KANSAS CITY
Wheeler Airport

Airport Master Plan

KANSAS CITY WHEELER DOWNTOWN AIRPORT

COMPARATIVE SAFETY ASSESSMENT (CSA)

May 29, 2024

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Meeting Agenda

#	Agenda Item	Agenda Description	Participants	Start	End	Duration
1.	Introduction	Brief Introductions	Landry/All	9:00	9:15	15 minutes
2.	Logistics	CSA objectives, FAA process, meeting format, ground rules, and participation	Landry/Madison (FAA)	9:15	9:25	10 minutes
3.	Airport Alternatives Presentation	Presentation of the alternatives for the four focus elements	Taylor	9:25	10:00	35 Minutes
4.	Hot Spot #1	Group discussion of Hot Spot 1 alternatives (Taxiway Golf/Runway 4-22)	All	10:00	11:00	1 Hour
5.	Hot Spot #2	Group discussion of Hot Spot 2 alternatives (Taxiway Delta/Lima/Direct Access)	All	11:00	12:00	1 Hour
6.	Lunch	Lunch to be provided	All	12:00	1:00	1 Hour
7.	Taxiway H	Group discussion of Taxiway Hotel alternatives (Non-standard Geometry)	All	1:00	2:00	1 Hour
8.	Landside Alternatives	Group discussion of Potential development of Taxiway Lima parcel	All	2:00	3:00	1 Hour
9.	Contingency	In case any of the discussion extends over the allotted time	All	3:00	3:50	50 minutes
10.	Next Steps	Discuss next steps, FAA process, findings report, and review schedule	Landry/Madison	3:50	4:00	10 minutes
Meeting Duration						**7 hours**

Meeting Ground Rules

In-Person/All

- Allow participants time to complete their question or comment.
- Please do not speak while others are talking so we can accurately capture comments and action items.
- Please follow instruction from the facilitator (Joanne Landry).
- This meeting will be recorded to facilitate meeting summary notes.
- No formal meeting notes will be provided; a Comparative Safety Assessment Report will be sent for review.
- A list of meeting attendees will be provided.

On-Line

- Please mute your system when not speaking.
- Please turn off camera when not speaking.
- We will manage questions and comments through the **chat function**, **raised hand**, and **audio**.

Please send additional follow up questions by email to: Ptaylor@coffmanassociates.com

Comparative Safety Assessment Purpose

The intent of the Comparative Safety Assessment (CSA) is to:

- Gather specific MKC stakeholders to review and discuss specific elements of the master plan alternatives analysis.
- Identify “Pros” and “Cons” of each alternative and to weigh the potential operational safety impacts.
- Arrive at a consensus on a single alternative for each element that will then be reflected on the airport layout plan (ALP).
- Obtain sufficient information and documentation to complete FAA form 5200-8, Safety Assessment Screening for Airport Planning and Development Projects (SAS-1). To be completed by FAA and submitted with the ALP during the FAA ALP approval process.

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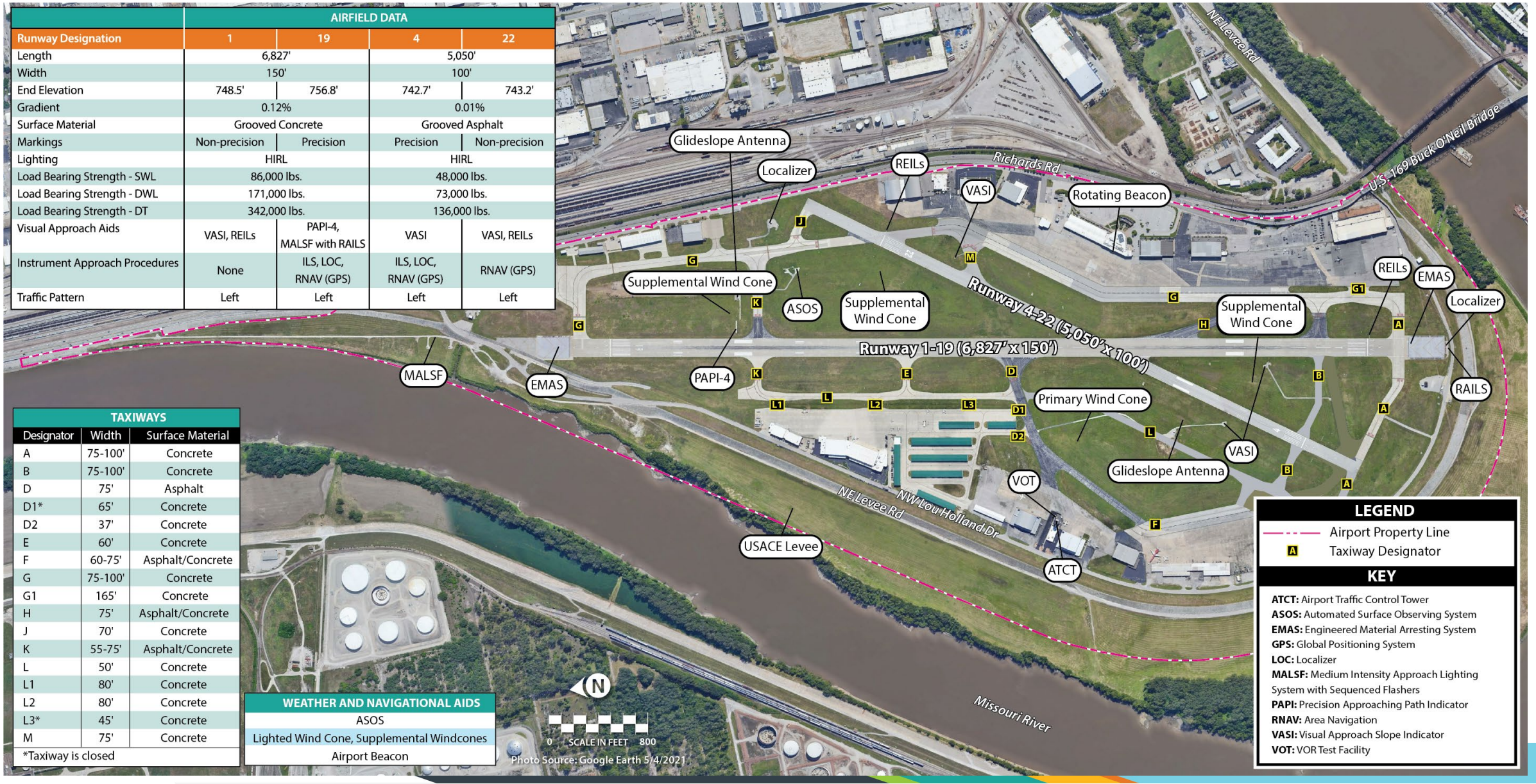
CSA Presentation

Exhibit 1G: Existing Airside Facilities

	AIRFIELD DATA			
Runway Designation	**1**	**19**	**4**	**22**
Length	6,827'		5,050'	
Width	150'		100'	
End Elevation	748.5'	756.8'	742.7'	743.2'
Gradient	0.12%		0.01%	
Surface Material	Grooved Concrete		Grooved Asphalt	
Markings	Non-precision	Precision	Precision	Non-precision
Lighting	HIRL		HIRL	
Load Bearing Strength - SWL	86,000 lbs.		48,000 lbs.	
Load Bearing Strength - DWL	171,000 lbs.		73,000 lbs.	
Load Bearing Strength - DT	342,000 lbs.		136,000 lbs.	
Visual Approach Aids	VASI, REILs	PAPI-4, MALSF with RAILS	VASI	VASI, REILs
Instrument Approach Procedures	None	ILS, LOC, RNAV (GPS)	ILS, LOC, RNAV (GPS)	RNAV (GPS)
Traffic Pattern	Left	Left	Left	Left

TAXIWAYS		
Designator	Width	Surface Material
A	75-100'	Concrete
B	75-100'	Concrete
D	75'	Asphalt
D1*	65'	Concrete
D2	37'	Concrete
E	60'	Concrete
F	60-75'	Asphalt/Concrete
G	75-100'	Concrete
G1	165'	Concrete
H	75'	Asphalt/Concrete
J	70'	Concrete
K	55-75'	Asphalt/Concrete
L	50'	Concrete
L1	80'	Concrete
L2	80'	Concrete
L3*	45'	Concrete
M	75'	Concrete
*Taxiway is closed		

WEATHER AND NAVIGATIONAL AIDS
ASOS
Lighted Wind Cone, Supplemental Windcones
Airport Beacon



LEGEND

Airport Property Line

A Taxiway Designator

KEY

ATCT: Airport Traffic Control Tower
ASOS: Automated Surface Observing System
EMAS: Engineered Material Arresting System
GPS: Global Positioning System
LOC: Localizer
MALSF: Medium Intensity Approach Lighting System with Sequenced Flashers
PAPI: Precision Approaching Path Indicator
RNAV: Area Navigation
VASI: Visual Approach Slope Indicator
VOT: VOR Test Facility

