



Airport Master Plan

KANSAS CITY WHEELER DOWNTOWN AIRPORT





AGENDA

MKC Master Plan – Forecasts – PAC #2

June 20, 2024 – 2:30 p.m.

Brigadier General Charles E. McGee

General Aviation Terminal Building Conference Room

1. Welcome/Introductions
2. Inventory
3. Forecast Summary
4. Discussion

MASTER PLAN PROCESS

February 7, 2023

PAC #1

INVENTORY

Working Papers
PDF

FORECASTS

Working Papers
PDF

June 20, 2023

PAC #2

FACILITY REQUIREMENTS

Working Papers
PDF

PIW #1

AIRPORT ALTERNATIVES

Working Papers
PDF

PAC #3

RECOMMENDED MASTER PLAN CONCEPT/
ENVIRONMENTAL REVIEW

Working Papers
PDF

PIW #2

FINANCIAL PLAN/CAPITAL IMPROVEMENTS

Working Papers
PDF

PAC #4

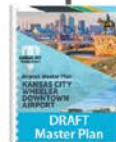
AIRPORT LAYOUT PLANS/LAND USE COMPATIBILITY

PIW #3

KEY:

PAC = Master Plan Advisory Committee

PIW = Public Information Workshop





Airport Master Plan

KANSAS CITY WHEELER DOWNTOWN AIRPORT

A photograph of the Spirit of '76 statue, a bronze equestrian statue of a Native American on a horse, standing on a stone pedestal. The background shows the Kansas City skyline under a clear sky. The image is partially overlaid by a large, semi-transparent blue triangle on the left side.

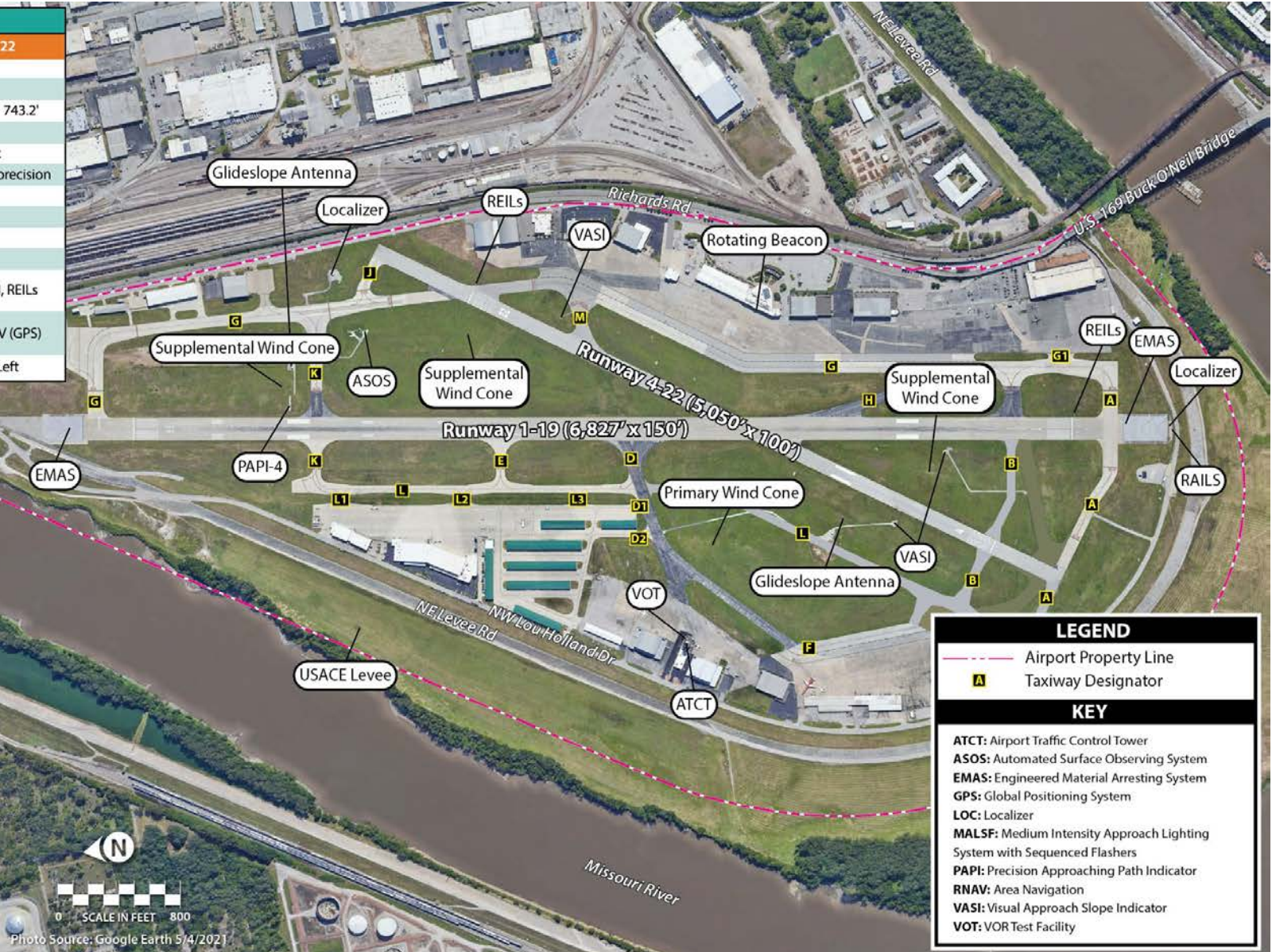
Chapter 1
EXISTING CONDITIONS

Exhibit 1G: Existing Airside Facilities

Runway Designation	AIRFIELD DATA			
	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

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



LEGEND	
	Airport Property Line
	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

