Legislative Budget and Finance Committee

A JOINT COMMITTEE OF THE PENNSYLVANIA GENERAL ASSEMBLY

Offices: Room 400 • Finance Building • Harrisburg • Tel: (717) 783-1600

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Economic Impact of the Proposed Greater Hazleton Air Cargo Airport

Conducted Pursuant to SR 2007-144

June 2008

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To the Members of the General Assembly:

Senate Resolution 144 of 2007 directed the Legislative Budget and Finance Committee to conduct a study of the economic impact of a proposed cargo-only airport on the greater Hazleton area and the potential risks and rewards of the Commonwealth providing economic development funds to support this project.

Due to the specialized nature of this study, the Committee issued a Request for Proposal for assistance in developing the report. In September 2007, the Committee contracted with the firm of Martin Associates to conduct this study.

The Martin Associates report is contained herein. As with all LB&FC reports, the release of this report should not be construed as an indication that the Committee or its individual Committee members necessarily concur with its findings and conclusions.

Sincerely,

Philip R. Durgin
Executive Director

Economic Impact Of The Proposed Greater Hazleton Air Cargo Airport

Prepared For:

Pennsylvania Legislative Budget and Finance Committee

June 2008

MARTIN ASSOCIATES

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IMPROVING YOUR WORLD

WEBBER AIR CARGO

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INTRODUCTION AND OVERVIEW

BACKGROUND

On June 28, 2007 the General Assembly of Pennsylvania issued Senate Resolution No. 144 directing the Pennsylvania Legislative and Budget Committee (LBFC) to study the economic impact of the proposed Cargo Airport on the greater Hazleton area, as well as potential risks and rewards to the Commonwealth, of providing economic development funds to support this project. The team of Martin Associates, Reynolds, Smith and Hills (RSH) and Webber Air Cargo, Inc. (Consultant) was selected from the resulting Request for Proposal (RFP).

The resolution was introduced by Senators Musto and Baker in response to numerous questions and concerns raised regarding the impact of the proposed facility on the surrounding communities and the Commonwealth conducted by the airport's developer Gladstone Partners, LP (Developer). The resolution cited the following:

- A major cargo-only airport development has been proposed in the Hazleton area in Schuylkill, Carbon and Luzerne counties, that is projected to bring 1.4 million tons of freight by 2012 with the potential to create more than 4,500 jobs;
- The proposed cargo-only airport has been projected to cost $1.6 billion funded through State, local and private moneys;
- The location of the airport lies outside the corridor currently identified by the Federal Aviation Administration (FAA), thereby potentially improving airspace capacity in the northeastern United States;
- No firm commitments have yet been made by any major air cargo carriers to use the proposed cargo-only airport;
- The role of the Developer in the financing and long-term operations is publicly unspecified;
- The proposed cargo-only airport could create the need for a regional airport authority to incur debt but the appropriate governance structure has yet to be determined; and
- Numerous questions and concern have been raised regarding the impact of the proposed airport on local rail, road and water infrastructure, as well as the impact of new workers on local schools, health care and emergency services.

PROJECT DESCRIPTION

The development of the Hazleton Cargo Airport has been proposed by Gladstone Partners, LP (Developer). The project involves the construction of an all-cargo airport on approximately 1,000 acres of land in

Schuylkill, Carbon and Luzerne Counties and is located adjacent to and south of the existing Humboldt Industrial Park. The project features include:

- Dedicated Airport property will encompass approximately 1,000 acres of land currently owned by the Developer in Schuylkill, Carbon and Luzerne counties;
- 13,000 foot long by 150 foot wide concrete runway designed to accommodate Federal Aviation Administration (FAA) Airport Reference Code (ARC) D-V Standards which will allow the Airport to accommodate the largest air cargo aircraft currently in service;
- Parallel Taxiway is being designed to be 150 feet wide to allow the parallel taxiway to serve as a temporary runway if required when the primary runway is not available for use;
- Aircraft apron of sufficient size to accommodate approximately twenty aircraft;
- Air traffic control tower staffed by either FAA or contract personnel;
- Airport Rescue and Firefighting vehicles and building;
- Airport Administration facilities;
- Two million square feet of leasable cargo handling facilities;
- Fueling facilities for Jet A Aviation Fuel;
- Water, Sewer, Gas and Electric on site;
- Primary Surface access to the site will be from SR 424 or the existing Haul Road Bridge;
- Rail access; and
- Additional commercial and industrial development also owned by the Developer of approximately 3,500 acres adjacent to the southern boundary of the airport.

REPORT OVERVIEW

Upon selection, the Consultant was charged with the tasks identified in the resolution including assessing the reasonableness of the assumptions used to estimate the job creation and economic impact figures cited by the Developer; evaluating the likely return to the Commonwealth for investing State funds into this project; considering the potential impact on roads, and other infrastructure as well as the impact of new workers on schools, health care and social services; and examining the governance structure used by other governments to manage comparably large airport construction projects.

Examining all of these issues, the Consultant's report is divided into six separate chapters to better analyze the potential impacts of the proposed Airport. First, it is the Consultant's belief that the key driving factor in the success of such a cargo-only airport relies on the market that could be captured at the proposed Hazleton cargo airport. Therefore the cargo market analysis is presented in Chapter 1 and examines the Developer's approach, as well as presents an independent analysis which includes a 20-year forecast. In Chapter 2, the estimated cost of the proposed airport facility is assessed.

With the first two tasks completed, the Consultant assesses the reasonableness of the Developer's economic impact methodology. This assessment not only analyzes the economic impact figures cited by the Developer, but also provides an independent economic impact analysis developed by the Consultant specifically for the proposed Hazleton Cargo Airport. This analysis, which is presented in Chapter 3, illustrates the potential benefits to the Commonwealth for investing in such a project.

Chapter 4 illustrates the potential impact of the proposed airport on local infrastructure such as roads, rail and utilities. Also included in this chapter, is the impact on other community facilities including hospitals, schools and public safety.

Chapter five details the key revenue sources and operating expenses of the airport. The resulting pro forma cash flow of model revenues and expenses is used to estimate the financial viability and sustainability of the project.

The final chapter in the analysis focuses on the airport governance options for the proposed facility. This chapter details ownership options, potential funding sources, other issues that may affect the potential ownership of the Airport as well as potential management structures.

The Developer has requested $250 million in state funds to be appropriated to this project. Through numerous meetings and continual contact, the Developer has complied with all of the data requests made during this study. The Consultant has fulfilled the fundamental responsibility of completing an analysis that is independent of the Developer but acknowledges the cooperation of the latter.

CHAPTER 1
PROPOSED AIR CARGO AIRPORT MARKET ANALYSIS

1.1 INTRODUCTION

This study's sponsors sought an evaluation independent of forecasts and analyses previously presented by the Developer of the proposed Hazleton Cargo Airport. As the Consultant with that responsibility it is not our expressed purpose to rebut that proposal or refute other recent assessments, but rather to test assumptions and qualify projections put forth as justification for a sizeable public investment. As much as qualifying the project's potential benefits, it is important to critically evaluate its risks.

This section has four principal components: 1) Air Cargo Industry Overview; 2) Experience of All-Cargo Airports; 3) Attributes of Regional Airports; and 4) Forecasts. Two recent studies[1] of the regional air cargo market are also briefly examined in Section 1.5. The unmistakable focal point is the forecasts but the Consultant has provided as much context as required for the underlying assumptions of those forecasts.

1.2 THE AIR CARGO INDUSTRY: CONDITION

The Hazleton Cargo Airport is proposed at a challenging period for the air cargo industry in general and for the domestic market, in particular. Shaped largely by US companies such as FedEx, UPS and DHL (acquired by the German/Deutsche Post), North America's contemporary commercial air cargo industry provides US industry with logistics efficiencies only beginning to reach the world's fastest-growing regions.

As detailed in the forecasts, the more mature US market no longer produces growth rates comparable to those of burgeoning markets. These disparities have implications for the US market in that investment – both in aircraft and in facilities – is more likely to chase high-growth markets. Representatives of both FedEx and UPS suggested near to mid-term capital investments will emphasize international growth while optimizing existing fixed investments in the US as long as reasonably possible.

The slowing US air cargo industry is not only relative (to faster-growing economies) but also indicative of internal forces. With UPS and FedEx as the two largest trucking companies in the US, the forces most responsible for air cargo growth in previous decades have been instrumental in diverting traditional air cargo shipments to trucks since 2000.

[1] The Pennsylvania Air Cargo Study completed by Wilbur Smith Associates for the Pennsylvania Department of Transportation and the more recent Tri-County Cargo Airport Feasibility Study prepared for Luzerne County by the LPA Group in February 2005.

Meanwhile, US passenger carriers conceded huge blocks of domestic market share, reducing capacity through eliminating frequencies and transitioning to regional jets. In addition, the US Postal Service prioritized trucking (reducing rates so greatly legacy carriers have opted out of contract renewals) and offered service contracts leveraging lift from FedEx and other all-cargo carriers.

According to the FAA, market share of belly carriers for domestic shipments fell from 41% to 29% between 2000 and 2006. Cargo ton-miles for passenger carriers dropped 26.9% for belly carriers, while rising for all-cargo carriers by 22%. Market share was merely transferred rather than growing the industry. Short of an all-out security ban on belly cargo, industry observers question whether any further erosion of belly carriers' domestic market share is even possible.

Trans-Atlantic and trans-Pacific volumes - thought 'safe' due to inherent protection from trucking as a substitute – also have become vulnerable to modal diversions. Traditionally growing faster (often at a multiple) than world trade, the International Air Transport Association (IATA) projects that trade grew 7.5% in 2007, while globally air cargo by only 4.0%. Seaborne freight grew more than twice as much. Especially with unprecedented fuel prices reflected in 'landed costs' of shipments, buyers are increasingly willing to trade time for cost in favoring slower ocean shipping.

Another factor that cannot be ignored is the extraordinary consolidation of the industry's major players. In 2000, there were six US integrators operating extensive proprietary air and trucking fleets: Airborne Express, BAX Global, DHL, Emery Worldwide, FedEx and UPS. Since, Emery Worldwide grounded its aircraft and sold its heavy forwarder business to UPS, while Airborne Express sold its ground unit to DHL and became a contract air carrier for it. Meanwhile, BAX Global greatly constricted its proprietary air fleet while returning largely to its forwarder roots.

Similar consolidation has occurred among forwarders, as well as between forwarders and integrators. DHL's parent company Deutsche Post acquired Danzas, AEI and others. UPS acquired not only Emery but also Fritz. The same holding company (Deutsche Bahn) that bought BAX Global also bought Schenker.

All this consolidation has rendered much bigger but far fewer prospects for airports and their communities. Among carriers, telling evidence of a 'market correction' is that so much capacity has been excised – not only the Emery and much of the BAX fleet but US all-cargo airline Kitty Hawk which recently folded – yet lift availability has generally remained sufficient. Consolidation has also led to an inventory of redundant facilities, including not only former hubs of DHL, Emery and Kitty Hawk in the Ohio Valley but also 'spoke' stations at secondary airports across the country.

1.3 THE AIR CARGO INDUSTRY: COMPONENTS

A number of allied service providers – ground-handlers to name but one – are critical to the air cargo industry, but capacity is provided by direct carriers (passenger & all-cargo airlines) and procured largely by indirect carriers (freight forwarders). Trucking companies also are critical - both as complements and substitutes.

1.3.1 Integrators

Multiple definitions exist but generally the term *integrator* applies to entities operating multiple transportation modes with proprietary resources (typically aircraft and over-the road trucking fleets) and a greater breadth of services than more limited service providers. As has already been noted, the number of integrators has dwindled as UPS acquired the former Emery Worldwide and DHL absorbed elements of the former Airborne Express.

To serve both coasts effectively while retaining the ability to serve the dense population of the US Northeast by air and by truck, the integrated carriers primarily located their principal domestic hubs in the area of the Ohio Valley: UPS in Louisville, KY; FedEx in Memphis, TN; and DHL/Airborne in Wilmington, OH[2]. BAX Global maintains a small air hub in Toledo and prior to acquisition, Emery's hub was in Dayton, OH.

UPS and FedEx are now the two largest trucking companies in North America and much of Airborne Express's appeal to DHL was a ground network superior to its own – perceived as its Achilles heel in competing against UPS and FedEx. In the US, near-term expansion is likely to be limited to new trucking and air 'spoke' operations driven entirely by local origin & destination demand. As will be explored later, UPS and DHL's holding company have also acquired numerous freight forwarders and all three major integrators are still major purchasers of lift from other carriers.

As will be explored in the all-cargo airports section, the integrators are also important because they – alone – possess the scale of operations and internal resources (trucking and ground-handling, among them) to sustain operations at all-cargo airports, absent the ability to pool capacity and costs with other carriers.

1.3.1.1 United Parcel Service Co. (UPS)

With more than $42 billion in annual (2006) revenues and daily volume of 15.6 million packages and documents, UPS is the world's largest delivery company. UPS operates 1,130 daily domestic flight segments, utilizing 424 US airports and 796 international segments using an additional 389 international

[2] Prior to Airborne's acquisition by DHL, Airborne operated its air hub in Wilmington, OH and DHL at the Cincinnati/Northern Kentucky International Airport.

airports. Its main air hub is in Louisville, KY and regional air hubs are located in Philadelphia, PA, Hartford, CN, Ontario, CA, Rockford, IL, Dallas, TX (DFW), and Columbia, SC. UPS utilizes a fleet of around 600 aircraft with 322 of those chartered and 273 UPS proprietary jets – most of which are reported in the public filing below.

Table 1-1
UPS AIRCRAFT FLEET

Boeing 727-100 Series (1)	14
Boeing 747-100	5
Boeing 747-200	4
Boeing 747-400	2
Boeing 757-200	75
Boeing 767-300 ER	32
McDonnell-Douglas DC-8-71	17
McDonnell-Douglas DC-8-73	24
Airbus A-300F4-600R	53(more on order)
Boeing MD-11 Long Range Freighter	18(more on order)

While UPS has grown into one of the world's biggest air cargo carriers, it began as a trucking company and operates around 94,500 pieces of ground transportation equipment, inclusive of package cars, vans, tractors and motorcycles. Its dominance still derives from its trucking resources. Of its daily US volume of 15.6 million packages and envelopes, around 2.3 million (roughly 15%) are transported by air. In addition to providing transport in its proprietary trucks and aircraft, UPS also operates as a freight forwarder (UPS Supply Chain Solutions) procuring space on common carriers operating aircraft (both passenger and all-cargo freighters), trucks (both truckload and less-than-truckload), rail and maritime services.

In late 2004, UPS acquired Menlo Worldwide Forwarding whose assets included the resources of the former Emery Worldwide cargo airline. On February 24, 2005 UPS announced that it would close the former Emery heavy-freight hub in Dayton, OH and move those operations to UPS' own network hub in Louisville, as well as its regional hubs – after entertaining other options long enough to extract incentives from eventual host communities.

Of its regional air hubs, UPS' PHL operation has a sort hub occupying 681,000 sq. ft. and ramp size of 49.7 acres with 26 aircraft parking positions. There is also a heavy freight facility of 66,000 sq. ft. The air sort has capacity for 80,000 packages/documents per hour and averages 27 daily UPS flights. Its principal service area is Maine, New Hampshire, Maryland, Rhode Island, Massachusetts, New York, New Jersey, Delaware, Pennsylvania, Connecticut and Vermont.

UPS PHL operation is supplemented by a secondary regional air hub at Bradley in Hartford, CT with a smaller sort hub occupying 227,400 sq. ft. and ramp of only 3.5 acres with four aircraft parking positions. BDL averages six UPS flights per day and has an air sort capacity of 20,000 packages/documents per hour. Again, it is a supplemental regional operation serving Connecticut, Massachusetts, Rhode Island, New Hampshire and

parts of New Jersey and New York. Interviewed for this study, UPS indicated it could marginally expand its BDL operations to serve more of the Northeast domestic market if constrained at PHL.

1.3.1.2 FedEx

Smaller in total than UPS, FedEx had 2007 revenues of $35.2 billion with a daily volume of more than 7.5 million shipments for express, ground, freight and expedited delivery services.

Rather than acquiring other integrators or forwarders, FedEx acquired trucking companies once listed among the ten largest in North America. As part of a $1.8 billion network expansion plan to nearly double average daily hub package volume capacity in North America, FedEx has added ten new and expanded 19 other central distribution **trucking** hubs.

FedEx Express - the airfreight subsidiary of the FedEx holding company – operates an all-cargo aircraft fleet of 671 aircraft, which is larger than UPS' proprietary fleet and charters combined. Conversely, FedEx's trucking operations – FedEx Ground – operates a fleet about half that of UPS. FedEx Express' daily volume averages 3.5 million packages and 13 million pounds of freight.

FedEx Ground has its origins in several former carriers that include the former Roadway Package Service (RPS), which became Caliber in 1996 before being acquired by FedEx in 1998. The service was renamed FedEx Ground in 2000. Today, FedEx Ground accounts for around 2.6 million packages per business day. Its network is headquartered in Pittsburgh, PA and comprises 29 ground hubs and over 500 pick-up/delivery terminals.

In December 2007, FedEx Ground selected Perrysburg Township, OH as the location of a new hub to replace its existing Toledo operation. Occupying a 400,000 sq. ft. facility developed on a 127-acre site, the hub will have initial capacity for 22.500 packages per hour – expandable to 45,000. The project has an estimated cost of $87 million and will initially employ 550 employs, increasing to 800 at ultimate build-out. According to FedEx, the Perrysburg site was selected for its 'ease of access to major highways, its proximity to customers' distribution centers and a strong local labor pool from which to recruit employees'.

FedEx Freight is the product of FedEx's acquisitions of two less-than-truckload carriers. Viking Freight was acquired with RPS in 1998 when both were part of the Caliber system. In 2001, FedEx acquired American

Freightways and in 2002 combined the two networks into FedEx Freight as a comprehensive coast-to-coast less-than-truckload carrier. FedEx Freight is now the largest US regional provider of next-day and second-day less-than-truckload services.

Another subsidiary created by the Caliber acquisition was **FedEx Custom Critical,** which evolved from the former Roberts Express pickup-and-delivery cartage company. The service focused on customized surface expediting which provided exclusive-use, non-stop service that matched vehicle size to the customer's shipment, moving fast and at a lower cost than standard airfreight products. The subsidiary is headquartered in Green, OH and operates around 1,400 vehicles.

The FedEx hub at Newark employs more than 2,500 FedEx Express employees in three buildings, comprising approximately 2 million sq. ft. FedEx operates more than 1,200 monthly flights at the EWR hub with connectivity to domestic and international markets.

1.3.1.3 DHL

DHL closed its own former hub at Cincinnati/Northern Kentucky International Airport, consolidating operations at the former Airborne hub in Wilmington, OH. In Airborne, DHL acquired an operator with a larger US market share than its own (Airborne with 14% against DHL's 5%). Like UPS, DHL has consolidated redundant Airborne and DHL stations in many markets – further contributing to a glut of on-airport cargo space at North America's airports.

The process for DHL created opportunities for some communities that were marginal in the individual Airborne and DHL systems but have newfound strategic advantages in serving the combined carriers. One example is the former March Air Force Base in Riverside, California - selected as the West Coast regional hub for DHL. Smaller expansions have occurred as DHL developed a new system of regional trucking hubs.

Since acquiring Airborne, DHL invested $1.2 billion to rationalize its North American network. That investment involves consolidating its North American hub (closing CVG and upgrading Wilmington) and creating 13 regional sort center facilities creating a layered regional hub system more comparable to its larger competitors. Selection of new regional sort centers has emphasized ground operations with airside capabilities reduced to some 'minimum operating standard'. A ground emphasis is implicit in DHL's determination to strengthen its second and third-day delivery products.

In May 2007, DHL completed the $120 million upgrading and sort automation of its major east coast ground hub in Allentown, PA, complementing its air hubs in Wilmington, OH and Riverside, CA. The improved Allentown hub features a base footprint of 290,000 square feet. It serves Connecticut, New Jersey, Delaware, Maryland, Washington, DC, eastern Pennsylvania and eastern New York. It services 54 pick-up

and delivery service depots throughout the region and connects with 18 other sort locations.

Though much smaller, another ground sort hub was also completed in Erie, PA in October 2004. DHL invested $3 million in a 54,946 sq. ft. regional sort center with a capacity of 4,000 letter pieces/hour and 7,000 parcels/hour and serves 17 DHL service stations in the region.

BAX Global dramatically reduced its aircraft fleet, operating more as a slightly integrated forwarder than a true integrator. The former #5 and #6 freight forwarders in the world[3] – BAX Global and Schenker, respectively – have been acquired by Deutsche Bahn (German Railroad), making it less likely to expand its domestic air operations than to supplement its network with flights to its Toledo, OH hub operated by its service partners.

1.3.2 All-Cargo Airlines

Traditional all-cargo airlines offer airport-to-airport transport of heavy freight by one of two business models. Too many exist to cover each carrier but an example of each principal business model is provided.

'Wet lease' or **ACMI** (aircraft, crew, maintenance and insurance) providers operate cargo flights on a leased basis to other carriers and (less typically) to individual freight forwarders like Panalpina. All-cargo airlines also may operate their own scheduled and chartered flights, selling space directly to freight forwarders and occasionally to large industrial shippers.

The US based **Atlas** Air Worldwide Holdings (AAWW) exemplifies both through two subsidiaries. Atlas Air is primarily AAWW's ACMI operator, while Polar Air Cargo, Inc. is AAWW's scheduled and chartered freighter operator. With a fleet of 41 Boeing 747 aircraft, AAWW provides four specific services types: ACMI leasing; global scheduled service, commercial charter services; and U.S. military charter services.

Under an ACMI or wet lease contract, customers receive a dedicated aircraft that is crewed, maintained and insured by Atlas in exchange for an agreed-upon block hour rate and level of operation. The customer absorbs all other direct expenses of operation, such as fuel, landing fees and ground handling. The customer also bears the commercial risk of load and yield.

In November 2001, AAWW acquired **Polar** from GE Capital Aviation Services (GECAS). Polar provides scheduled all-cargo services on airport-to-airport routes to the world's largest freight forwarders. Polar's scheduled, all-cargo network serves four principal economic regions: North America, South America, Asia, and Europe. Its biggest clients include the forwarder divisions of integrators DHL and UPS, as well as EGL

[3] World's Top IATA Forwarders in 2004

Eagle, Nippon Express, Kuehne & Nagel, Panalpina and Schenker/BAX Global.

In June 2007, DHL completed a $150 million acquisition of a 49% stake and 25% of voting rights in Polar Air Cargo Worldwide. The agreement guarantees DHL Express access to Polar's aircraft capacity in key global markets, particularly between Asia Pacific and the US over a period of 20 years. The deal also provides DHL Express with considerations pursuant to aircraft capacity from Atlas.

Since its inception, **Cargolux** has maintained a consistent strategy that often seems willfully out of step with the industry's clamor for vertical integration. As quoted in Air Cargo World, Cargolux CEO Uli Ogiermann stated Cargolux' model succinctly: "We recognize that the forwarder is our most important customer base. We want to work with them to help them create value for their business, which is why we are not in the business of providing value-added premium products. We want to deliver a simple airport-to-airport product, which is exactly what our customer base asks us to deliver." Cargolux' sale of block space provides forwarders with reliability which forwarders' core clientele demands, while the sale of these guaranteed base loads allows Cargolux to operate its scheduled flights and occasionally introduce new routes.

While 50-60% of Cargolux's business is derived from only the top 10 forwarders, Ogiermann has suggested that Cargolux could work with even fewer (but bigger) ones because as the forwarders have grown in scale, their network strength and IT investments have made it easier for Cargolux to serve them. Cargolux also can be swayed by a few industrial shippers, as responding to the demand generated by the pharmaceutical industry, Cargolux added Indianapolis (home of Eli Lilly) to its US destinations – joining New York, Huntsville, Atlanta, Los Angeles, San Francisco, Chicago and an oil industry-driven Houston.

Formerly the largest domestic all-cargo airline, **Kitty Hawk Inc.** shut down all its scheduled services in late October 2007, leaving only its charter air cargo service in operation. Kitty Hawk's closure created yet another vacant air cargo hub at its former 240,000 sq. ft. facility at Fort Wayne International Airport, which received about $1 65,000/month in rents used to defray the cost of building the structure originally used to lure Kitty Hawk. The lease was to have run until 2020, so the airport and its community are scrambling for a new tenant to pay for the expensive, vacant compound. In addition to a vacant cargo terminal, FWA has a 12,000 ft. runway among its 3 runways and 450 acres of master-planned industrial space.

While some proclaim otherwise given the lack of passenger priorities, one could argue that all-cargo airlines are the least independent segment of the air cargo industry. ACMI operators repeatedly observe they simply operate the aircraft between points requested by their airline and forwarder clientele. Scheduled operators largely say the same about forwarders and large industrial shippers.

1.3.3 Passenger & Combination Carriers

While domestically it has dwindled greatly, belly-space still accounts for a significant percentage of international capacity. The ability to access that capacity, as well as the additional frequencies and destinations provided by passenger carriers, fortifies traditional passenger hubs as cargo gateways relied upon by freight forwarders.

More detail of JFK cargo will be presented in the regional airports section but exemplifying the importance of belly carriers, American Airlines was the cargo market share leader at New Yorks JFK International Airport through October 2007. Among US passenger carriers, only Northwest continues to operate freighters but combination carriers dominate in Asia and Europe and are still important in Latin America. These carriers extract substantial economies of scale from coordinating their freighters and passenger aircraft – perpetuating the appeal of traditional passenger gateways.

Although they retain their own sales forces, passenger carriers depend heavily upon freight forwarders and integrators to sell much of their capacity. Industry consolidation – for example, DHL having digested Danzas, Exel and Air Express International (which had been acquired by Danzas) - has given super-clients extraordinary leverage with the carriers.

1.3.4 Freight Forwarders

As in the contraction of competing integrators, airports and their communities are left with fewer options in trying to partner with freight forwarders to develop potential new gateways – international or otherwise.

Panalpina in Huntsville is still the only example of a sustained forwarder-driven alternative gateway strategy succeeding. Variations have been attempted (and ultimately deserted) with EGL Eagle having attempted an ambitious scheduled-charter operation prior to the 'factory recession' of late 2000. Danzas briefly 'championed' scheduled-charter flights from Charlotte, NC patterned after Panalpinas Huntsville operation but deserted the effort in less than a year. With all its new-found buying power, DHL Danzas has thus far not resurrected this idea, although DHL Express has been responsible for the routing of additional international capacity to its air hubs.

Table 1-2
TOP U.S. FREIGHT FORWARDERS RANKED BY FORWARDING SPEND - (AS OF OCTOBER 2007)

RANK 2007	COMPANY	US $millions
1	DHL	253.15
2	Expeditors	139.69
3	UPS	129.88
4	BAX Global	109.12
5	EGL – Eagle Global	99.49
6	Panalpina	74.12
7	Kuehne & Nagel	72.28
8	Schenker	55.07
9	Uti	53.39
10	Nippon Express	51.72

Source: International Air Transport Association

1.4 ALL-CARGO AIRPORTS

While all-cargo airports lack any scheduled passenger service, cargo-intensive airports are secondary passenger airports that have attracted regional cargo hub operations. High-profile all-cargo airports in North America include the FedEx regional hub at Ft. Worth Alliance Airport and DHL's West hub at Riverside, CA. Cargo-intensive airports include BAX Global's hub in Toledo, Ohio and UPS's West hub in Ontario, California.

At all-cargo airports, a hub carrier must be capable of stand-alone operations with scant (if any) complementing capacity offered by other carriers and often must even provide its own ground-handling services. The scale of operations required has all but dictated these airports be anchored by integrated carriers.

All-cargo airports often catch overflow from congested gateways occasionally hobbled by prohibitive noise constraints. The DHL hub in Riverside and UPS regional hub in Ontario, California resulted from two operators no longer able to expand sufficiently at Los Angeles International Airport. Unless compelled by necessity, these carriers would not likely have left the mega-hubs.

A variety of all-cargo airports could be employed as comparables but most apt are **Fort Worth Alliance (AFW)** and **Columbus Rickenbacker International (LCK)** as relative success stories, and **North Carolina's Global TransPark** and **Illinois' MidAmerica** as 'cautionary tales'. To the extent pertinent, other examples will also be introduced. Alliance provides additional benefit in having been a privately led green-field development, although its airfield operation has been turned over to public agencies.

Numerous attempts to develop all-cargo airports have been initiated, particularly in the era of military base-closings. Few have been successes even after investing tens of millions of regional and federal public

dollars.

There is a repetitive quality to the probable reasons for success and failure at these airports. Most significantly, the failures have often been positioned as *alternatives* to airports that don't necessarily *need* alternatives. As long as sufficient capacity remains for the planning horizon, it will almost always be preferable to operate at a major commercial airport than at a start-up all-cargo airport. While many former military bases were intentionally located at a distance from major metropolitan areas, commercial airports typically serve a substantial local base and already have the ground-handling services and other complementary resources available to immediately serve air cargo operations. In addition, commercial airports will typically have quality airfields and roadways, as well as the ability to fund improvements that may be necessary from a diverse array of financing mechanisms. Prospective tenants locating at one of these commercial airports can structure their networks and capitalize their investments on the safe premise that these will still be airports for the 20 to 30 year planning horizon.

Table 1-3
2006 CARGO TOTALS ALL-CARGO & CARGO INTENSIVE AIRPORTS

Airport (rank)	Total Cargo Metric Tonnes	% Growth
(AFW) Fort Worth Alliance (28)	250,478	13.8
(FWA) Fort Wayne (45)	116,978	-
(LCK) Rickenbacker (46)	113,714	0.7
(MHR) Sacramento Mather (69)	61,390	3.8

Source: Airports Council International – North America

1.4.1 Fort Worth Alliance

In the late 1980's, developer Hillwood acquired 15,000 acres of ranch land, betting on its vision and an uncanny ability to access public money for its private ventures. For the purposes of accessing FAA funds and assuaging anxieties of DFW management and bond holders, Alliance was initially represented as a non-competing reliever to DFW's long-term future airspace congestion. Hillwood acquired the land then donated it to the city to use as its matching share for a 90% construction contribution from the FAA. Fort Worth paid $76 million for infrastructure improvements and the Texas Department of Highways and Public Transportation paid for a $71 million highway extension.

Alliance Ft. Worth's early successes were consistent with the initial profile as a complement to DFW but later successes would be more logistics-oriented. First, DFW's hub carrier American Airlines chose Alliance for a $481 million maintenance and engineering center. While laying foundation for an emerging logistics hub, the decision by Burlington Northern Santa Fe Railway (BNSF) to locate its intermodal yard at Alliance suited the local council of governments and other planners troubled by the Metroplex's disruptive urban rail operations – mostly those of Union Pacific.

FedExs $300 million Southwestern hub at Alliance occupies 168 acres and employs approximately 1,000 workers. Alone, the FedEx operation was sufficient to elevate Alliance to being the 28[4] largest cargo airport in North America in 2006 with more than 250,000 metric tonnes with almost 14% growth for the year. Its growth has come at the expense of DFW, which nonetheless remained North Americas 10 largest cargo airport with over 750,000 metric tonnes in 2006. FedEx maintains operations at DFW to meet demands of local time-sensitive shippers, using Alliance largely for plane-to-plane transfers. Alliance has also attracted time-sensitive FedEx customers, such as Dell, Intel and Hewlett-Packard.

In 1999, UPS Logistics Group purchased 18 acres at Alliance for a 320,000 square foot distribution and technology center. UPS Logistics Group consists of six primary business units, including UPS Worldwide Logistics (UPS WWL) - the operating unit at Alliance Airport. UPS WWL has several customers on and immediately around Alliance who utilize UPS WWL for their multi-modal capabilities. Given the large volume of heavy freight activity - Maytag appliances, for example – UPS WWL uses the rail link extensively. UPS Alliance operation is prodigious with surface freight but UPS and the other forwarders with tenants at Alliance continue to truck their airfreight to DFW.

In justifying a $90 million runway extension of both runways from 9,600 feet to 11,000 feet in the Dallas Business Journal, Hillwood Properties president Mike Berry observed, “in terms of development around Alliance, it (the runway extension) will allow you to handle more diverse international cargo activity, particularly activity tied to the Asian marketplace.

Tom Harris, senior vice president of operations for Hillwood stated weve done an analysis and believe that for a single days operation, taking into consideration all the standard costs, we can save a 747-400 freighter operator anywhere from $1.5 million to $2.2 million per year[5]. While Alliance represents an achievement in visionary industrial development, the air forwarder community has remained at DFW given their reliance on supplemental passenger belly lift capacity and Alliance has yet to attract another all-cargo air carrier. Relative to Hazleton, DFW is less congested than JFK regarding runway capacity and land availability. Nonetheless, carriers unwillingness to divert from DFW to Alliance where congestion and operating costs would improve must not be ignored.

After several years and considerable investment at San Bernardino International Airport (formerly Norton Air Force Base) where Hillwood opened its Alliance California development, the airport has yet to attract a single scheduled air carrier, but has attracted distribution tenants such as Kohls who rely on other regional airports for air cargo lift.

[4] “Alliance Gets Federal Cash to Lengthen Runways” by Kerry Curry, Dallas Business Journal , 11/8/00
[5] “Cargo in the Middle” by Douglas Nelms, Air Cargo World, April 2008

1.4.2 Rickenbacker International Airport (LCK)

Columbus, Ohio's Rickenbacker International Airport is a relatively successful example of military base conversion into an all-cargo airport. Unlike less successful efforts, LCK has the enthusiastic support of the Columbus Regional Airport Authority, which operates both LCK and Port Columbus International Airport (CMH) and has pushed cargo operations to LCK. In 2006 LCK ranked #46 in cargo.

LCK has both benefited from and contributed to collateral industrial growth that would have been inconceivable at relatively land-locked CMH. LCK serves a tremendous local industrial base and is located within the Ohio Valley where it can be used for regional distribution.

LCK's origin as a former AFB left a superior airfield and infrastructure, including twin 12,000 ft. runways and a Category II Landing System for all-weather operating capabilities. LCK was closed as an Air Force Base in 1980 and its first success came in 1985 when Flying Tigers (acquired in 1989 by FedEx to whom its hub operation was transferred) established its air cargo hub and bulk sorting facility there. Success for the surrounding Rickenbacker Industrial Park came later with the 1992 opening of the Spiegel/Eddie Bauer and Siemens distribution centers.

In March 2008, Norfolk Southern (NS) Railroad opened a $63 million intermodal (truck-rail) facility on 175 acres at Rickenbacker. As with Alliance in the previous example, teaming the airport and rail yard provides access to the most time-effective but expensive option (air) and much less costly but also less timely rail service. NS invested $20 million of the total project cost with the balance from local government.

Both a cause-and-effect of the transportation services available at Rickenbacker, the larger area encompasses 30 million sq. ft. of development, 13 industrial parks and more than 100 companies, including several Fortune 500 corporations. The global distribution center for the Gap, Inc. accounts for a substantial seasonal chartered freighter operation. Much of the development at Rickenbacker has been through private investment accounting for 11 million sq. ft. of development at the airport and even more in the 15,000 acres beyond. Rickenbacker partnered with Duke Realty to develop its Global Logistics Park - 1,600 acres of airport land identified as not necessary for aviation purposes. The site will accommodate distribution and light manufacturing primarily spurred by the NS intermodal facility.

The Rickenbacker Air Cargo Terminal complex is comprised of three multi-tenant air cargo terminal buildings with 164,000 square feet of space and direct airside access. As of July 2007, the three buildings had total occupancy of only 56%. The FedEx regional hub is in its own dedicated facility with 275,000 sq. ft. originally developed for Flying Tigers in 1989. In September 2006, Forward Air expanded its trucking hub from 61,000 to 125,000 sq. ft. airside facility serving non-integrated all-cargo airlines and freight forwarders. FedEx accounted for 61% and UPS for 13% of 2007 air cargo tonnage through the airport. Chartered flights

accounted for 13%.

According to a recent[6] article in Airport Business, Franklin County taxpayers have invested $1 15 million in LCK since 1981 and the airport is forecasted to operate at a loss until 2012 – although in 1987, LCK managers predicted the airport would break even by 2002. Since the Columbus Regional Airport Authority

took over, the annual operating deficit decreased from $2 million in 2003 to its best year in 2006 with a deficit of $154,952. Since Franklin County taxpayers began funding LCK in 1981, the annual contribution averaged more than $4.3 million, peaking at $8 million in 2000.

