

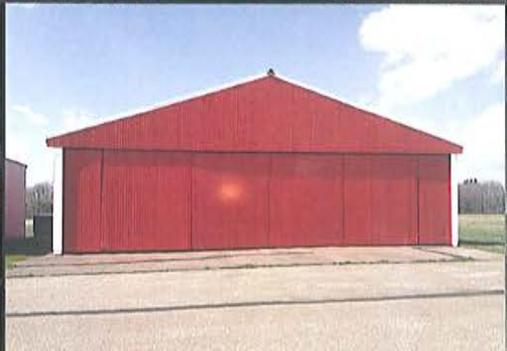
Master Plan Update at Titusville Airport

Prepared by
Michael Baker Jr., Inc.

Baker

Prepared for
**Titusville Airport
Authority**

February 2013



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**TITUSVILLE AIRPORT
AUTHORITY**

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1 Executive Summary

1.1. Master Plan Process

This Master Plan shall serve as a guide for development and improvements at the Titusville Airport over the next twenty years. The Master Plan process includes developing forecasts of growth in based aircraft and total aviation operations at the airport.

The most recent master plan prepared for Titusville Airport was completed in 1978, by Northwest Engineering Inc. Because of the age of the master plan, it was not utilized in this study. The current study will examine the ability of the existing airport facilities, both landside and airside, to accommodate the demands of the forecasted operations. These facility requirements are translated into a number of alternatives for improvements to the airport in order to accommodate the design aircraft and the forecasted number of based aircraft and operations. The Master Plan is divided into nine chapters; Existing Conditions, Aviation Forecast, Demand and Capacity Analysis, Facility Requirements, Alternatives Development and Analysis, Environmental Overview, Airport Layout Plan and Facilities Implementation Plan. Supporting data is provided in the appendices. A brief summary of each chapter is included in this Executive Summary.

1.2. Existing Conditions

Titusville Airport is located just outside the City of Titusville, Pennsylvania. The airport is a general aviation airport, approximately 48 miles southeast of Erie, that in 2011 accommodated 18 based aircraft (including 4 ultra-light/gyro/glider aircraft) and 9,510 annual operations.

The airport's single runway, 18-36, is a 4,902 foot long, 75 foot wide paved surface with a partial parallel taxiway. The airport has all visual approaches to both runway ends. The total land owned by the airport is approximately 204 acres.

1.3. Aviation Forecast

Historical records of based aircraft and operations were obtained for the Airport as well as previous forecasts from the Federal Aviation Administration (FAA). Forecasts developed for Titusville Airport indicate growth in based aircraft and annual operations. Forecasts were compiled for the short term (0-5 years), intermediate (6 - 10 years) and long range (11 - 20 years). By the year 2030, it is forecast that the Airport will see 29 based aircraft (including 8 ultra-light/gyro/ glider aircraft) and 12,246 annual operations.

Based on the forecast and fleet mix, an airport reference code of B-II should be used for design of future facilities.

1.4. Demand and Capacity Analysis

An analysis of the capacity of the runways shows that at the end of the 20-year forecast period, the airfield will be at 40% of annual service volume, causing minimal delays at peak hours. Airside facilities at the Airport will require expansion to meet forecasted demand. The ability to expand the airside facilities will be limited by cost and benefit. Landside facilities at the airport are appropriate to current demand, but will require expansion to meet forecasted demand. There is available land for new or expanded landside facilities at the airport.

1.5. Facility Requirements

While Runway 18-36 provides adequate length for the forecasted fleet mix, the Airport Authority desires to extend the runway by approximately 100 feet in order to obtain 5,000 feet of usable runway length. Chapter 5 provides more information regarding runway length.

Landside facility requirements included providing additional hangar storage for future forecasted based aircraft, relocation of existing box hangars, a corporate hangar facility, and a new aircraft parking apron.

1.6. Alternatives Analysis

Three alternatives were developed and evaluated in consideration for the ability to accommodate future aviation demands. Alternative I is a no-build option which does not provide for future aviation growth. Alternative II and Alternative III both provide expanded airside facilities and new landside facilities meeting the forecast operations. These two alternatives were evaluated for cost and environmental impacts.

1.7. Environmental Overview

An environmental overview was conducted for the Ultimate Airport Layout Plan to identify potential impacts from expansion of facilities at the Airport. There are anticipated impacts to wetlands and streams as a result of airside development associated with the partial parallel taxiway extension. There are no anticipated noise impacts as a result of the forecasted future operations. All noise contours are contained within the existing airport property.

Proposed property acquisition shown on the Ultimate Airport Layout Plan will impact residences and therefore potentially impact socioeconomics.

1.8. Recommendation

The alternatives were evaluated based on cost and environmental impacts. Based on the criteria used, the recommended alternative is Alternative II, which shows the new aircraft parking apron north of the existing terminal building, new hangar storage, and a 100-foot runway extension.

2 Existing Conditions

Titusville Airport (the Airport) is located three miles west of Titusville, Pennsylvania in Cherrytree Township and spans the border between Crawford and Venango Counties. The airport is owned by the City of Titusville and operated by the Titusville Airport Authority. Titusville Airport is part of the national airport system as well as a local part of transportation serving Venango and Crawford counties.

The *Existing Conditions* chapter examines six elements of the Airport, which are the history of the airport, the air traffic activity, the physical facilities (runways, taxiways, hangars, etc.), land use around the airport, the relationship to airspace, and the management of the airport. Following chapters will provide more detail on existing aircraft operations at the airport including the aviation forecast and an evaluation of the airport to meet the future demand.

2.1. Background

The City of Titusville received the deed to the Airport from J. Curtis McKinney in 1964, which was officially recorded in December of 1964. Prior to 1964, the Airport was a privately owned field with a 3,500 foot grass strip. McKinney originally purchased the Airport from Edward Voegele in 1952, who had originally purchased 120 acres of farm land in 1945 prior to the existence of the Airport. Voegele was responsible for the original construction of the Airport, which included the grass strip, two hangars, an administration building and a diner. Voegele had offered to sell the airport to the City of Titusville but it never came to fruition under his ownership. McKinney owned and operated the McKinney Flying Service from Titusville and Franklin. In 1959, there were three hangars on the field to house small aircraft. Because it was a grass strip with no lighting, use of the Airport was restricted to the daytime in summer months. McKinney chose to give the Airport and land to the city of Titusville in order for the Airport to become eligible for state and federal funds, so that the runway could be paved.

2.2. Socioeconomic Setting

2.2.1. Service Area

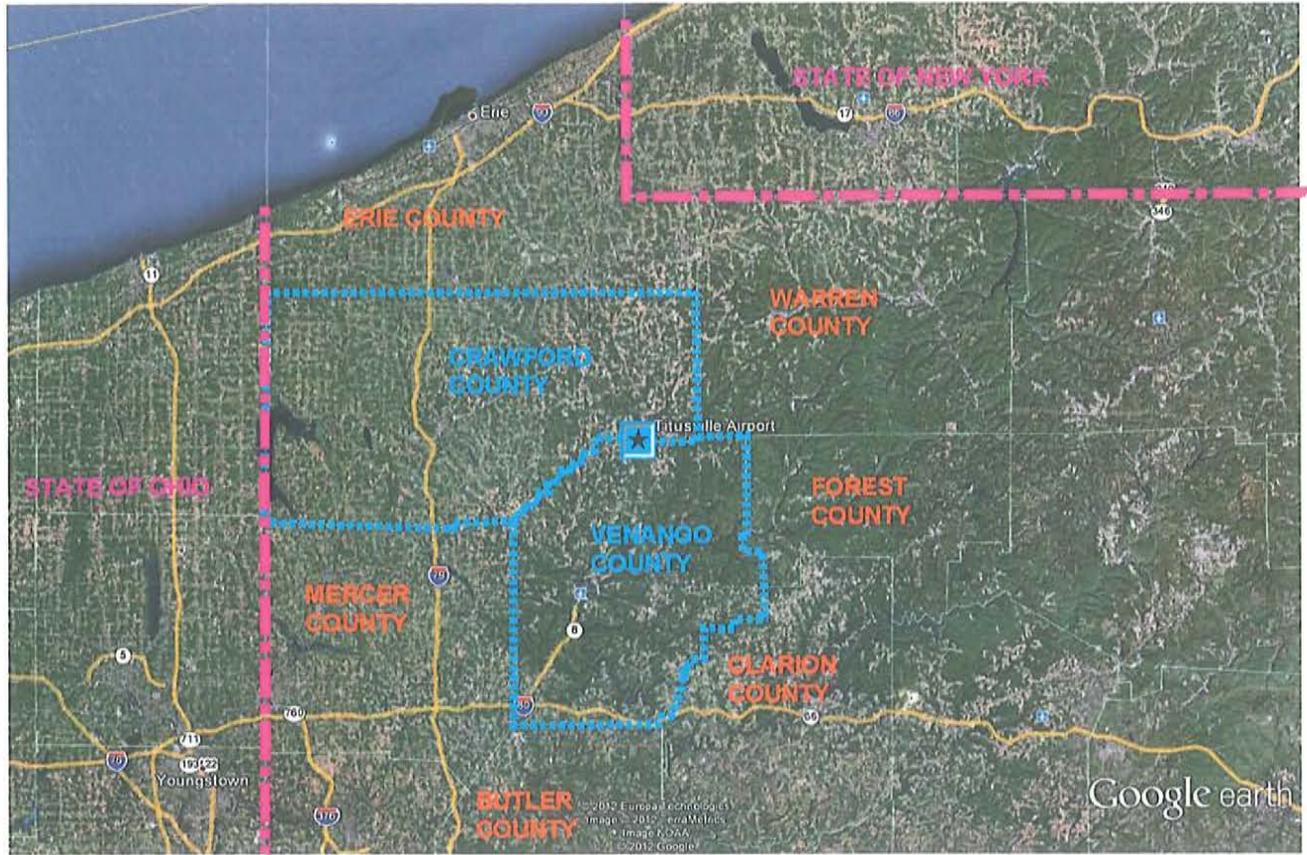
The area routinely serviced by the Airport does not seem to extend beyond the two-county area it physically straddles, Crawford and Venango counties. **Exhibit 2-1** illustrates the service area. Representatives of 15 surrounding airports within approximately 70 miles of Titusville were contacted to determine what, if any, interaction those facilities have with the Titusville Airport. These airports are located in the following counties, and are listed in **Appendix C, Aviation Forecast Backup**

Counties Contacted Regarding Use of Titusville Airport

•Allegheny	•Clarion	•Indiana	•Mercer
•Beaver	•Crawford	•Jefferson	•Venango
•Butler	•Erie	•Lawrence	

There did not appear to be a significant amount of activity at Titusville generated from these surrounding airports. A couple of these near-by facilities indicated that there is occasionally flight training activity from their airport to Titusville because of the length of the Titusville runway and the usually non-busy nature of Titusville. Several airports indicated that aviation facilities comparable to Titusville were available at other airports in the area, closer to them. Based upon this lack of interaction with airports beyond Crawford and Venango counties, the service area for Titusville was assumed not to extend beyond this two-county range.

Exhibit 2-1 Service Area



2.2.2. Economic Impact of the Airport

Airports have a measurable impact on the economy. General aviation airports tend to have a smaller impact on an overall state economy in comparison to commercial service airports, however, general aviation can have a large impact on a local community's development. In the October 2011 report, *The Economic Impact of Aviation in Pennsylvania Study*, it was estimated that the economic impact of the Titusville Airport is \$689,500 annually. Among the activities supported by the Airport are recreational flying, corporate business activity, aerial inspections, flight training, touch-&-go and cross country flight training, arriving tourists and resort visitors, aerial sightseeing, real estate tours, military exercises/training, police/law enforcement, Civil Air Patrol, emergency medical evacuation/transfer, medical doctor transport, forest/wildland firefighting, aerial photography/surveying, aerial advertising and youth outreach. The Airport hosts aviation activities such as Airport Day, Model Jet Day, and in the May-September months, a monthly gathering of an area Gyro Club. Based on the study performed by Wilbur Smith Associates for Pennsylvania Department of Transportation, Bureau of Aviation in 2011, Titusville Airport's economic impact is broken down as follows:

- ➔ Total employment = 7 (includes direct, multiplier and visitor related employment)
- ➔ Total payroll = \$197,200 (includes direct and multiplier payroll)
- ➔ Total output = \$689,500 (includes on-airport and visitor related output)

The study also estimated that the Airport brings 1,086 visitors to the area.

2.2.3. Socioeconomic Trends

Titusville is the site of the world's first successful oil well, drilled by Col. Edwin L. Drake in 1859. Recently, geological assessments have identified the Marcellus Shale and the Utica Shale, both in the Titusville area, as potential sources of natural gas. The Marcellus Shale is estimated to contain more than 50 trillion cubic feet of recoverable natural gas. The Utica Shale has not yet been fully assessed for its potential, but it appears to be substantially larger than the Marcellus Shale. By 2011, the state of Pennsylvania had permitted 2,073 wells for drilling in the Marcellus Shale. The Utica Shale is deeper than the Marcellus, and its development is in its infancy stages.

The Titusville area is well-situated to realize some economic development as the Utica Shale is explored. The Titusville Community Development Agency (TCDA), the umbrella agency for the Titusville Redevelopment Authority, Titusville Industrial Fund, Inc., Titusville Opportunity Park, and the Titusville Town Square, is actively soliciting business development from over 1,000 drilling-related companies throughout the United States. As the Utica Shale exploration evolves, the City of Titusville hopes to benefit from its historical economic connection to the oil and gas industry.

The Titusville Airport, with its 4,902 foot runway and room for expansion, is an important piece of this promotional activity. Conversations with representatives of the Washington County Airport, where the Marcellus Shale drilling activity began in 2003, indicate that the airport there has experienced a surge in aviation activity due to businesses related to the drilling activity.

The TCDA is evaluating the potential for a waste-water treatment plant at the Titusville Airport to encourage business development in the Airport area, especially in the sectors of light manufacturing and avionics. The City of Titusville has an active and expanding industrial business park, the Titusville Opportunity Park, located only 6 miles from the airport. The Titusville Town Square development project is completing the development of 24,000 square feet of downtown office space, and has removed architectural barriers and other obstacles to private sector development in its historic

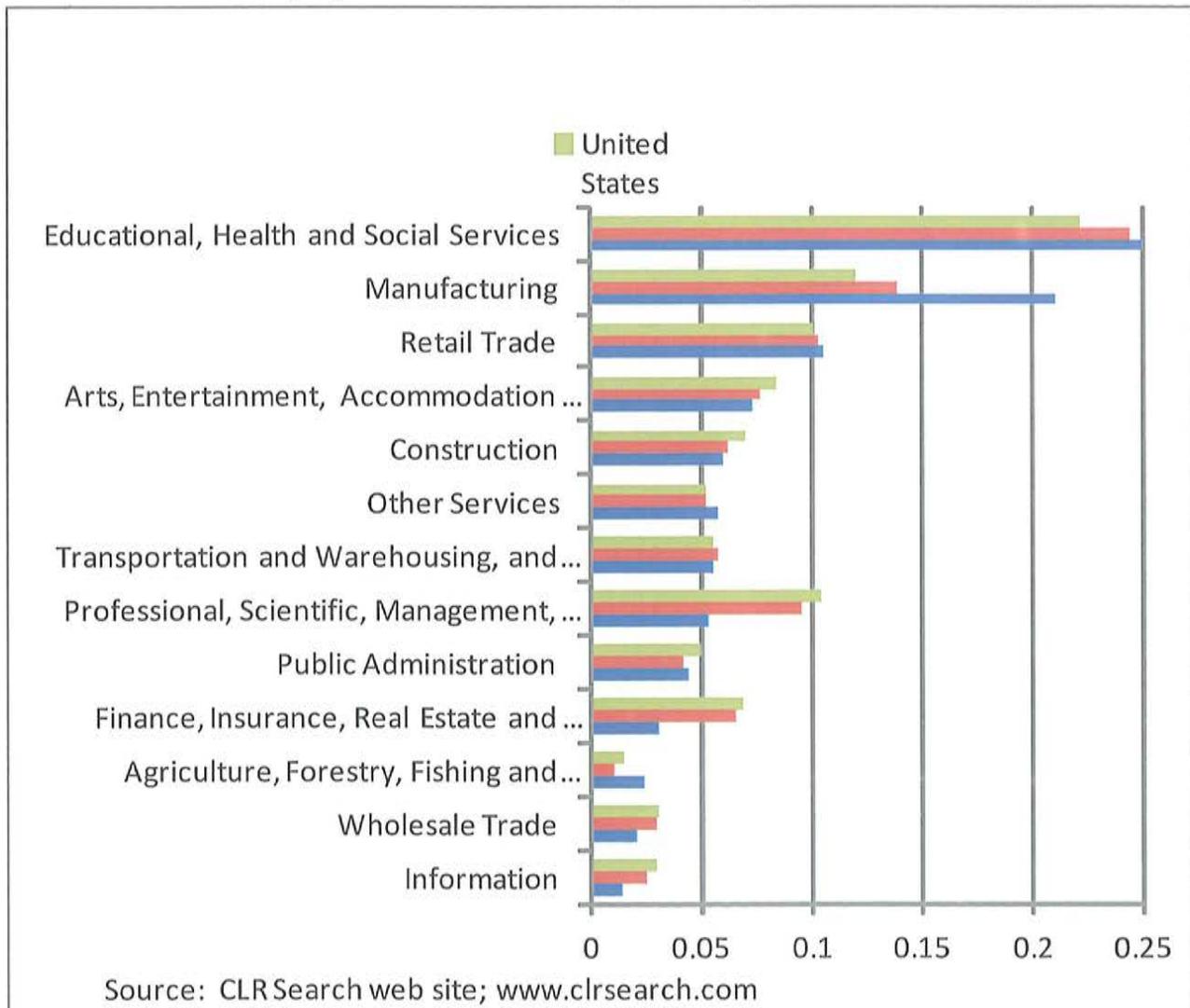
downtown district. The Airport area has good highway access, is not encumbered by restrictive zoning issues, and has no noise or environmental problems with its neighboring properties and population.

The TCDA is the primary driver behind development related to the Titusville Airport. The Airport does not figure as a significant element in planned development by the County Regional Planning Commissions.

Currently, employment by industry in the Crawford/Venango County area is distributed as presented in **Exhibit 2-2:**

- Educational, Health and Social Services, is the largest employer in the service area (25 percent), as it is in the United States (22 percent) and the State of Pennsylvania (24 percent)
- Crawford & Venango counties have a much higher proportion of employment in manufacturing (21%), than either the United States (12 percent) or Pennsylvania (14 percent)

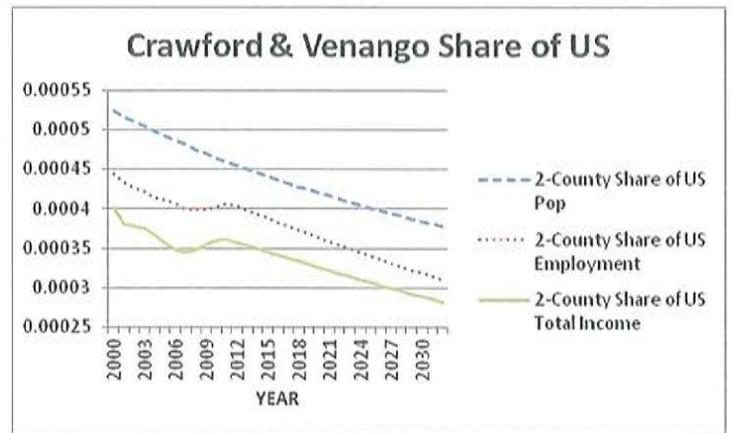
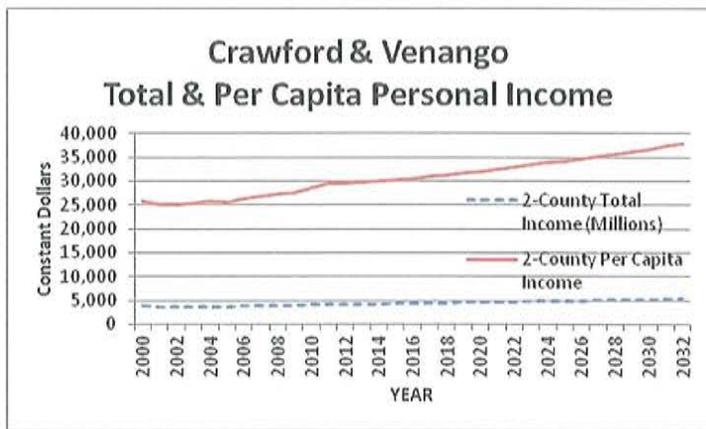
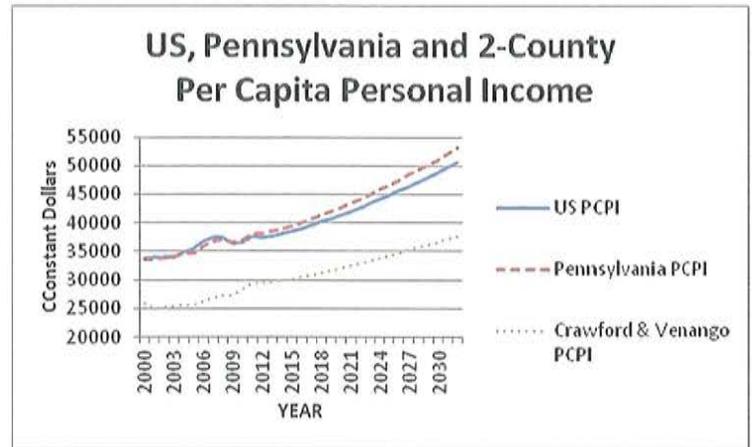
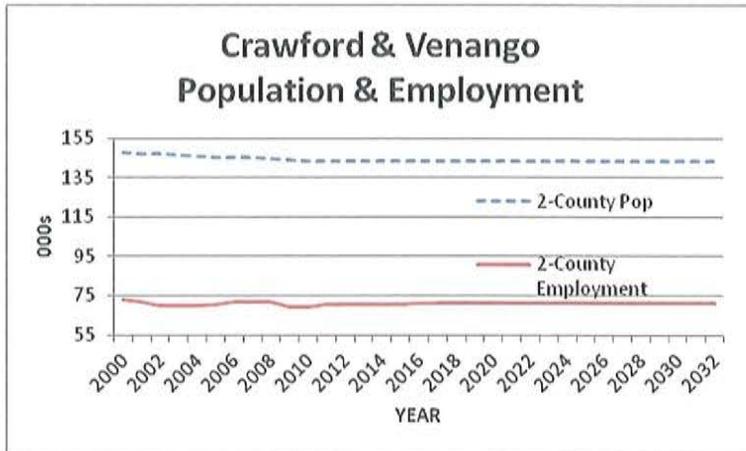
Exhibit 2-2 2010 Employment Distribution by Industry, Crawford & Venango Counties



The history and forecasts of socioeconomic elements such as population, employment, total personal income and per capita personal income in the two-county Crawford and Venango service area are

presented in **Exhibit 2-3**. The exhibit presents the growth of these elements in the service area compared to growth on a state and national level. Income measures are in constant dollars.

Exhibit 2-3 Service Area Socioeconomics



Source: 2012 Woods & Poole Economics, Washington DC
Population: Actual 2000-2010; Forecasted 2011-2032
Employment & Income: Actual 2000-2009; Forecasted 2010-2032

The upper two graphs in the exhibit indicate that population and employment in the two-county Crawford and Venango service area have both declined over the last decade; population is down 2.8 percent since 2000, while employment is down 0.2 percent. However, total personal income and per capita personal income have both increased, with total income up 3.4 percent since 2000 and per capita income up 6 percent. The lower two graphs in Exhibit 2-3 indicate that the service area's per capita income has historically been below that of the nation and the state of Pennsylvania.

In the forecasts, the population of the service area is expected to remain relatively stable, with virtually no growth. However, employment is forecast to increase from the current level by 2.3 percent by 2015, another 1.9 percent by 2020, and a further 0.2 percent by the end of the forecast period. This leads to an employment level in the service area 2.7 percent above what it is today by the end of the forecast period. Income measures are expected to grow at an even stronger rate as can be seen in the upper right hand graph in Exhibit 2-3. Total income will be 33.2 percent above current levels by 2030, and per capita income will be 33.7 percent above current levels.

The graph in the lower right-hand corner of Exhibit 2-3 indicates that the two-county service area will experience a declining share of both United States and Pennsylvania employment, total income, and per capita income in spite of growth in these measures. The service area is not forecast to grow as fast as the nation or the state throughout the forecast period.

In summary, there are several trends in socioeconomic activity in the Titusville Airport service area that indicate the Airport can experience long-term growth, even though external economic forces (U. S. recession, fuel price increases) might cause a downturn in the short term:

- TCDA activity is expanding the economic base of the area
 - Downtown office space has been developed
 - Zoning has been changed to remove barriers to future private sector development
 - The potential for a waste-water treatment facility at the Airport is under analysis
 - Titusville Opportunity Park six miles from the Airport has seen recent expansion and job creation
 - Over 1,000 companies involved in shale exploration and drilling have been solicited to bring potential business to Titusville
- Total and per capita income in the service area is forecast to increase steadily throughout the forecast period
- The service area's manufacturing base is more dominant in the local industry base than it is in the United States as a whole
- The area could benefit in the long-run from shale development, and that would contribute to airport activity growth as it has at airports such as Washington County in Washington, PA and Wheeling Ohio County Airport in West Virginia

TITUSVILLE AIRPORT

Master Plan Update

2.3. Airport Facilities

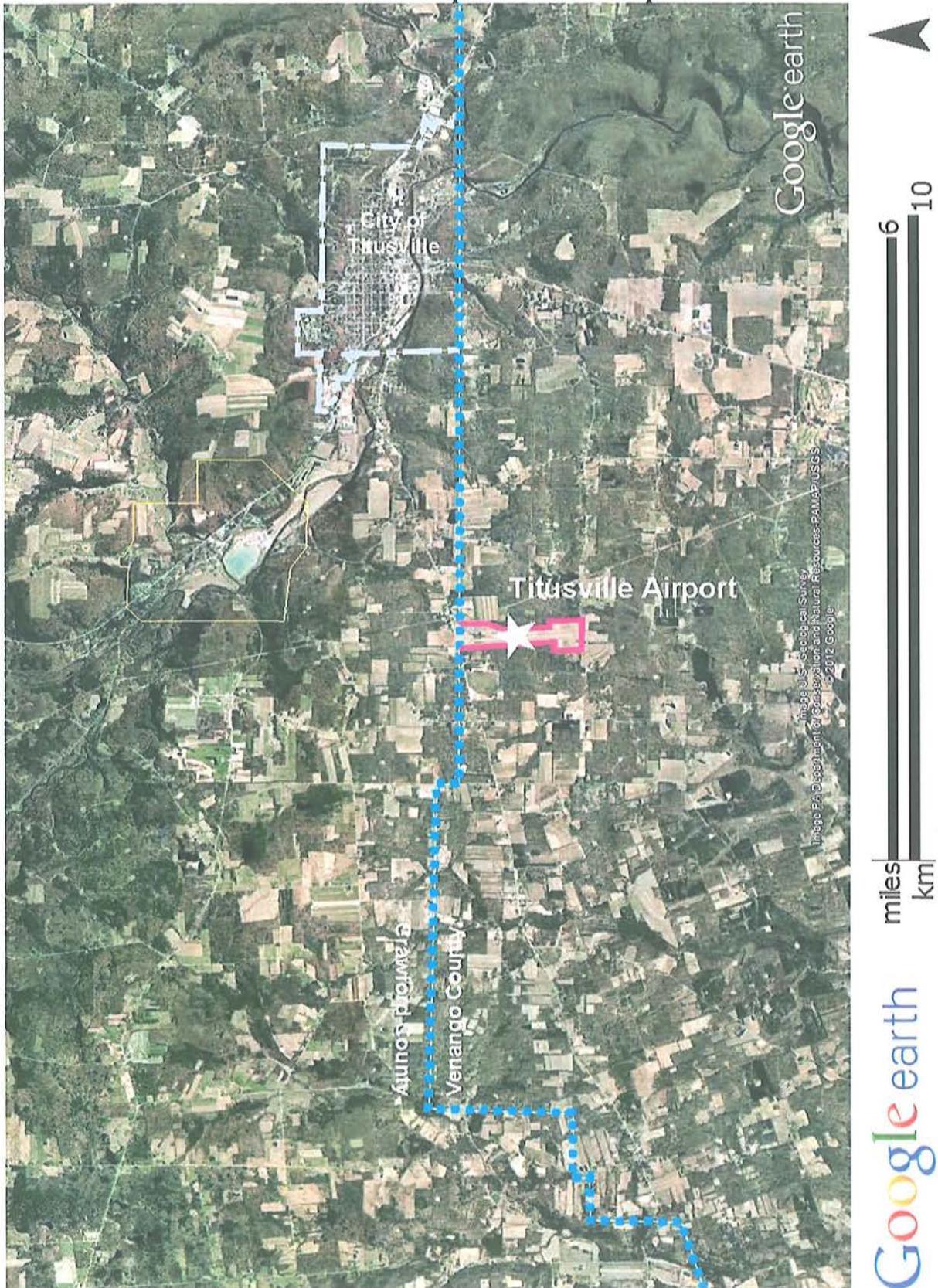
Titusville Airport is classified as a general aviation airport by the FAA's National Plan of Integrated Airport Systems (NPIAS). The airport is located in north-west Pennsylvania, as illustrated in **Exhibit 2-4**. The airport is located outside of the city limits of Titusville. The airport is approximately 48 miles southeast of Erie and 100 miles northeast of Pittsburgh. Access to the airport is provided via PA Route 27. PA Route 8 provides access from the outlying areas. The airport is located approximately 28 miles east of Interstate Route 79.

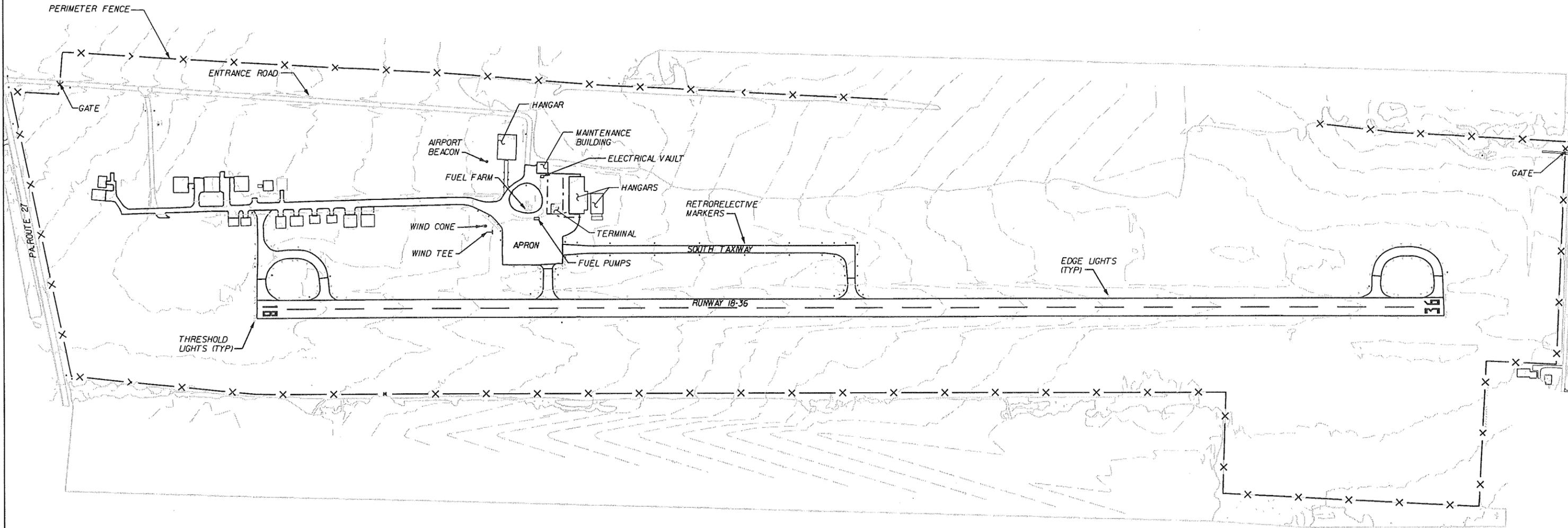
Facility References

- Airport Reference Point (ARP): **41°36'31.7"N 79°44'28.8"W**
- Federal Aviation Identifier: **6G1**
- NPIAS Classification: **General Aviation**
- Acreage: **204 acres**
- Elevation: **1,599.23' above mean sea level (AMSL)**
- Average Maximum Temperature of the hottest month: **83° (July)**

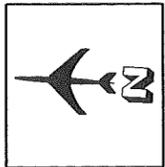
The existing conditions at Titusville Airport are depicted in **Exhibit 2-5**.

Exhibit 2-4 Airport Location Map





Baker
 Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation
 Airside Business Park
 100 Airside Drive
 Moon Township, Pennsylvania 15108



CITY OF TITUSVILLE
 TITUSVILLE AIRPORT AUTHORITY

TITUSVILLE AIRPORT
 TITUSVILLE, PENNSYLVANIA

MASTER PLAN UPDATE	
EXHIBIT 2-5 EXISTING CONDITIONS	
STATE PROJ NO	DATE
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Airside Facilities

The airport has one runway, **Runway 18-36**.

- Length and Width: 4,902 feet by 75 feet
- Pavement: Constructed of asphalt pavement with a published gross weight bearing capacity of 12,500 pounds single wheel
- Marking: Basic visual approach markings
- Lighting: Medium Intensity Runway Lights (MIRL)

Three aviation easements protect each end of the runway within the runway protection zone, beyond the airport property line.

Taxiway System. There is one partial parallel taxiway to Runway 18-36, extending from the terminal apron to approximately midpoint of the runway. The partial parallel is 30 feet wide, located 240 feet east of the runway centerline. There are also two taxiway "jug handles" serving as a turn-around at each runway end. A taxilane extends from the terminal apron to the hangar area and is 30 feet wide.

Instrument Approach and Capabilities. The airport currently has only one instrument approach utilizing the Franklin VOR. The FAA has begun the process to develop new GPS approaches into Titusville through the Wide Area Augmentation System (WAAS) program. As of March 2012, the development is pending and the publication of the new GPS approach into Titusville is scheduled for February, 2014.

Previous engineering drawings were reviewed for the information on past airport design and development projects which is outlined below.

- 1965 - Runway paving and lighting
- 1995 - Underdrain installation and runway crack repair
- 1995- Underground fuel tank installation
- 1998 - Construction of SRE building
- 2003 - New electrical vault and installation of wind cone and wind tee
- 2005 - Construction of connector taxiway to Runway 18 end and Taxiway A
- 2005- Runway edge light rehabilitation
- 2010- Construction of partial parallel taxiway

Landside Facilities

Aprons. There is one aircraft apron located on the east side of the airport, adjacent to the terminal building. The apron is approximately 955 square yards for aircraft parking. The apron has four tie-down spaces available for transient aircraft. It can be accessed directly from the runway, taxilane or partial parallel taxiway. A fuel farm located at the apron houses two storage tanks. There are two 10,000 gallon fuel tanks, one AvGas tank and one JetA tank.

Hangars. There are 17 conventional box hangars at the airport. Currently, the airport authority owns only one of those hangars.

Visual Navigation Facilities. Existing navigational aids include a wind tee and a lighted wind sock. A rotating beacon is also located at the Airport.

Terminal Building. The Airport has one main terminal building for use by pilots and transient passengers. It is a 36-foot by 45-foot building housing a lobby, two offices, a restroom and a furnace room. A maintenance garage is also adjacent to the terminal building, that is approximately 45 feet by 45 feet and has a 40 foot bi-fold door.

Fencing. The Airport is protected by an eight foot high chain link fence (seven feet fabric, one foot barbed wire) surrounding the perimeter of the property.

Fire and Emergency Response Services. The Airport is not required to have Aircraft Rescue and Fire Fighting (ARFF) facilities or equipment. The City of Titusville responds to any emergency response services at the Airport.

Vehicular Access and Parking. Route 27, along the northern border to the Airport provides vehicular access to the Airport. Minimal public parking is provided adjacent to and east of the terminal building, approximately 465 square yards equating to roughly 12 parking spaces.

The Airport owns the following equipment for maintaining the Airport's property and facilities (vehicle identification numbers (VINs) listed if applicable):

<i>Table 2.1 Airport Owned Equipment</i>			
Year	Make and Model	VIN	Condition
1996	John Deere 5400 Tractor	LV5400E543376	Good
1996	John Deere 10' Mower	W01018C005400	Good
1998	John Deere GT 275 Tractor	M0G275B102782	Fair
2000	Dodge 2500 Truck	3B7KF26Z9YM21	Fair
2001	John Deere Rotary Broom	M00026X010601	Fair
2001	Frontier 5' Mower	W06M1072R221990	Good
2001	John Deere 4400 Tractor	LV4400H442128	Good
2011	John Deere 7330 Tractor	RW7330H029003	New
2011	John Deer 20' Mower	1POCX20FHBP006662	Good
2011	John Deere 865 Gator	M)HX0PA107969	New
2011	John Deere X 534 Tractor	1M0X534AHBM061777	New
2012	Dodge 5500 ST/SLT Heavy Duty Truck	3C7WDNAL2CG176653	New
Source: Titusville Airport Authority			

2.4. Airspace

Existing airspace and airport navigational aids and their corresponding Air Traffic Control (ATC) procedures were identified and examined for the Airport. The aeronautical sectional chart identified in **Exhibit 2-6, Aeronautical Sectional Chart**, identifies the airspace for the Airport. The Titusville Airport experiences its peak demand levels in VFR conditions.

As previously mentioned, the Airport is not controlled by an air traffic control tower. The airspace around the Airport is considered Class E, beginning at 700 feet above ground level. There are two private strips within 10 miles of the Airport. Paul private strip is located north of the Airport, and just outside of the Class E airspace around Titusville. Fisher private strip is located southwest of Titusville, within the Class E airspace around the Franklin VOR and Venango Regional Airport. Franklin Regional is approximately 17 miles southwest of Titusville.

Class E airspace with a floor 700 feet above the surface around the Airport is used to transition to/from the terminal or en route environment. Class E airspace does not require two-way radio communication with ATC. There is no defined vertical limit for the Class E airspace.

Air traffic control in the vicinity of the Airport is provided by the Youngstown Approach and the Cleveland Center when the Youngstown Approach/Departure Control is closed. The Youngstown Approach is available 6:00 AM - Midnight . The Cleveland Center is available Midnight - 6:00 AM.

TITUSVILLE AIRPORT

Master Plan Update

Instrument Flight Rules (IFR) apply when visibility falls below certain thresholds for VFR. Limited capability of the Airport to operate within the IFR System is provided by a single published VOR instrument approach. This approach procedure is shown in **Exhibit 2-7**.

Exhibit 2-6 Aeronautical Sectional Chart

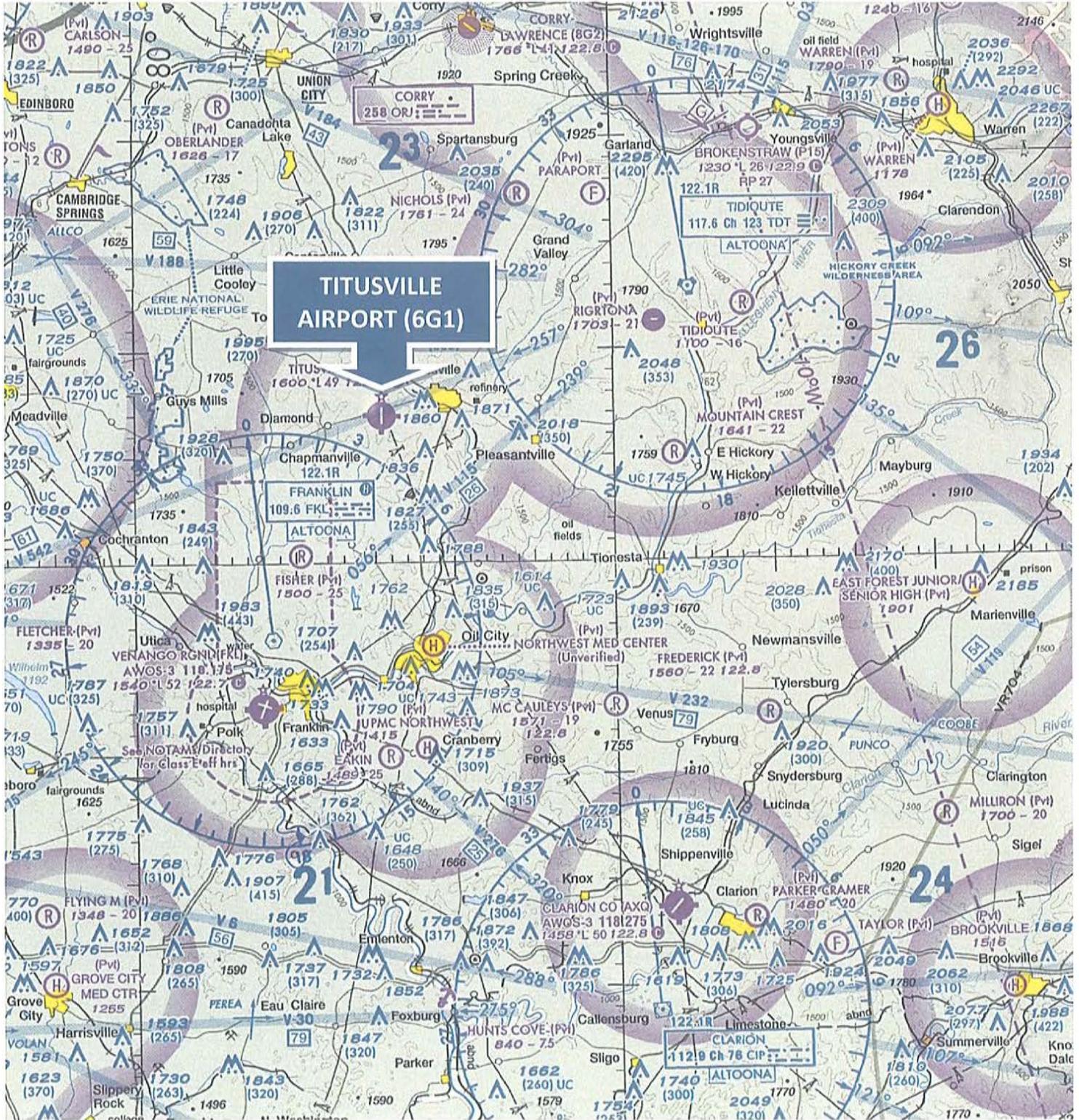
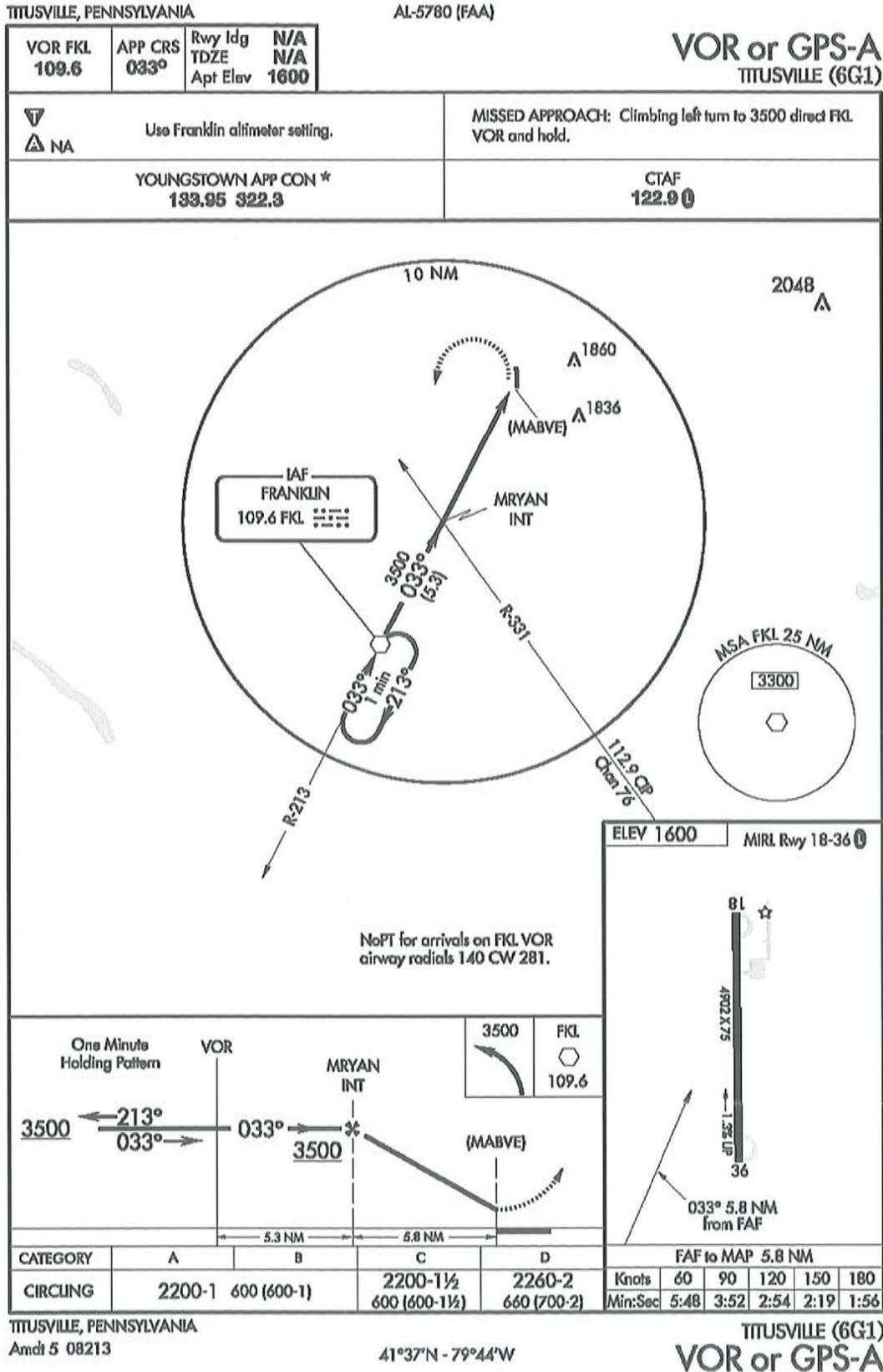


Exhibit 2-7 Approach Plate

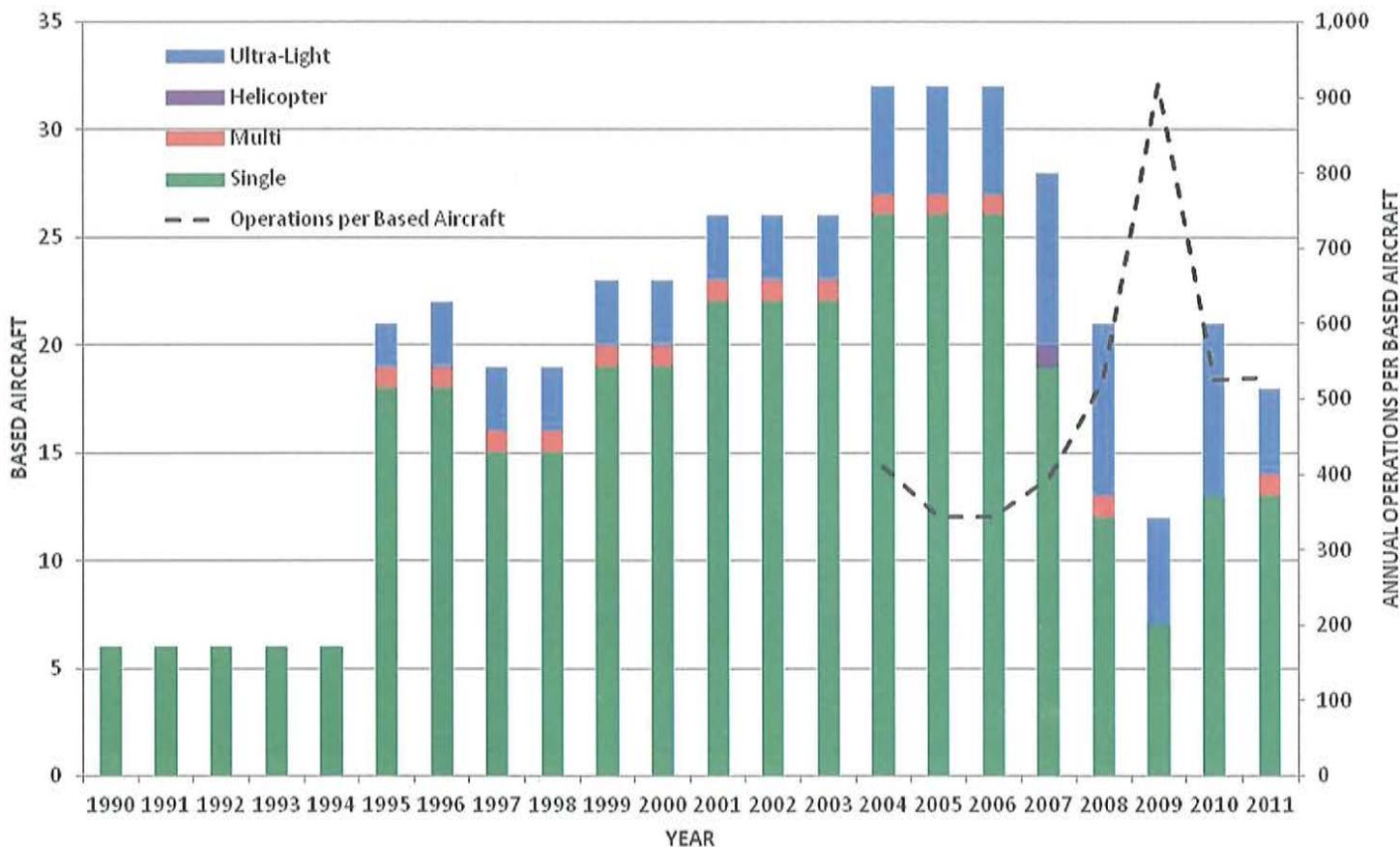


Departures from Runway 18 and Runway 36 have published obstacle departure procedures. These obstacles can be found in **Appendix A, Airport Data**.

