

## CHAPTER SIX OPTIONS IDENTIFICATION

The previous chapter of the Pennsylvania Statewide Airport System Plan (SASP) examined a series of system performance criteria and benchmarks. In the previous task, benchmarks were used to measure the current performance of Pennsylvania’s existing airports relative to goals established for each benchmark. The next step, as presented in this chapter, examines the need to improve the performance of the system as it relates to the benchmarks and identifies options available for making improvements. It is possible that for some benchmarks the current performance is sufficient for providing an adequate airport system. In other words, 100 percent compliance ratings for each of the benchmarks may not be feasible and, furthermore, may not be required in order for Pennsylvania to have an adequate airport system. However, for those performance ratings that are determined to require improvement, options for expanding or enhancing the system to improve its performance will be identified. These options will be examined in Chapter Seven of this analysis. Those options that show the most promise for meeting Pennsylvania’s vision for its airport system will ultimately be identified and included in the recommended development plan.

Chapter Five presented a summary of overall system performance relative to the measures and benchmarks developed for the SASP. The findings of the benchmark analysis are revisited and synthesized in this chapter, and potential options for improving system performance are identified. It is important to note that the benchmark compliance ratings presented in Chapter Five and examined in this chapter measured the performance of the State’s **existing** airport system relative to the benchmarks.

Subsequent sections of this chapter are organized to review system performance criteria and the benchmarks associated with each, as follows:

### Performance Criteria – ACTIVITY/DEMAND

- ❑ Airfield Capacity
- ❑ Aircraft Storage Capacity

### Performance Criteria – ACCESSIBILITY

- ❑ Coverage of Major Business Centers by Advanced Airports
- ❑ Coverage of Major Population Centers by Commercial Service Airports
- ❑ Surface Access of Airports
  - Accessibility of Advanced Airports from Limited Access Highways
  - Accessibility of Scheduled Service Airports from Limited Access Highways
- ❑ Intermodal Accessibility at Advanced Airports
- ❑ Medical Airlift Coverage

Performance Criteria – SUPPORT/COMMITMENT

- Airport Ownership/Management Structure and Grant Obligation

Performance Criteria – FACILITIES

- Facility and Service Objectives
- Pennsylvania Licensing Standards
- FAA Design Standards

Performance Criteria – OPTIMIZATION POTENTIAL

- Airport Hazard Zoning
- Current Airport Plans

The final measurement of system performance examined in this chapter, and for which options for improved performance are identified, is airport system coverage. Overall airport coverage relates to the system’s ability to serve the Commonwealth throughout its borders. Although overall airport coverage was not previously identified as a benchmark in this analysis, it is an important indication of system performance. This analysis examines the population coverage provided by the overall airport system, as well as each individual functional airport level. Options for improving this coverage are identified in those areas where current performance is inadequate.

**I. ACTIVITY/DEMAND**

In Chapter Five, two general factors, airfield capacity and aircraft hangar storage capacity, were examined in the benchmarking process to measure the performance of the system relative to activity/demand. Airfield capacity is a measure of an airport’s ability to accommodate aircraft operations without congestion and delay. The ability of an airport system to accommodate current and anticipated levels of aircraft operational demand is an important consideration of a system’s performance. Aircraft hangar storage capacity examines the performance of system airports and the system as a whole, as it relates to the ability of aircraft owners to store aircraft in hangars. In states such as Pennsylvania, with varied and sometimes severe weather conditions, the ability to store aircraft in covered storage facilities is very important to aircraft owners.

**A. Airfield Capacity**

The airfield capacity analysis that was conducted as part of the benchmark process focused on annual service volumes (ASVs) compared to current and future operational activity levels. This process identified, based on accepted planning estimates, those airports that may have current and/or future operational capacity issues that may need to be addressed as part of facility-specific master planning or other studies. Detailed airport-specific capacity analyses typically rely on computerized modeling that estimates the average delay per aircraft at those facilities. The FAA uses average delay per aircraft estimates to identify those airport facilities that have major capacity issues and that should be the focus of capacity-enhancing measures.

According to the FAA, Philadelphia International Airport currently experiences an average delay per aircraft operation of approximately 10 minutes, one of the five highest estimates of average delay

per aircraft operation for U.S. airports. As a result, Philadelphia International Airport is the focus of major FAA efforts to improve operational capacity and/or manage demand. The Philadelphia International Airport Capacity Enhancement Plan was completed in 1991 by a capacity team that included representatives from the FAA, the airport, and airline and general aviation representatives. This plan identified recommended development plans to reduce delay and congestion at the airport based on future operational activity levels and computerized modeling. One of the primary recommendations of the plan was the construction of commuter Runway 8/26. The FAA revisited capacity issues at Philadelphia International Airport in its Airport Capacity Benchmark Report published in 2001. This report identified planned improvements at Philadelphia International Airport and estimated the impact that the improvements may have on airport capacity. Specific planned projects identified for the airport in this report include the following:

- ❑ Terminal construction to reduce gate contention delays
- ❑ Construction of additional taxiways and high-speed turnoffs to improve runway utilization
- ❑ Improved arrival and departure procedures
- ❑ Airspace redesign
- ❑ Avionics improvements
- ❑ Potential for airlines to change their individual scheduling practices to minimize peaking

No additional options or recommendations regarding capacity issues at the airport will be examined as part of the SASP.

The FAA estimates that all other Pennsylvania airports, including Pittsburgh International, operate at less than four minutes of average delay per aircraft operation. These levels of average aircraft delay are considered to be within reasonable levels, however; based on individual airport analyses such as master plans, capacity issues should be examined at the airports identified as currently operating or projected to operate at over 60 percent of their capacity to demand ratio. Those airports identified as having potential capacity issues as part of the SASP include the following:

- ❑ Lehigh Valley International Airport
- ❑ Beaver County Airport
- ❑ Northeast Philadelphia Airport
- ❑ Pittsburgh International Airport
- ❑ Reading Regional Airport

Options available for addressing existing or anticipated capacity constraints at the airports listed above include the following:

- ❑ Do-Nothing Alternative
- ❑ Capacity-Enhancement Projects

### **1. Do-Nothing Alternative**

Although this analysis identified those airports that currently or potentially could operate at levels approaching 60 or 80 percent of their estimated ASVs, the FAA has identified that only one Commonwealth airport, Philadelphia International, represents a significant capacity/delay issue. Philadelphia International Airport is currently the focus of major capacity analyses, and significant efforts are being made to enhance capacity, reduce delay, and/or manage demand at the airport. Because such extreme capacity concerns do not currently exist at the other Commonwealth airports identified in this analysis, major efforts to study capacity and delay at these airports and develop means for improving operations at these airports may not be necessary. If the do-nothing approach is taken, however, increases in airport activity at Pennsylvania airports could lead to increased congestion and delay at one or more of the airports listed above.

## **2. Capacity-Enhancement Projects**

For the airports identified in this analysis, specific capacity-enhancing projects could be implemented to address and/or mitigate certain capacity issues. Capacity-enhancing projects are typically identified in detailed airport-specific planning projects. Examples of capacity-enhancing projects that could be implemented at these airports include construction of a parallel taxiway, construction of high-speed taxiway exits, and/or construction of a parallel runway.

To address the existing and projected capacity constraints identified in the SASP, it is important that airport-specific studies conducted at the airports identified in this analysis include a detailed capacity analysis. These individual studies, when conducted, will more thoroughly examine capacity issues at their respective airports and will identify means for addressing demonstrated capacity shortfalls. Conversely, the SASP analysis indicates that a vast majority of Commonwealth airports currently operate within acceptable ranges of delay based on demand/capacity ratios, and should continue to operate in such a manner beyond the planning period used in the SASP. Capacity analysis and capacity-enhancing projects, therefore, should not be the focus of long-range planning and development efforts at these airports.

### **B. Aircraft Storage Capacity**

The benchmark analysis that was conducted in Chapter Five examined hangar storage capacity at system airports. The analysis identified that existing hangar storage facilities are sufficient at approximately 55 percent of system airports, while the remaining 45 percent of system airports currently have a hangar waiting list. Because of the fluctuations and duplications that tend to occur on these hangar waiting lists (i.e., pilot finds a hangar at one airport, but still remains on the waiting list at another, or one pilot is on more than one airport's waiting list), further analysis regarding this benchmark is required to develop options to address specific deficiencies.

In general, the options that exist to address aircraft storage capacity deficiencies include constructing new hangar facilities, possibly with PennDOT funding support, or accepting the deficiency. To better understand current aircraft storage shortfalls and identify specific areas or regions of the Commonwealth where these shortfalls exist, **Exhibit 6-1** was developed. Exhibit 6-1 identifies those system airports that currently have a hangar waiting list, and distinguishes between those that have fewer than 10 people on that list and those that have 10 or more persons on the hangar waiting

list. The goal of this process is to identify regions or areas of the Commonwealth that have a high proportion of airports with hangar waiting lists. Although redundancy and duplication may exist on some of these waiting lists, by identifying regions of the Commonwealth in which most airports have a waiting list, those areas in which there is most likely a true shortfall in storage capacity can be identified.

As shown in Exhibit 6-1, some areas of the Commonwealth in which aircraft hangar storage deficiencies appear to be most significant include the following:

- Southwestern PA
- State College area
- Wilkes-Barre/Scranton area
- Gettysburg/York area
- Southeastern PA

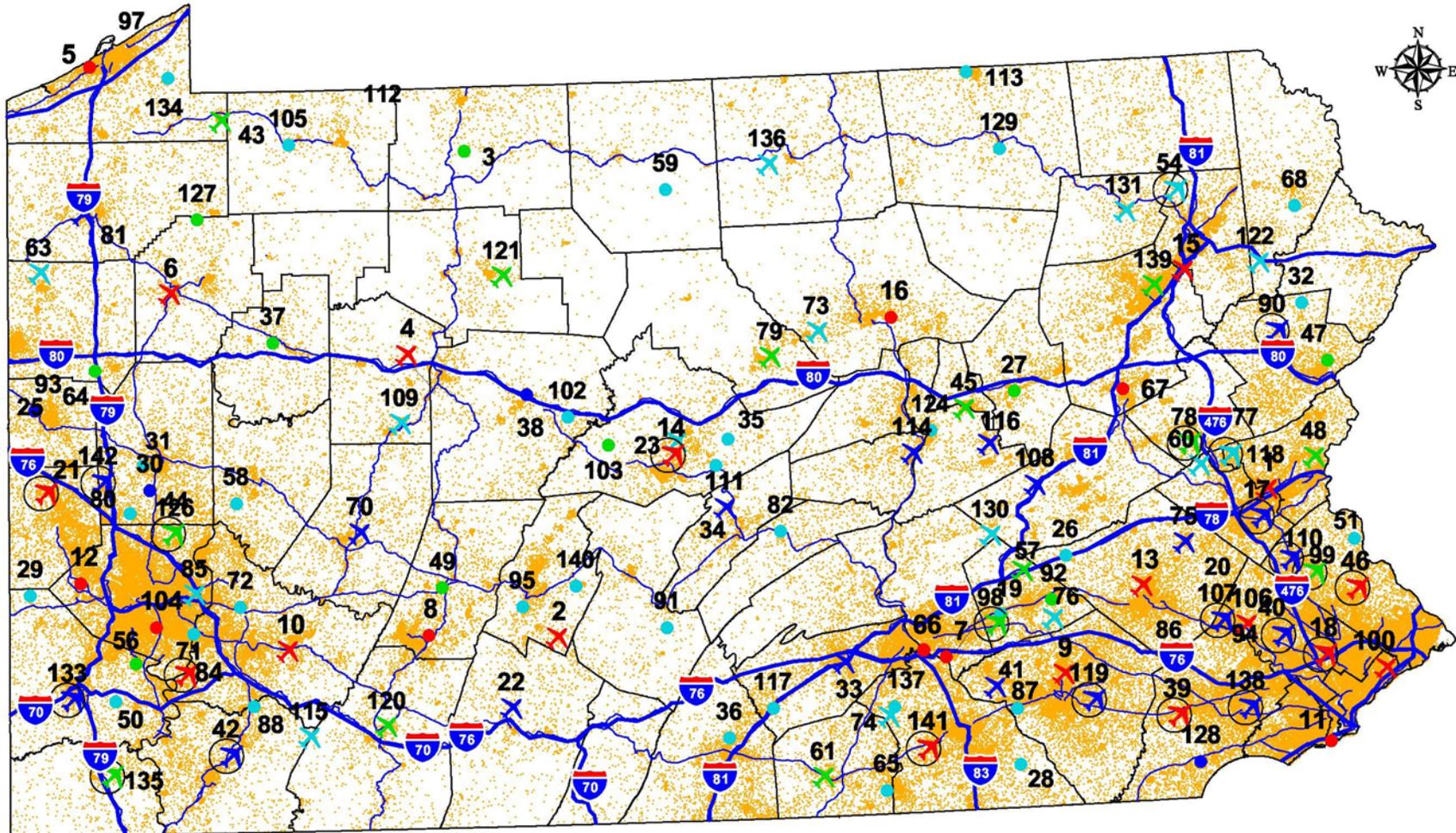
Options for addressing aircraft storage capacity shortfalls at Commonwealth airports include the following:

- Do-Nothing Option
- Development of New Hangar Development Policies

### **1. Do-Nothing Option**

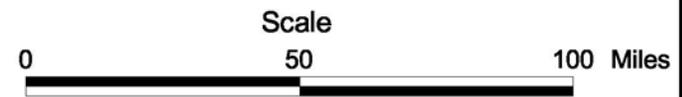
Although a number of Commonwealth airports indicated in the SASP data collection effort that hangar space is currently insufficient at their respective facilities, several means are available to fund hangar development at Commonwealth airports. Current means of funding for hangar development at Commonwealth airports include the following:

- Capital Budget – Commonwealth capital budget monies are available to fund hangar development projects at system airports. Funds from this source can be acquired through a process that includes fostering legislative support for specific projects at specific airports. The existing PennDOT capital budget program allows for the funding of 50 percent of hangar development costs from Bureau of Aviation grant funds while the airport sponsor is responsible for the remaining 50 percent share. Since 1997, 23 hangar development projects have been undertaken at 15 Commonwealth airports with the use of capital budget funding. Hangar projects that have been completed include; renovation of existing hangar facilities, the construction of multi-unit T-hangar structures, construction of large conventional hangars used for community aircraft storage, and the construction of large corporate hangars.



**Legend**

	Interstate Highway		2000 Population Density
	Limited Access Highway		501 - 2,000 People
	County Boundary		2,001 - 5,000 People
	Advanced Airports with 10 or more waiting for a hangar		5,001 - 10,000 People
	Advanced Airports with less than 10 waiting for a hangar		Basic Airports with 10 or more waiting for a hangar
	Advanced Airports with no hangar wait		Basic Airports with less than 10 waiting for a hangar
	Intermediate Airports with 10 or more waiting for a hangar		Basic Airports with no hangar wait
	Intermediate Airports with less than 10 waiting for a hangar		Limited Airports with 10 or more waiting for a hangar
	Intermediate Airports with no hangar wait		Limited Airports with less than 10 waiting for a hangar
			Limited Airports with no hangar wait



ENGINEERS  
PLANNERS  
ECONOMISTS

Source: National Transportation Atlas Database, Pennsylvania Department of Transportation, and US Census Bureau

**Page 6-6**  
**Exhibit 6-1**  
Aircraft Storage  
Capacity Summary

- ❑ Other Sources – Low-interest loans or grants from other agencies such as the Department of Community and Economic Development (DCED) can be accessed by airport sponsors to fund initial hangar development costs.
- ❑ Private Funding – Airport sponsors allow private corporations to construct hangars on airport property. Private developers can construct these hangars for their own use or to lease to other businesses and/or individuals. An airport must charge rent for the land on which the hangar is built; typically, there is a reversionary clause in the land lease that gives ownership of the hangar building to the airport after a specified period of time, often up to 30 years. If private development occurs on or near an airport, specific attention should be paid regarding through-the-fence operations to ensure that airport safety, grant eligibility, and revenue generation is not negatively impacted.

The do-nothing option assumes that these funding sources are adequate to support hangar development where sufficient demand exists. Hangar waiting lists, as previously discussed, are the best source of information regarding sufficiency of existing hangar facilities in the system. These lists, however, are not exact and it is possible that duplication or exaggeration may exist. Where true excess demand exists for hangar facilities, given the revenue/profit generating potential of hangars, it could be assumed that the airport sponsor or another private entity would have already developed hangars, without public assistance, to take advantage of the market for storage facilities that exists. This assumes, however, that the airport has sufficient developable land and that those aircraft owners on the hangar waiting list are willing to pay market rates to rent a hangar facility.

The number of airports indicating a deficiency in existing hangar storage space indicates that the assumptions discussed above may not be true. The do-nothing option would not examine means available to the Commonwealth for providing additional storage capacity at system airports. In doing this, airport activity levels and fuel sales could be negatively impacted as people wishing to base aircraft at Commonwealth airports must go elsewhere. In addition, given proper management techniques, providing additional hangars at select Commonwealth airports could significantly increase their revenue-generating capability and could positively impact cash flows at system airports.

## **2. Establishment of New Hangar Development Policies**

Analysis conducted in the SASP related to hangar storage capacity indicates that there are a significant number of Commonwealth airports that currently do not have sufficient hangar space. The development of hangar storage facilities, therefore, may need to be a higher priority for the Commonwealth's airport system. In order to meet the funding requirements associated with building more hangar capacity in the system, options must be identified to secure the funding resources required.

While hangar development funding options do currently exist, the benchmark analysis conducted in the SASP identified that lack of sufficient hangar storage capacity at Commonwealth airports continues to be a problem. In many instances, airport sponsors, both public and private, find it

difficult to make the initial investment required to construct hangar storage facilities. By providing additional means for funding the initial capital requirement of hangar development, PennDOT can help ensure that sufficient hangar facilities are available at Commonwealth airports, and can also aid the airports in increasing revenue generated at the facilities.

Options for making hangar development funds more available to airport sponsors include the following:

- ❑ Development of hangar development revolving loan program
- ❑ Allowing aviation restricted account funds (grant funds) to be used in the development of hangars at public-use airports
- ❑ Increasing the percentage of eligible costs for hangar development in the PennDOT grant program

By strategically focusing hangar development in areas or regions where hangar capacity appears to be a common constraint, system performance relative to this benchmark could be greatly improved while maximizing the return to the system from the investment that occurs. In addition, by taking a more active role in promoting and targeting hangar development, PennDOT could help ensure that hangar facilities are developed in areas where significant demand exists, and at those airports that have the necessary ancillary facilities and development opportunities to accommodate the construction of additional storage facilities.

## **II. ACCESSIBILITY**

An adequate airport system must provide reasonable access to its users. In Chapter Five, several accessibility parameters were examined to measure how well the existing airport system is serving Pennsylvania. Because of the size and topographic diversity of the Commonwealth, as well as varied concentrations of the Commonwealth’s population, a number of factors were examined in the accessibility analysis. Much of the analysis conducted in Chapter Five utilized Geographic Information System (GIS) technology. The specific accessibility benchmarks included in the SASP analysis are as follows:

- ❑ Coverage of Major Business Centers by Advanced Airports
- ❑ Coverage of Major Population Centers by Commercial Service Airports
- ❑ Surface Access: Accessibility of Advanced Airports from Limited Access Highways
- ❑ Surface Access: Accessibility of Scheduled Service Airports from Limited Access Highways
- ❑ Intermodal Accessibility at Advanced Airports
- ❑ Medical Airlift Coverage

The results of these GIS analyses are furthered examined in the following sections.

### **A. Coverage of Major Business Centers by Advanced Airports**

As presented in Chapter Five, only two of the 57 major business centers identified in the SASP are located outside of the 30-minute drive time coverage areas of existing Pennsylvania advanced airports. These two business centers are Sharon Borough in northwestern Pennsylvania and Plum Borough in Allegheny County. Sharon Borough is located approximately 13 miles driving distance of Youngstown-Warren Regional Airport which provides facilities and services commensurate with the advanced functional level of airport used in the Pennsylvania SASP. Because Sharon Borough is located within the 30-minute drive time coverage area of Youngstown-Warren Regional Airport, coverage of this business center by an advanced airport should not be considered deficient.

Plum Borough is located in the northeast corner of Allegheny County. Existing advanced airports in Allegheny County include Pittsburgh International and Allegheny County. Although Plum Borough is located proximate to the borders of the 30-minute drive time coverage areas of these airports and Arnold Palmer Regional Airport in Westmoreland County, Plum Borough is not currently covered by one of these coverage areas. Recent roadway improvements in the area may improve ground access sufficiently to extend existing advanced coverage to this area. If this is not the case, options that are available to address this deficiency include upgrading other airports in the area to meet advanced airport facility and service objectives or accepting the deficiency in the system. Accepting this current deficiency, however, would leave an area of the Commonwealth with significant population outside the 30-minute drive time of an advanced airport.

Options do exist for upgrading existing airports in this area to the advanced functional level. Those airports whose 30-minute drive time coverage areas could include Plum Borough and that could be considered for upgrading to the advanced level, along with their current functional level classification, include the following:

- Rock - Basic
- McVille - Limited
- Greensburg-Jeanette Regional - Limited
- Lakehill - Limited
- Pittsburgh Monroeville - Limited

In addition, the construction of a new advanced airport in the area could also be considered as an option for addressing the deficiencies that may exist in advanced airport coverage in this area of the Commonwealth.

## **B. Coverage of Major Population Centers by Commercial Service Airports**

The benchmark analysis that was conducted in the previous chapter examined the coverage provided to major population centers, identified as municipalities with populations greater than 40,000 persons, by Pennsylvania's current commercial service airports. GIS analysis indicated that each of the 23 municipalities with populations greater than 40,000 persons is located within the 60-minute drive time coverage area of one of the Commonwealth's existing commercial service airports. It is also important to note that out-of-state airports provide additional commercial service coverage to many areas of the Commonwealth, some of which is duplicative to coverage provided by Pennsylvania airports.

Based on this analysis, the system should be considered adequate related to this specific coverage. It should be noted that some of the commercial service coverage provided to these major population centers is solely provided by airports that have a single commercial service provider. Should the single carrier leave a market, coverage provided to these population centers could be negatively impacted. In addition, this benchmark analysis identified that, in some areas of the Commonwealth, significant duplication of commercial service coverage exists. While this duplication of commercial service coverage will not be examined in the SASP, it could be a factor that the airlines use to make their independent decisions on which Commonwealth markets to serve.

### **C. Surface Access of Airports**

The accessibility of an airport system can be measured in a variety of ways. The benchmarks previously discussed in this section relate the location of airports relative to population and employment centers. Another factor that is an important consideration in measuring the accessibility of an airport system is the location of airports relative to landside access systems including roadways. This benchmark section examines system airports relative to their location to the Commonwealth's highway transportation network.

#### **1. Accessibility of Advanced Airports from Limited Access Highways**

Performance measures that were developed for the SASP stated that advanced airports should be located within a reasonable distance of a limited access highway. Analysis that was conducted in Chapter Five identified six of Pennsylvania's 26 advanced airports that are not located proximate to a limited access highway. The airports located more than a reasonable driving distance from a limited access highway include the following:

- ❑ Altoona-Blair County
- ❑ Beaver County
- ❑ Doylestown
- ❑ DuBois-Jefferson County
- ❑ Lancaster
- ❑ Rostraver

In addition to the airports listed above, some advanced airports may be located within a reasonable driving distance of a limited access highway; however, landside access may not be sufficient for other reasons. Roadway congestion is an example of one factor, unable to be quantified in this analysis, that may compromise the sufficiency of landside access at certain airports. In specific cases where additional factors may influence landside access, roadway improvements may be beneficial to the overall performance of advanced system airports related to this benchmark.

Due to the nature of this specific performance measure, options for addressing the roadway accessibility deficiencies identified at Commonwealth airports are limited to accepting the current deficiency or promoting roadway improvements. Because roadway improvements off of airport property are planned, implemented, and funded by local municipalities or other Commonwealth

agencies, the Bureau of Aviation cannot unilaterally complete access improvement projects. Although accepting the current deficiencies related to landside access in airport environs, in some cases, may not negatively impact individual airports or the system as a whole, some airports may have roadway access deficiencies that are significant enough to impact activity levels at the airport and economic development on the airport property. If insufficient access exists, or congestion in the environs of the airport reaches unacceptable levels, airport users may decide to operate at another airport in order to avoid the congestion and delay associated with roadway access deficiencies at the airport.

