Westover Airport

Airport Business Plan

December 2014

massDOT
Massachusetts Department of Transportation
Aeronautics Division

MassDevelopment

Westover AIRPORT

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Acknowledgements

This report was prepared with the full cooperation of the Westover Airport Business Plan Project Stakeholder Committee comprised of members from the MASS Task Force, Massachusetts Department of Transportation, MassDevelopment, Westover Metropolitan Development Corporation, UMass-Amherst, local industry leaders, and airport staff. Broad-based input was obtained from several project stakeholder meetings at various locations over the course of approximately six months.

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A business plan provides an agency, community, organization, or Commonwealth with a clear assessment of their current situation, helps to identify potential opportunities as well as obstacles, and defines the actions necessary to achieve specific goals. The business plan establishes the direction for short- and long-term economic development, helps to guide future land use decisions with economic development implications, and outlines the strategies required to help with economic development, retention, expansion, and attraction efforts.

The Airport Business Plan for the Westover Airport reflects over six months of data collection, research, and analysis in cooperation with the Westover Airport Business Plan Project Stakeholder Committee. This committee was comprised of representatives from local and state economic development agencies, airport advisory board members, key local businesses, military personnel, and professionals of academia. Over the course of this process, the Project Stakeholder committee met multiple times to discuss goals and strategies, review draft reports, conduct a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis, and formulate and evaluate the Airport Business Plan. The Airport Business Plan reflects the values and priorities as stated by the Westover Airport Business Plan Project Stakeholder Committee.

We, the members of the McFarland Johnson Team comprised of staff from McFarland Johnson and R.A Wiedemann & Associates, would like to thank all the Project Stakeholder Committee members for their hard work, creativity, candor, honesty, and dedication to this process.

EXECUTIVE SUMMARY

Project Background

In 2012, Governor Deval L. Patrick and Lieutenant Governor Timothy P. Murray created the Military Asset and Security Strategy Task Force (MASS Task Force), which was a call to action to begin a long-term initiative to support all military installations in Massachusetts in order to both collaborate with them and explore opportunities to bring new missions. The MASS Task Force engages with the military, industry, non-profit organizations, municipal officials, elected officials, and community members at and surrounding each installation in order to enhance, expand, add, or otherwise improve missions, programs, facilities, and operations on or affecting the military installations in the Commonwealth. Since its creation, the MASS Task Force has analyzed Massachusetts' military installations to determine where there are opportunities to fill vacant spaces, upgrade aging infrastructures, become more energy efficient, identify new missions, and build partnerships to bring more jobs and economic development at and around each site.

The MASS Task Force analysis has shown that the people and missions at each military installation in Massachusetts are supported by all of the Commonwealth's advantages. Massachusetts is first in the nation in student achievement, and at or near the top in the world in math and science. With over 300 universities within Boston's 90-mile radius, our region has a unique concentration of brainpower, which in turn creates a knowledge-based environment that cannot be replicated anywhere else in the country. Massachusetts is also first in the nation in economic competitiveness, entrepreneurial activity, health care coverage, veterans' services, and energy efficiency. Massachusetts' installations are able to take advantage of a high-quality workforce, world-class educational institutions, and advanced technological companies in our high-tech cluster. Everything Massachusetts offers its residents, including the spirit of innovation, supports the military's presence. In short, members of the Armed Services and military families have a great Commonwealth in which to live, work, play, and be educated.

One of the six core military installations in this great Commonwealth is Westover Air Reserve Base. Westover Air Reserve Base (ARB) is a joint-use military installation that supports the mission of the C-5B Galaxy and civilian aviation activities. It is the nation's largest Air Reserve Base in terms of land mass, and supports reservists from 34 states who travel to Westover to serve in Air Force, Army, Navy, and Marine Reserve units. Westover ARB is strategically located in the northeast, providing close proximity to Europe and NATO alliances. For this reason, Westover ARB has figured prominently in every major contingency requiring strategic airlift. In fact, flying a C-5B from Westover to Europe and the Middle East takes 3 to 4 fewer hours than it would from Lackland AFB, where half of the aircraft at Westover will eventually be re-assigned under current military proposals. Operationally, its geographical proximity also eliminates the need for long transits to the east coast, additional crew rest, and extra fuel to fully satisfy mission requirements. Moreover, Westover's maintenance record is stellar and its pilot

and crew manning levels meet the requirements to satisfy all missions.

Westover ARB is not only important to the nation's military, but serves as a strategic interest to the Commonwealth, the Governor, and the Delegation. However, cuts to military spending and changes to military missions threaten the sustainability of the status quo at Westover ARB and, as a result, the economic vitality of the surrounding communities.

Because of the opportunities for growth and the news of upcoming cuts, in late 2013 Governor Patrick directed two primary members of the MASS Task Force, MassDevelopment and the Massachusetts Department of Transportation – Aeronautics Division to study opportunities in support of economic development opportunities which would support the community and military. Therefore in early 2014 the Massachusetts Department of Transportation – Aeronautics Division issued a Request for Response (RFR) for consulting services to develop an airport business plan to identify potential new/complementary military missions and to increase civilian aviation operations at the Westover ARB and the Westover Airport, respectively. The Westover Metropolitan Development Corporation (WMDC) oversees the civilian airport operations, which include scheduled/unscheduled aircraft charter operations, business aviation, and general aviation – and joined this effort. The RFR was composed in recognition of the development potential of the airfield, and also the unique qualities of the property. The contract was awarded to the McFarland Johnson Team comprised of personnel from McFarland Johnson and R.A. Wiedemann & Associates during the Spring of 2014.

