

# OKLAHOMA'S AIRPORT SYSTEM PLAN

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# AGENCY MISSION

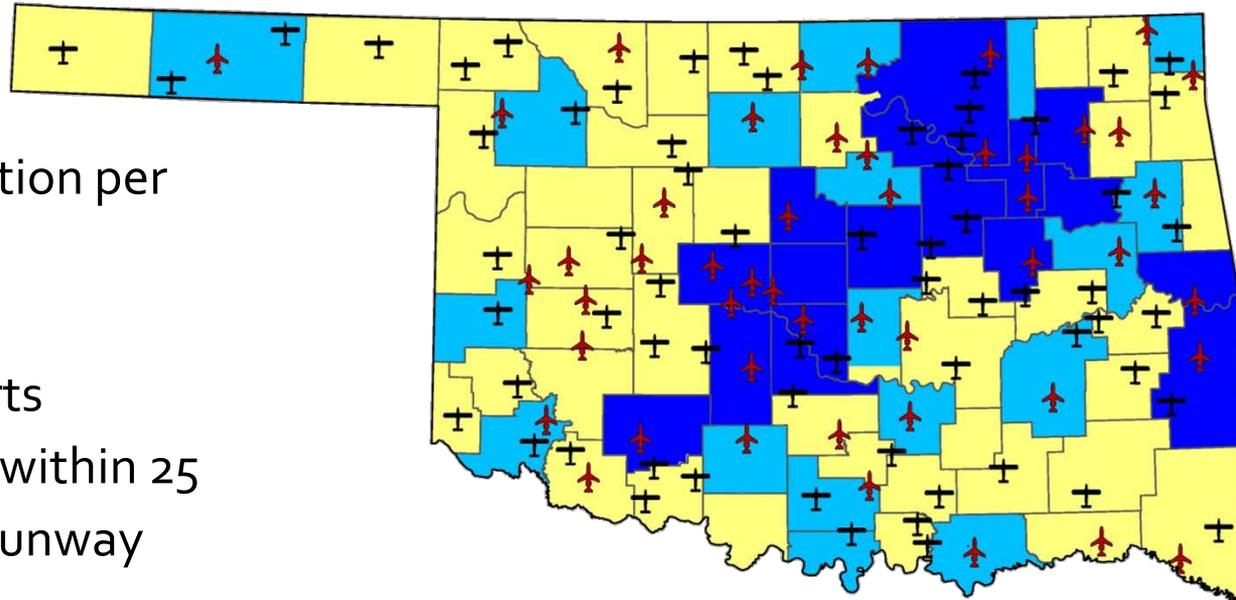
## Promote Aviation in the state

- Ensuring that the needs of commerce and communities across Oklahoma are met by the state's 110 public airports that comprise the state's air transportation system
- Fostering the growth of the aerospace industry



# Oklahoma Airport System

- 111 Airports - #4 in nation per capita
- 101 NPIAS Airports
- 10 State funded Airports
- 93% of OK population within 25 miles of a jet capable runway



Metropolitan Statistical Areas



Micropolitan Statistical Areas

# Oklahoma Airport System Plan

- Adopted in 1999
- Amended in 2005, 2011
- 9 airports deleted through amendments
- Identifies the airport's functional classification and role
  - ❖ Regional Business
  - ❖ District
  - ❖ Community
- Identifies basic amenities needed to fulfill designated role
- Guides Commission's CIP



# Regional Business Airports

## Criteria:

- Location: State's economic centers
- Serve multiple communities
- 20 or more based aircraft

## Eligible Projects:

- Runway length 5,000 ft x 75 ft
- Full parallel taxiway
- Runway and Taxiway Lights
- All weather access (AWOS)
- Navigational Aids
- Desirable approach minimums
- Fuel and services



**Number:** 49; 43 are Jet capable (5,000 ft. or longer)

# District Airports

## Criteria

- Provides access for areas not served well by a regional business airport
- Financially capable airport sponsor
- Provides some on airport services

## Eligible Projects

- Runway length 4,000 ft x 60 ft
- Partial or full parallel taxiway
- Beacon, approach aids, wind cone, and segmented circle

Number – 27 airports



# Community Airports

## Criteria

- Serve a small community
- Airport sponsor is financially limited
- Provide few or no services

