

**SCRCOG**

# South Central Regional Council of Governments

## Freight Cargo Study for Tweed New Haven Airport

South Central Region  
of Connecticut



January 2014

**URS**

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## I. Introduction

URS Corporation AES, in conjunction with A. Strauss-Wieder, is pleased to have the opportunity to prepare this report for the South Central Regional Council of Governments (SCRCOG) and the Tweed-New Haven Airport Authority (TNHAA). This report summarizes the results of our study of options for increasing freight services for niche markets, removing trucks from the I-95 and I-91 corridors, reducing congestion and providing timely delivery of goods and food products for the region's consumers. More specifically the goals of this study are to:

1. *Develop the cargo context for the airport.* The context will review domestic air cargo movements (including feeder and belly cargo services), along with domestic expedited truck movements (which have emerged as the substitute service for domestic air cargo). The context will also consider truck movements and freight users proximate to the airport as part of the area context.
2. *Work with the airport to establish cargo objectives.* Identify short and longer-term cargo objectives that may include but are not be limited to:
  - Preserve air cargo options for the future.
  - Generate short-term revenue from freight related activities on airport property.The cargo context will be used as background for this discussion.
3. *Assess the possible application of the "freight village" or "business gateway" concept to cargo development at the airport.* The freight village concept combines industrial development with multi-modal freight access in an environmentally and community friendly manner. The business gateway concept recognizes the value of a synergistic relationship between the airport and local businesses allowing for more opportunities through combined efforts. The freight village/business gateway concepts could be used to attract businesses that are or could be users of air cargo services at the airport, as well as a way of "branding" the Airport.
4. *Develop growth strategies for the airport to support the freight cargo industry.* Based on the information developed by the previous three goals and the additional work undertaken by the URS team, potential air cargo growth strategies have been developed for the airport's consideration. These strategies include a list of operational and facility considerations separated into 3 distinct categories that can be used when entertaining potential opportunities.

## II. Air Cargo Context

This section summarizes the air cargo context for Tweed. This context affects the potential level and type of demands for the airport, as well as the possible characteristics of air cargo providers and customers for Tweed.

### A. Background on Air Cargo

Air cargo services were among the most recent means for goods movement to emerge. Joining in freight systems that included railroads, ocean carriers, pipelines and trucking services, air cargo emerged as an option for moving time sensitive and often high value shipments domestically and internationally.

The air cargo physically moves in two ways:

- Belly cargo – cargo transported in the bellies of commercial passenger planes.
- All-cargo services – shipments transported in aircraft devoted to air cargo, ranging in size from general aviation (e.g., Cessnas) to extremely large (e.g., Antonov 124s).

Air cargo services may be arranged in several ways:

- Private movements for a specific company – Aircraft are part of the logistics operation of a specific company and generally do not handle additional companies. For example, Quest Diagnostics notes on their website that the company maintains “a robust logistics operation that includes courier vehicles and aircraft that collectively make tens of thousands of stops daily in order to collect and deliver specimens to our laboratories for testing”<sup>1</sup>

#### Quest Diagnostic Aircraft



Source:

<http://www.jetsnprops.com/details.php?qid=85&pid=5433>

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<sup>1</sup> <http://newsroom.questdiagnostics.com/company-information>

- Cargo-only air carriers – Generally, cargo-only air carriers contract for airport-to-airport movements. Their services are generally engaged by transportation service arrangers such as freight forwarders and third party logistics companies that also arrange the ground handling by trucks to and from the airports. Cargo-only carriers may specialize in varying sized aircraft. For example, AirNet’s Charter Cargo Services and Scheduled Package Delivery service utilize Cessna aircraft.<sup>2</sup> Cargolux, which also handles international air cargo operations, operates much larger aircraft, such as 747s.
- Combination air carriers – Commercial passenger airlines such as Delta, United and Southwest similarly work with forwarders and transportation arrangers to handle belly cargo on scheduled flights.

**Example of All Cargo Aircraft**



Source: A. Strauss-Wieder, Inc.

**Examples of the Types of Aircraft Used by FedEx, an integrator**



Source: A. Strauss-Wieder, Inc.

- Integrators

– Integrators are companies that provide door-to-door services for their clients that may involve aircraft (and are sometimes referred to as “express carriers.” UPS and FedEx have the largest such “multi-modal” networks, as well as smaller specialized companies such as the previously noted AirNet, which offers AirNet Express (ANX).<sup>3</sup> Integrators may use a variety of aircraft types, including planes converted from passenger to cargo use.

**B. Overview of Domestic Air Cargo Industry Trends**

Air cargo moves *domestically* within the US, as well as internationally. The air cargo context for Tweed focuses primarily on domestic air cargo movements among origins and destinations throughout the country.

<sup>2</sup> <http://www.airnet.com/services/air-transportation.aspx>

<sup>3</sup> <http://www.airnet.com/services/airnet-express.aspx>

The air cargo industry as a whole and domestic air cargo movements in particular have experienced substantial changes in the last decade. Air cargo movements are among the most expensive form of goods movement as well as among the fastest for longer distance movements. As such, the industry has historically focused on high value goods that can absorb the air cargo fees and time sensitive products that require expedited travel times.

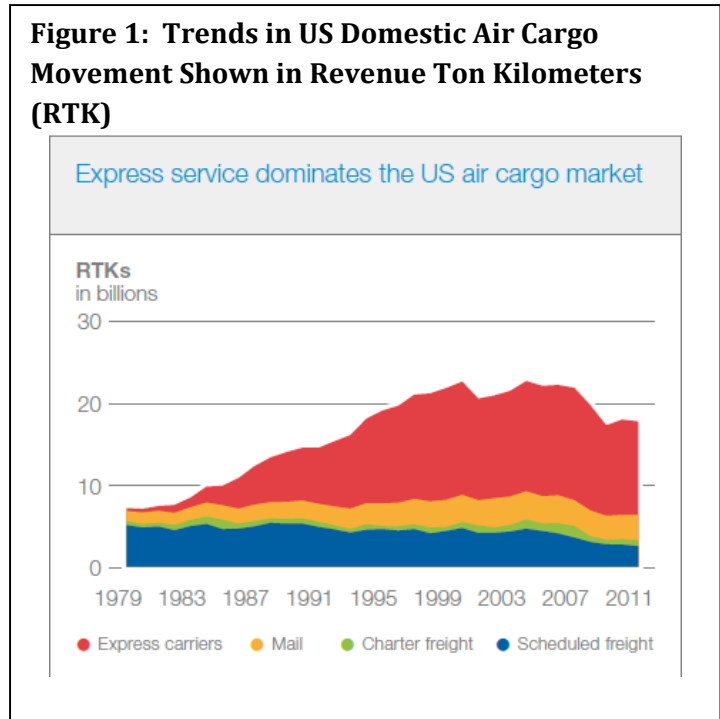
Air cargo movements grew as companies became more international, sought to reduce inventory costs and provide time definite deliveries. However, several trends have converged within the last decade to reduce the demand for air cargo services. These include:

- Increased and continuing pressure to keep freight costs as low as possible. Many retailers offer free shipping for their customers. In turn, these companies seek to minimize and optimize their use of freight services.
- Increased implementation of information technologies that can more closely plan production or store requirements, track inventory needs and follow cargo in transit. The new information systems enable goods to move via less expensive longer-transit time freight options.
- Increased substitution of trucks for domestic air cargo and ocean carriers for international air cargo movements. Domestically, the cost of trucking a shipment is generally substantially less than sending the shipment via air. Similarly, international ocean shipments are substantially less than international air cargo movements. Expedited services are a particularly attractive market for highly competitive trucking industry, which faces significant pressure to keep their standard rates as low as possible. Trucking firms can charge premium rates for time definite, expedited shipments, with those rates still being factors less than the cost of air cargo on certain routes.

As a result, the demand for domestic air cargo has slowed and, in many cases, been significantly reduced from the industry's peak.

As shown in Figure 1, the integrators/express carriers remain the dominate provider of air cargo

**Figure 1: Trends in US Domestic Air Cargo Movement Shown in Revenue Ton Kilometers (RTK)**



services. Scheduled air freighter services via all-cargo aircraft have declined, as have shipments of mail and charter services. The *2012-2013 Boeing World Air Cargo Forecast* noted, “The US domestic market is mature and has remained flat or in slight decline in recent years, except during the global economic downturn.”<sup>4</sup>

The air cargo industry appears to be returning its focus to the niche shipment markets that require the high speed delivery of products and/or are high value goods that can absorb the cost of transporting the goods via air. Examples of the types of commodities which these characteristics include:

- Bio-material (e.g., laboratory samples, transplants, etc.)
- High value pharmaceutical and medical products
- Perishable and high value food products (e.g., sushi grade fish)
- High value and/or high in demand retail products (high end apparel, jewelry, electronics, toys with short product life cycles)
- Replacement parts (critical to production line or business operations)
- Emergency response shipments

### **III. Airports in the Vicinity of Tweed Handling or Considering Air Cargo**

The analysis identified nine airports in the vicinity of Tweed that are handling air cargo and/or pursuing industrial development that could support air cargo activity. The section summarizes several key characteristics of these airports, describes the air cargo trends at the airports where information is readily available and identifies efforts at two Connecticut airports to encourage industrial development.

#### **A. Airports in the Tweed-New Haven Airport Hinterland**

The airports in the vicinity of Tweed that handle a wide variety of air cargo movements, ranging from substantial movement of domestic and international air cargo to small aircraft feeder services for such customers as FedEx. As shown in Figure 2, these airports include:

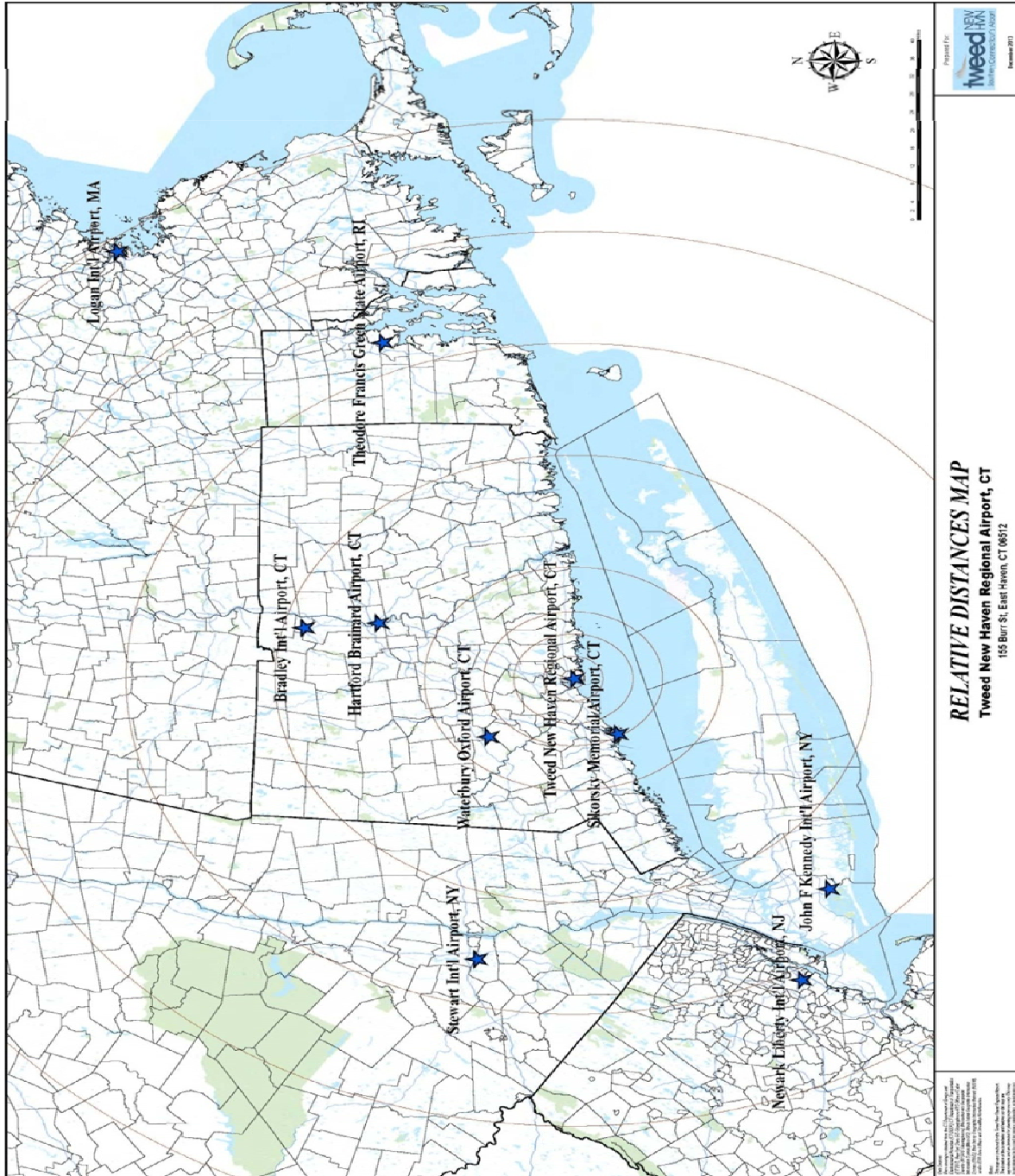
- In Connecticut: Bradley International, Hartford-Brainard and Igor I. Sikorsky Memorial Airports
- In New York: Stewart International and John F. Kennedy International Airports
- In New Jersey: Newark Liberty International Airport
- In Rhode Island: T.F. Green Airport
- In Massachusetts: Logan International Airport

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<sup>4</sup> *2012-2013 Boeing World Air Cargo Forecast*, p. 14.