The focus of the Airport Business Plan was the development of goals and objectives intended to improve the financial and mission sustainability of the Westover ARB and Westover Airport, along with the identification of specific actions to be taken in support of achieving those goals. It was envisioned that this business plan will be clear, concise, and actionable, with an emphasis on brevity to encourage stakeholders to read and enact the plan, as they channel their efforts toward building and sustaining the ARB as an economic engine and strategic resource for the Commonwealth and the Department of Defense. The Westover ARB shares a common destiny with the Commonwealth. The Project Committee hopes that all of these factors will cause the Department of Defense to think of Massachusetts when new and innovative cyber security missions, flying missions, homeland security needs, and other military priorities require a place to call home.

The Commonwealth, through the MASS Task Force, has already taken the initial steps to foster greater economic opportunities at Westover ARB, this Airport Business Plan among them.

Partnerships to date include:

- Providing energy assistance through a comprehensive energy study the state's Department of Energy Resources has launched at Westover. The goal of this study is to build on the past successes the base has previously made, and to offer the expertise of the best energy experts in Massachusetts to provide no strings attached advice on how further gains can be made at Westover to further reduce energy operating costs and enhance energy security.

- Supporting the base's master planning efforts and exploring the opportunities for shared services, the pursuit of new tenants for underutilized space, zoning, and land issues with community partners through the Air Force's Public-Private-Partnership Tabletop Exercise program.

- Expansion of UMass Amherst's Research and Development resources at Westover

- Connecting Westover staff with the state's STEM Education and Workforce Development initiatives and organizations working in the Massachusetts innovation economy.

- Domestic emergency management operations with FEMA and MEMA.

All of these partnerships to date between the MASS Task Force and Westover have followed the framework these parties agreed to in 2013 to pursue anything with the potential to reduce Air Force operating costs, enhance Air Force missions, and enhance economic development opportunities for MA and the region.

These past actions and new ideas should be seen as a commitment to the Air Force Reserve that the Commonwealth hopes to maintain an active Department of Defense presence within Massachusetts because there is tremendous value to the Air Force Reserve by locating here. The Commonwealth is in favor of additional military and commercial missions, including expansion of airport operating and tower hours at Westover. It is the Commonwealth's hope to partner with military, greater Chicopee community, and private sector stakeholders to turn these possibilities into realities. This process should be, and could be, a great story of how collaborative public/private/military partnerships strengthened the airport, the community, the Commonwealth, and the nation, simply by investing in the people and missions of Westover.

Business Plan Process

The following is a summary of the various components and processes undertaken as part of the strategic planning effort led by the McFarland Johnson Team:

- Research and Strategic Formulation – With the assistance of data and reports by the Pioneer Valley Planning Commission, the Economic Development Council of Western Massachusetts, WestMass Area Development Corporation, the U.S. Census Bureau, and the U.S. Department of Transportation, demographic data specific to the Springfield Metropolitan Area was analyzed in order to produce a thorough baseline of socioeconomic information.

- Strategic Planning Charrette – The Project Stakeholder Committee held a strategic planning session at the onset of this process. Initial research findings and strategic ideas were presented in a formal report in order to obtain feedback and input on the development of the Airport Business Plan.

- Assessment of Market Position and Brand Equity – These assessments provide a quantitative and qualitative look at the Airport's competitive market position in Western Massachusetts and the relative strength of the Airport's brand among users in that market. These assessments present a basis for strengthening the Airport's competitive position and brand in tandem with identified alternatives and recommendations.

- Identification of Airport Alternatives – Based on feedback from the stakeholder charrette, potential airport development options were formulated and assessed according to eight criteria: Market Demand, Facilities Required, Labor Force Required, Marketing Efforts Required, Likelihood of Success, Timeframe, Value to Westover Civilian Operation, Value to Military.

- Formulation of Financial Pro Formas – Using historical revenues and expenses as a baseline, estimates of future financial performance were provided for each of the seven alternatives that had been selected for further consideration.

- Dynamic Analysis Tool – This automated planning tool was used to illustrate projections of revenue and expenses using the various alternatives considered for implementation. The tool allows web access for users to quickly analyze the financial implications of potential development scenarios at the airport.

- Business Plan Compilation – a draft of the final Airport Business Plan was prepared for review prior to presentation to leaders of the Commonwealth and Department of Defense.

Recommendations

The recommendations made in this report are summarized below. Please note that each of the alternatives presented should be pursued in an opportunistic manner. However, rather than focusing on one or two at the expense of all others, an inclusive, or holistic, strategy should be embraced by pursuing multiple opportunities simultaneously. Although some alternatives presented result in stronger revenue for the airport, each alternative adds significant value to the operation and sustainability of both the civilian and military facilities. Moreover, it is possible that several of these recommendations may be interwoven with each other, implying that their individual success is dependent upon that of another. The recommendations resulting from this Airport Business Plan are as follows:

- **Attract a Maintenance, Repair, and Overhaul (MRO) firm to Westover Airport within Three Years**
  - This alternative involves the attraction of a full-scale Maintenance, Repair and Overhaul (MRO) operator to base at the airport. Services could include airframe repair, engine maintenance, major overhaul, painting, avionics, interior refurbishment, etc. MROs that work on large jets require significant runway length and large amounts of hangar space.
  - The MRO alternative is highly dependent upon the ability to accurately assess the market and hire a 'business builder' with close ties to the industry. Initial assessment indicates that this alternative would result in significant increases in revenue, and depending upon scale, job growth as well.

