

# Ralph M. Hall Municipal Airport City of Rockwall



**Project Kickoff and Airport  
Inventory**

**Aviation Demand Forecasts and  
Facility Requirements**

**Alternatives Evaluation: Airside  
and Landside**

**Capital Improvement Program  
and Phased Development Plan**

**Airport Layout Plan and Final  
Report**



# Ralph M. Hall Municipal Airport Mission Statement

To provide resident pilots and aircraft owners a safe recreational facility while offering regional corporations and growing businesses a local transportation base with national reach and accessibility to Rockwall's thriving economy.





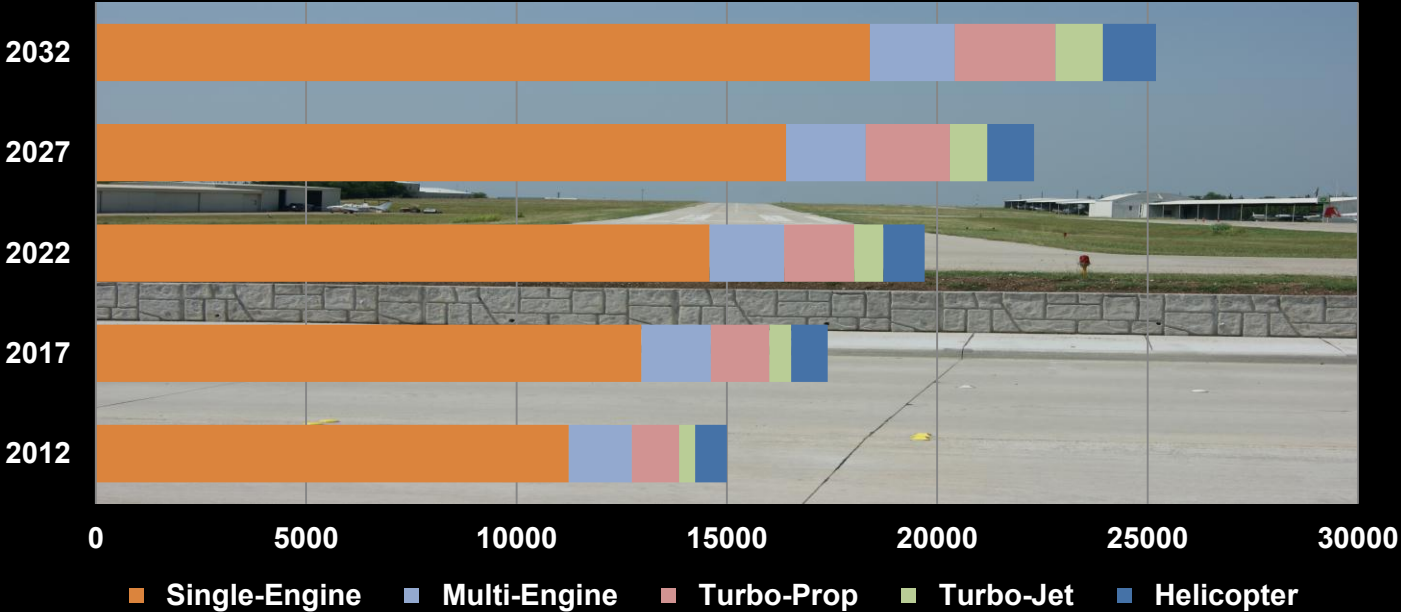
# Forecasts

- Aviation Demand Forecasts
  - ▲ Local & regional influences
  - ▲ Changes in fleet mix, industry trends
  - ▲ Meets FAA requirements
  - ▲ Forwarded to TxDOT for approval
- Airport Operations
- Based Aircraft



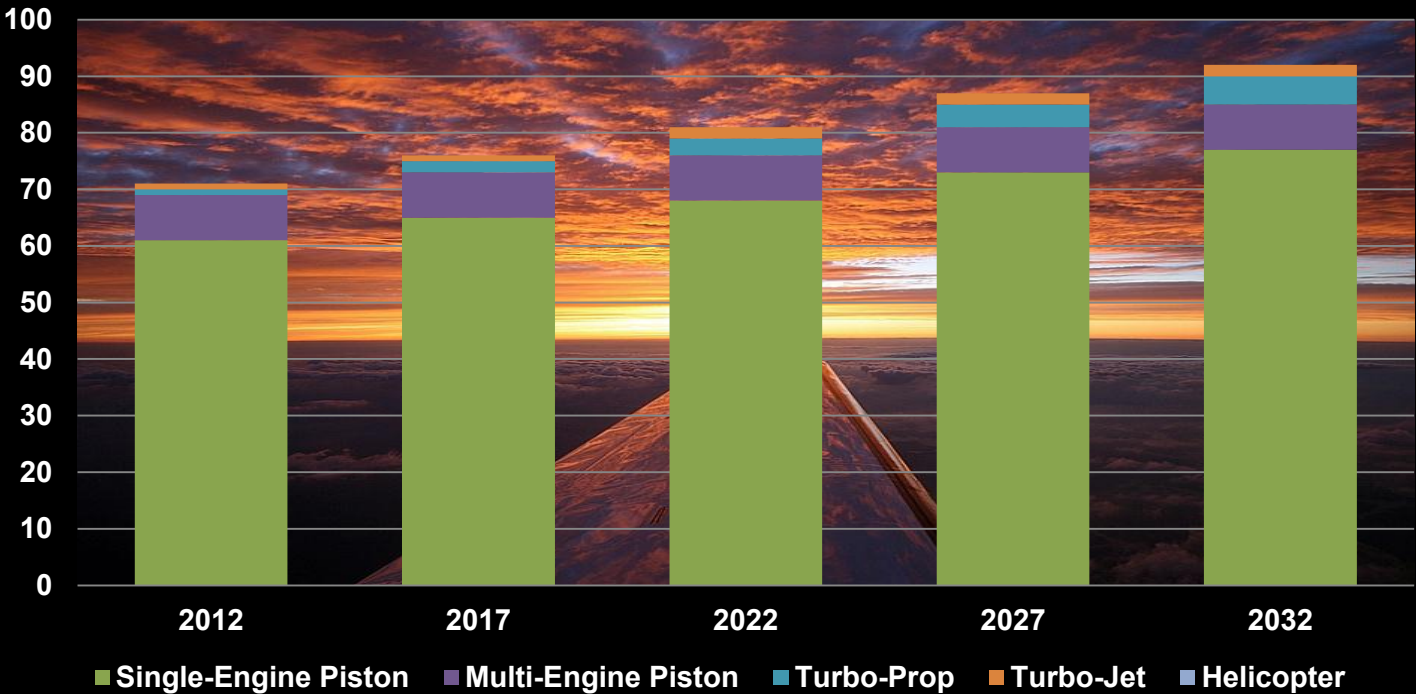
# Rockwall Aviation Demand Forecast Summary

SUMMARY OF OPERATIONS BY AIRCRAFT TYPE,  
2012-2032



# Rockwall Aviation Demand Forecast Summary

GENERAL AVIATION BASED AIRCRAFT FLEET MIX,  
2012-2032



## Texas Airport System Plan



Update 2010

## Facility Requirements

- Updated every 2 years
- Classifies each airport in the system
  - ▲ Commercial
  - ▲ Reliever
  - ▲ Business/Corporate
  - ▲ Community Service
  - ▲ Basic Service
- Defines minimum facilities and services





