pennsylvania
DEPARTMENT OF TRANSPORTATION

PennDOT | Bureau of Aviation

PENNSYLVANIA STATEWIDE AIRPORT SYSTEM PLAN (PA SASP) UPDATE 2016

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AGENDA

1. SASP OVERVIEW & PURPOSE
2. SCOPE OF WORK & RESULTS
3. SUMMARY OF FINDINGS
4. QUESTIONS

1 SASP OVERVIEW & PURPOSE

University Park Airport (UNV)
Source: UNV Airport Facebook Page

SASP OVERVIEW

- Timeline of Previous PA SASPs:

** 2012 Update was suspended after the completion of the inventory and forecasts sections.*

SASP PURPOSE

1. Provides a statewide framework for **prioritizing investments** to improve the performance of Pennsylvania's air transportation system.
2. Records current conditions as the basis for **identifying needs** and for comparison to historical and future inventories.
3. Estimates projected statewide aviation activity to better **understand the facilities that will be needed** in the future.
4. Ensures criteria for each class are appropriate and **supports implementation** of PA SASP goals, objectives, and performance benchmarks.
5. Anticipates changes in demand and future challenges to **promote system flexibility and sustainability**.

SASP GOALS

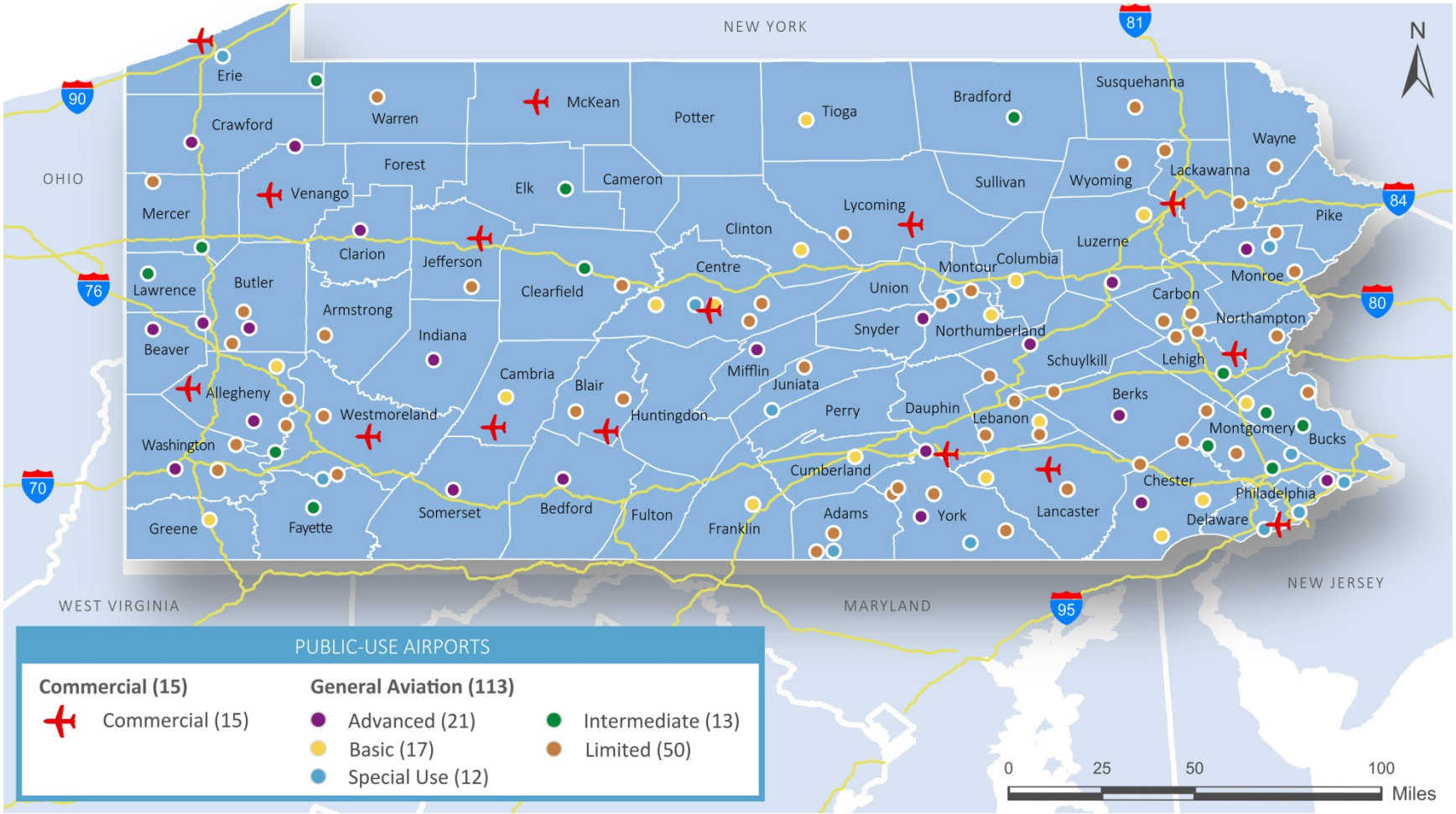
PERFORMANCE MEASURES	GOALS
ACCESSIBILITY	• Provide an airport system that is accessible from both the air and ground.
OPTIMIZATION POTENTIAL	• Support an airport system able to meet the demand of its users by optimizing facilities that help foster economic development.
ACTIVITY / DEMAND	• Support an airport system that maintains the flexibility to respond to changes in future demand.
SUPPORT / COMMITMENT	• Promote and preserve a sustainable airport system that is supported by airport sponsors and local communities.
FACILITIES	• Support users by optimizing facilities while maximizing the system-wide benefit of aviation investments.

