new jet bridges that will function easy	N/A
10. What deicing needs are required for your operation?	N/A	A designated deicing area with an environmentally friendly reclamation basin glycol		N/A
11. Other exterior / site requirements?	N/A	Landside: Emergency access gates and roads if applicable and accessible fire hydrant locations. fire hydrant locations. Airside: Accessible fire hydrant locations. A designated area for the collection of snow with a snow melter and run-off collection basin.	Landside: Outside food, walking park, Dog park Airside: More employees.	N/A
12. Ticketing / Check-in	N/A	N/A	N/A	N/A
13. Baggage Claim	N/A	N/A	N/A	N/A
14. Operations	<p>Airline Operations Offices (include breakroom size [SF]) Breakroom, locker room and bathroom with shower. Large enough to be used by whatever the staff count may be, at least 15-20 people.</p> <p>Other operations requirements: For the Custodial Department, it would be optimum to have a large storage area on the first floor with a loading dock for deliveries. Also needed would be at least one large room to be used as a main operations area for the department, centrally located in the terminal with easy access to all points of the building. Additionally, several smaller rooms for storage and sink access would be needed at different locations in the terminal to service different locations. A large freight elevator, again centrally located, to move stock and machinery to different areas of the terminal.</p>	N/A	N/A	N/A
15. Electrical Requirements	Having a great deal of battery powered equipment, my need for ample power is of great importance. Everything at this time is 11.0v but multiple aanged outlets will be required	N/A	Solar panels to help with electric	N/A
16. Cabling / IT / Communications Requirements	N/A	N/A	N/A	N/A

Question	ISP Law Enforcement	PrimeFlight Aviation Services	Airline B	Swissport Fueling	Department of Homeland Security/Transportation Security Administration
1. Please rank your preferred concepts below. (1 – most preferred to 6 – least preferred)	<p>Concept A North - N/A</p> <p>Concept B North - 3 – needs substantial barricade to direct blast</p> <p>Concept C North - N/A</p> <p>Concept D North - 2 – needs substantial barricade to direct blast</p> <p>Concept E North - 1</p> <p>Concept F South - N/A</p>	<p>Concept A North - 2</p> <p>Concept B North - 3</p> <p>Concept C North - 4</p> <p>Concept D North - 5</p> <p>Concept E North - 1</p> <p>Concept F South - 6</p>	<p>Concept A North - 5</p> <p>Concept B North - 3</p> <p>Concept C North - 4</p> <p>Concept D North - 2</p> <p>Concept E North - 6</p> <p>Concept F South - 1</p>	<p>Concept B North - 1</p> <p>Concept B North - 2</p> <p>Concept C North - 3</p> <p>Concept D North - 4</p> <p>Concept E North - 5</p> <p>Concept F South - 6</p>	<p>Concept A North - 1</p> <p>Concept B North - 1</p> <p>Concept C North - 1</p> <p>Concept D North - 1</p> <p>Concept E North - 1</p> <p>Concept F South - 6</p>
2. Explain why your top 2-3 concepts are preferred. Please consider the following in your determination:	<p>Functionality including (vehicle or aircraft), security, concessions, concourse & baggage</p> <p>Parking garage in all except Concept E is situated close to the Terminal. If a threat of a vehicle bomb is presented, the result would be to close the terminal causing disruption to air traffic.</p> <p>Customer Experience</p> <p>Either a greater distance or substantial fortified obstruction to direct a blast would be required</p>	<p>Functionality including (vehicle or aircraft), security, concessions, concourse & baggage</p> <p>Acceptable walk to LIRR</p> <p>Transit oriented</p> <p>Customer Experience</p> <p>Strong customer experience</p> <p>Operational</p> <p>Sustained development</p> <p>Long-term flexibility</p> <p>Sustained development</p>	<p>Functionality including (vehicle or aircraft), security, concessions, concourse & baggage</p> <p>The top three concepts were preferred due to the need in the foreseeable future</p> <p>Customer Experience</p> <p>The Customer Service Experience can always be improved but would like to consider doing it in the current airport.</p> <p>Operational</p> <p>The current airport is operational but agree it could be updated.</p> <p>Long-term flexibility</p> <p>Eight gates in the East Terminal have been open for several years and are available to any carriers that would like to utilize them.</p>	<p>Functionality including (vehicle or aircraft), security, concessions, concourse & baggage</p> <p>Access to LIRR, room to grow future</p> <p>Customer Experience</p> <p>Easily accessible for passengers</p> <p>Operational</p> <p>More aircraft gates</p> <p>Long-term flexibility</p> <p>more operational growth</p>	<p>Functionality including (vehicle or aircraft), security, concessions, concourse & baggage</p> <p>Concepts A to E are all preferable due to the expansion capabilities for screening locations as well as the potential for all TSA Administrative staff to be on site.</p> <p>Customer Experience</p> <p>By having a larger screening location for checkpoint and checked baggage, it allows for the expansion capabilities to bring in the latest technology, such as the Automated Screening Lanes (ASL), which increase the efficiency. Additionally, an inline baggage system which would reduce the need for customers to physically drop off their bags. This system would remove all equipment from the lobby, improving the aesthetics, thus giving the airport to provide more customer-oriented amenities, such as kiosks, vending machines, concessions or information stations.</p> <p>Operational</p> <p>The ability to have a larger screening checkpoint would allow increased throughput, more efficiency using the latest technology, such as the Computed Tomography (CT) with ASLs. An inline system allows for consolidated resources in screening checked baggage, which allows greater flexibility and efficiency.</p> <p>Long-term flexibility</p> <p>As the TSA continues to develop newer and more efficient technologies, an upgraded terminal with the appropriate flooring, electrical, and technological flexibilities built in would afford even greater expansion opportunities.</p>
3. Any additional comments or concerns regarding the concepts?	N/A	My only concern is the distance customers with disabilities will have to endure when they need to rent a care after going to baggage claim.	<p>Concept E - There are concerns with the development surrounding the airport. If it fails, the airport could fail.</p> <p>Concept A-D - It is difficult to see a need for this amount of gates. The cost to build and the annual increase in O&M for the additional space is seen as unnecessary at this time.</p> <p>The eight gates in the East Terminal have not been used to their full</p> <p>If a new terminal were developed we always have an invested interest in the BHS. We also prefer to have the ability to do our own deicing.</p>	N/A	N/A
4. What other passenger amenities would your organization like to see incorporated into a new terminal / concourse development?	N/A	Updated lavatories Access to H2O in offices		N/A	N/A
5. What new technologies should be incorporated into a new terminal / concourse development?	Biometric door access system required - contactless	N/A	New technologies would not be requested but to reemphasize the importance of a well designed in-line BHS is a must.	N/A	At the time of development, the latest TSA technology for both checkpoint and checked baggage and a facility capable of incorporating administrative TSA staff to be on site
6. What health and safety amenities should be included in a new terminal / concourse development?	N/A	N/A	Same as current.	N/A	N/A
7. Please indicate environmental or sustainability requirements (LED, other) your organization would like incorporated into a new terminal / concourse development?	Vehicle storage area for Law enforcement vehicles in secured area with electric charging equipped facility	N/A	Nothing to provide at this time.	N/A	N/A
8. Anticipated aircraft sizing for the next 10 years?	N/A	N/A	737 800 MAX	N/A	N/A
9. Desired type of jet bridge?	N/A	N/A	Any standard jet bridge (JBT or Thyssenkrupp). No glass bridges.	N/A	N/A
10. What deicing needs are required for your operation?	N/A	N/A	The ability to do our own deicing is our preference.	N/A	N/A
11. Other exterior / site requirements?	N/A	N/A	<p>Landside:</p> <p>Nothing additional at this time.</p> <p>Airside:</p> <p>Nothing additional at this time.</p> <p>Counter:</p> <p>Same as current</p> <p>Number of kiosks:</p> <p>Same as current</p> <p>Types of scales desired:</p> <p>Same as current</p> <p>Airline Ticketing Office size (sf):</p> <p>Same as current</p> <p>Other requirements/comments:</p> <p>Nothing additional at this time.</p>	N/A	N/A
12. Ticketing / Check-in	N/A	N/A	<p>Number of kiosks:</p> <p>Same as current</p> <p>Types of scales desired:</p> <p>Same as current</p> <p>Airline Ticketing Office size (sf):</p> <p>Same as current</p> <p>Other requirements/comments:</p> <p>Nothing additional at this time.</p> <p>Preferred type of claim unit (circle):</p> <p>Sloped</p> <p>Baggage Makeup requirements:</p> <p>Same as current</p> <p>Baggage Makeup requirements:</p> <p>Same as current</p> <p>Other requirements/comments:</p> <p>Nothing additional at this time.</p>	N/A	N/A
13. Baggage Claim	N/A	N/A	<p>Preferred type of claim unit (circle):</p> <p>Sloped</p> <p>Baggage Makeup requirements:</p> <p>Same as current</p> <p>Baggage Makeup requirements:</p> <p>Same as current</p> <p>Other requirements/comments:</p> <p>Nothing additional at this time.</p>	N/A	N/A
14. Operations	N/A	N/A	<p>Airline operations (including berakroom) size SF:</p> <p>1/3 of today's SF</p> <p>GSE Storage requirements:</p> <p>Same as today</p> <p>Other operations requirements:</p> <p>Same as today</p>	N/A	<p>Airline operations (including berakroom) size SF:</p> <p>1/3 of today's SF</p> <p>GSE Storage requirements:</p> <p>Same as today</p> <p>Other operations requirements:</p> <p>TSA would need to leave the appropriate space based on the assigned airport staff with the ability to expand as air operations increase. TSA HQ would provide the exact square footage required at the time of development which may include, training rooms, break rooms, storage rooms, IT rooms, and administrative offices. These must be in accordance with the TSA Checkpoint Design Requirements Guide to ensure the installation of all TSA equipment and ability to expand.</p> <p>These must be in accordance with TSA screening needs equipment, to include, but not limited to, ASLS or equivalent technology, CT, as well as leased spaces that need VOIP and internet capabilities. Additionally, all cabling and communications requirements must be flexible enough to upgrade as needed</p>
15. Electrical Requirements	N/A	N/A	Same as current.	N/A	
16. Cabling / IT / Communications Requirements	N/A	N/A	Same as today	N/A	



