Airports GIS and Order 5010.4A Update

A Change in Direction

Airports GIS Team

Dr. Mike McNerney – Team Lead (Retiring Oct 30)

Dr. Shyam Parhi – System Development

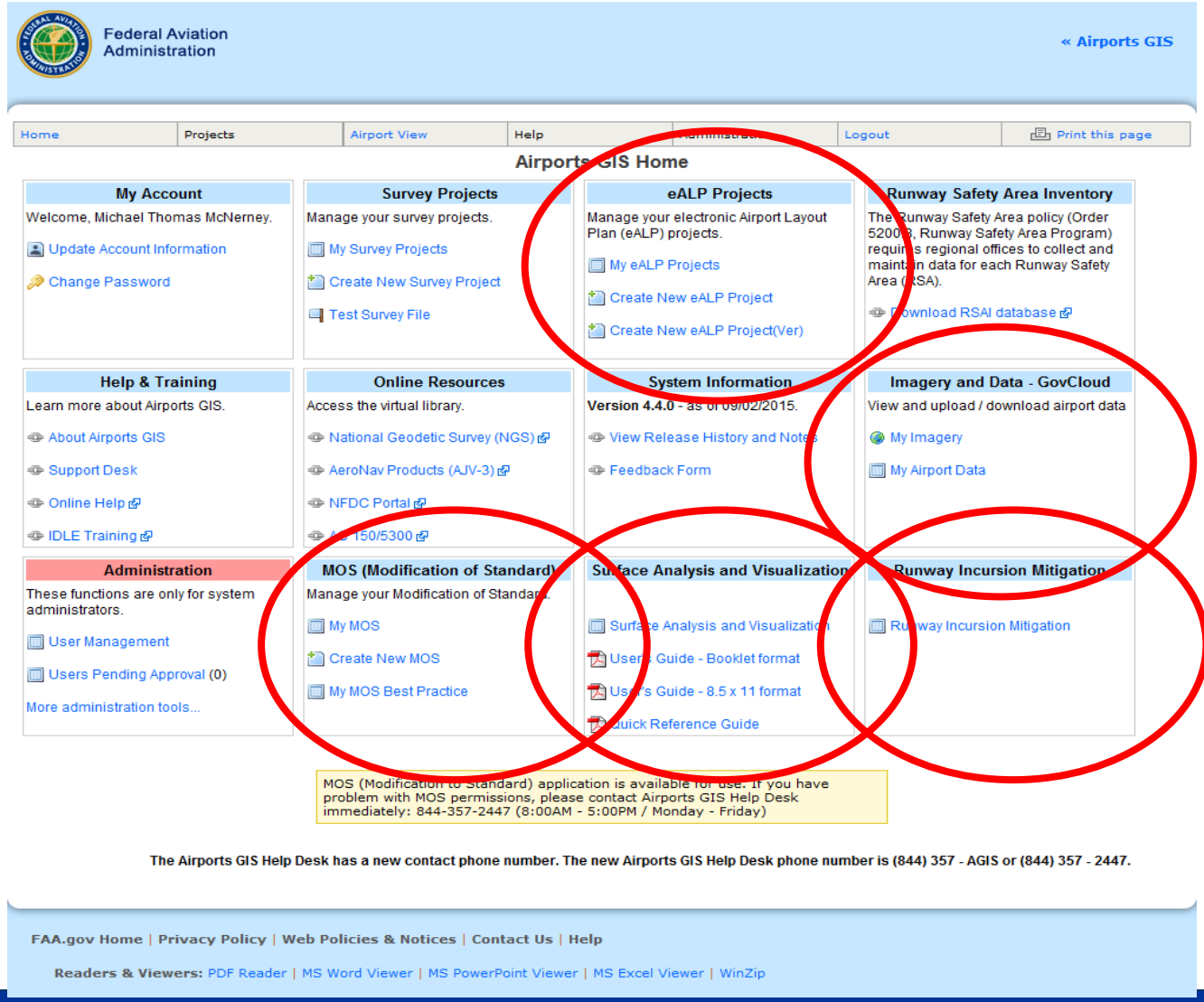
Andrew E. Goldsmith– 5010 Data

New Position – AIS Coordination and survey data

Presented to | Aeronautical Charting Forum

Date | October 28, 2015

Airports GIS Homepage



https://airports-gis.faa.gov/

Federal Aviation Administration

Quarterly Newsletter www.airports-gis.info

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Office of Airport Safety and Standards : Airports GIS Quarterly Newsletter

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DISCLAIMER

This newsletter is for information only and does not supersede any guidance in advisory circulars, standards, or official procedures.

QUICK LINKS

- Airports GIS
- Login Page
- Newsletters & Publications

8:00 am - 8:00 pm EST
Monday thru Friday

USER HELP

Office of Airports Professionals Recognized for Excellence

Ellis A. Ohnstad Award for Technical Excellence: This award is to honor an employee that is a recogn...

FEATURED

Office of Airports Professionals Recognized for Excellence

- September 14, 2015

Ellis A. Ohnstad Award for Technical Excellence: This award is to honor an employee that ...

AIRPORTS GIS

The Airports Surveying Geographic Information System (Airports GIS) is a tool to standardize survey data on airports needed for the Federal Aviation Administration (FAA) to issue grants under the Airport Improvement Program (AIP). The standardized airport and aeronautical data helps the FAA manage data to meet the demands of the Next Generation National Airspace System.

Guided by advisory circulars, the airport sponsor or proponents are key links in the information chain. We are developing electronic airport obstruction evaluation tools and electronic Airport Layout Plans.

Our ultimate goal is to integrate airport data: preliminary, current, planned, and temporary. Additional plans are to share data with other FAA systems such as iOEAAA and eNASR. Stay tuned for future implementations.