2.5. Air Traffic Activity

There is no tower at the Airport, so annual operations activity is estimated by those familiar with the Airport's operation. Historical based aircraft and operations per based aircraft are presented in **Exhibit 2-8**.

Exhibit 2-8 Based Aircraft by Type and Operations per Based Aircraft

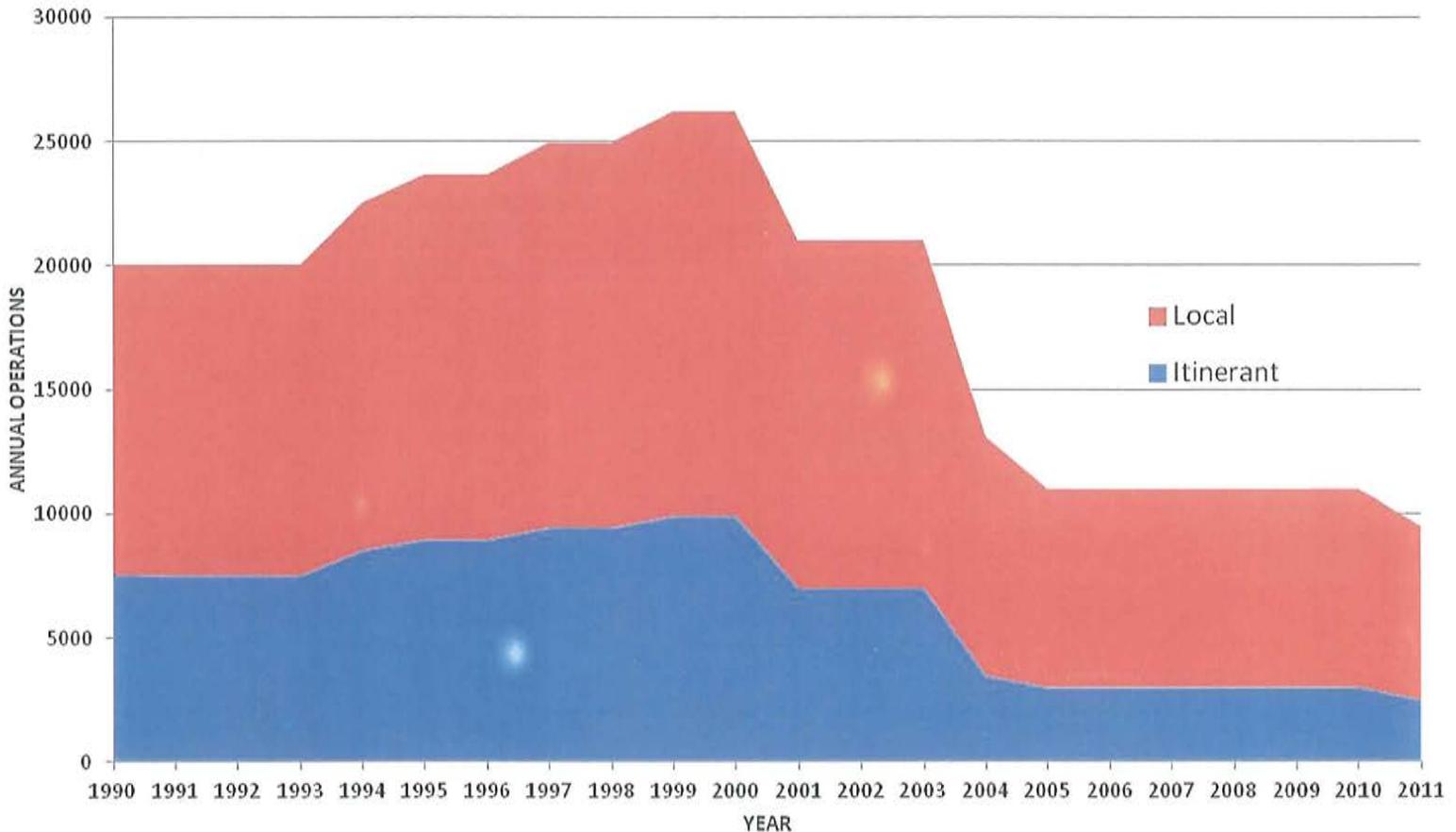


Source: 1985-2009, January 2012 FAA TAF 6G1; 2010 airport-data.com; 2011, Airport IQ Data Center 6G1 5010

Based aircraft grew in a reasonably steady fashion from 1990 through 2006, when they reached a peak of 32. By 2011, the number of based aircraft had fallen to almost half of that level. Even at the peak, the mix of based aircraft was predominantly single-engine piston aircraft. In 1995, the "ultra-light" category appeared and began to grow. This category includes aircraft types such as ultra-lights, gyros and gliders. This category has remained in the fleet mix and grown steadily until very recently. There is a gyro club that meets at Titusville Airport once per month during the May-September time frame. It is important to note that in the FAA TAF, the data shown in the report as "ultra light" is described as "other" in the TAF. However, it has been confirmed that the "other" category for Titusville only includes "ultra lights". Operations of these aircraft types are included in operations counts. There has been one multi-engine piston aircraft based at Titusville off and on since 1995. There have never been any jet aircraft based at the Airport.

Total operations are presented in **Exhibit 2-9**. Total operations peaked in 2000 and have declined significantly since then, with 2011 activity being over 60 percent below the level of operations in 2000. Itinerant operations (those that enter from outside Titusville airspace for arrival, or leave Titusville airspace after departure) have declined faster than local operations (which occur totally within Titusville airspace). Local operations tend to be primarily training operations, such as touch and go operations. Local operations have increased in share of activity from 62.4 percent in 1990 to 73.6 percent in 2011.

Exhibit 2-9 Itinerant and Local Operations



Source: FAA TAF 6GI January 2012

Details on historical based aircraft and operations are presented in **Table 2.2**.

<i>Table 2.2 Historical Based Aircraft and Operations</i>											
Year	Based Aircraft						Operations				
	Single-Engine	Multi-Engine	Helicopter	Sub-Total	Ultra-Light**	Total	Itinerant		Local		
							GA	Military	GA	Total	
1990	6	0	0	6	0	6	7,500	25	12,500	*	20,049
1991	6	0	0	6	0	6	7,500	25	12,500		20,025
1992	6	0	0	6	0	6	7,500	25	12,500		20,025
1993	6	0	0	6	0	6	7,500	25	12,500		20,025
1994	6	0	0	6	0	6	8,500	40	14,000		22,540
1995	18	1	0	19	2	21	8,925	42	14,700		23,667
1996	18	1	0	19	3	22	8,925	42	14,700		23,667
1997	15	1	0	16	3	19	9,400	50	15,500		24,950
1998	15	1	0	16	3	19	9,400	50	15,500		24,950
1999	19	1	0	20	3	23	9,870	53	16,275		26,198
2000	19	1	0	20	3	23	9,870	53	16,275		26,198
2001	22	1	0	23	3	26	7,000	10	14,000		21,010
2002	22	1	0	23	3	26	7,000	10	14,000		21,010
2003	22	1	0	23	3	26	7,000	10	14,000		21,010
2004	26	1	0	27	5	32	3,478	10	9,634		13,122
2005	26	1	0	27	5	32	3,000	10	8,000		11,010
2006	26	1	0	27	5	32	3,000	10	8,000		11,010
2007	19	0	1	20	8	28	3,000	10	8,000		11,010
2008	12	1	0	13	8	21	3,000	10	8,000		11,010
2009	7	0	0	7	5	12	3,000	10	8,000		11,010
2010	13	0	0	13	8	21	2,999	11	8,014		11,024
2011	13	1	0	14	4	18	2,500	6	7,004		9,510

Source: 1985-2009, January 2012 FAA TAF 6G1;
2010 airport-data.com;
2011, Airport IQ Data Center 6G1 5010

* In 1990 there were also 24 operations listed as "Air Taxi & Commuter"

** The Ultra-Light category also includes Gyro aircraft and Gliders

With no tower at the Airport, it is difficult to estimate the mix of aircraft types in the total operations. However, there is a log book at the Airport which is available for local and visiting fliers to sign. The book includes an entry column for aircraft type. This data was considered to be the best source for estimating the fleet mix of operations at the Airport. The following assumptions were made about the data in the log book:

- Entries represented itinerant flights, since for local operations it would be less likely that the pilot would be getting out of the aircraft, and so there would not be a signature in the log book

- Local operations would be 95 percent single-engine aircraft, and 5 percent “other” aircraft (ultra-lights, gyros and gliders)
- Helicopters represented a very high percentage of entries into the log book. The helicopters were largely MedEvac operations. Because of the nature of this activity and the need to maintain detailed records for medical air lift activities, MedEvac helicopter operators would be highly likely to sign the log book. While fewer than 5 percent of the flyers into the airport signed the book over the period analyzed, it is assumed that nearly all of the MedEvac helicopter operators signed the book. Based on conversations with representatives from the Titusville Hospital, the number of MedEvac operations was estimated, and the percentage share of helicopter operations in the fleet mix was adjusted from what was represented by log book entries.
- The reduction in the helicopter share was redistributed to single-engine piston aircraft
- Jet operations listed in the log book account for approximately 1.4 percent of the fleet mix. Because the log book covers a range of years, this percentage was decreased. This decrease is justified by the analysis of the aircraft tail numbers performed by the BOA showing that 50 percent are still valid in 2012. The reduction in the jet share was redistributed to single-engine piston aircraft.

This resulted in the following estimated fleet mix of operations for 2011 at the Airport:

<i>Table 2.3 Estimated 2011 Operations Fleet Mix</i>		
Equipment Type	Number	% Share
One Engine Piston	8,740	91.9
Two Engine Piston	49	0.5
One Engine Turbo	44	0.5
Two Engine Turbo	168	1.8
Two Engine Jet	8	0.1
Helicopter	120	1.3
Ultra light	381	4.0
Total	9,510	100%
Source: Mary A. Lynch Analysis		

The log book was also used to estimate the hourly distribution of flight activity across the day. As with the assumptions made in estimating fleet mix from the log book, it was assumed that the signatures represented itinerant activity. Flights during the 7:01 AM – 10:00 PM “Day” time frame represented 86.9 percent of the log book entries. Flights in the 10:01 PM – 7:00 AM “Night” time frame represented 13.1 percent of the entries. 98 percent of local activities were assumed to occur during the day, and 2 percent during the night. The results of these assumptions are presented below, with just over 95 percent of total operations occurring during the day and just under 5 percent occurring at night.

Table 2.4 Day-Night Distribution of Operations

	Day (701-2000)	Night (2001-700)	Total
Itinerant	86.9%	13.1%	100.0%
Local	98.0%	2.0%	100.0%
Total	95.1%	4.9%	100.0%
2011	Day (701-2000)	Night (2001-700)	Total
Itinerant	2,179	327	2,506
Local	6,864	140	7,004
Total	9,043	467	9,510

Source: Mary A. Lynch Analysis

2.6. Land Use

Land use surrounding the Airport ranges from residential to agricultural. More information on existing and planned land use will be presented in Chapter 7 –Environmental Overview. **Exhibit 2-10, Zoning Map** identifies the zoning for land in the vicinity of the Airport, in accordance with the Cherrytree Township. The Airport property is zoned “AP” in Cherrytree Township which designates airport. Outside the immediate vicinity of the Airport in the township, the surrounding area is zoned residential/agricultural.

Cherrytree Township uses an overlay district to regulate land use on the Airport. "The Airport Overlay District is intended to provide for and preserve certain lands, areas and structures required for aviation related activities in the Township to meet air travel and air freight needs of the residents, businesses and visitors to establish a framework within which commercial and recreational aviation activities can proper. These are critical for the economic base and public safety considerations of the Township." The following uses are permitted within the district:

- Runways, taxiways, navigational equipment, and aircraft parking areas, airport administrative offices, and other similar facilities associated with a general aviation airport
- Hangars intended for storage of aircraft
- Aircraft sales, repair, rebuilding and maintenance, and the facilities essential for such operations
- Schools or other instructional activities related to aircraft and flight operations
- Fixed base operations providing aviation and aircraft services
- Storage and sale of aviation fuel, oil, and other aviation fluids
- Air freight and air courier services and facilities
- Agriculture and horticulture
- Accessory buildings and use

The following uses require Township Board of Supervisors review and action:

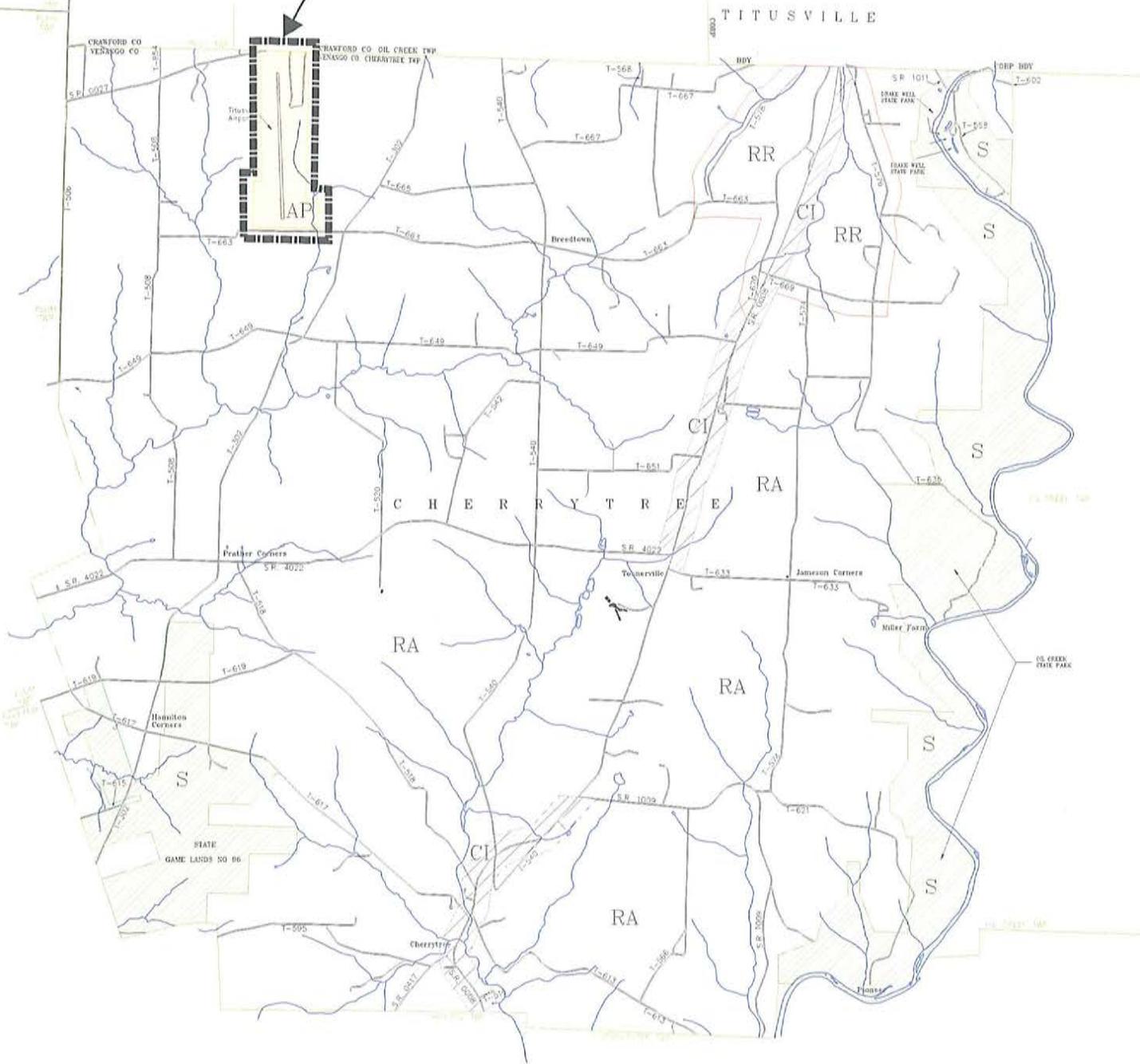
- Manufacturing of aviation equipment
- Manufacturing dependent on nearby air access.

The Airport Overlay District has a height restriction, no building is permitted to be higher than 35 feet. This overlay district does not address any specific restrictions related to Part 77 and hazards to air navigation.

The surrounding townships within the Part 77 imaginary surfaces include Plum Township, Troy Township and Oil Creek Township, as depicted in **Exhibit 2-11, Part 77 Overlay**. Plum Township is located in Venango County. Troy and Oil Creek townships are located in Crawford County. Plum and Troy townships do not currently have zoning available.

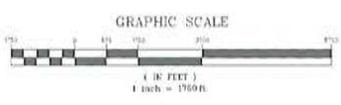
Crawford County has also identified the land use of the area surrounding the Airport to the north as Agricultural/Rural. This land use represents land within the county that is not otherwise classified or is used for farming except for water, marshland, wetlands, and State or Federal conservation areas. **Exhibit 2-12, Crawford County Land Use** identifies this area.

TITUSVILLE AIRPORT



LEGEND

- HYDROLOGY
- TOWNSHIP BOUNDARY
- ROADS
- RA - RESIDENTIAL / AGRICULTURAL DISTRICT
- RR - RURAL RESIDENTIAL OVERLAY DISTRICT
- AP - AIRPORT OVERLAY DISTRICT
- CI - COMMERCIAL / LIGHT INDUSTRIAL OVERLAY DISTRICT
- S - CONSERVATION DISTRICT



**TITUSVILLE AIRPORT
MASTER PLAN UPDATE**

EXHIBIT 2-10 - ZONING MAP



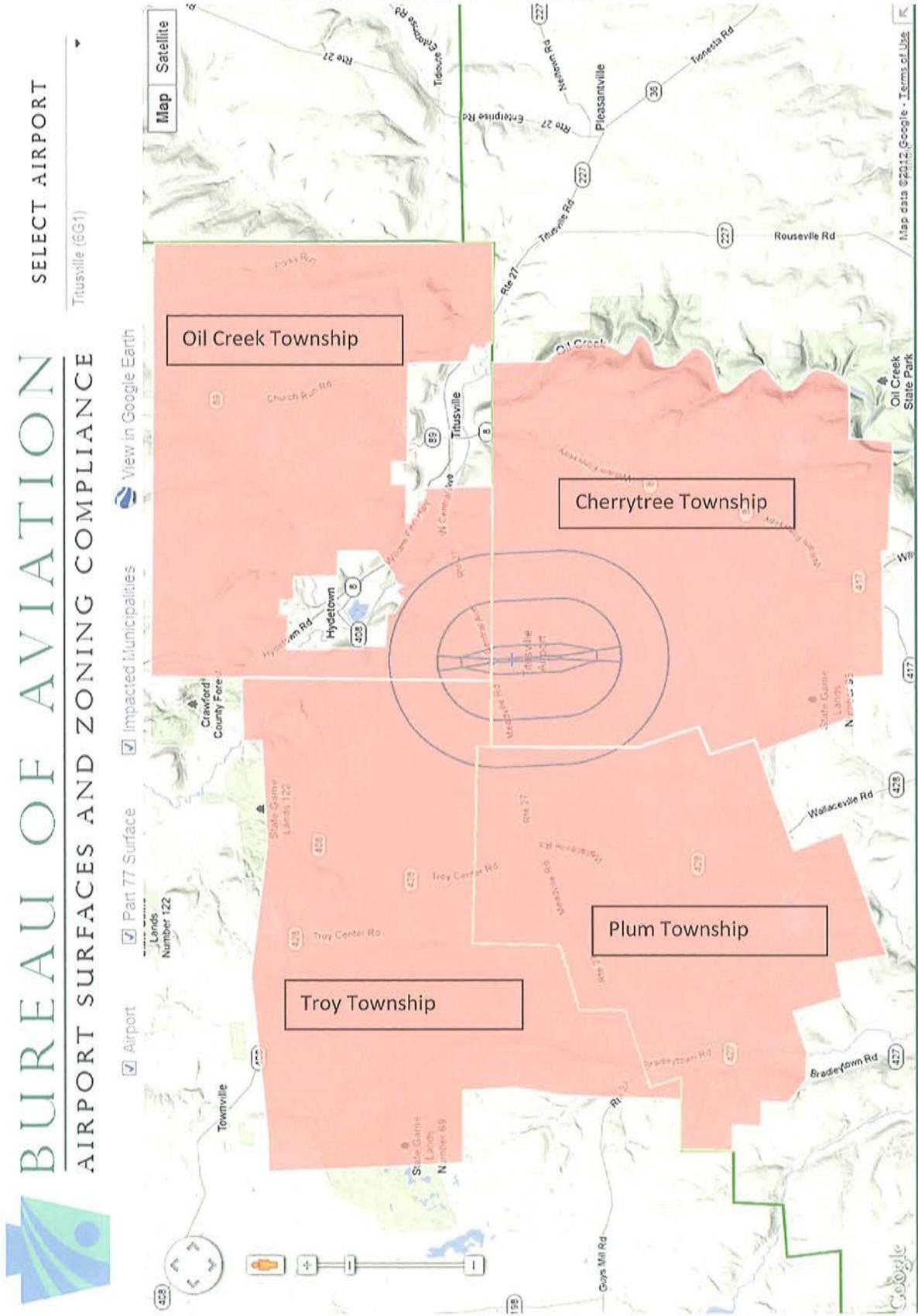
CLARION OFFICE
15392 ROUTE 322
CLARION, PA. 16214
(814) 764-5050
(814) 764-5055 FAX
EML: clar@eadsgrp.com

ZONING MAP

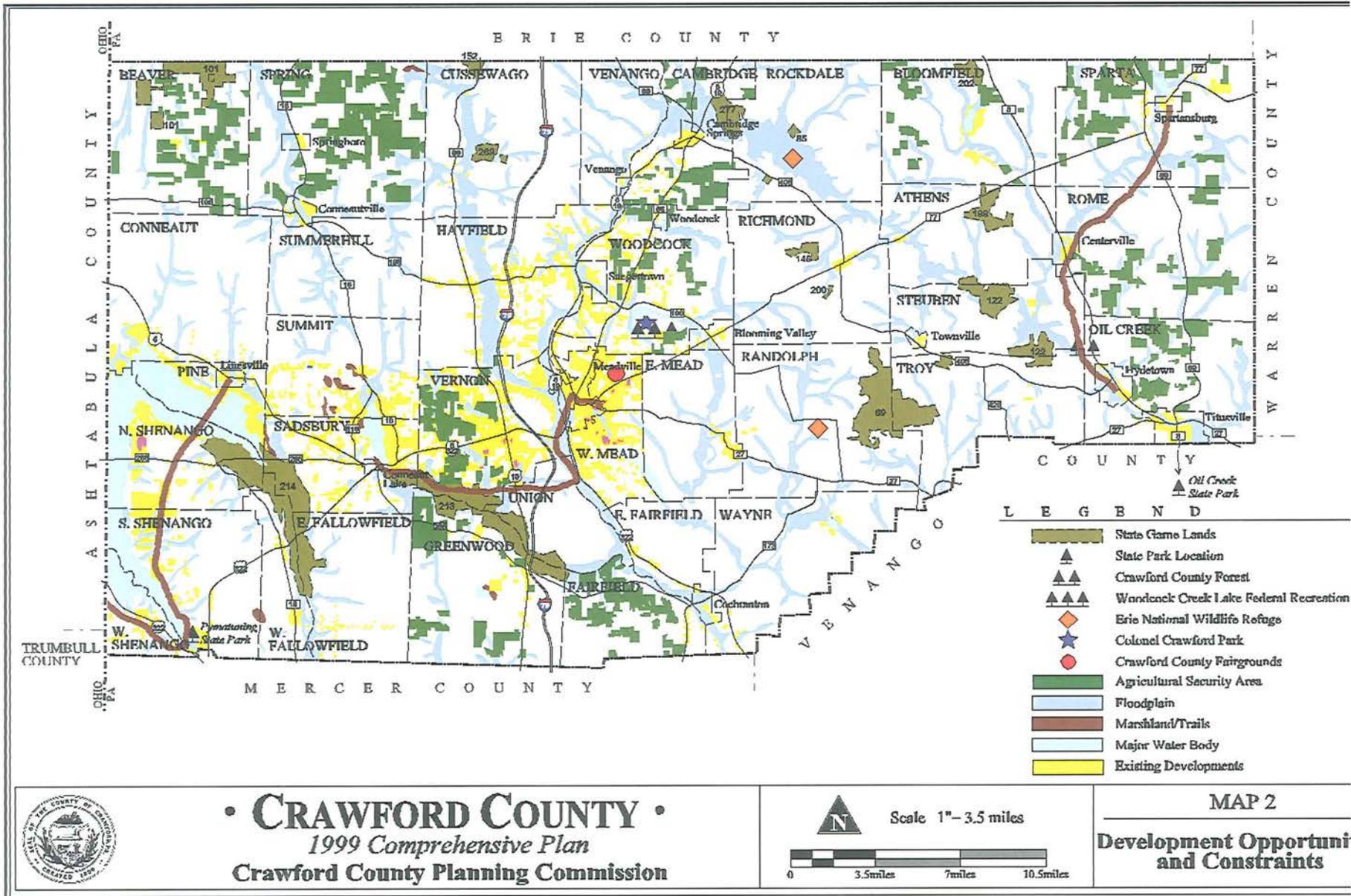
PROPOSED ZONING MAP
CHERRYTREE TOWNSHIP
VENANGO CO. PENNSYLVANIA

DATE:	JAM
REVISION:	
DATE 12-14-04	SCALE 1"=100'
PROJECT NO.	38004477
DRAWN BY:	
ZONING MAP	

Exhibit 2-11 Part 77 Overlay



BUREAU OF AVIATION
AIRPORT SURFACES AND ZONING COMPLIANCE
SELECT AIRPORT
Titusville (6GG1)



**TITUSVILLE AIRPORT
MASTER PLAN UPDATE**

EXHIBIT 2-12 - CRAWFORD COUNTY LAND USE

2.7. Management and Financial Information

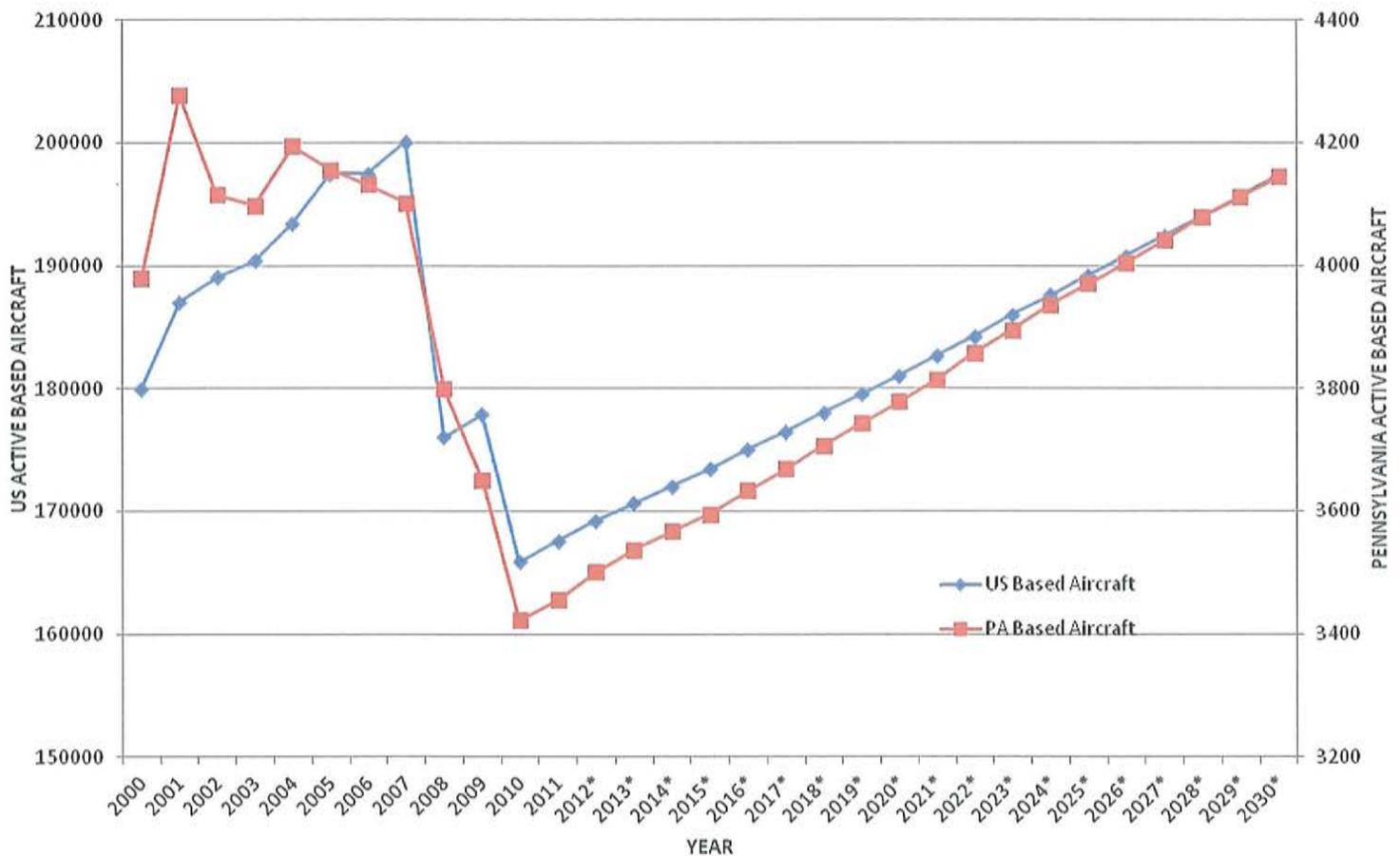
Titusville Airport is owned by the City of Titusville. Responsibility for the Airport's operation is entrusted to the Titusville Airport Authority. The day-to-day operations of the Airport are managed by the Authority President. Financial records for the Airport were obtained for 2009 through 2011. Revenues from natural gas royalties and office space lease for Mid American make up approximately 50 percent of the revenue at the airport. Yearly revenue and expenditures are listed in **Table 2.5**, below.

<i>Table 2.5 Airport Financial Data</i>			
Revenues	2009	2010	2011
Aviation Fuel Sales Profit	\$3,000	\$3,000	\$2,100
Hangar Lease Fees	\$3,200	\$3,200	\$3,100
Hangar Rental	\$1,100	\$1,100	\$900
Natural Gas Royalties	\$5,500	\$5,500	\$4,000
Mid American (office space rental)		\$2,280	\$2,280
Total Revenue	\$12,800	\$14,580	\$12,380
Expenditures	2009	2010	2011
Telephone	\$360	\$360	\$420
Electric	\$3,000	\$2,800	\$3,000
Tractor Maintenance	\$2,000	\$3,000	\$2,000
Fuel for Tractors	\$1,800	\$3,000	\$3,200
Fuel Business Expense	\$1,200	\$1,200	\$1,200
Septic Cleaning	\$500	\$500	\$350
Contractor Services Misc.	\$2,000	\$2,000	\$700
Miscellaneous	\$1,940	\$1,720	\$1,510
Total Expenditures	\$12,800	\$14,580	\$12,380
Source: Titusville Airport Authority			

3 Aviation Forecasts

The *Aviation Forecasts* chapter examines aviation activity at the Airport, including the existing aircraft operations and forecasted aircraft operations for a 20-year period. General aviation activity in the United States (US) has been in decline throughout the last decade. **Exhibit 3-1** presents historical and forecast US and Pennsylvania based aircraft. Since 2000, both the US and the State have seen a significant decline in the number of active general aviation aircraft. According to the FAA Terminal Area Forecast (TAF) published in January 2012, this decline is expected to reverse itself.

Exhibit 3-1 US and Pennsylvania Based Aircraft



Source: FAA TAF January 2012

As indicated in the discussion of the Titusville Airport’s service area socioeconomic, population and employment fell in the last decade in the service area while total income and per capita income increased. Aircraft operations declined over 60 percent since 2000, and based aircraft have declined over 20 percent. It was not possible to establish a meaningful statistical relationship between any of the historical socioeconomic variables in the service area and aviation activity at the Titusville Airport. Therefore, activity at the Airport was

forecast based on expectations for the general aviation industry. Forecasts for Titusville based aircraft were then adjusted based upon qualitative factors relevant to the service area uncovered in conversations with local airport, city, county and regional representatives. A list of those involved in these discussions is presented in **Appendix C, Aviation Forecast Backup**. These contacts included planning agencies, local companies identified as potential users of the airport, flight instructors at Titusville and elsewhere, and MedEvac operators and the Titusville hospital.

As demonstrated in the discussion of the socioeconomics of the service area:

- TCDA activity is expanding the economic base of the area
 - Downtown office space has been developed
 - Zoning has been changed to remove barriers to future private sector development
 - The potential for a waste-water treatment facility at the Airport is under analysis
 - Titusville Opportunity Park six miles from the Airport has seen recent expansion and job creation
 - Over 1,000 companies involved in shale exploration and drilling have been solicited to bring potential business to Titusville
- Total and per capita income in the service area is forecast to increase steadily throughout the forecast period
- The service area's manufacturing base is more dominant in the local industry base than it is in the United States as a whole
- The area could benefit in the long-run from shale development, and that would contribute to Airport activity growth as it has at airports such as Washington County in Washington, PA and Wheeling Ohio County Airport in West Virginia*

*Upgrades to the facilities at the Airport would be necessary to see future growth from the shale industry, such as instrumentation for approaches which are currently only visual approaches.

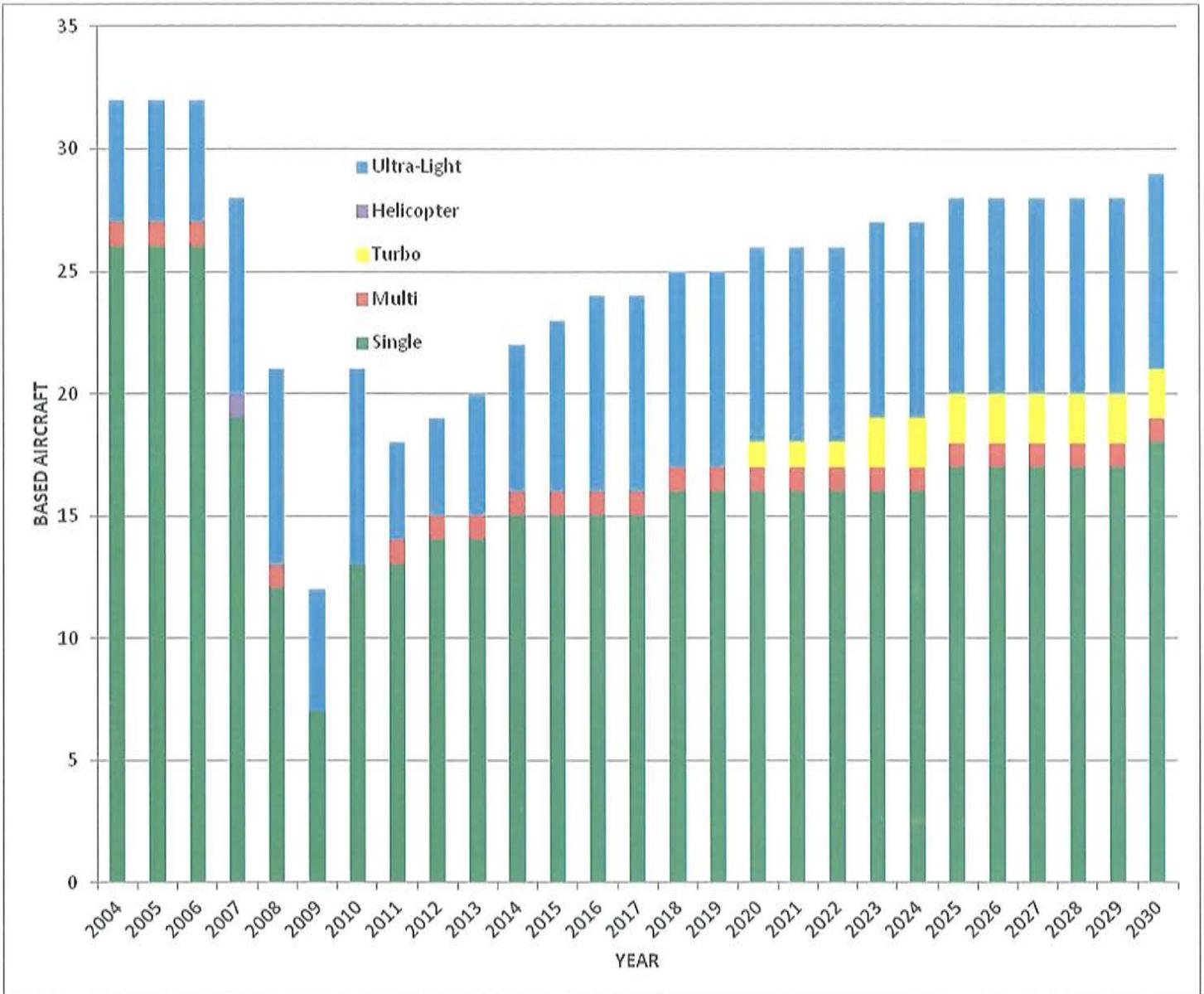
3.1. Based Aircraft

Table 3.1 indicates that the number of aircraft based at Titusville has declined significantly since 2004. Based aircraft have declined 50 percent. The rates and facilities at Titusville are very competitive relative to other near-by airports, and there seems to be a feeling that Titusville is capable of attracting more based aircraft. Also, in recent years there has been an increase in the "Ultra-light" category of based aircraft, which includes ultra-lights, gyros and gliders.

<i>Table 3-1 Based Aircraft</i>							
Year	Single-Engine	Multi-Engine	Turbo	Helicopter	Sub-Total	Ultra-Light*	Total
2004	26	1	0	0	27	5	32
2005	26	1	0	0	27	5	32
2006	26	1	0	0	27	5	32
2007	19	0	0	1	20	8	28
2008	12	1	0	0	13	8	21
2009	7	0	0	0	7	5	12
2010	13	0	0	0	13	8	21
2011	13	1	0	0	14	4	18
Forecast							
2015	15	1	0	0	16	7	23
2020	16	1	1	0	18	8	26
2030	18	1	2	0	21	8	29
Source: 2004-2009, January 2012 FAA TAF 6G1; 2010, airport-data.com; 6G1 2011, Airport IQ Data Center 6G1 5010 * The Ultra-Light category also includes Gyro aircraft and Gliders							

Table 3.1 and **Exhibit 3-2** present the growth of the based aircraft fleet by equipment type. Single-engine piston aircraft have always represented the largest segment of based aircraft. The forecast assumes that this segment will increase from 13 in 2011 to 15 by 2015, 16 by 2020 and then 18 by 2030. This level is less than the peak of 32 experienced during the period from 2004 to 2006. The multi-engine piston aircraft that has appeared sporadically since 2004 will remain in the forecast. Given the development factors in and around the City of Titusville relating to light manufacturing, private commercial business, and the future possibilities in the shale industry the forecast assumes that by 2020 it is possible that business development will lead to a two-engine turboprop aircraft, such as a Beech King Air or Cessna 400, being based at Titusville. If necessary improvements such as hangar space and instrumentation are realized, by 2030 there could be a second aircraft of this type based at Titusville. "Ultra-Light" aircraft types are also expected to grow at Titusville. Based aircraft of this type are expected to increase to eight by 2020, the level seen recently at the Airport. This will result in 23 based at Titusville by 2015, 26 in 2020, and 29 in 2030. The 29 based aircraft forecast for 2030 is comprised of 21 aircraft (single, multi, and turbo engine) and 8 aircraft in the "ultra light" category. This ultra-light category is a strong segment at Titusville. The airport hosts monthly meetings of an area gyro club during the non-winter months.

Exhibit 3-2 Based Aircraft Forecast



3.2. Aircraft Operations Forecasts

Total Titusville operations are presented in **Table 3.2**. This table presents:

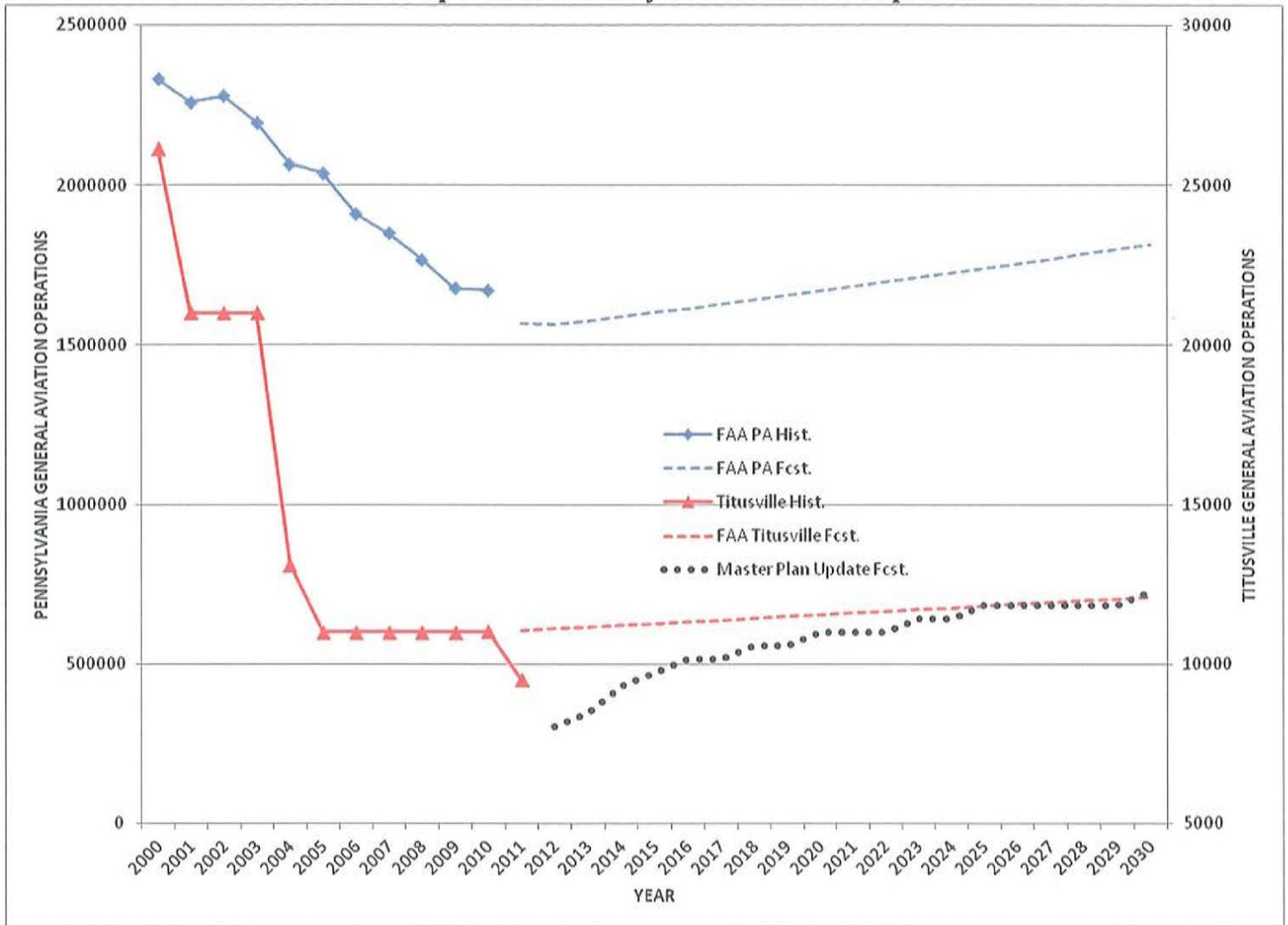
- Itinerant and local operations
- General aviation and military operations
- Operations per based aircraft
- Itinerant and local operations split

Table 3.2 Historical and Forecast Operations									
Year	Operations							Percent Split	
	Itinerant			Local	Total Ops			Based Aircraft*	Ops per Based Aircraft
	GA	Military	Total						
2000	9,870	53	9,923	16,275	26,198	23	1,139	37.9	62.1
2001	7,000	10	7,010	14,000	21,010	26	808	33.4	66.6
2002	7,000	10	7,010	14,000	21,010	26	808	33.4	66.6
2003	7,000	10	7,010	14,000	21,010	26	808	33.4	66.6
2004	3,478	10	3,488	9,634	13,122	32	410	26.6	73.4
2005	3,000	10	3,010	8,000	11,010	32	344	27.3	72.7
2006	3,000	10	3,010	8,000	11,010	32	344	27.3	72.7
2007	3,000	10	3,010	8,000	11,010	28	393	27.3	72.7
2008	3,000	10	3,010	8,000	11,010	21	524	27.3	72.7
2009	3,000	10	3,010	8,000	11,010	12	918	27.3	72.7
2010	2,999	11	3,010	8,014	11,024	21	525	27.3	72.7
2011	2,500	6	2,506	7,004	9,510	18	528	26.4	73.6
Forecast									
2015	2,612	10	2,622	7,090	9,712	23	422	27.0	73.0
2020	2,954	10	2,964	8,015	10,979	26	422	27.0	73.0
2030	3,296	10	3,306	8,939	12,246	29	422	27.0	73.0
Source: 2004-2009, January 2012 FAA TAF 6G1; 2010, airport-data.com; 6G1 2011, Airport IQ Data Center 6G1 5010 *Includes Ultra-lights, Gyro aircraft and Gliders									

Operations per based aircraft since 2004 range between 344 and 538, with the exception of an unexplained aberration in 2009. In order to forecast total operations, an estimate of future operations per based aircraft was developed and applied to the based aircraft forecast. An average of the 2004-2011 operations per based aircraft, excluding 2009, was calculated and yielded an average of 422 operations per based aircraft. This estimate was applied to the based aircraft forecast to yield total operations at Titusville. This methodology results in an operations forecast that does not reach the 2010 level until after 2020.