15 Appendix D – Public Outreach

PREPARED FOR
Town of Islip
Long Island MacArthur Airport

Prepared by:
Landrum & Brown, Incorporated



Please rank your preferred concepts below.	Explain what you like about your preferred concept	What passenger amenities would you like to see incorporated into a new terminal/concourse development?	What new technologies should be incorporated into a new terminal/concourse development?	What health and safety amenities should be included in a new terminal/concourse development?	Please indicate environmental or sustainability initiatives (LEED, other) you would like incorporated into a new terminal/concourse development.
Concept B North; Concept E North; Concept F South;	It provides the most room for maximum expansion, can be phased in and is close to mass transit.	Restaurants, car rental, WiFi, coffee, a aquarium setup, outdoor smoking area behind security (basically a cage outside) Atlanta Georgia has this.	Moving sidewalks, wifi, plenty of displays showing flight status and gate information	Emergency EpiPens and defibrillators	Recycling bins
Concept B North; Concept E North; Concept F South;	Walkable to RR station.	Moving walkways.	Multiple arrival/ departure screens. Kiosks for check in. Charging stations.	Multiple security check areas to prevent over crowding.	Solar power.
Concept F South; Concept B North; Concept E North;	Keep airport smaller. This is a residential area. We dont need a large airport here!!! It is already too noisy and polluted and how is this paid for????				
Concept E North; Concept B North; Concept F South;	Best use				
Concept E North; Concept B North; Concept F South;	The overall live work and play potential of the development.	Enhanced eating and drinking amenities.	NA	NA	NA
Concept B North; Concept E North; Concept F South;	The opportunity for expansion	All amenities the airport has now			
Concept E North; Concept B North; Concept F South;	Connection to LIRR. Provides area for development around airport.	Hotel	Clear, TSA Precheck and open hold rooms that allow for proper queue.		
Concept B North; Concept E North; Concept F South;	Railway access	Winter weather protection from parking to gates	Quite aircraft, flying over my home. I don't live in Inwood.	Fuel efficient jets. Reduce air pollution	See above
Concept E North; Concept B North; Concept F South;	Most convenient for everything	American Express Club	Wifi everywhere and charging stations for tablets and phones	Urgent care center	Everything that will provide building efficiency and lower operational costs
Concept E North; Concept F South; Concept B North;	Development opportunities, increasing footprint for additional flights while connecting to LIRR has the ability to generate business to attract as tenants right there.	Amex lounges, library type lounges, international flights and expanded domestic flights, live music options, public arts showcases and loungers for long layovers (international flights etc) so travelers can rest more comfortably.	Any and all new technologies including self driving cars for local commuters which will limit the need for additional parking	Contactless experiences including food service options, more lounges & personal space for travelers	Any ride hailing vehicles should be required to be green or hybrid (for now), self driving is preferable. Solar lighting for parking lots, lots of car charging stations, permeable pavement, local food sourcing as suffolk is home to many farms etc.

