PENSACOLA INTERNATIONAL AIRPORT

MASTER PLAN UPDATE

WORKING PAPER 5

ALTERNATIVES AND RECOMMENDED MASTER PLAN

OCTOBER 2018

RS&H

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CHAPTER 5

ALTERNATIVES AND RECOMMENDED MASTER PLAN

5.1 INTRODUCTION

The alternatives phase of an Airport Master Plan identifies development solutions, and guide decision-making towards a recommended solution to accommodate the future demand for the airport. The alternatives phase for this Airport Master Plan Update included preparation of several development concepts and alternatives.

These concepts and alternatives included innovative and far-reaching options that provide a "balanced" airport plan that meets or exceeds customer expectations for level of service and results in a fair and equitable distribution of user fees. A range of alternatives was prepared for the major airport functional areas. Development concepts and alternatives were prepared based on input from Pensacola International Airport (referred to as "PNS") staff, a Technical Advisory Committee (TAC) and a City Advisory Committee (CAC). The Development concepts and alternatives were evaluated using an objective screening process, which is described further in detail in this document.

The terminal, parking, and access concept were identified as part of an integrated package. However, evaluation was conducted separately to consider the individual merits of each group of alternatives. Key to this task was to identify the ultimate capacity of the existing terminal area. The overall alternative was tested against a range of forecast scenarios to ensure that it is adequately flexible to meet varying levels of demand.

Sustainability initiatives were identified to lessen the consumption of environmental resources or minimize the overall environmental effects of proposed development during the development of facility alternatives. Sustainability goals and objectives were also used as screening criteria during the development of alternatives for the facility requirements or associated renewal and replacement projects.

The existing conditions are described in *Working Paper 2, Inventory of Existing Conditions*, the current and future demand are described in *Working Paper 3, Aviation Activity Forecasts*, and the requirements to accommodate the future demand at PNS are described in *Working Paper 4, Facility Requirements*.

5.2 ALTERNATIVE PREPARATION AND EVALUATION PROCESS

5.2.1 Alternatives Preparation Process

The alternatives preparation process was used to identify development solutions that would resolve existing issues and meet the long-term needs of PNS. The alternatives were prepared and categorized into the following functional areas:

- Airside
- Terminal
- Landside (terminal curbside and parking)
- General aviation
- Air cargo

For each functional area, a range of alternatives were established. The range of alternatives were prepared through an iterative process that involved input and guidance from PNS staff, the TAC, and the CAC. The

process started with the preparation of high-level, development concepts to test the feasibility of different ideas. These development concepts were refined into development alternatives that became the subject of the alternatives evaluation process. The refined development alternatives are described in the subsequent sections of this document.

Input from stakeholders through the public involvement process was considered in the alternative preparation process. The public involvement process included soliciting stakeholder input from two committees formed to assist the development of the Master Plan Update. The TAC is composed of individuals whose professional expertise and experience allows for a technical perspective to the process. This includes individuals representing on-Airport tenants, city/county staff, and FAA officials. The TAC's purpose is to assess impact of recommendations on airport operations and stakeholder facilities. The CAC includes individuals who represent key organizations in the community surrounding PNS. Represented organizations include neighborhood associations, local tourism promotion agencies, and economic development organizations. The CAC's purpose is to assess impact of recommendations on the City and the surrounding community. Both committees are advisory in nature and PNS officials maintain the authority and responsibility of decision-making.

Input from these groups was collected and considered during the alternatives preparation phase. Stakeholder input provided the benefit of a diverse range of perspectives from which the future direction of PNS is viewed. Stakeholder input was integral to support the refinement of the development concepts to the alternatives that were evaluated as part of this process.

5.2.2 Alternatives Evaluation Process

The alternatives evaluation process was undertaken to evaluate the development alternatives for meeting the needs of airport users as well as the long-term strategic vision of PNS. A set of evaluation criteria was prepared to support this effort. Evaluation criteria provide planners with a set of consistent criteria against which the merits of each development alternative could be measured. Therefore, the criteria were used as a guideline against which each alternative was assessed. The evaluation criteria assessed four broad categories (i.e., operational performance, best planning tenets and other factors, environmental factors, and fiscal factors) as recommended in FAA Advisory Circular 150/5070-6B, *Airport Master Plans*.

The evaluation criteria were determined in advance, based on the Master Plan Update goals and objectives, which were prepared at the outset of the Master Plan Update process. The purpose of preparing the goals and objectives was to identify the desired accomplishments of the Master Plan Update process. The study goals are broad foundational statements that are consistent with the City of Pensacola and Airport's missions. The goals also represent the aspirations of PNS staff for Airport development. The study objectives are more specific and measurable criteria by which accomplishment of the goals can be gauged. The goals and objectives are described further in *Working Paper 1, Goals and Objectives*.

The Master Plan Update goals and objectives were converted to evaluation criteria to support the selection of the recommended development alternative. The goals remain constant in the evaluation criteria. The six goals are described in *Figure 5-1*. Note that each goal is color-coded to provide reference of its application in the evaluation process throughout the document.

FIGURE 5-1
ALTERNATIVE EVALUATION GOALS

Source: RS&H, 2017

Each goal comprises several criteria. The criteria are measurable benchmarks by which accomplishment of the goals can be gauged for each development alternative. The evaluation criteria are described further in *Appendix A*.

Each alternative was evaluated using technical analysis and stakeholder input. The technical analysis included review of technical efficacy (e.g., how well the alternative would function), fiscal factors, and environmental review.

Rough order magnitude cost estimates were prepared for each alternative as an input in the review of fiscal factors. The rough order magnitude cost estimates were prepared using professional judgement assumptions to identify appropriate unit costs related to the material types (as applicable) and construction means and methods. The cost estimates were also tailored to the costs for the Pensacola region.

The environmental review included analysis to assess the potential for an alternative to affect an environmental category. The environmental impact categories are those identified in the following documents:

- FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*
- FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*

The sections in this document below summarize the findings of the environmental review. The evaluation review of the alternatives is described in detail in *Working Paper 6, Environmental Overview*.

The first level of alternatives assessment was to identify the positive and negative attributes of each alternative. The attributes are compiled as "Pros" or "Cons". Pros represent positive attributes and cons represent negative attributes associated with a particular element of the alternative. Each pro/con was attributed to the appropriate evaluation goal. The second level of alternatives assessment was to rate the

performance of each alternative evaluation criteria based on the pros/cons. The performance was measured on a scale of 1-5 for each applicable criterion. The scoring rubric descriptions are as follows:

- 5 - Alternative Fully Responds to Criterion/Goal
- 4 - Alternative Largely Responds to Criterion/Goal
- 3 - Alternative Partially Responds to Criterion/Goal
- 2 - Alternative Minimally Responds to Criterion/Goal
- 1 - Alternative Does Not Respond to Criterion/Goal

The scores of criteria associated with each goal were averaged to represent the score for the goal. Therefore, the maximum score of each goal is 5. The scores from each goal were summed to represent the total score for each alternative. Therefore, the maximum score a given alternative could achieve is 30. However, some goals/criteria do not apply to the development alternative. In these cases, the maximum score is reduced based on the number of applicable goals. An evaluation summary matrix is used to report total evaluation scores (and for each goal) for each group of alternatives in the sections throughout this document.

Ultimately, the alternative evaluation scores were used to ascertain how well the alternatives as a whole (and specific elements) perform. Using these results, an airport development plan was prepared that incorporated the best alternative for each functional area. As applicable, specific elements that performed well were parsed from each alternative and incorporated into the composite development plan with the goal of minimizing the negative attributes associated with the future development plan.

Input from stakeholders through the public involvement process was considered throughout the evaluation process. The TAC and CAC were asked to review and provide comments during the evaluation process. Input from these groups was collected and considered in the ultimate selection of the recommended alternatives.

5.3 AIRSIDE

Preparation of the airfield development concepts considered the future needs and configuration for the runways, taxiways, navigational aids (NAVAIDs), and airside perimeter road. Two airside development alternatives were prepared to explore options for future airfield development.

5.3.1 Key Issues

The key issues defined in the facility requirements analysis included:

- Resolve non-conforming airfield design principles to meet FAA standards and industry best practices
  - High energy intersections
  - Direct access from apron to runway
  - Three node intersection
  - Limit runway crossings
  - Perpendicular intersections
- Increase runway length

  - Runway length of 7,700 feet to accommodate near-term demand
  - Runway length of 8,000 feet to accommodate long-term forecast demand
- Identify new Performance Based Navigation (PBN) / Area Navigation (RNAV) instrument approach capable runway ends
- Maximize area for aeronautical development
- Create contiguous airside perimeter road
- Identify relocation options for the fuel storage facility

The critical aircraft for the overall airfield and each functional area was considered as the primary input to determine the standard to which the airfield pavement areas should be designed. The critical aircraft include the Airbus A300-600 for the overall airfield/cargo area, Boeing 757-200 for passenger terminal area, Boeing 737-700 for runway length, and Gulfstream GIII/G550 for general aviation. The critical aircraft determination is described further in *Section 4.2.1* in *Working Paper 4, Facility Requirements*.

Relocation of the fuel storage facility (referred to as fuel farm) is also recommended based on the need to accommodate alternate land uses at the existing location of the fuel farm. Terminal and landside uses are the highest and best use for the land area occupied by the existing fuel farm.

5.3.2 Airside Alternatives

Two alternatives were prepared to explore the airside development options. Airside Alternative 1 is depicted in *Figure 5-2*. Airside Alternative 2 is depicted in *Figure 5-3*.

5.3.2.1 Airside Alternative Common Elements

Several common elements pertain to each of the Airside Alternatives. The focus of the subsequent sections are on the elements that differentiate the two. The common elements are identified below.

- New Airplane Design Group (ADG) V/Taxiway Design Group (TDG) 6 parallel taxiway 400 feet east of Runway 17-35
  - North portion of taxiway designed to avoid impact to the Runway 17 glide slope critical area
  - North portion of the taxiway was constructed to support the VT Mobile Aerospace Engineering (VTMAE) development
  - The portion of the taxiway south of the VTMAE development is identified as part of Master Plan alternative preparation process
- Seven taxiway segments removed to resolve non-conforming design principles
  - Taxiway A2, Taxiway A3, Taxiway A7, Taxiway C (between Taxiway B and Taxiway D), Taxiway B3, and Taxiway D1, Taxiway C2 (portion west of Taxiway C1)
  - Initial comments received from ATC indicated concern regarding the removal of Taxiways C (between D and Runway 8-26), D1, and A7. Coordination with PNS Air Traffic Control (ATC) personnel is recommended to ensure removal does not unduly impact airfield operational efficiency.
- Replace taxiways
  - Three ADG-IV/TDG 5 taxiway connectors between Taxiway A and Runway 17-35 in northwest quadrant

  - Eastward extension of Taxiway A5 (ADG IV/TDG 5) to new parallel taxiway
- Upgrade Taxiway D to ADG III/TDG 3 for portion east of Runway 17-35
- Runway 17-35 extension to 7,700 feet
  - Taxiway A extended to new Runway 35 end
- Relocate Remote Transmitter/Receiver (RTR) Site 1 (northwest quadrant) and RTR Site 2 (northeast quadrant) to new sites in southwest and southeast quadrants
- Install PBN/RNAV approach for Runway 35
- Paved airside perimeter road
  - New segment in southwest quadrant
- New segment in southeast quadrant

5.3.2.2 Airside Alternative 1

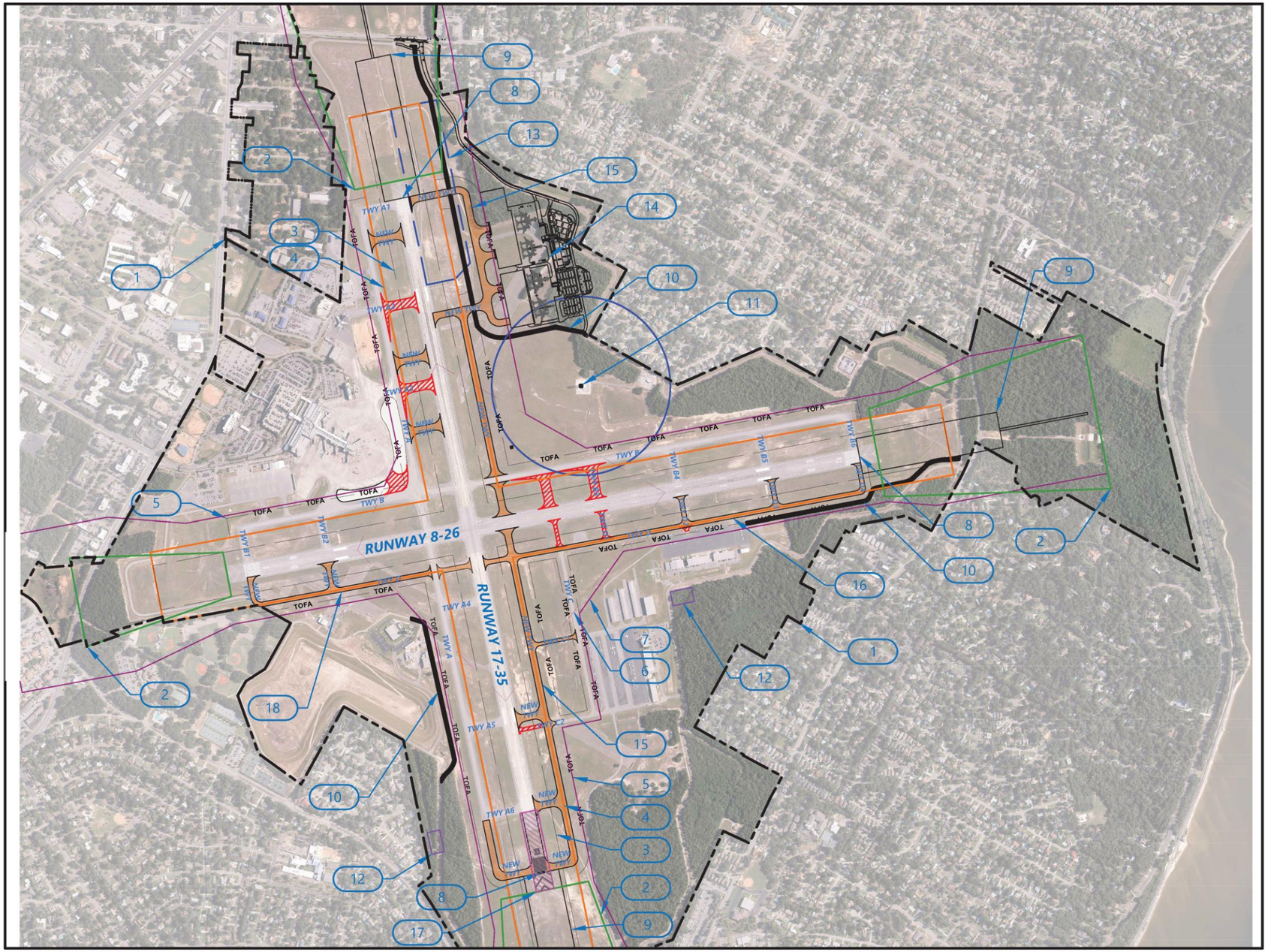
Airside Alternative 1 is depicted in *Figure 5-2.* Airside Alternative 1 includes the following elements, in addition to the common elements described in *Section 5.3.2.1*.

- Taxiway D extension to Runway 8 end from Taxiway A at ADG III/TDG 3 standards
- Paved airside perimeter road in northeast quadrant
- PBN/RNAV approach for Runway 26
- Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) installed for Runway 26

5.3.2.3 Airside Alternative 2

Airside Alternative 2 is depicted in *Figure 5-3*. Airside Alternative 2 includes the following elements, in addition to the common elements described in *Section 5.3.2.1*.

- Taxiway D extension to intersection departure point west of Taxiway B3 at ADG III/TDG 3 standards
- PBN/RNAV approach for Runway 8
- MALSR installed for Runway 8
- ASR relocation to site in southeast quadrant



Source: Pensacola International Airport, 2007; RS&H, 2017

FIGURE 5-2
AIRSIDE ALTERNATIVE 1

Legend

- Proposed Taxiway
- Proposed Runway 17-35 Extension
- Existing Taxiway / Apron Removal
- ASR Critical Area

1. Property Line
2. Runway Protection Zone
3. Runway Safety Area
4. Runway Object-Free Area
5. Taxiway Object-Free Area
6. Runway Visibility Zone
7. Building Restriction Line
8. PBN/RNAV Instrument Approach End
9. MALSR
10. Paved Airside Perimeter Road
11. Airport Surveillance Radar
12. Relocated RTR Facilities
13. Glideslope Critical Area
14. VTMAE MRO
15. New Taxiway (ADG V)
16. Taxiway D Upgraded to ADG III
17. Runway 17-35 Extension to 7,700 feet
18. Taxiway D Extension (ADG III)

0 550 1100
Feet

N

PENSACOLA International Airport

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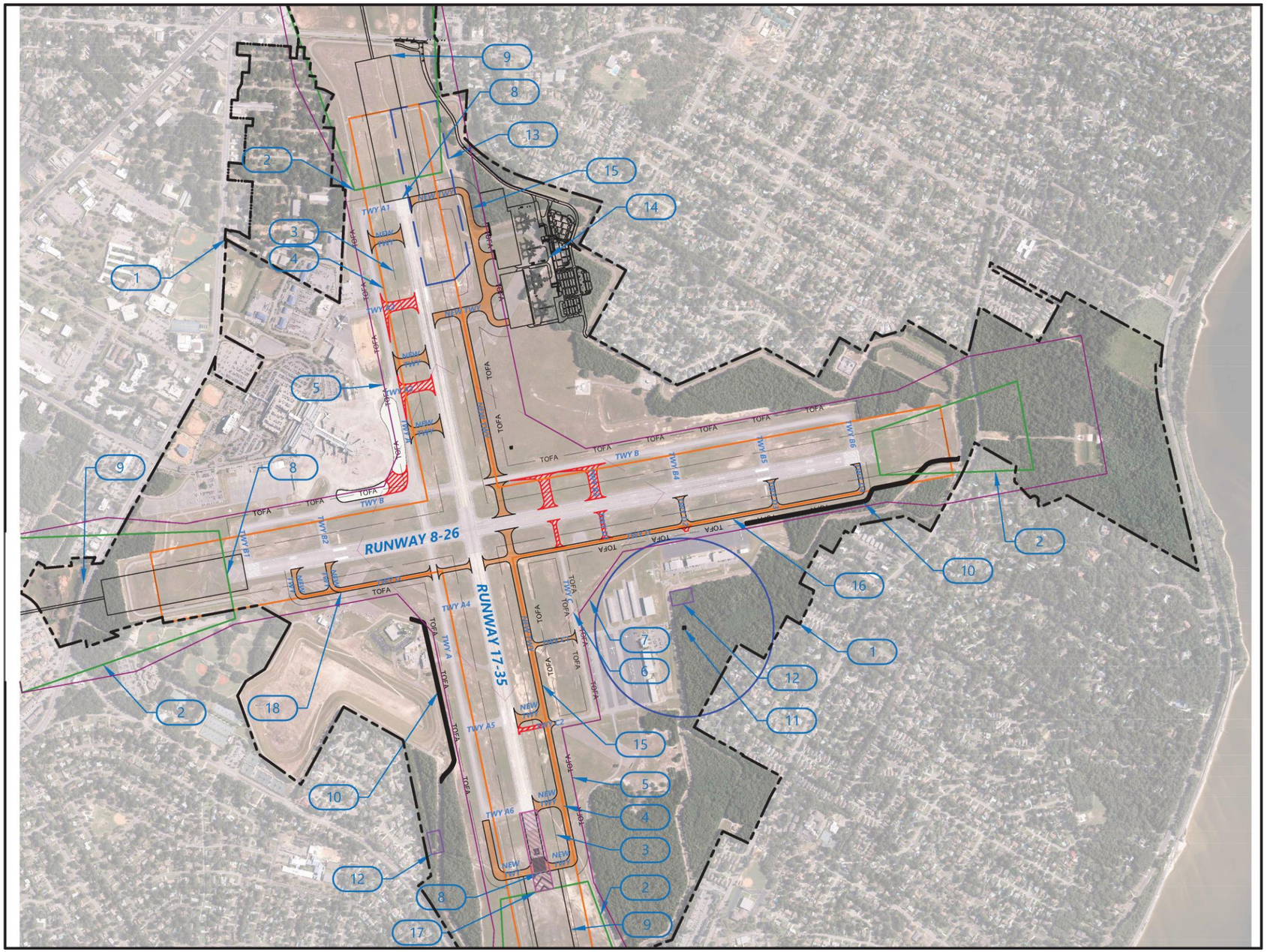

FIGURE 5-3
AIRSIDE ALTERNATIVE 2

Legend

- Proposed Taxiway
- Proposed Runway 17-35 Extension
- Existing Taxiway / Apron Removal
- ASR Critical Area

1. Property Line
2. Runway Protection Zone
3. Runway Safety Area
4. Runway Object-Free Area
5. Taxiway Object-Free Area
6. Runway Visibility Zone
7. Building Restriction Line
8. PBN/RNAV Instrument Approach End
9. MALSR
10. Paved Airside Perimeter Road
11. Relocated ASR
12. Relocated RTR Facilities
13. Glideslope Critical Area
14. VTMAE MRO
15. New Taxiway (ADG V)
16. Taxiway D Upgraded to ADG III
17. Runway 17-35 Extension to 7,700 feet
18. Taxiway D Extension (ADG III)

0 550 1100
Feet

N

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

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5.3.3 Airside Alternatives Evaluation

Both Airside Alternatives conform to FAA standards for safety. Both Alternatives comply with FAA design standards described in FAA Advisory Circular 150/5300-13A, *Airport Design*. Non-conforming airfield design principles and nonstandard conditions are resolved in both Airside Alternatives.

The Airside Alternatives were evaluated against the evaluation criteria, relative to one another. The pros/cons for Airside Alternative 1 and Airside Alternative 2 are listed in *Table 5-1* and *Table 5-2*, respectively. As noted previously, the common features of the Airside Alternatives were not considered in the evaluation of the alternatives.

TABLE 5-1
AIRSIDE ALTERNATIVE 1 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
ECONOMIC - No Pros	ECONOMIC - No Cons
OPERATIONAL EFFICIENCY - All four runway ends are connected by dual parallel taxiways	LAND MANAGEMENT - Taxiway D extension impacts park (0.5 acres)
OPERATIONAL EFFICIENCY - Taxiway D extension to Runway 8 end provides greater utility of Runway 8 for departures	OPERATIONAL EFFICIENCY - Utility/cost effectiveness of airside road in northeast quadrant is questionable because vehicles must coordinate w/ ATC during IMC since road crosses through GS Critical Area
OPERATIONAL EFFICIENCY - Airside road in northeast quadrant results in contiguous airside vehicle service road which results in enhanced efficiency	FISCAL - MALSR installation may be costly because terrain drops off east of Spanish Trail Road
FISCAL - Least costly ($46.8M)	
ENVIRONMENTAL - PBN/RNAV Approach to Runway 26 has minimal noise impacts because approach route would be over largely undeveloped areas	

Source: RS&H, 2017

The Taxiway D configuration in Airside Alternative 1 performs better than Airside Alternative 2 in relation to Safety Evaluation criteria. This difference results from the full-length, westward extension of Taxiway D in Airside Alternative 1. In Airside Alternative 2, the Taxiway D extension does not provide access to Runway 8 end, which would require a runway crossing to access the Runway 8 end or an intersection departure for general aviation users. The configuration in Airside Alternative 2 is not prohibited but it is not preferred.

The Taxiway D configuration in Airside Alternative 1 performs better than Airside Alternative 2 in relation to the Operational Efficiency criteria. The full-length extension of Taxiway D would result in dual parallel

taxiways for Runway 8-26 and enhance access to the Runway 8 end. Therefore, the utility and flexibility of the taxiway network would be enhanced.

TABLE 5-2
AIRSIDE ALTERNATIVE 2 PROS/CONS

Pros	Cons
ECONOMIC - No Pros	ECONOMIC - No Cons
LAND MANAGEMENT - Relocation of ASR allows for more efficient land use because it allows for airside development of area in northeast quadrant	SAFETY - Taxiway D extension does not provide access to Runway 8 end. This results in additional runway crossings required for GA to access Runway 8 end
OPERATIONAL EFFICIENCY - Utility of PBN/RNAV approach on Runway 8 is greater since winds favor this approach more than approaches to Runway 26 or Runway 35. This results in greater efficiency for arriving aircraft	OPERATIONAL EFFICIENCY - Airside vehicles cannot circumnavigate Airport on contiguous airside vehicle service road
FISCAL - ASR frees up prime airside development area which may lead to further aeronautical development with revenue generating potential	ENVIRONMENTAL - PBN/RNAV approach on Runway 8 has greater potential noise impacts because of noise sensitive development west of PNS
	FISCAL - PBN/RNAV approach on Runway 8 costly to implement because of potential land acquisition and other off-airport impacts
	FISCAL - Most costly ($49.7M)

Source: RS&H, 2017

However, the Taxiway D configuration in Airside Alternative 1 includes a significant drawback. The full-length, westward extension of Taxiway D results in impact to approximately 0.5 acres of off-Airport recreational park southwest of the Runway 8 end. The Taxiway D Object Free Area (OFA) would require land acquisition and at least partial demolition of the park.

A new PBN/RNAV instrument approach procedure is considered for Runway 26 in Airside Alternative 1 and for Runway 8 in Airside Alternative 2. There is greater utility for the new instrument approach for Alternative 2 because wind direction more often aligns with Runway 8 than Runway 26 during Instrument Meteorological Conditions (IMC). During IMC, winds align with Runway 8 about 32 percent of the time, while winds align with Runway 26 about 12 percent of the time, as discussed in *Working Paper 4*. However, a new PBN/RNAV instrument approach for Runway 8 would result in greater off-airport impacts, compared to Runway 26. The new instrument approach for Runway 8 would cast a larger Runway Protection Zone (RPZ) over off-airport land areas west of North 12th Avenue. The affected areas include existing residential and commercial land uses that are not compatible with FAA regulations. Mitigation for these non-compatible land uses could potentially require costly land acquisition. The associated MALSR may also require land acquisition or avigation easements for affect off-airport land areas. Further obstruction analysis indicated that off-airport light poles could potentially be obstruction to air navigation, for which mitigation would be challenging.

Construction of a MALSR to support the PBN/RNAV approach would be challenging in either alternative. In Airside Alternative 2, the MALSR extends beyond the airport property boundary and may require easements to implement the system. In Airside Alternative 1, the MALSR construction cost may be higher due to the terrain drop-off east of Spanish Trail Road.

Implementation of a PBN/RNAV instrument approach procedure for Runway 8 would increase aircraft landings to this runway end during poor weather conditions. Therefore, consideration of the noise impacts of this change in traffic pattern is important. The land area west of Runway 8 contains commercial and residential land uses. Therefore, the land uses west of Runway 8 are more noise sensitive. The land area east of Runway 26 up until Escambia Bay is largely undeveloped. Further, Runway 26 is more frequently used because it is equipped with a more capable instrument approach (i.e., LOC/DME) compared to Runway 8. It is assumed that implementing a Runway 26 PBN/RNAV instrument approach procedure would result in greater utilization of Runway 26; however, this increase would be minimal compared to the increased Runway 8 utilization associated with the PBN/RNAV configuration identified in Alternative 2. Therefore, the PBN/RNAV Approach for Runway 26 in Airside Alternative 1 performs better than Alternative 2 in relation to the Environmental Awareness criteria.

Relocation of the Airport Surveillance Radar (ASR) in Alternative 2 is beneficial as it relates to the Strategic Land Management criteria because it opens land area in the northeast quadrant for revenue generating aeronautical development. The land area in the southeast quadrant (east of Maygarden Road) used as the ASR receiving site is not as valuable for aeronautical development due to the presence of wetlands in the area and airside inaccessibility beyond Maygarden Road. Alternatively, Airside Alternative 1 considers the preservation of the ASR in its existing location. Therefore, the ASR location in Alternative 2 more effectively supports the Strategic Land Management and Fiscal Sustainability criteria.

Implementation of Airside Alternative 1 would result in operational efficiencies based on enhanced taxiway access to Runway 8-26 and a paved, contiguous airside service road network.

Airside Alternative 1 considers the construction of a new airside perimeter road segment in the northeast quadrant. Construction of that roadway segment would create a contiguous airside road network around PNS, which results in enhanced vehicle circulation and access. The operational benefit, however, may be limited because the roadway traverses the critical area for the Runway 17 Instrument Landing System (ILS). This configuration would require vehicle drivers to contact Air Traffic Control to coordinate vehicle passage through this area during IMC while the Airport Traffic Control Tower (ATCT) is operational. However, the likelihood of occurrence of vehicle crossing during the aforementioned scenario is low as verified by ATC and Airport staff. Alternative 2 does not include this airside perimeter road segment, which results in a disconnected airside road network. Therefore, the northeast quadrant airside perimeter road in Alternative 1 performs better than Alternative 2 in relation to the Operational Efficiency criteria.

The overall Rough Order of Magnitude (ROM) implementation cost is $46.8 million for Airside Alternative 1 and is $49.7 million for Airside Alternative 2. The primary reason for the cost difference is the relocation of the ASR associated with Airside Alternative 2. The costs for all other project elements are similar between the two alternatives. The ROM implementation cost estimates are summarized in *Table 5-3*. It should be noted that the Alternative 2 cost estimate does not include costs of land acquisition that may be required to support the installation of a MALSR or the larger Runway Protection Zone for Runway 8.

The evaluation results for the Airside Alternatives are described in *Table 5-4*.

TABLE 5-3
AIRSIDE ALTERNATIVES ROM COSTS

	Alternative 1	Alternative 2
Runway 17-35 Extension	$2.9M	$2.9M
Proposed Taxiway Construction	$29.6M	$29.1M
Taxiway/Apron Removal	$1.9M	$1.9M
MALSR Installation	$5.3M	$4.8M
RTR Facility Relocation	$4.8M	$4.8M
ASR Relocation	-	$5.0M
PBN/RNAV Commissioning	$0.1M	$0.1M
Paved Airside Perimeter Road	$2.2M	$1.2M
Total ROM Cost	$46.8M	$49.7M

Source: RS&H, 2017
Note: Numbers may not sum due to rounding.

TABLE 5-4
AIRSIDE ALTERNATIVES EVALUATION MATRIX

	Evaluator Description	Alt 1	Alt 2
GOAL	**SAFETY**	**5.0**	**4.5**
Crit. 1	Meets or exceeds standards to enhance safety	5	5
Crit. 2	Enhances safety through application of industry best practices	5	4
GOAL	**STRATEGIC LAND MANAGEMENT**	**3.0**	**5.0**
Crit. 1	Encourages compatibility between on- and off-airport land uses	2	5
Crit. 2	Promotes highest and best land use to support efficient airport operations	4	5
GOAL	**OPERATIONAL EFFICIENCY**	**5.0**	**4.4**
Crit. 1	Maintains or enhances operational efficiency	5	4
Crit. 2	Supports redundancy to enhance operational flexibility	5	4
Crit. 3	Strategically balances demand with supply using alternative methods	5	5
Crit. 4	Supports efficient operating environment for all aviation users	5	4
Crit. 5	Considers flexibility and adaptability to support future potential industry trends	5	5
GOAL	**ENVIRONMENTAL AWARENESS**	**4.5**	**3.5**
Crit. 1	Recognizes noise impacts	5	3
Crit. 2	Environmental compatibility	4	4
Crit. 3	Employs environmental sustainability initiatives	n/a	n/a
GOAL	**FISCAL SUSTAINABILITY**	**4.3**	**3.7**
Crit. 1	Cost effectiveness	5	4
Crit. 2	Minimizes costs	4	2
Crit. 3	Generates revenue	4	5
GOAL	**ECONOMIC GROWTH**	**5.0**	**5.0**
Crit. 1	Enhances regional transportation connections to the Airport	n/a	n/a
Crit. 2	Encourages increased economic impact to community	5	5
TOTAL SCORE		**26.8**	**26.1**
MAXIMUM SCORE		**30**	**30**

Source: RS&H, 2017
Notes: Alt = Alternative, Crit. = Criterion
Scoring Rubric: 5 - Alternative Fully Responds to Criterion/Goal, 4 - Alternative Largely Responds to Criterion/Goal, 3 - Alternative Partially Responds to Criterion/Goal, 2 - Alternative Minimally Responds to Criterion/Goal, 1 - Alternative Does Not Respond to Criterion/Goal

5.3.4 Recommendation

The Recommended Airside Development Alternative was prepared based on the results of the alternatives evaluation process and represents the consolidated airside layout for the future development of PNS.

The best performing elements from each Alternative were selected and compiled into the Recommended Airside Development Alternative with the goal of reducing the number of "cons" or negative attributes. The Recommended Airside Development Alternative is composed of the following elements:

- Relocate ASR to southeast quadrant – Alternative 2
- Taxiway D extended west short of the Runway 8 end – Alternative 2
- Construct airside perimeter road in northeast quadrant – Alternative 1
- PBN/RNAV approach and MALSR for Runway 26 – Alternative 1

Additionally, all common elements were included in the Recommended Airside Development Alternative.

ATC has indicated a need for a total of three precision approach capable runway ends. Currently, only Runway 17 has precision approach capability. A PBN/RNAV approach is recommended for Runway 35, as identified as identified as a common Airside Alternative element. Precision approach capability in the east-west direction would provide flexibility in handling aircraft when strong fronts and/or storms move through the area. Both ends of Runway 8-26 were evaluated and it is recommended that the PBN/RNAV approach capability is added to Runway 26. Runway 26 was selected as the recommended option because it resulted in the least off-airport impacts. A new instrument approach to Runway 8 was considered, but ultimately dismissed given the impacts and implementation hurdles. ATC feedback was that PBN/RNAV instrument approach capability on Runway 26 and Runway 35 would provide sufficient operational flexibility for routing arrivals during inclement weather.

The recommended airside alternative includes refinements to the taxiway removal not otherwise depicted in any of the alternatives. Based on comments received from ATC stakeholders, the recommendation is to retain Taxiway C (south of Runway 8-26) and Taxiway B3. Both Airside Alternatives considered the removal of both taxiway segments. However, input from ATC indicates that this refinement would result in greater flexibility for aircraft taxiing operations while also still resolving the non-conforming airfield design principles. Further coordination with ATC is required before any decisions are made regarding taxiway removal.

Based on stakeholder input and operational efficiency, two new fuel farm sites are recommended. One is a site in the southwest quadrant to serve the needs of the passenger and cargo airline users. The other located in the southeast quadrant to serve the needs of the general aviation users.

The recommended site for the fuel farm is in the southwest quadrant is west of the FAA Terminal Radar Approach Control (TRACON) facility. This largely undeveloped site has a public roadway and airside perimeter road that provide access to the facility. The public access road supports efficient fuel delivery to the fuel farm. The airfield perimeter road and proximity to the passenger terminal complex were also key to support efficient fuel delivery to aircraft. Slight reconfiguration of the airside perimeter road and extension of Airfield Road is required to support the use of the new fuel farm. The general aviation fuel farm is described in *Section 5.6.4*.