Roadway development projects could be pursued in the areas surrounding these facilities to extend limited access highway accessibility to be more proximate to the airports or to improve congestion or other negative impacts to landside access in the airport area. In this process it is important that fostering and promoting roadway development projects becomes a community effort and a regional goal. Airports should work with PennDOT, their regional planning agencies, and their regional intermodal coordinators to encourage local communities to approach decision-makers with roadway improvement requests. Once a request is made, local communities and stakeholders need to continue to be involved in the planning process to ensure that the requested project is included in the State Transportation Committee's Transportation Improvement Program (TIP).

In some instances, additional highway development may be too costly and/or not feasible for other reasons such as topography or environmental issues. Deficiencies related to access to limited access highways may not be able to be addressed for these airports. In such a case, all feasible roadway improvements should be pursued to ensure that, although access to a limited access highway may be deficient at one or more of these facilities, the landside access that is provided is adequate based on the types and levels of usage that occurs at these facilities.

## **2. Accessibility of Scheduled Service Airports from Limited Access Highways**

Similar to advanced airports, a performance measure was developed to examine scheduled service airports and their accessibility to limited access highways. The specific benchmark used in the SASP analysis was that scheduled service airports should be located within a reasonable driving distance of a limited access highway. Based on analysis presented in Chapter Five, it was determined that Altoona-Blair County Airport is the only scheduled service airport that is currently not located proximate to a limited access highway. Options for addressing this accessibility deficiency at Altoona-Blair County Airport include pursuing roadway access improvements in the vicinity of the airport or accepting the current deficiency.

### **D. Intermodal Accessibility at Advanced Airports**

Based on the goals that were established for advanced airports in the benchmark analysis, specifically that they should provide on-site access to public transit and have dedicated cargo/freight transfer facilities, a number of deficiencies were identified at advanced airports.

Those airports currently deficient in each of these categories are listed below:

*Those airports currently lacking access to on-site public transit:*

- Altoona-Blair County
- Beaver County
- Chester County-GO Carlson
- Doylestown
- DuBois-Jefferson County
- Venango Regional
- Capital City
- Hazleton Municipal
- Lancaster
- Rostraver
- Northeast Philadelphia
- Wings Field
- Allegheny County
- Pottstown Limerick
- University Park
- York

*Those airports currently lacking dedicated cargo/freight transfer facilities:*

- Altoona-Blair County
- Beaver County
- Chester County-GO Carlson
- Doylestown
- DuBois-Jefferson County
- Erie International
- Capital City
- Hazleton Municipal
- Johnstown-Cambria County
- Lancaster
- Arnold Palmer Regional
- Rostraver
- Northeast Philadelphia
- Wings
- Allegheny County
- Reading Regional
- York

Options available to address intermodal accessibility deficiencies at the Commonwealth’s advanced airports include the following:

- Do-Nothing Option
- Development of Facilities at all Advanced Airports
- Targeted Development of Facilities

**1. Do-Nothing Option**

At many of the airports where sufficient demand exists for intermodal facilities, usually airports with scheduled airline service, those facilities have already been developed by the airport, often with funding support from PennDOT, or by private interests. Accepting current deficiencies at Commonwealth airports related to intermodal accessibility is an option that would ignore the importance of intermodal connectivity among transportation systems. The ability to move goods and people from one means of transportation to another is important to economic development on and off an airport. By not promoting intermodal accessibility at Commonwealth airports, development opportunities at and around the airports could be lost. This, in turn, could negatively impact airport activity levels, airport revenue-generating capabilities, and local economic development.

**2. Development of Facilities at all Advanced Airports**

One option available to address these deficiencies is to promote the development of these services and/or facilities at all advanced airports. This option would meet the goal of providing access to

public transit and facilities for freight/cargo transfer at all advanced airports. Funding requirements to implement this option would be significant and, in many cases, there would be no certainty that the facilities would be used to their optimal levels. Where sufficient demand for these facilities did not exist, the return on investment for developing such infrastructure would be minimal.

### **3. Targeted Development of Facilities**

It is important to note that the development of the types of intermodal facilities and services identified in this analysis is traditionally demand-driven. Developing intermodal facilities at all advanced airports, even those where insufficient demand may exist to make those facilities viable and beneficial to the system, would be a costly endeavor. A more reasonable option may be to promote the development of these services and facilities at those advanced airports at which there is an illustrated demand. In general, insufficient demand for on-site public transit typically exists at general aviation airports to make the development of such services a viable option. Similarly, at advanced airports where minimal or no cargo activity occurs, the development of dedicated cargo facilities is not justified.

There are no general guidelines regarding the amount of demand, or ridership, that is required to make a public transit route, such as bus route or commuter rail line, financially viable. The feasibility of providing public transit to any location is determined by the transit provider in that area. Transit providers have their own methodologies for estimating the cost/benefit of providing the service, and based on their estimates, the providers independently decide which routes to serve.

The typical process involved in promoting improved public transit at any location, including airports, would be initiated by an interested party, such as the airport, approaching the public transit provider in the area and requesting a route to serve their location. The airport and the transit provider would then work to establish a relationship and identify a mutual goal for the service to be provided. Once a working relationship has been developed between the airport and the transit provider, they should approach local and regional planning agencies for their help in facilitating the process of initiating the service. In most circumstances, capital development that may be required to start public transit service, such as a bus stop shelter, would be the responsibility of the service provider or the location to be served. The responsibilities of funding capital development needs and potential advertising needs would typically be determined through a negotiation process between the airport and the transit provider. As it relates to the Commonwealth's aviation system, if the request for transit service is initiated by the airport, it may be necessary for the airport to fund the capital facilities need to entice the transit provider to serve the location.

The general processes required to initiate additional bus and/or commuter rail service to any location vary greatly as a result of the major differences in capital costs associated with each. Major steps in promoting new/additional commuter rail service to an airport location would typically include the following:

- ❑ Major corridor study
- ❑ Ridership/demand projections
- ❑ Major investment study

- ❑ Cost/benefit analysis
- ❑ Options analysis and environmental requirements

Major steps in promoting new/additional public transit bus routes to an airport would typically included the following:

- ❑ Airport approaches local transit operator requesting service.
- ❑ Local transit operator examines their own service standards, performance factors, and decision points to determine if service is financially viable. Specific factors that may be examined include estimates of riders-per-hour and fare box return.
- ❑ Negotiation process identifies the responsibilities of transit provider and airport related to capital development and advertising costs.

As advanced airports illustrate specific demand for these types of services and facilities through airport master planning or other airport planning processes, they should approach local transit providers with requests for new/additional service. In this process, PennDOT and/or local or regional agencies could take a more active role in supporting airports that request improved public transit service. In many instances, this support could come in the form of funding through capital budget funds, the PennDOT grant program, low-interest loans from other agencies that promote economic development, and/or private funding.

#### **E. Medical Airlift Coverage**

GIS analysis presented in Chapter Five indicated that approximately 65 percent of the Commonwealth’s land area is located within a 30-minute drive time of an airport, either in Pennsylvania or in a neighboring state, that can accommodate medical airlift flights by fixed-wing aircraft. Approximately 92 percent of the Commonwealth’s population is located within the 30-minute drive time coverage area of an airport included in this analysis. Only those airports that have at least a published non-precision approach and a primary runway length of at least 3,200 feet were categorized as being able to accommodate this type of activity. These minimum facility requirements were developed based on general operating requirements for providers of fixed-wing medical airlift services.

Although providing 100 percent coverage of medical airlift services throughout the Commonwealth may not be totally feasible, improvements at some specific airports could significantly improve the performance of the existing system relative to medical airlift coverage. Large portions of the counties listed below are currently located outside the coverage areas provided by the airports that have the required facilities to support medical airlift operations. Airports located in each of the uncovered counties that may represent options for improving this coverage are also listed. The uncovered counties and airports located in those counties include:

- ❑ Warren – Brokenstraw Airport is located in Warren County.
- ❑ Forrest – No airports are located in Forrest County.
- ❑ Potter – Cherry Springs Airport is located in Potter County.
- ❑ Bradford – Bradford County Airport and Blue Swan Airport are located in Bradford County.

- ❑ Susquehanna – No airports are located in Susquehanna County; Skyhaven Airport and Seamans Field Airport are located proximate to the border of Susquehanna County.
- ❑ Wayne – Cherry Ridge Airport is located in an area of Wayne County that is not currently covered by an airport that can accommodate medical airlift operations.
- ❑ Pike – No airports are located in Pike County; Flying Dollar Airport is located proximate to the border of Pike County.
- ❑ Clinton – William T. Piper Airport is located in Clinton County.
- ❑ Union – No airports are located in Union County; Sunbury Airport and Penn Valley Airport are located proximate to the county’s border.
- ❑ Snyder – Penn Valley Airport is located in Snyder County.
- ❑ Juniata – Mifflintown Airport is located in Juniata County.
- ❑ Perry – No airports are located in Perry County; Carlisle Airport is located proximate to the Perry County border.
- ❑ Huntingdon – Huntingdon County Airport is located in Huntingdon County.
- ❑ Fulton – No airports are located in Fulton County.
- ❑ Greene – Greene County Airport is located in Greene County.

It is important to note that Exhibit 5-11 also identifies the location of 140 medical-use heliports located throughout the Commonwealth. Most of these medical-use heliports are located at hospitals or other urgent care facilities and have the facilities required to support rotorcraft operations. A number of these facilities are located in areas of the Commonwealth outside of the 30-minute drive time coverage area of an airport that meets the facility requirements identified for the medical airlift coverage analysis. Drive time coverage areas are not shown for these medical-use heliports; however, if their coverage areas were added, existing medical airlift coverage for the Commonwealth would be significantly improved.

For each of the areas listed above, options for improving medical airlift coverage include upgrading existing facilities in those areas to have a published non-precision approach and a primary runway of at least 3,200 feet; constructing a new airport that has the specified facilities; or relying on medical-use heliports to support medical airlift needs in these areas.

### **III. SUPPORT/COMMITMENT**

Support and/or commitment for airports at the local level is important to the long-term viability of Pennsylvania’s airport system. Because of the financial and other resources required to promote airport development and maintenance, it is important that those airports that are considered most important to the system have certain characteristics that promote stability and illustrate support and/or commitment to the long-term viability of the airports.

Positive interaction with the local community and developing community support for the facility is important for all system airports, regardless of airport functional level. PennDOT’s Bureau of

Aviation has published a document that provides information related to processes that can, and have, been used to successfully promote airport involvement and support in their local communities. *Partnering for Better Communities, A Guide to Public Outreach for Aviation Facilities*, presents information on successful means of fostering a positive relationship between airports and neighboring residents and communities. In addition to describing how airports can get involved in their local communities, benefiting both the airport and the local community, the guide also includes examples of how some Pennsylvania airports have been successful in improving their relationship with their local communities. All system airports should use information included in the guide as a framework for developing positive relationships with their local communities.

Benchmark analyses conducted in Chapter Five summarized system performance relative to a single support/commitment benchmark. The findings of those previous analyses are further examined in following section and options/recommendations for improving system performance are noted.

### **A. Airport Ownership/Management Structure and Grant Obligation**

To support the long-term viability of airports that have been determined to be most important to the system, it is important that certain characteristics exist at Commonwealth airports that promote stability, efficiency, development, and service. By promoting public ownership, on-site management, and grant obligations at key airports, PennDOT can aid in ensuring that the Commonwealth's most important airports remain open to public use over the long-term, while offering the types and levels of service that are required to support the operations of based and transient users. These factors are explained in greater detail in Chapter 5, where specifics related to the current characteristics of system airports are also presented.