## Eligible Projects

- Maintain existing facility
- Beacon, wind cone, and segmented circle

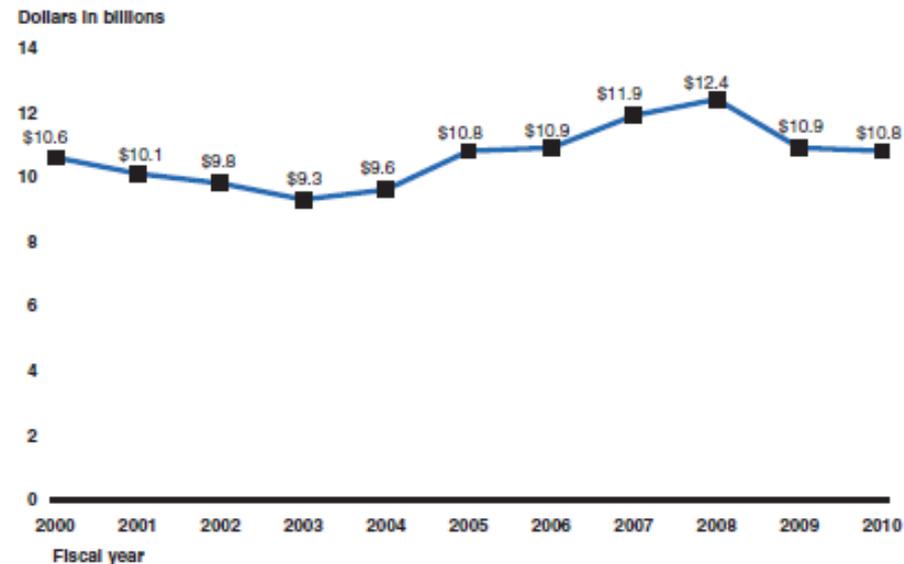
Number – 35 airports



# Challenges to System Planning

- **Uncertainties in funding**
  - Federal funding:
    - Declining trust fund receipts
    - Expenditures growth outpacing revenues increase
  - State budgets facing tremendous pressures
- **Demand projections at GA airports**
- **Individual airports pursue development agendas with little regard to the system**
- **Capital investment decisions are not well linked to the system planning process**

**Figure 1: Trust Fund Receipts, Fiscal Years 2000 through 2010**



Source: GAO analysis of FAA data.

Trust fund collections dropped 16% due to the economic crisis of 2008

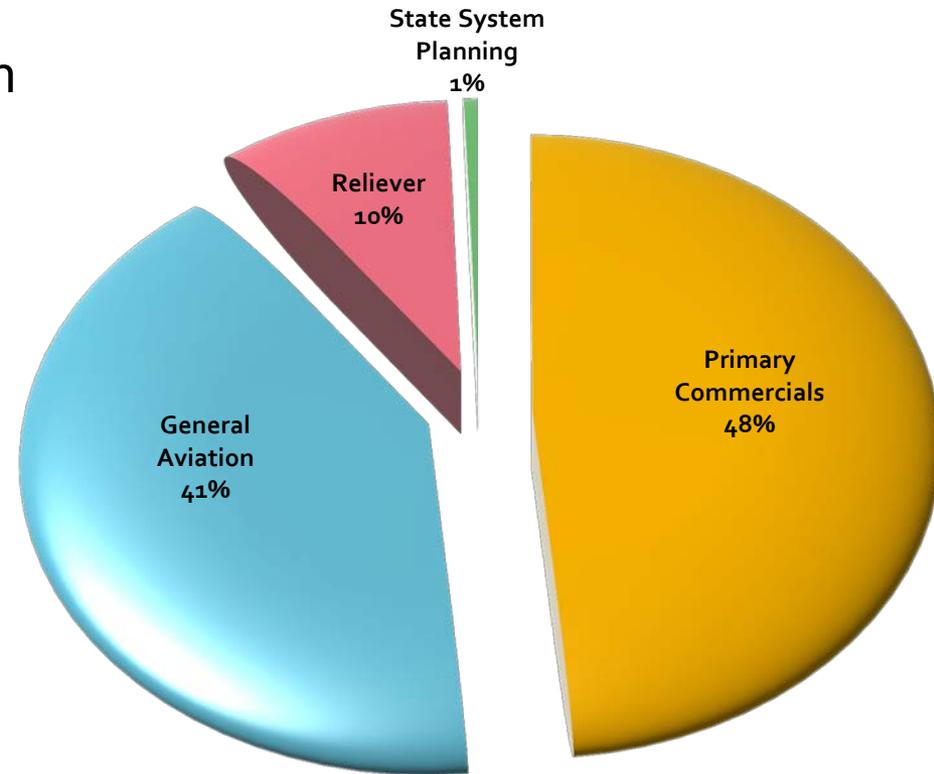
# Annual Funding of Oklahoma Airports

- **Federal Formula Funding (FY 2011)**
  - ❖ Federal-State Apportionment - \$4.0 M/yr
  - ❖ Federal Discretionary - \$5.0 M/yr
- **Entitlements (FY 2011)**
  - ❖ Federal Non-Primary Entitlement funds (NPE) - \$15 M/yr approx.
  - ❖ 101 airports participate (98 GA)
- **Total Federal Funding for OK Airports (FY 2011): \$39.97 M**
  - ❖ \$22.18 M General Aviation
- **State Funds for Oklahoma's Airports (FY 2011) - \$4.0 million**
- **Changes to Federal Funding could seriously impact OK airports and Airport System Planning.**



# AIP funds in OK FY 2001 - 2011

- Total funds received - \$456.1 million
- 48% to 3 Primary Commercial Airports – OKC, TUL & LAW
- 41% to NPIAS GA airports
- 10 % to Reliever Airports – PWA, RVS, OUN



Federal Funds to Oklahoma Airports  
(FY 2001 through FY 2011)