The forecast for Titusville is reasonable given expectations for general aviation operations growth in the state of Pennsylvania over this period. **Exhibit 3-3** compares this operations forecast to the FAA TAF January 2012 forecast for Titusville, and to the FAA TAF Pennsylvania general aviation forecast. The State forecast is listed along the left axis, and the Titusville forecast is listed along the right axis. The FAA forecast for Titusville trends in a fashion similar to the State. The FAA forecast used the 2010 Titusville measure of operations as its last data point and did not have the benefit of seeing the 13 percent drop in operations at the Airport in 2011 from 2010. Therefore, the master plan update forecast trends downward before it recovers. The master plan update forecast catches up with the FAA forecast after 2020.

Exhibit 3-3 Operations History and Forecast Comparison



Since 2004, the itinerant/local split of operations at Titusville has hovered around 27 percent/73 percent. This is a reflection of the predominance of single-engine and ultra light aircraft based there. These aircraft are frequently used for training and requalification activity, as well as leisure. This split is projected to persist throughout the forecast period.

3.3. Peak Operations

The log book served as the basis for analysis of the monthly and hourly peaking of operations at Titusville. If there were no monthly peaking, each month would represent 8.3 percent of annual activity. The month of June was the peak month for operations with 12.8 percent of annual operations. This is reasonable given that the bulk of the activity at the Airport is on single-engine aircraft, and tends to be training or leisure. Training and leisure activity is typically concentrated in the good-weather months. The forecast assumes that this 12.8 percent monthly peak persists throughout the forecast period.

The log book indicated that the peak hour of the day for operations experiences 8.9 percent of the day’s total. There were two hours that experienced this level of operations, 10:01 AM-11:00 AM and 1:01 PM-2:00 PM. The forecast assumes that this 8.9 percent hourly peak persists throughout the forecast period. These assumptions lead to the peaking characteristics at Titusville shown in **Table 3.3**.

<i>Table 3.3 Peak Hour Operations</i>				
Year	Annual	June	Avg. Day	Peak Hour
		12.8%	3.33%	8.9%
2010	11,024	1,416	47	4
2011	9,510	1,221	41	4
Forecast				
2015	9,712	1,247	42	4
2020	10,979	1,410	47	4
2030	12,246	1,573	52	5

Source: Mary A. Lynch analysis

3.4. Fleet Mix and Day/Night Operations

As discussed earlier, single-engine aircraft will continue to dominate the fleet at Titusville. However, over time, there will be an increase in turbo aircraft and the “ultra light” category. Therefore, the share of operations represented by these fleet types will increase over the forecast period. As business activity driven by the exploration and drilling of the Utica Shale increases, jet operations will increase in number, although not substantially in share. The forecast fleet mix of operations is shown in **Table 3.4**.

<i>Table 3.4 Fleet Mix</i>								
Equipment Type	2011		2015		2020		2030	
	Number	% Share	Number	% Share	Number	% Share	Number	% Share
One Engine Piston	8,740	91.9%	8,866	91.3%	9,793	89.2%	10,918	89.2%
Two Engine Piston	49	0.5%	29	0.3%	22	0.2%	18	0.2%
One Engine Turbo	44	0.5%	19	0.2%	16	0.2%	12	0.1%
Two Engine Turbo	168	1.8%	243	2.5%	538	4.9%	612	4.9%
Two Engine Jet	8	0.1%	14	0.1%	22	0.2%	30	0.2%
Helicopter	120	1.3%	122	1.3%	121	1.1%	135	1.1%
Ultra light	381	4.0%	418	4.3%	467	4.3%	520	4.3%
Total	9,510	100.0%	9,712	100.0%	10,979	100.0%	12,246	100.0%

Source: Mary A. Lynch analysis

The day/night distribution of operations was presented earlier in the report as being 95.1 percent of operations between 7:01 AM and 10:00 PM, and 4.9 percent between 10:01 PM and 7:00 AM. This split is expected to persist throughout the forecast period, as shown in **Table 3.5**.

Table 3.5 Day/Night Distribution of Operations

Year	Annual		Average Day/Peak Month	
	Day (701-2000)	Night (2001-700)	Day (701-2000)	Night (2001-700)
	95.1%	4.9%	95.1%	4.9%
2011	9,043	467	39	2
Forecast				
2015	9,235	477	40	2
2020	10,439	539	45	2
2030	11,644	602	50	3

Source: Mary A. Lynch analysis

3.5. Airport Reference Code

The airport reference code (ARC) is a combination of the aircraft approach category and the airplane design group. The aircraft approach category relates to the approach speed of an aircraft and equates to 1.3 times the aircraft's stall speed. The airplane design group relates to the wingspan and tail height of an aircraft. The ARC is determined based on the aircraft or combination of aircraft with the highest approach speed code and the greatest wingspan that substantially use the airport. Substantial use is defined by the FAA as aircraft that have at least 500 or more annual itinerant operations at the airport for an individual airplane or family grouping of airplanes. The ARC is important to airport planning because it relates design criteria for facility improvements to the operational and physical characteristics of the aircraft intended to use the airport. **Table 3.6** summarizes the various approach categories and airplane design groups.

Table 3.6 Aircraft Category and Design Groups

Aircraft Approach Category	Approach Speed (knots)	Airplane Design Group	Wingspan (ft)	Tail Height (ft)
A	Less than 91	I	Less than 49	Less than 20
B	91 to less than 121	II	49 to <79	20 to <30
C	121 to less than 141	III	79 to <118	30 to <45
D	141 to less than 166	IV	118 to <171	45 to <60
E	166 or greater	V	171 to <214	60 to <66
		VI	214 to <262	66 to <80

FAA Advisory Circular 150/5300-13

At Titusville Airport, the single engine piston aircraft represents the aircraft family that is the current critical aircraft. Within the forecast period, the turbo aircraft family enters the substantial use threshold in the year 2020. **Table 3.7** illustrates the existing and ultimate critical aircraft for Titusville Airport. A representative aircraft for each family is shown.

Table 3.7 ARC Matrix

Equipment Type	2011	2015	2020	2030	Aircraft	Wingspan	Stall Speed	Approach Speed	ARC
	Annual Operations								
One Engine Piston	8,740	8,866	9,793	10,918	Cessna 182	36'-0"	49 knots	63.7 knots	A-I
Two Engine Turbo	168	243	538	612	Beech King Air 200	54'-6"	75 knots	97.5 knots	B-II

The turbo aircraft are expected to account for 554 operations by 2020, based on Table 3.4. Of that 554, 538 operations are expected to be from the two-engine turbo aircraft. The King Air 200 represents a two-engine turbo aircraft which has historically operated at the Airport as an itinerant aircraft, as shown in the transcribed log book contained in Appendix C, as well as into the forecast future. At Titusville Airport, the turbo aircraft family represent the substantial use needed to justify a B-II ARC for the ultimate 20 year planning period.

4 Demand and Capacity Analysis

The *Demand and Capacity Analysis* chapter examines the capability of the Airport to accommodate the existing and forecasted aviation demand. Facility shortfalls will be identified for further evaluation in proceeding chapters.

4.1. Airfield Capacity and Delay

The airfield capacity at the Airport is a function of its runway and taxiway pavements and aircraft operations. Airfield capacity is defined by the hourly capacity of the runway and annual service volume (ASV)

Given the activity levels at the Airport, the handbook methodology presented in FAA AC 150/5060-5 is used to determine the hourly capacity and annual service volume of the runway and its ability to handle the future demand. The handbook method is used for long-range planning.

Chapter 4 of the AC was utilized for determining the runway capacity. Several assumptions are made in the handbook method which includes the following:

- The Airport is used almost exclusively by Class A and B aircraft
- The Airport does not have an ILS but it has an approved approach procedure
- Arrivals equal to departures
- There are no airspace limitations affecting runway use.

Class A and B aircraft are described specifically in the AC as aircraft with a maximum certified takeoff weight of 12,500 pounds or less with either single or multi engine. Other classes of aircraft include Class C, defined as aircraft with maximum takeoff weights ranging from 12,500 pounds to 30,000 pounds with multiple engines and Class D, defined as aircraft with maximum takeoff weights over 30,000 pounds with multiple engines.

Based on Figure 26 of the AC, the Airport most closely resembles the configurations shown in number 2. The theoretical capacity of the runway is a minimum of 72 and a maximum of 92 operations per peak hour in VFR conditions and 24 operations per peak hour in IFR conditions. AC 150/5060-5 defines VFR conditions as those when the cloud ceiling is at least 1,000 feet and visibility is at least three miles. IFR conditions are defined when the cloud ceiling is at least 500 feet but less than 1,000 feet and visibility is at least one mile but less than three miles.

Within the twenty year planning period, the growth of peak hour operations increases to five operations by 2030. This projected growth would put the airfield at five percent of peak hour operations theoretical capacity during VFR conditions and 21 percent of peak hour operations theoretical capacity during IFR conditions.

ASV represents a reasonable estimate of an airport's annual capacity. ASV is calculated by accounting for differences in runway use, aircraft mix, and weather conditions over the period of one year. Aircraft mix is defined through a mix index, which equals 3C+D, in reference to the class of aircraft. The method presented in Chapter 3 of the AC was utilized to calculate ASV for Titusville Airport based on the following assumptions:

- Runway 18-36 is utilized in VFR conditions 90 percent of the time
- Runway 18-36 is utilized in IFR conditions 10 percent of the time
- Mix Index for the runway is the same for VFR and IFR conditions

Titusville Airport has an ASV of 30,371 operations per year. **Table 4.1** details the calculation. The total annual operations forecast for the year 2030 are 12,246 operations. At the end of the planning period, the Airport will be at 40 percent of its ASV.

Table 4.1 Annual Service Volume					
Conditions	Mix Index	Percent of the Year (P)	Hourly Capacity (C)	Percent Maximum Capacity	Weighting Factor (W)
VFR	< 1	90	72	100	1
IFR	< 1	10	24	33	4
$C_w = (P_1 C_1 W_1 + P_2 C_2 W_2) / (P_1 + W_1) + (P_2 + W_2)$					
Cw = 12.4					
ASV = Cw * D * H					
where D = Annual Demand / Avg. Daily Demand; H = Avg. Daily Demand / Avg. Peak Hour Demand					
ASV = 12.4 * 235.5 * 10.4 = 30,371 operations					
Source: AC 150/5060-5, Baker Analysis					

Aircraft delay is “the difference between constrained and unconstrained operating time” as defined in AC 150/5060-5. Aircraft delay is calculated based on the relationships presented in Chapter 2 of the AC. The average delay per aircraft is determined from Figure 2-2 of the AC. This figure is presented below as **Exhibit 4-1, Average Aircraft Delay**. Table 4.2 and Table 4.3 detail total annual delay and associated costs as a result of delay. Annual average delay was determined by multiplying the annual operations by aircraft distribution by the average delay per aircraft and the dollars per minute.

Exhibit 4-1 Average Aircraft Delay

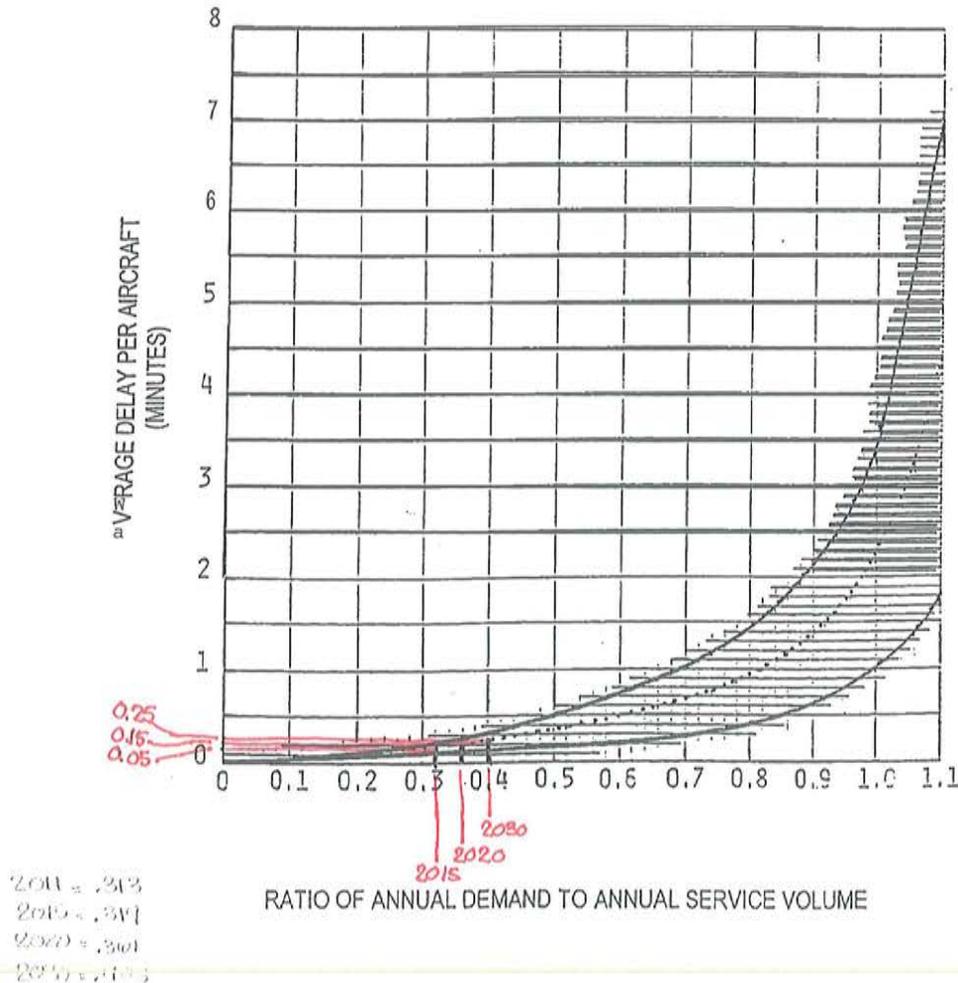


Table 4.2 Summary of Aircraft Delay over Forecast Period

Design Year	ASV (30,371 capacity)	Percent of Capacity	Avg. Delay per Aircraft (min.)	Total Annual Delay (min.)
2011	9,510	31.3	0.04	380
2015	9,712	31.9	0.05	486
2020	10,979	36.1	0.15	1,647
2030	12,246	40.3	0.25	3,062

Source: Baker Analysis

Table 4.3 Summary of Aircraft Delay Costs

Aircraft Distribution	Dollars / Minute	Annual Operations by Aircraft				Annual Average Delay Costs (\$)			
		2011	2015	2020	2030	2011	2015	2020	2030
Class A - 1-3 Seats	0.60	9,285	9,425	10,397	11,585	223	279	936	1,738
Class B - Piston Twin	2.50	49	29	22	18	5	4	8	11
Class B - Turbo Twin	5.20	168	243	538	612	35	63	420	796
Class C - 2 Engine Jet	13.60	8	14	22	30	4	10	45	102

Source: *FAA AC 150-5060-5, figure A5-12, Baker Analysis

Despite the demand being less than the capacity, aircraft delays still occur. This delay is a result of several factors, including delay to arriving and departing aircraft as a result of back-taxi operations on the runway, and time required between successive departures or arrivals.

According to AC 150/5060-5, the magnitude and scheduling of user demand is relatively unconstrained. Any necessary reductions in aircraft delay can be achieved through airport improvements that increase capacity, such as a full length parallel taxiway and instrumentation such as an instrument landing system. The need for such improvements will be evaluated in Chapter 5 including the perceived benefit of reducing delay costs in comparison to the cost of improvements.

4.2. General Aviation Facilities

4.2.1. Hangar Space

There are 17 conventional box hangars at the airport. Currently, the airport authority owns only one of those hangars. Photos of these hangars are included in Appendix A. Based on the aviation forecasts presented in Chapter 3, there will be 29 based aircraft at Titusville by the end of the planning period. Of that 29 there are eight ultra lights anticipated. For the purposes of this study, it assumed that two ultra lights can be stored in one hangar space. With this assumption, there is a demand for 25 hangar spaces. It is also assumed that the 17 box hangars will remain available throughout the planning period despite all not being owned by the Airport Authority.

Table 4.4 Summary of Hangar Capacity

Design Year	Based Aircraft	Ultra Lights	Hangar Space Needed	Deficiency in Hangar Capacity
2011	14	4	16	-
2015	16	7	20	3
2020	18	8	22	5
2030	21	8	25	8

Source: Baker Analysis

4.2.2. Apron Space

There is one aircraft apron located on the east side of the airport, adjacent to the terminal building. The apron is approximately 3,550 square yards for aircraft parking. The apron has four tie-down spaces available for transient aircraft. It can be accessed directly from the runway, taxiway or partial parallel taxiway.

Table 4.1 illustrates the apron space requirements for the aviation forecast planning period. Apron space is dependent on the number of busy day itinerant aircraft, which is ten percent more than the average day of the peak month. Parking areas on the apron should be sized for 50 percent of the busy day itinerant aircraft according to FAA standards. The FAA standards allocate 360 square yards per aircraft for apron space. The existing apron will be deficient in size and unable to fulfill the demand for apron space for the forecast itinerant aircraft.

Table 4.5 Apron Space Demand

Forecast Year	Average Day of Peak Month Operations	Itinerant Operations Split (%)	Itinerant Aircraft per Average Day	Busy Day Itinerant Aircraft	50% Busy Day Itinerant Aircraft	Square Yards per Aircraft	Total Apron Space Required (SY)
2011	41	26.4	10.82	11.9	6	360	2,160
2015	42	27	11.34	12.5	6	360	2,160
2020	47	27	12.69	13.9	7	360	2,520
2030	53	27	14.31	15.7	8	360	2,880

Source: Mary Lynch forecast; AC 150/5300-13 Appendix 5

Space is available at the Airport to provide for hangar development; therefore a based aircraft apron was not evaluated.

4.2.3. Fuel Storage

Titusville Airport has two fuel tanks, 10,000 gallons each. Fuel sales for 2010 were recorded at 6,500 gallons sold with three deliveries of fuel. The Airport Authority is responsible for the sale of fuel for aircraft. As shown in **Table 4.2**, assuming 40 gallons of AvGas per month and 100 gallons of Jet-A per month are sold, the existing fuel facilities at the Airport are sufficient to handle the demand through the planning period.

Table 4.6 Fuel Storage and Demand

Forecast Year	Average Day of Peak Month Operations	Aircraft	Piston Aircraft	AvGas Fuel Demand Per Month (gal)	Turbo, Jet or Helicopter	Jet-A Fuel Demand per Month (gal)
2011	41	20	19	760	1	100
2015	42	21	19	760	1	100
2020	47	23	22	880	2	200
2030	53	26	23	920	2	200

Source: Mary Lynch forecast; AC 150/5300-13 Appendix 5

4.2.4. Corporate Facilities

There is currently no corporate facility at the Airport. The aviation forecast anticipates that there will be two corporate type turbo aircraft based at the Airport by the end of the planning period. Titusville cannot meet this demand without constructing corporate facilities such as a larger conventional box hangar and amenities that attract corporate business.

4.2.5. Administration Building

The Airport's terminal building is approximately 1,620 square feet and in good condition. The facility has a lobby with a kitchenette, conference room, administrative office, bathroom and a utility room. Pedestrian access to the terminal building is provided from the airside and landside faces of the building. Terminal building space required per peak hour passenger is 150 square feet. For the planning period, this equates to approximately 400 square feet, as shown in **Table 4.7**. Given the forecast activity for the Airport, the current layout of the administration is sufficient to handle the peak hour activity. The existing airport maintenance facility is located adjacent to the administration/terminal building and is positioned on the airfield and provides adequate access to hangar areas and the runway for maintenance activities.

Table 4.7 Terminal Space

Year	Peak Hour Operations	PHP	Space Required (SF)
2011	4	2	300
2015	4	2	300
2020	4	2	300
2030	5	2.5	375

Source: Baker Analysis

4.3. Terminal / Airport Parking

The Airport is accessed by an entrance road off of Route 27 Meadville Road. A capacity analysis on the intersection of the entrance road and Route 27 was not performed as part of this study. The entrance road is a two lane paved road approximately 20 feet wide. There is an area available for public parking, approximately 12 automobile spaces. Individual hangar owners do not have designated parking available, but park at their own hangars or inside of them.

The number of parking spaces is dependent on the peak hour passenger. Parking requirements are based on 1.5 times the number of peak hour passengers, plus an additional 15 percent in accordance with FAA AC 150/5360-13. The additional 15 percent is added to allow for ease of finding a parking space in the lot.

For purposes of this study, it is assumed that the peak hour passenger (PHP) is defined as 2 per aircraft arrival or departure. It is assumed that arrivals equals departures, when evaluating the peak hour operations. Other

considerations for parking spaces include airport management and employees. The Airport does not currently employ any personnel but for the planning period it is assumed that there will be at least two employees by the end of the period. The amount of passenger parking spaces required is presented in **Table 4.8**.

<i>Table 4.8 Parking Demand</i>					
Year	Peak Hour Operations	PHP	1.5 * PHP	15% Increase	Required Parking Spaces*
2011	4	2	3	0.45	6
2015	4	2	3	0.45	6
2020	4	2	3	0.45	6
2030	5	2.5	3.75	0.56	7

Source: Baker Analysis

*included employee parking consideration

4.4. Utilities and Support Facilities

With the forecasted increase in the based aircraft and overall operations, facilities at the Airport will need to be expanded. Expansion of hangar space will require additional utility access and possibly other support facilities for these buildings. Future development for hangar expansion as well as any development associated with pavements will require supporting storm water management facilities and drainage systems to incorporate existing structures and maintain compliance with all local, state and federal regulations and guidelines. Development for a corporate hangar will require installation of facilities, if needed, for the specific hangar. Development for these facilities must take into account a solution to the lack of local sanitary waste lines.

5 Facility Requirements

The *Facility Requirements* chapter examines the development needs .

5.1. Introduction

As defined in Chapter 3 Aviation Forecast, the ARC for the 20 year planning period is B-II. Facility requirements are developed to accommodate the existing and forecasted demand for the year 2030 at the end of the 20-year planning period in accordance with FAA AC 150/5300-13. The following sections discuss the requirements for airfield, navigational aids and instrumentation, aprons, terminal building space, access and parking, hangar facilities, and support facilities. It is noted that the current version of the design AC is under a draft revision, AC 150/5300-13A. This chapter does not present facility requirements in consideration for the draft AC but it is anticipated that any proposed construction for developments at the Airport will likely need to be in accordance with 13A and may at that time be different than what is detailed below.

5.2. Airfield Facilities

5.2.1. Runway Requirements

The Titusville Airport has one runway, designated 18-36. The runway designation is based on the alignment of the runway related to its magnetic compass heading, or the direction one would be flying relative to “north” when landing or taking off. Runway 18 is short for 180 degrees, due south. Runway 36 is short for 360 degrees, due north. The runway alignment is chosen to allow landing and departing aircraft to fly into the prevailing wind. In the case of Titusville, the prevailing winds are most often from the south southwest during good weather – meaning most operations at Titusville land and depart Runway 36.

Runway 18-36 is currently equipped with medium intensity runway edge lights. An upgrade to high intensity edge lights is not necessary for the Airport, however it may be beneficial to consider upgrading the existing light fixtures to the new light emitting diode (LED) edge lights in order to realize an cost savings and energy efficiency. As a result of the future GPS approaches being developed for the Airport, lens colors for the edge lights must be changed from white to amber lenses for the last 2,000 feet of each runway end.

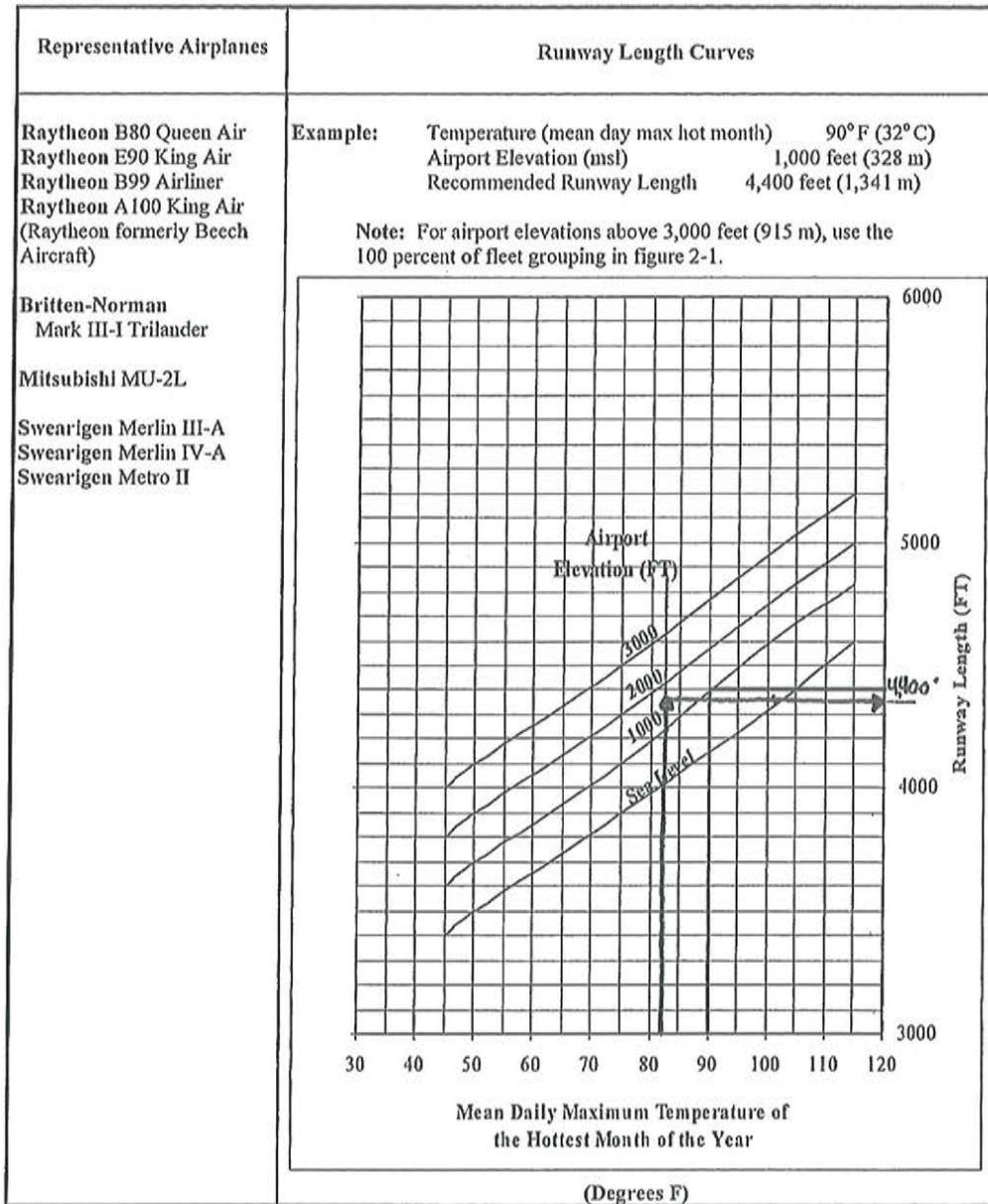
5.2.2. Runway Length and Width

Runway 18-36 is 4,902 feet in length, 75 feet wide, and comprised of bituminous concrete pavement in fair condition. A runway rehabilitation project will be necessary within the planning period, and is currently in the Capital Improvement Program for federal fiscal year 2016/2017 (design in 2016 and construction in 2017). As part of the rehabilitation, a thorough geotechnical investigation is required to determine the cause of the transverse cracking occurring the entire length of the runway. Sixty feet wide pavement is required, for group I runways with approach category A and B with not less than 3/4-statute mile visibility minimums. For group II runways, 75 feet wide pavement is required. Required runway length is determined in accordance with FAA Advisory Circular 150/5325-4B, Runway Length Requirements for Airport Design, based on the critical design aircraft that make substantial use of the runway for an established planning period.

In accordance with AC 150/5325-4B, charts were used to determine the required runway length for takeoffs for the critical design aircraft. Figure 2-2 from the AC was utilized with an 83°F mean daily maximum temperature, at 1,600' above mean sea level. This chart yields a runway length of 4,400' required for the ultimate critical aircraft, as shown in **Exhibit 5-1**.

Exhibit 5-1 Runway Length

**Figure 2-2. Small Airplanes Having 10 or More Passenger Seats
(Excludes Pilot and Co-pilot)**



The existing runway is capable of providing adequate runway length for the existing and ultimate critical aircraft, in accordance with AC 150/5325-4B. Runway length will be evaluated in more detail under Chapter 6, Alternative Development and Analysis.

5.2.3. Runway Orientation

The magnetic declination was reviewed for confirmation of runway orientation. The current magnetic declination is 9°41'W changing 0°1' W per year, according to the National Geophysical Data Center. Runway 18-36 has a true bearing of approximately N 3° W . The orientation of the runway is a function of wind coverage. Historical wind data was obtained from the NCDL of NOAA for the purpose of analyzing the current runway orientation. Information was available from 2000 - 2009 for evaluation.

Runways are to be orientated such that 95% wind coverage is obtained for allowable crosswind components. Allowable crosswinds are as follows:

Table 5.1 – Allowable Crosswind Components

Airport Reference Code	Crosswind (knots)
A-I, B-I	10.5
A-II, B-II	13
A-III, B-III, C-I, C-II, C-III, C-IV	16

Source: LG 5300-13

Runway 18-36 meets the recommendations for wind coverage in IFR, VFR, and All Weather conditions above 10.5 knots, as shown in **Table 5.2** below.

Table 5.2 – Runway 18-36 Wind Coverage

Crosswind (knots)	IFR Coverage	VFR Coverage	All Weather Coverage
10.5	93.7	91.14	93.4
13	96.76	95.19	96.57
16	99.34	98.91	99.3

Source: Baker Analysis

Runway 18-36 does not meet the recommendation of 95% wind coverage for A-I and B-I aircraft at 10.5 knots. A runway orientation of 10-27, in VFR coverage at 10.5 knots would only provide 94.8%.

5.2.4. Additional Runway Requirements

Additional runway requirements assure the safe operation of the Airport during arrivals and departures of the critical aircraft as well as providing an increased level of safety for all other aircraft, vehicles, and persons operating in the vicinity of the critical aircraft. These additional requirements include separations from the runway centerline to various other airfield facilities, runway protection zones (RPZ), safety areas (RSA), object free areas (OFA), and object free zones (OFZ). These requirements are summarized below, as defined by FAA AC 150/5300-13.

The RPZ serves to protect people and property on the ground off the ends of runways. The best option for protection is for the airport to own the property in which the RPZ falls so that the owner has complete control of the RPZ. The RPZ is a trapezoidal area centered about an extended runway centerline. The RPZ is comprised of two internal areas; the central portion and the controlled activity area. The central portion of an RPZ is centered on the extended runway centerline, beginning to end of the RPZ and as wide as the runway OFA, which is defined in the following paragraphs. The controlled activity area is adjacent to the central portion. According to AC 150/5300-13, there are land use restrictions within the RPZ. Fuel storage facilities are not permitted within any portion of the RPZ, along with residences and places of public assembly such as churches, schools and hospitals. The existing RPZ for A-I is 1,000 feet long by 250 feet wide (inner) by 450 feet wide (outer). For the planning period, the RPZ will increase to 1,000 feet long 500 wide (inner) by 700 feet wide (outer) for B-II.

The RSA is an area centered on the runway centerline which must be free of objects, except those that are fixed by function, drained by grading and/or storm sewer systems, and cleared and graded with no potentially hazardous surface variations. The RSA must be suitable for preventing damage to an aircraft in the situation that the aircraft overshoots, undershoots or drifts off the side of the runway.

The OFA is an area centered on the runway centerline which must be cleared of above ground objects protruding above the RSA edge elevation, unless they must be located within the OFA because of their function.

The OFZ is a defined volume of airspace centered above the runway centerline. Its elevation at any point is the same as the nearest point on the runway centerline. There can be no penetration to the OFZ except by frangible visual NAVAIDs that must be located inside the OFZ because of their function.

These and additional runway requirements are outlined in **Table 5.3** below. These requirements assume that with the anticipated GPS approaches being developed by the FAA, standards will be for runways with not lower than 3/4-statute mile approach visibility minimums.

<i>Table 5.3 Runway Requirements</i>			
	Existing	A-I*	B-II
Runway Centerline to Taxiway Centerline	227 [^] /240	150	240
Runway Centerline to Aircraft Parking	179'	125	250
Runway Centerline to Holdline	125	125**	125**
RSA Width	150	120	150
RSA Length Prior to Landing Threshold and Beyond Runway End	300	240	300
OFA Width	250	250	500
OFA Length Beyond Runway End	300	240	300
OFZ Width	250	250	250
OFZ Length Beyond Runway End	200	200	200

*These dimensional standards pertain to facilities for small aircraft exclusively

**Holdline dimension standards pertain to facilities for small airplanes exclusively, including airplane design groups I and II.

[^]Represents distance from runway centerline to taxiway centerline of taxiway turnarounds.

As shown in the table, the existing apron is located in too close a proximity to the runway centerline, in regards to aircraft parking, for the ultimate condition. By reconfiguring the layout of the apron, aircraft parking separation distances can be met as well as the OFA width for B-II.

5.2.5. Taxiway Requirements

The taxiway system must efficiently provide aircraft access to and from the runways and the aprons. Taxiway requirements are outlined below in **Table 5.4**.

<i>Table 5.4 Taxiway Requirements</i>			
	Existing	A-I	B-II
Taxiway Width	30	25	35
TSA Width	50	49	79
TOFA Width	90	89	131
Taxiway Centerline to Fixed or Moveable Object	65.5	44.5	65.5
Taxilane OFA Width	79	79	115
Taxilane Centerline to Fixed or Moveable Object	39.5/57.5*	39.5	57.5

*The existing taxilane to the west meets 39.5' while to the east, it meets 57.5'

As shown in the table, the existing taxiway will need to be widened by five feet in the future to accommodate the B-II classification.

The existing taxilane does not have an adequate OFA for the B-II classification. However, this taxilane currently only serves small aircraft. The taxilane will need to be widened by five feet in the future to

accommodate the B-II classification. This taxiway meets the dimensional requirements for A-I. During the course of the planning period, additional development of t-hangars and box hangars is anticipated. Individual taxiways for these developments may be required and should be evaluated based on the aircraft anticipated to use the facilities.

The Airport does not have a full parallel taxiway, which requires arriving and departing traffic to back-taxi on a portion of the runway. A full parallel taxiway is recommended. A full parallel taxiway will be further developed and analyzed in Chapter 6, Alternative Development and Analysis.

5.3. NAVAIDs and Instrumentation

Currently, there is no instrumentation on the airfield to assist pilots on approach. Exhibit 2-7 shows that pilots can fly IFR to the Franklin VOR and then proceed to the final approach fix which is located 5.8 nautical miles from Runway 36. The portion of flight after the VOR is visual into Titusville. As previously mentioned, the FAA is developing GPS approaches for Titusville. These approaches are planned for completion in 2014. The GPS approach will utilize on-aircraft GPS equipment to direct a pilot to spatial reference points, which will assist with locating the airport and aligning the aircraft with the runway.

In addition to an improved GPS approach, visual aids can be installed to increase flight safety. A precision approach path indicator (PAPI) provides a visual guidance to pilots. The system can have a visual range up to three miles during daylight hours and up to 20 miles at night. The system consists of glide path indicators that show different light configurations when an aircraft is on the proper path, slightly high, significantly high, slightly low, or significantly low. In conjunction with the PAPI, installation of runway end identifier lights (REILs) would provide benefit to pilots. REILs provide a flashing white light to aid in identification of the runway end. A project to install REILs at Titusville is on the Capital Improvement Program for federal fiscal year 2014.

5.4. Airspace Requirements

There is no anticipated upgrade to the existing airspace class as a result of the planned airfield development. The CFR 14 Part 77 imaginary surfaces will be adjusted for the future runway length and GPS approaches as needed depending on the alternatives analysis. The runway shall still be considered a utility runway for Part 77 surfaces. All development will take these surfaces into consideration.

5.5. Terminal Area Requirements

5.5.1. Hangars

To meet the forecasted demand for aircraft storage at the Airport, expanded hangar facilities are necessary. Of the 17 existing conventional box hangars, at least two are in poor condition. In addition to those needing replaced, by the year 2030 an additional eight hangar spaces will be needed. Several options for hangar space exist. T-hangars have the ability to house small aircraft in compact areas, such as those manufactured by FulFab or Erect-A-Tube. Two five unit t-hangars present an option that provides for the forecasted demand while allowing phased construction so that a portion of the spaces do not sit vacant for years. Another option is to provide a mix of t-hangar units and conventional box hangars.

As mentioned in Chapter 4, the Airport lacks any facilities to accommodate based corporate aircraft. Several options exist to meet this demand for corporate aircraft storage. Rectangular hangars similar to FulFab and Erect-A-Tube provide pre-fabricated, lower cost solutions for aircraft storage. A standalone clear span hangar with integral office space can also be designed outside of the pre-fabricated options.

5.5.2. Apron Space and Tie-Downs

The existing apron provides sufficient area for the future demand for aircraft parking; however aircraft parking is located too close to the runway. By limiting the location for airport parking, the usable space on the apron is minimized such that it no longer provides sufficient area for the future demand. Revised apron layouts will be further analyzed in Chapter 6, Alternative Development and Analysis. The layout of the tie-down spaces will be revised based on the chosen apron layout for the planning period.

5.5.3. Administration / Terminal Building Area

The current layout of the administration building is sufficient to handle the peak hour activity therefore no major upgrades are recommended for the building. Interior upgrades may be necessary throughout the planning period depending on the age of equipment and appliances in the building.

5.6. Airport Access and Support Facilities

5.6.1. Access Roads and Parking

The existing entrance road off of Route 27 provides access to the terminal building and hangar areas of the airport. Additional automobile parking is necessary for the proposed hangar development. A typical parking space is 166.5 square feet (9' x 18.5'), with a 26 foot wide aisle between parking spaces for maneuverability. Automobile parking spaces for 16 tenants and one ADA van accessible parking space is required. An access road from the entrance road to the proposed automobile parking for the hangar development is necessary. This access road will provide direct access to parking near the hangar development, removing the need for automobile traffic to utilize the taxilane for travel.

5.6.2. Fuel Facilities

The existing fuel facilities provide enough storage for the forecast period. However, upgrades are recommended to the pump system. Current fueling policy requires the use of an airport specific fuel card. If an airport user or itinerant user does not have one of these cards, they must coordinate the need to purchase fuel prior to arrival. Upgrading the fuel service facility to a 24 hour service with credit card creates a more desirable fuel stop for pilots. This amenity has the potential to generate additional revenue for the airport that they are currently not realizing because of the limit on the fuel service.

5.6.3. Utilities

Utilities will need to be expanded to meet the future demands related to hangar expansion as well as taxiway and apron lighting. Major utility investments that are important to the area include the potential for an on-site waste water treatment facility and extension of public sewer service.

5.6.4. Land Use Requirements

Land use surrounding the Airport ranges from residential to agricultural. **Exhibit 5-1, Land Use**, exhibits the planned land use in neighboring Crawford County immediately north of the runway as "agricultural/rural." According to the 2008 Crawford County Comprehensive Plan Update, the agricultural land use objectives are to use existing agricultural land more effectively and to preserve and protect active farmland with "productive" soil.

Exhibit 2-10 shows that the land use immediately south of the runway and adjacent to the airport property is "Residential/Agricultural." According to Cherrytree Township zoning, the purpose of this land use is to preserve and protect the rural nature of the area, including provisions of low-density residential units on large lots, farmettes, the practice of farming, and to ensure the preservation of prime soils for future generations to farm. Permitted uses within this area include agricultural, single family detached dwellings, seasonal dwellings, kennels, veterinary facilities, animal hospitals, houses of worship, bed and breakfasts, cemeteries, home occupations, essential services, and accessory

buildings. Airport development within Cherrytree Township is not anticipated to spread beyond existing Airport property, therefore no special land use review is anticipated. However, should manufacturing business be brought to the airport and facilities be proposed for manufacturing, review by the township Board of Supervisors will be necessary.

Further discussion of the land use surrounding the airport is presented in Chapter 7 - Environmental Overview.

5.6.5. Airport Security

The Airport is surrounded by a perimeter fence located approximately on the property line with a gate at the access which serves to deter uncontrolled access and wildlife from the property. There is no internal security fence separating the public from airside facilities.

6 Alternative Development and Analysis

This chapter brings together many different elements of the planning process to identify and evaluate alternatives for meeting the needs of the users as well as the strategic vision of the Titusville Airport Authority. The process for identifying possible alternatives and evaluation is to:

- Identify alternative ways to address facility requirements
- Evaluate the alternatives, individually and collectively, to understand the strengths, weaknesses, and other implications of each
- Select the preferred alternative

6.1. Introduction

The current Titusville Airport does not meet certain FAA standards for a facility with an airport reference code of B-II, with visibility minimums not lower than one statute mile. FAA standards indicate a need to provide adequate separation between the runway and aircraft parking areas as well as the need to provide adequate object free areas. An extension of the partial parallel taxiway will also benefit the Airport and is considered in the alternatives below. Three alternatives have been established to investigate feasible options for accomplishing these objectives.

Alternative I is considered a no-build alternative. Alternatives II and III include aviation development to support the increased operations at the Airport as well as property acquisition for runway protection zones. The key evaluation criteria for the alternatives are the amount of environmental impacts and associated cost. Graphical depictions of each alternative are included in this chapter.

6.2. Alternatives

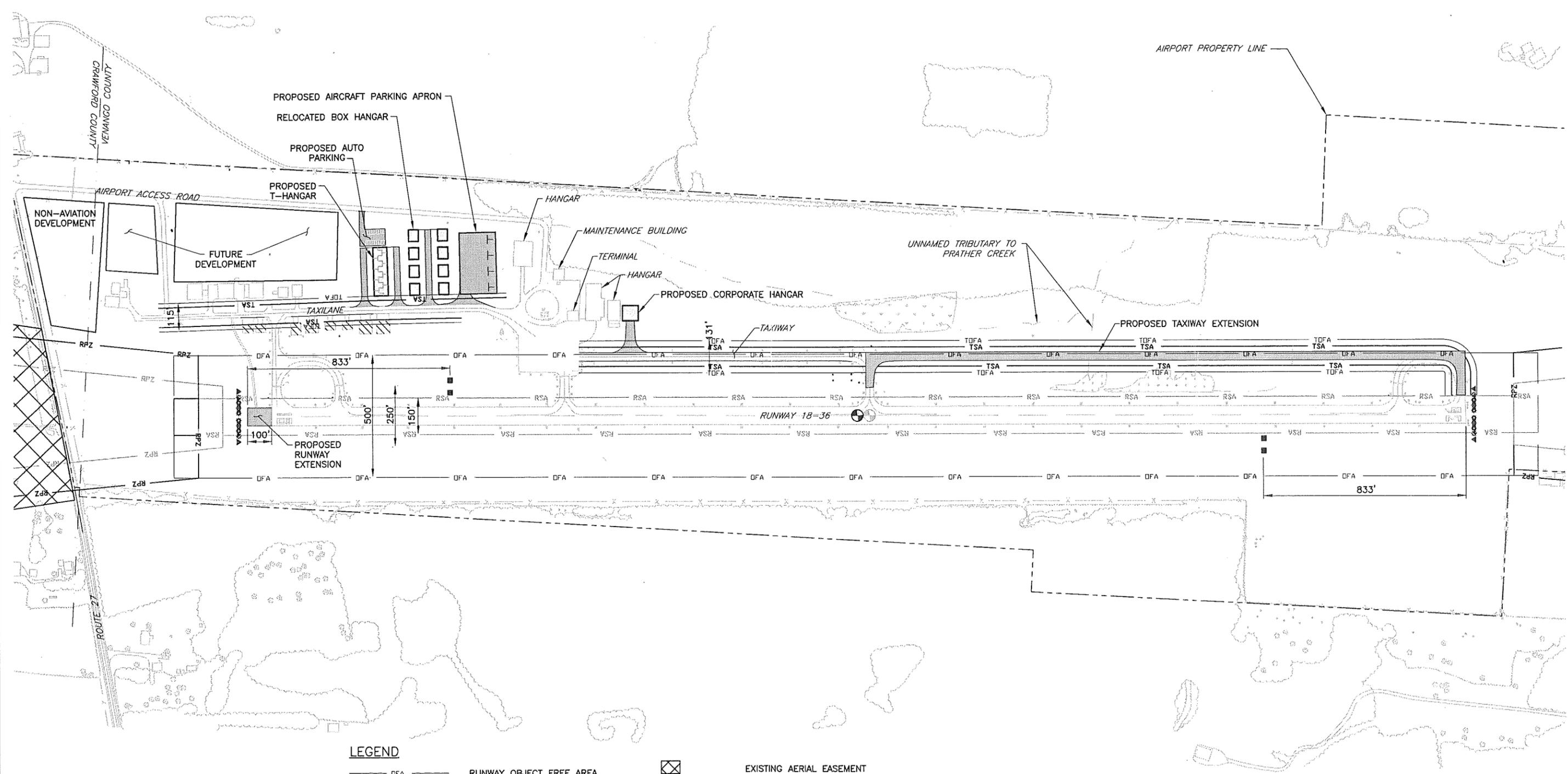
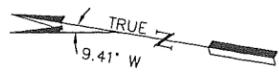
6.2.1. Alternative I

Alternative I represents the no-build alternative. The No-Build alternative for the Airport does not include any new construction or development at the Airport. Minimal work can be done to improve the safety issues at the Airport. This work includes installing new tie-downs at the proper separation for aircraft parking, which severely limits the use of the apron, and performing grading operations to correct deficiencies in object free areas and the primary surface for the runway and taxiway.