Elements for Discussion

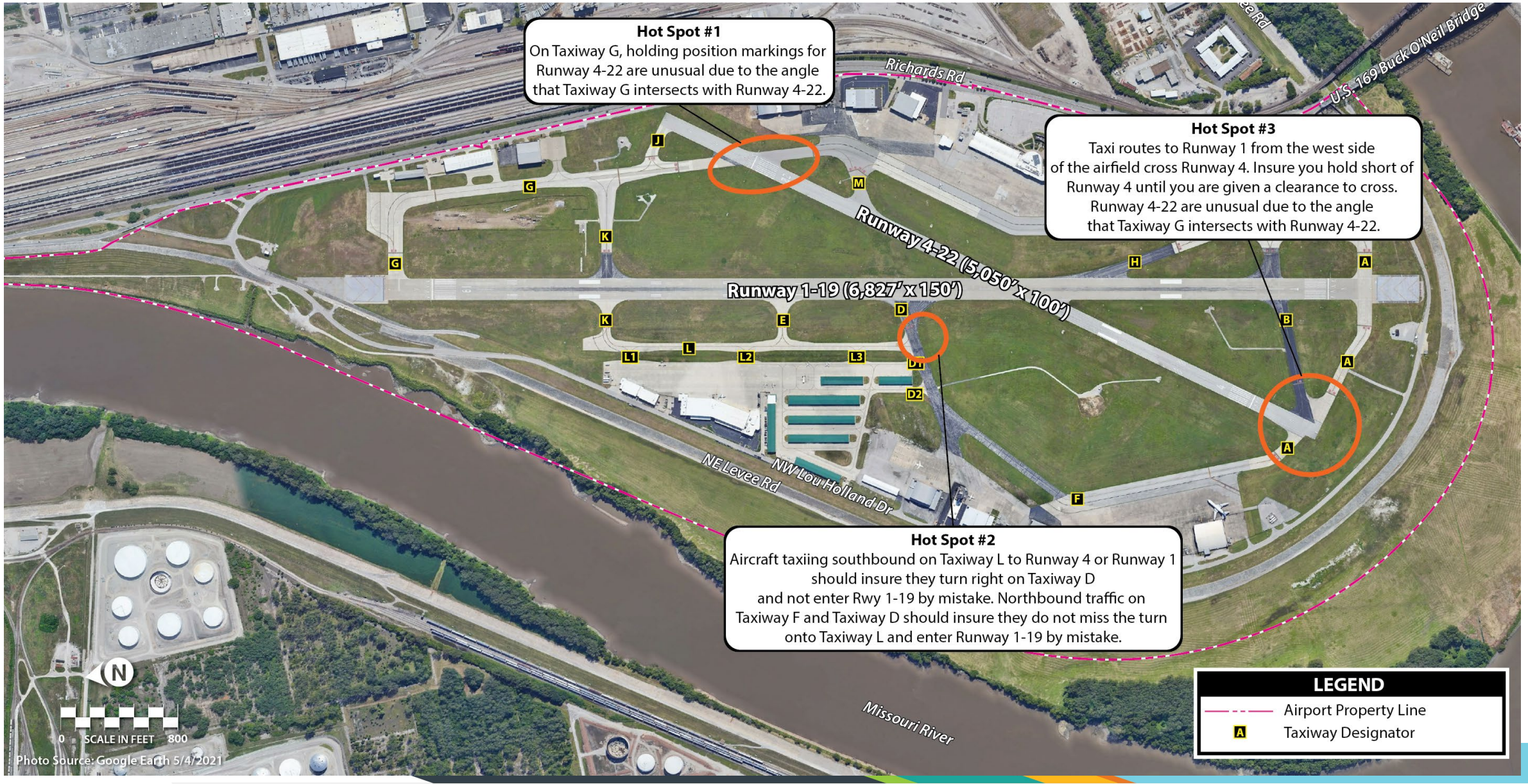
Primary Elements for the CSA

1. Hot Spot #1: Intersection of Taxiway G and Runway 4-22 and associated taxiways
2. Hot Spot #2: Direct access of Taxiway D to Runway 1-19
3. Taxiway H: Angled high-speed taxiway exit
4. Landside Development Alternatives: New development potential adjacent newly opened Taxiway L extension
   - Public road access/Status of Taxiway F
   - Potential hangar layouts/Viewshed from the control tower

Elements not covered today

- Runways: Previous analysis and consensus determined that the runways are to remain at their current length/width.
- Runway Safety Area (RSA): Safety is maximized based on the presence of EMAS
- Hot Spot #3: The newly opened Taxiway L largely mitigates this issue. Completion of Taxiway B provides resolution, and FAA may consider removing this as a designated hot spot.
- Potential instrument approach to Runway 1: This analysis is complete. It is likely feasible and can be pursued by KCAD (typical 2-year timeframe for a new instrument approach).