<p>Concept E North; Concept B North; Concept F South;</p>	<p>I prefer concept E for a few reasons. 1) It maximizes the developable land and integrates well with the potential development of the county parcel to the north. 2) the Terminal design appears to be more consolidated and arranged in a way that appears to give a more pleasing "front of house" vs "back of house" operations in relation to the other developable areas. 3) Lastly due to the front vs back of house arrangement, additional expansion appears to be more easily facilitated with this layout 4) I believe this arrangement provides a strong pedestrian experience from Concept B, which is an important consideration for this project</p>	<p>Lots of seating with tables and outlets. iPad ordering for food and drinks, several high quality and local retailers/food options, marketing/education to visitors about the greatness, tourism and history of LI, bathroom stalls large enough to bring a carry on into, waiting area for cars, sufficient drop off/pick up space that doesn't cause traffic jams (e.g. dedicated parking spots)</p>	<p>Uber dedicated areas, touchless everything, fast security lines,</p>	<p>Touchless everything, lots of air circulation</p>	<p>Access to light and air throughout, access to multiple modes of transport (bike, pedestrian, train, ride share, etc.</p>
<p>Concept F South; Concept B North; Concept E North;</p>	<p>More parking for Islip residents, utilize free shuttle bus to transport to and from LIRR station instead of expensive move to north area.</p>	<p>Town parking lots</p>	<p>Make baggage claim closer to gates.</p>	<p>None</p>	<p>None</p>
<p>Concept B North; Concept E North; Concept F South;</p>	<p>Connectivity and closeness to the LIRR station is the most important, as the airport will never attract enough airlines and viable routes/flights if it does not have better connectivity to the broader NYC region. The current catchment area for the airport is very small. Please consider better marrying concepts B and E. The aviation layout of concept B is better as it is more expandable and scalable, but this should be combined with additional commercial and residential development both elsewhere on the north terminal site and the existing LIRR parking lots (concept E shows development on the existing parking lots). The connection between the airport and the train station should also be as direct and fast as possible (i.e. the moving walkway in concept B is better than an indirect walking connection in concept E, especially when navigating it with luggage).</p>	<p>Ground transportation should be as integrated as possible with the LIRR, especially as Amtrak considers expanding service to Ronkonkoma. e.g. rental car desks, taxi stands, TNC pickup, etc. should be located somewhere between the north terminal and the train station so both passengers can easily utilize it.</p>		<p>Not an important factor, hopefully COVID-19 will be an afterthought soon</p>	
<p>Concept B North; Concept E North; Concept F South;</p>	<p>Relocating the existing terminal to the north side of the airport offers connectivity to the LIRR and economic development opportunities. This future economic development will create an inviting pedestrian friendly experience as travelers depart the train.</p>	<p>Convenient and shorter walking distance from airport gates to baggage claim and additional food / beverage venues. Potential airline lounges for passengers to relax during layovers.</p>	<p>People movers to lessen walking distances.</p>	<p>Minimize contact surfaces. The creation of a 24 hour environment (publicly defensible space) as the number of airlines and travelers increases.</p>	<p>The terminal should incorporate LEED building construction standards (geothermal HVAC, green roof) and passive storm water management methods that lessen potential airplane / waterfowl conflicts.</p>

Email Response 1

I would have attended the Planning meeting (if invited) if I had received a notice BEFORE the meeting not after. Regarding the proposed plans Anything on the northside is better than the existing south side because it is closer to the LIRR
But I would not demolish the southside but instead convert it into a GA facility
ISP is advertised as an alternative to the JFK LGA EWR experienceone experience is all you need and you will never use it again
The existing parking facilities could be used for long term parking or at least reduced fee Save the parking lots. Develop the north side in increments as carriers expand BUT stays ahead of their plans
To me ISP is a diamond in the rough but we must develop it. The economy of LI depends upon it. You only have to look at current capabilities Westhampton could become the airport of choice as LI expands eastward... don't ignore it
I applaud Islip Town officials for thinking out of the box but as the founding father of the "USE IT OR LOST IT" campaign of many years ago NOW IS THE TIME
DO IT OR LOST IT

Email Response 2

Expanding the current airport to include international travel is irresponsible and self serving. There is zero justification to include international travel. This will only further diminish the quality of life for local residents.

Email Response 3

1. I don't see any plans talking about access to the Airport if there is a North Terminal. Currently, there are only single lane roads in the area. What is the plan to increase the road access from surrounding roads as well as the LIE from Exits 60 and/or 61?
2. While access to the Airport is helped by having closer proximity to the LIRR, what about parking?
Parking at the LIRR lots are quite full pre covid. Also, parking is free at the LIRR Ronkonkoma Station.
 - A. How and where will the parking be increased? (Is the LIRR on board with adding additional parking) (No pun intended)
 - B. If you have a North Terminal, there will be a loss of current revenue from the existing parking facilities. How does that impact the operational budget?
3. What is your definition of International? Is it mileage and/or countries and/or continents?
The Distance from Islip to Montreal is 324 Miles which is less than the distance from Islip to Pittsburgh (375). So this "International Flight" could use Domestic Jet Equipment and Current Runway sizes.
On a flight to London, UK (LHR 3,406 Miles, LGW 3,424 Miles), you would need larger equipment, fuel supply and runways greater than what is currently in use

Email Response 4

Detailed Description: ISP Terminal Narrative Study Thank you for the informative presentation on the future of Mac Arthur Airport as reported in your Islip Weekly E-Alert of July 23, 2021. It appears this was done in the beginning of June and the questionnaire was expected by July 16th, 2021. Since this information was received after the deadline for questions, I will pose my rationale in this email for your consideration. (1) What is the intended flight path if international travel is accepted? There will be noisier, increased flights and more traffic for the residents of Islip. (2) I am for increased nonstop flights within the U.S. before the addition of foreign flights. (3) Of the concepts presented, I am for Concept E. If there are shopping facilities, there are more jobs for Long Island. (4) The repeated references to connectivity to the LIRR baffle me. Consideration for walking and the time it takes to get to the airport seems moot when you have to remember that people are carrying their luggage, too. Lastly, (5) Exactly what technology is being considered? Thank you Angie for your continual support of your residents and your transparent information. Regards,

Email Response 5

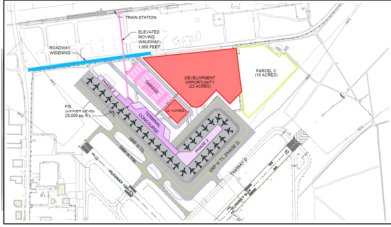
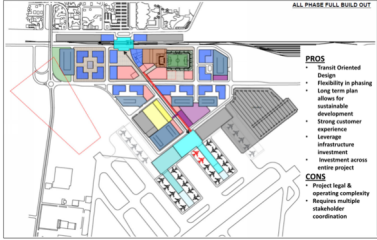

Must I remind you that we are still in a very lethal pandemic, killing millions across the world. Airport travel is the way virus and variants spread throughout the world. Airline passengers move from areas of high infection un vaccinated areas, spreading this dreadful epidemic. I cannot fathom why you continue to promote airline travel and the expansion of the airport considering the variants are being spread from areas in the south. Florida is being classified as the center of the non-immunized people that are fueling the rise of the virus. You should be concentrating on beating this plague not spreading it. Use the town resources to promote vaccinations and safe behavior. Promoting a drive-in at Holbrook spreads not only the virus, but sends the wrong message that the plague is over and there is no need to take health care warnings and prevention seriously. It is not enough to hold parades thank health care worker or handing out certificates of appreciation. What is needed is the promotion of safety and health measures to protect the health care workers and the health system. Promoting airports and travel is endangering the entire community. We can permanently lick this epidemic in the bud if all people and government officials work together to achieve an end to the virus transmissions. I notice you E-letters are also promoting comments to be sent to the FAA on the airport expansion plans. The FAA PR office may welcome comments, but in reality, they do not influence them in any way. The comments are window dressing to add legitimacy to their actions, but have no impact. These comments should be sent to the town representations who are the airport operators and should be the ones who consider the residents needs and have the authority to determine the airport's future not the FAA. The FAA policy is to remove people and their homes surrounding the airport. This is a major failure to accept responsibility for the airport and its effect on the surrounding and is dereliction of your responsibilities as town officials.