1.4.3 MidAmerica (St. Louis) Airport

Located 25 minutes from downtown St. Louis in Belleville, Illinois, MidAmerica Airport opened in November 1997 built with $60 million in funding from the state of Illinois, $30 million from St. Clair County and $154 million in federal money. MidAmerica has two commercial-length runways (10,000 and 8,000 ft. in length) with Category II Instrument Landing Systems, immediate access to Interstate-64 and potential access to a Norfolk Southern rail spur contiguous to the airports south edge.

A cargo ramp of 258,000 sq. ft. (5.9 acres) was built on a purely speculative basis and a 200-acre air cargo terminal site prepared adjacent to the ramp. A $6.3 million, 50,000 sq. ft. air cargo terminal was built on the site. Airport management noted that would accommodate one 747-size planeload of cargo each day. “In terms of pounds, Mid-America director Tim Cantwell observed: 'that works out to 350,000 pounds of product a day. That'll max us out in terms of the cargo facility that's being built.'

St. Louis Lambert International Airport operators endorsed Mid-America and although Lambert's operators did nothing to keep its cargo tenants, none were attracted even by Mid-America landing fees - roughly half that of Lambert's. MidAmerica has hired Lambert's retired former director, Leonard Griggs, as a consultant.

In May 2000, a 'strategy meeting' was convened between airport officials from both Mid-America and Lambert, as well as elected officials from Missouri and Illinois. Lambert's management confirmed they were informing cargo carriers that no expansion opportunities would be made available at Lambert. In August 2000, Lambert's Washington lobbyist Jim Brown observed: 'there is not going to be any more cargo at Lambert. We are going to say, 'Look, guys, we have a new policy, and that is, there's a fantastic facility only 25 miles from here that would love to have you.' St. Clair County Board Chairman John Baricevic added: 'One of Lambert's shortcomings is that they don't have a lot of real estate, and freight needs a lot of real estate. So that same regional aviation plan that includes Lambert as the primary passenger facility in

[6] “Rickenbacker Aims to Break Even by 2012”, Alayna DeMartini, Columbus Dispatch, March 3, 2008

essence designates MidAmerica for the region's air cargo business.' Nonetheless, Mid-America has never landed a substantial scheduled carrier, but did get a few charters in 2007 with Centurion Airlines flying 144,000 pounds of corn seed.

Since its inception, MidAmerica has cost taxpayers more than $300 million, justifying its feature in a 1998 segment called 'Gateway to Nowhere' on NBC Nightly News 'Fleecing of America'. Without a trace of irony, airport operators and county supporters perceived the coverage as 'the kind of advertising that money can't buy'. County records for 2002 indicated that rather than the $2 million annual loss previously admitted, with

all financial factors considered MidAmerica Airport had a net loss of $12.8 million in 2002. Airport operators contested the 'actual cash loss was only around $3.5 million' for operating costs. The larger figure included $5.8 million for depreciation and an adjusted $3.5 million charged for interest on long-term bonds. According to an audit made public by the Belleville News-Democrat, MidAmerica ran a $9.1 million deficit for 2005, which St. Clair County was forced to cover. In 2006, the deficit ran $4.1 million but with depreciation that figure rose to about $12.2 million.

In an Associated Press story published in January 2005[7], Aviation Consultant Mike Boyd of Colorado-based Boyd Group, observed "It was a boondoggle from the beginning. It was built on wishful thinking.' Boyd also suggested local officials should be compelled to acknowledge their mistakes, comparing the development to "a field of dreams'. Recently, Boyd observed that his company cautioned the state of Illinois in 1995 that **the airport shouldn't be built unless it had "more reasonable forecast assumptions" and a signed contract with a big airline.**

In 2007, St. Clair County officials announced they had signed an agreement with Batam Industrial Development Authority in Indonesia. MidAmerica also hosted 50 members from the Singapore AirCargo Agents Association, later declaring the airport on its way to creating an 'air bridge' between Southeast Asia and the US. More recently, MidAmerica's developers have diverted the focus from commercial failures to its success as a joint-use airport for the adjacent Scott Air Force Base. Tim Cantwell, Director of MidAmerica Airport expressed the airport's main goal now as being 'the best joint-use airport in the nation'. As massive a failure as MidAmerica has been, it could have even been worse if not for its joint-use function for Scott AFB.

1.4.4 North Carolina's Global TransPark

The governor announced plans to merge manufacturing with air cargo transportation in a massive industrial complex that would meet the demands of the new global economy and restore the sagging economy of the eastern part of the state. Two large runways surrounded by factories to facilitate 'just in time' manufacturing

[7] "Despite Regional Efforts, MidAmerica Airport's Struggles Continue" by Betsy Taylor, Associated Press

would allow freighters to fly raw materials and parts in for assembly into finished products, then flown out.

From that start in 1991, the Carolina Journal Online has described the 2,000-acre North Carolina Global TransPark (GTP) in Kinston, NC as:

> "A boondoggle from the start … possibly the largest government waste and failure in North Carolina state history, a failed cargo-airport project that has brought false hopes but little impact to Kinston and Eastern North Carolina.

Rather than the 55,000 jobs promised in its original 'feasibility study', employment peaked at 320 jobs. Rather than the $2.8 billion annual economic impact projected, it drained more than $140 million in federal, state and county funds without landing a single major air cargo tenant. To 'ensure' success, the GTP paid consultant Isaac Manning who had been associated with success at Alliance Airport in Ft. Worth $15,000/month to provide on-call consulting services. The GTP also used Duke Realty Corporation (successful at Rickenbacker) for marketing.

The State of North Carolina spent roughly $53 million on runway improvements at the GTP. Although the GTP never convinced a single scheduled cargo carrier to fly from Kinston even to a North American cargo hub, its primary runway was expanded to 11,500 ft. to accommodate freighter flights to Europe. The runway length exceeds any at USAirways hub Charlotte and former American Airlines hub Raleigh-Durham – both of which have had international service.

The TransPark had more than 6,000 sq. ft. of office space and 30,000 sq. ft. of airside warehouse but in spite of having a 50% occupancy rate for warehouse (none of it used for air cargo operations), the GTP developed an additional 120,000 sq. ft. warehouse opened in Spring 2005.

In January 2005, the GTP announced it had incurred operating losses of about $8 million in the preceding two fiscal years. According to a report released in January 2008 by the State Auditor, the GTP might go bankrupt because of its inability to pay an outstanding $32 million loan from the state Escheat Fund. According to an article[8] in the Carolina Journal, '(If) the Authority declares bankruptcy, funding received to date from the Federal Aviation Administration may be required to be paid back.' The amortized potential liability of the GTP to the FAA was about $18.1 million.

After receiving $2 million in local and state support to locate at the GTP, Workhorse Aviation Manufacturing LLC (opened in December 2005) closed in February 2008. State Representative Paul Stam, R-Wake, observed about the GTP 'Its been a lot of money and with precious little to show for it. We should stop adding money to the losses.' The GTP gets about $1.5 million from the state each year. Abandoning cargo development, an alternative use recently suggested was an academy for mid-air anti-terrorist training.

[8] "Firm Closes Global TransPark Operation", WRAL on-line, 2/4/2008

1.4.5 Other North American All-Cargo Airports

The airports presented are representative – but far from comprehensive – of all-cargo airports in North America. Similar to Rickenbacker, Sacramentos Mather Field (MHR) is managed by the Sacramento Airport System, which also manages the local gateway airport limited by both land availability and highly restrictive noise prohibitions for nighttime operations. MHR has an excellent airfield with twin commercial runways, the longest of which is 11,300 feet in length. Austin-based private developer LYNXS Holdings constructed the Sacramento CargoPort in 1999 with 33,000 sq. ft. of warehouse and 1.5 million sq. ft. of adjacent ramp.

Since the former airbase was announced for closure in 1988 and the commercial airport opened in 1995, it has attracted UPS and DHL/Airborne. In 2006, MHR ranked #69 in North America with more than 60,000 metric tonnes of cargo. While MHR has attracted integrators from Sacramento International Airport, it has not drawn international carriers from relatively nearby, heavily constrained cargo gateways Oakland and San Francisco.

Like other former military bases closed in California, Mather is eligible for the Local Agency Military Base Recovery Area (LAM BRA) Program created by legislation in 1993 to promote business growth and create jobs at designated closed and realigned bases in California. The Act provides potential employers with state tax credits and benefits, as well as assistance with permits, loans and even public utility rates.

Located in Riverside, CA, March Inland Port also signed LYNXS as master developer of the entire former Air Force Base approximately 60 miles from the Los Angeles Basin. LYNXS successfully attracted major manufacturers like Phillips Electronics to March several years ago but its biggest success came when March was selected as West Coast Regional Hub for DHL. While Ontario is already home to the West Coast regional air and truck hubs for UPS – an operation approximately seven times larger than what is envisioned for DHL – winning this hub competition was perceived as absolutely critical for any of the three other alternatives to establish credibility as prospective air cargo airports.

The UPS regional air hub at the Greater Rockford Airport (65 miles northwest of OHare) occupies a 520,000 square-foot warehouse and sufficient ramp parking for 30 aircraft. The hub employs 1,500 full and part-time workers and an additional 200 are employed for the package center that operates a fleet of ground delivery vans. The air hub handles 34 daily UPS flights and processes 130,000 to 170,000 packages nightly. The regional hub serves a multi-state region for which all intra-regional shipments go only through the Rockford hub, whereas shipments moving to other domestic regions and internationally will be routed from Rockford to/from Louisville.

Table 1-4
NORTH AMERICAN ALL-CARGO AIRPORTS

Airport	Integrators	Type of Development
Fort Worth Alliance (28)	*FedEx regional hub*	Greenfield
Rickenbacker (46)	FedEx, UPS	Base Conversion
Sacramento Mather (69)	DHL, UPS	Base Conversion
March (Riverside, CA)	DHL re gional hub	Base Conversion
Rockford, IL	UPS regional hub	Base Conversion
Global TransPark	None	Greenfield
MidAmerica	None	Greenfield*

* Commercial parcels were Greenfield but airfield split with joint-use activity

1.5 REGIONAL AIRPORTS

Other regional airports have a tremendous influence on the outlook for the proposed Hazleton cargo airport. For that reason, much of the direct and indirect impact of these airports will be presented in Section 1.6: Forecasts. The emphasis of Section 1.5 will be establishing the context required to legitimize assumptions critical to the forecasts.

Section 1.5 begins with a brief overview of recent cargo volumes of major airports in the region. Next, this Section delves into the composition of carriers operating at the Port Authority of New York/New Jerseys **(PANYNJ)** two largest cargo airports: JFK and EWR. This section ends with a brief examination of how the Hazleton cargo airport might fit into the overall competitive environment these airports occupy. To the extent necessary, we will reference additional airports with capacity that also affects prospects of the Hazleton airport.

Table 1-5
TOTAL CARGO TONNAGE NORTHEASTERN AIRPORTS: 1997 - 2006

Freight	PHL	JFK	EWR	IAD	PIT	BDL	BOS
1997	415,374	1,543,678	969,215	292,474	108,515	122,711	369,446
1998	443,313	1,469,870	985,421	295,618	107,277	128,635	364,542
1999	482,515	1,589,215	983,787	291,693	106,150	135,990	373,773
2000	493,621	1,690,005	970,833	321,686	105,440	128,325	386,552
2001	472,946	1,379,999	786,195	288,195	109,464	129,829	337,777
2002	517,855	1,513,055	754,879	304,003	105,114	129,764	333,523
2003	502,579	1,578,219	884,865	267,518	95,169	129,060	337,795
2004	548,448	1,625,575	902,697	293,186	98,756	140,449	344,342
2005	527,987	1,561,036	868,546	288,879	68,205	159,847	336,289
2006	514,051	1,545,821	888,199	338,391	68,656	162,384	307,957

Source: Airports Council International – North America

1.5.1 Regional Trends

As evident in Table 1-5, the last decade was difficult for major regional airports in terms of cargo volumes. The highest growth was achieved by two airports dominated by UPS: regional hub Philadelphia which grew by just under 24% in total for the ten-year period and UPS mini-hub Bradley which grew by slightly more than 32% for the same period. Based almost entirely on growth by belly carriers operating international flights, Washington Dulles experienced almost 16% growth. When growth is annualized for the 10-year period, the rates are tellingly modest for all three airports.

Of the two PANYNJ airports of greatest interest, FedEx regional hub Newark's cargo totals shrank by more than 8% while cargo totals at JFK ended the ten year-span with almost the same volume as in 1997. The PANYNJ also operates LaGuardia and the former Stewart Air Force Base. The former is almost entirely a

belly-cargo airport (ranked only #109 in North America in 2006) and therefore presents little of opportunity for a prospective all-cargo airport. The latter is relevant more as a prospective competitor to Hazleton than as an immediate cargo force (ranking only #111 in 2006 with approximately 16,400 metric tonnes of annual cargo).

Of the two other airports included in Table 1 -5, Pittsburgh International Airport has been severely impacted by the demise of the former USAirways hub, which greatly diminished belly capacity at the airport – resulting in a staggering 37% decrease for the period. Not quite as bad as PIT, Boston's Logan International Airport experienced a decrease of almost 17%.

New York JFK's 0.14% cargo growth compares with the 1.86% growth *enjoyed* by Los Angeles International Airport for the same period. While cargo totals stagnated at the two passenger mega-hubs, freighter operators did not divert aircraft but JFK and LAX lost monopolies on some trans-Atlantic and trans-Pacific carriers. Foreign carriers increasingly expanded to other major hubs such as Atlanta, Dallas and Houston but did not venture into non-traditional gateways.

Underscoring the commonalities between the mega-markets, UPS regional hub Philadelphia's relative prosperity with 24% growth compares with LAX's closest UPS regional hub, LA/Ontario's 18% growth. At the other end of the spectrum, FedEx regional hubs Newark in the East and Oakland in the West both incurred losses for the period.

1.5.2 Carrier Composition

Developers have taken a tonnage-based approach to forecasting anticipated cargo volumes at the proposed Hazleton cargo airport. In contrast, the Martin Associates team believes a carrier-based approach is more appropriate in that an airport operator is far less likely to pursue individual manufacturers, exporters and

importers than carriers. More of this debate will be provided later in the Forecasts section but immediately a more detailed analysis of the carriers (and types) present at the major competing gateways will be presented as context for the later approach to forecasting.

Philadelphia International Airport (PHL) is the regional hub for UPS, accounting for roughly 60% of annual cargo there. Neither the airport nor carriers would verify market shares, but FedEx and operators on behalf of DHL are believed to account for another 20%. Passenger hub carrier USAirways accounts for approximately 10% of total cargo and its status as a major trans-Atlantic gateway and US carrier hub attracts daily wide body belly capacity from European passenger carriers Lufthansa, British Airways and Air France – which account for much of the 10% balance.

Over the long-term, PHL is hamstrung and alternatives arising from its ongoing Master Plan could negatively impact its cargo growth or even its ability to accommodate current volumes. The current master plan

alternatives are proposing a new parallel runway that would eliminate the current location of the UPS facility requiring UPS to move to a new site on the Airport. A new site for the relocated UPS facility is part of the recommended expansion plan for PHL. One of the greatest challenges of the Master Plan implementation will be accommodating hub carrier UPS whose representatives have expressed confidence they will remain at the airport, albeit perhaps in an altered or new site. UPS' representatives indicated that under no imaginable condition would they consider splitting their international and domestic operations at the airport. All considered, no other event could so favorably impact Hazleton's air cargo aspirations as successfully attracting the UPS regional hub. Indeed given findings contained in the all-cargo section, not one all-cargo airport in North America has been successful without attracting an integrator to anchor its development.

With a carrier mix more similar to PHL, **Newark (EWR)** is the regional hub for FedEx which (as of October 2007) accounts for roughly 54.3% of the airports' total cargo. Adding market share of UPS and DHL's contract carriers (ABX and Astar), integrators account for 72.6% of EWR cargo and non-integrated freighters account for only 3.4%. Belly carriers account for approximately 24% of EWR cargo, led by hub carrier Continental with 13.7%. As with PHL, EWR's Continental hub and gateway status attracts foreign belly carriers such as SAS (1.6%), Virgin Atlantic (1.6%), British Airways (1.2%), Lufthansa (1.2%) and a variety of other carriers each of which account for less than 1% and collectively less than 5%.

The dominant airport in the region (#6 in North America in 2006), **John F. Kennedy International** is relatively balanced with 60% of its cargo carried in freighters and 40% in passenger aircraft. Integrated carriers accounted for a little more than 14%, non-integrated all-cargo airlines accounted for 11%. The highest share by sector was the almost 43% transported by combination carriers in both passenger and freighter aircraft. For the purposes of analysis, this cargo falls into a statistical 'gray area' because it is not broken out by PANYNJ by type of aircraft or service.

Table 1-6
CARGO CARRIER MARKET SHARE JFK INTERNATIONAL AIRPORT (OCTOBER 2007)

Carrier	Market Share	Carrier	Market Share
Integrators	**14.3**	**Passenger & Freighter**	**42.8**
FedEx	8.7	**Lufthansa**	5.8
UPS	2.4	**Korean**	5.0
Astar/DHL	2.3	**China Airlines**	4.3
ABX	0.9	**Asiana**	4.1
All-Cargo	**11.0**	**Japan Airlines**	2.9
Kalitta	2.4	**Others**	20.7
Atlas	2.2	**Pure Belly Carriers**	**31.9**
Cargolux	1.5	**American**	9.7
Cargo Airlines	1.5	**Delta**	3.7
Evergreen	1.4	**British Airways**	3.5
Others	2.0	**Virgin Atlantic**	2.0
		KLM	1.3
		Others	11.7

Source: Port Authority of New York/New Jersey

In terms of prospective diversions, the 40% of total cargo presently carried in bellies of passenger aircraft is largely untouchable. Moreover – for reasons explored at length previously in this document - the roughly 35% carried in freighters operated by passenger carriers would require a very difficult splitting of operations by combination carriers. Adding 14% contributed by integrators, almost 90% of cargo presently moving through JFK is somewhat beholden to the network established there. For reasons explored earlier, a JFK 'alternative' is less likely to convince operators to leave JFK than to capture new overflow growth - which at less than 1% in the preceding decade, has not accumulated very rapidly.

Diversions by international cargo carriers have largely been to other major passenger gateways (Atlanta, Dallas & Houston) to their network, rather than adding all-cargo airports. Rather than replacing/growing New York-area capacity, carriers have diluted their concentration on JFK as a national gateway by adding frequencies and destinations closer to other segmented regions of the US market. For example, Nippon Cargo Airlines (NCA) shifted a substantial amount of cargo to Chicago's O'Hare Airport due to the cost of doing business and congestion at JFK. 'The access issue is one of the major deterrents to growth at JFK'[9], according to Peter Diefenbach, senior adviser to NCA.

PANYNJ staff does not deny JFK's liabilities, not least the aging, nine-mile perpetually clogged Van Wyck Expressway that provides access. In addition to costs derived from congestion, JFK is relatively costly in terms of ground-handling charges and state tolls for trucking to secondary markets.

In recent years, PANYNJ completed multiple projects augmenting or replacing aging cargo terminals, as well

[9] "When It Positively Has to Be There Fast, J.F.K. Loses Ground" by Lydia Polgreen, New York Times, 7/10/2004

as partnering with a variety of local and state agencies in efforts to mitigate roadway congestion. More ambitiously, the PANYNJ recently absorbed the former **Stewart** Air Force Base (SWF), which ranked #111 in North America in 2006 with about 16,450 total metric tonnes of cargo. The PANYNJ identified Stewart as 'heir apparent' but may find convincing carriers and forwarders to leave the traditional gateway difficult.

1.5.3 Other Regional Airports Offering Cargo Capacity

Attributable to industry consolidation cited previously, relatively state-of-the-art vacant hubs already exist in Dayton (the former Emery Worldwide hub) and Cincinnati (a former DHL hub). More recently, the all-cargo airline Kitty Hawk collapsed, abandoning its former hub at Fort Wayne, IN (described in Section 1 .3.2).

In addition to having existing cargo terminal facilities, these airports have already capitalized their airfield development. Moreover, all have already demonstrated their ability to accommodate large cargo networks from the Ohio Valley – traditional home to so many national hubs. Cincinnati and Dayton also have the benefit of supporting operating budgets from substantial passenger revenues.

1.5.4 Other Regional Air Cargo Reports

Two other studies of the regional air cargo market have been completed within the last ten years. Neither was used as an input for the Consultants' air cargo forecasts but each was reviewed (as independent modules) subsequently.

The **Pennsylvania Air Cargo Study** was prepared for the Pennsylvania Department of Transportation by Wilbur Smith Associates, Inc. **(WSA)** to assess the feasibility and risk associated with a dedicated PA air cargo airport. Specifically, WSA was to determine if there is sufficient volume to support a dedicated facility or if existing PA airports can support forecasted air cargo volumes.

Significantly, the study predated 9/11 and its forecasts were based upon a relatively high growth five-year period during which US domestic and export air cargo tonnage rose by 60.8%. PA airports averaged 5.0% growth per annum during the period and forecasts were constructed from that base plus growth derived from Boeing forecasts of 4.8% per annum for domestic with higher rates for international. Exemplary of the challenges, for 2005, the forecast for **PIT** was 218,269 (short)[10] tons compared with actual tons of around 75,000. The forecast for **PHL** came closer - 738,510 tons against actual tons of around 581,000 tons.

Similar to the Consultants' current study, the WSA study's section on **Secondary & All-Cargo Airports**

[10] This part of the analysis uses short tons calculated from metric tonnes used in the earlier regional table.

presented three successful examples – Rickenbacker, the former Airborne Airpark and Fort Worth Alliance – all anchored by integrators. Cited as a failure, the North Carolina Global TransPark represented a **'build it and they will come'** mentality that disregarded business drivers and market location.

WSA identified the primary driver for an international gateway as an abundance of widebody lift to international destinations, specifically citing lower deck, or belly space, on commercial passenger carriers. More to the point, WSA cited heavy reliance on commercial passenger carriers for the following: 1) competitively priced airport-to-airport service; 2) developed international networks; and 3) domination of international air cargo markets by freight forwarders.

Regarding the potential of a new all-cargo airport, WSA found it 'highly unlikely a carrier would abandon its presence at a major market area airport, even if that airport becomes constrained.' Rather, WSA found it more likely a carrier would divert some volume to a secondary airport via smaller feeder aircraft for express air carriers, or increase truck operations in and around the market area in the case of freight forwarders utilizing all-cargo airlines.

In **'Feasibility & Risk of a Pennsylvania All-Cargo Airport',** WSA suggested again that justification of an all-cargo airport in Pennsylvania required the same mindset that 'justified' the spectacularly unsuccessful North Carolina Global Transpark – belief that development of a new airport will create demand for the facility.

WSA concluded 'development of a fully utilized all-cargo airport in the central Pennsylvania region has limited prospects for success. Factors ranging from geographic location in relation to markets and local transportation infrastructure to 'critical mass' issues and lack of core business drivers (or an anchor user to sustain the facility) … suggest that such a substantial investment may not be capable of producing the desired return on investment.' In fairness to the Hazleton development, it merits noting the WSA study was not specific to the Hazleton (or any eastern Pennsylvania) site nor could it have contemplated the current air traffic congestion in the New York airspace and metropolitan area as well as master plan challenges at Philadelphia. Nonetheless, its evaluation of the air cargo industry, itself, was perceptive. Too, the WSA study's skepticism – in light of what proved to be far higher forecasts for cargo growth than were achieved – is worth noting.

Tri-County Cargo Airport Feasibility Study - submitted in February 2005 but prepared earlier – was prepared for Luzerne County by The LPA Group **(LPA)** to determine the 'feasibility based upon anticipated use, need, operations, risks and benefits associated with development of a new airport in the vicinity of Carbon, Luzerne and Schuylkill Counties.' LPA projected cargo volumes and operations for a new airport for the period 2012 through 2022 based upon anticipated air cargo development regionally and worldwide.

LPA based its forecasts (as did the Developers) upon **anticipated regional market share** for the proposed

Tri-County Airport. In doing so, LPA observed that forecasting presents challenges in that no historical basis or trend exists to formulate projections of future air cargo activity and related aircraft operations for the new airport in question. However, unlike LPA, the Consultant used specific carrier data from New York and Philadelphia airports to calibrate expectations, rather than rely on market share assumptions that ignore the operating realities of different types of carriers and their strategic partners.

Assumptions of Regional Growth: LPA assumed future growth in the regional cargo market will match industry growth projections for a world cargo market ranging 6 to 7% per annum. LPA also assumed new large aircraft (NLA) – citing A-380 use by FedEx - will primarily be used for long-haul markets (i.e. Asia and the Middle East). Subsequent A-380 freighter orders by carriers serving North America have been cancelled.

Assumptions of Airport Role: LPA assumed use of non-traditional gateway airports, such as the proposed Tri-County Airport, will increase. While minor shipper-specific diversions to medium-sized commercial airports such as Huntsville, Nashville and Indianapolis have occurred, nothing of the scale projected for Luzerne has occurred – nor do these semi-successful commercial airports equate to an all-cargo airport.

LPA assumed airlines operating both combination passenger/cargo aircraft and all-cargo aircraft will become more willing to segregate passenger and cargo operations at different airports. In North America, such carriers have shown no such tendency.

LPA assumed an increased use of freighter aircraft for carrying cargo, which has occurred to a point – although an increased use of trucking for domestic and ocean for international has been at least as pronounced.

Assumptions of Market Capture: LPA assumed it will require an orchestrated effort between local economic and community leaders from the Tri-County Area and the Port Authority of New York and New Jersey to facilitate the shift needed to justify the proposed Airport. In contrast, the PANYNJ continues efforts to optimize cargo operations at JFK and has acquired Stewart as its chosen reliever. LPA made a cursory assessment of Stewart, observing airport management has had difficulty establishing a significant air cargo presence and therefore Stewart offered only limited potential. This assessment preceded the PANYNJs role as operator of Stewart. Had the PANYNJ chosen to move international carriers to a remote alternative, there is no compelling reason why it may have been more successful than Los Angeles World Airports, which has been unable to move international operators from LAX to its regional alternative, LA/Ontario.

LPA assumed during the first 10 years of operation, the proposed airport would capture 50-70% of the Asian market activity currently served by JFK. However, what little diversion of Asian traffic has occurred has been to other major gateways and has been a diversion of growth rather than existing volumes.

LPA assumed the proposed airport would capture all future expansion of cargo service that cannot be accommodated at major airports in the region. However, UPS – as one example – has suggested Bradley in Hartford, CT could benefit from capacity issues at PHL. The 'monopoly' on new growth must also occur while PIT is sorely under-utilized and existing hubs are vacant at three airports in the all-important Ohio Valley.

LPA Forecast Risks:

LPA listed several risks that could potentially compromise or even invalidate its forecasts:

- LPA assumed aviation demand would follow a similar recovery path to that following 'previous terrorist or war related incidents such as Pan Am 103 or the Iraqi invasion of Kuwait'. What has transpired is incalculably more profound and enduring than either prior event cited.
- LPA assumed no significant destabilization of fuel prices to undermine profitability or result in significant increases in air shipment costs versus other modes, rather than unprecedented fuel costs that have materialized..
- LPA assumed recovery of the U.S. domestic economy will continue unimpeded. In contrast, the economy has absorbed a variety of maladies, including an ongoing credit crunch.
- LPA assumed the U.S. economic recovery would be paired with a modal return from trucks to air shipment for that portion of air cargo activity lost to ground due to the recession. In contrast, domestic losses to trucks have more recently been paired with international losses to ocean transport.
- Military action against Iraq was not assumed as a factor in the projection of future cargo volumes;
- LPA assumed no introduction of another regional hub or significant international air cargo gateway, adding that revisions would be required should either occur. Recent PANYNJ action on Stewart likely would have drawn such consideration.

In 'Next Steps', LPA reiterated the new airport would require 'collaborative effort of government leaders representing the multiple state jurisdictions of Pennsylvania, New York and New Jersey' but interviews conducted with the PANYNJ and PHL airport staff made clear their determination to keep major cargo tenants. In the extraordinary case of the New York airports, the operator has acquired an additional airport to this end.

In contrast, the developers believe that the prospective airport's growth depends not upon cooperation from other airport operators but rather will derive from necessity – specifically, the expense and lack of capacity at the traditional gateways in the region. Too, the developers believe no existing alternative in the region can fill the role of alternative international gateway but allow that others such as Bradley and Stewart can absorb less demanding increments of domestic growth serving the region.

1.6 FORECASTS

1.6.1 Overview

As has been stated both in this study and others regarding a prospective regional all-cargo airport, forecasts for the proposed Hazleton airport must rely entirely on assumptions versus actual and historical airport data. Any trend analysis must be based upon externalities, rather than the recent performance of the actual airport under consideration.

The potential of the Hazleton airport depends on its ability to take market share from other regional airports – whether by diverting current operations or by capturing new growth anticipated for the region. This occurs against a backdrop of cargo industry consolidation and relatively slow growth anticipated in the North American domestic market. (Table 1-7)

Table 1-7
FORECASTED ANNUAL GROWTH RATES BY REGION/SEGMENT

Annual Growth Rates 2005-2025	%
DOMESTIC CHINA	10.8
INTRA-ASIA	8.6
ASIA-NORTH AMERICA	7.1
EUROPE-ASIA	6.9
EUROPE-SOUTHWEST ASIA	6.2
WORLD	**6.1**
EUROPE-NORTH AMERICA	5.4
EUROPE-MIDDLE EAST	4.3
NORTH AMERICA	3.8

Source: Boeing World Cargo Forecasts

Attracting a substantial regional hub will prove difficult given the integrated carriers have mature hub-and-spoke air networks for North America. DHL has its national hub in Wilmington, OH but also must continue to pay debt service on bonds issued to build its former hub at Cincinnati-Northern Kentucky Airport (CVG). FedEx has its regional hub in Newark and specifically registered no interest in a potential airport in Hazleton.

Hazleton's *best* prospective hope for an integrator's regional hub is UPS, which has its closest hub at Philadelphia International Airport and a smaller regional hub at Bradley International Airport in Hartford, CN. Proponents of the Hazleton development have pointed to planned expansion and development alternatives at PHL as cause for optimism. However, discussions with UPS found the carrier '98%' confident its long-term needs would be addressed at PHL. Airport staff also indicated a strong commitment to ensuring their dominant cargo carrier remains at PHL. UPS' staff corroborated PHL's planners' willingness to serve the

carriers needs have greatly escalated in recent meetings and added that in the 1-2% chance its needs are

not met at PHL, a Hazleton option would be one of 4-5 prospective alternatives in the region. The Developer believes that a decision has already been reached pursuant to the PHL master plan that would critically affect the UPS operation.

Following the development trajectory of every successful all-cargo airport in North America, the Consultant believes Hazleton likely must attract a regional hub – not merely a limited local operation - for an integrated carrier to establish the economies of scale required to sustain an all-cargo airport. Absent such a tenant, the proposed Hazleton all-cargo airport could be on track to repeat the unsuccessful performance of North Carolinas Global TransPark or St. Louis MidAmerica Airport. While UPS has registered the likelihood of its leaving PHL as 2% or less, in subsequent discussions, the developers have suggested a potential tenant with the order of magnitude of an integrator is already considering using the proposed all-cargo airport. While an integrator is preferable for bringing its own forwarding, trucking and ground-handling – as well as an incomparable scale of operations – the Consultant concedes an entity **controlling** six or more international air carriers would interest freight forwarders and trucking companies. However, the enforceable commitment of such an entity and the full measure of its control over – rather than mere access to – such carriers would have to be verified and then closely monitored throughout the commitment of any public funding or appropriation.

Absent either the regional hub of an integrator or some unprecedented alliance of international carriers, **the Consultant would project the most likely forecast for Hazleton in terms of air cargo tonnage is zero – the unsuccessful track.** While Hazleton might attract scheduled operations for other individual all-cargo carriers absent an integrator regional hub, their operations would be inadequate to cover operating costs – let alone capitalization – of the airport. This belief draws on the experience (documented in Section 1.4) of all-cargo airports in North America.

In the event that UPS were to relocate its regional hub to Hazleton, it would be the anchor tenant and in our forecasts, the sole tenant of the airport for the first five years. Because too many variables exist for the Consultant to project a date upon which the airports construction will be complete and ready for tenancy, we based an initial operating level on the most recent operations of UPS at PHL.

Table 1-8
TOTAL FREIGHT VOLUMES: 1997 – 2006
PHILADELPHIA INTERNATIONAL AIRPORT (METRIC TONNES)

PHL	Enplaned Freight	Deplaned Freight	Total Freight	Intl. Freight
1997	204,683	210,691	415,374	50,402
1998	226,784	216,529	443,313	71,873
1999	243,899	238,616	482,515	91,922
2000	243,020	250,601	493,621	105,213
2001	225,717	247,229	472,946	119,505
2002	243,341	274,514	517,855	125,087
2003	239,365	263,214	502,579	126,362
2004	265,798	282,650	548,448	142,393
2005	254,343	273,644	527,987	125,572
2006	248,964	265,087	514,051	123,701

Source: Airports Council International – North America

It is beyond the near-term ability of the Consultant to project a specific opening date (or year, even) for the proposed Hazleton cargo airport, or a date by which time a tenant might be secured. Providing an alternative to the zero-tonnage forecast in order to complete the economic impact model and to capture the potential IF an integrator such as a UPS is attracted to Hazleton, the initial baseline of the 'High Case' – successful track will be a discounted function of UPS' present volumes at PHL. Rather than use conventional dates, this forecast starts with a 'Year One'. The Consultant recognizes the unfortunate but unavoidable disconnect in using recent data to establish a baseline for some nondescript future year.

1.6.2 Years One through Five: Integrator Regional Hub Operation

Our baseline and first five years of operating forecasts rely upon the following assumptions:

- (A) Neither airport operators nor UPS would provide carrier-level detail of their operations at PHL, but consultants were advised UPS accounts for approximately 60% of total freight at PHL; and

- (B) Interviews with UPS suggest that in the unlikely (< 2%) event its regional hub moved from PHL, not all operations would move to its replacement because PHL would still host a substantial city-station serving the O&D needs of the Philadelphia metro area and because additional traffic for markets north and east of Philadelphia may be diverted to an existing underutilized regional operation at Hartford, CN;

- (C) Initial growth will be projected with a premium added to Boeings' 3.8% per annum forecast for North America due to the fact that integrator hubs have fared slightly better than the majority of North American airports. Therefore, average growth will be projected at 4.5% per annum for Years 2-5.

In summary, the baseline begins with:

- PHL's most recent reported annual freight (cargo net of mail) total of 514,051 metric tones;
- Less 40% not attributable to UPS (205,620 MTs);
- Less 25% of UPS tonnage not moved to alternative (77,107 MTs)

The product of the preceding methodology would be a Year One total of 231,322 metric tonnes of freight. In the context of ACI-NA's 2006 data, an airport with that volume would already be larger than the UPS regional mini-hub at Hartford, CN and approximately twice as large (in cargo tonnage) as Pittsburgh International Airport. Again *imperfectly* using 2006 as a baseline for comparison, that total would rank #29 in North America and just below Alliance Airport in Ft. Worth – the FedEx regional hub examined in the all-cargo airports section of this report. For further context, PHL ranked #14 among North American airports in 2006.

Table 1-9
HIGH CASE HAZLETON CARGO AIRPORT AIR CARGO FORECASTS YEARS ONE THROUGH FIVE

Year	Total Freight	Annual Growth %	Annual Growth MTs
1	231,322		
2	241,731	4.50%	10,409
3	252,609	4.50%	10,878
4	263,977	4.50%	11,367
5	275,856	4.50%	11,879

1.6.3 Years Six through Twenty: Diversification of Carriers

Previously, this document detailed business models utilized by air cargo carriers and underscored difficulties in attracting international operators from traditional gateways. Among the most compelling:

- Freight forwarders operate as de facto sales forces for non-integrator cargo airlines. Forwarders, in turn, are motivated to support conventional gateways that allow them to maximize cheaper belly capacity and to exploit greater flight frequencies and destinations offered by larger pools of carriers. The higher volume of flights also offers recovery opportunities in the event freight is not flown 'as booked'. Adding investments in existing facilities that support such operation, it becomes even more challenging for forwarders to leave traditional gateways.
- Carriers operating both passenger and freighter aircraft benefit by co-locating flights in gateways, gaining efficiencies from facilities and manpower, as well as leveraging their own belly capacity and higher frequencies to serve customers. Combination carriers are tough competitors specifically because of their ability to leverage extensive passenger networks and cheaper belly capacity to supplement their total network capacity. Belly carriers can provide cargo connectivity in frequencies and destinations for which pure freighters – especially where a dearth of backhaul exists – are simply

not economical.

- The airport will incur substantial ongoing costs for routine operations and maintenance, as well as potentially the operation of air traffic control – should the FAA not agree to operate the tower. Initial investments and ongoing costs will be required for allied services such as snow plowing and de-icing. These costs, which are spread more evenly at gateway airports where both air cargo and passenger service both co-exist, would need to be borne solely by the air cargo carriers.