SPOTLIGHT

Staff Spotlight: Andrew Goldsmith

- July 2, 2015

FAA Airports GIS Program Roadmap

FY'14 Deliverables

- Safety Data
- eALP Tool
- 20:1 SAV Tool
- MOS Level 1 Tool
- NAV Lean BPM

FY'15 Deliverables

- Survey / Airport / Obstacles / NAVAID Authoritative Sources
- Airports GIS Database Migration
- Enhanced eALP Tool & Printing
- Legacy PDFs of ALPs, Signage and Marking Plans
- Airports Orthorectified Imagery
- AVS Waiver Tracking
- Customer Service Improvements
- Updated Docs and Train'g

FY'16 Deliverables

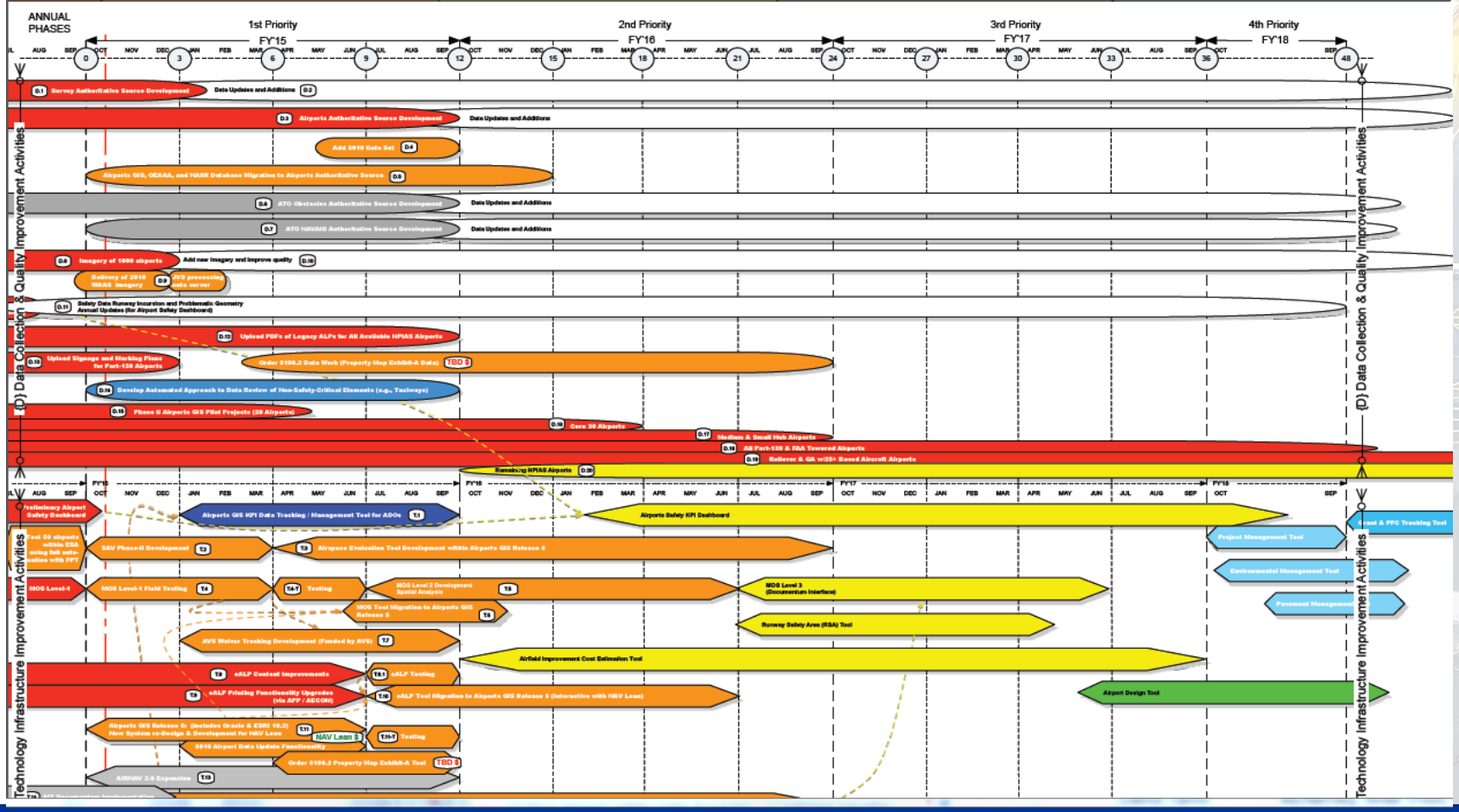
- Authoritative Data Sources Updates
- Medium & Small Hub Airports AGIS Data
- Airports GIS Release 5 and Migrated Tools
  - > eALP Tools
  - > MOS Tools
  - > Airspace Tools
- ARP Documentum
- Airport Safety Data Metrics
- Updated Docs and Train'g

FY'17 Deliverables

- MOS Level 3 Tool
- Runway Safety Area (RSA) Tool
- Airfield Improvement Cost Estimation Tool
- Airports Safety Dashboard
- Updated Docs and Train'g

FY'18

- Airport Design Tool
- Project Mgm't Tool
- Enviro' Mgm't Tool
- Pavement Mgm't Tool
- Updated Docs and Train'g



https://airports-gis.faa.gov/

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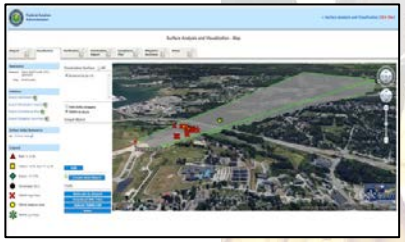
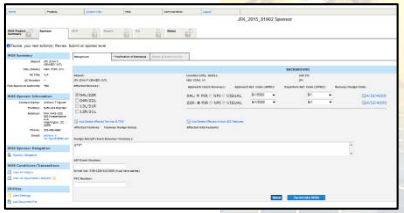
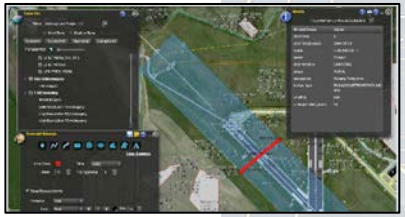
Federal Aviation Administration

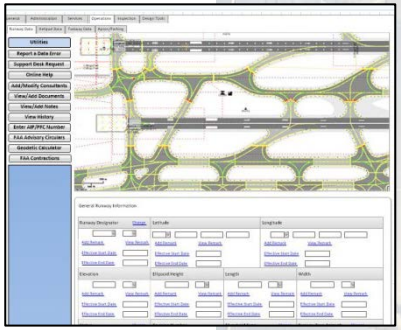
FY 2015 Deliverables

- **Airports GIS Tools**
  - Surface Analysis & Visualization (SAV) Tool
  - Modification of Standards (MOS) Tool
  - Electronic Airport Layout Plan (eALP) Tool
  - NAV Lean 5010 Airport Data Update Tool