*Taxiway is closed

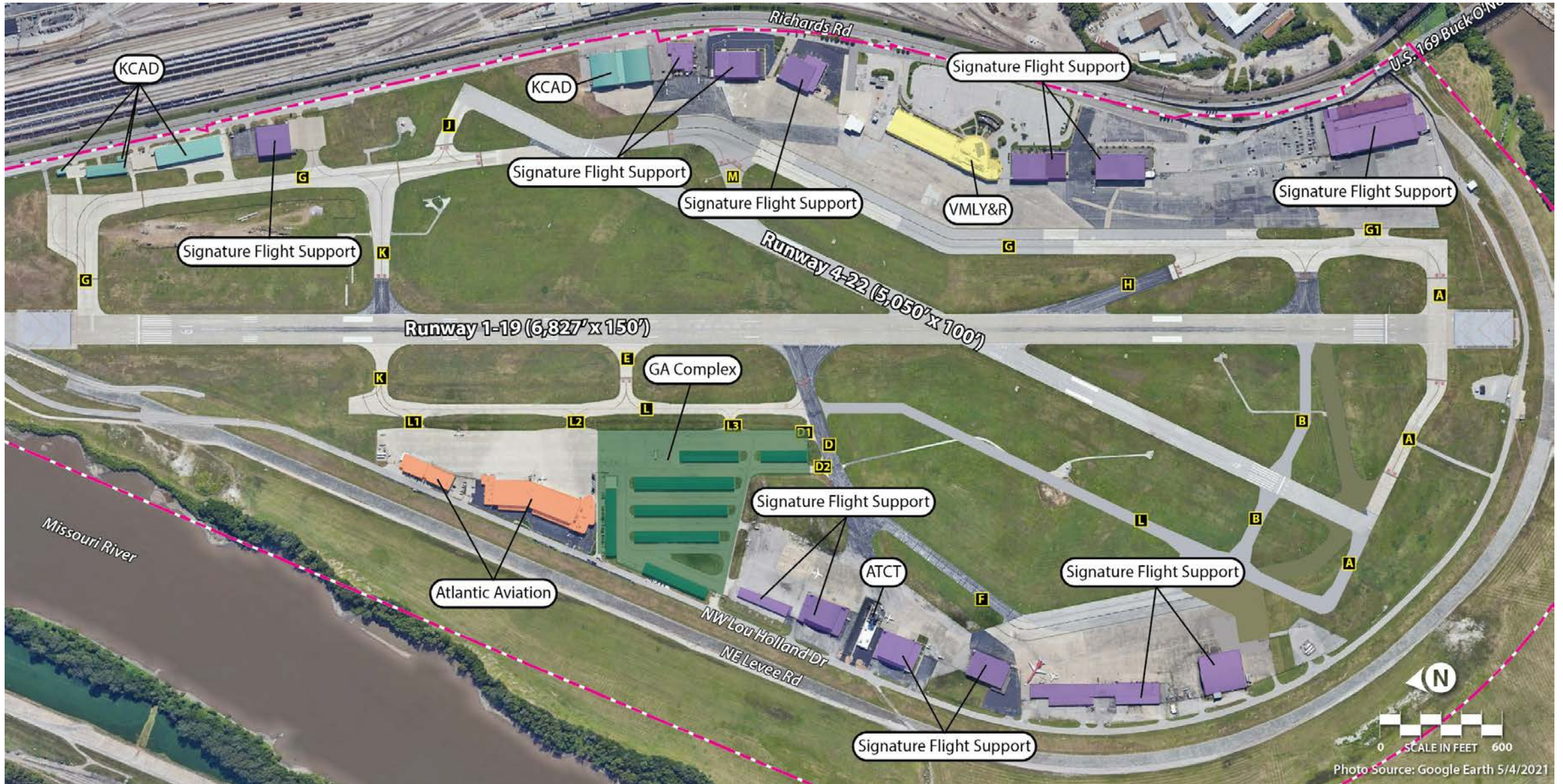
0 SCALE IN FEET 800

Photo Source: Google Earth 5/4/2021

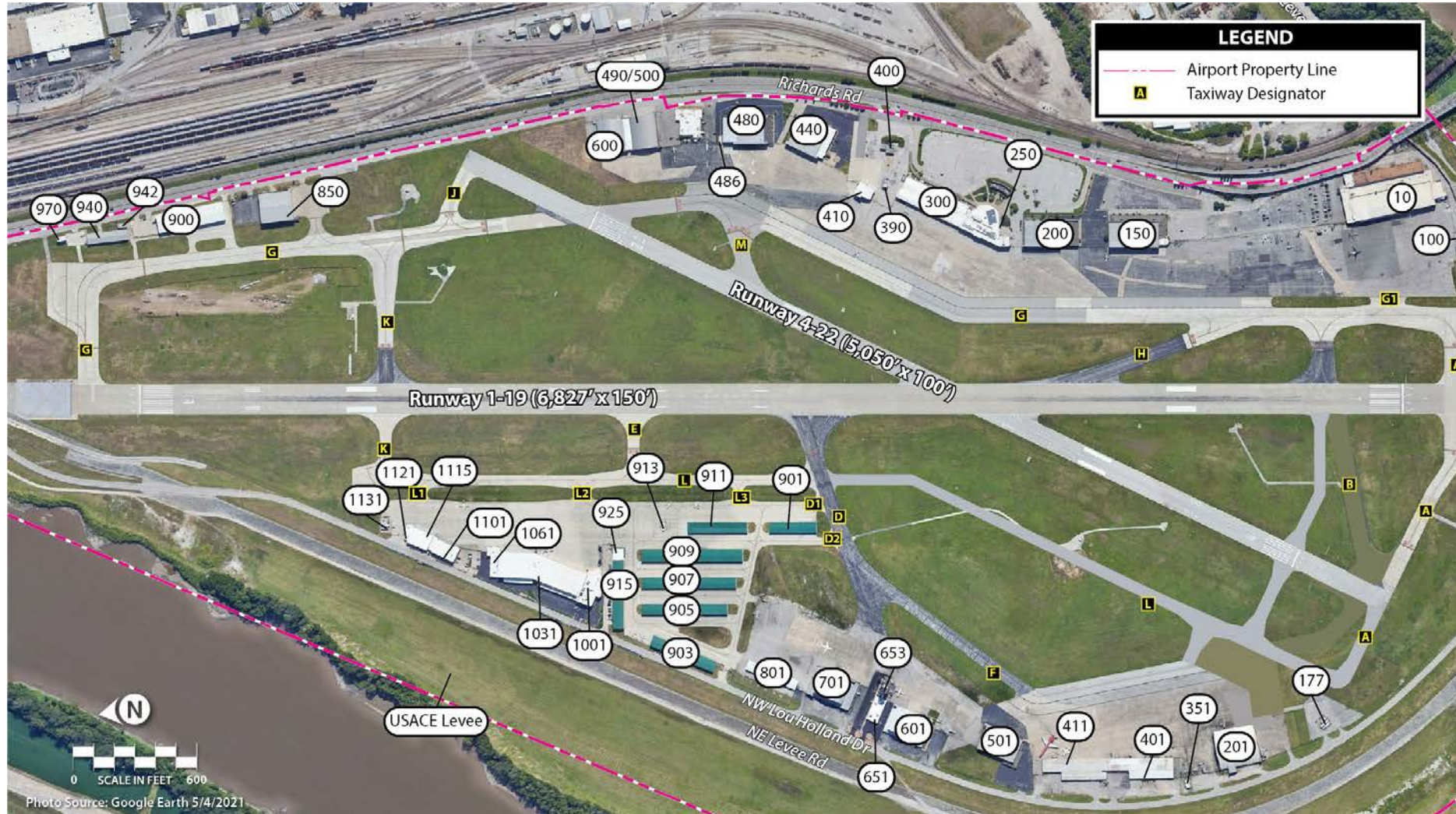
Exhibit 1K: Airfield Pavement Condition



Ex 1Q: Landside Map



Ex 1R: Existing Landside Facilities

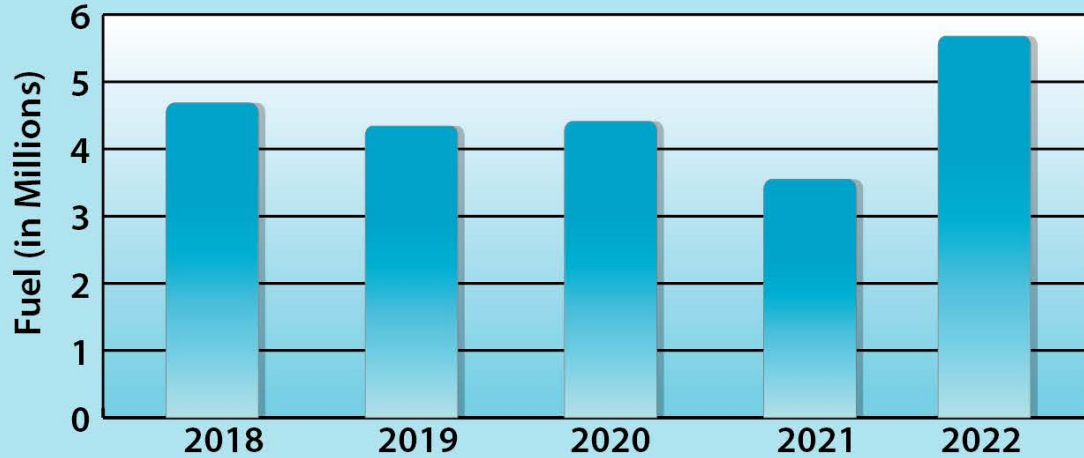


Building #	Description	Additional Tenants	Total sf	Hangar sf
West Side				
177	Aboveground Fuel Facility (Signature)		NA	NA
201	Hangar 9 (Signature Flight Support)	Airline History Museum	39,600	39,600
351	Office/Storage (Signature Flight Support)		900	NA
401	Hangar 8A (Signature Flight Support)		24,700	NA
411	Hangar 8B (Signature Flight Support)		31,300	NA
501	Hangar 7 (Signature Flight Support)	Airshare	24,000	24,000
601	Hangar 6B (Signature Flight Support)	ATD	29,900	24,000
651	FAA Airways and Facilities Building	NA	7,600	NA
653	FAA Airport Traffic Control Tower	NA	NA	NA
701	Hangar 6A (Signature Flight Support)	Duncan Aviation	31,900	22,400
801	Shade Hangars, 12 spaces (Signature Flight Support)		NA	NA
901	T-hangar, 10 units		12,200	12,200
903	Linear Box Hangars, 6 units		18,100	18,100
905	T-hangar, 19 units		22,400	22,400
907	T-hangar, 21 units		24,000	24,000
909	T-hangar, 21 units		29,900	29,900
911	T-hangar, 13 units		15,500	15,500
913	Self Serve Fuel Facility		NA	NA
915	Linear Box Hangars, 6 units		17,800	17,800
925	GA Terminal Building		3,100	NA
1001	FBO Terminal (Atlantic Aviation)		29,600	NA
1031	Hangar 10 (Atlantic Aviation)		31,700	31,700
1061	Hangar 11 (Atlantic Aviation)		27,800	21,000
1101	Hangar 14		8,800	8,800
1115	Hangar 15		NA	9,100
1121	Customs and Border Protection		2,000	NA
1131	Aboveground Fuel Facility (Atlantic)		NA	NA