Email Response 5 (continued)

I also must bring to your attention that that our home foundations have cracked from the noise vibrations of the airport operations. This a real danger to our home's stability and to the life and safety of the inhabitants. There is a real risk our homes could collapse or cause structural damage. Past town officials stated they would not have approved the airport expansions if this information had not been withheld from them. This further shows the need for a comprehensive health safety study of the adverse effects of the airport operations which the FAA study does not address. Our homes and our bodies can no longer endure the present noise from the airport. How can you propose an airport expansion given this danger to live life limb and property? The FAA does not give priority to the dangers of airport operation but seeks to ignore and hide them with misleading and clever PR spin to the problem. I cannot understand your apparent ignorance of global warming and the contribution of burning fuel. Airport travel is a major contributor to global warming due to the high concentration of carbon monoxide and other pollutants they emit and that they are emitted in the upper atmosphere which heightens their contribution to global warming. The effects of global warming have resulted in extreme changes to earth. The Salt Lake is disappearing as well as other bodies of water worldwide. Glaciers are melting raising sea levels promoting increased flooding of coastal areas and inland floods as in Europe. The US west is burning from drought and dangerous high temperatures. Canada and the northwest US have never experienced these high temperatures and their residents are not equipped to handle them. Lightning is witnessed in the artic. The artic is becoming ice free. The examples and warnings from nature of a world catastrophe is imminent. Yet, you are considering adding to the problem by expanding air travel. Have you no shame or have you dismissed everything as false news and chose to ignore it. Have you become so insensitive to people and their safety that you are blind to the dangers of your actions?

Public Questionnaire:

I. Please rank your preferred concepts below. (1 – most preferred to 3 – least preferred)

Concept	Layout	Place Ranking Here
<p>Concept B North</p>		<p>1</p>
<p>Concept E North</p>	 <p>PROS</p> <ul style="list-style-type: none"> • Transit Oriented Design • Flexibility in phasing • Long term plan allows for sustainable development • Strong customer experience • Leverage infrastructure investment • Investment across entire project <p>CONS</p> <ul style="list-style-type: none"> • Project legal & operating complexity • Requires multiple stakeholder coordination 	<p>2</p>
<p>Concept F South</p>		<p>3</p>

II. Explain what you like about your preferred concept.

Connectivity and closeness to the LIRR station is the most important, as the airport will never attract enough airlines and viable routes/flights if it does not have better connectivity to the broader NYC region. The current catchment area for the airport is very small.

Please consider better marrying concepts B and E. The aviation layout of concept B is better as it is more expandable and scalable, but this should be combined with additional commercial and residential development both elsewhere on the north terminal site and the existing LIRR parking lots (concept E shows development on the existing parking lots). The connection between the airport and the train station should also be as direct and fast as possible (i.e. the moving walkway in concept B is better than an indirect walking connection in concept E, especially when navigating it with luggage).

Public Questionnaire:

General Comments:

III. What **passenger amenities** would you like to see incorporated into a new terminal / concourse development?

Ground transportation should be as integrated as possible with the LIRR, especially as Amtrak considers expanding service to Ronkonkoma. e.g. rental car desks, taxi stands, TNC pickup, etc. should be located somewhere between the north terminal and the train station so both passengers can easily utilize it.

IV. What **new technologies** should be incorporated into a new terminal / concourse development?

V. What **health and safety amenities** should be included in a new terminal / concourse development?

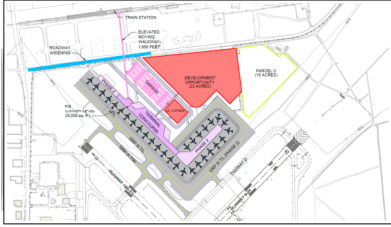
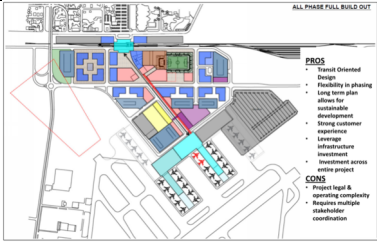

Not an important factor, hopefully COVID-19 will be an afterthought soon

VI. Please indicate **environmental or sustainability** initiatives (LEED, other) you would like incorporated into a new terminal / concourse development.

We appreciate your time and participation in this study for the future of Long Island MacArthur Airport!

Public Questionnaire:

I. Please rank you preferred concepts below. (1 – most preferred to 3 – least preferred)

Concept	Layout	Place Ranking Here
<p>Concept B North</p>		<p>1</p>
<p>Concept E North</p>	 <p>PROS</p> <ul style="list-style-type: none"> • Transit Oriented Design • Flexibility in phasing • Long term plan allows for sustainable development • Strong customer experience • Leverage infrastructure investment • Investment across entire project <p>CONS</p> <ul style="list-style-type: none"> • Project legal & operating complexity • Requires multiple stakeholder coordination 	<p>2</p>
<p>Concept F South</p>		<p>Don't waste any more time or money on the south side.</p>

II. Explain what you like about your preferred concept.

Terminal placement on the north side near LIRR was first discussed around 1951. It's about time someone else noticed.

Public Questionnaire:

General Comments:

III. What **passenger amenities** would you like to see incorporated into a new terminal / concourse development?

Passengers should be able to board a train between Manhattan and Brookhaven National Lab (BNL) and should not have to step outside until they reach their final destination.

IV. What **new technologies** should be incorporated into a new terminal / concourse development?

V. What **health and safety amenities** should be included in a new terminal / concourse development?

See # III




VI. Please indicate **environmental or sustainability** initiatives (LEED, other) you would like incorporated into a new terminal / concourse development.

Rail service underground for traffic mitigation at RR crossings from Ocean Ave. on the west to Main Street, Holbrook on the east so as to open traffic flow to the north and east of the project. At the present time, the L.I.E. and the LIRR form a hard corridor creating traffic problems throughout the area.

We appreciate your time and participation in this study for the future of Long Island MacArthur Airport!

Public Questionnaire:

I. Please rank your preferred concepts below. (1 – most preferred to 3 – least preferred)

Concept	Layout	Place Ranking Here
Concept B North		1
Concept E North		2
Concept F South		3

II. Explain what you like about your preferred concept.

It is essential that we connect the terminal to the LIRR station and concept B does it in the best manner. We can no longer have two major transportation facilities separated by our lack of awareness.

Public Questionnaire:

General Comments:

- III. What **passenger amenities** would you like to see incorporated into a new terminal / concourse development?

*food service
electronic baggage claims*

- IV. What **new technologies** should be incorporated into a new terminal / concourse development?

*television screens for everyone at
each seat
complete electronic check-in*

- V. What **health and safety amenities** should be included in a new terminal / concourse development?

- VI. Please indicate **environmental or sustainability** initiatives (LEED, other) you would like incorporated into a new terminal / concourse development.

sustainable energy such as solar + wind

We appreciate your time and participation in this study for the future of Long Island MacArthur Airport!



16 Appendix E – Passenger Boarding Bridge Data

PREPARED FOR
Town of Islip
Long Island MacArthur Airport

Prepared by:
Landrum & Brown, Incorporated



AIRPORT LOCATION

ISP

CUSTOMER NAME

TOWN OF ISLIP

CUSTOMER CODE

ORDERED BY

CUSTOMER P.O.#

JOB #

09 2075



OXFORD™

AIRPORT TECHNICAL SERVICES

SALES ORDER

09 181611

OCT 24 2017

ORDER DATE: 10/18/17

OXFORD NATIONWIDE 1 (800) OXFORD - 8

DAY OF WEEK: (S) (M) (T) (W) (T) (F)

QTY.	MATERIAL PARTS	OXFORD P.O.#
1	J&B NOSE KIT	R-3457A

DESCRIPTION OF WORK

JET BRIDGE GATE 23
 GPU SHUTTING OFF / RAN ON LOAD BANK
 - DIAGNOSED, FOUND CABLE END BAD / WORN
 - REMOVED AND REPLACED NOSE KIT
 - RAN ON LOAD BANK AGAIN / TESTED OK

JET BRIDGE GATE 19
 - GPU COMING UP WITH FAULT CODES
 - RAN ON LOAD BANK, FOUND CABLE FAILING
 - WILL CALL WITH ESTIMATE

SALES CATEGORY

- BOARDING BRIDGE
- CARGO CONV.
- BAGGAGE CONV.
- 400 HZ POWER
- PRECOND. AIR
- GSE
- VEHICLE FACILITY
- HEADSETS
- F.I.D.
- MISC.