The recommended airside development alternative is consolidated into an airport-wide recommended development plan as depicted in *Figure 5-25*. The cost of implementing the recommended airside alternative is described in *Table 5-5*.

TABLE 5-5
RECOMMENDED AIRSIDE ALTERNATIVE ROM COSTS

	Implementation Costs
Runway 17-35 Extension	$2.9M
Proposed Taxiway Construction	$29.1M
Taxiway/Apron Removal	$1.9M
MALSR Installation	$5.3M
RTR Facility Relocation	$4.8M
ASR Relocation	$5.0M
PBN/RNAV Commissioning	$0.1M
Paved Airside Perimeter Road	$2.2M
Jet A Fuel Farm Construction	$1.3M
Fuel Farm Demolition	$0.1M
Total ROM Cost	$52.6M

Source: RS&H, 2017
Note: Numbers may not sum due to rounding.

5.4 TERMINAL

5.4.1 Key Issues

5.4.1.1 Terminal Development within Planning Horizon

The key issues defined in the facility requirements analysis included:

- Ticketing Area
  - Add 1,200 square feet of ticketing area, in order to meet 2035 demand and level of service standards
  - Reallocate lobby space to accommodate shift to the next generation of ticket counters and kiosks
- Outbound Bag Make-Up
  - Add 6,000 square feet of make-up area, in order to meet 2035 demand and level of service standards
- Bag Claim Lobby
  - Add 8,400 square feet of lobby space, in order to meet 2035 demand and level of service standards
- Holdrooms
  - Reallocation of holdroom space to avoid spillover into adjacent holdrooms during peak departure periods
- Concessions
  - Provide area for post-security concessions expansion
- Gates/Apron parking positions
  - Reconfigure each apron parking position and gate area to support a Boeing 757-200, to enhance aircraft parking flexibility

- Maintain 10 apron parking positions

» Terminal apron
  - Realign terminal apron taxilane such that separation to Taxiway A is 215 feet, in order to meet FAA design standards for parallel taxiway separation for ADG IV aircraft
  - Realign terminal apron service road around gates such that separation to apron taxilane centerline is 112.5 feet, in order to meet FAA design standards for to fixed or movable objects for ADG IV aircraft

Increasing each aircraft parking position size to accommodate a Boeing 757-200 generally involved pulling the aircraft closer to the Terminal Concourse. This was achieved because the higher sill height for the aircraft boarding door (relative to smaller narrow-body aircraft) allows for the passenger boarding bridge to retract somewhat while maintaining allowable ramp slope in compliance with Americans with Disabilities Act (ADA) guidelines. The layouts associated with each terminal alternative also allows smaller aircraft to be accommodated at each gate. In this case, aircraft would park farther from the Terminal Concourse. This would provide the sufficient distance for the passenger boarding bridge to extend to the lower sill height while maintaining the allowable ramp slope.

The terminal alternatives also considered the need for incremental terminal expansion within next 20 years. The layout also needed to provide flexibility for future expansion beyond 2035. Lastly, providing a balanced terminal development configuration was desired.

5.4.1.2 Terminal Development beyond the Planning Horizon

Consideration of terminal development options beyond the 20-year planning horizon is an important component of the terminal alternative preparation process. The purpose is to ensure that development options selected for implementation during the planning horizon would not complicate maximization of the terminal site beyond the 20-year planning horizon. This exercise allowed the Planning Team to identify interim layout options within the planning horizon that can logically transition into the Long-Term and Ultimate terminal development layouts beyond 20 years.

The analysis focused on two milestones beyond the planning horizon – Long-Term and Ultimate. The Long-Term milestone refers to the demand level at which 15 terminal gates are required to accommodate commercial passenger traffic. This is significant because this corresponds to the point at which the level of service on a single-level terminal roadway deteriorates to an unacceptable level. An upper level roadway is recommended to efficiently accommodate passenger demand beyond this point. The Long-Term milestone occurs when demand reaches 1.9 million enplaned annual passengers. Based on forecast growth rate, demand will reach this level by 2051. However, the actual year may occur sooner or later, depending on actual growth.

The Ultimate milestone refers to the demand level at which 20 terminal gates are required to accommodate commercial passenger traffic. This is significant because this is the point at which the terminal area reaches capacity and the building can no longer be expanded in its current location to support the demand. Accommodating growth in passenger demand beyond this point may require a supplementary terminal site or relocating the passenger terminal function to another location on-airport. The Ultimate milestone occurs when demand reaches 2.5 million enplaned annual passengers. Based on forecast growth rates, demand will reach this level by 2064. However, the actual year may occur sooner or later, depending on actual growth.

Terminal layout options for the Long-Term and Ultimate milestones are depicted in *Appendix B*. The development options show that the existing terminal site is insufficient to accommodate the Long-Term development options. The existing terminal site is bound by the helicopter apron to the southwest and the abandoned TRACON building to the northeast. The Long-Term development options show that at least one of these facilities would need to be removed in order to accommodate a 15-gate terminal layout. Similarly, review of the Ultimate development option indicates that both the abandoned TRACON building and the helicopter apron are impacted to accommodate the 20-gate terminal layout. Therefore, relocating the helicopter operation and removing the abandoned TRACON building is recommended to support the Long-Term and Ultimate terminal development.

5.4.2 Terminal Alternatives

Five alternatives were prepared depicting development options for the expansion of the passenger terminal building to accommodate the 20-year demand throughout the planning horizon. Each alternative was prepared in consideration of key issues, as described in *Section 5.4.1*.

5.4.2.1 Terminal Alternative 1 – Minimal Development

Terminal Alternative 1 is depicted in *Figure 5-4* and *Figure 5-5* for the Upper Level and Lower Level, respectively. Terminal Alternative 1 includes the following elements:

- Reconfigured terminal apron area
  - Provides 10 Boeing 757-200 gates/parking positions
  - Reconfigured 25-foot-wide apron service road around parked aircraft
- Linear expansion in the east direction
- Minimal expansion
- Upper Level
  - Holdroom expansion on the sides and the end of the Concourse to increase holdroom depth
- Lower level
  - Expansion of the existing make-up area with five additional belts

5.4.2.2 Terminal Alternative 2 – South Expansion

Terminal Alternative 2 is depicted in *Figure 5-6* and *Figure 5-7* for the Upper Level and Lower Level, respectively. Terminal Alternative 2 includes the following elements:

- Reconfigured terminal apron area
  - Provides 10 Boeing 757-200 gates/parking positions
  - Reconfigured 25-foot-wide apron service road around parked aircraft
- South expansion
  - Gates expand to the south with the addition of a triangle shaped structure
- Upper Level
  - Expands and relocates the passenger security screening checkpoint to central spine of Terminal Concourse

- Holdroom expansion along concourse and to the south - fill-in aircraft nose pockets, extend end of concourse, and new space on upper level above bag make-up expansion
- Increased post-security concessions space

» Lower Level
- Reconfiguration of ticketing lobby
  - Conversion to island ticket lobby configuration
  - Airline Ticket Offices (ATO) move to mezzanine level above ticket lobby
  - Improves queuing and circulation
- Expansion of the existing make-up area with four additional belts

5.4.2.3 Terminal Alternative 3 – North Expansion

Terminal Alternative 3 is depicted in *Figure 5-8* and *Figure 5-9* for the Upper Level and Lower Level, respectively. Terminal Alternative 3 includes the following elements:

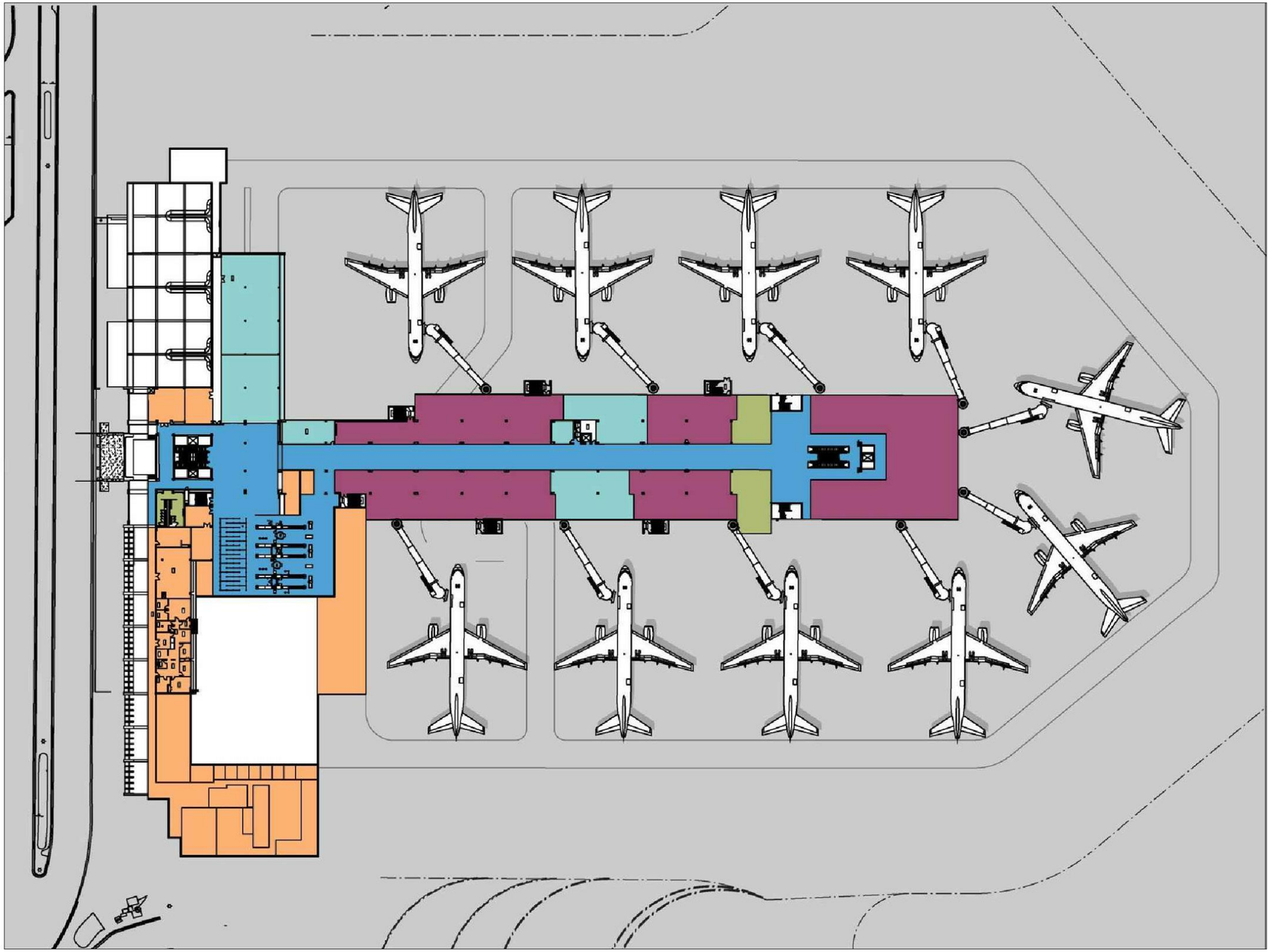
» Reconfigured terminal apron area
- Provides 10 Boeing 757-200 gates/parking positions
- Reconfigured 25-foot-wide apron service road around parked aircraft

» North expansion
- Gates expand towards the north with the addition of a triangle shaped structure

» Upper Level
- Expands and relocates the passenger security screening checkpoint to central spine of Terminal Concourse
- Holdroom expansion along concourse and to the north – fill-in aircraft nose pockets, extend end of concourse, and new office space on upper level above bag make-up expansion
- New office space created at mezzanine level over existing bag claim hall
- Expansion to pre- and post-security concessions
- Enhanced circulation

» Lower Level
- Reconfiguration of ticketing lobby
  - Conversion to island ticket lobby configuration
  - ATOs move to mezzanine level
  - Improves ticket lobby queuing and circulation
- Baggage make-up area expanded on north side of concourse
- Bag claim lobby expanded to create more circulation area (back wall shifted east)
  - Baggage service office relocated
- Expansion of rental car lobby and queuing area
- Restrooms relocated

FIGURE 5-4
TERMINAL ALTERNATIVE 1
UPPER LEVEL



Legend

- Holdroom
- Public Circulation
- Restrooms
- Concessions
- Office/Administration

0 50 100
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

RS&H

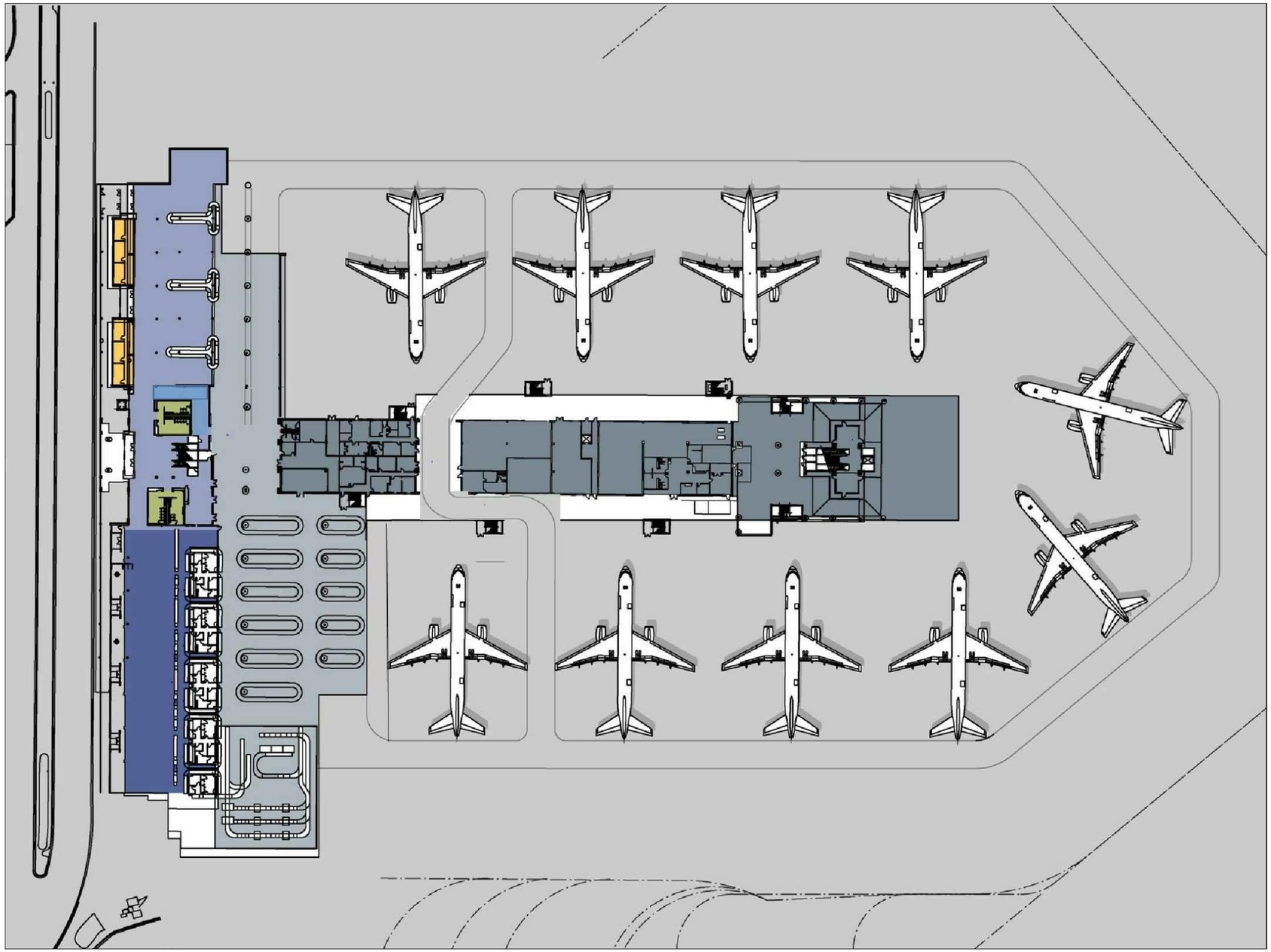


FIGURE 5-5
TERMINAL ALTERNATIVE 1
LOWER LEVEL

Legend

- Ticketing
- Public Circulation
- Baggage Handling
- Restrooms
- Baggage Claim Lobby
- Rental Car Lobby
- Rental Car Offices
- Support

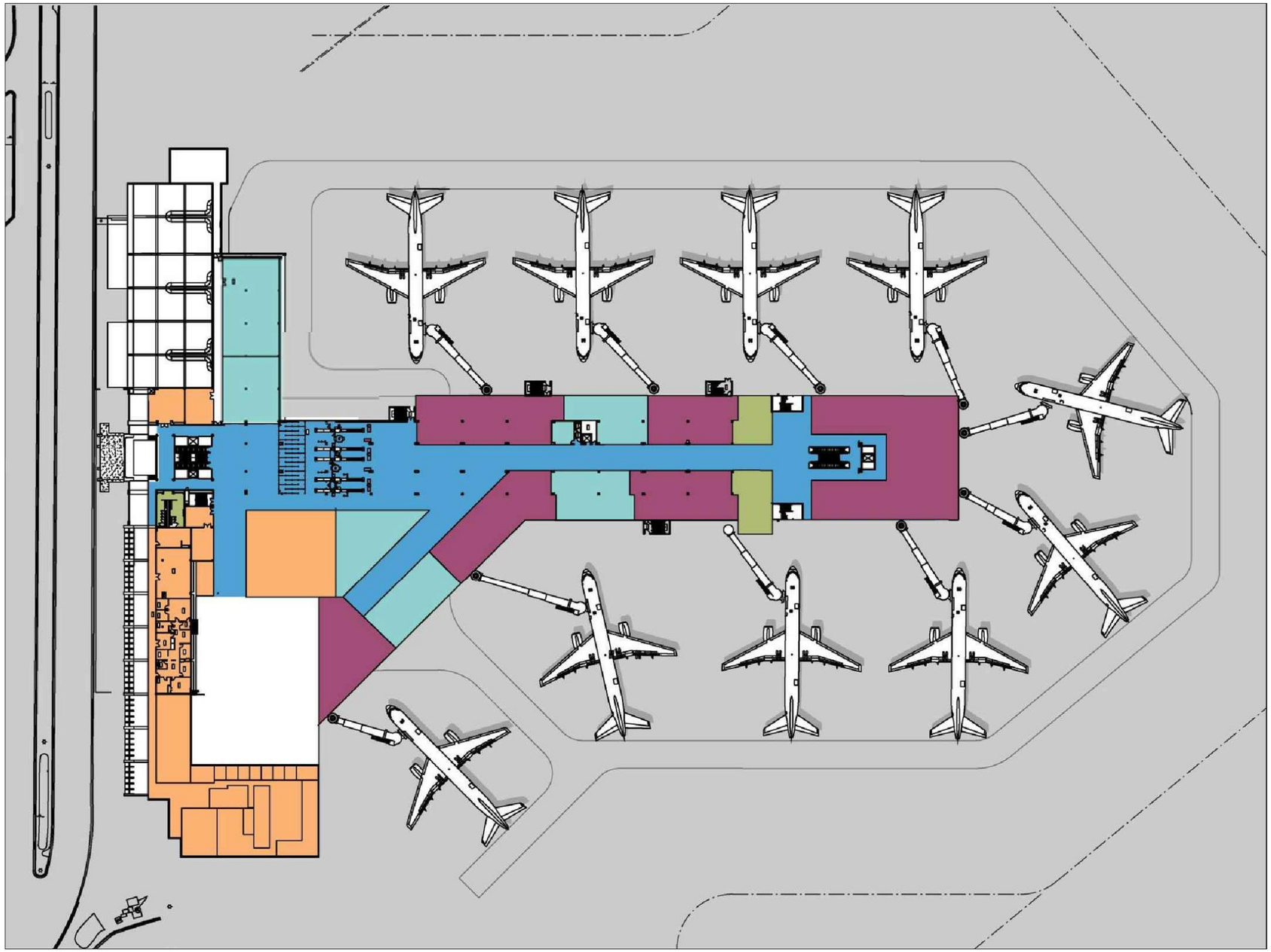
0 50 100
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

RS&H

FIGURE 5-6
TERMINAL ALTERNATIVE 2
UPPER LEVEL



Legend

- Holdroom
- Public Circulation
- Restrooms
- Concessions
- Office/Administration

0 50 100
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

RS&H

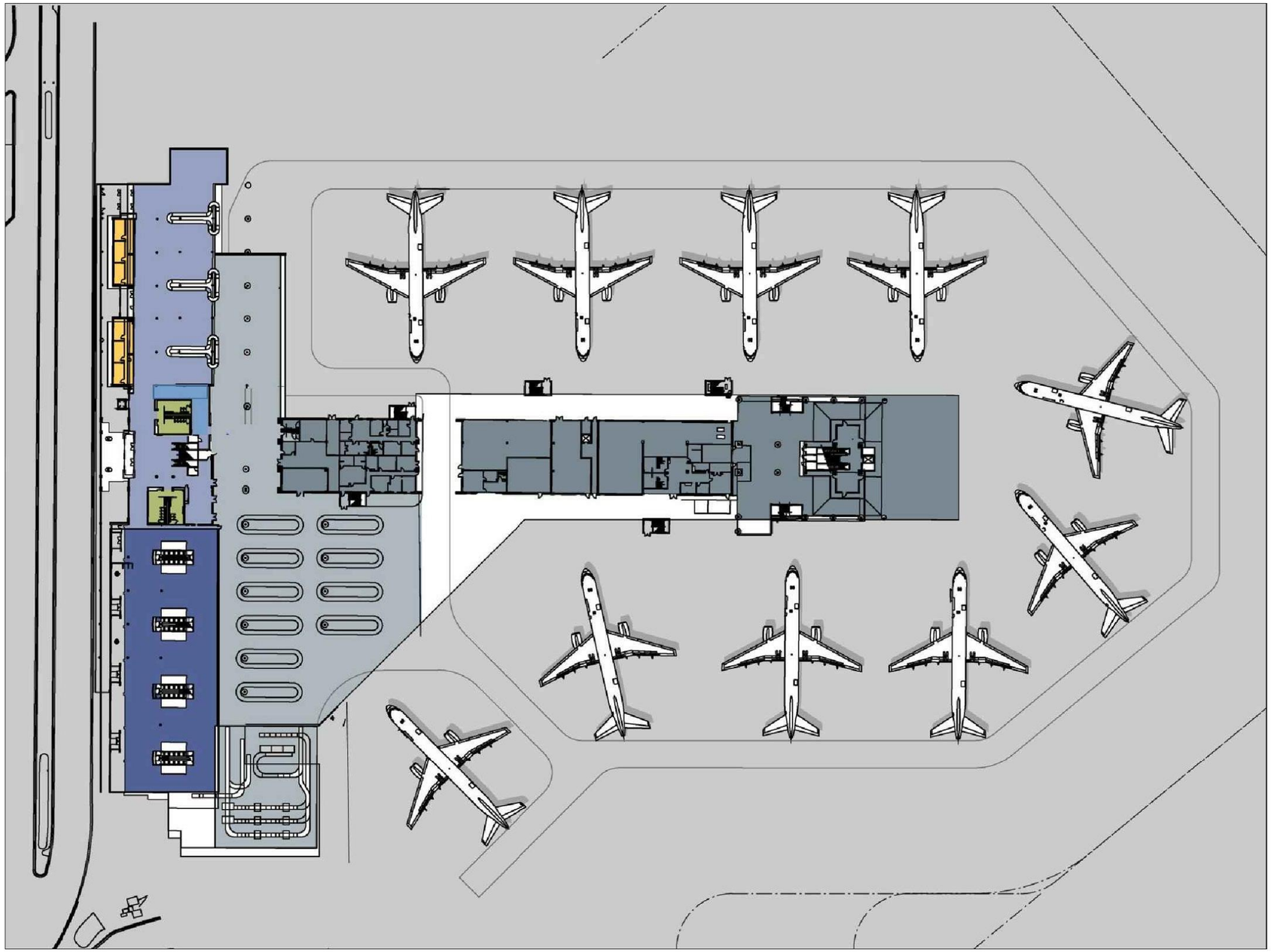


FIGURE 5-7
TERMINAL ALTERNATIVE 2
LOWER LEVEL

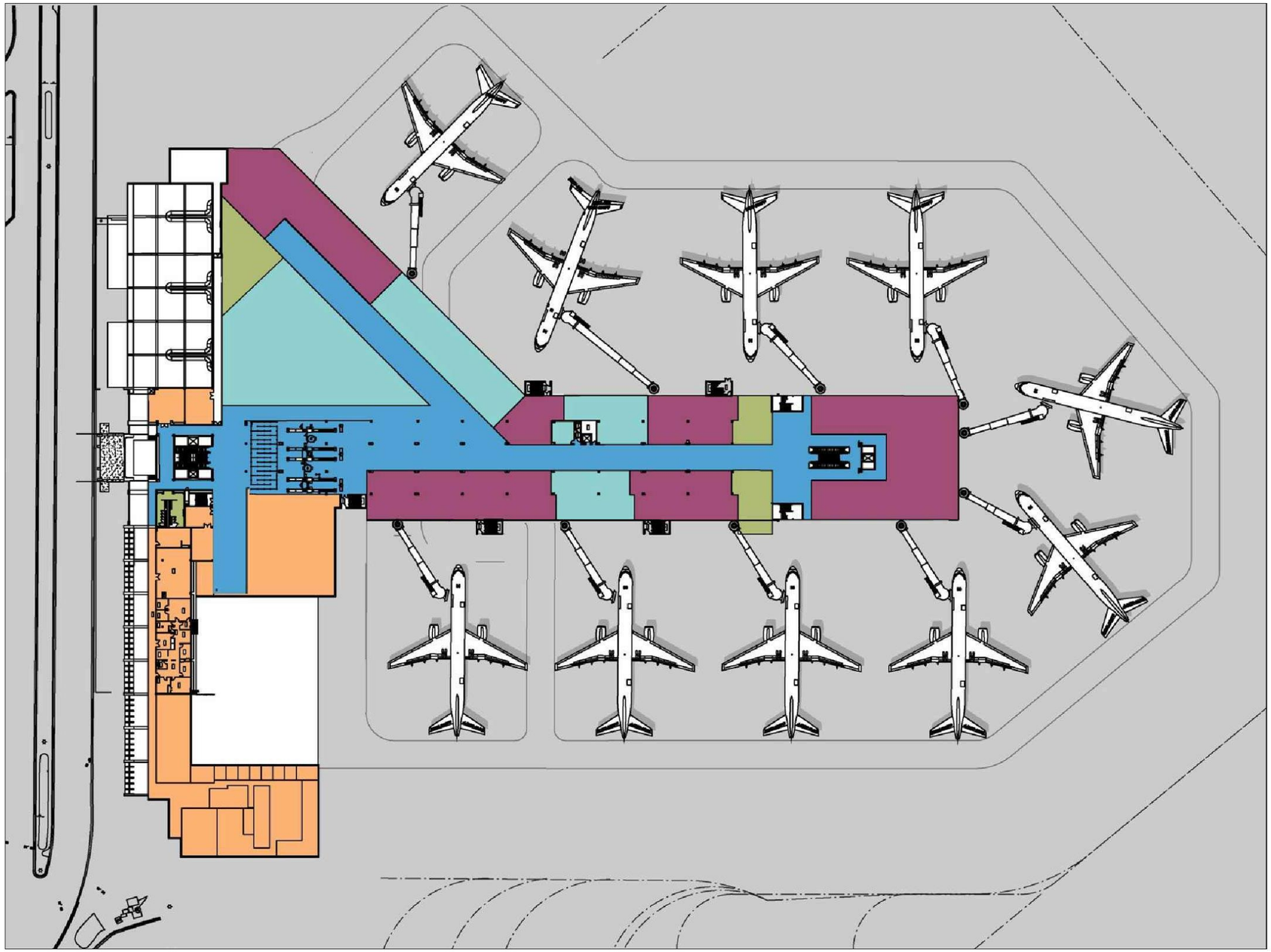
Legend

- Ticketing
- Public Circulation
- Baggage Handling
- Restrooms
- Baggage Claim Lobby
- Rental Car Lobby
- Rental Car Offices
- Support

0 50 100
Feet

Source: Pensacola International Airport, 2007; RS&H, 2017

FIGURE 5-8
TERMINAL ALTERNATIVE 3
UPPER LEVEL



Legend

- Holdroom
- Public Circulation
- Restrooms
- Concessions
- Office/Administration

0 50 100
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

RS&H

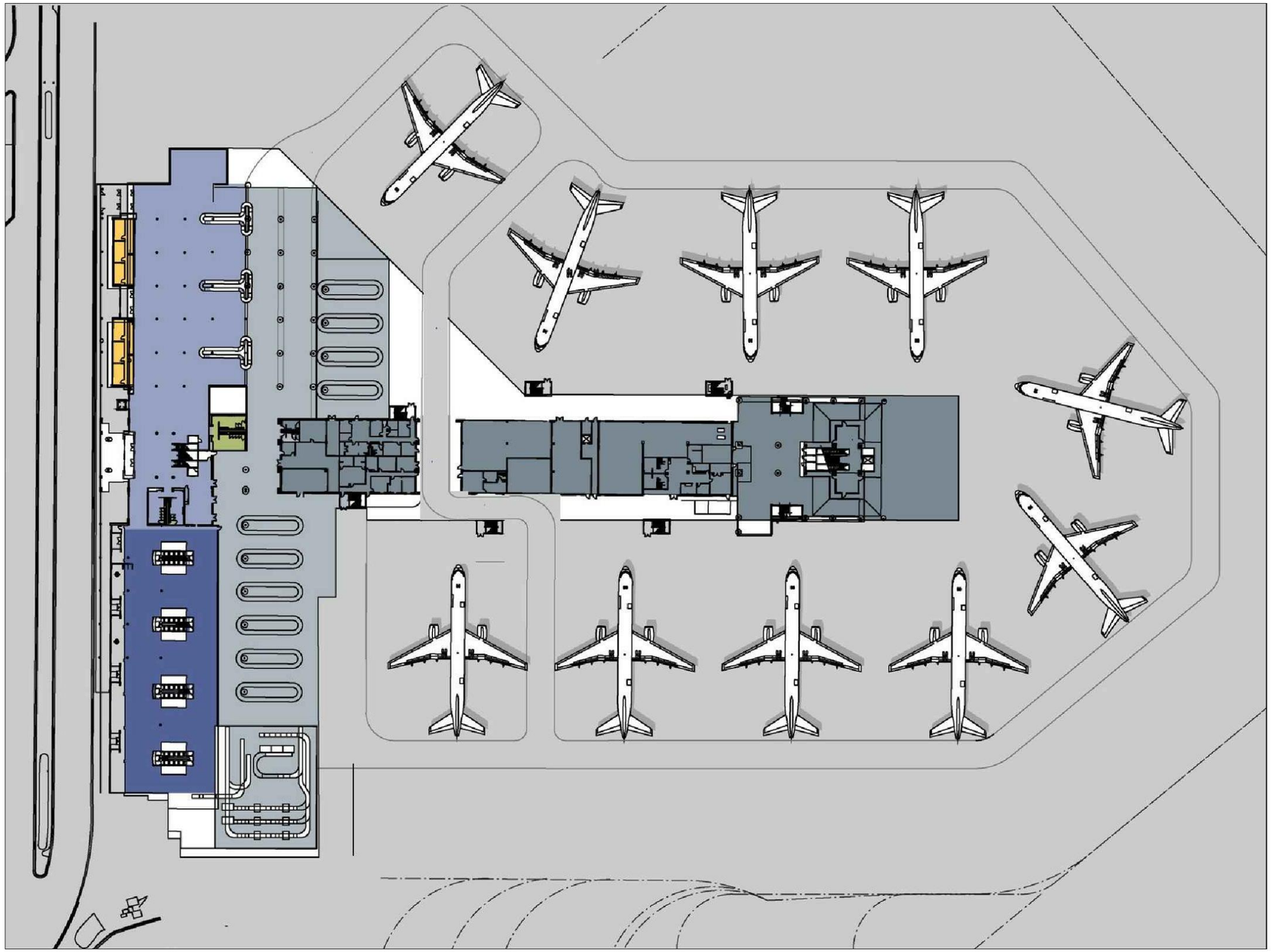


FIGURE 5-9
TERMINAL ALTERNATIVE 3
LOWER LEVEL

Legend

- Ticketing
- Public Circulation
- Baggage Handling
- Restrooms
- Baggage Claim Lobby
- Rental Car Lobby
- Rental Car Offices
- Support

0 50 100
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

RS&H

5.4.2.4 Terminal Alternative 4 – North and South Expansion

Terminal Alternative 4 is depicted in *Figure 5-10* and *Figure 5-11* for the Upper Level and Lower Level, respectively. Terminal Alternative 4 includes the following elements:

- Reconfigured terminal apron area
  - Provides 10 Boeing 757-200 gates/parking positions
  - Reconfigured 25-foot-wide apron service road around parked aircraft
- North and south expansion
  - Gates expand towards the north and south with the addition of triangle shaped structures
  - New office space created at mezzanine level over existing bag claim hall
- Upper Level
  - Expands and relocates the passenger security screening checkpoint to central spine of Terminal Concourse
  - Holdroom expansion along concourse , to the north, and to the south – fill-in aircraft nose pockets, extend end of concourse, and new office space on upper level above bag make-up expansion
  - Increased post-security concessions space
- Lower Level
  - Reconfiguration of ticketing lobby
    - Provides space for next-generation of airline ticketing
    - ATOs move to mezzanine level above ticket lobby
    - Additional queuing and circulation area
  - Make-up area expansion adjacent to existing area
  - Bag claim lobby expanded to create more circulation area (back wall shifted east)
    - Inbound bag room relocated
    - Baggage service office relocated
  - Expansion of rental car lobby
  - Restrooms relocated

5.4.2.5 Terminal Alternative 5 – Hybrid Expansion

Terminal Alternative 5 is similar to Alternative 2 and Alternative 4. It combines a large expansion to the south and a moderate expansion to the north. Terminal Alternative 5 is depicted in *Figure 5-12* and *Figure 5-13* for the Upper Level and Lower Level, respectively. Terminal Alternative 5 includes the following elements:

- Reconfigured terminal apron area
  - Provides 10 Boeing 757-200 gates/parking positions
  - Reconfigured 25-foot-wide apron service road around parked aircraft
- North and south expansion
  - Gates expand towards the north a partial triangle shaped structure
  - Gates expand towards the south with the addition of triangle shaped structures
- Upper Level

- Expands and relocates the passenger security screening checkpoint to central spine of Terminal Concourse
- Holdroom expansion along concourse , to the north, and to the south – fill-in aircraft nose pockets, extend end of concourse, and new office space on upper level above bag make-up expansion
- Increased post-security concessions space