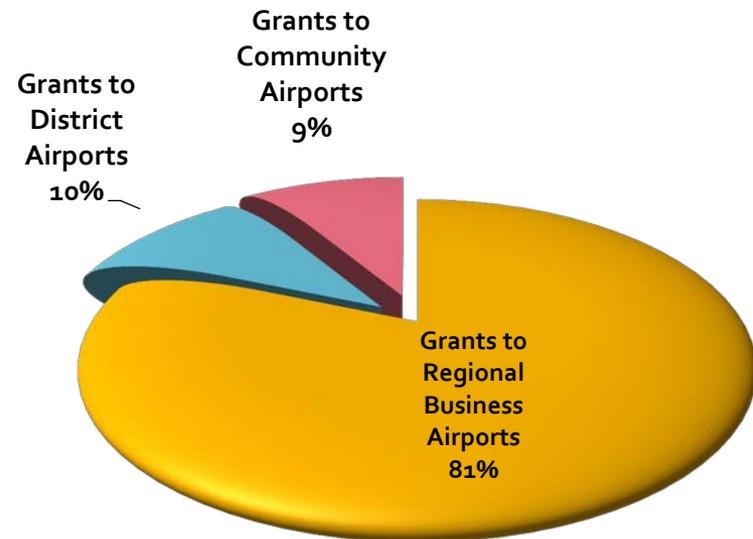
# AIP Grants Distribution (NPIAS GA)

## FY 2001 – FY 2011

- 81% to Regional Business airports
- 10% to District Airports
- 9% to Community Airports

### Conclusion

- Regional Business airports - backbone of Oklahoma Airport System, and
- Focus of Federal and State airport development funds



# System Planning Activities

- Airport Information Management:
  - ❖ Airport Safety and Standards Inspections and master record update
  - ❖ Pavement Management Inspections
- Capital Planning – State & federal funds
  - ❖ NPIAS Needs Update
  - ❖ Airport Five Year CIP
    - ❑ Early Project Development Packets
  - ❖ Commission's Three-year CIP
- Tall and Incompatible structures regulation
- Funded through annual FAA grant

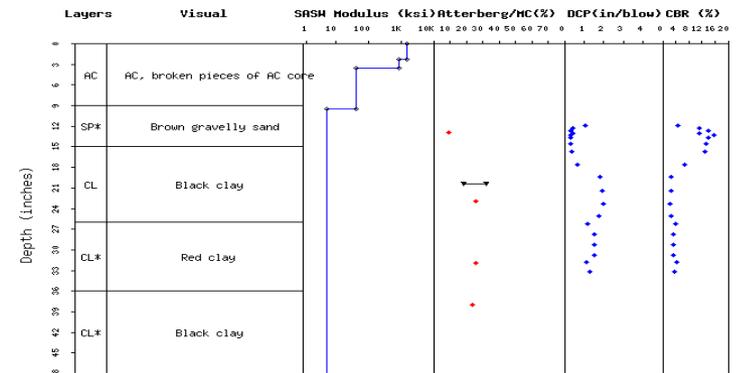
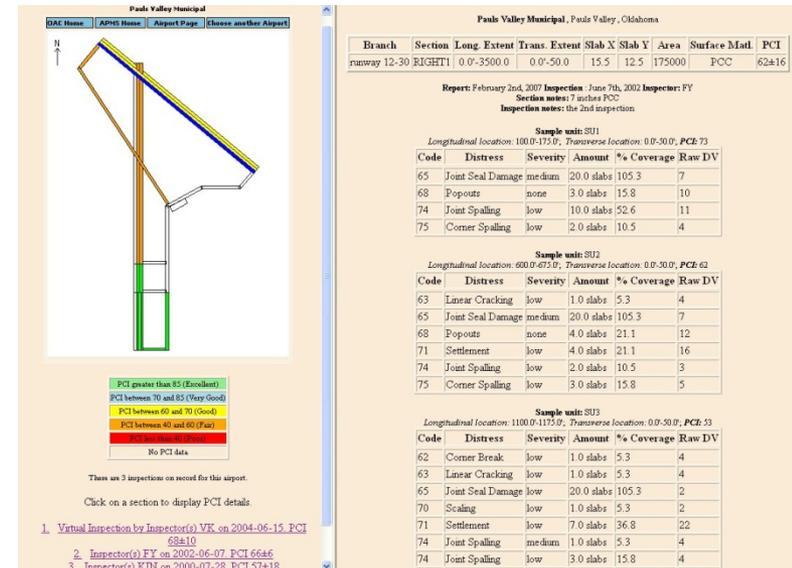
The screenshot displays the Oklahoma Aeronautics Commission website. At the top, there is a header with the commission's name and logo, and a navigation bar with links for Home, About, Communications, and Contact. Below the header, a welcome message reads: "Welcome to Oklahoma's Airport Facility Infrastructure Management System (AirportIMS)." The main content area is organized into several columns of menu items:

- Facility Directory:** Online Airport Guide, Address Database
- Airport Planning:** NPIAS Needs Worksheets, Airport Project History, 5-Year Airport Improvement Totals, Based Aircraft, Regional Meeting Presentation, List of Consultants, Oklahoma's Regional Business Airports, Oklahoma's District Airports, Oklahoma's Community Airports, Regional Business Airports with AWOS/ASOS
- Pavement Management:** Airport Information, Network Information, Airport PCI, Runway PCI Report, Taxiway PCI Report, Apron PCI Report
- Authorized User:** Authorized User Interface

At the bottom of the page, there is a footer with a "POWERED BY redhat LINUX 40501" logo, a "Send Feedback" button, and a "Created By" field.