Oxford Airport does not appear to currently have air cargo activity. However, as part of a local initiative, the airport is pursuing industrial development that could support future air cargo activity.

**Figure 2: Airports in the Tweed-New Haven Hinterland**



The air cargo activity and characteristics of these airports vary, as shown in Figure 3. JFK is the seventh largest air cargo operation in the US with extensive international operations. Newark Liberty is the ninth ranked airport in the US in terms of air cargo, with UPS, FedEx and the



scheduled airlines providing domestic and international cargo movements. Both of these airports, along with Logan, Bradley, and Stewart, can handle the largest type of aircraft used for cargo and have the runway length to support these aircraft in international operations. Logan is ranked 21<sup>st</sup> and Bradley is ranked 32<sup>nd</sup> in US air cargo tonnage by Airports Council International North America.

**Figure 3: Airports in the Tweed Hinterland that handle Cargo**

<i><b>Airport</b></i>	<i><b>Nearest Town</b></i>	<i><b>2012 Cargo Tonnage</b></i>	<i><b>Longest Runway Length (ft)</b></i>	<i><b>Cargo/ Industry Development</b></i>
Bradley	Hartford	124,550	9,510	Domestic & International
TF Green	Providence, RI	12,500	7,166	Domestic
Stewart	Newburgh, NY	19,098	11,817	Domestic & International
JFK	NY-NJ Metro Area	1,318,938	14,511	Domestic & International
Newark Liberty	NY-NJ Metro Area	741,276	11,000	Domestic & International
Logan	Boston	246,677	10,083	Domestic & International
Hartford-Brainard	Hartford	N/A	4,417	Wiggins (FedEx feeder)
Sikorsky Memorial	Bridgeport	N/A	4,761	Wiggins (FedEx feeder)
Oxford	Waterbury	N/A	5,800	Oxford Industrial Park
Tweed	New Haven		5,600	

T. F. Green has integrator cargo services such as FedEx, as well as belly cargo movements in scheduled passenger aircraft.

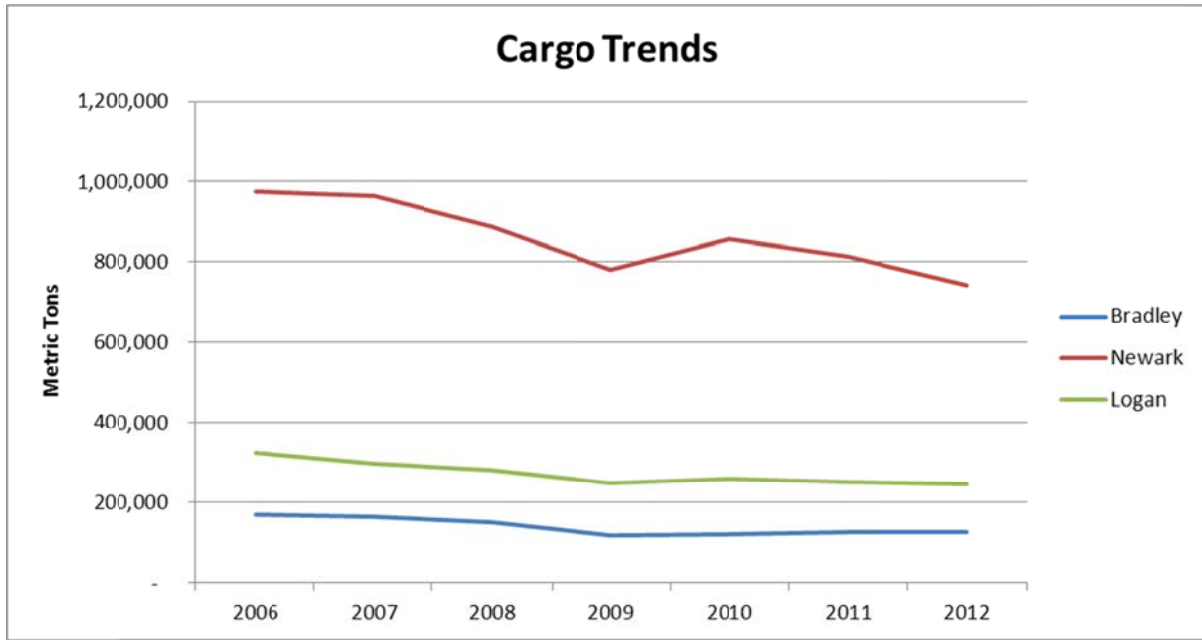
Wiggins Airways operates at Hartford-Brainard and Sikorsky Memorial Airports. Wiggins Airways is a regional freight carrier. According to the company’s website, Wiggins is also a long standing contract service provider of FedEx Express, which is a subsidiary of FedEx. In the capacity, Wiggins is a regional “freight feeder” in the Northeast and operates FedEx Cessna Caravan aircraft in multiple states.<sup>5</sup>

**B. Air Cargo Trends at Airports in the Vicinity of Tweed**

The trends and multi-modal competitive conditions affecting air cargo nationally and internationally are reflected at airports in the vicinity of Tweed. As shown in Figure 4, Logan showed a decline of nearly 25 percent or over 78,000 metric tons between 2006 and 2012. Air cargo movements at Newark International Airport, declined by nearly 234,000 metric tons or 24 percent during this time period. Bradley International experienced a 44,000 metric ton decrease or 26 percent.

<sup>5</sup> <http://www.wiggins-air.com/index.html>

**Figure: 4: Air Cargo Trends at Airports in the Vicinity of Tweed**



	<b>Bradley</b>	<b>Newark</b>	<b>Logan</b>
2006	168,575	974,961	324,859
2007	162,929	963,794	298,536
2008	149,823	887,252	281,761
2009	118,147	779,642	247,782
2010	120,569	855,594	259,539
2011	124,506	813,209	251,520
2012	124,550	741,276	246,677



Sources: ACI-NA and Port Authority of NY/NJ

### **C. Industrial Development Initiatives at Connecticut Airports**

Airports with cargo operations have been pursuing strategies that integrate local economic development with freight movement development. These integrated strategies generally use “freight village” principles.