» Lower Level
- Reconfiguration of ticketing lobby
  - Provides space for next-generation of airline ticketing
  - ATOs move to mezzanine level above ticket lobby
  - Additional queuing and circulation area
- Make-up area expansion adjacent to existing area
- Bag claim lobby expanded to create more circulation area (back wall shifted east)
  - Inbound bag room relocated
  - Baggage service office relocated
- Expansion of rental car lobby
- Restrooms relocated

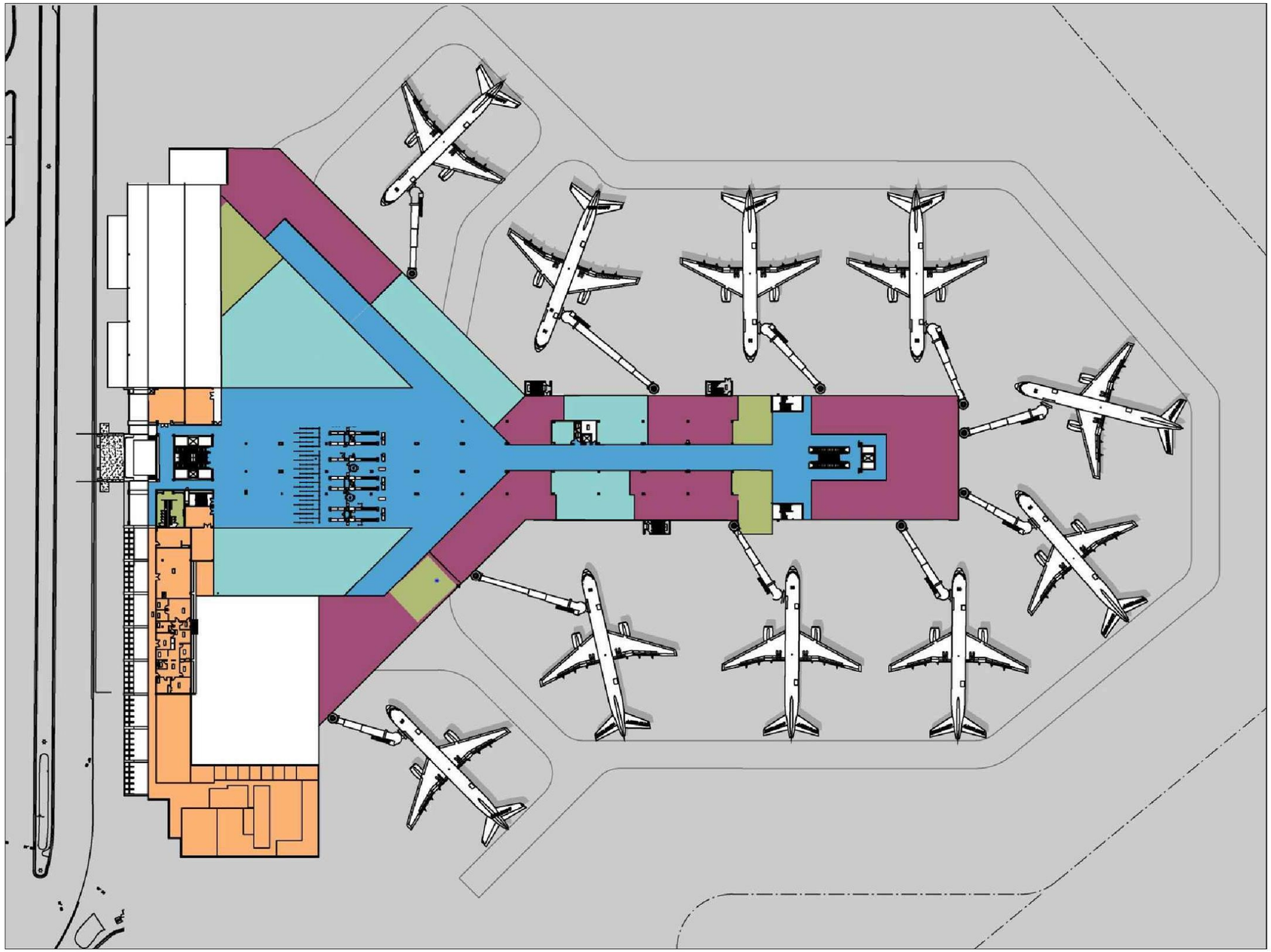


FIGURE 5-10
TERMINAL ALTERNATIVE 4
UPPER LEVEL

Legend

- Holdroom
- Public Circulation
- Restrooms
- Concessions
- Office/Administration

0 50 100
Feet

Source: Pensacola International Airport, 2007; RS&H, 2017

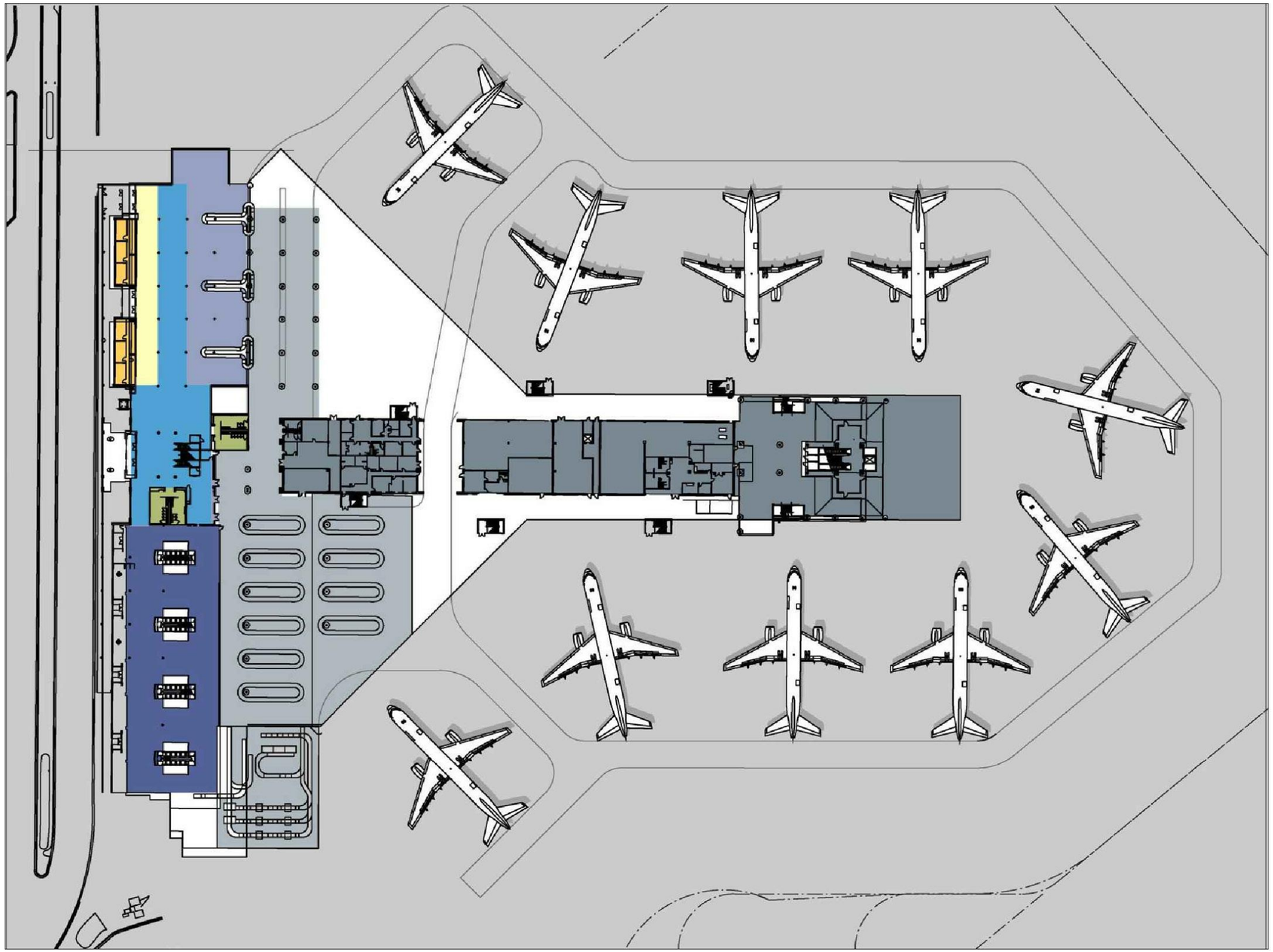


FIGURE 5-11
TERMINAL ALTERNATIVE 4
LOWER LEVEL

Legend

- Ticketing
- Public Circulation
- Baggage Handling
- Restrooms
- Baggage Claim Lobby
- Rental Car Lobby
- Rental Car Offices
- Support

0 50 100
Feet

Source: Pensacola International Airport, 2007; RS&H, 2017

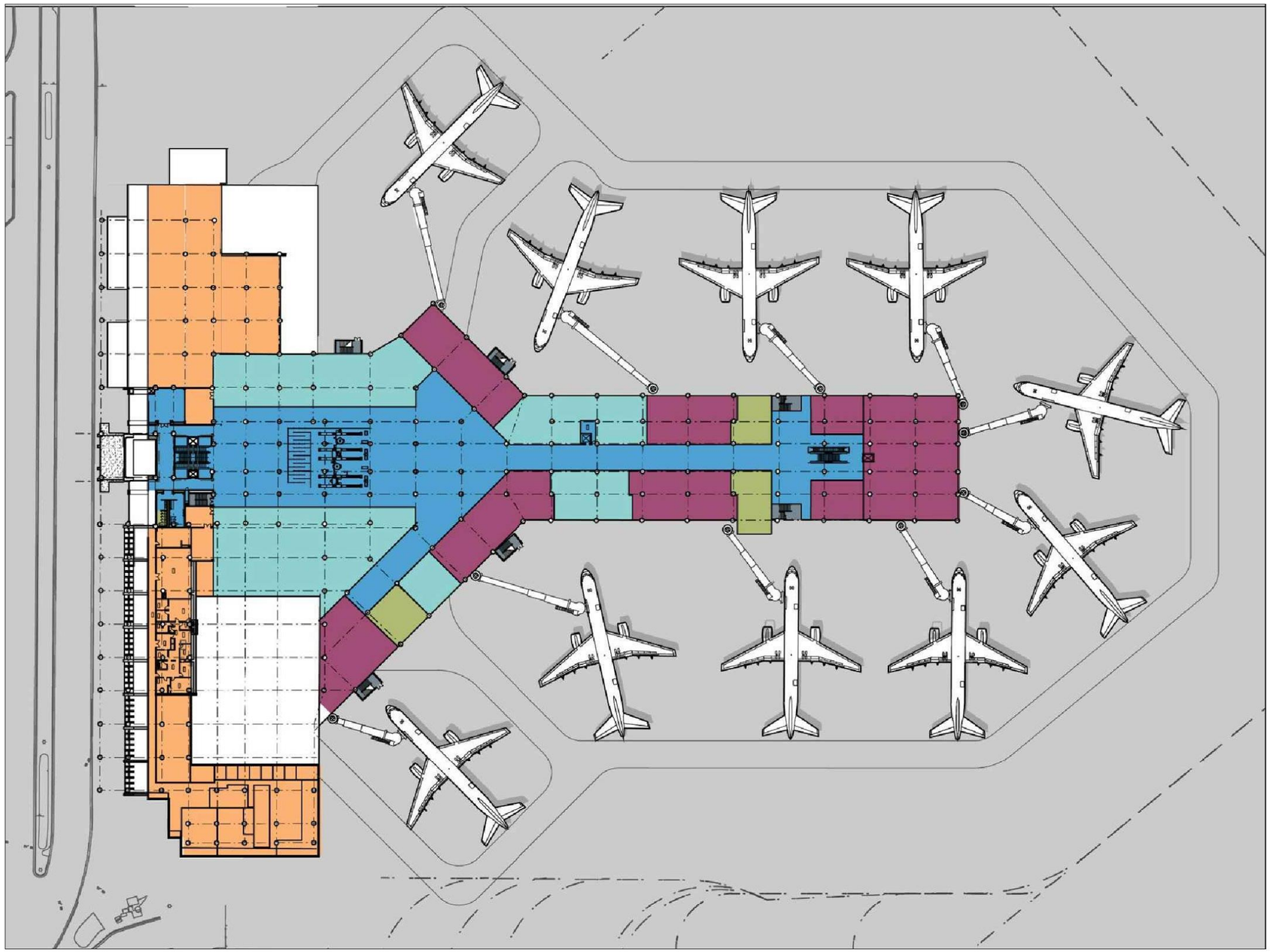


FIGURE 5-12
TERMINAL ALTERNATIVE 5
UPPER LEVEL

Legend

- Holdroom
- Public Circulation
- Restrooms
- Concessions
- Office/Administration

0 50 100
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

RS&H

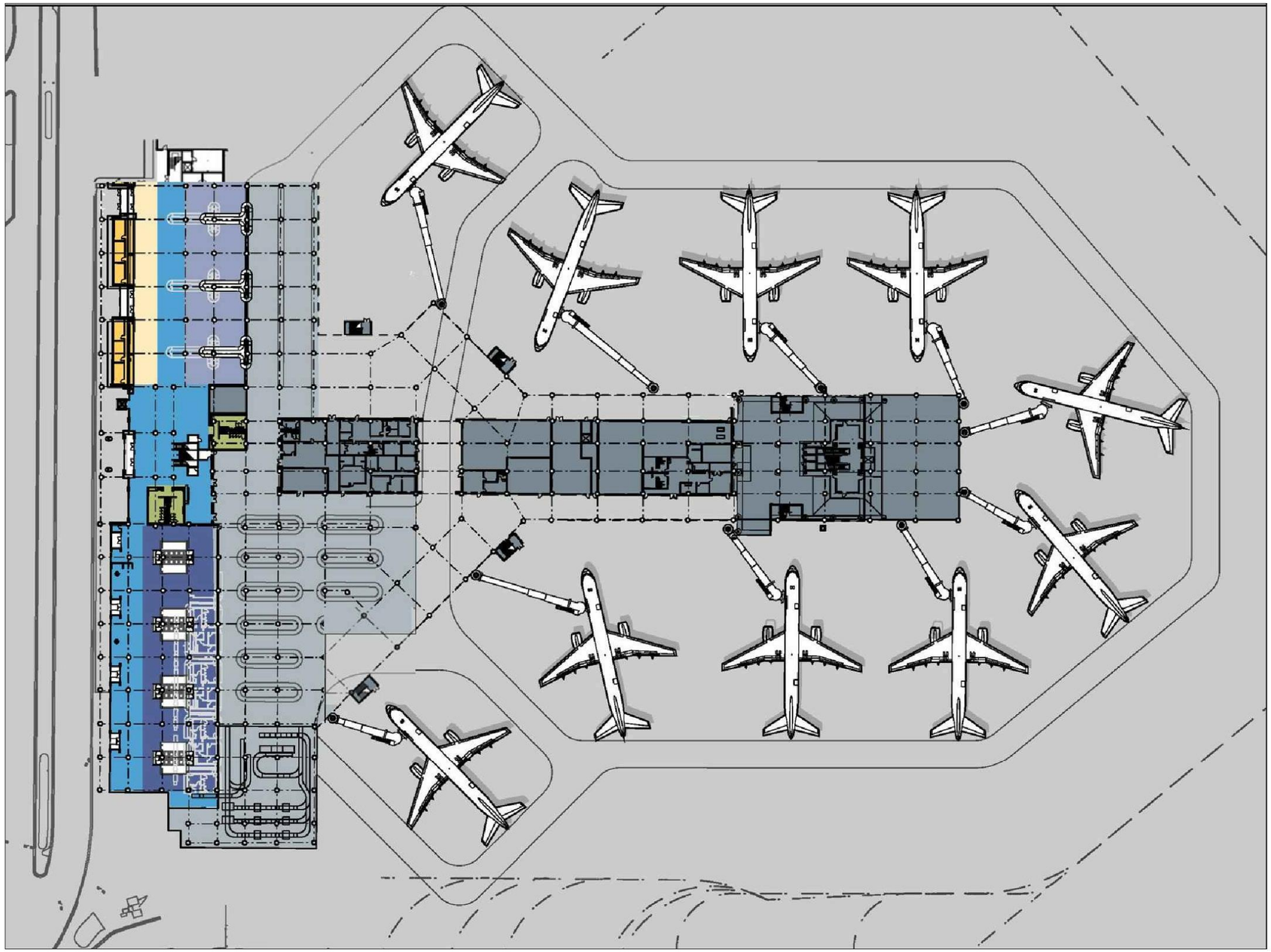


FIGURE 5-13
TERMINAL ALTERNATIVE 5
LOWER LEVEL

Legend

- Ticketing
- Public Circulation
- Baggage Handling
- Restrooms
- Baggage Claim Lobby
- Rental Car Lobby
- Rental Car Offices
- Support

0 50 100
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

RS&H

5.4.3 Terminal Alternatives Evaluation

The Terminal Alternatives were evaluated against the evaluation criteria, relative to one another. The pros/cons for Terminal Alternatives 1-5 are listed in *Table 5-6*, *Table 5-7*, *Table 5-8*, *Table 5-9*, and *Table 5-10* respectively.

Alternative 1 is the minimal development option. It does not consider the modification of the ticketing area due to the minimalist nature of this alternative. Alternatives 2, 3, 4, and 5 all consider the modification and expansion of the ticketing area.

The improvements to the ticket lobby enhances passenger flow and level of service. As a result, the ticket lobby reconfiguration associated with Terminal Alternatives 2, 3, 4, and 5 perform better in relation to the Operational Efficiency criteria.

The relocation of the ATO was considered to enhance space utilization, passenger flow, and support the "next-generation" ticket counter. Alternative 1 does not consider relocation of ATO space due to the minimalist nature of this alternative. In Alternatives 2, 4, and 5 the increased space on the mezzanine level above ticket counters allow ATOs to be relocated to that space while retaining existing uses (i.e., TSA administrative space and meeting rooms). In Alternative 3, the new space created on the mezzanine level above baggage claim reclaims unused space, and allows for the relocation of TSA to the space above baggage claim. This opens up the mezzanine area above the ticket counter for ATO relocation.

TABLE 5-6
TERMINAL ALTERNATIVE 1 PROS/CONS

Pros	Cons
LAND MANAGEMENT - No Pros	LAND MANAGEMENT - No Cons
ENVIRONMENTAL - No Pros	ENVIRONMENTAL - No Cons
FISCAL - Least Costly ($22.9M)	OPERATIONAL EFFICIENCY - No improvement to baggage claim, car rental, ticket lobby, or security checkpoint
FISCAL - Minimal development	OPERATIONAL EFFICIENCY - Future terminal expansion to north or south will require gate relocations
SAFETY - No Pros/Cons	FISCAL - No improvement to post-security concessions
	ECONOMIC - Least ability to support economic growth

Source: RS&H, 2017

TABLE 5-7
TERMINAL ALTERNATIVE 2 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
LAND MANAGEMENT - No Pros	LAND MANAGEMENT - No Cons
ENVIRONMENTAL - No Pros	ENVIRONMENTAL - No Cons
OPERATIONAL EFFICIENCY - Improvement most functional areas including: ticketing, baggage make-up, holdroom, and post security concessions	OPERATIONAL EFFICIENCY - No improvement to baggage queuing/circulation area and rental car queuing area
FISCAL - Moderate Cost ($37.6M)	OPERATIONAL EFFICIENCY - Asymmetrical terminal layout
FISCAL - Moderate improvement to post-security concessions	
ECONOMIC - Moderate ability to support economic growth	

Source: RS&H, 2017

TABLE 5-8
TERMINAL ALTERNATIVE 3 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
LAND MANAGEMENT - No Pros	LAND MANAGEMENT - No Cons
ENVIRONMENTAL - No Pros	ENVIRONMENTAL - No Cons
OPERATIONAL EFFICIENCY - Improvement most functional areas including: ticketing, baggage make-up, holdroom, post security concessions, and rental car queuing	OPERATIONAL EFFICIENCY - Asymmetrical terminal layout
FISCAL - Moderate Cost ($39.7M)	OPERATIONAL EFFICIENCY - Split operation for baggage make-up
FISCAL - Moderate improvement to post-security concessions	
ECONOMIC - Moderate ability to support economic growth	

Source: RS&H, 2017

TABLE 5-9
TERMINAL ALTERNATIVE 4 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
LAND MANAGEMENT - No Pros	LAND MANAGEMENT - No Cons
ENVIRONMENTAL - No Pros	ENVIRONMENTAL - No Cons
OPERATIONAL EFFICIENCY - Improvement to all functional areas	FISCAL - Most Costly ($43.8M)
OPERATIONAL EFFICIENCY - Greatest improvement to post-security concessions	FISCAL - Most expansive option
ECONOMIC - Greatest ability to support economic growth	

Source: RS&H, 2017

TABLE 5-10
TERMINAL ALTERNATIVE 5 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
LAND MANAGEMENT - No Pros	LAND MANAGEMENT - No Cons
ENVIRONMENTAL - No Pros	ENVIRONMENTAL - No Cons
OPERATIONAL EFFICIENCY - Improvement most functional areas including: ticketing, baggage make-up, holdroom, post security concessions, and rental car queuing	OPERATIONAL EFFICIENCY - Asymmetrical terminal layout
OPERATIONAL EFFICIENCY - Moderate improvement to post-security concessions	
FISCAL - Moderate Cost ($39.4M)	
FISCAL - Moderate improvement to post-security concessions	
ECONOMIC - Moderate ability to support economic growth	

Source: RS&H, 2017

All of the Terminal Alternatives consider the expansion of the baggage make-up area. However, two differences exist. Terminal Alternative 1 includes the addition of five smaller belts in the existing make-up area. Terminal Alternative 3 includes the addition of four larger belts in the northern expansion of the terminal building. Terminal Alternatives 2 and 4 both consider addition of four larger belts in the existing make-up area. Terminal Alternative 5 considers addition of three larger belts in the existing make-up area.

There is reduced operational efficiency associated with the configuration in Terminal Alternative 3. A split make-up operation would result if a second baggage make-up area were constructed. Therefore, the baggage make-up configuration in Terminal Alternative 3 does not perform as well as the other Terminal Alternatives in relation to the Operational Efficiency criteria.

Terminal Alternatives 3, 4, and 5 consider the expansion of the north Lower Level lobby. This expansion enhances queuing space, circulation, and level of service for baggage claim and rental car areas. Therefore, the expansion associated with Terminal Alternatives 3, 4, and 5 perform best in relation to the Operational Efficiency criteria. Conversely, the lack of expansion associated with Terminal Alternatives 1 and 2 would result in increased congestion and reduced level of service for passengers in this portion of the terminal. Therefore, this results in poor performance in relation to the Operational Efficiency criteria.

Increased concession space was not identified as a need in *Working Paper 4*; however, increasing concessions space may enhance revenue generation. Enhanced revenue generation can be integral to justifying the cost feasibility of an expansion project if there is a reasonable expectation that the revenue can offset implementation cost. Terminal Alternative 1 does not include expansion of concessions space due to the minimalist nature of this Alternative. Therefore, the potential revenue generation Terminal Alternative 1 minimally responds to the Fiscal Sustainability criteria. Terminal Alternatives 2, 3, and 5 each include a moderate expansion of post-security concessions. Consideration of the potential revenue generation opportunities largely respond to the Fiscal Sustainability criteria. Terminal Alternative 4 includes the greatest expansion of post-security concessions space. Consideration of the potential revenue generation opportunities fully respond to the Fiscal Sustainability criteria. It is important to note, however, that a more detailed passenger survey and financial analysis is required to determine the appropriate concession area expansion that meet the local demand. Constructing excessive concession space can be detrimental because the Airport may be unable to achieve a positive revenue return on capital investment.

Alternative 1 does not include relocation of the security-screening checkpoint (SSCP) due to the minimalist nature of this Alternative. Alternatives 2, 3, 4, and 5 each consider the expansion of SSCP space. These configurations support a balanced and symmetrical configuration; which encourages efficient passenger flow around the concourse. A balanced layout is key to future terminal expansion because it minimizes passenger walking distances and enhances passenger flow around the terminal building. That said, only Terminal Alternative 4 considers a balanced concourse layout with a symmetrical layout on the north and south side of the concourse. Terminal Alternatives 2, 3, and 5 both consider asymmetrical expansions; however, future concourse expansion could easily be configured to create a symmetrical layout. Conversely, Terminal Alternative 1 maintains the existing location of the SSCP, which does not support a balanced and symmetrical future expansion. Therefore, the SSCP and overall concourse layouts associated with Terminal Alternatives 4 and 5 perform best in relation to the Operational Efficiency criteria. The layouts associated with Terminal Alternatives 2 and 3 perform moderately, and the Terminal Alternative 1 layout performs poorly when evaluated against the Operational Efficiency criteria.

Terminal Alternative 1 implementation cost is estimated at $22.9 million. This is the least costly of the five Terminal Alternatives. The terminal expansion associated with Terminal Alternative 1 is minimal compared to the other Alternatives. Terminal Alternative 2 implementation cost is estimated at $37.6 million. Terminal Alternative 3 implementation cost is $39.7 million. Both Alternatives have a moderate implementation cost relative to the other two Alternatives. Terminal Alternative 4 implementation cost is

estimated at $43.8 million, which is the highest implementation cost relative to the other three Alternatives. Terminal Alternative 5 implementation cost is estimated at $39.4 million, which approximately 70 percent more expensive than Alternative 1 and 11 percent less expensive than Alternative 4. A more detailed financial feasibility analysis is required to determine which alternative provides the best return on investment.

The ROM implementation cost estimates are summarized in *Table 5-11*.

The evaluation results for the Terminal Alternatives are described in *Table 5-12*.

TABLE 5-11
TERMINAL ALTERNATIVES ROM COSTS

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Renovation (finished)	$2.2M	$8.1M	$8.1M	$12.8M	$10.7M
Renovation (shell only)	-	-	-	-	$1.2M
New Construction (finished)	$20.8M	$28.3M	$25.9M	$24.7M	$24.5M
New Construction (shell only)	-	$1.2M	$5.7M	$6.3M	$3.0M
Total ROM Cost	$22.9M	$37.6M	$39.7M	$43.8M	$39.4M

Source: RS&H, 2017
Note: Numbers may not sum due to rounding.

TABLE 5-12
TERMINAL ALTERNATIVES EVALUATION MATRIX

	Evaluator Description	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
GOAL	**SAFETY**	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**
Crit. 1	Meets or exceeds standards to enhance safety	5	5	5	5	5
Crit. 2	Enhances safety through application of industry best practices	5	5	5	5	5
GOAL	**STRATEGIC LAND MANAGEMENT**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
Crit. 1	Encourages compatibility between on- and off-airport land uses	n/a	n/a	n/a	n/a	n/a
Crit. 2	Promotes highest and best land use to support efficient airport operations	n/a	n/a	n/a	n/a	n/a
GOAL	**OPERATIONAL EFFICIENCY**	**2.8**	**4.8**	**2.5**	**5.0**	**4.8**
Crit. 1	Maintains or enhances operational efficiency	3	5	1	5	5
Crit. 2	Supports redundancy to enhance operational flexibility	2	5	3	5	5
Crit. 3	Strategically balances demand with supply using alternative methods	3	4	3	5	4
Crit. 4	Supports efficient operating environment for all aviation users	n/a	n/a	n/a	n/a	NA
Crit. 5	Considers flexibility and adaptability to support future potential industry trends	3	5	3	5	5
GOAL	**ENVIRONMENTAL AWARENESS**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
Crit. 1	Recognizes noise impacts	n/a	n/a	n/a	n/a	n/a
Crit. 2	Environmental compatibility	n/a	n/a	n/a	n/a	n/a
Crit. 3	Employs environmental sustainability initiatives	n/a	n/a	n/a	n/a	n/a
GOAL	**FISCAL SUSTAINABILITY**	**4.3**	**4.0**	**3.3**	**3.0**	**4.0**
Crit. 1	Cost effectiveness	5	4	3	2	4
Crit. 2	Minimizes costs	5	4	3	2	3
Crit. 3	Generates revenue	3	4	4	5	5
GOAL	**ECONOMIC GROWTH**	**3.0**	**4.0**	**4.0**	**5.0**	**5.0**
Crit. 1	Enhances regional transportation connections to the Airport	n/a	n/a	n/a	n/a	n/a
Crit. 2	Encourages increased economic impact to community	3	4	4	5	5
TOTAL SCORE		**15.1**	**17.8**	**14.8**	**18.0**	**18.8**
MAXIMUM SCORE		**20**	**20**	**20**	**20**	**20**

Source: RS&H, 2017
Notes: Alt = Alternative, Crit. = Criterion, n/a = not applicable
Scoring Rubric: 5 - Alternative Fully Responds to Criterion/Goal, 4 - Alternative Largely Responds to Criterion/Goal, 3 - Alternative Partially Responds to Criterion/Goal, 2 - Alternative Minimally Responds to Criterion/Goal, 1 - Alternative Does Not Respond to Criterion/Goal

5.4.4 Recommendation

The recommended terminal development alternative was selected based on the results of the alternatives evaluation process. Terminal Alternative 5 had the highest total score based on the evaluation process. Therefore, Terminal Alternative 5 is recommended for implementation. However, Terminal Alternatives 1, 2, and 4 have their merits. Terminal Alternative 5 is included as the recommended configuration in the airport-wide recommended development plan as depicted in *Figure 5-25*. The cost of implementing the recommended terminal alternative (Alternative 5) is described in *Table 5-11*.

Terminal Alternative 4 would provide the greatest level of customer service; however, it may not be cost feasible. Terminal Alternative 2 is less capital intensive; however, it provides only a moderate enhancement to level of service. Terminal Alternative 1 requires the least capital investment; however, it provides the least improvement to passenger level of service. Terminal Alternative 3 should be discarded as a development option. It was not deemed suitable for implementation due to the operational inefficiencies resulting from the split baggage make-up area.

Ultimately, implementation cost and the ability for PNS to recuperate costs through terminal operation is a significant determining factor impacting the decision to implement the terminal development option. Financial feasibility assessment will ultimately help determine which alternative should be selected and when the alternative should be implemented

Phased implementation can also be undertaken to support cost effectiveness. The terminal alternatives are configured such that a phased implementation approach can be taken. For example, Terminal Alternative 1 can be implemented in the near term followed by implementation of Terminal Alternative 2 and Terminal Alternative 5, as each phase becomes financially feasible.

5.5 LANDSIDE

The landside system consists of elements, which in conjunction with the terminal, create the intermodal nature of an airport. The landside elements are tied significantly to the orientation and design of the terminal building, as they are part of the same airport subsystem. As documented in *Working Paper 4, Facility Requirements*, growth at Pensacola International Airport is challenging the existing landside facilities to serve the increasing passenger demand at the quality level for which PNS has been known. Overall, there are the signs that PNS is growing beyond the ability of existing facilities to retain the most convenient characteristics of a small airport, the most important of which is a consistently high passenger level of service.

Those passenger conveniences, as they relate to landside facilities, include ease of access and egress for dropping off or picking up passengers at the terminal curb, and plentiful, affordable parking close to the terminal. The following sections will briefly reiterate the analysis of key issues for the landside elements, identify alternatives to meet current and future needs, and assess each option against established evaluation criteria. The goal of these landside alternatives is to retain and/or improve the passenger level of service in a safe and efficient manner, all while accommodating the increase in demand through the planning horizon (2035) and beyond.

5.5.1 Key Issues

The key issues defined in the facility requirements analysis included:

- Curbside
  - Increase the capacity of the curb roadways (expand them by making them longer and/or adding lanes), and/or modify operations in the peak hours, in order to meet 2035 capacity and level of service standards
  - Provide options and incentives for customers picking up passengers to reduce the demand for, and dwell times on, the arrivals curb
  - Reduce time on the curbs for commercial vehicles by providing off-curb staging areas for all such vehicles, including transportation network company providers
- Parking
  - Add more than 500 net public parking spaces in the most convenient location (i.e., in the Garage or the Surface Lot)
  - Augment the employee parking supply, especially to accommodate higher demand during shift change periods
- Rental cars
  - Add more than 200 ready-return spaces, contiguous to existing ready-return spaces, preferably in a parking structure
  - Gain more storage spaces by reconfiguring the service area

Analysis and observation of inner curb roadway operations showed the capacity constraints were aggravated by long curb dwell times during peak hours, the high volume of pedestrians crossing the inner curb roadway (both within crosswalks and not), and the distinctive curb configuration where passenger service is permitted on both the left and right lanes. Of these, the long dwell times on the arrivals curb is the most significant in terms of reducing the effective capacity of the given facility. These factors was addressed in the landside alternatives.

A common means of encouraging the efficient use of the arrivals curb is to provide a cell phone lot where drivers can wait free of charge for a modest period, and then go to the curb only when their party is ready at the curb for pickup. A cell phone lot was opened within Economy Lot 1 after the initiation of this Master Plan Update. The continued operation and potential expansion of the cell phone lot thus became part of the landside alternatives that were developed.

The current parking program consists of garage, surface, and economy parking, as well as tenant and administrative parking. Alternatives for parking considered size, location, and potential parking product designations to optimize efficiency, cost, and customer level of service. The parking alternatives were closely related to the rental car alternatives for ready-return spaces, as they share the same desired characteristics, and thus compete for the most convenient locations. Parking alternatives needed to account for the staging of all commercial vehicle classes.

All landside alternatives were developed within the existing land area under PNS ownership and control. All alternatives maintained the existing interfaces with the regional transportation network (i.e., streets, highways, and transit service) that carry passengers to and from PNS. The landside alternative development process considered what, if any, improvements to that system would be necessary or

desirable out to the planning horizon. A review of regional plans (e.g., State, County, City, Transit Agency, and MPO) indicated that the sole issue of interest is for PNS to continue its coordination and support for the improvements to Airport Boulevard, which were documented in the *SR 750 (Airport Boulevard) Action Plan*[1] , some of which have been, or are in the process of being, implemented.

All landside alternatives were developed interactively with terminal, airfield, and support services alternatives, in order to create a cohesive plan for the entire airport. They were developed to address these issues in a manner that resolves them in a financially feasible way, through 2035, without sacrificing future development and growth potential as PNS moves incrementally toward the ultimate plan.

In the development of the landside alternatives, and with consideration of the terminal, airfield, and support facility alternatives being simultaneously developed, the planning team concluded that the landside elements could include alternatives for sub-elements (e.g., for curbs, for parking) that could be combined readily with each other and with the other airport elements' plans. Therefore, *Section 5.5.2* and *Section 5.5.5* present the alternatives for the sub-elements of the landside, rather than for a comprehensive overall landside plan.

5.5.2 Curbside Alternatives

A significant factor in the development of curb alternatives was the fact that the terminal alternatives for 2035 maintained a single-level terminal, with the ticketing/check-in and bag claim halls in sequence. Single-level terminals create a challenge for the curb roadways, as every vehicle destined to the arrivals curb must pass through the departures area, and every vehicle leaving the departures curb must pass through the arrivals area. This challenge is typically met by providing enough lanes for the two traffic streams to bypass each other, something that the current PNS inner curb roadway configuration (at three lanes with only one thru lane) does not permit.