The information presented in Chapter Five presents a point-in-time view of the existing airport system relative to the support/commitment factors examined. While some of the factors examined in this analysis fall beyond the control of PennDOT, such as airport management and/or ownership structure, these factors are important to overall system performance. Options do exist related to how the information developed in this analysis can be used by PennDOT to promote the stability and long-term viability of Commonwealth airports. These options include the following:

- ❑ Periodic Update/Do-Nothing Option
- ❑ Continuous Monitoring of System
- ❑ Development of System Goals for Airport Ownership/Management Structure and Grant Obligation Characteristics

#### **1. Periodic Update/Do-Nothing Option**

Data presented in the SASP relative to the support/commitment performance measure could be used by PennDOT as a source of information on current conditions and characteristics at Commonwealth airports. This information provides a better understanding of the airport system's characteristics at the present time, and could be updated at some point in the future to identify trends related to ownership, management, and grant obligation at system airports. Ownership and grant obligation characteristics at system airports are important, however, because they can reflect the stability and

viability of the airports. Privately owned airports that are not grant obligated can be closed, sold, or redeveloped at the owner’s will. Should this happen at a number of Commonwealth airports, or at very important system airports, the overall system could be greatly impacted.

**2. Continuous Monitoring of System**

By continuously monitoring changes in airport ownership, management, and grant obligation characteristics at Commonwealth airports, PennDOT can ensure that any changes in these characteristics, especially at the most important system airports, are known. In an instance where closure or re-development of an airport may be an option for the airport owner, it is important for PennDOT to promote open lines of communication and work with owners, sponsors, and potential public sponsors to ensure that such actions would not have a significant negative impact on the overall airport system. Although PennDOT, through its aviation specialists, engineers, and planners, currently does monitor these factors for most system airports, a more formal methodology for doing so may be beneficial. In addition to the SASP benchmarks and other factors examined in this analysis including airport ownership, community support/commitment to the airport, and airport grant obligation, there are a number of other factors that PennDOT uses to monitor existing conditions at system airports. Some examples of these factors include the following:

- ❑ Monitoring newspaper articles and editorials for information related to local airport interaction with the community
- ❑ Monitoring airport and airport sponsor attendance at PennDOT’s regional chats, Airports 101 courses, grant funding workshops, and other public meetings

All of these factors would be important considerations in PennDOT’s effort to continuously monitor airport ownership/management structure and grant obligation characteristics at system airports.

**3. Development of System Goals for Airport Ownership/Management Structure and Grant Obligation Characteristics**

A more proactive use for the information developed in the SASP may be to develop goals for system airports related to the specific ownership, management, and grant obligation characteristics examined. By identifying specific goals individually for the different functional levels of airports identified in the SASP, PennDOT could take a more active role in ensuring that the Commonwealth’s airports remain open to public use, operating as airports, and have access to funding resources to promote airport development.

An example of how this process could be implemented would be to promote the characteristics summarized in the following table:

<b>Functional Level</b>	<b>Ownership</b>	<b>Management</b>	<b>Obligation</b>
Advanced	Public	Stand-alone	Federal Obligation
Intermediate	Public	Stand-alone	Federal Obligation
Basic	Public or Private	Stand-alone or Contract	Obligated
Limited	Public or Private	Stand-alone or Contract	

PennDOT could promote these characteristics through interaction and discussions with local airport, municipal, or regional representatives regarding the importance of the Commonwealth’s airport system. One important step in this process would be to work with locals to ensure that the Commonwealth or local municipalities would have an option to buy any private airport before it is sold for non-aviation use. This process would allow for the public acquisition of private airports to assist another municipal entity to purchase an airport that is important to Pennsylvania’s aviation system.

#### **IV. FACILITIES**

Pennsylvania’s system of public-use airports is comprised of a wealth of existing aviation infrastructure. The existing infrastructure has been funded through the use of airport development funds that have come from local, private, State, and Federal sources. Much of the existing infrastructure at system airports still has considerable useful life and should be considered an asset, where possible, when system development recommendations are made. Recognizing the contributions of existing infrastructure to the system, as well as balancing the need for the creation of new facilities, is often a key component in the long-term success of an airport system. Benchmarks used to measure the performance of existing system infrastructure were developed and analyzed in Chapter Five. The findings of these analyses are re-examined in the following sections and options for improving system performance relative to facility benchmarks are identified.

##### **A. Facility and Service Objectives**

System performance relative to facility and service objectives for each functional level of airport was presented in Chapter Five. Graphs presented in that chapter depicted the percentage of airports in each functional level that currently meet objectives developed for each specific facility or service identified in the SASP. To complement that information, matrices have been developed to show in detail which airports meet the identified facility and service objectives for each of the four categories. In the matrices, airports that meet the specific objective are depicted with an “x.” For those airports that do not currently meet the objective, existing facilities or services are identified. It is important to note that airports in the special-use category were not addressed because of the special nature of their facilities.

Specifics related to facility and service objective performance by airport and functional level are presented in the following tables:

- ❑ **Table 6-1:** Advanced Airport Summary
- ❑ **Table 6-2:** Intermediate Airport Summary
- ❑ **Table 6-3:** Basic Airport Summary
- ❑ **Table 6-4:** Limited Airport Summary

**Table 6-1  
Facility and Service Objectives  
Advanced Airports Summary**

AIRPORT NUMBER	ADVANCED AIRPORTS	ASSOCIATED CITY	Approach Aids							Facilities							Services							
			ARC Objective B-II (C-III for CS)	Runway Length Objective (5000)	Runway Width Objective (ARC)	Runway Strength Objective 30,000 (60,000 for CS)	Taxiway Objective (Full Parallel)	Navigational Aid Objective (Precision)	Rotating Beacon	Lighted Wind Indicator	REIL	PAPI 1/	MALSR	HIRL	ASOS/AWOS	Apron Objective	Aircraft Storage Objective	Terminal Objective	Auto Parking Objective	Public Telephone	Public Restroom	FBO	Aircraft Maintenance	Jet Fuel
1	Lehigh Valley International	Allentown	X	X	X	X	X	X	X	VASI	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	Altoona-Blair County	Altoona	B-II	X	X	16000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
21	Beaver County	Beaver Falls	X	4510	X	16000	X	X	X	X	X	MIRL	X	X	X	X	X	X	X	X	X	X	X	X
39	Chester County-G.O. Carlson	Coatesville	C-I	X	X	X	X	X	X	VASI	X	X	X	X	X	X	X	X	X	X	X	X	X	X
46	Doylestown	Doylestown	B-I	3004	X	12000	X	X	X	VASI	MIRL	X	X	X	X	X	X	X	X	X	X	X	X	X
4	DuBois-Jefferson County	DuBois	B-II	X	X	45000	part.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	Erie International	Erie	X	X	X	X	X	X	X	VASI	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	Venango Regional	Franklin	C-II	X	X	40000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	Harrisburg International	Harrisburg	X	X	X	X	X	X	X	VASI	X	X	X	X	X	X	X	X	X	X	X	X	X	X
66	Capital City	Harrisburg	B-II	X	X	X	X	X	X	VASI	SSALF	X	X	X	X	X	X	X	X	X	X	X	X	X
67	Hazleton Municipal	Hazleton	X	4898	X	X	part.	X	X	VASI	X	MIRL	X	X	X	X	X	X	X	X	X	X	X	X
8	Johnstown-Cambria County	Johnstown	B-II	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9	Lancaster	Lancaster	B-II	X	X	X	X	X	X	VASI	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	Arnold Palmer Regional	Latrobe	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
84	Rostraver	Monongahela	X	4001	X	12000	X	X	X	VASI	MIRL	X	X	X	X	X	X	X	X	X	X	X	X	X
100	Northeast Philadelphia	Philadelphia	X	X	X	X	part.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11	Philadelphia International	Philadelphia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18	Wings Field	Philadelphia	X	3700	X	12500	X	X	X	X	MIRL	X	X	X	X	X	X	X	X	X	X	X	X	X
104	Allegheny County	Pittsburgh	X	X	X	X	X	X	X	VASI	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	Pittsburgh International	Pittsburgh	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
106	Pottstown Limerick	Pottstown	A-I	3371	X	12500	X	X	X	X	MIRL	X	X	X	X	X	X	X	X	X	X	X	X	X
13	Reading Regional	Reading	B-II	X	X	X	X	X	X	VASI	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	University Park	State College	X	X	X	50000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15	Wilkes-Barre/Scranton International	Wilkes-Barre/Scranton	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	Williamsport Regional	Williamsport	B-II	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
141	York	York	A-I	X	X	20000	X	X	X	X	MIRL	X	X	X	X	X	X	X	X	X	X	X	X	X

Note 1/ In the benchmark analysis, VASIs were considered as sufficient alternatives to PAPIs at those airports where they are currently in use. As VASIs reach their useful lives, they should be replaced with PAPIs.

Source: Wilbur Smith Associates, Inc.

**Table 6-2  
Facility and Service Objectives  
Intermediate Airports Summary**

AIRPORT NUMBER	INTERMEDIATE AIRPORTS	ASSOCIATED CITY	ARC Objective (B-II)	Runway Length Objective (4,000)	Runway Width Objective (ARC)	Runway Strength Objective (30,000)	Taxiway Objective (Full Parallel For Primary)	Navigational Aid Objective (Non-Precision Approach)	Approach Aids						Facilities				Services							
									Rotating Beacon	Lighted Wind Indicator	REIL	MALSR	PAPI or VASI	MIRL	ASOS/AWOS	Apron Objective	Aircraft Storage Objective	Terminal Objective	Auto Parking Objective	Public Telephone	Public Restroom	FBO	Aircraft Maintenance	Jet Fuel	On-site rental car, Limo, Courtesy car	
17	Queen City	Allentown	X	3,950	X	12,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
22	Bedford County	Bedford	X	X	X	12,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
30	Butler County	Butler	NA	X	X	12,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
33	Carlisle	Carlisle	X	X	40	14,000		X	X	X	X	X	NSTD	X	X	X	X	X	X	X	X	X	X	X	X	X
38	Clearfield-Lawrence	Clearfield	B-I	X	X	12,500		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
40	Perkiomen Valley	Collegeville	X	2,950	X	12,500		X	X	X	X	NSTD	X	X	X	X	X	X	X	X	X	X	X	X	X	X
42	Connellsville	Connellsville	A-1	3,458	X	12,500		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
70	Indiana County-Jimmy Stewart	Indiana	X	X	X	18,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
75	Kutztown	Kutztown	A-1	2,435	50	12,500		X	X	X	X		LIRL-NSTD	X	X		X	X	X	X	X	X	X	X	X	X
81	Port Meadville	Meadville	X	X	X	12,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
87	Donegal Springs Airport	Mount Joy/Marietta	B-I	3,250	50	12,500		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
90	Pocono Mountains Municipal	Mount Pocono	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
93	New Castle Municipal	New Castle	NA	X	X	12,500		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
107	Pottstown Municipal	Pottstown	A-1	2,704	X	12,000	X	X	X	X	X	X	NSDT	X	X	X	X	X	X	X	X	X	X	X	X	X
108	Schuylkill County-Joe Zerbey	Pottsville	X	X	X	21,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
110	Quakertown	Quakertown	B-I	3,201	50	12,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
111	Mifflin County	Reedsville	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
114	Penn Valley	Selinsgrove	X	3,800	X	12,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
116	Northumberland County	Shamokin	B-I	3,297	X	12,500		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
119	Smoketown	Smoketown	B-I	2,400	50	12,500	X		X	X	X		LIRL	X	X	X	X	X	X	X	X	X	X	X	X	X
128	New Garden Flying Field	Toughkenamon	B-I	3,695	50	12,500		X	X	X	X	NSTD	X	X	X	X	X	X	X	X	X	X	X	X	X	X
133	Washington County	Washington	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
138	Brandywine	West Chester	A-1	3,347	50	10,000		X	X	X	X		LIRL	X	X	X	X	X	X	X	X	X	X	X	X	X
142	Zelienople Municipal	Zelienople	X	X	X	12,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Source: Wilbur Smith Associates, Inc.