Freight villages, a concept that originated in Europe and now widely applied in the US, are defined as complexes or areas with:

- Multi-modal use – goods can arrive or depart by several freight modes, such as rail to truck; barge to rail/truck; air and rail/truck
- Economic activity – Active distribution centers and industrial activities are located adjacent or proximate to cargo facilities (e.g., airports, rail yards, etc.). A freight village also does not have passive activities such as container storage
- Support activities – office space, retail (restaurants, banking, stores), and hotels
- Unified management – typically in the US, the freight operations are managed by a public entity (such as an airport authority) or private freight operator (such as a railroad). The industrial buildings are typically developed and managed by one or a small group of private real estate companies

Freight villages can also be referred to as integrated logistics centers or business gateways.

Examples of air cargo/airport freight villages in the US include:

- Alliance Texas – a 17,000 acre master planned development that began with industrial development and now also includes housing, office and recreational activities. The development started around a new airport – Fort Worth Alliance Airport – which, according to the Alliance Texas was the world’s first 100 percent industrial airport designed for cargo and corporate aviation.<sup>6</sup>
- Alliance California – an industrial and airport development pursued to repurpose the former Norton Air Force Base. San Bernardino International Airport, which made use of the Air Force Base’s 10,000 foot runway, was created as part of the effort. Hillwood, the same company that developed Alliance Texas, developed and markets the industrial space adjacent to the airport.
- Rickenbacker Inland Port (Ohio) – This freight village development includes Rickenbacker International Airport, a cargo only airport. The development pursues both domestic and international air cargo movements and related industrial and development activities.

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<sup>6</sup> <http://www.alliancetexas.com/OverviewMaps/ServicesAmenities/AllianceAirport.aspx>

In addition, freight village principles are being used to rebrand air cargo airport and adjacent industrial activities as cohesive, one-stop cargo/industrial options. John F. Kennedy International Airport, a leading US and international airport, is using this approach to rebrand the air cargo, on-airport and adjacent off-airport facilities to retain and attract new customers.

Within Connecticut, two airports in the vicinity of Tweed are pursuing industrial development that incorporates at least some of freight village principles – Bradley and Oxford.

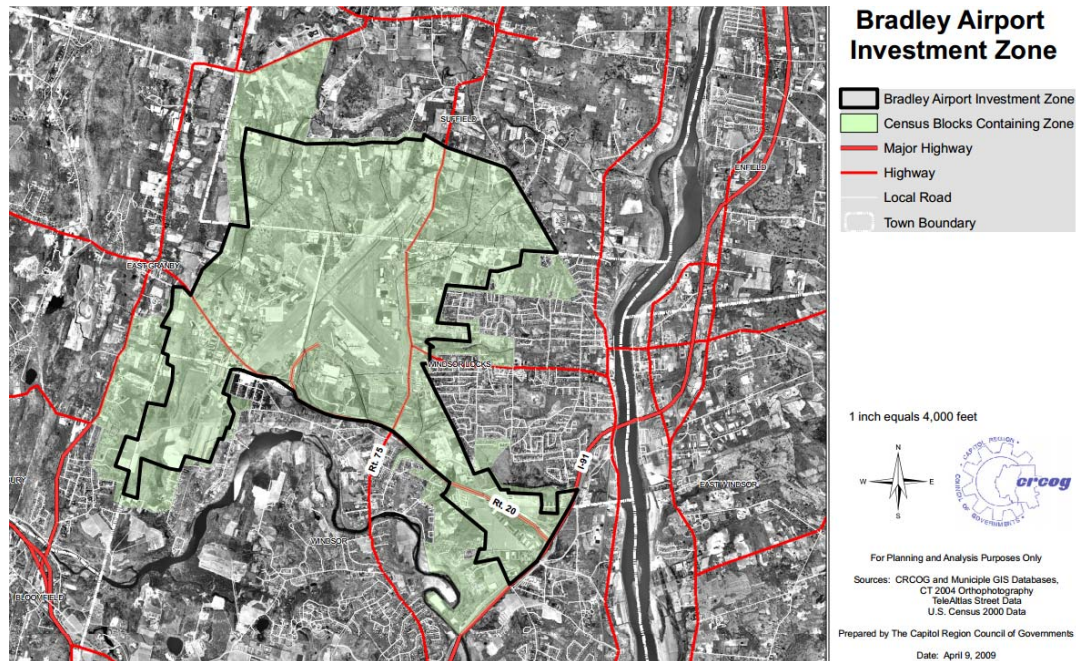
### 1. Bradley Airport Development Zone (BADZ)

The Bradley Airport Development Zone (BADZ) extends a package of tax incentives to attract:<sup>7</sup>

- Manufacturing
- Firms performing research and development directly related to manufacturing and/or service or rebuild industrial machinery/equipment
- Warehousing and motor freight distribution uses qualify for incentives if they handle goods shipped by air.
- Business services if the Department of Economic and Community Development (DECD) determines that the business services depend upon or relate directly to the airport.

As shown in Figure 5, the BADZ surrounds the airport.

**Figure 5: Map of the Bradley Airport Development Zone**



Source: [http://www.bradleydevelopment.com/Regional\\_Profile/Incentives/Bradley\\_Airport\\_Development\\_Zone/](http://www.bradleydevelopment.com/Regional_Profile/Incentives/Bradley_Airport_Development_Zone/)

<sup>7</sup> [http://www.bradleydevelopment.com/Regional\\_Profile/Incentives/Bradley\\_Airport\\_Development\\_Zone/](http://www.bradleydevelopment.com/Regional_Profile/Incentives/Bradley_Airport_Development_Zone/)

The BADZ follows freight village principles as integrates economic and airport development in a designated area. In addition to targeting businesses that can contribute to air cargo and airport business, the stated goals of the BADZ include attracting businesses, creating jobs and generating tax revenue for the municipalities and State. These goals help increase the value of the BADZ – and airport – to the local community. The BADZ overview is provided in Appendix A and includes additional details on the requirements and benefits.

Indeed, the *New York Times* references Bradley and the BADZ in an article entitled, “Connecticut Looks to Airport as a Business Draw.”<sup>8</sup> The same article noted that success of the BADZ in retaining and growing Nufern, a Connecticut optical fiber and fiber laser manufacturer and stated, “Mr. Seifert said his company would spend \$360,000 this year sending products via airfreight from Bradley and an additional \$150,000 on air travel.”<sup>9</sup>

## 2. Oxford Airport Economic Development Zone

In August 2013, the DECD and Governor Daniel P. Malloy announced that the Connecticut Airport Authority voted to create an economic development zone at Oxford Airport.<sup>10</sup> The enterprise zone will offer the same tax incentives to targeted businesses as the BADZ. The Town of Oxford Economic Development Commission had previously identified 2,500 acres of industrial properties within the town.<sup>11</sup>

## **IV. Air Cargo Operational and Facility Considerations for Tweed**

This section:

- Summarizes the cargo and economic objectives developed in conjunction with Tweed Airport and South Central Regional Council of Governments (SCROG) executives.
- Discusses a potential local growth market for air cargo services at the airport.
- Identifies operational and facility considerations for the airport.