Two alternatives were prepared to explore the curb development options. The two curb alternatives provide for one or two additional lanes on the inner curb, which carries more than 90 percent of all curb traffic. The inner curb is used for most vehicles dropping off at ticketing/check-in, and is used exclusively by privately owned vehicles (POVs) for picking up at bag claim. Both curb alternatives fit within the existing constraints set by the terminal building and its sidewalk, by the parking structure, and by the piers that support the pedestrian bridge between parking structure and terminal. Each provides for a 14-foot wide pedestrian island where passengers can wait for commercial vehicles, which use that curb chiefly for passenger pick-up. In each alternative, the outer curb is served by two lanes, with the right lane for serving passengers, and the left lane for thru movements.

5.5.2.1 Curbside Alternative Common Elements

The Curbside Alternatives incorporate several common elements. The focus of the subsequent sections are on the elements that differentiate the two Curbside Alternatives. Therefore, the common elements identified below are not referenced further in the description of each specific alternative.

[1] Florida DOT, SR 750 (Airport Boulevard) Action Plan, 2015

- Demolish center median
- Demolish center median canopy
- Construct new center median
- Construct new center median canopy
- Convert center median area to traffic lane
- Demolish north crosswalk canopy

5.5.2.2 Curbside Alternative 1

Curbside Alternative 1, depicted in *Figure 5-14*, includes the following elements, in addition to the common elements described in *Section 5.5.2.1*.

- Inner curb lanes (private vehicles) – five total lanes
  - Comprises two service lanes, one flex lane, and two through lanes
- Outer curb lanes (commercial vehicles) – two total lanes
  - Comprises one service lane and one through lane
  - Width reduced to single lane near center crosswalk
- Center crosswalk access to Garage
  - Passengers can also access parking structure via overhead walkway
- New north crosswalk canopy from terminal canopy to center median

For Curbside Alternative 1, the inner curb is 55 feet wide and provides five lanes in total – the two adjacent the terminal for passenger service (loading/unloading), the two left lanes for thru movements, and the center lane to be shared between those functions. At airports with a five-lane curb, the center lane chiefly serves to move vehicles, with only a few stopping during the peak hours for passenger unloading or loading. During such stops, dwell times are generally very short (less than 30 seconds), as drivers feel the need to stop only briefly, lest they congest the lanes.

Curbside Alternative 1 provides a center crosswalk between the parking structure and terminal (in addition to the overhead pedestrian bridge). It also provides a north crosswalk of the inner curb to enable passengers to walk more directly to the taxi queue on the outer curb.

Curbside Alternative 1 provides a total effective length of 560 feet, roughly the length of the terminal. Given the width of the crosswalks (not included in the effective length figure), the inner curb would be approximately 600 feet long.

In Curbside Alternative 1, the total width of the curb roadway is 91 feet. Consequently, the left curb of the outer roadway would move closer to the Garage than in the existing configuration. At the center crosswalk, the outer roadway would merge to one lane, due to the piers of the pedestrian bridge, before widening back to two lanes on the other side of the crosswalk.

5.5.2.3 Curbside Alternative 2

Curbside Alternative 2, depicted in *Figure 5-15*, includes the following elements, in addition to the common elements described in *Section 5.5.2.1*.

- Inner curb lanes (private vehicles)– four total lanes
  - Comprises two service lanes and two through lanes
- Outer curb lanes (commercial vehicles) – two total lanes
  - Comprises one service lane and one through lane
- No at-grade access to Garage
  - All passengers must access Garage via overhead walkway
- Curb and canopy extended to the north
- New north crosswalk canopy to center median

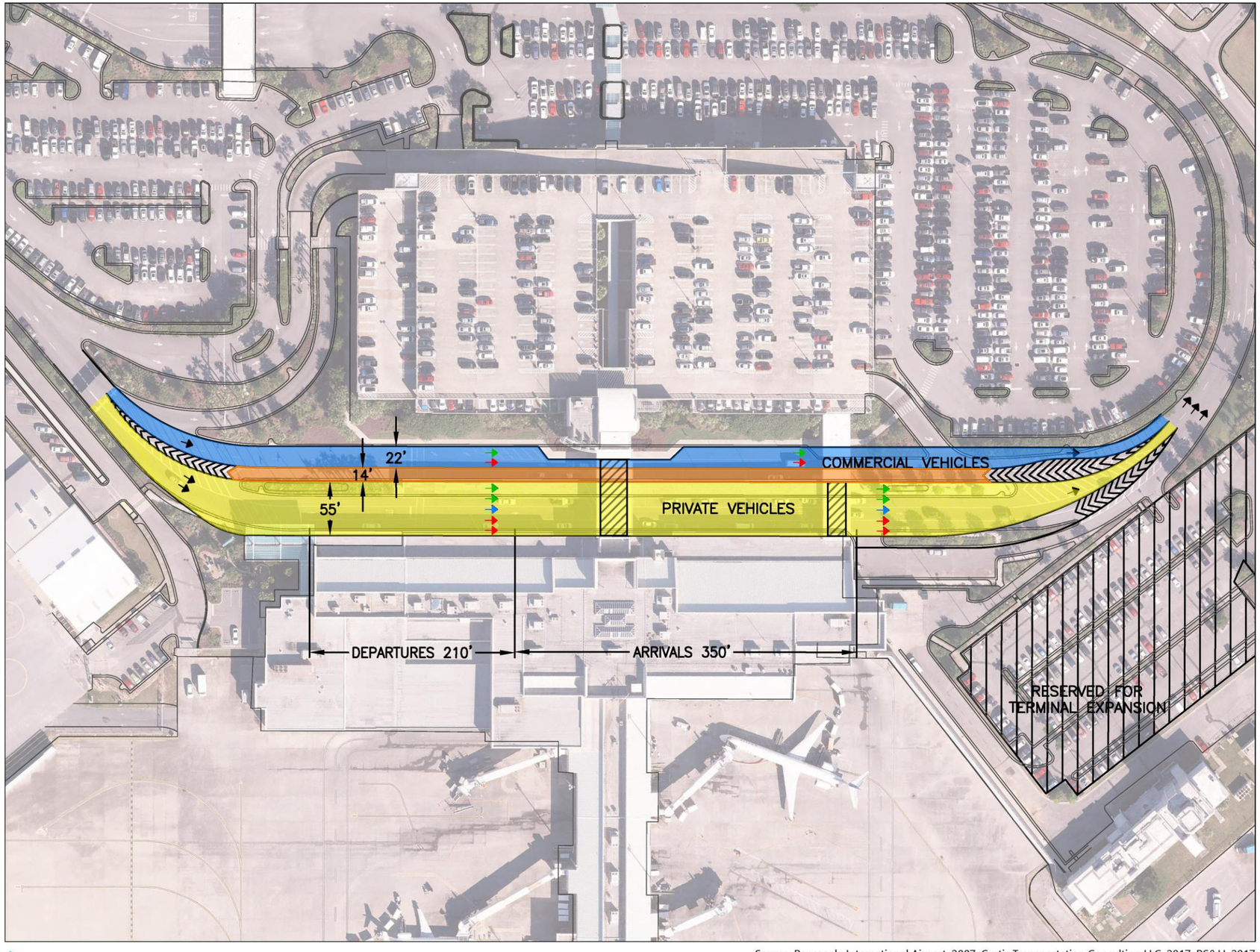
In Curbside Alternative 2, the inner curb is 44 feet wide, providing four lanes in total – the two adjacent the terminal for passenger service (loading/unloading), and the two left lanes for thru movements.

Curbside Alternative 2 only provides two crosswalks to the outer curb for passengers accessing the commercial vehicles there. The impact of pedestrians to/from the parking structure would be too great with only four lanes on the inner curb to permit them to cross, and thus in this alternative, all garage/terminal pedestrian traffic must use the pedestrian bridge. To make this self-enforcing, this alternative requires construction of barriers that would keep pedestrians from crossing at-grade the entire length of the far curb adjacent the Garage.

Curbside Alternative 2 provides a total effective length of 675 feet, which, when crosswalk width is included, implies the need to extend the terminal sidewalk and canopy north approximately 100 feet, thereby closing access from the inner curb to the ancillary lot on the north end of the terminal. While the total capacity of the longer but narrower Alternative 2 is the same as the shorter and wider Alternative 1, this extension of the sidewalk and canopy is not likely to be used as heavily, as it is less convenient, and hard to see (being at the far end of the curb). Consequently, Alternative 2 has a modestly higher risk of some congestion when this segment of curb is not utilized.

In Curbside Alternative 2, the total width of the curb roadways is 80 feet, and there is no crosswalk across the outer roadway. Thus, both lanes of the outer curb are continuous across the entire length. This adds modestly to its overall capacity, though the increase is not necessary to meet 2035 requirements.

FIGURE 5-14
CURBSIDE ALTERNATIVE 1



Legend

- Commercial Vehicle Lanes (2 lanes, 11 ft each)
- Pedestrian Island
- Private Vehicle Lanes (5 lanes, 11 ft each)
- Covered Pedestrian Crosswalk
- Through Lanes
- Through/Service Lanes
- Service Lanes

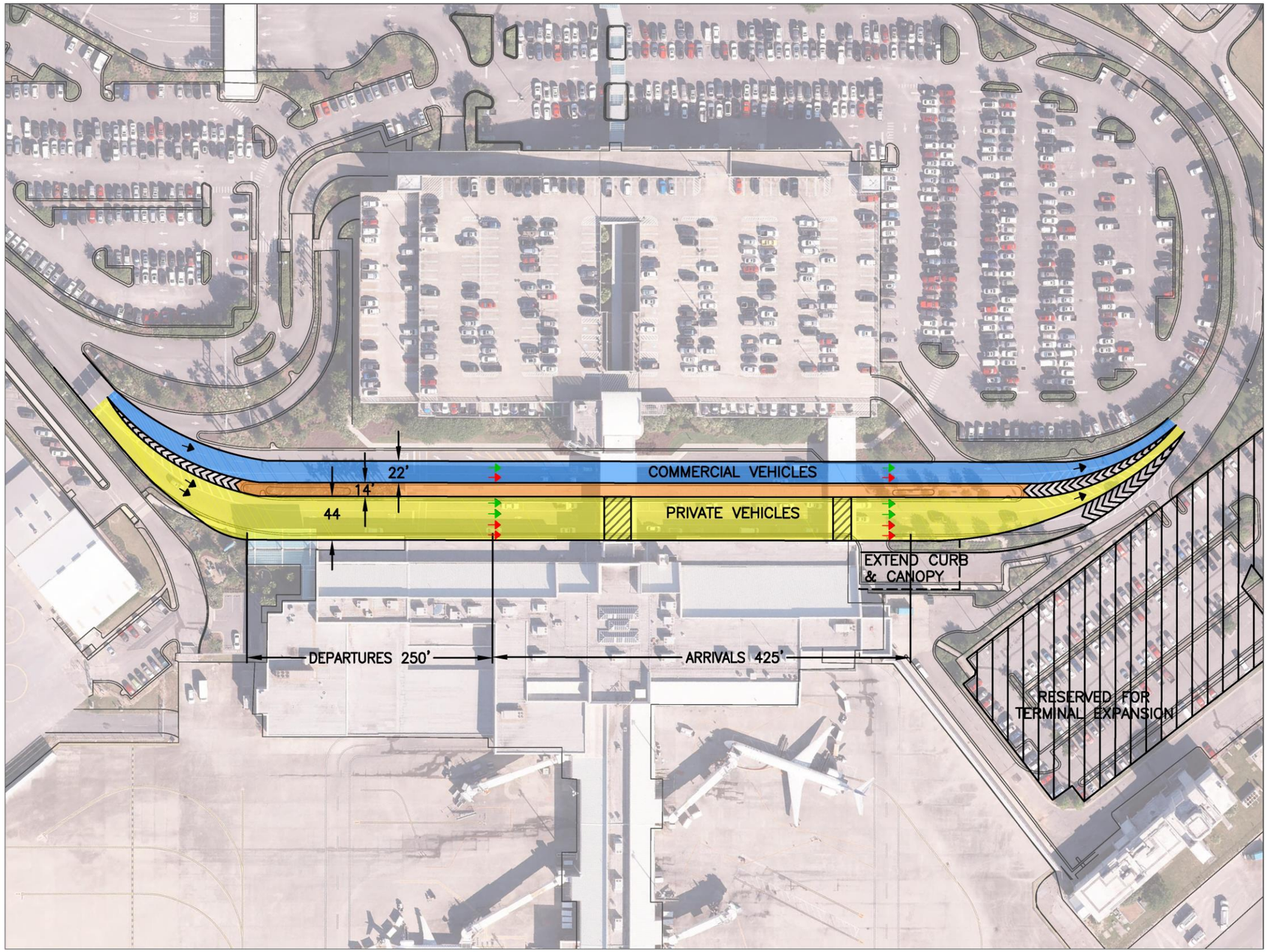
0 50 100
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; Curtis Transportation Consulting LLC, 2017; RS&H, 2017

RS&H

FIGURE 5-15
CURBSIDE ALTERNATIVE 2



Legend

- Commercial Vehicle Lanes (2 lanes, 11 ft each)
- Pedestrian Island
- Private Vehicle Lanes (5 lanes, 11 ft each)
- Covered Pedestrian Crosswalk
- Through Lanes
- Service Lanes

0 50 100
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; Curtis Transportation Consulting LLC, 2017; RS&H, 2017

RS&H

5.5.3 Curbside Alternatives Evaluation

The Curbside Alternatives were evaluated against the evaluation criteria, relative to one another. The pros/cons for Curbside Alternative 1 are listed in *Table 5-13*. The pros/cons for Curbside Alternative 2 are listed in *Table 5-14*.

The inner curb lane configuration for Curbside Alternative 1 is more efficient than that of Curbside Alternative 2. The five lanes in the Curbside Alternative 1 configuration provide greater capacity than the four lanes in Curbside Alternative 2. Both inner curb lane configurations yield a reduction of vehicle idling time because of increased capacity, which reduces vehicle congestion. However, the configuration in Curbside Alternative 1 is expected to provide a more significant reduction to idling times because of the greater capacity associated with the configuration. This is despite the greater potential for traffic weaving and trapped vehicles because of the increased number of lanes.

In Curbside Alternative 1, the outer curb lane configuration includes a reduction to a single lane near the center crosswalk. This results in an unusual configuration for the through-lane movement. This may present some challenges for larger commercial vehicles to maneuver through this chokepoint.

Curbside Alternative 1 preserves two pedestrian paths between the parking structure and terminal building – the center crosswalk at street level and the overhead pedestrian walkway. This gives pedestrians the flexibility and option to choose the path that is most convenient to them.

TABLE 5-13
CURBSIDE ALTERNATIVE 1 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
LAND MANAGEMENT - No Pros	LAND MANAGEMENT - No Cons
ECONOMIC - No Pros	ECONOMIC - No Cons
OPERATIONAL EFFICIENCY - Five inner lanes adds more capacity than four inner lanes (Alt 2)	OPERATIONAL EFFICIENCY - Unusual through lane movement for larger commercial vehicles
OPERATIONAL EFFICIENCY - Preservation of two pedestrian paths to/from garage provides redundancy	OPERATIONAL EFFICIENCY - More inner lanes (compared to Alt 1) involves more traffic weaving and greater potential for trapped vehicles in lanes closer to terminal
OPERATIONAL EFFICIENCY - Ability to modify control of center crosswalk helps balance supply/demand over time	
ENVIRONMENTAL - Greatest reduction to vehicle idling times for vehicles through increased capacity and congestion elimination	
FISCAL - Least Costly ($0.9M)	

Source: Curtis Transportation Consulting LLC analysis, 2017; RS&H, 2017

TABLE 5-14
CURBSIDE ALTERNATIVE 2 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
LAND MANAGEMENT - No Pros	LAND MANAGEMENT - No Cons
ECONOMIC - No Pros	ECONOMIC - No Cons
ENVIRONMENTAL - Moderate reduction to vehicle idling times for vehicles through increased capacity and congestion elimination	FISCAL - Most Costly ($1.1M)
	OPERATIONAL EFFICIENCY - Reduced passenger convenience for those using the parking structure

Source: Curtis Transportation Consulting LLC analysis, 2017; RS&H, 2017

Conversely, Curbside Alternative 2 retains the overhead pedestrian walkway as the only means of passenger access to the Garage. This results in an indirect passenger flow due to the grade change, leading to a significant reduction in level of service for pedestrians needed to move between parking and the first floor of the terminal building. The vertical circulation cores in the terminal building and parking structure were not designed to consider this higher level of activity needed to accommodate passenger demand. Implementation of this element of Curbside Alternative 2 would likely require enhancements to the vertical circulation capacity in both facilities.

Curbside Alternative 1 implementation cost is $0.9 million while Curbside Alternative 2 is $2 million. The primary reason for the cost difference is the new vertical circulation in the garage and terminal building that would be required as part of Curbside Alternative 2. The ROM implementation cost estimates are summarized in *Table 5-15*.

The center crosswalk configuration in Curbside Alternative 1 provides the ability to modify control of center crosswalk. During peak times, PNS staff could temporarily close the crosswalk to pedestrians or meter pedestrian crossings using uniformed staff or signalization. This would reduce vehicle congestion and permit more free-flow conditions. This is an inherent benefit of the configuration as it helps balance supply/demand over time.

The evaluation results for the Curbside Alternatives are described in *Table 5-16*.

TABLE 5-15
CURBSIDE ALTERNATIVES ROM COSTS

	Alternative 1	Alternative 2
Center Median Demolition	<$0.1M	<$0.1M
Center Median Reconstruction	$0.1M	$0.1M
Crosswalk Median Canopy Demolition	$0.1M	$0.1M
Crosswalk Median Canopy Reconstruction	$0.6M	$0.6M
North Crosswalk Canopy Demolition	<$0.1M	$0.1M
North Crosswalk Canopy Reconstruction	$0.1M	$0.1M
Terminal Canopy Extension Construct	-	$0.2M
Center Median to Traffic Lane	<$0.1M	<$0.1M
Outer Curb Demolition	<$0.1M	-
Garage Elevator Addition	-	$0.5M
Terminal Elevator Addition	-	$0.4M
Total ROM Cost	$0.9M	$2.0M

Source: RS&H, 2017; Curtis Transportation Consulting LLC analysis, 2017
Note: Numbers may not sum due to rounding.

TABLE 5-16
CURBSIDE ALTERNATIVES EVALUATION MATRIX

	Evaluator Description	Alt 1	Alt 2
GOAL	**SAFETY**	**4.0**	**4.0**
Crit. 1	Meets or exceeds standards to enhance safety	4	4
Crit. 2	Enhances safety through application of industry best practices	4	4
GOAL	**STRATEGIC LAND MANAGEMENT**	**n/a**	**n/a**
Crit. 1	Encourages compatibility between on- and off-airport land uses	n/a	n/a
Crit. 2	Promotes highest and best land use to support efficient airport operations	n/a	n/a
GOAL	**OPERATIONAL EFFICIENCY**	**4.6**	**2.4**
Crit. 1	Maintains or enhances operational efficiency	4	2
Crit. 2	Supports redundancy to enhance operational flexibility	5	2
Crit. 3	Strategically balances demand with supply using alternative methods	5	3
Crit. 4	Supports efficient operating environment for all aviation users	5	2
Crit. 5	Considers flexibility and adaptability to support future potential industry trends	4	3
GOAL	**ENVIRONMENTAL AWARENESS**	**4.5**	**4.0**
Crit. 1	Recognizes noise impacts	n/a	n/a
Crit. 2	Environmental compatibility	4	4
Crit. 3	Employs environmental sustainability initiatives	5	4
GOAL	**FISCAL SUSTAINABILITY**	**4.5**	**2.5**
Crit. 1	Cost effectiveness	5	3
Crit. 2	Minimizes costs	4	2
Crit. 3	Generates revenue	n/a	n/a
GOAL	**ECONOMIC GROWTH**	**n/a**	**n/a**
Crit. 1	Enhances regional transportation connections to the Airport	n/a	n/a
Crit. 2	Encourages increased economic impact to community	n/a	n/a
TOTAL SCORE		**17.6**	**12.90**
MAXIMUM SCORE		**20**	**20**

Source: Curtis Transportation Consulting LLC analysis, 2017; RS&H, 2017
Notes: Alt = Alternative, Crit. = Criterion, n/a = not applicable
Scoring Rubric: 5 - Alternative Fully Responds to Criterion/Goal, 4 - Alternative Largely Responds to Criterion/Goal, 3 - Alternative Partially Responds to Criterion/Goal, 2 - Alternative Minimally Responds to Criterion/Goal, 1 - Alternative Does Not Respond to Criterion/Goal

5.5.4 Curbside Recommendation

The recommended curbside alternative was selected based on the results of the alternative evaluation process. The recommended alternative represents the single Curbside Alternative identified for future development. The alternatives scores in *Table 5-16* indicate that Curbside Alternative 1 performs better than Curbside Alternative 2. Therefore, Curbside Alternative 1 (in whole) is selected as the recommended development alternative. Curbside Alternative 1 is consolidated into an airport-wide recommended development plan as depicted in *Figure 5-25*. The consolidated recommended landside development alternative is depicted in *Figure 5-18*. The cost of implementing the recommended curbside alternative (Alternative 1) is described in *Table 5-16*.

5.5.5 Parking Alternatives

All parking at Pensacola International Airport is within reasonable walking distance to the terminal, and no shuttle services are provided unless both the Garage and Surface Lot are closed. Given the walking distances to the farthest spaces of the economy lots are nearly 2,000 feet[2] (Economy 1) and 1,400 feet[3] (Economy 2), it is clear why the two closer parking facilities (the Garage and Surface Lot) are in higher demand. The development of parking alternatives was driven by meeting this demand as close to the terminal as possible, both for passenger convenience and to limit the need to implement shuttle service.

Two alternatives were prepared to explore the parking development options.

5.5.5.1 Parking Alternative Common Elements

Several common elements pertain to each of the Parking Alternatives. The focus of the subsequent sections are on the elements that differentiate the two Parking Alternatives. Therefore, the common elements are identified below and are not referenced further in the description of each specific alternative.

- The Economy 2 lot would remain as it is today
- The Economy 1 lot would be expanded in both alternatives, with the required expansion somewhat greater in Alternative 1 than in Alternative 2
- The Cell Phone lot (60 spaces) would remain in the expanded Economy 1 lot
- The employee parking lot north of the terminal and the administrative parking in the Heliworks parking lot would be closed, and merged into a single employee lot on a site formerly used for the fuel farm and the existing overflow parking lot
- The taxi staging area would remain where it is
- An additional staging area would be created where the Heliworks parking is currently. This would serve all commercial vehicles (including Transportation Network Companies (TNCs)) other than taxis, thus eliminating the need for them to stage on the outer curb This increases the capacity of the outer curb to meet 2035 demand

The relocation of the employee parking lot allows for the ultimate terminal development (beyond the 20-year planning period). Terminal and landside development are the highest and best uses for that land area. Therefore, the fuel farm will be relocated to other locations on-airport, as described in *Section 5.3.4* and *Section 5.6.4*.

5.5.5.2 Parking Alternative 1

Parking Alternative 1 is depicted in *Figure 5-16*. Parking Alternative 1 includes the following elements, in addition to the common elements described in *Section 5.5.5.1.*

- A six-level addition to existing Garage, with the ground level dedicated to rental car ready-return expansion
- A down helix to serve as the exit for traffic from the entire Garage (other than rental cars)

[2] Measured as straight-line distance – not walking distance.
[3] Measured as straight-line distance – not walking distance.

- Parking exit plaza relocated to north side of the Surface Lot
- Main surface parking lot expanded to the west (toward the hotel)
- Large surface parking expansion and reconfiguration of Economy 1 + Cell Lot

Parking Alternative 1 provides significant additional parking proximate to the terminal through an expansion of the Garage into the portion of the Surface Lot north of the Garage. The six-level addition, down helix construction, and exit plaza relocation are included in the first phase of a multi-phase potential parking structure expansion. *Table 5-17* shows the resulting space count in Parking Alternative 1, compared to existing conditions and Parking Alternative 2.

5.5.5.3 Parking Alternative 2

Parking Alternative 2 is depicted in *Figure 5-17.* Parking Alternative 2 includes the following elements, in addition to the common elements described in *Section 5.5.5.1.*

- Helicopter apron converted to surface parking lot
- Smaller surface parking expansion and reconfiguration to Economy 1 + Cell Lot
- Area north of Garage converted to rental car ready/return

Parking Alternative 2 provides significant additional terminal-proximate parking through conversion of the former Heliworks site to surface parking. All of the spaces in this lot would be closer than those in Economy 1, and more than 80 percent would be closer than the closest spaces in Economy 2. The farthest space in this lot would be as close as the farthest spaces in the current Surface Lot. With no parking structure expansion, the required rental car ready-return spaces would still need to be contiguous to the existing spaces on the ground level of the parking structure, and thus they would displace more than 200 surface parking spaces.

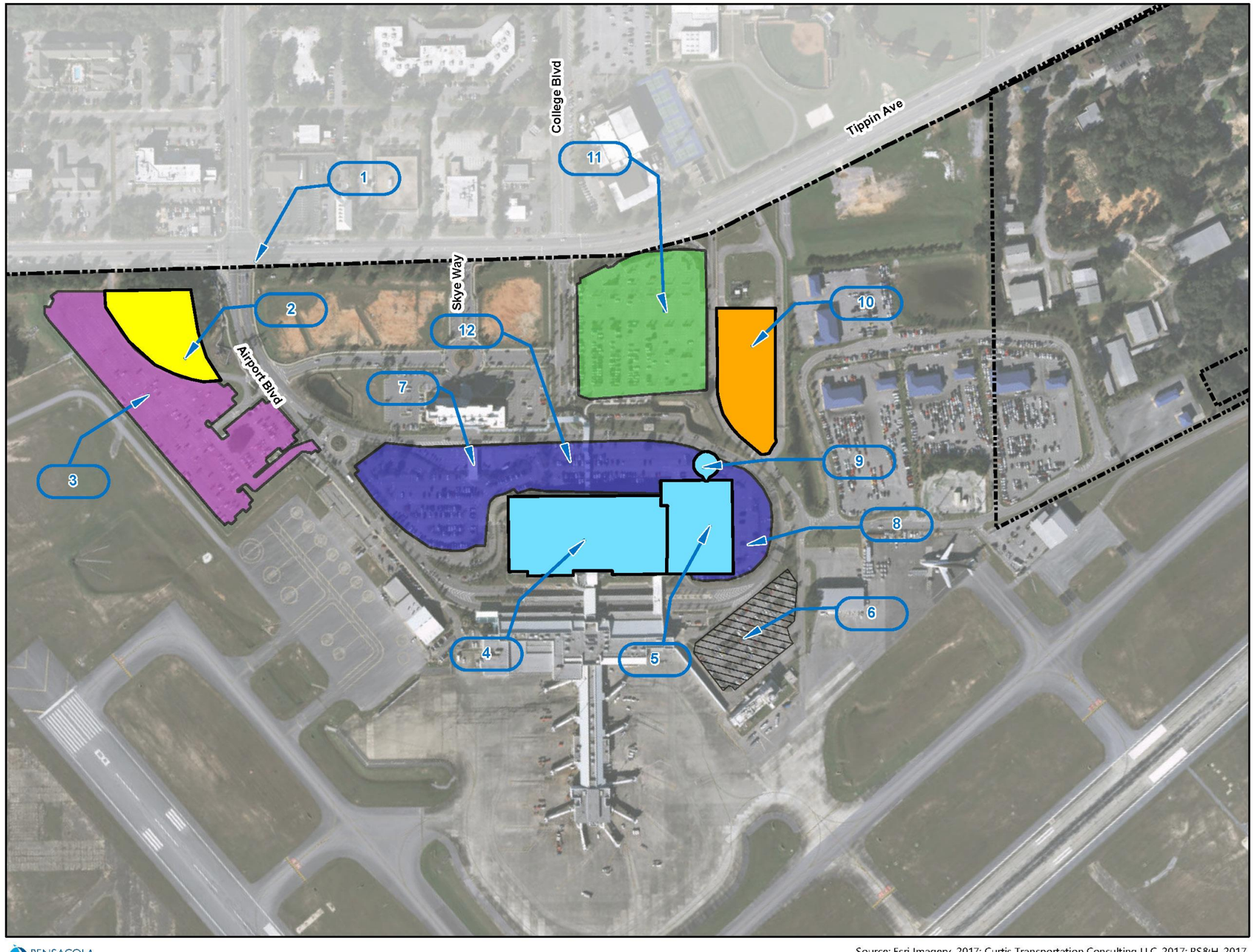
Table 5-17 shows the resulting space count in the two alternatives, as compared to existing conditions.

TABLE 5-17
SPACE COUNT FOR PARKING ALTERNATIVES

Facility/Site	Space Count		
	Existing	Alternative 1	Alternative 2
Public Parking			
Garage	961	1,576	961
Surface Lot	822	563	611
Economy Lot 1 & Cell Lot	541	750	617
Economy Lot 2	477	477	477
Heliworks	0	0	700
Subtotal	2,801	3,366	3,366
Employee Parking			
Tenant Lot	194	0	0
Heliworks Lot	45	0	0
Overflow Lot	0	280	280
Subtotal	239	280	280
Rental Car Ready/Return			
Garage	342	549	342
North of Garage	0	0	211
Subtotal	342	549	553

Source: Curtis Transportation Consulting LLC analysis, 2017

FIGURE 5-16
PARKING ALTERNATIVE 1



Legend

- Property_Boundary
- Economy 1 + Cell Phone Lot Expansion
- Relocated Employee Parking
- Parking Garage
- Economy Lot 1 + Cell Phone Lot
- Economy Lot 2
- Employee Lot
- Surface Parking

1 **Property Line**

2 **209 Parkings Spaces**

3 **541 Parking Spaces**

4 **Existing Parking Garage**
-4 Levels
(342 RAC Spaces)
(961 Parking Spaces)

5 **Garage Expansion**
-6 Levels
(207 RAC Spaces)
(615 Parking Spaces)

6 **Reserved for Terminal Expansion**

7 **Exit Plaza Relocated**

8 **New Exit Plaza**

9 **Garage Expansion Down Ramp**

10 **280 Parking Spaces**

11 **477 Parking Spaces**

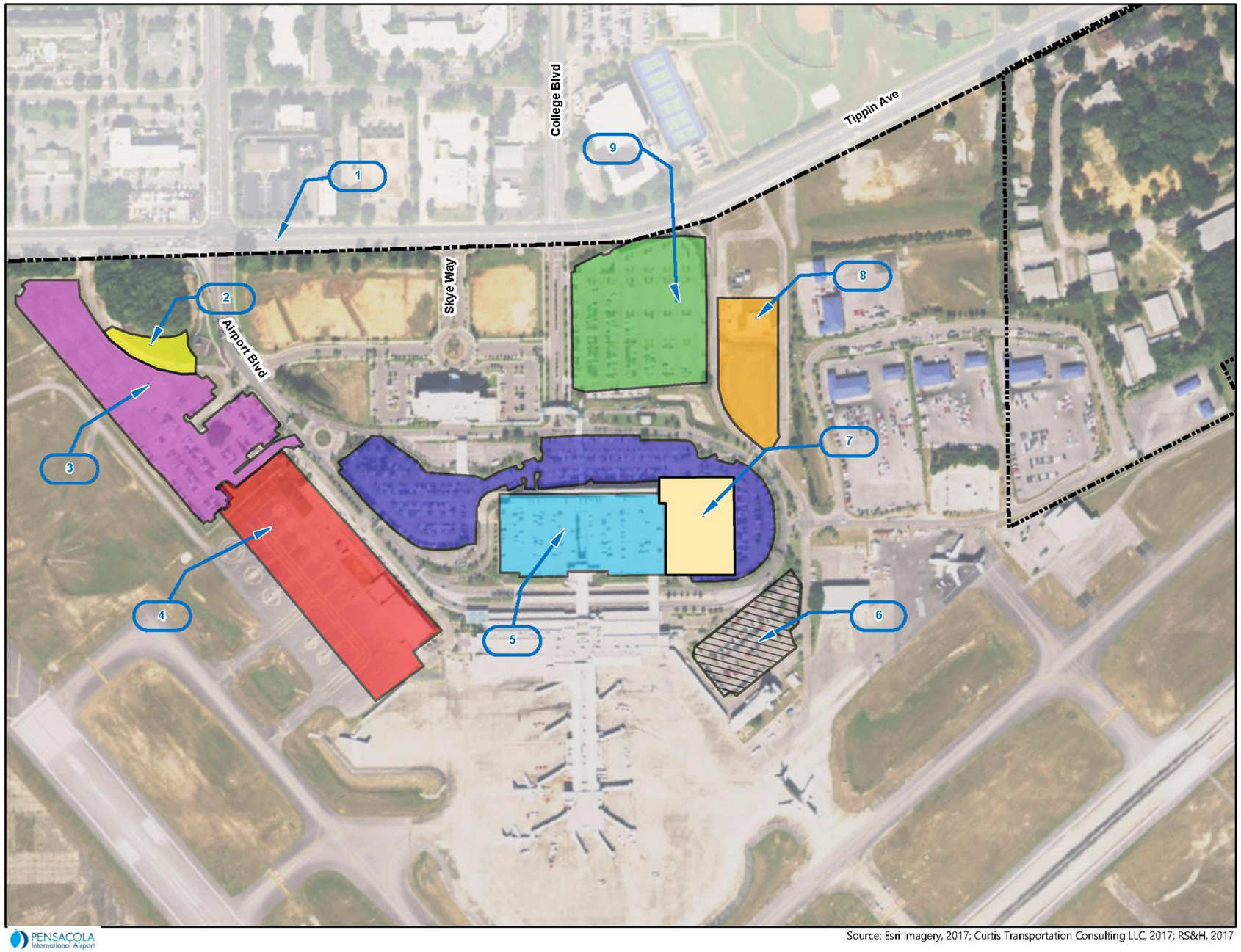
12 **563 Parking Spaces**

0 200 400
Feet

PENSACOLA International Airport

Source: Esri Imagery, 2017; Curtis Transportation Consulting LLC, 2017; RS&H, 2017

RS&H



Source: Esri Imagery, 2017; Curtis Transportation Consulting LLC, 2017; RS&H, 2017

FIGURE 5-17
PARKING ALTERNATIVE 2

Legend

- Property_Boundary
- Economy Lot 1 + Cell Lot Expansion
- Parking Lot Expansion
- Rental Car Ready/Return Expansion
- Relocated Employee Parking
- Existing Parking Garage
- Economy Lot 1 + Cell Phone Lot
- Economy Lot 2
- Employee Lot
- Surface Parking Lot

1. **Property Line**
2. **76 Parkings Spaces**
3. **541 Parking Spaces**
4. **700 Parkings Spaces**
5. **Existing Parking Garage**
   -4 Levels
   (342 RAC Spaces)
   (961 Parking Spaces)
6. **Reserved for Terminal Expansion**
7. **611 Parking Spaces**
   211 RAC Spaces
8. **280 Parking Spaces**
9. **477 Parking Spaces**

0 200 400
Feet

RS&H

5.5.6 Parking Alternatives Evaluation

The Parking Alternatives were evaluated against the evaluation criteria, relative to one another. The pros/cons for Parking Alternative 1 are listed in *Table 5-18*. The pros/cons for Parking Alternative 2 are listed in *Table 5-19*.