- **Increase the Number of Air Charter Operations and Fractional Operators**
  - This alternative includes the attraction of a fractional jet ownership company, or Part 135 air charter operator, to locate at Westover Airport.
  - Key to the success of this alternative is the retention of a marketing firm that has general aviation expertise and/or additional staff time at Westover. In addition, the change in operating hours for the Airport will be important in attracting more air charter and fractional jet operators.

- **Seek to Double the Number of Corporate Jet Operations and Add More General Aviation Based Aircraft to Westover**
  - This alternative considers the attraction of general aviation and corporate/business aircraft to the Airport. Additional activity can be in the form of based aircraft or itinerant operations.
  - The success of this alternative will involve the ability to fund development of hangar space at the Airport. This can be through grants, low interest loans, or private enterprise development. The attraction of new based aircraft will also depend, in part, on the retention of a marketing firm that has general aviation expertise. Similar to the fractional jet and air charter

scenario, the change in operating hours for the Airport will be important in attracting more corporate aviation.

- **Attract an Ultra Low Cost Carrier (ULCC) to Westover within Two Years**
  - This alternative focuses on reestablishing commercial passenger air service to the airport. Based upon market research and a competitive analysis, it is believed that pursuit of an Ultra Low Cost Carrier (ULCC) is the best opportunity for air service at Westover.
  - The presence of a comprehensive plan and cost-friendly operating environment are crucial to attracting a ULCC. The Airport is in talks with several airlines. An airline such as Allegiant Air or Frontier could provide this type of low-cost service.

- **Establish Aviation/Aerospace Education Partnerships to Facilitate Research and Development Opportunities with Military and Private Sectors while Providing a Talented Workforce Pool**
  - This alternative focuses on the establishment of aviation-related academic degree and/or certificate programs at the post-secondary level, in partnership with local colleges and universities, private investors, and the military. The proposed UMass Amherst/NASA Aviation Research and Training Center would be ideal for development of UAS/UAV and ATC programs; however, it is possible that a consortium of local colleges and universities could work together with Westover on this overall educational initiative.
  - The Aviation/Aerospace Education Initiative is a prudent and practical option to undertake as it relates to airport and community development. This alternative would capitalize on the Knowledge Corridor's resources and student population, while fostering specialized workforce training that benefits public and private aviation employers and military users. Presently, $5 million is budgeted for in the Commonwealth's Capital Plan to support infrastructure upgrades to bring UMass Amherst to Westover.

- **Pursue a Consolidated Public Safety Facility on the Airport**
  - As envisioned, a consolidated public safety facility is aimed at centralizing multiple types of public safety training capabilities and facilities into one co-located facility/complex at the Airport. Such a facility would include firefighting, police/MP, and other first responder training programs that serve all municipalities and providers in the Springfield area and beyond.
  - Due to the complexity of this option, additional study is required to determine the full feasibility of this alternative; however, this concept appears to have support from civilian and military stakeholders.

Additional details and further information supporting the above recommendations can be found in the full Airport Business Plan.

Further Consideration and Commentary on Military Mission Options

Westover ARB faces challenges similar to many military installations in these times of strategic economization, yet their unique infrastructure and excess capacity provides tremendous opportunity for growth in support of military mission needs. The strong partnership between Westover Airport, Westover Air Reserve Base, and the Military Asset and Security Strategy Task Force will allow all of the following recommendations to be studied in the near future.

Military Recommendations

It is recommended that coordination with the Air Force at the appropriate level is maintained, and the following opportunities are considered as the next step in executing the Airport Business Plan as it relates to advancing joint military/civilian opportunities:

- **Joint Westover Plan or Joint Land Use Study:**
  The Air Force and the Airport currently perform periodic planning efforts to assess and direct future development efforts for their respective portions of the airport. A joint Westover master plan sponsored and supported equally by the Air Force and Airport, or through the DOD's Joint Land Use Study program could be a logical and productive follow on to the Air Force Community Partnership initiative currently underway at Westover.

- **Preservation of Capacity:**
  The pending loss of 8 C-5Bs at Westover ARB will not result in excess facilities of any magnitude. The loss of aircraft will, however, result in a loss of some full-time enlisted and drilling reservist positions. There will be additional ramp space available for new missions in the future. Not knowing the future of Department of Defense needs and subsequent budget allowances, Westover ARB should seek to preserve current capacities for future new missions – new missions that may include a return to 16 C-5B aircraft.

- **Expansion of Aerial Port Capabilities:**
  Westover ARB currently maintains a small aerial port capability. A future consideration could include examination and promotion of Westover as a primary departure port for Europe (as the closest U.S. military C-5B base to Europe) while Dover would focus on the Middle East and other regions.