PROJECT OVERSIGHT COMMITTEE (POC)

- **The POC serves in an advisory role** by providing input on technical planning and stakeholder outreach efforts (Convenes quarterly)
- **Members include** representatives of:
  - PennDOT – BOA (4)
  - FAA (1)
  - ACP (1)
  - DVRPC MPO (1)
  - PA DCED (2)
  - Selected sponsors of SASP airports (10)

Lancaster Airport (LNS)
Source: www.airbornephoto.com/aerial-photography-pa.html

THE CURRENT AIRPORT SYSTEM



2 SCOPE OF WORK & RESULTS

William T. Piper Memorial Airport (LHV)
Source: LHV Airport Facebook Page

SCOPE OF WORK

	VOLUME I – 2012 UPDATE	2016 UPDATE
1	• Airport System Goals & Objectives	*No Changes*
2	• Inventory Update	*Updated*
3	• Aviation Forecasts	*Updated*
4	• Airport Classification Update	*No Changes*
5	• State & Local Aviation Issues	*No Changes*

SCOPE OF WORK

VOLUME II – 2016 UPDATE

6 • Inventory Update

7 • System Requirements

8 • Implementation Plan

9 • Impacts of Completed Airport Improvements

10 • Summary of Findings

INVENTORY UPDATE (2016)

- **Update the Last Inventory Developed in 2011 to Account for:**

✓ **Airport Closures**
  - McGinness Field, Hanover, and Shippensburg airports

✓ **Name Changes**
  - Hazleton Municipal to Hazleton Regional Airport
  - Rock Airport to Pittsburgh Northeast Airport
  - Butler County to Pittsburgh-Butler Regional Airport)

✓ **Upgraded Facilities**
  - McVille (Runway Reconstruction)

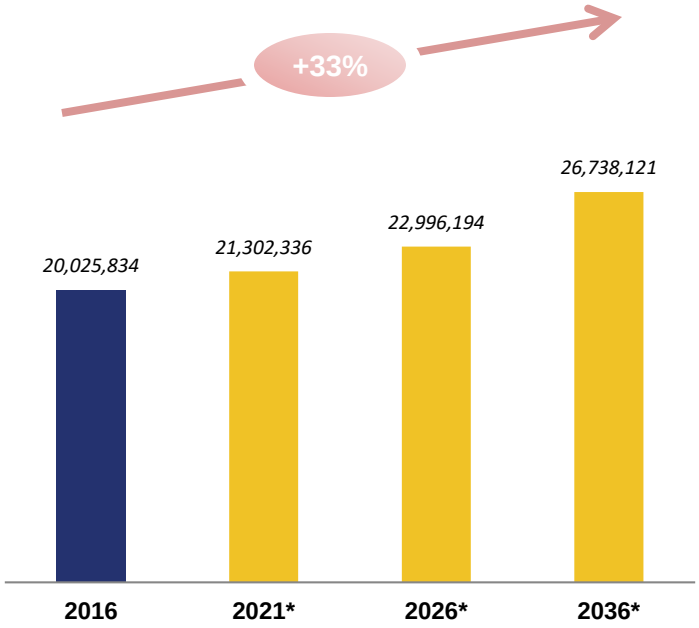
✓ **Various Inventory Changes** (Runway widths, Fixed-Base Operators (FBOs), jet fuel availability, terminals, …)

AVIATION FORECASTS (2016)

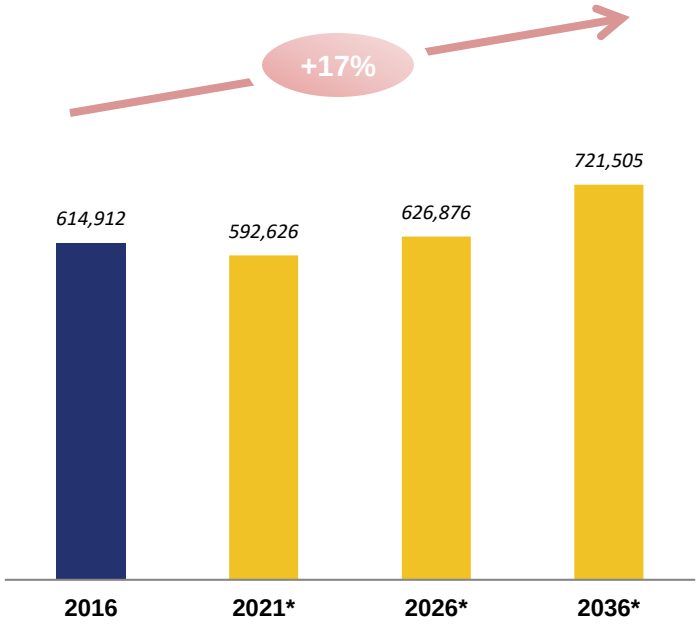
- Developed for the 2012 SASP, updated in 2016

Activity Forecasts at Pennsylvania's Commercial Airports (2016 – 2036)

Passenger Enplanements



Aircraft Operations

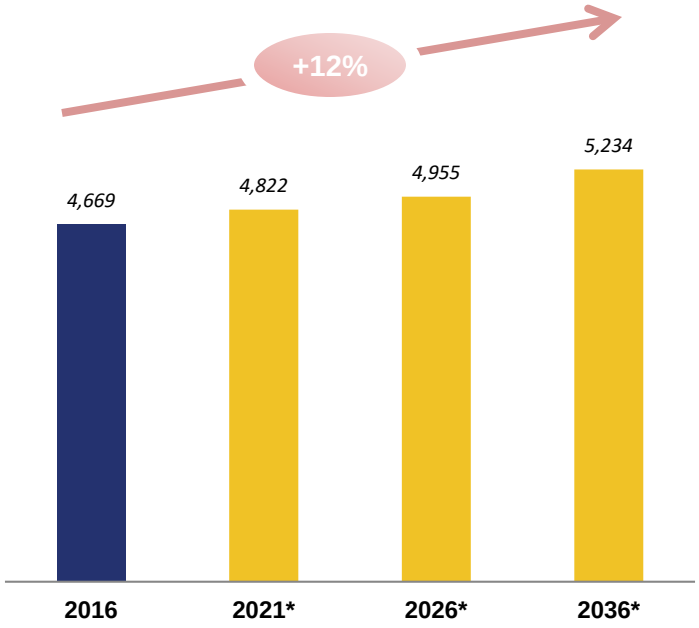


AVIATION FORECASTS (2016)