### **A. Air Cargo and Economic Development Objectives**

Establishing objectives forms the framework for advancing next steps and growth strategies. The consultant team facilitated discussion with Tweed Airport and South Central Regional Council of Governments (SCROG) executives in June 2013 to develop a consensus set of objectives. During this dialogue, the air cargo context, activities at airports in the area and the

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<sup>8</sup> <http://www.nytimes.com/2012/09/05/realestate/commercial/connecticut-looks-to-bradley-airport-as-a-business-draw.html>

<sup>9</sup> *Ibid.*

<sup>10</sup> <http://www.governor.ct.gov/malloy/cwp/view.asp?Q=529836&A=4010>

<sup>11</sup> [http://www.oxford-ct.gov/Section/Business\\_Development/](http://www.oxford-ct.gov/Section/Business_Development/)

potential use of freight village principles were discussed, along with community and broader regional considerations.

As a result, the group consensus focused on three categories on objectives – cargo and airport specific goals that focus on cargo and revenue growth and economic development and community objectives that reflect local, regional and state level goals. The consensus objectives adopted by the group are:

- Economic Development
  - Create or retain jobs and tax revenues for the New Haven region.
  - Attract growth industries to the region, particularly in core competency business sectors.
- Tweed Cargo Development
  - Grow cargo operations and revenues at the airport.
  - Generate new net revenues.
  - Invest strategically and incrementally as needed to attract cargo.
- Community Considerations
  - Pursue cargo activities viewed as beneficial to the surrounding area.

***B. Bio-Material – A Potential Niche Market for Developing Tweed Air Cargo Traffic***

With air cargo demand refocusing on its core niche markets – high value and/or time sensitive – freight development at Tweed can also build on local industries and shipments that fit this profile.

The movement of bio-material fits the niche profile. Bio-material includes biological specimens and supplies for diagnostic, research labs and hospitals, along with transplant material. Bio-material is also of growing interest to pharmaceutical and medical businesses.

New Haven County has a high concentration of these businesses as shown in Figure 6, including world famous hospitals and research institutions. Over 290 establishments in this industry were identified in the 2010 US Census of County Business Patterns, employing nearly 82,700 workers.

**Figure 6: Bio-Medical Businesses in New Haven County**

NAICS	Sector	In New Haven County	
		Workers	Establishments
622	Hospitals	70,386	47
541711	Bio Tech R&D	7,470	62
6215	Medical & Diagnostic Labs	4,812	184

Source: US Census County Business Patterns, New Haven County, 2010.

New Haven’s strength of this business concentration appears to be growing. In June 2012, Alexion Pharmaceuticals, Inc., a drug manufacturer announced that it would build a new headquarters building in New Haven, consolidate their current workforce at that location and hire 300 additional workers.<sup>12</sup> A *Wall Street Journal* article on the investment noted:

“The state helped facilitate the move by providing about \$51 million in tax credits, loans and grants for the project scheduled to open in 2015. Alexion's "decision to grow here in our state is a major step forward in our larger strategy to establish Connecticut as a world-renowned life-sciences hub," Mr. Malloy said in a statement... ‘Bioscience and biopharma are one of our sweet spots where we see the opportunity for this combination of real business growth,’ said Catherine Smith, commissioner of the state Department of Economic and Community Development.”<sup>13</sup>

Bio-material shipments generally consist of highly time sensitive, small-sized shipments. These shipments are known to move in smaller aircraft and as belly cargo. Tweed Airport executives noted that some of these shipments are already moving through the airport as belly cargo.

Examples of small aircraft movement of biomaterial shipments include the previously referenced private air fleet of Quest Diagnostics. Clinical Pathology Laboratories Southeast (CPLSE) similar uses small aircraft through regional airports via AirNet Cargo Services to move the bulk of their samples to their laboratories in the US Southeast.<sup>14</sup>

Freight forwarders and transportation arrangement companies are also focusing on this industry. Examples include Quick International Couriers, DHL Thermonet (which was formed in June 2013), and Shine Express Inc. UPS Supply Chain Solutions and Kuehne + Nagel are also focusing on the growing “life sciences” business cluster.

<sup>12</sup> Joseph De Avila, “Alexion to Build New Offices,” *The Wall Street Journal*, June 19, 2012.

<sup>13</sup> *Ibid*

<sup>14</sup> Lisa Terry, “Air Cargo’s Future: Ready for Anything,” *Inbound Logistics*, June 2012.

### **C. Airport Operational and Facility Considerations**

The operational and facility considerations for an airport to handle cargo will vary based on the physical characteristics of the airport, the air cargo markets served, cargo aircraft types and the quantity and characteristics of the cargo flowing through the airport.

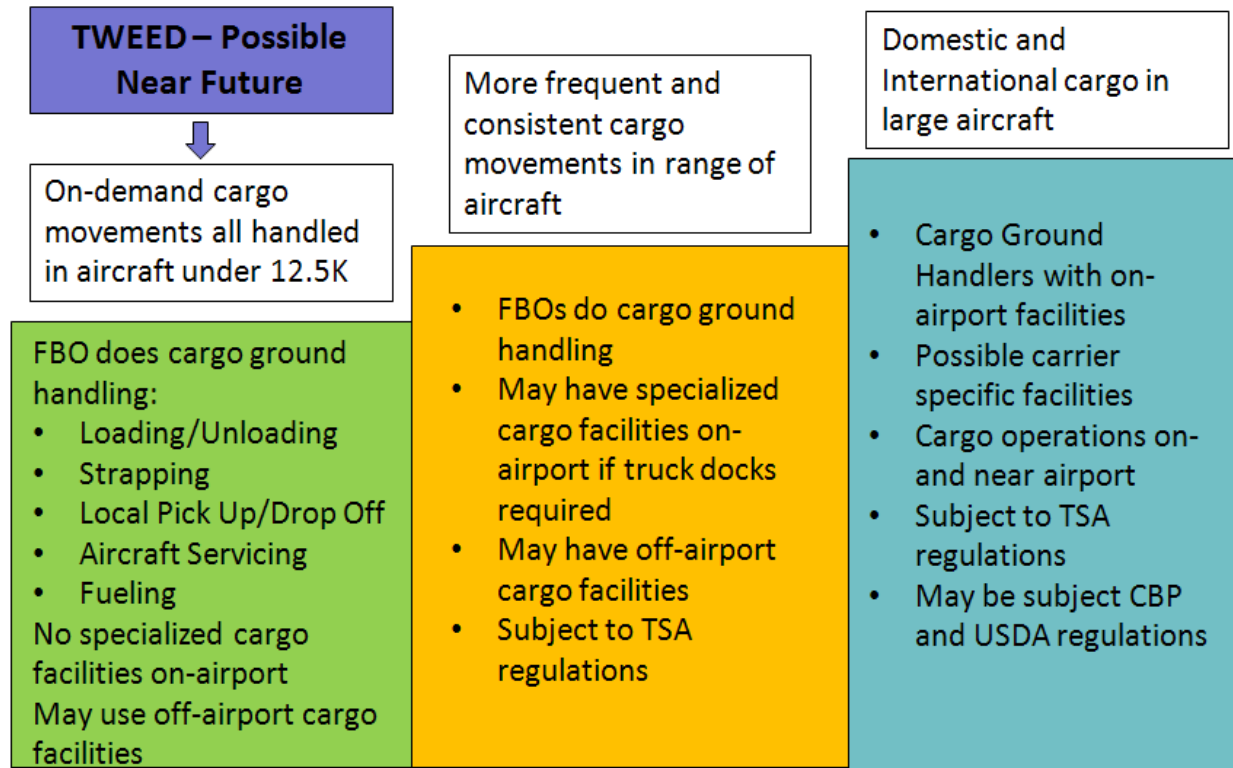
Tweed has several physical characteristics that shape its potential air cargo market:

- Runway length – Runway length determines the aircraft that can use the airport. As described previously in Figure 3, Tweed’s longest runway is 5,600 feet. This runway is longer than two Connecticut airports that are served by Wiggins, which operates smaller aircraft. However, the runway is shorter than the airports that handle domestic cargo in larger aircraft (such as Boeing 737s and 727s) and considerably shorter than the airports that handle international cargo and the largest cargo aircraft (e.g., Boeing 747s and Antonovs).
- Available on-airport space and operations – The availability of on-airport cargo handlers and facilities and/or the amount of space available to build new facilities and offer new services can affect the range of cargo operations that an airport can pursue. Tweed has limited on-airport space currently available; the Airport can currently build one new hangar with tarmac space. The airport also has one existing fixed base operator(FBO) that handles small aircraft similar to the type that transport cargo.

Figure 7 provides a step chart of varying air cargo operations, ranging from on-demand cargo movements in smaller aircraft to nationally ranked movements of domestic and international air cargo in large aircraft.



**Figure 7: Air Cargo Airport Operational and Facility Considerations**



The on-demand movement in smaller aircraft limit of 12,500 pounds recognizes rules set and the costs for potential air cargo carriers associated with US Department of Homeland Security Transportation Security Administration (TSA) inspection facilities and staffing.

As of 2004, aircraft weighing 12,500 pounds or less are exempt from the Twelve-Five Standard Security Program (TFSSP). According to the National Business Aircraft Association, the TFSSP, as formulated in 2002, requires aircraft operators using aircraft with a maximum certificated takeoff weight of 12,500 pounds or more carry out security measures. The rule also required that “certain aircraft operators conduct criminal history records checks on their flight crew members, and restrict access to the flight deck.” The “certain aircraft operators” were defined as those conducting operations “in scheduled or charter service, carrying passengers or cargo or both to, from, within, or outside the United States.”<sup>15</sup>

On-airport requirements provided in the Figure 7 are based on website reviews and confirmed through discussions with two cargo-handling FBOs – Tri-City Aviation (located at Tri-Cities Regional Airport in Tennessee) and Atlantic Aviation (located at Stewart International Airport in New York) and airport executives at the Port Authority of New York and New Jersey and

<sup>15</sup> <http://www.nbaa.org/ops/security/programs/TFSSP/>

Stewart Airport. Smaller aircraft transporting freight generally may require a minimum of additional on-airport equipment (potentially a loading/offloading assistance, forklift provision), access to strapping and other cargo-securing supplies, truck access to the airport for local pick and delivery, and the types of services typically supplied by FBOs. Pilots of these smaller planes tend as to act as their own load masters, taking responsibility for the securing of cargo and paperwork.

Once air cargo movements become more frequent and customers have made longer term commitments to use an airport, the airport may add specialized facilities, particularly when on-airport cargo storage with truck loading dock access is required. All cargo remains subject to TSA and FAA regulation, with additional requirements if the aircraft exceed 12,500 pounds.

As cargo movement continues to grow and potentially includes international shipments, specialized freight ground handlers may be used. The need for on-airport cargo facilities, tarmac or ramp staging areas, inspections, and adjacent off-airport (“through the fence”) cargo facilities increases. Aircraft size grows with the accompanying runway length and other airport physical requirements.

## **V. Initial Considerations for Discussions with Potential Air Cargo Service Providers**

As part of this project, Tweed executives requested the development of a preliminary check list to guide their discussions with individuals and organizations that approach the Airport regarding potential cargo operations. Five areas of consideration were identified for the check list:

- Pilot Credentials
- Aircraft Considerations
- Cargo Considerations
- Revenue Considerations
- FAA and other Regulatory Considerations

### **A. Pilot Credentials**

Federal regulations specify the pilot credentials required for air cargo movements. Federal Acquisition Regulation (FAR) 61.113 stipulates that no person who holds a private pilot certificate may act as pilot in command of an aircraft that is carrying passengers or property for compensation or hire; nor may that person, for compensation or hire, act as pilot in command of an aircraft. Accordingly, a private pilot’s license, commonly used for recreational aviation, cannot be used for commercial purposes. Commercial pilots are required for compensated cargo and passenger operations.

## **B. Aircraft Considerations**

The considerations focus on aircraft type and weight. As noted previously, aircraft weighing 12,500 pounds or less are exempt from the Twelve-Five Standard Security Program (TFSSP). In addition, the proposed aircraft runway requirements should fit within the existing physical attributes of Tweed Airport.

## **C. Cargo Considerations**

The cargo considerations center on shipment types and ground handling requirements. It is assumed that cargo carriers approaching Tweed regarding potential operations will focus on US domestic and regional services given the current physical characteristics of the airport. International cargo operations, if proposed by a prospective carrier, also should be considered in terms of US Customs and Border Patrol (CBP) facility and aircraft requirements.

Ascertaining the types of cargo anticipated to be moved by the carrier is important. For example, if the cargo potentially involves hazardous materials and/or specialized handling, the requirements for airport emergency response and ground handling should be considered.