Exhibit 1J: FAA Hot Spots



Ex 3F: Taxiway Geometry Concerns

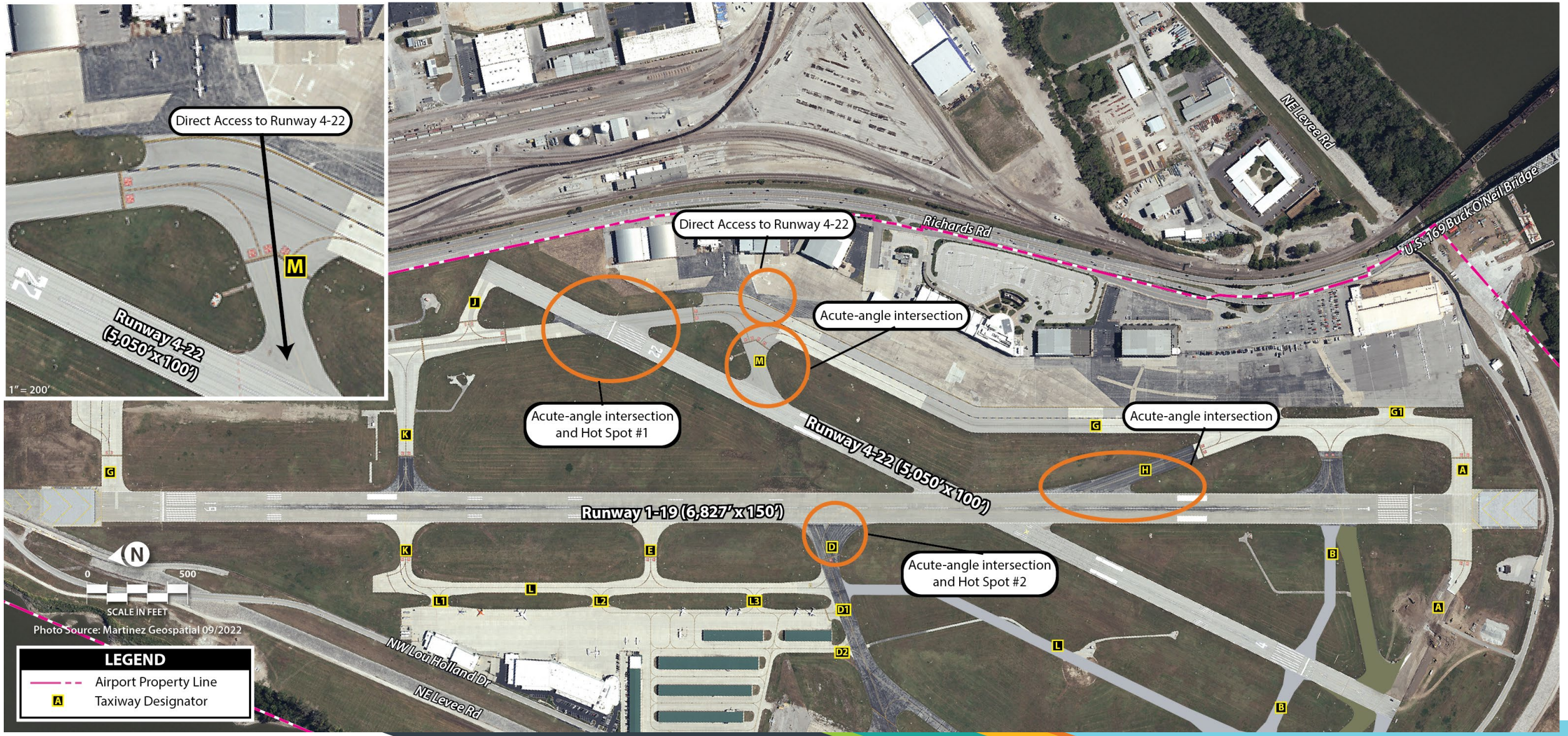


Exhibit 4G: Taxiway Alternative 1

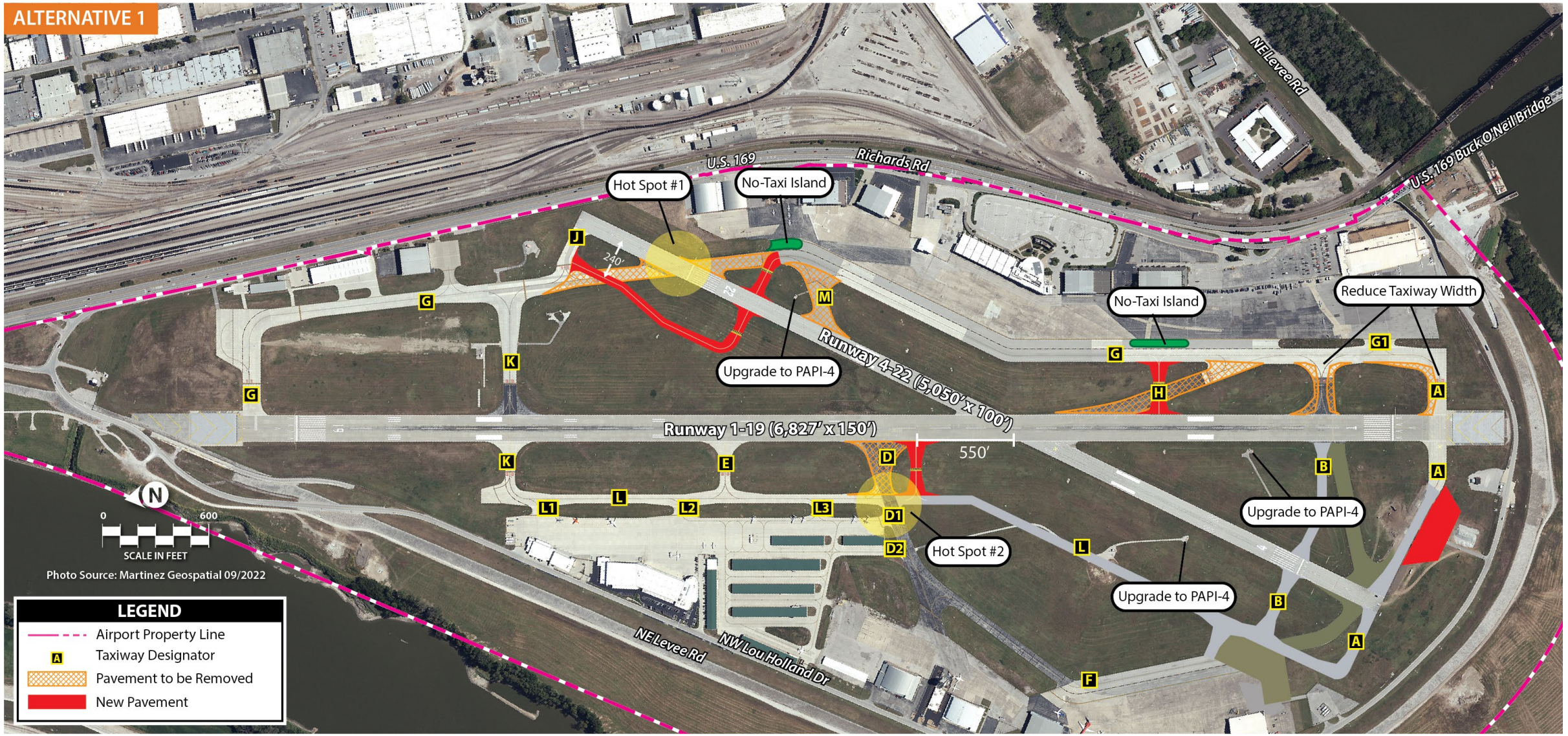


Exhibit 4G: Taxiway Alternative 2

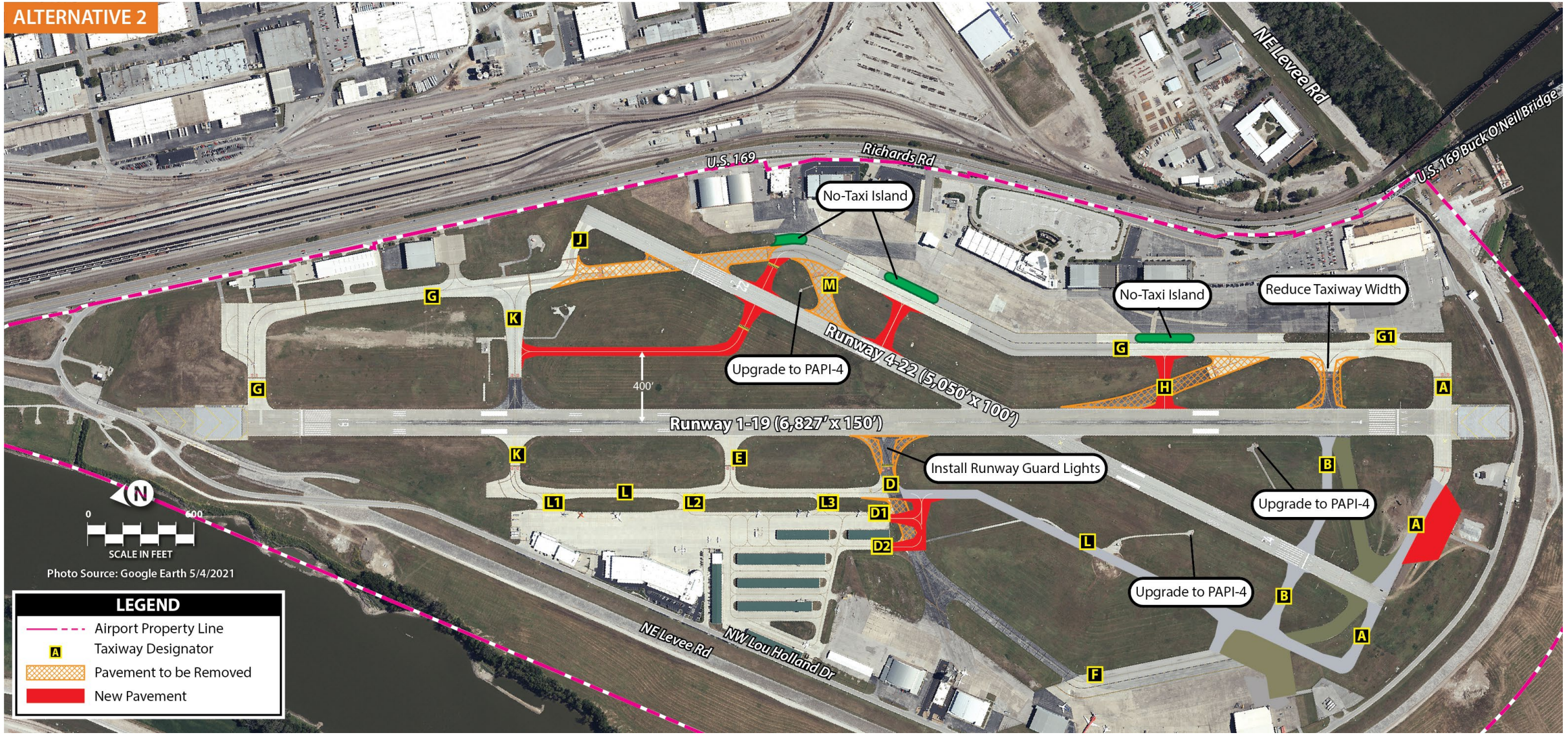
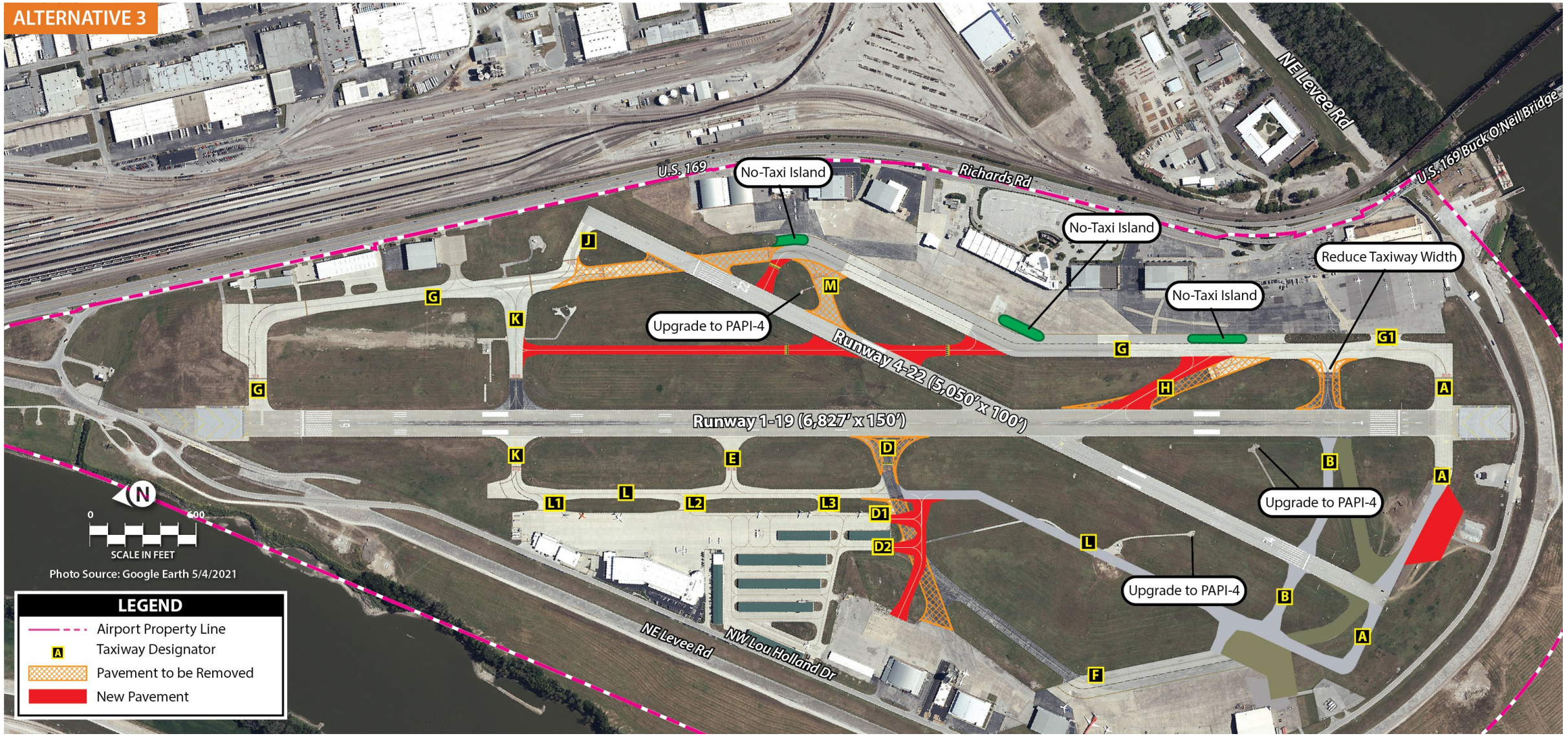