The No-Build Alternative does not provide the needed development for hangar space nor does it provide an adequate aircraft parking ramp for transient aircraft for the current fleet and future aviation demand. This alternative does not support the goal of the Airport Authority in improving facilities at the Airport.

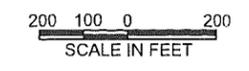
6.2.2. Alternative II

Alternative II provides a runway extension, additional hangar space and automobile parking, a corporate facility, an additional aircraft apron, visual navigational aid improvements, and a taxiway extension to Runway 36. Exhibit 6-1 illustrates the proposed development associated with Alternative II.



LEGEND

- | | | | |
|-----------|-----------------------------------|------|-----------------------------------|
| — DFA — | RUNWAY OBJECT FREE AREA | ⊗ | EXISTING AERIAL EASEMENT |
| — TDFA — | TAXIWAY/TAXILANE OBJECT FREE AREA | — | STREAM |
| — RSA — | RUNWAY SAFETY AREA | — | VEGETATION/TREE LINE |
| — RPZ — | RUNWAY PROTECTION ZONE | — | WETLAND |
| — X — X — | PERIMETER FENCE | ◀ | RUNWAY END IDENTIFIER LIGHT |
| ■ | PROPOSED PAVEMENT | ■ ■ | PRECISION APPROACH PATH INDICATOR |
| ▨ | BUILDING TO BE REMOVED | ○○○○ | THRESHOLD LIGHTS |
| □ | PROPOSED HANGAR | | |



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A runway extension of 100 feet is provided beyond Runway 18 threshold. This 100-foot extension is shown to provide the Airport with a 5,000 foot runway length. One of the Airport Authority’s goals in the development of the Airport is to attract small corporate jet traffic to the area. As it stands currently, there are minimal jet operations at the Airport as a result of the runway length being less than 5,000 feet. Industry standards for jet operations typically dictate the need for a minimum of 5,000 foot runway length. The current length at the Airport inhibits potential use of the Airport by businesses with small jet aircraft. A runway extension of 100 feet will provide the desired length for jet operations. Providing this runway length will attract new business to the Airport. However, it is noted that jet operations are not expected to dominate if 5,000 foot is provided but instead bring a new market to the area. **Table 6.1** summarizes the costs associated with providing a 100 foot runway extension.

<i>Table 6.1 Runway Extension Cost Estimate</i>				
Item Description	Quantity	Unit	Unit Cost	Total
Unclassified Excavation	1,800	CY	\$10	\$18,000
Undercut Excavation	270	CY	\$18	\$4,860
Subbase, 16-inch Depth	400	CY	\$45	\$18,000
Crushed Aggregate Base Course, 4-inch Depth	100	CY	\$55	\$5,500
Bituminous Surface Course, 4-inch Depth	200	TON	\$150	\$30,000
Pavement Marking with Glass Beads	45,600	SF	\$2	\$91,200
Pavement Marking without Glass Beads	8,000	SF	\$2	\$16,000
Underdrain Pipe	320	LF	\$20	\$6,400
Underdrain Cleanout Structure	2	EA	\$1,000	\$2,000
Topsoil	80	CY	\$10	\$6,400
Airfield Cable	320	LF	\$4	\$1,280
Counterpoise Wire in Separate Trench	320	LF	\$12	\$3,840
Conduit in Turf	320	LF	\$20	\$6,400
Elevated Threshold Lights	8	EA	\$2,500	\$20,000
Mobilization	1	LS	\$40,000	\$40,000
Maintenance and Protection of Airfield Traffic	1	LS	\$40,000	\$40,000
Seeding	15	LB	\$25	\$3,000
Mulch	230	LB	\$2,000	\$2,000
Erosion and Sediment Controls	1	LS	\$6,000	\$6,000
			<i>Subtotal</i>	<i>\$320,880</i>
			Design and CM/CI	\$250,000
			<i>Subtotal</i>	<i>\$570,880</i>
			Contingency (20%)	\$114,176
			<i>Grand Total</i>	<i>\$685,056</i>

A taxiway extension south to Runway 36 would provide direct access to the runway end. The proposed extension would add approximately two and a half acres of impervious area to the airfield. Approximately 700 linear feet of an unnamed tributary and 0.81 acres of potential wetlands would be impacted as a result of the taxiway extension. These impacts require wetland and stream mitigation. In addition to a taxiway extension, the existing partial parallel taxiway width will be widened from 30 feet to 35 feet.

As part of this alternative, PAPIs would be installed on both runway ends, to enhance visual guidance for runway approaches. In order to install PAPIs on Runway 18-36 a new circuit must be provided from the electrical vault to each unit. Conduit, duct banks, handholes and vault upgrades are necessary to provide PAPIs for both ends.

A new aircraft parking apron proposed north of the existing terminal, situated between the taxilane and Runway 18-36, would add approximately one acre of impervious area to the airfield. Minimal grading to provide the apron subgrade is necessary. Grading to reduce penetrations to the future runway object free area and the primary surface is also necessary.

A new corporate hangar is proposed south of the existing terminal building. This location provides access to the terminal building and the amenities available there. At a minimum, a conventional box hangar to house twin engine prop planes can be constructed utilizing the amenities of the terminal building and leasing office space. A more elaborate facility could be constructed with private office space and restroom facilities in the hangar itself, depending on the needs of business.

An eight unit T-hangar is proposed off of the existing taxilane. Relocated box hangars are proposed east of the existing taxilane, providing adequate object free area on both sides of the taxilane. The proposed hangar development would add approximately two acres of impervious area to the airfield. This development would require grading work to construct the hangar foundations and floors. Automobile parking with an access road off of the main entrance road would be provided adjacent to the T-hangar development to accommodate 16 parking spaces and one ADA van accessible parking space.

Stormwater management will be important for future development at the Airport. Multiple tributaries exist on and adjacent to airport property. These tributaries run to Prather Creek, which is considered a high quality trout stream. Stormwater facilities should be designed to accommodate runoff from future development depicted on Airport Layout Plan.

Table 6.2 provides a breakdown of estimated construction costs. Cost estimates for the Alternative II were developed at a conceptual level using unit costs from industry standards. The design and construction management fees are not included in the cost estimate nor is any contingency. The Facilities Implementation Plan chapter shall further evaluate costs on a conceptual project level and include estimates for those items not included below.

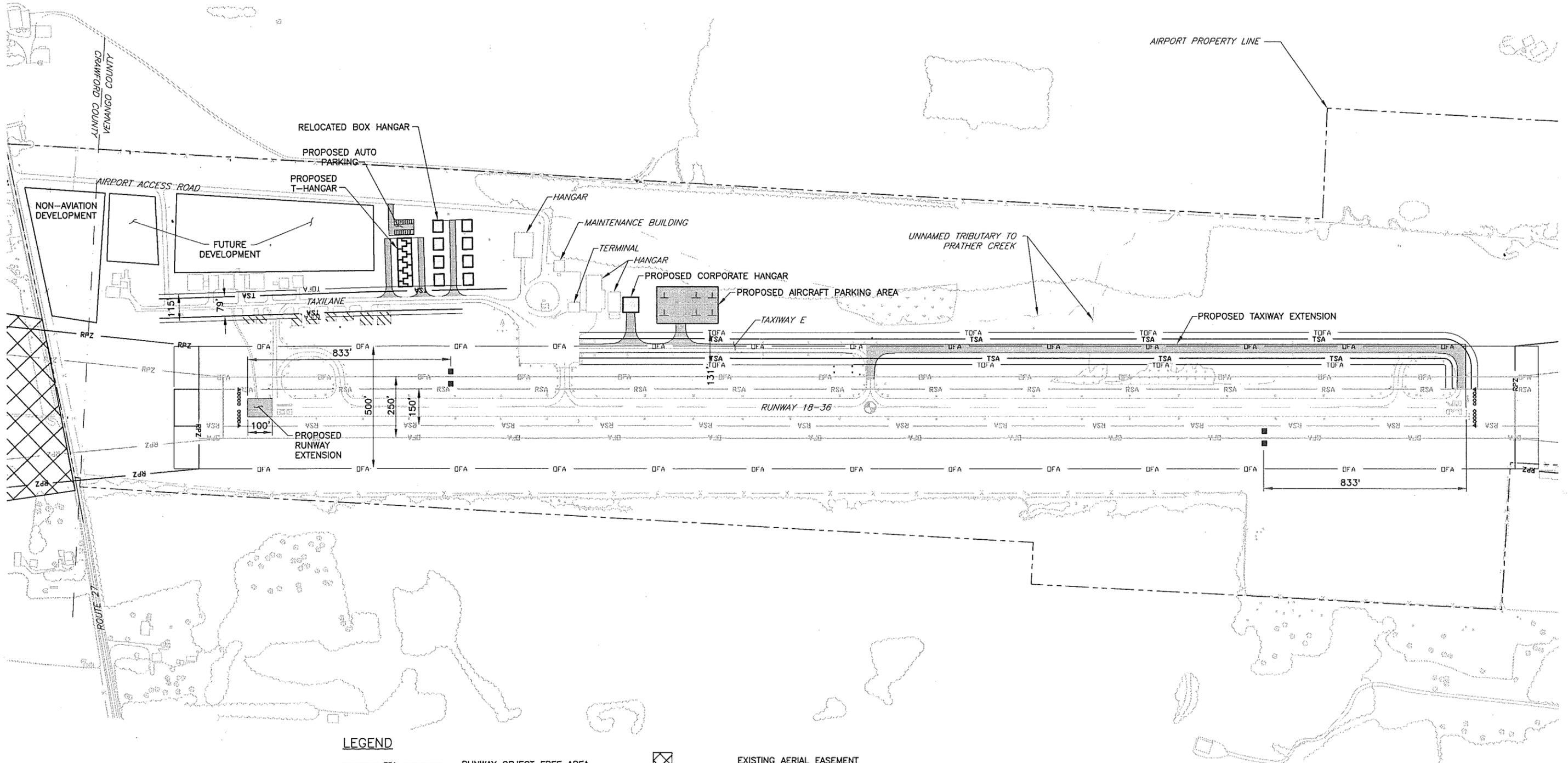
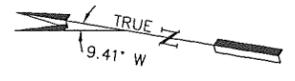
<i>Table 6.2 Alternative II Construction Cost Estimate</i>				
Item Description	Quantity	Unit	Unit Cost	Total
Runway Extension	1	LS	\$500,000	\$500,000
Aircraft Parking Apron	1	LS	\$588,684	\$588,684
Widen Existing Taxiway	1	LS	\$471,870	\$471,870
Taxiway Extension	1	LS	\$2,282,400	\$2,282,400
PAPI and REIL Installation	1	EA	\$ 481,000.00	\$481,000
Relocation Box Hangars (1,968 SF)	8	EA	\$75,000	\$600,000
8-Unit T-Hangar	1	EA	\$900,000	\$900,000
Corporate Hangar (4,030 SF)	1	EA	\$600,000	\$600,000
Automobile Parking	8,100	SF	\$35.36	\$286,400
Earthwork to Remove Penetrations	1	LS	\$292,800	\$292,800
Stormwater Management Facilities	1	LS	\$400,000	\$400,000
			Grand Total	\$7,403,154

6.2.3. Alternative III

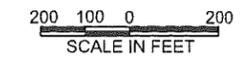
Alternative III provides all of the facilities provided in Alternative II, but the aircraft apron is located south of the existing terminal as opposed to north. **Exhibit 6-2** illustrates the proposed development associated with Alternative III. The construction of a new apron in this location would add approximately one acre of impervious area to the airfield. In order to construct the apron, clearing and grubbing a portion of the tree line would be required. A modification to design standard is not anticipated for this location because grades at two percent or less can be obtained. This apron would be connected to the taxiway by a taxiway connector. Grading between Runway 18-36 and the taxiway would be necessary to remove penetrations to the future object free area and primary surface.

Table 6.3 provides a breakdown of estimated construction costs. Cost estimates for the Alternative III were developed at a conceptual level using unit costs from industry standards. The design and construction management fees are not included in the cost estimate.

<i>Table 6.3 Alternative III Construction Cost Estimate</i>				
Item Description	Quantity	Unit	Unit Cost	Total
Runway Extension	1	LS	\$500,000	\$500,000
Aircraft Parking Apron	1	LS	\$595,926	\$595,926
Widen Existing Taxiway	1	LS	\$471,870	\$471,870
Taxiway Extension	1	LS	\$2,282,400	\$2,282,400
PAPI and REIL Installation	1	EA	\$ 481,000.00	\$481,000
Relocation Box Hangars (1,968 SF)	8	EA	\$75,000	\$600,000
8-Unit T-Hangar	1	EA	\$900,000	\$900,000
Corporate Hangar (4,030 SF)	1	EA	\$600,000	\$600,000
Automobile Parking	8,100	SF	\$35.36	\$286,416
Earthwork to Remove Penetrations	1	LS	\$292,800	\$292,800
Stormwater Management Facilities	1	LS	\$400,000	\$400,000
			Grand Total	\$7,410,412



LEGEND		
	OFA	RUNWAY OBJECT FREE AREA
	TOFA	TAXIWAY/TAXILANE OBJECT FREE AREA
	RSA	RUNWAY SAFETY AREA
	RPZ	RUNWAY PROTECTION ZONE
		PERIMETER FENCE
		PROPOSED PAVEMENT
		BUILDING TO BE REMOVED
		PROPOSED HANGAR
		EXISTING AERIAL EASEMENT
		STREAM
		VEGETATION/TREE LINE
		WETLAND
		RUNWAY END IDENTIFIER LIGHT
		PRECISION APPROACH PATH INDICATOR
		THRESHOLD LIGHTS



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6.3. Recommended Alternative

The only difference between Alternative II and III is the location of the aircraft parking apron. In considering costs, Alternative II is slightly less expensive than Alternative III. This cost savings is a result of no tree clearing required for the apron in Alternative II. Alternative II also provides additional space to the south of the terminal building that can be used for additional corporate hangar development (beyond the need identified herein) if the need arises. Given the proximity to the terminal building, Alternative II is recommended for development for the Airport Layout Plan. By locating the apron north of the terminal building, access can be provided to the terminal building without having individuals traverse the taxiway on foot or in a vehicle.

7 Environmental Overview

7.1. Introduction

Consideration for environmental factors is important in the master plan process. The Environmental Overview will identify environmental factors that will need to be addressed for future development at the Airport. Several environmental factors identified in FAA Order 5050.4B do not apply to Titusville Airport and the proposed development associated with the recommended alternative. These factors include Coastal Management and Coastal Barriers, Wild and Scenic Rivers, Energy Supply and Natural Resources, Light Emissions, and Historical, Architectural, Archeological and Cultural Resources.

This chapter also serves to provide a basic inventory of the environmental impacts for the airport development and identification, when possible, of any permits that may be required as a result of the planned development.

7.2. Noise

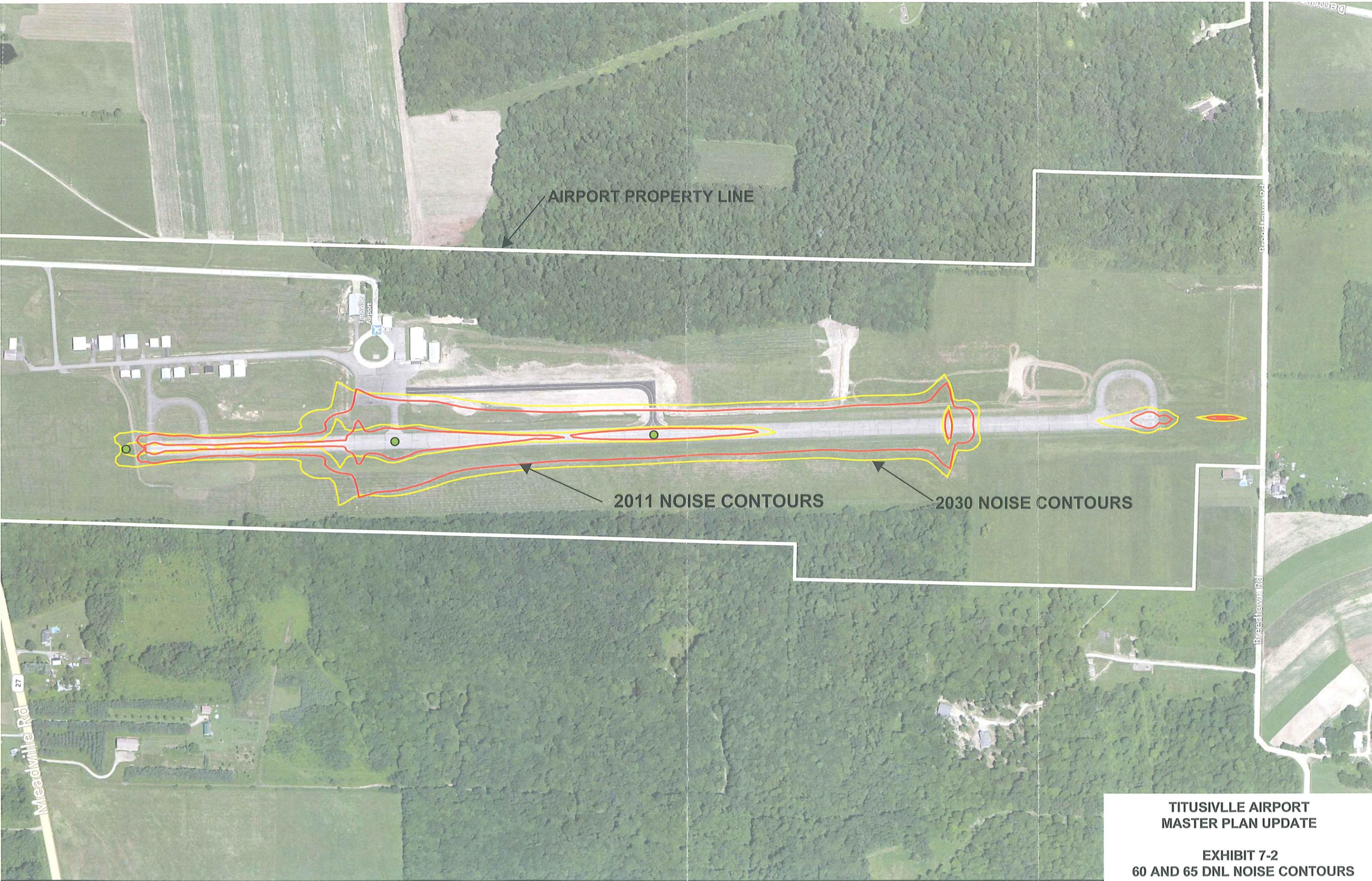
The FAA's Integrated Noise Model (INM) computer program is used to generate airport noise contours and to evaluate incompatible noise exposure to sensitive land uses such as residential properties, schools, places of worship, and hospitals. The noise contours illustrate the Day-Night Average Sound Level (DNL) that occurs during an average day and are generated by inputting various airport-specific factors into INM (aircraft activity and fleet mix, flight tracks, runway utilization, day and night activity, etc.). According to the FAA's Environmental Desk Reference for Airport Actions, "DNL is the 24-hour average sound level in decibels (dB). This average is derived from all aircraft operations during a 24-hour period that represents an airport's average annual operational day. [...] DNL adds a 10 dB noise penalty to each aircraft operation occurring during nighttime hours (10 p.m. to 7 a.m.). DNL includes that penalty to compensate for people's heightened sensitivity to noise during this period." The FAA identifies DNL levels of 65 dB and higher as incompatible with noise sensitive land uses.

Using the latest version of INM (Version 7.0c), DNL noise contours were generated for the following two scenarios at 6G1: 1) existing 2011 activity levels, fleet mix, and runway configuration (4,902 foot runway length), and 2) forecast 2030 activity levels, fleet mix, and runway configuration (5,000 foot runway length via a 98 foot extension to the north). The INM inputs in **Table 7.1** were derived from the fleet mix forecast in Table 3.4 and by reviewing the airport's flight log book to identify aircraft models that commonly operate at Titusville. As shown in **Exhibit 7-1**, due to the limited number of operations by non-piston aircraft in both 2011 and 2030, the 65 DNL contours do not extend much beyond the runway pavement. The 60 DNL contours are also shown to illustrate the minimal noise footprint associated with 6G1 activity. Because the 2030 65 DNL contour remains entirely on the airport property and does not encompass any sensitive land uses, the proposed runway extension should not result in any significant noise impacts.

Table 7.1 Integrated Noise Model Inputs

Aircraft Type	Model	INM Code	2011 Operations	2030 Operations
Touch & Go (Piston)	Cessna 172	CNA172	7,004	8,939
One Engine Piston	Piper PA-28	PA28	2,117	2,499
Two Engine Piston	Baron 58	BEC58P	49	18
One Engine Turbo	Cessna 208	CNA208	44	12
Two Engine Turbo	Beechcraft 1900D	1900D	168	612
Two Engine Jet	Citation 525C	CNA525C	8	30
Helicopter	Augusta A-109	A109	120	135
Total			9,510	12,245

Source: Baker analysis.



AIRPORT PROPERTY LINE

2011 NOISE CONTOURS

2030 NOISE CONTOURS

TITUSVILLE AIRPORT
MASTER PLAN UPDATE

EXHIBIT 7-2
60 AND 65 DNL NOISE CONTOURS

7.3. Compatible Land Use

Rural and wooded in nature, the area surrounding the Airport contains a mixture of agricultural, rural, and undeveloped lands. Development for the Airport is contained within existing airport property, and compatible with surrounding land use.

An area within a one mile radius of the airport was evaluated to determine land use compatibility based on the elements of noise, height restrictions and obstructions, and safety of persons and property on the ground. The largest area of concern is the runway protection zones shown on the ALP. The proposed runway protection zones are not currently owned in their entirety by the Airport. The increase in size of the future zones introduces new incompatible land uses within the zone. The south runway protection zone will have residences located within the boundary, as well as a public road. The FAA considers these incompatible land uses within a runway protection zone. The north runway protection zone will have only vegetation and rural land. The FAA recommends airport ownership of the runway protection zones to ensure the safety of the public on the ground. It is recommended that the airport acquire property within the footprint of the runway protection zones to remove incompatible land uses and ensure the safety of the public.

7.4. Social and Induced Socioeconomic Impacts

There is potential for disturbance to established communities as a result of land acquisition. Proposed property acquisition and aerial easements to protect the runway approaches could cause an impact. Land acquisition will occur within rural and rural/residential areas. It is anticipated that residences will be displaced, but relocation will be possible. This action may cause an economic impact to the area.

7.5. Air Quality

The Airport is located in Venango County, Pennsylvania and is within EPA Region 3 jurisdiction. The agencies typically involved with air quality in this region are the Federal EPA and the Pennsylvania Department of Environmental Protection. Venango County, as of October 2012, is designated as an attainment area for all National Ambient Air Quality Standard (NAAQS) pollutants. Therefore, the assessment of the development shown on the ALP for air quality based on current regulatory requirements does not require an air quality analysis as it is unlikely that the development pollutant concentrations would exceed the NAAQS. Specifically, a NAAQS assessment is not required for the development because the area has been designated as an attainment area for all NAAQS pollutants and there are less than 180,000 forecasted annual general aviation operations.

7.6. Water Quality

While there are no bodies of water on Airport property, there are unnamed tributaries to Prather Creek adjacent to the property. The Airport property drains to unnamed tributaries to the east and west of the property. Prather Creek is tributary to Little Sugar Creek and French Creek, which flow into the Allegheny River. Impacts to unnamed tributaries and possibly water quality as a result of the taxiway extension will be further developed and mitigation measures reviewed and developed through a separate permitting effort specific to that development project.

The Prather Creek / Sugar Creek Watershed is considered a tier 2 enhancement area. According to the PA Department of Natural Resources "enhancement areas are watersheds that do not qualify as 'Conservation' or 'Restoration' priorities. These enhancement watersheds reflect conditions that are likely not in pristine condition, but are prime candidates for light restoration action because they are not as severely degraded as the restoration watersheds. Tier 2 enhancement watersheds are in the bottom half of this category, and represent watersheds that have significant water quality issues and could benefit greatly from restoration action."

7.7. DOT Act Section 4(f)

There are no known Section 4(f) properties, such as park lands or historic/cultural resources impacted by the development depicted on the ALP.

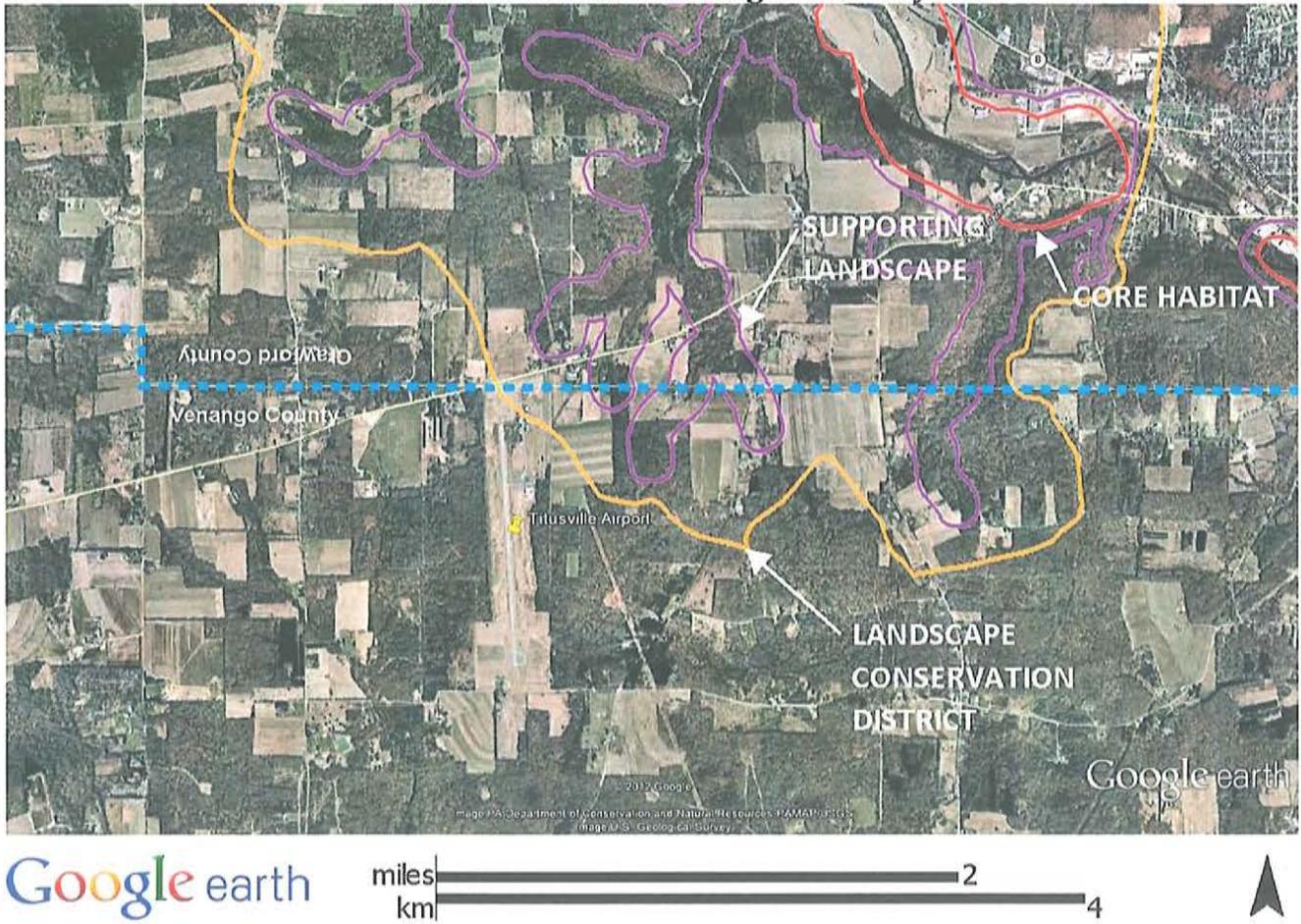
7.8. Farmlands

Proposed development shown on the ALP is contained within existing airport property and therefore no farmland soils are impacted. The property acquisition to protect runway approaches will not be developed and therefore no farmland soil impacts are anticipated.

7.9. Fish, Wildlife, and Plants

The northern portion of Airport property is located within a landscape conservation area, as shown in **Exhibit 7-2**. According to the PA Natural Heritage Program, landscape conservation areas are “large contiguous areas that are important because of their size, open space, habitats and/or inclusion of one or more core habitats for species of concern.” Species of concern include plants, animals, natural communities and habitats most at risk of extinction at the global or local level. The ALP shows future development of the northern property. Additional environmental evaluation may be required to determine what, if any, impacts could occur as a result of the proposed development. This evaluation would occur during design of the future development.

Exhibit 7-2 Natural Heritage Inventory



Source: Pennsylvania Natural Heritage Program, Statewide County Natural Heritage Inventory Map

7.10. Endangered and Threatened Species

The following federally listed endangered species are known or believed to be in Pennsylvania, in both Venango and Crawford Counties:

- Indiana Bat
- Rayed Bean Mussel
- Clubshell Mussel
- Snuffbox Mussel
- Northern Riffleshell Mussel

The development shown on the ALP does not involve any habitat destruction for the Indiana Bat. However, obstruction removal will be necessary to clear obstructions for air navigation, as shown on the Airspace and Inner Approach plans. Obstruction removal could potentially impact habitats that have been used by the Indiana Bat. Prior to obstruction removal, coordination with the PaDCNR and Fish and Game Commission will be necessary to determine what, if any, impacts to Indiana Bat habitat will occur as a result of the proposed obstruction removal.

7.11. Wetlands

There are wetlands present on Airport property and drainage ditches to unnamed tributaries to Prather Creek. The taxiway development will impact approximately 0.81 acres of wetland. A Section 401/404 permit will be necessary for construction of the taxiway extension. This permit application should be developed during design of the development project. Mitigation for these wetland impacts will be a necessary work item for the construction project.

7.12. Floodplains

Titusville Airport is not located within any designated floodplains based on the Flood Insurance Rate Map for Cherrytree Township, Venango County, dated 1987 provided by FEMA. A special flood hazard area exists south of the airport property for an unnamed tributary that runs to Prather Creek and Prather Creek itself.

7.13. Solid Waste and Hazardous Sites

Solid wastes generated during construction of the proposed development will be handled using BMPs for disposal.

7.14. Environmental Justice

There are no environmental justice populations or locations that would present children's health and safety risks located within or nearby the planned development shown on the ALP.

7.15. Construction Impacts

Any impacts during the construction period associated with development projects of the ALP will be temporary in nature. Regarding air quality during construction, it is unlikely that the ALP development construction would exceed the NAAQS or require dispersion analysis modeling. Additionally, Best Management Practices (BMPs) will be implemented for dust control, equipment operations, and erosion and sediment control during construction of the proposed development.

The increase in impervious surface area for the development will require storm water permitting for the runway and taxiway, the hangar area, and the access road. Detention basins may likely be needed and should be designed and constructed to mitigate any storm water impact from the construction areas.

A National Pollution Discharge Elimination System (NPDES) permit must be obtained for construction activities. Any required detention basins required under the permit would be designed as a dry pond to ensure no wildlife hazards are created for the Airport.

8 Airport Layout Plan

The Airport Layout Plan is included as Appendix F.

9 Facilities Implementation Plan

9.1. Introduction

This section presents the Airport Authority's implementation plan to carry out the proposed development shown on the ALP. The purpose of the Facilities Implementation Plan is to address the planned capital projects in order to provide adequate planning for future fiscal needs. Therefore, the current Airport Capital Improvement Program (CIP) is also incorporated into the development associated with the ALP. Upon approval of the ALP by the FAA, this plan will serve as a guide for future development.

9.2. ALP Improvement Projects

Several projects have been identified as a result of the proposed development shown on the ALP. These projects are presented in **Table 9.1**, Proposed Improvement Projects. Construction and design costs are included in the estimated cost values which are presented in 2012 dollars, for planning purposes only. These costs differ from those presented in Chapter 6. Chapter 6 cost estimates provided only construction cost estimates and did not consider things such as environmental permitting needed prior to development design, nor did they include design and construction management fees. In addition to the projects and costs identified in Table 9.1, a runway feasibility study / aeronautical survey will be necessary prior to design of the runway extension, and property acquisition is also identified on the ALP. The Airport Authority should acquire approximately 21 acres of adjacent property to protect the ultimate runway protection zones. This property is primarily agricultural / residential. A value cannot be assigned to the cost of property acquisition as appraisals are necessary to determine the fair market value of the properties. A line item will be included in the final implementation plan presented in Table 9.3 to account for the acquisition in the plan, however a value will not be included.

<i>Table 9.1 ALP Development Projects</i>	
Development Project	Estimated Costs
Runway Extension	\$700,000
• Construction	\$500,000
• Design	\$150,000
• Construction Management	\$50,000
Aircraft Parking Apron	\$735,000
• Construction	\$600,000
• Design	\$88,000
• Construction Management	\$47,000
Widen Existing Taxiway	\$586,870
• Construction	\$471,870
• Design	\$75,000
• Construction Management	\$40,000
Taxiway Extension	\$2,716,300
• Construction	\$2,282,400
• Design	\$273,900
• Construction Management	\$160,000
PAPI Installation	\$731,000
• Construction	\$589,500
• Design	\$88,500
• Construction Management	\$53,000
Relocation of Box Hangars (1,968 sf)	\$732,000
• Construction (\$304.87 per sf)	\$600,000
• Design	\$90,000
• Construction Management	\$42,000
8-Unit T-Hangar (10,206 sf)	\$1,098,000
• Construction (\$88.18 per sf)	\$900,000
• Design	\$135,000
• Construction Management	\$63,000
Corporate Hangar (4,030 sf)	\$732,000
• Construction (\$148.88 per sf)	\$600,000
• Design	\$90,000
• Construction Management	\$42,000
Automobile Parking	\$372,350
• Construction	\$286,400
• Design	\$57,300
• Construction Management	\$28,650
Earthwork to Remove Penetrations	\$397,100
• Construction	\$292,800
• Design	\$75,000
• Construction Management	\$29,300
Stormwater Management Facilities	\$540,000
• Construction	\$400,000
• Design	\$100,000
• Construction Management	\$40,000

Source: Baker

9.3. Current Airport Improvement Program

Airport management currently has one project planned and approved for next year (2013), rehabilitation of the entrance road. This project is programmed for \$263,888 which includes 90% federal funds, 5% state funds, and 5% local share. The remainder of the existing CIP is presented in Table 9.2 below.

Table 9.2 Current Titusville Airport Capital Improvement Program

Federal Fiscal Year	Project	Total Budget	Federal Share	State Share	Local Share
2013	Rehabilitate Entrance Road	\$263,888	\$237,500	\$13,194	\$13,194
2014	Expand Snow Removal Equipment Storage Building	\$184,722	\$166,250	\$9,236	\$9,236
2015	Install Runway End Identified Lights	\$316,666	\$285,000	\$15,833	\$15,833
2016	Crack Seal and Remark Runway	\$166,666	\$150,000	\$8,333	\$8,333
2017	Rehabilitate Runway 18-36 and Connector Taxiways, Phase I Design	\$422,222	\$380,000	\$21,111	\$21,111
	Rehabilitate Taxiway and Apron	\$527,778	\$475,000	\$26,389	\$26,389
	Runway Extension, Phase I (Design and Environmental)	\$422,222	\$380,000	\$21,111	\$21,111
2018	Rehabilitate Runway 18-36 and Connector Taxiway, Phase II (Construction)	\$1,583,334	\$1,425,000	\$79,167	\$79,167
	Runway Extension, Phase II (Construction)	\$2,111,112	\$1,900,000	\$105,556	\$105,556
2019	Rehabilitation (Crack Seal) Taxiway	\$166,666	\$150,000	\$8,333	\$8,333
2020	Construct Parallel Taxiway Phase I	\$791,666	\$712,500	\$39,583	\$39,583
	Expand Terminal Apron, Phase I	\$316,666	\$285,000	\$15,833	\$15,833
2021	Construct Parallel Taxiway Phase II	\$897,222	\$807,500	\$44,861	\$44,861

Source: PennDOT BOA JACIP

9.4. Recommended Implementation Plan

The current airport improvement program and the proposed improvement projects must be combined and prioritized as part of this Implementation Plan. **Table 9.3** lists the proposed project priority for the Airport.

TITUSVILLE AIRPORT
Master Plan Update

Table 9.3 Facilities Implementation Plan

Development Year	Improvement Project	Budget	Funding Source
Year 1	Rehabilitate Entrance Road	\$263,888	AIP
Year 2	Expand Snow Removal Equipment Storage Building	\$184,772	AIP
Year 3	Install Runway End Identifier Lights	\$316,666	AIP
Year 4	Crack Seal and Remark Runway	\$166,666	AIP
Year 5	Rehabilitate Runway 18-36 and Connector Taxiway, Phase I Design	\$422,222	AIP
Year 6	Rehabilitate Runway 18-36 and Connector Taxiway, Phase II Construction	\$1,583,334	AIP
Year 7	PAPI Installation	\$731,000	AIP
Year 8	Runway Extension Feasibility Study and Aeronautical Survey	\$432,000	State / Local *
Year 9	Runway Extension	\$645,000	State / Local *
Year 10	Earthwork to Remove Obstructions	\$397,000	AIP
Year 11	Corporate Hangar	\$732,000	State / Local
Year 12	Aircraft Parking Apron	\$723,500	AIP
Year 13	Stormwater Management Facilities	\$540,000	State / Local
Year 14	8-Unit T-Hangar	\$1,098,000	State / Local
Year 15	Automobile Parking	\$372,500	State / Local
Year 16	Property Acquisition	TBD	AIP
Year 17	Relocation of Box Hangars	\$732,000	State / Local
Year 18	Rehabilitate (Crack Seal) Taxiways	\$166,666	AIP
Year 19	Taxiway Extension	\$2,716,000	AIP
Year 20	Widen Existing Taxiway	\$587,000	AIP

* This master plan does not provide justification for a runway extension, therefore the project is not eligible for federal funds through AIP.

Source: Baker

Appendix A

Airport Data

Airport Photos



Airport Beacon (Terminal Building right)



Hangars (looking east from Runway 18)



Airport Wind Tee and Wind Sock



Runway 36 (looking north)



Runway 36 (looking south)



Runway 18 (looking north)



Runway 18 (looking south)



Electrical Vault



Hangar



Hangar



Fuel Pumps



Maintenance Building



Hangar



Hangar



Hangar



Hangar



Hangar



Hangar



Hangar



Hangar



Hangar



Hangar



Hangar



Hangar



Hangar



Hangars

Obstacle Departure Procedures

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TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES



11237

SUTTON, WV

BRAXTON COUNTY

TAKE-OFF MINIMUMS: **Rwy 1**, 300-1 with a min. climb of 245' per NM to 2100 or 1100-2½ for climb in visual conditions. **Rwy 19**, NA-obstacles.

DEPARTURE PROCEDURE: **Rwy 1**, climb via heading 014° to 2100 before proceeding on course. For climb in visual conditions, cross Braxton County Airport at or above 2200.

NOTE: **Rwy 1**, Road 798' from departure end of runway, 498' right of centerline, 15' AGL/1334' MSL. Trees 1160' from departure end of runway, 533' left of centerline, up to 100' AGL/1439' MSL. Trees, 3257' from departure end of runway, 1194' left of centerline, up to 100' AGL/1479' MSL. Trees, 4449' from departure end of runway, 955' left of centerline, up to 100' AGL/1539' MSL. Powerline tower, 4549' from departure end of runway, 342' left of centerline, 70' AGL/1429' MSL.

TITUSVILLE, PA

TITUSVILLE

NOTE: **Rwy 18**, trees beginning 1865' from departure end of runway, 199' right of centerline, up to 100' AGL/1589' MSL. Trees beginning 1313' from departure end of runway, on centerline, up to 100' AGL/1609' MSL. Trees beginning 872' from departure end of runway, 194' left of centerline, up to 100' AGL/1619' MSL. **Rwy 36**, trees beginning 2798' from departure end of runway, 217' right of centerline, up to 100' AGL/1689' MSL. Trees beginning 2806' from departure end of runway, 47' left of centerline, up to 100' AGL/1736' MSL.

TOUGHKENAMON, PA

NEW GARDEN

TAKE-OFF MINIMUMS: **Rwy 6**, 300-1.

DEPARTURE PROCEDURE: **Rwys 6, 24**, climb runway heading to 900 before turning on course.

TOWANDA, PA

BRADFORD COUNTY

TAKE-OFF MINIMUMS: **Rwy 5**, 900-2 or std. with a min. climb of 380' per NM to 2000. **Rwy 23**, 1600-2 or std. with a min. climb of 580' per NM to 2800.

DEPARTURE PROCEDURE: **Rwy 5**, climb heading 047° to 3000 before proceeding on course. **Rwy 23**, climb heading 227° to 3000 before proceeding on course.

NOTE: **Rwy 5**, trees 12386' from departure end of runway, 3511' left of centerline, 100' AGL/1462' MSL. **Rwy 23**, trees 10099' from departure end of runway, 1892' left of centerline, 100' AGL/1203' MSL.

TOWER CITY, PA

BENDIGO (74N)

ORIG 09183 (FAA)

TAKE-OFF MINIMUMS: **Rwy 6**, std. w/ min. climb of 518' per NM to 2200 or 1700-2 for climb in visual conditions. **Rwy 23**, NA-terrain.

DEPARTURE PROCEDURE: **Rwy 6**, departure NA at night. Climb heading 054° to 2200 before proceeding on course or for climb in visual conditions: cross Bendigo airport at or above 2300 before proceeding on course. Do not exceed 180 KIAS until crossing Bendigo airport on course.

NOTE: **Rwy 6**, multiple trees beginning 330' from DER, 45' left of centerline, up to 100' AGL/919' MSL. Multiple trees beginning 355' from DER, 81' right of centerline, up to 100' AGL/879' MSL. Multiple towers beginning 2.1 NM from DER, 2384' left of centerline, up to 200' AGL/1559' MSL.

WASHINGTON, PA

WASHINGTON COUNTY

TAKE-OFF MINIMUMS: **Rwy 9**, 700-2½ or std. with a min. climb of 475' per NM to 2100. **Rwy 27**, 300-1½ or std. with a min. climb of 490' per NM to 1500.

NOTE: **Rwy 9**, multiple trees beginning 2968' from departure end of runway, 780' right of centerline, up to 109' AGL/1308' MSL. Multiple trees beginning 5232' from departure end of runway, 459' left of centerline, up to 105' AGL/1380' MSL. Multiple trees beginning 1.2 NM from departure end of runway, 13' left of centerline, up to 117' AGL/1392' MSL. Multiple trees beginning 1.2 NM from departure end of runway, 687' right of centerline, up to 122' AGL/1461' MSL. Multiple trees and towers beginning 1.8 NM from departure end of runway, 1012' right of centerline, up to 213' AGL/1721' MSL. **Rwy 27**, multiple trees beginning 187' from departure end of runway, 132' left of centerline, up to 36' AGL/1195' MSL. Multiple trees beginning 267' from departure end of runway, 146' right of centerline, up to 55' AGL/1244' MSL. Multiple trees and poles beginning 1173' from departure end of runway, 29' left of centerline, up to 80' AGL/1414' MSL. Multiple trees and pole beginning 1362' from departure end of runway, 221' right of centerline, up to 65' AGL/1367' MSL. Multiple trees and towers beginning 1.2 NM from departure end of runway, 801' right of centerline, up to 83' AGL/1422' MSL.

WAYNESBURG, PA

GREENE COUNTY (WAY)

ORIG 08269 (FAA)

TAKE-OFF MINIMUMS: **Rwy 9**, NA-obstacle. **Rwy 27**, 300-1 or Std. w/ min. climb of 447' per NM to 1300.

DEPARTURE PROCEDURE: **Rwy 27**, climb heading 268° to 1800 before proceeding on course.

NOTE: **Rwy 27**, trees beginning 332' from departure end of runway, 315' left of centerline, up to 100' AGL/1119' MSL. Trees beginning 332' from departure end of runway, 360' right of centerline, up to 100' AGL/1239' MSL. Pole/sign 1672' from departure end of runway, 623' left of centerline, 80' AGL/1148' MSL.

25 AUG 2011 to 22 SEP 2011

25 AUG 2011 to 22 SEP 2011

11237



TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES



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Appendix B

User Surveys

Baker developed a business user survey for circulation to area businesses to solicit information and feedback regarding future development and existing conditions at the Airport. The businesses that received the survey were selected from the Titusville Chamber of Commerce business listing. Surveys were mailed out February 14, 2012 with feedback requested by February 28, 2012. Baker included a pre-addressed, stamped envelope with the survey. Out of 53 surveys sent out, Baker received 11 completed surveys at the end of the time period allotted. No surveys were returned to Baker after February 28th.

- All 11 returned surveys indicated those businesses do not use the Airport. Several comments were made in the space available on the surveys and they are detailed below.
 - Commercial is more competitive for our flying needs. However, we have used the airport on occasion and it is a tremendous asset to the community
 - I feel there is a need for an airport in Titusville. With the Marcellus Shale and Utica gas business there will be additional airplane traffic
 - If there were car rentals available in Titusville, some of our customers might use the airport
 - A better airport would be great. If the business had an aircraft we would base it at Titusville. They would do more business if the airport was utilized more with improved facilities.

An example of the business user survey sent out follows.

A Master Plan for Titusville Airport is being prepared by Michael Baker Jr., Inc. (Baker) in cooperation with the Titusville Airport Authority. Your insights are important to this process and in the development of an airport that better serves area residents and businesses. By taking a few minutes to complete the information below, you will help Baker prepare a plan that successfully addresses the needs for an enhanced Titusville Airport.

General Information

Please verify or correct your information below:

Contact Name:

Business:

Address:

Telephone Number:

Email Address:

Airport Utilization

1. Does your company currently use Titusville Airport? Yes No
If Yes: What are your annual operations? (Number): _____
If No: What airport does your company use? _____

2. Does your company have its own aircraft? Yes No
If Yes: Aircraft Type N-Number(s)? _____

3. Does your company currently use a charter service for business flights? Yes No
If Yes: What airport(s) do you use? _____
If No: Why are you currently not using charter services?
 a. We have no need for charter services
 b. Too expensive
 c. Too far away to be convenient
 d. Other (Please specify) _____

4. Have you ever considered using Titusville Airport for charter service? Yes No

5. Are you making use of Titusville Airport for charter services? Yes No
If Yes: What are your current annual operations for charter services?
If No: Why are you not utilizing the airport? (Please check all that apply)
 a. The facilities are not suitable for our uses (Please explain below)

 b. The cost is too high
 c. The Titusville Airport is too far away / closer to another airport
 d. Other (Please specify) _____

6. Which of the following facility upgrades would influence your use of the Airport?
- a. Primary runway and taxiway (Please describe) _____
 - b. Terminal area, aprons
 - c. Joint use aviation areas
 - d. General aviation areas
 - e. Access and parking
 - f. Airport support facilities
 - g. Instrument approach procedures
 - h. Restaurant
 - i. Fuel service
7. If the upgrades described in Question 10. above were made,
- a. How many annual operations would you make at Titusville Airport (Number): _____
Would you base your aircraft at Titusville Airport? _____
8. Which of the following describes a benefit to your business if you used the Titusville Airport under the enhanced conditions described above?
- a. Would save time
 - b. Would save money
 - c. Would be able to do more business
 - d. Would be able to move to a more suitable location
 - e. Would be better able to attract or retain employees
 - f. Other (Please describe) _____
9. Please feel free to provide any additional comments about the Titusville Airport.
- _____
- _____
- _____
- _____
- _____
- _____
- _____

**Thank you for your time spent completing the survey and the valuable insights provided.
They are greatly appreciated.**

Please return your completed survey in the envelope provided **by February 28th, 2012.**

If provided envelope is misplaced, please send your completed survey to:
Michael Baker Jr., Inc.
c/o Jennifer Andy
100 Airside Drive
Moon Township, PA 15108

Appendix C

Aviation Forecast Backup

Airport Contacts

- Airport Authority Members
 - Titusville has space for additional hangars for corporate aircraft
 - Airport is rarely closed due to weather conditions; there is new snow removal equipment. This is attractive to potential corporate users
 - Airport has a significant amount of ultra-light and gyro activity, and training activity from Kent State, Correy-Lawrence and Venango Regional Airport
- Flight Instructors
 - Airport flying club previously had 2 instructors, now have only 1
 - There are 5 student pilots “backed up” because of lack of instructor time; in the near term additional instructor time will be available and there will be more training operations
 - Additional instrumentation would make Titusville more attractive for corporate users and training activity

SHALE INDUSTRY INFLUENCE AT NEARBY AIRPORTS

Two airports were contacted to discuss what, if any, influence the development of the shale industry has had on their airports.