BILL TYPE NEW CUSTOMER

EC PM LS TM MISC

TO BE COMPLETED BY OXFORD

S.O. COMPLETED BY: [Signature] DATE: _____

S.O. APPROVED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____

LABOR	HOURS		
	S	P	H
GREG RUGZAN 8.00			
NEIL PEDERSEN 4.00			

FOR ACCOUNTING USE ONLY

SALES TAXABLE

MATERIALS _____

FREIGHT _____

LABOR _____

TOTALS _____

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____ SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work)

AIRPORT LOCATION ISL
 CUSTOMER NAME Town of
 CUSTOMER CODE _____
 ORDERED BY _____
 CUSTOMER P.O. # _____
 JOB # 09-2075

780309



JAN - 8 2017

SALES ORDER

09 182107

ORDER DATE: 12-31-2017

OXFORD NATIONWIDE 1 (800) OXFORD - 8

DAY OF WEEK: S M T W T F S

QTY.	MATERIAL PARTS	OXFORD P.O.#	UNIT PRICE
1	Pack Fuses	09-338977	

DESCRIPTION OF WORK
Called NO lights in Gate #19
Trouble shot Bad Battery Backup Ballast
Disconnected Ballast + installed New Fuses

SALES CATEGORY

- J BOARDING BRIDGE
- G GSE
- C CARGO CONV.
- W VEHICLE FACILITY
- B BAGGAGE CONV.
- D HEADSETS
- F 400 HZ POWER
- T F.I.D.
- P PRECOND. AIR
- Z MISC.

BILL TYPE _____ NEW CUSTOMER

PM LS TM MISC

TO BE COMPLETED BY OXFORD

DATE: _____
 DATE: _____
 DATE: _____

LABOR	HOURS			FOR ACCOUNTING USE ONLY
	S	P	H	
Ayaz Bukhari		4		SALES TAXABLE <input type="radio"/> Y <input checked="" type="radio"/> N
				MATERIALS <u>46.00</u>
				FREIGHT _____
				LABOR <u>384.00</u>
				TOTALS <u>430.00</u>

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____ SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.) _____

179 HALL, MAIN STREET
ISLIP, NEW YORK 11751
PURCHASE ORDER

Against Contract No.

CLAIMANT'S NAME AND ADDRESS
Oxford Airport Technical Services
474 Meecham Avenue
Elmont NY 11003

DATE

SERIAL NO. - **174337**

CLAIM NO. -

VENDOR NO. -

2427

PURCHASE ORDER

DEPT. LI. MacARTHUR AIRPORT **174337**

DELIVER TO: 100 Arrival Ave. Ste 100

Konkoma NY 11779 (631) 467-3300

Date of Delivery or Service	Quantity	ITEMIZATION Where applicable, unit price must be shown	Unit Price	Totals
		Gate 10 PBB Outer Cab Floor Replacement		
		Remove and dispose of existing Outer Cab Floor		
		Supply and install new Outer Cab floor to include		
		3/4 plywood, ribbed rubber matting		
		and aluminum trim		
		Remove door saddle from Terminal door Entrance		
		and remove and dispose of existing rotted plywood		
		Supply and install new 5'X2' plywood, ribbed rubber		
		matting and aluminum trim then reinstall door saddle		
		at Terminal Door Entrance Quote #10-415		
		TOTAL		5054 00

Claimant certifies that the prices charged herein do not include Federal Excise Tax or any Federal, N. Y. State or N. Y. C. Sales Tax and are not higher than prices charged to any governmental or commercial consumer for like deliveries.

Order number and Dept. must appear on all packages, invoices and Correspondence.

Delivery must be made within doors of specified destination.

IMPORTANT: Return Town of Islip Claim Form or you cannot be paid. The Town of Islip is exempt from all Federal and State taxes.

If order specifies F. O. B. Shipping point, Vendor must attach freight or express receipts when filing claim.

I, Stephen S. Smith, hereby certify the above services or materials are necessary and

that there are funds available in Appropriation Account No. CT5619/2560

Admin Supervisor

Signed

Title

AKT

Dept.

APPROVAL

1/19/17
Date

[Signature]
PURCHASING DIRECTOR

DEPARTMENT COPY



OXFORD®

AIRPORT TECHNICAL SERVICES

TO: Oxford Electronics, Inc., P.O. Box 10566, Newark, NJ 07193-0566 Tel (516) 326-6262 Fax (516) 775-2552

Page: 1

LONG ISLAND MACARTHUR AIRPORT
Attn: STEVE SINISKI
AIRLINE TERMINAL BUILDING
100 ARRIVAL AVE
RONKONKOMA NY 11779-7398
USA

CUSTOMER CODE: 09-LIMAC
CUSTOMER NUMBER: 53882
INVOICE NUMBER: 9900609545
INVOICE DATE: 07/31/2018
ORDER DATE: 07/31/2018
ORDER NUMBER: 105-0718
JOB NUMBER: 17060105

INVOICE NOTE:
* PREVENTATIVE MAINTENANCE FOR THE PBB'S
FOR THE MONTH OF JULY.

DESCRIPTION	QUANTITY	RATE /UM	VALUE	TOTAL
LUMPSUM CHARGE	1.00	2,798.7500/HR	2,798.75	
				Total Items
				Total
				USD
				2,798.75
				2,798.75

CUSTOMER P.O.

SHIP VIA

F.O.B.

TERMS

PO 184307

Net 30 Days

IF YOU HAVE ANY PROBLEMS WITH THIS INVOICE
PLEASE CONTACT CUSTOMER SERVICE AT 1(800)OXFORD8

ZOX

SALES ORDER

125269

17

ORDER DATE

DAY OF WEEK: (S) (M) (T) (W) (T) (F) (S)

NOV 29 2018

AIRPORT TECHNICAL SERVICES

OXFORD



OXFORD NATIONWIDE 1 (800) OXFORD - 8

DESCRIPTION OF WORK	H	P	S
RECEIVEDS AND STATIONING GATE 23 NOT WORKING			
PROBLEM WITH			
TRUCKS @ SITE - CHECKED			
FINDS OUT IT IS WHEEL NOT MOVING			
CHECKS ALL GEAR - FOUND INOPERABLE PORT			
WORKING			
WAS TO PICK UP NEW LOCATION			
REMOVED DITCHES LOCATION - INOPERABLE PER			
TECHNICALS AND WORKING			
WAS TO SET THE PERMITS AND CHECKING TO BE			
LISTS ARE OPERATIONS & OF			

LABOR			
-------	--	--	--

FOR ACCOUNTING USE ONLY

SALES TAXABLE (A) (N)

MATERIALS

FREIGHT

LABOR

TOTALS

TO BE COMPLETED BY CUSTOMER
 DATE COMPLETED
 SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.)