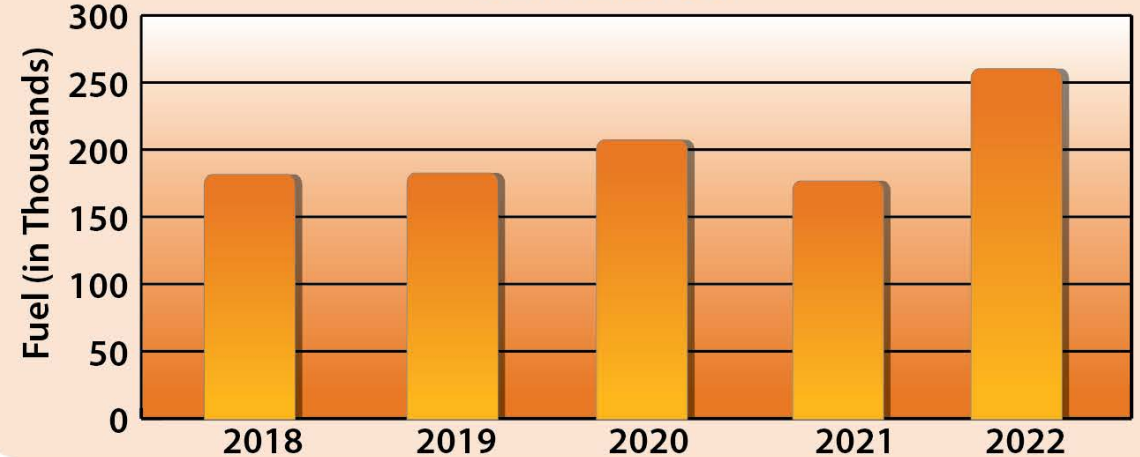
Building #	Description	Additional Tenants	Total sf	Hangar sf
East Side				
10	Hangar 1 (Signature FBO)	TWA Museum, Air Associates Charter	100,000	47,800
100	Storage Building (Signature Flight Support)		1,200	NA
150	Hangar 2 (Signature Flight Support)	Meisinger Aviation	42,200	29,700
200	Hangar 3 (Signature Flight Support)		33,500	19,900
250	Administration Office/Maintenance Garage		2,500	NA
300	Old Terminal / VMLY&R		62,200	NA
390	Underground Auto Fuel Facility	NA	NA	NA
400	Electrical Vault	NA	NA	NA
410	Aircraft Rescue and Firefighting	NA	5,300	NA
440	Hangar 4A (Signature Flight Support)	Sierra Aviation Corporation	28,700	19,500
480	Hangar 4B (Signature Flight Support/TADIC)		30,300	25,600
486	Aboveground Fuel Facility	NA	NA	NA
490/500	Offices (Signature Flight Support)	ATP	14,300	NA
600	Hangar 5A (Signature Flight Support) & 5B (KCAD)		46,800	41,000
850	Hangar 50 (Signature Flight Support)		23,400	23,400
900	Office and Maintenance Building (KCAD)		30,600	NA
940	Storage Building (KCAD)		10,000	NA
942	Storage Building (KCAD)		800	NA
970	Sand Storage Building (KCAD)		900	NA

Ex 1U: Fuel Flowage

Total Jet A Fuel



Total 100LL Fuel



Year	Jet A			100LL			Total Fuel Dispensed
	Atlantic Aviation	Signature	Total	Self-Service	Signature	Total	
2018	2,717,128	1,965,937	4,683,065	108,572	73,803	182,375	4,865,440
2019	2,439,150	1,901,706	4,340,856	109,840	73,629	183,469	4,524,325
2020	2,438,154	1,970,704	4,408,858	119,059	89,087	208,146	4,617,004
2021	2,185,722	1,360,580	3,546,302	105,080	72,487	177,567	3,723,869
2022	3,158,780	2,520,092	5,678,872	122,014	138,974	260,988	5,939,860