# Facility Requirements

Community Service

City	Airport	Airport ID	County Name	NPIAS Airport	State Role	Current Design Standard	Functional Category
ROCKPORT	ARANSAS CO	RKP	ARANSAS	Y	BC	C-II	REGIONAL
ROCKSPRINGS	EDWARDS COUNTY	ECU	EDWARDS		BS	B-I	REMOTE
ROCKWALL	ROCKWALL MUNI	F46	ROCKWALL	Y	CS	B-I	MULTI
ROTAN/ROBY	FISHER COUNTY	56F	FISHER		BS	A-I	AGRICULTURE
SAN ANGELO	SAN ANGELO RGNL/MATHIS FIELD	SJT	TOM GREEN	Y	CMS	C-IV	COMMERCIAL
SAN ANTONIO	BEXAR COUNTY (NEW)	xxx	BEXAR		CS	B-II	MULTI
SAN ANTONIO	SAN ANTONIO INTL	SAT	BEXAR	Y	CMS	D-V	COMMERCIAL
SAN ANTONIO	STINSON MUNI	SSF	BEXAR	Y	RL	B-II	RELIEVER
SAN AUGUSTINE	SAN AUGUSTINE COUNTY	78R	SAN AUGUSTINE		BS	B-II	ACCESS
SAN MARCOS	SAN MARCOS MUNI	HYI	CALDWELL	Y	RL	C-II	RELIEVER
SAN SABA	SAN SABA COUNTY MUNI	81R	SAN SABA		CS	B-I	MULTI
SEMINOLE	GAINES COUNTY	GNC	GAINES	Y	CS	B-II	MULTI
SEYMOUR	SEYMOUR MUNI	60F	BAYLOR	Y	CS	B-I	MULTI
SHAMROCK	SHAMROCK MUNI	2F1	WHEELER		BS	A-I	MULTI
SHERMAN	SHERMAN MUNI	SWI	GRAYSON		CS	B-II	MULTI
SHERMAN/DENISON	GRAYSON COUNTY	GYI	GRAYSON	Y	BC	D-IV	INDUSTRIAL
SINTON	ALFRED C "BUBBA" THOMAS	T69	SAN PATRICIO		CS	B-II	MULTI
SLATON	SLATON MUNI	F49	LUBBOCK	Y	CS	B-II	MULTI
SMITHVILLE	SMITHVILLE CRAWFORD MUNI	84R	BASTROP	Y	CS	B-II	MULTI
SNYDER	WINSTON FIELD	SNK	SCURRY	Y	BC	B-II	REGIONAL
SONORA	SONORA MUNI	SOA	SUTTON		BS	B-I	MULTI
SPEARMAN	SPEARMAN MUNI	E42	HANSFORD	Y	CS	B-II	AGRICULTURE
STAMFORD	ARLEDGE FIELD	F56	JONES	Y	CS	B-I	MULTI

# Airport Design Standards

Item	Runway 17/35	TxDOT and FAA Design Standards
<b>Runway Design</b>		
Length	3,373'	4,000'
Width	45'	60'
Safety Area Width	120'	120'
Safety Area Length Beyond R/W End	0'/0'	240'/240'
Object Free Area Width	380'	400'
Object Free Area Length Beyond R/W End	0'/0'	240'/240'
Obstacle Free Zone Width	250'	250'
Obstacle Free Zone Length Beyond R/W End	0'	200'
<b>Runway Setbacks - Runway Centerline to:</b>		
Parallel Taxiway Centerline	121'/157'/177'	225'
Holdline	100'	200'
Aircraft Parking Area	140'	250'
<b>Taxiway Design</b>		
Width	17'/23'	25'
Safety Area Width	25'/49'	49'
Object Free Area Width	60'/89'	89'



# 2

## Airfield Alternatives

- Maintain Current Boundaries – North and South
  - ▲ North – Fill to meet safety area design standards
  - ▲ South and North – Publish declared distances
- Explore Expansion
  - ▲ Runway Expansion to 4,000' x 60'
  - ▲ Parallel Taxiway Offset at 225' and Width of 25'
  - ▲ Airport Road Realignment
  - ▲ Property Acquisition





**LEGEND**

- Rerouted Airport Road
- Proposed Runway and Parallel Taxiway
- Proposed Pavement (Land Side)
- Proposed Pavement (Air Side)
- Proposed Terminal Building
- Proposed Box Hangar
- Proposed Nested T-Hangar
- Proposed Shade Hangar











# 4

## Terminal Development Alternatives

- Addresses Parallel Taxiway Offset of 225'
- Assumes Acquisition of 19-acre Parcel
- Provides new
  - ▲ Terminal Building
  - ▲ Fuel Storage/Delivery System
  - ▲ Auto Access/Entrance w/ Security
  - ▲ Ample Apron for Aircraft Parking and Maneuvering
  - ▲ Mix of Hangars: Box/Corporate, Enclosed T-hangars, and Open Shade T-hangars

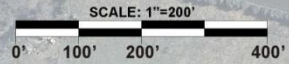


**LEGEND**

-  Rerouted Airport Road
-  Proposed Runway and Parallel Taxiway
-  Proposed Pavement (Land Side)
-  Proposed Pavement (Air Side)
-  Proposed Terminal Building
-  Proposed Box Hangar
-  Proposed Nested T-Hangar
-  Proposed Shade Hangar

Total Box Hangar Space: 68,800 SF\*  
Total T-Hangar Spaces: 20  
Total Shade Hangar Spaces: 20  
Total Apron: 17,778 SY\*  
Total Taxilane: 4,386 LF\*  
Total Auto Parking Spaces: 106

\*Estimated



Reserved for Future Development  
Approx. 9 Acres

- ① 40'x60' Hangar
- ② 60'x60' Hangar
- ③ 80'x80' Hangar
- ④ 100'x100' Hangar
- ⑤ 10-Unit T-Hangar
- ⑥ 10-Unit Shade Hangar



# FAA Program Guidance Letter – Fall 2012

- Existing Uses – Grandfathered
- Changes to Runway End Location
  - ▲ Runway Protection Zone Land Use Requiring Analysis, Coordination, and Approval
    - Buildings/Structures
    - Transportation Facilities
      - Roads
      - Railroads
    - Above-ground Utility Infrastructure
    - Recreational Uses
    - Fuel Storage Facilities
    - Hazardous Materials
    - Wastewater Treatments Facilities



# 2

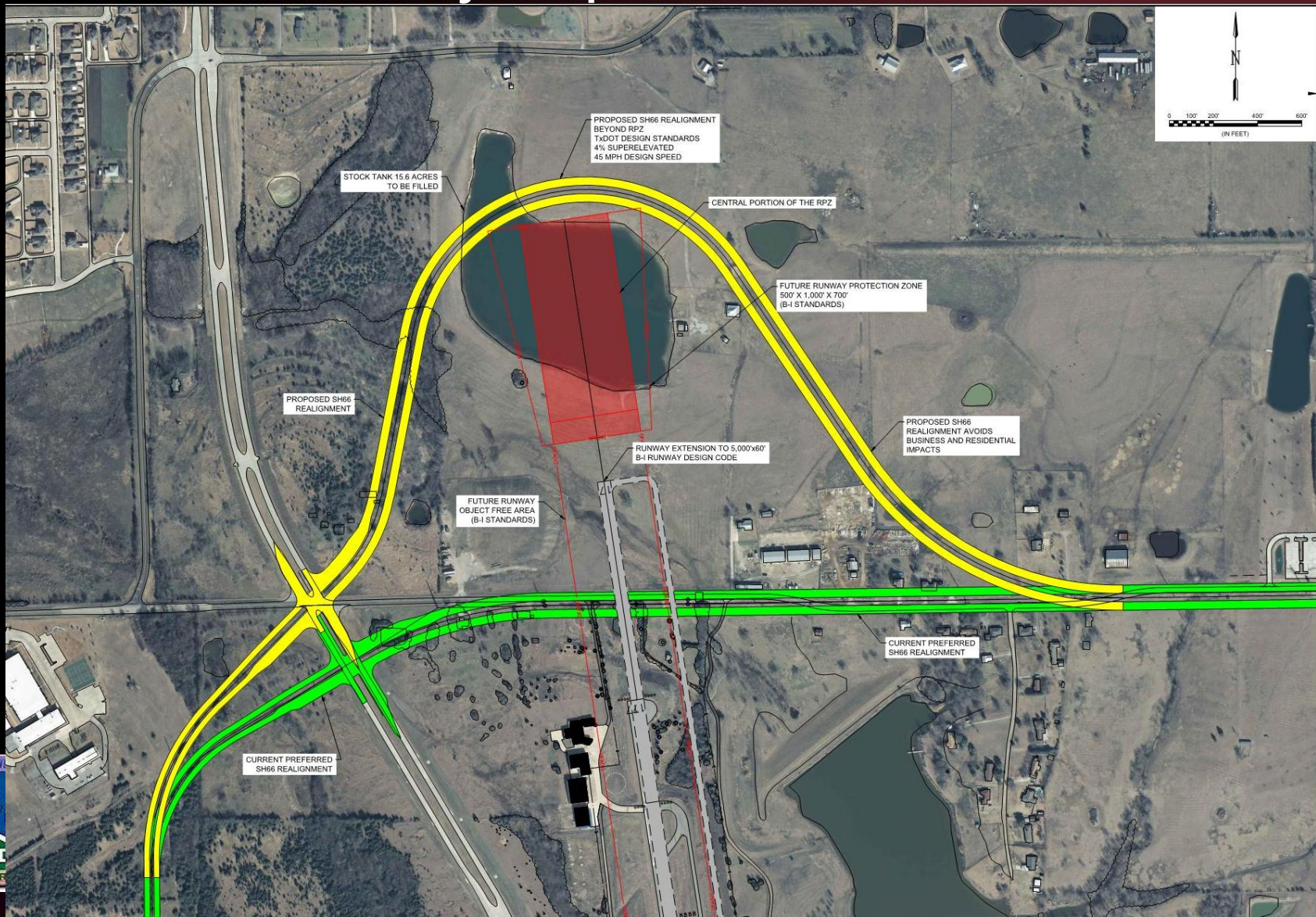
## Airfield Alternatives

- Northern Runway Expansion – 5,000’
  - ▲ Fill to meet safety area design standards
  - ▲ SH66 and Powerline Reroutes
  - ▲ Property Acquisition and RPZ
- Southern Runway Expansion – 5,000’
  - ▲ Railroad Impact
  - ▲ Property Acquisition
  - ▲ IH30 Approach Clearances
  - ▲ Industrial Development Considerations