- Allied Cargo Services, such as ground-handling and local cartage, as well as over-the-road trucking companies are critical to the operations of an air cargo airport but have requirements in terms of economies of scale that would be difficult for Hazleton to meet. The anchor integrated carrier is likely to perform its own ground-handling and will own its own ground fleet, which is constructive to its ability to function at an all-cargo airport but contributes virtually nothing to achieving the scale required by a potential 3rd party service provider. New entry, international and domestic all-cargo airlines with (at least initially) perhaps only one flight per day would be particularly dependent upon reliable third-party ground-handling. Again, the Consultant acknowledges the Developers' claim of a prospective tenant constituting the operational equivalent of multiple international carriers.

Indicative of how difficult the leap to international freighters can be, Alliance Airport – home to FedExs southwest regional hub – hasnt attracted another significant air cargo carrier after almost twenty years. LA/Ontario International Airport – west coast regional hub to UPS – has not attracted another international freighter operator, in spite of sharing with LAX management by Los Angeles World Airports, which has even explored incentives to move freight operators to ONT to ease congestion at its principal gateway. Similarly, UPS regional hub Rockford, IL has failed to attract other international carriers from a congested Chicago OHare. Moreover for approximately 30 years, numerous US airports have been vying to break Miami International Airports grip on Latin American cargo, yet the only nominal impact has been made by major passenger hubs – Atlanta, DFW and Houston, specifically – rather than by any dissolution of freighter traffic.

It would be only slightly more likely that the proposed Hazleton cargo airport could attract a pure all-cargo airline, rather than a combination carrier which has more compelling reasons to remain at the principal gateway with its passenger operations. An example of such an all-cargo operation at an alternative gateway is Cargolux operation at Huntsville International Airport in Alabama. These flights depend upon the commitment of a very large international freight forwarder – Swiss-German Panalpina – using a non-traditional gateway that could serve the US southeast without the congestion of relatively nearby Atlanta-Hartsfield International Airport. However, in terms of growth at the proposed Hazleton airport, it bears noting that success story HSV accounted for just under 70,000 metric tonnes of cargo in 2006 - ranking #66 in air

cargo in North America. Moreover, HSV is a commercial airport with other aerospace operations on airport

and several key local industries attractive to the European forwarder and carrier.

Examined in Section 1.5, the Port Authority of New York/New Jersey will not simply relinquish market share to Hazleton or any other US airport. Much of its tenant base is – for reasons just described – unlikely to willingly depart. At Newark (EWR), approximately 73% of air cargo is transported by integrated carriers and another 24% is carried on passenger aircraft, leaving only 3% (about 27,000 MTs) of EWRs cargo volumes available to an alternative.

At JFK, the carrier mix is decidedly more favorable to freighter operators and within that group, far less dependent upon integrated carriers than EWR with its FedEx hub. That said, in terms of prospects for the alternative gateway, pure belly operations (40%) and integrators (14%) immediately remove 54% from reasonable consideration. Moreover, as previously discussed, carriers operating both passenger and freighter aircraft have compelling reasons to maintain both operations together. Such combination carriers account for 8 of the largest cargo carriers and roughly 35% of total cargo at JFK. The prime target for an alternative gateway diversion - non-integrator all-cargo airlines - accounts for approximately 11% (about 170,000 MTs) of cargo market share at JFK. Several all-cargo carriers included in that volume are contract (ACMI) carriers flying on behalf of carriers possibly locked into JFK by other arrangements. Unfortunately, the market share capture model favored by the Developer (and earlier by LPA) does not factor in the interdependencies and other operating realities of carriers according to their business models.

As with the preceding (Years One through Five), forecasting Years Six through Twenty hinges entirely upon assumptions. Whereas the preceding timeframe at least drew from UPSs actual operation at PHL, supplemental forecasts will depend entirely upon assumptions about how effectively the Hazleton team attracts tenants from (primarily) JFK.

Moreover, whereas the previous forecasts integrated Boeing forecasts for North American cargo growth, Hazletons international growth would be more likely (if successful) to revolve around recruitment of additional carriers than the organic growth typically portrayed by Boeing and others. Growth in such an environment would more likely resemble intermittent steps as flights and most importantly carriers are added.

As conveyed in Table 1-10, such an effort would occur in a context in which JFKs own recent freight performance (both total and specifically international) has been almost stagnant. From 1997 through 2006, JFKs total freight grew only 0.14% and international freight decreased slightly.

Table 1-10
JFK AIR FREIGHT 1997 - 2006 (METRIC TONNES)

JFK	Enplaned Freight	Deplaned Freight	Total Freight	Intl. Freight
1997	689,985	853,693	1,543,678	1,205,784
1998	618,641	851,229	1,469,870	1,157,798
1999	624,487	964,728	1,589,215	1,181,895
2000	650,188	1,039,817	1,690,005	1,275,016
2001	538,559	841,440	1,379,999	1,061,179
2002	546,330	966,725	1,513,055	1,157,806
2003	578,587	999,632	1,578,219	1,160,275
2004	614,294	1,011,281	1,625,575	1,197,251
2005	608,042	952,994	1,561,036	1,171,410
2006	606,143	939,678	1,545,821	1,198,892

Source: Airports Council International – North America

The key North American-Europe segment has been stagnant (or worse) for much of this period while West Coast airports feeding on a booming Asia have been slightly more robust. Further to the detriment of any prospective alternative, a significant imbalance favors deplaned (inbound) freight that is approximately 50% greater than inbound. Such imbalances favor the maximization of belly space (with passenger revenues covering some of the round-trip costs) and also make the contributions of freight forwarders in balancing directionality even more important.

Table 1-11
HIGH CASE HAZLETON CARGO AIRPORT
AIR CARGO FORECASTS YEARS ONE THROUGH TWENTY

Year	Domestic Freight	Annual Growth % Domestic	Annual Growth MTs	Intl. Freight	Annual Growth % Intl.	Annual Growth MTs	Total Freight
1	231,322			-			231,322
2	241,731	4.50%	10,409	-			241,731
3	252,609	4.50%	10,878	-			252,609
4	263,977	4.50%	11,367	-			263,977
5	275,856	4.50%	11,879	-			275,856
6	287,166	4.10%	11,310	19,162	*	19,162	306,328
7	298,940	4.10%	11,774	20,197	5.40%	1,035	319,136
8	311,196	4.10%	12,257	21,287	5.40%	1,091	332,484
9	323,955	4.10%	12,759	22,437	5.40%	1,150	346,392
10	337,237	4.10%	13,282	23,648	5.40%	1,212	360,886
11	351,064	4.10%	13,827	41,716	*	18,068	392,781
12	365,458	4.10%	14,394	43,969	5.40%	2,253	409,427
13	380,442	4.10%	14,984	46,344	5.40%	2,374	426,785
14	396,040	4.10%	15,598	48,846	5.40%	2,503	444,886
15	412,277	4.10%	16,238	51,484	5.40%	2,638	463,761
16	429,181	4.10%	16,903	70,646	*	19,162	499,826
17	446,777	4.10%	17,596	74,461	5.40%	3,815	521,238
18	465,095	4.10%	18,318	78,481	5.40%	4,021	543,576
19	484,164	4.10%	19,069	82,719	5.40%	4,238	566,883
20	504,015	4.10%	19,851	87,186	5.40%	4,467	591,201

* Years in which growth rates are distorted by projected introduction of new carrier

Table 1-11 represents the **High Case – successful track** forecast for Years 1-20 of the proposed all-cargo airport. Years One through Five (relying entirely upon the recruitment of the UPS regional operation from PHL) were examined in the preceding section.

Beginning in **Year Six** and in 5-year intervals thereafter, the forecasts introduce the arrival of international carriers diverted from JFK or another gateway. To calibrate the impact of such carriers, we used real 12-month volumes from major (non-integrator) all-cargo carriers presently serving JFK. By using these volumes for a solid 12-month period, we were able to smooth potential distortions of seasonality. By excluding combination carriers, we have prevented the introduction of any belly cargo volumes relatively unavailable to all-cargo airports. As represented in Table 1-11, we assumed that on average domestic cargo will grow at the same accelerated rate – due to the competitive advantage of the regional integrator hub – but applied the Boeing forecasted rate (5.40%) for North America-Europe to the international component. The Consultant used North America-Europe in keeping with our preference for prevailing operational realities in the region,

while the LPA study favored growth with Asia – projected by Boeing as the worlds cargo-growth engine for the next twenty years but traditionally more inclined to US West Coast gateways. Preference for either multiplier is subjective.

Hence in the Consultant forecasts, total freight results from a blended rate of North American growth for the integrator traffic and the (predominantly) N. America-Europe rate for international all-cargo carrier traffic. At the end of twenty years, such a rate would make the proposed Hazleton all-cargo airport host to movements of about 590,000 metric tonnes[11] of airfreight, slightly exceeding the combined volumes (582,000 metric tonnes) of cargo handled in 2006 by PHL and Pittsburgh International Airport. Such a volume in 2006 would rank the airport #14 in North America – behind San Francisco International Airport.

1.7 AIR CARGO MARKET CONCLUSIONS

Based on the state of the air cargo industry, operating tendencies of its business sectors, experiences of all-cargo airports, as well as competition of regional gateways and other airports, the Consultant projected two potential scenarios for the prospective all-cargo airport at Hazleton.

The Hazleton airport could follow unsuccessful efforts of the North Carolina Global TransPark and MidAmerica Airport near St. Louis. Developers correctly stress neither failure represented an alternative to such gateways as found in the US Northeast – the congested airspace, roadways and land supporting New York and Philadelphia. As importantly, Global TransPark and MidAmerica were developed almost entirely with public money and without enforceable commitments from major tenants. Not only should responsible Commonwealth public entities require the latter but also the Hazleton Developer has suggested it would be required by their own prospective investment partners. In essence, the Developer has suggested such a failed outcome is inherently untenable due to the fact that their private investors would not allow the project to proceed without satisfying thresholds of confidence in their ability to successfully attract major tenants missing from the failed projects previously described.

In contrast with the zero tonnage unsuccessful scenario, a High Case (successful) Scenario was developed with forecasts based upon surrogates and assumptions – absent an operating history. While the Developer and previously LPA (authors of an earlier study) based forecasts upon regional market share capture, the Consultant used tonnages of carriers now operating at Philadelphia and New York JFK International Airport. While assumptions are necessary in either methodology, the Consultant maintains a carrier-driven forecast is more appropriate to representing the experience of creating and growing an alternative gateway.

The High Case Scenario utilized an initial (Years One through Five) volume derived from UPS current regional hub at PHL, then introduced international contributions in five-year increments using actual

[11] 651,687 short tons.

tonnages of individual all-cargo airlines now operating at JFK. Between these extraordinary events, annual growth was calculated using Boeing's forecasts for North America (for the integrator regional hub) and for Europe-North America for the international component. While inexact, the Consultant believes a methodology using such surrogates is more realistic than one using regional market share capture that, for example, includes belly cargo carried on passenger aircraft as part of the regional total from which market share will be captured by an all-cargo airport.

The Consultant used the integrator volume in the High Case Scenario, in spite of discouraging feedback from the three integrators. FedEx specifically registered no interest in the Hazleton development, DHL noted it already has a hub in Wilmington, OH and is paying for a vacant hub in Cincinnati, while representatives of UPS gauged likelihood its regional hub would leave PHL as 2% or less. Historically, not one all-cargo airport has been successfully developed in North America absent an integrated carrier as the anchor tenant. Moreover, even relatively successful examples with integrator-anchors have been challenged to become profitable – even with legacy airfields redeveloped from previous military purposes.

The Hazleton Developer has also had discussions with DHL and UPS but have suggested a prospective partner with sufficient influence to bring multiple international carriers (non-integrators). If such a partner can deliver 5-6 carriers, comparable scale of activity as projected by an integrator's regional hub could be accomplished.

Attracting international cargo airlines to the alternative gateway will prove almost as rare. Even at successful all-cargo airports cited – such as Alliance in Ft. Worth – prying international carriers from traditional gateways has been difficult. Foreign carriers have expanded almost exclusively to other major gateways – such as Asian carriers initiating service to Dallas/Ft. Worth, Houston and Atlanta, rather than simply traditional trans-Pacific gateway LAX. Notably, such operations have more typically involved the diversion of growth rather than moving existing operations from a gateway. Claims that the US Northeast is uniquely congested must be reconciled with the inability of Chicago O'Hare alternative (and UPS regional hub) Rockford, LAX alternative (and UPS regional hub) LA/Ontario and San Francisco alternative (and FedEx hub) Oakland to attract international cargo carriers. Again, the Hazleton developers are suggesting a development that is not impossible but would be unlike any other all-cargo airport developed in North America.

The Consultant developed cargo forecasts that accommodate such developments for the purpose of projecting potential economic impact and as an input to other considerations. The Consultant also provided the client with industry knowledge and case studies of all-cargo airports – successful and unsuccessful. While the Consultant developed scenarios of cargo tonnages and economic impact based on industry trends that were sensitive to the ambitions of the Developer, the burden is on the Developer to provide sufficiently compelling confidence that the Hazleton airport development will be more like the unprecedented all-cargo airport of the High Case Scenario than like airports presented as 'cautionary tales' in this study.

CHAPTER 2
AIR CARGO INFRASTRUCTURE NEEDS

2.1 INTRODUCTION

The purpose of this section is to evaluate the infrastructure needs of the proposed Hazleton Air Cargo Airport, and to provide an independent verification of the basic infrastructure needs for the proposed facility. Items to be evaluated include the runway, taxiway, aprons, NAVAIDS, access roadway and other ancillary infrastructure needed to provide an operational facility. These items have been quantified and tabulated to prepare an independent cost estimate to help validate the potential costs for the project, and will be used later in the economic impact analysis. Members of the developer's team were interviewed during the initial preparation of the analysis to help determine the assumptions used for generating the required infrastructure and to review the initial layout sketch of the Airport that was prepared by the URS Corporation.

Because this is a green-field site, all necessary infrastructures must be constructed prior to the Airport being operational. This analysis focused on those items that are considered basic infrastructure for an Airport which must be in place prior to opening day, versus those items which may be phased in over time. For instance, the developer may elect to construct only a portion of the aircraft apron initially, with the intention of expanding the aircraft apron as demand grows. However, a phased approach is difficult to implement for a runway, as the entire length of the runway will be needed on day one to support international air cargo aircraft.

2.2 INFRASTRUCTURE REQUIREMENTS

A list of basic infrastructure requirements was prepared to help provide an independent verification of the building program, and ultimately was used to generate the independent cost estimates for the project. In order to prepare realistic estimates of probable construction costs, the airport design group was established as defined by the Federal Aviation Administration (FAA). The design group is a designation of the aircraft wingspan and approach speed of the largest aircraft expected to use the facility on a regular basis as shown in Table 2-1 and Table 2-2. A regular basis is defined as 500 aircraft operations per year. An operation is defined as either an aircraft landing or an aircraft departing. The following is a list of representative aircraft with their associated wingspan and approach speeds. A conceptual sketch of the Airport layout is shown in Figure 2-1.

Table 2-1
AIRCRAFT APPROACH CATEGORY AND AIRPLANE DESIGN GROUP

Aircraft Approach Category	Approach Speed
Category A	Speed less than 91 knots
Category B	Speed 91 knots to less than 121
Category C	Speed 121 knots to less than 141
Category D	Speed 141 knots to less than 166
Category E	Speed 166 knots or more
Airplane Design Group	**Wingspan**
Category I	Less than 49 feet
Category II	49 feet to less than 79 feet
Category III	79 feet to less than 118 feet
Category IV	118 feet to less than 171 feet
Category V	171 feet to less than 214 feet
Category VI	214 feet to less than 262 feet

Source: FAA Advisory Circular 150/5300-13

Table 2-2
AIRPLANE DESIGN GROUP AIRCRAFT

Airplane Design Group	Representative Aircraft
I	Beech Baron 58A, Cessna 150, Gates Learjet 35A, Piper Navajo, McDonnell Douglas F-18, General
II	Beech King Air C90, Canadair Regional Jet, Cessna Citation III, Gulfstream IV, Grumman F-14, Saab 340
III	Airbus A-320, Boeing 727, Boeing 737, Douglas DC-9, Fokker 100, Gulfstream V, McDonnell-Douglas
IV	Boeing 757, Boeing 767, Airbus A-300, Douglas, DC-10, Lockheed C-141, Boeing MD-17, Boeing MD-11
V	Airbus 340, Boeing 747, Boeing 777
VI	Antonow AN-124, Lockheed C-5B, A-380

Source: Jane's All The World's Aircraft

It is assumed that the Airport would be designed to FAA Airport Reference Code (ARC) category D-V standards. These standards include the majority of the largest aircraft expected to use the facility on a regular basis which are the Boeing 747 and 777 aircraft. Those runway design standards do not include the largest air cargo aircraft, the Airbus A-380, which is an ARC D-VI aircraft. However, the key term is "regular use," so while the runway would be designed for ARC D-V aircraft, the A-380 aircraft would still be able to use the proposed aircraft as long as the use is less than 500 operations annually. Given the newness of this aircraft, this is a reasonable assumption.

2.2.2 Runway Length Analysis

The required runway length is one of the most critical determinations for the physical infrastructure of an airport. This section addresses specific requirements relative to the ability of the runway at the proposed

Hazleton air cargo airport to accommodate the desired aircraft. At a minimum, runways must have the proper length, width, strength, and prescribed FAA and PennDOT Bureau of Aviation design standards to safely accommodate the design aircraft for the runway, the Boeing 747.

The typical aircraft traffic at Hazleton Air Cargo Airport will include those aircraft typically seen at an air cargo integrators hub such as JFK International Airport, Newark International Airport, or Philadelphia International Airport.

A runway length planning analysis was conducted to determine recommended runway length requirements for various categories of aircraft, as well as for specific aircraft. The FAA's Airport Design Microcomputer Program was used as an initial screening tool to determine general runway length requirements along with a specific analysis for individual aircraft types. The results of this runway length analysis are listed in the following Table 2-3.

Figure 2-1
CONCEPTUAL AIRPORT LAYOUT

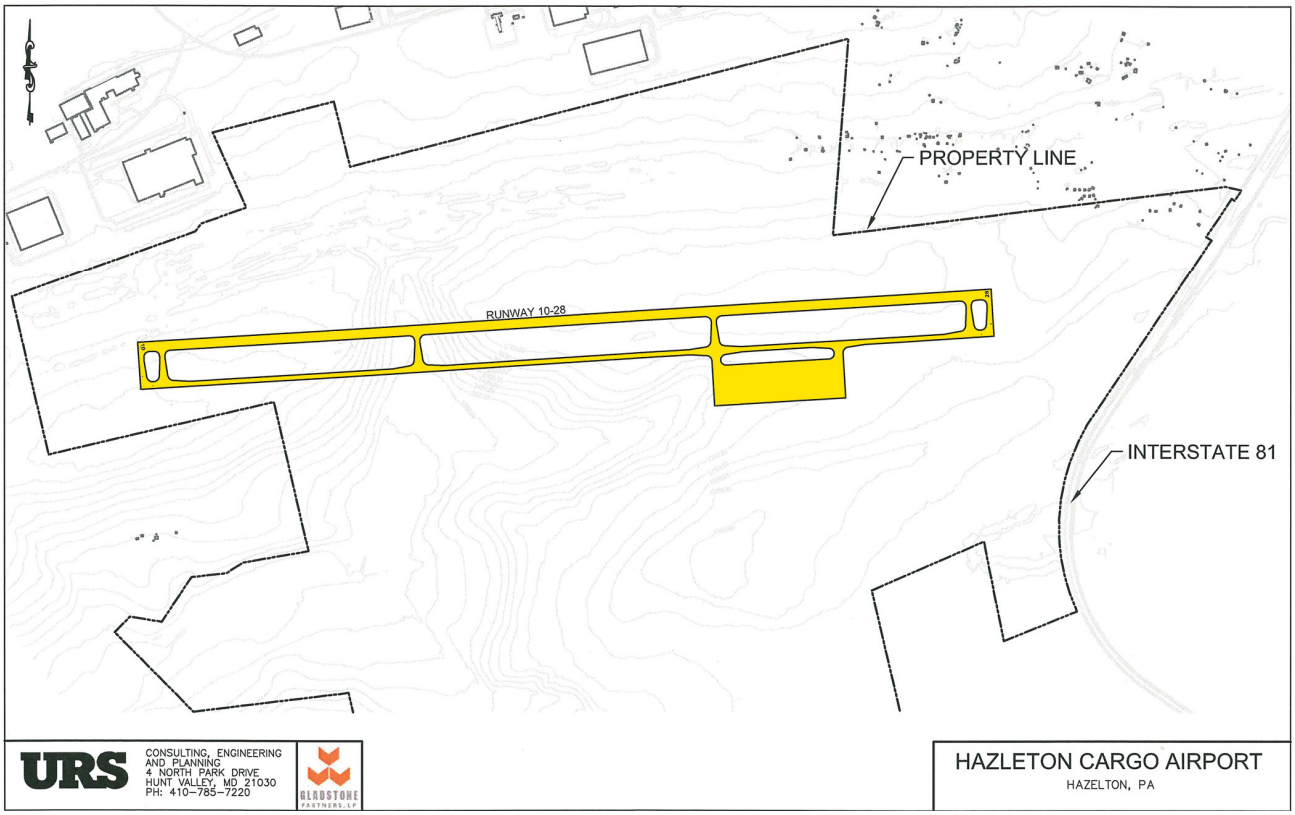


Table 2-3
AIRCRAFT RUNWAY LENGTH REQUIREMENTS

Aircraft Category	Recommended Runway Length
Small airplanes (Less than 12,500 lbs.)	
100% of fleet (Less than 10 seats)	3,680 feet
Small airplanes (Less than 12,500 lbs.)	
100% of fleet (10 or more seats)	4,280 feet
Large airplanes (Between 12,501 lbs.-60,000 lbs.)	
75% of fleet @ 60% Useful Load	5,370 feet
75% of fleet @ 90% Useful Load	7,000 feet
100% of fleet @ 60% Useful Load	5,630 feet
100% of fleet @ 90% Useful Load	8,520 feet
Large Airplanes (Greater than 60,000 lbs.)	
500 Mile Stage Length	5,050 feet
1,000 Mile Stage Length	6,000 feet
2,000 Mile Stage Length	7,660 feet
3,000 Mile Stage Length	9,030 feet
Specific Aircraft	
Boeing	
B-737-200	8,800 feet
B-737-300	8,100 feet
B-747-400 (Freighter)	11,800 feet
B-747-800	10.600 feet
B-757-300	9,500 feet
B-767-300 (Freighter)	10,500 feet
B-777-200 LR	**13,200 feet**
Airbus	
A-380 (Freighter)	16,000 feet
A-319	8,000 feet
A-321	9,000 feet
A-330	8,500 feet
A300-600	8,700 feet

Source: FAA Airport Design Microcomputer Program AD 4.2D; Aircraft Manufacturer's Airport Planning Manuals; RS&H Analysis, 2008

As shown in Table 2-3, the proposed runway length of 13,000 feet is more than capable of accommodating the majority of the air cargo fleet used worldwide, including the Boeing 747 and 777 aircraft. The only exception would be a reduction in payload with the Airbus 380 Freighter. However, given the recent introduction of the aircraft to the market, adjustments to the performance criteria may be made in the future, and the analysis assumes maximum take-off weight..

2.2.3 Taxiways

A full length parallel taxiway is a safety requirement for an airport of this size, and will be designed and constructed during the initial phases. Exit taxiways will also be provided as a means of entering and exiting

the runway system. They permit free flow of the aircraft to the parallel taxiway to allow the aircraft to clear the runway. The taxiways are designed to accommodate FAA Design Group D-V aircraft and the pavement should be of a similar section to that of the runway. The developer plans to construct the taxiway to the same width as the runway (150 feet) to allow the parallel taxiway to function as a temporary runway in the event that the runway is closed due to an aircraft incident or maintenance. The taxiway will have medium intensity taxiway lights for use during periods of low visibility and no additional lights will be installed on the taxiway, such as medium or high intensity runway lights for temporary use. No additional NAVAIDs will be provided for the temporary runwayl. This results in the taxiway only being able to accommodate traffic during periods of good visibility and weather.

2.2.4 NAVAIDS

NAVAIDS and landing aids are generally grouped into airport facility equipment that help pilots locate the Airport, provide horizontal guidance information for a non-precision approach, provide horizontal and vertical guidance information for a precision instrument approach, or provide visual cues to assist pilots in locating the Airport and making final landing corrections.

Given the time-sensitive nature of accommodating air cargo aircraft, it is important that the Airport offer all-weather capability, particularly given the weather conditions for the greater Hazleton region. The proposed Airport will require an Instrument Landing System (ILS) for either runway end as part of the initial construction. Over time, there may be some consideration given to upgrading the approach to what is called a Category 2 or 3 ILS approach, which involves the installation of additional instrumentation and in-pavement lights to help guide the aircraft during periods of even lower visibility. But for the purposes of the initial cost estimates, a Category 1 ILS approach is assumed for both runway ends as part of the initial construction. This would also include the required approach lighting system for either runway end and approach visual aids to provide guidance to pilots.

2.2.5 Apron

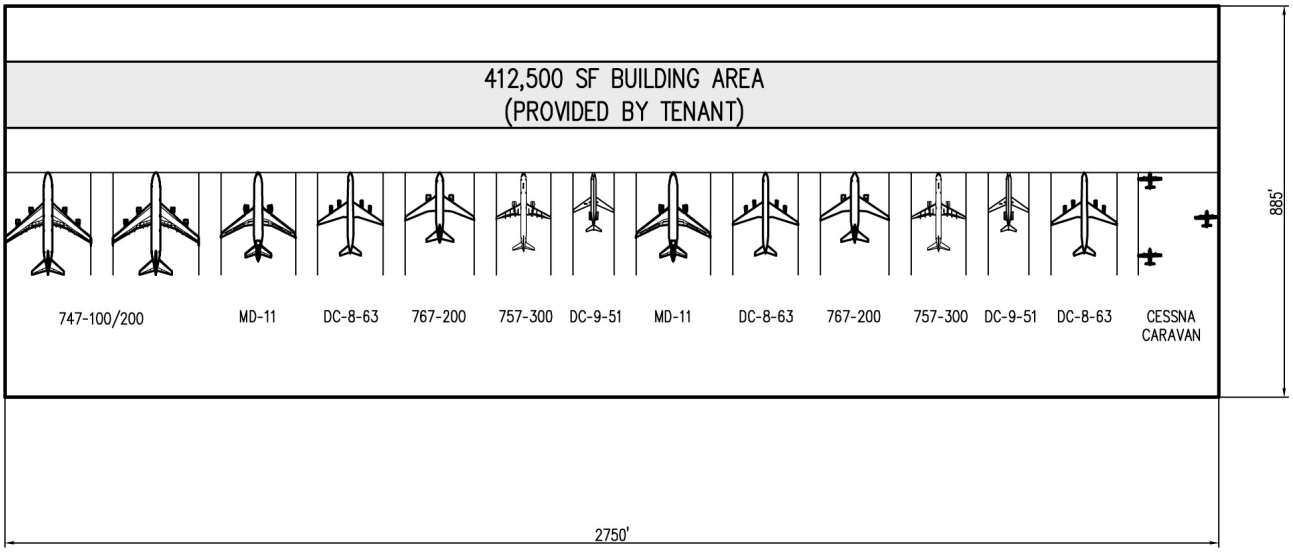
The aircraft apron was also analyzed for adequate sizing. As a starting point, the layout of the apron of the proposed Airport was used to help determine whether the apron was of sufficient size to accommodate the forecasted demand. A sketch of a conceptual apron is shown on Figure 2-2, along with representative aircraft expected to use the facility, to provide a sense of scale and amount of aircraft that can be accommodated. For graphic purposes, an air cargo warehousing building is shown; these structures will be constructed by tenants with a ground lease by the developer. No costs for the construction of these buildings have been included in the overall estimates.

As shown, the apron is of sufficient size to accommodate the initial demand at the Airport. It can be easily expanded as needed for future growth, or if a different configuration as desired by a tenant.

2.2.6 Air Traffic Control Tower

An Air Traffic Control Tower (ATCT) is shown on the development sketch of the developer's plans. Air Traffic Control Towers are used to provide guidance to pilots while arriving and departing at airports and are considered an essential piece of infrastructure at busy commercial service airports or airports with intersecting or parallel runways. Due to the low amount of projected aircraft traffic, an ATCT would not necessarily be required by the FAA for the initial opening of the Airport. There are numerous single runway,

Figure 2-2
AIR CARGO APRON LAYOUT



commercial service airports across the country that are operated without an ATCT. At these facilities, a UNICOM frequency is used for arriving or departing aircraft to announce their intentions, and this system is safe and efficient.

The other cost associated with the construction of an ATCT is personnel staffing. Due to the low traffic volume, it is unlikely that the FAA would consider staffing the ACTC with FAA ATCT personnel. The Tower would more likely be staffed by FAA-trained controllers but would be established as an FAA "contract tower". Costs for staffing the tower would be borne by the owner or manager of the Airport. Due to the timing of air cargo flights, it is likely that the ACTC would be staffed 24 hours a day, since a significant amount of traffic would occur during the evening and nighttime hours.

While an ATCT is not necessary during the initial phase of construction, conversations with the Developer indicate that they plan to construct a tower during the initial phase; therefore, estimates were developed for this item.

2.2.7 Airport Rescue and Fire Fighting Building and Equipment

An Airport Rescue and Fire Fighting (ARFF) building and equipment provide the necessary safety support in the event of an aircraft emergency. A proposed ARFF building is shown on the development sketch of the proposed Airport.

Similar to the ATCT, FAA Part 139 requirements do not specifically require ARFF equipment for an all-cargo airport and focus more on passenger service facilities. ARFF equipment and staff are determined by FAA standards, which consider aircraft size and number of seats along with the frequency of daily operations. Because the Airport will be used solely by air cargo aircraft, the FAA is mainly silent on the requirements for ARFF equipment. As a result, the ARFF equipment is not necessarily required by the FAA but is recommended for safety in the event of an accident.

Similar to the ATCT, while an ARFF is not required during the initial phase of construction, discussions with the Developer indicate that they intend to construct one during the initial phase of construction. For the purpose of this analysis, an approximately 5,000 square foot ARFF building with two bays is included for cost estimating purposes, as well as the acquisition of two ARFF vehicles.

2.2.8 Snow Removal and Airport Maintenance Equipment Building

Due to the climatic conditions of the site, snow removal will be necessary during the winter months. Most airports offer both passenger service as well as air cargo activity, and the costs for snow removal are shared among all entities. In this situation, the air cargo operators will be required to absorb the entire cost burden for snow removal. In addition, due to the proposed 13,000 foot long runway, parallel taxiway and aircraft apron, there is a considerable amount of surface area requiring snow removal. As a result, it is suggested that a 10,000 square foot snow removal and airport maintenance equipment building be constructed. At least 10 pieces of snow removal equipment are necessary, along with storage for ice removal chemicals and glycol for de-icing operations. The building should also be large enough to accommodate other airport maintenance equipment such as broom equipment, mowers and dump trucks as well as facilities to maintain the equipment and house the personnel.

2.2.9 Airport Administration Building

A modest airport administration building will be constructed for a small staff of airport management personnel, and space for US Customs and Border Protection inspection staff. For the purpose of this analysis, a building size of 7,500 square foot was used.

2.2.10 Aircraft Fueling

A large underground Jet A fuel line runs underneath the proposed Airport site. It is reasonable to assume that a secondary line will be constructed along with the necessary pumping equipment to provide aircraft fuel to the site without transporting it from off-site. It is also assumed that a total of 100,000 gallons of above ground storage be constructed to provide the necessary volume for settling and testing of fuel prior to the transfer of fuel to aircraft. A minimum of two fuel tenders are calculated to be required to provide the transport of fuel from the storage location to the aircraft.

2.2.11 Aircraft De-icing

Due to the climatic conditions of the site, aircraft de-icing will be required for the safe operation of aircraft using the facility. Although the Airport may experience a relatively low volume of traffic as compared to an air carrier passenger airport, because of the length of the runway, it may be prudent to construct two separate de-icing pads on either end of the runway adjacent to the parallel taxiway. Each pad would contain the necessary glycol collection systems required by the EPA during de-icing operations.

2.2.12 Fencing and Security

Due to the events of 9/11, there is an emphasis on fencing and security. While security requirements for air cargo areas and aircraft have lagged behind passenger aircraft facilities, it is likely that the FAA will announce new security requirements for air cargo aircraft in the near term. For the purposes of this analysis, it is assumed that the perimeter of the Airport will be fenced with a minimum of eight foot fencing and that access control gates will be installed in the terminal area to control access to the Airport Operations Area. Video surveillance technology including cameras and monitors will be installed to help monitor the terminal area 24/7 and provide tape backup.

2.2.13 Airport Access

The airport intermodal chapter provides a more detailed analysis on Airport access from the Interstate System. A four lane divided roadway will be constructed to provide access from SR 424. No additional roadways serving the adjacent industrial / office park are included.

2.2.14 Airport Utilities

The airport intermodal chapter provides a more detailed description and analysis concerning utilities to the Airport site. It is assumed that the existing underground acid mine tunnel will be treated on-site to provide potable water to both the Airport and the adjacent industrial / office park. Sewer to the site will be handled by an on-site treatment plant sized sufficiently to accommodate the Airport and the adjacent industrial / office park. There is an electrical sub-station on-site so the costs have been assumed for running power from the sub-station to the terminal area.

2.3 ESTIMATES OF PROBABLE CONSTRUCTION COSTS

Estimates of probable construction costs were developed for the project using the available project definition information. The following is a summary of more detailed assumptions made in the preparation of the estimates of probable construction costs. Each material designation is defined by the appropriate FAA construction specification number.

Land Acquisition

The actual costs of the simple acquisition of the property for the proposed air cargo airport was provided by the Developer. A lump sum amount of $51,775,000 was used for the estimate. No additional verification of the actual costs paid for the property with local government records was made.

Runway and Taxiway Pavement

Based on the proposed layout, there is approximately 772,000 square yards of runway, taxiway and apron pavement that will be constructed of concrete material. This includes 13,000 linear feet of runway and parallel taxiway pavement that is 150' wide. As mentioned previously, the taxiway is proposed to be constructed at the same width as the runway to serve as a temporary back-up runway if needed. Connector taxiways between the parallel taxiway and the runway are 75' wide. There is approximately 282,000 square yards of shoulder pavement. Based on a theoretical fleet mix of 1,200 annual departures each of the following aircraft – B747, B767, B777, A300, and DC10 – a rough pavement design was completed for the aircraft pavement and a separate design for the paved shoulder.

The proposed pavement section for the aircraft pavement (runway, taxiway, and apron) is 16" P-501 Portland Cement Concrete, 6" P-304 Cement Treated Base, and 6" P-209 Crushed Aggregate. The shoulder pavement section is 4" P-401 Bituminous Asphalt and 13" P-209 Crushed Aggregate.

The expected cost for the aircraft pavement is $80/SY for P-501, $20/SY for P-304 and $6.50/SY for P-209 for a section cost of $106.50/SY. The expected cost for the shoulder pavement section is $30/SY for P-401 and $14/SY for P-209 for a section cost of $44/SY.

The estimated cost for the aircraft pavement is $82,218,000, and 12,408,000 for the shoulder pavement. The combined estimated cost for these two sections is $94,626,000.

Earthwork

Preliminary quantities for earthwork have ranged between 20 and 50 million cubic yards. Blasting is expected to be required for the excavation process, increasing the average cost of the work. Using the average of 35 million cubic yards and a cost of $6/CY, the cost for earthwork would equal $210,000,000.

Storm Sewer

A creek passes under the western end of the proposed runway/taxiway. The straight-line distance from toe of slope to toe of slope is 2,700 LF. This crossing will require a significant structure such as an arch culvert. The cost is projected to be $900/LF. The additional drainage requirements are estimated to cost $150,000. The estimated cost for the storm sewer system is $2,580,000.

Sanitary Sewer

A self contained treatment plant will be constructed on-site to serve the Airport and the adjacent industrial / office park. The Consultant reviewed similar systems and estimated this cost at $5,000,000.

Water and Gas

Water from the on-site acid well will be treated on-site to be made potable and used for the Airport and the adjacent industrial / office park. The existing gas line from the Humboldt Industrial Park will be extended into the site. There are two existing gas lines crossing the property that will have to be protected. The water treatment facility is estimated to cost $5,000,000. The protection and extension of the existing gas lines is estimated to cost $1,000,000. The estimated combined cost would be $6,000,000.