AIRPORT LOCATION
 CUSTOMER NAME
 CUSTOMER CODE
 ORDERED BY
 CUSTOMER P.O. #
 JOB #

QTY.	MATERIAL PARTS	OXFORD P.O. #
1	7.5 HP JDU	12-
	HITCH	79685

SALES CATEGORY

- (J) BOARDING BRIDGE
- (C) CARGO CONV.
- (B) BAGGAGE CONV.
- (F) 400 HZ POWER
- (P) PRECOND. AIR
- (G) GSE
- (W) VEHICLE FACILITY
- (D) HEADSETS
- (T) F.I.D.
- (Z) MISC.

BILL TYPE
 NEW CUSTOMER

TO BE COMPLETED BY OXFORD

COMPLETED BY: _____ DATE: _____
 ORDERED BY: _____ DATE: _____
 JOB # _____ DATE: _____

AIRPORT LOCATION FSLIP
 CUSTOMER NAME TOWN JET BRIDGE
 CUSTOMER CODE _____
 ORDERED BY _____
 CUSTOMER P.O. # _____
 IB # 09-0105



SALES ORDER
09 200612

ORDER DATE: 1-29-19
Tuesday
 DAY OF WEEK: **S M W T F S**

OXFORD NATIONWIDE 1 (800) OXFORD - 8

QTY	MATERIAL PARTS	OXFORD P.O.#	UNIT PRICE

TOWN JET BRIDGE	DESCRIPTION OF WORK
	Completed monthly pm ON TOWN JET BRIDGE GATE B-21

SALES CATEGORY

BOARDING BRIDGE GSE
 CARGO CONV. VEHICLE FACILITY
 BAGGAGE CONV. HEADSETS
 400 HZ POWER F.I.D.
 PRECOND. AIR MISC.

BILL TYPE NEW CUSTOMER

LS TM MISC

LABOR	HOURS			FOR ACCOUNTING USE ONLY
	S	P	H	
Ayaz Bukhari	4/5			SALES TAXABLE <input checked="" type="checkbox"/> <input type="checkbox"/> N
Jimmy	4/5			
				MATERIALS _____
				FREIGHT _____
				LABOR _____
				TOTALS _____

TO BE COMPLETED BY OXFORD

ED BY: Ayaz Bukhari DATE: 1/29/19
 DATE: _____
 DATE: _____

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____
 SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.) _____

LOCAL OFFICE

AIRPORT LOCATION Lima
 CUSTOMER NAME TOWN OF ISLA
 CUSTOMER CODE _____
 ORDERED BY _____
 CUSTOMER P.O. # _____
 JOB # 09-268

841074



OXFORD™

AIRPORT TECHNICAL SERVICES

SALES ORDER ✓

09 207224

ORDER DATE: 12-11-19

OXFORD NATIONWIDE 1 (800) OXFORD - 8

DAY OF WEEK: S M T W T F S

QTY.	MATERIAL PARTS	OXFORD P.O.#	UNIT PRICE
1	LOAD BANK	0/5	

DESCRIPTION OF WORK

E-Call - Call stating GPU on GATE 19 NOT WORKING PROPERLY

- ARRIVED ON SITE & FOUND UNIT HAVING A FAULT ON INVERTER IC

- OPENED UP UNIT & INSPECTED INVERTER CONTROL BOARDS

- SWAPPED CONTROL BOARDS & CHECKED ALL CONNECTIONS

- CLEANED AIR FILTERS AT BLOWER MOTOR

- CLOSED UNIT & TESTED ON LOAD BANK

- Ran unit on FULL LOAD for hour

- no ISSUES FOUND AFTER TEST - PUT GPU BACK IN SERVICE

- OBSERVED NEXT FLIGHT

- UNIT IN GOOD WORKING CONDITION

SALES CATEGORY

- BOARDING BRIDGE
- CARGO CONV.
- BAGGAGE CONV.
- 400 HZ POWER
- PRECOND. AIR
- GSE
- VEHICLE FACILITY
- HEADSETS
- F.I.D.
- MISC.

BILL TYPE NEW CUSTOMER

EC PM LS TM MISC

TO BE COMPLETED BY OXFORD

S.O. COMPLETED BY: _____ DATE: 12/17
 S.O. APPROVED BY: [Signature] DATE: 12/17
 HDQ APPROVED BY: _____ DATE: _____

LABOR	HOURS			FOR ACCOUNTING USE ONLY
	S	P	H	
G. RUIZAT	8			SALES TAXABLE <input checked="" type="radio"/> Y <input type="radio"/> N
				MATERIALS _____
				FREIGHT _____
				LABOR _____
				TOTALS <u>\$4,200.00</u>

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____ SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.)
[Signature]

LOCAL OFFICE

AIRPORT LOCATION Lima
 CUSTOMER NAME Town of ISCP
 CUSTOMER CODE _____
 ORDERED BY _____
 CUSTOMER P.O. # _____
 JOB # 09-2087



SALES ORDER ✓

09 221735

ORDER DATE: 12-18-19

OXFORD NATIONWIDE 1 (800) OXFORD - 8

DAY OF WEEK: **S M T ~~W~~ T F S**

QTY.	MATERIAL PARTS	OXFORD P.O.#	UNIT PRICE
1	GPU NOSE Kit.	12-88215	

DESCRIPTION OF WORK
E-CALL. GATE 19 GROUND POWER UNIT NOT WORKING
- ARRIVED ON SITE + FOUND NO FAULTS IN FAULT LOG
- INSPECTED GROUND POWER CABLE
- FOUND WEAR ON CABLE HEAD
- REMOVED OLD GPU HEAD + REPLACED WITH NEW
- TESTED UNIT ON LOAD BANK
- UNIT TESTED GOOD
- SHOWED MAINTENANCE UNIT RUNNING ON LOAD BANK
- GPU PUT BACK INTO SERVICE

SALES CATEGORY

- BOARDING BRIDGE
- CARGO CONV.
- BAGGAGE CONV.
- 400 HZ POWER
- PRECOND. AIR
- GSE
- VEHICLE FACILITY
- HEADSETS
- F.I.D.
- MISC.

BILL TYPE

NEW CUSTOMER

EC PM LS TM MISC

TO BE COMPLETED BY OXFORD

S.O. COMPLETED BY: _____ DATE: _____
 S.O. APPROVED BY: _____ DATE: 12/23
 APPROVED BY: _____ DATE: _____

LABOR	HOURS		FOR ACCOUNTING USE ONLY
	P	H	
G. ROLZAS	1.5		SALES TAXABLE <input checked="" type="radio"/> Y <input type="radio"/> N
E-CALL			MATERIALS _____
			FREIGHT _____
			LABOR _____
			TOTALS <u>725.65</u>

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____ SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.)

LOCAL OFFICE

AIRPORT LOCATION LIMA
 CUSTOMER NAME TOWN OF KCP
 CUSTOMER CODE _____
 ORDERED BY _____
 CUSTOMER P.O. # _____
 JOB # 09-2087



SALES ORDER

09 221838

ORDER DATE: 1/13/20

OXFORD NATIONWIDE 1 (800) OXFORD - 8

DAY OF WEEK: **S** **M** **T** **W** **T** **F** **S**

QTY.	MATERIAL PARTS	OXFORD P.O.#
2	20' WIRE WOUND	09-00210
	STARTED UP AIR	1
	HOSE	1

DESCRIPTION OF WORK
RECEIVED OK TO INSTALL 2 20' WIRE
WOUND PC AIR HOSES ON GATES 19 + 23
ARRIVED ON SITE & SIGNED IN
REMOVED OLD PC AIR DUCTS ON GATES 19 + 23
INSTALLED NEW STAIER HOSE ON GATES
NOTE- ALL WORK DONE AROUND FLIGHTS

SALES CATEGORY

- BOARDING BRIDGE
- CARGO CONV.
- BAGGAGE CONV.
- 400 HZ POWER
- PRECOND. AIR
- GSE
- VEHICLE FACILITY
- HEADSETS
- F.I.D.
- MISC.