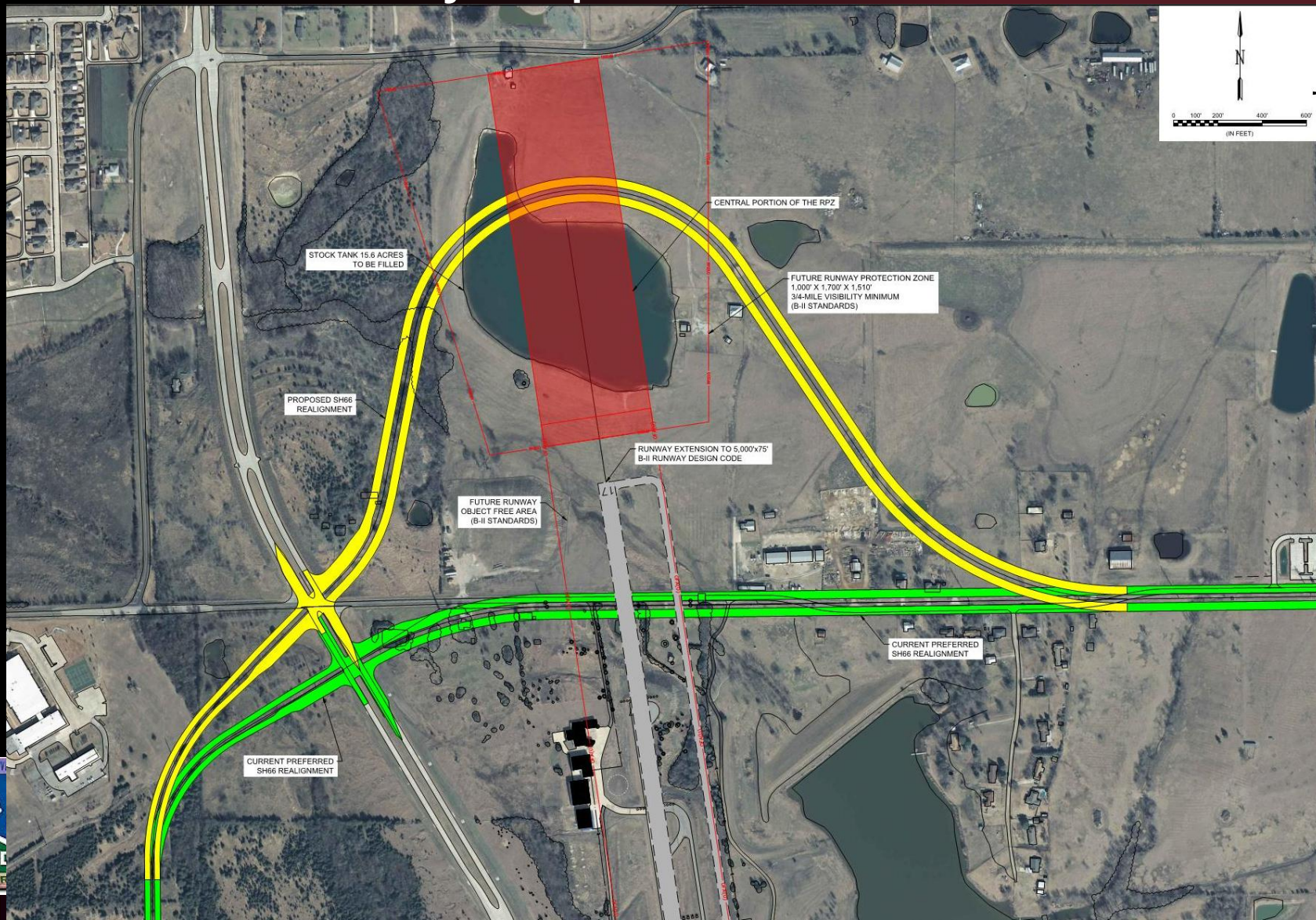




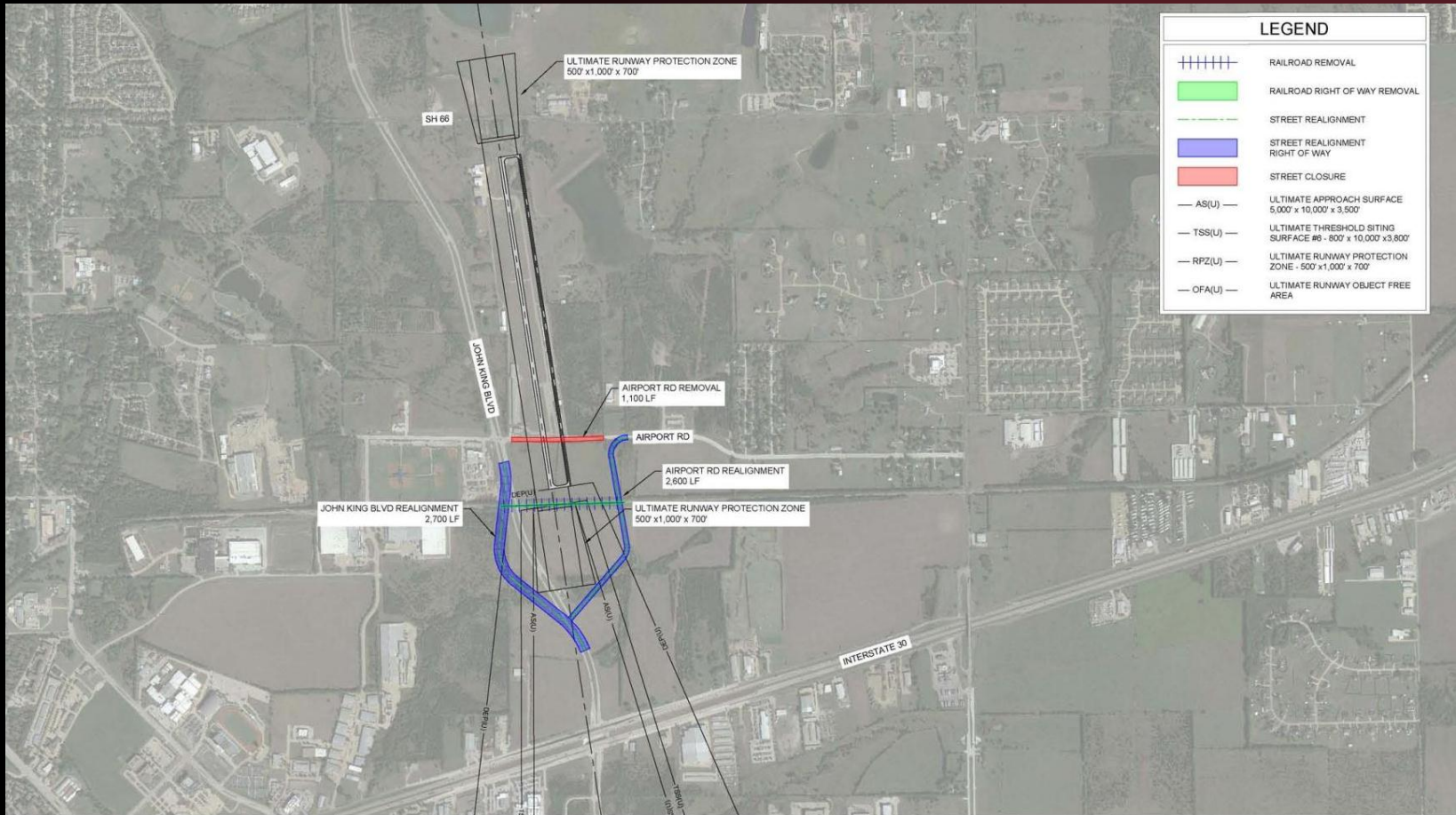
# Northern Runway Expansion – B-I, 5,000' x 60'