The prospective operator should also indicate the ground handling needed to support the cargo operations. Example considerations include:

- What types of ground handling equipment is required (e.g., forklift provision)?
- Does that cargo movement require tarmac or other types of staging area?
- What type of truck access is required to support the proposed cargo operation?
- Will the carrier use the existing airport FBO or does the carrier seek their own facility and FBO status at Tweed?

## **D. Revenue Considerations**

Airport revenue considerations focus on the frequency, quantity and consistency of proposed cargo operations. Airports typically derive their revenue streams from landing and takeoff fees, provision of fuel, and ground services used. If the cargo operator proposes construction of a new facility on-airport or re-purposing an existing building, then additional considerations in terms of leasing and investment required exist.

Revenue considerations also include the costs associated with the proposed cargo operations. In general, the revenues anticipated from the proposed operations should not exceed the anticipated costs to the Airport Authority. Accordingly, the costs, such as emergency response, additional operating hours, etc., should be ascertained as part of the evaluation.

### ***E. FAA and other Regulatory Considerations***

The potential cargo operator should document for Tweed that the air worthiness and all other applicable FAA, federal and state requirements are also be met, including FAA commercial operator and Connecticut business requirements.

## **VI. Considerations for the Development of Airside Air Cargo Facilities**

As part of attracting potential clients, Tweed-New Haven Airport Authority has considered the development of additional airside facilities to serve the potential needs of passenger and freight cargo service. When developing an airside facility that may partially serve the freight cargo industry, the following infrastructure considerations should be made:

- Fire suppression systems for hangars (NFP 409) typically satisfy requirements for storage facilities, unless it is a Group III facility
- Storage may require tight tolerances of flat floor construction, to allow for higher stacking, which may differ from typical hangar drainage design
- Design loads will vary depending on type and amount of materials stored, and vehicles loading and unloading materials
- Access requirements for material transfers, secure storage, records/manifest storage and emergency egress should be carefully considered
- Electrical service needs may include a walk-in cooler. Consider an additional 230/460V, Single or Three Phase 60Amp Circuit for a small walk-in cooler.

## **VII. Conclusions – Potential Growth Strategies and Next Steps**

The potential growth strategies and next steps are based on the research and discussions undertaken for this project. The potential growth strategies also assume that the airport will ascertain the opportunities for new facility development on-airport, as well as opportunities to co-market with the current FBO at Tweed.

The potential growth strategies and next steps include:

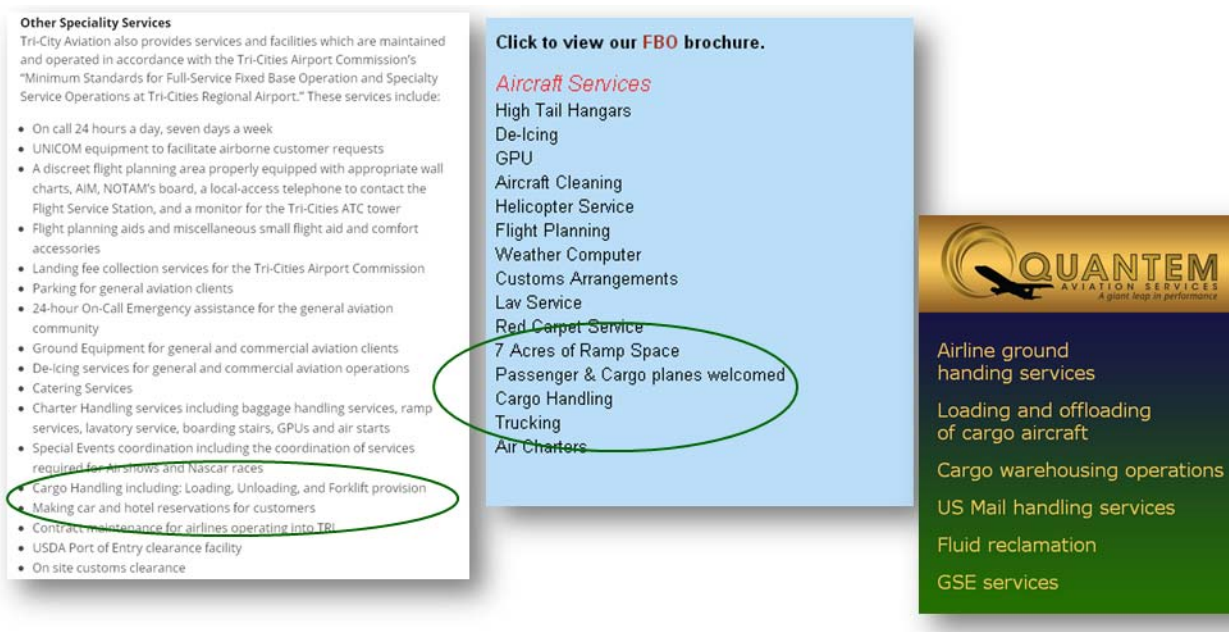
- Identifying and enhancing existing on-airport operations to facilitate air cargo operations.
- Marketing the airport to targeted cargo operators and air cargo shippers.
- Pursuing the development of an airport enterprise zone.
- Pursuing additional runway length

**A. Identifying and enhancing existing on-airport operations to facilitate air cargo operations**

As shown in Figure 8, at smaller airports, FBOs advertise and offer cargo services on their websites. These cargo services may include offering assistance with loading and off-loading of cargo, provisions/rental of forklift services and offering ramp space. Accordingly, a next step could be an inventory of ramp space, facilities, services and equipment existing on-site that could be used to assist cargo operations at the Airport. These assets could become part of a cargo marketing strategy.

In addition, Tweed and/or the existing FBO operator can investigate the specifications and cost associated with renting or acquiring a forklift such a cargo customer require this equipment to use the airport.

**Figure 8: Examples of Website Marketing to Cargo Carriers**



**B. Marketing the airport to targeted cargo operators and air cargo shippers**

Once Tweed determines the potential facilities, services, available land and equipment that can be marketed, a targeted campaign could be progressed to attract air cargo users to the Airport. In addition to the inclusion of these services on websites for the Tweed and the airport FBO, marketing material and sales calls could be made to three groups:

- Air cargo carriers that use aircraft suitable for Tweed – As discussed, examples include Wiggins Airways, which already has a presence in Connecticut and AirNet.

- Private companies that have air cargo fleets that could be drawn to the New Haven Area – The New Haven area has a distinct concentration of bio-material, life science businesses. Companies in this business, such as the aforementioned, Quest Diagnostics, maintain a private fleet to transport bio-medical samples.
- New Haven businesses in targeted industries – Tweed can collaborate with local and state economic development and planning organizations to increase awareness of the airport and its potential for cargo operations, particularly to life science businesses that receive and ship bio-material. The airport’s central location can be key to the timely transport of these items.