Erosion and Sediment Control

For a project of this size, a preliminary estimate for erosion and sediment control is one percent of the earthwork cost. One percent of $210,000,000 is $2,100,000.

NAVAIDS

NAVAIDS include the following items: glide slope antennas for both runway ends, localizer antennas, marker beacons, approach lighting systems (ALSF-2), touchdown zone lighting, runway centerline and edge lighting, taxiway centerline and edge lighting, airfield electrical vault, PAPI-4, cable, conduit, and airport beacon. The estimated cost for these is be $19,250,000.

De-icing Pad

Because of the location of the Airport, deicing activities are required. Because of the length of the taxi route from the apron to the runway ends, two de-icing areas are recommended; one at each end of the parallel taxiway. The estimated cost to construct the deicing pads, the collection system, and the storage/disposal facilities is $5,000,000 per pad. The estimated total for the two pads is $10,000,000.

Air Traffic Control Tower

Based on a recently completed tower cost in Martinsburg, WV of $4.99 million, the estimated cost for a new tower is $5,000,000.

Aircraft Rescue and Fire Fighting Facility

Design and construction of an ARFF building costs around $1,500,000. ARFF trucks range in cost from $500,000 to $1,000,000, depending on size and features. Assuming the Airport has two trucks, at $750,000 each, the equipment will cost $1,500,000. The estimated cost for ARFF building and equipment is $3,000,000.

Snow Removal and Airport Maintenance Equipment Building

Design and construction of a six-bay Snow Removal Equipment (SRE) and Maintenance Building will cost around $1,200,000. SRE ranges in cost from $250,000 to $800,000 depending on the size and purpose of the equipment. Assuming the Airport has four trucks at $500,000 each, the SRE will cost $2,000,000. Maintenance equipment also varies in cost between $25,000 and $100,000, again varying with size and functionality. Assuming the maintenance equipment costs $75,000 each, two pieces cost $150,000. The estimated cost for the SRE/Maintenance building and equipment is $3,350,000.

Access Roadways

The access roads will connect to an existing interchange at SR 924 (Exit 143) to Interstate 81 about two miles north of the project site. This will be the initial short-term solution to provide access to the site. The access roadway is a four-lane road with paved shoulders. The total width is to be 60'. The pavement section is to be 8" of asphalt on 16" of aggregate. The estimated cost is $5,490,000.

Interchange Improvements

As mentioned above, the connection to SR 924 will be a short term solution to provide access to the site. The long-term solution will be to enhance the existing interchange at SR 424. The existing interchange at 424 has a stub roadway system that extends over Interstate 81, which can then be extended with relative ease to provide access for the proposed Airport development.

Fuel Farm

The Airport will tap into the existing underground Jet A fuel line traversing the site to supply the Airport with Jet A fuel. The Airport will construct five 20,000 gallon tanks at $200,000 per tank; the estimated cost is $1,000,000. Four fuel trucks at $250,000 per truck will cost $1,000,000. The combined estimated cost is $2,000,000.

Fencing and Security

The future Airport Operations Area (AOA) perimeter is approximately 50,000 feet. The Airport will construct several access control gates serving the terminal area. At $20/LF for fencing (including manual gates), the perimeter fencing will cost approximately $1,000,000. Electronic access control and video surveillance

around the terminal area costs approximately $500,000. The combined cost of fencing and security is approximately $1,500,000.

Power

A lump sum of $10,000,000 will be needed to provide power to the site.

Administration Building

A 5,000 square foot building at $300/SF costs $1,500,000. The associated parking lot with 50 spaces and lighting, drainage improvements, and marking costs approximately $200,000. The estimated cost for the Administration Building is $1,700,000. Table 2-4 presents a summary of the potential project costs.

Table 2-4
ESTIMATE OF PROBABLE CONSTRUCTION COST

Item	Estimated Quantity	Unit Price	Cost
Land Acquisition	1	$ 51,775,000	$ 51,775,000
Runway, Taxiway & Apron Pavement	772,000	$ 106.50	$ 82,218,000
Shoulder Pavement	282,000	$ 44	$ 12,408,000
Earthwork	35,000,000	$ 6	$ 210,000,000
Stream Crossing	2,700	$ 900	$ 2,430,000
Storm Sewer	1	$ 150,000	$ 150,000
Sanitary Sewer	1	$ 5,000,000	$ 5,000,000
Water and Gas	1	$ 6,000,000	$ 6,000,000
Erosion and Sediment Control	1	$ 2,100,000	$ 2,100,000
NAVAIDS (See Attached List)	1	$ 19,250,000	$ 19,250,000
De-icing Pad	2	$ 5,000,000	$ 10,000,000
Subtotal - Airfield Construction			**$ 401,331,000**
Air Traffic Control Tower	1	$ 5,000,000	$ 5,000,000
Aircraft Rescue and Fire Fighting Facility	1	$ 3,000,000	$ 3,000,000
Snow Removal Equipment and Airport Maintance Building	1	$ 3,350,000	$ 3,350,000
Access Roadways	1	$ 5,490,000	$ 5,490,000
SR 424 Interchange Improvements	1	$ 10,000,000	$ 10,000,000
Fuel Farm	1	$ 2,000,000	$ 2,000,000
Fencing and Security	1	$ 1,500,000	$ 1,500,000
Power	1	$ 10,000,000	$ 10,000,000
Administration Building	1	$ 1,700,000	$ 1,700,000
Subtotal - Site Construction			**$ 42,040,000**
Total			**$ 443,371,000**
10% Contingency			$ 44,337,100
Total - Construction			**$ 487,708,100**
Planning and Design Fees			$ 14,631,243
Grand Total			**$ 502,339,343**

Source: RSH Analysis, 2008

2.4 SUMMARY

The purpose of the independent analysis is to validate the potential costs for the project as proposed by the Developer. The estimate of probable construction cost for the proposed Hazleton air cargo airport is estimated to be $502,000,000 as compared to the an original estimate by the Developer of approximately $475,000,000. The estimate by the Developer has since been revised to approximately $550,000,000 as the project is further refined during the preliminary design process. For a project of this magnitude, a 10% variance is considered reasonable and helps to provide an independent estimate of the estimates of probable construction costs. The costs prepared in this analysis were also used as part of the economic impact analysis shown later in the report.

CHAPTER 3
ECONOMIC IMPACT ASSESSMENT OF THE PROPOSED HAZLETON CARGO AIRPORT

3.1 OVERVIEW AND APPROACH

The sponsors of the study have charged the Consultant with evaluating the reasonableness of assumptions used to develop economic impact figures cited by the Developer. In order to complete this task, the Consultant will evaluate the assumptions, methodology, and results of the Developer's analysis, as well as conduct an independent economic impact analysis of the proposed Hazleton Cargo Airport based on the market findings presented in Chapter 1. A list of key subtasks of this analysis to be completed by the Consultant in this chapter is summarized is as follows:

- Review of Developer's impact analysis assumptions and methodology;
- Develop Consultant (Martin Associates) model for proposed Hazleton Cargo Airport activity;
- Compare results of Consultant model to Developer results;
- Estimate economic impacts of proposed airport based on the results of Consultant market forecast;
- Develop Consultant model to assess the impacts of the construction activity of the proposed airport; and
- Develop Consultant industrial real estate model to estimate the impacts of the development of the 3,500 acres adjacent to the south of the proposed airport site.

3.2 REVIEW OF DEVELOPER ECONOMIC IMPACT ASSUMPTIONS, METHODOLOGY AND RESULTS

The first element of the proposed economic impact evaluation is the review of assumptions, methodology and results presented by the Developer. This review will include the source of the job creation ratios, tonnage assumed in relation to the results, the multiplier model (i.e. REMI, IMPLAN etc.) used, and the sectors in which the jobs occur. The Consultant's evaluation will also identify and define the other figures cited by Developers, including indirect economic activity.

3.2.1 Review and Assessment of Developer Assumptions and Methodology in Developing Economic Impact Analysis

From the outset, it is necessary to acknowledge that due to the fact that The Hazleton cargo Airport is in the developmental stage, with no actual data to use in the analysis, the impact figures presented by the Developer were not derived from a full economic impact study of the proposed Hazleton Cargo Airport. Rather, their economic figures have been developed from the use of real world examples of existing methodologies and economic impact studies that have been conducted for other airports.

Two specific examples of methodologies were identified as the baseline modeling scenario for the Developer impact analysis:

- Memphis International Airport (MEM); and
- Washington Dulles International Airport (IAD).

The full economic impact study of the Memphis International Airport (MEM) was conducted by the University of Memphis in May 2005. The MEM methodology and model is used by the Developer as a comparison due to the fact that MEM has been the world's busiest cargo airport since 1992, driven by FedEx national Super Hub operations, which account for nearly 94% of the total cargo handled at MEM. However, Memphis International Airport is not a cargo-only airport as the airport handles over 11 million passengers annually, which according to the FAA, ranked as the 34th busiest passenger airport in the United States in 2006.

Key assumptions and methodology used in 2005 economic impact study of MEM include the following:

- The impact analysis completed by the University of Memphis is based on the RIMSII (Regional Input-Output Modeling System) multiplier published by the US Department of Commerce, Bureau of Economic Analysis, which measures the direct, indirect and induced ripple effects throughout the economy.
- The 2004, enplaned freight at MEM, which totaled 4,000,019,000 pounds, was multiplied by the FedEx revenue per pound of $2.51 obtained from FedEx's financial history reports. The multiplication resulted in total cargo revenue to FedEx of $10,040,047,690.
- Since the RIMS II multipliers used in this analysis were based on 2000 dollars, the 2004 total cargo revenue needed to be converted into 2000 dollars to avoid overstating the impact in the final analysis. The resulting total cargo revenue to FedEx in 2000 dollars was $9,240,043,890.
- The $9,240,043,890 of "direct expenditures" or total FedEx cargo revenue was then applied to the RIMS Category "Air Transportation" and resulted in the following impact figures:
    - 155,872 jobs;
    - $19,527,770,249 in output; and
    - $5,588,979,055 in earnings.

While the RIMS II is an accepted and widely used multiplier, there are several key fundamental issues with the calculations and results from this University of Memphis analysis. First, although the cargo composition at MEM is more akin to that of the anticipated Hazleton cargo operations, the large-scale operation of the FedEx hub will operate at different economy of scale than that of a Hazleton "regional hub". Secondly, the RIMS category "Air Transportation" is not specific to air cargo transportation, but rather includes multiplier effects for both passenger and freight transportation.

The impacts are based on the amount of revenue received by FedEx, not the value of the producing industries of the enplaning freight being manufactured in the Memphis region. Therefore, the assumption that the "induced jobs" include high tech industries and manufacturing industries is inconsistent. This omission of the regional manufacturing sector actually results in an underestimating of impacts.

Next, there is not a factor to represent what portion of this enplaned freight is originating in the Memphis or regional area. These figures assume that all of the cargo enplaned at the FedEx Super Hub is originating in the local and regional economy – and that is certainly not the case and therefore results in a gross overstating of the impacts.

Lastly, there is no mention of where these jobs, earnings and output occur. According to this analysis, one is led to believe that all of these jobs would occur in Memphis, when in reality it appears that the impacts would be on a regional and perhaps national level.

The second example study the Developer cites in their analysis is the Washington Dulles International Airport (IAD) economic impact analysis completed by Martin Associates in June 2006. This Dulles study cited by the Developer is a representative example of a key international airport in the Mid-Atlantic Corridor with highway connectivity to I-81, I-70 and I-95. Secondly, in 2005, 303,064 metric tons of cargo – both freight and mail moved through IAD, which is more comparable to the tonnage projected to be handled the proposed Hazleton Cargo Airport. It is advantageous that this economic impact analysis was conducted by the Consultant (Martin Associates). While the full methodology will be detailed in the following sections, highlights of the Martin Associates methodology include:

- Direct job data was collected from interviews of airport tenants and service providers – the study conducted for the Washington Dulles International was developed from 374 telephone interviews;
- The direct income by category was obtained directly from the interviews by multiplying the average annual salaries for each of the job categories. A respending effect was then estimated using an income multiplier for the Washington DC Metropolitan Area, estimated by the Bureau of Economic Analysis, RIMS II;
- It is to be emphasized that an input/output model was not used to estimate induced jobs. Instead of using a regionalized input/output model, respending categories based on area specific data, and data specific to the region in which employees dependent upon each of the airports reside were developed;
- Indirect impacts were estimated based on local purchase patterns, as developed during the interview process. The local and in-state purchases by the firms providing direct services to the airport facilities were then combined with jobs-to-sales coefficients and income and output vectors derived from the Bureau of Economic Analysis, RIMS II;

- Air cargo revenue was estimated based on average revenue per pound for air freight, airmail, and air express, as determined from the interviews with the major air couriers and data supplied by the Maryland Department of Transportation;
- Per employee tax burdens were developed from data supplied from the Tax Foundation which estimates the development of taxes as a percent of per capita income;
- Related jobs were estimated by identifying the value of air cargo loaded at IAD from U.S. Bureau of Census data; Each cargo type was then associated with a producing industry; Using data from the U.S. Bureau of Economic Analysis, the appropriate producing industry jobs to sales multiplier to each cargo type were identified; the total value of freight was estimated by multiplying the value per pound by the air freight enplaned at IAD; The value of enplaned cargo was then combined with the jobs to sales multipliers for the industries that supplied the air cargo to IAD to estimate the related jobs.

While the IAD total tonnage is more representative to that of the proposed Hazleton Cargo Airport, the composition of the cargo is distinctly different by the fact that in 2005, about half of the cargo was belly freight of which United Airlines accounted for about 33% of the airport's total tonnage. In contrast, as discussed in Chapter 1, the proposed Hazleton Airport will not handle belly freight operations. A passenger airport such as IAD maintains drastically different operating structure than that of an all-cargo airport, which is proposed in Hazleton. Furthermore, every passenger airport operates uniquely from one another by the composition of passenger airlines, the composition of cargo airlines, the composition of domestic versus international passengers, the percent of passengers classified as business versus pleasure, percent of connecting passengers, etc. Therefore, job generation relationships developed in the IAD analysis conducted by Martin Associates in 2006 would be skewed if applied to the type of operating structure of the proposed cargo-only airport in Hazleton.

Discussions and correspondence with the Developer indicate that the primary basis for the Hazleton impact analysis conducted by the Developer was essentially an extrapolation of job creation ratios of the full analysis conducted for the Washington Dulles International Airport, which as mentioned earlier, was coincidentally performed by the Consultant in 2006. Although the operating structure of these airports will vary, as previously described, the essential framework of a similar methodology used for both the Dulles and Hazleton airports, should lend itself for uniform comparisons of the figures in both reports.

3.2.2 Review of Developer Economic Impact Results

Given the previous description of the methodologies used in their analysis, the figures and definitions of the Developer analysis that is the basis for the Consultant's study are cited in an August 10, 2006 presentation titled *"Preliminary Feasibility Assessment - Proposed Cargo Airport Hazleton, PA"* and include the following:

- ***The Developer impact statement is based on 500,000 tons of air cargo activity;***
- ***The Developer cites 4,533 direct jobs will be generated by the proposed airport activity:***

- Air cargo airlines;
- Air cargo handlers;
- US Customs services;
- Specialty commodity handling operators;
- Security companies; and
- Bonded warehouse operators.

- ***The Developer indicates that 161,000 induced jobs will be generated by the Hazleton Cargo Airport:***
  - Manufacturing Companies;
  - Value-Added Service Industries;
  - Freight forwarding companies;
  - International consolidators; and
  - High-tech companies.
- ***Developer estimates $17.1 billion of indirect impacts are created by the proposed airport:***
  - Goods and services;
  - Local and regional taxes;
  - Home starts; and
  - Foreign investment.

3.2.3 Summary of Developer's Economic Impact Analysis Methodology and Assumptions

In summary, although a full economic impact analysis was not initially conducted for the proposed Hazleton Cargo Airport, the results purported by the Developer were generated by a nationally recognized multiplier and an accepted Martin Associates methodology. However, the fundamental oversight of anticipating that the proposed Hazleton Cargo Airport will operate similarly to Memphis International or Washington Dulles International Airport cannot be overlooked. Neither of these airports operate as a pure cargo-only airport. Furthermore, neither of these airport comparisons is based on a cargo-only Greenfield Project, which as described in the previous section, will require the support of an integrated carrier hub (or a tenant operation of similar scale and level of activity) to sustain operations, at least in the near-term. As noted, the Developer analysis is essentially an extrapolation of ratios from these two full impact reports, with the emphasis of job creation ratios being derived from the Washington Dulles International Airport study. These ratios are then applied to a tonnage figure of 500,000 tons, which is not reached under the Developer's projected tonnage until the medium-term of the airport's operation. Based on this summary and preceding analysis, it is necessary to develop a specific cargo-only model for the proposed Hazleton Cargo Airport to compare the results of Developer's analysis.

3.3 CONSULTANT'S INDEPENDENT ECONOMIC IMPACT ANALYSIS OF AIR CARGO ACTIVITY AT THE PROPOSED HAZLETON CARGO AIRPORT

The resolution requires the Consultant to estimate the potential benefits to the Commonwealth of the proposed Hazleton Cargo Airport. Although the previous section examines the assumptions and methodology used by the Developer in assessing the impacts of the proposed airport, it is necessary to develop a cargo-specific model of the proposed Hazleton Cargo Airport that can accurately identify the potential benefits to the local Hazleton area as well as the Commonwealth.

This section serves a two-fold purpose: 1) the Consultant's model developed specifically for the proposed Hazleton cargo Airport to will compare the Developer's results based on the Washington Dulles study; 2) the Consultant will estimate the impacts of the potential airport based on the results of the independent market analysis presented in Chapter 1 of this report.

3.3.1 Consultant's Approach to Airport Economic Impact Analyses

The economic impact methodology was initially developed in 1981 by Dr. John Martin, founder of Martin Associates, to measure the economic impact of the Port of Baltimore. This methodology represented a radical departure from the way economic impact studies had been conducted during the 1970s. Previously, impact studies attempted to reduce the economic contribution of an airport or seaport to one number, usually a dollar amount, which was purported to reflect total economic contribution. However, it was never clear as to what the "one number" actually consisted of, and in many cases, the number was simply the sum of revenue and taxes generated by airport or seaport activity. This resulted in double counting, since taxes are paid from revenues. Furthermore, impacts were never allocated to particular activities (i.e., air cargo, general aviation, hubbing, etc.) and, therefore, the results could rarely be used as a planning tool.

Due to shortcomings of previous approaches of impact analysis, the Martin Associates' methodology is based on the use of airport-specific data, collected through detailed phone and personal interviews and passenger surveys. The econometric models developed to estimate economic relationships are estimated using this local data and are further designed to reflect the actual local expenditure patterns. While much more data intensive than other approaches, the Martin Associates' methodology is designed to produce results that can be traced back to actual sources and spending relationships. Furthermore, the Martin Associates' methodology recognizes that the contribution to an economy of an airport cannot be reduced to a single number, but instead the impacts occur as jobs, personal income, business revenue, and state, local and federal taxes.

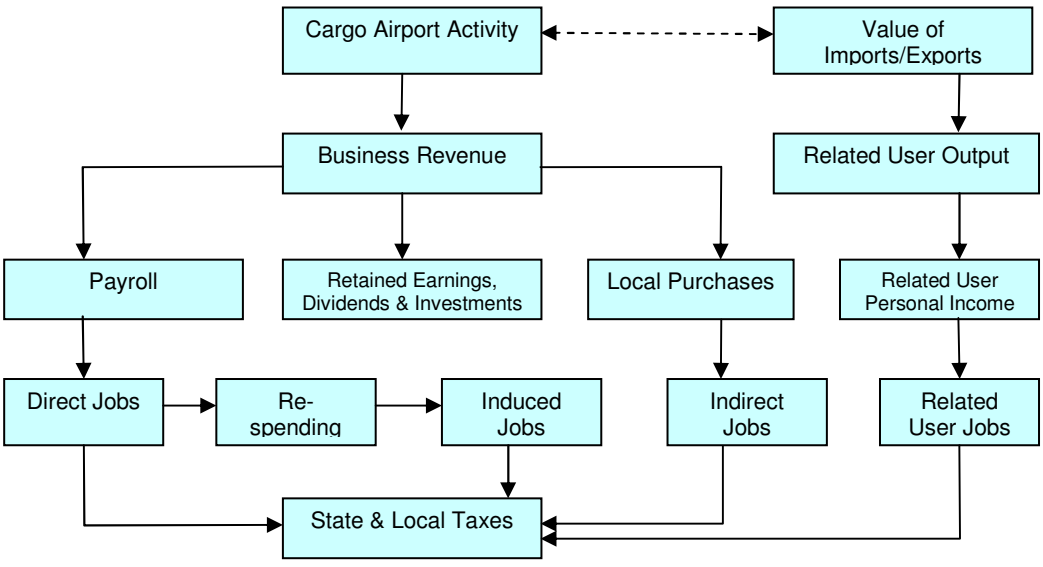
Since 1986, we have used this impact methodology to measure the economic impacts generated by airport activity at Ronald Reagan Washington National and Washington Dulles International Airports (seven studies, most recent 2005), Hartsfield-Atlanta International Airport (6 studies, most recently in 2002), San Francisco

International Airport (7 studies, most recently in 2006), the Minneapolis/St. Paul International Airport (4 studies, recently completed in 2005), Milwaukee's General Mitchell International Airport (most recent 2005), Seattle/Tacoma International Airport (5 studies, 2004), Miami International Airport including the Miami-Dade Airport System (2 studies, 2007), Van Nuys Airport (2007), Baltimore/Washington International Airport (four studies, most recent 2006) and the economic impact of the State of Maryland Aviation System (34 individual airport impact models, also 2006), San Jose International Airport (4 studies, most recent 1999), Oakland International Airport (3 studies, 2008), Portland, Oregon International Airport (5 studies, most recent 2007), Sacramento International Airport – including Mather Field Air Cargo facility (two studies, updated in 2003), Harrisburg International Airport, Toronto's Lester B. Pearson International Airport, Stapleton International Airport and to estimate the impacts of new airport development at Denver (2 studies).

3.3.2 Impact Structure

Air cargo activity at an airport contributes to the local and regional economy by generating business revenue to local and national firms providing air cargo service and support services to the airport and the airlines. These firms, in turn, provide employment and income to individuals, and pay taxes to state and local governments. Table 3-1 illustrates how air cargo activity at a proposed Hazleton Cargo Airport will generate impacts throughout the local, state, and national economies. As this figure indicates, the impact of the air cargo cannot be reduced to a single number, but instead, the airport activities create several impacts. These are the revenue impact, employment impact, personal income impact, and tax impact. These impacts are non-additive. For example, the income impact is a part of the revenue impact, and adding these impacts together would result in double counting. Table 3-1 shows graphically how air cargo activity generates the four impacts.

Table 3-1
FLOW OF ECONOMIC IMPACTS GENERATED BY AIR CARGO ACTIVITY



3.3.2.1 Business Revenue Impact

At the outset, air cargo activity at the airport generates business revenue for firms that provide cargo handling services as well as services to the air cargo carriers as well as to the passenger air carriers transporting air cargo services. This business revenue impact is dispersed throughout the economy in several ways. It is used to hire people to provide the services, to purchase goods and services, to pay for the use of the airport and to make Federal, state, and local tax payments. The remainder is used to pay stockholders, retire debt, make investments, or is held as retained earnings. It is to be emphasized that the only portions of the revenue impact that can be definitely identified as remaining in the Commonwealth of Pennsylvania are those portions paid out in salaries to Pennsylvania employees, for local purchases by individuals and businesses directly dependent on the seaport and airport, and in contributions to state and local taxes, as well as Federal taxes. Landing fees and terminal rentals paid by airlines help provide for the costs of operation of the airport and capital costs of new construction.

3.3.2.2 Employment Impact

The employment impact of air cargo activity consists of four levels of job impacts:

- **Direct employment impact** - jobs directly generated by air cargo handled at a proposed Hazleton Cargo Airport, including jobs with air cargo airlines, air cargo operations of passenger airlines, freight forwarders, warehouses and sorting facilities located in the Hazleton area. It is to be emphasized that these are classified as directly generated in the sense that these jobs would experience near term dislocation if air operations at the airport were discontinued.
- **Induced employment impact** - jobs created throughout the local economy because individuals directly employed due to air cargo activity spend their wages locally on goods and services such as food, housing and clothing. These jobs are held by residents located throughout the region and state, since they are estimated based on local and regional purchases.
- **Indirect employment impact** - jobs created in the Commonwealth due to purchases of goods and services by firms, not individuals. These jobs are estimated directly from ratios of local purchases data supplied by the companies that were interviewed in other Martin Associates' air cargo impact studies, and include jobs with local office supply firms, maintenance and repair firms, parts and equipment suppliers, local trucking, etc.
- **Related user employment impact** - jobs with firms using the airport to ship and receive air cargo. These jobs are not entirely dependent upon the proposed airport, but reflect the importance of the airport to local firms. While the air cargo facilities and services provided at the airport are a crucial part of the infrastructure allowing these jobs to exist, they would not necessarily be immediately displaced if marine and air activities were to cease. These users could use other airports for air cargo shipments (if service were available), including Dulles International Airport, JFK International Airport and Philadelphia International Airport. To the extent that alternative infrastructure is not

readily available, increased costs incurred by users could result in relocation of these businesses.

3.3.2.3 Personal Earnings Impact

The personal earnings impact is the measure of employee wages and salaries (excluding benefits) received by individuals directly employed due to airport air cargo activity. Re-spending of these earnings throughout the Commonwealth for purchases of goods and services is also estimated. This generates additional jobs, known as the induced employment impact. This re-spending throughout Pennsylvania is estimated using a state personal earnings multiplier, which reflects the percentage of purchases by individuals that are made within a state. The re-spending effect varies by state: a larger re-spending effect occurs in states that produce a relatively large proportion of the goods and services consumed by residents, while lower re-spending effects are associated with states that import a relatively large share of consumer goods and services (since personal earnings "leak out" of the state for these out-of-state purchases). The direct earnings are a measure of the local impact since those directly employed by airport activity receive them. The re-spending effect is statewide.

3.3.2.4 Tax Impact

Federal, state, and local tax impacts are tax payments to the state and local governments by firms and by individuals whose jobs are directly dependent upon and supported (induced jobs) by air cargo activity at a Hazleton Cargo Airport.

3.3.3 METHODOLOGY

As described in the previous section, economic impacts presented in this report are quantified in terms of jobs, personal income, business revenue and state and local taxes. Furthermore, direct, induced and indirect impacts are estimated. A description of the methodology used to estimate these impacts for cargo activity at the proposed Hazleton Cargo Airport follows.

3.3.3.1 Direct Impacts

Direct impacts are those impacts that would cease to exist if cargo activity at the airport ceased. This includes activity with cargo airlines, freight forwarders, freight consolidators, freight dedicated FBO's etc.

The direct impacts to be estimated include:

- Job impacts;
- Personal income impacts;
- Revenue impacts; and
- State and local tax impacts.

- **Direct Employment Impacts**

The direct job impacts by each employer in each category are estimated.

The jobs generated are estimated based on a direct count of the employees obtained from in-house data bases developed from interview results of past Martin Associates airport economic studies. These include jobs with freight airlines, FBO's, freight forwarders, consolidators and air couriers directly dependent upon airport activity are estimated from the interview results with these firms. Also, jobs with passenger airlines that are dedicated to air freight and cargo moving in the cargo sections of passenger airlines are included in this category and estimated from the interviews.

- **Direct Income Impacts**

The direct income impacts are estimated by multiplying the average annual salaries (adjusted for typical overtime hours and salaries where applicable) for each of the job categories by the direct number of jobs created in the respective categories. The direct income by category is obtained directly from the interviews.

A respending effect is then estimated using an income multiplier for the Greater Hazleton Metropolitan Area, estimated by the US Department of Commerce, Bureau of Economic Analysis. Based on data provided by the Bureau of Economic Analysis, for every one dollar earned by individuals in the Hazleton area, another $1.805 is spent in the region. Hence, the personal income multiplier for the Hazleton regional economy is 2.805.

- **Direct Revenue Impact**

The revenue impact by economic impact sector is estimated directly from the in-house interview database. Air cargo revenue is estimated based on average revenue per pound for air freight, airmail, and air express, as determined from the interviews with the major air couriers and data furnished by published carrier data.

3.3.3.2 Induced Impacts

Much of the personal income that is directly generated by cargo activity at the airports and received by individuals employed due to airport activity is spent and respent throughout the local, regional and national economies. As a result of the purchases of goods and services with this personal income, additional jobs in the local, regional, state and national economies will be generated. That fraction of the income impact used to purchase goods and services produced in the Hazleton Metropolitan Area is isolated and the resulting induced employment generated for residents.

To estimate this induced employment impact, the following steps were undertaken:

- The percentage of income spent by Hazleton area residents on various expenditure categories of the economy (i.e., manufacturing, housing, services, food, etc.) are estimated from the Consumer

Expenditure Survey;

- The ratio of employment to sales in each of the expenditure categories for both wholesale and retail purchases are calculated for the Hazleton Metropolitan Statistical Area, from data published by the U.S. Bureau of the Census;
- The airport-induced consumption impacts are allocated to the various expenditure categories based on the Bureau of Labor Statistics breakdown for a typical consumer in the Hazleton Metropolitan Area;
- The personal consumption impact allocated to each expenditure category is then multiplied by the ratio of employment to sales in that category to estimate the number of induced jobs for regional residents.

It is to be emphasized that an input/output model is not used to estimate induced jobs. Instead of using a regionalized input/output model, respending categories based on area specific data, and data specific to the region in which employees dependent upon the airport reside are developed.

3.3.3.3 Indirect Impacts

Indirect impacts are generated by the local purchases of the firms directly dependent upon airport cargo activity. These impacts are estimated based on local purchase patterns, as developed during the interview process. The local and in-state purchases by the firms providing direct services to the airport facilities are then combined with jobs-to-sales coefficients and income and output vectors derived from the Bureau of Economic Analysis, Regional Input-Output Modeling System (RIMS II), which was prepared for the Hazleton Metropolitan Area well as for the Commonwealth of Pennsylvania.

3.3.3.4 Impacts for Related Airport Users

Related jobs are jobs with freight users and shippers through the airport. These shippers can use Hazleton as well as other airports for air cargo shipments. Therefore, these shippers are ***not directly dependent*** upon the airport in the same sense, as are the firms that supply direct services to the cargo airlines. However, the use of a proposed cargo airport by these shippers is critical in sustaining and stimulating economic activity in the region.

To estimate related jobs, the composition of projected air cargo by key commodity loaded at Hazleton Cargo Airport was developed from actual Port Authority of New York/New Jersey tonnage statistics. While this air cargo data is collected for international air cargo only, the composition of the air cargo by cargo and product type are assumed to be representative of total air cargo that will be loaded at the proposed airport. Each cargo type is then associated with a producing or manufacturing industry. Using data from the U.S. Bureau of Economic Analysis, the appropriate producing industry jobs to sales multiplier to each cargo type is identified. The value per pound of the cargo is computed from the US Department of Commerce - USA

Trade Online for 2007, which estimated that the average value of air shipments in New York and Philadelphia markets is approximately $61 per pound. The Consultant then assumes that 50% of the enplaned cargo that will be handled at Hazleton is originating in Pennsylvania. This value per pound estimate is multiplied by the corresponding pounds of air freight (both domestic and international) projected to be enplaned at Hazleton. Related jobs are finally estimated by combining the value of enplaned cargo with the jobs to sales multipliers for the Pennsylvania portion of industries supplying the air cargo to Hazleton.

3.3.3.5 Tax Impacts

Per employee tax burdens as well as data from the Tax Foundation (www.taxfoundation.org), which allows the development of taxes as a percent of per capita income, are used to estimate the tax impacts resulting from cargo activity at the proposed airport These state and local tax burdens include tax revenues from all sources. A ratio of state to local tax percentages is developed from data published by the US Department of Commerce, Bureau of Economic Analysis. The tax impacts are estimated for direct, induced and indirect impacts.

Specific federal airport taxes (i.e., air cargo tax), are also estimated. These taxes are based on the current aviation tax rates, and the air transportation value of the airfreight and air express.

3.3.4 Data Collection

The cornerstone of the Consultant's approach is the collection of detailed baseline impact data from airport tenants as well as firms providing services at the airport. Since the proposed Hazleton Airport is still in the developmental stage, the data collection effort consists of analyzing in-house proprietary data that Martin associates has developed from previous commercial and cargo airport impacts. The database is has been developed and refined based on telephone and personal (on-site) interviews with employers in each impact sector at various airports throughout the United States. The impact data developed for the proposed Hazleton Cargo Airport is derived from statistical calculations with respect to the relative size, cargo volume and operational characteristics of similar airports as set forth in the Chapter 1 market assessment. This data is further enhanced by findings in Task 1 of the type of key anchor tenant and operator to potentially locate at the proposed airport. Key data derived from the in-house database includes:

- Employment, full and part time;
- Labor productivity;
- Payroll, excluding benefits;
- Percent of business that is dependent upon the airport;
- Annual Revenue;
- Capital expenditures; and
- Local purchases.

In addition to the data derived from the existing internal databases, the Consultant also collected data for the analysis from other sources including:

- Port Authority of New York New Jersey;
- Philadelphia International Airport;
- Harrisburg International Airport;
- Interviews with regional cargo hub operators;
- Developer estimates; and
- Greater Hazleton CANDO.

3.3.5 COMPARISON OF CONSULTANT AND DEVELOPER AIR CARGO IMPACT RESULTS

Previous sections of this chapter have described the assumptions and methodology used in the Developer's impact analysis of the proposed airport. Using the Consultant's methodology previously described, attempts at an apples-to-apples comparison is presented in Table 3-2. The comparison between the Consultant and Developer is based on the results of the 500,000 tons identified by the Developer in their public documentation. While it is difficult to compare results when examining different methodologies, the fact that the majority of the Developer analysis is derived from the IAD study conducted by Martin Associates (Consultant), makes comparisons easier to some degree.

It is to be noted that this tonnage figure is not representative of the initial year of freight operations. This level of cargo does is not achieved until year 16 of the Consultant's high case scenario forecast.

Table 3-2
COMPARISON OF CONSULTANT TO DEVELOPER ECONOMIC IMPACTS BASED ON 500,000 TONS OF CARGO

COMPARISON OF ESTIMATED ECONOMIC ACTIVITY		
	Consultant	**Developer**
ESTIMATED METRIC TONS	**500,000**	**500,000**
JOBS		
DIRECT JOBS	2,866	4,533
INDUCED JOBS	2,182	
INDIRECT JOBS	500	
TOTAL JOBS	**5,548**	**4,533**
PERSONAL INCOME (1,000)		
DIRECT	$101,128	
INDUCED/RESPENDING	$182,617	
INDIRECT	$23,817	
TOTAL INCOME	**$307,562**	
AIRPORT BUSINESS REVENUE (1,000)	**$1,415,832**	
LOCAL PURCAHSES (1,000)	**$49,209**	
STATE AND LOCAL TAXES (1,000)		
STATE TAXES	$19,598	
LOCAL TAXES	$13,619	**
TOTAL TAXES	**$33,217**	
FEDERAL AVIATION TAXES (1,000)	**$87,252**	
RELATED JOBS STATEWIDE	**164,475**	**161,000**
RELATED INCOME STATEWIDE (1,000)	**$7,245,672**	
TOTAL OUTPUT TO REGION (1,000)	**$30,898,026**	**$17,100,000**
TOTAL STATE AND LOCAL TAXES (1,000)	**$815,749**	

Results based on Developer assumption of 500,000 Metric Tons of cargo
***** Included in Total Output***

The Developer indicates that 4,533 "direct jobs" will be generated by companies that include air cargo airlines, air cargo handlers, US Customs services, specialty commodity handling, security companies and bonded warehouse operators. The Developer also indicates that these jobs will occur on-site at the airport as well as within a 5-10 mile radius of the airport. These jobs may also be included in the potential 3,500+/- acres of land adjacent to the south of the proposed airport area.

In comparison, the Consultant identifies the corresponding 5,548 job figure represents not only direct, but induced and indirect jobs as well. Approximately 2,866 direct jobs are generated on airport and local surrounding area whose jobs would vanish if activity at the airport ceased. These include including airport administration, cargo handlers, mechanics, fixed base operators (FBOs), freight forwarders, US Customs agents, cargo airline employees and truck drivers/couriers. Also captured in that figure are 2,812 induced jobs, which will occur within the region of the direct jobholders, which are generated by the spending of the

wages by the direct jobholders. Lastly, 500 indirect jobs - those generated by the purchase of the airport dependent companies that are held in the region encompassing with a majority locating the Tri-County area of Schuylkill, Carbon and Luzerne counties. Furthermore, a number of the direct on-site jobholders may already be residents of the Tri-County area holding employment elsewhere within the state, and in order to eliminate a lengthy commute may decide to seek employment opportunities at the proposed airport.