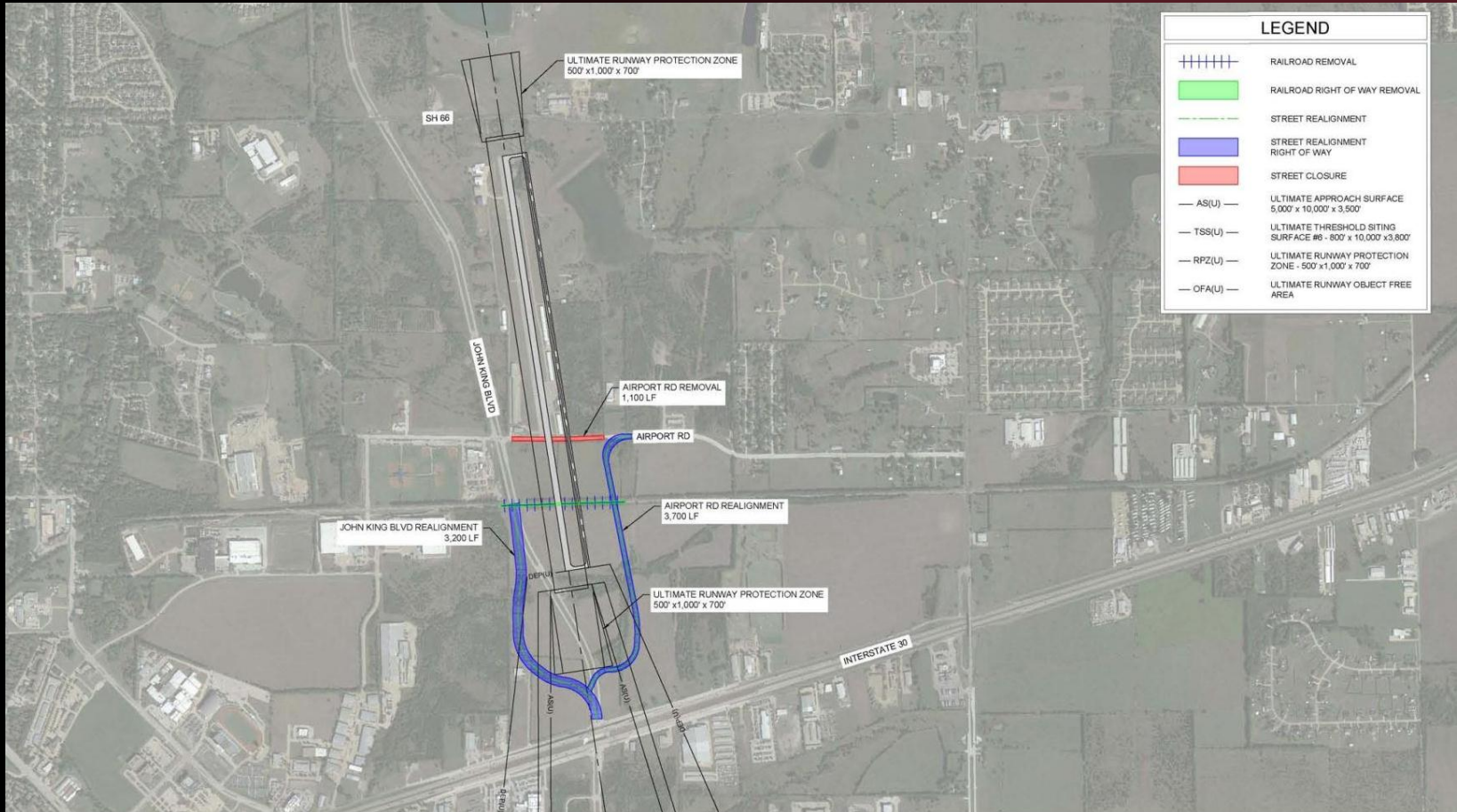
# Northern Runway Expansion – B-II, 5,000' x 75'



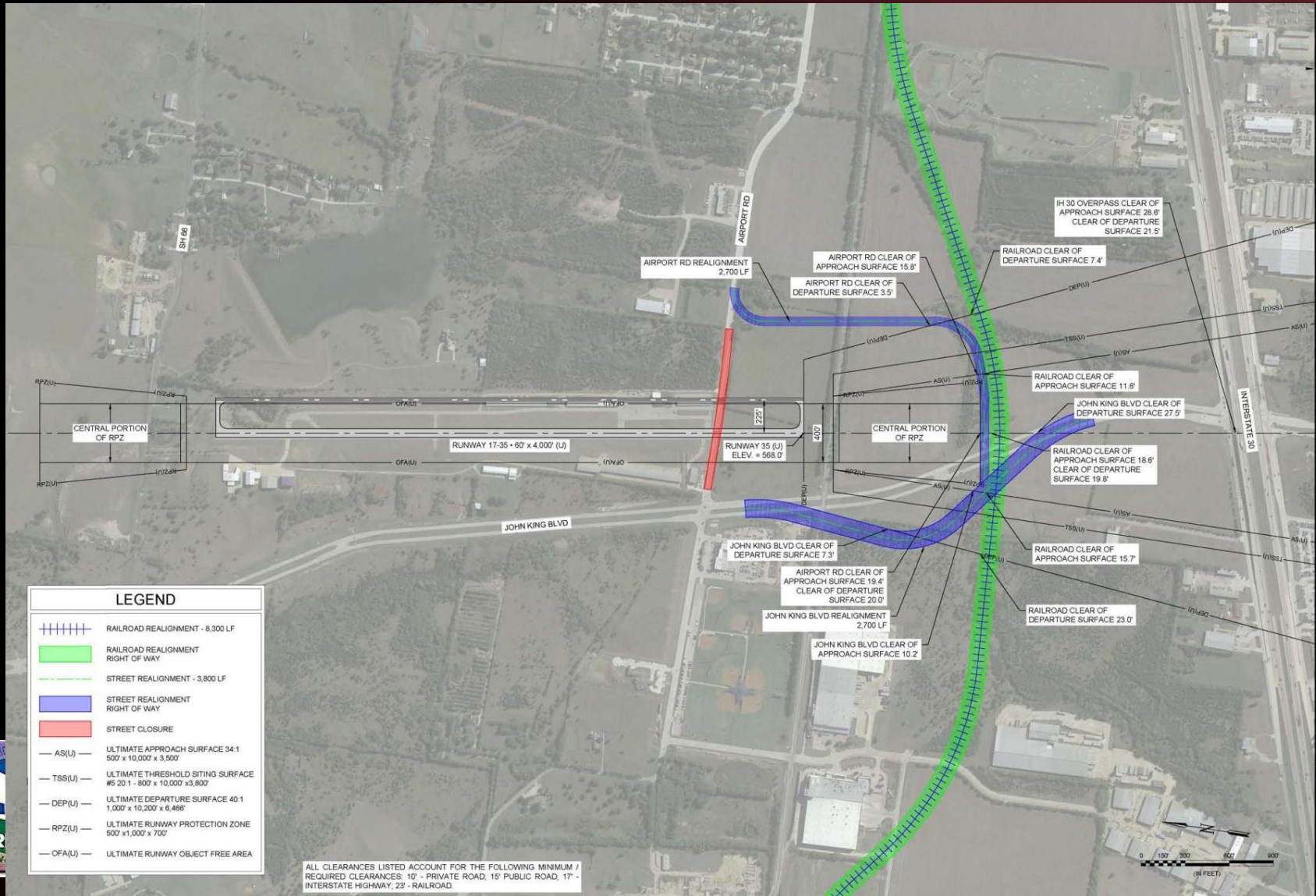
# Southern Runway Expansion – B-I, 4,000' x 60'