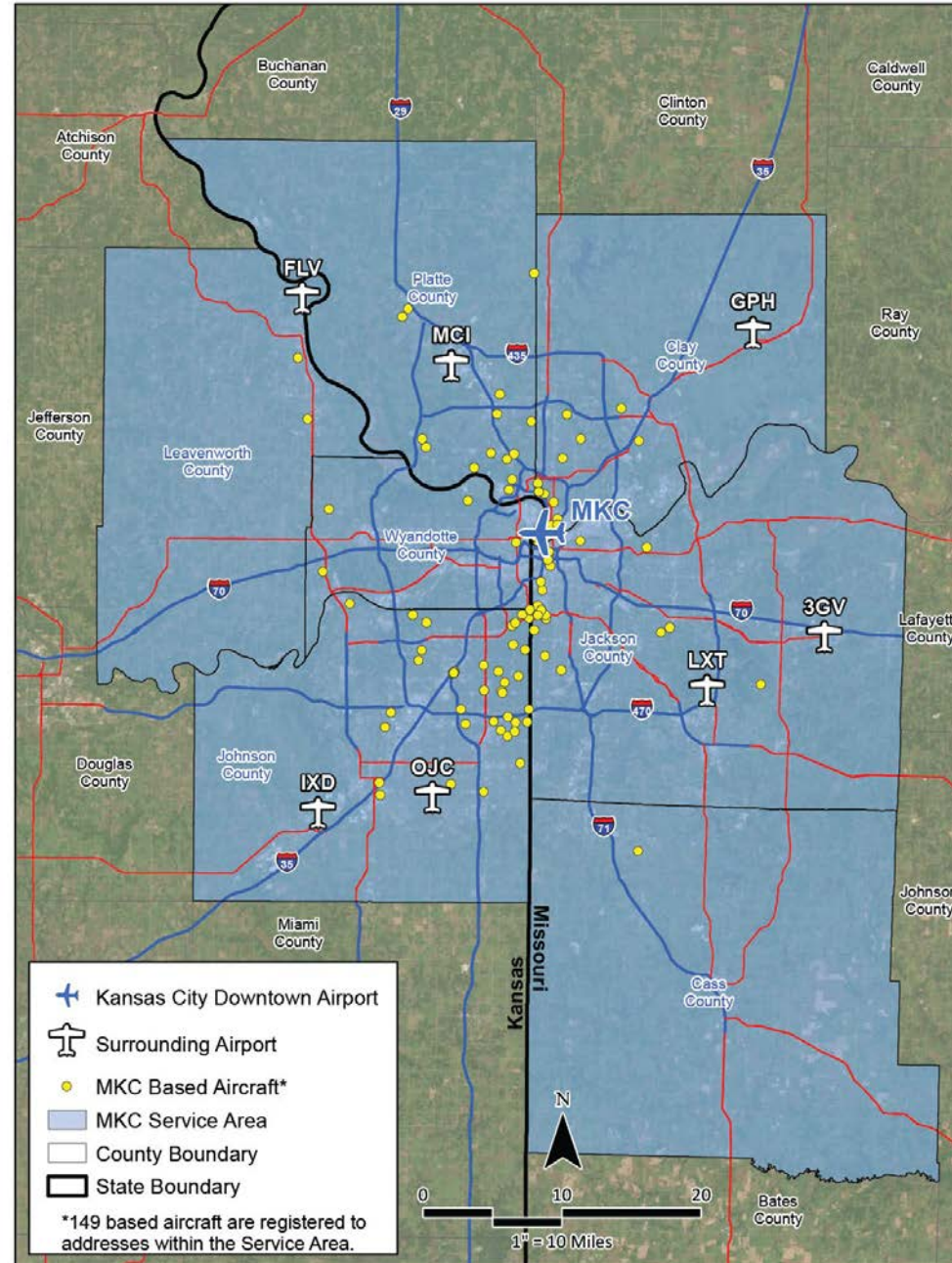
Airport Master Plan

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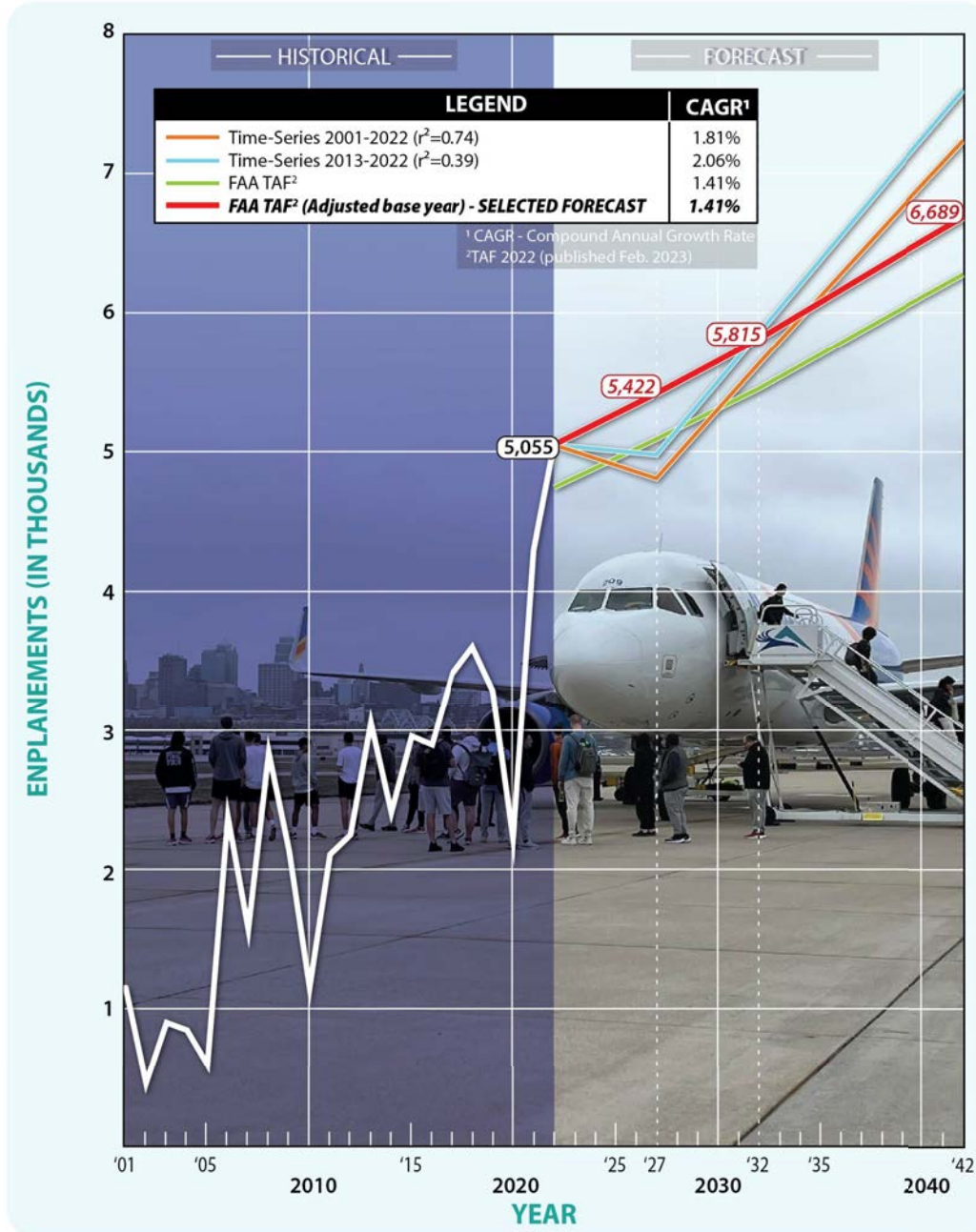