Exhibit 4G: Taxiway Alternative 3



Example Parallel Taxiway Geometry with Crossing Runways

IXD – New Century

SFG – Springfield

LXT – Lees Summit

LWC – Lawrence

ICT – Wichita

HUT – Hutchinson

Exhibit 4J: Southwest Landside Alternative 1

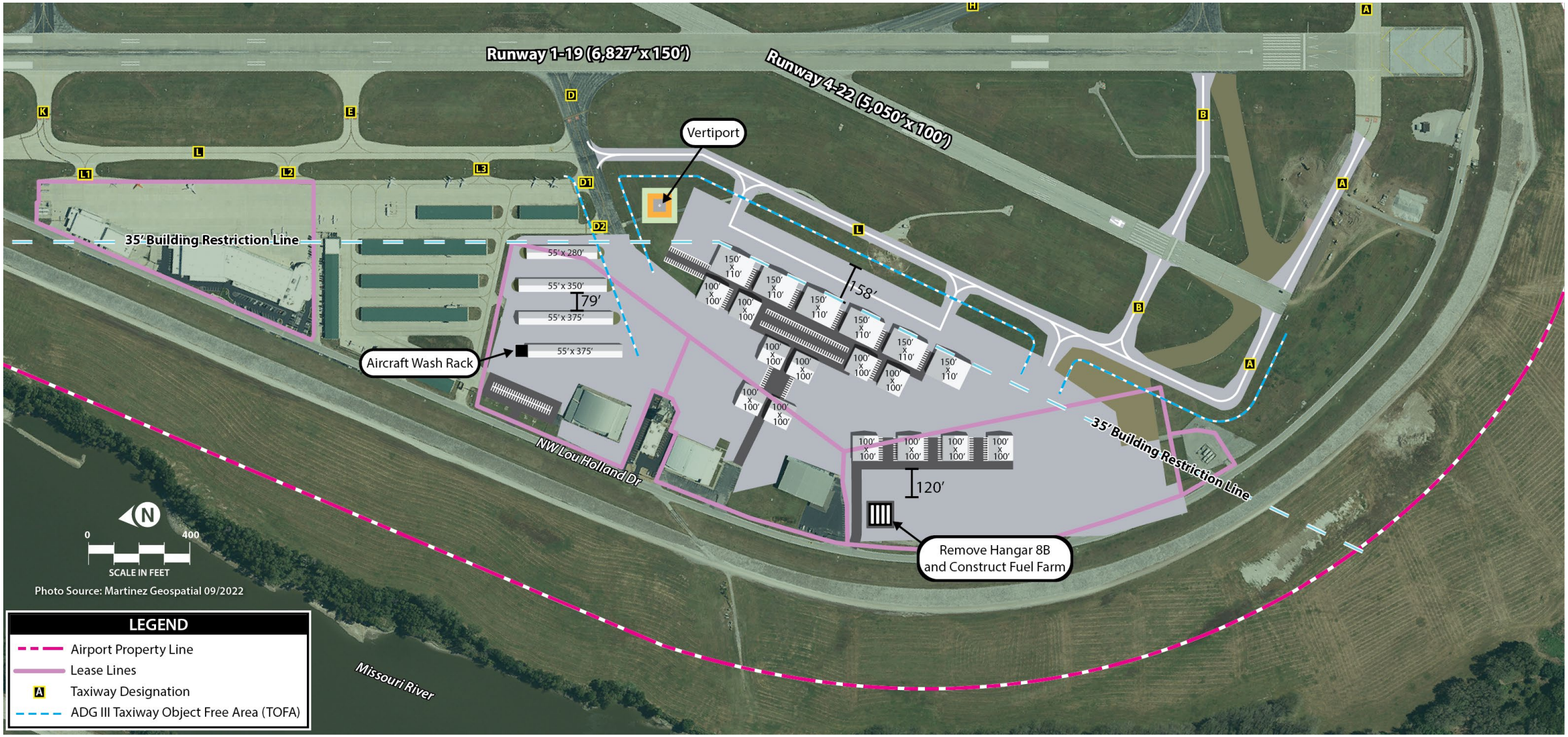


Exhibit 4J: Southwest Landside Alternative 1

Exhibit 4K: Southwest Landside Alternative 2