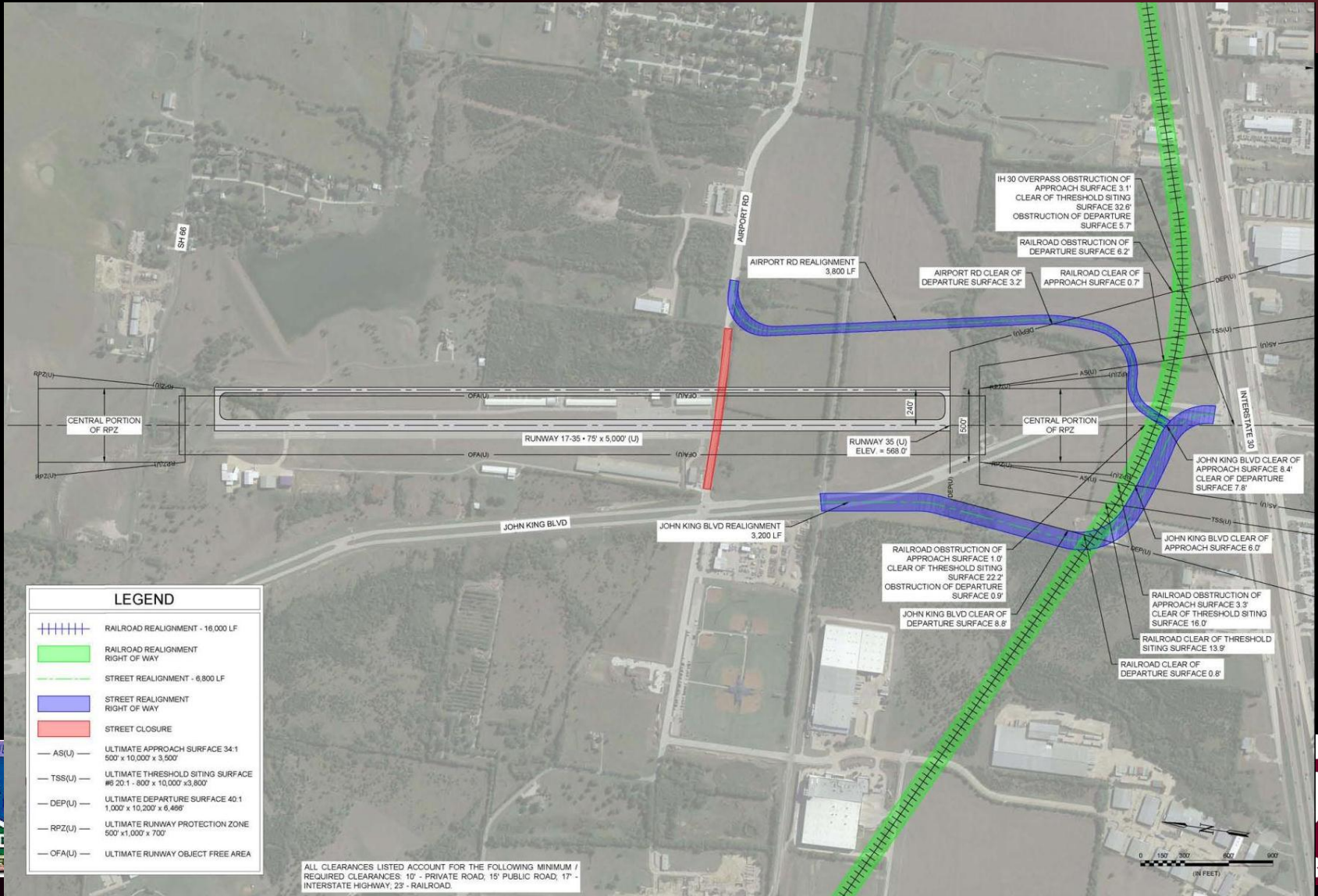
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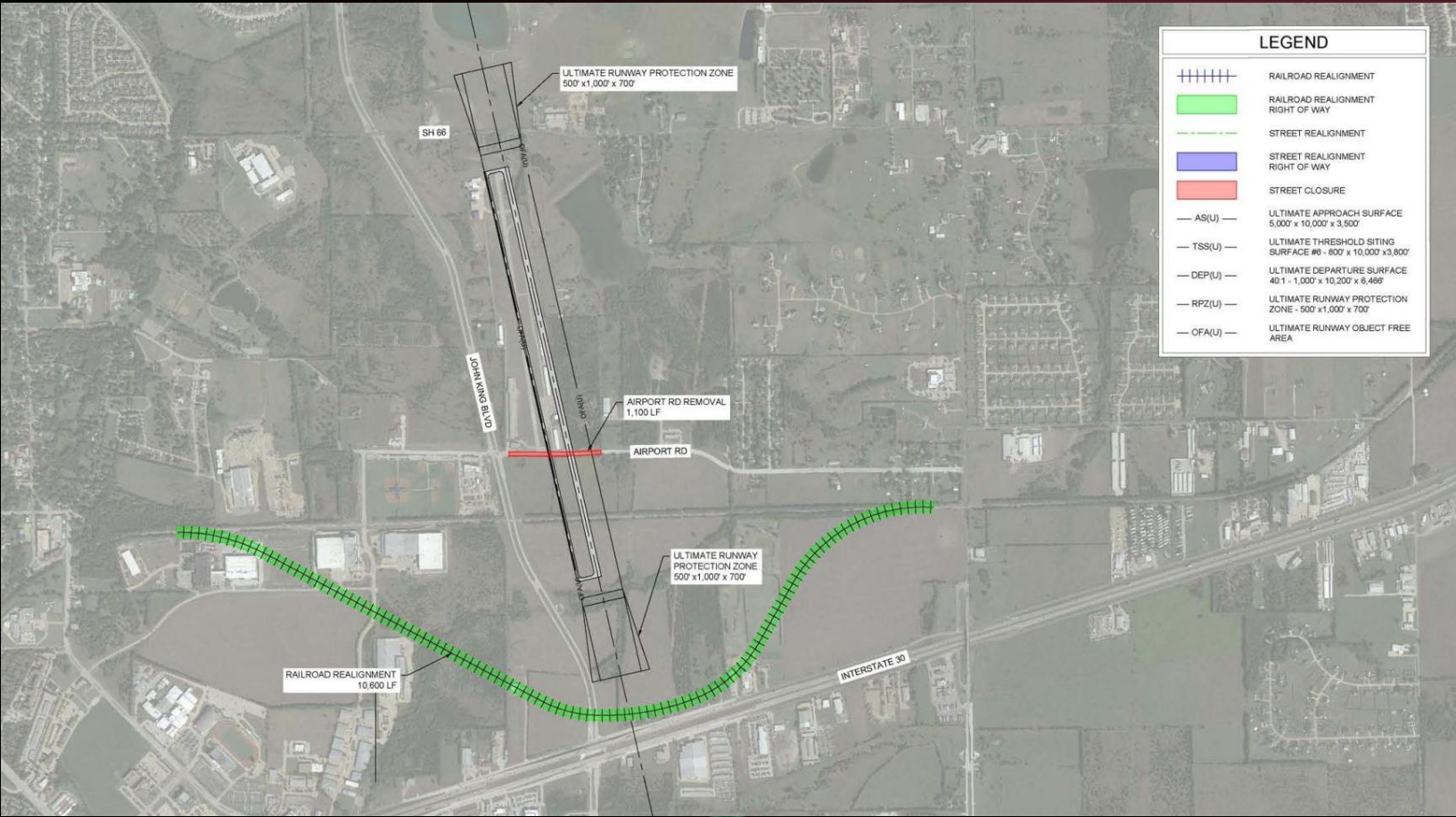
# Southern Runway Expansion – B-I, 4,000' x 60' with Railroad Realignment



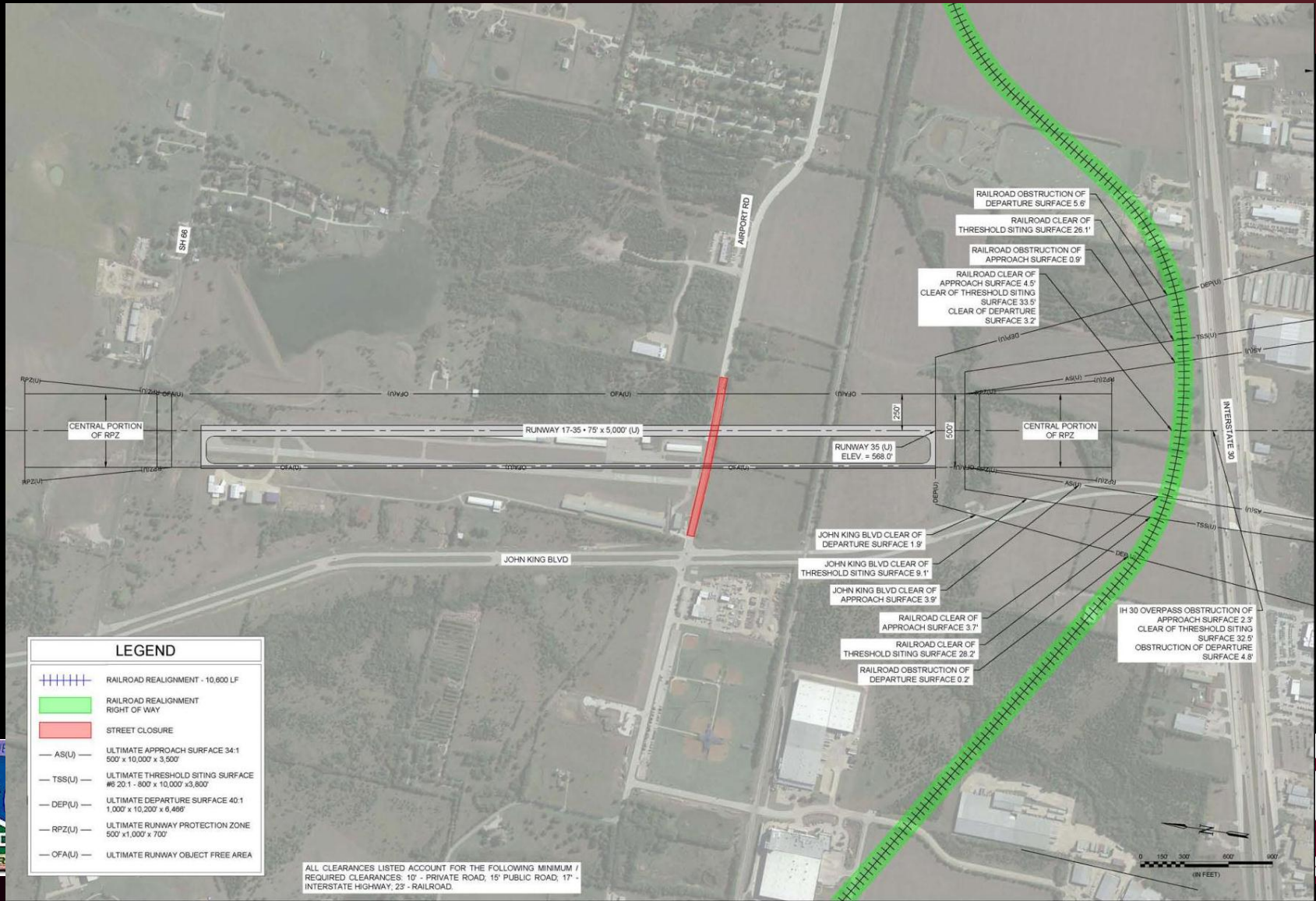
# Southern Runway Expansion – B-II, 5,000' x 75' with Railroad Realignment