- **New Fixed or Rotary Wing Mission Potential:**
  The North Ramp at Westover maintains space that could accept a new mission for the installation. A squadron of either fixed or rotary wing aircraft could be a viable new mission for Westover with plenty of ramp space available and land available for the development of supporting facilities.

- **Supply Chain Space Offer:**
  Westover ARB mission aircraft work in concert with Dover AFB to load and unload their payloads primarily because the supply chain distribution network better serves the Dover area. If there were opportunities to encourage a portion of the supply chain distributors to the Westover area by virtue of offering space on Westover ARB to these suppliers; a proactive approach to reorienting/supplementing/redirecting the supply chain support decisions more toward Westover ARB, thus strengthening the geographic posture and the regional economics of Westover, may result.

- **New Controlled Airfield Technology – SATAS:**
  The civilian side of the Airport is exploring opportunities for 24 hour airfield operations which include one option of going to an non-towered airfield situation from the hours of 11 pm to 7 am.

The opportunities represented in the above concepts, if desired for the future, should be well documented and packaged for future use in selling the ideas to potential advocates for Westover ARB. The packaging of the ideas should include documenting the need, the possibilities and the resources that would be required to carry the ideas forward.

Additional details and further information supporting the above recommendations can be found in the Further Consideration and Commentary on Military Mission Options and Military Recommendations sections.

CHAPTER 1 – REGIONAL BACKGROUND

INTRODUCTION

Westover Airport (CEF), a 91-acre public use airport, is co-located with Westover Air Reserve Base in the City of Chicopee, which is in the heart of the Pioneer Valley of Western Massachusetts. The immediate market area, known as the Springfield Metropolitan Area, encompasses forty-three communities throughout Hampden and Hampshire Counties and covers approximately 1,200 square miles, a region roughly the size of Rhode Island. Owned by the Department of Defense, the Westover Airport is managed under a joint-use agreement by Westover Metropolitan Development Corporation (WMDC), a non-profit industrial development corporation created in 1974 to oversee the Airport and undertake development of surplus land from the former Westover Air Force Base.

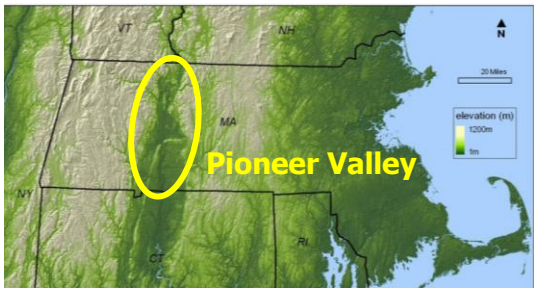
As a joint-use facility, Westover Airport/Westover Air Reserve Base serves both civilian and military needs, representing two very different aviation markets. On the military side, Westover Air Reserve Base supports the mission of the C-5B Galaxy. On the civilian side, Westover Airport serves scheduled/unscheduled aircraft charter operations and passengers, business aviation operators, and general aviation aircraft owners. The Airport Business Plan for Westover Airport[1] is foreseen as a plan that will address civilian airport operations, as well as identify potential new/complementary military missions.

[1] For simplicity, Westover Airport will refer to both civilian and military components unless otherwise explicitly stated.

REGIONAL SOCIOECONOMIC DATA

The Springfield Metropolitan Area (SMA) is located in the western region of Massachusetts known as the "Pioneer Valley." This valley runs north to south, bordering the Connecticut River as it spans the length of Massachusetts, thus creating a corridor through the region. The SMA is made up of Hampden and Hampshire Counties; however, the Pioneer Valley also includes Franklin County to the North.

Figure 1: Pioneer Valley of Massachusetts



Source: McFarland Johnson

Population Trends

According to the U.S. Census Bureau, the overall population in the Springfield Metropolitan Area has increased 2.1% between 2000 and 2010. This mirrors state and national activity, which also illustrates increasing trends in total population, as seen in Table 1.

Table 1: Total Population Trends

	Census 2000	Census 2010	% Change
United States	281,421,906	308,745,536	+ 8.8%
Massachusetts	6,349,097	6,547,629	+3.0%
Springfield Metro	608,479	621,570	+ 2.1%