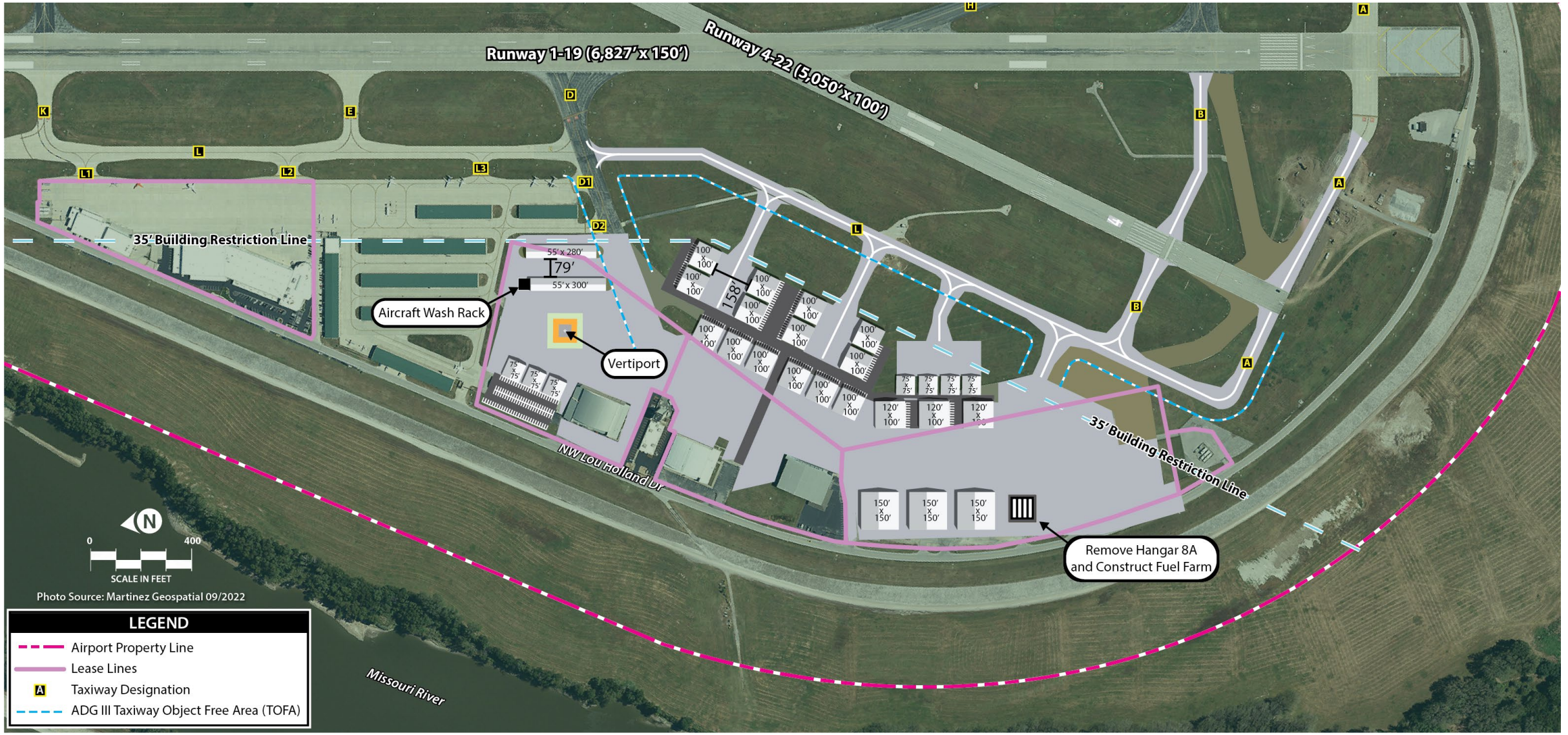


Exhibit 4K: Southwest Landside Alternative 2

Exhibit 4L: Southwest Landside Alternative 3

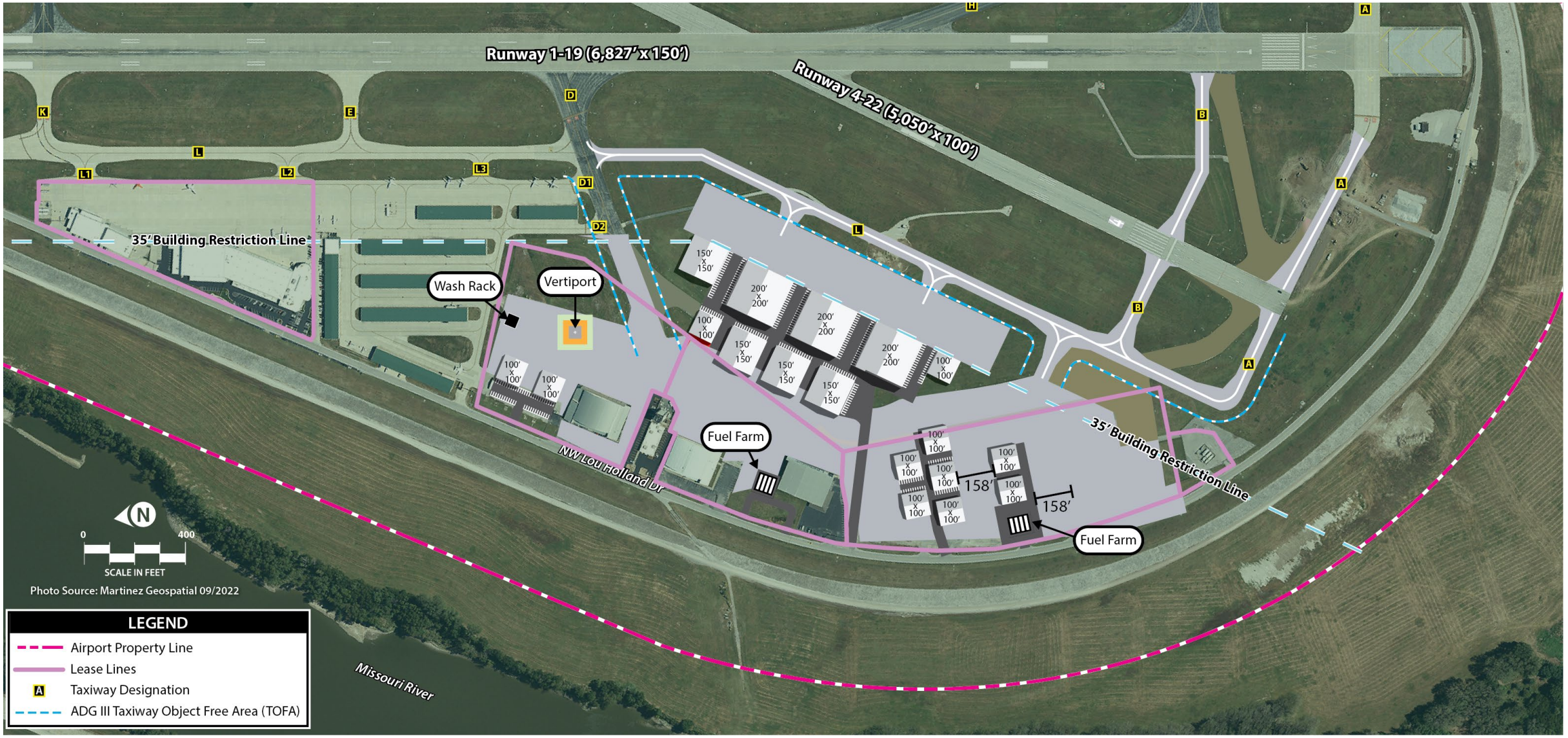


Exhibit 4L: Southwest Landside Alternative 3

Exhibit 4M: Southwest Landside Alternative 4

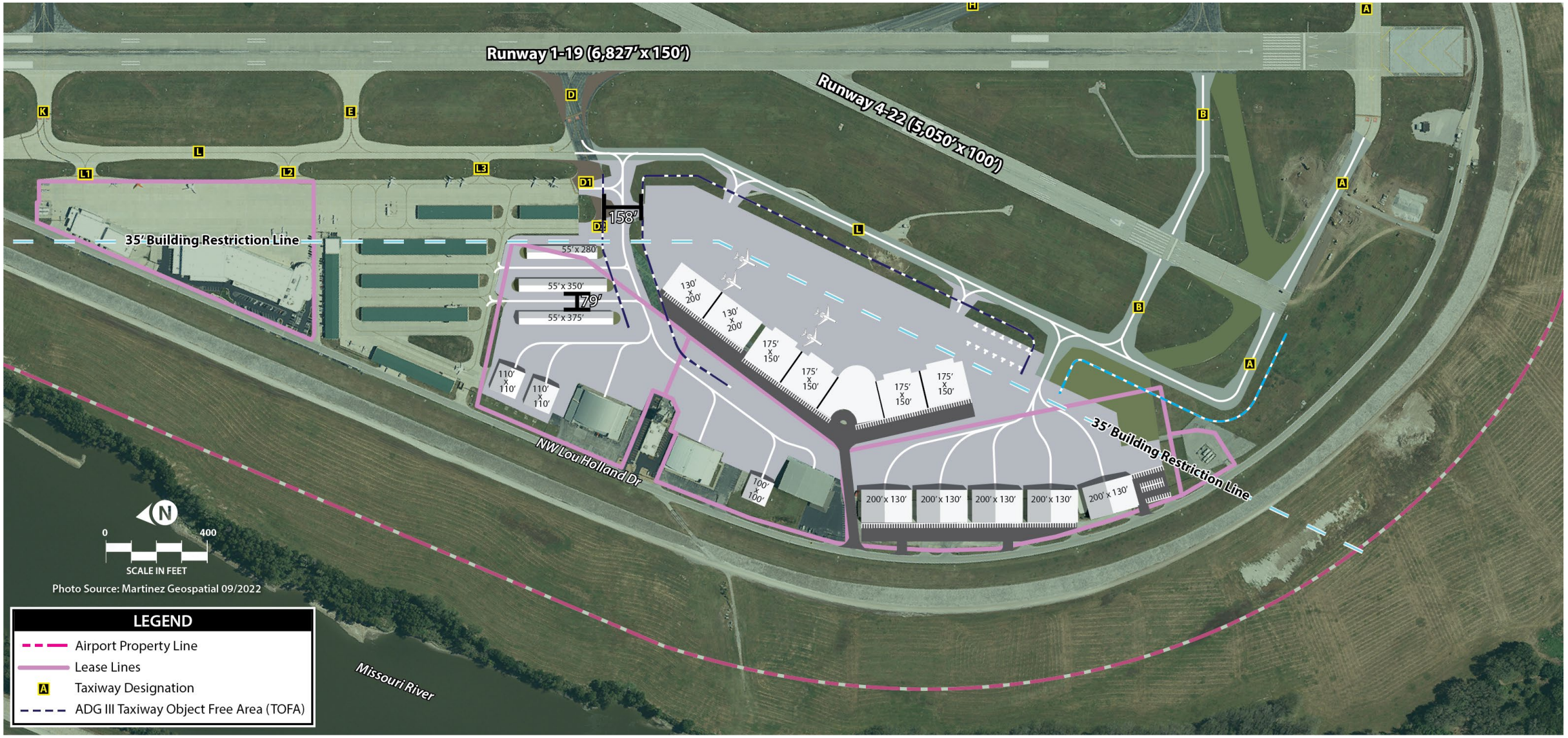


Exhibit 4M: Southwest Landside Alternative 4

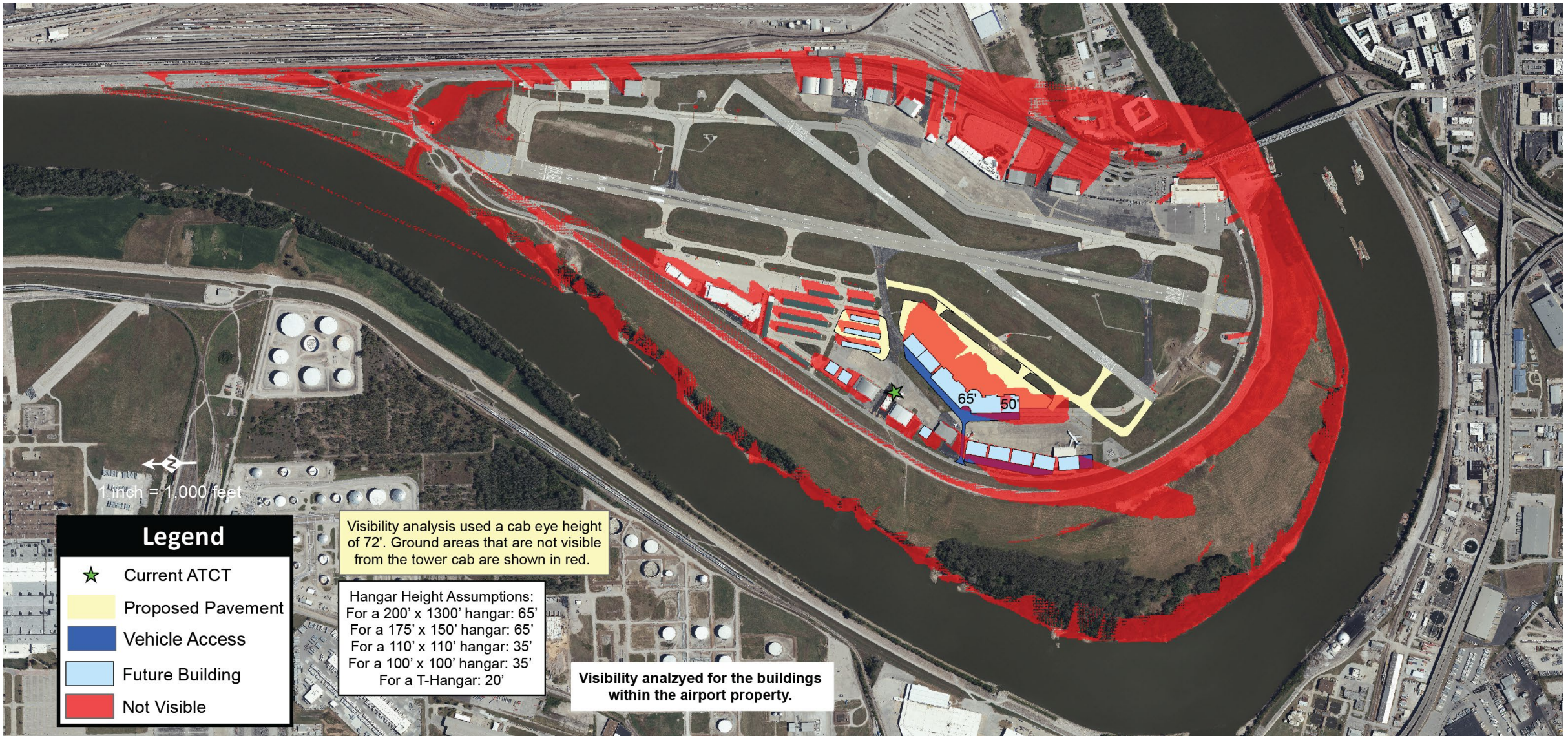