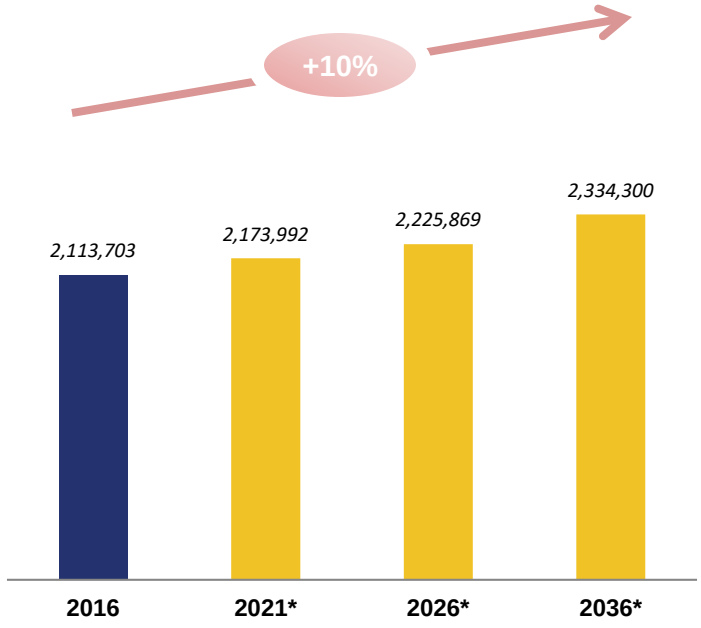
- Developed for the 2012 SASP, updated in 2016

Activity Forecasts at Pennsylvania's GA Airports (2016 – 2036)

Based Aircraft



Aircraft Operations



SYSTEM REQUIREMENTS

Establish the Adequacy of the Existing PA Airport System by Evaluating:

- ✓ Ability to Meet Airport Classification Criteria
- ✓ Coverage of Population and Economic Centers
- ✓ Airport Development Constraints
- ✓ Ability to Accommodate Growth in Aviation Demand

Capital City Airport (CXY)

Source: www.flickr.com/photos/23269353@N00/4020087030

AIRPORT CLASSIFICATION CRITERIA

Class Criteria

- *Runway Length*
- *Published Approach*
- *Runway Lights*

Performance Criteria

- *Runway Width*
- *Runway Strength*
- *Parallel Taxiway*
- *Approach NAVAIDS*
- *Weather Equipment*
- *Services*
- *Facilities*

Note: No classification changes to remaining airports from the suspended 2012 PA SASP Update to the current 2016 PA SASP Update.

MINIMUM AIRPORT CLASSIFICATIONS CRITERIA

COMMERCIAL SERVICE	
Class Criteria (Facility Objectives)	
Runway Length	5,000 ft. and 14 CFR Part 139 Cert (I, II, or III)
Runway Approach	Instrument Landing System (ILS)
Runway Lights	High Intensity Runway Lights (HIRL)

ADVANCED	
Class Criteria (Facility Objectives)	
Runway Length	4,500 ft.
Runway Approach	Vertically Guided Approach (VGA)
Runway Lights	Medium Intensity Runway Lights (MIRL)

INTERMEDIATE	
Class Criteria (Facility Objectives)	
Runway Length	3,800 ft.
Runway Approach	Non-Precision (NP)
Runway Lights	MIRL

MINIMUM AIRPORT CLASSIFICATIONS CRITERIA

BASIC	
Class Criteria (Facility Objectives)	
Runway Length	3,200 ft.
Runway Approach	Circling Approach (CA)
Runway Lights	MIRL

LIMITED	
Class Criteria (Facility Objectives)	
Runway Length	2,200 ft.
Runway Approach	None
Runway Lights	None

Note: Airports reclassified in 2007, were not reclassified a second time in 2012.

SASP VS. ASSET CLASSIFICATION CRITERIA

PA SASP Classification Criteria:

- Generally based on accessibility through existing amenities and facilities:
  - *Runway length*
  - *Runway lights*
  - *Approach minimums*
  - *Other Performance Criteria*
- Includes all 128 PA public-use aviation facilities

Major ASSET Classification Criteria:

- Largely driven by location and current airport activity:
  - *In or near a metropolitan area*
  - *Number of based aircraft*
  - *Annual operations*
  - *Serves a federal activity*
- Includes only 63 PA airports listed in the National Plan of Integrated Airport Systems (NPIAS)