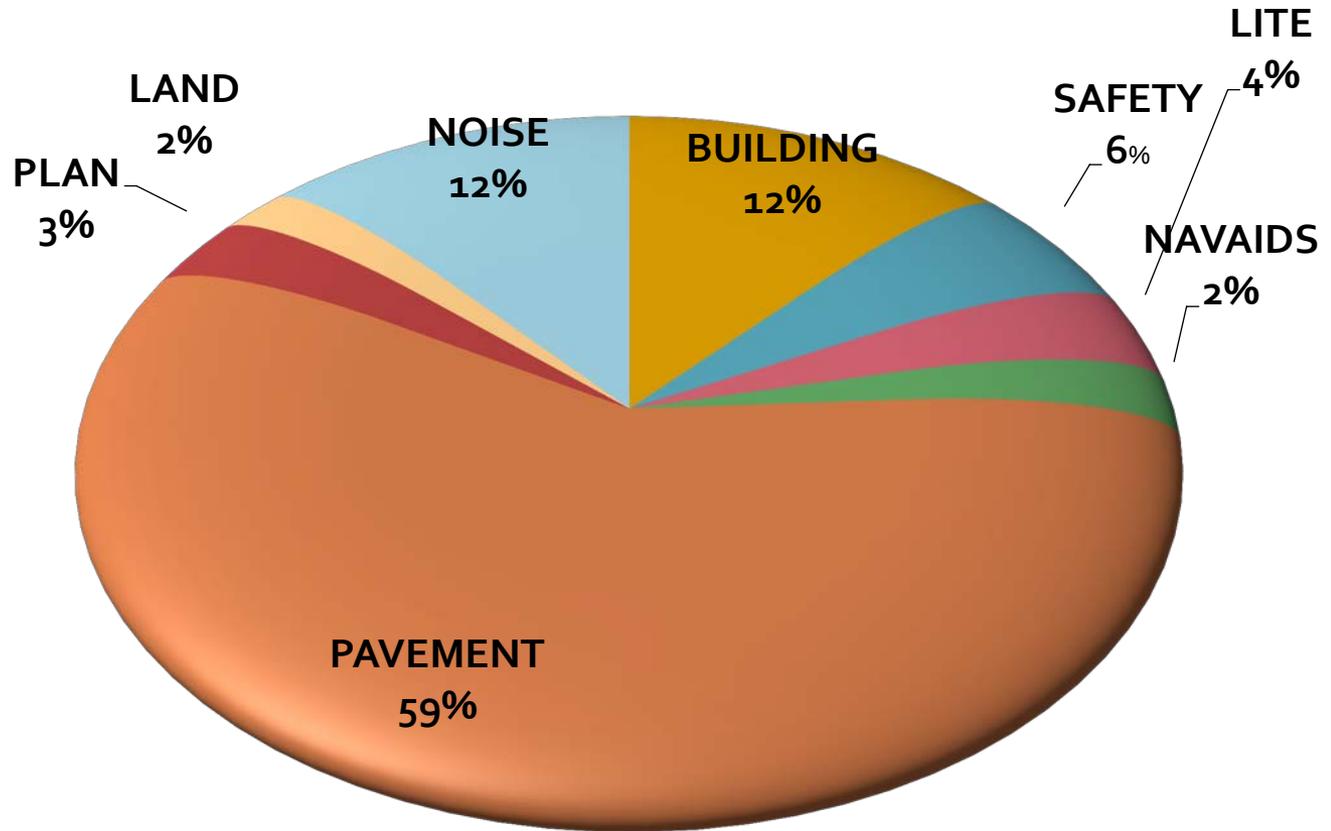
# Pavement Management Program

- Started in 2000
- 81 Airports in the program
- One third inspected annually
- Color coded map indicates current pavement condition
- Lists visual distresses observed
- Pavement type and thickness
- Engineering properties of soils
- Pavement Structural health from NDT





# GRANT BREAKUP FY 2008 – FY 2011



# Online NPIAS Needs List

- 20 Year capital expenditure plan for the development of the airport
- Short term development totals determine NPE (20% of 0-5yr)
- Unconstrained by funding
- Updated annually by airport sponsor
- Commission maintains on the Web
- Digitally transferred to FAA
- Used by Sponsor to develop 5-year ACIP
- Used by the Commission to develop CIP