Source: U.S. Census Bureau

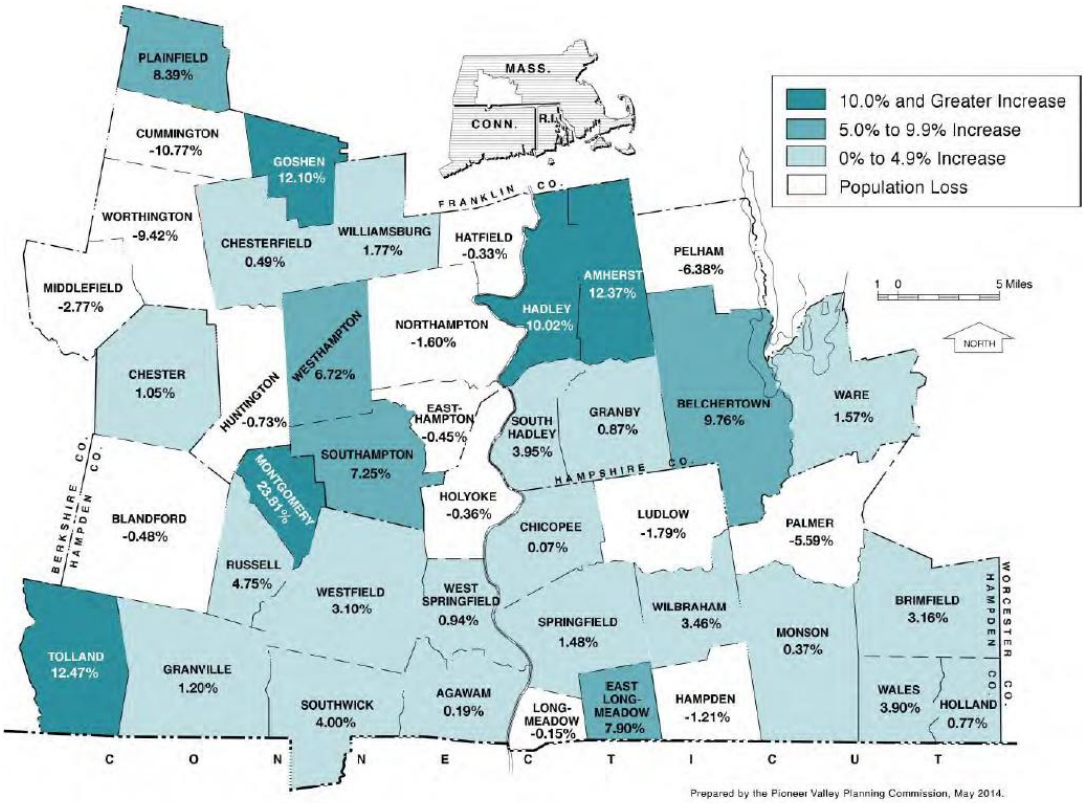
Of that limited growth, urban areas such as Chicopee, Holyoke, Springfield, and Westfield grew just over 1%, and nearly a quarter of that growth occurred in Westfield alone. While urban areas remained relatively stable, the suburban and rural communities experienced growth. The population changes within Hampden and Hampshire Counties are depicted in Figure 2. Significant to this growth is the change in population of Hispanic or Latino persons. Between 2000 and 2012, the U.S. Hispanic or Latino population increased by 50%. This augmentation was mirrored by both the state of Massachusetts and the Pioneer Valley Region, as seen in Table 2.

Table 2: Hispanic or Latino Population in the Pioneer Valley Region 2000-2012

	Hispanic or Latino Persons			% of Total Population		
	2000	2012	% Change	2000	2012	% Change
Pioneer Valley	74,409	110,301	48.2%	12.2%	17.6%	5.4%
Hampden Co.	69,197	102,369	47.9%	15.2%	22.0%	6.8%
Hampshire Co.	5,212	7,932	52.2%	3.4%	5.0%	1.6%
Massachusetts	428,729	673,885	57.2%	6.8%	10.1%	3.3%
United States	35,305,818	52,961,017	50.0%	12.5%	16.9%	4.4%

Source: PVPC CEDS Ten Year Update, 2014

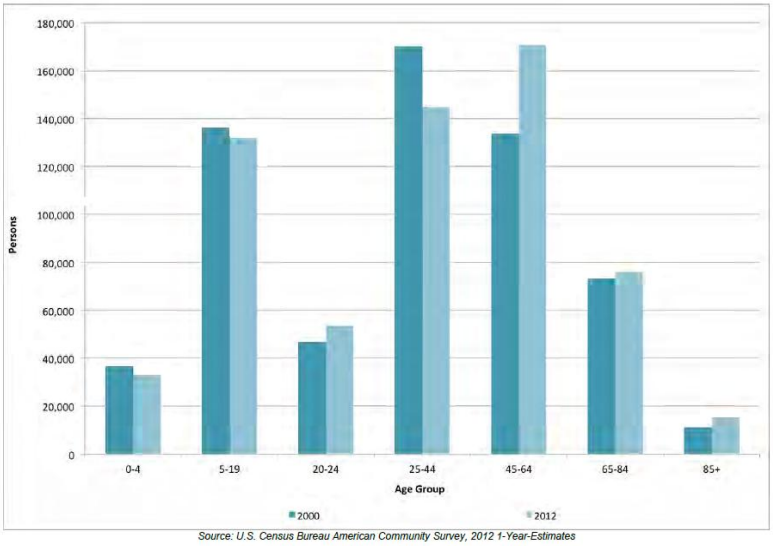
Figure 2: Percent Change in Population (2002-2012)[2]



Data Source: U. S. Census Bureau Population Estimates Program, 2002-2012

Another important factor influencing the population of the Springfield Metropolitan Area is the age distribution across the Pioneer Valley. Data from the Pioneer Valley shows the region again mirroring trends seen across the nation. As seen in Figure 3, between 2000-2012, all age groups, except those age 5-19 and those 25-44, experienced increases. This is indicative of a smaller wage-earning population overall, and of a larger percentage of the population in, or approaching, dependence on others. It is important to consider the millions of Baby Boomers (approximately 27% of the population) who are likely to move out of the labor force and into retirement within the next decade.[3]

Figure 3: Population by Age



Source: U.S. Census Bureau American Community Survey, 2012 1-Year-Estimates

[2] PVPC CEDS Ten Year Update, 2014
[3] Ibid.