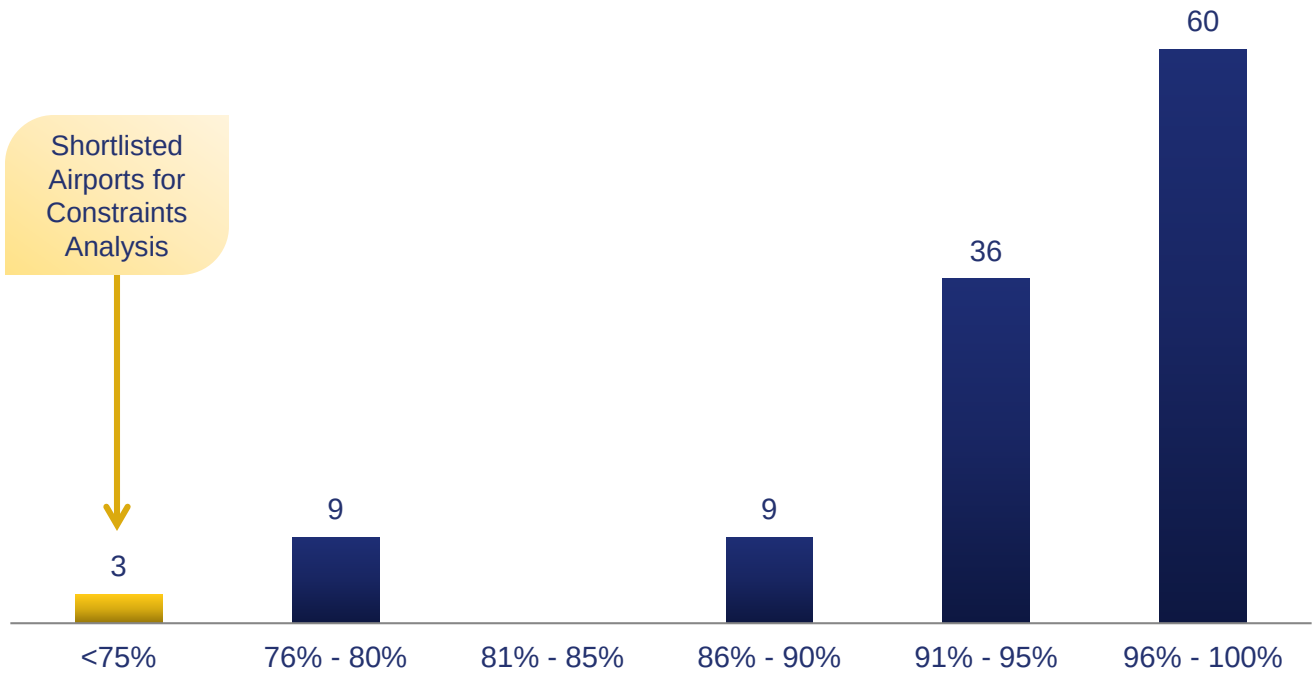
SYSTEM DEFICIENCIES AND CONSTRAINTS SCORING METHODOLOGY

Scoring Weights by Airport Category (%)

Airport Category	Runway Length	Published Approach	Runway Lights	Runway Width	Runway Strength	Parallel Taxiway	Rotating Beacon	Light Wind Indicator	Segmented Circle	REILs	PAPI	Approach Lighting	ASOS/ AWOS	Phone	Restroom	FBO	Maintenance	Fuel	Ground Transport	Local & Itinerant Parking Apron	Storage	Terminal	Auto Parking	TOTAL
Commercial	20	15	15	5	5	5	2	2	1	1	2	3	3	1	1	2	1	2	2	2	2	6	2	100
Advanced	25	15	15	5	5	5	2	2	1	1	2	3	3	1	1	2	1	2	1	2	2	2	2	100
Intermediate	25	15	15	5	5	5	2	2	1	1	0	2	3	1	1	2	1	2	1	3	3	2	3	100
Basic	35	15	15	5	5	5	2	2	1	0	0	2	0	1	1	0	0	2	0	3	3	0	3	100
Limited	65	0	0	10	10	0	0	5	0	0	0	0	0	2	2	0	0	0	0	3	0	0	3	100

SYSTEM DEFICIENCIES AND CONSTRAINTS SCORING METHODOLOGY

Number of Airports by Scoring Category (%)



**Special Use facilities are not included in the analysis*

SYSTEM DEFICIENCIES AND CONSTRAINTS

Constrained Airports Shortlist
(Score < 75%)

- Doylestown Airport (70%)
- Heritage Field Airport (75%)
- Brandywine Airport (73%)

All 3 have over 100 based aircraft.

GA Relievers to PHL

Brandywine Airport (OQN)
Source: www.skyvector.com/content/oqn-brandywine-airport-0

SYSTEM DEFICIENCIES AND CONSTRAINTS

Constraints Matrix of Shortlisted Airports

Airport	LOC ID	Score	Objective Need	Objective Weight	Existing Objective	Minimum Objective	Major Constraints	Ability to Address Constraints	Future Expansion Potential
Intermediate									
Doylestown Airport (*)	DYL	70%	Runway Length	25%	3,004’	3,800’	Community opposition and off-airport development	Limited	Low
			Runway Width	5%	60’	75’		Limited	
Heritage Field Airport (*)	PTW	75%	Runway Length	25%	3,371’	3,800’	None	Possible. Potential extension of Runway 10/28 to the West.	Medium - High
Basic									
Brandywine Airport (*)	OQN	73%	Runway Lights	15%	LIRL	MIRL	None	Possible	Constrained
			Runway Width	5%	50’	60’	None	Possible. Current plans to widen runway.	
			Runway Strength	5%	10,000 lbs.	12,500 lbs.	None	Possible. Current plans to repave runway.	
			Segmented Circle	1%	-	Yes	None	Possible	
			Public Phone	1%	-	Yes	None	Possible	

(*) Airports reclassified in 2007, were not reclassified a second time in 2012.