BILL TYPE _____ NEW CUSTOMER

EC PM LS FM MISC

TO BE COMPLETED BY OXFORD

S.O. COMPLETED BY: _____ DATE: _____
 S.O. APPROVED BY: _____ DATE: _____
 HDQ APPROVED BY: _____ DATE: _____

LABOR	HOURS		
	S	P	H
ROONEY	4		

FOR ACCOUNTING USE ONLY	
SALES TAXABLE	<input checked="" type="radio"/> Y <input type="radio"/> N
MATERIALS	_____
FREIGHT	_____
LABOR	_____
TOTALS	_____

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: 1/13/20 SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.) [Signature]

AIRPORT LOCATION Lima
 CUSTOMER NAME TOWN OF ISLIP
 CUSTOMER CODE _____
 ORDERED BY _____
 CUSTOMER P.O. # _____
 JOB # 09-2087.

88 84494

OXFORDTM
 AIRPORT TECHNICAL SERVICES

FEB - 8 2020

SALES ORDER

09 221870

ORDER DATE: 1/24/20

OXFORD NATIONWIDE 1 (800) OXFORD - 8

DAY OF WEEK: (S) (M) (T) (W) (T) (F) (S)

QTY.	MATERIAL PARTS	OXFORD P.O.#	UNIT PRICE
1	CONTRACTOR	09-	
1	AUX CONTRACT.	88247.	

DESCRIPTION OF WORK
RECEIVED CALL STATING GATE 19 NOT WORKING
ARRIVED ON SITE + FOUND FAULT ON INVERTERS
SHOWING 24.1
- OVER FAULT VOLTAGE PROTECTION
- TESTED VOLTAGE AT INVERTERS - LOST PHASE
- FOUND BAD 1 CON CONTACTOR
- RETRIEVED CONTACTOR + INSTALLED
- TESTED ALL FUNCTIONS
- TESTED GOOD PUT BACK IN SERVICE

SALES CATEGORY

- J BOARDING BRIDGE
- C CARGO CONV.
- B BAGGAGE CONV.
- F 400 HZ POWER
- P PRECOND. AIR
- G GSE
- W VEHICLE FACILITY
- D HEADSETS
- T F.I.D.
- Z MISC.

BILL TYPE _____ NEW CUSTOMER

EC PM LS TM MISC

TO BE COMPLETED BY OXFORD

S.O. COMPLETED BY: _____ DATE: _____
 S.O. APPROVED BY: _____ DATE: 1/31
 _____ DATE: _____

LABOR	HOURS		
	S	P	H
CONUCZAT.	8		

FOR ACCOUNTING USE ONLY	
SALES TAXABLE	<input checked="" type="radio"/> Y <input type="radio"/> N
MATERIALS	_____
FREIGHT	_____
LABOR	_____ 27
TOTALS	\$1,266.09

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____ SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.) _____

AIRPORT LOCATION LIMA
 CUSTOMER NAME Town of Islip
 CUSTOMER CODE _____
 ORDERED BY _____
 CUSTOMER P.O. # 09-2087
 JOB # _____

846744



MAR - 2 2020

SALES ORDER
 09 207228

ORDER DATE: 2-26-2020

OXFORD NATIONWIDE 1 (800) OXFORD - 8

DAY OF WEEK: (S) (M) (T) (W) (T) (F) (S)

QTY.	MATERIAL PARTS	OXFORD P.O.#	UNIT PRICE
1	LOAD BANK	O/S	

DESCRIPTION OF WORK

E-CALL GATE 23 GPU NOT WORKING

ARRIVED ON SITE & HOOKED GPU UP
 TO LOAD BANK TO TEST UNIT

FOUND UNIT WILL RUN ON LOW LOAD BUT ONCE
 RAMPED UP IT WOULD FAULT OUT & SHOW
 BAD INVERTERS ON IB + IC

NEED TO REPLACE INVERTER BANK

WILL ORDER AND ARRIVE ON SITE TO INSTALL
 UPON ARRIVAL

SALES CATEGORY

- J BOARDING BRIDGE
- G GSE
- C CARGO CONV.
- W VEHICLE FACILITY
- B BAGGAGE CONV.
- D HEADSETS
- X 400 HZ POWER
- T F.I.D.
- P PRECOND. AIR
- Z MISC.

BILL TYPE _____ NEW CUSTOMER

EC PM LS TM MISC O

TO BE COMPLETED BY OXFORD

LABOR	HOURS			FOR ACCOUNTING USE ONLY
	S	P	H	
G. WEAJ	MIN			SALES TAXABLE <input checked="" type="radio"/> Y <input type="radio"/> N
	E			MATERIALS _____
	CALL			FREIGHT _____
				LABOR _____
				TOTALS \$536.41

S.O. COMPLETED BY: _____ DATE: 2/28
 S.O. APPROVED BY: C DATE: _____
 HQO APPROVED BY: _____ DATE: _____

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____ SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work)
David Dehn

AIRPORT LOCATION LIMA
 CUSTOMER NAME RWA OF ISLA
 CUSTOMER CODE _____
 ORDERED BY _____
 CUSTOMER P.O. # _____
 JOB # 09-2087

848187



OXFORD™

AIRPORT TECHNICAL SERVICES

MAR 13 2020
SALES ORDER

09 207230

ORDER DATE: 3-9-20

DAY OF WEEK: S M T W T F S

OXFORD NATIONWIDE 1 (800) OXFORD - 8

QTY.	MATERIAL PARTS	OXFORD P.O.#	UNIT PRICE
1	INVERTER KIT	09	
1	EXT 130 RES/CAF	88293	

DESCRIPTION OF WORK

GATE 23 BPU

RETURNED TO INSTAKE INVERTER KIT & CAPACITORS
 BOARD ON LINE 1 BANK

REMOVED OLD BUS BAR, TRANSFORMER, CAPACITORS & BOARD
 INVERTERS & BLOCKS AND INSTALLED NEW

TESTED UNIT ON LEAD BANK

TESTED GOOD - UNIT PUT BACK IN SERVICE

SALES CATEGORY

- J BOARDING BRIDGE
- G GSE
- C CARGO CONV.
- W VEHICLE FACILITY
- B BAGGAGE CONV.
- D HEADSETS
- 400 HZ POWER
- T F.I.D.
- P PRECOND. AIR
- Z MISC.

BILL TYPE _____ NEW CUSTOMER

EC PM LS FM MISC

TO BE COMPLETED BY OXFORD

S.O. COMPLETED BY: _____ DATE: _____
 S.O. APPROVED BY: _____ DATE: 3/13
 HDQ APPROVED BY: _____ DATE: _____

LABOR	HOURS		
	S	P	H
G. IZZO	4		

FOR ACCOUNTING USE ONLY

SALES TAXABLE Y N

MATERIALS _____

FREIGHT _____

LABOR _____

TOTALS \$2132.16

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____ SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.)