The parking structure expansion considered in Parking Alternative 1 is beneficial because it is a more efficient use of prime land adjacent to the terminal building due to its high density, compared to a surface parking lot. Expanding the parking structure also supports the Environmental Awareness criteria because it generates less noise than surface lots due to its semi-enclosed configuration. Parking structures also occupy a smaller footprint than surface lot with the same number of spaces of equal capacity, which reduces the amount of impermeable ground surface. As it relates to the Fiscal Sustainability criteria, the parking structure expansion may generates additional revenue because it provides added premium parking spaces compared to an equivalent a surface lot. However, the revenue would need to first amortize the most significant capital, operational, and maintenance costs relative to a parking lot. Note that the amortization period was only generally considered in this analysis but is explored in detail in *Working Paper 8*. Also considered was that a parking structure is more of a fixed commitment that has not as much flexibility as the surface lots of Alternative 2. Further, a parking structure is inherently less flexible and more expensive than relatively inexpensive surface lots.

The conversion of the Heliworks apron as a surface lot in Parking Alternative 2 is beneficial related to the Fiscal Sustainability criteria because it is less costly to implement than a parking structure. Surface lots also provide a higher level of flexibility in that they can be reconfigured as demand and circumstances change. For example, constructing a surface lot generally does not preclude the option to construct a structure later, if demand warrants. Therefore, the surface parking lot is a practical interim solution.

TABLE 5-18
PARKING ALTERNATIVE 1 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
LAND MANAGEMENT - No Pros	LAND MANAGEMENT - No Cons
ECONOMIC - No Pros	ECONOMIC - No Cons
ENVIRONMENTAL - Less noise from a garage than from surface lots	OPERATIONAL EFFICIENCY - Garage is more of a fixed commitment that has less flexibility compared to surface lots
ENVIRONMENTAL - Less impermeable pavement compared to Alternative 2	OPERATIONAL EFFICIENCY - Garage is inherently less flexible than the inexpensive surface lots
FISCAL - Should generate more revenue	FISCAL - Most Costly ($27.8M)
OPERATIONAL EFFICIENCY - More spaces in closer proximity to terminal building	

Source: Curtis Transportation Consulting LLC analysis, 2017; RS&H, 2017

TABLE 5-19
PARKING ALTERNATIVE 2 PROS/CONS

Pros	Cons
ENVIRONMENTAL - No Pros	ENVIRONMENTAL - No Cons
ECONOMIC - No Pros	ECONOMIC - No Cons
OPERATIONAL EFFICIENCY - There remains the option to go to a garage if demand warrants	SAFETY - More pedestrians walking through large parking lots, which is not as safe as taking the elevator to a floor in the garage for a short walk
FISCAL - Least Costly ($2.5M)	LAND MANAGEMENT - Surface parking is not as compatible with adjacent uses
	LAND MANAGEMENT - Surface parking is not best and highest use of Helicopter apron site
	OPERATIONAL EFFICIENCY - The farthest surface lots may require shuttles to provide timely access

Source: Curtis Transportation Consulting LLC analysis, 2017; RS&H, 2017

In relation to the Safety criteria, pedestrian safety is reduced in surface parking lots compared to structures. Surface lots include more pedestrians walking through large parking lots, which is not as safe as taking the elevator to a floor in the parking structure for a short walk. The most critical negative attribute associated with the apron conversion to a surface lot is that vehicle parking is not the highest and best land use for that site. In addition, the FAA typically does not support land use conversion from an airside use to a nonaeronautical use except on an interim basis.

The estimated cost of Parking Alternative 1 is $27.8 million while for Parking Alternative 2 the estimated cost is $2.5 million. The significantly higher cost of the parking structure is the reason for large differential in implementation costs. The ROM implementation cost estimates are summarized in *Table 5-20*.

TABLE 5-20
PARKING ALTERNATIVES ROM COSTS

	Alternative 1	Alternative 2
Economy 1/Cell Phone Lot Expansion	$0.9M	$0.3M
Surface Parking Lot Demolition	$0.2M	-
Surface Parking Lot Expansion	$0.5M	-
Garage Expansion Construction	$24.5M	-
Employee Parking Lot Reconstruction	$0.4M	$0.4M
Heliworks Buildings Demolition	-	<$0.1M
Helicopter Apron to Parking Lot Conversion	-	$1.7M
Parking Exit Plaza Demolition	<$0.1M	-
Parking Exit Plaza Reconstruction	$1.3M	-
Total ROM Cost	$27.8M	$2.5M

Source: RS&H, 2017; Curtis Transportation Consulting LLC analysis, 2017

Note: Numbers may not sum due to rounding.

The evaluation results for the Parking Alternatives are described in *Table 5-21*.

TABLE 5-21
PARKING ALTERNATIVES EVALUATION MATRIX

	Evaluator Description	Alt 1	Alt 2
GOAL	**SAFETY**	**5.0**	**4.0**
Crit. 1	Meets or exceeds standards to enhance safety	5	4
Crit. 2	Enhances safety through application of industry best practices	5	4
GOAL	**STRATEGIC LAND MANAGEMENT**	**4.5**	**3.0**
Crit. 1	Encourages compatibility between on- and off-airport land uses	4	3
Crit. 2	Promotes highest and best land use to support efficient airport operations	5	3
GOAL	**OPERATIONAL EFFICIENCY**	**4.4**	**4.0**
Crit. 1	Maintains or enhances operational efficiency	5	3
Crit. 2	Supports redundancy to enhance operational flexibility	4	5
Crit. 3	Strategically balances demand with supply using alternative methods	4	4
Crit. 4	Supports efficient operating environment for all aviation users	5	3
Crit. 5	Considers flexibility and adaptability to support future potential industry trends	4	5
GOAL	**ENVIRONMENTAL AWARENESS**	**5.0**	**3.7**
Crit. 1	Recognizes noise impacts	5	4
Crit. 2	Environmental compatibility	5	4
Crit. 3	Employs environmental sustainability initiatives	5	3
GOAL	**FISCAL SUSTAINABILITY**	**3.0**	**4.3**
Crit. 1	Cost effectiveness	3	5
Crit. 2	Minimizes costs	1	5
Crit. 3	Generates revenue	5	3
GOAL	**ECONOMIC GROWTH**	**n/a**	**n/a**
Crit. 1	Enhances regional transportation connections to the Airport	n/a	n/a
Crit. 2	Encourages increased economic impact to community	n/a	n/a
TOTAL SCORE		**21.9**	**19.0**
MAXIMUM SCORE		**25**	**25**

Source: Curtis Transportation Consulting LLC analysis, 2017; RS&H, 2017
Notes: Alt = Alternative, Crit. = Criterion, n/a = not applicable
Scoring Rubric: 5 – Alternative Fully Responds to Criterion/Goal, 4 – Alternative Largely Responds to Criterion/Goal, 3 – Alternative Partially Responds to Criterion/Goal, 2 – Alternative Minimally Responds to Criterion/Goal, 1 – Alternative Does Not Respond to Criterion/Goal

5.5.7 Parking Recommendation

The recommended parking alternative was selected based on the results of the alternative evaluation process. The recommended alternative represents the single Parking Alternative identified for future development. The Alternatives scores in *Table 5-21* indicate that Parking Alternative 1 performs better than Parking Alternative 2. Therefore, Parking Alternative 1 (in whole) is selected as the recommended development alternative. Parking Alternative 1 is consolidated into an airport-wide recommended

development plan as depicted in *Figure 5-25*. The consolidated recommended landside development alternative is depicted in *Figure 5-18*. The cost of implementing the recommended parking alternative (Alternative 1) is described in *Table 5-20*.

5.5.7.1 Rental Car Service Centers

Expansion of the rental car service centers is also recommended. The need for additional rental car service/storage spaces would be met through two changes:

- The Remote Transmitter/Receiver (RTR) equipment at RTR Site 1 would be relocated, and the 1.2 acres converted to rental car service use
- The configuration of each rental car area would be changed for greater flexibility in utilization, and thus an increase in the amount of vehicle parking accommodate within the same footprint

5.5.8 Landside Efficiency Strategies

Landside operational changes may also help reduce peak-hour demand on the terminal curb roadways when combined on concert with the recommended landside infrastructure changes. Operational changes may even help defer the need for infrastructure changes. Therefore, PNS administration may continually evaluate opportunities to implement different landside operational changes to benefit curbside operations, as required.

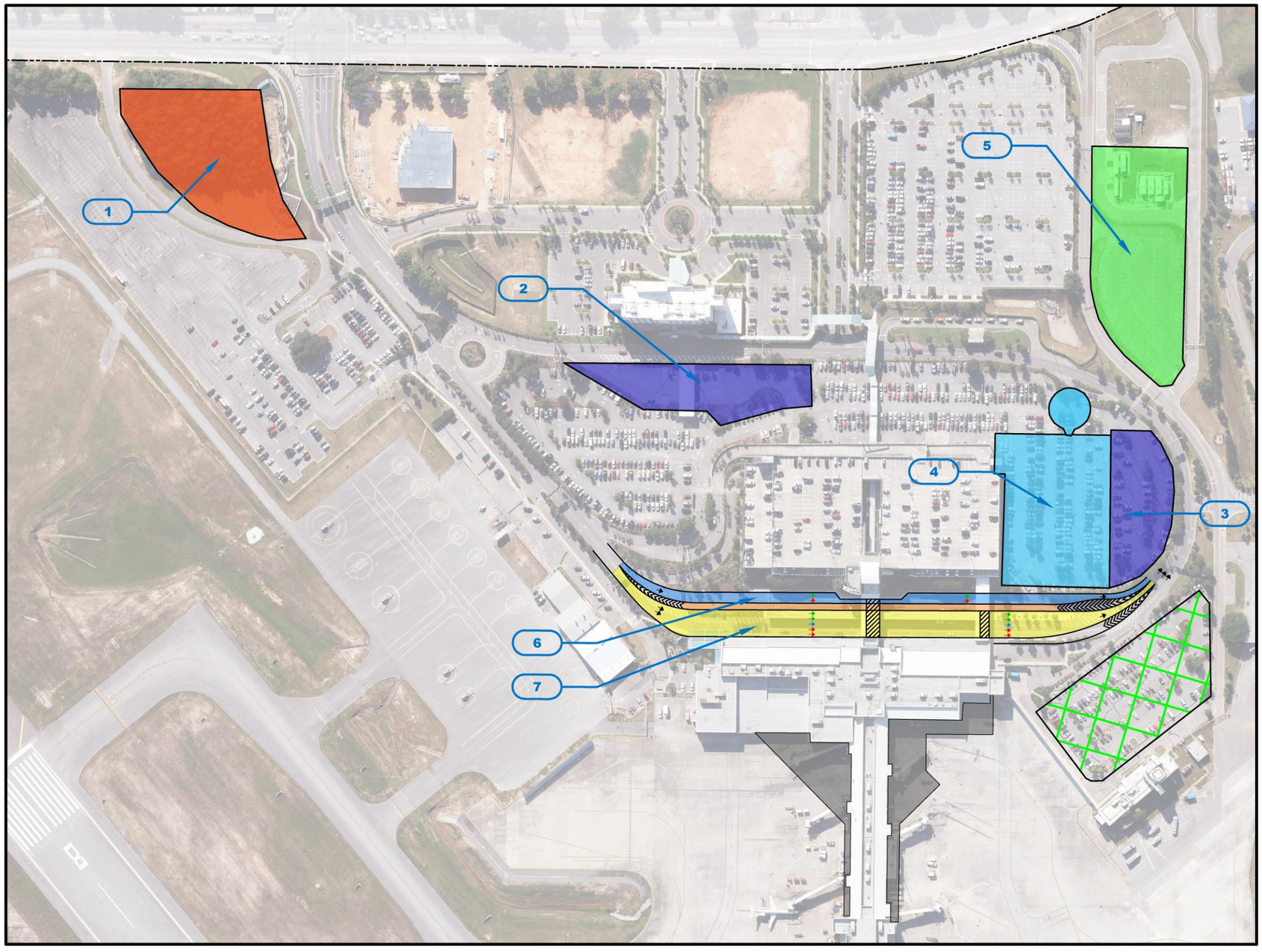


FIGURE 5-18
RECOMMENDED LANDSIDE DEVELOPMENT

Legend

Property Boundary

Parking

- Economy 1 + Cell Phone Lot Expansion
- Relocated Employee Parking Lot
- Surface Lot Reconfiguration
- Parking Garage Expansion
- Employee Parking Lot Removal

Curbside

- Commercial Vehicle Lanes
- Private Vehicle Lanes
- Pedestrian Island
- Through Lanes
- Through/Service Lane
- Service Lanes

Terminal

- Terminal Expansion

1. 209 Additional Parking Spaces
2. Reconfigured to Parking Stalls
3. Relocated Exit Plaza
4. Expanded Parking Garage
5. Relocated Employee Parking Lot
6. Two Lane Commercial Vehicle Curb
7. Five Lane Private Vehicle Curb

0 100 200
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; Curtis Transportation Consulting LLC, 2017; RS&H, 2017

RS&H

5.6 GENERAL AVIATION

Three alternatives were prepared to explore the general aviation development options.

5.6.1 Key Issues

The key issues defined in the facility requirements analysis include:

- Accommodate larger ADG III aircraft
  - Select taxiways/taxilanes and aircraft parking aprons should be upgraded to accommodate larger business jets forecast to increase operations at PNS
- Identify location for U.S. Customs and Border Patrol (CBP) General Aviation Facility (GAF)
  - GAF is one type of Federal Inspection Services (FIS) used to serve persons arriving aboard small private airplanes and/or regional type aircraft
  - CBP has indicated a need for implementation of a GAF FIS at PNS to support their operation in the near term
  - CBP requires a building that is approximately 5,000 square feet, with an apron area large enough to accommodate large business jets
  - CBP also requires two vehicle parking areas – one is an unsecured lot for patrons and the other is a secured lot for CBP employees
- Add 58 T-hangar units to accommodate existing and forecast demand at PNS
- Add 78,900 square feet of box hangar space to accommodate forecast general aviation aircraft storage and maintenance operations
- Add 55,300 square feet of vehicle parking area to support forecast general aviation operations
- Identify location for helicopter apron relocation to the southeast quadrant to enhance level of service for helicopter operators and provide space for Long-Term terminal expansion
- Identify location for general aviation fueling facilities in the southeast quadrant to allow for redevelopment of the existing fuel farm site for a higher and better use. Siting general aviation fueling facilities near the general aviation users will also enhance level of service for general aviation users

5.6.2 General Aviation Alternatives

5.6.2.1 Common Elements

Several common elements pertain to each of the General Aviation Alternatives. The focus of the subsequent sections is on the elements that differentiate the three General Aviation Alternatives. Therefore, the common elements identified below are not referenced further in the description of each specific alternative.

- Realignment of Maygarden Road south of northeast general aviation apron
  - This opens up area for aeronautical development in the Southeast Quadrant
- Expansion of northeast general aviation apron to the east, south of Taxiway D3

Note that all three General Aviation Alternatives also depict several commonalities associated with the Airside Alternatives. These elements were considered as part of the Airside Alternatives evaluation process and are depicted in the General Aviation Alternatives as reference. These elements were not evaluated as part of the General Aviation Alternatives. The commonalities from the Airside Alternatives include:

- RTR relocation to the southeast quadrant
- ASR relocation to the southeast quadrant
- Runway 35 extension
- New full-length parallel taxiway, east of Runway 17-35

5.6.2.2 General Aviation Alternative 1

General Aviation Alternative 1 is depicted in *Figure 5-19*. General Aviation Alternative 1 includes the following elements, in addition to the common elements described in *Section 5.6.2.1*.

- Construct new taxiways to provide access to proposed facilities and enhance access to existing facilities
  - A new taxiway south of and parallel to Taxiway C2. This taxiway is proposed to meet ADG III and TDG 3 standards
  - Extension of Taxiway C to the south to terminate at the aforementioned new taxiway. This Taxiway C extension is proposed to meet ADG III and TDG 3 standards
  - Widening of Taxiway C2 east of Taxiway C to allow ADG III aircraft to access the eastern portion of the new general aviation development and the south apron area
- New T-hangars constructed adjacent to the existing T-hangar development
  - Northward expansion of the existing T-hangar banks, up to the future Runway Visibility Zone (RVZ) and ensuring clear line of sight to the runway ends from the ATCT. Another bank of T-hangars west of the existing development
  - New ADG I TDG 1 taxilanes providing access to the T-hangar expansion area
- GAF FIS development is considered for the undeveloped area south of the eastern terminus of Taxiway C2, proximate to Maygarden Road
- Reconfigure the south general aviation apron to accommodate helicopter operations
  - The west portion of the south general aviation apron would be reconfigured from fixed-wing aircraft parking to hardstands and taxilane for helicopter parking
  - Parking layout based on standards outlined in FAA Advisory Circular 150/5390-2C
- A new general aviation fuel farm
  - A new general aviation fuel farm is considered for the area near Maygarden Road and Summit Boulevard
  - This facility would include storage tanks for Jet A and Avgas fuel
- A new apron south of Taxiway C2 capable of accommodating ADG III aircraft
- Three new box hangar buildings east of the aforementioned apron
- A new vehicle parking lot and roadways providing access to Maygarden Road

5.6.2.3 General Aviation Alternative 2

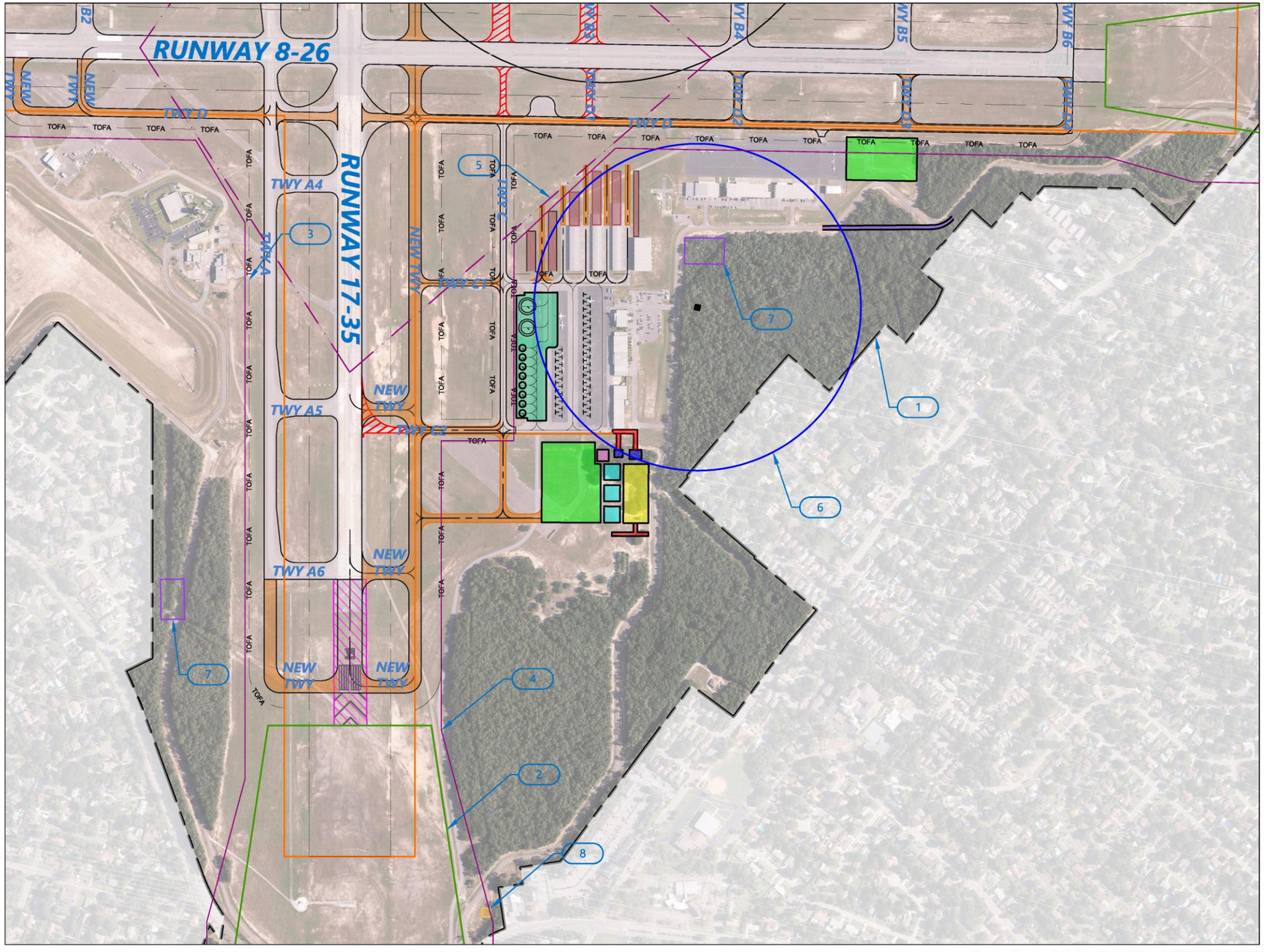
General Aviation Alternative 2 is depicted in *Figure 5-20*. General Aviation Alternative 2 includes the following elements, in addition to the common elements described in *Section 5.6.2.1*.

- New T-hangars constructed adjacent to the existing T-hangar development
  - Northward expansion of the existing T-hangar banks, up to the future RVZ and ensuring clear line of sight to the runway ends from the ATCT. Another bank of T-hangars west of the existing development
  - New ADG I TDG 1 taxilanes providing access to the T-hangar expansion area
- GAF FIS development on the undeveloped area south of the eastern terminus of Taxiway C2, proximate to Maygarden Road
- Reconfigure the south general aviation apron to accommodate helicopter operations
  - The west portion of the south general aviation apron would be reconfigured from fixed-wing aircraft parking to hardstands and taxilane for helicopter parking
  - Parking layout based on standards outlined in FAA Advisory Circular 150/5390-2C
- A new apron south of Taxiway C2 capable of accommodating ADG III aircraft
- Three new box hangar buildings south of the aforementioned apron
- A new vehicle parking lot and roadway providing access to Maygarden Road

5.6.2.4 General Aviation Alternative 3

General Aviation Alternative 3 is depicted in *Figure 5-21*. General Aviation Alternative 3 includes the following elements, in addition to the common elements described in *Section 5.6.2.1*.

- New T-hangars constructed south of Taxiway C2
  - New ADG I TDG 1 taxilanes providing access to the T-hangar expansion area
- GAF FIS development on the undeveloped area southwest of the southern terminus of Taxiway C
- A new apron west of Taxiway C to accommodate helicopter operations
  - Parking layout based on standards outlined in FAA Advisory Circular 150/5390-2C
- Construct a new self-serve general aviation fueling facility
  - A new general aviation fuel farm is considered for the area west of the existing T-hangar development
  - This facility would include a storage tank and self-serve pump(s) for Avgas fuel
- A new apron east of the proposed taxiway parallel to Runway 17-35 capable of accommodating ADG III aircraft
- Three new box hangar buildings east of the aforementioned apron
- A new vehicle parking lot and roadways providing access to Maygarden Road



PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

FIGURE 5-19
GENERAL AVIATION ALTERNATIVE 1

Legend

- General Aviation Apron Area
- Proposed Taxiway
- Proposed Runway 17-35 Extension
- Conventional Hangar Buildings
- General Aviation CBP Building
- General Aviation Fuel Farm
- Landside
- CBP Secured/Unsecured Parking
- Helicopter Parking
- Realign Road
- Extend T Hangars
- Access Road
- Existing Taxiway / Apron Removal

1. Property Line
2. Runway Protection Zone
3. Taxiway Object-Free Area
4. Building Restriction Line
5. Runway Visibility Zone
6. Airport Surveillance Radar Clear Area*
7. Relocated RTR Facilities*
8. GA Fuel Farm Site

Note -
* Facilities from Airside Alternative 2 included for informational purposes. Not to be considered for evaluation of GA Alternative.

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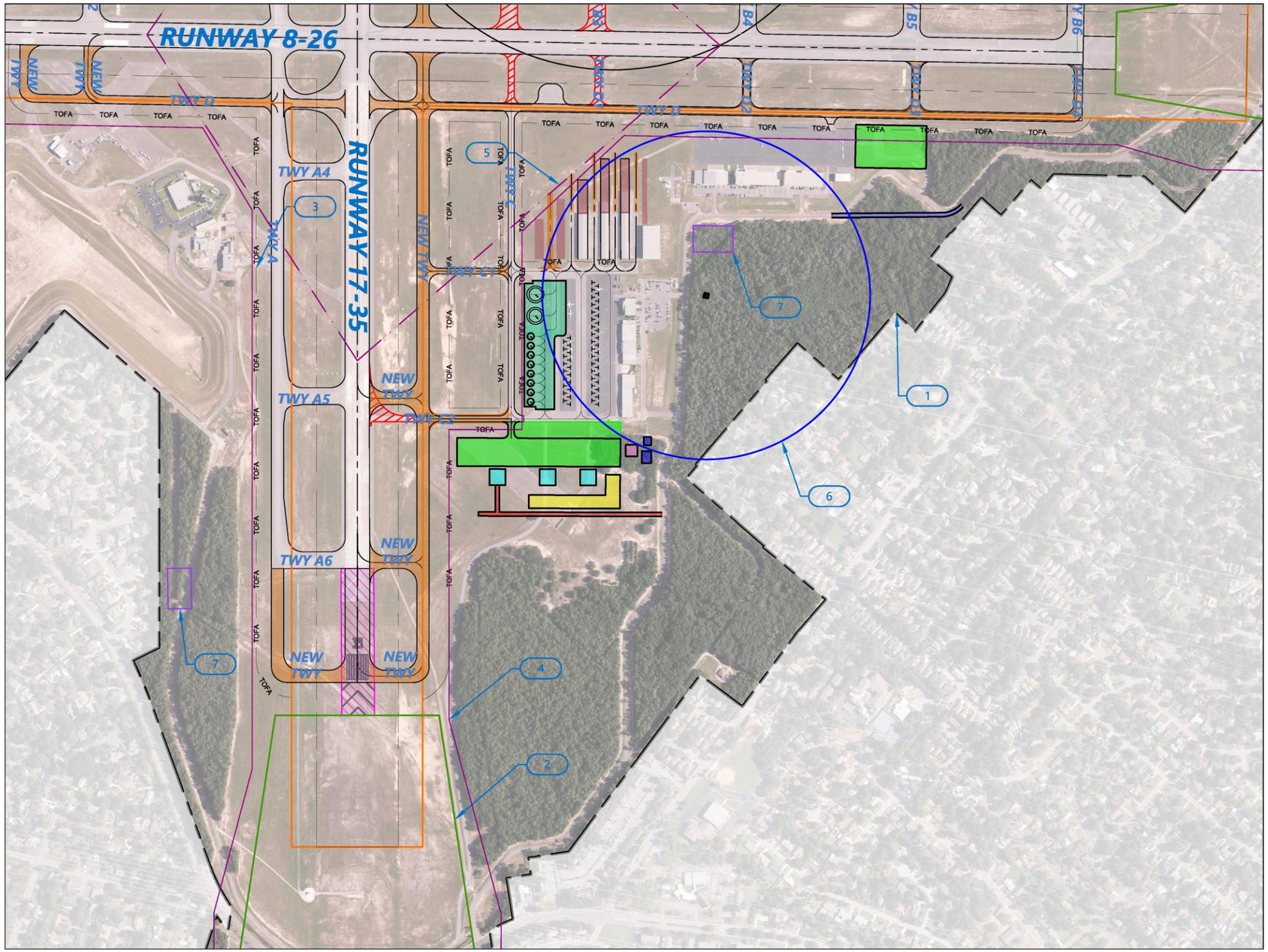
Feet

RS&H



Source: Pensacola International Airport, 2007; RS&H, 2017

FIGURE 5-20
GENERAL AVIATION ALTERNATIVE 2

Legend

- General Aviation Apron Area
- Proposed Taxiway
- Proposed Runway 17-35 Extension
- Conventional Hangar Buildings
- General Aviation CBP Building
- Landside
- CBP Secured/Unsecured Parking
- Helicopter Parking
- Realign Road
- Extend T Hangars
- Access Road
- Existing Taxiway / Apron Removal
- (1) Property Line
- (2) Runway Protection Zone
- (3) Taxiway Object-Free Area
- (4) Building Restriction Line
- (5) Runway Visibility Zone
- (6) Airport Surveillance Radar Clear Area*
- (7) Relocated RTR Facilities*

Note -
* Facilities from Airside Alternative 2 included for informational purposes. Not to be considered for evaluation of GA Alternative.

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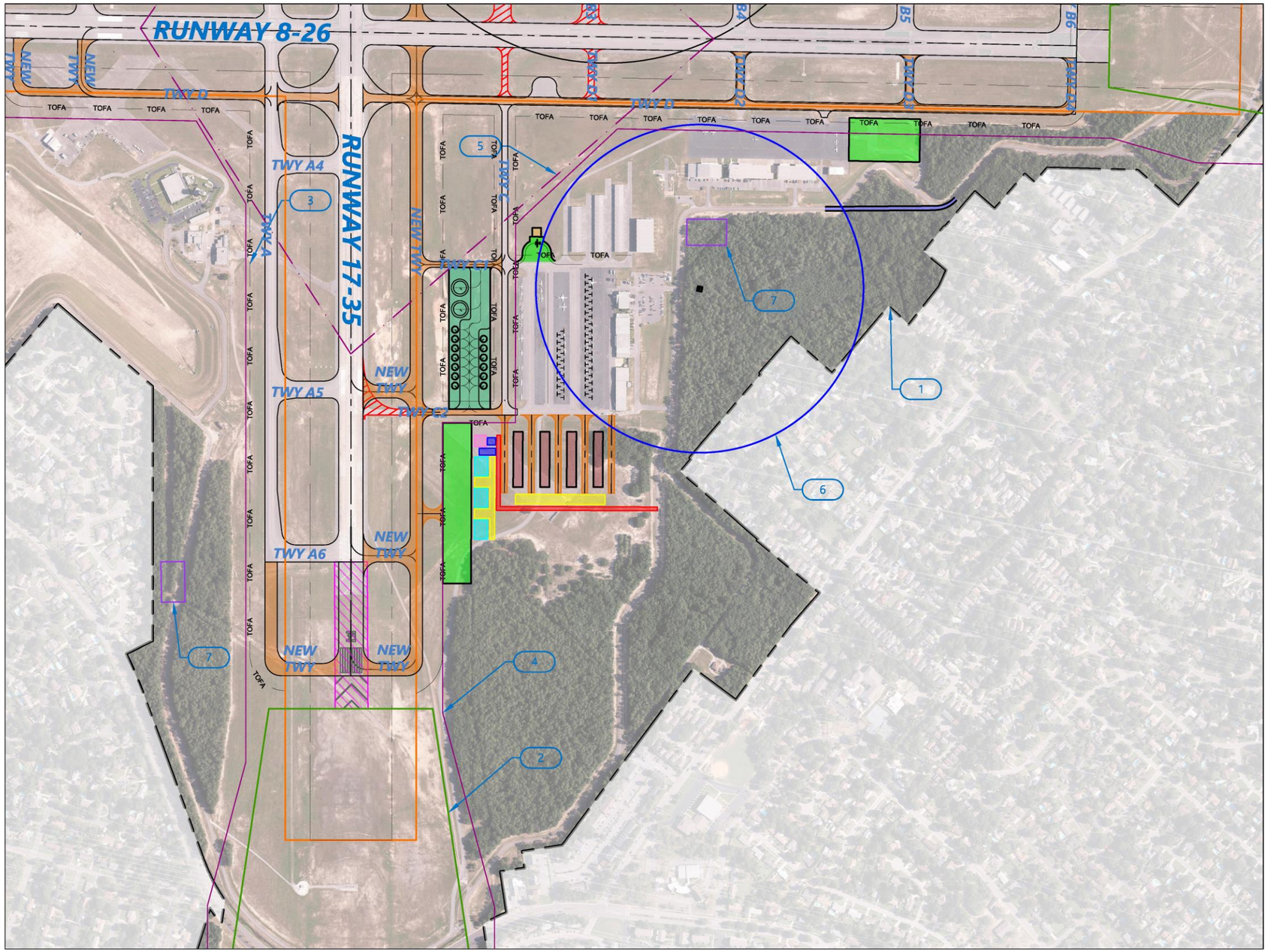

Source: Pensacola International Airport, 2007; RS&H, 2017

FIGURE 5-21
GENERAL AVIATION ALTERNATIVE 3

Legend

- General Aviation Apron Area
- Proposed Taxiway
- Proposed Runway 17-35 Extension
- Conventional Hangar Buildings
- General Aviation CBP Building
- General Aviation Self-Serve Fuel Station
- Landside
- CBP Secured/Unsecured Parking
- Helicopter Parking
- Realign Road
- Extend T Hangars
- Access Road
- Existing Taxiway / Apron Removal
- (1) Property Line
- (2) Runway Protection Zone
- (3) Taxiway Object-Free Area
- (4) Building Restriction Line
- (5) Runway Visibility Zone
- (6) Airport Surveillance Radar Clear Area*
- (7) Relocated RTR Facilities*

Note -
* Facilities from Airside Alternative 2 included for informational purposes. Not to be considered for evaluation of GA Alternative.

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Feet

5.6.3 General Aviation Alternatives Evaluation

The GAF FIS facility is a critical facility that will need to be implemented in the near-term. Therefore, ease of implementation for the FIS facility is an important consideration in the evaluation process. General Aviation Alternatives 1 and 2 identify FIS facility locations adjacent to the existing south general aviation apron and Maygarden Road. These locations support an easy implementation because minimal new infrastructure would be required – most notably the aircraft parking apron. Proximity to the existing south apron meets CBP requirements for aircraft parking adjacent to the facility. Conversely, the CBP site identified in General Aviation Alternative 3 requires the construction of an apron at the time of CBP construction.