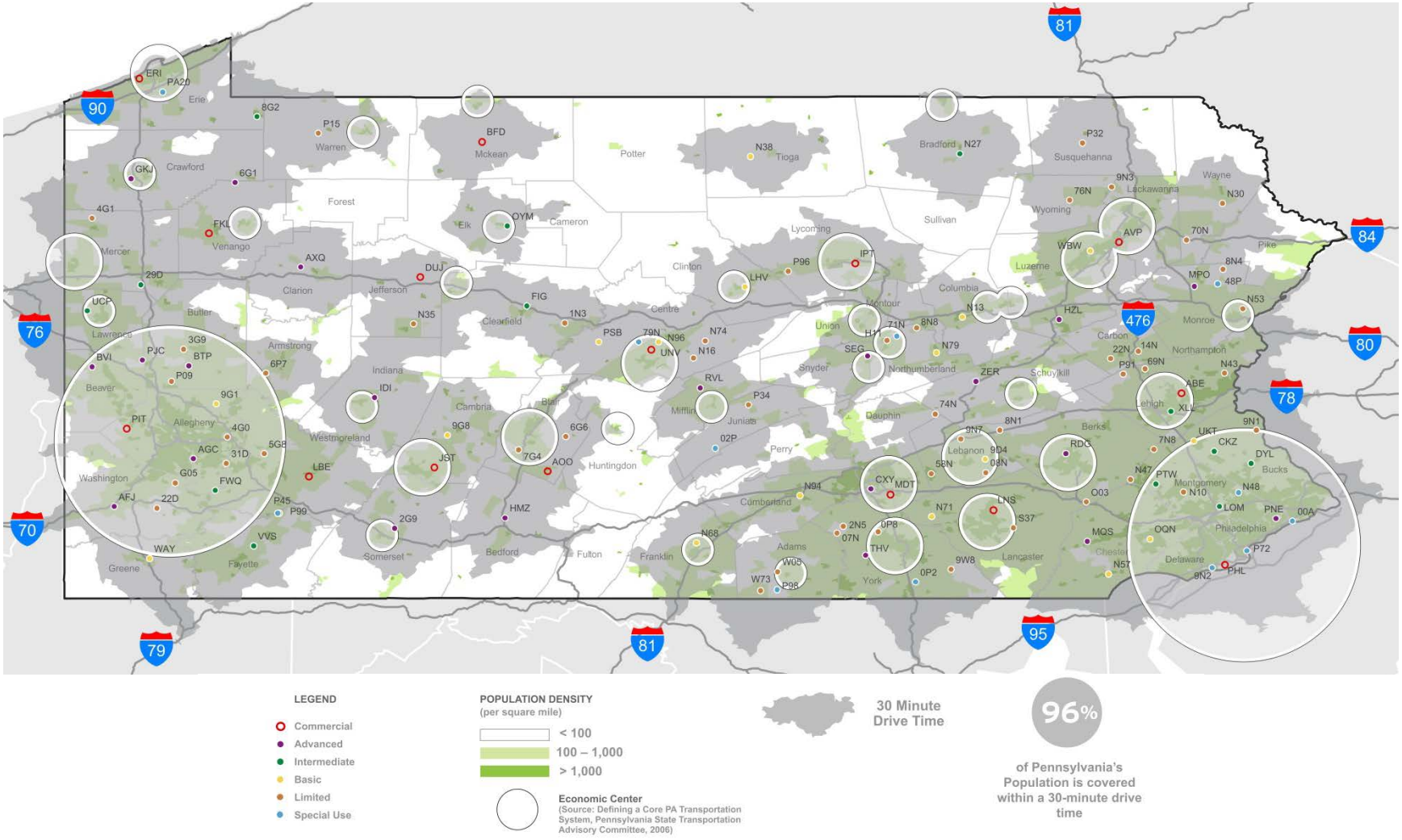
COVERAGE OF POPULATION AND ECONOMIC CENTERS

Airport Drive Time Population Coverage Ratios

	Population Covered	Coverage Ratio	Out-of-State Population Covered	Out-of-State Coverage Ratio	Total Coverage Ratio
PA	**12,702,379**	**100%**			
30-minute (All)	12,238,305	96%	-	-	96%
30-minute (NPIAS)	11,391,686	90%	77,093	1%	91%
45-minute (Commercial/Advanced)	11,908,813	94%	339,369	3%	97%
60-minute (Commercial)	12,061,348	95%	304,627	3%	98%

Source: 2010 Census, United States Bureau of the Census

DRIVE TIME MAP: 30-MINUTE (ALL 128 SASP AIRPORTS)



GAPS IN THE SYSTEM

- Northern areas of **Wayne County** and **Pike County**
- Northeastern suburbs of Pittsburgh, **North Allegheny County, Armstrong County**
- Overall: Vast majority of PA population has access to a system airport in less than an hour's drive