Exhibit 4N: Southwest Landside Alternative 5

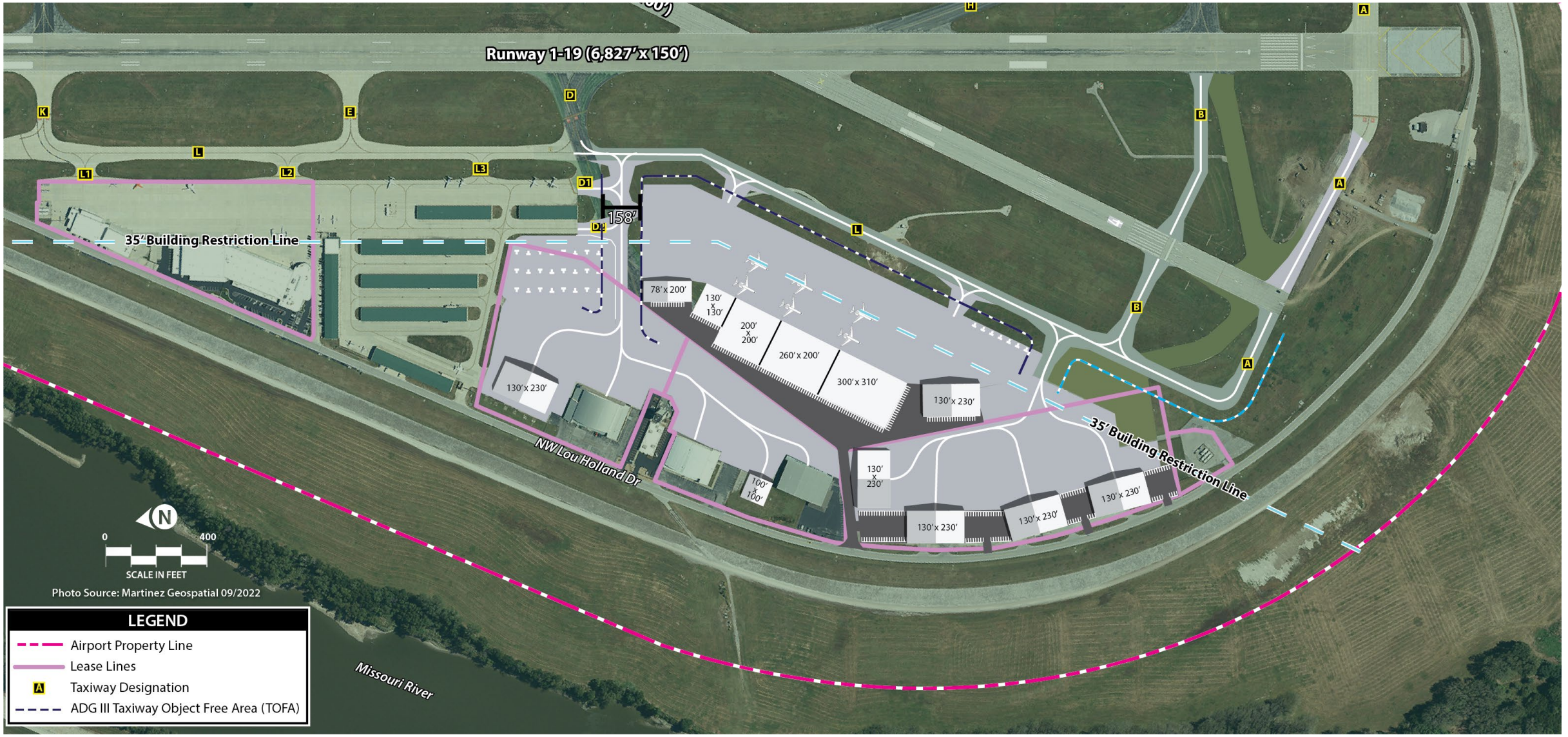
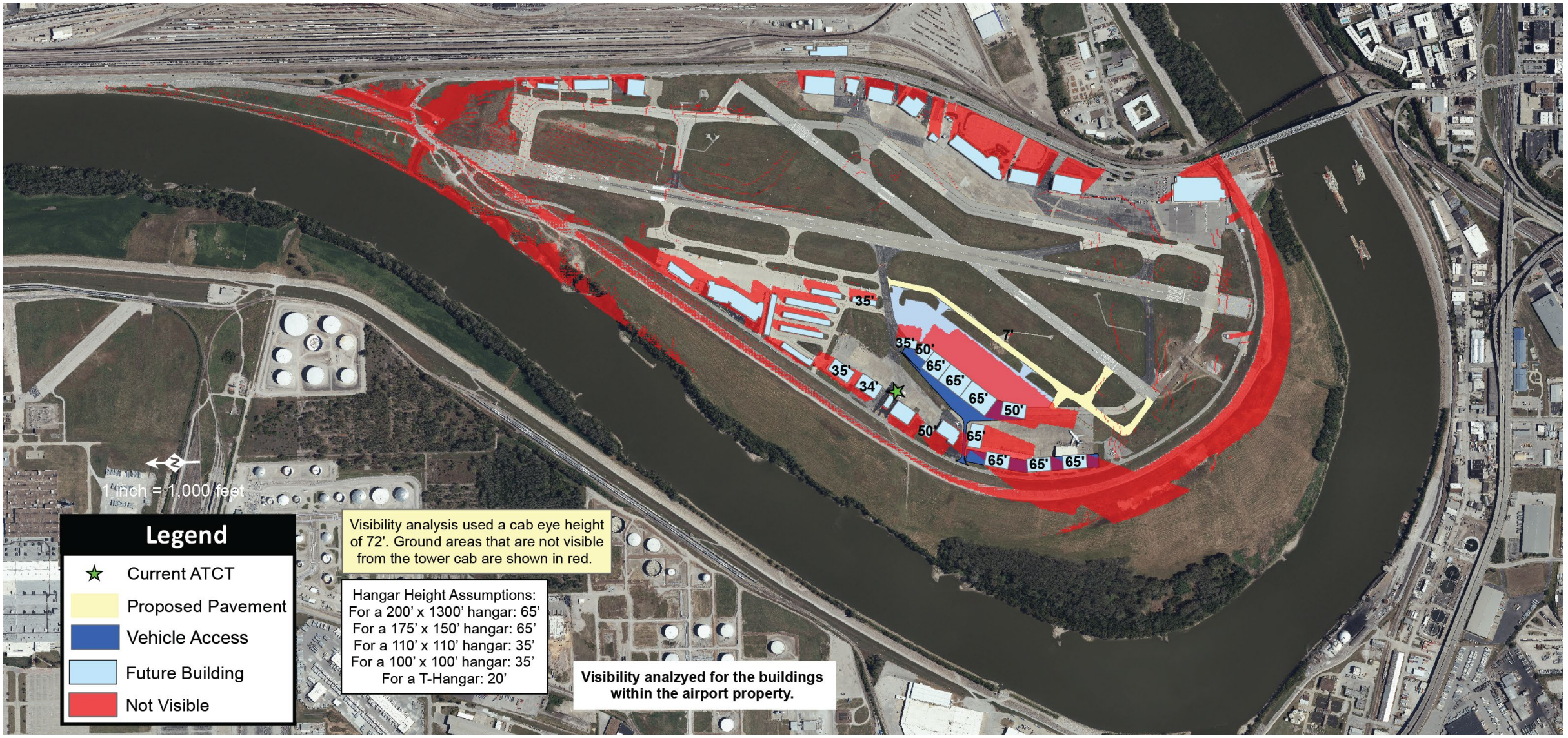


Exhibit 4N: Southwest Landside Alternative 5



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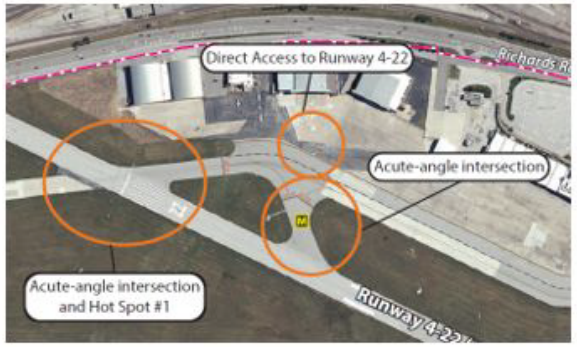
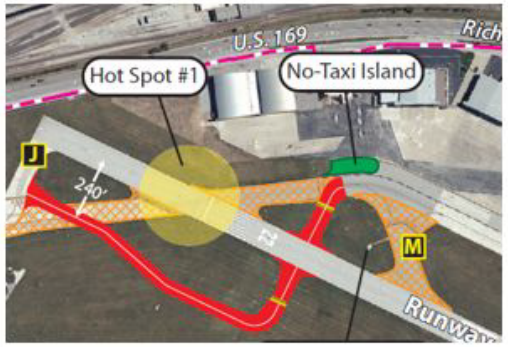
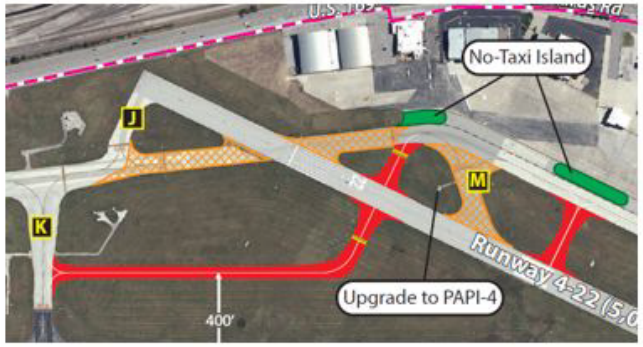
ELEMENT 1