Chapter 2
FORECASTS

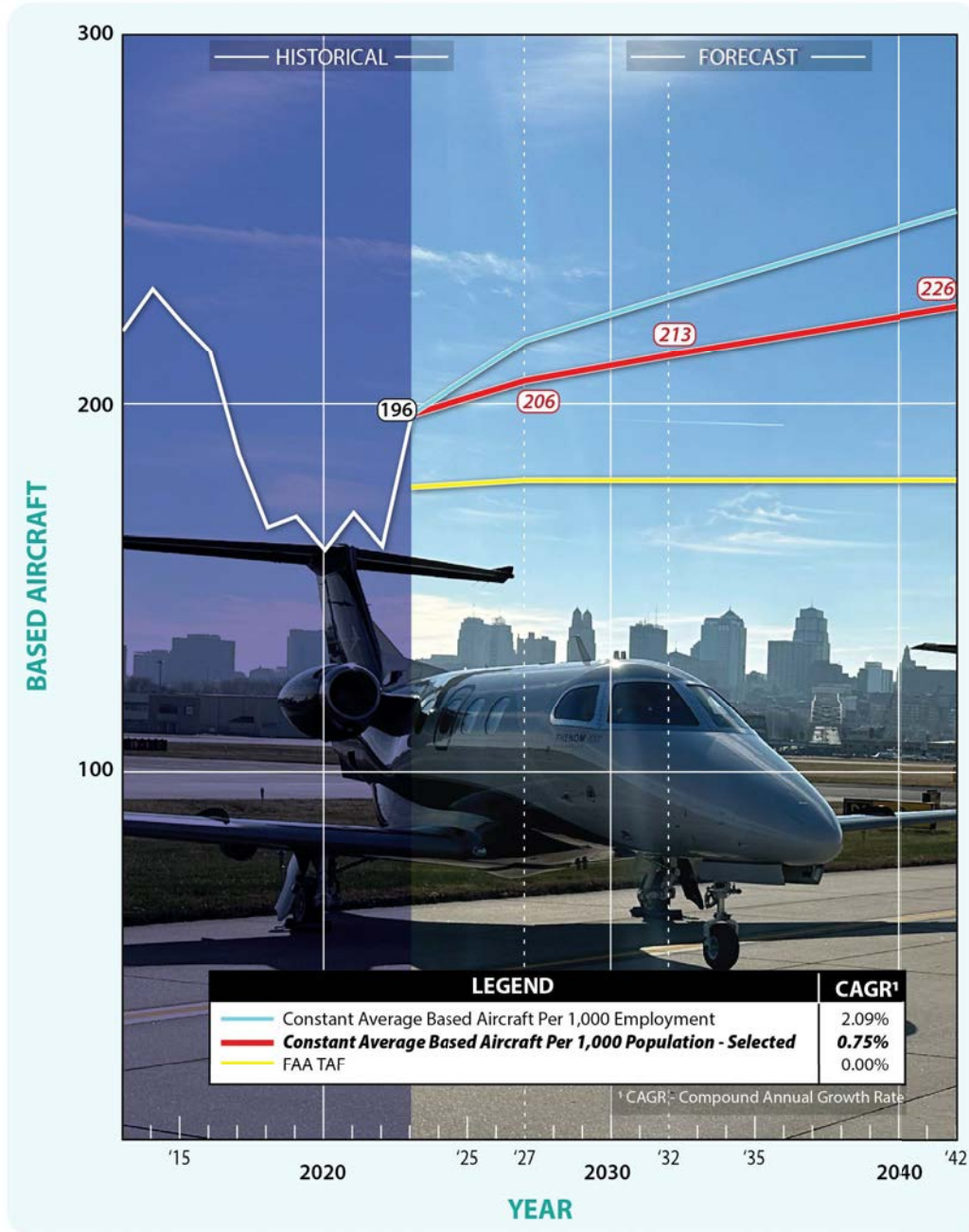
Ex 2A: Airport Service Area



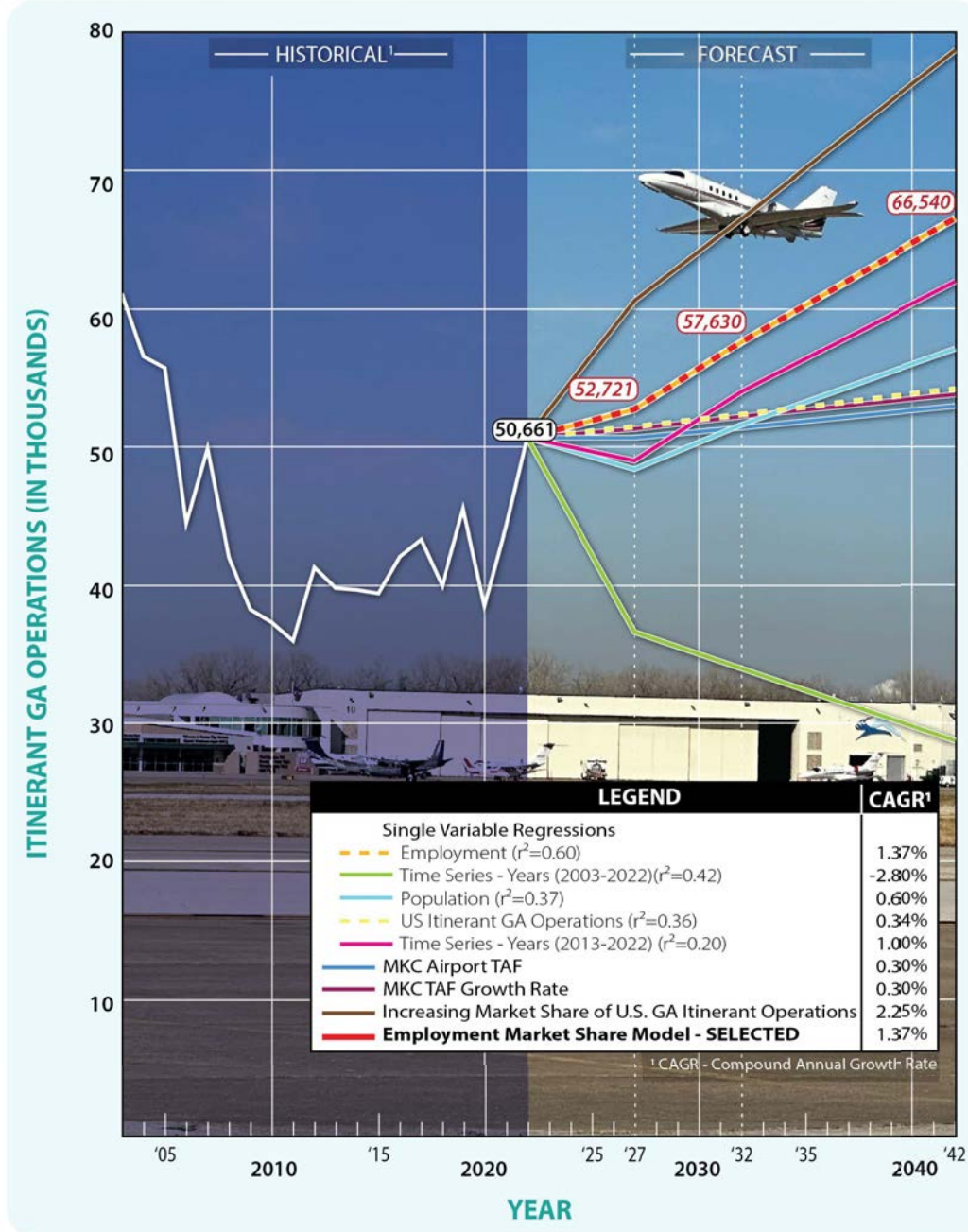
Ex 2C:
Enplanement Forecast



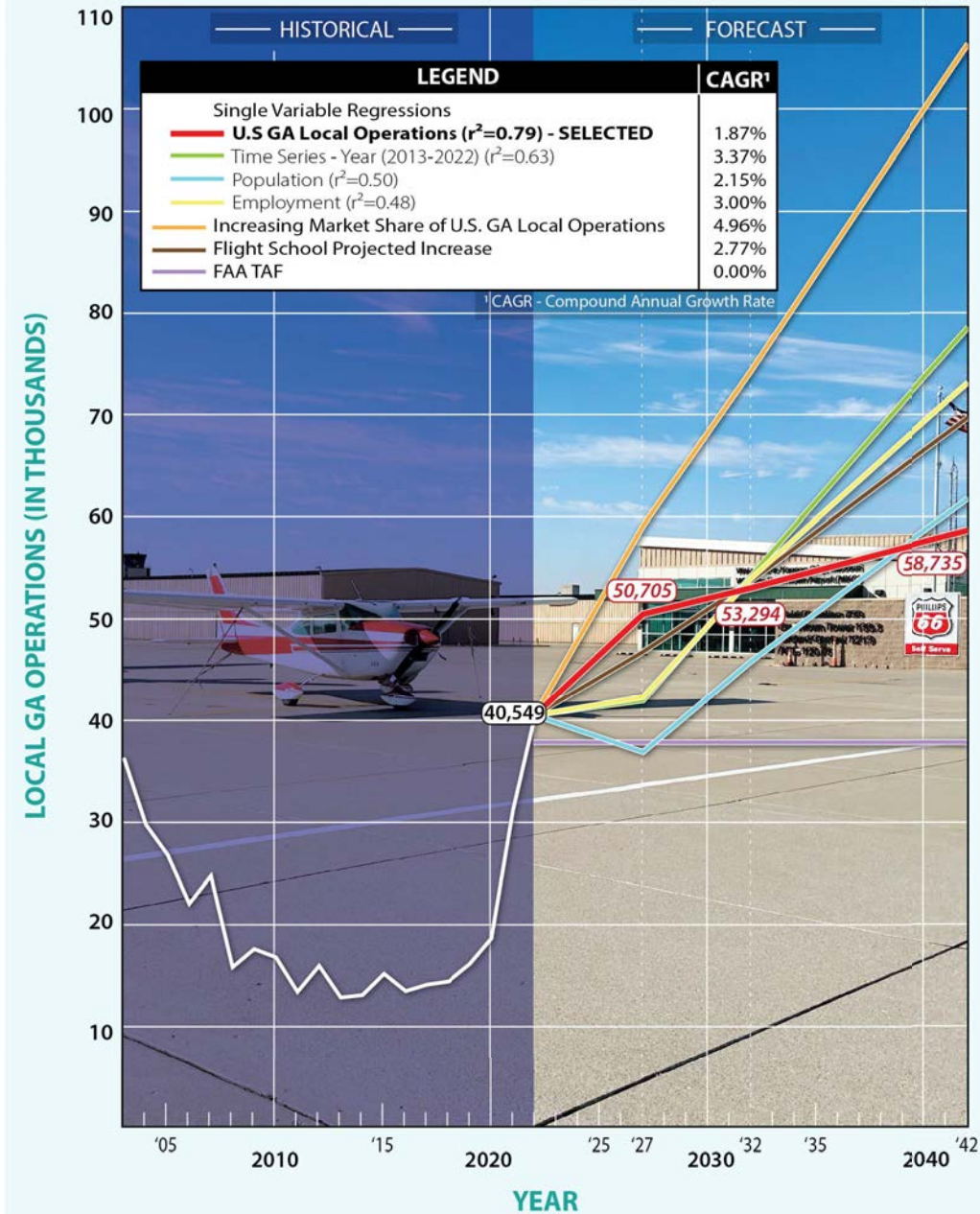
Ex 2D:
Based Aircraft Forecast



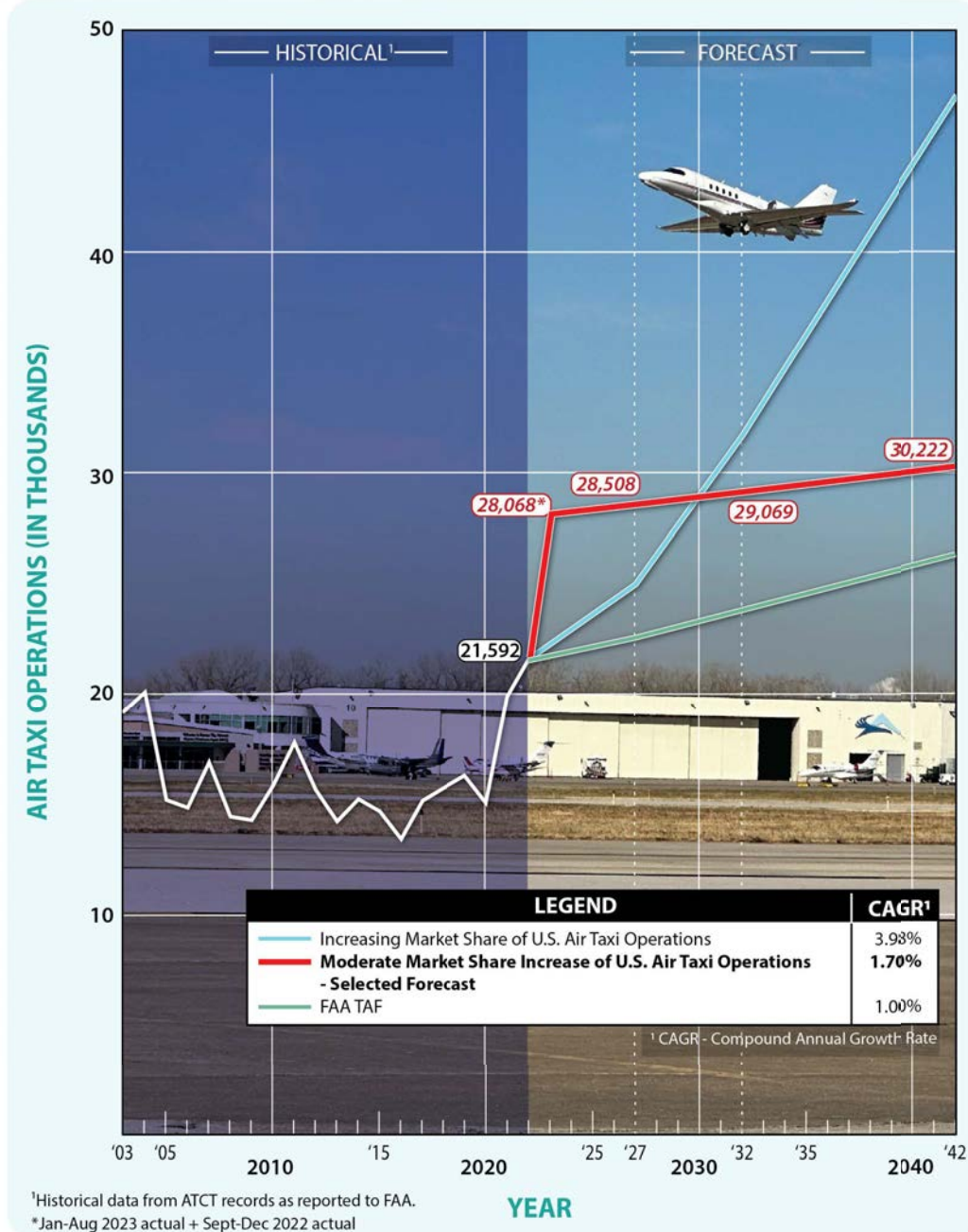
Ex 2E:
Itinerant GA Operations
Forecast



Ex 2F:
Local GA Operations
Forecast



Ex 2G:
Air Taxi Operations Forecast



¹Historical data from ATCT records as reported to FAA.

*Jan-Aug 2023 actual + Sept-Dec 2022 actual

FORECAST SUMMARY

	Base Year	Forecast			CAGR
	2022	2027	2032	2042	
ENPLANEMENTS AND AIR CARGO					
Annual Enplanements	5,055	5,422	5,815	6,689	1.41%
ANNUAL OPERATIONS					
<i>Commercial Operations (Itinerant)</i>					
Air Carrier (>59 seats)	321	360	400	480	2.03%
Air Taxi	21,592	28,508	29,069	30,222	1.70%
Total Commercial Operations	21,913	28,868	29,469	30,702	1.70%
<i>General Aviation Operations</i>					
Itinerant	50,661	52,721	57,630	66,540	1.37%
Local	40,549	50,705	53,294	58,735	1.87%
Total General Aviation Operations	91,210	103,426	110,923	125,275	1.60%
<i>Military Operations</i>					
Itinerant	930	984	984	984	0.28%
Local	41	47	47	47	0.69%
Total Military Operations	971	1,031	1,031	1,031	0.30%
Total Itinerant Operations	73,504	82,574	88,082	98,226	1.46%
Total Local Operations	40,590	50,752	53,341	58,782	1.87%
TOTAL ANNUAL OPERATIONS	114,094	133,326	141,423	157,008	1.61%