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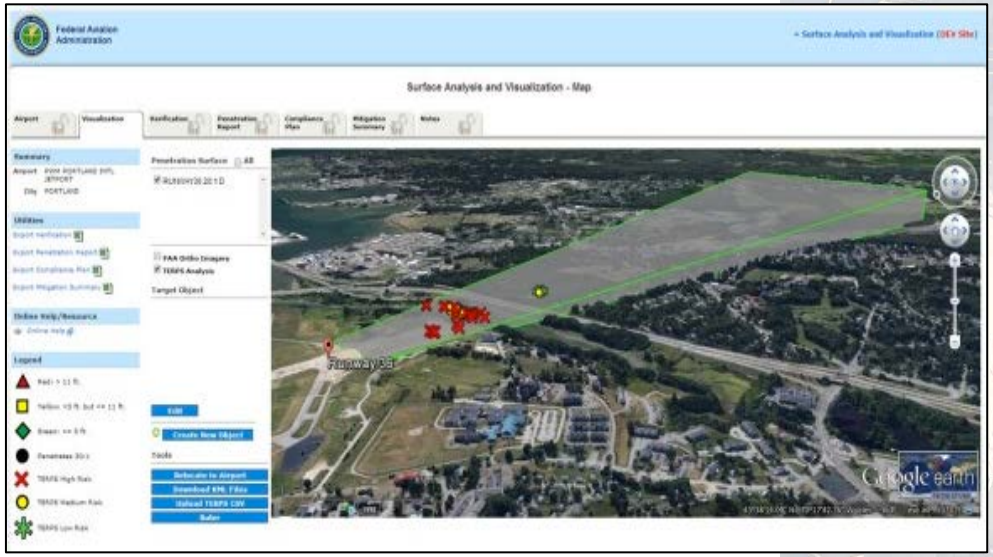
1st Deliverable: SAV Tool (1.0)

- 20:1 Surface Visualization
- Obstacles Data Visualization and Validation
- Obstructions Risk Identification and Visualization
- Measurement of Penetrations
- Penetrations Report
- Mitigation Coordination

with Full Automation



https://airports-gis.faa.gov/

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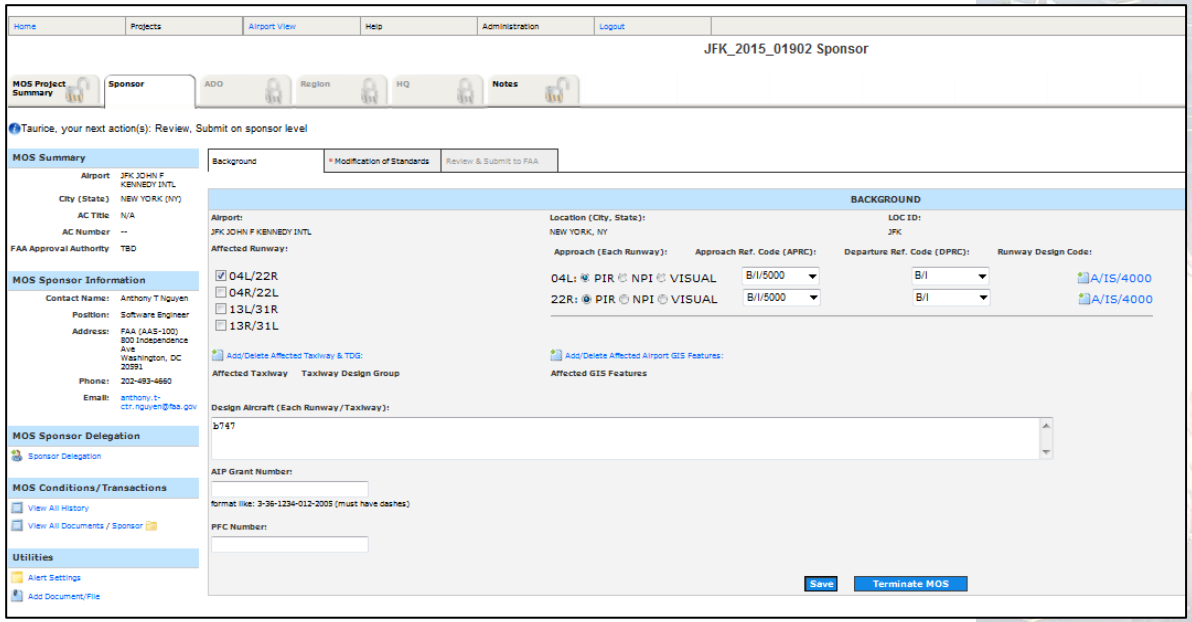
2nd Deliverable: MOS Tool (1.0)

- Web-enabled Modification of Standards (MOS) Form
- Digital Submission for Review
- Web-enabled Coordination of Approval Process
- Digital Signature

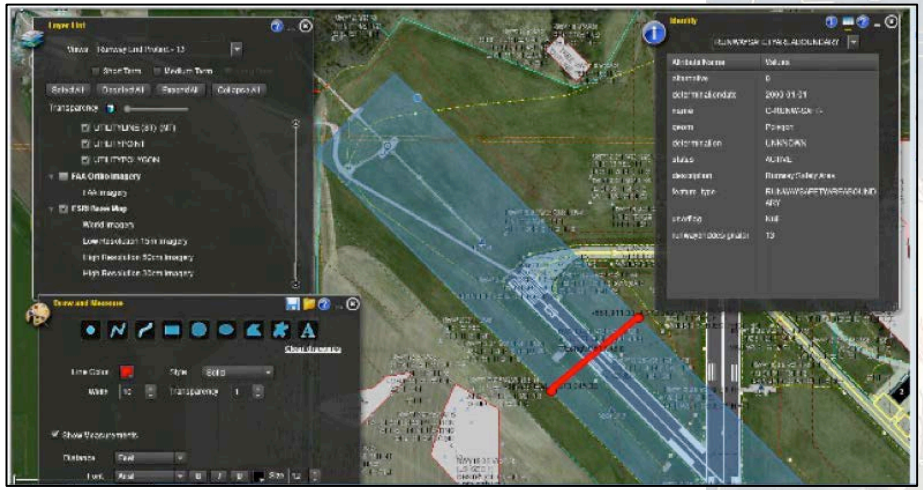


https://airports-gis.faa.gov/

Federal Aviation Administration

3rd Deliverable: eALP Tool (1.0)

- Web-enabled Aerial Imagery and Map Overlay
- Measurement Tools (e.g., Distance, Circumference, Area)
- Attribute Data Viewing
- Markup and Exhibit Generation
- Web-enabled Collaboration
- ALP Change Coordination
- ALP Digital Signature
- ALP Drawing Set Viewing



*** Provide Substantial Data for ALP Drawing Set Generation**

Deliverable: ALP Tool

- **September 30, 2015 we delivered a working version 1.0 of the eALP tool.**
- **We had over 500 requirements from the Planning and programming Office (APP 400)**
- **The requirements are aligned with the new ALP SOP**
- **Tool has a few limitations**
  - Dimensioning is not well implemented. Upgrade to Esri Arc GIS 10.3

Testing in FY 2016 with at least 1 airport in each Region.