Hot Spot #1 and Taxiway M

Element	Brief Description	Safety Concern	Alternative 1	Alternative 2	Alternative 3
[1]**Hot Spot #1 and Taxiway M**	The Taxiway G and Runway 4-22 Intersection on Taxiway G and the holding position markings for Runway 4–22 are unusual due to the angle that Taxiway G intersects with Runway 4–22. Taxiway M is currently an angled connection which is nonstandard.	Inadvertent runway incursions. Taxiway M provides direct access to the Runway from an Apron. "…wide expanses of pavement at taxiway entrances and taxi paths that provide direct access to a runway can lead to loss of situational awareness for pilots and vehicle operators, which increases the risk of a runway incursion." (150/5300-13B)	a) Remove a portion of Taxiway G that crosses the Runway 22 threshold. b) Construct a new right angle taxiway pavement on either side of Runway 4-22. c) Taxiway would intersect Runway 4-22 at a right angle; the new Taxiway is approximately 380 feet south of the threshold. d) New pavement extends west from the north end of the apron, cross the runway, and turn to the northeast to connect with Taxiway J. e) The new partial parallel taxiway to Runway 4-22 at the north end is separated from the runway by 240 feet with holding positions set 200 feet from the runway centerline. f) Taxiway M is proposed to be removed, with the new taxiway connecting the north apron to Runway 22 serving as an exit for pilots landing on Runway 4. g) No-taxi islands are proposed, which are either natural turf or artificial turf/paint that force pilots to make a turn prior to entering the runway environment, thereby improving pilot situational awareness, and reducing the risk of a runway incursion. h) No-taxi islands are proposed near the to eliminate apron to runway direct access.	a) As in Alternative 1, remove a portion of Taxiway G pavement that crosses the Runway 22 threshold. b) Construct new right-angle taxiway pavement on either side of Runway 4-22. c) However, rather than constructing a partial parallel taxiway to Runway 4-22, a partial parallel taxiway is proposed for Runway 1-19. d) The taxiway would extend from the apron, cross Runway 4-22, and turn north to connect with Taxiway K. e) The taxiway would be separated from Runway 1-19 by 400 feet with holding positions to Runway 4-22 set 200 feet from the runway centerline. f) Taxiway M is proposed to be removed and a new taxiway connector constructed between Taxiway G and Runway 4-22, south of the existing Taxiway M. This connector would serve as an exit for pilots arriving on Runway 4. g) No-taxi islands are also planned for three areas on the east side apron to reduce the risk of inadvertent runway access from landside areas. h) No-taxi islands are proposed near the to eliminate apron to runway direct access.	a) As in Alternative 1, remove a portion of Taxiway G pavement that crosses the Runway 22 threshold. b) Construct new taxiway pavement. c) Construct parallel taxiway intersecting at Runway 4-22 parallel to Runway 1-19. d) Taxiway would extend from Taxiway K to Taxiway G. e) Taxiway is separated by 412.5 feet from Runway 1-19, same as the existing parallel portion of Taxiway G. f) Taxiway M is proposed to be removed, with a new exit taxiway proposed to extend from the northeast apron to connect with Runway 4-22. g) No-taxi islands are proposed near the to eliminate apron to runway direct access.
					

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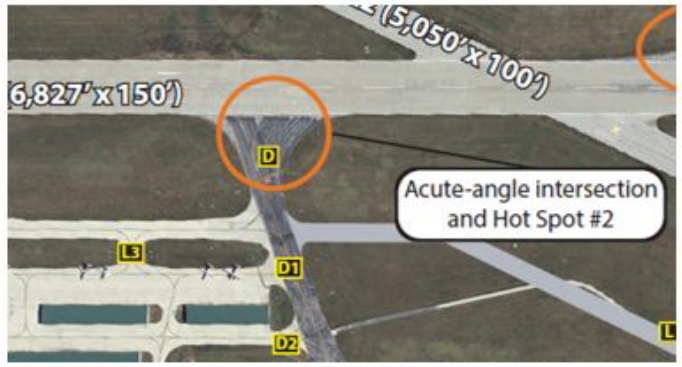
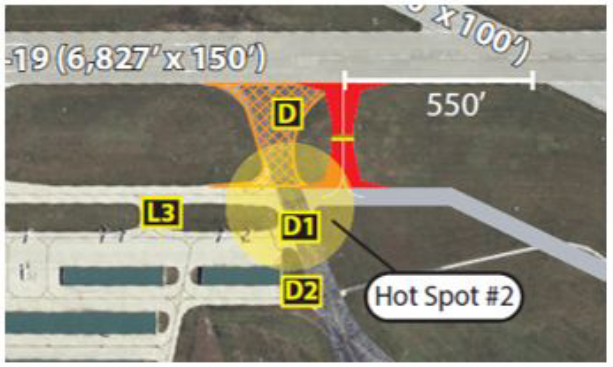
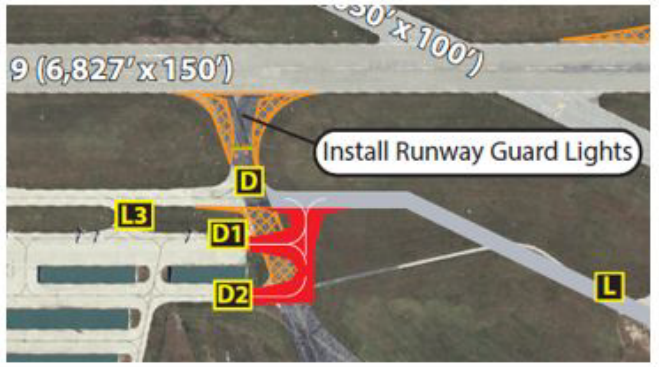
ELEMENT 2

Hot Spot #2 and Taxiway D

Element	Brief Description	Safety Concern	Alternative 1	Alternative 2	Alternative 3
[2]**Hot Spot #2 / Taxiway D**	Taxiway D is an exit taxiway to Runway 1-19; identified as Hot Spot #2 due to past pilot confusion about the intersection. The new extension of Taxiway L is likely to improve pilot situational awareness; however, Taxiway D still provides direct access from an apron area to the runway as it crosses Taxiway L. Removing the direct access issue is the object of the alternatives.	Northbound traffic on Taxiway F and Taxiway D should ensure they do not miss the turn onto Taxiway L and enter Runway 1–19 by mistake.	a) Hotspot #2 is proposed to be alleviated by the closure of a portion of Taxiway D connecting to the runway. b) A replacement connector taxiway is proposed approximately 100 feet south of the existing Taxiway D pavement and 550 feet from the intersection of the runways. c) A similar option was studied in the past and the primary concern was that a replacement Taxiway D connector closer to the intersection of the two runways might lead to pilot confusion and potential runway incursions. d) At the time, the replacement Taxiway D connector was positioned farther south and thus closer to the intersection of the runway than the one depicted in the figure below.	a) Taxiway D is proposed to be narrowed to the 50-foot standard, eliminating excess pavement that may contribute to confusion in this area. b) Removing pavement on either side of the taxiway also serves to form a right-angle connection between the taxiway and runway, which is preferred by FAA design standards. c) To further reduce the risk of accidental entrance onto Runway 1-19, runway guard lights are proposed to be installed. Runway guard lights are installed at taxiway/runway intersections to enhance the visibility of taxiway/runway intersections. d) Proposed lights consist of either: ▪ a pair of elevated flashing yellow lights installed on either side of the taxiway, ▪ or a row of in-pavement yellow lights installed across the entire taxiway at the runway holding position marking. e) In this alternative, Taxiway D west of Taxiway L is also modified by shifting it slightly south to eliminate direct access to the runway and create a 90-degree intersection with Taxiway L.	a) Proposed to be mitigated similar to Alternative 2. a) Taxiway D is narrowed to provide a 50-foot-wide surface and right-angle connection to Runway 1-19. b) The western portion of Taxiway D that extends from Taxiway L to the west apron is proposed to be closed and configured to provide an offset connection to Taxiway L.
					

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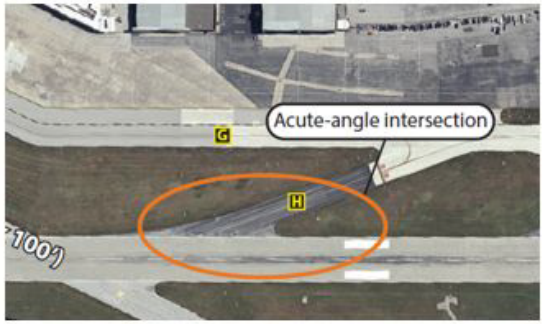
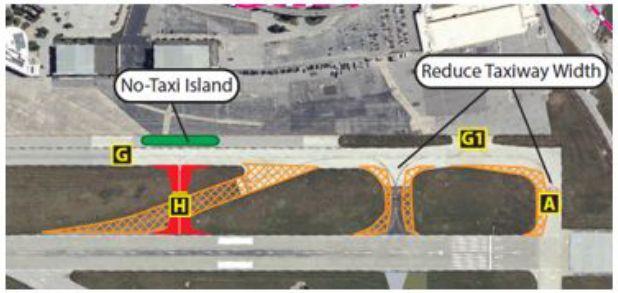
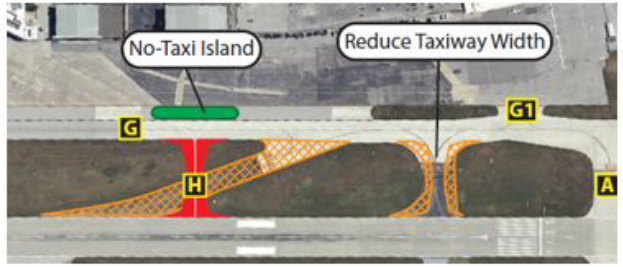
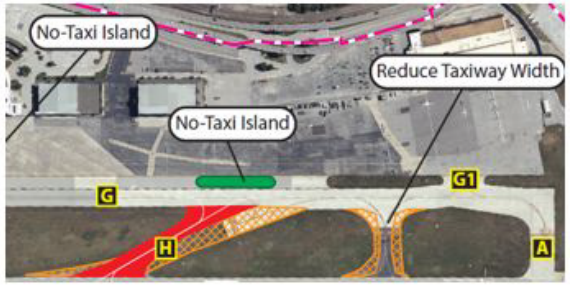
ELEMENT 3