Pittsburgh-Butler Regional Airport (BTP)
Source: BTP Airport Facebook Page

IMPLEMENTATION PLAN

- **Provide a Summary of Priorities & Plan to Address Them:**

✓ Identification of Core and System (Non-Core) Airports

✓ Drive Time Coverage of Core Airports

✓ Ability of Core Airports to Accommodate Future System Demand

✓ Greatest System-Wide Benefits of Core Airports

Lehigh Valley International Airport (ABE)
Source: ABE Airport Facebook Page

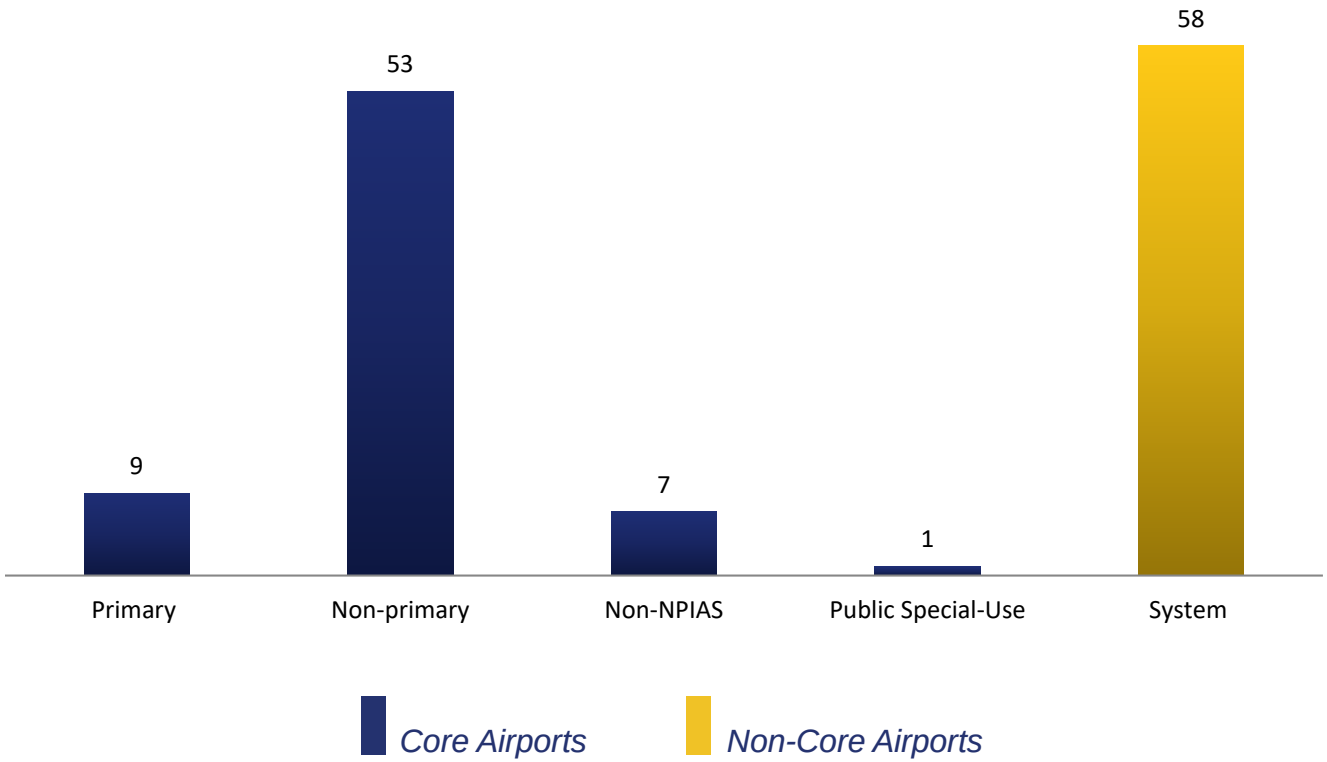
CATEGORIES OF AIRPORTS

- **Core Airports**
  - NPIAS Primary
  - NPIAS Non-Primary (*Included in ASSET*)
  - Non-NPIAS *(Airports that best fill gaps in the NPIAS-only system)*
  - Public Special-Use
- **System Airports**
  - All Non-Core

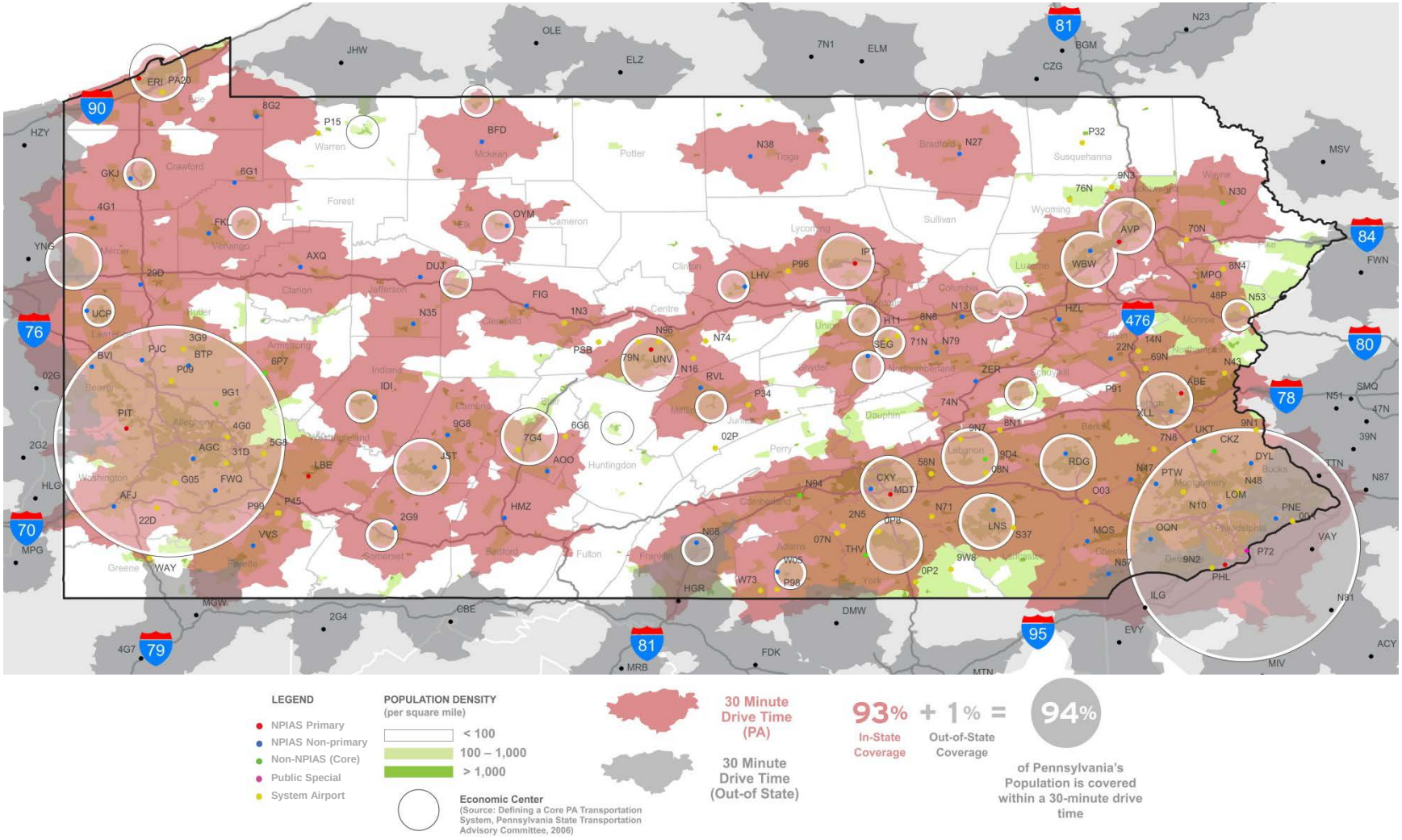
Wilkes-Barre/Scranton International Airport (AVP)
Source: AVP Airport Facebook Page