FORECAST SUMMARY

	Base Year	Forecast			CAGR
	2022	2027	2032	2042	
BASED AIRCRAFT					
Single Engine Piston	82	83	85	88	0.35%
Multi-Engine Piston	12	12	11	10	-0.91%
Turboprop	9	11	13	15	2.59%
Jet	82	87	90	96	0.79%
Helicopter	11	13	14	17	2.20%
TOTAL BASED AIRCRAFT	196	206	213	226	0.71%

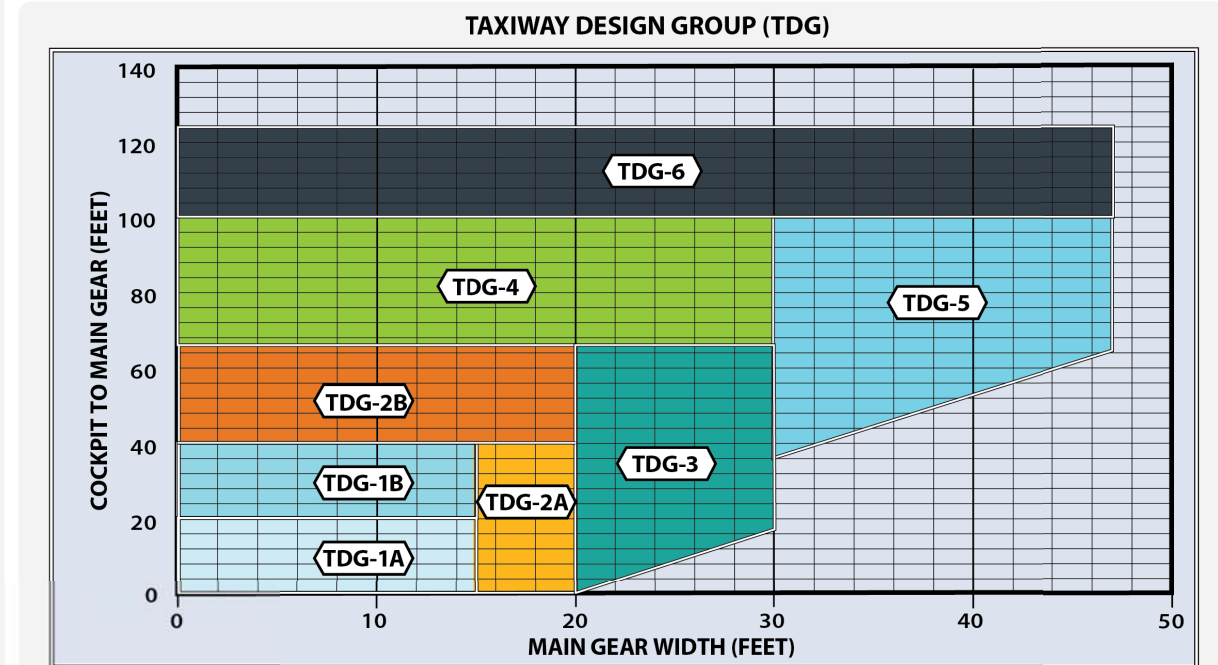
CAGR: Compound Annual Growth Rate

	Base Year	Forecast		
	2022	2027	2032	2042
PEAKING ACTIVITY PROJECTIONS				
Annual Operations	114,094	133,326	141,423	157,008
Peak Month	12,149	14,199	15,062	16,721
Design Day	405	473	502	557
Design Hour	55	64	68	76

Ex 2J: Aircraft Classification Parameters











AIRCRAFT APPROACH CATEGORY (AAC)		
Category	Approach Speed	
A	less than 91 knots	
B	91 knots or more but less than 121 knots	
C	121 knots or more but less than 141 knots	
D	141 knots or more but less than 166 knots	
E	166 knots or more	
AIRPLANE DESIGN GROUP (ADG)		
Group #	Tail Height (ft)	Wingspan (ft)
I	<20	<49
II	20≤30	49≤79
III	30≤45	79≤118
IV	45≤60	118≤171
V	60≤66	171≤214
VI	66≤80	214≤262
VISIBILITY MINIMUMS		
RVR* (ft)	Flight Visibility Category (statute miles)	
VIS	3-mile or greater visibility minimums	
5,000	Not lower than 1-mile	
4,000	Lower than 1-mile but not lower than ¾-mile	
2,400	Lower than ¾-mile but not lower than ½-mile	
1,600	Lower than ½-mile but not lower than ¼-mile	
1,200	Lower than ¼-mile	