The Developer's definition of 161,000 "induced job" impacts correlates to the Consultant's related job definition. The Developer defines these as manufacturing companies, value-added service industries, freight forwarding companies, international consolidators, and high-tech companies. The Developer cites these jobs as being held with in the region, not confined to Pennsylvania, but also portions of neighboring states where the manufacturing processes are occurring. In contrast, the Consultant's figure of 164,475 jobs assumes that these jobs will be supported in Pennsylvania. **These jobs are classified as related to Hazleton Cargo Airport, since it is the demand for the products shipped by air that generates the employment, not the services offered by the airport.** It is to be emphasized that a portion, which cannot be defined at his time, may be held in the local Hazleton area. These jobholders can reside anywhere in the state including metropolitan areas such as Philadelphia and Pittsburgh. Therefore, there will not be an influx of 164,475 jobs in the Tri-County area in the near or medium-term; however, over time as airport operations develop, certain companies may locate in the Hazleton area to take advantage of services offered at the airport.

The $17.1 billion of "indirect impacts" the Developer cites is defined as goods and services, local and regional taxes, home starts and foreign investment. In the Consultant's model, this corresponding figure is defined as Total Output to the State. In their analysis, the Developer extrapolates the value of the enplaned cargo, not the value added of manufacturing or producing companies in the region, which would support the total output figure. This results in an understating of the impact. Based on the Consultant's model, the average value of New York and Philadelphia enplaning cargo is estimated at $61. By using this value, the resulting figure of $30.9 billion refers to the economic output to the Commonwealth of all aspects of production, manufacturing and logistics. Furthermore, the Consultant's definition of indirect impacts is jobs and income held with companies in the region that are generated by the $49.2 million of local purchases by airport tenant and service providers.

The Consultant also estimates that $1.4 billion of business revenue will be received by the companies located on airport property including integrated carriers, all cargo airlines, FBO's, maintenance, airport administration, etc.

The Developer does not specifically identify state and local tax impacts, which are critical in this analysis since this is the key benefit that the state and local governments will receive from the development of the airport. The Consultant estimates that the State will receive $19.6 million and the local governments will receive payments of $13.6 million for this level of activity.

In conclusion, while some of the figures between the Developer's and Consultant's analyses appear comparable on the surface, the underlying definitions and methodologies of the Developer's extrapolation analysis of the Dulles example result in an overestimation of direct jobs and an underestimation of output to the state.

3.3.6 SUMMARY OF IMPACTS BASED ON CONSULTANT'S HIGH CASE FORECAST

Due to the fact that the proposed Hazleton Cargo Airport is still in the developmental stages, it is beneficial to evaluate the impacts for not only a single snapshot year in time, but at incremental stages of growth over a designated planning period. To this end, the Consultant has assessed impacts of air cargo activity at years 1, 5, 10 and 20 to achieve order-of-magnitude estimates as projected tonnage levels increase over time. Since the low scenario or unsuccessful track for forecasted growth presented in Chapter 1 is essentially zero, the economic impacts presented through the rest of the analysis assume the Consultant's high case scenario. Table 3-3 summarizes the potential economic impacts of high scenario growth generated by air cargo activity at the proposed Hazleton Cargo Airport.

Table 3-3
SUMMARY OF ECONOMIC IMPACTS GENERATED BY HIGH CASE SCENARIO OF AIR CARGO AT HAZLETON CARGO AIRPORT IN YEARS 1, 5, 10, AND 20

ESTIMATED ECONOMIC ACTIVITY OF PROPOSED HAZLETON CARGO AIRPORT				
	YEAR 1	YEAR 5	YEAR 10	YEAR 20
ESTIMATED METRIC TONS	231,322	275,856	360,886	591,201
JOBS				
DIRECT JOBS	1,491	1,800	2,100	3,347
INDUCED JOBS	1,150	1,389	1,616	2,519
INDIRECT JOBS	260	314	366	583
TOTAL JOBS	**2,901**	**3,503**	**4,082**	**6,449**
PERSONAL INCOME (1,000)				
DIRECT	$53,549	$64,682	$75,146	$116,282
INDUCED/RESPENDING	$96,699	$116,802	$135,669	$209,981
INDIRECT	$12,389	$14,958	$17,452	$27,815
TOTAL INCOME	**$162,638**	**$196,442**	**$228,267**	**$354,078**
AIRPORT BUSINESS REVENUE (1,000)	**$653,858**	**$779,024**	**$1,017,698**	**$1,681,917**
LOCAL PURCAHSES (1,000)	**$25,598**	**$30,905**	**$36,058**	**$57,470**
STATE AND LOCAL TAXES (1,000)				
STATE TAXES	$10,398	$12,560	$14,596	$22,638
LOCAL TAXES	$7,166	$8,656	$10,060	$15,602
TOTAL TAXES	**$17,565**	**$21,216**	**$24,656**	**$38,240**
FEDERAL AVIATION TAXES (1,000)	**$40,367**	**$48,138**	**$62,976**	**$103,167**
RELATED JOBS STATEWIDE	**75,759**	**90,301**	**118,636**	**194,586**
RELATED INCOME STATEWIDE (1,000)	**$3,331,820**	**$3,970,767**	**$5,223,445**	**$8,576,880**
RELATED OUTPUT TO THE STATE (1,000)	**$14,293,123**	**$17,045,164**	**$22,304,999**	**$36,526,768**
RELATED STATE AND LOCAL TAXES (1,000)	**$377,401**	**$450,059**	**$588,785**	**$964,543**

Years 1, 5, 10 and 20 results based on Consultant market analysis presented in Task 1
Totals may be rounded

As shown in the previous table, the Consultant's high scenario forecast is expected to grow from 231,322 metric tons in year 1 to 591,201 in year 20. A summary of the impact categories is as follows:

3.3.6.1 Job Impacts

Direct Jobs - In the first year of operation, 1,491 direct jobs are generated by air cargo activity at the proposed Hazleton Cargo Airport. These jobs are held on site by tenants and service providers at the airport and jobs would vanish if there the airport activity ceased. This category includes jobs held with integrator airlines, all-cargo carriers, freight handlers, FBOs, maintenance personnel, freight forwarders and consolidators, based couriers, line haul truckers, government inspection personnel, security and airport

administration. By year 20, the total job figure increases to 3,347.

Induced Job Impacts - A portion of the personal earnings received by those individuals directly employed as a result of air cargo activity is saved, another portion is used to pay Federal, state, and local taxes, while another portion is used to purchase goods and services from firms located both within and outside of the Commonwealth of Pennsylvania. The purchase of goods and services from firms located in Pennsylvania creates induced jobs for Pennsylvania residents in the firms supplying the goods and services. Furthermore, those individuals supplying the goods and services also receive personal earnings from their employers, and use a portion of it for additional purchases from firms located in Pennsylvania. This "trickle-down" of an initial expenditure results in a multiplier effect throughout the state economy known as the personal earnings multiplier. In year 1, $53.5 million of wages and salaries were received by those individuals directly employed due to air cargo activity. As a result of the re-spending of this direct income, $96.7 million of re-spending throughout the region occurred, resulting in 1,150 induced jobs for Pennsylvania residents. This figure increases to 2,519 by year 20.

Indirect Jobs - In addition to these induced jobs created due to purchases by the individuals directly employed due to cargo activity at Hazleton, additional indirect jobs in the local economy are created as the result of local purchases by the firms directly dependent upon air cargo activity at Hazleton. For example, cargo airlines purchase such items as fuel, parts and office supplies from local firms, thereby creating jobs in these supplying industries. Similarly, the forwarders purchase such services as trucking, goods and services, utilities, and maintenance services from local suppliers, also creating jobs in the local economy. In year 1 of operation, it is estimated that a total of $25.6 million of additional local purchases were made. These purchases supported the 260 indirect jobs in the local economy. Similarly, in year 20 the estimated $57.5 million in local purchases would result in 583 indirect jobs.

Related Jobs - In addition to the baseline direct, induced and indirect economic impacts that would be generated by the air cargo handled at Hazleton Cargo Airport, the air freight that is shipped via the airport supports jobs in the local, regional, and state economies. It is estimated that 75,759 related jobs are supported within the Commonwealth due to the projected value of air cargo activity during the first year of operation of the Hazleton Cargo Airport. These related jobs are expected to grow to 194,585 by year 20. ***These jobs are classified as related to Hazleton Cargo Airport, since it is the demand for the products shipped by air that generate the employment, not the fact that the air freight is shipped by air carriers using the Hazleton Cargo Airport. If airport operations were to cease, these jobs would most likely remain, however, options of air transportation services at competing airports would need to be utilized.*** These related jobs also include the local support jobs with supplying and manufacturing firms required to produce the air freight.

3.3.6.2 Employee Earnings Impact

The portion of the business revenue paid out in salaries and wages is described in this section. In total, it is estimated that air cargo activity at the proposed airport will create $162.6 million of direct, induced and indirect wages and salaries and local consumption expenditures. By year 20, $354.1 million of personal income is estimated.

In the first year of operation, an estimated total of $53.5 million is paid in wages and salaries to those directly employed as a result of air cargo activity, representing an average annual salary of $35,920. This $53.5 million employee earnings impact is estimated based on the average wage and salaries for each job category, multiplied by the corresponding job impact in that category. The spending of the employee earnings within the Commonwealth creates the additional employment estimated as induced jobs, which results in an additional $96.7 million of personal earnings and purchases. In the twentieth year of operation, it is expected that direct income will reach $116.3 million and an additional induced personal earnings and consumption of $210 million will be created.

In addition to the re-spending impact, indirect jobholders will earn approximately $12.4 million in indirect wages and salaries in year 1, while the related employees throughout the state will support $3.3 billion in salaries throughout the Commonwealth. These figures increase to $27.8 million and $8.6 billion respectively by year 20.

3.3.6.3 Business Revenue and Value of Economic Activity Impact

The movement of air cargo via the proposed airport generates revenue for firms providing services to the air cargo and the air carriers moving the air freight. For example, the integrated airlines and all cargo carriers receive freight revenue from transporting the air cargo, the fixed base operators receive revenue from providing services to the air cargo carriers, warehouses receive revenue from sorting and storage activity and trucking firms receive revenue from trucking the cargo to and from the airport. In year 1, the firms directly involved in handling the air cargo and providing services at the airport will receive about $653.9 million of revenue. The business revenue figure increases to $1.7 billion by year 20 due to the anticipated increase in aircraft operations and cargo handling activity in Hazleton.

In addition to the business revenue created directly dependent tenant and service providers of the airport operations, the related output to the state increases from $14.3 billion in year 1 to $36.5 billion in year 20. This figure represents the value of output to the Commonwealth that is supported by the cargo moving via the Hazleton Cargo Airport. This includes the value added at each stage of manufacturing and production process of enplaned cargo.

3.3.7 Tax Impacts

Airport activity generates federal, state, and local tax revenues paid by the total employment figure, as well as by the firms providing the services. In year one, it is estimated that air cargo activity at Hazleton will generate $17.6 million of state and local tax revenue, of which $10.4 million is collected at the state level and $7.2 million is collected at the local level. These state and local tax payments are expected to grow to $22.6 and $15.6 respectively over the 20 year period.

Related shippers throughout the state using the airport will support $377.4 million in state and local taxes in the initial year of the airport's operation. It is expected that these tax payments will increase to $964.5 million by year 20. Caution must be exercised in discussing these related taxes collected from related shippers due to the fact that the majority of these jobs are currently present in the state's manufacturing sector.

Additionally, $40.8 million of Federal aviation-specific taxes would be initially collected from air freight activity at Hazleton. This figure is expected to increase to $103.2 million in 20 years.

3.4 ECONOMIC IMPACTS OF PROPOSED CONSTRUCTION ACTIVITY

In addition to the impacts of the air cargo activity, a significant impact will be generated in the Hazleton area due to the construction efforts necessary to complete the airport project. In terms of construction, runways, air traffic control tower (ACTC), Aircraft Rescue and Fire Fighting (ARFF) facilities, as well as adjacent administrative and cargo handling buildings will be built as part of the airport infrastructure phase. Furthermore, the industrial development that will occur on the adjacent 3,500+/- acres to the south of the airport will also generate significant construction activity.

The estimated cost of the airport infrastructure project, as presented in Chapter 2, is $502.3 million over a 5-year time period. In addition, the adjacent acreage to the south will also be developed to accommodate industrial tenant activity. The Developer estimates this cost to be $1.2 billion and is anticipated to take 8 years to complete. Table 3-4 details the impacts of the anticipated construction activity of these two projects.

Table 3-4
SUMMARY OF CONSTRUCTION IMPACTS

Project	Cost	Manhours	Income	Average Salary	State Taxes	Local Taxes
Airport Infrastructure	$502,339,343	15,884,690	$295,313,263	$38,669	$18,817,361	$13,076,471
Adjacent Development	$1,200,000,000	37,945,719	$705,451,247	$38,669	$44,951,353	$31,237,381

As illustrated above the anticipated $502.3 million cost of airport infrastructure construction is expected to generate 15,884,960 total man-hours. The estimated direct income to the local region generated by these

jobs due to the airport development is approximately $295.3 million, resulting in an annual wage equivalent of nearly $38,669 per employee. The taxes generated by these employees are estimated at $32 million over the period of construction activity. It is estimated that the state would receive about $18.8 while the local governments will receive $13.1 million.

Similarly, the estimated $1.2 billion of construction activity of the adjacent industrial acreage will generate 37.9 million man-hours generating over $705 million in personal income. The state and local taxes paid to governments $45 million and $31.2 million respectively for a total tax impact of $76.2 million over the life of the construction period. ***It is to be noted that these impacts occur one-time only, and are not additive and therefore careful consideration should be used while expressing these impacts.***

3.5 ECONOMIC IMPACTS OF INDUSTRIAL DEVELOPMENT OF ADJACENT LAND

The potential development of 3,500+/- acres adjacent to the south of the airport offers a significant impact in terms of industrial development. The Developer estimates that at full build-out, the acreage will house 24 million square feet of industrial space, which includes warehousing, distribution and logistics as well as manufacturing and value-added operations. The time frame of this development is estimated at 8 years, beginning during the airport infrastructure construction. While it is difficult at this time to estimate the time period of the absorption of the parcels, it does offer a significant potential in terms of economic impact to the area. In addition, it is necessary to assess the potential impacts on infrastructure such as road capacity for planning purposes.

To identify the potential economic impact of this adjacent acreage, the Consultant has developed a separate real estate economic impact model. In addition, this model can be used to assess the impacts of specific uses of the property, including, manufacturing, distribution, logistics, office, restaurant, retail and other miscellaneous industrial uses.

This model was developed from data supplied by the Greater Hazleton CAN DO, which operates numerous industrial parks in the Hazleton area, including the Humboldt Industrial Park, which lies adjacent to the north of the proposed project site.

The model was developed by incorporating a composition similar to that of tenants currently occupying the Humboldt Industrial Park. Key tenants currently located at Humboldt include Cargill Meat Solutions, First Quality Nonwovens, Hershey Foods, Michael's Stores, Office Max, Simmons Company and Hilton Reservations. While the proposed airport may attract a different tenant base composition over the course of time, it is to be assumed that at the outset the tenant composition will remain similar to that of the Humboldt Industrial Park.

The Humboldt Industrial Park, including Humboldt North, Northwest, West and East encompasses 3,000 total acres with about 780 hundred acres still available for development or subdivision as well as an additional 450 acres of available tenant occupancy developers[1]. Currently, about 5,600 people are employed at the park, which was first opened in 1971, but has witnessed tremendous success over the past 15 years. By using this data, relationships were developed for the 3,500 adjacent acres.

Table 3-5 summarizes the economic impacts of the industrial tenants of the adjacent acreage owned by the Developer at periodic stages of development.

Table 3-5
ECONOMIC IMPACTS OF INDUSTRIAL DEVELOPMENT OF ADJACENT ACREAGE

ESTIMATED ECONOMIC ACTIVITY OF ADJACENT INDUSTRIAL ACREAGE			
	500 ACRES	**1,750 ACRES**	**3,000 ACRES**
JOBS			
DIRECT JOBS	1,591	5,568	9,545
INDUCED JOBS	635	2,223	3,811
INDIRECT JOBS	1,965	6,877	11,790
TOTAL JOBS	**4,191**	**14,669**	**25,146**
PERSONAL INCOME (1,000)			
DIRECT	$49,055	$171,692	$294,329
INDUCED/RESPENDING	$85,355	$298,744	$512,133
INDIRECT	$60,444	$211,555	$362,665
TOTAL INCOME	**$194,855**	**$681,991**	**$1,169,127**
PARK BUSINESS REVENUE (1,000)	**$124,949**	**$437,323**	**$749,696**
LOCAL PURCAHSES (1,000)	**$82,360**	**$288,261**	**$494,161**
STATE AND LOCAL TAXES (1,000)			
STATE TAXES	$12,416	$43,456	$74,497
LOCAL TAXES	$8,628	$30,199	$51,769
TOTAL TAXES	**$21,044**	**$73,655**	**$126,266**

Again, it is important to emphasize that these impacts are not tied to a specific year, but rather to periodic stages of development and absorption of this acreage. In comparison, it has taken over 30 years for the Humboldt Industrial Park to reach the current employment level of 5,600. Also, the potential tenants do not necessarily need to be related to the airport and its cargo operations. However, if the Hazleton Cargo airport was developed, it is assumed over time that air-related tenants - shippers and manufacturers - may locate here to take advantage of the cargo airport and ancillary services provided at the airfield.

As summarized in Table 3-5, the adjacent industrial development activity has the potential to create the following impacts:

1 Acreages identified and calculated from Humboldt Industrial Park map directory, revision date 11/09/2007

- It is estimated that between 1,591 and 9,545 direct jobs would be generated on-site by these tenants at different levels of build-out, and as the result of local purchases by these direct employees, another 635 to 3,811 induced jobs are supported in the Hazleton area economy. Due the local purchases by the perspective tenants, 1,965 to 11,790 indirect jobs would be supported. This indirect impact reflects the dependency on the local economy to supply infrastructure for tenants such as manufacturing companies and distribution centers.

- The directly employed workers are estimated to receive $49.1 to $294.3 million of wages and salaries. As the result of the local purchases by these employees, another $85.4 to $512.1 million of income and consumption expenditures would be generated, resulting in the induced job impact. The indirect jobholders will receive $60.4 to $362.6 million of indirect wages and salaries.

- It is estimated that industrial tenants would receive $125 to $750 million of revenue, of which $82.4 to $494 million would be used for local purchases and support the local indirect jobs.

- These industrial tenants have the potential to generate $21.0 to $126.3 million of state and local taxes. It is estimated that the Commonwealth would receive $12.4 to $74.5 million annually while the local governments would receive $8.6 to $51.8 million per year in tax payments. As previously mentioned, it is difficult to assess the percentage of tenants that will be airport-related; therefore these tax figures must be used with caution when expressing benefits to the local and state governments.

3.6 SUMMARY OF ECONOMIC BENEFITS TO THE COMMONWEALTH

As illustrated under the high case scenario forecasts, the proposed Hazleton Cargo Airport would have a tremendous impact on local and state economies. The local economies would not only benefit from jobs and business revenue generated by the airport and related industrial operations but also in terms of local tax payments. The Commonwealth would also receive increased tax dollars from those directly dependent on airport and industrial activity. Table 3-6 presents a summary of the state and local taxes that would be generated from the construction of the airport infrastructure and the airport cargo operations. The tax impacts of the related jobholders are not included in this summary since the majority of these jobs are already supported in the state's manufacturing sector. Also, the Consultant cannot identify at this time the percentage of tenants of the adjacent industrial land development that will be airport-related. Furthermore, public funds requested by the Developer are to be used for the airport construction and the resulting activity of the airport.

Table 3-6
TAX BENEFITS TO STATE AND LOCAL GOVERNMENTS DUE TO AIRPORT CONSTRUCTION AND CARGO ACTIVITY

TAX BENEFITS CREATED	PERIOD	STATE TAXES	LOCAL TAXES
AIRPORT INFRASTRUCTURE CONSTRUCTION ($502 MM)	5 YEARS	$18,817,361	$13,076,471
AIRPORT CARGO ACTIVITY (YEARS 1 THROUGH 20)	20 YEARS	$315,479,581	$217,425,117
	TOTAL AIRPORT	$334,296,943	$230,501,588

As shown, given the forecasted level of activity, the Commonwealth would receive approximately $334 million dollars over the first 20 years of the project. It appears the Commonwealth would get back or "break even" on the $250 million investment in year 16 of the airport operations. Local governments in Schuylkill, Luzerne and Carbon Counties would receive over $230 million over the same period. Again, it is to be noted that these tax payments do not include the adjacent development construction activity or resulting tenant base that would occupy the 24 million square feet of industrial space.

One issue that needs to be addressed in terms of benefits to the Commonwealth is the potential relocation of UPS from Philadelphia International Airport to the proposed Hazleton Airport. The Consultant's high case forecast is predicated on the fact that the proposed airport will have the ability to attract an integrated carrier (although the Developer has expressed interest from a partner that is expected to have the influence and capacity to generate a similar level of activity). At this time, a possible candidate appears to be a potential relocation of a UPS Regional Hub from PHL. A decision of potential relocation arrangements has not yet been made, and our market analysis suggests that this scenario has an unlikely probability. However, in the event that the UPS facility is not accommodated at PHL and did relocate to Hazleton, the benefit of jobs and taxes to the state would be limited to the net gain of any jobholders currently working for UPS in PHL and not residing in Pennsylvania. For example, if 80% of the current UPS regional hub workforce resides in Pennsylvania and the remaining 20% lives in New Jersey and Delaware, the net benefit to the state is the taxes generated by the 20% currently not residing in Pennsylvania, which would need to be reflected in the economic impact analysis.

Conversely, another potential scenario is if UPS cannot be accommodated at PHL, and finds it necessary to relocate their hub operations elsewhere, without the proposed Hazleton airport, UPS may select an out-of-state competitor. It needs to be emphasized that while Hazleton is not a "lock" for UPS relocation, however in the event that the relocation does occur, Hazleton would most likely be under consideration. Therefore, the potential loss to the Commonwealth without having a Hazleton airport option would be the 80% currently residing in Pennsylvania.

The construction activity of the airport and the adjacent industrial acreage would also provide significant impacts to both the state and local economies during the life of the project.

In addition to the airport activity, the development of the industrial 3,500+ acres of land offers the potential to create significant economic impacts. At this time, the timeline of build out is expected to take 8 years, however the absorption of the parcels cannot be determined. In comparison, it has taken over 30 years for the Humboldt Industrial Park to reach the current employment level of 5,600. Also, the potential tenants do not necessarily need to be related to the airport and its cargo operations. However, if the Hazleton Cargo airport was developed, it is assumed over time that air-related tenants - shippers and manufacturers - may locate at these sites to take advantage of the cargo airport and ancillary services provided at the airfield.

Another concern to the sponsors of the project is the potential impact this job creation would have on the local infrastructure. While it will be discussed in detail in the following Chapter of this report, it is important to note that the perception of an influx of 160,000 jobs to the Greater Hazleton area is simply not the case. As described, that while many of these jobs are already present in the Commonwealth, a successful cargo airport operation may act as an impetus for future relocations of manufacturers of this type.

CHAPTER 4
INTERMODAL ELEMENT

4.1 TRANSPORTATION IMPACT ASSESSMENT

In response to the announced proposal for the development of the Hazleton Air Cargo Airport, questions have been raised regarding its potential impacts upon the surrounding communities, including its potential impacts upon auto and truck traffic, railroads, health care facilities, schools, and other infrastructure systems, namely potable water, sewerage, and public safety systems. The primary focus of this analysis has been an assessment of the potential impacts of the proposed cargo airport upon the affected transportation infrastructure, along with a qualitative assessment of its potential impacts upon the other infrastructure systems that have been listed above.

4.1.1 Background

From late in 2007 through to the middle of 2008, The Consultant has conducted a review and analysis of data and information regarding the existing highway and infrastructure network that potentially may be affected by the development of the proposed new cargo airport southwest of Hazleton PA. In addition, in order to assess the current status of this highway and infrastructure network, as well as the potential impacts of the proposed cargo airport upon this network, the Consultant has requested and received relevant data and information from state and local officials, as well as from the Developer..

On January 30, 2008 the Consultant attended the annual State of the City Address by Hazleton Mayor Louis Barletta, in order to help understand some of the local issues facing the citizens of the greater Hazleton area. The Consultants also meet with a large group of community leaders of the greater Hazleton area, for an exchange of information regarding specific concerns about the project. Other meetings held included meetings with representatives of District 4 of the Pennsylvania Department of Transportation (PennDOT) in Dunmore PA, as well as communications with the Pennsylvania Bureau of Aviation and the Federal Aviation Administration.

The following sections of this report are based upon the data and information that was collected and compiled through the process that has been described above.

4.1.2 Highways

4.1.2.1 Overview of Existing Highway System

Figure 4-1 shows the location of the proposed cargo airport site in relation to the major highways near the site. The site is located near Hazleton PA and the junction of I-80 and I-81, about 90 miles west of New York City. Figure 4-1 also shows the boundaries of the proposed cargo airport facility.

The site of the proposed cargo airport facility is located immediately south of the Humboldt Industrial Park. The eastern boundary of the cargo airport site is located along the west side of I-81, south of the I-81 interchange with SR 924, and north of the I-81interchange with SR 424. A detailed site plan for the cargo airport facility, including specific proposed access points, is not yet available, so proposed points of access to the cargo airport facility have not yet been identified at the time this analysis was conducted.

Figure 4-2 shows 2006 Average Annual Daily Traffic (AADT) volumes, as provided by the Pennsylvania Department of Transportation (PennDOT).

4.1.2.2 Existing Access to the Proposed Cargo Airport Site

As discussed previously, the proposed means of access to the proposed Hazleton Air Cargo Airport has not been identified other than in general terms. The only existing means of access to the proposed air cargo airport would be either through the Humboldt Industrial Park to SR 924, or via a private haul road that connects the site to SR 309 via an overpass of I-81 that is located about halfway between the SR 924 and SR 424 interchanges with I-81 if direct access to I-81 is not provided.

Figure 4-1
HAZLETON AREA HIGHWAY NETWORK

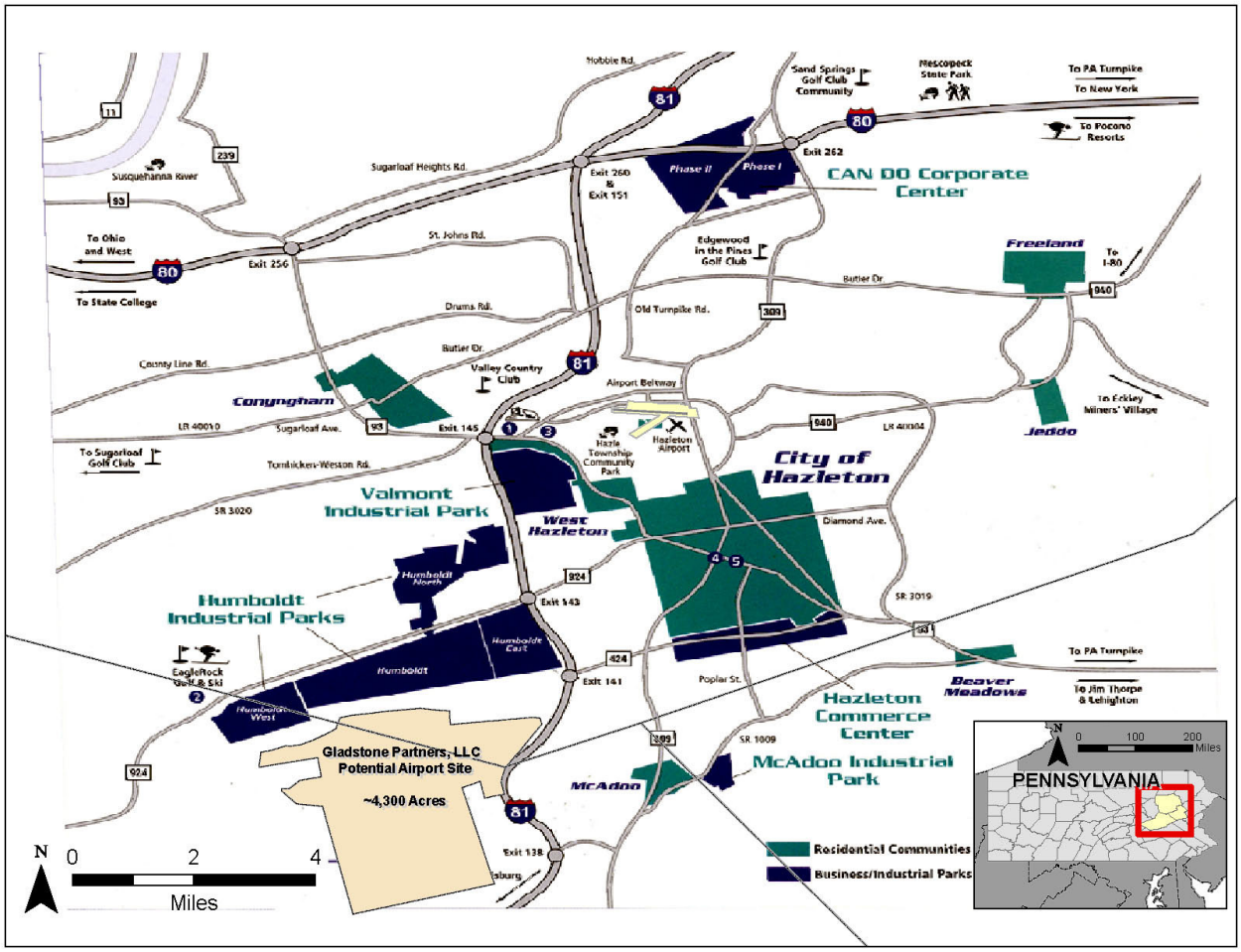
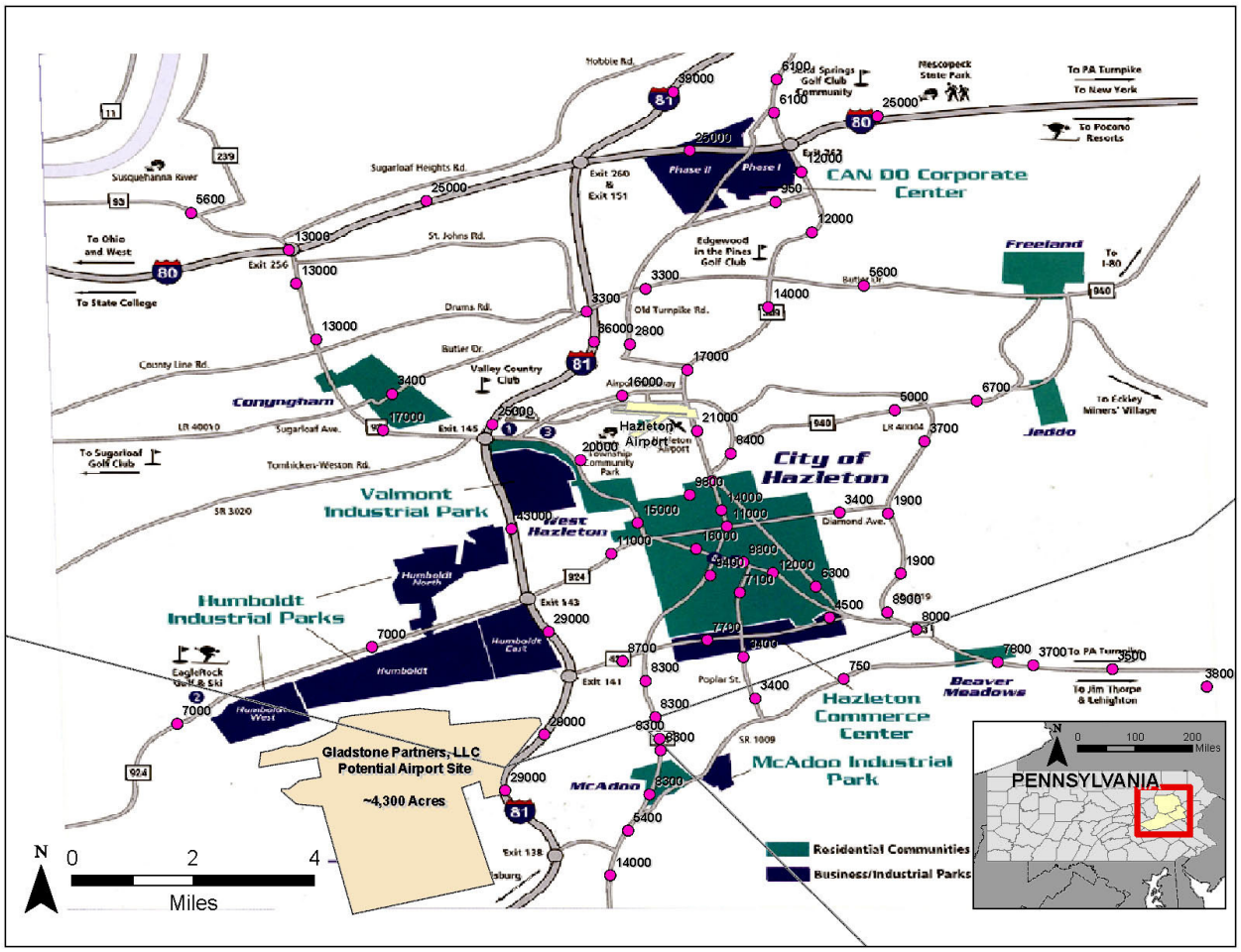


Figure 4-2
2006 AVERAGE ANNUAL DAILY TRAFFIC (AADT) HAZLETON AREA



Source: Pennsylvania Department of Transportation (PennDOT)

4.1.2.3 SR 924 Analysis

It would appear that access to SR 924 from the proposed Hazleton Air Cargo Airport would be the most likely short term solution for access the site. Access to SR 924 from the Proposed Hazleton Air Cargo Airport would most likely be from an access road that would run parallel with I-81 and connect to SR 924 at an existing intersection, which may not currently be signalized.

As noted below, a traffic study would be required to be conducted on behalf of the developer in accordance with guidelines that have been established by the Pennsylvania Department of Transportation (PennDOT). This study would include the identification of specific site access points and existing affected intersections on affected roadways such as SR 924, as well as any proposed new intersections. For each affected access

point, intersection, and roadway that is identified in the traffic study, the developer would be required to submit detailed design and capacity analyses. Given the initial traffic volumes that are likely to be generated by the proposed project, it is very likely that several intersections along SR 924 would be required to be analyzed.