Washington County Airport (AFJ)

- ➔ Businesses related to shale exploration and drilling have brought an estimated 30 operations per week in large turbo and small corporate jet aircraft to AFJ, as described by the Airport Director Scott Gray
- ➔ Operations reported in 2011 via AirportIQ5010 - AFJ
 - Air Taxi 7,268
 - GA Itinerant 9,631
- ➔ Previous Operations as reported by the FAA TAF 2007- 2010

Year	Itinerant Operations	
	Air Taxi and Commuter	GA
2007	6,607	8,500
2008	6,607	8,755
2009	6,607	8,755
2010	6,607	8,755

Wheeling Ohio County Airport (HGL)

- ➔ Based on conversations with Airport Manager Tom Tominack, operations at HGL have begun to increase, possibly as a result of the shale industry and the reopening of a local coal mine. A 50/50 split in the increase of operations was estimated. The airport began to see an increase in late 2010 which continued through 2011.
- ➔ Operations reported through the FAA ATADS report

Year	Itinerant Operations	
	Air Taxi	GA
2008	1,317	14,017
2009	1,580	15,861
2010	1,488	12,820
2011	1,875	13,238

NEAR-BY AIRPORTS CONTACTED

	Airport	Code	Miles from Titusville
1.	Venango Regional Airport 1560 Airport Road Franklin, PA 16323	FKL	17
2.	Erie International Airport 4411 West 12th Street Erie, PA 16505	ERI	40
3.	Erie County Airport Road 1 Erie, PA 16442	3G1	31
4.	Corry-Lawrence Airport 800 Spring Street Corry, PA 16047	8G2	21
5.	Port Meadville Airport 16306 Corporate Drive Meadville, PA 16335	GKJ	25
6.	Brokenstraw Airport 700 Airport Lane P.O. Box 134 Pittsfield, PA 16340	P15	25
7.	Greenville Municipal Airport 511 E. Jamestown Road Greenville, PA 16125	4G1	36
8.	Grove City Airport 40 Oakley Kelly Drive Mercer, PA 16137-8411	8N1	33
9.	Clarion County Airport 395 Airport Road Shippensburg, PA 16254	AXQ	31
10.	New Castle Municipal Airport 406 Frank Farone Drive New Castle, PA 16101	UCP	53
11.	Butler County Airport (BTP) 475 Airport Road Butler, PA 16002	BTP	58
12.	Beaver County Airport (BVI) 15 Piper Street Main Terminal Building Beaver Falls, PA 15010	BVI	67
13.	Zelienople Municipal Airport 1857 Route 588 Zelienople, PA 16063	PJC	55
14.	Indiana Co./Jimmy Stewart Field 398 Airport Road Indiana, PA 15701	IDI	75
15.	DuBois Regional Airport 377 Aviation Way Reynoldsville, PA 15861	DUJ	53

LOCAL STAKEHOLDERS CONTACTED

Local stakeholders were contacted to discuss the Titusville Airport and its current and future role in the community.

Service Area Planners

- Venango County Regional Planning Commission
 - Minimal involvement with the planning around Titusville. Just recently began receiving information pertaining to the airport
 - Main focus for VCRPC is the Franklin Regional Airport
- Crawford County Regional Planning Commission
 - The Crawford County Comprehensive Plan has among its objectives “To preserve and improve air services of the Meadville and Titusville airports”
 - As part of its public outreach to garner community support for the airport, the “Titusville Days” event was held at the airport
- North West Planning Commission - Susan Smith
 - NWPC is responsible for an eight county area
 - NWPC doesn't provide duplicate planning services, considered one step above the county level organization
 - Larger focus on transportation as it relates to eight county area access
- Titusville Chamber of Commerce
 - Local events such as the marathon, Oil Festival, Applefest and the Clarion Festival attract many visitors, some using the Airport
 - Chamber would like to sponsor an annual Titusville Airport Fly-In to promote the airport
- Titusville Community Development Agency
 - Indicated the possibility of manufacturing development around the airport as a result of the future plans for on-site wastewater treatment plant and water tower
 - Indicated that the TCDA has been in contact with over 1,000 shale exploration companies nation-wide to discuss expansion around the City of Titusville for the Utica Shale exploration
 - Toured Wellsboro and Williamsport which have seen an influx of people, corporations as a result of the shale industry
 - \$1 million renovation project downtown, and for the Titusville Opportunity Park, an industrial park 6 miles from the airport
 - Within the past 18 months, private commercial businesses have come to Titusville, such as Giant Eagle, Sheetz, Advanced Auto, Family Video and Tru Value.

Local Companies - Airport Users

- Oil Creek Plastics
- Salvage Direct
- Titusville Hospital
 - Patients requiring treatment beyond the capabilities of the Titusville hospital are flown by helicopter to larger medical facilities
- Stat MedEvac
 - Operate 2-3 flights per month at Titusville transporting patients
 - Sometimes stop at Titusville for fuel

Appendix D

Public Involvement

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

Venango Co. Regional Planning Comm.
Alex Smith
1168 Liberty Street
PO Box 831
Franklin, PA 16323

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Smith:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

You are cordially invited to attend an interim review meeting June 15, 2012 at 10:00 a.m. at the Titusville Airport. At this meeting we will provide a recap of the master plan process and review the aviation forecast and facility requirements for the Airport for the forecast period (20 years). The next steps in the planning process will also be presented. Your input on the development of the Titusville Airport is important to the planning process.

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

Titusville Redevelopment Authority
Jim Becker
110 West Spring Street
P.O. Box 425
Titusville, PA 16354

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Becker:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

You are cordially invited to attend an interim review meeting June 15, 2012 at 10:00 a.m. at the Titusville Airport. At this meeting we will provide a recap of the master plan process and review the aviation forecast and facility requirements for the Airport for the forecast period (20 years). The next steps in the planning process will also be presented. Your input on the development of the Titusville Airport is important to the planning process.

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airsides Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

Venango Co. Regional Planning Comm.
Christopher Berkey
1168 Liberty Street
PO Box 831
Franklin, PA 16323

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Berkey:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

You are cordially invited to attend an interim review meeting June 15, 2012 at 10:00 a.m. at the Titusville Airport. At this meeting we will provide a recap of the master plan process and review the aviation forecast and facility requirements for the Airport for the forecast period (20 years). The next steps in the planning process will also be presented. Your input on the development of the Titusville Airport is important to the planning process.

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

Cherrytree Township
1311 Cherrytree Road
Titusville, PA 16354-1311

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

To Whom It May Concern:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

You are cordially invited to attend an interim review meeting June 15, 2012 at 10:00 a.m. at the Titusville Airport. At this meeting we will provide a recap of the master plan process and review the aviation forecast and facility requirements for the Airport for the forecast period (20 years). The next steps in the planning process will also be presented. Your input on the development of the Titusville Airport is important to the planning process.

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

Venango Co. Regional Planning Comm.
Judy Downs
1168 Liberty Street
PO Box 831
Franklin, PA 16323

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Ms. Downs:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

You are cordially invited to attend an interim review meeting June 15, 2012 at 10:00 a.m. at the Titusville Airport. At this meeting we will provide a recap of the master plan process and review the aviation forecast and facility requirements for the Airport for the forecast period (20 years). The next steps in the planning process will also be presented. Your input on the development of the Titusville Airport is important to the planning process.

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

PennDOT District 1
E. Mariah Hanson
255 Elm Street
PO Box 398
Oil City, PA 16301

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Ms. Hanson:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

You are cordially invited to attend an interim review meeting June 15, 2012 at 10:00 a.m. at the Titusville Airport. At this meeting we will provide a recap of the master plan process and review the aviation forecast and facility requirements for the Airport for the forecast period (20 years). The next steps in the planning process will also be presented. Your input on the development of the Titusville Airport is important to the planning process.

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma



Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

Titusville Airport Authority
James Kuhn
Titusville Airport Complex
2572 Suite 1 Meadville Road
Titusville, PA 16354

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Kuhn:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

You are cordially invited to attend an interim review meeting June 15, 2012 at 10:00 a.m. at the Titusville Airport. At this meeting we will provide a recap of the master plan process and review the aviation forecast and facility requirements for the Airport for the forecast period (20 years). The next steps in the planning process will also be presented. Your input on the development of the Titusville Airport is important to the planning process.

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.

J. Bradley Homan, P.E.
Project Manager

JBH/jma



Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

Crawford Co. Regional Planning Comm.
Jack Lynch
903 Diamond Park
Meadville, PA 16335

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Lynch:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

You are cordially invited to attend an interim review meeting June 15, 2012 at 10:00 a.m. at the Titusville Airport. At this meeting we will provide a recap of the master plan process and review the aviation forecast and facility requirements for the Airport for the forecast period (20 years). The next steps in the planning process will also be presented. Your input on the development of the Titusville Airport is important to the planning process.

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.

J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

Titusville Airport Authority
Mark Nickerson
24609 State Street
Meadville, PA 16335

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Nickerson:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

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*Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108*

May 22, 2012

Oilcreek Township
4 McKinney Road
Titusville, PA 16354-1311

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

To Whom It May Concern:

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J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
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(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

PA Department of Transportation BOA
David Parker
P.O. Box 229
1800 Wilmington Road
New Castle, PA 16103

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Parker:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

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Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

*Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108*

May 22, 2012

City of Titusville
Jay Reese
P.O. Box #1
Spartansburg, PA 16434

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Reese:

The Titusville Airport Authority has completed the aviation forecast and facility requirements of the Master Plan Update for the Titusville Airport. Next steps include airport development alternatives, preparation of a new airport layout plan set, and development of an airport capital improvement program.

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Sincerely,

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J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

North West Planning Commission
Susan Smith
395 Seneca Street
Oil City, PA 16301

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Ms. Smith:

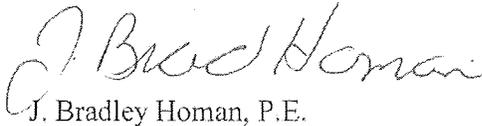
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J. Bradley Homan, P.E.
Project Manager

JBH/jma



Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

May 22, 2012

PA Department of Transportation BOA
Russell L. Jones
District 10 Office
2550 Oakland Avenue, Indiana PA 15701

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Jones:

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Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

PROJECT: Titusville Airport
Master Plan Update

DATE: Friday, June 15th, at 10:00a.m. (EST)

PLACE: Titusville Airport, Terminal Building

INTRODUCTION:

Titusville Airport Authority - Jim Kuhn
Project Manager – Baker – Brad Homan, P.E. (412-269-2744), bhoman@mbakercorp.com
Project Engineer – Baker - Jennifer Andy (412-269-2737), jmandy@mbakercorp.com
PennDOT BOA Project Manager - Russ Jones
PennDOT District 1 – Mariah Hanson
City of Titusville – not present
Venango County - Alex Smith, Regional Planning Commission
Crawford County - not present
Cherrytree Township – Ben Breniman, Zoning
Oilcreek Township - not present
NW Planning Commission - not present
Titusville Redevelopment Authority - not present

- I. The Airport Master Plan Process
 - a. Purpose and Need
 - i. Master Plan is a comprehensive study of an airport and its needs for development in the short-, medium- and long-term in order to meet future aviation demand.
 - ii. The Master Plan supports modernization or expansion of existing airports and provides a strategy for development at an airport.
 - iii. Goal is to provide a framework to guide airport development that is cost effective and satisfies aviation demand while considering any potential environmental and socioeconomic impacts.
 - iv. This update looks at the following: existing conditions, aviation forecast, demand and capacity analysis, facility requirements, alternatives development, environmental overview, airport layout plan, and facilities implementation program
 - b. Your Role in the Planning Process
 - i. Ultimate goal is to gain public consensus on the preferred alternative
 - ii. Provide feedback throughout the process
 - iii. Comment forms may be filled out and submitted today, or you can mail them to Baker
 - c. Schedule
 - i. Next Meeting – during the meeting it was stated that it is anticipated for the week of July 23 and submission of the alternatives to the BOA would be around the week of August 6, but this will likely be adjusted. Submission of alternatives to the BOA must happen before the next meeting. We anticipate the next meeting to be generally the week of September 3.
 - ii. Public Workshop - during the meeting it was stated that it is anticipated for the week of September 10 but this will likely be adjusted to the week of September 17.
 - iii. Anticipated Completion Date - anticipated delivery to BOA/FAA by December 21, 2012 for approval

II. Airport Background

a. History of the Airport

- i. The airport dates back to the late 1940's as a private grass strip
- ii. Given to the City of Titusville in 1964
- iii. Service area = Crawford and Venango Counties
- iv. Economic Impact of Airport = estimated \$689,500 annually and an estimated 1,086 visitors to the area annually (Wilbur Smith Associates for Pennsylvania Department of Transportation, Bureau of Aviation in 2011)
- v. Total and per capita income in service area forecast to increase
- vi. Economic base within the area is expanding as a result of development downtown

b. Airport Facilities

- i. 204 acres
- ii. Runway 18-36 is 4,902' long by 75' wide; Bituminous pavement with medium intensity runway edge lights
- iii. Partial parallel Taxiway and Taxiway turnarounds at the runway ends
- iv. One aircraft parking apron
- v. Fueling facilities (JetA - 10,000 gallons, AvGas - 10,000 gallons)
- vi. 17 conventional box hangars (one owned by the Authority)
- vii. Wind Tee, Lighted Wind Sock, Rotating Beacon
- viii. Terminal Building

c. Airspace

- i. Peak demand levels during Visual Flight Rule (VFR) conditions – which is basically good weather, nothing where visibility is low or storm conditions
- ii. No tower
- iii. Class E airspace (floor at 700', no defined vertical limit, 2-way radio communication with ATC not required)
- iv. VOR Approach which allows a pilot to fly on instruments to the location of the VOR equipment then proceed on a visual approach to the airport

d. Air Traffic Activity

- i. Based aircraft reached peak of 32 in 2006; decreased to 18; predominantly single engine, includes 4 ultra lights.
- ii. Local Operations dominate (74%)
- iii. Helicopter operations from MedEvac and similar

e. Land Use

- i. Residential to agricultural
- ii. Zoning - Cherrytree Township zones the airport property as "AP"; surrounding area is zoned residential / agricultural
- iii. Hazard Zoning effort - 3 out of 4 municipalities are participating but 2 of the 3 do not currently have zoning ordinances in place.
- iv. Draft zoning ordinance sent to the municipalities 5/16/12.

f. Management of the Airport

- i. Owned by the City of Titusville, operated by the Titusville Airport Authority.
- ii. 50% of revenues from natural gas royalties and office space lease. Other revenue from fuel sales, hangar leases and rentals.
- iii. Main expenditures include utilities (telephone, electric, septic cleaning) and maintenance (grass cutting, on vehicles, fuel for tractor, etc)
- iv. 2011 budget: Total Revenue \$12,380; Total Expenditures: \$12,380
- v.

III. Aviation Forecast

- a. Historical data utilized: FAA Terminal Area Forecasts, Airport Information
- b. Development in and around Titusville pertaining to light manufacturing and private commercial business

- c. Based aircraft increase to 29 by 2030
- d. Annual Operations
 - i. 9,510 in 2011; 12,246 by 2030
- e. Itinerant versus local operations
 - i. Local 73% and Itinerant 27% throughout forecast period
- f. Peaking characteristics
 - i. June determined to be the peak month; 12.8% of operations
 - ii. Forecast shows this persistent throughout the forecast period
 - iii. Peak hour of the average day in the peak month experiences 8.9% of the day's total
 - iv. Average Day 2011 - 41 operations; 2030 52 operations
 - v. Peak Hour 2011 - 4 operations; 2030 5 operations
- g. Forecast shows Twin Engine Turbo to be the critical aircraft for the planning period
 - i. B-II ARC for planning purposes
- h. Forecast has been approved by PennDOT BOA
 - i.

IV. Facility Requirements for Planned B-II AR C

- a. Developed based on a demand and capacity analysis
- b. Runway has adequate length and width at the current time, but the Authority desires to extend the runway by 100 feet to 5,000 feet.
- c. Runway orientation provides mostly adequate wind coverage. Just under the required coverage for small aircraft, at 93% (95% required)
 - i. No crosswind runway is needed based on forecast
- d. Deficient areas relating to the runway:
 - i. Separation from runway to aircraft parking and future primary surface for GPS approach
 - ii. Object free area width
- e. Deficient areas relating to the taxiways:
 - i. Taxiway width
 - ii. Safety area and object free area width
 - iii. Taxilane OFA width
- f. Recommend extension of partial parallel taxiway to Runway 36
- g. Recommend installation of REILS and PAPI
- h. Eight hangar spaces needed; possible replacement of existing hangars necessary during planning period because of taxilane OFA clearance, age and due to future airspace (transitional surface)
- i. The FAA is developing new GPS approaches for Titusville for both runway ends; they are scheduled to be published in 2014.

V. Next Steps

- a. Develop Airport Improvement Alternatives based on aviation forecast
 - i. Three alternatives will be developed; "No Build" and two alternatives that address airport deficiencies
 - ii. Alternative selection will be based on operational, environmental and economic considerations
- b. Determine Preferred Alternative for development into Airport Layout Plan (ALP)
- c. Perform environmental overview related to preferred alternative
- d. Develop Airport Capital Improvement Program for next 20 years based on ALP
 - i. Work with Jim Becker to identify funding opportunities and other grant programs that might be available
- e. Submit a draft final report and ALP to BOA for review and FAA analysis
- f. Recap of schedule from beginning of meeting

COMMENTS / ADDITIONAL DISCUSSION

Mariah Hanson asked several questions/clarifications regarding the forecast numbers and the facility requirements. She also pointed out that a business left Titusville, Salvage Direct. Additional research was done after the meeting, and it was found that Salvage Direct's operations in Titusville are being reduced but that some minimal operations such as customer service, vehicle titling and IT will remain in Titusville ([Titusville Herald 5/4/12 Article](#)). Jenn Andy noted that during the forecast development, Salvage Direct was contacted to discuss their use of the airport and it was noted that they had already reduced their operations out of the airport.

Mariah questioned the runway length and why the Authority desired to get to 5,000'. It was explained that for business jets such as a Gulfstream or Citation, there is the overall need to provide 5,000' of runway length before operators will even consider flying in an airport. Insurance companies for those type of aircraft typically also set minimum length requirements for operation. Brad Homan explained that it's part of the battle most airports face in regards to runway length, in that the airport has to show a need for the length but in many cases the operations won't be there until they have that longer length. Russ Jones clarified that based on the forecast, the additional runway length is not justified. Brad Homan also clarified that the 500+ operations of the twin engine turbo aircraft identified for the facility requirements is not the same type of aircraft as the business jets part of the runway length discussion. The current runway length is adequate for the 500+ operations of the twin engine turbo aircraft.

Mariah also questioned how the forecast of 500+ operations of the turbo prop were identified. She indicated that based on the reduction in operations by Salvage Direct and the understanding that the University of Pittsburgh at Titusville is considering closing their campus it is hard to understand the forecasted growth. It was explained that the forecast was based on the FAA's Terminal Area Forecast (TAF), which is a forecast for general aviation, because it is difficult to tie the forecast to socioeconomic factors in Titusville. The total and per capita income is increasing while the population and employment have fallen. A copy of the entire forecast chapter will be provided to the all agency representatives for review.

The information contained in these meeting minutes represents the writer's interpretation and understanding of the discussions and decisions that occurred during the meeting. Any clarifications or corrections to these minutes should be submitted in writing to Michael Baker Jr. Inc. No response implies that the information contained herein is correct. If there are any additions or corrections to these Meeting Minutes, please contact the undersigned within five (5) days of receipt.

Sincerely,

MICHAEL BAKER JR., INC.


Jennifer M. Andy
Civil Engineer

cc: Attendees

FORECAST, FLEET MIX AND CRITICAL AIRCRAFT

<i>Aviation Forecast Summary</i>				
	2011	2015	2020	2030
Based General Aviation Aircraft (including ultra-lights)	18	23	26	29
Annual Aircraft Operations				
Itinerant	2,506	2,622	2,964	3,306
Local	7,004	7,090	8,015	8,939
Total	9,510	9,712	10,979	12,246
General Aviation Peaking Characteristics				
Peak Month	1,221	1,247	1,410	1,573
Average Day	41	42	47	52
Peak Hour	4	4	4	5

Source: Mary A. Lynch analysis

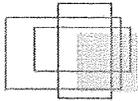
<i>Annual Operations by Fleet Mix</i>				
Aircraft Type	2011	2015	2020	2030
One Engine Piston	8,740	8,866	9,793	10,918
Two Engine Piston	49	29	22	18
One Engine Turbo	44	19	16	12
Two Engine Turbo	168	243	538	612
Two Engine Jet	8	14	22	30
Helicopter	120	122	121	135
Ultra light	381	418	467	520
Total	9,510	9,712	10,979	12,246

Source: Mary A. Lynch analysis

<i>Airport Reference Code (ARC) Matrix</i>									
Equipment Type	Annul Operations				Aircraft	Wingspan	Stall Speed	Approach Speed	ARC
	2011	2015	2020	2030					
One Engine Piston	8,740	8,866	9,793	10,918	Cessna 182	36'-0"	49 knots	63.7 knots	A-I
Two Engine Turbo	168	243	538	612	Beech King Air 200	54'-6"	75 knots	97.5 knots	B-II

Source: Baker Analysis





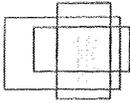
LANDSIDE AND AIRSIDE FACILITY REQUIREMENTS

	Existing	Required	Deficiency
Airside			
Runway Length	4,902'	4,400'	N/A
Runway Safety Area			
Length Beyond Threshold	300'	300'	N/A
Width	150'	150'	N/A
Runway Object Free Area			
Length Beyond Threshold	300'	300'	N/A
Width	250'	500'	250'
Separation			
Runway Centerline to Taxiway Centerline	240'	240'	N/A
Runway Centerline to Aircraft Parking	179'	250'	71'
Runway Centerline to Holdline	125'	125'*	N/A
Taxiway Width	30'	35'	5'
Taxiway Safety Area Width	50'	79'	29'
Taxiway Object Free Area Width	90'	131'	41'
Taxilane Object Free Area Width	79'	115'	36'
Landside			
Terminal Building	1,620 sf	400 sf	N/A
Hangars	17 box hangars	25 hangar spaces	8 hangar spaces
Apron	3,550 sy	2,880 sy	N/A
Corporate Facilities	None	1 facility	1 facility
Auto Parking	12 spaces	7 spaces	N/A

*Holdline dimension standards pertain to facilities for small aircraft exclusively, including airplane design group I and II.

Other Improvements Suggested:

- Extend taxiway to Runway 36
- Upgrade fuel pump facility to 24 hour use with credit card use
- Install REILS and PAPI visual navigation aids
- Expand utilities to the Airport as available; sanitary and water



Public Officials Meeting

Friday, June 15, 2012 at 10:00 a.m.

Record of Attendance

Name	Representing	Phone/E-mail
1. <i>Meriah Hanson</i>	<i>PDOT</i>	<i>814 678 7078 emhanson@pa.gov</i>
2. <i>Russ Som</i>	<i>PODOT BEA</i>	<i>724-599-1369 TRUSSONES@PA.GOV</i>
3. <i>Alex Smith</i>	<i>Verango Co. Planning</i>	<i>814-432-9689 asmith@co.verango.pa.us</i>
4. <i>Ben Breniman</i>	<i>Cherryton Twp Zoning</i>	<i>814 231-1135 bbreniman@ctmnl.com</i>
5.		
6.		
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12.		
13.		
14.		
15.		
16.		
17.		

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

James J. Becker, Executive Director
Titusville Redevelopment Authority
Titusville Community Development Agencies
Towne Square, 4th Floor
110 W. Spring Street
Titusville, PA 16354

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Becker:

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Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.

Project Manager

JBH/jma

Baker

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A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

Judy Downs
Venango Co. Regional Planning Comm.
1168 Liberty Street
PO Box 831
Franklin, PA 16323

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Ms. Downs:

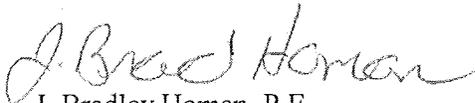
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MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

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A Unit of Michael Baker Corporation

(412) 269-4600
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Office Location:
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100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

Alex Smith, GIS Planner
Venango Co. Regional Planning Comm.
1168 Liberty Street
PO Box 831
Franklin, PA 16323

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Smith:

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(412) 269-4600

FAX (412) 375-3990

Office Location:

Airside Business Park

100 Airside Drive

Moon Township, Pennsylvania 15108

September 28, 2012

E. Mariah Hanson
PennDOT District 1
PO Box 398
Oil City, PA 16301

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Ms. Hanson:

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MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

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A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

*Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108*

September 28, 2012

Jack Lynch
Crawford Co. Regional Planning Comm.
903 Diamond Park
Meadville, PA 16335

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Lynch:

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We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.

Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

David Parker
PA Department of Transportation BOA
P.O. Box 229
1800 Wilmington Road
New Castle, PA 16103

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Parker:

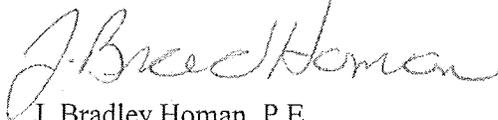
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FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

Mark Nickerson
Titusville Airport Authority
24609 State Street
Meadville, PA 16335

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Nickerson:

The Titusville Airport Authority has completed the airport development alternatives analysis of the Master Plan Update for the Titusville Airport. Next steps include preparation of a new airport layout plan set and development of an airport capital improvement program.

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Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

Oilcreek Township
4 McKinney Road
Titusville, PA 16354

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

To Whom It May Concern:

The Titusville Airport Authority has completed the airport development alternatives analysis of the Master Plan Update for the Titusville Airport. Next steps include preparation of a new airport layout plan set and development of an airport capital improvement program.

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Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

Cherrytree Township
1311 Cherrytree Road
Titusville, PA 16354

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

To Whom It May Concern:

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We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

Susan Smith
North West Planning Commission
395 Seneca Street
Oil City, PA 16301

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Ms. Smith:

The Titusville Airport Authority has completed the airport development alternatives analysis of the Master Plan Update for the Titusville Airport. Next steps include preparation of a new airport layout plan set and development of an airport capital improvement program.

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We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

Russell L. Jones
PA Department of Transportation BOA
District 10 Office
2550 Oakland Avenue,
Indiana, PA 15701

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Jones:

The Titusville Airport Authority has completed the airport development alternatives analysis of the Master Plan Update for the Titusville Airport. Next steps include preparation of a new airport layout plan set and development of an airport capital improvement program.

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MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

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Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

James Kuhn
Titusville Airport Authority
Titusville Airport Complex
2572 Suite 1 Meadville Road
Titusville, PA 16354

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Kuhn:

The Titusville Airport Authority has completed the airport development alternatives analysis of the Master Plan Update for the Titusville Airport. Next steps include preparation of a new airport layout plan set and development of an airport capital improvement program.

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J. Bradley Homan, P.E.
Project Manager

JBH/jma

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

September 28, 2012

Jay Reese
City of Titusville
PO Box #1
Spartansburg, PA 16434

Subject: Titusville Airport Master Plan Update
Interim Review Meeting

Dear Mr. Reese:

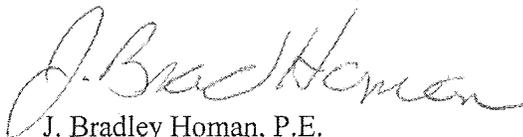
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Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

JBH/jma

PROJECT: Titusville Airport
Master Plan Update

DATE: Tuesday, October 9, 2012 at 10:03a.m. (EST)

PLACE: Titusville Airport, Terminal Building

INTRODUCTION:

Titusville Airport Authority – Jim Kuhn, not present
Project Manager – Baker – Brad Homan, P.E. (412-269-2744), bhoman@mbakercorp.com
Project Engineer – Baker - Jennifer Andy (412-269-2737), jmandy@mbakercorp.com
PennDOT BOA Project Manager - Russ Jones
PennDOT BOA Engineering Project Manager – David Parker
PennDOT District 1 – Mariah Hanson
City of Titusville – not present
Venango County – Judy Barret, Alex Smith, and Jason Ruggiero; Regional Planning Commission
Crawford County - not present
Cherrytree Township – Ben Breniman, Zoning
Oilcreek Township - not present
NW Planning Commission – Sue Smith
Titusville Redevelopment Authority - not present

I. The Airport Master Plan Process

- a. Purpose and Need
 - i. Master Plan is a comprehensive study of an airport and its needs for development in the short-, medium- and long-term in order to meet future aviation demand.
 - ii. Goal is to provide a guide airport development that is cost effective and satisfies aviation demand while considering any potential environmental and socioeconomic impacts.
- b. Your Role in the Planning Process
 - i. Ultimate goal is to gain public consensus on the preferred alternative
 - ii. Provide feedback throughout the process
 - iii. Comment forms may be filled out and submitted today, or you can mail them to Baker
- c. Schedule
 - i. Public Workshop - anticipate in early November
 - ii. Anticipated Completion Date - anticipated delivery to BOA/FAA by December 21, 2012 for approval

II. Airport Background (recap)

- a. Airport Facilities
 - i. 204 acres
 - ii. Runway 18-36 is 4,902' long by 75' wide; Bituminous pavement with medium intensity runway edge lights
 - iii. Partial parallel Taxiway and Taxiway turnarounds at the runway ends
 - iv. One aircraft parking apron
 - v. Fueling facilities (JetA - 10,000 gallons, AvGas - 10,000 gallons)
 - vi. 17 conventional box hangars (one owned by the Authority)
 - vii. Wind Tee, Lighted Wind Sock, Rotating Beacon
 - viii. Terminal Building

- III. Aviation Forecast (recap)
 - a. Based aircraft 18 (included 4 ultra lights) in 2011; increase to 29 by 2030
 - b. Annual Operations
 - i. 9,510 in 2011; 12,246 by 2030
 - c. Itinerant versus local operations
 - i. Local 73% and Itinerant 27% throughout forecast period
 - d. Forecast shows Twin Engine Turbo to be the critical aircraft for the planning period
 - i. B-II ARC for planning purposes
 - e. Forecast has been approved by PennDOT BOA

- IV. Facility Requirements for Planned B-II AR C (recap)
 - a. Developed based on a demand and capacity analysis
 - b. Runway has adequate length and width at the current time, but the Authority desires to extend the runway by 98 feet to 5,000 feet.
 - c. Deficient areas relating to the runway:
 - i. Separation from runway to aircraft parking and future primary surface for proposed GPS approach
 - ii. Object free area width
 - d. Deficient areas relating to the taxiways:
 - i. Taxiway width
 - ii. Safety area and object free area width
 - iii. Taxilane Object Free Area (OFA) width
 - e. Recommend extension of partial parallel taxiway to Runway 36
 - f. Recommend installation of REILS and PAPI
 - g. Eight hangar spaces needed; relocation of existing hangars necessary during planning period because of taxilane OFA clearance, and due to future airspace (transitional surface)

- V. Airport Development Alternatives Analysis
 - a. Alternative I – No Build
 - i. No development to accommodate future aviation demand
 - ii. Bring safety issues into compliance
 - 1. Remove tie-downs that are located too close to the runway and being inside the future expanded primary surface, severely limiting use of existing apron for aircraft parking
 - 2. Relocation of box hangars on taxilane
 - 3. Excavation to correct deficiencies in the Runway Object Free Area (ROFA), future primary surface, and taxiway
 - b. Alternative II – Apron to the North (see attached layout)
 - i. Additional hangar space and automobile parking
 - ii. Corporate hangar facility
 - iii. Relocated aircraft apron (north of terminal building)
 - iv. Visual navigational aid improvements
 - 1. new circuits and infrastructure from vault to each unit
 - v. Taxiway widening and extension
 - 1. 700 lf of unnamed tributary to Prather Creek impacted
 - 2. 0.81 acres of wetland impacted
 - vi. Total Cost Estimate: \$9,435,650
 - c. Alternative III – Apron to the South (see attached layout)
 - i. Same as above except apron is located to South
 - 1. Clearing and grubbing of tree line
 - ii. Total Cost Estimate: \$9,447,550

- d. Preferred Alternative = Alternative II (lesser impacts for apron construction)
 - i. Aircraft apron location does not require additional clearing and grubbing of any trees or brush

VI. Environmental Overview

- a. Coastal Management and Coastal Barriers; Wild and Scenic Rivers; Energy Supply and Natural Resources; Light Emissions; and Historical, Architectural, Archeological and Cultural Resources; DOT Act Section 4(f); Environmental Justice were found not applicable
- b. Noise and Farmlands
 - i. Not completed at this time
- c. Compatible Land Use
 - i. Runway Protection Zone land uses
- d. Social and Induced Socioeconomic Impacts (see attached figure)
 - i. Property acquisition
- e. Air Quality
 - i. Venango County is designated as an attainment area for all NAAQS pollutants
 - ii. NAAQS assessment is not required for the proposed development because the area has been designated as an attainment area, and there are less than 180,000 forecasted annual general aviation operations.
- f. Water Quality
 - i. Unnamed tributaries to Prather Creek
- g. Fish, Wildlife, and Plants
 - i. Landscape conservation area
 - 1. Located only within the northern part of the airport shown for Non-aviation use
- h. Endangered and Threatened Species
 - i. Indiana Bat – obstruction removal
- i. Wetlands
 - i. Impacts to approximately 0.81 acres of wetlands (this includes all the wetlands currently identified on airport property)
- j. Floodplains
 - i. Airport is not within any designated floodplains
- k. Solid Waste and Hazardous Sites
 - i. Individual construction projects must employ Best Management Practices for solid waste management
- l. Construction Impacts
 - i. Individual construction projects will require Erosion & Sedimentation (E&S) Control / National Pollutant Discharge Elimination System (NPDES) permits

VII. Next Steps

- a. Finalize environmental overview related to preferred alternative
- b. Finalize ALP drawing set
- c. Develop Airport Capital Improvement Program for next 20 years based on ALP
- d. Submit a draft report and ALP to BOA for review and FAA analysis
- e. Recap of schedule from beginning of meeting
 - i. Public Workshop - anticipate in early November
 - ii. Anticipated Completion Date - anticipated delivery to BOA/FAA by December 21, 2012 for approval

COMMENTS / ADDITIONAL DISCUSSION

Judy commented that the alternatives will definitely need to consider stormwater management in costs. Venango County has adopted a county-wide stormwater management plan through working with the DEP. Cherrytree Township is the only municipality that hasn't adopted it yet.

David discussed funding of the hangar development shown and reminded the room that the state grants that may be available for that type of project are a 50/50 split. The Authority doesn't have those types of funds currently for those types of projects.

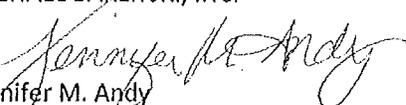
Question was posed as to how hangar relocation would be funded. Funding of individual projects will be looked at more closely during the Facilities Implementation development.

Mariah questioned where maintenance falls in the alternatives, as Baker has nothing shown for runway repairs. It was discussed that the alternatives presented only represent what is needed to fulfill aviation demand for the forecast. Baker will include projects, such as runway rehabilitation, in the Facilities Implementation Plan which is used to develop the airport's 12 year plan with the BOA. These maintenance projects won't show up on the Airport Layout Plan, but will be documented in the Master Plan report.

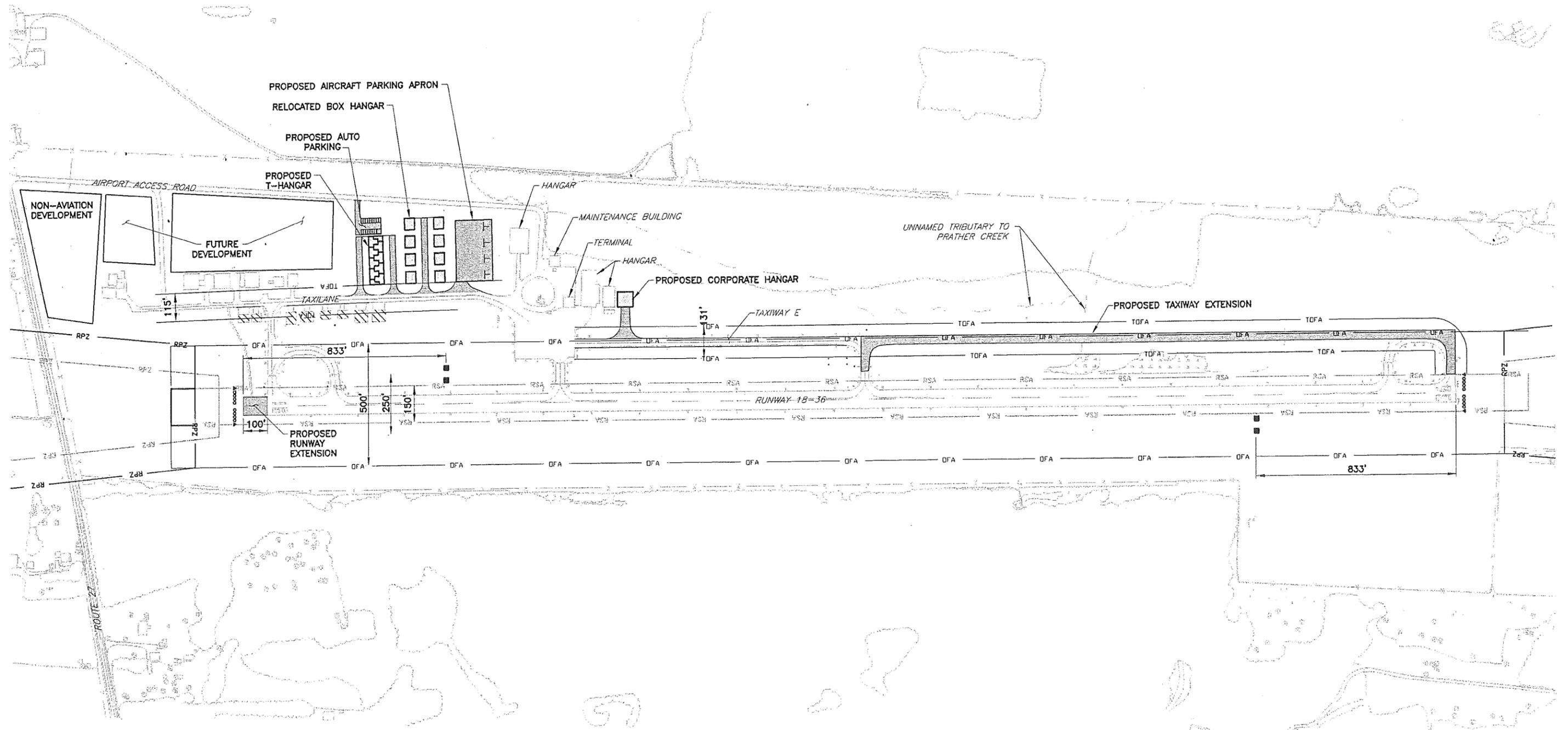
The information contained in these meeting minutes represents the writer's interpretation and understanding of the discussions and decisions that occurred during the meeting. Any clarifications or corrections to these minutes should be submitted in writing to Michael Baker Jr. Inc. No response implies that the information contained herein is correct. If there are any additions or corrections to these Meeting Minutes, please contact the undersigned within five (5) days of receipt.

Sincerely,

MICHAEL BAKER JR., INC.

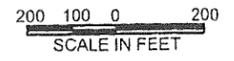

Jennifer M. Andy
Civil Engineer

cc: Attendees



LEGEND

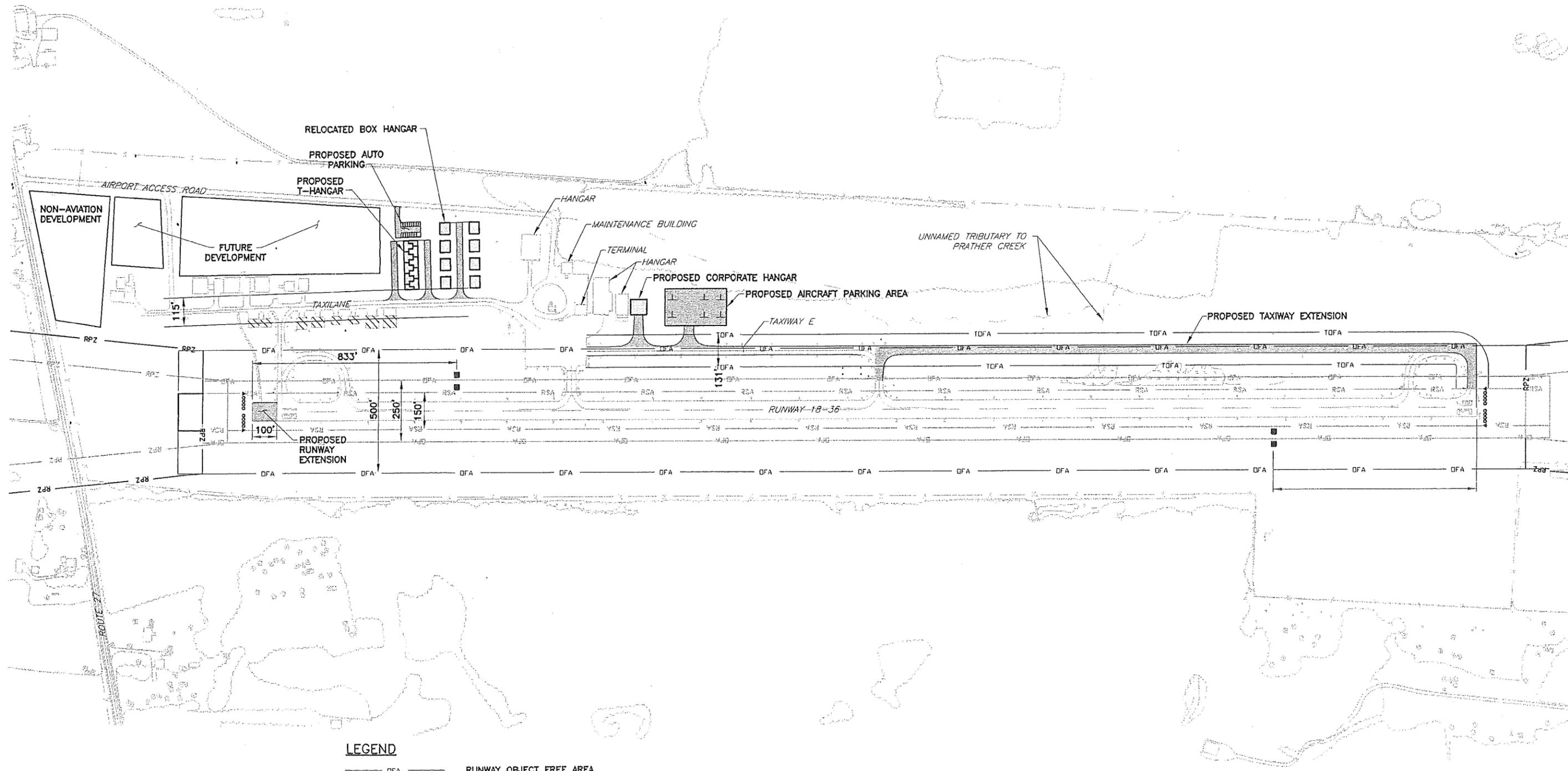
- | | | | |
|--------------------------|-----------------------------------|---------------------------------------|-----------------------------------|
| — DFA — | RUNWAY OBJECT FREE AREA | — Stream — | STREAM |
| — TOFA — | TAXIWAY/TAXILANE OBJECT FREE AREA | — Vegetation/Tree Line — | VEGETATION/TREE LINE |
| — RSA — | RUNWAY SAFETY AREA | — Wetland — | WETLAND |
| — RPZ — | RUNWAY PROTECTION ZONE | — Runway End Identifier Light — | RUNWAY END IDENTIFIER LIGHT |
| — Perimeter Fence — | PERIMETER FENCE | — Precision Approach Path Indicator — | PRECISION APPROACH PATH INDICATOR |
| ■ Proposed Pavement | PROPOSED PAVEMENT | — Threshold Lights — | THRESHOLD LIGHTS |
| ■ Building to be Removed | BUILDING TO BE REMOVED | | |
| ■ Proposed Hangar | PROPOSED HANGAR | | |



Baker Michael Baker Jr., Inc.
A Unit of Heery Group
Airsides Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

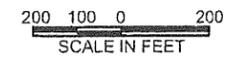


MASTER PLAN UPDATE		SHEET
EXHIBIT 6-1 ALTERNATIVE II		
ABG-2010-TITUSVILLE AA-00029	DATE	SEPTEMBER 2012



LEGEND

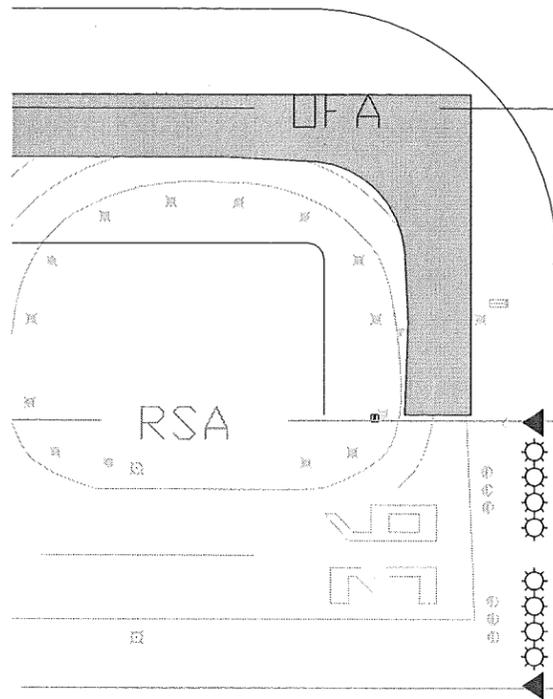
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- ▨ BUILDING TO BE REMOVED
- ▩ PROPOSED HANGAR
- STREAM
- VEGETATION/TREE LINE
- WETLAND
- RUNWAY END IDENTIFIER LIGHT
- PRECISION APPROACH PATH INDICATOR
- THRESHOLD LIGHTS



Baker
 Michael Baker Jr., Inc.
 A Unit of Michael Baker Corporation
 Airside Business Park
 100 Airside Drive
 Moon Township, Pennsylvania 15108



CITY OF TITUSVILLE TITUSVILLE AIRPORT AUTHORITY		MASTER PLAN UPDATE	SHEET
		EXHIBIT 6-2 ALTERNATIVE III	
ABG-2010-TITUSVILLE AA-00029		DATE	SEPTEMBER 2012



50 25 0 50
SCALE IN FEET

Baker
Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108



CITY OF TITUSVILLE TITUSVILLE AIRPORT AUTHORITY		MASTER PLAN UPDATE	SHEET
		RUNWAY PROTECTION ZONE - SOUTH	
ABG-2010-TITUSVILLE AA-00029		DATE	SEPTEMBER 2012

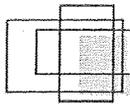


Baker
 Michael Baker Jr., Inc.
 A Unit of Michael Baker Corporation
 Airside Business Park
 100 Airside Drive
 Moon Township, Pennsylvania 15108

CITY OF TITUSVILLE
 TITUSVILLE AIRPORT AUTHORITY



MASTER PLAN UPDATE		SHEET
RUNWAY PROTECTION ZONE - NORTH		
ABG-2010-TITUSVILLE AA-00029	DATE	SEPTEMBER 2012

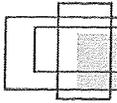


AIRPORT DEVELOPMENT ALTERNATIVES ANALYSIS

Cost estimates include design, and construction management/construction inspection fees for each project listed. Cost Estimates do not include consideration for inflation. More detailed cost estimates will be provided under the Facilities Implementation Plan for the preferred alternative.