CATEGORIES OF AIRPORTS

Number of Airports by Category in Implemented System



RECOMMENDED 30-MINUTE DRIVE TIME CORE AIRPORTS MAP



MAIN AIRPORT SYSTEM PRIORITIES

1

Maximize drive time accessibility of population and economic centers, and reduce identified gaps

2

Implement feasible upgrades and expansions justified through the master planning process or documented operational need

3

Ensure that operational capacity will accommodate future demand

IMPACTS OF COMPLETED IMPROVEMENTS

- **Develop a Methodology to Assess the Impact of Individual Airport Improvements:**

✓ **Five airport case studies**: Indiana County, New Garden, Pocono Mountains Municipal, Erie International, and McVille

✓ Qualitative and quantitative returns to the airport system

New Garden Flying Field (N57)
Source: N57 Airport Facebook Page

METHODOLOGY

EXISTING CONDITIONS

Airport Overview

Description of Recently Completed Airport Improvements

IMPACTS EVALUATION

Airport Survey Questionnaire

Quantitative Impacts

Changes in annual operations and based aircraft; Changes in capacity; Fluctuations in on-airport businesses and employment
→ *Input from Project Contribution Calculator and Economic Contribution Calculator*

Qualitative Impacts

Design standard compliance; Changes in types of aircraft being accommodated; Off-airport business growth; Aircraft stage length impacts

Conclusion: Return on Investment Assessment

POCONO MOUNTAINS MUNICIPAL AIRPORT
SAMPLE AIRPORT CASE STUDY

- **Located 24 miles south of Scranton**
- **Public GA facility classified as Advanced**
- **Major Improvement (2012):**

– Extension of Runway 13/31 from 3,950 feet to 5,001 feet

– Widening of Runway 13/31 from 60 to 75 feet

– Total cost: $6 million, 1/3 Local Share

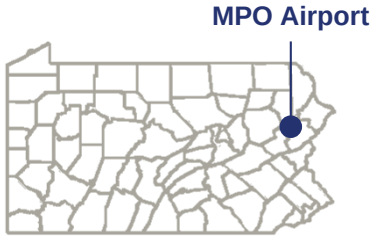
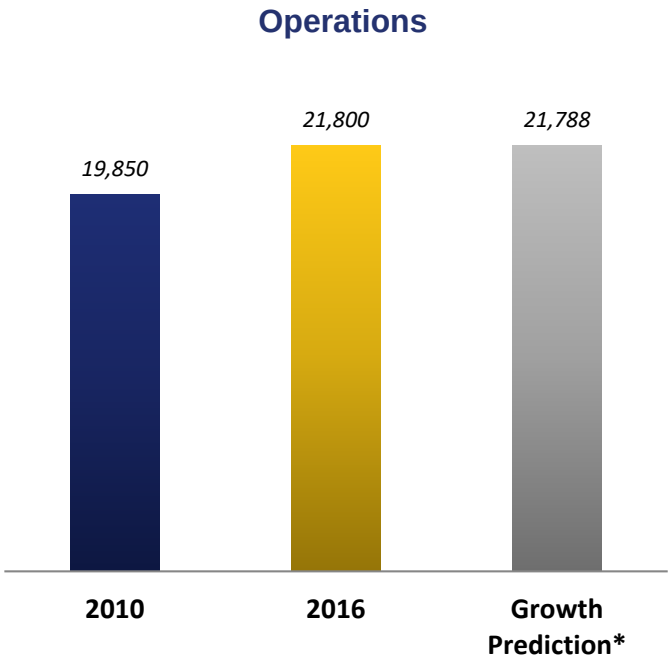
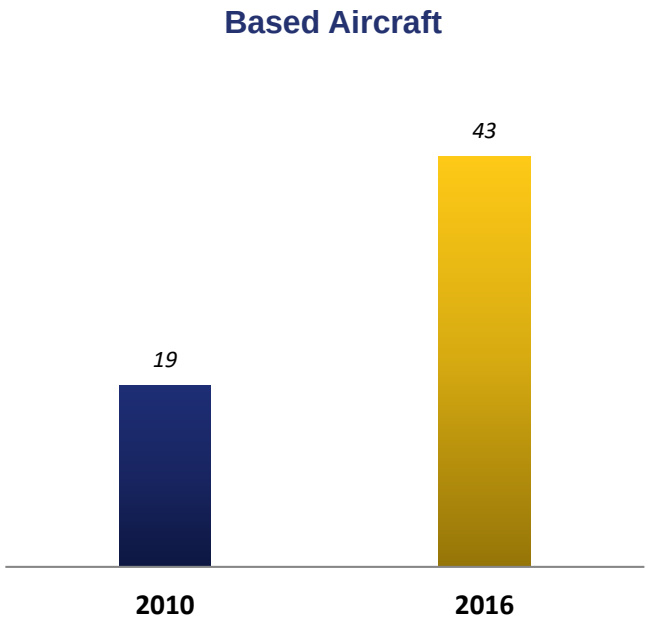