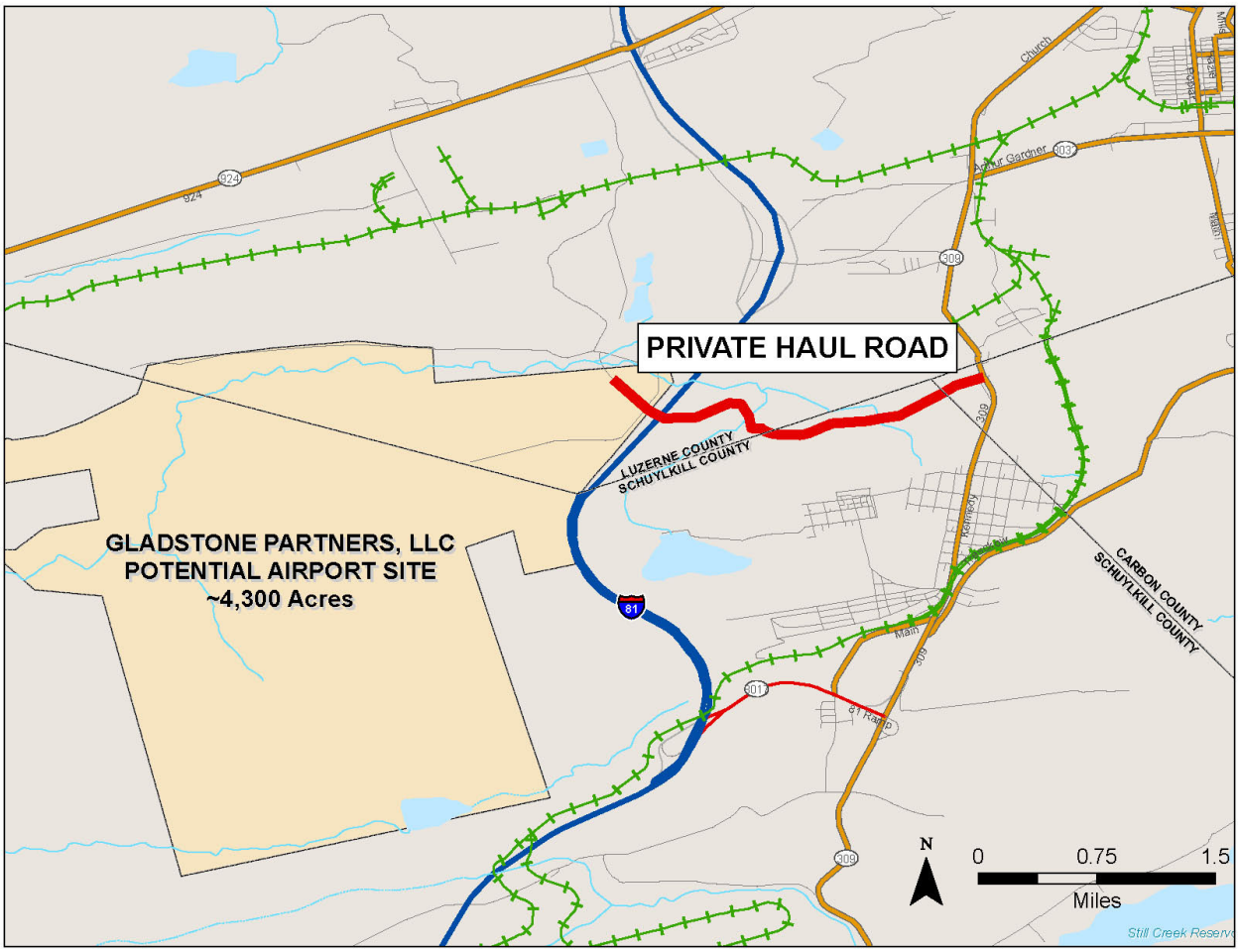
Improvements to SR 924 are underway which are intended to provide additional capacity. However, these improvements would not provide any additional highway capacity beyond the capacity that would be required to support the ongoing development of the Humboldt Industrial Park. Development of the Humboldt Industrial Park is not yet completed. By the time of completion of the development of the industrial park, it is expected that there will be no remaining capacity on SR 924 that could be used to accommodate any of the traffic that would be generated by the proposed new cargo airport facility.

If the traffic study envisions that primary access to the cargo airport site would be via through the Humboldt Industrial Park from SR 924, then PennDOT approval of that traffic study would likely be problematic, given the level of existing traffic on SR 924 and the additional traffic that can be expected on SR 924 due to ongoing developments such as the Humboldt Industrial Park itself.

4.1.2.4 Haul Road Analysis

Figure 4-3 shows the location and alignment of the existing private haul road located on the Developer's property. It includes an I-81 overpass that is located about halfway between the SR 924 and SR 424 interchanges. It appears that the haul road and overpass were built as part of the initial I-81 construction project, in order to allow surface mining operations to continue on both sides of the interstate. There are no ongoing surface mining activities in the area, so these facilities are no longer in use. The haul road and overpass are not presently in use and their condition is unknown but appears to be in poor condition. It is possible that they may be traversable by construction vehicles while the airport is being developed, but for ongoing vehicular access to the completed cargo airport facility, it will be necessary to build a replacement road and overpass on a better alignment. If access to the site was via the Haul Road Bridge, the access road would be required to be connected to SR309.

Figure 4-3
LOCATION AND ALIGNMENT OF PRIVATE HAUL ROAD



Major improvement or reconstruction of the haul road would be necessary before it could be used by cars or over-the-road trucks on a regular basis. The principal benefit of the haul road is that parts of it could be used as an easement for the future construction of an access road into the site.

It is very likely that major improvements to SR 309 would be required before it could be considered to be suitable as a principal means of travel to or from the proposed cargo airport facility.SR 309 is a major state highway that runs through Hazleton along the eastern side of I-81, linking I-80 and Hazleton to Allentown and Philadelphia. In Luzerne County and in the general vicinity of the site of the proposed cargo airport, SR 309 is heavily traveled and is generally only two lanes wide. In addition, SR 309 does not appear to meet current roadway design standards.

4.1.2.5 I-81 Interchange at SR 924

Figure 4-4 shows the existing interchange of SR 924 at I-81. As shown in Figure 4-4, access ramps are located in three quadrants of the interchange but not in the southwest quadrant. In lieu of a southbound on ramp in the southwest quadrant, there is a loop ramp for eastbound to southbound traffic in the northwest quadrant. The effect of this configuration is to all traffic from the Humboldt Industrial Park is required to turn left from SR 924 in order to enter I-81. To enter I-81 northbound, traffic from the Humboldt Industrial Park must cross I-81 and then turn left onto the northbound on ramp. To enter I-81 southbound, traffic from Humboldt Industrial Park must turn left on the near side of I-81onto the southbound loop ramp that as described above.

Figure 4-4
I-81 INTERCHANGE AT SR 924

Ramp traffic counts are not readily available. Ramp capacity analyses at this interchange have not been conducted as part of this study. Nevertheless it appears that existing traffic volumes are operating above capacities on one or more of the ramps that are located at the I-81 interchange with SR 924. At the meeting with business and government leaders that was held in Hazleton, it was reported to the Consultant that queues of exiting traffic have been observed that were long enough to partially block main line traffic through this interchange.

There are no currently planned improvements to the interchange of I-81 and SR 924. Improvements to this interchange would require the acquisition of a significant amount of right of way that would be located within the southwest quadrant of I-81 at SR 924.

4.1.2.6 I-81 Interchange at SR 424

At a point about three miles south of SR 924 and just east of the proposed project site, there is another I-81 interchange, at SR 424. This interchange is shown in Figure 4-5. This interchange is in a normal diamond configuration, with relatively long ramps located in all four quadrants of the interchange. Although ramp traffic counts are not readily available, it appears that the ramps at this interchange are currently operating within their existing capacities. But in order for this interchange to be used for interstate access from locations that are west of I-81, including the site of the proposed cargo airport facility, SR 424 itself would have to be extended. At present, SR 424 extends from SR 93 east of Hazleton, across SR 309 to I-81, where it terminates.

Figure 4-5
I-81 INTERCHANGE AT SR 424

4.1.2.7 Proposed Extension of SR 424

A westward extension of SR 424 is in the early planning stages. An advisory task force for the SR 424 extension study was formed late in 2007. The extension would begin at the existing SR 424 interchange with I-81, and would run across the cargo airport site north and west to SR 924, providing direct access to the site from I-81 and SR 924. Figure 4-2 shows the location of the corridor that is being studied for the SR 424 extension. According to a PennDOT representative, the currently planned opening date for the SR 424 extension is early to mid 2014. This extension would most likely be the best access point to the project given its location and potential to accommodate the traffic generated by the proposed project.

4.1.2.8 SR 309 and SR 93 Analysis

In addition to SR 924 and SR 424, the existing state highways in this area include SR 309 and SR 93. Sr 309 runs generally parallel to I-81 from I-80 through the City of Hazleton down to the southern boundary of Luzerne County and on to Allentown and Philadelphia. SR 93 runs generally south and east from the Hazleton area through the Town of Jim Thorpe. At Jim Thorpe SR 93 connects to Allentown and Philadelphia via I-476, which is the Northeast Extension of the Pennsylvania Turnpike. As noted above , SR 309 is generally a two-lane rural road that does not meet current roadway design standards in many locations. Similarly, SR 93 is also a two lane rural road which would most likely require major design and capacity improvements.

4.1.2.9 I-81 Existing Level of Service

I-81 is an existing four-lane interstate highway that runs from Canada through New York, Pennsylvania, Maryland, and Virginia, to I-40 in Tennessee. Within Pennsylvania, I-81 is four lanes wide. There is a very high percentage of truck traffic along the length of I-81. In the general vicinity of the Proposed Hazleton Air Cargo Airport, the percentage of truck traffic on I-81 ranges from 21 percent to 31 percent.

Table 4-1 shows the volume of traffic on the segments of I-81 that are located in the general vicinity of the proposed cargo airport site. Table 4-1 also shows the percentages of truck traffic for each of these segments of I-81, and the results of a preliminary level of service analysis of I-81 that was conducted as a part of this study, for illustration purposes only.

This level of service analysis was conducted by the Consultant using the planning methodology for freeway segments that is documented in Chapter 23, of the 2000 edition of the Highway Capacity Manual (HCM 2000), entitled “Basic Freeway Segments.”

Based on this analysis, it appears that there is sufficient capacity on I-81 for additional development in this general area. The amount of additional development that could be accommodated would have to be determined through a traffic impact study that would be conducted on behalf of the applicant, in accordance with the procedures as generally described below.

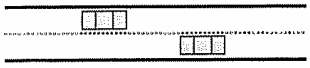
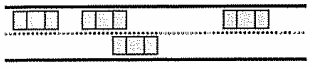
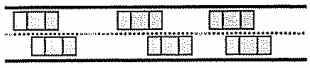
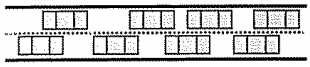
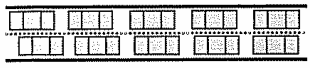
Table 4-1
I-81 TRAFFIC COUNTS, TRUCK PERCENTAGES, AND LEVELS OF SERVICE I-80 TO LUZERNE/SCHUYLKILL COUNTY LINE

From / To	I-80 / SR 93	SR 93 / SR 924	924 / County Line
Total AADT	36,000	43,000	29,000
Percent Trucks	27%	21%	31%
Level of Service	**C**	**C**	**A**

Source: AADT and Percent Trucks: PennDOT
Level of Service Analysis: RS&H

The levels of service identified in Table 4-1 are generally described in Figure 4-6 below.

Figure 4-6
LEVEL OF SERVICE DESCRIPTIONS

Level of Service		Description
A		**FREE FLOW.** Low volumes and no delays.
B		**STABLE FLOW.** Speeds restricted by travel conditions, minor delays.
C		**STABLE FLOW.** Speeds and maneuverability closely controlled due to higher volumes.
D		**STABLE FLOW.** Speeds considerably affected by change in operating conditions. High density traffic restricts maneuverability, volume near capacity.
E		**UNSTABLE FLOW.** Low speeds, considerable delay, volume at over slightly over capacity.
F		**FORCED FLOW.** Very low speeds, volumes exceed capacity, long delays with stop-and-go traffic.

SOURCE: Bucher,Willis & Ratliff Corporation

If the volume of additional traffic generated by the proposed cargo airport facility would be high enough to exceed the existing available capacity of I-81, it would be necessary to widen I-81 from four lanes to six lanes, at least from SR 424 to I-80, a distance of about 10 miles.

Based on the estimated $695 million cost of a project that was proposed in 2003 to widen a 33-mile portion of I-81 through Scranton and Wilkes Barre, the Consultant has estimated that to widen ten miles of I-81 between SR 4224 and I-80, the cost would be about $200 million. This project would likely be eligible for 80 percent Federal assistance. If Federal funds were obtained for this project, the net cost of this project to the state would then be only 20% of the total project cost, or about $40 million.

The developer's share of this cost could be based on the percentage of new capacity on I-81 that would be required to handle traffic to and from the proposed cargo airport facility. For example, if the development were to generate 10,000 new trips on I-81 and the project were to increase the capacity of I-81 by 20,000, then the developer would be required to pay only 50% (= 10,000 / 20,000) of the project cost. Before project costs, and the developer's share of these costs, could be determined, it would first be necessary to conduct a traffic impact study in accordance with PennDOT guidelines.

There are no active plans for adding travel lanes on I-81 in Pennsylvania. In addition, there are no ongoing plans for any new I-81 interchanges in the Hazleton area, or for significant improvements to any existing I-81 interchanges in this area.

If the traffic impact study determines that it would be necessary to provide additional interchange capacity, either at an existing interchange or at a proposed new interchange, then a Point of Access study would also need to be conducted on behalf of the applicant. Procedures to be followed in conducting a Point of Access study are also described below.

4.1.2.10 Trip Generation Estimates for Cargo Airport and Related On-Site Development

The number of daily trips expected to be generated by the proposed cargo airport can be estimated as a function of the number of expected additional employees. *Trip Generation,* 7th edition, published in 2003 by the Institute of Transportation Engineers (ITE), is the most widely used method for determining the number of trips that can be expected to be generated by a proposed new development. In the 7th edition of the ITE Trip Generation Report, there is no entry for a cargo airport. For the purposes of this analysis, the Consultant has used the number of direct jobs expected to occur as a result of aviation related activity calculated from the level of air cargo activity by the Study Team. It is estimated that the project would produce 3,347 direct jobs in year 20 of the project. As a result, the Consultant has estimated that there will be approximately 47,700 new weekday trips to and from the cargo airport as a result of just of the direct aviation related jobs.

In addition to traffic generated by the directly related air cargo activity, it is likely that there will be additional traffic from the adjacent property also being proposed for commercial, industrial warehousing by the Developer. The additional development area is approximately 3,500 acres in size in addition to the 1,000 acres to be used for the Proposed Air Cargo Airport. Based on relationships of current employment levels at the Humboldt Industrial Park and estimated absorption of industrial parcels, the number of additional jobs on the cargo airport adjacent site that would not be aviation related has been estimated at 6,000. Using the ITE Land Use Code 130, i.e. the land use code for an industrial park, the Consultant has estimated that 20,000 new weekday trips will be generated by non-aviation related industrial activities on the site of the proposed air cargo airport.

Table 4-2 is a summary of the Consultant's estimates of new weekday trips that will be generated by the proposed air cargo airport facility and the related industrial development that will be expected to occur on the site of the proposed new cargo airport, based on the potential number of new employees and the trip generation estimates that are documented in the 7th edition of the ITE Trip Generation Report.

It is estimated that 67,700 new weekday trips will be generated by the proposed new cargo airport and related on-site industrial development.

Table 4-2

TRIP GENERATION ESTIMATES FOR PROPOSED CARGO AIRPORT AND RELATED ON-SITE INDUSTRIAL DEVELOPMENT

Proposed Land Use	ITE Land Use (Code #)	Employee Forecast	ITE Rate	New Weekday Trips
Cargo Airport	General Aviation Airport (022)	3,347	14.24	~ 47,700
Industrial	Industrial Park (130)	6,000	3.34	~ 20,000
Total		9,347		67,700

4.1.2.11 Traffic Impact Study Requirements

To determine the impact of additional traffic upon the state highway system, the Pennsylvania Department of Transportation (PennDOT) will require the applicant to prepare and submit a traffic impact study. In anticipation of its formal adoption, the current draft revision of the PennDOT Traffic Impact Study Policy and Procedures Manual is being used as the basis for the preparation of traffic impact studies that will be required to be submitted to PennDOT, as a condition of approval of access to state highways.

An informal description of the PennDOT Traffic Impact Study Policy and Procedures Manual is presented below for information purposes. The description below is not intended to supersede the requirements that are documented in the manual itself.

Under the policies and procedures that PennDOT has established, a traffic study is required for all proposed new developments that would generate more than 3,000 vehicle trips per day, or if a proposed new development is likely to generate 100 or more new inbound or outbound hourly trips.

Applicants are highly encouraged to request a pre-application scoping meeting with the appropriate PennDOT District Office. Since the proposed cargo airport would be located in Luzerne County, the appropriate district office would be District 4-0, headquartered in Dunmore PA.

If a scoping meeting is held, a site plan and a preliminary traffic assessment would be required to be submitted at least two weeks prior to the date set for the scoping meeting.

At a minimum, it would be necessary for the site plan to identify the number and location of proposed access points to the cargo airport facility. Given the overall level of anticipated development, it is expected that the site plan would show at least two major access points connecting to off site arterial or major collector roadways.

The preliminary traffic assessment would be required to include:

- existing available traffic data
- preliminary trip generation based on the proposed land use,
- preliminary trip distribution
- proposed study area scope,
- information regarding significant develpments in the vicinity of the project location, and
- a list of all existing and requested signalized intersections in the proposed study area

In addition, the developer should be prepared to present information at the scoping meeting regarding any known and/or foreseeable issues associated with the project location or proposed improvements, including but not limited to right-of-way, structure locations, existing roadway traffic conditions (congestion, etc), environmental constraints, and public involvement.

The study area will likely include intersections adjacent or in close proximity to the site, intersections that are of major concern in the vicinity of the proposed site, intersections with known history of crashes or congestion problems, and intersections that will be utilized by a significant percentage of site generated traffic.

If a scoping meeting is held, a Scoping Meeting Checklist must be completed and signed by the applicable PennDOT representative at the Scoping Meeting and must be included in the completed Traffic Impact Study.

The completed Traffic Impact Study must also include:

- an analysis of existing traffic conditions;

- an analysis of opening year traffic conditions without the proposed new development;
- an analysis of design year traffic conditions without the development (i.e. either 10 or 20 years after the opening date for the proposed development);
- a description of the development, including a description of the proposed access location(s), analyses of sight distances at proposed access location(s); trip generation forecasts; and trip distribution and trip assignment to roadways and intersections in the study area;
- Opening year traffic conditions with the development;
- Design year traffic conditions with the development;
- A description of the mitigation measures or remedies that will be required in order to provide future design year levels of service with the development which are no worse than future design year acceptable levels of service without the development (unless a waiver is granted). If a new intersection is included in the list of required mitigation measures, it should be designed to operate at an acceptable level of service in the future design year (i.e. Level of Service C or D, as these levels of service are described in the 2000 edition of the Highway Capacity Manual, and as determined by PennDOT).

The analyses of traffic conditions will include capacity analyses of the impact of the cargo airport upon opening year and design year traffic conditions, as well as turning lane and queue length studies, gap studies, and traffic signal warrant analyses as applicable.

The remedies identified in the study may include PennDOT or locally funded projects, or they may include a proposal to pay for the cost of a required improvement rather than the provision of the improvement itself. The benefits of proposed remedies must be quantified in the Traffic Impact Study. Recommended remedies must be determined to be feasible. If right of way availability is a concern, the study must address the ability to obtain the necessary right(s)-of-way.

If any part of the development of the cargo airport is expected to occur prior to the opening date set for the extension of SR 424, then it may be advisable to prepare a traffic impact study in a manner that would allow PennDOT and other reviewing agencies to determine the level of cargo airport development that could be supported by the affected highway system prior to the completion of the SR 424 extension.

If it is determined that the Traffic Impact Study has been prepared in accordance with appropriate PennDOT guidelines, PennDOT will review and return comments within 30 – 60 days of the submission of the Traffic Impact Study.

4.1.2.12 Point of Access Study Requirements

If the development of the air cargo airport would require an additional interstate interchange to be constructed, or if an existing interstate interchange would be required to be significantly modified, then a Point of Access Study will be required to be prepared and submitted in accordance with PennDOT and FHWA guidelines.

The purpose of a Point of Access study is to assure that the proposed new or revised access point is developed properly with minimal adverse impact to the existing system. In addition, PennDOT guidelines state that local governments should not approve additional points-of-access unless local roads can accommodate the increased traffic and sufficient funding is available for the necessary improvements.

The maximum time allowed for PennDOT to review a Point of Access study is 60 days. Under normal circumstances, the completion of a review can be expected within 30 – 35 days.

Detailed guidelines for a point of access study may be downloaded from the PennDOT web site. They are located in Appendix G of PennDOT Design Manual Part 1A.

4.1.3 Railroads

Figure 4-7 is a map of the existing rail facilities that are located within the Humboldt Industrial Park.

Figure 4-7
HUMBOLDT INDUSTRIAL PARK RAIL FACILITIES

The Humboldt Industrial Park is located immediately to the north of the proposed air cargo airport. Within the industrial park, existing rail facilities are owned by CAN-DO, the operator of the industrial park, and operated by Norfolk Southern, which pays CAN-DO for the use of these facilities. These rail facilities are in good condition and are well maintained. According to PennDOT officials, Norfolk Southern currently operates about 50 rail cars per week at the Humboldt Industrial Park.

The owner or operator of the new air cargo airport would be responsible for the extension of rail facilities onto the cargo airport site and most likely the future maintenance of the tracks and sidings.

Given the nature of the commodities that are handled by air versus the nature of the commodities that are handled by rail, it is not expected that the roadway traffic impacts of the proposed air cargo airport would be significantly mitigated by availability of well maintained rail facilities within the immediate vicinity of the

proposed site of the cargo airport, or by the potential for the extension of these rail facilities into the air cargo airport site itself. However, the rail availability would be beneficial to the adjacent 3,500 acre industrial park also owned by the Developer and most likely would be configured similar to the rail service in the adjacent Humboldt Industrial Park.

4.2 QUALITATIVE ASSESSMENT OF OTHER INFRASTRUCTURE EXISTING CONDITIONS AND EXPECTED IMPACTS

4.2.1 Health Care Facilities

In 2005 Hazleton-St. Joseph Medical Center voluntarily surrendered its hospital license. Late in 2006 the St. Joseph's Urgent Care Center also closed. About 150 beds are available at Hazleton General Hospital, the area's remaining acute care facility. Hazleton General Hospital is operated by Greater Hazleton Health Alliance (GHHA), which was formed in 1996. The hospital added new operating and emergency rooms late in 2006. In addition, a new 73,000 sq. ft. health and wellness center was scheduled to open in Hazleton late in 2007, featuring diagnostic and laboratory services, rehabilitation and various therapies, an ambulatory-surgery wing, a fitness center, and a café.

At the January 30, 2008 meeting in Hazleton with business and government leaders, representatives of the Medical Center reported that there has been a 15 – 20 percent annual increase in uncompensated care over the past two years, amounting to $9,000,000 in the past year. At this meeting the representatives expressed concern regarding the expected rate of development of the cargo airport in relation to amount of time that would be required to expand medical facilities, as well as the time that would be needed to recruit additional physicians and trained medical staffs.

With regard to health care facilities, the impact of the proposed air cargo airport facility would appear to be manageable, as long as that the employees resulting from the proposed development would be covered by employers health care plans and not require a disproportionate demand for uncompensated medical care. Assuming that the employees resulting from the proposed development would have access to health insurance, the resulting impact may actually be positive for the area and stop the trend of closing beds in the community hospitals.

4.2.2 Schools

According to information that was provided at the meeting with business and government leaders on January 30, 2008, it was reported that there has been a large recent influx of new students into the Greater Hazleton area. Meeting attendees reported that the Hazleton Area High School is ten years old and was designed for

1.600 students. According to the Hazleton Area School District website (http://www.greatschools.net), the current 2008 enrollment at the Hazleton Area High School is 3,335 students.

It was also noted at the meeting that schools in McAdoo in Carbon County may be adversely by noise attributable to aircraft operations at the cargo airport.

It is not known at this time what new vocational training facilities or services would be required to in order to support the workers who would be employed at the proposed air cargo airport as demands for skilled workers at both the proposed air cargo airport and the nearby Humboldt Industrial Park could potential increase the demand for skilled worker training in the region,

Given that current enrollment in the Hazleton public schools is well above the existing capacity of the school system, a direct investment in the school system would appear to be required in order to mitigate the potentially adverse impact of a large number of new school students. The source of funding for this investment should be determined based on an assessment of the number of new jobs that would be created and the impact of these new jobs upon the overall property tax base in the area.

The Proposed Air Cargo Airport could potential create greater demands on the Regions' school systems. The Consultant believes it is reasonable to expect that some of the workers for the Proposed Air Cargo Facility already reside on the area and would be attracted to the proposed development that could potential offer more highly skilled and higher paying positions. It is also reasonable to expect that the proposed development would also attract workers from outside the area that would move to the region and therefore create more demands on the school systems.

In the absence of a means for the transfer of public funds across local jurisdictional boundaries for educational purposes, it is likely that a major influx of new students into the region would have a negative impact upon certain schools or school systems.

During the initial development plan review of the project, discussions should be held with the Developer and local officials, in order to help ensure that sufficient funds will be available to offset the additional costs of enhanced or expanded public school facilities. These funds may be derived through development fees or through increased property tax collections.

4.2.3 Public Safety

It is anticipated that the proposed air cargo airport will be built and staffed to meet its own requirements with regard to police fire and other emergency services. The adjacent area outside of the runway and taxiway

environment which also includes the majority of the Developers property would be served by the local government as far as police, fire and rescue services goes.

Outside of the proposed development but within the Greater Hazleton Area, concerns have been expressed with respect to existing staffing and jurisdictional constraints affecting the availability of adequate police fire protection and emergency services. Due to the recent influx of new lower income residents to the region, public safety is a growing concern in the Greater Hazleton area.

In the absence of a regional public safety agency to serve the greater Hazleton region, it is likely that certain individual jurisdictions will be adversely affected by an influx of new residents due to the development of the proposed cargo airport facility. To meet the costs of the additional public safety services that may be required to support an influx of new residents, funding for these services and facilities may be sought through development impact fees or through the imposition of additional property taxes within certain individual jurisdictions.

4.2.4 Other Facilities

4.2.4.1 Potable Water

It is understood that the Developer of the Proposed Air Cargo Airport plans to provide an independent supply of treated water that will be sufficient to meet the anticipated potable water supply requirements of the cargo airport. Depending on the specific location of the cargo airport runway, there may be an issue with the location of the runway in relation to the location of a well field that supplies a significant amount of the potable water that is available in the Greater Hazleton area. This site issue should be able to be mitigated during the design process of the airfield to help protect the viability of the well field site.

4.2.4.2 Sewerage

It is expected that the Developer will construct an on-site sewage treatment plant that will be adequate to satisfy the requirements of the cargo airport facility. Discussion with local public officials indicated that within the Greater Hazleton area as a whole, there are significant constraints that affect the capacities of existing wastewater treatment facilities, particularly in residential areas near the interstate system, as well as in the vicinity of the Humboldt Industrial Park. More recently, this has affected the issuance of new building permits for the construction of commercial and industrial buildings. Municipalities in the Greater Hazleton area tend to operate combined wastewater and storm water sewer systems, so that water treatment capacities are routinely exceeded whenever there is a significant amount of rainfall or runoff from snow melt.

4.3 OVERVIEW OF FACTORS AFFECTING THE FISCAL IMPACT OF THE DEVELOPMENT

4.3.1 Economic Incentives (e.g. KOZ)

In cooperation with local communities, the Commonwealth of Pennsylvania provides tax abatement and other economic incentives that are intended to promote desirable economic development. For example, Keystone Opportunity Zones (KOZ) are defined parcel-specific areas with greatly reduced or no tax burden for property owners, residents, and businesses. For a KOZ to be established, a vision or strategy statement must be prepared. Along with other requirements, a potential KOZ site must have displayed evidence of adverse economic and socioeconomic conditions within the proposed zone, such as high poverty rates, high unemployment, percentage of abandoned or underutilized property, and/or population loss.

It is understood that the Developer of the Proposed Air Cargo Airport will not be seeking the designation of the site as a Keystone Opportunity Zone. Therefore, if there are to be any cargo airport related tax abatements or economic incentives, they will not be subject to KOZ requirements. This is also directly tied to the ability of local governments to collect local property taxes that will be needed to help support continued development of the local school systems and public safety issues.

4.3.2 Development Issues

During several meetings with the local community leaders, questions have been raised to the Consultant over the quality of the jobs that will be created at the proposed air cargo airport. If the new jobs are high paying jobs, then the local economy will most likely be able to provide the additional public services and facilities that may be required. If not, then local government resources may be inadequate.

Similarly, if the scale of the cargo airport development is too large, or if the pace of the development is faster than the pace at which new facilities can be developed or new services provided, then it can be expected that the new development will have adverse impacts upon the transportation and local infrastructure systems.

As a general rule, aviation related jobs in the air cargo industry can pay higher than average wages. As was mentioned several times during meetings with community leaders, the Humboldt Industrial Park, while very successful, has offered the majority of jobs in the $8.00 - $15.00 per hour range for warehousing which has caused some concern about ability to help pay for the necessary public infrastructure and services costs.

It is undetermined at this time what the range of salaries that would be produced by the proposed development and what the actual percentages would be between aviation related and warehousing / commercial / industrial jobs produced by the proposed development.

4.3.3 Intergovernmental Issues

Due to the large number of local jurisdictions in the Greater Hazleton area, new tax revenues attributable to the proposed new cargo airport may not be sufficiently available to jurisdictions where there may be new infrastructure or service requirements resulting from the arrival of new residents or businesses.

Although the cargo airport would be located in the southwest corner of Luzerne County, governments in both Schuylkill County and Carbon County may be affected by the development of the cargo airport. In order to ensure that the benefits and costs of the airport are more evenly divided, it may be necessary to investigate some sort of mechanism to financially assist surrounding communities that are outside of the county where the airport exists.

At the state level, it should be noted that Luzerne County is in a different PennDOT Engineering District from Carbon County and Schuylkill County. Luzerne County is in PennDOT Engineering District 4-0, headquartered in Dunmore, while Carbon County and Schuylkill County are located PennDOT District 5-0, headquartered in Allentown.

Depending upon the magnitude of the proposed cargo airport facility and its potential impact upon highways located in Schuylkill or Carbon Counties, it may be necessary to involve PennDOT District 5-0 officials in the review of traffic impact studies or Point of Access studies for the proposed Cargo Airport Facility.

4.4 CONCLUSIONS

For access to the proposed cargo airport facility, the weakest links appear to be the existing I-81 interchange with SR 924, and SR 924 itself. The I-81 interchange with SR 924 was not designed to provide for convenient access to and from the area west of I-81, and no improvements to the I-81 interchange with SR 924 are currently being planned or considered.

Improvements to SR 924 are currently underway, but all of the additional capacity that would be provided on SR 924 will be required to support the ongoing development of the Humboldt Industrial Park.

An extension of SR 424 has been proposed that would provide for better access to the site of the proposed cargo airport, but completion of the extension cannot be expected to occur until 2014. No improvements to the I-81 interchange with SR 424 are currently being planned or considered.

Interim access to the site could be provided via an existing private haul road and I-81 overpass, but the haul road is not suitable for daily use in its current configuration. The major benefit of the haul road is that it provides for an easement for access to the site across I-81 to SR 309.

Given that there are existing deficiencies in the design of the I-81 interchange with SR 924, and that no improvements to this interchange are currently under consideration, it may become necessary to modify the design of the I-81 interchange with SR 424, as an added part of the project for the construction of the extension of SR 424 from I-81 to SR 924. The alternative would be for a new I-81 interchange to be built that would provide sufficient highway capacity for the proposed new cargo airport

Before a new I-81 interchange could be approved and before any major improvements could be made to any existing I-81 interchanges, a Point of Access Study would be required to be prepared and submitted to both the Pennsylvania Department of Transportation (PennDOT) and the Federal Highway Administration (FHWA) for their review.

In addition, PennDOT regulations also require the developer of the proposed new cargo airport to prepare and submit a traffic impact study. The traffic impact study would be required to include a demonstration of the sufficiency and feasibility of the improvements that would be required in order to provide for sufficient highway capacities as well as for the continued safe operation of existing highway facilities.

Rail facilities that would serve the proposed cargo airport facility appear to be adequate to support the extension of these facilities into the site of the proposed cargo airport facility.

There appear to be existing short term infrastructure deficiencies in the Greater Hazleton area, including school capacity deficiencies and deficiencies in the adequacy of existing public safety services. There are also locations within the region where sewerage capacities are not sufficient to support additional new development. The developers of the cargo airport have proposed to provide new facilities that would address their on-site requirements for water, sewerage and emergency services. To serve the new residents that may move into the greater Hazleton area in response to the development of the proposed cargo airport, the opportunity to provide for new infrastructure requirements will depend upon the expected number of new residents in the region, the rate at which they arrive, and the amounts that they can be expected to earn.

Provided that:

- the developers of the cargo airport will provide new infrastructure facilities such as water and sewer to address their facility's own on-site requirements,

- the developers of the cargo airport will work cooperatively with surrounding local governments regarding potential impacts to schools, public safety and transportation,
- the development of the cargo airport facility will proceed in an orderly manner over a reasonable length of time, and
- the new jobs to be created or induced by the cargo airport development will be sufficiently remunerative, then

These potential deficiencies should not be seen as prohibitive obstacles to the development of the proposed cargo airport facility.

Like most areas in Pennsylvania, the Greater Hazleton area is burdened with a very large number of local jurisdictions, some of which are very small. It is therefore likely that certain individual jurisdictions may be unduly burdened by the impacts resulting from the development of the cargo airport facility, even if the overall impact of the development is favorable.

(Although this problem has a significant influence upon the findings of this study, it would be well beyond the scope of this study to address this problem in any detail. Along with other relevant studies, please refer to *Back to Prosperity: A Competitive Agenda for Renewing Pennsylvania*, a project that was conducted in 2003 by the Brookings Institution Center on Urban and Metropolitan Policy.)

Although population and employment in the Greater Hazleton area have been declining over a long period, it appears that there has been a reversal of this decline within the past one or two years. The Humboldt Industrial Park appears to be thriving. In addition, new residents are being drawn into Greater Hazleton due to new employment opportunities in the outer New Jersey suburbs of New York City, as well as due to seasonal travel and second-home development in Eagle Rock, located southwest of Hazleton in Schuylkill County. While it is possible that infrastructure investments in support of the development of a cargo airport may divert resources that would otherwise be used to support these ongoing developments, such an analysis would also be beyond the scope of this study.

CHAPTER 5
CASH FLOW ANALYSIS OF PROPOSED HAZLETON CARGO AIRPORT

In this task, the financial implications of the proposed Hazleton Cargo Airport and projected cargo volume are estimated. The Consultant has developed a cash flow model to measure the revenue generating potential of cargo volume and rental operations of proposed airport business to the anticipated operating expenses and ultimately identify the financial viability and sustainability of the project.

5.1 APPROACH AND METHODOLOGY

Since the proposed airport is in the developmental stage, it is necessary to develop assumptions with respect to both revenue and expenses. The initial revenue and cost estimates for the Consultant's cash flow analysis have been provided by the Developer. The Consultant has reviewed the Developer's baseline analysis and has assessed the reasonableness of assumptions. In addition to the Developer's estimates, other sources were used to determine the validity of the components of the cash flow model. These sources include:

- Martin Associates in-house data base;
- Port Authority of New York and New Jersey;
- Harrisburg International Airport;
- Philadelphia International Airport;
- American Association of Airport Executives 2006/2007 Rates & Charges Survey
- www.freightersonline.com;
- www.airbus.com and
- www.boeing.com.

Once complied, the supporting data is used to evaluate the reasonableness of the Developer's baseline analysis. Then the anticipated revenues and costs are applied to the Consultant high case scenario forecast figures to essentially devise an anticipated and reasonable revenue stream. After a net revenue stream (operating revenues less operating costs) is developed, a debt service figure is derived from the total cost of the anticipated construction based on different levels of Commonwealth financial support. *It is to be emphasized that the funding options have not been determined at this time, and therefore the debt service figure in this cash flow is simply an order-of-magnitude estimate.*

5.2 REVIEW OF ANTICIPATED OPERATING REVENUES

The Developer's baseline analysis includes initial estimates of anticipated revenue sources. Therefore, the following cash flow analysis assumes those estimates to be the most accurate at this time. It should be noted that as commitments and contracts with potential tenants and carriers come to fruition, these rates are

subject to change on a number of factors including market conditions, escalation of anticipated construction cost, size of facilities required, etc. The cash flow model depicts three specific revenue sources:

- Landing Fees – are fees collected by the airport operator that is charged to the landed weight of the commercial aircraft;
- Lease Rental Income – are rents collected by the airport operator for the use of on-airport facilities, in this case primarily warehousing and cargo handling facilities; and
- Fuel Flowage Fees - are fees paid to the airport operator by the fuel provider, in most cases an on-site third party FBO (Fixed Base Operator) for the privilege of providing fueling services at the airport.

In order to assess the reasonableness of the Developer's revenue estimates, the Consultant has prepared a matrix of key revenue sources of competing airports in the region. Table 5-1 depicts the results of the comparison.

Table 5-1
COMPARISON OF KEY REVENUE SOURCE RATES

COMPARISON OF REVENUE SOURCES		
AIRPORT	LANDING FEE ($/1,000 lbs)	ON-AIRPORT CARGO LEASES
HAZLETON (ESTIMATE)	$0.75	$8.00
PHILADELPHIA INT'L	$1.93	$27.00-$31.00
JFK INTERNATIONAL	$5.35	$40.00-$44.00
NEWARK INTERNATIONAL	$5.75	$45.00-$49.00
HARRISBURG INT'L	$3.06	$13.50-$17.50

* Hazleton estimates incorporate a 3% annual escalation factor on all charges

The initial landing fee proposed by the Developer is estimated at $0.75 per 1,000 pounds of landed aircraft weight. The New York system airports are currently charging between $5.35 and $5.75 per 1,000 pounds. The other Pennsylvania airports - Harrisburg International and Philadelphia International are charging in $3.06 and $1.93 respectively. As illustrated, in comparison to the other key regional airports depicted, this proposed fee is certainly in an acceptable range for the Hazleton demographic.