<i>Alternative II Cost</i>				
Item Description	Quantity	Unit	Unit Cost	Total
Runway Extension	1	LS	\$ 547,500	\$ 547,500
Aircraft Parking Apron	1	LS	\$ 724,100	\$ 724,100
Widen Existing Taxiway	1	LS	\$ 580,400	\$ 580,400
Taxiway Extension	1	LS	\$ 2,716,100	\$ 2,716,100
PAPI and REIL Installation	1	LS	\$ 678,000	\$ 678,000
Relocation of Box Hangars (1,968 sf)	8	EA	\$ 107,100	\$ 856,800
8-unit T-Hangar	1	EA	\$ 1,285,200	\$ 1,285,200
Corporate Hangar (4,030 sf)	1	EA	\$ 856,800	\$ 856,800
Automobile Parking	8,100	SF	\$ 51	\$ 413,100
Earthwork to Remove Penetrations	1	LS	\$ 380,650	\$ 380,650
Stormwater Management Facilities	1	LS	\$ 400,000	\$ 400,000
Grand Total				\$ 9,435,650
Source: Baker				

<i>Alternative III Cost</i>				
Item Description	Quantity	Unit	Unit Cost	Total
Runway Extension	1	LS	\$ 547,500	\$ 547,500
Aircraft Parking Apron	1	LS	\$ 733,000	\$ 733,000
Widen Existing Taxiway	1	LS	\$ 580,400	\$ 580,400
Taxiway Extension	1	LS	\$ 2,716,100	\$ 2,716,100
PAPI and REIL Installation	1	LS	\$ 678,000	\$ 678,000
Relocation of Box Hangars (1,968 sf)	8	EA	\$ 107,100	\$ 856,800
8-unit T-Hangar	1	EA	\$ 1,285,200	\$ 1,285,200
Corporate Hangar (4,030 sf)	1	EA	\$ 856,800	\$ 856,800
Automobile Parking	8,100	SF	\$ 51	\$ 413,100
Earthwork to Remove Penetrations	1	LS	\$ 380,650	\$ 380,650
Stormwater Management Facilities	1	LS	\$ 400,000	\$ 400,000
Grand Total				\$ 9,447,550
Source: Baker				



Public Officials Meeting

Tuesday, October 9, 2012 at 10:30 a.m.

Record of Attendance

Name	Representing	Phone/E-mail
1. Alex Smith	Venango County Planning	432-5689 asmith@co.venango.pa.us
2. Jason Ruggiero	Venango County Planning	432-9682 jruggiero@co.venango.pa.us
3. Sue Smith	NW Commission	677-4800 x131 SUSAN@NWCOMMISSION.ORG
4. Judy Bartzel	Venango Planning	814-432-9181 jbarzel@co.venango.pa.us
5. Ben Breneman	Cherrytree Township	814-221-1135 bbreneman@hotmail.com
6. Marah Benson	PDOT 1-0	Emharsone pa.gov 2146787078
7. Ross Sonot	Penn DOT BOA	724-599-1369
8. David Porkeu	Penn DOT BOA	
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Mr. James J. Becker, Executive Director
Titusville Redevelopment Authority
Titusville Community Development Agencies
Towne Square, 4th Floor
110 W. Spring Street
Titusville, PA 16354

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Mr. Becker:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

You are invited to attend the public workshop to present the Master Plan Update on Thursday, December 13, 2012 from 4:00 p.m. to 6:00 p.m. in the Terminal Building at Titusville Airport. Any special needs for access should be directed to 814.827.0400 at least 48 hours prior to the workshop.

Copies of the draft Master Plan Update document may be reviewed at the Terminal Building at Titusville Airport, 2572 Meadville Road, Titusville, PA 16354, Monday through Friday between 9:00 a.m. and 4:00 p.m. from December 6, 2012 through January 9, 2013.

Written comments will be accepted at the public workshop and in writing until January 9, 2013 at the below address:

Michael Baker Jr., Inc.
100 Airside Drive
Moon Township, PA 15108
Attn: Jennifer Andy

Your input on the development of the Titusville Airport is important to the planning process. Comments received will be considered and addressed in the Final Master Plan Update document.

Baker

Mr. James J. Becker
Page 2
November 20, 2012

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.

A handwritten signature in cursive script, appearing to read "J. Bradley Homan".

J. Bradley Homan, P.E.
Project Manager

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

CherrytreeTownship
1311 Cherrytree Road
Titusville, PA 16354

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

To Whom It May Concern:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

You are invited to attend the public workshop to present the Master Plan Update on Thursday, December 13, 2012 from 4:00 p.m. to 6:00 p.m. in the Terminal Building at Titusville Airport. Any special needs for access should be directed to 814.827.0400 at least 48 hours prior to the workshop.

Copies of the draft Master Plan Update document may be reviewed at the Terminal Building at Titusville Airport, 2572 Meadville Road, Titusville, PA 16354, Monday through Friday between 9:00 a.m. and 4:00 p.m. from December 6, 2012 through January 9, 2013.

Written comments will be accepted at the public workshop and in writing until January 9, 2013 at the below address:

Michael Baker Jr., Inc.
100 Airside Drive
Moon Township, PA 15108
Attn: Jennifer Andy

Your input on the development of the Titusville Airport is important to the planning process. Comments received will be considered and addressed in the Final Master Plan Update document.

Baker

Cherrytree Township
Page 2
November 20, 2012

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.

A handwritten signature in black ink, appearing to read "J. Bradley Homan". The signature is fluid and cursive, with a long horizontal stroke at the end.

J. Bradley Homan, P.E.
Project Manager

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Ms. Judy Downs
Venango Co. Regional Planning Comm.
1168 Liberty Street
PO Box 831
Franklin, PA 16323

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Ms. Downs:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

You are invited to attend the public workshop to present the Master Plan Update on Thursday, December 13, 2012 from 4:00 p.m. to 6:00 p.m. in the Terminal Building at Titusville Airport. Any special needs for access should be directed to 814.827.0400 at least 48 hours prior to the workshop.

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100 Airside Drive
Moon Township, PA 15108
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Baker

Ms. Judy Downs
Page 2
November 20, 2012

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Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

E. Mariah Hanson
PennDOT District 1
PO Box 398
Oil City, PA 16301

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Ms. Hanson:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

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100 Airside Drive
Moon Township, PA 15108
Attn: Jennifer Andy

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Baker

Ms. E. Mariah Hanson

Page 2

November 20, 2012

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.

A handwritten signature in cursive script, appearing to read "J. Bradley Homan".

J. Bradley Homan, P.E.

Project Manager

The logo for Baker, featuring the word "Baker" in a bold, sans-serif font inside a dark rectangular box.

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Mr. James Kuhn
Titusville Airport Authority
Titusville Airport Complex
2572 Suite 1 Meadville Road
Titusville, PA 16354

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Mr. Kuhn:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

You are invited to attend the public workshop to present the Master Plan Update on Thursday, December 13, 2012 from 4:00 p.m. to 6:00 p.m. in the Terminal Building at Titusville Airport. Any special needs for access should be directed to 814.827.0400 at least 48 hours prior to the workshop.

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100 Airside Drive
Moon Township, PA 15108
Attn: Jennifer Andy

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Baker

Mr. James Kuhn
Page 2
November 20, 2012

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Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Jack Lynch
Crawford Co. Regional Planning Comm.
903 Diamond Park
Meadville, PA 16335

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Mr. Lynch:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

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Michael Baker Jr., Inc.
100 Airside Drive
Moon Township, PA 15108
Attn: Jennifer Andy

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Baker

Mr. Jack Lynch
Page 2
November 20, 2012

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.

A handwritten signature in cursive script, appearing to read "J. Bradley Homan".

J. Bradley Homan, P.E.
Project Manager

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Mr. Mark Nickerson
Titusville Airport Authority
24609 State Street
Meadville, PA 16335

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Mr. Nickerson:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

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100 Airside Drive
Moon Township, PA 15108
Attn: Jennifer Andy

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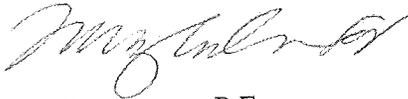
Baker

Mr. Mark Nickerson
Page 2
November 20, 2012

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Sincerely,

MICHAEL BAKER JR., INC.

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J. Bradley Homan, P.E.
Project Manager

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Oilcreek Township
4 McKinney Road
Titusville, PA 16354

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

To Whom It May Concern:

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100 Airside Drive
Moon Township, PA 15108
Attn: Jennifer Andy

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Baker

Oilcreek Township
Page 2
November 20, 2012

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to call me at (412) 269-2744.

Sincerely,

MICHAEL BAKER JR., INC.

A handwritten signature in cursive script, appearing to read "J. Bradley Homan".

J. Bradley Homan, P.E.
Project Manager

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Mr. David Parker
PA Department of Transportation BOA
P.O. Pox 229
1800 Wilmington Road
New Castle, PA 16103

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Mr. Parker:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

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Moon Township, PA 15108
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Baker

Mr. David Parker
Page 2
November 20, 2012

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Sincerely,

MICHAEL BAKER JR., INC.

A handwritten signature in cursive script, appearing to read "J. Bradley Homan".

J. Bradley Homan, P.E.
Project Manager

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Mr. Jay Reese
City of Titusville
PO Box #1
Spartansburg, PA 16434

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Mr. Reese:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

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Moon Township, PA 15108
Attn: Jennifer Andy

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Baker

Mr. Jay Reese
Page 2
November 20, 2012

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Sincerely,

MICHAEL BAKER JR., INC.

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J. Bradley Homan, P.E.
Project Manager

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Mr. Russell L. Jones
PA Department of Transportation BOA
District 10 Office
2550 Oakland Avenue,
Indiana, PA 15701

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Mr. Jones:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

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Attn: Jennifer Andy

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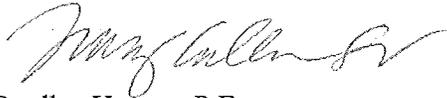
Baker

Mr. Russell Jones
Page 2
November 20, 2012

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Sincerely,

MICHAEL BAKER JR., INC.

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J. Bradley Homan, P.E.
Project Manager



Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Ms. Susan Smith
North West Planning Commission
395 Seneca Street
Oil City, PA 16301

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Ms. Smith:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

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Moon Township, PA 15108
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Baker

Ms. Susan Smith
Page 2
November 20, 2012

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Sincerely,

MICHAEL BAKER JR., INC.



J. Bradley Homan, P.E.
Project Manager

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

(412) 269-4600
FAX (412) 375-3990

Office Location:
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108

November 20, 2012

Mr. Alex Smith, GIS Planner
Venango Co. Regional Planning Comm.
1168 Liberty Street
PO Box 831
Franklin, PA 16323

Subject: Titusville Airport Master Plan Update
Public Comment Period and Public Meeting

Dear Mr. Smith:

The Titusville Airport Authority has completed the draft Master Plan Update for the Titusville Airport. The next steps in the planning process include public review of the document and a public workshop to garner comments on the plan.

You are invited to attend the public workshop to present the Master Plan Update on Thursday, December 13, 2012 from 4:00 p.m. to 6:00 p.m. in the Terminal Building at Titusville Airport. Any special needs for access should be directed to 814.827.0400 at least 48 hours prior to the workshop.

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Baker

Mr. Alex Smith
Page 2
November 20, 2012

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Sincerely,

MICHAEL BAKER JR., INC.

A handwritten signature in cursive script, appearing to read "J. Bradley Homan".

J. Bradley Homan, P.E.
Project Manager

PROOF OF PUBLICATION

Copy of Notice of Publication

PROOF OF PUBLICATION OF NOTICE IN

THE TITUSVILLE HERALD

Under Act No. 587 Approved May 16, 1929

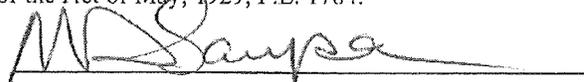
STATE OF PENNSYLVANIA
COUNTY OF CRAWFORD SS:

I, Michael D. Sample, being duly sworn say that I am the Publisher of The Titusville Herald, owned and published by The Titusville Herald, Inc., of the County and State aforesaid, and that The Titusville Herald, a newspaper of general circulation published at 209 West Spring Street, City of Titusville, County and State aforesaid, was established in 1865, since which time The Titusville Herald has been regularly issued in said county and that the printed notice of publication attached hereto is exactly the same as was printed and published in the regular editions and issues of the said Titusville Herald on the following dates, 27th of November; 4th, 6th

And the 10th of day of December, A.D. 2012

Affiant deposes that he is an officer duly authorized by The Titusville Herald, Inc. of general circulation, to verify the foregoing statement under oath, and affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place and character of publication are true.

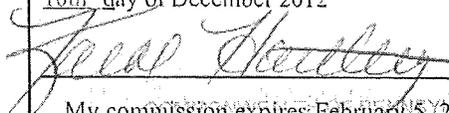
This affidavit is made under and by virtue of a resolution of the Board of Directors of The Titusville Herald, Inc. duly passed on the 29th day of September, 2005, authorizing and directing this affiant to make and verify this and all other proofs of publication of notices and advertisements thereafter to be published in The Titusville Herald which may require such proof according to the requirements of the Act of May, 1929, P.L. 1784.



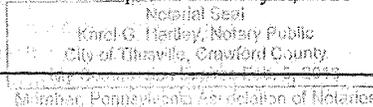
The Titusville Herald, Inc.

Sworn to and subscribed before me this

10th day of December 2012



My commission expires February 15, 2013



Michael Baker Jr Inc
J Brad Homan
100 Airside Dr
Moon Township, PA 15108

THE TITUSVILLE HERALD

For publishing the notice of publication attached hereto on the above stated dates \$ 388.00

Affidavit of same \$ 5.00

Total \$ 393.00

**PUBLIC NOTICE
OF AVAILABILITY**

Invitation to Comment
on the Master Plan
Update for the
Titusville Airport

Titusville Airport is
completing a Master
Plan Update (MPU) to
identify and plan for
future development at
the Airport. A draft
document, prepared in
accordance with the
Federal Aviation
Administration policies
and guidelines has
been prepared. The
MPU provides an
analysis of facility
requirements to
support aviation
growth, airport
development

alternatives and an
environmental
overview associated
with the preferred
development
alternative. Copies of
the draft MPU may be
reviewed at the
following locations and
times from December
6, 2012 through
January 9, 2013.

Titusville Airport
Terminal Building
2572 Meadville Road
Titusville, PA 16354

Hours:

Mon-Fri:

9am-4pm

Written comments
should be sent to the
address below on or
before January 9, 2013
Michael Baker, Jr. Inc.
100 Airside Drive
Moon Township, PA
15108

Attn: Jennifer Andy
A public workshop to
present the MPU will
be held on December
13, 2012 from 4:00
pm-6:00pm in Terminal
Building at Titusville
Airport, 2572 Meadville
Road, Titusville, PA
16354. Any special
needs for access
should be directed to
814-827-0400 at least
48 hours prior to the
workshop. Written
comments will be
accepted at the public
workshop.
Comments received
will be considered and
addressed in the Final
Master Plan Update.

Titusville Airport - Public Workshop - Record of Attendance

Thursday, December 13, 2012 at 4:00 p.m. - 6:00 p.m.

Name	Address	Phone	Email
Van Randall	42557 Tel. Central Ave	827 7265	
Joan Cuggiere	Venango County Planning Commission	438 - 9682	jcuggiere@co.venango.pa.us
Alan Knapp	903 Diamond Park Meadville	814 333 7341	aknapp@co.crawford.pa.us
Jim Becker	11785 Spring Creek Rd. Tusville	814-827-3668	jbecker@tceda.org
Ben Breniman	484 Breniman Rd. Shippenville	716254 8142271135	bbreniman@hotmail.com

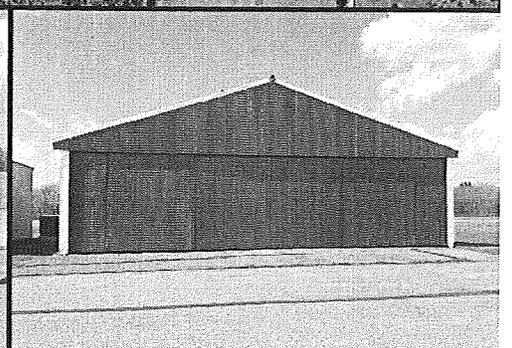
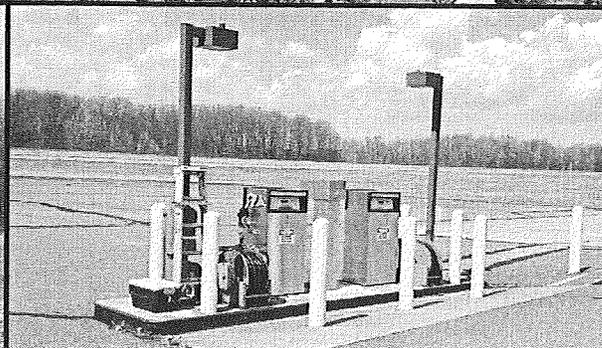
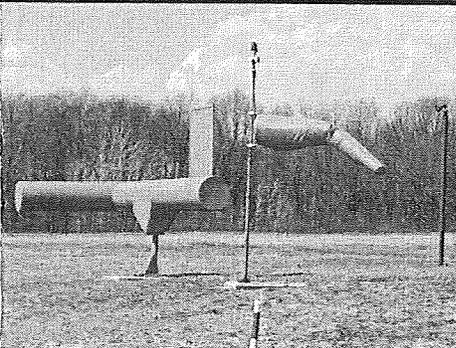
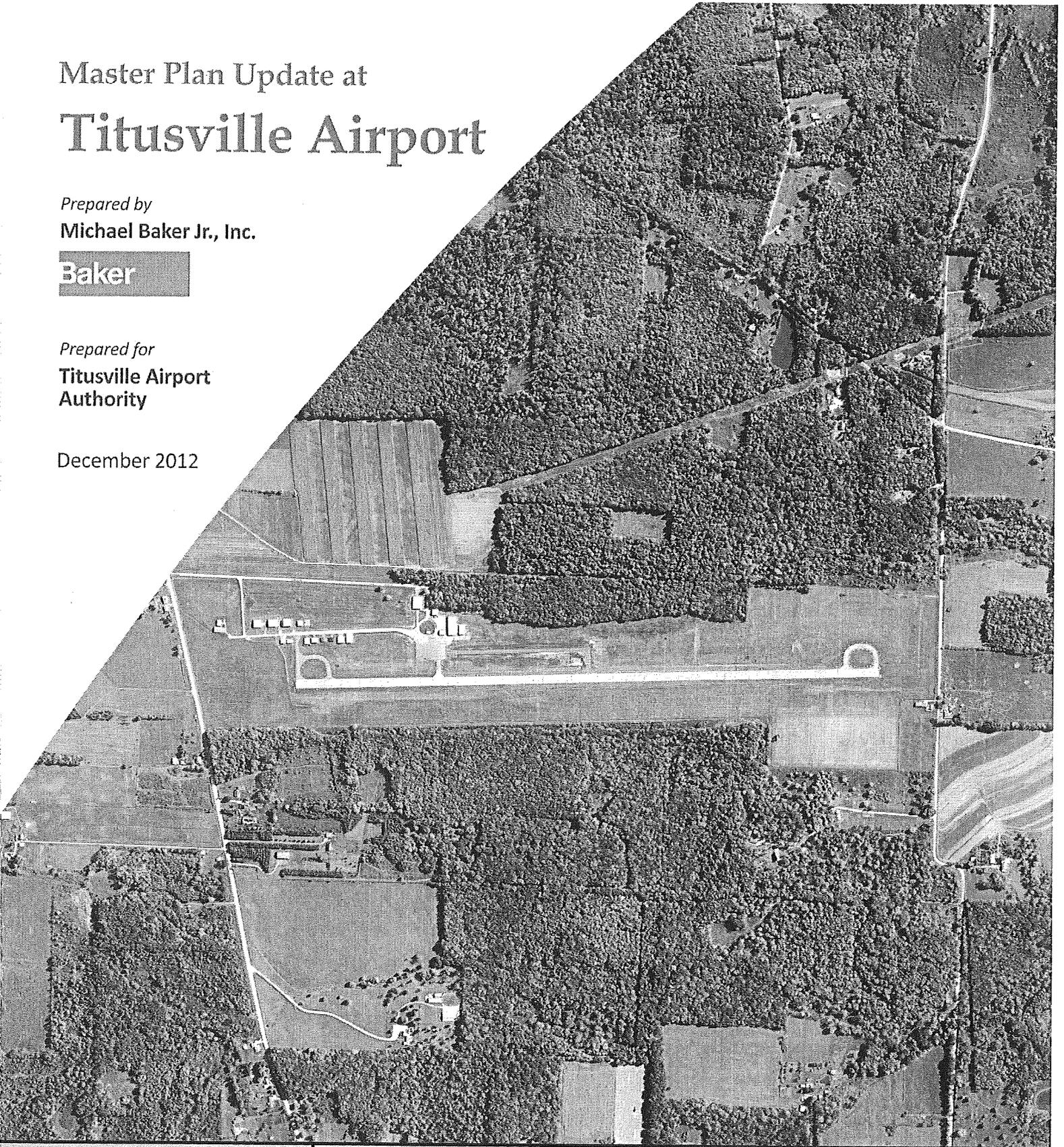
Master Plan Update at Titusville Airport

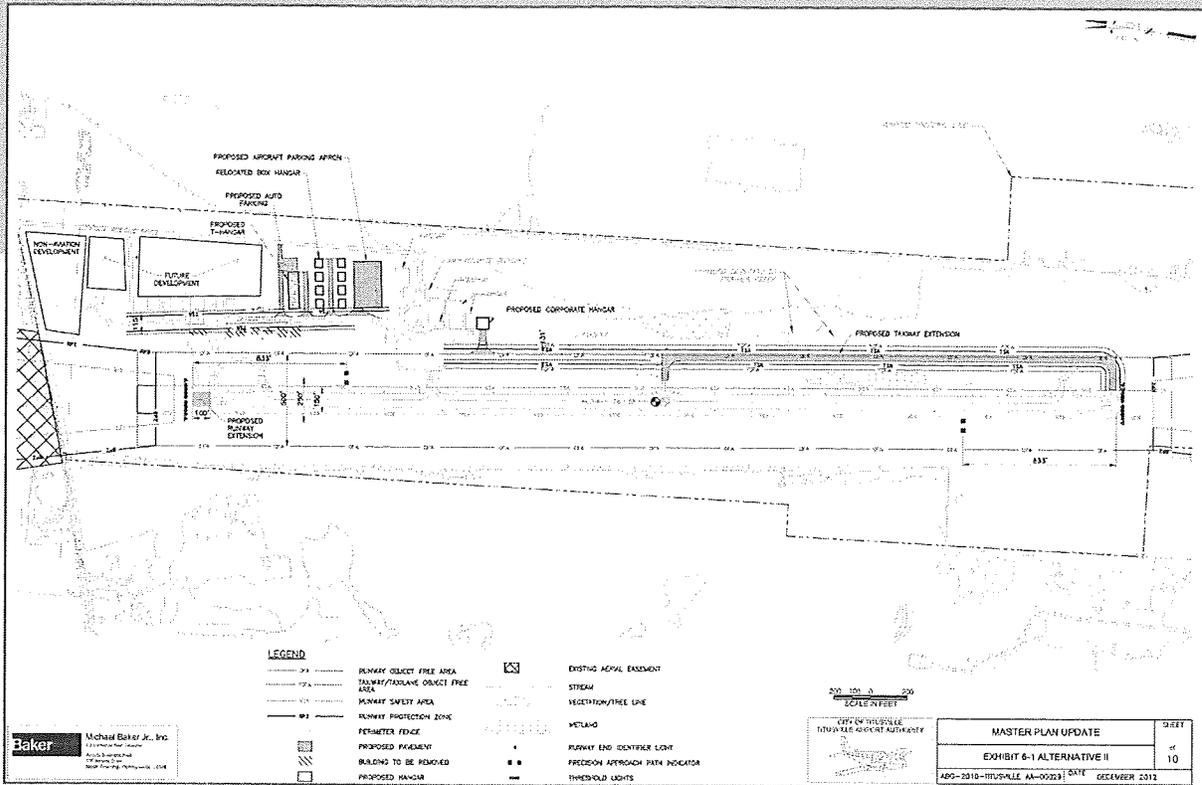
Prepared by
Michael Baker Jr., Inc.

Baker

Prepared for
Titusville Airport
Authority

December 2012





Facilities Implementation Plan			
Development Year	Improvement Project	Budget	Funding Source
1	Rehabilitate Entrance Road	\$263,888	AIP/State/Local
2	Expand Snow Removal Equipment Storage Building	\$184,772	AIP/State/Local
3	Install Runway End Identifier Lights	\$316,666	AIP/State/Local
4	Crack Seal and Remark Runway	\$166,666	AIP/State/Local
5	Rehabilitate Runway 18-36 and Connector Taxiway, Phase I Design	\$422,222	AIP/State/Local
6	Rehabilitate Runway 18-36 and Connector Taxiway, Phase II Construction	\$1,583,334	AIP/State/Local
7	PAPI Installation	\$731,000	AIP/State/Local
8	Runway Extension Feasibility Study and Aeronautical Survey	\$432,000	AIP/State/Local
9	Runway Extension	\$645,000	AIP/State/Local
10	Earthwork to Remove Obstructions	\$397,000	AIP/State/Local
11	Corporate Hangar	\$732,000	State / Local
12	Aircraft Parking Apron	\$723,500	AIP/State/Local
13	Stormwater Management Facilities	\$540,000	State / Local
14	8-Unit T-Hangar	\$1,098,000	State / Local
15	Automobile Parking	\$372,500	State / Local
16	Property Acquisition	TBD	AIP/State/Local
17	Relocation of Box Hangars	\$732,000	State / Local
18	Rehabilitate (Crack Seal) Taxiways	\$166,666	AIP/State/Local
19	Taxiway Extension	\$2,716,000	AIP/State/Local
20	Widen Existing Taxiway	\$587,000	AIP/State/Local

Source: Baker

Next Steps
 Public Comments
 Due January 9, 2013
 Final Submission to PennDOT BOA
 January 2013

Additional information is contained in the MPU document. The complete MPU is available for review from December 6, 2012 through January 9, 2013 at the location and times specified below.

Titusville Airport
 Terminal Building
 2572 Meadville Road
 Titusville, PA 16354

Hours:
 Mon- Fri 9:00 am- 4:00 pm

Appendix E

Airport Property Information

EASEMENT AGREEMENT

This Easement Agreement is made the 22nd day of March, 2005 by and between Ed ^{WARD} Mackiewicz and Rose Mackiewicz, his wife, of the Township of Cherrytree, Venango County, Pennsylvania, ("Grantor") and the Airport Authority of the City of Titusville, a municipal authority created under and pursuant to the Municipality Authorities Act of 1945 ("Grantee").

WITNESSETH:

WHEREAS, Grantee maintains and operates an airport for private and commercial aviation located partly within the Township of Cherrytree, Venango County, Pennsylvania; and

WHEREAS, in order to maintain its airport operations, Grantee has determined that it is necessary to acquire an easement for air space and to restrict building and development within the Easement Areas as defined herein; and

WHEREAS, fee title to the property on which the Easement Areas are located is owned beneficially and of record by Grantor; and

WHEREAS, pursuant to this Agreement, Grantor has agreed to grant to Grantee an easement on and through Grantee's property for the purpose of flight of aircraft, the right to cause noise and dust incident to the flight of aircraft, to prevent erection of structures and growth of trees and other vegetation above the Easement Areas, and the right to enter the Easement Areas to remove or cut structures or vegetation upon at least seven days prior notice to Grantor.

NOW, THEREFORE, the parties hereto, in consideration of \$2,500.00 paid by Grantee to Grantor and intending to be legally bound hereby, agree as follows:

1. Grant of Easement. Grantor hereby grants and conveys to Grantee and Grantee's successors and assigns as fee owner of the easement property, a perpetual right of way and easement for the right and privilege to fly aircraft over the Easement Areas as defined herein, and the right to cause noise and dust over the Easement Areas incident to the flight of aircraft, subject to the further terms and conditions hereof. The boundaries of the Easement Areas are defined as follows:

1A. Runway Protection Zone Easement: Beginning at a point with coordinates Latitude 41°-36'-07.56" and Longitude 79°-44'-27.13", which is located on the centerline at the south end of the Titusville Airport Runway 18-36, then south 1°-35'-15" east approximately four hundred and ninety nine feet (499') to the center of Breedtown Road; then follow the centerline of such road in the easterly direction approximately one hundred and ninety feet

San Diego County Recorder of Deeds
Instrument Filings

Receipt# 113211

str# 2005-042133 4/11/2005 16:00:07

marks: BUTCHER & WINKLER

EASEMENT	17.00
EASEMENT - WRIT	.50
C.S. / A.T.J.	10.00
IMPROVEMENT FND	2.00
C. IMPRVMT FUND	3.00
check# 6202	\$32.50
Total Received.....	\$32.50

(190') to the western boundary of the property as defined in the deed, such point being the true point of beginning and the northwest corner of the Runway Protection Zone Easement; then follow the centerline of Breedtown road in the easterly direction approximately one hundred and eight feet (108'), which shall define the north east corner of the Runway Protection Zone Easement; then south 10°-7'-6" east approximately one thousand three hundred and ninety seven feet (1397'), which shall define the south east corner of the Runway Protection Zone Easement; then south 88°-24'-44" west approximately three hundred and fifty nine feet (359') to the western boundary of the property as defined by the deed, which shall define the south west corner of the Runway Protection Zone Easement; then follow the western boundary in the northern direction approximately one thousand three hundred and ninety feet (1390') to the true point of beginning.

1B. Approach Surface Easement: The eastern boundary of the Approach Surface Easement shall be defined as follows; beginning at the true point of beginning as defined by the Runway Protection Zone Easement; then to the north east corner of the Runway Protection Zone Easement; then south 10°-7'-6" east to the southern boundary of the property as defined in the deed. The western boundary of the Approach Surface Zone shall be defined as the western property boundary as defined by the deed.

1C. Transitional Surface Easement: The Transitional Surface boundary shall be defined as the remaining portion of Grantor's property beyond the Approach Surface Easement.

1D. The Easement Areas are shown on Exhibit A attached hereto and incorporated herein by this reference.

2. Easement against Structures within the Runway Protection Zone Easement Area. Grantor also grants and conveys to Grantee and Grantee's successors and assigns, a perpetual easement against the construction of any buildings or structures within the Runway Protection Zone Easement Area as described herein. Grantor covenants and agrees that the Runway Protection Zone Easement Area shall be used only as farmland, (either pastureland or cropland) or open land (included woodland, providing that such woodland does not interfere with the aviation rights granted herein).
3. Easement Against Structures and Vegetation within the Approach Surface Easement Area: Any structures constructed outside of the Runway Protection Zone Easement Area and any trees or other vegetation growing within the Approach Surface Easement as described in paragraph 1B

above shall not exceed a maximum elevation defined by the following equation: the Approach Surface Elevation at true point of beginning as defined by the Runway Protection Zone Easement is one thousand five hundred and forty two (1,542) feet above mean sea level. The Approach Surface slopes thirty-four (34) feet outward for each one (1) foot upward as it proceeds northward within the Approach Surface Easement Area.

4. Easement Against Structures within the Transitional Surface Easement Area: Any structures constructed outside of the Runway Protection Zone Easement Area and Approach Surface Easement and any trees or other vegetation growing outside of the Runway Protection Zone Easement Area and the Approach Surface Easement Area that are located in the Transitional Surface Easement Area shall not exceed a maximum elevation defined by the following formula; the Transitional Surface Easement Area slopes seven (7) feet outward for each one (1) foot upward beginning at the sides of and the same elevation as the Approach Surface Easement Area, and extending to a height of one hundred and fifty feet (150') above the airport elevation of one thousand six hundred feet (1600'), or at a height of one thousand seven hundred and fifty feet (1750') above mean sea level.
5. Ingress and Egress. Grantee shall have the right of ingress, egress and regress onto and across the Easement Areas for its employees, agents, contractors and equipment to trim and remove any trees and weeds which Grantee deems necessary in order to avoid interference with aircraft, provided that such trimming and removal shall not otherwise interfere with any use by Grantor of the Easement Areas consistent with the provisions of this Agreement. Grantee agrees to provide Grantor notice of at least seven days prior to entry for the aforesaid purposes. In the event Grantee removes from Grantor's property any trees with marketable timber, Grantee agrees to pay Grantor or his successors the fair market value of such timber, determined as follows. Grantee shall obtain an estimated value of the timber by a disinterested forester. If Grantor does not agree to accept such valuation, Grantor may obtain a valuation by another disinterested forester. If there is a 5% or more difference between the two valuations, Grantee shall pay Grantor (or successor) the average of the two valuations; otherwise, Grantee shall pay the value determined by the forester retained by Grantee.
6. Affected Premises. The property on which the above easements are located is a portion of that certain property conveyed to Ed Mackiewicz, Grantor herein, by Deed dated December 30, 1992 and of record in the Office of Recorder of Deeds of Venango County, Pennsylvania at Deed Book 954, page 126. Grantor warrants that he has good and marketable title to the premises upon which the above easements are granted and that

he has full right, power and authority to enter into and perform this Agreement.

- 7. Indemnity. Grantee agrees to indemnify and hold Grantor harmless from any liability, cost or expense incurred by Grantor by reason of injury to persons or damage to property arising out of or in connection with Grantee's exercise of the rights granted herein, except for such liability, cost or expense caused by the negligence of Grantor, his heirs, employees, independent contractors or assigns.
- 8. Assignment. This Agreement shall be freely assignable by either party.
- 9. Covenant Running with the Land. This Agreement shall constitute a covenant running with the land and shall benefit and bind the parties and their respective heirs, representatives, successors and assigns.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed the day and year first above set forth.

WITNESS:

Edward Mackiewicz
Ed Mackiewicz
ward

Rose Mackiewicz
Rose Mackiewicz

Charmie Smith

Charmie Smith

WITNESS:

Charmie Smith

Airport Authority of the City of Titusville

By: Jamie L. [Signature]

Title: PRESIDENT

CERTIFICATE OF RESIDENCE

I hereby certify that the precise residence of the Grantee herein is as follows:

107 N. Franklin St., Titusville, PA 16354

[Signature]

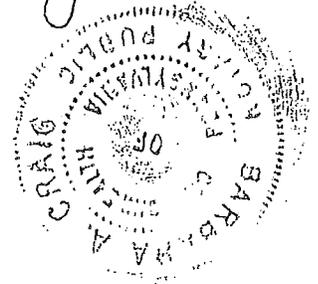
COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF CRAWFORD)

On this, the 30TH day of MARCH, 2005, before me, a notary public, the undersigned officer, personally appeared Ed Mackiewicz, and Rose Mackiewicz, his wife, known to me (or satisfactorily proven) to be the persons whose names are subscribed to the within instrument, and acknowledged that they executed the same for the purpose therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand and notarial seal.

Barbara A Craig

Notarial Seal
Barbara A. Craig, Notary Public
Titusville, Crawford County
My Commission Expires Apr. 26, 2005
Member, Pennsylvania Association of Notaries



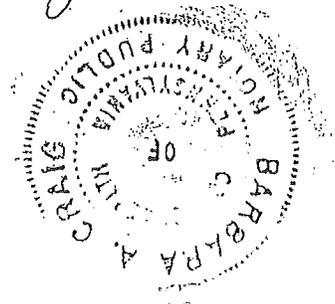
COMMONWEALTH OF PENNSYLVANIA)
) ss:
COUNTY OF CRAWFORD)

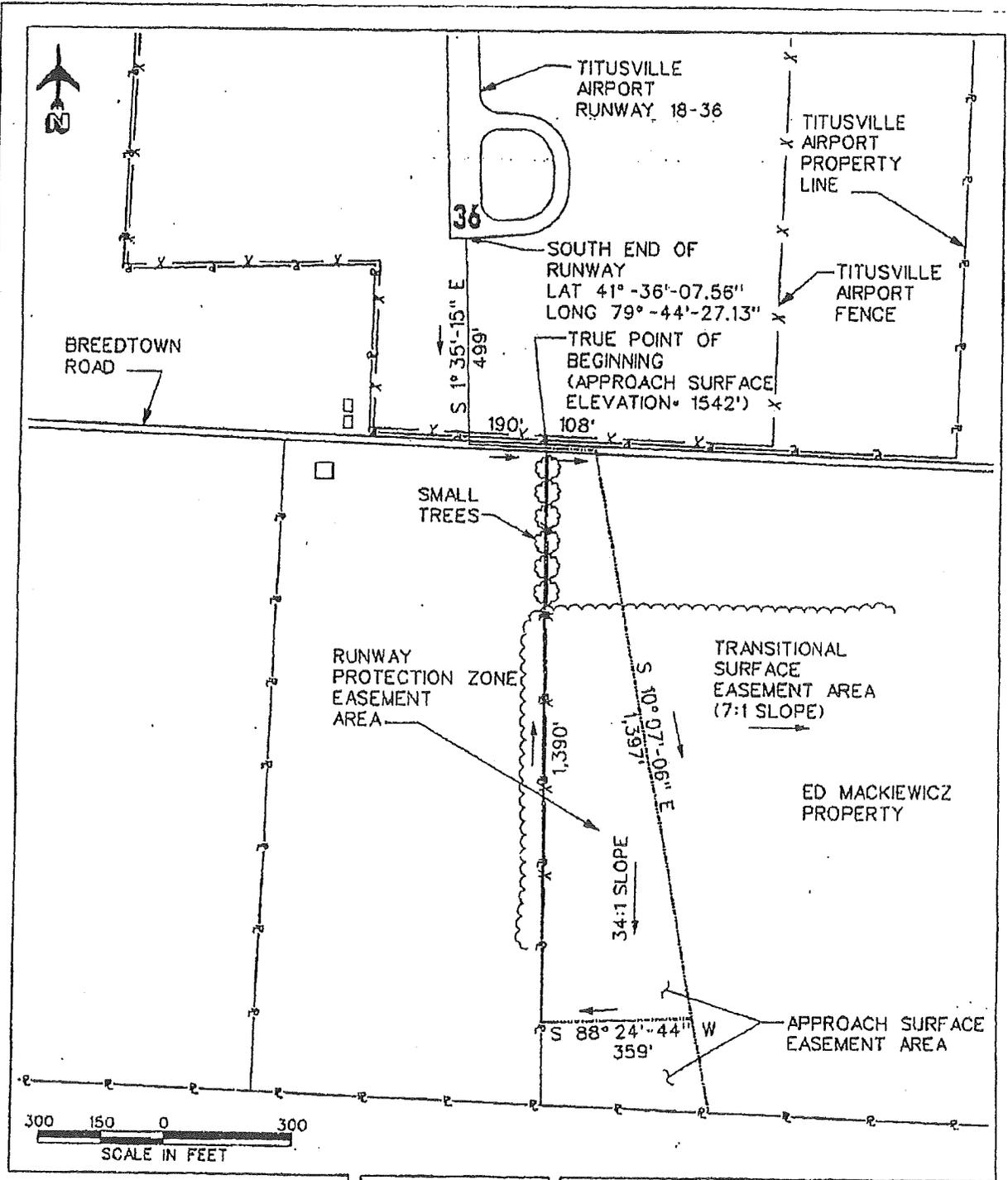
On this, the 31ST day of MARCH, 2005, before me, a Notary Public, the undersigned officer, personally appeared James W. Kuhn, who acknowledged himself to be the President of the Airport Authority of the City of Titusville, a municipal authority created under and pursuant to the Municipality Authorities Act of 1945, and that he as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of said corporation by himself as President James W. Kuhn.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Barbara A Craig

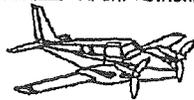
Notarial Seal
Barbara A. Craig, Notary Public
Titusville, Crawford County
My Commission Expires Apr. 26, 2005
Member, Pennsylvania Association of Notaries





Michael Baker Jr., Inc.
 A U.S. Government Contractor
 4000 Business Park
 138 Avenida de las Americas, Suite 100
 Miami Beach, Florida 33154

CITY OF TITUSVILLE
 TITUSVILLE AIRPORT AUTHORITY



TITUSVILLE AIRPORT AVIGATION
 EASEMENT AQUISITION
 RUNWAY 36 END

APR 11 2005

32.50

*END
Batches & ...*

Commonwealth of Pennsylvania
County of Venango

Recorded on this 11th day of APRIL
A.D. 2005, in the Recorder's Office of
said County in Record Book No. 350
Page 563.

See A. Buckner

2133

EASEMENT AGREEMENT

This Easement Agreement is made the 7th day of SEPTEMBER, 2004 by and between **Mae Gneadinger**, an unmarried widow of Oil Creek Township, Crawford County, Pennsylvania, ("Grantor") and the **Airport Authority of the City of Titusville**, a municipal authority created under and pursuant to the Municipality Authorities Act of 1945 ("Grantee").

WITNESSETH:

WHEREAS, Grantee maintains and operates an airport for private and commercial aviation located partly within the Township of Oil Creek, Crawford County, Pennsylvania; and

WHEREAS, in order to maintain its airport operations, Grantee has determined that it is necessary to acquire an easement for air space and to restrict building and development within the Easement Areas as defined herein; and

WHEREAS, fee title to the property on which the Easement Areas are located is owned beneficially and of record by Grantor; and

WHEREAS, pursuant to this Agreement, Grantor has agreed to grant to Grantee an easement on and through Grantee's property for the purpose of flight of aircraft, the right to cause noise and dust incident to the flight of aircraft, to prevent erection of structures and growth of trees and other vegetation above the Easement Areas, and the right to enter the Easement Areas to remove or cut structures or vegetation.

NOW, THEREFORE, the parties hereto, in consideration of \$5,000 paid by Grantee to Grantor and intending to be legally bound hereby, agree as follows:

1. Grant of Easement. Grantor hereby grants and conveys to Grantee and Grantee's successors and assigns as fee owner of the easement property, a perpetual right of way and easement for the right and privilege to fly aircraft over the Easement Areas as defined herein, and the right to cause noise and dust over the Easement Areas incident to the flight of aircraft, subject to the further terms and conditions hereof. The boundaries of the Easement Areas are defined as follows:

1A. Runway Protection Zone Easement: Beginning at a point with coordinates Latitude 41°-36'-55.94" and Longitude 79°-44'-30.40", which is located on the centerline at the north end of the Titusville Airport Runway 18-36, then north 1°-35'-15.72" west approximately eight hundred and sixty three feet (863') to the center of the road leading from Titusville to Meadville (the referenced property line in the deed), which is designated as State

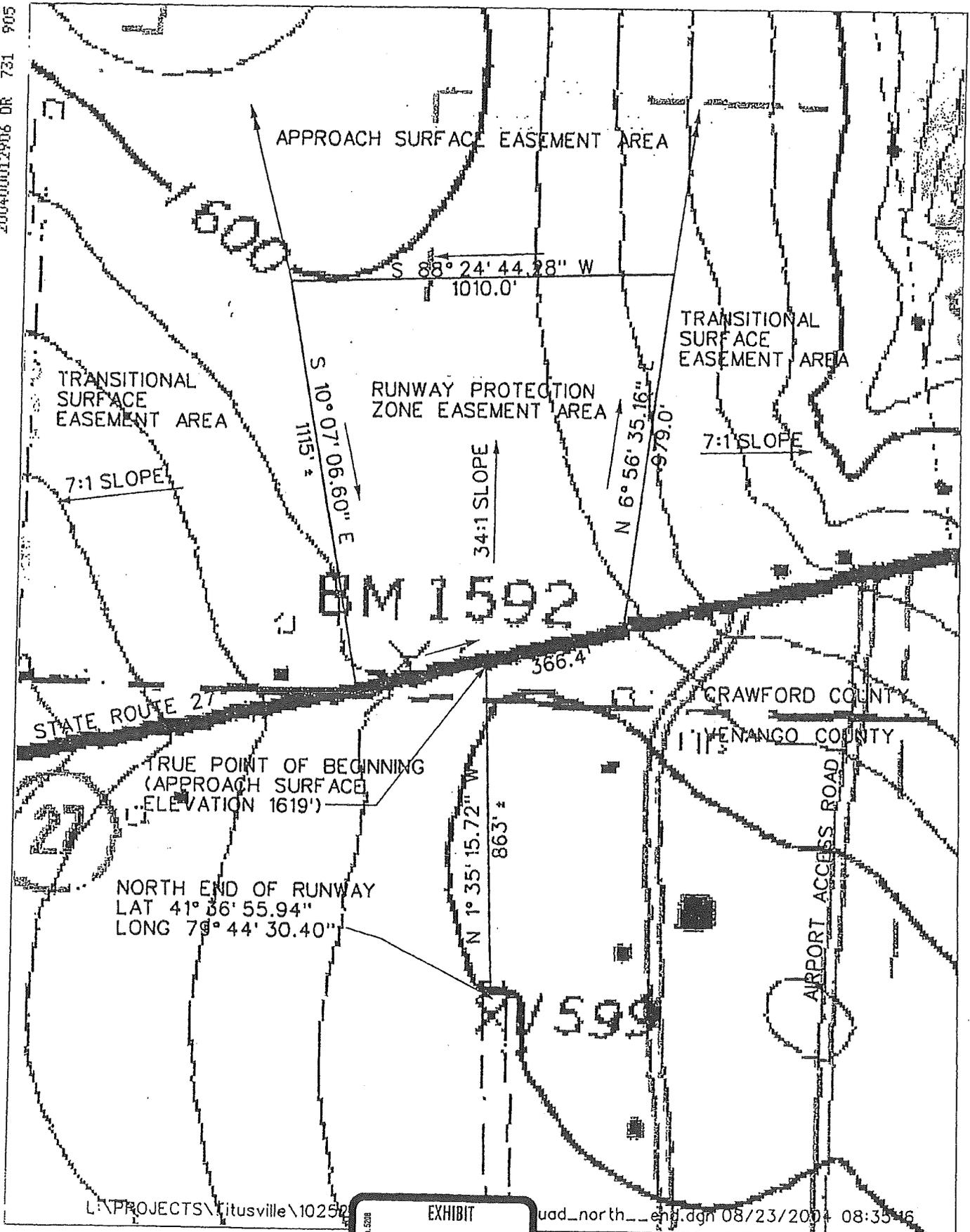
Route 27, such point being the true point of beginning; then follow the centerline of such road in the easterly direction three hundred sixty six and four tenths feet (366.4') to the southeast corner of the Runway Protection Zone Easement; then north 6°-56'-35.16" east nine hundred and seventy nine and zero tenths feet (979.0') to the north east corner of this Runway Protection Zone Easement; then south 88°-24'-44.28" west one thousand and ten and zero tenths feet (1010.0') to the north west corner of this Runway Protection Zone Easement; then south 10°-07'-06.60" east approximately one thousand one hundred and fifteen and zero tenths feet (1115.0') to the southwest corner of this Runway Protection Zone Easement and centerline of State Route 27; then to the true point of beginning.