Airport Development Worksheet						
DEVELOPMENT BY TIME PERIOD						
Airport: Ada Municipal ARC: D-II		City: Ada ARC Future: D-II		NPIAS No: 40-0001 Classification: RB		
<b>Airport Deficiencies</b>						
1. RSA length at south end of RW 17/35 is non-standard (660 ft instead of required 1000 ft)						
2. ROPA length at south end of RW17/35 is non-standard (660 ft instead of required 1000 ft)						
No.	Project Description	Project cost	Const Type	Object Code	Airport Comp	Project Status
1	Install perimeter fence (8 ft chainlink 5 mi.) NPE 01 & 02 ongoing	300,000	OTHR	STDS	OLSD	U
2	Prepare Environmental Assessment (RSA crosses creek) - Federal FY 02	16,000	OTHR	SAFE	AMP	U
3	Rehabilitate runway 17/35 - (State CIP FY 2005)	500,000	PAVE	PRSV	PRWY	C
4	Rehabilitate Runway 13/31 (3100' x 50')	85,000	PAVE	PRSV	SRWY	U
5	Reconstruct unimproved circular taxiway from Taxiway A to Taxiway B (3350' x 30'), reconstruct ramps and Hangars D, E, & H; Crack seal and seal coat ramp and Hangars F & G	575,000	PAVE	PRSV	PTXY	U
6	Reconstruct Taxiway B & turnout that proceed from Taxiway A to Runway 13/31	160,000	PAVE	PRSV	STXY	U
7	Acquire land & easements south end Runway 35, Construct new terminal building, Update airport action plan, Update height zoning ordinance	485,000	BLDG	STDS	TERM	U
8	Install reflective signs (24 ea) in Airport Operations Area	4,800	OTHR	STDS	ANAS	C
<b>Time Period: 00-05</b>		<b>Total Cost: \$ 2,125,800</b>	<b>Committed: \$ 504,800</b>			
No.	Project Description	Project cost	Const Type	Object Code	Airport Comp	Project Status
1	Reconstruct parallel TW to RW 13/31 (1770' x 35')	144,250	PAVE	RECN	STXY	U
2	Improve Runway Safety Area - acquire .9 ac	25,000	OTHR	SAFE	PRWY	U
3	Rehabilitate TW to RW 17/35	200,000	PAVE	PRSV	PRWY	U
4	Reconstruct connecting TW RW 13 (400' x 35')	32,700	PAVE	STDS	STXY	U
5	Construct aircraft turnaround RW 13 (50' x 80')	9,350	PAVE	STDS	SRWY	U
6	Clean and fill cracks, seal coat, and mark RW 17/35 (6203' x 100')	160,000	PAVE	PRSV	PRWY	U
6	Clean and fill cracks, Seal coat and mark RW 13/31 (3,100' x 50')	80,000	PAVE	PRSV	SRWY	U
8	Reconstruct hangar C TW (2,000' x 35'), 30,000#	167,000	PAVE	RECN	APRN	U
<b>Time Period: 06-10</b>		<b>Total Cost: \$ 818,300</b>	<b>Committed: \$ 0</b>			
No.	Project Description	Project cost	Const Type	Object Code	Airport Comp	Project Status
1	Clean and seal cracks, seal coat and Mark RW 17/35	160,000	PAVE	PRSV	PRWY	U
2	Overlay RW 17/35	500,000	PAVE	PRSV	PRWY	U
3	Clean and fill cracks, seal coat and mark RW 13/31	100,000	PAVE	PRSV	PRWY	U
4	Repair and seal coat TW to RW 13/31 (3,100' x 50')	80,000	PAVE	PRSV	SRWY	U
<b>Time Period: 11-20</b>		<b>Total Cost: \$ 840,000</b>	<b>Committed: \$ 0</b>			

# Airport Five-Year CIP

- Prepared and Updated annually by airport sponsor
- Identifies 0-5 year capital improvements
- Projects are constrained to known resources (NPE and funds identified in Commission's CIP)
- Overall Development Datasheet (detailed cost)

## CAPITAL IMPROVEMENT PLAN (CIP)

DATE: 3/7/06

Flyhigh Airport, OK

\$ 188,213 Estimated Carryover Balance  
 \$ 150,000 Estimated Annual NPE Amount

Color Code Key & Notes			
** State Grant, Economic Development Grant, Bonds, Private Donations	Other**		
* Sponsor 5% Match	Match*		
"AIP Funding Request" 5% Match Amount NOT Included	\$ 15,000		
Multi-Year NPE Fronted Amount NOT Included	\$ 15,000		

Fed FY	Entitlement Available	ODO Priority	ODO Project Component/Phase	Multi-Year	Est. Total Project Cost	Funding Source				AIP Funding Request
						Entitlement	Other AIP	Match*	Other**	
2007	\$ 338,213	1	Taxiway Extension / Construction		\$ 389,760	\$ 275,177	\$ 14,483	\$ 100,100		
			** Using Excise Tax funds (\$91,000) w/ 10% Sponsor Match							
<b>2007 Annual Subtotals:</b>						<b>\$ 389,760</b>	<b>\$ 275,177</b>	<b>\$ 14,483</b>	<b>\$ 100,100</b>	<b>Zero</b>
2008	\$ 213,036	2	South Taxiway / Design & Construction		\$ 181,970	\$ 172,872	\$ 9,099			
<b>2008 Annual Subtotals:</b>						<b>\$ 181,970</b>	<b>\$ 172,872</b>	<b>\$ 9,099</b>		<b>Zero</b>
2009	\$ 190,165	3	Airport Layout Plan Update		\$ 25,000	\$ 23,750	\$ 1,250			
<b>2009 Annual Subtotals:</b>						<b>\$ 25,000</b>	<b>\$ 23,750</b>	<b>\$ 1,250</b>		<b>Zero</b>
2010	\$ 316,415		No Project							
<b>2010 Annual Subtotals:</b>										<b>Zero</b>
2011	\$ 466,415	4	Commercial Hangar (80'x100')		\$ 350,000	\$ 332,500	\$ 17,500			
			5	Taxiway Lighting / Design		\$ 23,200	\$ 22,040	\$ 1,160		
<b>2011 Annual Subtotals:</b>						<b>\$ 373,200</b>	<b>\$ 354,540</b>	<b>\$ 18,660</b>		<b>Zero</b>
<b>5 Year CIP Totals:</b>						<b>\$ 969,930</b>	<b>\$ 826,339</b>	<b>\$ 43,492</b>	<b>\$ 100,100</b>	<b>\$ -</b>