The ease of implementation, operational efficiency, and safety are key considerations related to the helicopter apron locations within the alternatives. The helicopter apron location in General Aviation Alternatives 1 and 2 allows for enhanced level of service for helicopter users due to proximity to the Fixed Base Operator (FBO) facility. Repurposing an existing apron area also supports the easy implementation because a new apron is not required. However, the layout in Alternatives 1 and 2 reduces the number of fixed-wing aircraft that can be parked on the apron. Further, co-mingling of fixed wing and rotorwing operations is suboptimal. Ideally, differing fixed-wing and rotorwing aircraft would be separated to reduce conflicts (e.g., rotor wash) and operational inefficiencies. Conversely, the helicopter apron in General Aviation Alternative 3 does not impact the existing fixed wing parking and has greater separation between the aircraft types. The location in Alternative 3 also enhances level of service for helicopter users; however, the apron is farther for flight crew to get to their aircraft. The segment of Taxiway C south of Taxilane C1 could be converted to a non-movement area to facilitate individuals to transit to/from helicopter parking from FBO buildings without coordination with ATC. The section of Taxiway C, north of Taxilane C1, could remain as a movement area and under the control of ATC. The new helicopter apron for required for Alternative 3 does not support ease of implementation.

Relocating the helicopter apron to the southeast quadrant may increase noise impacts to the areas east of PNS. Similar impacts are expected for each alternative. However, existing helicopter operational procedures will be extended to minimize helicopter noise impacts. ATC and PNS staff indicate that helicopter arrival and departure operations will be directed along runways such that helicopters avoid low-level operations over noise sensitive land uses around PNS.

Expanding the T-hangars in the existing location, as is the case for Alternatives 1 and 2, is beneficial because it keeps the small general aviation aircraft operations consolidated in a single area. This results in enhanced operational efficiency, and the segregation of small general aviation and large general aviation aircraft types results in safety benefits. Additionally, the highest and best use for the area north of Taxiway C1 is T-hangars. Conversely, Alternative 3 considers T-hangar expansion south of Taxiway C2. This is a suboptimal configuration because the operational efficiencies and safety benefits are not realized. Additionally, the highest and best use for the land south of Taxiway C2 is for corporate general aviation development.

A general aviation fuel farm, as considered in Alternative 1, enhances efficiency of fueling operation for general aviation users, which improves the level of service. It also would reduce the fuel truck traffic on the airside perimeter road since retrieving fuel from the northwest quadrant would not be required. The location identified in Alternative 1 is beneficial because truck impacts to traffic on Maygarden Road is minimal. Fuel delivery could be done via Summit Boulevard or via airside perimeter road. Further, the

location identified in Alternative 1 is proximate to other developable area that may encourage third party general aviation development. The self-serve fueling station associated with General Aviation Alternative 3 enhances the efficiency of the fueling operation for Avgas general aviation users, which benefits level of service. Similar benefits of fuel truck traffic reduction from Alternative 1 would be realized for Alternative 3. The location of the self-serve fuel station identified in Alternative 3 is not the highest and best use for that site. In addition, T-hangars would be better to be located proximate to the self-serve fuel station. Alternative 2 does not realize the benefits of fueling facilities (i.e., self-serve fueling station or general aviation fuel farm) since none is considered for Alternative 2.

The pros/cons for General Aviation Alternative 1 are summarized in *Table 5-22*. The pros/cons for General Aviation Alternative 2 are summarized in *Table 5-23*. The pros/cons for General Aviation Alternative 3 are summarized in *Table 5-24*.

The implementation costs for General Aviation Alternatives 1 and 2 are very similar to each other at $24.7 million and $24.5 million, respectively. General Aviation Alternative 3 is the most costly of the three alternatives at $27.1 million. The higher cost for General Aviation Alternative 3 is attributable to the larger apron area required for the new helicopter apron. The ROM implementation cost estimates are summarized in *Table 5-25*.

The evaluation results for the General Aviation Alternatives are described in *Table 5-26*.

TABLE 5-22
GENERAL AVIATION ALTERNATIVE 1 PROS/CONS

Pros	Cons
ECONOMIC - No Pros	ECONOMIC - No Cons
LAND MANAGEMENT - T-hangar expansion keeps the small GA aircraft operations consolidated in a single area	SAFETY - Co-mingling fixed-wing and rotorwing operations
OPERATIONAL EFFICIENCY - CBP location allows for near-term development without apron construction	OPERATIONAL EFFICIENCY - Relocated helicopter apron displaces some fixed-wing aircraft
OPERATIONAL EFFICIENCY - Helicopter operations use existing apron	OPERATIONAL EFFICIENCY - Corporate GA hangar layout does not support efficient westward expansion because landside access is challenging
OPERATIONAL EFFICIENCY - GA fuel farm enhances efficiency of fueling operation for GA users	ENVIRONMENTAL - Greatest potential effect to biological resources
OPERATIONAL EFFICIENCY - Helicopter apron allows for increased level of service for helicopter users due to proximity to FBO	
ENVIRONMENTAL - GA fuel farm location has minimal impact to traffic on Maygarden Road	
ENVIRONMENTAL - GA fuel farm reduces fuel truck traffic (fewer and shorter trips)	
FISCAL - GA fuel farm may encourage additional third party GA expansion	
FISCAL - Moderate Cost ($24.7M)	

Source: RS&H, 2017

TABLE 5-23
GENERAL AVIATION ALTERNATIVE 2 PROS/CONS

Pros	Cons
ENVIRONMENTAL - No Pros	ENVIRONMENTAL - No Cons
ECONOMIC - No Pros	ECONOMIC - No Cons
LAND MANAGEMENT - T-hangar expansion keeps the small GA storage consolidated in a single area	SAFETY - Co-mingling fixed-wing and rotorwing operations
OPERATIONAL EFFICIENCY - CBP location allows for near-term development without apron construction	OPERATIONAL EFFICIENCY - Corporate GA hangar development area requires access roadway construction to Maygarden Road
OPERATIONAL EFFICIENCY - Corporate GA hangar development area requires minimal access taxiway development	OPERATIONAL EFFICIENCY - Relocated helicopter apron displaces some fixed-wing aircraft
OPERATIONAL EFFICIENCY - Helicopter apron allows for increased level of service for helicopter users due to proximity to FBO	OPERATIONAL EFFICIENCY - No fuel farm or self-serve fueling results in reduced efficiency and reduced level of service for GA users
OPERATIONAL EFFICIENCY - Corporate GA hangar layout supports efficient continued expansion in the southeast quadrant (development can be mirrored on south side of roadway with taxiway access south of the development)	
FISCAL – Marginally least costly ($24.5M)	

Source: RS&H, 2017

TABLE 5-24
GENERAL AVIATION ALTERNATIVE 3 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
ECONOMIC - No Pros	ECONOMIC - No Cons
OPERATIONAL EFFICIENCY - CBP and corporate GA hangar development area requires minimal development of access taxiway	LAND MANAGEMENT - Location of self-serve fuel station not highest and best use for that site. Also, T-hangars would be better located proximate to self-serve fuel station
OPERATIONAL EFFICIENCY - Helicopter apron does not impact existing apron area	OPERATIONAL EFFICIENCY - CBP and corporate GA hangar development area requires construction of access roadway to Maygarden Road
OPERATIONAL EFFICIENCY - GA self-serve fueling enhances efficiency of fueling operation for Avgas GA users	OPERATIONAL EFFICIENCY - CBP requires construction of new apron
OPERATIONAL EFFICIENCY - Helicopter apron allows for increased level of service for helicopter users due to proximity to FBO; however, it is still fairly distant for flight crew to get to their aircraft but the portion of Taxiway C south of Taxilane C1 could be designated as a non-movement area and change it to a taxilane, thus requiring no special clearances from ATC to cross	FISCAL - Helicopter apron relocation requires construction of new apron
OPERATIONAL EFFICIENCY - Corporate GA hangar layout supports efficient continued expansion in this southeast quadrant	FISCAL - Most Costly ($27.1M)
ENVIRONMENTAL - GA self-serve fueling location minimizes fuel truck traffic on Maygarden Road because delivery of fuel is made via airside perimeter road	
ENVIRONMENTAL - Least potential effect to biological resources.	

Source: RS&H, 2017

TABLE 5-25
GENERAL AVIATION ALTERNATIVES ROM COSTS

	Alternative 1	Alternative 2	Alternative 3
Proposed Taxiway Construction	$1.8M	$0.5M	$0.6M
Taxiway/Apron Removal	$0.2M	$0.2M	$0.2M
Apron Pavement Rehab to Helicopter Apron	$0.5M	$0.5M	-
Helicopter Hard Stand Construction	$0.1M	$0.1M	$0.1M
GA Fuel Farm Construction	$0.6M	-	-
GA Self-Service Fuel Station	-	-	$0.2M
T Hangar Construction	$5.2M	$5.2M	$5.2M
T Hangar Taxilane Construction	$0.9M	$0.9M	$0.7M
Apron Construction	$5.7M	$7.1M	$10.1M
GA CBP Facility Construction	$2.0M	$2.0M	$2.0M
Hangar Building Construction	$6.8M	$6.8M	$6.8M
Vehicle Parking Lot Construction	$0.7M	$0.7M	$0.7M
Maygarden Road Realignment Construction	$0.3M	$0.3M	$0.3M
Access Roadway Construction	$0.1M	$0.3M	$0.3M
Total ROM Cost	$24.7M	$24.5M	$27.1M

Source: RS&H, 2017
Note: Numbers may not sum due to rounding.

TABLE 5-26
GENERAL AVIATION ALTERNATIVES EVALUATION MATRIX

	Evaluator Description	Alt 1	Alt 2	Alt 3
GOAL	**SAFETY**	**4.5**	**4.5**	**5.0**
Crit. 1	Meets or exceeds standards to enhance safety	5	5	5
Crit. 2	Enhances safety through application of industry best practices	4	4	5
GOAL	**STRATEGIC LAND MANAGEMENT**	**5.0**	**5.0**	**3.5**
Crit. 1	Encourages compatibility between on- and off-airport land uses	5	5	5
Crit. 2	Promotes highest and best land use to support efficient airport operations	5	5	2
GOAL	**OPERATIONAL EFFICIENCY**	**4.0**	**3.8**	**4.0**
Crit. 1	Maintains or enhances operational efficiency	4	4	2
Crit. 2	Supports redundancy to enhance operational flexibility	n/a	n/a	n/a
Crit. 3	Strategically balances demand with supply using alternative methods	3	3	5
Crit. 4	Supports efficient operating environment for all aviation users	5	3	4
Crit. 5	Considers flexibility and adaptability to support future potential industry trends	4	5	5
GOAL	**ENVIRONMENTAL AWARENESS**	**3.5**	**4.0**	**4.5**
Crit. 1	Recognizes noise impacts	4	4	4
Crit. 2	Environmental compatibility	3	4	5
Crit. 3	Employs environmental sustainability initiatives	n/a	n/a	n/a
GOAL	**FISCAL SUSTAINABILITY**	**5.0**	**4.7**	**3.7**
Crit. 1	Cost effectiveness	5	5	3
Crit. 2	Minimizes costs	5	5	4
Crit. 3	Generates revenue	5	4	4
GOAL	**ECONOMIC GROWTH**	**5.0**	**5.0**	**5.0**
Crit. 1	Enhances regional transportation connections to the Airport	n/a	n/a	n/a
Crit. 2	Encourages increased economic impact to community	5	5	5
TOTAL SCORE		**27.0**	**26.9**	**25.7**
MAXIMUM SCORE		**30**	**30**	**30**

Source: RS&H, 2017
Notes: Alt = Alternative, Crit. = Criterion, n/a = not applicable
Scoring Rubric: 5 - Alternative Fully Responds to Criterion/Goal, 4 - Alternative Largely Responds to Criterion/Goal, 3 - Alternative Partially Responds to Criterion/Goal, 2 - Alternative Minimally Responds to Criterion/Goal, 1 - Alternative Does Not Respond to Criterion/Goal

5.6.4 Recommendation

The recommended general aviation development alternative was prepared based on the results of the alternatives evaluation process. The recommended general aviation alternative represents the consolidated general aviation layout for the future development of PNS. The best elements from each alternative was selected with the goal of reducing the number of "cons" or negative attributes. The recommended general aviation alternative comprises the following elements:

- Helicopter apron west of Taxiway C from Alternative 3
  - This is the recommended layout; however, reconfiguration of the existing south general aviation apron as depicted in Alternative 1 can be used as an interim configuration.
- T-Hangar expansion from Alternative 1
- General aviation fuel farm from Alternative 1
  - The location of general aviation fuel farm was revised based on input from general aviation stakeholders. The site was updated to the northwest side of Maygarden Rd to support enhanced operational efficiency for fueling operators.
- Self-service fueling station from Alternative 3
  - Site identified in Alternative 3 is not compatible with T-hangar expansion. The location of self-serve fueling facility was updated to ensure compatibility between the adjacent uses in the southeast quadrant.
- Corporate general aviation and GAF FIS development as depicted similar to Alternative 2

Additionally, all other common elements were included in the recommended general aviation alternative.

The recommended general aviation alternative includes refinements to the helicopter apron not otherwise depicted in any of the alternatives. The proposed helicopter apron is recommended to be limited to construction of hardstands. The taxilane would be constructed of stabilized turf or another similarly acceptable material. This configuration is acceptable because helicopters would use hover taxi procedures to maneuver to and from hardstand parking positions. This refinement was suggested to reduce the construction costs and reduce the amount of impervious pavement area associated with this development.

The recommended general aviation development alternative is consolidated into an airport-wide recommended development plan as depicted in *Figure 5-25*. The cost of implementing the recommended general aviation alternative is described in *Table 5-27*.

TABLE 5-27
RECOMMENDED GENERAL AVIATION ALTERNATIVE ROM COSTS

	Implementation Costs
Taxiway/Apron Removal	$0.2M
Helicopter Hard Stand Construction	$0.1M
GA Fuel Farm Construction	$0.6M
GA Self-Service Fuel Station	$0.2M
T Hangar Construction	$5.2M
T Hangar Taxilane Construction	$0.9M
Apron Construction	$9.7M
GA CBP Facility Construction	$2.0M
Hangar Building Construction	$6.8M
Vehicle Parking Lot Construction	$0.7M
Maygarden Road Realignment Construction	$0.3M
Access Roadway Construction	$0.3M
Total ROM Cost	$26.9M

Source: RS&H, 2017
Note: Numbers may not sum due to rounding.

5.7 AIR CARGO

Three alternatives were prepared to explore the air cargo development options. The existing cargo facility would be relocated and sized to accommodate the forecast demand. Each alternative considers relocation of the existing cargo facility into a consolidated cargo facility that would also accommodate an integrated express cargo tenant. As discussed in *Working Paper 4*, *Facility Requirements*, a hypothetical cargo scenario was considered to evaluate facilities should a new integrated express cargo carrier initiate operation at PNS.

5.7.1 Key Issues

The facility requirements indicate that the existing cargo facility is sufficient to accommodate the forecast cargo demand. However, the alternatives explore options to accommodate a more significant cargo operation. The development metrics of the forecast and hypothetical cargo operation are as follows:

- A new potential integrated express cargo tenant facility consists of:
  - Three ADG IV apron parking positions
  - Three turboprop aircraft apron parking positions
  - 25,000 square-foot cargo building
  - 80,000 square-foot vehicle parking area
  - 127,350 square-foot truck parking/staging area
- A new cargo facility to meet forecast demand consists of:
  - One ADG IV apron parking position
  - Two turboprop aircraft apron parking positions
  - 4,650 square-foot cargo building
  - 9,500 square-foot vehicle parking area

- 8,370 square-foot truck parking/staging area

5.7.2 Air Cargo Alternatives

Each Air Cargo Alternative explores the development in a different location on-airport. The basic elements of each Alternative is similar; however, the configuration differs for each Alternative based on site characteristics. The evaluation of Air Cargo Alternatives focused on the pros/cons associated with each site.

5.7.2.1 Cargo Alternative 1

Cargo Alternative 1 depicted in *Figure 5-22*, explores the relocation and consolidation of cargo operations in the northwest quadrant, west of the Runway 17 end. The proposed facility includes the following elements:

- Construct new ADG IV / TDG 5 taxiway connecting to the north terminus of Taxiway A
- Construct new forecast cargo tenant facility on the north side of the site
- Construct new potential integrated express cargo facility on the south side of the site
- Construct new roadways to provide site access from Tippin Avenue

5.7.2.2 Cargo Alternative 2

Cargo Alternative 2, depicted in *Figure 5-23*, explores the relocation and consolidation of cargo operations to the northeast quadrant, north of Taxiway B. The proposed facility includes the following elements:

- Construct new forecast cargo tenant facility on the east side of the site
- Construct new potential integrated express cargo facility on the west side of the site
- Construct new roadways to provide site access from Spanish Trail Road

5.7.2.3 Cargo Alternative 3

Cargo Alternative 3, depicted in *Figure 5-24*, explores the relocation and consolidation of cargo operations to the southeast quadrant, east of the Runway 35 end. The proposed facility includes the following elements:

- Construct new ADG IV / TDG 5 taxiway connecting to the south portion of the new taxiway parallel to Runway 17-35
- Construct new forecast cargo tenant facility on the south side of the site
- Construct new potential integrated express cargo facility on the north side of the site
- Construct new roadways to provide site access from Summit Boulevard

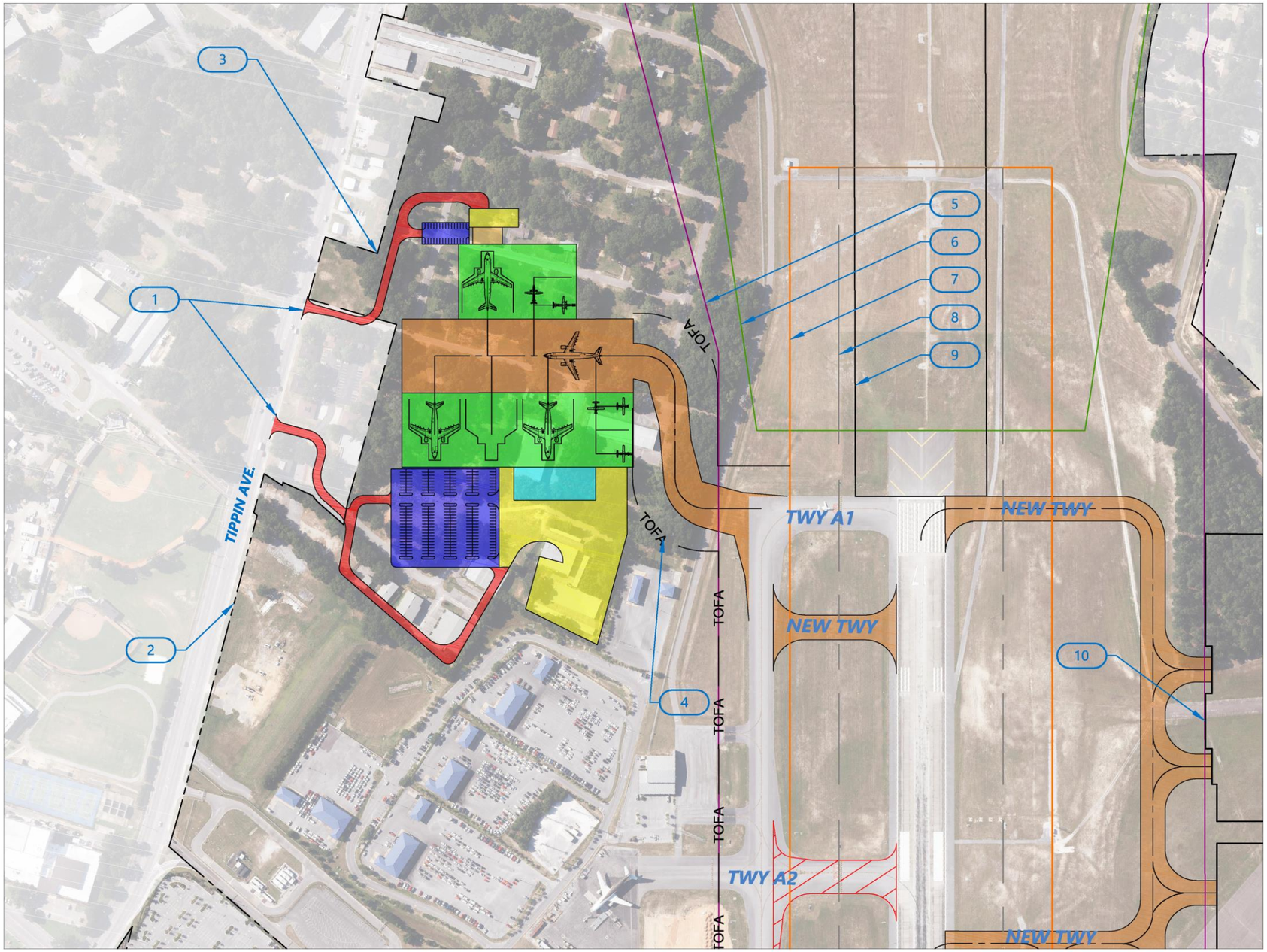


FIGURE 5-22
CARGO ALTERNATIVE 1

Legend

- Cargo Facility Apron Area
- Proposed Taxiway
- Potential Integrated Express Cargo Entrant Building
- Forecast Cargo Tenant Building
- Cargo Truck Parking / Staging Area
- Cargo Facility Parking Lot
- Access Road to Cargo Facilities
- Existing Taxiway Removal

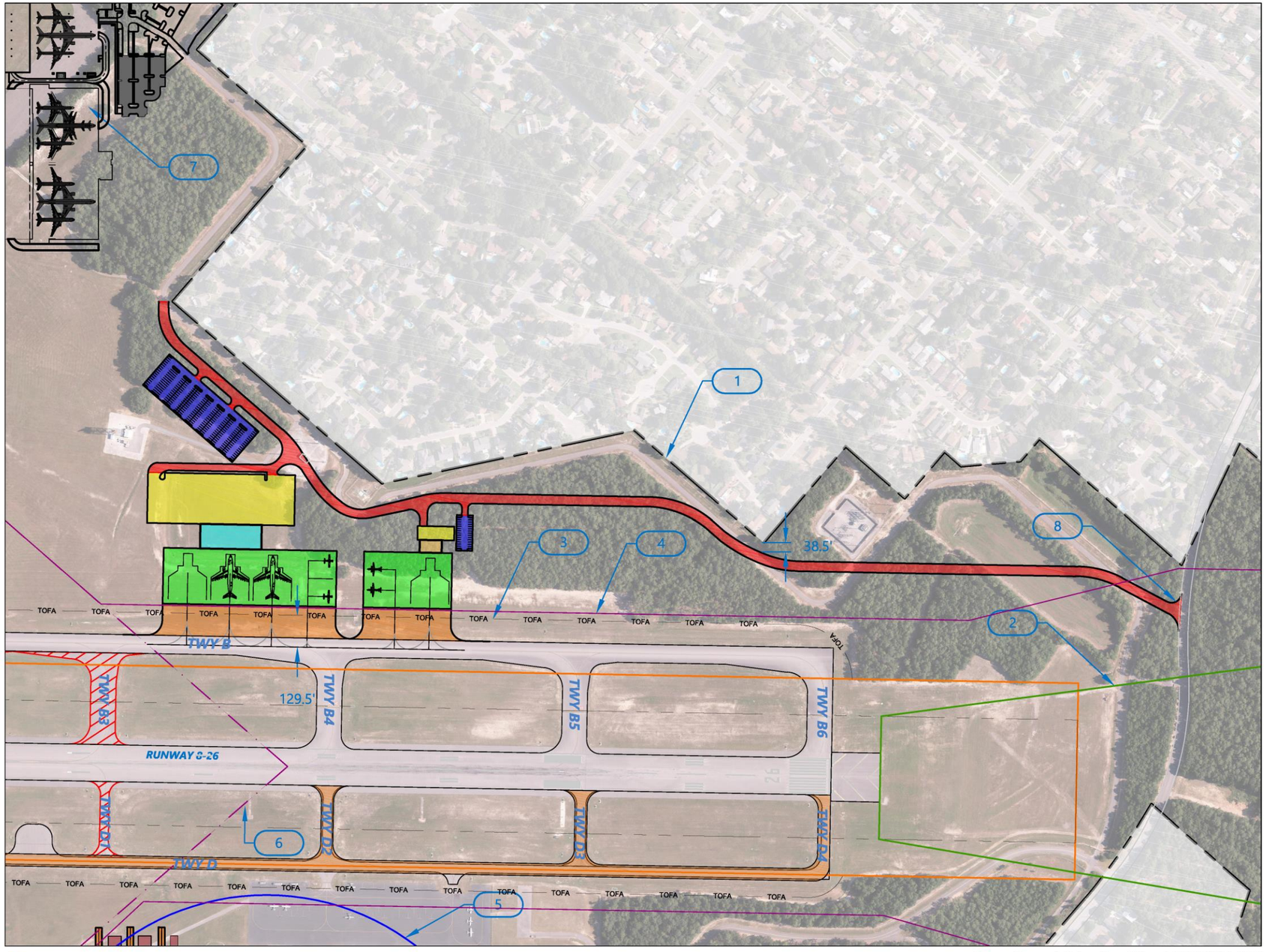
1. Access into Tippin Avenue
2. Existing Property Line
3. Future Property Line*
4. Taxiway Object-Free Area (TOFA)
5. Building Restriction Line (BRL)
6. Runway Protection Zone (RPZ)
7. Runway Object-Free Area (ROFA)
8. Runway Safety Area (RSA)
9. MALSR
10. VTMAE MRO

Note -
* Property acquisition underway independent of this potential development Alternative.

0 150 300
Feet

Source: Pensacola International Airport, 2007; RS&H, 2017

FIGURE 5-23
CARGO ALTERNATIVE 2



Legend

- Cargo Facility Apron Area
- Proposed Taxiway
- Potential Integrated Express Cargo Entrant Building
- Forecast Cargo Tenant Building
- Cargo Truck Parking / Staging Area
- Cargo Facility Parking Lot
- Access Road to Cargo Facilities
- Existing Taxiway / Apron Removal

1. Property Line
2. Runway Protection Zone
3. Taxiway Object-Free Area
4. Building Restriction Line
5. ASR Critical Area*
6. Runway Visibility Zone
7. VTMAE MRO
8. Access into Spanish Trail Road

Note -
* Facilities from Airside Alternative 2 included for informational purposes. Not to be considered for evaluation of Cargo Alternative.

0 200 400
Feet

N

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

RS&H

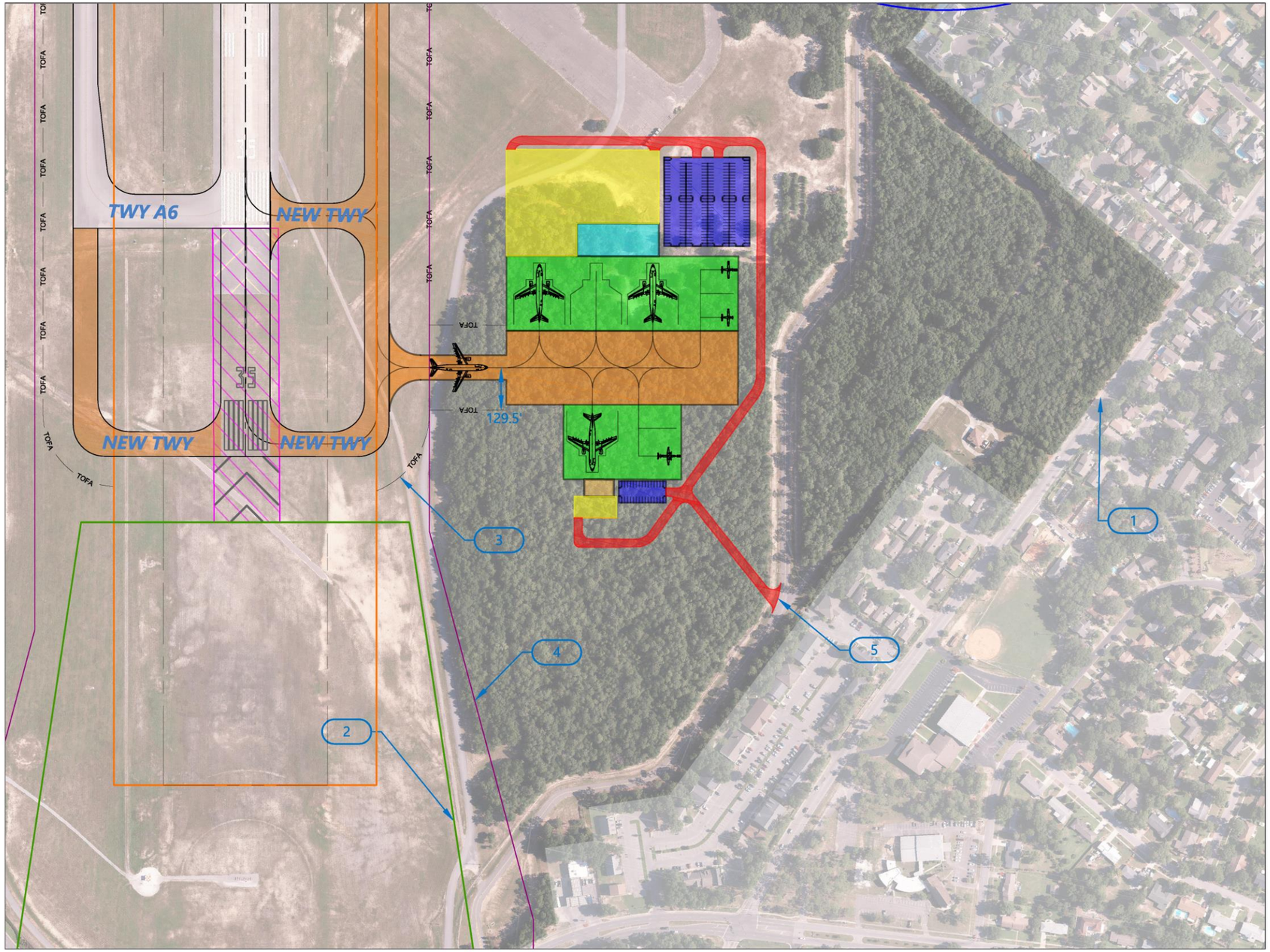


FIGURE 5-24
CARGO ALTERNATIVE 3

Legend

- Cargo Facility Apron Area
- Proposed Taxiway
- Potential Integrated Express Cargo Entrant Building
- Forecast Cargo Tenant Building
- Cargo Truck Parking / Staging Area
- Cargo Facility Parking Lot
- Access Road to Cargo Facilities
- Proposed Runway 17-35 Extension

1. Property Line
2. Runway Protection Zone
3. Taxiway Object-Free Area
4. Building Restriction Line
5. Access into Maygarden Road

0 150 300
Feet

PENSACOLA International Airport

Source: Pensacola International Airport, 2007; RS&H, 2017

RS&H

5.7.3 Air Cargo Alternatives Evaluation

Cargo Alternative 1 is advantageous because cargo development is the highest and best use for this site. One contributing factor is that the roadway connection to Tippin Avenue provides most direct route to both nearby interstate highways. Tippin Avenue is a four-lane arterial roadway with a center turn lane, and is capable of accommodating large truck traffic. Additionally, this site has minimal non-compatible land uses proximate to development location. The pros/cons for Cargo Alternative 1 are summarized in *Table 5-28*.

The Cargo Alternative 2 may require pushback operations onto Taxiway B. Since Taxiway B is a movement area, pushback operations would require coordination with ATC, which results in an operational inefficiency. The layout in Cargo Alternative 2 would impact three existing facilities – the existing airside perimeter road, ASR, and RTR Site 2. The facility layout in Cargo Alternative 2 may require the relocation of the ASR to a viable because the buildings and parked aircraft may interfere with signal integrity. Additionally, the proposed access roadway alignment would impact the RTR Site 2. This site also requires significant roadway infrastructure to connect to Spanish Trail Road. Further, Spanish Trail Road provides the poorest direct access route to interstate highways, and is a two-lane roadway that is the least capable of accommodating large truck traffic. Cargo Alternative 2 also represents significant potential noise impacts to the off-airport land uses proximate to this site. However, Cargo Alternative 2 does not require a new access taxiway. The pros/cons for Cargo Alternative 2 are summarized in *Table 5-29*.

TABLE 5-28
CARGO ALTERNATIVE 1 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
OPERATIONAL EFFICIENCY - No Pros	OPERATIONAL EFFICIENCY - No Cons
LAND MANAGEMENT - Minimal non-compatible land uses proximate to development location. Berms and natural vegetation buffers can be used to reduce noise/visual impacts	ENVIRONMENTAL - Requires removal of scattered trees, shrubs, and cleared grassland. Given the previous disturbance of this area, it is unlikely that many species use the area
LAND MANAGEMENT - Highest and best use on-airport for cargo development	FISCAL - Most Costly ($24.7M)
ECONOMIC - Roadway connection to Tippin Avenue provides most direct route to both nearby interstate highways. Tippin Ave. is capable of accommodating large truck traffic	FISCAL - Requires demolition of existing mini warehouses which are an important source of nonaeronautical revenue for the Airport
ECONOMIC - Space remains adjacent to site for complimentary uses (e.g., freight forwarders) to locate on-airport	

Source: RS&H, 2017

Cargo Alternative 3 is advantageous because there are no non-compatible land uses proximate to development location. Summit Boulevard, a four-lane divided highway with a raised median, provides

moderate access to interstate highways. A notable negative attribute associated with Cargo Alternative 3 is that the layout impacts developable area that best suited for general aviation development. The pros/cons for Cargo Alternative 3 are summarized in *Table 5-30*.

Cargo Alternative 1 is the most costly of the three alternatives at $24.7 million. Cargo Alternative 2 is $24 million and Cargo Alternative 3 is $23.7 million. The higher cost for Cargo Alternative 1 is attributable to the longer taxiway required to access the proposed site. Conversely, Cargo Alternative 3 has a shorter taxiway length and Cargo Alternative 2 only requires access pavement for access to Taxiway B. The access road costs are the same for both Alternative 1 and Alternative 3. However, the costs of the three alternatives are within five percent of each other, which is not a major indicator of superiority for any alternative. The ROM implementation cost estimates are summarized in *Table 5-31*.

TABLE 5-29
CARGO ALTERNATIVE 2 PROS/CONS

Pros	Cons
OPERATIONAL EFFICIENCY - No new taxiways required	SAFETY - Not best practice for aircraft to pushback onto taxiway
FISCAL - Moderate Cost ($24.0M)	LAND MANAGEMENT - May require relocation of ASR
ECONOMIC - Space remains adjacent to site for complimentary uses (e.g., freight forwarders) to locate on-airport	LAND MANAGEMENT - Area more suitable for small scale development due to size and proximity to residences
	OPERATIONAL EFFICIENCY - Challenges associated pushback operations onto Taxiway B (movement area)
	OPERATIONAL EFFICIENCY - Interrupts existing airside perimeter road
	ENVIRONMENTAL - Proximate to noise sensitive land use
	ENVIRONMENTAL - Requires the moderate removal of undisturbed vegetated area
	ECONOMIC - Spanish Trail Road is two-lane roadway and provides only indirect access to interstate highways
	ECONOMIC - Distance to main roadway may discourage development of complimentary uses near this site

Source: RS&H, 2017

Overall, Cargo Alternative 1 performed best with a score of 29.2 out of a possible 30 points. Cargo Alternative 3 also performed well with a score of 26. Cargo Alternative 2 performed poorly with a score of 19.8. The evaluation results are described in *Table 5-32*.