# Southern Runway Expansion – B-II, 5,000' x 75' with Runway and Railroad Realignment



# Southern Runway Expansion – B-II, 5,000' x 75' with Runway and Railroad Realignment



**LEGEND**

- RAILROAD REALIGNMENT - 10,600 LF
- RAILROAD REALIGNMENT RIGHT OF WAY
- STREET CLOSURE
- AS(U) — ULTIMATE APPROACH SURFACE 34.1  
500' x 10,000' x 3,500'
- TSS(U) — ULTIMATE THRESHOLD SITING SURFACE  
#0 20.1 - 800' x 10,000' x 3,800'
- DEP(U) — ULTIMATE DEPARTURE SURFACE 40.1  
1,000' x 10,200' x 6,466'
- RPZ(U) — ULTIMATE RUNWAY PROTECTION ZONE  
500' x 1,000' x 700'
- OFA(U) — ULTIMATE RUNWAY OBJECT FREE AREA

ALL CLEARANCES LISTED ACCOUNT FOR THE FOLLOWING MINIMUM / REQUIRED CLEARANCES: 10' - PRIVATE ROAD, 15' - PUBLIC ROAD, 17' - INTERSTATE HIGHWAY, 23' - RAILROAD.

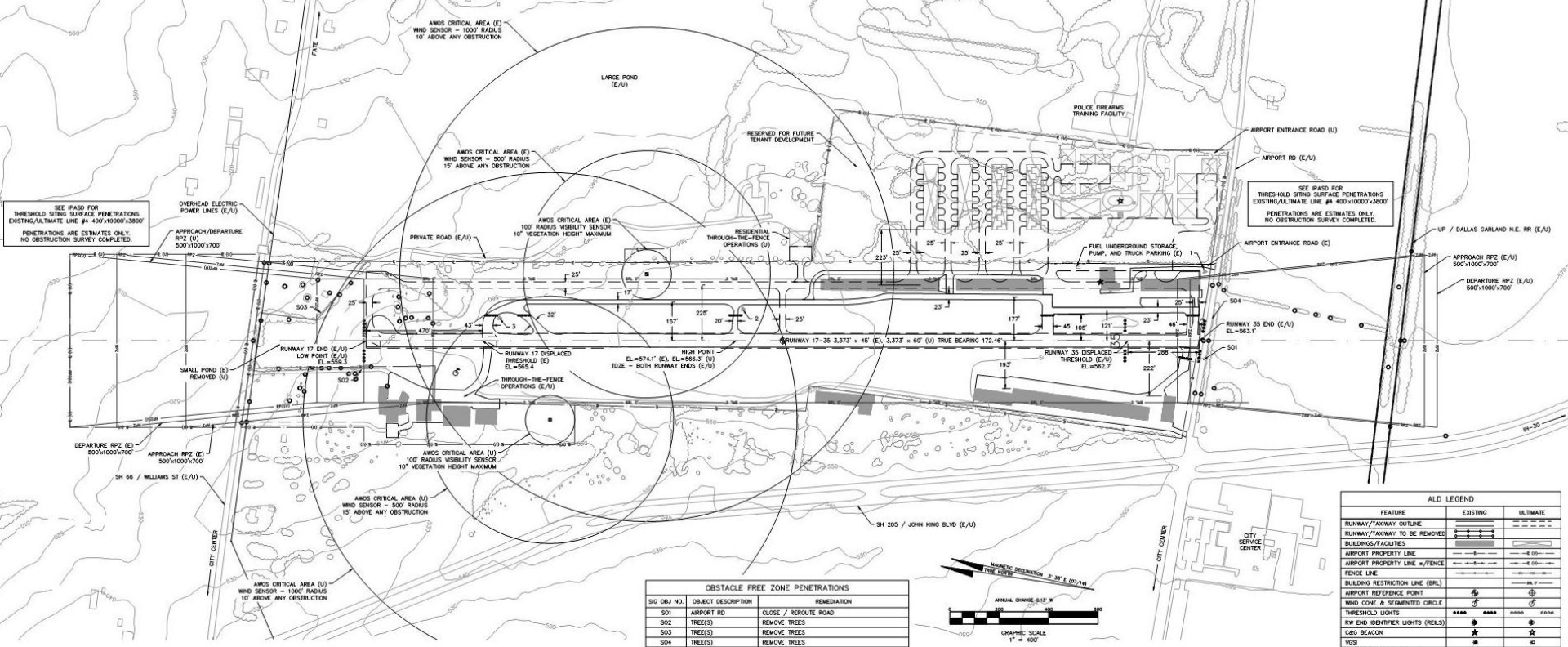




# Airport Layout Plan

- Airport Layout Drawing
- Inner Portion of the Approach Surface Drawings
- Terminal Area Drawings
- Land Use Drawing
- Property Map





SEE IPAD FOR THRESHOLD STRING SURFACE PENETRATIONS EXISTING/ULTIMATE LINE #4 400'x1000'x3800' PENETRATIONS ARE ESTIMATES ONLY, NO OBSTRUCTION SURVEY COMPLETED.

SEE IPAD FOR THRESHOLD STRING SURFACE PENETRATIONS EXISTING/ULTIMATE LINE #4 400'x1000'x3800' PENETRATIONS ARE ESTIMATES ONLY, NO OBSTRUCTION SURVEY COMPLETED.

SID OBJ NO.	OBJECT DESCRIPTION	REMEDATION
S01	AIRPORT RD	CLOSE / REROUTE ROAD
S02	TREES(S)	REMOVE TREES
S03	TREES(S)	REMOVE TREES
S04	TREES(S)	REMOVE TREES