# Commission's Three-Year CIP

- Approved annually
- Guide for the programming of federal and state funds for airport development consistent with OASP
- Developed from a pool of NPIAS Needs

## Durant – Eaker Field Regional Business Airport (Appendix C)

### DESCRIPTION

The proposed project has two Overall Development Objectives (ODO). The first of these is the reconstruction of the parallel taxiway to runway 17/35. The work elements of the ODO include and b) rehabilitate taxiway. The latter will include the construction of a full parallel taxiway to runway 17/35, rehabilitate taxiways and aprons, and update the airport layout plan. The second ODO of the proposed project is - improve runway safety area (RWY 17/35).

#### FY 2008

This project will consist of a design only grant for the development of the plans and specification as well as construction phasing for the project.

#### FY 2009

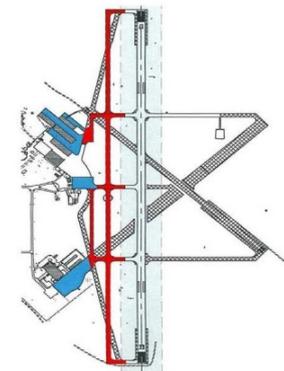
Implementation of Phase I of the construction activities for the project.

#### FY 2010

Implementation of phase II (completion) of the ODO including submission of the updated airport layout plan.

#### Selection Criteria

- Pavement Management: PCI = 76
- NPS: Rehabilitate taxiway = 63.6



Areas highlighted in red indicate proposed construction.

### JUSTIFICATION

The taxiway pavements were originally constructed in 1943 using a geometry that is considered non-standard by current FAA standards. The Commission's pavement management system indicates that surface condition of the existing taxiway pavements has deteriorated beyond acceptable levels. The pavements have been extensively patched by the sponsor over the years to maintain ride quality and prevent FOD generation. Currently, even the patches have deteriorated (see Appendix B) and are generating FOD that could cause significant damage to aircraft operating at the airport. This extremely distressed condition of the existing taxiway pavements needs to be addressed.

It is proposed to reconstruct a full parallel taxiway system to runway 17/35 with a runway to taxiway separation distance of 400 ft for future precision approaches. Also, the obstructions in the safety areas beyond runway ends will be addressed in the proposed project. The airport has 55 based aircraft including one Jet.

Funding	FY 2008	FY 2009	FY 2010	Total
<b>Commission</b>	\$100,000	\$400,000	\$100,000	\$600,000
<b>Federal State Apportionment</b>		\$1,350,000	\$500,000	\$1,850,000
<b>Federal Discretionary</b>		\$1,300,000	\$500,000	\$1,800,000
<b>Non-Primary Entitlement</b>	\$150,000	\$150,000	\$150,000	\$450,000
<b>Sponsor</b>	\$27,777	\$355,556	\$138,889	\$522,222
<b>Total</b>	\$277,777	\$3,166,667	\$1,388,889	\$5,222,222

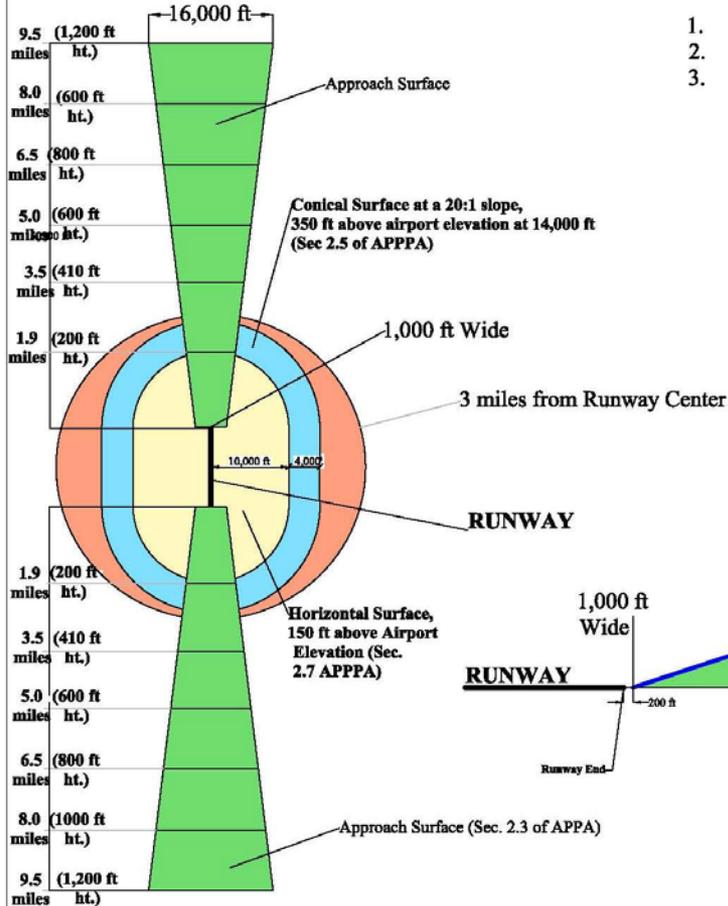
Commission may provide half of sponsor's match on federal participation projects involving State Apportionment and/or Discretionary, and NPE funds. Commission on funds are contingent on availability State funds are contingent on availability