*RVR: Runway Visual Range



Source: FAA AC 150/5300-13B, Airport Design

Ex 2J: Aircraft Reference Codes

A-I	Aircraft	TDG	B-II <i>over 12,500 lbs.</i>	Aircraft	TDG	C/D-II	Aircraft	TDG
	<ul style="list-style-type: none"> Beech Baron 55 Beech Bonanza Cessna 150, 172 Eclipse 500 Piper Archer, Seneca 	1A 1A 1A 1A 1A		<ul style="list-style-type: none"> Beech Super King Air 350 Cessna Citation CJ3(525B), V (560) Cessna Citation Bravo (550) Cessna Citation CJ4 (525C) Cessna Citation Latitude/Longitude Embraer Phenom 300 Falcon 10, 20, 50 Falcon 900, 2000 Hawker 800, 800XP, 850XP, 4000 Pilatus PC-24 	2A 2A 1A 1B 1B 1B 1B 2A 1B 1B		<ul style="list-style-type: none"> Challenger 600/604/800/850 Cessna Citation VII, X+ Embraer Legacy 450/500 Gulfstream IV, 350, 450 (D-II) Gulfstream G200/G280 Lear 70, 75 	1B 1B 1B 2A 1B 1B
	<ul style="list-style-type: none"> Beech Baron 58 Beech King Air 90 Cessna 421 Cessna Citation CJ1 (525) Cessna Citation 1(500) Embraer Phenom 100 	1A 1A 1A 1A 2A 1B		<ul style="list-style-type: none"> Bombardier Dash 8 Bombardier Global 5000, 6000, 7000, 8000 Falcon 6X, 7X, 8X 	3 2B 2B		<ul style="list-style-type: none"> Gulfstream V Gulfstream G500, 550, 600, 650 (D-III) Airbus A319-100, 200 Boeing 737 -800, 900, BBJ2 (D-III) MD-83, 88 (D-III) 	2A 2B 3 3 4
	<ul style="list-style-type: none"> Beech Super King Air 200 Cessna 441 Conquest Cessna Citation CJ2 (525A) Pilatus PC-12 	2A 1A 2A 1A		<ul style="list-style-type: none"> Lear 25, 31, 45, 55, 60 Learjet 35, 36 (D-I) 	1B 1B		<ul style="list-style-type: none"> Airbus A300-100, 200, 600 Boeing 757-200 Boeing 767-300, 400 MD-11 	5 4 5 6
							<ul style="list-style-type: none"> Airbus A330-200, 300 Airbus A340-500, 600 Boeing 747-100 - 400 Boeing 777-300 Boeing 787-8, 9 	5 6 5 6 5

Note: Aircraft pictured is identified in bold type.



Ex 2K: Historic Turboprop and Jet Operations

AIRCRAFT APPROACH CATEGORY (AAC)

AAC	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
A	1,200	1,142	1,224	1,108	1,076	1,126	1,406	1,716	2,042	2,128
B	15,952	16,842	17,180	16,164	17,886	18,200	18,148	13,650	20,748	22,320
C	4,794	5,140	4,868	4,658	4,746	4,336	4,224	3,086	4,330	4,630
D	1,266	1,108	1,132	1,270	1,336	1,326	1,304	1,086	1,666	1,716
E	2	4	0	8	6	0	0	0	0	0
TOTAL	23,214	24,236	24,404	23,208	25,050	24,988	25,082	19,538	28,786	30,794

AIRPLANE DESIGN GROUP (ADG)

ADG	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
I	8,082	8,022	7,388	6,530	7,348	7,484	6,962	5,078	6,550	6,926
II	14,654	15,712	16,506	16,150	16,982	16,790	17,220	13,758	21,046	22,610
III	424	424	446	468	668	638	838	662	1,100	1,202
IV	52	70	64	60	50	76	60	40	90	56
V	2	8	0	0	2	0	2	0	0	0
TOTAL	23,214	24,236	24,404	23,208	25,050	24,988	25,082	19,538	28,786	30,794

TAXIWAY DESIGN GROUP (TDG)

TDG	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1A	6,126	5,782	5,416	4,326	4,184	4,446	4,606	4,166	5,400	6,034
1B	10,338	11,520	12,170	11,910	13,928	13,768	13,926	10,322	15,676	16,600
2A	6,220	6,412	6,262	6,282	6,182	6,050	5,626	4,332	6,498	6,884
2B	330	286	326	490	554	516	648	546	844	910
3	156	160	186	144	164	146	220	152	312	312
4,5,6	44	72	44	56	38	62	56	20	56	54
TOTAL	23,214	24,236	24,404	23,208	25,050	24,988	25,082	19,538	28,786	30,794



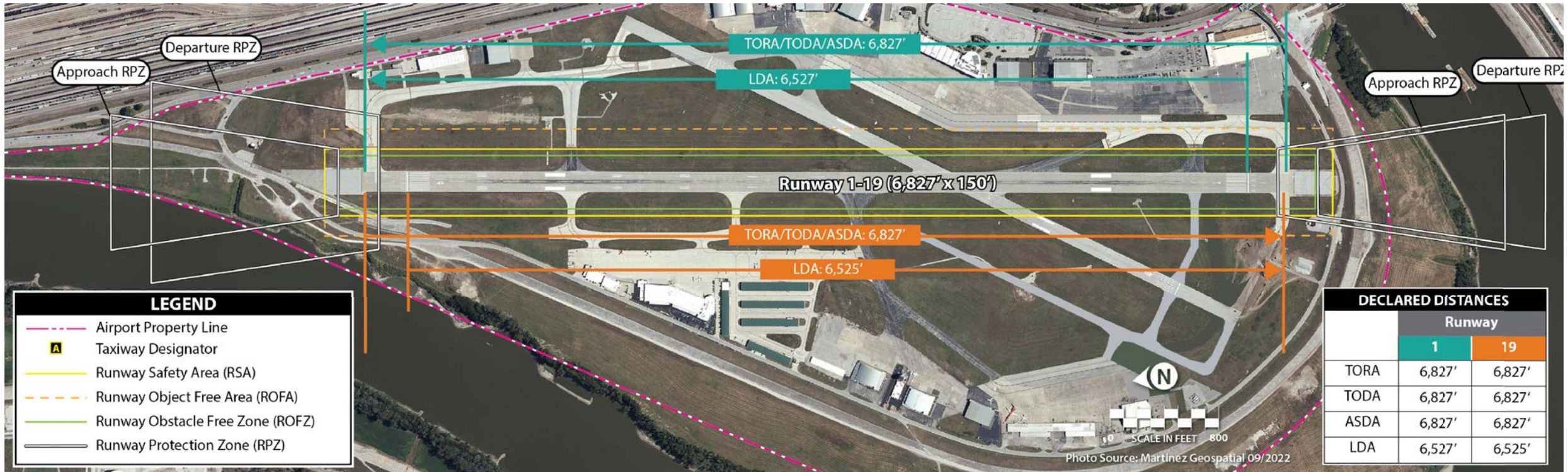
Airport Master Plan

KANSAS CITY WHEELER DOWNTOWN AIRPORT

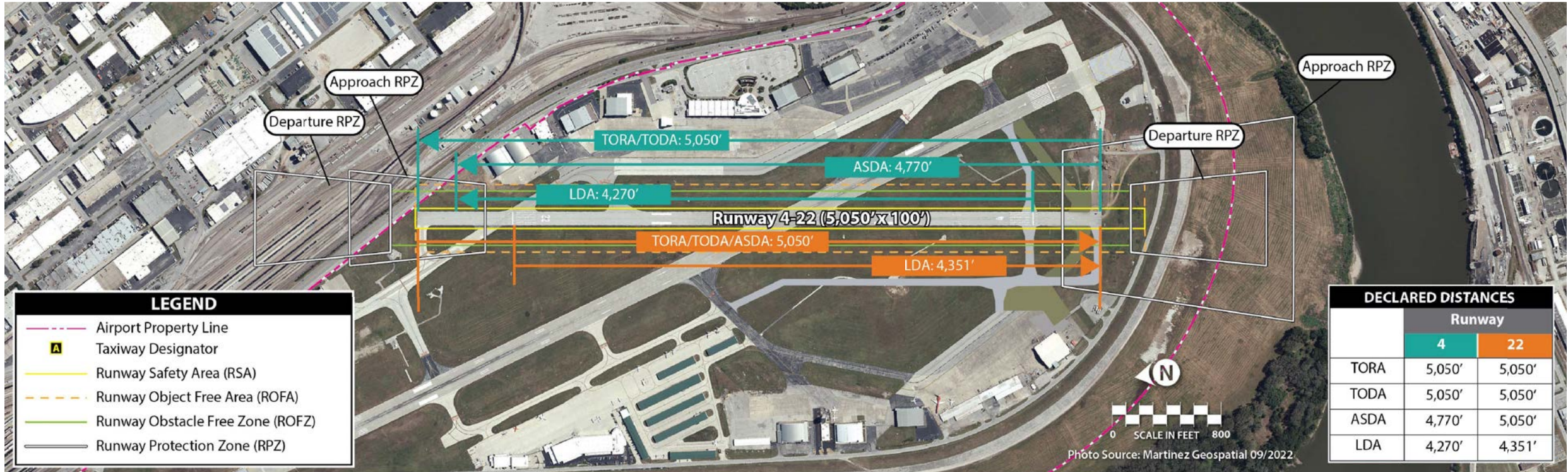
A photograph of the Spirit of the Plains statue, a bronze sculpture of a Native American on a horse, standing on a stone pedestal. The background shows the Kansas City skyline under a cloudy sky. A large, semi-transparent blue triangle is overlaid on the left side of the image, containing the text.