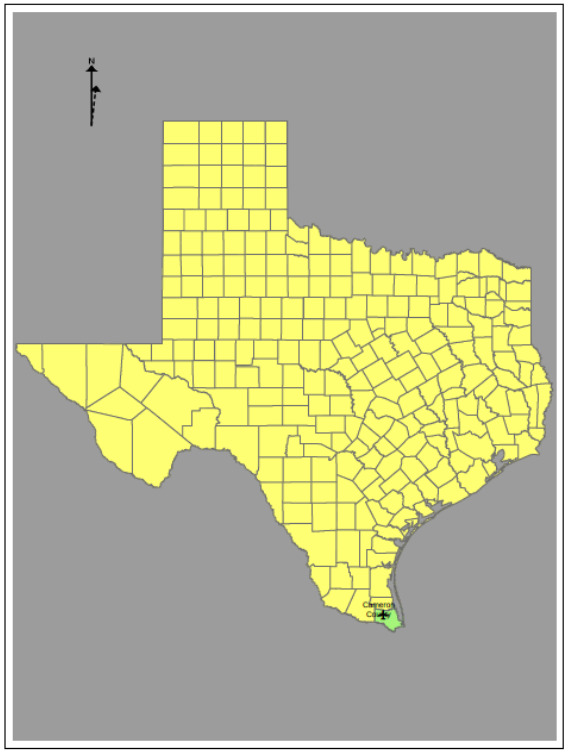
*** Provide Substantial Data for ALP Drawing Set Generation**

VALLEY INTL (HRL)
AIRPORT LAYOUT PLAN
September 2015

PO BOX 2207

HARLINGEN, Texas 08324

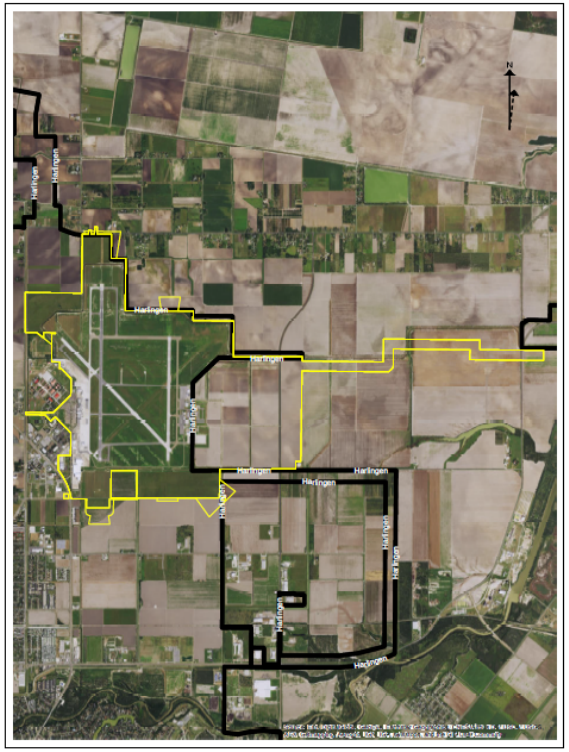
LOCATION MAP
(Texas)



SHEET INDEX

1. Cover Sheet
2. Version Table
3. Airport Layout Plan
4. Building Table
5. Airport Data Table
6. Airport Airspace Plan
7. Obstruction Table
8. Inner Portion of Approach Plan
9. Terminal Area Plan

VICINITY MAP
(Cameron County / HARLINGEN)



PREPARED BY:

JVS LLC

700 12th Street NW
Suite 700 Washington,
DC 20005 202-904-2455

AIRPORT SPONSOR APPROVAL:

Name : _____

Tiltle: _____

Signature: _____

Date: _____

PREPARED FOR:

Valley International Airport

3002 Heritage Way,
Harlingen, TX 78550

STATE AERONAUTICS AGENCY APPROVAL:

Name : _____

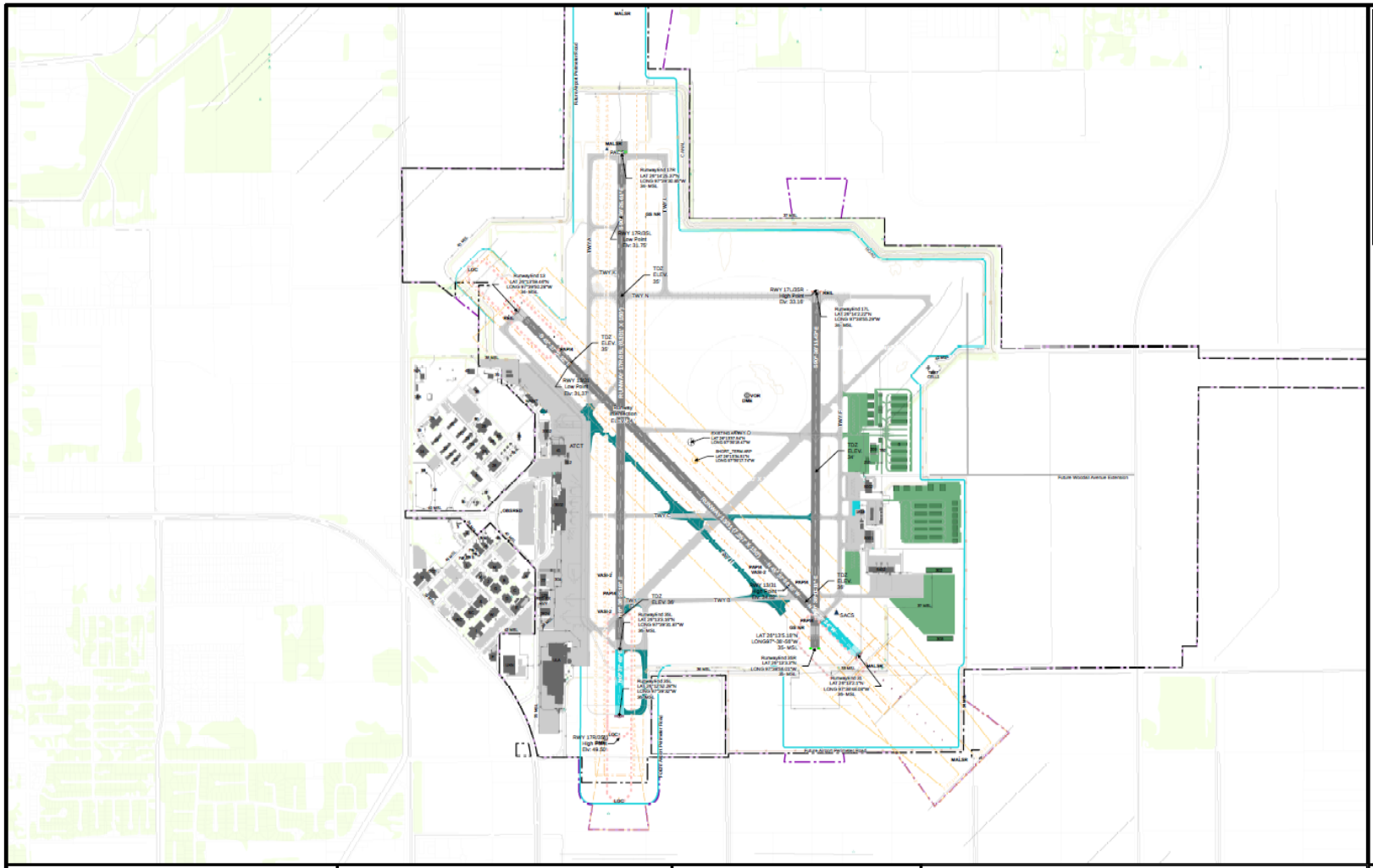
Tiltle: _____

Signature: _____

Date: _____

Federal Aviation Administration

Generated by FAA's Airport GIS eALP System



Feature Type	Existing	Future
BRL	BRL	BRL
ITOFZ	ITOFZ	ITOFZ
OFZ	OFZ	OFZ
POFZ	POFZ	POFZ
ROFA	ROFA	ROFA
RPZ	RPZ	RPZ
RSA	RSA	RSA
TOFA	TOFA	TOFA
TSA	TSA	TSA
TXSA	TXSA	TXSA

- EXISTING ARP
- FUTURE ARP
- EXISTING PACS/SACS
- EXISTING RUNWAY END
- SHORT TERM RUNWAY END
- EXISTING TREE/BUSH
- EXISTING AIRPORT BOUNDARY
- SHORT TERM AIRPORTBOUNDARY
- EXISTING APRON
- LONG TERM APRON
- SHORT TERM APRON
- EXISTING FENCE
- FUTURE FENCE
- EXISTING GATE
- EXISTING BRIDGE
- EXISTING BUILDING
- LONG TERM BUILDING
- SHORT TERM BUILDING
- EXISTING FOREST STAND AREA
- EXISTING LANDMARKSEGMENT
- EXISTING NAVAID CRITICAL AREA
- SHORT TERM NAVAID CRITICAL AREA
- EXISTING PARKING LOT
- LONG TERM PARKING LOT
- EXISTING PARCEL
- EXISTING ROAD SEGMENT
- LONG TERM ROAD SEGMENT
- SHORT TERM ROAD SEGMENT
- FUTURE RSA
- EXISTING RUNWAY
- SHORT TERM RUNWAY
- EXISTING SHOULDER
- EXISTING STOPWAY
- EXISTING TAXI WAY ELEMENT
- MEDIUM TERM TAXI WAY ELEMENT
- ELEVATION CONTOUR

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700 12th Street NW
Suite 700 Washington,
DC 20005 202-904-2455

PREPARED FOR:

Valley International Airport

3002 Heritage Way,
Harlingen, TX 78550

Federal Aviation Administration

Generated by FAA's Airport GIS eALP System

AIRPORT LAYOUT PLAN

VALLEY INTL, HARLINGEN, TX

Digital Signature: | eALP Type: DRAFT

Airport Sponsor	Date	State	Date	FAA	Date

Revision	Date	Description	NRA#	AIP / PFC #
3-0-0	09/11/2015	UPDATE	-	-
	-	-	-	-

MAG. DECLINATION: 4°9'55.000"E
SOURCE: NGDC
YEAR: 2016

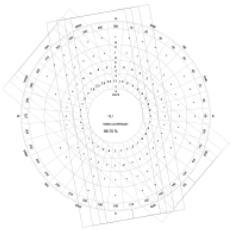
1 Inch = 800 Feet

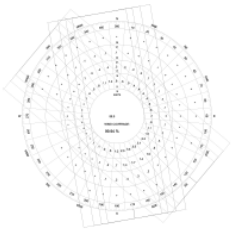
800 0 1,600 Feet

GRAPHIC SCALE

RUNWAY 13-31 DATA				
ITEM	EXISTING		ULTIMATE	
	13	31	13	31
Runway Design Code (RDC)	A-I-5000	D-IV-5000	A-I-5000	D-IV-5000
Approach Reference Code (APRC)	A-I-5000	C-IV-5000	A-I-5000	C-IV-5000
Departure Reference Code (DPRC)	A-I	A-III	A-I	A-III
Pavement Surface Type	AG		AG	
Pavement Strength (lbs)				
Single Wheel	0	0	0	0
Dual Wheel	0	0	0	0
Dual Tandem	0	0	0	0
Double Dual Tandem	0	0	0	0
Pavement Strength (PCN)	160000		160000	
Pavement Surface Treatment	Grooved	grooved	Grooved	grooved
Effective Runway Gradient (%)	0	0	0	0
Maximum Grade Change (%)	0	0	0	0
Line of Sight Violations	No	No	No	No
Runway Length	7257.0		8100.0	
Runway Width	150.0		150.0	
Runway Shoulder Width	0	0	0	0
Displaced Threshold	No	No	No	No
Displaced Distance (ft)	0	0	0	0
Displaced Threshold Coordinates				
DTHLD Latitude	N/A	N/A	N/A	N/A
DTHLD Longitude	N/A	N/A	N/A	N/A
Displaced Threshold Elevation	34.4	35.7	34.4	35.8
Runway End Coordinates				
Latitude	26°13'59.47"N	26°13'8.09"N	26°13'59.47"N	26°13'2.11"N
Longitude	97°38'50.3"W	97°38'54.54"W	97°39'50.3"W	97°38'48.09"W
Runway End Elevation	34.4	35.7	34.4	35.8
Runway Lighting		LAHSO HIR		LAHSO HIR
Runway Safety Area (RSA)				
Length Beyond Runway	20	20	20	20
Width	200	200	200	200
Runway Protection Zone (RPZ)				
Inner Width	0	0	0	0
Outer Width	0	0	0	0
Length	0	0	0	0
Runway Marking	PIR	PIR	PIR	PIR
14 CFR Part 77 Approach Category	20:1	20:1	20:1	20:1
Approach Type	PRECISION	PRECISION	PRECISION	PRECISION
Visibility Minimums	<3/4_SM	<3/4_SM	<3/4_SM	<3/4_SM
Aeronautical Survey Requirement	VGS	VGS	VGS	VGS
Departure Surface (40:1 Slope)	No	No	No	No
Runway Object Free Area (ROFA)				
Length Beyond Runway	0	0	0	0
Width	0	0	0	0
Runway Obstacle Free Zone (OFZ)				
Length Beyond Runway	0	0	0	0
Width	0	0	0	0
Inner Approach Obstacle Free Zone (IAOFZ)				
Length Beyond Runway	0	0	0	0
Width	0	0	0	0
Inner Transitional Obstacle Free Zone (ITOFZ)				
Length Beyond Runway	0	0	0	0
Width (START)	0	0	0	0
Width (END)	0	0	0	0
Precision Obstacle Free Zone (POFZ)				
Length Beyond Runway (ft)	0	0	0	0
Width (ft)	0	0	0	0
Runway End (Threshold) Sitting Surface Penetrations				
Approach Surface (20:1 Slope)	NA	NA	NA	NA
Approach Surface (30:1 Slope)	NO	NO	NO	NO
Approach Surface (34:1 Slope)	NO	NO	NO	NO
Visual Approach Aids		APAPI SSAL		APAPI SSAL
Instrument Approach Aids				
Touchdown Zone Elevation (TDZE)	34.8	35.9	34.8	35.9