**Table 6-3  
Facility and Service Objectives  
Basic Airports Summary**

AIRPORT NUMBER	BASIC AIRPORTS	ASSOCIATED CITY	ARC Objective (B-I)	Runway Length Objective (3,000)	Runway Width Objective (ARC)	Runway Strength Objective (12,500)	Taxiway Objective (Partial Connectors or Turnarounds)	Approach Aids			MIRL	Facilities			Services		
								Rotating Beacon	Lighted Wind Indicator	PAPI or VASI		Apron Objective	Aircraft Storage Objective	Auto Parking Objective	Public Telephone	Public Restroom	AvGas
27	Bloomsburg Municipal	Bloomsburg	X	2,800	50	X		X	X		LIRL-NSTD	X	X	X	X	X	X
3	Bradford Regional	Bradford	X	X	X	X		X	X	X	X	X	X	X	X	X	X
37	Clarion County	Clarion	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
43	Corry-Lawrence	Corry	X	X	X	X	X	X	X		X	X	X	X	X	X	X
45	Danville	Danville	X	2,140	X			X	X			X	X	X	X	X	X
47	Stroudsburg Pocono	East Stroudsburg	A-I	X	30			X	X		LIRL-NSTD	X	X	X	X	X	X
48	Easton (Braden Airpark)	Easton	X	1,950	50			X	X		LIRL-NSTD	X	X	X	X	X	X
49	Ebensburg	Ebensburg	X	X	50	X	X	X	X		X	X	X	X	X	X	X
56	Finleyville Airpark	Finleyville	A-I	2,505	50			X	X		LIRL	X	X	X	X	X	X
57	Farmer's Pride	Fredicksburg	A-I	X	X			X	X		LIRL	X	X	X	X	X	X
61	Gettysburg Airport and Travel Center	Gettysburg	A-I	X	40				X		NONE	X	X	X	X	X	X
64	Grove City	Grove City	A-I	X	X	X				X	X	X	X	X	X	X	X
78	Jake Arner Memorial	Lehighton	X	X	50	X	X	X	X	X	X	X	X	X	X	X	X
79	William T. Piper Memorial	Lock Haven	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
92	Deck	Myerstown	X	X	50	12,000		X	X		X	X	X	X	X	X	X
98	Reigle	Palmyra	A-I	1,950	40	X		X	X		LIRL-NSTD	X	X	X	X	X	X
99	Pennridge	Perkasie	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
103	Mid State	Philipsburg	X	X	X	X		X	X	X	X	X	X	X	X	X	X
120	Somerset County	Somerset	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
121	St. Marys Municipal	St. Marys	X	X	X	X		X	X	X	X	X	X	X	X	X	X
126	Rock	Tarentum	X	2,645	36			X	X	X	LIRL-NSTD	X	X	X	X	X	X
127	Titusville	Titusville	X	X	X	X		X	X		X	X	X	X	X	X	X
135	Greene County	Waynesburg	X	X	X	12,000	X	X	X	X	X	X	X	X	X	X	X
139	Wilkes-Barre/Wyoming Valley	Wilkes-Barre	X	X	X	X		X	X	X	X	X	X	X	X	X	X

Source: Wilbur Smith Associates, Inc.

**Table 6-4  
Facility and Service Objectives  
Limited Airports Summary**

AIRPORT NUMBER	LIMITED AIRPORTS	ASSOCIATED CITY	ARC Objective (A-I)	Runway Length Objective (2,200)	Runway Width Objective (ARC)	Runway Strength Objective (Up to 12,500)	Wind Indicator	Facilities		Services	
								Apron Objective	Auto Parking Objective	Public Telephone	Public Restroom
19	Millard	Annvile	X	X	50	X	X	X	X	X	X
23	Bellefonte	Bellefonte	X	X	40	X	X	X	X	X	X
26	Grimes	Bethel	X	X	X	X	X	X	X		X
28	Baublitz Commercial	Brogue	X	X	X	X	X	X	X		X
29	Miller	Burgettstown	X	X	38	X	X	X	X	X	X
31	Butler Farm Show	Butler	X	X	X	X	X	X	X	X	X
32	Flying Dollar	Canadensis	X	X	X	X	X	X	X		X
34	Centre Airpark	Centre Hall	X	X	X	X	X	X	X	X	X
35	Penn's Cave	Centre Hall	X	X	40	X	X	X	X	X	X
36	Chambersburg Municipal	Chambersburg	X	X	X	X	X	X	X	X	X
41	McGinness Field	Columbia	X	1800	X	X	X	X	X		X
44	Culmerville	Culmerville	X	1670	X	X	X		X		X
50	Bandel	Eighty Four	X	2080	X	X	X	X	X		X
51	Van Sant	Erwinna	X	X	X	X	X	X	X	X	X
54	Seamans Field	Factoryville	X	X	50	X	X	X	X	X	X
58	McVile	Freeport	X	X	X	X	X	X	X		X
59	Cherry Springs	Galeton	X	X	X	X	X	X	X		X
60	Flying M. Aerodrome	Germansville	X	X	X	X	X	X	X	X	X
63	Greenville Municipal	Greenville	X	X	X	X	X	X	X	X	X
65	Hanover	Hanover	X	X	X	X	X	X	X		X
68	Cherry Ridge	Honesdale	X	X	50	X	X	X	X	X	X
71	Inter County	Irwin	X	1960	X	X	X	X	X		X
72	Greensburg-Jeanette Regional	Jeanette	X	X	X	X	X	X	X	X	X
73	Jersey Shore	Jersey Shore	X	X	X	X	X	X	X	X	X
74	Bermudian Valley Airpark	Kralltown	X	X	X	X	X	X	X	X	X
76	Keller Brothers	Lebanon	X	X	X	X	X	X	X		X
77	Beltzville	Lehighton	X	2020	X	X	X	X	X		X
80	Lakehill	Mars	X	X	X	X		X	X		X
82	Mifflintown	Mifflintown	X	X	50	X	X	X	X	X	X
85	Pittsburgh Monroeville	Monroeville	X	X	27	X	X	X	X	X	X
86	Morgantown	Morgantown	X	X	X	X	X	X	X		X
88	Mt. Pleasant-Scottsdale	Mount Pleasant	X	X	X	X	X	X	X		X
91	Huntingdon County	Mount Union	X	X	X	X	X	X	X	X	X
95	Blue Knob Valley	Newry	X	X	X	X	X	X	X		X
102	Albert	Philipsburg	X	X	X	X		X	X		X
105	Brokenstraw	Pittsfield	X	X	X	X	X	X	X	X	X
109	Punxsutawney	Punxsutawney	X	X	50	X	X	X	X	X	X
113	Blue Swan	Sayre	X	X	X	X	X	X	X		X
115	Seven Springs	Seven Springs	X	X	42	X	X	X	X	X	X
117	Shippensburg	Shippensburg	X	X	X	X	X	X	X		X
118	Slatington	Slatington	X	X	50	X	X	X	X	X	X
122	Spring Hill	Sterling	X	X	42	X	X	X	X	X	X
124	Sunbury	Sunbury	X	X	X	X	X	X	X		X
129	Bradford County	Towanda	X	X	X	X	X	X	X	X	X
130	Bendigo	Tower City	X	2100	X	X	X	X	X	X	X
131	Sky Haven	Tunkhannock	X	2007	50	X	X	X	X	X	X
134	Erie County	Wattsburg	X	X	X	X	X	X	X	X	X
136	Grand Canyon State	Wellsboro	X	X	X	X	X	X	X	X	X
137	Kampel	Wellsville	X	X	X	X	X	X	X		X
140	Cove Valley	Williamsburg	X	X	X	X	X	X	X	X	X

Source: Wilbur Smith Associates, Inc.

The specific facility and service objective deficiencies identified in these tables could be addressed through the following options:

- ❑ Across-the-Board System Improvements
- ❑ Focused Improvements for Specific Facilities/Services
- ❑ Focused Improvements for Functional Levels
- ❑ Prioritized Improvements

### **1. Across-the-Board System Improvements**

This option for improving system performance relative to facility and service objectives identified in the SASP would implement improvements at all airports that would bring them into complete compliance with all objectives, where local conditions, legal determinations, planning, and zoning do not prohibit such development. It should be noted that the facility and service objectives used in the SASP were developed so that they could be implemented to the airport functional levels that were identified in the stratification process. However, all airport development that would be implemented with federal funding will have to be properly justified based on FAA criteria. These FAA criteria generally require that the use of federal funding is limited to those development projects that are justified to meet aviation demand, and that each airport development project that uses federal funds will be subject to eligibility and justification requirements included in the normal AIP funding process. Those airports only eligible for state aviation funding would be required to follow the normal State funding process. For example, if a runway extension is required for an advanced airport to meet the 5,000- foot long runway length objective identified in the SASP, the airport will need to justify that runway length requirement to the FAA based on activity and support at the local level. In addition, the runway extension project would need to be identified on an approved airport layout plan and meet all environmental requirements.

While this option would bring all but the most constrained airports into compliance with their respective facility and service objectives, the financial implications could be overwhelming to the system. This option would require the diversion of all or most of PennDOT’s airport grant resources over a multi-year period to go to this specific objective. In the process, vital maintenance and/or expansion projects may need to be postponed or ignored, which could negatively impact the overall airport system. In addition, local regulatory policies or planning and zoning ordinances may restrict PennDOT and the airports from pursuing SASP facility and service objectives at some system airports. Another important consideration in this option is that, although PennDOT funds could be used to develop facilities at airports to bring them into compliance with facility and service objectives, the airports themselves would be responsible for funding the maintenance and operation of those facilities. In many instances, the airports may not be able to support the increased operational budgets associated with these improvements, and the initial investment in infrastructure could be lost to deterioration as a result of insufficient funds for maintenance. It is also important to note that PennDOT can promote the development of aviation facilities through the grant funding process; however, the provision of aviation services at airports is up to the airports and their respective tenants.

### **2. Focused Improvements for Specific Facilities/Services**

Another means for quickly addressing deficiencies related to facility and service objectives at system airports would be to focus improvements on those objectives determined to be most important to the system. Improvement to these most important objectives would then be implemented in each functional level of airports, if applicable. For instance, if runway length was determined to be the most important objective, all Commonwealth airports could be brought into compliance with that specific objective before other objectives are pursued. While the financial impact of this option would not be as great as in the previous option, this methodology would still require significant amounts of investment. One shortfall of this process is that it may ignore the synergy that exists between specific airport’s facilities and services. For example, the development of a 5,000-foot-long runway at an airport may not lead to increased activity levels at that facility unless other ancillary facility objectives (such as lighting, NAVAIDs, and runway strength) are also met.

### **3. Focused Improvements for Functional Levels**

Another option for addressing deficiencies related to facility and service objectives at system airports would be to focus improvements on the most important airport functional levels in the system. Improvements focused on individual functional levels may bring all advanced airports into compliance with objectives before moving to intermediate, basic, and limited airports. This process would substantially improve airport performance relative to facility and service objectives by functional level. One shortfall of this process is that it could delay and/or ignore other improvements that may be required at airports in the other functional levels. In addition, while advanced airports are most important to the system, meeting the facility and service objectives for that level typically requires the highest level of investment. Meeting the facility and service objectives at basic and limited airports may not be as costly, and their overall performance relative to their facility and service objectives could potentially be greatly improved with minimal investment.

### **4. Prioritized Improvements**

System performance relative to facility and service objectives is impacted by many factors, and promoting improved performance is a complicated process. Other options identified in this analysis include a systematic approach to making improvements; however, these options lack the flexibility that may be required to ensure that improvements made at specific facilities have their desired impact and also to ensure that quick fixes can be implemented where available to efficiently and inexpensively improve system performance. A more flexible approach to implementing necessary improvements at system airports could rely on the existing or revised version of PennDOT’s grant prioritization process. In the prioritization process, those projects that improve an airport’s compliance relative to the facility and service objectives developed for it based on its functional level would be of a higher priority than other projects that may not address these objectives. This option would allow PennDOT to address facility and service objectives as part of the existing grant process.

## **B. Pennsylvania Licensing Standards**

Analysis conducted in Chapter Five examined the performance of system airports as it relates to meeting established regulations for the licensing of public-use aviation facilities in the Commonwealth. These regulations define different types of aviation facilities that may exist throughout the Commonwealth and identify development and safety standards for those facilities. Licensing standards developed in these regulations relate to specific factors such as runway dimensions, primary surface dimensions, required navigational aids and lighting, as well as other factors. The licensing standards have been developed for each of the different types of aviation facilities identified in the regulations.