TABLE 5-30
CARGO ALTERNATIVE 3 PROS/CONS

Pros	Cons
SAFETY - No Pros	SAFETY - No Cons
LAND MANAGEMENT - Non-compatible land uses not proximate to development location	OPERATIONAL EFFICIENCY - No Cons
FISCAL - Least Costly ($23.7M)	LAND MANAGEMENT - Impacts developable area that can be used for general aviation development
ECONOMIC - Summit Boulevard is a four-lane arterial highway with raised median and provides moderate access to interstate highways	ENVIRONMENTAL - Requires substantial removal of undisturbed vegetated area

Source: RS&H, 2017

TABLE 5-31
CARGO ALTERNATIVES ROM COSTS

	Alternative 1	Alternative 2	Alternative 3
Proposed Taxiway/Apron Access Construction	$4.8M	$2.8M	$3.8M
Apron Construction	$4.8M	$4.8M	$4.8M
Vehicle Parking Lot Construction	$2.2M	$2.2M	$2.2M
Access Roadway Construction	$1.0M	$2.2M	$1.0M
Cargo Building Construction	$11.9M	$11.9M	$11.9M
Total ROM Cost	$24.7M	$24.0M	$23.7M

Source: RS&H, 2017
Note: Numbers may not sum due to rounding.

TABLE 5-32
CARGO ALTERNATIVES EVALUATION MATRIX

	Evaluator Description	Alt 1	Alt 2	Alt 3
GOAL	**SAFETY**	**5.0**	**4.5**	**5.0**
Crit. 1	Meets or exceeds standards to enhance safety	5	5	5
Crit. 2	Enhances safety through application of industry best practices	5	4	5
GOAL	**STRATEGIC LAND MANAGEMENT**	**5.0**	**2.5**	**3.5**
Crit. 1	Encourages compatibility between on- and off-airport land uses	5	2	4
Crit. 2	Promotes highest and best land use to support efficient airport operations	5	3	3
GOAL	**OPERATIONAL EFFICIENCY**	**5.0**	**3.3**	**5.0**
Crit. 1	Maintains or enhances operational efficiency	5	3	5
Crit. 2	Supports redundancy to enhance operational flexibility	n/a	n/a	n/a
Crit. 3	Strategically balances demand with supply using alternative methods	n/a	n/a	n/a
Crit. 4	Supports efficient operating environment for all aviation users	5	2	5
Crit. 5	Considers flexibility and adaptability to support future potential industry trends	5	5	5
GOAL	**ENVIRONMENTAL AWARENESS**	**4.5**	**2.0**	**3.0**
Crit. 1	Recognizes noise impacts	5	1	4
Crit. 2	Environmental compatibility	4	3	2
Crit. 3	Employs environmental sustainability initiatives	n/a	n/a	n/a
GOAL	**FISCAL SUSTAINABILITY**	**4.7**	**5.0**	**5.0**
Crit. 1	Cost effectiveness	4	5	5
Crit. 2	Minimizes costs	5	5	5
Crit. 3	Generates revenue	5	5	5
GOAL	**ECONOMIC GROWTH**	**5.0**	**2.5**	**4.5**
Crit. 1	Enhances regional transportation connections to the Airport	5	2	4
Crit. 2	Encourages increased economic impact to community	5	3	5
TOTAL SCORE		**29.2**	**19.8**	**26.0**
MAXIMUM SCORE		**30**	**30**	**30**

Source: RS&H, 2017
Notes: Alt = Alternative, Crit. = Criterion, n/a = not applicable
Scoring Rubric: 5 - Alternative Fully Responds to Criterion/Goal, 4 - Alternative Largely Responds to Criterion/Goal, 3 - Alternative Partially Responds to Criterion/Goal, 2 - Alternative Minimally Responds to Criterion/Goal, 1 - Alternative Does Not Respond to Criterion/Goal

5.7.4 Recommendation

Factors other than cost were used to drive the recommended development option, given the insignificant ROM cost differential. The primary determining factors were land use compatibility, environmental impacts, and regional ground transportation access. Based on the aforementioned pros/cons and the evaluation results, Cargo Alternative 1 is recommended as the preferred cargo expansion area. Cargo Alternative 1 is preferred because the site supports more efficient regional ground transportation access. As described in *Working Paper 4*, *Facility Requirements,* this larger cargo development is only needed

should a new integrated cargo carrier begin operating at PNS. Site 1 can be used to accommodate other aviation-related developments if such need arises before the area is needed for cargo use. Site 3 is also viable should Site 1 be developed for other aviation-related purposes. Should an alternative aviation-related facility be developed at Site 1 before a new cargo facility is needed, then Site 3 should be preserved for long-term cargo development. Cargo Alternative 2 should not be considered for implementation due to its poor performance and potential impacts to noise sensitive off-airport land uses.

Cargo Alternative 1 is consolidated into the airport-wide recommended development plan as depicted in *Figure 5-25*.

5.8 ABANDONED TRACON BUILDING

This section describes the recommended disposition for the abandoned TRACON building. The abandoned TRACON building is located in the northwest quadrant of PNS, north of the passenger terminal building. The building is in poor condition and has exceeded its useful life. Demolition of the building is recommended so that it can be repurposed for other needs. The site has higher and better uses to serve as an aeronautical function or to support long-term (beyond 20-years) terminal expansion needs.

Furthermore, upkeep of a vacant and unused facility can be costly with limited return on investment. A facility that deteriorates to a point of disrepair can become a liability and introduces the concern of foreign object debris that may be produced as the building deteriorates.

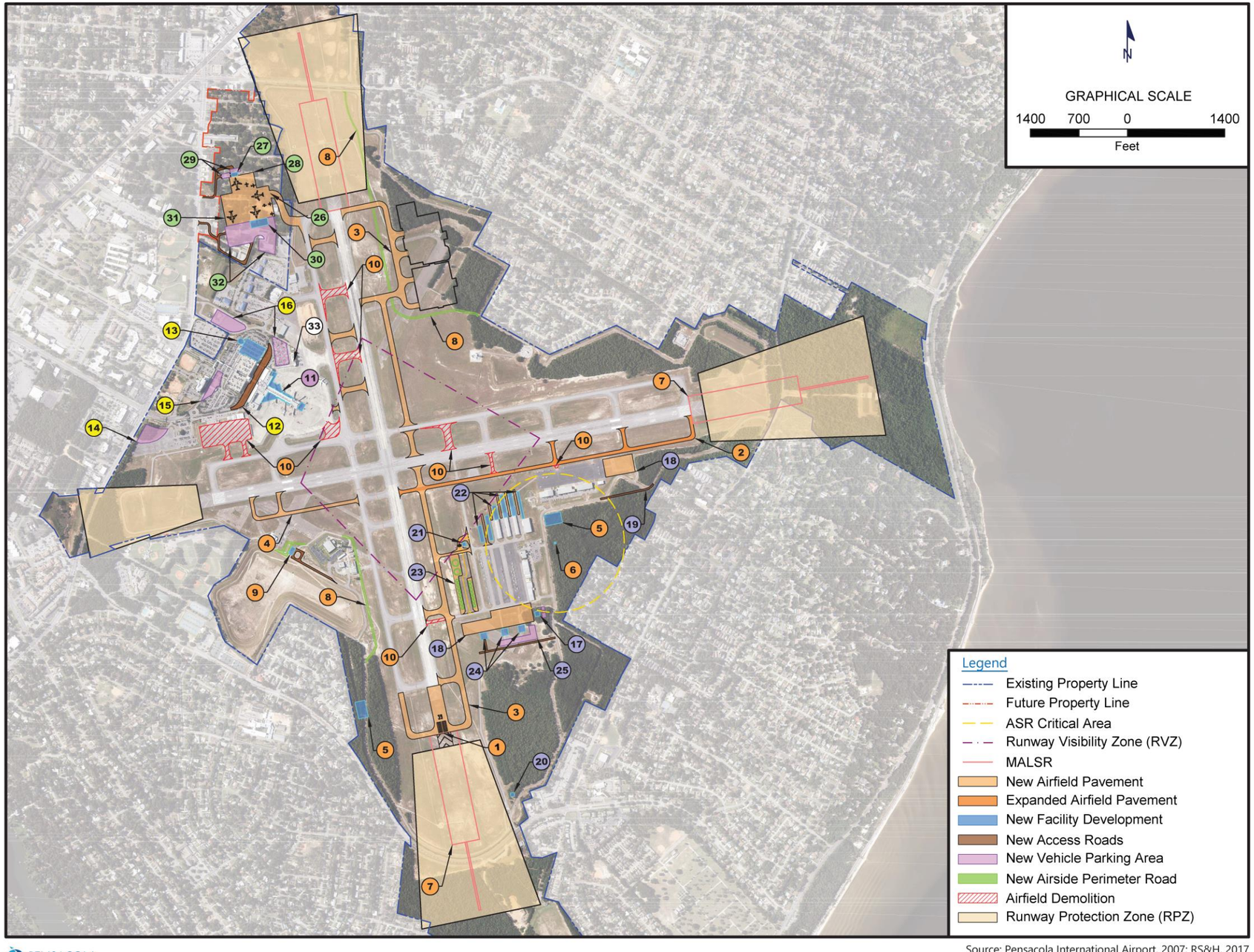
The demolition of the abandoned TRACON building is depicted as a project in *Figure 5-25*.

5.9 RECOMMENDED DEVELOPMENT ALTERNATIVE

The recommended airport development alternative is the preferred layout for future airport development. The recommended development alternative is the combination and consolidation of the recommended alternative for each functional area, as described throughout this document.

This recommend alternative represents the culmination of the Master Plan Update alternatives evaluation process. The layout will be reflected in the Airport Layout Plan future development sheet. The recommended airport development alternative was selected and refined based on both technical analysis and stakeholder input. The layout meets the forecast demand for airport operations throughout the planning horizon. It minimizes negative impacts through the consideration of the evaluation criteria and iterative refinement. Further, the layout allows for future expansion and continued development beyond the 20-year planning horizon.

The recommended airport development alternative is depicted in *Figure 5-25*.



Source: Pensacola International Airport, 2007; RS&H, 2017

FIGURE 5-25
RECOMMENDED DEVELOPMENT ALTERNATIVE

Project List

Airside

1. Runway 17-35 Extension
2. Taxiway D Upgrade to ADG-III
3. New Parallel Taxiway
4. Extension of Taxiway D
5. Relocated RTR
6. Relocated ASR
7. New MALSR
8. New Airside Perimeter Road
9. New Jet A Fuel Farm
10. Airfield Demolition

Terminal

11. Terminal Building Expansion

Landside

12. Curbside Reconfiguration
13. Expansion of Parking Garage
14. Expansion of Economy 1 and Cell Lot
15. Modification of Surface Lot
16. Relocation of Employee Lot

General Aviation

17. GA CBP FIS Facility
18. New Apron
19. Realignment of Maygarden Road
20. New GA Fuel Farm
21. Self-Serve AvGas Fueling Station
22. T-Hangar Expansion
23. Relocation of Helicopter Hardstand
24. New Conventional Hangars
25. New Access Road and Vehicle Parking Area

Cargo

26. New Access Taxiway (ADG IV)
27. Relocated Cargo Building
28. Relocated Cargo Apron
29. Relocated Vehicle and Truck Parking
30. Potential Cargo Entrant Building
31. Potential Cargo Apron Expansion
32. Potential Vehicle and Truck Parking

Non-Aeronautical

33. Demolish Abandoned TRACON Building

5.10 PRELIMINARY PHASING PLAN

A preliminary phasing plan was prepared for the recommended airport development plan. The goal was to determine the preferred timing for implementation that meets both the projected need for future facilities and the ability to finance construction.

The phasing plan considers projects that should be implemented within the 5-year, 10-year and 20-year planning horizons. The phasing plan considers project dependency (i.e., the projects that must be implemented prior to the project under consideration). The preliminary phasing plan is described below and summarized in *Table 5-33*.

This analysis represents a preliminary phasing plan that considers implementation economies of scale and forecast demand for facility enhancements. A more detailed phasing plan that considers the airport financial planning is described in *Working Paper 7, Financial Plan*. The detailed phasing plan will also include a description of trigger points for design and construction start.

The recommendation is to extend Runway 35 to 7,700 feet in the near-term. The need for this project has been triggered because the existing runway lengths at PNS are insufficient to accommodate the existing demand. Extension to 8,000 feet would not be required until a longer runway length is required by the fleet, which is not anticipated until beyond the 20-year planning horizon. The near-term runway extension should be coordinated with the parallel taxiway construction and new instrument approach for Runway 35.

The new parallel taxiway construction should be implemented in the near-term, in coordination with the extension to Runway 35. Implementation of the PBN/RNAV approaches is also recommended in the near-term. The facility requirements analysis results indicates that weather conditions and existing runway use are enough to trigger near-term implementation. No project needs to precede the implementation for Runway 26; however, implementation for Runway 35 should follow or coincide with the runway extension. Coincidence with the runway extension would support construction cost and time savings. Further, coordination with FAA Flight Procedures could be down at one time to facilitate the runway end location update and new instrument approach procedure.

The relocation of the RTR facilities is recommended within the 5-year planning horizon. Relocation of the RTR facilities at Site 1 (northwest quadrant near rental car service centers) must precede the expansion of the rental car service centers. Relocation of RTR Site 2 (northeast quadrant near ASR) must be complete to allow the Phase II hangar construction for VTMAE. The FAA has determined that the hangar associated with the Phase II construction will negatively impact the signal integrity for the RTR. The ASR can remain in its existing location until such time the land is needed for other uses. The hangar construction has no known impacts to the ASR signal integrity.

The replacement of the existing taxiway segments that do not meet the airfield best practices should occur incrementally throughout the planning horizon. Typically, the FAA will require replacement as the pavement section is slated for reconstruction. At that time, the new replacement taxiways should be implemented and the existing nonstandard and non-conforming segments should be demolished.

Upgrades to Taxiway D (east of Runway 17-35) should occur in the near-term to accommodate the larger general aviation aircraft that currently operate at PNS. The Taxiway D extension to the west should occur within the 10-year planning horizon as the larger general aviation aircraft being operating with greater

frequency. Neither project must be preceded by another project and, therefore, can be implemented independently.

The airside perimeter road can be implemented at any point during the planning horizon. PNS can complete this project when able because it is not deemed a high priority project. Implementation of the new roadway segments can occur incrementally and independently of another. No other projects need to precede this implementation; however, implementation with other projects to take advantage of economies of scale should be considered. For example, economies of scale may benefit the implementation of the airside perimeter road segment in the northeast quadrant in conjunction with the new parallel taxiway construction.

The fuel facility relocation to the southwest quadrant and the implementation of the fuel facilities in the southeast quadrant should be coordinated. Implementation of the general aviation fuel facilities (fuel farm and self-serve fueling station) should be implemented in the near-term to accommodate the forecast demand for additional fuel storage capacity by the end of the 5-year planning horizon. Offsetting this demand in the southeast quadrant will allow for delayed implementation of the larger fuel farm recommended relocation to the southwest quadrant. Relocation is recommended within the 5-year planning horizon timeframe. At the time of relocation, the 20-year forecast demand for fuel storage does not need to be met. Additional storage tanks can be implemented incrementally in the 20-year planning horizon timeframe, as demand materializes.

The summary of terminal building capacity is described in *Table 4-33* in *Working Paper 4, Facility Requirements*. The Tables describes the aviation demand levels at which each functional area of the terminal building reaches capacity. The overall terminal building expansion can be implemented incrementally, as demand warrants, throughout the planning period. For example, it is recommended that the terminal bag claim lobby and holdroom reconfiguration occur in the near-term to accommodate existing demand. Expansion of the bag make-up area should occur within the 10-year planning horizon to accommodate forecast demand. The overall expansion of the terminal building should be phased based on actual design and economies of scales identified during the advanced planning process.

The curbside expansion can occur incrementally throughout the planning horizon, with the initial phase implemented in the near-term to resolve existing congestion and poor level of service. This project can be implemented without consideration of a preceding project link. Expansion of the parking facilities can occur towards the end of the planning horizon. The facility requirements results indicate that demand for the Garage and Surface Lot will exceed capacity in the near-term because these are premium parking products. However, the facility requirements results indicate that latent capacity exists in the economy lots, such that the demand for the Garage and Surface Lot can be offset in the near-term. In the long-term implementation of the Garage expansion and the expansion of Economy Lot 1 should be undertaken to accommodate forecast demand. Construction of the Economy Lot 1 expansion should occur prior to the expansion of the Garage to offset impacts during construction.

Employee parking lot relocation can occur beyond the 20-year planning horizon. The trigger driving this project is the need for additional land north of the terminal building to accommodate terminal expansion. Terminal expansion that would warrant use of that land area is not forecast to occur within the 20-year planning horizon.

Near-term implementation of the GAF FIS facility is recommended. CBP has indicated that existing demand is sufficient to trigger the near-term implementation. As discussed in *Section 5.6*, implementation of the FIS facility can occur without construction of a dedicated aircraft parking apron. Construction of this apron can occur later, as funding allows.

Implementing the T-hangar expansion can occur incrementally throughout the planning horizon, with the initial phase implemented in the near-term to resolve existing capacity shortfall. Implementation of the corporate general aviation apron and hangars can occur incrementally throughout the planning horizon. The facility requirements analysis results indicate that additional hangar space is required by the end of the 10-year planning horizon. However, actual implementation should occur based on tenant demand. Therefore, implementation may occur prior to and/or after the 10-year planning horizon timeframe.

The relocation of the helicopter parking to the southeast quadrant can occur in two distinct phases. Near-term relocation to the existing south general aviation apron would support the existing need to enhance level of service for helicopter users. However, due to the impact to existing fixed-wing parking positions, plans construction of a new helicopter apron should occur within the 10-year planning horizon.

Implementation of the consolidated cargo complex is based on when a new integrated express cargo carrier indicates interest in initiating service at PNS. At that time, the consolidated complex should be implemented. Until that demand materializes, the facility requirements analysis results indicate that the existing cargo building is sufficiently sized to accommodate the forecast demand throughout the 20-year planning horizon.

The demolition of the abandoned TRACON building can be completed at any point during the planning horizon. Triggers for demotion are based on availability of funds and/or when future development warrants use of that site. Facility condition may also become the trigger for demolition if the building deteriorates to a point of condemnation.

TABLE 5-33
PRELIMINARY PHASING PLAN

Project	Implementation Period	Project Dependency
Runway 35 Extension to 7,700 feet	5-year planning horizon	None
Runway 35 Extension to 8,000 feet	Beyond 20-year horizon	None
RTR Relocation	5-year planning horizon	None
ASR Relocation	20-year planning horizon	None
Runway 35 PBN/RNAV	5-year planning horizon	Runway extension
Runway 26 PBN/RNAV	5-year planning horizon	None
New Parallel Taxiway	5-year planning horizon	Runway extension
Taxiway Replacement	Incremental implementation	None
Taxiway D Upgrade (East of Runway 17-35)	5-year planning horizon	None
Taxiway D Extension	10-year planning horizon	None
Construct Airside Perimeter Road Segments	Incremental implementation	None
Fuel Facility Relocation	5-year planning horizon	None
Overall Terminal Building Expansion	Incremental implementation	None
Terminal Bag Claim Lobby Expansion	5-year planning horizon	None
Terminal Bag Make-up Expansion	10-year planning horizon	None
Holdroom Reconfiguration	5-year planning horizon	None
Curbside Reconfiguration	Incremental implementation	None
Garage Construction	20-year planning horizon	Economy Lot 1 Expansion
Economy Lot 1 Expansion	20-year planning horizon	None
Employee Lot Relocation	Beyond 20-year horizon	Fuel facility relocation
GAF FIS	5-year planning horizon	None
T-Hangar Expansion	Incremental implementation	None
GA Fuel Facility Implementation	5-year planning horizon	None
New Corporate GA Apron and Hangars	Incremental implementation	None
Helicopter Parking Relocation to Existing Apron	5-year planning horizon	None
New Helicopter Parking Apron	5-year planning horizon	None
Consolidated Cargo Complex	TBD	Land acquisition
Demolish Abandoned TRACON Building	20-year planning horizon	None

Source: RS&H, 2017

5.11 PRELIMINARY FINANCIAL FEASIBILITY

The total implementation cost of the Master Plan Recommended projects is described in *Table 5-34*.

Table 5-35 presents a summary of the financial results from this preliminary financial feasibility analysis with specific years selected to highlight the results based on five-year increments. The financial feasibility analysis will be presented in greater detail in *Working Paper 8*. Most of the projects are assumed to be online by the end of fiscal year (FY) 2022 periods, and the associated costs are shown in the FY 2023 periods and beyond. Discussed below are the financial results for each of the major areas.

Note that the enplaned passenger forecast figures described in *Table 5-35* represents a revised forecast based on actual demand in 2018.

TABLE 5-34
RECOMMENDED AIRPORT DEVELOPMENT ALTERNATIVE ROM COSTS

	Implementation Cost
Recommended Airside Alternative	$52.6M
Recommended Terminal Alternative	$39.4M
Recommended Curbside Alternative	$0.9M
Recommended Parking Alternative	$27.8M
Recommended General Aviation Alternative	$26.9M
Recommended Cargo Alternative	$24.7M
Total ROM Cost	$172.3M

Source: RS&H, 2017
Notes: Numbers may not sum due to rounding.

TABLE 5-35
PRELIMINARY FINANCIAL FEASIBILITY ANALYSIS

	2017 Actual	2018 Estimated	2019 Budget	2020 Projected	2025	2030	2035
Enplaned Passenger Forecast	**835,000**	**850,000**	**900,000**	**948,000**	**1,073,000**	**1,215,000**	**1,376,000**
Passenger Airlines Rents and Fees							
Airline Terminal Building rents	$ 2,845,000	$ 2,430,000	$ 2,690,000	$ 2,709,000	$ 3,191,000	$ 3,025,000	$ 2,618,000
Apron Area rents	$ 611,000	$ 750,000	$ 720,000	$ 645,000	$ 686,000	$ 720,000	$ 770,000
Loading Bridge Use Fee	$ 359,000	$ 530,000	$ 322,000	$ 297,000	$ 349,000	$ 372,000	$ 397,000
BHS Use Fee	$ 11,000	$ 1,125,000	$ 1,079,000	$ 1,097,000	$ 1,180,000	$ 1,269,000	$ 1,367,000
Airlines Landing Fees	$ 2,074,000	$ 598,000	$ 594,000	$ 2,212,000	$ 3,581,000	$ 2,276,000	$ 2,420,000
Total Passenger Airlines Rents and Fees	**$ 5,900,000**	**$ 5,433,000**	**$ 5,405,000**	**$ 6,960,000**	**$ 8,987,000**	**$ 7,662,000**	**$ 7,572,000**
Average Cost per Enplaned Passenger	**$ 7.07**	**$ 6.39**	**$ 6.01**	**$ 7.34**	**$ 8.38**	**$ 6.31**	**$ 5.50**
Cargo Airlines Fees							
Landing Fees	$ 230,000	$ 75,000	$ 75,000	$ 267,000	$ 412,000	$ 243,000	$ 242,000
Cargo Apron Fees	$ 7,000	$ 87,000	$ 107,000	$ 110,000	$ 237,000	$ 255,000	$ 273,000
Total Cargo Airline Fees	**$ 237,000**	**$ 162,000**	**$ 182,000**	**$ 377,000**	**$ 649,000**	**$ 498,000**	**$ 515,000**
Total Airline Rents and Fees	**$ 6,137,000**	**$ 5,595,000**	**$ 5,587,000**	**$ 7,337,000**	**$ 9,636,000**	**$ 8,160,000**	**$ 8,087,000**
Airport Revenue							
Airline Rents and Fees	$ 6,137,000	$ 5,595,000	$ 5,587,000	$ 7,337,000	$ 9,636,000	$ 8,160,000	$ 8,087,000
Non-Airline Revenue and Transfers	$ 22,412,000	$ 24,003,000	$ 22,327,000	$ 21,467,000	$ 25,509,000	$ 28,019,000	$ 31,397,000
Gross Revenue	**$ 28,549,000**	**$ 29,598,000**	**$ 27,914,000**	**$ 28,804,000**	**$ 35,145,000**	**$ 36,179,000**	**$ 39,484,000**
Less Operation and Maintenance Expense	$ 12,399,000	$ 15,434,000	$ 16,738,000	$ 17,050,000	$ 19,923,000	$ 21,476,000	$ 23,142,000
Less Restricted PFC Funds	$ 1,122,000	$ 1,707,000	$ 1,985,000	$ 2,236,000	$ 591,000	$ 1,189,000	$ 1,861,000
Less Restricted CFC Funds	$ 1,711,000	$ 1,597,000	$ 1,547,000	$ 1,716,000	$ 1,280,000	$ 2,181,000	$ 2,669,000
Net Airport Revenue	**$ 13,317,000**	**$ 10,860,000**	**$ 7,644,000**	**$ 7,802,000**	**$ 13,351,000**	**$ 11,333,000**	**$ 11,812,000**
Debt Service Requirements:							
Existing Debt Service							
Bond Fund:							
2008 PFC Eligible	$ 2,133,000	$ 1,817,000	$ -	$ -	$ -	$ -	$ -
2008 Series Airport Revenue Bonds	$ 506,000	$ 454,000	$ -	$ -	$ -	$ -	$ -
2010 Series Airport Revenue Bonds	$ 1,302,000	$ 1,300,000	$ -	$ -	$ -	$ -	$ -
Bank Notes:							
2012 Bank Note	$ 232,000	$ 280,000	$ -	$ -	$ -	$ -	$ -
2015 Bank Loan Refunding Note	$ 1,221,000	$ 1,196,000	$ 1,217,000	$ 1,217,000	$ 1,219,000	$ -	$ -
2017 Series Airport Bank Note	$ -	$ -	$ 700,000	$ 693,000	$ 722,000	$ -	$ -
2018 Series Airport Bank Note (PFC)	$ -	$ -	$ 1,718,000	$ 1,718,000	$ 1,720,000	$ 1,714,000	$ 1,714,000
2018 Series Airport Note	$ -	$ -	$ 430,000	$ 430,000	$ 430,000	$ 428,000	$ 428,000
Existing Debt Service	**$ 5,394,000**	**$ 5,047,000**	**$ 4,065,000**	**$ 4,058,000**	**$ 4,091,000**	**$ 2,142,000**	**$ 2,142,000**
Proposed Debt Service							
Series 2021 Bonds - MP Update Projects:							
2021 Series Airport Revenue Bonds (PFC)	$ -	$ -	$ -	$ -	$ 2,164,000	$ 2,164,000	$ 2,164,000
2021 Series Airport Revenue Bonds	$ -	$ -	$ -	$ -	$ 2,254,000	$ 2,254,000	$ 2,254,000
Proposed Debt Service Requirements	**$ -**	**$ -**	**$ -**	**$ -**	**$ 4,418,000**	**$ 4,418,000**	**$ 4,418,000**
Total Debt Service Requirements	**$ 5,394,000**	**$ 5,047,000**	**$ 4,065,000**	**$ 4,058,000**	**$ 8,509,000**	**$ 6,560,000**	**$ 6,560,000**
Debt Service Coverage	**$ 2.47**	**$ 2.15**	**$ 1.88**	**$ 1.92**	**$ 1.57**	**$ 1.73**	**$ 1.80**

Source: Mike Maroney & Associates, Inc., 2018; City of Pensacola, 2018

5.12 NONAERONAUTICAL LAND USE DESIGNATIONS

Airports often rely on nonaeronautical uses of airport property to provide alternate sources of revenue. These nonaeronautical land areas support the ability of the airport to be financially self-sufficient.

Airports that accept grants under the Airport Improvement Program (AIP) have agreed to comply with certain Federal policies included in each AIP grant agreement. These policies often restrict all federally obligated land to aeronautical uses. However, the Airport Compliance Manual indicates that airports can use specific lands approved by the FAA as nonaeronautical land uses to generate revenue to support the airport's aviation needs. The airport must demonstrate it has sufficient space designated aeronautical purposes to meet the demand in order to designate supplementary land as nonaeronautical.

The FAA requires certain criteria must be met and maintained for all nonaeronautical land uses. Per FAA Federal Grant Assurance 24, as described in FAA Order 5190.6B, *Airport Compliance Manual*, an airport is obligated to maintain a fee and rental structure for the facilities and services being provided on these properties. This allows the airports to charge Fair Market Value for nonaeronautical activities.

Nonaeronautical properties should also always remain in FAA concurrence. The airport must maintain control of the land use (e.g., lease agreement, deed restriction) to ensure non-compatible land uses do not arise, which may interfere with airport operation. Lease agreements typically also include provisions for the leasehold to revert back to the airport in the event that the property is needed for aeronautical reasons.

It is important to identify which portions of the airport property may be considered for nonaeronautical land uses and pre-cleared for potential development as nonaeronautical. Factors in this determination include that land should be located beyond RPZs and comply with BRL constraints. The purpose of the RPZ is to enhance the protection of people and property on the ground. The FAA indicates that the RPZ should be clear of all facilities supporting incompatible land uses. Incompatible land uses are those that generally support the congregation of people, transportation facilities, or large scale infrastructure. The BRL identifies suitable and unsuitable locations for buildings on airport property. The BRL delineation is based on the location of RPZs, the Obstacle Free Zones, OFAs, RVZ, NAVAID critical areas, areas required for Terminal Instrument Procedures (TERPS), and ATCT clear line of site. The BRL represents the location at which buildings can be 35 feet tall.

Several sites of airport property at PNS can be designated for nonaeronautical use given the aforementioned constraints. These areas are depicted in *Figure 5-26*. These nonaeronautical land areas are not needed to support the aeronautical function of the airport throughout the planning horizon. These nonaeronautical land areas have limited utility as an aeronautical use due to their distance from and access to the airfield. All of the proposed nonaeronautical land areas are outside of the RPZs. Most of the recommended nonaeronautical uses are outside the BRL. Parcel D is located inside the BRL but beyond the Runway 8 RPZ. Location within the BRL does not prohibit the use of the property; however, it restricts the height of buildings within the BRL area to 35 feet. Buildings located outside of the BRL on this property are less restricted on height limits.

PNS intends to lease these land areas, which allows oversight and management of the type of development to ensure development is compatible airport operations. PNS has no intention of selling or disposing of these land areas.

PNS has hired the commercial real estate firm SVN to assist in soliciting tenants for the available nonaeronautical areas. Currently SVN has listings on Parcels A and D and a portion of parcel C depicted in *Figure 5-26*. All parcels are currently available to be leased under the zoning code ARZ or Airport Restricted Zoning. Parcels B, E, and F have not yet been made available for development.

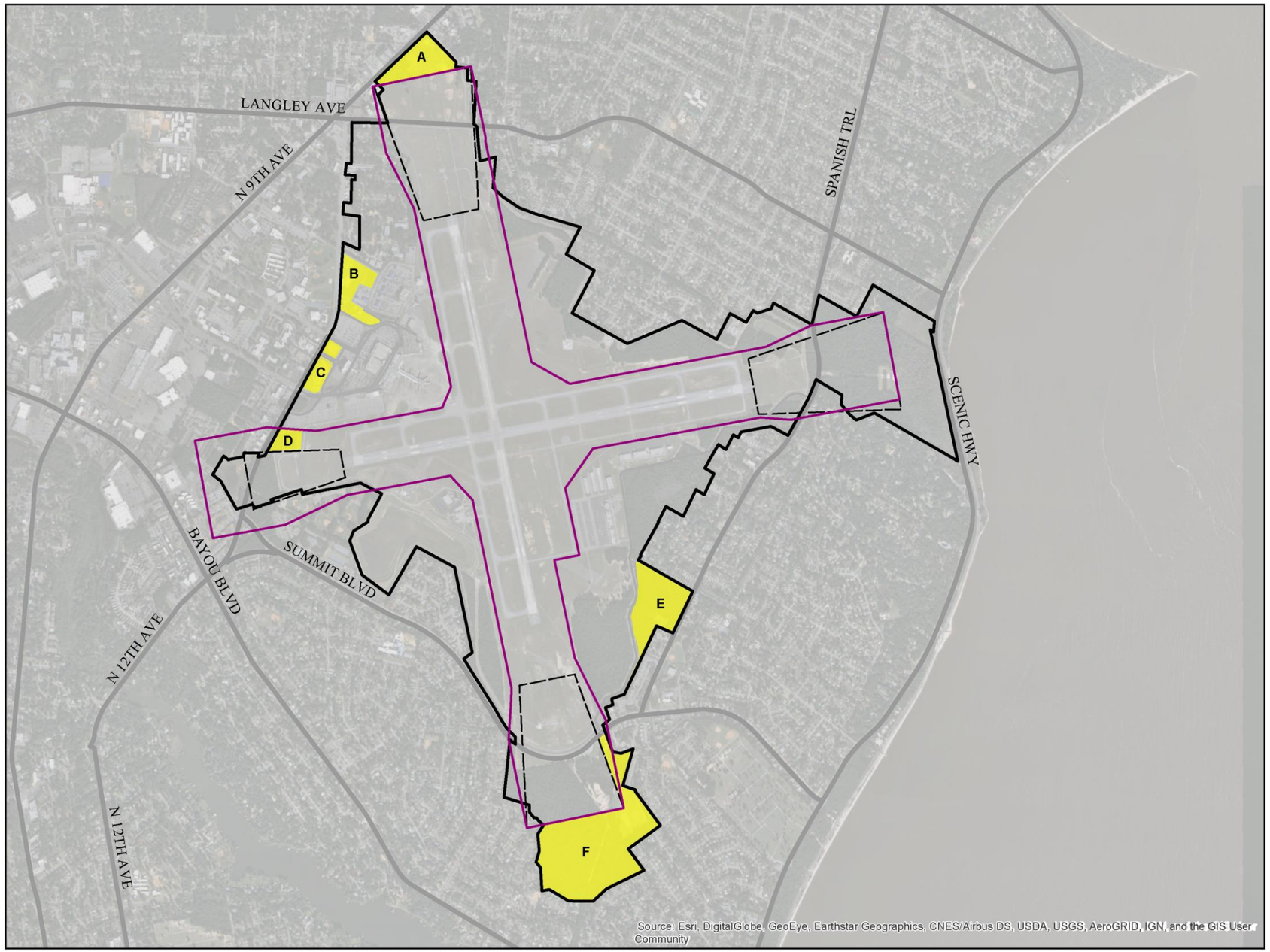


FIGURE 5-26
NONAERONAUTICAL LAND USES

Legend

- Building Restriction Line
- Airport Property Boundary
- Runway Protection Zone
- Nonaeronautical Sites
  - A. 14.4 Acres
  - B. 11.9 Acres
  - C. 6.7 Acres
  - D. 4.4 Acres
  - E. 22.5 Acres
  - F. 66.8 Acres

PENSACOLA International Airport

Source: Esri Imagery, 2017; RS&H, 2017

0 1,000 2,000 Feet

N

RS&H

5.13 FUTURE LAND USE PLAN

The FAA allows aeronautical land to be developed for nonaeronautical use on an interim basis (less than 5 years) as approached by the FAA Airport District Office.