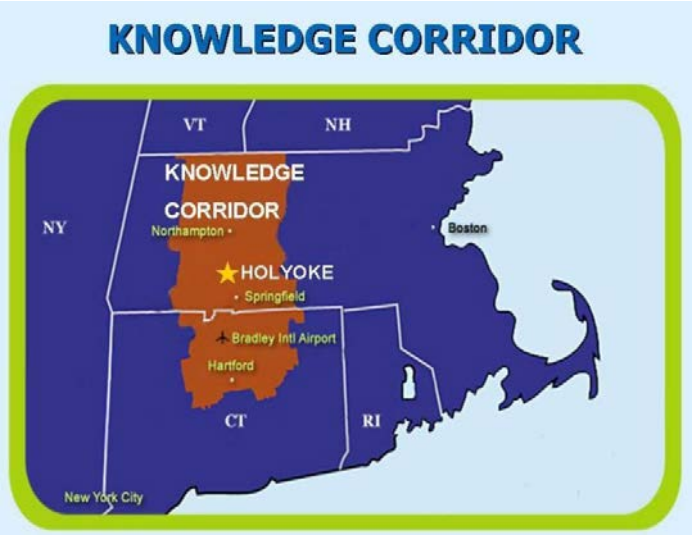
Strategic Takeaways:

- **Slow population growth overall**
- **Significant increase in Hispanic/Latino population**
- **Smaller wage-earning population overall; indicative of retirements and 'brain drain'**

Educational Attainment

The corridor which runs along I-91 and the Connecticut River from the northern border of Massachusetts to the central portion of Connecticut is currently home to 29 institutions of higher education and is aptly referred to as the "Knowledge Corridor." Combined, these 29 colleges and universities account for more than 100,000 students and provide one of the best-educated work forces in the nation.[4] Table 3 lists the educational institutions located within the Knowledge Corridor.

Figure 4: Knowledge Corridor



Source: EDC of Western Mass

Table 3: Educational Institutions in the Knowledge Corridor

Public Colleges and Universities	Community and Technical Colleges	Private Colleges and Universities
University of Connecticut	Asnuntuck	American International College
University of Massachusetts*	Capital	Amherst College*
Central Connecticut State University	Greenfield	Bay Path College
Charter Oak State College	Holyoke	Elms College
Westfield State University	Manchester	Goodwin College
	Middlesex	Hampshire College*
	Springfield	Hartford Seminary
	Tunxis	Mount Holyoke College*
		Smith College*
		Springfield College
		Western New England University
		Rensselaer at Harford
		Saint Joseph College
		Trinity College
		University of Hartford
		Wesleyan University

Source: EDC of Western Massachusetts

[4] The Economic Development Council Of Western Massachusetts

While Massachusetts has historically ranked among the best educated states in the nation, the educational attainment levels of the Springfield Metropolitan Area are slightly lower and seemingly more aligned with national trends compared to that of the Commonwealth, as seen in Table 4.

Table 4: Percent of Population by Educational Attainment

	High School Graduate, GED, or Alternative	Bachelor's Degree or Higher
United States	85.7%	28.5%
Massachusetts	89.1%	39.0%
Springfield Metro	86.3%	29.1%

Source: U.S. Census

Given the region's unusually high concentration of colleges and universities, it would be natural to expect the Springfield Metropolitan Area to have greater levels of educational attainment. However, the region is subject to the same common challenges as any other. Specifically, the region's urban centers, home to a quarter of the area's population, are characterized by high poverty and unemployment. School test scores from within the urban areas lag behind state averages in reading, writing, math, and science. Consequently, high school and post-secondary graduation rates in the cities pose major obstacles to reaching the region's workforce potential.[5] Figure 5 shows the distribution of post-secondary graduations in the Springfield Metropolitan Area, which seemingly correlates to the median family income levels shown later in Figure 6.

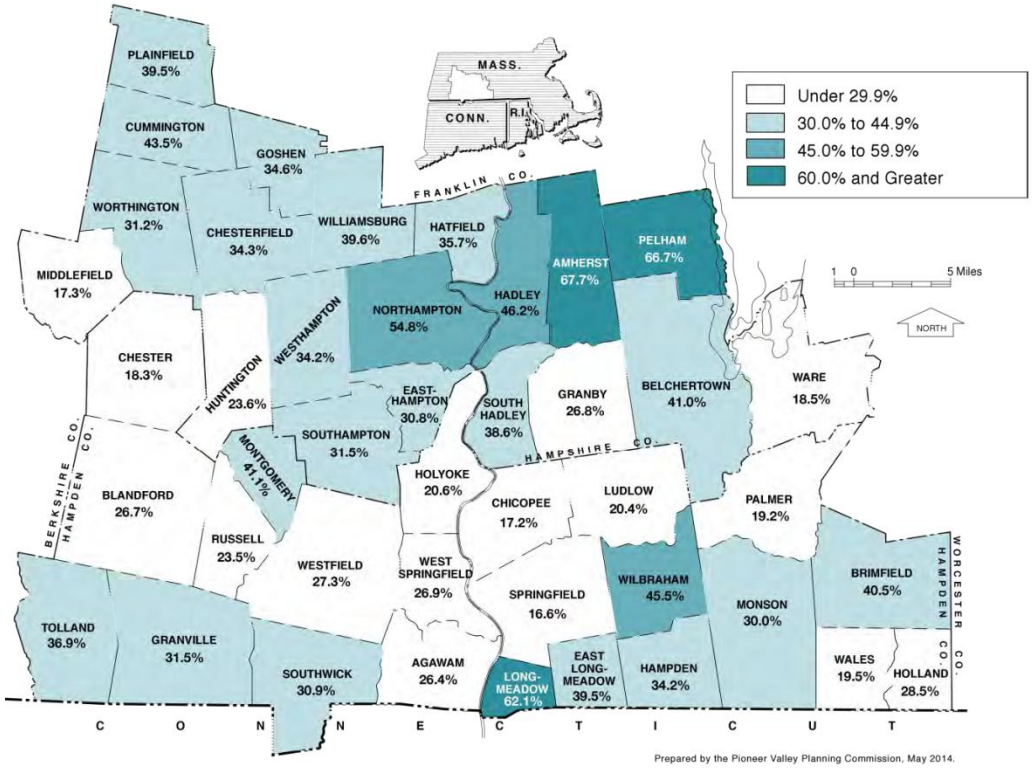
An underlying implication of these educational statistics is the assumption that many of more than 100,000 students attending an institution of higher education within the Knowledge Corridor are not local to the region and move away after graduation. Progress must be made to better educate more of the local populace and workforce, and then retain those graduates, as well as non-local graduates, within the region.