1B. Approach Surface Easement: the eastern boundary of the Approach Surface Easement shall be defined as follows; beginning at the true point of beginning as defined by the Runway Protection Zone Easement; then to the southeast corner of the Runway Protection Zone Easement; then north 6°-56'-35.16" east to Grantor's northern property line as defined in that certain deed of record at Crawford County Deed Book 385, page 364. The western boundary of the Approach Surface Zone shall be defined as follows; beginning at the true point of beginning as defined by the Runway Protection Zone Easement; then to the southwest corner of the Runway Protection Zone Easement; then north 10°-07'-06.60" west to the northern property line as defined in that certain deed of record at Crawford County Deed Book 385, page 364.

1C. Transitional Surface Easement: The Transitional Surface boundary shall be defined as the remaining portion of Grantor's property beyond the Approach Surface Easement.

1D. The Easement Areas are shown on Exhibit A attached hereto and incorporated herein by this reference.

2. Easement against Structures within the Runway Protection Zone Easement Area. Grantor also grants and conveys to Grantee and Grantee's successors and assigns, a perpetual easement against the construction of any buildings or structures within the Runway Protection Zone Easement Area as described herein. Grantor covenants and agrees that the Runway Protection Zone Easement Area shall be used only as farmland, (either



pastureland or cropland) or open land (included woodland, providing that such woodland does not interfere with the aviation rights granted herein).

3. Easement Against Structures and Vegetation within the Approach Surface Easement Area: Any structures constructed outside of the Runway Protection Zone Easement Area and any trees or other vegetation growing outside of the Runway Protection Zone Easement that are located within the Approach Surface Easement as described in paragraph 1B above shall not exceed a maximum elevation defined by the following equation: the Approach Surface Elevation at true point of beginning as defined by the Runway Protection Zone Easement is one thousand six hundred and nineteen (1619) feet above mean sea level. The Approach Surface slopes thirty-four (34) feet outward for each one (1) foot upward as it proceeds northward within the Approach Surface Easement Area.
4. Easement Against Structures within the Transitional Surface Easement Area: Any structures constructed outside of the Runway Protection Zone Easement Area and Approach Surface Easement and any trees or other vegetation growing outside of the Runway Protection Zone Easement Area and the Approach Surface Easement Area that are located in the Transitional Surface Easement Area shall not exceed a maximum elevation defined by the following formula; the Transitional Surface Easement Area slopes seven (7) feet outward for each one (1) foot upward beginning at the sides of and the same elevation as the Approach Surface Easement Area, and extending to a height of one hundred and fifty feet (150') above the airport elevation of one thousand six hundred feet (1600'), or at a height of one thousand seven hundred and fifty feet (1750') above mean sea level.
5. Ingress and Egress. Grantee shall have the right of ingress, egress and regress onto and across the Easement Areas for its employees, agents, contractors and equipment to trim and remove any trees and weeds which Grantee deems necessary in order to avoid interference with aircraft, provided that such trimming and removal shall not otherwise interfere with any use by Grantor of the Easement Areas consistent with the provisions of this Agreement.
6. Affected Premises. The property on which the above easements are located is a portion of that certain property conveyed to Robert Gneadinger and Mae Gneadinger, Grantor herein, by Deed of Archie E. Ross, widower, dated March 22, 1957 and of record in the Office of Recorder of Deeds of Crawford County, Pennsylvania at Deed Book 385, page 364. Grantor as surviving tenant by entireties holds title to said premises by operation of law. Grantor warrants that she has good and marketable title to the premises upon which the above easements

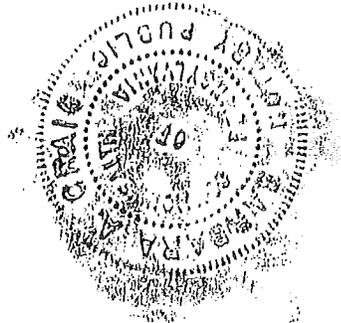
COMMONWEALTH OF PENNSYLVANIA)
) ss:
COUNTY OF CRAWFORD)

On this, the 20TH day of SEPTEMBER, 2004, before me, a Notary Public, the undersigned officer, personally appeared JAMES W. KUHN, who acknowledged himself/~~herself~~ to be the PRESIDENT of the Airport Authority of the City of Titusville, a municipal authority created under and pursuant to the Municipality Authorities Act of 1945, and that he/~~she~~ as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of said corporation by himself/~~herself~~ as PRESIDENT.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Barbara A Craig

Notarial Seal
Barbara A. Craig, Notary Public
Titusville, Crawford County
My Commission Expires Apr. 26, 2008
Member, Pennsylvania Association of Notaries



200400012906
Filed for Record in
CRAWFORD COUNTY PA
CAROL A. STAINBRDOK
09-22-2004 At 12:07 PM.
AGT 22.50
DR Book 731 Page 903 - 908

Certificate of Residence

I hereby certify that the precise residence of the Grantee herein is as follows:
107 N. Franklin St., Titusville, PA 16354

James W. Kuhn

11/10

Commonwealth of Penna.
Crawford County ss:

Recorded in the Recorder of Deeds Office
of said County in Record Book 731 Page 903
WITNESS my hand and official seal at Meadville, PA

this 22nd day of September 20 04

Carol A. Stainbrook
Recorder of Deeds

Memo

To: Jim Kuhn

From: Richard Winkler *RW*

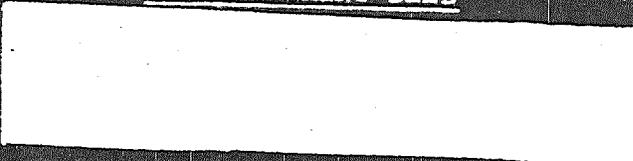
Date: 04/04/05

Re: Panza/Janakowski

Enclosed is a copy of an Easement Deed dated October 18, 1971 by Ella Thomas and Cordelia Thomas to the City, conveying what amounts to an easement for a clear zone across what was then the Thomas property. Enclosed is a copy of the sketch map of the easement area that is a part of the deed. As a result, the airport already holds some rights across what is now the Janakowski property, as a result of a deed from Roberta Panza in 2002.

RW/lw

THIS EASEMENT DEED



Made the Eighteenth day of October in the year nineteen hundred and seventy-one (1971)

Between ELLA M. THOMAS, Widow, Life Tenant, and CORDELIA THOMAS, Widow Remainderman, of Cherrytree Township, Venango County, Pennsylvania,

GRANTORS,

AND

THE CITY OF TITUSVILLE, a Municipal Corporation, of Crawford County, Pennsylvania,

Witnesseth, That in consideration of One Thousand Five Hundred Fifty (\$1,550.00)

in hand paid, the receipt whereof is hereby acknowledged, the said grantor s do hereby grant and convey, sell and confirm unto the said grantee, its successors and assigns, an

Easement and accompanying rights as hereinafter described, in and over the following described premises, situate in Cherrytree Township, Venango County, Pennsylvania, bounded and described as follows, to wit:

BEGINNING at an iron post, the Northwest corner; thence along the center of the Breedtown road, eighty-seven and one-half (87-1/2) degrees East, thirty and eight-tenths (30-8/10) perches to an iron post; thence South two and one-half (2-1/2) degrees West, one hundred three (103) perches to a post and witness; thence by land of Coover's Heirs North eight-seven and one-half (87-1/2) degrees West, thirty-eight and eight-tenths (38-8/10) perches to the place of beginning. Containing twenty-five (25) acres of land, more or less.

BEING, or intended to be, the same premises conveyed to Samuel P. Thomas and Cordelia Thomas, his wife, by Ella M. Thomas, Widow, by deed dated March 31, 1967, and recorded in Venango County Deed Book 703 at page 129. The said Samuel P. Thomas died April 6, 1968, thereby vesting complete title to the remainder in Cordelia Thomas, his wife. Ella M. Thomas joins in the within conveyance with Cordelia Thomas, for the purpose of extinguishing her life estate in the land described in this Easement.

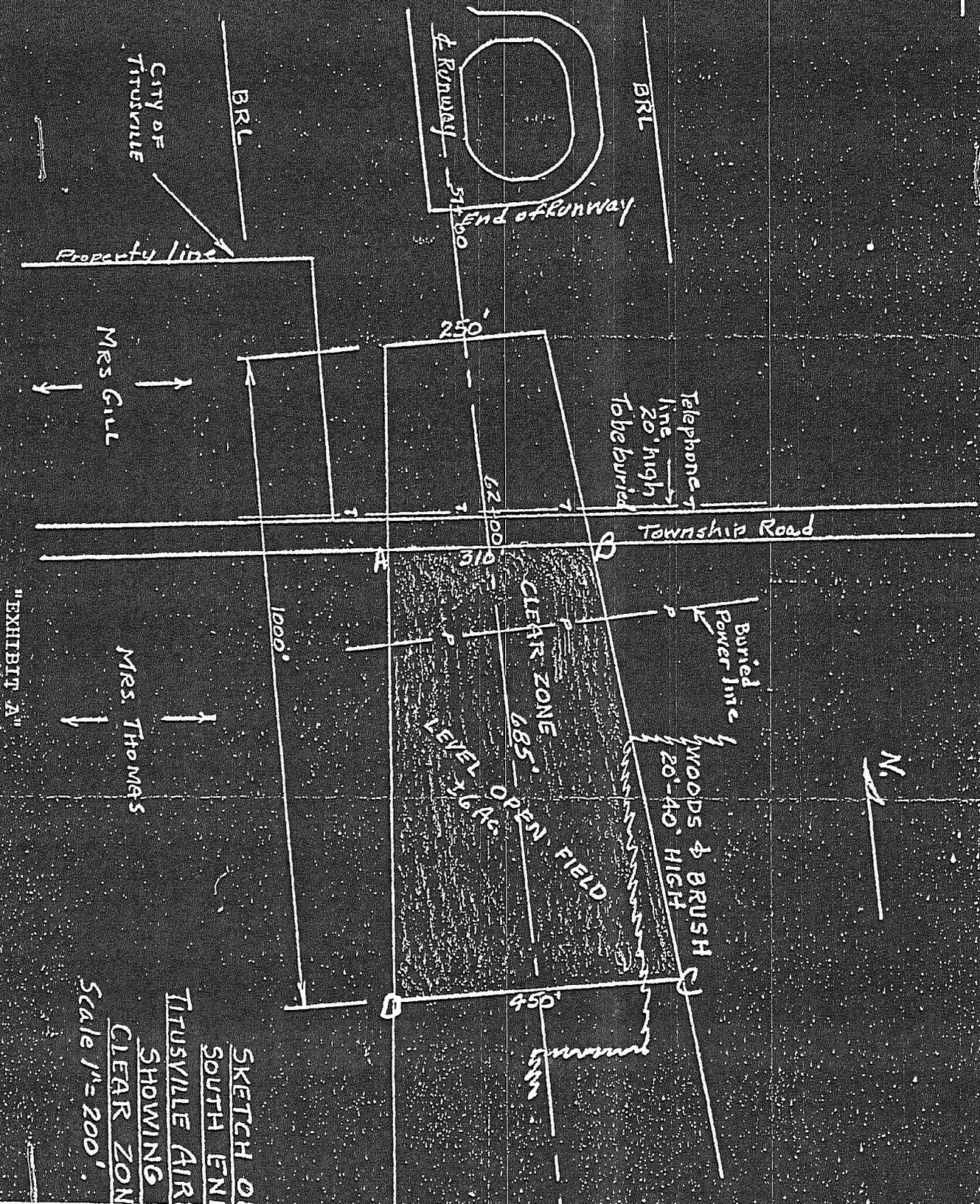
The quantity and extent of the Easement granted is over approximately six (6) acres of land, as shaded in in the attached "Exhibit A" to this deed, and is further roughly bounded and described as follows, to wit:

BEGINNING at a point on the southerly line of Township Road No. 663, designated on the attached sketch as point "A"; thence in a generally easterly direction along the South line of said Township Road a distance of three hundred ten (310) feet to point indicated "B"; thence in a generally southeasterly direction to a point indicated on the attached sketch as point "C"; thence in a generally westerly direction a distance of four hundred fifty (450) feet to a point designated as "D" in the attached sketch; thence in a generally northeasterly direction to a point designated on attached sketch as point "A", the point or place of beginning.

The usage extent of the Easement herein granted is that

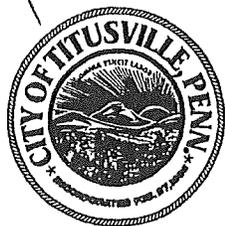
Grantors covenant with Grantee that they will build no structure, nor allow any structure to be built, nor grow any plant, tree, or other like thing, nor allow any plant, tree or other like thing to grow within the bounds of this Easement to a height greater than twelve (12) feet from ground level, as ground level now exists or may exist in the future.

The grant of this Easement is in perpetuity, unless earlier reconveyed by Grantee or its successor. This Easement shall be binding on Grantors herein and their heirs, successors and assigns.



SKETCH OF SOUTH END TITUSVILLE AIR SHOWING CLEAR ZON
Scale 1" = 200'

copy



CITY OF TITUSVILLE

BIRTHPLACE OF THE OIL INDUSTRY



May 17, 2007

Verizon North Inc.
Right of Way Department
31 S. Beaver Street
York, PA 17405

To Whom It May Concern:

At their meeting of Monday, May 14, 2007 Titusville City Council adopted Resolution No. 9 of 2007 to approve and authorize the execution and delivery of a Right of Way Agreement between the City of Titusville and Verizon North, Inc. to allow an underground cable along Route 27 on the City of Titusville's Airport property.

Enclosed are the executed copies of the Underground Grant Agreement between the City of Titusville and Verizon North, Inc. and also a copy of Resolution No. 9 of 2007.

Please submit payment of Five Thousand (\$5,000) dollars, made payable to the City of Titusville, to the City Treasurer's office located in City Hall, 107 North Franklin Street, Titusville, PA 16354.

Thank you for your cooperation, and if you have any questions regarding, please contact me at 814-827-5300, extension 303.

Sincerely,

Mary Ann Nau, M.Ed., CPRP
City Manager

sb
Enc.

cc: Honorable Mayor and Council
City Treasurer
Airport Authority

COPY

RESOLUTION No. 9 of 2007

CITY OF TITUSVILLE, PENNSYLVANIA

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF TITUSVILLE, CRAWFORD COUNTY, PENNSYLVANIA, TO APPROVE AND AUTHORIZE THE EXECUTION AND DELIVERY OF A RIGHT OF WAY AGREEMENT BETWEEN THE CITY OF TITUSVILLE AND VERIZON NORTH, INC. TO ALLOW AN UNDERGROUND CABLE ALONG ROUTE 27 ON THE CITY OF TITUSVILLE'S AIRPORT PROPERTY.

WITNESSETH:

WHEREAS, Verizon North, Inc. ("Verizon") has requested that the City of Titusville grant a right of way allowing for an underground communication line on the City's Airport property at a location along State Route 27, for consideration of \$5,000;

WHEREAS, the requested right of way will have no impact on Airport operations; and

WHEREAS, the City Council of the City of Titusville deems it to be in the best interest of the citizens of the City of Titusville to grant the requested right of way.

NOW, THEREFORE, BE IT RESOLVED, and the City Council of the City of Titusville hereby declares that:

1. The right of way agreement – Underground Grant requested by Verizon in the form submitted to this meeting is hereby authorized and approved, for payment by Verizon of consideration of \$5,000.
2. The Mayor and City Clerk are hereby authorized and directed to execute, acknowledge and deliver the form of right of way agreement – Underground Grant presented at this meeting.

This resolution has been duly adopted the 14th day of May, 2007.

City of Titusville,

By: Brian A. Sanford
Brian A. Sanford, Mayor

ATTEST:
Mary Ann Nau
Mary Ann Nau, City Clerk

Prepared by: _____

Return to: Verizon North Inc.
Right of Way Department
31 S. Beaver Street
York, PA 17405
(814) 456-3424

R/W#: 2007-021 CD#: 500-10028
WO#: 7FOA0AA EXCHG: 5830



UNDERGROUND GRANT

Received of VERIZON NORTH INC., (Hereinafter referred to as the Telephone Company) the sum of **Five Thousand (\$5000.00)**, receipt whereof is hereby acknowledged, City of Titusville, a city of the Third Class,

hereby grants unto said Telephone Company, its successors, assigns, lessees and agents, the right, privilege and authority to construct, maintain, operate and inspect and from time to time, reconstruct, rearrange, replace, renew and thereafter maintain, operate and inspect, underground communication lines, appliances, manholes, conduits, cables and wires (hereinafter referred to as utility facilities) together with electric facilities and service provided by the electric utility or company (when required by Telephone Company) on, over, under, along and across its land, at mutually agreed upon locations as shown on Exhibit "A" which is attached hereto and made part hereof, said land being located **along State Route 27 in Oil Creek Township, County of Crawford, Commonwealth of Pennsylvania**, more particularly described in **Deed Book _____, Page _____**.

Owner(s) further grant(s) the right of access over said land to or from said utility facilities by Telephone Company employees and/or agents and equipment, for the purposes set forth above, by any reasonable route over said land, including but not limited to private lanes, roads or driveways and the right to make such alterations in said land as mutually agreed is necessary to construct said utility facilities..

Owner(s) further grant(s) to Telephone Company the right to cut back such foliage (trees, shrubs, brush, etc) as may interfere with the use and operation of said utility facilities.

The said utility facilities shall be installed in a good workmanlike manner by, and at the expense of, the said Telephone Company.

The said Telephone Company shall indemnify and hold **City of Titusville and Titusville Airport Authority**, harmless from and against all claims for liability, for injury to person, including death, or damage to property caused by or arising out of the construction, operation, maintenance and removal of said utility facilities.

This agreement shall take effect at the expiration of thirty (30) days from the date when a copy thereof shall be filed in the office of the Secretary of the Pennsylvania Public Utility Commission; provided that if the said Commission shall, prior to the expiration of such period, institute a proceeding affecting its validity under the provisions of Section 507 of the Public Utility Law, this agreement shall become effective only upon the approval thereof by the said Commission.

(Signature page to follow)

IN WITNESS WHEREOF, we have hereunto set our hand(s) and seal(s) this
the 14th day of May, A.D., 2007, at
City of Titusville, 107 N. Franklin Street, Titusville, PA 16354
(Post Office Address)

WITNESS OR ATTEST:

By: *[Signature]*

for: City of Titusville

By: *[Signature]*
Brian A. Sanford, Mayor, City of Titusville

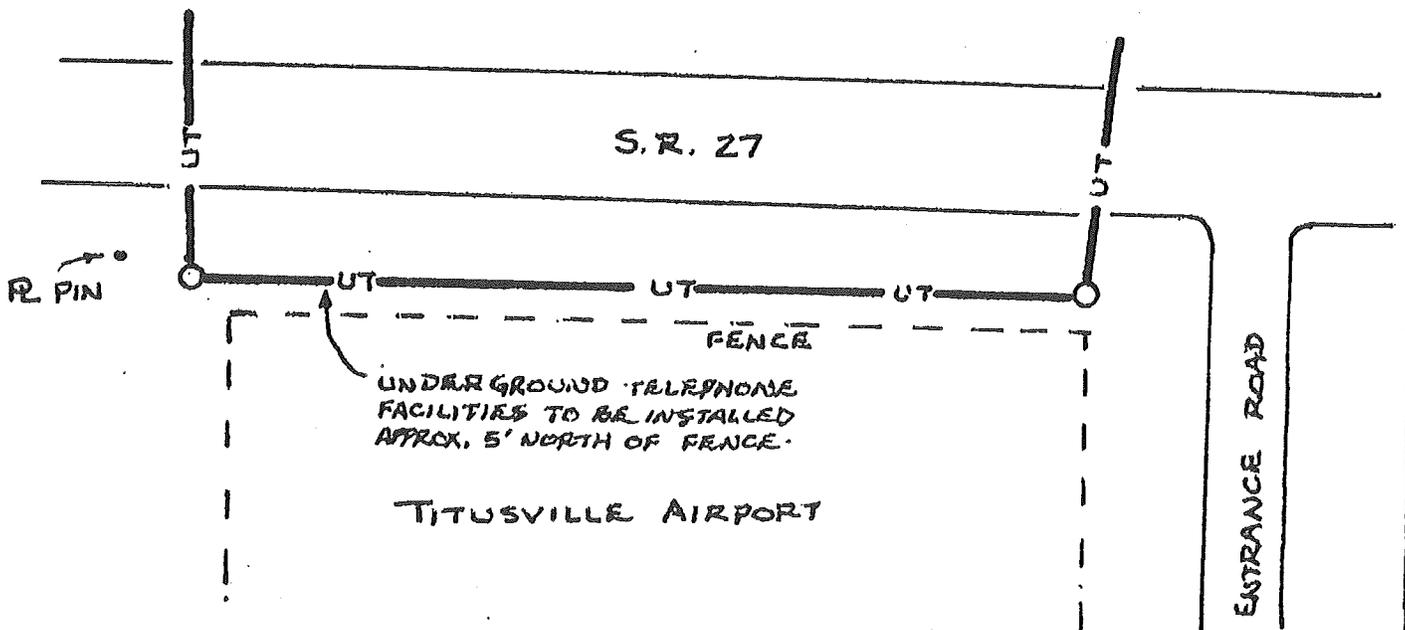
(Seal)

Approved as to form:

[Signature]
(Solicitor)



OIL CREEK TWP.
CRAWFORD CO.



LEGEND

- UT — UNDERGROUND TELEPHONE CONDUIT AND CABLES
- = FIBERGLASS MANHOLE E/W LID AT GROUND LEVEL.

NO ABOVE GROUND STRUCTURES TO BE INSTALLED BY VERIZON ON AIRPORT PROPERTY PER THIS AGREEMENT.

EXHIBIT A

VERIZON UNDERGROUND FACILITIES ON TITUSVILLE AIRPORT PROPERTY

NOT TO SCALE

DGB 05-01-07

Division NEW YORK

CD No. 995

Exchange ITTSVILLE

R/W No. 4206

RIGHT OF WAY AGREEMENT

INDENTURE, made this 10th day of NOVEMBER, 19 70, by and between

Party of the First Part, hereinafter called
GRANTORS, identified as -

Name AGENT GNEADING-GR
 Address RUE ITTSVILLE, PA.
 Name MAE. B. GNEADINGER
 Address RDS ITTSVILLE, PA
 Name _____
 Address _____
 Name _____
 Address _____

Party of the Second Part, hereinafter called
GRANTEE, identified as -

**GENERAL TELEPHONE COMPANY
 OF PENNSYLVANIA**
 150 WEST TENTH STREET
 ERIE, PENNSYLVANIA, 16512

WITNESSETH: That in consideration of the sum of One Dollar (\$1.00) received from the Grantor and other considerations and terms hereinafter set forth, Grantor(s) hereby grant and convey unto Grantee, its successors and assigns, a Right of Way upon, across, over, under and along the land of Grantor(s) which land is described below, for the construction, reconstruction, operation and maintenance of telephone facilities. The terms of this Right of Way are more fully described on the reverse side of this agreement.

Grantor will not be held responsible for any accidental damage to telephone facilities placed by virtue of this agreement. Grantee agrees to relocate its facilities at its own expense to a mutually agreed upon location should facilities interfere with any future development of the land.

LOCATION OF LAND: City/Borough/Township of DILL CREEK
 County of CRAWFORD, State of Pennsylvania; said land being bounded as follows:
 on the North by CURRYN LUMBER CO.
 on the East by C. STANG
 on the South by RT 27
 on the West by R. FITCH

PAYMENT: Classified under Telephone No 3810-42

Total Consideration ----- \$ 1.00
 Amount Paid Herewith (R/W Ch. No. CASH) \$ 1.00
 *Balance Payable ----- \$ _____

*If the balance payable is not paid by Grantee to Grantor within _____ from date of this agreement, the rights and privileges herein granted, without further act by the parties hereto, shall cease, thereupon Grantee shall be relieved from any further obligation hereunder and this agreement shall become null and void.

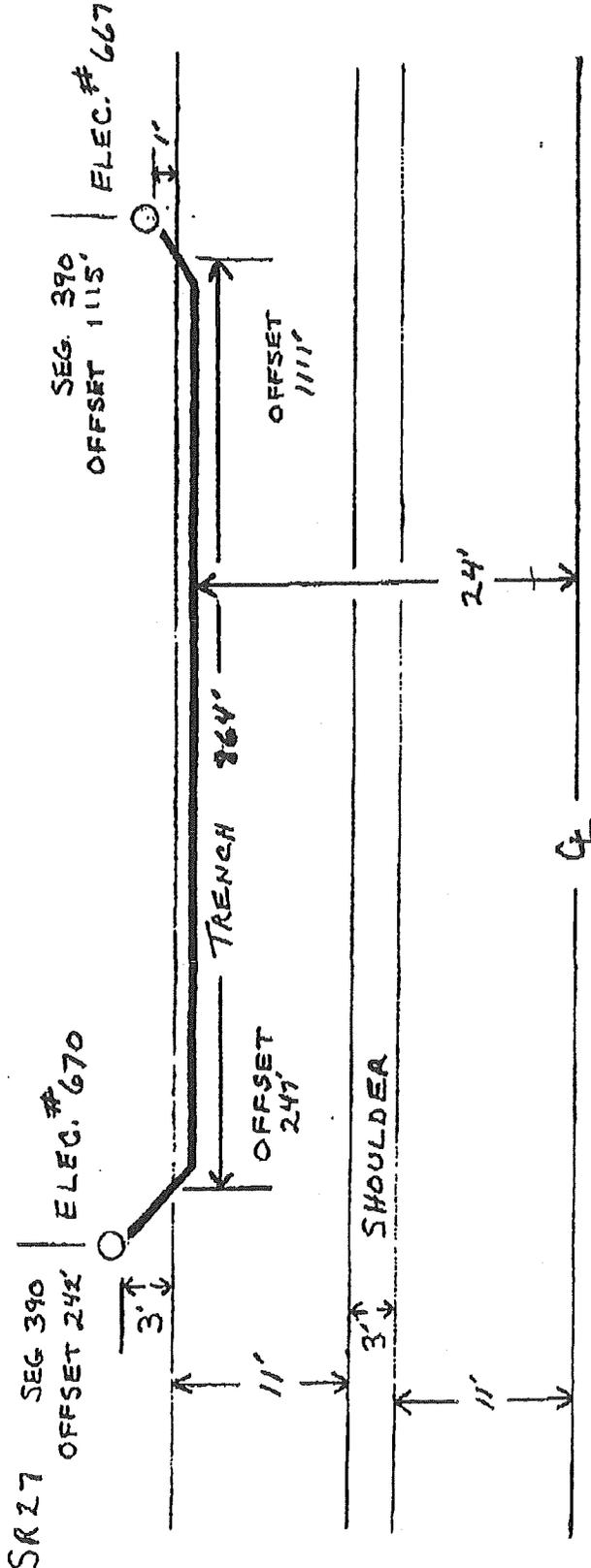
R/W LOCATION NUMBER		
BASE MAP	2000' GRID	200' GRID
BH13	D4	G2 To F0
TO	TO	TO
D3		F9 To E-4

ACCOUNTING DISTRIBUTION			
ORDER NO.	ACCOUNT	EXCHANGE	AMOUNT
P95060	C604	59 583	1.00
		59	

Authorized By R. A. [Signature] Date 11/24/10

REMARKS: 127462

QUINTUPPLICATE TO DIVISION ENGINEERING DEPT. -
TEMPORARY COPY



CRAWFORD COUNTY
OIL CREEK TWP.

SR 27
SEG. 390

NOTE: PROPOSED TRENCH TO CONTAIN ONE VACANT 4" PVC AND ONE 4" PVC CONTAINING TWO PLASTIC 1 1/2" OD SUB DUCTS AND ONE YFD - 216 SM FIBER OPTIC CABLE AT A DEPTH OF 42" ENTERING STATE R/W AT SEG. 390 OFFSET 247' AND EXITING STATE R/W AT SEG. 390 OFFSET 1111'.

FEE CALCULATION: 873 FT.

VERIZON W.O. 5E30 - 7F0A0AA

Titusville Airport

Appendix F

Airport Layout Plan

AIRPORT LAYOUT PLAN

for

TITUSVILLE AIRPORT

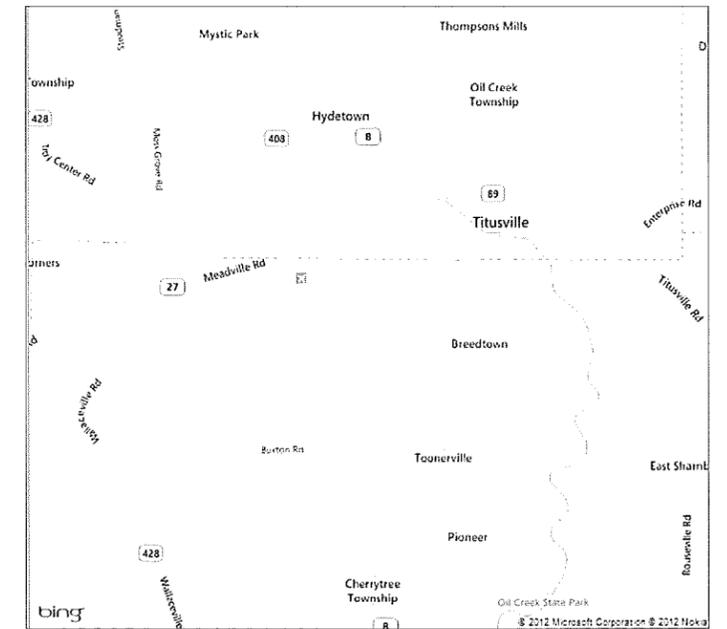
2572 MEADVILLE ROAD
TITUSVILLE, PENNSYLVANIA 16354

STATE AGREEMENT NO. ABG-2010-TITUSVILLE AA-00029



LOCATION MAP

INDEX OF DRAWINGS	
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	AIRPORT LAYOUT PLAN
3	AIRPORT DATA TABLES
4	TERMINAL AREA PLAN
5	FUTURE AIRSPACE PLAN
6	OBSTRUCTION DATA TABLES
7	INNER APPROACH SURFACE AND RPZ CONTROL PLAN
8	AIRPORT LAND USE AND ACCESS PLAN
9	AIRPORT PROPERTY MAP
10	ENVIRONMENTAL OVERVIEW PLAN



VICINITY MAP

FAA'S APPROVAL OF THIS AIRPORT LAYOUT PLAN (ALP) REPRESENTS ACCEPTANCE OF THE GENERAL LOCATION OF FUTURE FACILITIES DEPICTED. DURING THE PRELIMINARY DESIGN PHASE, THE AIRPORT OWNER IS REQUIRED TO RESUBMIT FOR APPROVAL THE FINAL LOCATIONS, HEIGHTS, AND EXTERIOR FINISH OF STRUCTURES. FAA'S CONCERN IS OBSTRUCTIONS, IMPACT ON ELECTRONIC AIDS, OR ADVERSE EFFECTS ON CONTROLLER VIEW OF AIRCRAFT APPROACH AND GROUND MOVEMENT AREAS WHICH COULD ADVERSELY AFFECT THE SAFETY, EFFICIENCY, OR UTILITY OF THE AIRPORT.

CONSTRUCTION NOTICE REQUIREMENT

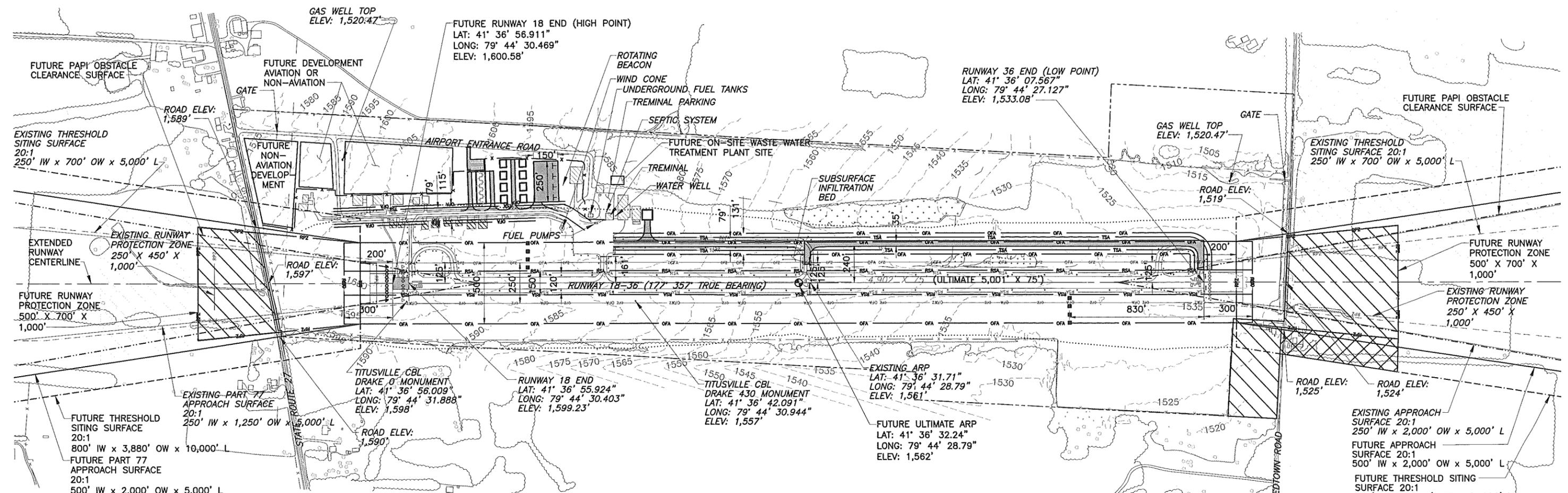
TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE AIRPORTS DISTRICT OFFICE PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

REVISION BLOCK			
NO.	DESCRIPTION	DATE	BY



MASTER PLAN UPDATE		SHEET 1 of 10
COVER SHEET		
ABG-2010-TITUSVILLE AA-00029	DATE	FEBRUARY 2013

Baker Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation
Airsides Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108



LEGEND	EXISTING	FUTURE
TEXT STYLE DEPICTING INFORMATION	XXXX	XXXX
RUNWAY OBJECT FREE AREA	— OFA —	— OFA —
RUNWAY OBJECT FREE ZONE	— OFZ —	— OFZ —
RUNWAY SAFETY AREA	— RSA —	— RSA —
RUNWAY PROTECTION ZONE	— RPZ —	— RPZ —
THRESHOLD SITING SURFACE	—	—
PAPI OBSTACLE CLEARANCE SURFACE	N/A	—
TAXIWAY OBJECT FREE AREA	— OFA —	— OFA —
TAXIWAY SAFETY AREA	— TSA —	— TSA —
BUILDING RESTRICTION LINE	N/A	—
PERIMETER FENCE	— x — x —	— x — x —
GROUND CONTOUR	—	N/A

LEGEND CONT'D.	EXISTING	FUTURE
PROPERTY LINE	—	N/A
PROPERTY ACQUISITION	N/A	▨
STREAM	—	N/A
VEGETATION / TREE LINE	—	N/A
WETLAND	—	N/A
AERIAL EASEMENT	—	▨
PAVEMENT	□	▨
BUILDING TO BE REMOVED	N/A	▨
BUILDINGS / HANGAR	▨	□
RUNWAY END IDENTIFIER LIGHTS	◀	◀
THRESHOLD LIGHTS	○○○○	○○○○
PRECISION APPROACH PATH INDICATOR	N/A	■ ■ ■ ■

- NOTES:**
- SEE AIRPORT DATA FOR AIRPORT, RUNWAY AND WIND ROSE INFORMATION.
 - SEE TERMINAL AREA PLAN FOR STRUCTURE IDENTIFICATION AND INFORMATION.
 - NO OBJECT FREE ZONE PENETRATIONS, EXCEPT NORTH OF RUNWAY 18 END, WHERE GROUND IS SLIGHTLY HIGHER THAN RUNWAY END WITHIN OFZ.
 - THE EXISTING AND FUTURE PRIMARY SURFACES ARE NOT SHOWN FOR CLARITY.
EXISTING PRIMARY SURFACE: 250' WIDE CENTERED ON RUNWAY CENTERLINE, EXTENDING 200' BEYOND THRESHOLD.
FUTURE PRIMARY SURFACE: 500' WIDE CENTERED ON RUNWAY CENTERLINE, EXTENDING 200' BEYOND THRESHOLD.
 - SEE FUTURE AIRSPACE PLAN AND INNER APPROACH SURFACE AND RPZ CONTROL PLAN FOR OBSTRUCTION INFORMATION.
 - THE BUILDING RESTRICTION LINE SHOWN DEPICTS WHERE THE FUTURE PART 77 TRANSITIONAL SURFACE IS AT A HEIGHT OF 25' ABOVE GROUND LEVEL (AGL). BUILDINGS LESS THAN 25' COULD BE POSITIONED CLOSER TO THE RUNWAY. BUILDINGS TALLER THAN 25' WILL BE REQUIRED TO BE FURTHER FROM THE RUNWAY. ALL WILL REQUIRE AIRSPACE EVALUATION VIA SUBMISSION OF FAA FORM 7460-1, "NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION."

AIRPORT SPONSOR APPROVAL	
THIS AIRPORT LAYOUT PLAN IS HEREBY APPROVED	
NAME	DATE
TITLE	
SIGNATURE	

PENNDOT BUREAU OF AVIATION	
THIS AIRPORT LAYOUT PLAN IS HEREBY APPROVED	
NAME	DATE
TITLE	
SIGNATURE	

FAA APPROVAL	
THIS AIRPORT LAYOUT PLAN IS HEREBY APPROVED	
NAME	DATE
TITLE	
SIGNATURE	

REVISION BLOCK			
NO.	DESCRIPTION	DATE	BY

Baker Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation
Airsides Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108



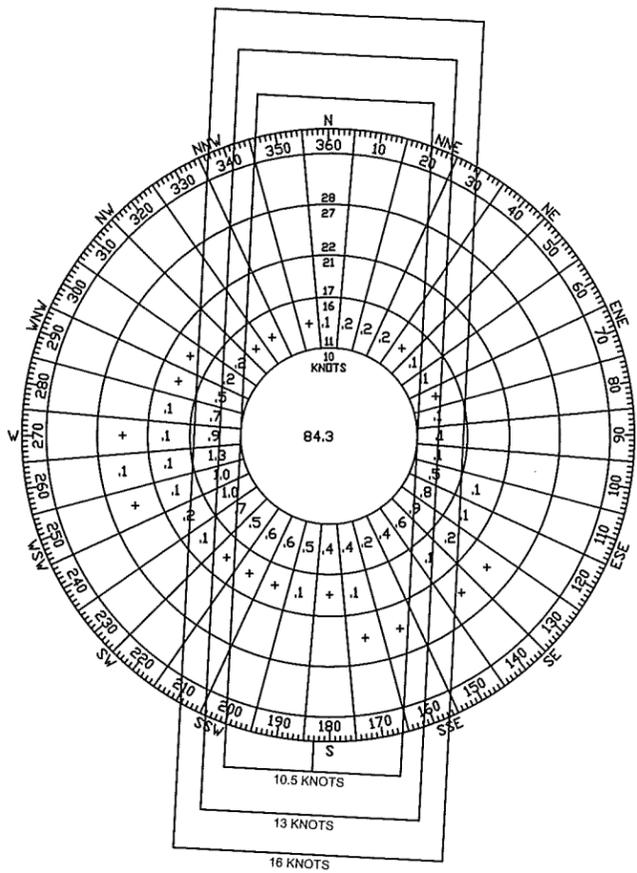
CITY OF TITUSVILLE
TITUSVILLE AIRPORT AUTHORITY

MASTER PLAN UPDATE
AIRPORT LAYOUT PLAN

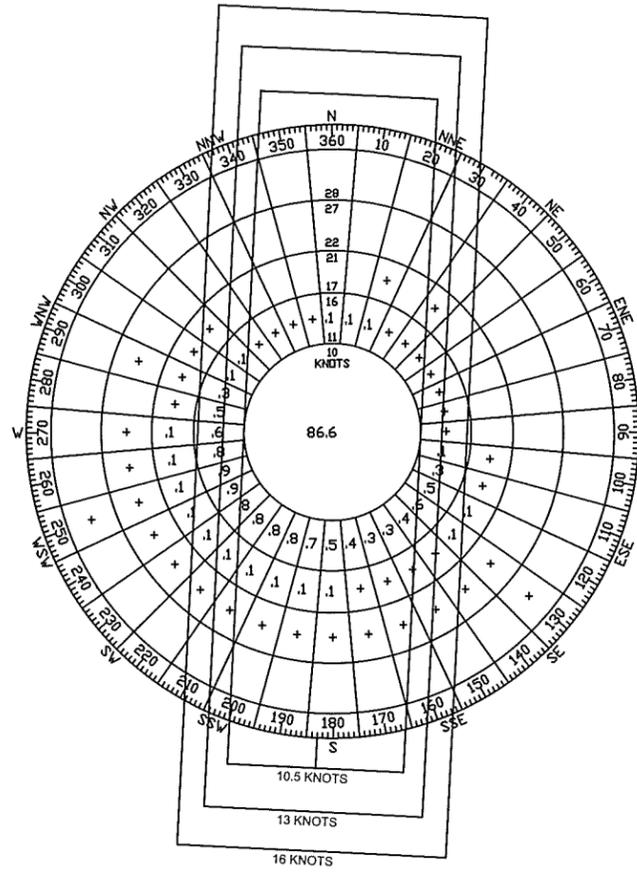
ABG-2010-TITUSVILLE AA-00029 DATE FEBRUARY 2013

SHEET
2
of
10

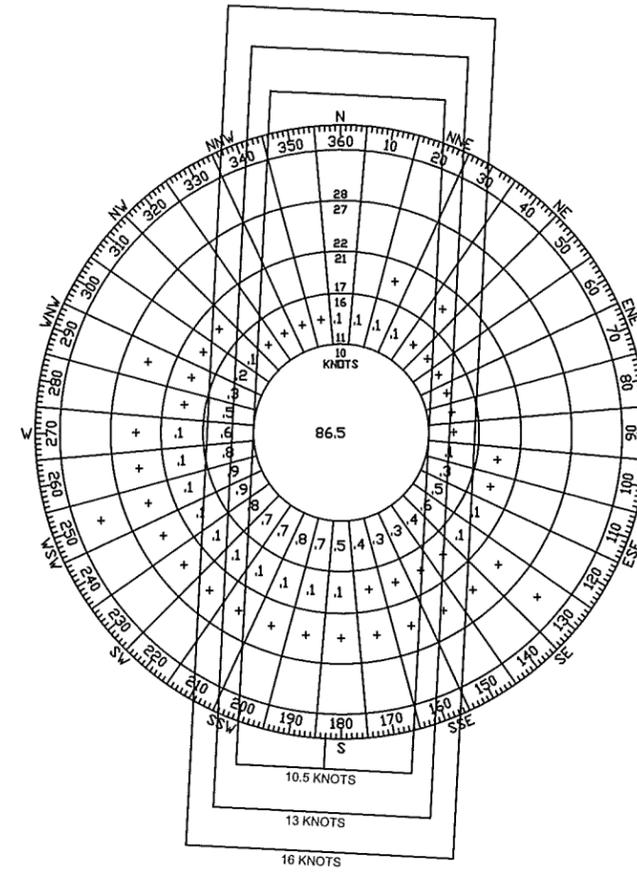
300 150 0 300
SCALE IN FEET



VFR WIND ROSE



IFR WIND ROSE



ALL WEATHER WIND ROSE

SOURCE: FRANKLIN PA, PA ANNUAL PERIOD RECORD 2000-2009 (NOAA)

AIRPORT DATA TABLE		
AIRPORT DATA	EXISTING	FUTURE
AIRPORT ELEVATION (MSL)	1,599.23'	1,600.58'
AIRPORT REFERENCE POINT (NAD 83)		
LATITUDE	41° 36' 31.71"	41° 36' 32.24"
LONGITUDE	79° 44' 28.79"	79° 44' 28.79"
MEAN MAX TEMP. OF HOTTEST MONTH	83°	83°
AIRPORT AND TERMINAL AREA NAVAIDS	WIND CONE WIND TEE, ROTATING BEACON	WIND CONE, WIND TEE, ROTATING BEACON
MAGNETIC VARIATION	9.41° W	N/A
DATE OF MAGNETIC VARIATION	SEPTEMBER 2011	N/A
NPIAS SERVICE LEVEL	G.A.	G.A.
STATE SERVICE LEVEL	UTILITY, G.A.	UTILITY, G.A.
WIND COVERAGE CROSSWIND COMPONENT (13 KNOTS)		
VFR	95.19%	95.19%
IFR	96.76%	96.76%
ALL WEATHER	96.57%	96.57%
AIRPORT REFERENCE CODE	A-I	B-II
DESIGN AIRCRAFT		KING AIR 200
TAXIWAY LIGHTING	YES	YES
TAXIWAY MARKING	YES	YES

* THE FAA IS CURRENTLY DEVELOPING NEW GPS APPROACHES FOR TITUSVILLE. PUBLICATION OF NEW APPROACHES IS ANTICIPATED IN 2014. APPROACH VISIBILITY MINIMUMS TO BE DETERMINED BY FAA.