With respect to cargo building lease rates, as expected, the New York airports (JFK and Newark) are collecting the highest charges in terms of landing fees and lease rentals ranging from $40-$49 per square foot. Philadelphia lease rates are considerably less than New York, but almost twice that of Harrisburg. Given the demographic market, the Harrisburg figures of $13.50-$17.50 would most likely compare to a proposed Hazleton Cargo Airport. To this end, it appears that the proposed initial Hazleton estimates are certainly reasonable and conservative.

While the proposed Hazleton Cargo Airport will offer perspective tenants a less expensive alternative to other gateways identified, it is the availability of infrastructure and proximity to the market and access to international gateways that provide the competitors, specifically New York, with the opportunity to charge such rates.

Average fuel flowage fees, typically range from $.04-$.06 per gallon. The Developer's initial estimate of $.03 appears reasonable as well.

5.3 ANTICIPATED REVENUE STREAM

The three revenue sources explained in the previous section have been incorporated into a revenue stream for the first 20 years of operation. Key factors in compiling the revenue stream include:

- Estimates of revenues are derived from the Developer's initial assessment and applied to the Consultant's high case scenario forecast as described in Chapter 1.

- Landing fee revenue is calculated by multiplying the Developer's initial estimate of $0.75 per landed 1,000 pounds (with 3% annual escalation) by the landed weight of the aircraft to the total annual landed weight of the forecasted aircraft landings. The payload for each landing is estimated at 85% of the payload capacity according to the manufacturer's technical specifications. The aircraft used in this analysis is based a proxy aircraft of the fleet mix that corresponds to the Consultant's high case scenario. Due to the market assessment of regional integrator hub activity, a Boeing 757-200F is used as the proxy aircraft. Similarly, with additional international freighter service coming online in later years of operation, a Boeing 747-400F is incorporated in the analysis. Cargo composition at Hazleton assumes the same relationship of deplaned to enplaned (56%-44%) freight for the New York and Philadelphia market as defined by the US Department of Commerce - USA Trade Online 2007. It should be noted that as contracts and commitments from carriers and operators are solidified, the aircraft mix will most undoubtedly shift, supporting different landing fee revenues. However, for the purpose of this analysis these proxy aircraft represent a viable order of magnitude relationship.

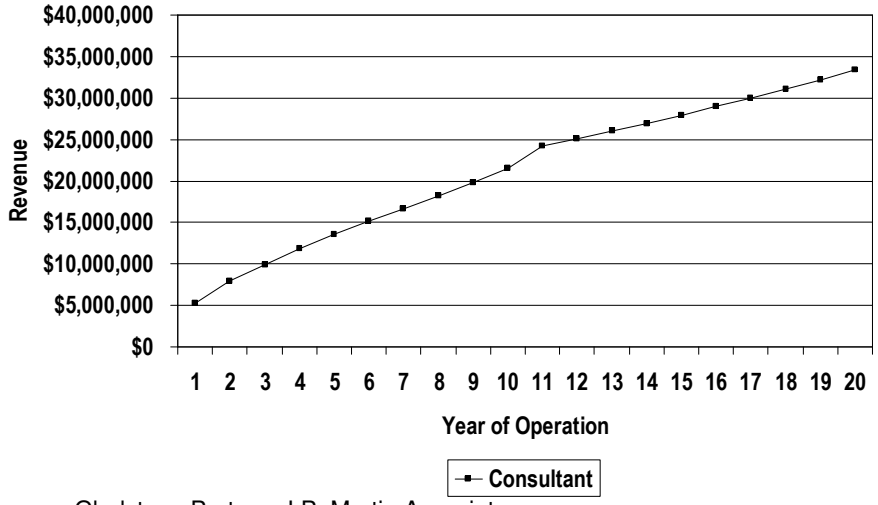
- The anticipated lease rental income from cargo tenants is developed by multiplying the Developer's initial estimate of $8.00/square foot/year (with 3% annual escalation) by the estimated air cargo square footage designed for the airport. At full build out, the proposed airport planned leasable space is 2 million square feet. By applying tonnage-to-square foot relationships of other integrator hub operations, it is estimated that 500,000 square feet will initially be leased by the regional integrator, with years 2 through 5 assuming that the regional hub operations will continue to expand with complementary tenants absorbing additional square footage. By year 6, international service

will be added into the fleet mix requiring additional square footage to be absorbed. For the purpose of this cash flow, by year 11 all 2 million of the planned square feet will be occupied. As leases are signed with potential tenants, the demand for the square footage may be absorbed at a different rate than depicted in this analysis.

- The fuel flowage revenue is derived from multiplying the Developer's initial estimate of $0.03 per gallon (with 3% annual escalation) by the fuel capacities of the proxy aircraft for domestic and international carriers. The fuel consumption at Hazleton is assumed to be 60% of the fuel capacity of the proxy aircraft.

The resulting revenue is presented in Figure 5-1.

Figure 5-1
ANTICIPATED REVENUE STREAM



Source: Gladstone Partners LP; Martin Associates

As illustrated, the anticipated revenues given the level of activity presented in the High as scenario forecast grow from approximately 4.3 million in year 1 to 33.5 million by year 20 of the airport's operations.

5.4 REVIEW OF ANTICIPATED OPERATING EXPENSES

The Developer has also provided an initial estimate of operating expenses of the proposed airport. The key operating expense categories to be incurred:

- Administrative and Personnel – salaries and benefits paid to airport employees;
- ARFF (Air Rescue and Firefighting) – on-site fire suppression and rescue; and
- O/M Expenses – operating expenses including contracted services, communications utilities,

maintenance and repair, building and gate security, supplies, insurance, etc.

The Consultant‘s assessment of the reasonableness of operating cost estimates is based on the initial estimates provided by the Developer and enhanced and recalibrated by in-house and data base as well as published rate data by the American Association of Airport Executives.

The personnel estimates provided by the Developer are corroborated with the salary ranges found in the Consultant’s in-house data base. ARFF cost estimates identified by the Developer also appear to be in line with other data source estimates. The operating cost of the facility, including goods and services, communications, utilities, insurance and maintenance and repair. The fact that the airport is a Greenfield new construction project should minimize additional capital maintenance and repair expenses through the medium-term.

5.5 ANTICIPATED OPERATING EXPENSE STREAM

The operating expenses explained in the previous section have been incorporated into an operating expense stream for the first 20 years of operation. Key factors in compiling the revenue stream include:

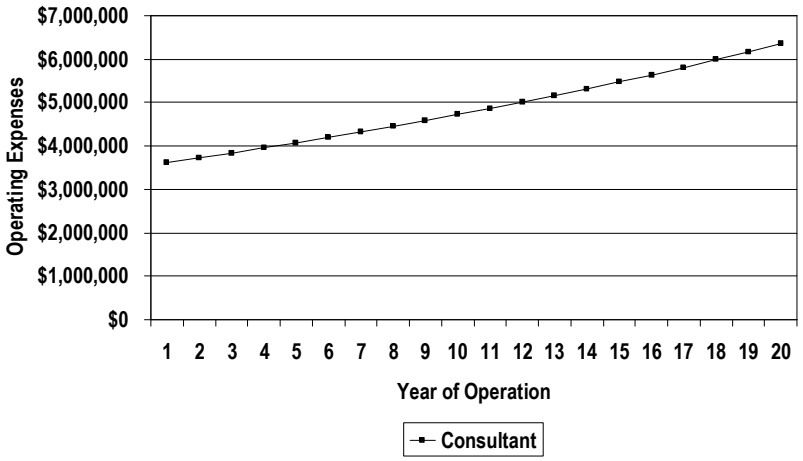
- Estimates of revenues are derived from the Developer’s initial estimates as well as Consultant’s in-house data base and compared to results of the American Association of Airport Executives (AAAE) annual rates and charges survey.

- Personnel and ARFF cost estimates cited by the Developer are escalated by 3% per year.

- O&M expenses factor into account contractual services, security, utilities, communications and materials/supplies. These estimates are representative of an all-cargo, new construction facility. It is assumed that limited replacement of equipment will not be necessary in the medium-term. Also, no additional capital construction or maintenance project s are needed aside from the initial construction of the required airport infrastructure. Year one estimates are escalated by a factor of 3%.

The resulting revenue stream which illustrates that operating costs are estimated at $3.6 million in the first year of operation increasing to $6.4 million by year 20 is presented in Figure 5-2.

Figure 5-2
ANTICIPATED OPERATING EXPENSE STREAM



Source: Gladstone Partners, LC Martin Associates

5.6 DEBT SERVICE ESTIMATES

The Developer is requesting $250 million in state funds to be allocated to this project. Given the fact that a balance of $252 million remains, various financing options are being considered for the balance of the project. The financing method that is selected will depend on the economics of the project and the level of support from the Commonwealth, and the contractual agreements with prospective tenants. Options under consideration include (but are not limited to) bonds, bank loans, variable rate debt secured by a letter of credit and direct investment by private equity companies. Since the bond market is under considerable fluctuation, the proxy bond term and rate used for the purpose of this analysis a 30 year note at 6% interest.

5.7 PRO FORMA CASH FLOW ANALYSIS BASED ON CONSULTANT FORECAST

Based on the assumptions anticipated revenues and costs as well as the revenue and operating expense streams previously described, the Consultant has developed a pro forma cash flow of the proposed project based on the high scenario forecasts presented in Chapter 1. The pro forma cash flow is presented in Table 5-2.

Table 5-2
PRO FORMA CASH FLOW ANALYSIS BASED ON CONSULTANT HIGH SCENARIO FORECAST

PRO FORMA CASH FLOW BASED ON CONSULTANT HIGH CASE FORECAST										
YEAR OF OPERATION	1	2	3	4	5	6	7	8	9	10
FORECASTED METRIC TONNES	231,322	241,731	252,609	263,977	275,856	306,328	319,137	332,483	346,392	360,885
OPERATING REVENUES										
LANDING FEE REVENUE	$609,903	$656,467	$706,589	$760,539	$818,606	$905,528	$971,308	$1,041,867	$1,117,560	$1,198,756
FUEL FLOWAGE REVENUE	$654,919	$704,921	$758,742	$816,674	$879,027	$988,359	$1,060,363	$1,137,616	$1,220,510	$1,309,451
AIR CARGO LEASE RENTAL INCOME	$4,000,000	$6,592,000	$8,487,200	$10,271,634	$11,930,393	$13,215,724	$14,567,438	$15,988,360	$17,481,427	$19,049,688
TOTAL REVENUES	**$5,264,822**	**$7,953,388**	**$9,952,531**	**$11,848,846**	**$13,628,026**	**$15,109,611**	**$16,599,108**	**$18,167,842**	**$19,819,497**	**$21,557,895**
OPERATING EXPENSES										
PRESONNEL/ADMINISTRATION	$1,100,000	$1,133,000	$1,166,990	$1,202,000	$1,238,060	$1,275,201	$1,313,458	$1,352,861	$1,393,447	$1,435,251
ARFF	$600,000	$618,000	$636,540	$655,636	$675,305	$695,564	$716,431	$737,924	$760,062	$782,864
O&M EXPENSES	$1,920,000	$1,977,600	$2,036,928	$2,098,036	$2,160,977	$2,225,806	$2,292,580	$2,361,358	$2,432,199	$2,505,165
TOTAL EXPENSES	**$3,620,000**	**$3,728,600**	**$3,840,458**	**$3,955,672**	**$4,074,342**	**$4,196,572**	**$4,322,469**	**$4,452,143**	**$4,585,708**	**$4,723,279**
NET REVENUE (NO DEBT SERVICE)	**$1,644,822**	**$4,224,788**	**$6,112,073**	**$7,893,174**	**$9,553,684**	**$10,913,039**	**$12,276,639**	**$13,715,699**	**$15,233,789**	**$16,834,616**
DEBT SERVICE $252M, 6% 30 YR	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)
CASH SURPLUSS/DEFICIT	**($16,662,704)**	**($14,082,738)**	**($12,195,453)**	**($10,414,351)**	**($8,753,842)**	**($7,394,487)**	**($6,030,887)**	**($4,591,827)**	**($3,073,736)**	**($1,472,909)**
DEBT SERVICE $502M, 6% 30 YR	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)
CASH SURPLUSS/DEFICIT	**($34,824,932)**	**($32,244,966)**	**($30,357,681)**	**($28,576,579)**	**($26,916,070)**	**($25,556,715)**	**($24,193,114)**	**($22,754,055)**	**($21,235,964)**	**($19,635,137)**
PRO FORMA CASH FLOW BASED ON CONSULTANT HIGH CASE FORECAST										
YEAR OF OPERATION	11	12	13	14	15	16	17	18	19	20
FORECASTED METRIC TONNES	392,780	409,427	426,786	444,886	463,761	499,827	521,238	543,576	566,883	591,201
OPERATING REVENUES										
LANDING FEE REVENUE	$1,314,095	$1,409,953	$1,512,816	$1,623,192	$1,741,635	$1,900,675	$2,039,803	$2,189,139	$2,349,434	$2,521,495
FUEL FLOWAGE REVENUE	$1,451,452	$1,557,842	$1,672,049	$1,794,645	$1,926,252	$2,120,207	$2,276,390	$2,444,112	$2,624,235	$2,817,677
AIR CARGO LEASE RENTAL INCOME	$21,502,662	$22,147,742	$22,812,174	$23,496,539	$24,201,436	$24,927,479	$25,675,303	$26,445,562	$27,238,929	$28,056,097
TOTAL REVENUES	**$24,268,209**	**$25,115,537**	**$25,997,039**	**$26,914,376**	**$27,869,323**	**$28,948,361**	**$29,991,496**	**$31,078,813**	**$32,212,598**	**$33,395,268**
OPERATING EXPENSES										
PRESONNEL/ADMINISTRATION	$1,478,308	$1,522,657	$1,568,337	$1,615,387	$1,663,849	$1,713,764	$1,765,177	$1,818,132	$1,872,676	$1,928,857
ARFF	$806,350	$830,540	$855,457	$881,120	$907,554	$934,780	$962,824	$991,709	$1,021,460	$1,052,104
O&M EXPENSES	$2,580,319	$2,657,729	$2,737,461	$2,819,585	$2,904,172	$2,991,297	$3,081,036	$3,173,467	$3,268,671	$3,366,732
TOTAL EXPENSES	**$4,864,977**	**$5,010,927**	**$5,161,254**	**$5,316,092**	**$5,475,575**	**$5,639,842**	**$5,809,037**	**$5,983,308**	**$6,162,808**	**$6,347,692**
NET REVENUE (NO DEBT SERVICE)	**$19,403,231**	**$20,104,610**	**$20,835,785**	**$21,598,284**	**$22,393,748**	**$23,308,519**	**$24,182,458**	**$25,095,505**	**$26,049,791**	**$27,047,577**
DEBT SERVICE $252M, 6% 30 YR	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)	($18,307,526)
CASH SURPLUSS/DEFICIT	**$1,095,706**	**$1,797,084**	**$2,528,259**	**$3,290,758**	**$4,086,222**	**$5,000,993**	**$5,874,933**	**$6,787,979**	**$7,742,265**	**$8,740,051**
DEBT SERVICE $502M, 6% 30 YR	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)	($36,469,754)
CASH SURPLUSS/DEFICIT	**($17,066,522)**	**($16,365,143)**	**($15,633,969)**	**($14,871,469)**	**($14,076,006)**	**($13,161,235)**	**($12,287,295)**	**($11,374,249)**	**($10,419,963)**	**($9,422,177)**

5.8 CASH FLOW SUMMARY

Without debt service requirements, the proposed airport, at this level of activity, operates at a positive cash flow. Year 1 shows a cash surplus of $1,644,822 which increases to $27 million by year 20.

Given the scenario in which the Commonwealth provides $250 million of financial assistance to the project,

the resulting balance and responsibility of the Developer would be $252 million. This $252 million debt service payment, which is calculated at $18.3 million per year, produces a negative cash flow through the first ten years of operation. However in year 11 a positive cash flow of $1,095,706 is realized. By year 20 the cash surplus is estimated at $8.74 million.

Under the assumption that no public funds are appropriated to this project, the Developer and their financial partners must assume the entire $502 million cost of development. Based on a 6% interest over 30 years, the annual debt service payment is estimated at $36.5 million. Under this scenario, the project produces a negative cash flow over the course of the first 20 years of operation, with year 20 still recording a loss of $9.4 million.

Given these conditions, it appears that the support of the Commonwealth is necessary in the viability of this project. It is also to be noted that the Developer's partner, in addition to the $252 million needed for the airport infrastructure construction, is anticipating on funding an additional $1.2 billion for the development of the adjacent acreage.

CHAPTER 6
AIRPORT GOVERNANCE

6.1 INTRODUCTION

Airports are typically owned and operated by the Federal government, states, local municipalities (cities, counties and special districts), or independent airport authorities. The management of airports similar to the Air Cargo Airport proposed for the greater Hazleton region can take many forms, from publicly managed to privately managed, to independent authorities. While public ownership and management is the most common form used at the majority of Airports in the United States, the Developer is proposing a form of private ownership and public use for the Hazleton Air Cargo Airport that is more typically seen at airports outside of the United States. It is also important to note early on this chapter that while private ownership and management is not as common in the United States, this chapter points to several examples for reference. In addition, there is much discussion in the aviation industry for the potential of this structure to become a more commonplace in the market place.

One of the main goals of this chapter is to explore the different types of ownership and management options, both public and private and some case studies of each. This chapter will also explore some typical Commonwealth of Pennsylvania public ownership options for Airports and provide examples of where this structure is currently in place along with some private ownership structures that are currently occurring within the United States but not in Pennsylvania. Lastly, it is important to understand that the intent of this review and discussion is to provide ownership and management alternatives to the legislative body of the Commonwealth of Pennsylvania; the ultimate ownership and management decisions will be made at a later date. Since the Developer is requesting State participation in the development of the facility, it will be the decision of the Commonwealth to determine if some form of public oversight is necessary to protect the Commonwealth of Pennsylvania's interest in the project. Any form of additional public oversight will be part of the negotiation process between the Developer and the Commonwealth.

The second part of this section will discuss funding options for the Airport for subsequent capital improvements projects following the initial phase, and specifically FAA funding and eligibility requirements. While funding eligibility is distinct from ownership discussions, the two are directly tied together when eligibility for state and federal grants are considered. Lastly, this chapter will discuss other issues that affect the operation of an airport under public versus private ownership. The purpose of this discussion is to provide additional information to the policy and lawmakers of Pennsylvania regarding the final potential ownership and management structure of the airport, but no final recommendation will be given.

6.2 OWNERSHIP OPTIONS

Ownership and management of an airport are two separate and distinct entities. Ownership is defined as control of the physical infrastructure and land of the airport, i.e. owning the land in fee simple title. At some airports the same entity that owns the airport property and infrastructure provides the aviation services, and at other airports they are two distinct and separate entities. It is also important to recognize that there is no right or correct answer to the "best" ownership and management structure for a facility, as each situation is different and unique. The purpose of the next several sections is to discuss the various options for both ownership and management structures, and to identify in each case an example of at least one airport where this structure is in place. For grant eligibility, the FAA is only concerned about the ownership of an Airport and not the management of the airport.

Discussions with the developer of the proposed Hazleton Air Cargo Facility indicated that their preference for the ownership and management of the airport would be privately owned, privately managed, but open for public use. This type of ownership will be discussed in greater detail later in this section.

While there are only a few cargo-only airports, one can draw some parallels in ownership with Commercial Service Airports in the United States. The following is a summary of ownership structures that provide a sense of the type of ownership structures for commercial service airports in the United States:

Commercial Airports are typically operated by one of these types of entities:

1. City -- 33% are city-owned. Examples include Atlanta and Austin.
2. County -- 15% are county-owned. Fort Lauderdale and Las Vegas are examples.
3. State -- 7% are state owned, as are Baltimore, Honolulu and Anchorage.
4. Port Authority -- 9% use a port authority, such as New York City and Oakland.
5. Airport Authority -- 30% use an airport authority. Washington's Reagan National and Dulles, as well as Nashville, are examples.
6. Other / Private -- 6%. Examples include Dallas/Fort Worth, which is the result of contract between the two cities, and Monterey, Calif., which is operated by a special local tax district. This other category also inlcudes privately owned facilities such as the Airborne Airpark located in Wilmington, Ohio.

As shown above, City / County Management and Airport Authorities make up over 75% of the typical ownership structures for commercial service airports.

Management options for provided services and the overall administration of the airport are discussed briefly in the following section of this chapter. Management is defined as providing the necessary management and administration of the facility, and the provision of services such as fueling, aircraft maintenance, staffing for

air traffic control services, airport rescue and firefighting capabilities, and other similar services. Management options for airports are varied, so the purpose of this analysis is to provide a general overview.

6.2.1 Municipal (City / County) Ownership

The ownership and operation of a vast majority of the public-use airports in the U.S. are by local municipality, (i.e., city and county government). This ownership structure has evolved since the inception of aviation, as a means to maintain and develop airport facilities that were historically not capable of being financially self-supporting, and therefore could not operate as private enterprise. The theory behind this form of ownership and the public investment in these facilities is that aviation, as a benefit to the entire community, creates employment opportunities for the workforce, fosters economic development opportunities, provides access to broader regional, national and international markets, and allows the community a competitive advantage over other communities, which is deemed a proper governmental role. Furthermore, airports have historically been viewed as complimentary to local government oversight of other public works facilities, such as the local roadway system, water and sewer facilities, parks and other "traditional" government services. Many of today's modern airport facilities were constructed as military training sites during World War II, and transferred from Federal government control to local control at the conclusion of respective war efforts. At that time, local government was best equipped to handle the operation and maintenance burden of this "new" transportation infrastructure asset.

There are many benefits to having an airport owned and operated by a local municipality. These include the allocation of staff resources to the airport from many different and specialized functional departments (e.g., finance, human resources, maintenance, engineering, etc.), creating economies of scale and lower overhead costs for the facility. If the airport is not capable of being financially self-sufficient, general fund revenues from local government can be applied to cover overall capital and operating expenses. Large-scale capital projects can be financed utilizing local government bonding capability or other governmental debt mechanisms that routinely offer lower financing costs and less risk for the bondholder. Finally, since the airport is typically considered to be a significant public asset, participation in the strategic oversight and direction of airport facilities is provided by elected officials. These elected officials will ensure the public's voice is heard as it relates to airport operations and long-term development. There are, however, some potential disadvantages of municipal ownership of the local airport. Principal among these disadvantages is the fact that the operation of the airport is usually delegated to a specific municipal department, often competing for attention and resources with other functional departments. Airport policy decisions are usually made in a broader context of competing public investment needs, budgetary constraints, and development goals without a specific focus on the individual needs of the airport and the potential economic benefits airport development creates. In times of financial constraint or distress, the airport is often viewed as a liability, even if financially self-sufficient, and will in all probability suffer the same budget reductions as other municipal departments. Even taking into consideration the potential disadvantages relating to municipal

ownership and control over airport facilities, it remains the preferred method of governance in the U.S. for small and large airports. County owned and managed airports are publicly owned but managed through a county. This allows the airport to receive potentially more resources under county management. This type of ownership/management option typically requires the county management to elect/appoint an Airport Board which runs the administrative functions of the airport.

Bradford County Airport

Bradford County Airport is an example of an Airport which is publicly owned by the local government. The Bradford County Airport is located in the Susquehanna River Valley which is near Towanda, Pennsylvania. The airport is a local General Aviation (GA) Airport which serves the aviation community in northeastern part Pennsylvania. The local governments that surround the Bradford County Airport established the Bradford County Airport Authority (BCAA) in 1986; it is a good example of a municipal authority that is not completely independent of the local government. One of the issues with local governance is that the airport board or county can grow over time, which happened at Bradford County. The BCAA was increasing in size, and in 2001 the Bradford County Commissioners reformed the Airport Authority, and the size of the board was set at five members. The members are two county employees, and three other members throughout the county with local municipality participation. The BCAA is the owner of the Airport and meets monthly. The board is charged with the development of the Airport and is responsible for overseeing improvements at the Airport.

Wilkes-Barre/Scranton

The Wilkes-Barre/Scranton International Airport is a full-service, non-hub, FAR Part 139 certificated airport, operated jointly by the Counties of Lackawanna and Luzerne. The Airport is a governmental subdivision controlled by six Commissioners: three from Luzerne County and three from Lackawanna County, who preside as the Airport Board of Commissioners.

6.2.2 Independent Airport Authority Ownership

Generally, independent authorities are legally chartered State organizations endowed with the legal status of public corporations which operate a variety of publicly owned facilities (e.g., harbors, airports, toll roads, bridges, etc.). In managing the facilities under their control, independent authorities have extensive independence from state and local governments. These authorities are typically financially independent, have the power to issue their own debt (general, revenue or other forms of bond indebtedness), can usually exercise the power of Eminent Domain, have the power to sue and be sued in any court, and in theory function totally independently from state and local politics. In reality however, the governing body of the independent authority, be it a board or commission, is usually appointed by one or more local political officials or bodies, and in some respect is beholden to, or influenced by, local political demands.

The consensus among many airport professionals is that independent airport authorities function more effectively than airports that operate under local municipal control. This concept acknowledges that airport organizations are almost always more efficient and effective if not governed by publicly elected boards or commissions for two main reasons: 1) Airports function significantly different from the typical local governmental agency, wherein taxes are levied based on priorities set through a political process, and long-term strategic development priorities may be disrupted frequently as elected officials enter and exit public office; and 2) The need for a rational, private enterprise, business-driven agenda far outweighs potentially conflicting agendas individual elected officials might bring to the table.

Some boards are comprised of all gubernatorial appointments, while others are comprised of all local appointments or combinations thereof. In short, how appointments are made is less important than how well candidates are screened before they are appointed. Some communities allow appointments by the business community, and others require that appointees have certain qualifications and experience to be eligible for appointment. In particular, appointed boards are better screened, in that the appointing body or public official knows far more about the prospective member than would otherwise be obtained in the elective process. In addition, the field of candidates for appointment is vastly larger and more potentially qualified, since many excellent candidates choose not to engage in the elective process. It is generally the case that appointees tend to be among the most qualified people in a community, with substantial experience and credentials, and whose talents, disposition and orientation, are well known.

Burbank-Glendale Airport

Burbank-Glendale-Pasadena Airport Authority is an independent authority composed of appointees from each of the adjacent three cities. Each city appoints three individuals for a four year term. These nine board members then set policy by majority vote of a quorum. The advantage of this particular authority is that no individual city controls the entire board.

Orlando International Airport

Before 1974, the land the airport now sits on was largely owned by the United States Air Force, which operated McCoy air force base there. In 1975, the final Air Force contingent departed McCoy and the Greater Orlando Aviation Authority (GOAA) was established as a state-chartered governmental agency and an enterprise fund of the City of Orlando. GOAA's mission was to operate, manage and oversee construction of expansions and improvements to both the Orlando International Airport and the Orlando Executive Airport. The Board members are appointed by the Governor of Florida and also surrounding local governments.

Lehigh-Northhampton Valley - LN Airport Authority

The Lehigh-Northampton Airport Authority (LNAA) governs Lehigh Valley International Airport. LNAA is a 19 member board of governors. The members are appointed by county executives of Lehigh and Northampton. They are governed by the Pennsylvania Municipal Authorities Act which provides the enabling legislation from which the authorities are formed. These regulations are the framework under which authorities own and operate the Lehigh Valley International Airport Authority and Queen City Airport and Braden Airpark.

6.2.3 Port Authority

A port authority is a special type of legally chartered institution that generally has the same status as public corporations, but in addition to the airport, the authority operates other types of facilities such as harbors, toll roads, rail, or other public transportation systems. The effectiveness of the port authority can be assessed by determining the answer to the following questions: (1) who controls the appointments to the authority's governing body, (2) does the authority have control over budgeting, contracts and personnel and (3) does the authority have the power of eminent domain or the power to levy taxes. The answers to these questions, determine if the authority is able to operate independently or if the authority shares power with other governmental entities.

The port authority is typically created to provide focused leadership and specialized attention to significant community assets like an airport. Because of the structure, a port authority, similar to an airport authority, often helps to shield the management and operation of the Airport from political impact.

Boston-Logan International Airport – Massport

The Massachusetts Port Authority (Massport) is an independent public authority which develops, promotes and manages airports, the seaport and transportation infrastructure in Massachusetts and New England.

Massport is governed by a seven member Board appointed to staggered seven year terms by the Governor of Massachusetts. These members serve without compensation. Massport has a Chief Executive Officer (CEO) that serves at the pleasure of the Board and is responsible for implementing the Board's decisions and carrying out its agenda with the assistance of key department heads.

The Massachusetts Port Authority employs more than 20,000 people and generates more than $8 billion for the region's economy every year.

New York International JFK Airport – PANYNJ

The Port Authority of New York and New Jersey manages and maintains the airports, bridges, tunnels, bus terminals, PATH and seaport that are critical to the bi-state region's trade and transportation capabilities. Through their facilities and services, people are able to make connections and businesses are able to grow.

The Port Authority is a financially self-supporting public agency that receives no tax revenues from any state or local jurisdiction and has no power to tax. It relies almost entirely on revenues generated by facility users, tolls, fees, and rents. The Governor of each state appoints six members to the Board of Commissioners, subject to State Senate approval. Board Members serve as public officials without pay for overlapping six-year terms. The Governors retain the right to veto the actions of Commissioners from his or her own State.

The Board of Commissioners appoints an Executive Director to carry out the agency's policies and manage the day-to-day operations.

6.2.4 State Owned

There are few airports that fall into this category, mainly airports that are in Maryland, Hawaii and Alaska. The airports are publicly owned, while a division of the state's transportation department manages the airports. This option allows the airport to be run by professional airport operators and allows the airport to receive the necessary funding for improvement projects.

Baltimore-Washington International Airport

The Maryland Aviation Administration (MAA) is the owner and operator of Baltimore/Washington International Thurgood Marshall Airport (BWI). The (MAA) fosters the vitality of aviation statewide and promotes safe and efficient operations, economic viability and environmental stewardship. Responsible for the operation of Baltimore/Washington International Thurgood Marshall and Martin State airports, the MAA provides friendly, convenient facilities and customer services and develops enhanced domestic and international passenger and cargo opportunities through intermodalism and state-of-the-art technology.

Harrisburg International Airport

Harrisburg International Airport at one time was owned by the Commonwealth of Pennsylvania and is a good example for state owned airports. The Airport initially was a military base and with the creation of a separate United States Air Force in 1947, the installation was renamed Olmstead Air Force Base. By the time it was deactivated in 1969, Olmstead AFB, because of its logistics and aircraft overhaul facilities, had grown to employ 11,400 civilians in addition to uniformed USAF personnel. With turnover from the U.S. Air Force, the

civilian Harrisburg International Airport began to serve the public under the ownership of the Commonwealth of Pennsylvania.

In 1998, the Commonwealth of Pennsylvania transferred ownership to the Susquehanna Area Regional Airport Authority (SARAA), the board that oversees ownership of the airport. The Authority board consists of community volunteers appointed to staggered, five-year terms by the elected officials from Cumberland, Dauphin, and York counties, the cities of Harrisburg and York, and Fairview and Lower Swatara townships

6.2.5 Privately Owned

There are very few privately owned public use airports in the United States of significant size as compared to publically owned facilties. There are numerous privately owned general aviation facilities across the county but the majority of them are generally small in nature.

Private ownership of Airports is more common in Europe. However, there is a growing trend across Europe and Asia of private ownership of Airports along with initiation of discussions regarding privatization by some airports in the United States due to the possibility of bringing efficiencies to traditional government-run projects. Privatization can take the form of many levels from a minimal amount of privatization of where the Airport is owned by a public entity and services are provided by the private sector to where the Airport is wholly owned and operated by the private sector. The following are some representative examples of privately owned airports:

Brandywine Airport

Brandywine Airport, located in the heart of the western Philadelphia suburbs, is a good example of the many privately owned airports across the County. The airport is owned by an airport club made up of shareholders.

Airborne Airpark

Airborne Airpark in Wilmington, Ohio is a good example of a privately owned but public-use airport that is owned by DHL Corporation. The facility was constructed in 1947 for the US Military and was known as Clinton County Air Force Base. In the late 1980's the airport was closed due to military base closures. On 16 April 1980, the facility was acquired by Airborne Freight Corporation of Seattle, WA and Airborne purchased the base, creating the Wilmington Air Park/Airborne Commerce Park. August 2003, Airborne Air Park was acquired by DHL America for use as a central air freight sorting facility in conjunction with DHL Worldwide and continues in that use today. The airport continues to be held privately by DHL but is open to the public.

Stewart International Airport

In the late 1990's Stewart became the first U.S. commercial airport to be privatized when United Kingdom-based National Express Group was awarded a 99-year lease on the airport. Due to many factors, The Port Authority of New York acquired the remaining term of the 99-year lease in January 2007.

6.2.6 Public Private Partnerships (PPP)

Mixed capital public private partnerships (PPP) represent a unique form of privatizing that blends the sometimes competing interest of the public sector and the private sector to form a joint venture to complete large complex infrastructure improvements. Examples of successful public private partnerships can be found across the United States for transportation related projects that required significant public and private investments. Public private partnerships for US Airport projects are relatively rare at this time but it is likely to see more use of this option over the next five years.

Privatizing is seen as the bright beacon on the horizon for development projects as it provides the necessary competitive market factors to allow a development to prosper. The wave of privatizing can bring a wealth of private capital along with financial and management expertise that is sometimes lacking in public section arenas. With the potential increase in efficiencies inherent in private sector ownership and management, a case can be made for the need for public oversight for public infrastructure such as roads and airports and to provide oversight on profit motives in the private sector which can lead to project failures.

There are several ways to structure public private partnerships. In today's greater demand for public infrastructure and smaller budgets, the public sector is realizing that the private sector can be a viable partner. Partnerships can take the form of having complete public ownership and control of an entity, to private ownership with government regulation and oversight to where each public and private entity has an equal equity position in the endeavor. While there are several variations on what is really a public private partnership, the majority opinion is a true public private partnership is where there is shared ownership and equity and risk in the project.

6.2.7 Proposed Ownership for the Airport

Discussions with the Developer indicate a desire to build and operate the Airport as a privately owned and privately managed Airport. The Developer is requesting funding assistance from the Commonwealth of Pennsylvania for the construction of the Airport. Once the Airport is constructed, the Developer would be responsible for the operation and future maintenance of the facility. A representative case study for this option is the existing air cargo airport Wilmington Ohio that is owned and operated by DHL and Stewart International Airport when is was leased to a private company.

6.3 AIRPORT MANAGEMENT OPTIONS

As discussed previously, ownership can be distinct from management of an airport. In addition, it is the ownership that most often determines eligibility of federal or state grants. Management of an airport falls into many categories such as the overall administration of the airport, providing fueling services, aircraft maintenance or flight instruction. Unlike airport ownership where one finds a more limited number of options, management of airport services can vary widely. In general, the entity that owns the airport provides the staff for the overall administration of the airport. From there, the provision of services such as fueling and aircraft maintenance can take the form of additional staff members or a privately owned company.

At many airports, the providers of these services are contracted by an entity known in the industry as a fixed based operator (FBO). Depending on the size of the facility, the airport may elect to have only one FBO or multiple FBOs if there is enough demand for services.

For larger facilities such as commercial service airports, airport staff may number in the hundreds to provide necessary services. Pittsburg International Airport is owned and managed by the Allegheny County Airport Authority and the Authority employs 465 persons that help operate and maintain the airport. Another example on the opposite end of the spectrum is the Orlando Sanford International Airport. While the Airport is owned by the Sanford Airport Authority, the Airport is run and managed by TBI Airport Management, a private firm, who handles the day to day operation of the airport.

The key to selecting the best management structure for an airport is to determine who will provide the best customer service as efficiently as possible. Varied ownership and management structures lead to significant variation in local management decisions.

6.4 FUNDING ASSISTANCE AVAILABLE

There are various sources available for funding the proposed Hazelton Air Cargo Airport depending on what ultimate ownership is used. The discussion below is an overview of some of the different funding sources and eligibility for attaining these sources with the majority of the funding sources available for public and privately owned airports. Some of the potential funding sources include the Federal Aviation Administration (FAA), state sources including the Commonwealth of Pennsylvania Bureau of Aviation, Pennsylvania Department of Community and Economic Development or the Pennsylvania Redevelopment Assistance Capital Program (RCAP) The final decision regarding the ownership structure of the proposed Hazleton Air Cargo Airport will determine their eligibility of these types of potential funding sources

6.4.1 FAA AIP Grant Assistance

The primary form of federal financial assistance is through the Federal Aviation Administration (FAA) Airport Improvement Program (AIP) for publicly owned and public use airports. This program has a dedicated funding source known as the Aviation Trust Fund, which Congress created. This trust fund is funded by the collection of taxes or user fees from various segments of the aviation community. These are known as AIP grants. An AIP grant can be issued for the purposes of airport planning, airport capital development, or noise compatibility projects. AIP grants are characterized by the FAA as either entitlement (apportionment) or discretionary grants and are used among the community of commercial service, general aviation and air cargo airports. They are distributed in accordance with authorizing federal legislation.