Strategic Takeaways:

- **Dense cluster of higher-education institutions**
- **Local educational attainment levels lag compared to rest of Commonwealth**
- **Students move to area for education and leave after graduation**

[5] Knowledge Corridor Talent and Workforce Strategy, 2014

Figure 5: Percent of Population with Post-Secondary Graduation[6]



Source: US Census Bureau, American Community Survey 5-year estimates 2008-12.

Income/Labor Force and Unemployment

Per Capita Income

Per capita income is a useful measure of economic growth since it controls for population change by measuring total income as it relates to population size. Table 5 shows that the per capita income levels of the Pioneer Valley have remained significantly less than that of the Commonwealth of Massachusetts over time. However, national, state, and local per capita incomes have all declined since 2000, which is indicative of the economic downturn experienced beginning in 2008.

Table 5: Per Capita Income (2012$)

	Census 2000	2008-2012 Estimate	% Change
United States	$30,319	$28,051	-8.09
Massachusetts	$36,751	$35,485	-3.57
Pioneer Valley	$28,432	$26,565	-7.02
Hampden County	$27,673	$25,646	-7.90
Hampshire County	$30,709	$29,246	-5.00

Source: PVPC CEDS Ten-Year Update, 2014

[6] PVPC CEDS Ten-Year Update, 2014

Median Family Income

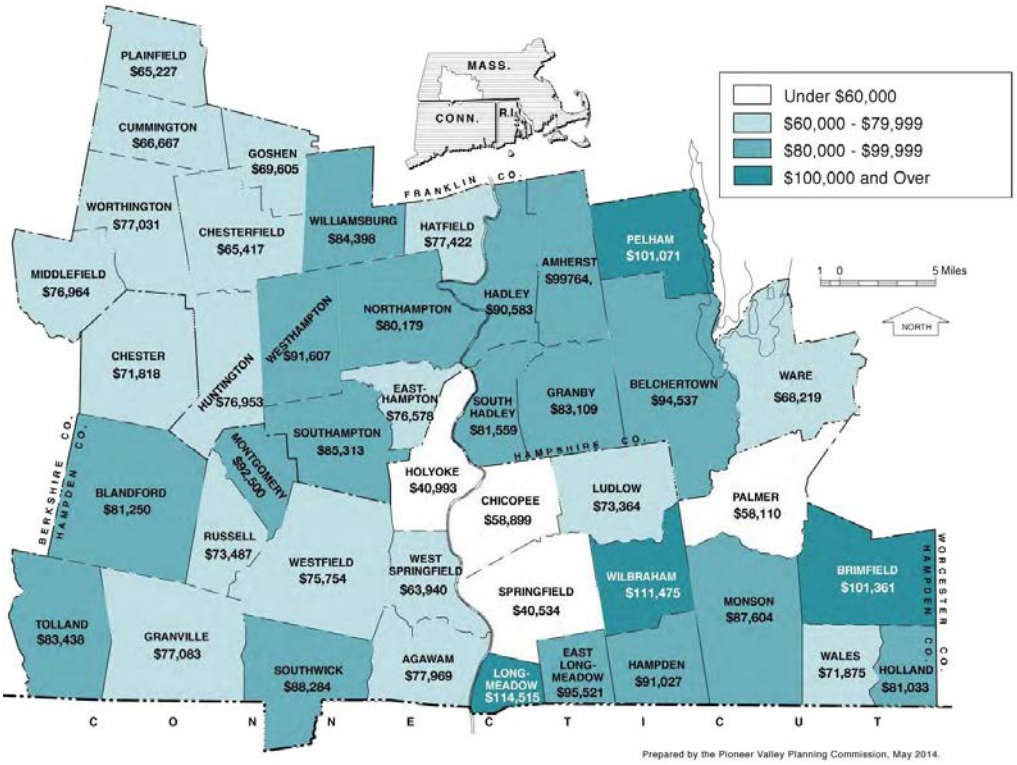
According to the U.S. Census Bureau, median family incomes in the Pioneer Valley region increased slightly between 2000 and the five year period between 2008-2012, as seen in Table 6. This is in contrast to the declines seen at the state and national levels. However, despite this modest growth, substantial disparities related to median family income levels exist within the region. Cities such as Springfield and Holyoke have median family incomes of less than $41,000, while places such as Wilbraham, Brimfield, and Pelham have median family incomes greater than $100,000.[7] These disparities are illustrated in Figure 6.