RUNWAY DATA TABLE

RUNWAY DATA	EXISTING	FUTURE
EFFECTIVE GRADIENT	1.35%	1.35%
MAXIMUM GRADE CHANGE	66.15'	66.92'
MAXIMUM ELEVATION (MSL)	1,599.23'	1,600.58'
RUNWAY LENGTH	4,902'	5,001'
RUNWAY WIDTH	75'	75'
DISPACED THRESHOLD	N/A	N/A
USABLE RUNWAY LENGTH	4,902'	
PAVEMENT SURFACE TYPE	ASPHALT	ASPHALT
PAVEMENT STRENGTH		
	SINGLE WHEEL	12,500 LBS
		12,500 LBS.
APPROACH SURFACE SLOPE	20:1	20:1
APPROACH MINIMUMS	1 STATUTE MILE	1 STATUTE MILE *
FAR PART 77 CATEGORY	VISUAL	NON-PRECISION
DESIGNATED INSTRUMENT DEPARTURE RUNWAY	N/A	N/A
RUNWAY DEPARTURE SURFACES	N/A	N/A
VISUAL APPROACH AIDS	NONE	REIL, PAPI
INSTRUMENT APPROACH AIDS	VOR/GPS	VOR/GPS
RUNWAY LIGHTING	YES - MIRL	YES - MIRL
AMBER LENSES LAST 2,000'	NO	YES
RUNWAY MARKING	BASIC - VISUAL	NON-PRECISION
TAXIWAY LIGHTING	YES	YES
AIRPORT REFERENCE CODE	A-I	B-II
CRITICAL AIRCRAFT	CESSNA 182	KING AIR 200
RUNWAY OBJECT FREE AREA		
	LENGTH BEYOND RUNWAY	240'
		300'
	WIDTH	250'
		500'
RUNWAY SAFETY AREA		
	LENGTH BEYOND RUNWAY	240'
		300'
	WIDTH	120'
		150'
RUNWAY OBJECT FREE ZONE - NO OFZ PENETRATIONS		
	LENGTH BEYOND RUNWAY	200'
		200'
	WIDTH	250'
		250'
PRECISION OBJECT FREE AREA		
	N/A	N/A
RUNWAY PROTECTION ZONE		
	1,000' L x 250' IW x 450' OW	1,000' L x 500' IW x 700' OW
RUNWAY END COORDINATES (NAD 83)		
	RUNWAY 18 LATITUDE	41° 36' 55.924"
		41° 36' 56.911"
	RUNWAY 18 LONGITUDE	79° 44' 30.403"
		79° 44' 30.469"
	RUNWAY 36 LATITUDE	41° 36' 07.567"
		41° 36' 07.567"
	RUNWAY 36 LONGITUDE	79° 44' 27.127"
		79° 44' 27.127"
RUNWAY END ELEVATIONS (MSL)		
	1,599.23' (18)/ 1,533.08' (36)	1,600.58' (18)/ 1,533.08' (36)
DISPACED THRESHOLD ELEVATION (MSL)		
	N/A	N/A
DISPACED THRESHOLD COORDINATES (NAD 83)		
	N/A	N/A
LINE OF SIGHT VIOLATIONS		
	NONE	NONE

REVISION BLOCK			
NO.	DESCRIPTION	DATE	BY

Baker Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation
 Airside Business Park
 100 Airside Drive
 Moon Township, Pennsylvania 15108



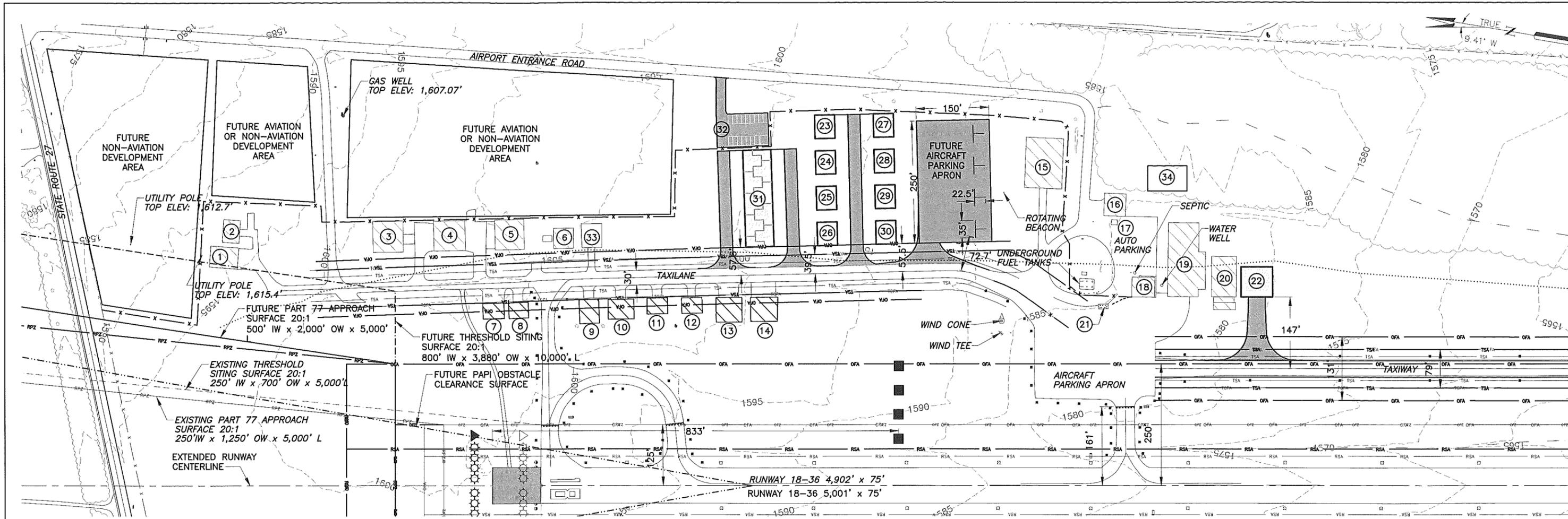
CITY OF TITUSVILLE
TITUSVILLE AIRPORT AUTHORITY

MASTER PLAN UPDATE

AIRPORT DATA TABLES

ABG-2010-TITUSVILLE AA-00029 DATE FEBRUARY 2013

SHEET 3 of 10



FACILITIES TABLE		
NO.	FACILITY DESCRIPTION	TOP ELEVATION (FT. MSL)
1	HANGAR	1,607.73
2	HANGAR	1,610.89
3	HANGAR	1,625.61
4	HANGAR	1,630.42
5	HANGAR	1,636.38
6	HANGAR	1,623.17
7	HANGAR	1,623.62
8	HANGAR	1,622.93
9	HANGAR	1,621.77
10	HANGAR	1,625.11
11	HANGAR	1,619.68
12	HANGAR	1,619.69
13	HANGAR	1,622.77
14	HANGAR	1,621.01
15	HANGAR	1,609.06
16	MAINTENANCE BUILDING	1,611.17
17	ELECTRICAL VAULT	1,593.89
18	TERMINAL	1,600.53
19	HANGAR	1,608.26
20	HANGAR	1,604.13

FACILITIES TABLE		
NO.	FACILITY DESCRIPTION	TOP ELEVATION (FT. MSL)
21	FUEL FACILITY	
22	FUTURE HANGAR	NO HIGHER THAN 1,595
23	FUTURE HANGAR	NO HIGHER THAN 1,650
24	FUTURE HANGAR	NO HIGHER THAN 1,640
25	FUTURE HANGAR	NO HIGHER THAN 1,630
26	FUTURE HANGAR	NO HIGHER THAN 1,620
27	FUTURE HANGAR	NO HIGHER THAN 1,650
28	FUTURE HANGAR	NO HIGHER THAN 1,640
29	FUTURE HANGAR	NO HIGHER THAN 1,630
30	FUTURE HANGAR	NO HIGHER THAN 1,620
31	FUTURE T-HANGAR	NO HIGHER THAN 1,620
32	FUTURE AUTOMOBILE PARKING	
33	VACANT HANGAR PAD	
34	FUTURE WASTEWATER TREATMENT PLANT SITE	TBD

- NOTES:**
- THE BUILDING RESTRICTION LINE SHOWN DEPICTS WHERE THE FUTURE PART 77 TRANSITIONAL SURFACE IS AT A HEIGHT OF 25' ABOVE GROUND LEVEL (AGL). BUILDINGS LESS THAN 25' COULD BE POSITIONED CLOSER TO THE RUNWAY. BUILDINGS TALLER THAN 25' WILL BE REQUIRED TO BE FURTHER FROM THE RUNWAY. ALL WILL REQUIRE AIRSPACE EVALUATION VIA SUBMISSION OF FAA FORM 7460-1 "NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION."
 - THE EXISTING AND FUTURE PRIMARY SURFACES ARE NOT SHOWN FOR CLARITY.
 - EXISTING PRIMARY SURFACE: 250' WIDE CENTERED ON RUNWAY CENTERLINE, EXTENDING 200' BEYOND THRESHOLD.
 - FUTURE PRIMARY SURFACE: 500' WIDE CENTERED ON RUNWAY CENTERLINE, EXTENDING 200' BEYOND THRESHOLD.

LEGEND	EXISTING	FUTURE
TEXT STYLE DEPICTING INFORMATION	XXXX	XXXX
RUNWAY OBJECT FREE AREA	— OFA —	— OFA —
RUNWAY OBJECT FREE ZONE	— OFZ —	— OFZ —
RUNWAY SAFETY AREA	— RSA —	— RSA —
RUNWAY PROTECTION ZONE	— RPZ —	— RPZ —
THRESHOLD SITING SURFACE	— — — —	— — — —
PAPI OBSTACLE CLEARANCE SURFACE	N/A	— — — —
TAXIWAY OBJECT FREE AREA	— TOFA —	— TOFA —
TAXIWAY SAFETY AREA	— TSA —	— TSA —
BUILDING RESTRICTION LINE	N/A	— · · · · ·
PERIMETER FENCE	— x — x — x —	— x — x — x —
GROUND CONTOUR	— — — —	N/A
PROPERTY LINE	— — — —	N/A
PROPERTY ACQUISITION	N/A	▨
STREAM	— — — —	N/A
VEGETATION / TREE LINE	— — — —	N/A
WETLAND	— — — —	N/A
AERIAL EASEMENT	— — — —	▣
PAVEMENT	— — — —	■

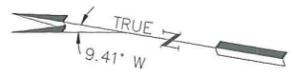
LEGEND CONT'D.	EXISTING	FUTURE
BUILDING TO BE REMOVED	N/A	▨
BUILDINGS / HANGAR	▨	▣
RUNWAY END IDENTIFIER LIGHTS	◁	◁
THRESHOLD LIGHTS	○○○○	○○○○
PRECISION APPROACH PATH INDICATOR	N/A	■ ■ ■ ■

Baker Michael Baker Jr., Inc.
 A Unit of Michael Baker Corporation
 Airside Business Park
 100 Airside Drive
 Moon Township, Pennsylvania 15108



REVISION BLOCK			
NO.	DESCRIPTION	DATE	BY

MASTER PLAN UPDATE		SHEET 4 of 10
TERMINAL AREA PLAN		
ABG-2010-TITUSVILLE AA-00029	DATE	FEBRUARY 2013



LEGEND:

- EXISTING AERIAL EASEMENT
- FUTURE AERIAL EASEMENT
- FUTURE PROPERTY ACQUISITION
- EXISTING PROPERTY LINE
- 1,750' FUTURE PART 77 SURFACE CONTOUR
- FUTURE THRESHOLD SITING SURFACE
- EXISTING THRESHOLD SITING SURFACE

RUNWAY 18 RPZ:
 INNER WIDTH: 500'
 OUTER WIDTH: 700'
 LENGTH: 1,000'
 NON-PRECISION
 1 MILE VISIBILITY MINIMUMS

RUNWAY 36 RPZ:
 INNER WIDTH: 500'
 OUTER WIDTH: 700'
 LENGTH: 1,000'
 NON-PRECISION
 1 MILE VISIBILITY MINIMUMS

NOTES:

1. AT THE TIME OF COMPLETION OF THIS ALP, CHERRYTREE TOWNSHIP WAS IN THE PROCESS OF DEVELOPING AND ADOPTING AIRPORT HAZARD ZONING. NO SURROUNDING TOWNSHIPS HAVE ENACTED HAZARD ZONING ORDINANCES.
2. SEE INNER APPROACH SURFACE AND RPZ PROTECTION PLAN FOR OBSTRUCTIONS IN IMMEDIATE VICINITY OF RUNWAY 18-36.
3. FOR OBSTRUCTION INFORMATION SEE SHEET 6 OBSTRUCTION DATA TABLES.
4. EXISTING PART 77 SURFACE CONTOURS NOT SHOWN FOR CLARITY.

REVISION BLOCK			
NO.	DESCRIPTION	DATE	BY

Baker Michael Baker Jr., Inc.
 A Unit of Michael Baker Corporation
 Airside Business Park
 100 Airside Drive
 Moon Township, Pennsylvania 15108



CITY OF TITUSVILLE
 TITUSVILLE AIRPORT AUTHORITY

MASTER PLAN UPDATE		SHEET 5 of 10
FUTURE AIRSPACE PLAN		
ABG-2010-TITUSVILLE AA-00029	DATE	FEBRUARY 2013

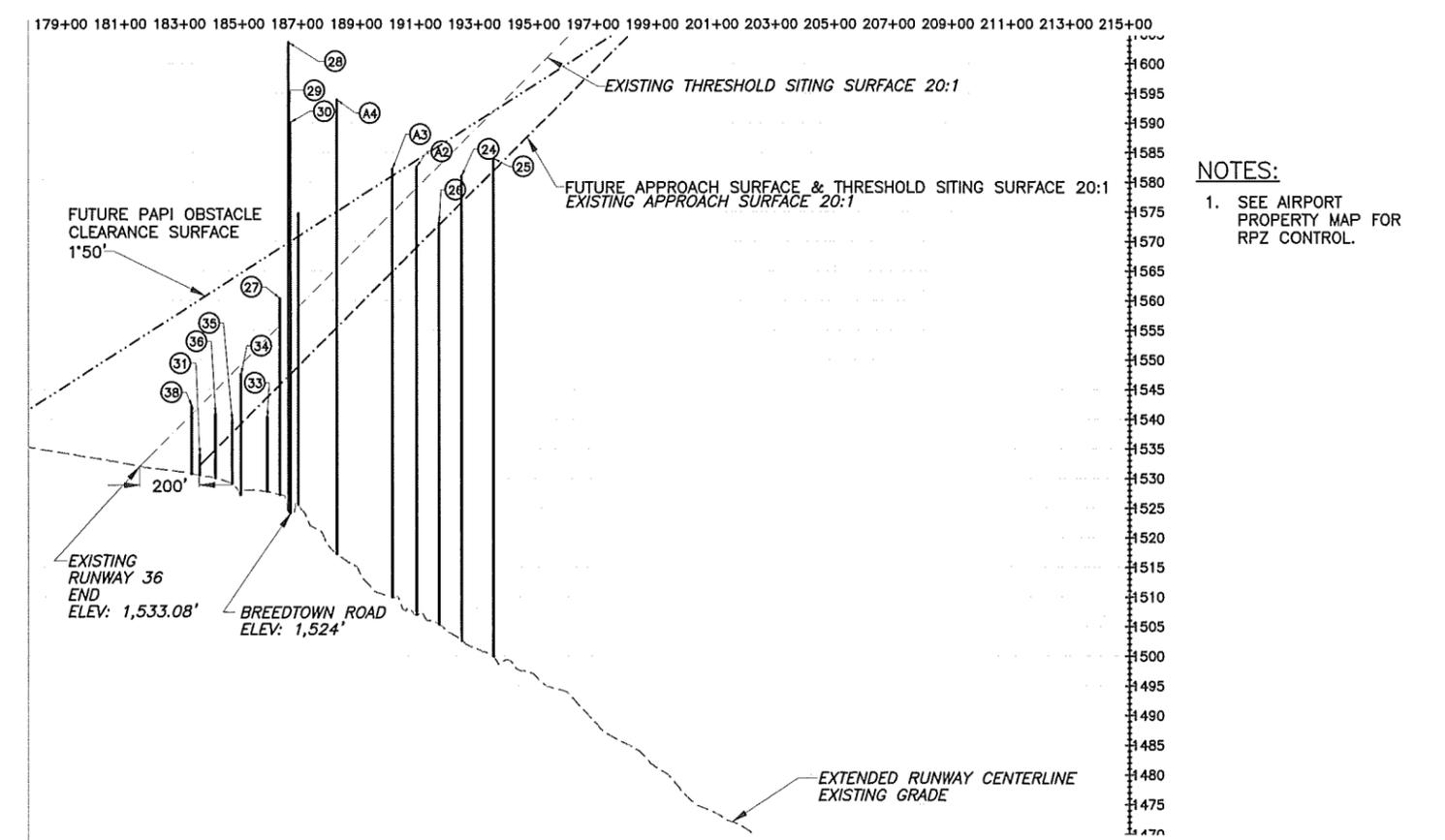
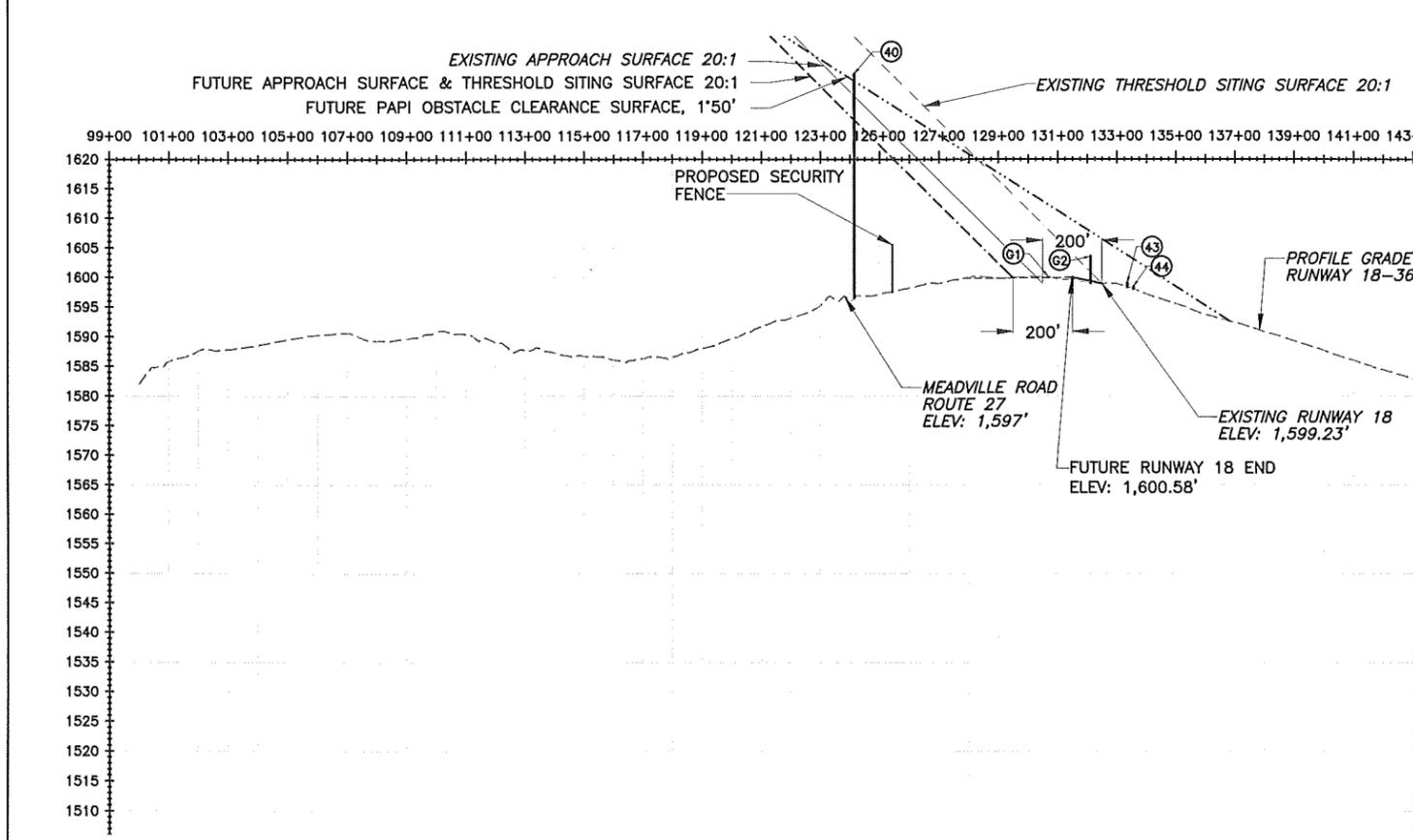
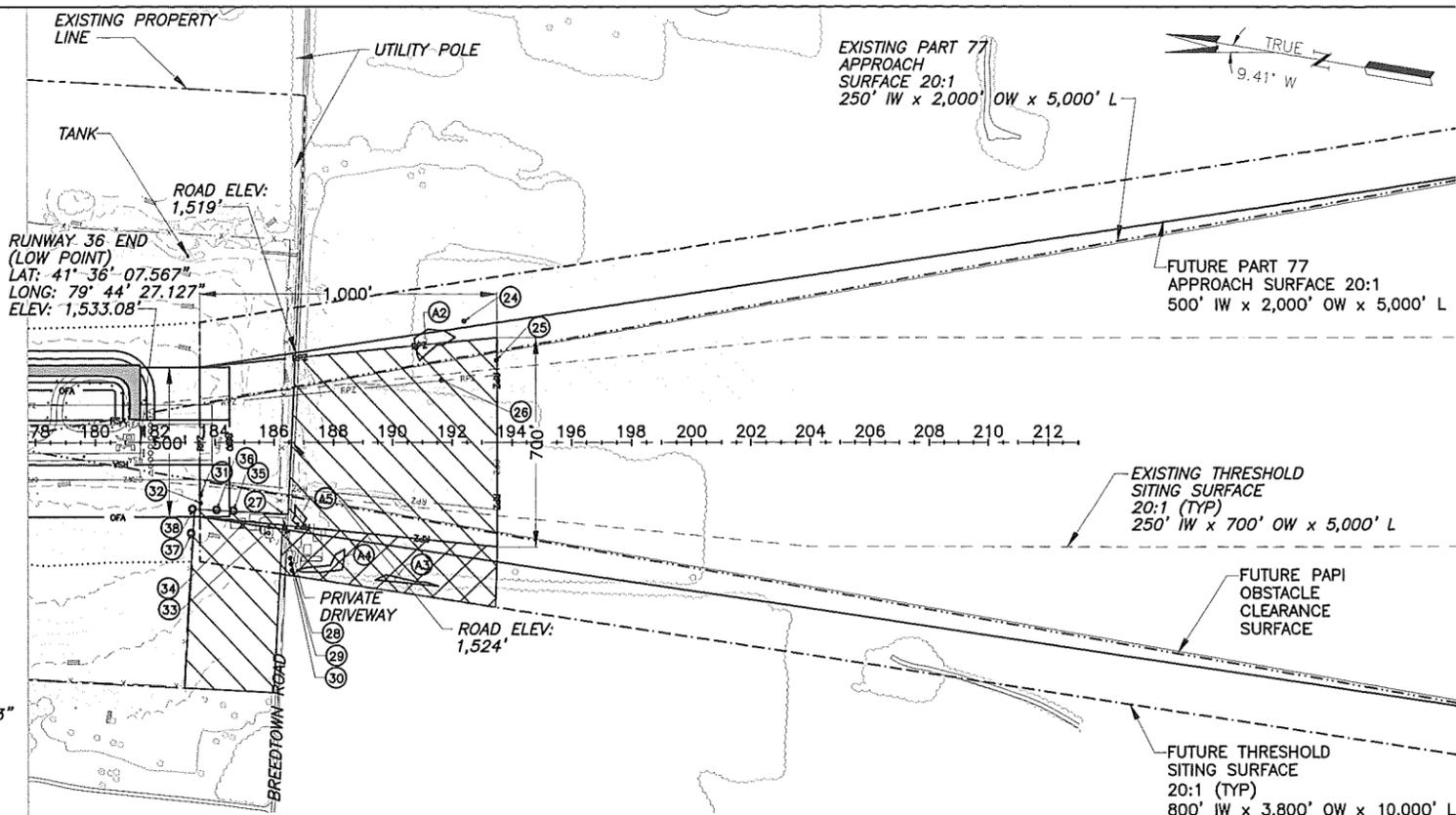
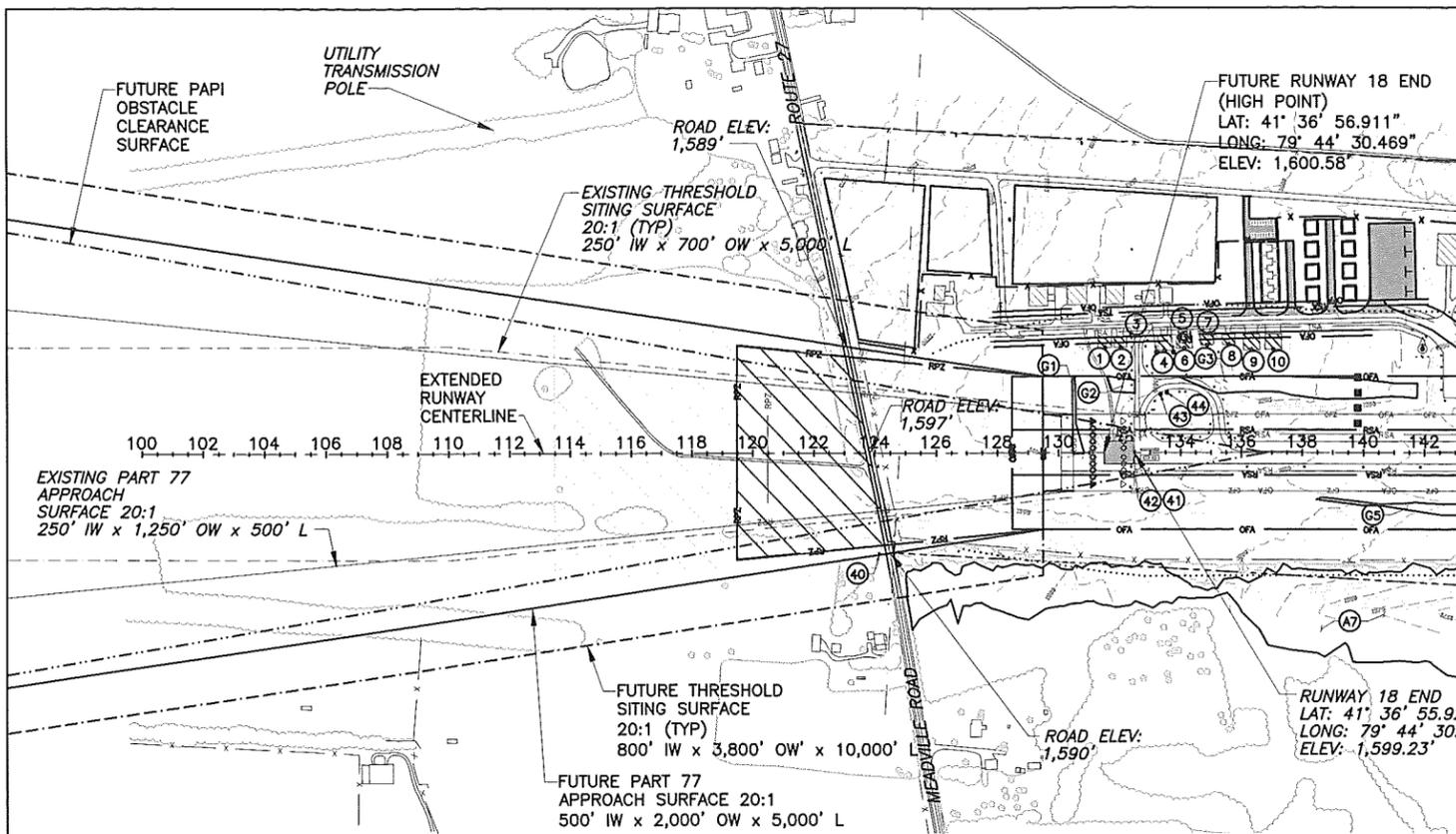
FUTURE AIRSPACE OBSTRUCTION DATA TABLE			
NO.	DESCRIPTION	PENETRATION	FUTURE ACTION
1	HANGAR	11.8'	RELOCATE
2	HANGAR	11.6'	RELOCATE
3	BUSH	13.5'	REMOVE
4	HANGAR	13.7'	RELOCATE
5	BUSH	16.5'	REMOVE
6	HANGAR	16.8'	RELOCATE
7	HANGAR	10.9'	RELOCATE
8	HANGER	11.6'	RELOCATE
9	HANGAR	18.2'	RELOCATE
10	HANGAR	17.1'	RELOCATE
12	TREE	-0.2'	REMOVE
13	TREE	-0.5'	REMOVE
14	TREE	2.2'	REMOVE
15	HANGAR	7.9'	INSTALL OBSTRUCTION LIGHT
17	TREE	1.8'	AIRSPACE REVIEW
18	TREE	0.8'	AIRSPACE REVIEW
19	TREE	9.5'	AIRSPACE REVIEW
20	TREE	12.5'	REMOVE
21	TREE	3.0'	REMOVE
22	TREE	-1.9'	REMOVE
23	TREE	3.9'	REMOVE
24	TREE	-0.4'	TRIM TREE
25	TREE	1.1'	TRIM TREE
26	TREE	-0.7'	TRIM TREE
27	POLE	13.3'	INSTALL OBSTRUCTION LIGHT
28	TREE	42.0'	REMOVE
29	TREE	23.7'	REMOVE
30	TREE	22.4'	REMOVE
31	GROUND	0.6'	GRADE TO REMOVE PENETRATION
32	GROUND	0.3'	GRADE TO REMOVE PENETRATION
33	BUILDING	1.3'	ACQUIRE PROPERTY, REMOVE
34	BUILDING	6.8'	ACQUIRE PROPERTY, REMOVE
35	FENCE	0.8'	INSTALL OBSTRUCTION LIGHT
36	FENCE	4.8'	INSTALL OBSTRUCTION LIGHT
37	FENCE	9.0'	INSTALL OBSTRUCTION LIGHT
38	FENCE	-0.4'	INSTALL OBSTRUCTION LIGHT
39	TREE	1.1'	REMOVE
40	POLE	2.9'	INSTALL OBSTRUCTION LIGHT
43	GROUND	0.4'	GRADE TO REMOVE PENETRATION
44	GROUND	0.1'	GRADE TO REMOVE PENETRATION

OBSTRUCTION DATA TABLE				
NO.	DESCRIPTION	PENETRATION	FUTURE ACTION	AREA
A1	TREES	9.4'	AIRSPACE REVIEW	14.1 AC
A2	TREES	12.5'	REMOVE	0.16 AC
A3	TREES	26.9'	ACQUIRE AERIAL EASEMENT, TRIM TREE	0.05 AC
A4	TREES	26.6'	ACQUIRE AERIAL EASEMENT, TRIM TREE	0.09 AC
A5	TREES	41.2'	ACQUIRE PROPERTY, REMOVE	0.04 AC
A6	TREES	6.1'	REMOVE	0.15 AC
A7	TREES	56.8'	AIRSPACE REVIEW	23.3 AC
G1	GROUND	2.93'	GRADE TO REMOVE PENETRATION	0.09 AC
G2	GROUND	3.70'	GRADE TO REMOVE PENETRATION	0.09 AC
G3	GROUND	5.10'	GRADE TO REMOVE PENETRATION	0.93 AC
G4	GROUND	2.25'	GRADE TO REMOVE PENETRATION	0.46 AC
G5	GROUND	0.86'	GRADE TO REMOVE PENETRATION	0.51 AC

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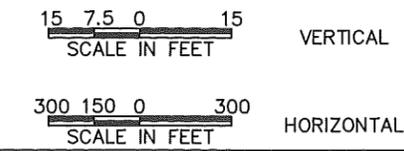


MASTER PLAN UPDATE		SHEET 6 of 10
OBSTRUCTION DATA TABLES		
ABG-2010-TITUSVILLE AA-00029	DATE	FEBRUARY 2013

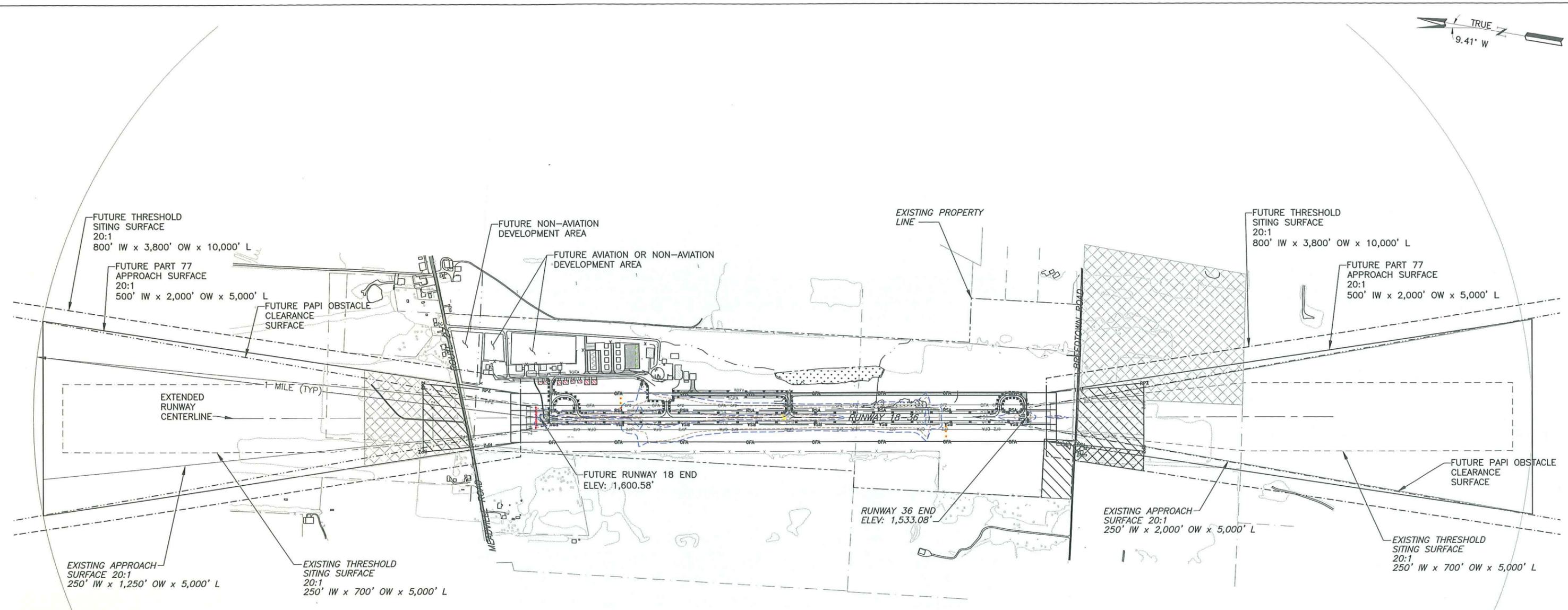
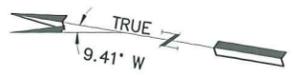


NOTES:
 1. SEE AIRPORT PROPERTY MAP FOR RPZ CONTROL.

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MASTER PLAN UPDATE		SHEET 7 of 10
INNER APPROACH SURFACE AND RPZ CONTROL PLAN		
ABG-2010-TITUSVILLE AA-00029	DATE	FEBRUARY 2013



LEGEND

	EXISTING	FUTURE
TEXT STYLE DEPICTING INFORMATION	XXXX	XXXX
PERIMETER FENCE	— x —	— x —
GROUND CONTOUR	— — — —	N/A
PROPERTY LINE	— — — —	N/A
PROPERTY ACQUISITION	N/A	▨
STREAM	— · — · —	N/A
VEGETATION / TREE LINE	☁	N/A
WETLAND	☁	N/A
AERIAL EASEMENT	⊠	⊠
PAVEMENT	□	■
BUILDING TO BE REMOVED	N/A	▨
BUILDINGS / HANGAR	□	□
RUNWAY END IDENTIFIER LIGHTS	·	·
THRESHOLD LIGHTS	— — — —	— — — —

LEGEND CONT'D.

	EXISTING	FUTURE
PRECISION APPROACH PATH INDICATOR	N/A	— · — · —
NOISE CONTOURS (60 & 65 DNL)	— · — · —	— · — · —
VENANGO COUNTY — AIRPORT	□	□
VENANGO COUNTY — RESIDENTIAL / AGRICULTURAL	□	□
CRAWFORD COUNTY — AGRICULTURAL / RURAL	□	□

NOTES:

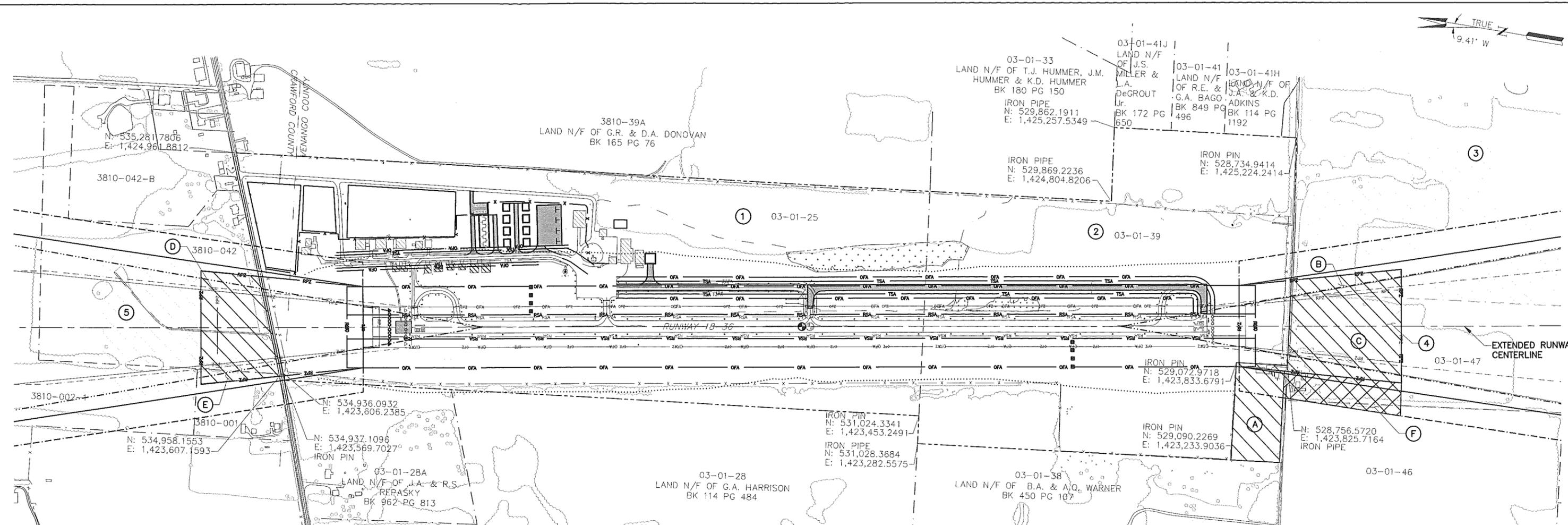
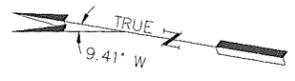
1. AT THE TIME OF COMPLETION OF THIS ALP, CHERRYTREE TOWNSHIP WAS IN THE PROCESS OF DEVELOPING AND ADOPTING AIRPORT HAZARD ZONING. NO SURROUNDING TOWNSHIPS HAVE ENACTED HAZARD ZONING ORDINANCES.
2. SEE VENANGO AND CRAWFORD COUNTIES COMPREHENSIVE PLANS FOR MORE INFORMATION ON SPECIFIC LAND USES FOR EACH AREA.

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REVISION BLOCK			
NO.	DESCRIPTION	DATE	BY

MASTER PLAN UPDATE		SHEET 8 of 10
AIRPORT LAND USE AND ACCESS PLAN		
ABG-2010-TITUSVILLE AA-00029	DATE	FEBRUARY 2013



LEGEND	EXISTING	FUTURE
TEXT STYLE DEPICTING INFORMATION	XXXX	XXXX
RUNWAY OBJECT FREE AREA	— OFA —	— OFA —
RUNWAY OBJECT FREE ZONE	— OFZ —	— OFZ —
RUNWAY SAFETY AREA	— RSA —	— RSA —
RUNWAY PROTECTION ZONE	— RPZ —	— RPZ —
THRESHOLD SITING SURFACE	— TSS —	— TSS —
PAPI OBSTACLE CLEARANCE SURFACE	N/A	— PAPI —
TAXIWAY/LANE OBJECT FREE AREA	— TOFA —	— TOFA —
TAXIWAY/LANE SAFETY AREA	— TSA —	— TSA —
BUILDING RESTRICTION LINE	N/A	— BRL —
PERIMETER FENCE	— X — X —	— X — X —
GROUND CONTOUR	— —	N/A
PROPERTY LINE	— —	N/A
PROPERTY ACQUISITION	N/A	— —
STREAM	— —	N/A
VEGETATION / TREE LINE	— —	N/A
WETLAND	— —	N/A
AERIAL EASEMENT	— —	— —
PAVEMENT	— —	— —
BUILDING TO BE REMOVED	N/A	— —

LEGEND	EXISTING	FUTURE
BUILDINGS / HANGAR	▨	□
RUNWAY END IDENTIFIER LIGHTS	◀	◀
THRESHOLD LIGHTS	○○○○	○○○○
PRECISION APPROACH PATH INDICATOR	N/A	■ ■ ■ ■
PROPERTY IDENTIFICATION NUMBER	N/A	①
EXISTING PARCEL BOUNDARY	— — — —	N/A

PROPERTY ID #	TAX PARCEL #	OWNER	ACRES	PURPOSE	CURRENT USE
A	03-01-62	C. L. & B. M. FREY	4.13	RPZ CONTROL	RESIDENTIAL
B	03-01-48	E. G. & R. A. MACKIEWICZ	2.11	RPZ CONTROL	RESIDENTIAL / AGRICULTURAL
C	03-01-47	H. A. & S. P. PANZA	7.90	RPZ CONTROL	RESIDENTIAL / AGRICULTURAL
D	3810-042	A. G. & K. T. ROTONDO	5.92	RPZ CONTROL	AGRICULTURAL / RURAL
E	3810-001	B. A. & L. S. BILLIMUTH	0.62	RPZ CONTROL	AGRICULTURAL / RURAL

PROPERTY ID #	TAX PARCEL #	OWNER	ACRES	PURPOSE	CURRENT USE
F	03-01-47	H. A. & S. P. PANZA	3.05	OBSTRUCTION CONTROL	RESIDENTIAL / AGRICULTURAL

PROPERTY ID #	GRANTOR	ACRES	DATE RECORDED	DEED BOOK, PAGE	PROPERTY INTEREST	GRANT # OR PURCHASE INFO	NOISE LAND	CURRENT USE
1	J. CURTIS MCKINNEY	120	12/24/1964	682-310	FEE SIMPLE	N/A - \$1.00	NO	AIRPORT
2	J. CURTIS MCKINNEY	84	12/24/1964	682-310	FEE SIMPLE	N/A - \$1.00	NO	AIRPORT
3	E. & R. MACKIEWICZ	56.2	4/11/2005	350-563	AERIAL EASEMENT	SS6G1-30-011 \$2,500	NO	RESIDENTIAL / AGRICULTURAL
4	E. M. & C. THOMAS	25	10/18/1971	740-547	AERIAL EASEMENT	N/A - \$1,550	NO	RESIDENTIAL / AGRICULTURAL
5	M. GNEADINGER	20.15	9/22/2004	731-907	AERIAL EASEMENT	SS6G1-30-011 \$5,000	NO	AGRICULTURAL / RURAL

NOTE:
FUTURE PROPERTY ACQUISITION IS FOR PROTECTION OF RUNWAY PROTECTION ZONES PER FAA ADVISORY CIRCULAR 150/5300-13A, "AIRPORT DESIGN."

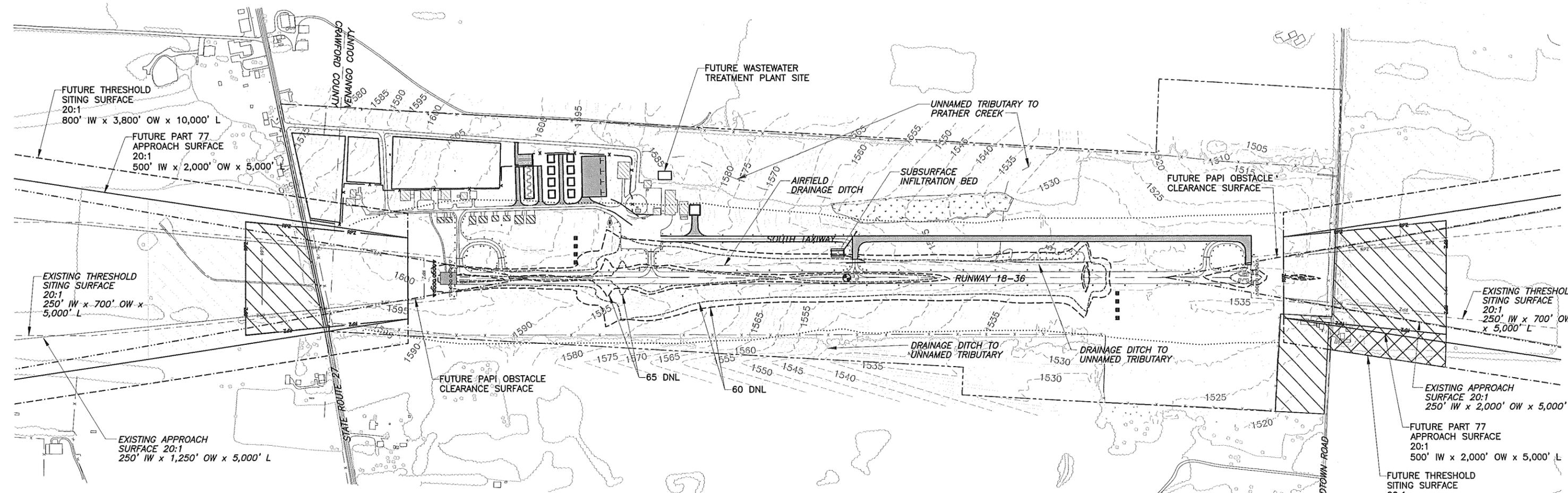
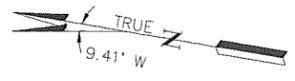
NO.	DESCRIPTION	DATE	BY



MASTER PLAN UPDATE		SHEET 9 of 10
AIRPORT PROPERTY MAP		
ABG-2010-TITUSVILLE AA-00029	DATE	FEBRUARY 2013

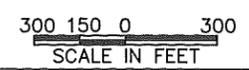
Baker Michael Baker Jr., Inc.
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Moon Township, Pennsylvania 15108

300 150 0 300
SCALE IN FEET



LEGEND	EXISTING	FUTURE
TEXT STYLE DEPICTING INFORMATION	XXXX	XXXX
RUNWAY SAFETY AREA	RPZ	RPZ
RUNWAY PROTECTION ZONE	---	---
THRESHOLD SITING SURFACE	N/A	---
BUILDING RESTRICTION LINE	N/A
PERIMETER FENCE	x x	x x
GROUND CONTOUR	---	N/A
PROPERTY LINE	---	N/A
PROPERTY ACQUISITION	N/A	▨
STREAM	---	N/A
VEGETATION / TREE LINE	~~~~~	N/A
WETLAND	▨	N/A
AERIAL EASEMENT	▨	▨
PAVEMENT	□	■
BUILDING TO BE REMOVED	N/A	▨
BUILDINGS / HANGAR	▨	□
RUNWAY END IDENTIFIER LIGHTS	◁	◁
THRESHOLD LIGHTS	oooo	oooo
PRECISION APPROACH PATH INDICATOR	N/A	■■■■
NOISE CONTOURS (60 & 65 DNL)	---	---

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REVISION BLOCK			
NO.	DESCRIPTION	DATE	BY

MASTER PLAN UPDATE		SHEET
ENVIRONMENTAL OVERVIEW PLAN		10
ABG-2010-TITUSVILLE AA-00029		DATE FEBRUARY 2013