RW 17-35	EXISTING		ULTIMATE	
	B-1	1 MILE	B-1	1 MILE
DESIGN AIRCRAFT & ARC	CESSNA 421	CESSNA 421	CESSNA 421	CESSNA 421
BALANCED FIELD LENGTH	2337'	2337'	2337'	2337'
RUNWAY LENGTH & WIDTH (ft.)	3372' x 45'	3373' x 60'	3373' x 60'	3373' x 60'
PAVEMENT DESIGN STRENGTH (1000 lbs.)	12	50	30	50
RUNWAY LIGHTING	NONE	MRL	MRL	MRL
PERCENT EFFECTIVE GRADIENT	0.44%	0.21%	0.21%	0.21%
PERCENT WIND COVERAGE	98.52%	98.52%	98.52%	98.52%
MAXIMUM ELEVATION ABOVE MSL	574.10'	566.30'	566.30'	566.30'
RW SURFACE TYPE	ASPH	ASPH	ASPH	ASPH
RTSA - LENGTH BEYOND RW END	240'	240'	240'	240'
RTSA - WIDTH	120'	120'	120'	120'
GFA - LENGTH BEYOND RW END	240'	240'	240'	240'
GFA WIDTH	400'	400'	400'	400'
GFZ - LENGTH BEYOND RW END	200'	200'	200'	200'
GFZ WIDTH	250'	250'	250'	250'
RUNWAY END	17	35	17	35
APPROACH TYPE	NDB/GPS	NDB/GPS	GPS	GPS
APPROACH VISIBILITY MINIMA	1 MILE	1 MILE	1 MILE	1 MILE
THRESHOLD STRING SURFACE & SLOPE	# 20.1	# 20.1	# 20.1	# 20.1
RUNWAY MARKING	NONE	HP	HP	HP
RUNWAY VISUAL AIDS	NONE	PAPL-2L	PAPL-2L	PAPL-2L
TOUCHDOWN ZONE ELEVATION	574.10'	574.10'	566.30'	566.30'
FAR PART 77 APPROACH CATEGORY	ANP	ANP	ANP	ANP
FAR PART 77 APPROACH SURFACE SLOPE	20.1	20.1	20.1	20.1
TAKE-OFF RIM AVAILABLE (TORA)	2632'	2830'	3133'	3373'
TAKE-OFF DISTANCE AVAILABLE (TODA)	2632'	2830'	3133'	3373'
ACCELERATE STOP DISTANCE AVAILABLE (ASDA)	3133'	3183'	3133'	3373'
LANDING DISTANCE AVAILABLE (LDA)	2663'	2864'	2663'	3084'

	EXISTING	ULTIMATE
AIRPORT ELEVATION (MSL)	574.1'	566.3'
AIRPORT NAVIGATION AIDS	NDB, GPS	GPS
MEAN WIND TEMP (HIGHEST MONTH F)	95F	95F
AIRPORT REFERENCE CODE (ARC)	B-1	B-1
TAXIWAY MARKING	STD W/REF	STD W/REF
TAXIWAY LIGHTING	NONE	NONE
AIRPORT REFERENCE POINT COORDINATES	32°50'50.14" N 96°28'07.75" W	32°50'50.14" N 96°28'07.75" W

NOTES:  
DATUM COORDINATE SYSTEMS - HORIZONTAL DATUM NA 1983 (STATE PLAIN ZONE 3 - TEXAS CENTRAL (GPS 4203)), VERTICAL DATUM NAVD83.  
A VERTICALLY-GUIDED SURVEY MEETING ALL THE REQUIREMENTS OF FAA ADVISORY CIRCULARS 150/5300-16, 17, AND 18 WAS NOT COMPLETED AS A PART OF THIS PROJECT.  
CONTOUR AND GASMAP DATA RECEIVED FROM THE CITY OF ROCKWALL.

RUNWAY END COORDINATES AND ELEVATIONS			
RUNWAY END	LATITUDE	LONGITUDE	ELEVATION
END OF RWY 17 (E/U)	32°50'56.68" N	96°28'10.31" W	559.2'
DISPLACED THRESHOLD OF RWY 17	32°50'52.07" N	96°28'08.50" W	565.4'
END OF RWY 35 (E/U)	32°50'53.60" N	96°28'05.12" W	563.1'
DISPLACED THRESHOLD OF RWY 35	32°50'36.44" N	96°28'05.58" W	562.7'

AIRFIELD MONUMENTS				
NO.	TYPE	DESIGNATION	LAT	LONG
1	PAC	BORNEN	32°50'53.70" N	96°28'01.83" W
2	PAC	BORNEN	32°50'51.50" N	96°28'04.04" W
3	PAC	BORNEN AZ MK	32°50'51.51" N	96°28'08.40" W

ALL COORDINATES AND ELEVATIONS HORIZONTAL NA D 83, VERTICAL NAVD 83.

FEATURE	EXISTING	ULTIMATE
RUNWAY/TAXIWAY OUTLINE	---	---
RUNWAY/TAXIWAY TO BE REMOVED	---	---
BUILDINGS/FACILITIES	■	■
AIRPORT PROPERTY LINE	---	---
AIRPORT PROPERTY LINE w/FENCE	---	---
FENCE LINE	---	---
BUILDING RESTRICTION LINE (BRL)	---	---
AIRPORT REFERENCE POINT	⊙	⊙
WIND CONE & SEGMENTED CIRCLE	⊙	⊙
THRESHOLD LIGHTS	⊙	⊙
RW END IDENTIFIER LIGHTS (RCLS)	⊙	⊙
CAB BEACON	★	★
VASI	⊙	⊙
WIND POSITION AND SIGN	⊙	⊙
ASOS/AWOS	⊙	⊙
PACCS AND SACS MARKERS	⊙	⊙
GROUND CONTOURS	---	---
SIGNIFICANT OBJECT LOCATION	⊙	⊙
TREES/BRUSH	⊙	⊙
NON-REFLECTIVE BEACON (NDB)	⊙	⊙

TEXAS DEPARTMENT OF TRANSPORTATION  
AVIATION DIVISION

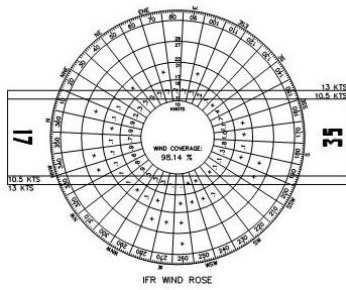
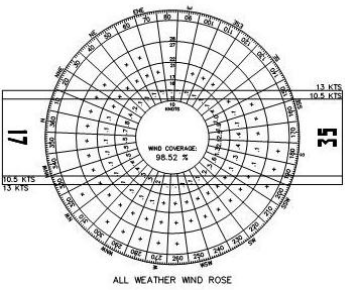
ALP APPROVED ACCORDING TO FAA AC 150/5300-13A CHANGE 1 PLUS THE REQUIREMENTS OF A FAVORABLE ENVIRONMENTAL FINDING AND FAA AREA STUDY PRIOR TO THE START OF ANY LAND ACQUISITION OR CONSTRUCTION ON AIRPORT PROPERTY.

SPONSOR ACKNOWLEDGES APPROVAL OF ALP BY ITSELF DOES NOT CONSTITUTE A COMMITMENT TO FUNDING.

AVIATION SPONSOR

PREPARED BY: GARVER, L.L.C.  
3010 GAYLORD PKWY, #190  
FRISCO, TX 75034  
(972) 377-7480  
(972) 377-8380 FAX

DATE: SEPTEMBER 2014



ALL WEATHER WIND ROSE ANALYSIS			
RUNWAY	WIND VELOCITY	AWOS WIND COVERAGE	IFR WIND COVERAGE
17-35	10.5 KNOTS (ARC A-1 AND B-1)	97.12%	96.33%
	13.5 KNOTS (ARC A-1 AND B-1)	98.52%	98.14%

WIND SOURCE: NATIONAL CLIMATIC DATA CENTER - COLLIN COUNTY REGIONAL AIRPORT 78,843 OBSERVATIONS, 1998-2008, STATION #72254



AIRPORT LAYOUT DRAWING  
RALPH M. HALL MUNICIPAL AIRPORT  
ROCKWALL, TEXAS (F46)



# Capital Improvement and Phasing Plan

## → Three Phase CIP and Phasing Plan

- ▲ 0 – 5 Years – Property, T-hangars, Apron, Terminal building, FBO hangar, Auto access, Fuel facility, Runway and Taxiway improvements
- ▲ 6 – 10 Years – Taxiway extension, Apron expansion, Hangar development, Airfield/Runway Electrical/Lighting, AWOS relocation
- ▲ 11 – 20 Years – Future Hangar development