Chapter 3 FACILITY REQUIREMENTS

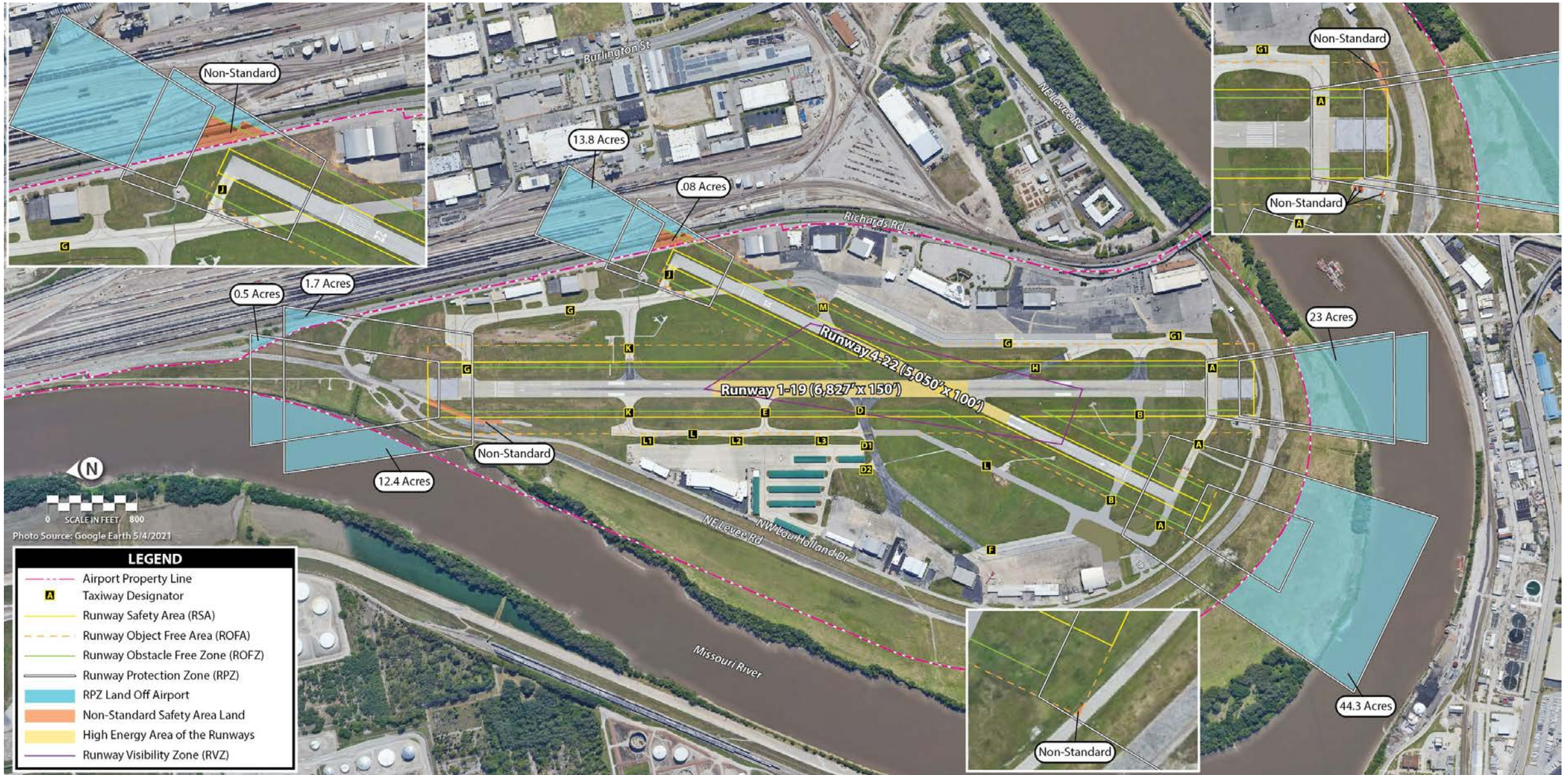
Ex 3C: Existing Declared Distances



Ex 3C: Existing Declared Distances



Ex 3E: Airfield Safety Areas





Ex 3D: Runway Design Standards

	Runway 1-19		Runway 4-22	
	Current/Ultimate Design Standard	Current Condition	Current/Ultimate Design Standard	Current Condition
Airport Design Aircraft	D-III-2B	D-III-2B	B-II-2B	B-II-2B
Runway Design Code	D-III-4000	D-III-4000	B-II-4000	B-II-4000
Visibility Minimums	¾-mile	¾-mile	¾-mile	¾-mile
RUNWAY DESIGN				
Runway Width	100'	150'	75'	100'
Runway Shoulder Width	20'	20'	10'	10'
Blast Pad Length/Width (if provided)	200' x 140'	200' x 140'	100' x 80'	100' x 80'
EMAS Length/Width	263' x 170' (Rwy 1) 287' x 170' (Rwy 19)	263' x 170' (Rwy 1) 287' x 170' (Rwy 19)	NA	NA
RUNWAY PROTECTION				
Runway Safety Area (RSA)				
Width	500'	500'	150'	150'
Length Beyond Departure End	1,000'	1,000' ¹	300'	300'
Length Prior to Threshold	600'	600'	300'	300'
Runway Object Free Area (ROFA)				
Width	800'	800'	500'	500' ²
Length Beyond Departure End	1,000'	1,000' ¹	300'	300' ²
Length Prior to Threshold	600'	600'	300'	300'
Runway Obstacle Free Zone (OFZ)				
Width	400'	400'	400'	400' ³
Length Beyond End	200'	200'	200'	200' ³

Note: All dimensions in feet. **BOLD** figures are non-standard.

¹RSA and ROFA dimensions meet standard due to the presence of EMAS.

²The ROFA length and width are penetrated by the perimeter fence, Richards Rd., and Highway 169.

³The OFZ length and width are penetrated by the perimeter fence, Richards Rd., and Highway 169.



Ex 3D: Runway Design Standards

	Runway 1-19				Runway 4-22			
	Current/Ultimate Design Standard		Current Condition		Current/Ultimate Design Standard		Current Condition	
Approach Runway Protection Zone (RPZ)	Rwy 1	Rwy 19	Rwy 1	Rwy 19 ⁴	Rwy 4	Rwy 22	Rwy 4	Rwy 22 ⁴
Length	1,700'	1,700'	1,700'	1,700'	1,700'	1,000'	1,700'	1,000'
Inner Width	500'	1,000'	500'	1,000'	1,000'	500'	1,000'	500'
Outer Width	1,010'	1,510'	1,010'	1,510'	1,510'	700'	1,510'	700'
Departure Runway Protection Zone (RPZ)	Rwy 1	Rwy 19	Rwy 1 ⁴	Rwy 19	Rwy 4	Rwy 22	Rwy 4 ⁴	Rwy 22
Length	1,700'	1,700'	1,000'	1,700'	1,000'	1,000'	1,000'	1,000'
Inner Width	500'	500'	500'	500'	500'	500'	500'	500'
Outer Width	1,010'	1,010'	700'	1,010'	700'	700'	700'	700'
RUNWAY SEPARATION								
Runway Centerline to:								
Holding Position		258'	250'⁵/258'		200'		250'	
Parallel Taxiway		400'	400'/413'⁶		240'		358'	

Note: All dimensions in feet. **BOLD** figures are non-standard.

⁴RPZs contain incompatible land uses; primarily public roads.

⁵Holdlines on westside Taxiways K and E are 250' from centerline.

⁶Parallel portion of Taxiway G is 413' from centerline.



NEXT STEPS



- **Receive Comments**
- **Fall 2024 PAC Meeting**
- **Fall 2024 Public Information Workshop**