Based on the licensing standards that are currently in place, system airports were examined in Chapter Five to determine their compliance to all applicable licensing standards. Airports were then classified as meeting all applicable standards, currently not meeting all standards but having plans in place to meet standards, or not meeting standards and having no plans to address deficiencies. As presented in the previous chapter, only 18 percent of system airports meet all current licensing standards. **Table 6-5** presents summary data regarding system airports' current compliance to Pennsylvania licensing standards. Options for improving system performance relative to Commonwealth licensing standards include the following:

- Do-Nothing Option
- Implement System Performance Improvements

**Table 6-5 (Page 1 of 3)**  
**State Licensing Standards Compliance Summary**

			STATE LICENSING STANDARDS		
			Complies	Does Not Comply/ Plans in Place	Does Not Comply/ No Plans
AIRPORT NUMBER	ADVANCED AIRPORTS	ASSOCIATED CITY			
1	Lehigh Valley International	Allentown	X		
2	Altoona-Blair County	Altoona		X	
21	Beaver County	Beaver Falls		X	
39	Chester County-G.O. Carlson	Coatesville		X	
46	Doylestown	Doylestown		X	
4	DuBois-Jefferson County	DuBois		X	
5	Erie International	Erie		X	
6	Venango Regional	Franklin		X	
7	Harrisburg International	Harrisburg	X		
66	Capital City	Harrisburg		X	
67	Hazleton Municipal	Hazleton		X	
8	Johnstown-Cambria County	Johnstown		X	
9	Lancaster	Lancaster		X	
10	Arnold Palmer Regional	Latrobe		X	
84	Rostraver	Monongahela	X		
100	Northeast Philadelphia	Philadelphia		X	
11	Philadelphia International	Philadelphia		X	
18	Wings Field	Philadelphia	X		
104	Allegheny County	Pittsburgh		X	
12	Pittsburgh International	Pittsburgh		X	
106	Pottstown Limerick	Pottstown		X	
13	Reading Regional	Reading		X	
14	University Park	State College		X	
15	Wilkes-Barre/Scranton International	Wilkes-Barre/Scranton		X	
16	Williamsport Regional	Williamsport		X	
141	York	York	X		
AIRPORT NUMBER	INTERMEDIATE AIRPORTS	ASSOCIATED CITY			
17	Queen City	Allentown		X	
22	Bedford County	Bedford		X	
30	Butler County	Butler		X	
33	Carlisle	Carlisle			X
38	Clearfield-Lawrence	Clearfield		X	
40	Perkiomen Valley	Collegeville			X
42	Connellsville	Connellsville		X	
70	Indiana County-Jimmy Stewart	Indiana		X	
75	Kutztown	Kutztown		X	
81	Port Meadville	Meadville		X	
87	Donegal Springs Airpark	Mount Joy/Marietta	X		
90	Pocono Mountains Municipal	Mount Pocono		X	
93	New Castle Municipal	New Castle		X	
107	Pottstown Municipal	Pottstown		X	
108	Schuylkill County-Joe Zerbey	Pottsville		X	
110	Quakertown	Quakertown		X	
111	Mifflin County	Reedsville	X		
114	Penn Valley	Selinsgrove	X		
116	Northumberland County	Shamokin		X	
119	Smoketown	Smoketown	X		
128	New Garden Flying Field	Toughkenamon			X
133	Washington County	Washington		X	
138	Brandywine	West Chester		X	
142	Zelienople Municipal	Zelienople		X	

**Table 6-5 (Page 2 of 3)  
State Licensing Standards Compliance Summary**

			STATE LICENSING STANDARDS		
			Complies	Does Not Comply/ Plans in Place	Does Not Comply/ No Plans
AIRPORT NUMBER	BASIC AIRPORTS	ASSOCIATED CITY			
27	Bloomsburg Municipal	Bloomsburg		X	
3	Bradford Regional	Bradford		X	
37	Clarion County	Clarion		X	
43	Corry-Lawrence	Corry		X	
45	Danville	Danville	X		
47	Stroudsburg Pocono	East Stroudsburg		X	
48	Easton (Braden Airpark)	Easton		X	
49	Ebensburg	Ebensburg		X	
56	Finleyville Airpark	Finleyville		X	
57	Farmer's Pride	Fredicksburg	X		
61	Gettysburg Airport and Travel Center	Gettysburg		X	
64	Grove City	Grove City		X	
78	Jake Arner Memorial	Lehighton		X	
79	William T. Piper Memorial	Lock Haven		X	
92	Deck	Myerstown	X		
98	Reigle	Palmyra			X
99	Pennridge	Perkasie		X	
103	Mid State	Philipsburg		X	
120	Somerset County	Somerset		X	
121	St. Marys Municipal	St. Marys		X	
126	Rock	Tarentum		X	
127	Titusville	Titusville			X
135	Greene County	Waynesburg			X
139	Wilkes-Barre/Wyoming Valley	Wilkes-Barre		X	

**Table 6-5 (Page 3 of 3)**  
**State Licensing Standards Compliance Summary**

			STATE LICENSING STANDARDS		
			Complies	Does Not Comply/ Plans in Place	Does Not Comply/ No Plans
AIRPORT NUMBER	LIMITED AIRPORTS	ASSOCIATED CITY			
19	Millard	Annville	X		
23	Bellefonte	Bellefonte		X	
26	Grimes	Bethel	X		
28	Baublitz Commercial	Brogue			X
29	Miller	Burgettstown			X
31	Butler Farm Show	Butler		X	
32	Flying Dollar	Canadensis			X
34	Centre Airpark	Centre Hall		X	
35	Penn's Cave	Centre Hall		X	
36	Chambersburg Municipal	Chambersburg	X		
41	McGinness Field	Columbia			X
44	Culmerville	Culmerville			X
50	Bandel	Eighty Four		X	
51	Van Sant	Erwinna			X
54	Seamans Field	Factoryville	X		
58	McVillie	Freeport		X	
59	Cherry Springs	Galeton		X	
60	Flying M. Aerodrome	Germansville		X	
63	Greenville Municipal	Greenville		X	
65	Hanover	Hanover	X		
68	Cherry Ridge	Honesdale		X	
71	Inter County	Irwin			X
72	Greensburg-Jeanette Regional	Jeanette		X	
73	Jersey Shore	Jersey Shore		X	
74	Bermudian Valley Airpark	Kralltown			X
76	Keller Brothers	Lebanon		X	
77	Beltzville	Lehighton		X	
80	Lakehill	Mars			X
82	Mifflintown	Mifflintown		X	
85	Pittsburgh Monroeville	Monroeville			X
86	Morgantown	Morgantown		X	
88	Mt. Pleasant-Scottsdale	Mount Pleasant			X
91	Huntingdon County	Mount Union	X		
95	Blue Knob Valley	Newry		X	
102	Albert	Phillipsburg			X
105	Brokenstraw	Pittsfield			X
109	Punxsutawney	Punxsutawney		X	
113	Blue Swan	Sayre		X	
115	Seven Springs	Seven Springs		X	
117	Shippensburg	Shippensburg	X		
118	Slatington	Slatington		X	
122	Spring Hill	Sterling		X	
124	Sunbury	Sunbury	X		
129	Bradford County	Towanda		X	
130	Bendigo	Tower City		X	
131	Sky Haven	Tunkhannock			X
134	Erie County	Wattsburg			X
136	Grand Canyon State	Wellsboro		X	
137	Kampel	Wellsville	X		
140	Cove Valley	Williamsburg	X		

Source: Pennsylvania Department of Transportation

## **1. Do-Nothing Option**

The do-nothing option accepts the current deficiencies related to Commonwealth licensing standards at those airports where they exist. This option would require no funding commitment from the Bureau of Aviation and projects that promote compliance to these licensing standards would not be planned, promoted, or required. In this option, the only improvements to system performance would occur when airports change ownership and are then required to be brought up to standards by the new owner/sponsor. Allowing system airports to operate as public-use facilities while not in compliance with licensing standards, however, not only ignores legislated licensing standards, but could also represent a significant legal/financial liability to both the Bureau of Aviation and the Commonwealth should an accident occur at that facility.

## **2. Implement System Performance Improvements**

Commonwealth licensing standards were developed to promote safe operations at Pennsylvania airports. Non-compliance with these standards at public-use airports could compromise safety at the facilities and, therefore, may not represent a viable option based on the current system performance relative to Commonwealth licensing standards. PennDOT could work with system airports to improve system performance by implementing some or all of the following techniques:

- For those airports that currently do not comply with Commonwealth licensing standards, specific projects that bring these facilities into total compliance with the standards could be implemented. In some instances, these projects could include airfield re-design or other major projects and could be very costly. This process may represent that best option for addressing non-compliance to licensing standards at the system’s most important airports and/or at the airports where non-compliance poses the most serious risk to safety.
- At those airports where non-compliance to licensing standards does not significantly compromise airport safety, projects that bring the airport into total compliance could be planned and implemented over a period of time. This approach would allow the airport and PennDOT to incorporate the required projects into the airport capital improvement plan. Planning to implement these projects over a period of time would allow grant funds to be managed efficiently to promote compliance to Commonwealth licensing standards, while also addressing other development and maintenance concerns at system airports.
- Those airports that are either unable or unwilling to implement or plan projects that would bring them into total compliance with Commonwealth licensing standards should no longer operate as public-use facilities.

## **C. FAA Design Standards**

In Chapter Five, each airport in the Pennsylvania system that is currently included in the National Plan of Integrated Airport Systems (NPIAS) was evaluated to see if existing runway centerline separation and RSA length and width dimensions meet the current FAA design standards based on each airport's ARC. For airports to comply, each runway at the examined airport must meet current standards. As shown in Chapter Five, approximately 33 percent of system NPIAS airports currently meet FAA design standards. **Table 6-6** has been developed to show the current status of each NPIAS airport to the FAA Design Standards that were examined in this analysis.

Options available to increase the performance of this measure include the following:

- ❑ Do-Nothing Option
- ❑ Implement System Performance Improvements

### **1. Do-Nothing Option**

The FAA design standards analysis that was conducted in the SASP examined the current performance of NPIAS airports in the Pennsylvania system relative to the FAA's most recent airport development standards. It is important to note that these design standards are recommendations related to the design of airport facilities; they are neither requirements nor regulations until federal funds are accepted for airport development. Once federal airport improvement program (AIP) monies are accepted, an airport agrees to grant assurances that require compliance to FAA design standards. As shown in the analysis, a number of the airports examined do not comply with all of the standards that were analyzed. FAA design standards are developed and used to promote the highest degree of safety possible in airport operations. In some instances, however, these design standards are impossible to meet based on conditions at a specific airport. Bringing all NPIAS airports into compliance with FAA design standards would be a very costly endeavor, and the actual impact to system safety may be hard to quantify and disproportionate to the amount of investment that is required.

### **2. Implement System Performance Improvements**

Promoting and maintaining the safety of airport operations should continue to be one of the top priorities of the Commonwealth's airport system. Working to bring impacted airports into compliance with FAA design standards is an important task in improving the safety of system airports. Specific modifications can be made to airport facilities, often in conjunction with other projects, that can bring airports into compliance with FAA design standards. Knowing where facilities are currently not in compliance with these standards can help the airports and the Bureau of Aviation to start planning what projects are required to improve compliance. The process of implementing projects to improve system performance relative to FAA design standards could be conducted in such a way that projects that improve compliance are planned and implemented in an orderly process in conjunction with other projects.