AIRPORT LOCATION LIMA
 CUSTOMER NAME Town of Islip
 CUSTOMER CODE _____
 ORDERED BY _____
 CUSTOMER P.O. # _____
 JOB # 09-2087

850724
 ✓



Cont of ...
 MAR 30 2020

SALES ORDER

09 207239

ORDER DATE: 3-25-20

OXFORD NATIONWIDE 1 (800) OXFORD - 8

DAY OF WEEK: S M T W T F S

QTY.	MATERIAL PARTS	OXFORD P.O.#	UNIT PRICE
-	FOUND CONTACTOR WELDED SHUT		
-	HAD TO RETRIEVE NEW CONTACTOR FROM LGA		
-	INSTALLED NEW CONTACTOR & FOUND 3 FUSES BURNED ON DISCONNECT		
-	HAVE TO RETRIEVE NEW FUSES IN MORNING		
1	<u>CONTACTOR</u>	<u>09-94233</u>	

DESCRIPTION OF WORK

E-CALL GATE 19 NOT WORKING

ARRIVED ON SITE & TESTED BRIDGE

- FOUND TUNNEL LIGHTS OUT & BRIDGE NOT TURNING ON

- BEGAN TROUBLE SHOOTING & FOUND POWER AT CONSOLE BUT NEUTRAL WIRES HAD 120 VOLTS

- TRACED ALL NEUTRAL WIRE IN CONSOLE FOUND NO SHORTS

- TRACED WIRING BACK TO ROTUNDA BOX

- FOUND WIRE 305 ON CONTACT BLOCK SHORTING OUT DATE NEUTRAL CONTACTS.

- REMOVED SHORT & RE CONNECTED - BRIDGE STILL NOT WORKING PROPERLY

- CONTINUED TROUBLE SHOOTING - FOUND I CAN NOT

SALES CATEGORY

- BOARDING BRIDGE
- CARGO CONV.
- BAGGAGE CONV.
- 400 HZ POWER
- PRECOND. AIR
- GSE
- VEHICLE FACILITY
- HEADSETS
- F.I.D.
- MISC.

BILL TYPE _____ NEW CUSTOMER

EC PM LS MISC

TO BE COMPLETED BY OXFORD

S.O. COMPLETED BY: _____ DATE: _____
 S.O. APPROVED BY: _____ DATE: 3/30
 HDQ APPROVED BY: _____ DATE: _____

LABOR	HOURS			FOR ACCOUNTING USE ONLY
	S	P	H	
G. Roczny	8	0	0	SALES TAXABLE <input checked="" type="radio"/> Y <input type="radio"/> N
				MATERIALS _____
				FREIGHT _____
				LABOR \$ 2087.10
				TOTALS \$ 1,652.5

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____ SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.) _____

LOCAL OFFICE

AIRPORT LOCATION

ISLIP
TOWN OF ISLIP?

859741



SALES L

09 23064

CUSTOMER NAME

CUSTOMER CODE

ORDERED BY

CUSTOMER P.O. #

JOB #

09-2087

OXFORD™

AIRPORT TECHNICAL SERVICES

SEP 23 2020

ORDER DATE:

9/8/20

OXFORD NATIONWIDE 1 (800) OXFORD -8

DAY OF WEEK:

S M ~~T~~ W T F S

QTY.	MATERIAL PARTS	OXFORD P.O.#	UNIT PRICE	DESCRIPTION OF WORK
2	10' MOULDINGS	09		<p>① GATE #23 CARPET & MOULDING REPAIR</p> <p>② RECEIVED CALL STATING CARPET & MOULDING DAMAGED @ ROUND & SERVICE DOOR.</p> <p>③ ARRIVED ON SITE - REMOVED ALL DAMAGED MOULDING.</p> <p>④ POLISHED BACK CARPET & CLEANED AREAS.</p> <p>⑤ INSTALLED AN NEW CARPET MOULDING.</p> <p>⑥ CLOSED & SEWED CARPET.</p> <p>NOTE: WOOD FLOOR ROTTING. WILL NEED TO REPLACE w/ NEW PLY WOOD.</p>
		93280		

SALES CATEGORY

- BOARDING BRIDGE
- CARGO CONV.
- BAGGAGE CONV.
- 400 HZ POWER
- PRECOND. AIR
- GSE
- VEHICLE FACILITY
- HEADSETS
- F.I.D.
- MISC.

BILL TYPE

NEW CUSTOMER

EC PM LS TR MISC

TO BE COMPLETED BY OXFORD

S.O. COMPLETED BY: _____ DATE: _____

S.O. APPROVED BY: [Signature] DATE: 9/18

HDQ APPROVED BY: _____ DATE: _____

LABOR	HOURS			FOR ACCOUNTING USE ONLY
	S	P	H	
J. POONEY	6			SALES TAXABLE <input type="checkbox"/> Y <input type="checkbox"/> N MATERIALS _____ FREIGHT _____ LABOR _____ TOTALS \$1,216.70
R. FIELD	6			

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____

SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.)
[Signature]

LOCAL OFFICE

AIRPORT LOCATION ISLI?
 CUSTOMER NAME TOWN OF ISLI?
 CUSTOMER CODE _____
 ORDERED BY _____
 CUSTOMER P.O.# _____
 JOB # 09-2087

854177



OXFORD™
 AIRPORT TECHNICAL SERVICES

SEP 23 2020

SALES U

09 23061

ORDER DATE: 9/11/20

OXFORD NATIONWIDE 1 (800) OXFORD - 8

DAY OF WEEK: (S) (M) (T) (W) (T) (F) (S)

QTY.	MATERIAL PARTS	OXFORD P.O.#	UNIT PRICE
1	4' LIGHT FIXTURE.	09-03261	
1	CONTROL CABLE	09-03253	
1	A-300PAD OUTER	09-03259	
1	A-300PAD INNER		
1	1/2 CLOSURE PAD		

DESCRIPTION OF WORK

COATE # 238
 - CONTINUED REPAIRS ON COATE 23.
 - REMOVED DAMAGED LIGHT FIXTURE TRIM
 OUTER CAS & INSTALLED NEW. TERMINATE
 WIRE CONNECTIONS & TESTED OKAY.
 - INSTALLED NEW 4HS CANOPY CLOSURE
 PADS ALONG WITH A-300 PADS INNER &
 OUTER.
 - REMOVED CONTROL CABLE FROM TRAIL
 UNIT. INSTALLED NEW CABLE, LARGED WIRE
 & TERMINATED WIRE CONNECTIONS
 - TESTED OPERATION OF UNIT, CHECKED OKAY

SALES CATEGORY

- BOARDING BRIDGE
- CARGO CONV.
- BAGGAGE CONV.
- 400 HZ POWER
- PRECOND. AIR
- GSE
- VEHICLE FACILITY
- HEADSETS
- F.I.D.
- MISC.

BILL TYPE _____ NEW CUSTOMER _____

EC PM LS TR MISC

TO BE COMPLETED BY OXFORD

S.O. COMPLETED BY: _____ DATE: _____
 S.O. APPROVED BY: _____ DATE: 9/18
 HDQ APPROVED BY: _____ DATE: _____

LABOR	HOURS			FOR ACCOUNTING USE ONLY
	S	P	H	
A. EVERGREEN	8			SALES TAXABLE <input checked="" type="radio"/> <input type="radio"/>
J. ROONEY	8			MATERIALS _____
				FREIGHT _____
				LABOR _____
				TOTALS \$2,538.1

TO BE COMPLETED BY CUSTOMER

DATE COMPLETED: _____ SIGNATURE (I hereby acknowledge the satisfactory completion of the above described work.)
Paul Chrysler