## → Airfield maintenance



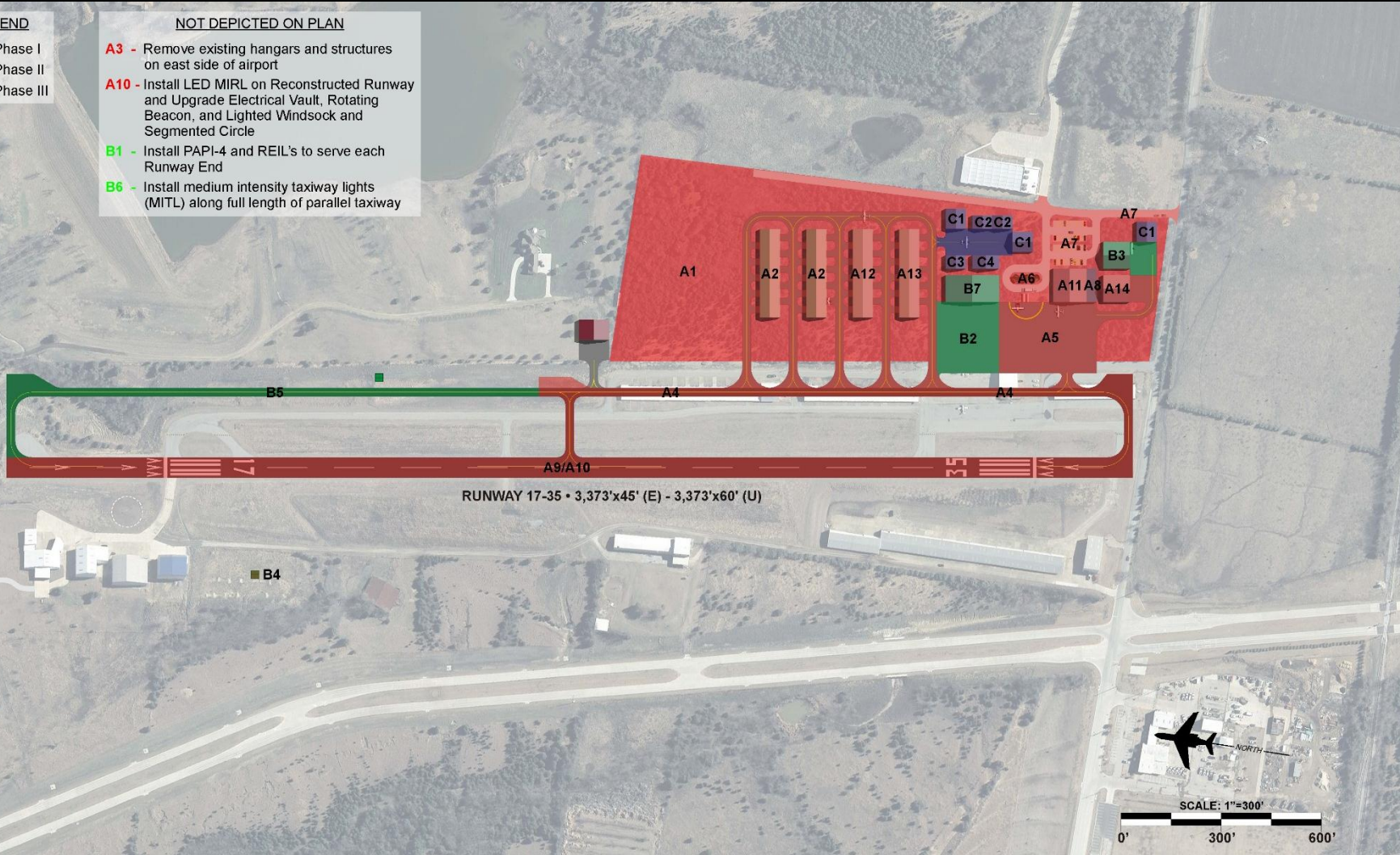
# Phasing Plan

## LEGEND

- Phase I
- Phase II
- Phase III

## NOT DEPICTED ON PLAN

- A3** - Remove existing hangars and structures on east side of airport
- A10** - Install LED MIREL on Reconstructed Runway and Upgrade Electrical Vault, Rotating Beacon, and Lighted Windsock and Segmented Circle
- B1** - Install PAPI-4 and REIL's to serve each Runway End
- B6** - Install medium intensity taxiway lights (MITL) along full length of parallel taxiway



# CIP: Phase IA (0-5 Years)

	Project Type	Local Funding	State/Federal Funding	Total Cost	TXDOT Program Source
A1	Acquire Land Adjacent to and East of the Airport (approx. 19 acres)	\$179,000	\$1,611,000	\$1,790,000	AIP
A2	Construct Two New 10-unit Shade T-Hangars and Associated Taxilanes	\$114,000	\$1,026,000	\$1,140,000	AIP/Hangar Program
A3	Remove Existing hangars and structures on east-side of airport	\$20,000	\$180,000	\$200,000	AIP/Hangar Program
A4	Construct 25' Parallel Taxiway 225' Offset from Runway 17/35 centerline (AWOS to Rwy 35 end)	\$75,000	\$675,000	\$750,000	AIP
A5	Construct New Terminal Area Apron	\$76,000	\$684,000	\$760,000	AIP
A6	Remove and Replace Underground AvGAS Fuel Storage Tank with Above-ground 12,000 gallon 24-hour Credit Card System	\$87,500	\$262,500	\$350,000	AIP/Fuel Program
A7	Construct New Airport Entrance Road, Auto Parking, and Security Fence	\$48,000	\$432,000	\$480,000	AIP
A8	Construct New Terminal Building (3,000 S.F.)	\$225,000	\$225,000	\$450,000	Terminal Program



# CIP: Phase IB (0-5 Years)

	Project Type	Local Funding	State/Federal Funding	Total Cost	TXDOT Program Source
A9	Reconstruct, Widen, and Re-stripe Runway 17/35 (Width increase of 15', correct line-of-sight)	\$204,000	\$1,836,000	\$2,040,000	AIP
A10	Install LED MIRL on Reconstructed Runway and Upgrade Electrical Vault, Rotating Beacon, and Lighted Windsock and Segmented Circle	\$94,000	\$846,000	\$940,000	AIP
A11	Construct 100' x 100' Box Hangar	\$75,000	\$675,000	\$750,000	AIP/Hangar Program
A12	New 10-unit Nested T-Hangar with Bi-Fold Doors (southern unit) and Associated Taxilane	\$66,000	\$594,000	\$660,000	AIP/Hangar Program
A13	New 10-unit Nested T-Hangar with Bi-Fold Doors (center unit) and Associated Taxilane	\$70,000	\$630,000	\$700,000	AIP/Hangar Program
A14	Construct 80' x 80' Box Hangar and Associated Taxilane/Ramp	\$37,500	\$337,500	\$375,000	Hangar Program
	<b>PHASE I TOTAL</b>	<b>\$1,371,500</b>	<b>\$10,014,000</b>	<b>\$11,385,500</b>	



# CIP: Phase II (6-10 Years)

	Project Type	Local Funding	State/Federal Funding	Total Cost	TXDOT Program Source
B1	Install PAPI-4 and REILs to serve each Runway End	\$54,000	\$486,000	\$540,000	AIP
B2	Expand Apron South	\$51,000	\$459,000	\$510,000	AIP
B3	Construct one 80' x 80' Box Hangar and Associated Taxilane/Ramp	\$91,000	\$819,000	\$910,000	AIP/Hangar Program
B4	Relocate AWOS	\$10,000	\$30,000	\$40,000	AWOS Program
B5	Extend Parallel Taxiway north to Runway 17 End	\$45,000	\$405,000	\$450,000	AIP
B6	Install Medium Intensity Taxiway lights (MITL) along full length of parallel taxiway	\$20,000	\$180,000	\$200,000	AIP
	<b>PHASE II TOTAL</b>	<b>\$291,000</b>	<b>\$2,559,000</b>	<b>\$2,850,000</b>	



# CIP: Phase III (11-20 Years)

	Project Type	Local Funding	State/Federal Funding	Total Cost	TXDOT Program Source
C1	Construct three 60' x 60' Box Hangars and Associated Taxilane/Ramp	\$150,000	\$550,000	\$700,000	Hangar Program
C2	Construct two 60' x 40' Box Hangars and Associated Taxilane/Ramp	\$90,000	\$420,000	\$510,000	Hangar Program
C3	Construct one 60' x 60' Box Hangar and Associated Taxilane/Ramp	\$50,000	\$210,000	\$260,000	Hangar Program
C4	Construct one 80' x 40' Box Hangar and Associated Taxilane/Ramp	\$70,000	\$315,000	\$385,000	Hangar Program
<b>PHASE III TOTAL</b>		<b>\$360,000</b>	<b>\$1,495,000</b>	<b>\$1,855,000</b>	
<b>TOTAL</b>		<b>\$2,022,000</b>	<b>\$14,068,000</b>	<b>\$16,090,000</b>	





**Project Kickoff and Airport  
Inventory**

**Aviation Demand Forecasts and  
Facility Requirements**

**Alternatives Evaluation: Airside  
and Landside**

**Capital Improvement Program  
and Phased Development Plan**

**Airport Layout Plan and Final  
Report**



# The Funding Cycle

## → TxDOT / FAA

- ✦ Airport Development Plan Review and Acceptance
- ✦ Airport Layout Plan Airspace Review
- ✦ Letter of Interest Receipt and Review
- ✦ Aviation Division Acceptance and Project Scoping
- ✦ Update of CIP / System Plan Data
- ✦ Airport Sponsor Commitment = 10% Match Paid
- ✦ TxDOT Commission Approval
- ✦ Consultant Selection Process
- ✦ Project Design and Construction



# Questions, Comments, and Discussion