Note that approval of an Airport Layout Plan does not necessarily constitute FAA approval to use land for Nonaeronautical purposes. However, for Nonaeronautical interim use per FAA Order 5190.6B, "the ADOs and regional airports divisions may consent to the interim use (not more than five (5) years) for nonaviation purposes of dedicated aeronautical land.

Any underutilized land areas may be used for nonaeronautical purpose

Aviation Development LU is ripe for this

Competing development applications should favor the aviation use

The Future Land Use Plan represents the highest and best land use for PNS and provides the framework for making decisions regarding future land development at PNS by identifying the most appropriate location to accommodate each major development component. The Future Land Use Plan reflects the proposed layout depicted in the recommended airport development alternative.

The Future Land Use Plan is intended to be use as a document to guide airport decision-making regarding locations of future development. The following criteria were considered while preparing the highest best land use.

- Facility requirements
- Airfield access requirements
- Compatibility with adjacent land uses
- Landside access and parking
- Potential environmental factors
- Financial implications

The highest and best land use configuration is depicted in *Figure 5-27*. The following land use designations were used:

- Airfield
- Aviation Development
- Passenger Terminal Area
- Airport Support
- MRO Development
- Rental Car (RAC) Service Center
- Fuel Farm
- Stormwater and Wetlands
- Airport and 12th Avenue Development
- Mixed-Use Development

- Commercial Development
- Reserved

Airfield represents the area that accommodates the continued safe and efficient operation of the airfield. This includes protection of clear areas (e.g., Object Free Areas, Runway Protection Zones, and navigational aids).

Aviation Development represents aeronautical development uses that accommodate aircraft. This includes general aviation facilities and air cargo facilities. Aircraft access to the "Airfield" land use is required for this land use.

Passenger Terminal Area represents areas dedicated to the continued operation and expansion of the passenger terminal facility. This includes the passenger terminal building and the associated landside area.

Airport Support represents aeronautical development that does not directly accommodate aircraft. This includes functions such as airport maintenance and the Aircraft Rescue and Firefighting Facility. Vehicle access to the "Airfield" land use is required for this land use.

Maintenance, Repair, and Overhaul (MRO) Development represents the maintenance of aircraft by third-party operators. These aeronautical development areas accommodate aircraft. This includes the scheduled, heavy maintenance that is conducted by third-party tenants. Facilities conducting ad-hoc and small aircraft maintenance are not included in this land use. Aircraft access to the "Airfield" land use is required for this land use.

Rental Car Service Center represents the area that is used by rental car operators to fuel, clean, and service their vehicles.

Fuel Farm represents the area that supports the aircraft and vehicle fuel storage facility for PNS.

Stormwater and Wetlands represents undeveloped areas that support the water management goals of PNS. These areas are not available future development.

Airport and 12th Avenue Development represents nonaeronautical development area along Tippin Avenue/North 12th Avenue.

Mixed-Use Development represents nonaeronautical development area along Tippin Avenue/North 12th Avenue.

Commercial Development represents nonaeronautical development area along Tippin Avenue/North 12th Avenue.

Reserved represents land area that does not have a near-term need for aeronautical development.

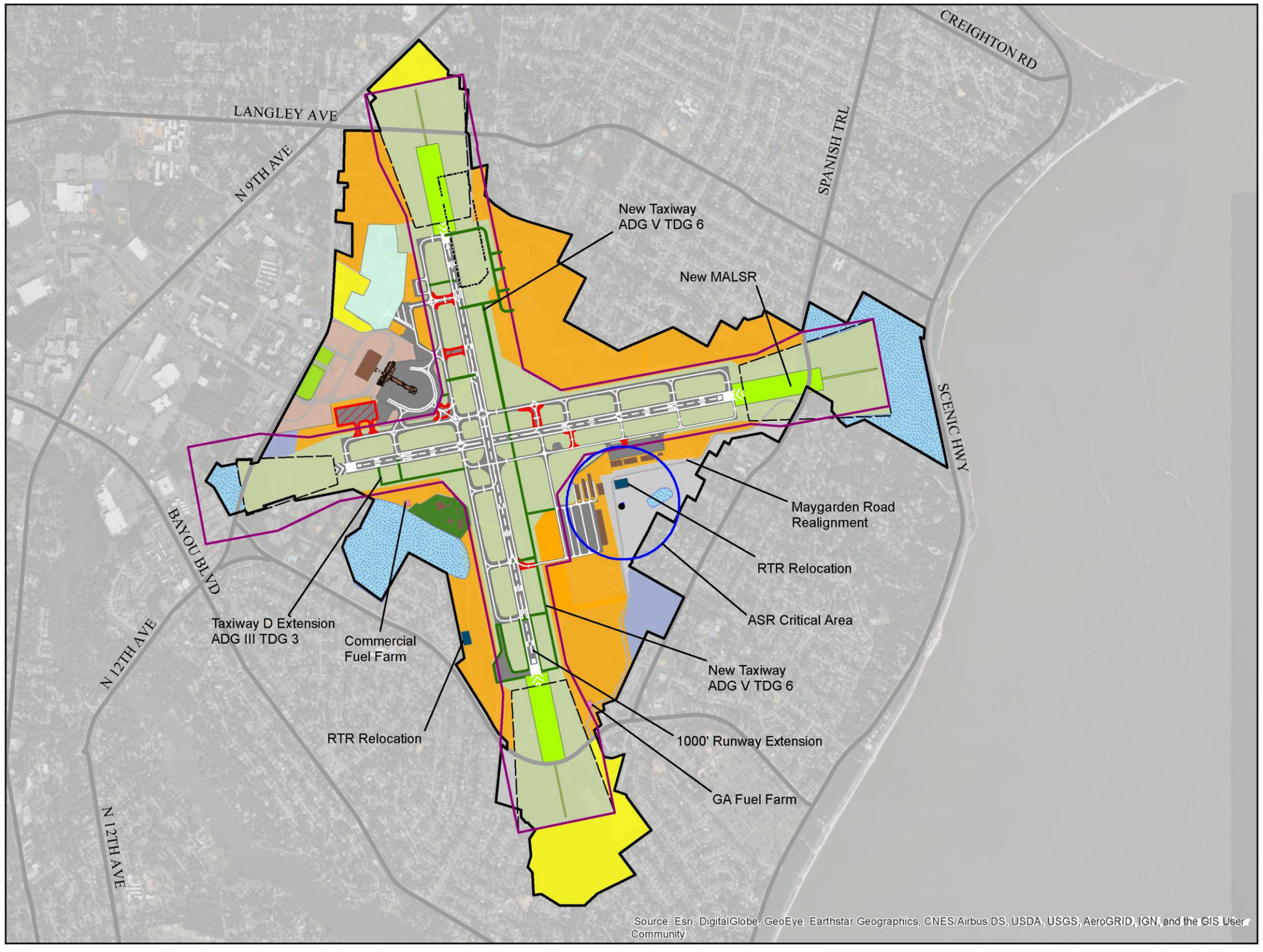


FIGURE 5-27
FUTURE LAND USE PLAN

Legend

- Airport Surveilance Radar
- ASR Critical Area
- Building Restriction Line
- Runway Protection Zone
- New Airfield Pavements
- Airport Property Boundary
- RTR Site
- RAC Service Facility
- Fuel Farm
- Airport Support
- MALSR
- Stormwater and Wetlands
- Airfield Pavement Removal
- Passenger Terminal Area
- Airfield
- Aviation Development
- Reserved
- Mixed-Use Development
- Airport & 12th Development
- Commercial Development

0 1,000 2,000 Feet

N

PENSACOLA International Airport

Source: Esri Imagery, 2017; RS&H, 2017

RS&H

APPENDIX A ALTERNATIVES EVALUATION CRITERIA

A.1 INTRODUCTION

This section describes the Development Alternatives Evaluation Criteria. The Evaluation Criteria are used as a predetermined rubric against which Concepts and Development Alternatives are evaluated. This process is undertaken to support the systematic selection of the preferred development option(s) that meets the existing and future needs of Pensacola International Airport (PNS).

The Evaluation Criteria were identified prior to preparation of the development alternatives because it allows for consensus-building regarding important components of the Development Alternatives. The Evaluation Criteria were prepared based on the PNS Master Plan Goals and Objectives, as identified in *Working Paper 1*. A list of study Goals and Objectives were generated with the purpose of identifying the desired accomplishments of the Master Plan Update process. The study Goals are broad foundational statements that represent the aspirations for PNS during the Master Plan process.

The Goals and Objectives are a reflection of the key airport issues that the Master Plan endeavors to resolve. Therefore, it is apropos to use the Goals and Objectives as the basis of the Evaluation Criteria. The Goals remain constant in the Evaluation Criteria. Each Goal comprises several Criteria. The Criteria are measurable benchmarks by which accomplishment of the Goals can be gauged for each Development Alternative. Examples are also included to provide specific illustration for each Criterion. The purpose of the Examples is to guide the evaluator through specific circumstances for which each Criterion may apply. This supports the ability for evaluators have the same frame of reference when evaluating the Concepts and Development Alternatives. It should be noted, however, that the Examples do not represent an exhaustive list. Therefore, evaluators should consider other ways in which each Criterion can be used to evaluate the Concept or Development Alternative. The study Objectives form the basis of the Criteria and Examples.

A.2 ALTERNATIVES EVALUATION CRITERIA

The draft alternatives evaluation criteria are as follows:

SAFETY GOAL - *Conform to industry regulations and guidelines*

- Criterion: Meets or exceeds standards to enhance safety
  - Example: Does the alternative adhere to FAA design standards?
  - Example: Does the alternative resolve nonstandard airfield configuration layouts to enhance safety?
- Criterion: Enhances safety through application of industry best practices
  - Example: Does the alternative incorporate best practices for airfield safety and pilot situational awareness?
  - Example: Does the alternative assess airspace conditions to promote safe use of navigable airspace?
  - Example: Does the alternative enhance roadway and pedestrian safety?

OPERATIONAL EFFICIENCY GOAL - *Accommodate short-term (2020), intermediate-term (2025), and long-term (2035) demand*

- Criterion: Maintains or enhances operational efficiency
  - Example: Does the alternative establish a plan for airfield infrastructure to support future development to accommodate the critical aircraft?
  - Example: Does the alternative accommodate forecast demand such that the airport operates efficiently?
  - Example: Does the alternative include adequate capacity for the terminal building to accommodate demand through planning horizon?
  - Example: Does the alternative ensure the terminal concourse has adequate capacity to accommodate aircraft parking during peak hour?
  - Example: Does the alternative enhance overall user experience, level or service, and/or level of comfort?
  - Example: Does the alternative enhance landside wayfinding and limit roadway decision points?
- Criterion: Supports redundancy to enhance operational flexibility
  - Example: Does the alternative provide secondary precision instrument approach capabilities?
- Criterion: Strategically balances demand with supply using alternative methods
  - Example: Does the alternative assess vehicle parking alternatives to balance demand between different price point options?
  - Example: Does the alternative include reconfiguration of terminal curbside to reduce congestion?
  - Example: Does the alternative enhance rental car ready / return facilities to increase efficiency?
- Criterion: Supports efficient operating environment for all aviation users
  - Example: Does the alternative evaluate long-term air cargo development options based upon forecast cargo activity?
  - Example: Does the alternative create an efficient operating environment for helicopter operations?
  - Example: Does the alternative enhance usability of general aviation facilities?
  - Example: Does the alternative implement a corporate general aviation facility strategy?
- Criterion: Considers flexibility and adaptability to support future potential industry trends
  - Example: Does the alternative consider impacts of potential TSA directives for employee screening?
  - Example: Does the alternative evaluate impacts of future passenger processing technologies?
  - Example: Does the alternative assess impacts of corporate general aviation growth trends?

STRATEGIC LAND MANAGEMENT GOAL - *Promote highest and best land use*

- Criterion: Encourages compatibility between on- and off-airport land uses
  - Example: Does the alternative locate complementary land use options adjacent to the passenger terminal?
  - Example: Does the alternative comply with the City and County Comprehensive Plans?
- Criterion: Promotes highest and best land use to support efficient airport operations
  - Example: Does the alternative include highest and best use of Airport Commerce Park?
  - Example: Does the alternative assess potential for relocating / consolidating Remote Transmitter/Receiver (RTR) sites that currently diminish other land development opportunities?

ENVIRONMENTAL AWARENESS GOAL - *Further environmental awareness*

- Criterion: Recognize noise impacts
  - Example: Does the alternative minimize or mitigate noise impacts on sensitive nearby uses?
- Criterion: Environmental compatibility
  - Example: Does the alternative coordinate airport development with community land use plans?
  - Example: Does the alternative minimize aircraft/airport impact on airport neighbors
- Criterion: Employ environmental sustainability initiatives
  - Example: Does the alternative incorporate use of multi-purpose buildings?
  - Example: Does the alternative use in-fill development?

FISCAL SUSTAINABILITY GOAL - *Maintain fiscal sustainability*

- Criterion: Cost effectiveness
  - Example: Is the alternative cost effective?
  - Example: Is the development financially self-sustaining?
  - Example: Does the alternative include adaptive reuse of existing facilities?
- Criterion: Minimize costs
  - Example: Does the alternative minimize increases to airline cost per enplaned passenger in the near- and intermediate-term?
  - Example: Does the alternative minimize increases in new airport debt in near- and intermediate-term?
- Criterion: Revenue generation
  - Example: Does the alternative enhance non-airline revenue by employing innovative revenue development strategies?

ECONOMIC GROWTH GOAL - *Facilitate regional economic growth through airport development and operation*

- Criterion: Enhance regional transportation connections to PNS
  - Example: Does the alternative enhance roadway access to on-airport tenant facilities?

- Criterion: Encourage increased economic impact to community
  - Example: Does on-airport nonaeronautical development support job creation?

A.3 EVALUATION CRITERIA APPLICATION

The Evaluation Criteria were prepared such that each Criterion can be applied to nearly all functional elements on the airport. This allows for universality in applying the Evaluation Criteria. Therefore, the Evaluation Criteria can be applied to terminal area concepts and overall airport development alternatives, for example.

The Evaluation Criteria will be used in tandem with a hierarchical rating system to appraise each Concept or Development Alternative. Each Goal and Criterion may retain the same relative importance to other Goals and Criteria. Alternatively, specific Goals and/or Criterion may be weighted to reflect greater relative importance.

A.4 OTHER ONGOING AIRPORT GOALS

All Goals and Objectives identified in *Working Paper 1* are integral and important to the continued operation of PNS. However, some PNS Goals apply to the ongoing operation of PNS or Goals for the project, rather than the process of evaluating Concepts and Development Alternatives. The following is a list of Goals and Objectives that were not incorporated in the Evaluation Criteria but guide the day-to-day activities of the PNS operation:

Goal: Consider Public Input

- Objective: Share findings and invite general public input through a public involvement workshop
- Objective: Solicit input from Technical Advisory Committee and Citizen Advisory Committee throughout the Master Plan process
- Objective: Review community and other previous studies for applicability to the Master Plan process

Goal: Fiscal Sustainability

- Objective: Match the 5-year CIP to available grants and Capital Improvement account deposits
- Objective: Identify strategies to increase airline revenue generation

Goal: Economic Growth

- Objective: Facilitate healthy partnerships with local business entities

APPENDIX B LONG-TERM AND ULTIMATE TERMINAL DEVELOPMENT OPTIONS

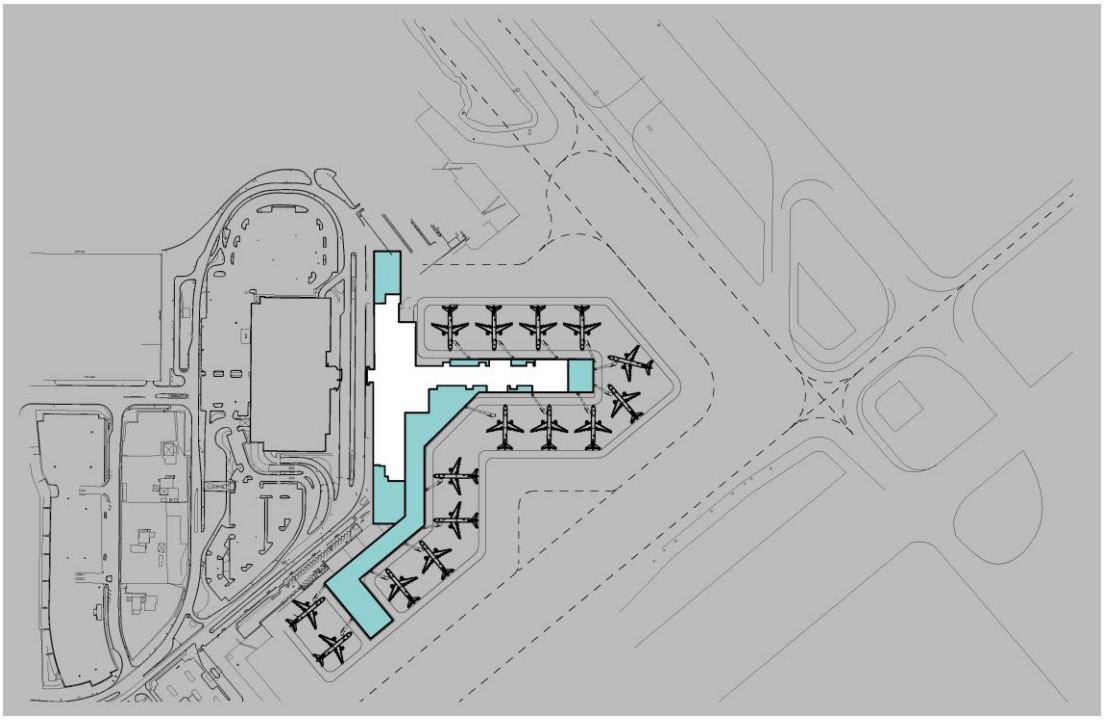
This section describes and depicts layout options for the Long-Term and Ultimate terminal development demand levels. The terminal option layouts are categorized into one of two configurations – pier or linear. The Pier layout options generally exhibit the characteristic of double-loaded concourse configuration where aircraft are parked on either side of a terminal extension. Linear configurations generally exhibit the characteristic of single-loaded concourse configuration where aircraft are parked on one side of the terminal building.

B.1 LONG-TERM TERMINAL DEVELOPMENT OPTIONS

The following represents example configurations to explore the 15-gate configuration associated with the Long-Term demand level. Note that this is not an exhaustive collection of Long-Term terminal development options. Rather, it is proof-of-concept to illustrate configuration options.

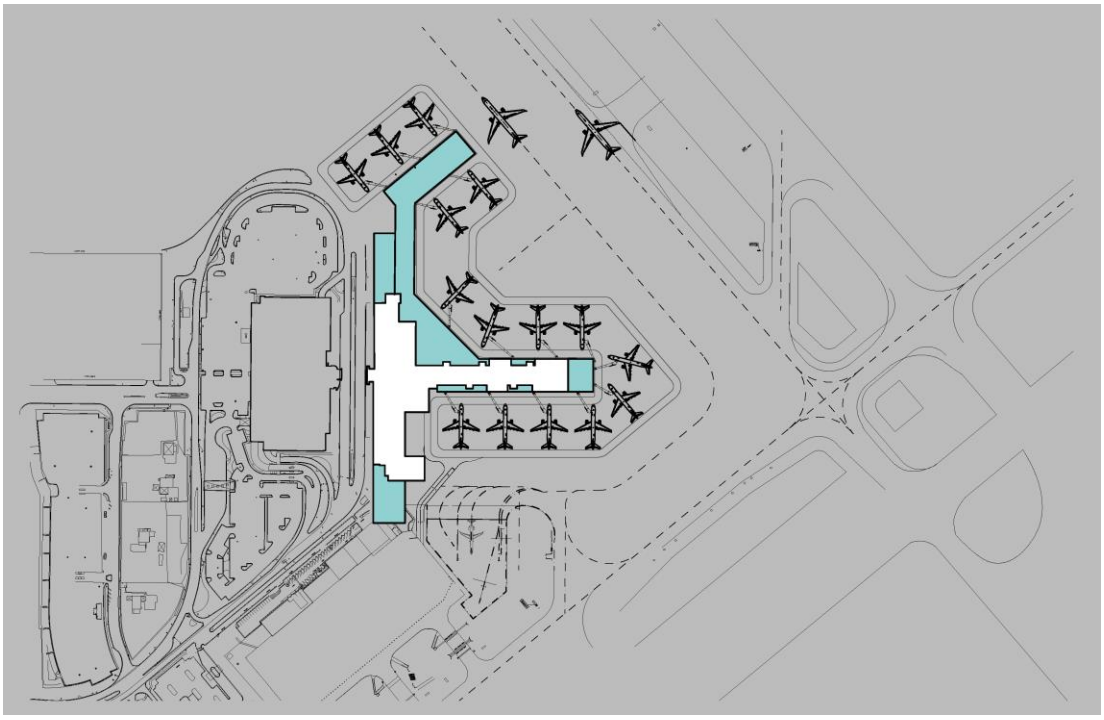
B.1.1 PIER DEVELOPMENT OPTIONS

FIGURE 5-28
LONG-TERM TERMINAL PIER OPTION 1



Source: RS&H, 2017

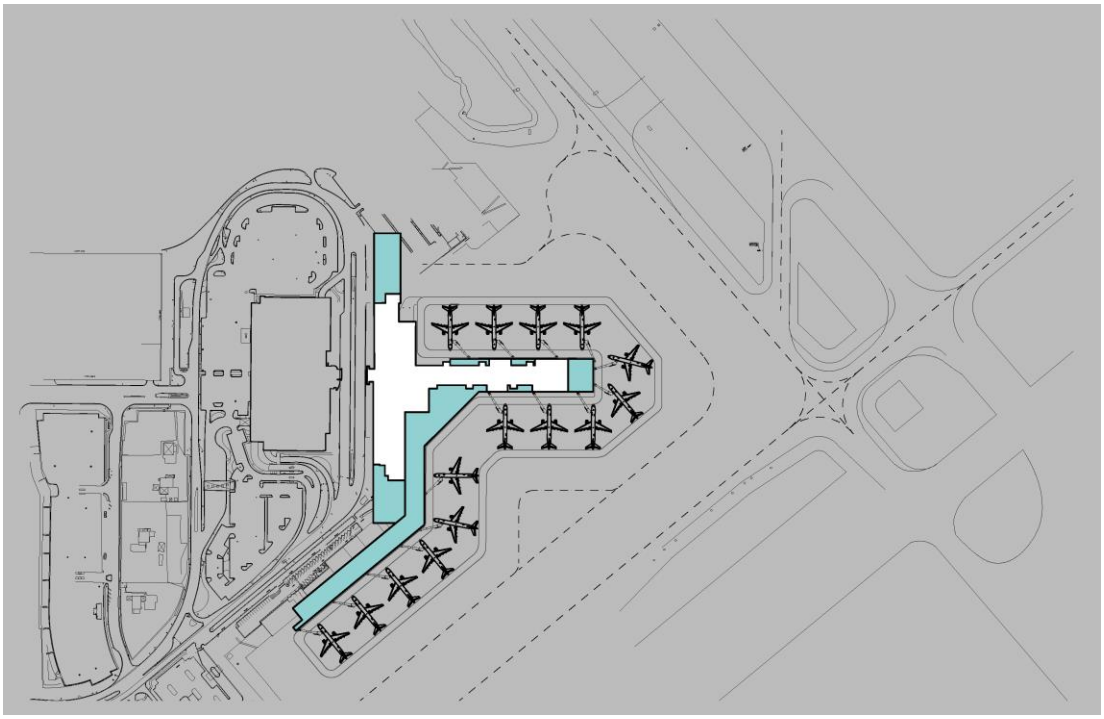
FIGURE 5-29
LONG-TERM TERMINAL PIER OPTION 2



Source: RS&H, 2017

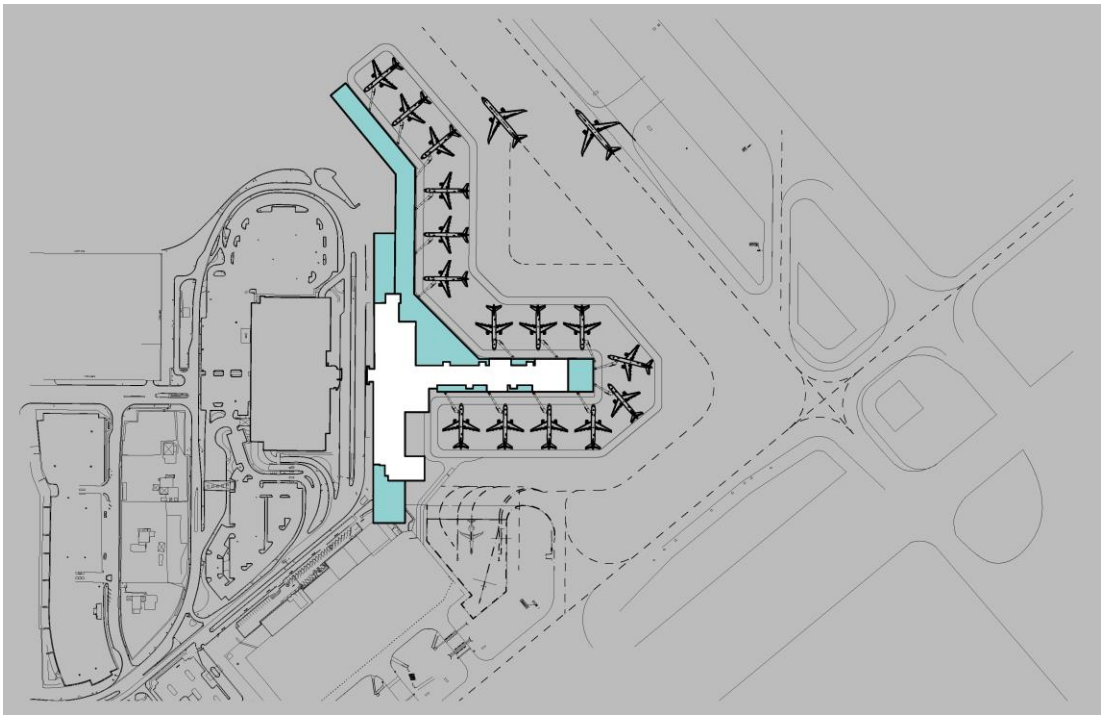
B.1.2 LINEAR DEVELOPMENT OPTIONS

FIGURE 5-30
LONG-TERM TERMINAL LINEAR OPTION 1



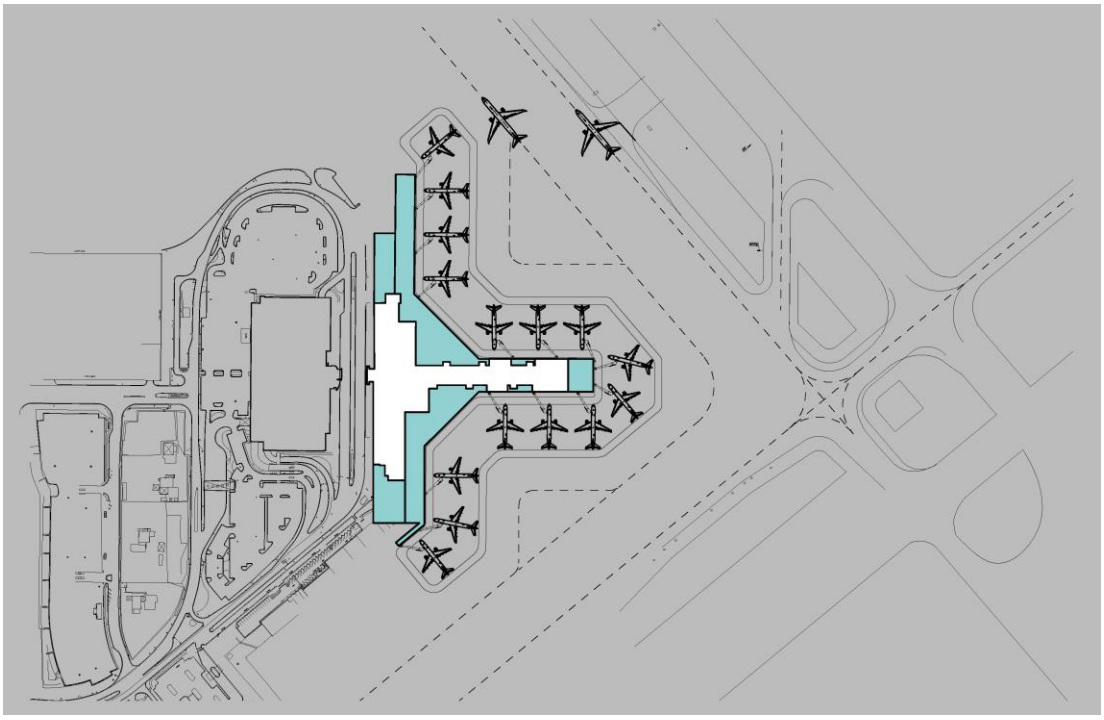
Source: RS&H, 2017

FIGURE 5-31
LONG-TERM TERMINAL LINEAR OPTION 2



Source: RS&H, 2017

FIGURE 5-32
LONG-TERM TERMINAL LINEAR OPTION 3



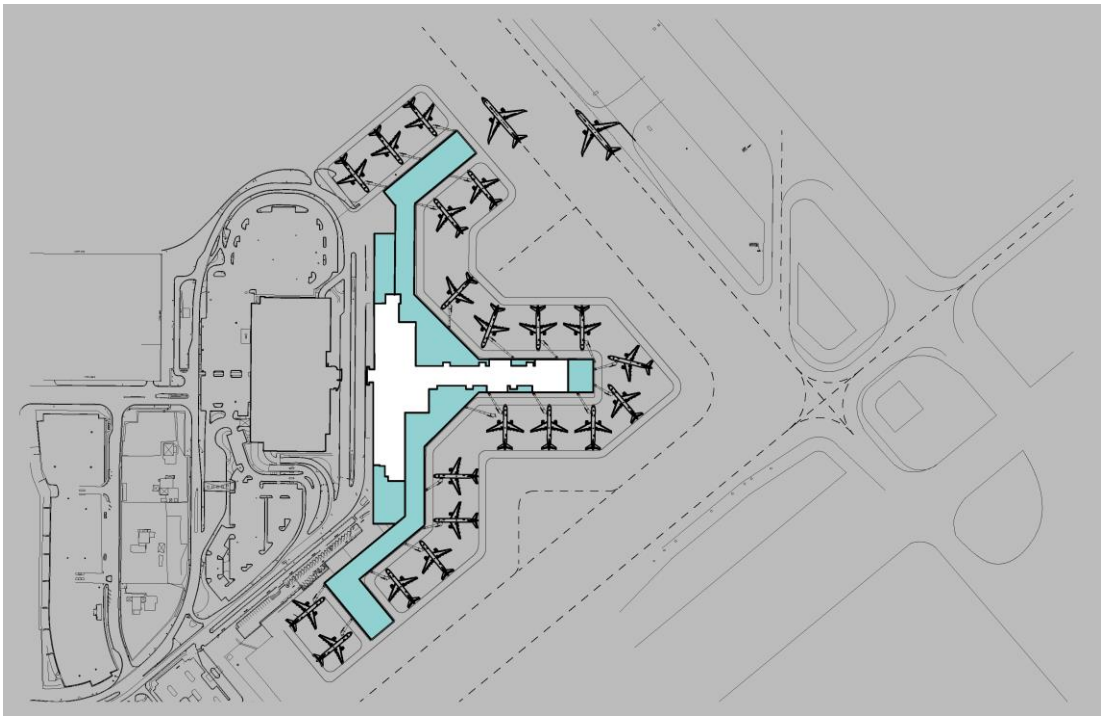
Source: RS&H, 2017

B.2 ULTIMATE TERMINAL DEVELOPMENT OPTIONS

The following represents example configurations to explore the 20-gate configuration associated with the Ultimate buildout. Note that this is not an exhaustive collection of Ultimate terminal development options. Rather, it is proof-of-concept to illustrate configuration options.

B.2.1 PIER DEVELOPMENT OPTIONS

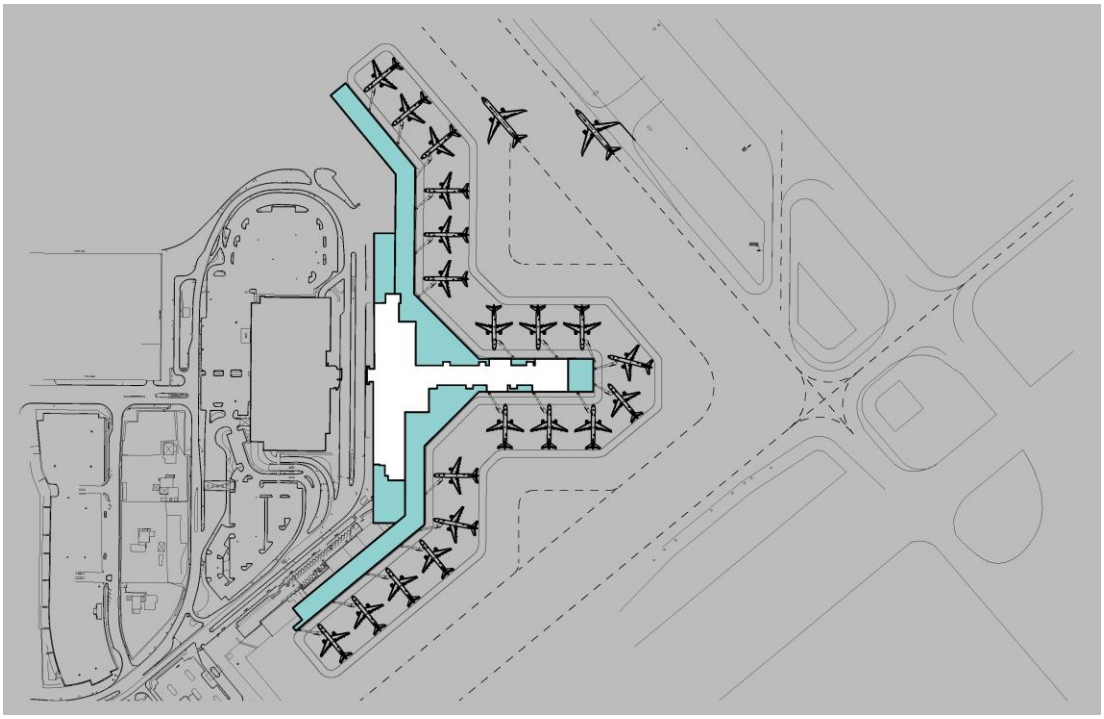
FIGURE 5-33
ULTIMATE TERMINAL PIER OPTION



Source: RS&H, 2017

B.2.2 LINEAR DEVELOPMENT OPTIONS

FIGURE 5-34
ULTIMATE TERMINAL LINEAR OPTION



Source: RS&H, 2017