**Table 6-6 (Page 1 of 2)**  
**Design Standards Compliance Summary**

			DESIGN STANDARDS	
			Complies	Does Not Comply
AIRPORT NUMBER	ADVANCED AIRPORTS	ASSOCIATED CITY		
1	Lehigh Valley International	Allentown	X	
2	Altoona-Blair County	Altoona		X
21	Beaver County	Beaver Falls		X
39	Chester County-G.O. Carlson	Coatesville		X
46	Doylestown	Doylestown		X
4	DuBois-Jefferson County	DuBois		X
5	Erie International	Erie		X
6	Venango Regional	Franklin		X
7	Harrisburg International	Harrisburg		X
66	Capital City	Harrisburg		X
67	Hazleton Municipal	Hazleton	X	
8	Johnstown-Cambria County	Johnstown		X
9	Lancaster	Lancaster		X
10	Arnold Palmer Regional	Latrobe		X
84	Rostraver	Monongahela		X
100	Northeast Philadelphia	Philadelphia		X
11	Philadelphia International	Philadelphia	X	
18	Wings Field	Philadelphia	X	
104	Allegheny County	Pittsburgh		X
12	Pittsburgh International	Pittsburgh	X	
106	Pottstown Limerick	Pottstown		X
13	Reading Regional	Reading		X
14	University Park	State College	X	
15	Wilkes-Barre/Scranton International	Wilkes-Barre/Scranton		X
16	Williamsport Regional	Williamsport		X
141	York	York		X
AIRPORT NUMBER	INTERMEDIATE AIRPORTS	ASSOCIATED CITY		
17	Queen City	Allentown	X	
22	Bedford County	Bedford	X	
30	Butler County	Butler		X
33	Carlisle	Carlisle		X
38	Clearfield-Lawrence	Clearfield		X
40	Perkiomen Valley	Collegeville		X
42	Connellsville	Connellsville		X
70	Indiana County-Jimmy Stewart	Indiana	X	
81	Port Meadville	Meadville	X	
90	Pocono Mountains Municipal	Mount Pocono	X	
93	New Castle Municipal	New Castle		X
107	Pottstown Municipal	Pottstown		X
108	Schuylkill County-Joe Zerbey	Pottsville	X	
110	Quakertown	Quakertown		X
111	Mifflin County	Reedsville		X
114	Penn Valley	Selinsgrove		X
116	Northumberland County	Shamokin		X
128	New Garden Flying Field	Toughkenamon		X
133	Washington County	Washington	X	
138	Brandywine	West Chester		X
142	Zelienople Municipal	Zelienople	X	

Note: This analysis was conducted using ALP drawings and aerial photographs, no on-site surveying was conducted.

**Table 6-6 (Page 2 of 2)  
Design Standards Compliance Summary**

			DESIGN STANDARDS	
			Complies	Does Not Comply
AIRPORT NUMBER	BASIC AIRPORTS	ASSOCIATED CITY		
27	Bloomsburg Municipal	Bloomsburg		X
3	Bradford Regional	Bradford		X
37	Clarion County	Clarion		X
43	Corry-Lawrence	Corry		X
49	Ebensburg	Ebensburg		X
61	Gettysburg Airport and Travel Center	Gettysburg		X
64	Grove City	Grove City	X	
78	Jake Arner Memorial	Lehighton		X
79	William T. Piper Memorial	Lock Haven	X	
103	Mid State	Phillipsburg		X
120	Somerset County	Somerset		X
121	St. Marys Municipal	St. Marys	X	
126	Rock	Tarentum		X
127	Titusville	Titusville	X	
135	Greene County	Waynesburg		X
139	Wilkes-Barre/Wyoming Valley	Wilkes-Barre	X	
AIRPORT NUMBER	LIMITED AIRPORTS	ASSOCIATED CITY		
36	Chambersburg Municipal	Chambersburg	X	
63	Greenville Municipal	Greenville		X
68	Cherry Ridge	Honesdale	X	
72	Greensburg-Jeanette Regional	Jeanette		X
88	Mt. Pleasant-Scottsdale	Mount Pleasant	X	
91	Huntingdon County	Mount Union	X	
109	Punxsutawney	Punxsutawney		X
129	Bradford County	Towanda	X	
136	Grand Canyon State	Wellsboro		X

Note: This analysis was conducted using ALP drawings and aerial photographs, no on-site surveying was conducted.

Source: Wilbur Smith Associates, Inc.

## V. OPTIMIZATION POTENTIAL

Specific benchmarks were examined in Chapter Five to measure system performance relative to the optimization potential performance measure. This performance measure examined factors that measured the ability of system airports to be further developed to meet the changing needs of the system. The specific factors examined in Chapter Five included implementation of airport hazard zoning and airport planning documents. The findings from the previous analysis are summarized in the following sections, and options for improving performance are identified.

### A. Airport Hazard Zoning

The analysis of this benchmark showed that, as a system, and specifically for the two highest categories of airports, few airports have addressed the Commonwealth’s airport zoning regulations. For the system as a whole, approximately 23 percent of system airports have airport hazard zoning implemented in more than 50 percent of impacted municipalities. Only 2 percent of system airports have airport hazard zoning implemented in all impacted municipalities. Current implementation of hazard zoning is summarized for each system airport in **Table 6-7**.

Options for addressing system deficiencies related to airport hazard zoning include the following:

- ❑ Do-Nothing Option
- ❑ Focus the Implementation of Hazard Zoning
- ❑ Promote Total Compliance

#### 1. Do-Nothing Option

Over recent years, the implementation of airport hazard zoning has been the focus of significant resources from both system airports and Bureau of Aviation. The Bureau of Aviation has actively worked to educate airports and their local municipalities about the importance of airport hazard zoning. As was summarized in the SASP analysis of hazard zoning, this effort has not yielded successful results at the vast majority of system airports. One reason for the current lack of success is related to the importance of “Home Rule” to the local levels of government throughout the Commonwealth. Home Rule protects the right of local municipalities relative to implementing zoning and land use policies. As a result, it is difficult, given current airport hazard zoning legislation, to force impacted municipalities to implement hazard zoning. The time, effort, and resources that have gone towards airport hazard zoning, and the apparent lack of success in getting such zoning implemented, may indicate that system performance is impossible, or unlikely to be improved, without changing the process.

**Table 6-7 (Page 1 of 3)**  
**Airport Hazard Zoning Summary**

			HAZARD ZONING		
			100%	50% TO 99%	LT 50%
AIRPORT NUMBER	ADVANCED AIRPORTS	ASSOCIATED CITY			
1	Lehigh Valley International	Allentown			X
2	Altoona-Blair County	Altoona			X
21	Beaver County	Beaver Falls			X
39	Chester County-G.O. Carlson	Coatesville			X
46	Doylestown	Doylestown		X	
4	DuBois-Jefferson County	DuBois			X
5	Erie International	Erie		X	
6	Venango Regional	Franklin			X
7	Harrisburg International	Harrisburg			X
66	Capital City	Harrisburg			X
67	Hazleton Municipal	Hazleton			X
8	Johnstown-Cambria County	Johnstown			X
9	Lancaster	Lancaster		X	
10	Arnold Palmer Regional	Latrobe		X	
84	Rostraver	Monongahela			X
100	Northeast Philadelphia	Philadelphia			X
11	Philadelphia International	Philadelphia			X
18	Wings Field	Philadelphia			X
104	Allegheny County	Pittsburgh			X
12	Pittsburgh International	Pittsburgh			X
106	Pottstown Limerick	Pottstown		X	
13	Reading Regional	Reading		X	
14	University Park	State College			X
15	Wilkes-Barre/Scranton International	Wilkes-Barre/Scranton			X
16	Williamsport Regional	Williamsport			X
141	York	York			X
AIRPORT NUMBER	INTERMEDIATE AIRPORTS	ASSOCIATED CITY			
17	Queen City	Allentown			X
22	Bedford County	Bedford			X
30	Butler County	Butler			X
33	Carlisle	Carlisle		X	
38	Clearfield-Lawrence	Clearfield		X	
40	Perkiomen Valley	Collegeville			X
42	Connellsville	Connellsville	X 1/		
70	Indiana County-Jimmy Stewart	Indiana			X
75	Kutztown	Kutztown			X
81	Port Meadville	Meadville			X
87	Donegal Springs Airpark	Mount Joy/Marietta			X
90	Pocono Mountains Municipal	Mount Pocono			X
93	New Castle Municipal	New Castle			X
107	Pottstown Municipal	Pottstown			X
108	Schuylkill County-Joe Zerbey	Pottsville			X
110	Quakertown	Quakertown			X
111	Mifflin County	Reedsville			X
114	Penn Valley	Selinsgrove		X	
116	Northumberland County	Shamokin			X
119	Smoketown	Smoketown		X	
128	New Garden Flying Field	Toughkenamon			X
133	Washington County	Washington			X
138	Brandywine	West Chester		X	
142	Zelienople Municipal	Zelienople			X

Note 1/ Connellsville Airport's hazard zoning applies only to cell phone towers.

**Table 6-7 (Page 2 of 3)  
Airport Hazard Zoning Summary**

			HAZARD ZONING		
			100%	50% TO 99%	LT 50%
AIRPORT NUMBER	BASIC AIRPORTS	ASSOCIATED CITY			
27	Bloomsburg Municipal	Bloomsburg			X
3	Bradford Regional	Bradford			X
37	Clarion County	Clarion			X
43	Corry-Lawrence	Corry			X
45	Danville	Danville			X
47	Stroudsburg Pocono	East Stroudsburg		X	
48	Easton (Braden Airpark)	Easton			X
49	Ebensburg	Ebensburg			X
56	Finleyville Airpark	Finleyville	X		
57	Farmer's Pride	Fredicksburg		X	
61	Gettysburg Airport and Travel Center	Gettysburg		X	
64	Grove City	Grove City			X
78	Jake Arner Memorial	Lehighton			X
79	William T. Piper Memorial	Lock Haven			X
92	Deck	Myerstown			X
98	Reigle	Palmyra		X	
99	Pennridge	Perkasie			X
103	Mid State	Philipsburg			X
120	Somerset County	Somerset			X
121	St. Marys Municipal	St. Marys			X
126	Rock	Tarentum			X
127	Titusville	Titusville			X
135	Greene County	Waynesburg			X
139	Wilkes-Barre/Wyoming Valley	Wilkes-Barre			X

**Table 6-7 (Page 3 of 3)  
Airport Hazard Zoning Summary**

			HAZARD ZONING		
			100%	50% TO 99%	LT 50%
AIRPORT NUMBER	LIMITED AIRPORTS	ASSOCIATED CITY			
19	Millard	Annville			X
23	Bellefonte	Bellefonte		X	
26	Grimes	Bethel		X	
28	Baublitz Commercial	Brogue			X
29	Miller	Burgettstown			X
31	Butler Farm Show	Butler			X
32	Flying Dollar	Canadensis			X
34	Centre Airpark	Centre Hall			X
35	Penn's Cave	Centre Hall			X
36	Chambersburg Municipal	Chambersburg			X
41	McGinness Field	Columbia			X
44	Culmerville	Culmerville			X
50	Bandel	Eighty Four			X
51	Van Sant	Erwinna			X
54	Seamans Field	Factoryville			X
58	McVile	Freeport			X
59	Cherry Springs	Galeton		X	
60	Flying M. Aerodrome	Germansville			X
63	Greenville Municipal	Greenville			X
65	Hanover	Hanover			X
68	Cherry Ridge	Honesdale			X
71	Inter County	Irwin		X	
72	Greensburg-Jeanette Regional	Jeanette			X
73	Jersey Shore	Jersey Shore			X
74	Bermudian Valley Airpark	Kralltown			X
76	Keller Brothers	Lebanon			X
77	Beltzville	Lehighton			X
80	Lakehill	Mars			X
82	Mifflintown	Mifflintown		X	
85	Pittsburgh Monroeville	Monroeville			X
86	Morgantown	Morgantown			X
88	Mt. Pleasant-Scottsdale	Mount Pleasant			X
91	Huntingdon County	Mount Union		X	
95	Blue Knob Valley	Newry			X
102	Albert	Philipsburg		X	
105	Brokenstraw	Pittsfield			X
109	Punxsutawney	Punxsutawney			X
113	Blue Swan	Sayre			X
115	Seven Springs	Seven Springs			X
117	Shippensburg	Shippensburg		X	
118	Slatington	Slatington			X
122	Spring Hill	Sterling			X
124	Sunbury	Sunbury			X
129	Bradford County	Towanda			X
130	Bendigo	Tower City			X
131	Sky Haven	Tunkhannock			X
134	Erie County	Wattsburg			X
136	Grand Canyon State	Wellsboro			X
137	Kampel	Wellsville		X	
140	Cove Valley	Williamsburg			X

Source: Wilbur Smith Associates, Inc.

## **2. Focus the Implementation of Hazard Zoning**

Current hazard zoning regulations were developed based on FAR Part 77 surfaces, and they are required to be implemented in large areas that include a number of municipalities. In some cases, individual airports and their respective airspace, based on Part 77 standards, impact up to 36 local municipalities. The airports are responsible for promoting the implementation of hazard zoning in each of these municipalities. While hazard zoning is important to the long-term viability of Commonwealth airports, implementation of hazard zoning in all impacted municipalities may divert attention and effort away from those specific municipalities, located most proximate to the airports, in which hazard zoning is most important. By narrowing the focus of where hazard zoning is legally required, PennDOT and the airports could ensure that hazard zoning is implemented in the most important areas. This may limit the time, effort, and political resources that are expended in implementing such zoning in areas that may be impacted by the airport, but whose location relative to the airport limits the severity of these impacts.