RUNWAY 17L-35R DATA				
ITEM	EXISTING		ULTIMATE	
	17L	35R	17L	35R
Runway Design Code (RDC)	A-I-5000	A-I-5000	A-I-5000	A-I-5000
Approach Reference Code (APRC)	A-I-5000	A-I-5000	A-I-5000	A-I-5000
Departure Reference Code (DPRC)	A-I	A-I	A-I	A-I
Pavement Surface Type	ANG		ANG	
Pavement Strength (lbs)				
Single Wheel	0	0	0	0
Dual Wheel	0	0	0	0
Dual Tandem	0	0	0	0
Double Dual Tandem	0	0	0	0
Pavement Strength (PCN)	160000		160000	
Pavement Surface Treatment		Grooved		Grooved
Effective Runway Gradient (%)	0	0	0	0
Maximum Grade Change (%)	0	0	0	0
Line of Sight Violations	No	No	No	No
Runway Length	5949.0		5949.0	
Runway Width	150.0		150.0	
Runway Shoulder Width	0	0	0	0
Displaced Threshold	No	Yes	No	Yes
Displaced Distance (ft)	0	191	0	191
Displaced Threshold Coordinates				
DTHLD Latitude	N/A	N/A	N/A	N/A
DTHLD Longitude	N/A	N/A	N/A	N/A
Displaced Threshold Elevation	33.8	35.0	33.8	35.0
Runway End Coordinates				
Latitude	26°14'2.23"N	26°13'3.31"N	26°14'2.23"N	26°13'3.31"N
Longitude	97°38'55.28"W	97°38'56.02"W	97°38'55.28"W	97°38'56.02"W
Runway End Elevation	33.8	35.0	33.8	35.0
Runway Lighting	LIRL REI	LIRL MIR	CENTERLINE LAHSO LIR	LIRL MIR
Runway Safety Area (RSA)				
Length Beyond Runway	20	20	20	20
Width	200	200	200	200
Runway Protection Zone (RPZ)				
Inner Width	0	0	0	0
Outer Width	0	0	0	0
Length	0	0	0	0
Runway Marking	PIR	PIR	PIR	PIR
14 CFR Part 77 Approach Category	20:1	20:1	20:1	20:1
Approach Type	PRECISION	PRECISION	PRECISION	PRECISION
Visibility Minimums	<3/4_SM	<3/4_SM	<3/4_SM	<3/4_SM
Aeronautical Survey Requirement	VGS	VGS	VGS	VGS
Departure Surface (40:1 Slope)	No	No	No	No
Runway Object Free Area (ROFA)				
Length Beyond Runway	0	0	0	0
Width	0	0	0	0
Runway Obstacle Free Zone (OFZ)				
Length Beyond Runway	0	0	0	0
Width	0	0	0	0
Inner Approach Obstacle Free Zone (IAOFZ)				
Length Beyond Runway	0	0	0	0
Width	0	0	0	0
Inner Transitional Obstacle Free Zone (ITOFZ)				
Length Beyond Runway	0	0	0	0
Width (START)	0	0	0	0
Width (END)	0	0	0	0
Precision Obstacle Free Zone (POFZ)				
Length Beyond Runway (ft)	0	0	0	0
Width (ft)	0	0	0	0
Runway End (Threshold) Sitting Surface Penetrations				
Approach Surface (20:1 Slope)	NA	NA	NA	NA
Approach Surface (30:1 Slope)	NO	NO	NO	NO
Approach Surface (34:1 Slope)	NO	NO	NO	NO
Visual Approach Aids	APAPI SSAL	LDI	LDIN MALS	LDI
Instrument Approach Aids	ND		ND	
Touchdown Zone Elevation (TDZE)	34.4	35.8	34.4	35.8





ALL WEATHER				
Source & Date	NCDC (2005 - 2014)			
CROSSWIND COMPONENT	17R/35L	17L/35R	13/31	TOTAL
10.5 KNOTS	92.34	92.34	88.81	97.4
13 KNOTS	96.47	96.47	94.23	98.95
16 KNOTS	99.22	99.22	97.95	99.72
20 KNOTS	99.83	99.83	99.52	99.94

IFR				
Source & Date	NCDC (2005 - 2014)			
CROSSWIND COMPONENT	17R/35L	17L/35R	13/31	TOTAL
10.5 KNOTS	95.71	95.71	90.82	97.54
13 KNOTS	97.67	97.67	94.71	98.7
16 KNOTS	98.87	98.87	97.48	99.4
20 KNOTS	99.42	99.42	99.08	99.75

AIRPORT DATA		
ITEM	EXISTING	ULTIMATE
AIRPORT REFERENCE CODE (ARC)	C-IV	C-IV
AIRPORT ELEVATION (MSL)	36.3'	36.3'
AIRPORT REFERENCE POINT (ARP)		
LATITUDE	26°13'37.55"N	26°13'34.51"N
LONGITUDE	97°39'17.45"W	97°39'17.75"W
MEAN MAX TEMPERATURE	88.98°F (JANUARY)	88.98°F (JANUARY)
AIRPORT NAVIGATIONAL AIDS	DME (HRL) ASR (HRL) FMH (HRL) GS NR (HRL) NDBHM (HRL) VOR (HRL) VISUAL (HRL) LOC (HRL)	GS NR (HRL) VISUAL (HRL) LOC (HRL)
MISCELLANEOUS FACILITIES	MALSRs REILs	MALSRs
AIRFIELD LIGHTING	N/A	N/A
CRITICAL AIRCRAFT	Boeing 737-500	Boeing 737-500
MAGNETIC DECLINATION	4°9'558.000"E	4°9'558.000"E
DATE OF MAGNETIC DECLINATION	2015 (NGDC)	2015 (NGDC)
NPIAS SERVICE LEVEL	MEDIUM GENERAL_AVIATION_REGIONAL	MEDIUM GENERAL_AVIATION_REGIONAL
STATE SERVICE LEVEL	Commercial	Commercial
WIND COVERAGE CROSSWIND COMPONENT		
IMC (20 KTS.)	99.75	99.75
ALL WEATHER (20 KTS)	99.94	99.94