# Aircraft Pilot and Passenger Protection Act

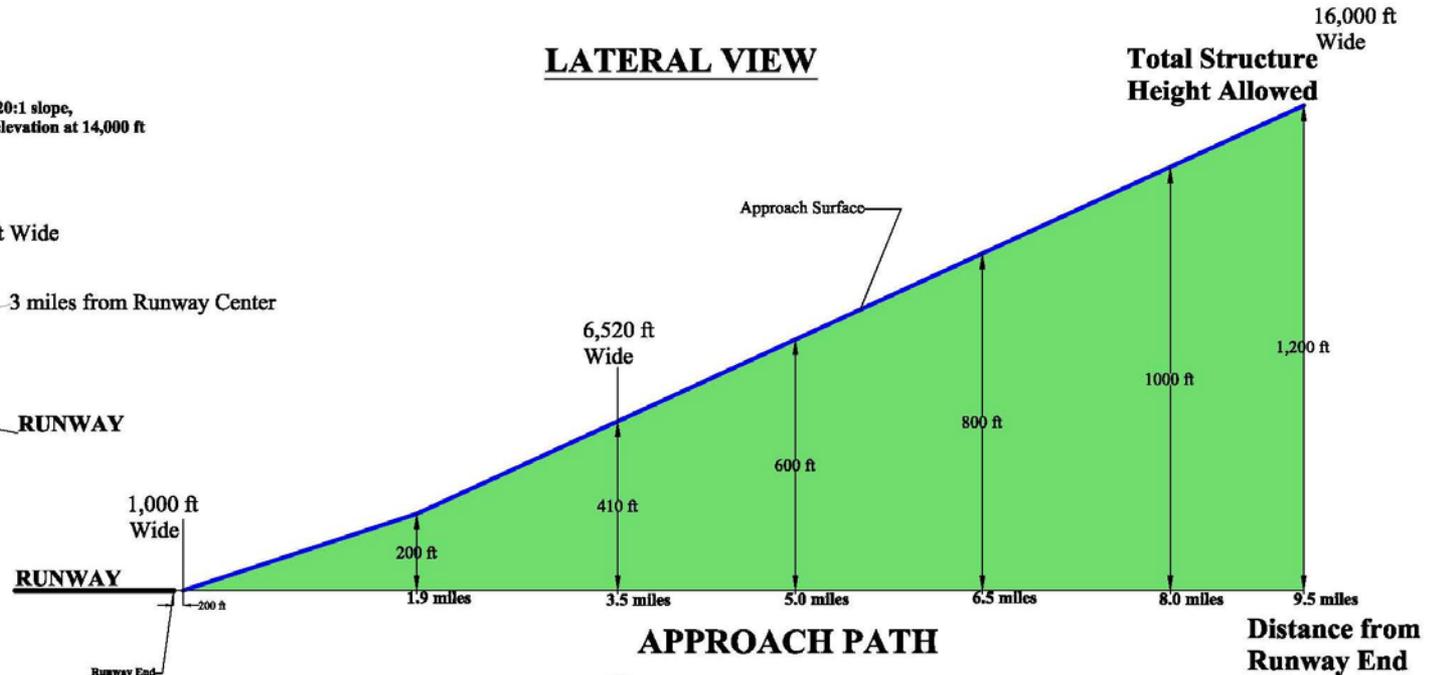
## Aircraft Pilot and Passenger Protection Act (APPPA) Tall Structures Regulation

1. Horizontal Surface - Yellow
2. Conical Surface (20:1) for 4,000 ft - Blue
3. 3-Mile radius from airport reference point - Orange

### AERIAL VIEW



### LATERAL VIEW



### APPROACH PATH



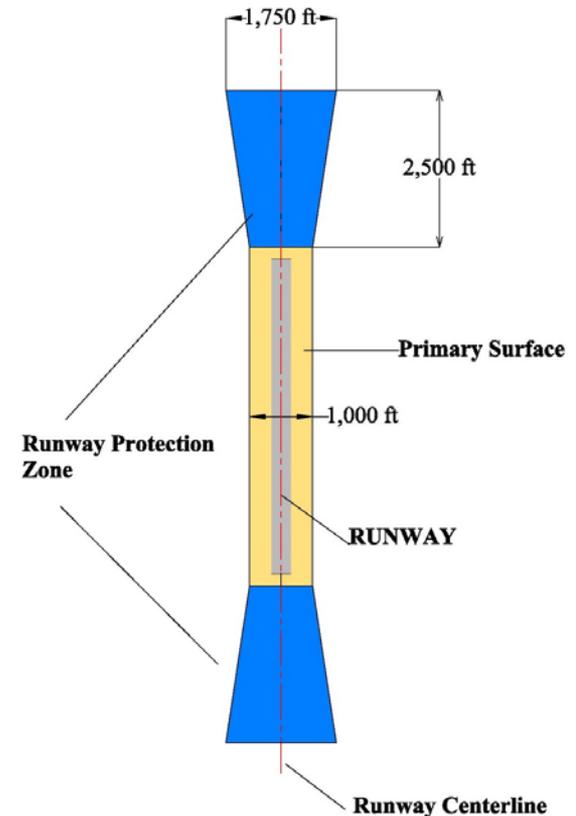
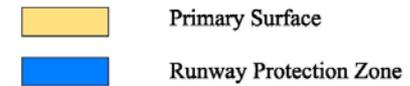
Typical 3-Megawatt rated  
Wind-Turbine - 410 ft