## **3. Promote Total Compliance**

Implementing airport hazard zoning in each impacted municipality in an airport’s environs is one means with which to help protect the long-term viability of existing airport facilities. Airspace hazards, such as cellular phone towers, have become an increasingly important concern for all facets of an aviation system. Cellular phone towers have been constructed throughout the Commonwealth, and in some cases these towers have impacted the airspace surrounding system airports. Depending on the height and location of these cellular towers, approach minima at system airports can be negatively impacted because of the danger that these towers represent related to aircraft operations. In the most extreme instances, runways can effectively shut down if these obstructions are located along the runway approach paths.

Protecting and preserving system airports and the past investments that have been made at those facilities needs to be a top priority as airspace obstructions and incompatible land uses continue to develop in airport environs. One means available to accomplish this is to require airport hazard zoning to be in place in all airport-impacted municipalities. Although this approach is currently legislated, SASP analysis indicates that few airports currently meet the required compliance. To promote increased compliance, more aggressive means of promoting the implementation of airport hazard zoning regulations may be required. Options to promote total compliance with airport hazard zoning regulations could include the following:

- ❑ PennDOT’s continuation of its outreach and awareness programs related to airport hazard zoning. In this proactive educational process, PennDOT works with airports to educate local municipalities in the environs of the airport of the importance of airport hazard zoning both for the safety of those residents living in the airport area as well as those pilots operating at the airport. This process also educates local communities of the liability and risk that they assume by not implementing such hazard zoning requirements.

- ❑ Funding outlays from the grant application process could be dependent on meeting or exceeding specific targets for airport hazard zoning implementation. These specific targets could be based on percentage of total municipalities that have enacted hazard zoning, such as 100 percent of impacted municipalities, or could require documentation that community outreach has been made to educate impacted municipalities of their responsibility to enact airport hazard zoning.
- ❑ Strengthen the legislation that enacted hazard zoning requirements to include penalties for those municipalities that do not enact the required zoning. A means for enforcing these penalties must also be identified and consistently implemented.

## **B. Current Airport Plans**

Planning documents provide a means for airports to address future needs and are critical to the ultimate development of the Commonwealth’s airport system. The SASP analysis examined the status of airport master plans, airport layout plans, and airport action plans conducted for the airports. Overall, approximately 66 percent of the system’s airports have planning documents and approximately 38 percent of the system’s planning documents are less than five years old. The airports with the highest level of current planning documents are in the basic category, followed by the advanced and intermediate categories. The status of planning documents at each Commonwealth airport is summarized in **Table 6-8**.

Because of the importance that airport planning documents play in maintaining and expanding airport facilities, it is vital that those airports that are most important to the Commonwealth’s aviation system have plans in place to promote and protect their future development. Options for improving system performance relative to the airport plan benchmark include one or more of the following:

- ❑ Develop Planning Documents for All System Airports
- ❑ Develop Planning Documents for the Most Important System Airports
- ❑ Identify Minimum Data Requirement for Lower Level Airports

### **1. Develop Planning Documents for all System Airports**

Activity levels, economic resources, and owner/sponsor intentions may not make it necessary for all airports to have complete planning studies, especially on a regular basis such as every five years. Developing planning documents for all airports, therefore, could be financially burdensome to PennDOT and airport owners/sponsors. In addition, due to the characteristics of certain facilities, these studies may be unwarranted.

### **2. Develop Planning Documents for the Most Important System Airports**

Understanding that some airports owners/sponsors may not have the financial resources to conduct planning studies on a regular basis, and that PennDOT may not have the resources to fund such studies at all airports, standards could be developed to ensure that those airports most important to

the overall system have the necessary plans in place to promote airport stability, maintenance, and expansion where necessary. This would likely mean that planning documents would be recommended for advanced and intermediate airports every five years. At basic airports, the recommendation could be for the completion of an airport action plan or airport layout plan every 10 years.

### **3. Identify Minimum Data Requirement for Lower Level Airports**

For those airports that do not accommodate significant levels of activity, or those that may not be an instrumental part of the overall aviation system in Pennsylvania, a less detailed data source may provide sufficient data regarding the airport when full-blown airport planning studies are not feasible. An airport drawing updated to show all existing and proposed facilities at an airport may provide sufficient information to PennDOT so that airport analysis and potential plans for future development at that airport can be completed. A recommendation for this option could be that limited airports be required to have a standard airport drawing on file with PennDOT.

A combination of the options presented in this analysis may provide PennDOT with the most flexibility and functionality related to promoting airport planning documents at system airports. Combining these options would result in a recommendation similar to the following:

- Advanced Airports – Master Plan or Master Plan Update every five years
- Intermediate Airports – Master Plan or Action Plan every five years
- Basic Airports – Action Plan or Layout Plan every 10 years
- Limited Airports – Standardized airport drawing on file with PennDOT

**Table 6-8 (Page 1 of 3)**  
**Airport Planning Document Summary**

			MASTER PLAN		
			SINCE 95	PRIOR TO 95	NO MP
AIRPORT NUMBER	ADVANCED AIRPORTS	ASSOCIATED CITY			
1	Lehigh Valley International	Allentown		X	
2	Altoona-Blair County	Alltoona	X		
21	Beaver County	Beaver Falls		X	
39	Chester County-G.O. Carlson	Coatesville		X	
46	Doylestown	Doylestown	X		
4	DuBois-Jefferson County	DuBois	X		
5	Erie International	Erie	X		
6	Venango Regional	Franklin	X		
7	Harrisburg International	Harrisburg	X		
66	Capital City	Harrisburg	X		
67	Hazleton Municipal	Hazleton		X	
8	Johnstown-Cambria County	Johnstown		X	
9	Lancaster	Lancaster		X	
10	Arnold Palmer Regional	Latrobe	X		
84	Rostraver	Monongahela		X	
100	Northeast Philadelphia	Philadelphia		X	
11	Philadelphia International	Philadelphia	X		
18	Wings Field	Philadelphia	X		
104	Allegheny County	Pittsburgh	X		
12	Pittsburgh International	Pittsburgh	X		
106	Pottstown Limerick	Pottstown		X	
13	Reading Regional	Reading		X	
14	University Park	State College	X		
15	Wilkes-Barre/Scranton International	Wilkes-Barre/Scranton		X	
16	Williamsport Regional	Williamsport	X		
141	York	York	X		
AIRPORT NUMBER	INTERMEDIATE AIRPORTS	ASSOCIATED CITY			
17	Queen City	Allentown		X	
22	Bedford County	Bedford	X		
30	Butler County	Butler		X	
33	Carlisle	Carlisle	X		
38	Clearfield-Lawrence	Clearfield	X		
40	Perkiomen Valley	Collegeville			X
42	Connellsville	Connellsville	X		
70	Indiana County-Jimmy Stewart	Indiana	X		
75	Kutztown	Kutztown	X		
81	Port Meadville	Meadville		X	
87	Donegal Springs Airpark	Mount Joy/Marietta			X
90	Pocono Mountains Municipal	Mount Pocono	X		
93	New Castle Municipal	New Castle		X	
107	Pottstown Municipal	Pottstown		X	
108	Schuylkill County-Joe Zerbey	Pottsville	X		
110	Quakertown	Quakertown	X		
111	Mifflin County	Reedsville	X		
114	Penn Valley	Selinsgrove	X		
116	Northumberland County	Shamokin	X		
119	Smoketown	Smoketown		X	
128	New Garden Flying Field	Toughkenamon		X	
133	Washington County	Washington		X	
138	Brandywine	West Chester		X	
142	Zelienople Municipal	Zelienople		X	

**Table 6-8 (Page 2 of 3)  
Airport Planning Document Summary**

			MASTER PLAN		
			SINCE 95	PRIOR TO 95	NO MP
AIRORT NUMBER	BASIC AIRPORTS	ASSOCIATED CITY			
27	Bloomsburg Municipal	Bloomsburg	X		
3	Bradford Regional	Bradford	X		
37	Clarion County	Clarion		X	
43	Corry-Lawrence	Corry	X		
45	Danville	Danville	X		
47	Stroudsburg Pocono	East Stroudsburg		X	
48	Easton (Braden Airpark)	Easton	X		
49	Ebensburg	Ebensburg		X	
56	Finleyville Airpark	Finleyville	X		
57	Farmer's Pride	Fredicksburg	X		
61	Gettysburg Airport and Travel Center	Gettysburg	X		
64	Grove City	Grove City		X	
78	Jake Arner Memorial	Lehighton	X		
79	William T. Piper Memorial	Lock Haven			X
92	Deck	Myerstown		X	
98	Reigle	Palmyra		X	
99	Pennridge	Perkasie	X		
103	Mid State	Philipsburg	X		
120	Somerset County	Somerset		X	
121	St. Marys Municipal	St. Marys	X		
126	Rock	Tarentum	X		
127	Titusville	Titusville	X		
135	Greene County	Waynesburg	X		
139	Wilkes-Barre/Wyoming Valley	Wilkes-Barre		X	

**Table 6-8 (Page 3 of 3)**  
**Airport Planning Document Summary**

			MASTER PLAN		
			SINCE 95	PRIOR TO 95	NO MP
AIRPORT NUMBER	LIMITED AIRPORTS	ASSOCIATED CITY			
19	Millard	Annville		X	
23	Bellefonte	Bellefonte			X
26	Grimes	Bethel			X
28	Baublitz Commercial	Brogue			X
29	Miller	Burgettstown			X
31	Butler Farm Show	Butler			X
32	Flying Dollar	Canadensis			X
34	Centre Airpark	Centre Hall			X
35	Penn's Cave	Centre Hall			X
36	Chambersburg Municipal	Chambersburg		X	
41	McGinness Field	Columbia			X
44	Culmerville	Culmerville			X
50	Bandel	Eighty Four			X
51	Van Sant	Erwinna			X
54	Seamans Field	Factoryville			X
58	McVile	Freeport			X
59	Cherry Springs	Galeton			X
60	Flying M. Aerodrome	Germansville			X
63	Greenville Municipal	Greenville		X	
65	Hanover	Hanover			X
68	Cherry Ridge	Honesdale	X		
71	Inter County	Irwin			X
72	Greensburg-Jeanette Regional	Jeanette			X
73	Jersey Shore	Jersey Shore	X		
74	Bermudian Valley Airpark	Kralltown			X
76	Keller Brothers	Lebanon			X
77	Beltzville	Lehighton			X
80	Lakehill	Mars			X
82	Mifflintown	Mifflintown			X
85	Pittsburgh Monroeville	Monroeville			X
86	Morgantown	Morgantown			X
88	Mt. Pleasant-Scottsdale	Mount Pleasant	X		
91	Huntingdon County	Mount Union	X		
95	Blue Knob Valley	Newry			X
102	Albert	Philipsburg			X
105	Brokenstraw	Pittsfield			X
109	Punxsutawney	Punxsutawney		X	
113	Blue Swan	Sayre		X	
115	Seven Springs	Seven Springs			X
117	Shippensburg	Shippensburg			X
118	Slatington	Slatington			X
122	Spring Hill	Sterling	X		
124	Sunbury	Sunbury			X
129	Bradford County	Towanda		X	
130	Bendigo	Tower City	X		
131	Sky Haven	Tunkhannock	X		
134	Erie County	Wattsburg			X
136	Grand Canyon State	Wellsboro		X	
137	Kampel	Wellsville			X
140	Cove Valley	Williamsburg			X

Source: Pennsylvania Department of Transportation

## **VI. NEXT STEPS**

Chapter Seven will examine overall airport coverage throughout the Commonwealth and, based on geographic and population coverage, will make recommendations for airport and system improvements that will make the airport system more accessible to its users. Options for improving system coverage will be identified in Chapter Seven, and recommendations for specific airport and system improvements will be made in Chapter Eight. In addition, Chapter Eight will also present recommendations for the performance measures and benchmarks examined in this chapter. These recommendations will represent the best/most feasible approach to improving system performance.