When an airport accepts an AIP grant, it is legally obligated to comply with various laws, regulations, and advisory circulars listed as Grant Assurances. Congress and the FAA have found that this is the most effective means for extending federal government policy to local governmental units. Grant Assurances are incorporated into and become a part of the agreement. Some of the agreements include the following:

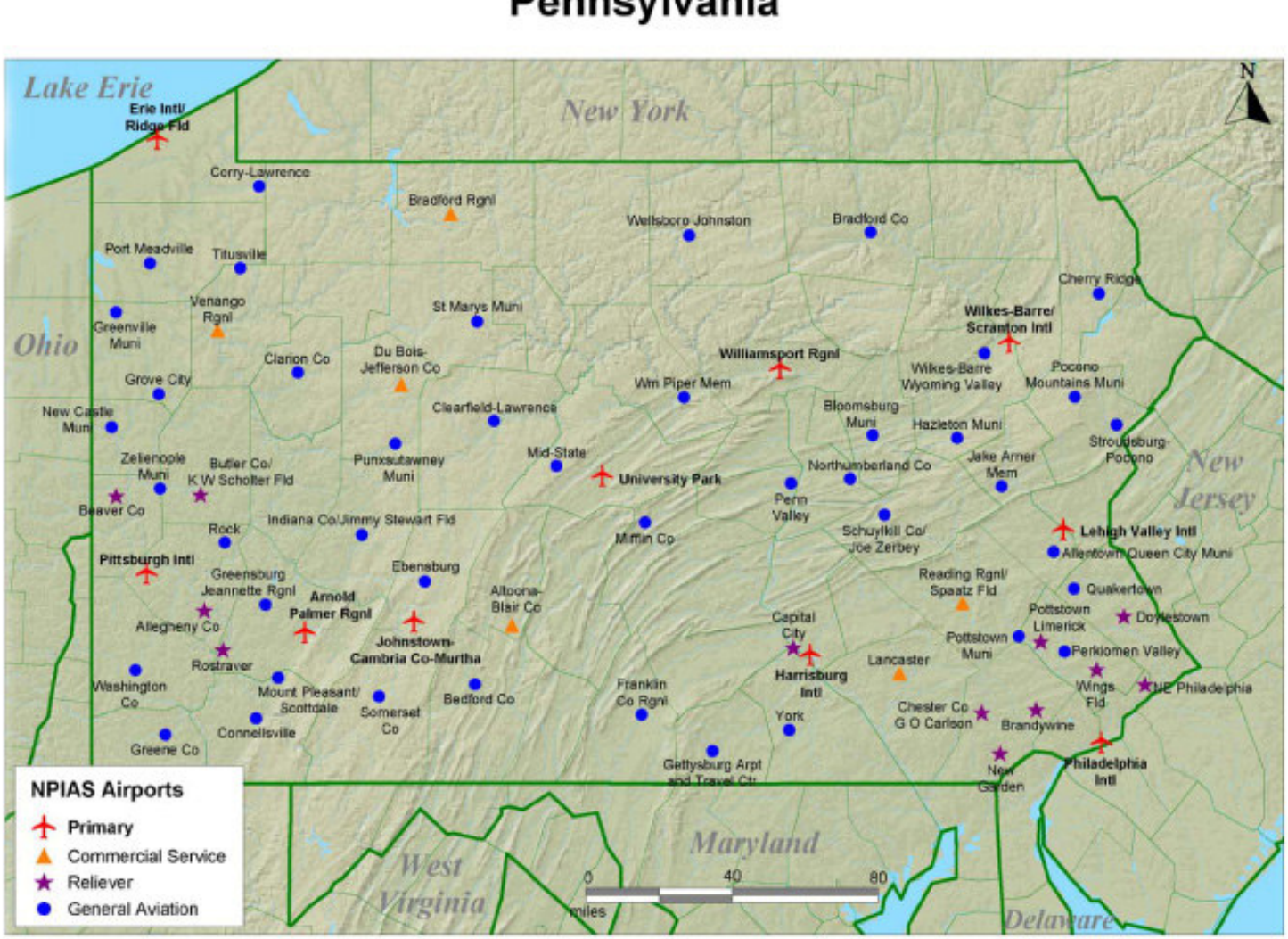
- The airport sponsor must be legally, financially, and otherwise able to assume and carry out certifications, representations, warranties, Federal or State assurances and obligations required of airport sponsors as referenced in the grant agreement.
- The airport must be open to the public and either publicly or privately owned. There are very strict regulations regarding issuing Federal grants to privately owned Airports and as a result, there are only a handful in the US. The proposed airport would not be eligible if it were privately owned.
- In order to receive federal funds, the airport must be in the NPIAS (National Plan of Integrated Airport Systems) and be publicly owned unless designated as a Reliever by the FAA. and
- The airport must be appropriately licensed by the Commonwealth.

As listed above, one of the requirements for Federal AIP Funding is that the Airport must be listed in the National Plan of Integrated Airport Systems (NPIAS). NPIAS is prepared and updated by the FAA on an annual basis and provides an evaluation of the condition and performance of the airport system to Congress, the aviation industry, and the public. It identifies significant airports and their roles, and develops a cost for infrastructure improvements for the next five years. There are 3,364 existing NPIAS airports listed in the latest version. In order to be included in the NPIAS, the airport must have met one of the following requirements:

- The airport serves a community that is at least a 30 – minute drive from the nearest existing airport currently in the NPIAS.
- There is an eligible sponsor willing to undertake ownership and development of the airport.
- There are a minimum of 10 based aircraft or engines. and
- The Airport is listed as a NPIAS candidate in the State Aviation System Plan.

Of the 126 airports that are publicly owned in Pennsylvania, 73 are listed in the current NPIAS. A graphic depicting the location of the airports listed in the NPIAS is shown on the next page.

Figure 6-1
PENNSYLVANIA NPIAS AIRPORTS



Source: National Plan of Integrated Airport Systems (2007-2011)

Airports qualified as cargo service airports share the 3.5 percent of AIP apportionment made available to them in accordance with Title U.S.C., Section 47114(c)(2). Cargo funds are apportioned to each cargo service airport based on the proportion of landed weight of cargo aircraft at that airport to the total landed weight of cargo aircraft at all qualifying airports. No single cargo service airport is entitled to more than eight percent of the total amount apportioned to all cargo service airports and they must be publicly owned if they desire to use FAA AIP funding.

The Secretary of Transportation has been authorized to make a portion of the cargo funds available to airports not qualifying for these funds if the Secretary finds the non-qualifying airports will be served primarily by aircraft providing air transportation of only cargo.

6.4.2 State Grant Assistance

The Commonwealth of Pennsylvania‘s Bureau of Aviation administers three grant programs for airport development; the Block Grant Program (BGP, federal), the Aviation Development Program (ADP, State) and the Capital Budget/Transportation Assistance Program (TAP, state), amounting to approximately $28 million annually within the State.

The ADP is funded through taxes on jet fuel and Avgas, the revenues from which are collected and deposited into Pennsylvania's Aviation Restricted Account. These funds are normally used to pay for eligible project costs up to 75 percent at State obligated airports and five percent at federally obligated airports. The amount available for funding through the ADP is on average $8.0 million annually.

The BGP funding is generated through taxes collected nationally on airline tickets, freight waybills, international departure fees, and sale of avgas and jet fuel, which is deposited into the FAA's Aviation Trust Fund. Congress appropriates funds for the Airport Improvement Program (AIP) each year and Pennsylvania gets its share of the approximately 18.5 percent of the total authorization based on an area/population formula (apportionment). The Bureau of Aviation became a Block Grant State in Federal FY 1998 and assumed responsibility for programming approximately $15 million annually.

The BGP is available only to general aviation airports, airports designated as reliever airports, and non-primary, public use airports (those with less than 10,000 annual enplaned passengers) that are part of the National Plan of Integrated Airport System (NPIAS), as approved by the FAA. Airports receive up to 95 percent of eligible project costs for projects included in the Federal ACIP and the State's 12-Year Transportation Program (TYP).

Airports receiving state grants from Pennsylvania must be public-use. A public-use airport is an airport which is either publicly or privately owned and which is open to the public. Additionally, the airport must be

appropriately licensed by the Commonwealth. Airports desiring FAA grants under the FAA state block grant program must meet the eligibility program listed in the FAA AIP Sponsors handbook.

Another potential source of funds would be through the Pennsylvania Department of Community and Economic Development (DCED). The DCED offers approximately 30 programs aimed at financially assisting businesses and local governments through various programs as well as assisting with matching state funds for Federal grants.

6.4.3 Redevelopment Assistance capital program (RACP) funding

The potential source of State funding of 250 million dollars for the project would be part of the state Redevelopment Assistance Capital Program (RACP) used for economic development projects. Gov. Ed Rendell recently proposed in increase of the borrowing limit of the program from $750 million to $1.5 billion. The Senate recently approved a bill authorizing numerous state projects to be considered under this program including 250 million dollars for the proposed Hazleton Air Cargo Airport.

Discussions with State Staff regarding eligibility of projects and who is eligible to receive RACP funding indicated that the program general requires the recipient to be a local government or state agency or a 501c-3 non-profit agency or that the funds are channeled and administered by one of these types of eligible agencies. Because of this requirement and the fact that the ultimate recipient will be a private enterprise, additional research will be required to make sure the project meets the eligibility requirements. Potential options for eligible state agencies that could potential receive and administer the grant include the Pennsylvania Economic Development Financing Authority (PEDFA), the Pennsylvania Industrial Development Authority (PIDA) or possibly the Pennsylvania Bureau of Aviation to name a few. However, there was no indication at this time concerning what agency would be used or how the state funds would be distributed for the project.

It is recommended that whatever entity is selected, that the agency should establish specific project milestones before the funds would be dispersed.

6.4.4 Private Investment

Private investment can also be used to develop the airport. Some advantages to private investment include:

- Faster project financing and implementation.
- Market viability is surer than with public investment.
- Cost to the public airport sponsor is negligible.
- Tenants and others with access to financing may be willing to develop part of the airport, at potentially no cost to the public. and
- Criticism that it is inappropriate for a public entity to compete with private enterprise is avoided.

A disadvantage of private investment includes a significant capital investment by a tenant or speculative developer particularly for projects that have a public interest such as airports that may not be able to generate enough revenue by itself to pay the investors an acceptable rate of return on the investment.

The use of private funding for Airport development is no longer considered a novelty, but rather is seen as a growing trend as the demand for public infrastructure investments cannot keep pace with public infrastructure budgets (such as the FAA AIP program and other state funding programs), and the growing need for US Airports to do more with less public funding. Private investment which provides a viable rate of return for private investors is a realistic model to consider for this particular project.

6.4.5 Funding Summary

The purpose of this section is to provide a brief summary of potential funding sources and options available to Airport owners, particularly once the initial construction has been completed. The ultimate ownership of the Airport will dictate which source of funds would or would not be available to the owners of the facility. While public funds such as the FAA AIP program are available to publicly owned- public use airports, the demand for these funds are constantly increasing while the amount of AIP funds have remained relatively stable over the past several years. As a result, many Airports are beginning to look at the private investments to help support the large capital needs for these types of facilities.

6.5 OTHER AIRPORT OWNERSHIP CONSIDERATIONS

There are other airport-related ownership considerations that should be taken into account when considering the most viable means of ownership of an airport. Some of the issues such as height restrictive zoning, land use and airport access can be more easily addressed by a public entity versus a private entity and should be a factor when considering Airport ownership options. The purpose of this section is to provide some additional considerations when deliberating the ultimate ownership of the proposed air cargo airport.

6.5.1 Height Restrictive Zoning

For purposes of safety, the FAA has developed a very technical justification for determining hazards to navigable airspace. Federal Aviation Regulation (FAR) Part 77 is a document that describes in detail guidelines to determine what constitutes an obstruction or hazard to the navigable airspace around an airport. In general, obstructions to air navigation are considered to be: (1) Any object man-made or natural outgrowth that is 200 feet or higher from the ground level of the airport and within a two mile radius. (2) Any object that protrudes above the plane of imaginary surfaces defined in Part 77 sections 77.25, 77.28 and 77.29. The intent of this information is not to provide a technical explanation of the criteria of an obstruction, rather, it is to promote an understanding that such criteria exist.

Because it is important that airports work closely with local governments to help regulate height restrictive zoning, which often extends off airport property, the issue of ownership of the airport can come into play. It may be easier for a publicly owned airport to establish a height restrictive zoning ordinance given the public benefit that an airport generates; a privately owned airport may find it more difficult to establish such an overlay without close cooperation of the local government. This is a potentially a significant issue for the proposed greater Hazleton area cargo airport given the number of local governments that surround the airport and which could be impacted. For reference, the FAA AC 150/5190-4A "A Model Zoning Ordinance to Limit Height of Objects Around Airports" provides excellent guidance for establishing height restrictive zoning around an Airport.

6.5.2 Airport Noise and Land Use

Airport land use is another important consideration when discussing potential ownership options. It is a fact that airports generate noise and as such, prudent land use planning should be considered to help ensure that there is no incompatible land use surrounding the airport. Because the proposed Hazleton Air Cargo Airport will be accommodating air cargo operations, this is even more critical as a majority of the operations of airports of this nature occur in the evening, night and early morning hours. The FAA has numerous technical guidance documents including FAA AC 150/5020-1 "Noise Compatibility Planning for Airports" and Federal Aviation Regulation (FAR) Part 150 which outlines the procedure for establishing noise contours and land use compatibility guidelines for airports. In this context, similar to height restrictive zoning, a publicly owned airport can more efficiently guide and control on and off airport land use than a privately owned airport, since localities can encourage compatible land use development surrounding the airport through zoning and comprehensive plans.

6.5.3 Transportation / Road Impacts

Transportation to and from an airport is critical to the safe and efficient operation of the facility. The ability to fund roadway improvements as the facility expands is a consideration when discussing ownership options. A privately owned facility would be required to participate with private funds to help pay for future roadway improvements, while a publicly owned facility could potentially have several funding sources, including state and federal sources, to pay for access improvements.

6.5.4 Land Acquisition – Eminent Domain

As an airport grows and expands, there is a potential for requiring additional land for expansion. In the case of the proposed Hazelton air cargo airport, there appears to be sufficient land for the foreseeable future. If land acquisition is required in the future, a private Airport owner will have to negotiate acquisition, while a

public owner has the potential use of eminent domain to acquire land for the public good. This also applies to the removal of tall structures or trees that could impact the approach surfaces to the runway.

6.6 ROLE OF THE DEVELOPER

There have been several questions raised during the course of the study about the role of the Developer in this project. Airports, particularly new Greenfield facilities, require large amounts of capital funding to construct the necessary infrastructure along with the need to provide user services and overall management of the facility. In the particular case of the proposed Hazelton Air Cargo Airport, the Developer would take the lead role in securing the necessary private funds along with public funds to construct the facility; market the facility to potential users and operators (including integrators, carriers and third party logistics providers); and to assemble a management team to provide oversight of the facility along with contracting with firms to provide the necessary aviation related services such as fueling, airport fire and rescue, air traffic control tower staffing, grounds maintenance and snow removal and many other services. The benefit of the project to the Developer will be the ability to generate a positive rate of return on the project (which is necessary to secure private investment) from revenues sources as described in Chapter 5 which will ultimately increase the value of the Developer's airport property. In addition, serving as master Developer for the adjacent commercial and industrial business park, the Developer will in turn increase the value of that land as well.

The Commonwealth of Pennsylvania's role in the project would be to provide state funding in the form of up to 250 million dollars in State funds that will be used by the Developer to help leverage additional private investment into the project. The Commonwealth's benefit in the project will be the construction of a new Greenfield air cargo airport capable of serving international markets that most likely would be not cost feasible to construct with only state and or Federal funds due to the large of capital investment required. The Commonwealth would also benefit due to the direct, induced, indirect jobs and other economic benefits generated by the project during the potentially four to five years worth of construction activity that would be required for the construction of the airport. In addition, the Commonwealth would benefit from the potential number of jobs that would be generated either directly or indirectly by the new Airport along with additional payroll and real estate taxes generated by the project. Chapter Three, "Economic Impact" of this report provides a detail of the potential economic benefits to the Commonwealth through jobs and taxes generated which in a successful long-term horizon will offset the Commonwealths initial contribution to the project

6.7 SUMMARY AND CONCLUSIONS

As mentioned previously, the purpose of this chapter is to outline potential options for the ownership of the airport. The Developer has indicated a desire to own and operate the proposed Hazleton Air Cargo Airport which would effectively make it a privately owned, public use airport. The Developer also understands that

this private form of ownership would prevent the Airport from receiving future federal FAA Airport Improvement Program funds. In addition, the Developer has indicated a desire to seek Commonwealth of Pennsylvania funds for the initial construction of the facility. Once the Airport is constructed, the Developer would be responsible for the marketing of the facility to prospective tenants including integrators and carriers, as well as the management and provision of aviation services most likely though skilled vendors. In addition, the Developer will be responsible for future operating maintenance of the facility and for the cost of any future capital improvement projects.

The chapter also summarizes the benefits to both the Commonwealth of Pennsylvania and to the Developer. Both parties could receive benefits from the project if the targets and milestones in the report are met and the project is successful. The Commonwealth of Pennsylvania could receive the benefits of constructing an air cargo facility capable of accommodating international air cargo service along with the payroll and personal property tax generated by the development. The Commonwealth could also the beneficiary of the airport infrastructure that most likely would not have been constructed using only public funds given the heavy demands for Federal and State funds for similar airport projects along with creating jobs in this region of Pennsylvania.

.Conversely, the Developer could also benefit from a successful project by being able to leverage State participation in the project with private investment funds that would be difficult without the State's commitment to the project. In addition, the Developer could benefit from the revenues generated by the airport project along with future revenues from office, industrial and commercial development controlled by the Developer that is adjacent to the Airport.

CHAPTER 7– SUMMARY AND CONCLUSIONS

The analyses presented in the previous chapters offer examinations of both the risks and potential benefits to the Commonwealth if state funds are appropriated for this project. A summary of key findings follows:

Task 1 Cargo Market Assessment

- The proposed Hazleton cargo airport could follow a successful track such as Alliance Fort Worth or unsuccessful efforts such as the North Carolina Global TransPark and MidAmerica Airport near St. Louis. An unsuccessful event represents a 'zero tonnage' scenario. The Developer stresses neither unsuccessful example represented an alternative to a gateway such as those found in the US Northeast – the congested airspace, roadways and land supporting New York and Philadelphia. As importantly, Global TransPark and MidAmerica were developed with public money and without enforceable commitments from major tenants – specifically air carriers. Not only should responsible Commonwealth public entities demand the latter precondition but also the Hazleton Developer has suggested it would be required by their own prospective investment partners. In essence, the Developer has suggested such a failed outcome is inherently untenable because their private investors would not allow the project to proceed without satisfying thresholds of confidence missing from the failed projects previously described.

- In contrast with the 'zero tonnage' unsuccessful scenario, a High Case (successful) Scenario was developed with forecasts based upon surrogates and assumptions – absent an operating history. While the Developer based forecasts upon regional market share capture, the Consultant used tonnages of carriers now operating at Philadelphia and New York JFK International Airport. While assumptions are necessary in either methodology, the Consultant maintains a carrier-driven forecast is more appropriate to representing the experience of creating and growing an alternative gateway.

- The Consultant used the integrator (specifically a function of UPS' volumes at Philadelphia) volume in the High Case Scenario, in spite of receiving discouraging feedback from all three integrators. FedEx specifically registered having no interest in the Hazleton development, DHL noted it already has a hub in Wilmington, OH and is paying for a vacant hub in Cincinnati, while representatives of UPS gauged likelihood its regional hub would leave PHL as "very unlikely". No all-cargo airport has been successfully developed in North America absent an integrated carrier as the anchor tenant. Moreover, relatively successful examples with integrator-anchors have still been challenged to become profitable – even with legacy airfields redeveloped from previous military purposes.

- The Developer has indicated it has received interest from a prospective partner with sufficient

influence to bring multiple international carriers (non-integrators) to Hazleton. If such a partner can deliver 5-6 carriers operating multiple daily frequencies, comparable scale of activity as projected by an integrator's regional hub could conceivably be accomplished. However, even at successful all-cargo airports cited – such as Alliance in Ft. Worth – prying international carriers from traditional gateways has not occurred. Foreign carriers have expanded almost exclusively to other major gateways - such as Asian carriers initiating service to Dallas/Ft. Worth, Houston and Atlanta - rather than simply traditional trans-Pacific gateway LAX. Again, the Developer is suggesting a development that is not impossible, but would be unlike any other all-cargo airport developed in North America. It should be noted that the Consultants have honored the necessary confidentiality required between the Developer and its prospective partner and therefore, the Consultant has not contacted the prospect directly to gauge its interest or level of commitment. That said. even with relationships with virtually every significant carrier as existing tenants, Los Angeles World Airports has been unable to convince any international carriers to divert service to its own chosen alternative, LA/Ontario International Airport which is nearer to the congested flagship LAX gateway than Hazleton is to JFK. The presence of allied services and the number of scheduled freighter and passenger services provides the cargo carriers at LAX flexibility which outweighs the benefits of possible relocation to an all-cargo airport.

Task 2 Cost Estimate Analysis

- The runway length of the proposed Hazleton Air Cargo is more than sufficient to accommodate the desired current fleet of air cargo aircraft expected to utilize the facility. The basic infrastructure requirements were tabulated and estimates of probable construction costs were generated. It is estimated that the costs to construct the proposed airport facility is approximately $505 million. These total costs are in line with those proposed by the Developer.

Task 3 Economic Impact Analysis

- Although a full economic impact analysis was not initially conducted for the proposed Hazleton Cargo Airport, the results cited by the Developer were generated by a nationally recognized multiplier and an accepted Martin Associates methodology. However, the choices of Memphis International Airport and Washington Dulles International Airport as comparables are questionable. Neither operates as a pure cargo-only airport. Furthermore, neither comparison is based on a cargo-only Greenfield Project, which will require the sole support of an integrated carrier hub (or a tenant operation of similar scale and level of activity) to sustain initial operations. The Developer's analysis is essentially an extrapolation of ratios from these two full impact reports, with the emphasis of job creation ratios derived from the Washington Dulles International Airport study (which coincidentally

was conducted by the Consultant team member Martin Associates in 2006). These ratios were then applied to an estimated tonnage figure of 500,000 tons - the estimated projected tonnage of the proposed airport which is reached in the medium-term of the airports operation.

- Developer's analysis indicates that 4,533 direct jobs will be generated by the 500,000 tons of cargo by companies within a 5-10 mile radius of the airport. In comparison, the Consultant projects that 2,866 direct jobs will be generated given the same level of cargo activity. These direct jobs would occur on-airport and in the local surrounding area and would vanish if activity at the airport ceased (airport administration, cargo handlers, mechanics, fixed base operators, freight forwarders, US Customs agents, cargo airline employees and truck drivers/couriers). The Consultant also estimates that an additional 2,812 induced jobs, which will occur within the region of the direct jobholders, would be generated by the spending of the wages by the direct jobholders and 500 indirect jobs would be generated in the region by the purchases made by the direct airport-dependent companies. When totaled, the direct, induced and indirect jobs generated by the airport activity equates to 5,548 total jobs.

- The Developer's definition of 161,000 "induced job" impacts correlates to the Consultant's "related job" definition. The Developer defines these as manufacturing companies, value-added service industries, freight forwarding companies, international consolidators, and high-tech companies. The Developer foresees these jobs as spread within the region, not confined to Pennsylvania, but including portions of neighboring states where the manufacturing processes are occurring. In contrast, the Consultant's figure of 164,475 related jobs assumes that these jobs will be supported in Pennsylvania. These jobs are classified as related to Hazleton Cargo Airport, since it is the demand for products shipped by air that generates the employment, not the services offered by the airport. It is to be emphasized that although a portion of the related jobs, which cannot be defined at this time, may be held in the local Hazleton area, these jobholders can reside anywhere in the state including metropolitan areas such as Philadelphia and Pittsburgh. Therefore, there will not be an influx of 164,475 jobs in the Tri-County area in the near or medium-term; however, over time as airport operations develop, certain companies may locate in the Hazleton area to take advantage of services offered at the airport. Also, caution must be exercised in discussing the taxes collected from related shippers as the majority of these jobs are already present in the state's manufacturing sector.

- The $17.1 billion of "indirect impacts" the Developer cites is defined as goods and services, local and regional taxes, home starts and foreign investment. In the Consultant's model, this corresponding figure is defined as Total Output to the State. In their analysis, the Developer extrapolates the value of the enplaned cargo, not the value-added and resulting output of manufacturing or producing companies in the region, which would support the total output figure. This results in an understating

of the impact. Furthermore, the Consultant's definition of indirect impacts encompasses jobs and income held by companies in the region that are generated by the $49.2 million of local purchases by airport tenant and service providers. The Consultant also estimates that $1.4 billion of business revenue will be received by companies located on airport property including integrated carriers, all cargo airlines, FBO's, maintenance, airport administration, etc. The Developer does not specifically identify state and local tax impacts, which are critical in this analysis since this is the key benefit that the state and local governments will receive from the development of the airport. The Consultant estimates that the State will receive $19.6 million annually and the local governments will receive payments of $13.6 million annually for this level of activity. In conclusion, while some of the figures between the Developer's and Consultant's analyses appear comparable on the surface, the underlying definitions and methodologies of the Developer's extrapolation analysis of the Dulles example result in an overestimation of direct jobs and an underestimation of output and benefits to the state.

- The Consultant also assessed the economic impacts based on the high case scenario market forecast presented in Chapter 1 as well as the benefits of the proposed construction activity of the airport infrastructure. Given the forecasted level of activity and construction cost, the Commonwealth would receive approximately $334 million in tax revenues over the first 20 years of the project. It appears the Commonwealth would get back or "break even" on its $250 million investment in year 16 of the airport operations. Local governments in Schuylkill, Luzerne and Carbon Counties would receive over $230 million in tax revenues over the same 20-year period. It is to be noted that these tax payments do not include the development of the Developer's adjacent acreage or resulting tenant base that would occupy the estimated 24 million square feet of industrial and commercial space. These tax benefits also assume that the jobs created by the Hazleton airport would be "new jobs" to the Commonwealth, not jobs relocated within the Commonwealth.

- In addition to the airport activity, the development of the industrial 3,500+ acres of land offers the potential to create significant economic impacts. At this time, the build out is scheduled for 8 years; however the absorption rate of the parcels cannot be determined. In comparison, it has taken over 30 years for the Humboldt Industrial Park to reach the current employment level of 5,600. Also, the potential tenants do not necessarily need to be related to the airport and its cargo operations. However, if the Hazleton Cargo Airport was developed, it is assumed over time that air-related tenants - shippers and manufacturers - may locate at these sites to take advantage of the cargo airport and ancillary services provided at the airfield. It is difficult to assess the percentage of tenants that will be airport-related; therefore these tax figures must be used with caution when expressing benefits to the state and local governments. Therefore, these are not included in the total benefits to the Commonwealth in this analysis.

Task 4 Infrastructure Analysis

- Roadway improvements to provide access to the site are among the key infrastructure needs for the proposed Hazleton Air Cargo Airport. The Consultant attended meetings with the adjacent Humboldt Industrial Park and PennDOT District staff regarding access to the site. PennDOT representatives indicated that due to the existing traffic volume currently using SR 924, any additional request by adjacent development such as the proposed Hazleton Air Cargo Airport would be a "non-starter". Other potential options to provide access to the site include the existing haul road bridge which would route traffic across Interstate 81 to SR309. PennDOT officials indicated that the haul road bridge would, at most, be a short term solution to provide access to the site. The most promising access to the site is via SR424. A westward extension of SR424 is in the early planning stages and the actual construction of the westward extension of SR 424 is not likely until early to mid 2014. It is also likely after a more detailed traffic analysis is prepared by the Developer (as will be required by PennDOT), that a third lane expansion to I-81 in either direction adjacent to the project site will be required to accommodate the ultimate build out of the development and traffic generated. The limits and timing of this improvement to I-81 would be further defined once the Developer prepares a traffic analysis and coordinates this with PennDOT officials. The most critical need at this stage for the project is for the Developer to begin discussions with PennDOT staff immediately given the time needed for sufficient analysis, discussions on who will pay for the improvements, design of the projects and ultimately the construction of the access improvements. Because of the proposed timing of the opening of the project, discussions between the Developer and PennDOT regarding improvements and the westward extension of SR 424 must start as soon as possible.

- Railcar service to the site would most likely be provided by Norfolk Southern Railway similar to the arrangement at Humboldt Industrial Park. Given the amount of proposed development, indications from Norfolk Southern indicated sufficient capacity to accommodate the projected demand.

- The proposed project would not have a significant impact on health care services in the region. Conversations with representatives for the Hazleton General Hospital indicated that Hazleton- St Joseph Medical Center surrendered its hospital license in 2005 due to the number of beds in the region. Other concerns included the recent increase in uncompensated care in the region in the last two years due to the lack of health insurance. The proposed Hazleton Air Cargo Facility could potential increase the number of persons in the region that carry health insurance along with greater demand for medical services in the region which could potentially help increase the number of beds in the region.

- Meetings with local school representatives indicated that current school enrollment in the region exceeds capacity. There will be impacts to the local school system from the proposed project as a

result in increased employees in the region resulting in additional school age children. This impact will require further discussions between the Developer and the local school districts.

- The project would supply a limited number of public safety officials such as police and fire protection for the project. The Developer is not planning to apply for economic incentives such as the Keystone Opportunity Zone. As a result of not applying for consideration as a Keystone Opportunity Zone, significant taxes should be generated by the project through both property and payroll taxes to help offset the increased costs incurred by surrounding local governments for public safety employees and services.

- Meetings with local utility officials indicated a general lack of availability of water and sewer for the project and surrounding areas. Indications from the Developer are that water will be provided and treated on-site from an existing well and that sewer will be treated by an on-site package plant. This will eliminate any impacts to the local utilities.

Task 5 Pro Forma Cash Flow Analysis

- The Consultant's cash flow model takes into account the Developer's initial conservative revenue estimates with respect to charges for landing fees, fuel flowage fees and lease rates. Similarly, the Developer's anticipated operating expenses were used as a base and enhanced with Consultant's in-house data. By applying the projected revenue and operating expenses to the Consultant's high case forecast without debt service requirements, the proposed airport, at this level of activity, operates at a positive cash flow. Year 1 shows a cash surplus of $1.64 million which increases to $27 million by year 20.

- Given the scenario in which the Commonwealth would provide $250 million of grant assistance to the project, the resulting balance and responsibility of the Developer would be $252 million. This $252 million debt service payment, which is calculated at $18.3 million per year, produces a negative cash flow through the first ten years of operation. However in year 11 a positive cash flow of $1.1 is realized. By year 20 the cash surplus is estimated at $8.74 million.

- Under the assumption that no public state grant funds are appropriated to this project, the Developer and their financial partners must assume the entire $502 million cost of development. Based on a 6% interest over 30 years, the annual debt service payment is estimated at $36.5 million. Under this scenario, the project produces a negative cash flow over the course of the first 20 years of operation, with year 20 still recording a loss of $9.4 million.

- Given these conditions, it appears that the support of the Commonwealth is necessary in the viability

of this project. It is also to be noted that the Developer's financial partner, in addition to the $252 million needed for the airport infrastructure construction, is anticipating on funding an additional $1.2 billion for the development of the adjacent industrial and commercial acreage.

Task 6 Airport Governance

- Airport Governance can take many forms. The purpose of this analysis is to outline the many options, but the final ownership and management structure will result from further negotiations between the Commonwealth of Pennsylvania and the Developer to arrive at a final agreement.

- Airport ownership is critical to discuss and ultimately affects future eligibility of federal and state grants if the owner desires to use these types of grants for future improvements. The Developer has indicated the desire to remain in control of the development and overall management of aviation services (private ownership/private management/public use facility). Private funding for the future operations and any subsequent maintenance or capital improvements is potentially realistic given the ever increasing demands on Federal and State Airport Improvement funds. While the model of using a greater percentage of private funds is more commonplace outside of the United States, it is not unrealistic to believe the Developer can attract a sufficient amount of private capital if the rate of return is attractive.

- The ultimate ownership will also impact how off-airport issues are addressed such as height restrictive zoning, land use, eminent domain for future expansion and surface access. These factors should be taken into consideration during the negotiations between the state the Developer.

- The Developer desires funding from the Commonwealth in the amount of $250 million that will be used to leverage a minimum of another $250 million in private financing for the project. The addition of state funding will ensure support of the project, and therefore make the project more attractive to private investors.

- The most likely source of the funding from the Commonwealth, the Pennsylvania Redevelopment Assistance Capital Program (RACP), may also impose some eligibility requirements for the recipient of the funds. Initial research concerning recipient eligibility indicated that the funds must be directed to either local or state governmental entities or 501(c) -3 non profit corporations. If this project is advanced, further research must be conducted on what entity would administer the RACP funds so they could be used for a privately-owned for-profit entity such as the Developer is proposing.

- The project has the potential to be beneficial to both the Developer and the Commonwealth if it is successful and able to meet the criteria outlined in the forecast of demand chapter in this report.

Assuming that the Developer is able to provide enforceable commitments from potential tenants, the project would be able to produce tangible benefits to the Commonwealth of Pennsylvania through job creation, sizable taxes from both payroll and property, and a sizable investment from both parties into public infrastructure that would serve the region. The benefits to the Developer would be the ability to advance the project and construct a new greenfield airport facility by securing financial investors into the project with to the assurance of public investment. The Developer would also benefit from the revenue generated by airport to pay back the private investors along with serving as the master developer for the adjacent commercial and industrial property that would be developed over time.

In summary, the analysis presented in this report addresses key concerns cited by sponsors of this study. The Consultant team has provided the Commonwealth with a tool to weigh the risk and benefits of investing in this project. Ultimately, the following conditions should be required prior to the disbursement of state funds:

- The Developer must bring to the table a partner or tenant that can deliver the level of activity described in this report. Historically, this anchor tenant has been an integrator; however the Developer believes that due to the unique circumstances surrounding the New York market and airspace, a strategic partner with enough influence could effectively direct cargo thorough the proposed airport. While such may ultimately be the case, the Commonwealth must recognize that the partner – itself – may not be a carrier, and its pledge to seek carriers does not equate to the pledge of the carriers themselves. The burden then falls on the Developer to establish compelling confidence that the Hazleton airport development will be more like the unprecedented all-cargo airport of the high case scenario than like airport precedents presented as 'cautionary tales' in this study. While strategic partners are helpful, they are no equivalent to having verifiable commitments from recognizable air carriers. Allied service providers (such as freight forwarders and truckers) also are essential to attracting carriers, but again are not equivalent to actual air carriers. Too, very few forwarders command sufficient volumes to independently effect change, whereas large confederations of small forwarders may have no influence whatsoever.

- The Developer must also provide enforceable letters of commitment from this prospective partner that can deliver the level of cargo activity described in this report to generate the benefits described. These letters of commitment must greatly exceed a letter of interest to ensure that this anchor tenant, integrator or strategic partner, is committed to sustaining operations at the proposed airport. This will protect the Commonwealth's interest since the greatest risk to the Commonwealth is that grant funds be spent to begin construction of the facility before the Developer has secured an enforceable letter of commitment from a major anchor tenant capable of providing and sustaining the level of business described in this report.

- The Commonwealth needs to confirm which organization would be tasked with administering and overseeing the disbursement of state funds such as the RACP funds. The disbursement of state funds should be structured such that the funds appropriated to this project would be used simultaneously with that of the private investment from the Developer's financial partners and that major milestones in the project be identified. This ensures that public funds are not spent prior to private investment and the risk is shared. This is reinforced by the fact that the Developer states that an in-depth financial and feasibility analysis would be completed by their financial partners prior to proceeding with the project.

- Project impacts to services and infrastructure relating to the proposed Hazleton Air Cargo Airport can be mitigated through prudent planning and coordination between the affected local communities and the Developer. Coordination regarding access to the site and access to the interstate highway system must begin immediately with PennDOT due to the length of time required and the Developers timeline. Affected local governments surrounding the project must ensure that sufficient fees are collected from the Developer during the local site review process either through building permit / impact fees or future property / employment taxes to offset the cost of providing local services such as schools, police and fire protection.