# Aircraft Pilot Passenger Protection Act

## b) "Incompatible purpose"

—  
use of a building or structure as a residence, education center, places of worship, hospital, medical inpatient treatment facility, nursing/convalescent home, retirement home, or similar use

Aircraft Pilot and Passenger Protection Act



# Performance Measures

## Staff focus:

- 96% of OK Population within service area of a regional business airport
- Pavement Condition:
  - PCI of Regional Business primary runways > 70
  - PCI of all other runways > 65
- Maximize number of jet-capable RB airports
- Timely submittal of update of NPIAS needs information to FAA
- ACIPs collected in a timely manner
- CIP projects close-out in a timely manner.



# Performance Measures (Contd.)

- **New Metrics** under development:

- ❖ Design Standards Index
- ❖ Operational Standards index

## **Goal of this development**

- ❖ Maintain an airport system that contributes to aviation safety and caters to system user needs
- ❖ Create a decision support system that reviews parameters that encompass the entire airport environment
- ❖ Enable periodic system performance measurements



# Design Standards Index

Measures compliance with Design standards.

- Pavement Condition Index (PCI) - 35%
- Lighting Condition -15%
  - Runway (10%)
  - Taxiway (5%)
- Pavement Markings Condition -10%
- Obstruction Clearance Slope (OCS) – 10% :
  - compares available to standard requirements for specific runway
- Runway Safety Area (RSA) – 10%
- NAVAIDS – 10% total
- Parallel Taxiway – 5%
- Line of Sight – 5%



# DSI Template

Airport: Univ. of Oklahoma Westheimer (KOUN)

Design Standard	Desired Compliance	Actual	Remarks	Estimated Impact of Pending CIP Projects
Runway PCI	35%	29.05%	PCI: 83	Rehab RW 3/21 PCI: 91
Runway Lighting Condition	10%	8.50%	Good	
Taxiway Lighting Condition	5%	4.50%	Good	
Markings Condition	10%	6.25%	17/35 Good (4.25%); 3/31 Fair (2%)	Excellent (10%)
Obstruction Clearance Slope	10%	10.00%	OK	
Runway Safety Area	10%	10.00%	OK	
NAVAIDS	10%	5.00%	OK	
Parallel Taxiway	5%	5.00%	OK	
Line of Sight	5%	5.00%	Good	
		Index: 83.30%	Future Index: 89.85%	

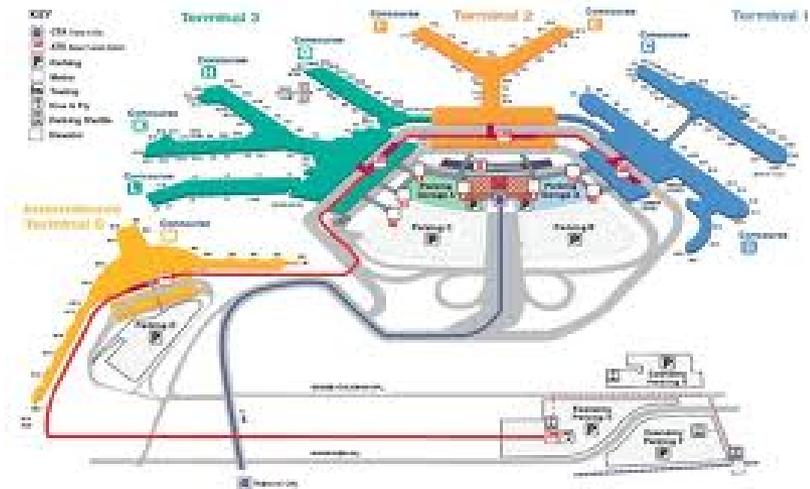
# Operational Standards Index (OSI)

Uses operational factors to characterize how well

the airport meets user needs

- Minimum Standards – 25%
- Airport Services – 25%
- Safety/Security Plan – 15%
- Based Aircraft Reporting – 15%
- Approved Airport Layout Plan (ALP) – 10%
- Business Center – 10%

BONUS: Airport Attractions (Up to 10%)



# OSI – Template

Airport: Univ. of Oklahoma Westheimer (KOUN)

Operational Standards Index	Desired Compliance	Actual	Remarks	Estimated Impact of Pending Projects
Minimum Standards	25%	25.00%	On File	
Airport Services	25%	25.00%	Terminal, Fuel, Maint.	
Safety (Security) Plan	15%	0.00%	None	
Based Aircraft	15%	10.00%	Currency?	
Approved ALP	10%	10.00%	Jan-12	
Business Center	10%	10.00%	Cruise Aviation	
BONUS: Airport Attractions	-	5.00%	Ozzie's Diner	
	Index:	85.00%		Future Index:

**THANK YOU!**

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Questions