Image Source: Google Earth

POCONO MOUNTAINS MUNICIPAL AIRPORT
SAMPLE AIRPORT CASE STUDY

- **Quantitative Impacts - Before & After**



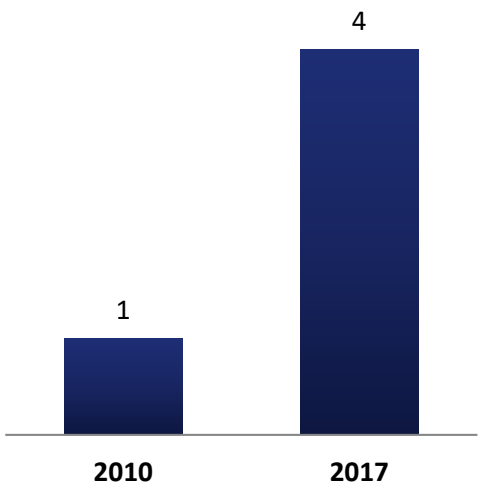


** 2016 estimated prediction from Project Contribution Calculator, using 2010 as base year*

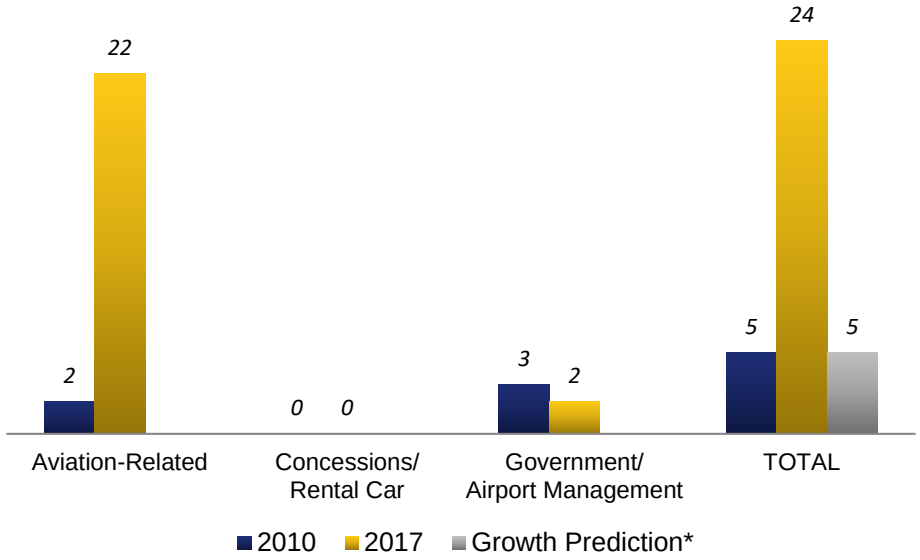
POCONO MOUNTAINS MUNICIPAL AIRPORT
SAMPLE AIRPORT CASE STUDY

- **Quantitative Impacts - Before & After (Continued)**

On-Airport Businesses



On-Airport Employment



** Estimated result from the Economic Contribution Calculator, using 2010 as a base year. This tool predicts total employment gains from both on-airport and off-airport businesses.*

POCONO MOUNTAINS MUNICIPAL AIRPORT
SAMPLE AIRPORT CASE STUDY

- **Qualitative Impacts**

– Added capability to accommodate larger business jets

– New and varied aviation services: aircraft maintenance, air tours, pilot training

– Opening of Kalahari Resorts & Conventions, the largest indoor water park in the world, next to the Airport

Kalahari Resorts and Conventions
Source: www.wisdells.com

RETURN ON INVESTMENT (ROI) SUMMARY

Return on Investment Assessment from Improvements at Cast Study Airports

Airport	Type of Improvement	Cost	Overall Return On Investment
Indiana County Airport (IDI)	Runway Extension	$19,489,403	**Medium** (4.2)
New Garden Flying Field (N57)	Runway Reconstruction, Parallel T/W, Hangars	$12,255,812	**High** (6.0)
Pocono Mountains Municipal Airport (MPO)	Runway Extension	$6,043,170	**High** (7.9)
Erie International Airport (ERI)	Runway Extension	$80,570,950	**Medium** (4.3)
McVille Airport (6P7)	Runway Reconstruction	$1,625,000	**Medium** (3.3)

Notes:

- *Return on Investment score is based on a 9-point scale, which combines quantitative and qualitative impacts scores.*
- *Quantitative impacts are attributed a double weight, whereas qualitative impacts receive a single weight.*

3 SUMMARY OF FINDINGS

Mifflin County Airport (RVL)
Source: RVL Airport Facebook Page

SUMMARY OF FINDINGS

FORECASTS

Positive aviation activity growth between 2016 and 2036

SYSTEM REQUIREMENTS

Most airports meet their **classification criteria**

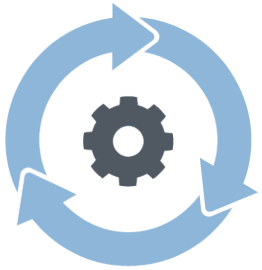
Certain **facility upgrades** recommended

No classification upgrades or downgrades recommended

Pennsylvanians have **optimal automobile access** to all system airports (96%)

SUMMARY OF FINDINGS

IMPLEMENTATION PLAN



Along with system preservation and economic development needs, **Core Airports** would be considered for feasible airfield upgrade and expansion justified through master-planning or operational need

The funding emphasis of **System Airports** should focus on system preservation and economic development

Three major priorities to be addressed: Maximize drive time, needed facility improvements, and accommodate future aviation demand

SUMMARY OF FINDINGS

IMPACTS OF SELECTED AIRPORT IMPROVEMENTS

Case study airports generated **medium to high ROI**

Trends: **Large investments** do not always immediately generate highest return but have the ability to do so in the future; **Good airport location** enhances growth potential

5 QUESTIONS

Arnold Palmer Regional Airport (LBE)
Source: LBE Airport Facebook Page

THANK YOU – RSUKLEY@PA.GOV

Philadelphia International Airport (PHL)
Source: PHL Airport Facebook Page