**C. *Pursuing the development of an airport enterprise zone***

The application of freight village principles and economic development incentives are being advanced by Bradley and Oxford Airports to attract businesses and airport users.

Air cargo as an industry has experienced near roller-coaster conditions over the last few years, including shifting demand, increased competition and new federal regulations. However, niche markets continue to need expedited and efficient air cargo services. With Tweed’s central location in the New Haven area, potential opportunities to advance air cargo exist and could be progressed in a cost effective manner.

**D. *Pursuing additional runway length***

Runway 02-20 is the primary instrument runway at Tweed-New Haven Airport. The runway is 150 feet wide and 5,600 feet in length, and is composed of a crushed gravel base course and bituminous concrete pavement. Currently, Runway 20 is displaced 352 feet due to obstructions, buildings, trees and bushes, in the approach surface as shown in the Master Plan Update from 2002. This runway is equipped with high intensity runway lights (HIRLs) for nighttime and low visibility conditions. Runway 14-32, which is 100 feet wide by 3,626 feet in length, serves as the secondary or cross wind runway.

US Airways serves the Tweed-New Haven Airport with Bombardier Dash 8 (DHC-8) aircraft, which can carry up to 37 passengers. US Airways provides five daily departures, most of which use the primary runway due to its length and multiple instrument approaches. The airport provides air access for both commercial and general aviation to the greater New Haven area.

Tweed-New Haven has the potential to increase service to both corporate (business) and commercial aviation. The Airport Master Plan updated in 2002 forecasted commercial enplanements to grow to 250,000 and aircraft operations to 85,000 by 2020.

As previously described, Tweed competes with other airports in the area [Bradley, T.F. Green, White Plains, JFK/LaGuardia/Newark] for both passenger and aircraft traffic. The 2002 Master

Plan noted that although Tweed is located in the middle of one of the largest travel markets in the Northeast, the primary reason it has not been able to grow is that service is limited by runway length and obstructions in the approach to Runway 20.

The existing Airport Layout Plan, developed in 2002, depicts the ultimate runway length at 8,200 linear feet. This runway length would be achieved by extending Runway 2 600 feet to the south and paving the 1,000-foot safety areas on both ends of the runway. The Runway 20 Safety Area Improvement project, completed in 2008, relocated Dodge Ave to the north, allowing for the development of approximately 1,000 feet of Runway Safety Area. This RSA improvement project, while slightly different from the Master Plan Update, developed the opportunity for the Tweed-New Haven Airport Authority to investigate options to extending the Runway 2-20 length. By paving some or all of the current Runway 20 Safety Area, the Airport Authority could achieve at least 6,000 of takeoff distance with no impact to currently mapped wetlands.

The Airport Authority could also look at improvements to the south end of the runway, Runway 2, to capture additional landing and take-off distance. The Updated Master Plan suggests constructing an additional 600 feet of runway to the south and extending the Runway Safety Area 600 feet as well. The Safety Area for Runway 2 is currently 1000 feet. Extending the Safety Area 600 feet to the south would most likely create significant environmental impacts. However, extending Runway 2 400 feet to the south, leaving 600 feet of Runway Safety Area south of the new pavement, would also achieve at least 6,000 of takeoff distance with little to no impact to currently mapped wetlands

Another potential option to lengthen the available landing distance would be to recapture the displaced threshold on Runway 20. The Tweed-New Haven Airport Authority has been removing obstructions in the approach to Runway 20 by obtaining property and voluntary easements from the property owners to the north. Removal of these obstructions could allow the Authority to recapture the 352 feet of pavement inside the displaced threshold. Additional topographic and approach surface analysis would be required to determine how the threshold could be moved to the north.

By advancing any or all of these options, the runway pavement lengths required to attract additional opportunities could be achieved with minimal impacts to the surrounding environment.

# Appendix A: Bradley Airport Development Zone Overview Document



## Bradley Airport Development Zone

Bradley International Airport, New England's second largest, is a major economic driver for Connecticut. In 2010, the Bradley Development League, the MetroHartford Alliance and key state legislators championed the creation of the Bradley Airport Development Zone (BADZ) to seize upon the airport's full potential. The BADZ extends tax incentives to airport-related firms utilizing the Airport for distribution, manufacturing and other specified businesses that develop or acquire property in the Zone and foster job growth. Incentives are offered to eligible businesses located in East Granby, Windsor, Windsor Locks and Suffield.

The Connecticut Airport Authority worked cooperatively with the Department of Economic and Community Development, Bradley Development League, Metro Hartford Alliance and municipal leaders to develop user-friendly and efficient policies and procedures for the BADZ.

### Goals:

- Create new jobs
- Attract new capital
- Increase tax revenue to the state and municipalities in the region

### Business Requirements:

- Businesses qualify for BADZ's tax incentives if the organization(s) acquires an idle facility or constructs, substantially renovates or expands the facility and uses it for specified purposes
- Eligible uses include:
  - Manufacturing
  - Performing research and development directly related to manufacturing
  - Significantly servicing, overhauling or rebuilding machinery and equipment for industrial uses
  - Warehousing and motor freight distribution uses qualify for the incentives, but only if they handle goods shipped by air
  - Business services, including information technology, also qualify for incentives if the Department of Economic and Community Development (DECD) commissioner determines they depend upon or relate directly to the airport

### Property Tax Incentives:

- Newly constructed, renovated, or expanded facilities qualify for an exemption based on the value of the improvement.
- The exemption equals 80 percent of improvement's assessed value and it is good for five years.
- Acquired facilities qualify for the same exemption, but it is based on the assessed value of the acquired section. This exemption is also good for five years.
- Businesses developing or acquiring a facility in the BADZ also qualify for a five-year, 80 percent exemption on assessed value of machinery and equipment it installs in the facility as part of its development or acquisition.

### Corporation Business Tax Credits:

- Businesses that qualify for property tax exemptions also qualify for a 10-year corporation business tax credit equal to the portion of the tax attributable to the facility (the law specifies how businesses must calculate that amount.) The credit equals 25 percent of the tax.



**About the Connecticut Airport Authority:**

The legislation creating the Connecticut Airport Authority (CAA) was signed into law in July 2011 with the goal of transforming Bradley International and the state's five general aviation airports, including Danielson, Groton/New London, Hartford Brainard, Waterbury-Oxford, and Windham into vibrant economic drivers for the state. The CAA, a quasi-public agency, has the flexibility and autonomy to streamline the process for getting things done and be responsive to economic opportunities for the airports.

The 11-member board brings together a broad spectrum of business and management acumen with members from across aviation-related and other businesses in Connecticut, as well as from state government. Board members have experience and expertise in government, financial planning, budgeting and assessment, marketing, master planning, aviation and transportation management.

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