PREPARED BY:

JVS LLC

700 12th Street NW
Suite 700 Washington,
DC 20005 202-904-2455

PREPARED FOR:

Valley International Airport

3002 Heritage Way,
Harlingen, TX 78550

Federal Aviation Administration

Generated by FAA's Airport GIS eALP System

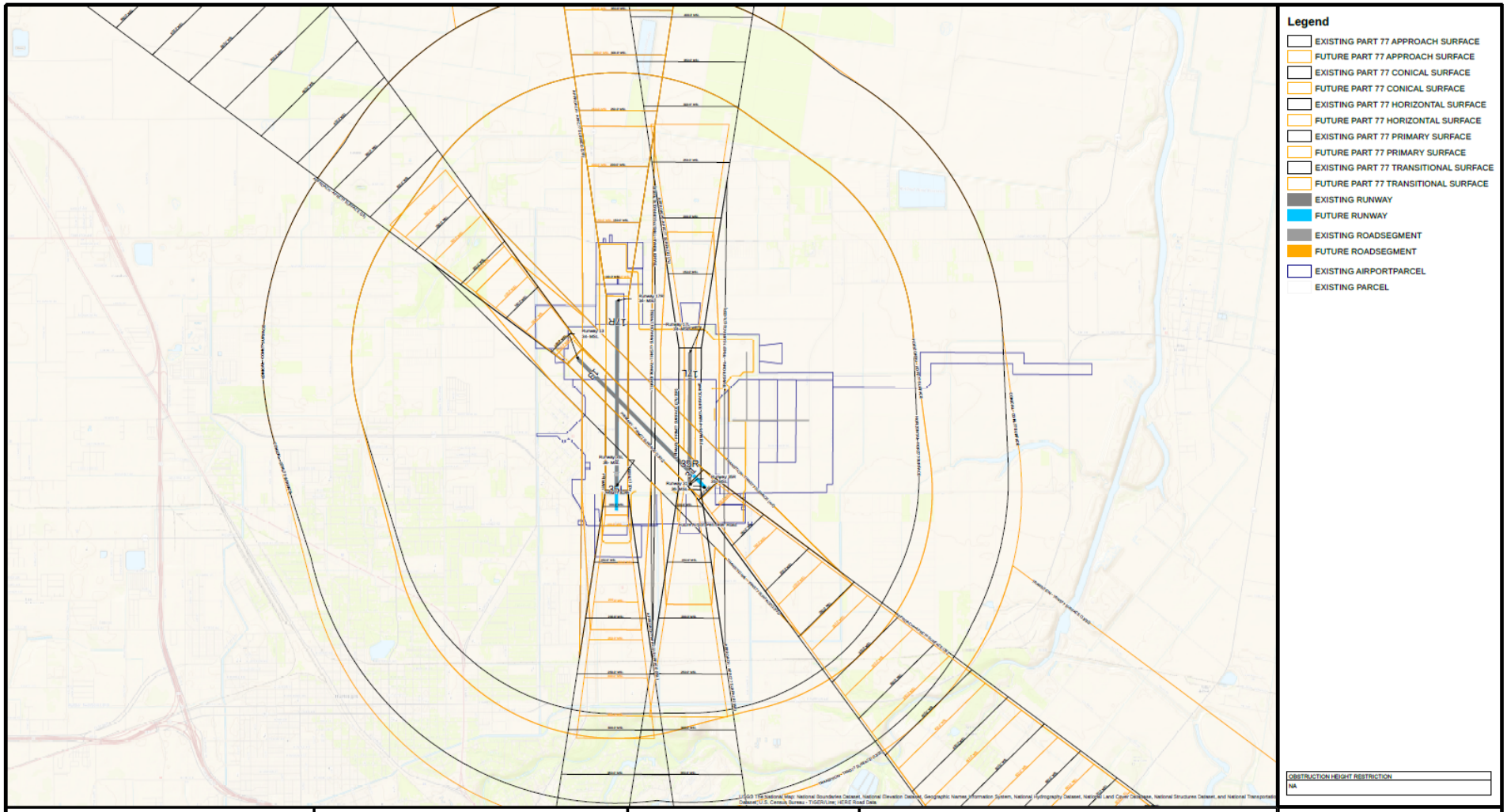
DATA TABLES

VALLEY INTL, HARLINGEN, TX

Digital Signature: | eALP Type: DRAFT

Airport Sponsor	Date	State	Date	FAA	Date

Revision	Date	Description	NRA#	AIP / PFC #
3-0-0	09/11/2015	UPDATE	-	-
-	-	-	-	-



PREPARED BY:

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Suite 700 Washington,
DC 20005 202-904-2455

PREPARED FOR:

Valley International Airport

3002 Heritage Way,
Harlingen, TX 78550

Federal Aviation Administration

Generated by FAA's Airport GIS eALP System

AIRPORT AIRSPACE PLAN

VALLEY INTL, HARLINGEN, TX

Digital Signature:

eALP Type: DRAFT

Airport Sponsor	Date	State	Date	FAA	Date

Revision	Date	Description	NRA#	AIP / PFC #
3-0-0	09/11/2015	UPDATE	-	-
-	-	-	-	-

N

MAG. DECLINATION: 4°9'55.000"E
SOURCE: NGDC
YEAR: 2015

1 Inch = 2,000 Feet

2,000 0 4,000 Feet

GRAPHIC SCALE

https://airports-gis.faa.gov/

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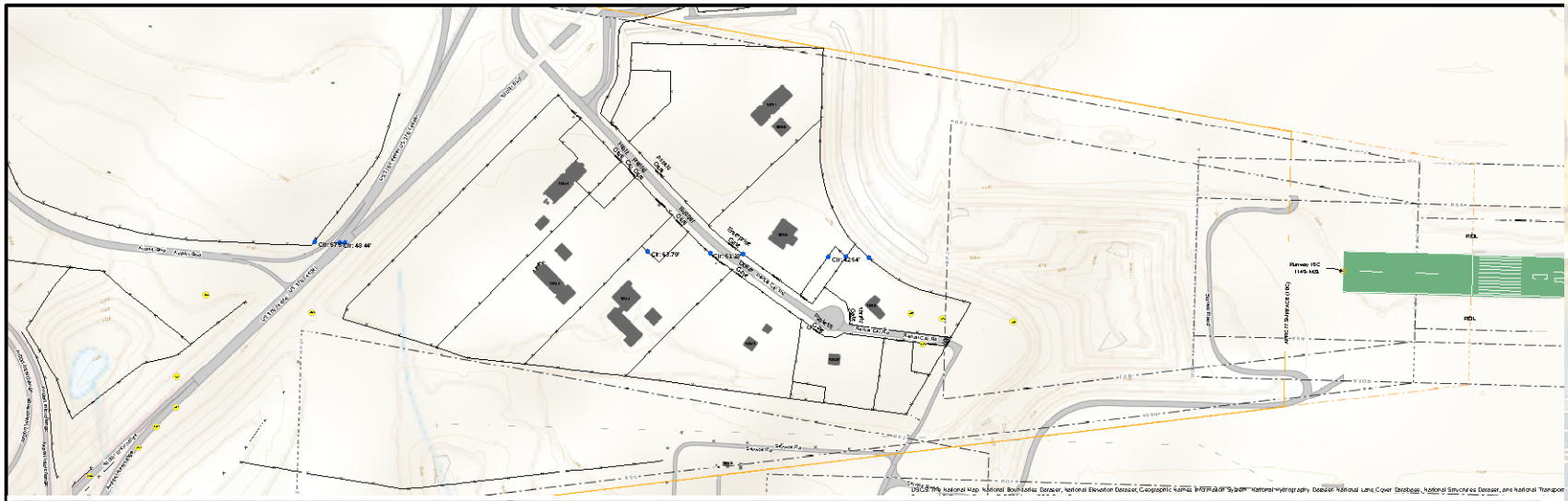
Federal Aviation Administration


Runway 10C
1145 MSL
RDL
RDL
Airport Blvd
Airport Blvd
Sewage Sewer
Sewage Sewer
Sewage Sewer

Anticipate the Transition to eALP

Today	Near Term	End State
2012	2013-2016	2016 +
• Airports GIS data collection and submittal • Sponsor/FAA access to data through Airports GIS • Legacy ALP (paper or PDF) • Legacy ALP coordination and approval process	• Airports GIS data collection and submittal • Sponsor/FAA access to data through Airports GIS • Electronic Signatures (submittal and approval) • eALP (geo-referenced PDF) with legacy ALP review and approval process	• Airports GIS data collection and submittal • Sponsor/FAA access to data through Airports GIS • Digital eALP submittal • Digital eALP review and approval through Airports GIS • Geo-referenced PDF (for use outside Airports GIS)
Limited e-Capability	Increasing Efficiency	Optimized Efficiency

4th Deliverable: Airport Data and Information Management Program

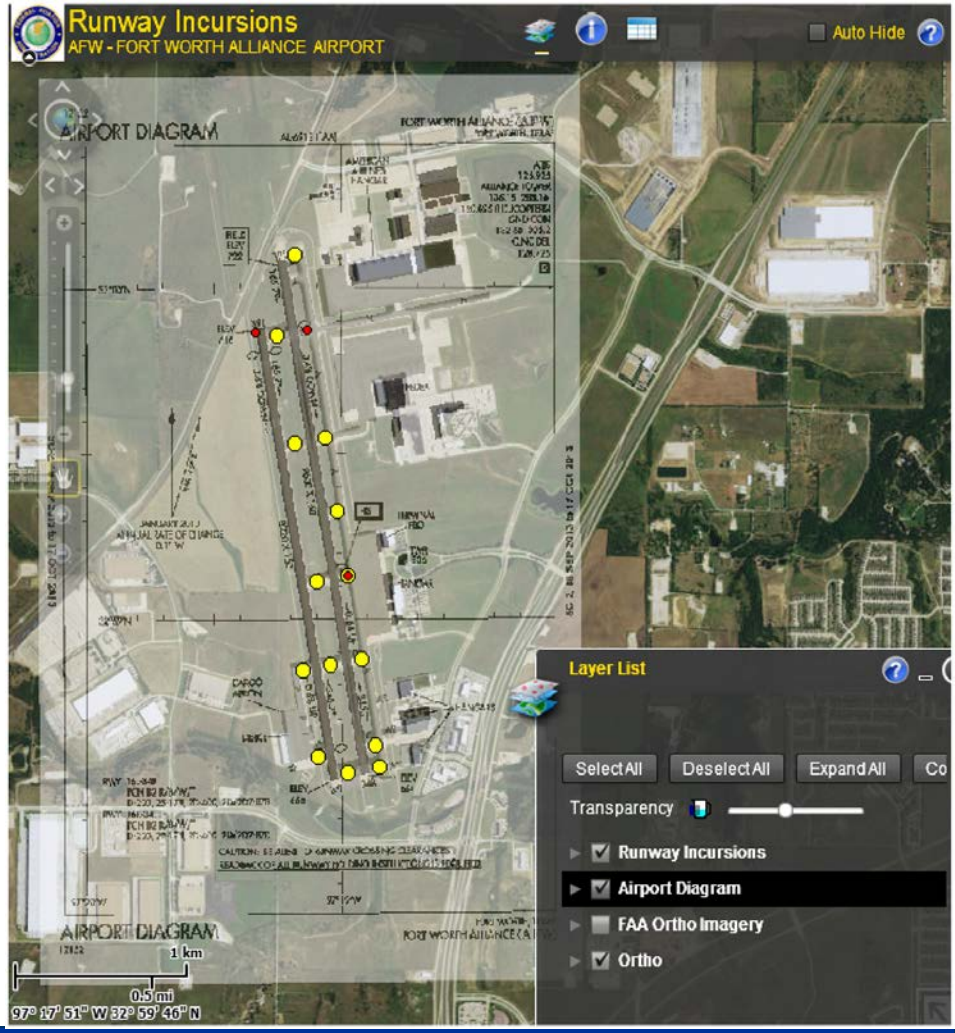
- NAV Lean User Interface for Airport Authoritative Data Source (a.k.a., "5010 Data Update")
- AC 150/5300-19 Airport Data and Information Program signed Sep 30, 2015 **NOT YET IMPLEMENTED**
- Web-enabled Airport Data Updates
  - Interim - Allow Airports to Use 5010Web
  - XML to NFDC
  - No retyping of data, Airport log in to change

New Airports GIS Development in FY15

- **Cloud server FAA Implementation**
  - Aerial Photography – 900 airports
  - 2266 Airports have legacy ALPs in PDF
  - 576 Airports have Signage and Marking Plans
  - Ability for airport to upload a GIS file to share with FAA

New Airports GIS Development in FY15

- **Runway Incursion Data**
  - Geolocated Runways Incursions from 2007 – 2014
  - Geolocated Hotspots
  - Airports can view data graphically
  - Review RI data by clicking the point.



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