High Speed Exit Taxiway H

Element	Brief Description	Safety Concern	Alternative 1	Alternative 2	Alternative 3
Taxiway H – High-Speed Exit	Taxiway H currently provides a quick exit from the runway for aircraft landing on Runway 19. The preferred geometry for exit taxiways is 90 degrees for pilots to have full peripheral views. At capacity-constrained airports (like MKC), angled taxiways are permissible; however, there are geometric standards for the angle that would apply. The existing Taxiway H is a high-speed exit; however, it is not at a standard angle.	Acute-angle intersection. The angle between the runway centerline and the Taxiway H centerline is currently **20** degrees. According to FAA Advisory Circular (AC) 150/5300-13B, Airport Design, the standard angle for a high-speed exit is **30** degrees.	a) In this alternative, existing Taxiway H pavement is proposed to be removed and a new right-angle connector constructed between Runway 1-19 and Taxiway G. b) This alternative also proposes two no-taxi islands, which are areas of either natural turf or artificial turf/paint that force pilots to make a turn prior to entering the runway environment, thereby improving pilot situational awareness, and reducing the risk of a runway incursion. c) No-taxi islands are proposed near the to eliminate apron to runway direct access.	a) Like the previous taxiway alternative, a similar modification is proposed for Taxiway H. b) Existing Taxiway H pavement is proposed to be removed and a new right-angle connector constructed between Runway 1-19 and Taxiway G. c) No-taxi islands are proposed near the to eliminate apron to runway direct access.	a) Taxiway H is proposed to remain as a high-speed exit taxiway because it enhances runway capacity by reducing runway occupancy times. b) This high-speed taxiway exit is also highly utilized, according to the airport traffic control tower (ATCT) manager, who indicated they would prefer to keep it operational as a high-speed exit. c) When it is time for Taxiway H to be reconstructed due to normal use, it is shown in a slightly different configuration. d) The angle between the runway centerline and the Taxiway H centerline is currently **20** degrees. According to the FAA AC 150/5300-13B, the standard angle for a high-speed exit is **30** degrees; therefore, this alternative shows Taxiway H to be reconstructed at the standard **30**-degree angle. e) Another consideration is the capability for a reverse turn onto the parallel taxiway. The recommended runway-to-taxiway separation to allow for a reverse turn is 350 feet for a critical aircraft in taxiway design group (TDG) 3. f) The future TDG for the airport is TDG 3, and the current runway-to-taxiway separation is 412.5 feet; therefore, a high-speed exit with a reverse turn onto the parallel taxiway is feasible. g) No-taxi islands are proposed near the to eliminate apron to runway direct access.
					

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ELEMENT 4

Southwest Landside Alternatives

Element	Brief Description	Safety Concern(s)	Alternative 1	Alternative 2	Alternative 3
Southwest Landside Alternatives **Unconstrained by Existing Lease Lines**	This analysis is based on the current ATCT location to determine if the alternatives would interfere with the tower controller's line of sight. Each analysis is based on a cab eye level of 72 feet, with assumed hangar heights ranging from 20 feet (T-hangar) to 65 feet (a 200-foot by 200-foot conventional hangar).	Areas shaded in red are locations that would not be visible from the cab to the ground. The viewshed analysis for each southwest landside alternative is shown in the second figure of each alternative. Additionally, the existing Taxiway F will no longer serve as a taxiway under FAA ATCT control and will be separated by a roadway that enters the area from Lou Holland Drive.	a) On the south end, a new vehicle access road is proposed to extend from Lou Holland Drive near Hangar 8B1, providing access to four conventional hangars. b) The access roads and vehicle parking lots will include security fencing and gates; as a result, the existing west side Taxiway F and aprons will be bisected and will not allow for aircraft taxi operations from north to south around the back side of the proposed hangars. c) Taxiway F would become a non-movement area from a controller perspective. Aircraft taxiing movements from north to south (or vice versa) would use Taxiway L, which will be controlled by tower personnel. d) Farther north, a larger complex of conventional hangars is depicted. These would also be accessible via a new road extending from the parking lot near Hangar 6B. e) New apron pavement is planned to support four new hangars and existing Taxiway F is planned to be converted to apron. f) The east-facing hangars would have access to Taxiway L via two taxilanes (one at each end of the proposed apron). g) The taxilane fronting the east-facing hangars is planned to serve ADG III aircraft, with a 158-foot-wide taxilane object free area (TLOFA). h) The T-hangar complex on the general aviation (GA) apron is also planned for expansion, with four new T-hangars.	a) Under this option, a mix of hangars – ranging from 75-foot by 75- foot (5,625 sf) executive box hangars to 150-foot by 150-foot (22,500 sf) conventional hangars – is proposed. b) In the central portion of the developable space, a new road extending from the parking lot adjacent to Hangar 6B is proposed to provide access to executive box and conventional hangars. c) Rather than a large singular apron, an expansion to existing apron pavement is planned to support west-facing conventional hangars, while three smaller aprons with access to Taxiway L are planned to support additional hangars. d) Like Alternative 1, access roads and vehicle parking will be surrounded by security fencing and gates. As a result, the existing west side Taxiway F and aprons will be bisected and will not allow for aircraft taxi operations from north to south around the back side of the proposed hangars. e) Taxiway F would become a non-movement area from a controller perspective. Aircraft taxiing movements from north to south (or vice versa) would use Taxiway L, which will be controlled by tower personnel. f) To the north, additional executive box hangars are proposed near the existing shade hangar. g) Two T-hangars are proposed south of the existing T-hangar and an adjacent aircraft wash rack is planned. h) A potential vertiport to support advanced air mobility (AAM) operations is also proposed.	a) The third alternative focuses on expanded conventional hangar facilities and proposes removal of Hangars 8A and 8B, with new 10,000 sf hangars. b) A fuel farm is also proposed in this area, with access from Lou Holland Drive, as well as a reserve area for AAM operations. c) The largest hangar development area is in the central portion near extended Taxiway L and a new access road is planned in the Hangar 8B area. d) The access road would bisect current Taxiway F and the apron, like previous alternatives. e) Hangars are proposed that would range in size from 10,000 sf to 40,000 sf, with the largest of these facing Taxiway L. f) These hangars are envisioned to potentially support a fixed base operator (FBO) or a large-scale specialized aviation service operator (SASO). g) Two taxilanes are proposed to extend from the apron to access Taxiway L. h) Farther north, another road is proposed to extend from Lou Holland Drive near the existing shade hangar. This road would serve as access to two proposed conventional hangars south of the T-hangar complex, as well as a new vehicle parking lot for tenants in this area. i) A portion of the shade hangar is proposed to be removed and an aircraft wash rack installed. j) A second option for a new fuel farm is proposed near Hangar 7, with a loop road constructed to allow easy access for fuel trucks.
					

Element	Brief Description	Safety Concern(s)	Alternative 4	Alternative 5
Southwest Landside Alternatives **<u>Constrained</u> by Existing Lease Lines**	This analysis is based on the current ATCT location to determine if the alternatives would interfere with the tower controller's line of sight. Each analysis is based on a cab eye level of 72 feet, with assumed hangar heights ranging from 20 feet (T-hangar) to 65 feet (200-foot by 200-foot conventional hangar).	Areas shaded in red are locations that would not be visible from the cab to the ground. The viewshed analysis for each southwest landside alternative is shown in the second figure of each alternative. Additionally, the existing Taxiway F will no longer serve as a taxiway under FAA ATCT control and will be separated by a roadway that enters the area from Lou Holland Drive.	a) This is the first of two alternatives that generally preserve the existing lease lines in the southwest quadrant. b) This alternative considers several large conventional hangars that might be typical of an FBO complex. The hangars are large enough to house the largest business jets and potentially larger commercial type aircraft used for charter purposes. c) An access road is extended from Lou Holland Drive adjacent to Hangar 8B. This location is along the current lease line, which limits separating facilities. The access road extends to the 26-acre parcel that is currently unleased. d) The parking lot extends along the west edge of the lease line before the hangars. This layout attempts to locate the hangars as far back to the west as possible to maximize control tower sightlines. e) This alternative shows additional hangar development on parcels that are currently leased. f) Additional T-hangars are shown in proximity to the existing T-hangars. g) The existing shade hangar is shown to be replaced with two medium-sized box hangars. h) The south area is shown to be completely redeveloped with a series of conventional hangars.	a) This is a variation of Landside Alternative 4 in which the centrally located hangars are more linearly oriented. b) There are a variety of hangar sizes; however, all are larger hangars that are typical for FBO services, bulk storage, or maintenance activities. c) The access road extends adjacent to Hangar 8B again along the existing parcel line. d) A development scenario is also shown for those areas that are currently under lease. On the south side of the new access road is redevelopment with four large conventional hangars. e) On the north side of the access road, the shade hangar is replaced with a conventional hangar and one other box hangar is shown to fill in an undeveloped area next to the AirShare hangar. f) The area next to the existing T-hangars is shown with a tiedown apron.

Report Schedule

COMMENT PERIOD: Please provide any additional comments by no later than **June 6, 2024**.
Send comments to ptaylor@coffmanassociates.com.

Action	Date to Group for Review	Review Duration	Return from Review
Draft CSA Report	By July 8, 2024	5 Business Days	July 12, 2024
Incorporate Comments	By July 29, 2024	5 Business Days	August 2, 2024
Final CSA Report	By August 19, 2024	FAA ALP Review Process	FAA ALP Review Process

Above dates are proposed based on typical report development durations; the team may adjust the schedule based on the comments received, technical questions, action item status, etc. Above dates are considered “no later than” and updates may be delivered earlier than indicated.

Next Steps

- Provide additional comments to the project team by June 6, 2024.
- Project team to author the Draft CSA Report.
- Share Draft CSA Report with this group for further comment (even if it's "no additional comment").
- Project team to complete the Final CSA Report.
- Share Final CSA REPORT with this group.
- Project team to continue master planning process including ALP development.
- ALP with CSA Final Report and Form SAS-1 to be submitted to FAA.