Table 6: Median Family Income (2012$)

	Census 2000	2008-2012 Estimate	% Change
United States	$55,030	$51,371	-7.12
Massachusetts	$87,324	$84,380	-3.37
Pioneer Valley	$72,549	$73,619	1.47
Hampden County	$69,754	$61,871	-11.30
Hampshire County	$81,399	$82,436	-1.27

Source: PVPC CEDS Ten-Year Update, 2014

Figure 6: Median Family Income (2012)[8]



Source: U.S.Census Bureau, American Community Survey 5-year Estimates, 2008-2012

[7] PVPC CEDS Ten-Year Update, 2014
[8] PVPC CEDS Ten-Year Update, 2014

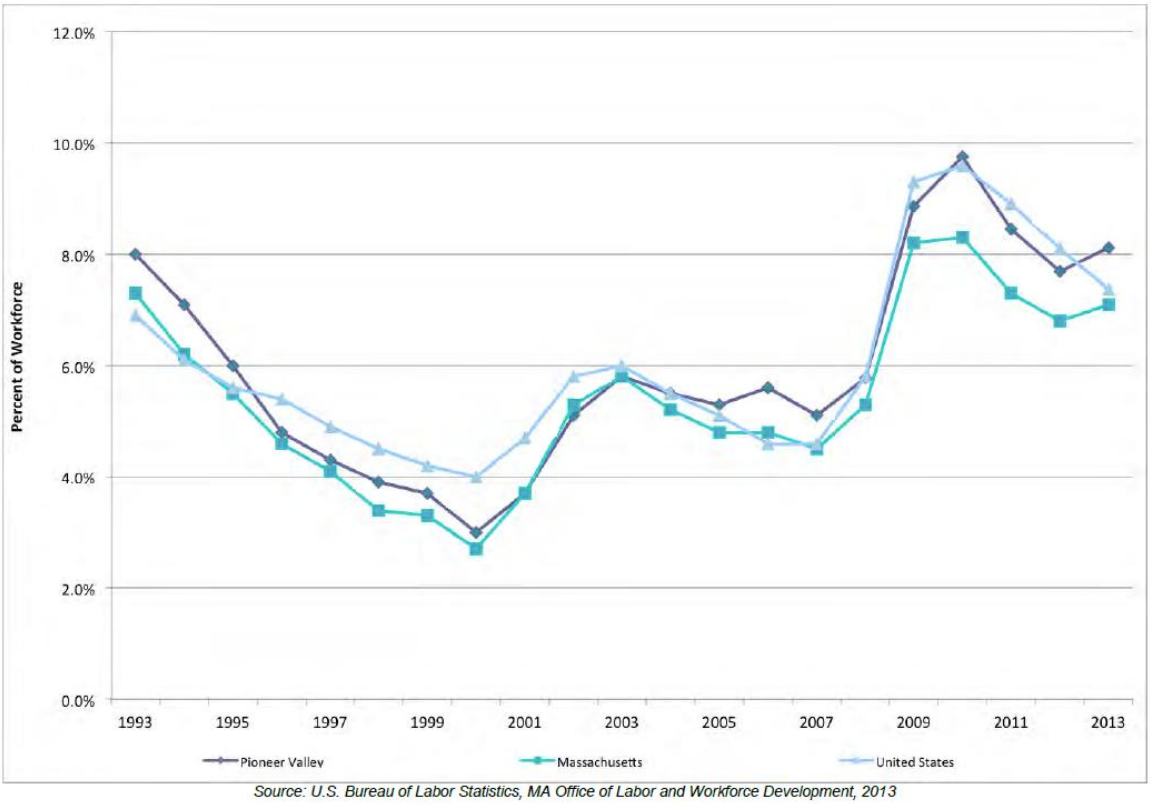
Unemployment

In 2010, the Pioneer Valley experienced its highest unemployment rate of that decade, jumping to 9.2%. Beginning with the Great Recession of 2008, unemployment rates nationwide increased sharply and the same held true for the region. Over the course of the decade, the Pioneer Valley's unemployment rate consistently exceeded that of Massachusetts and was the third highest unemployment rate of all Commonwealth regional labor markets in 2010.[9] In 2011 and 2012 the Pioneer Valley's economy appeared to shows signs of improvement, as its unemployment rate dropped to 8.5% and 7.7%, respectively. However, this decline could be attributed to a smaller labor force as people may be dropping out due to a sluggish economy, or because of greater rates of retirements amongst the larger cohort of older workers.[10] Figure 7 depicts the aforementioned unemployment trends.

Strategic Takeaways:

- **Economic measures such as PCI and MFI have declined since 2000**
- **Large disparities within region itself due to pockets of affluence and poverty**
- **High unemployment rates with sluggish recovery**

Figure 7: Pioneer Valley Unemployment Trends[11]



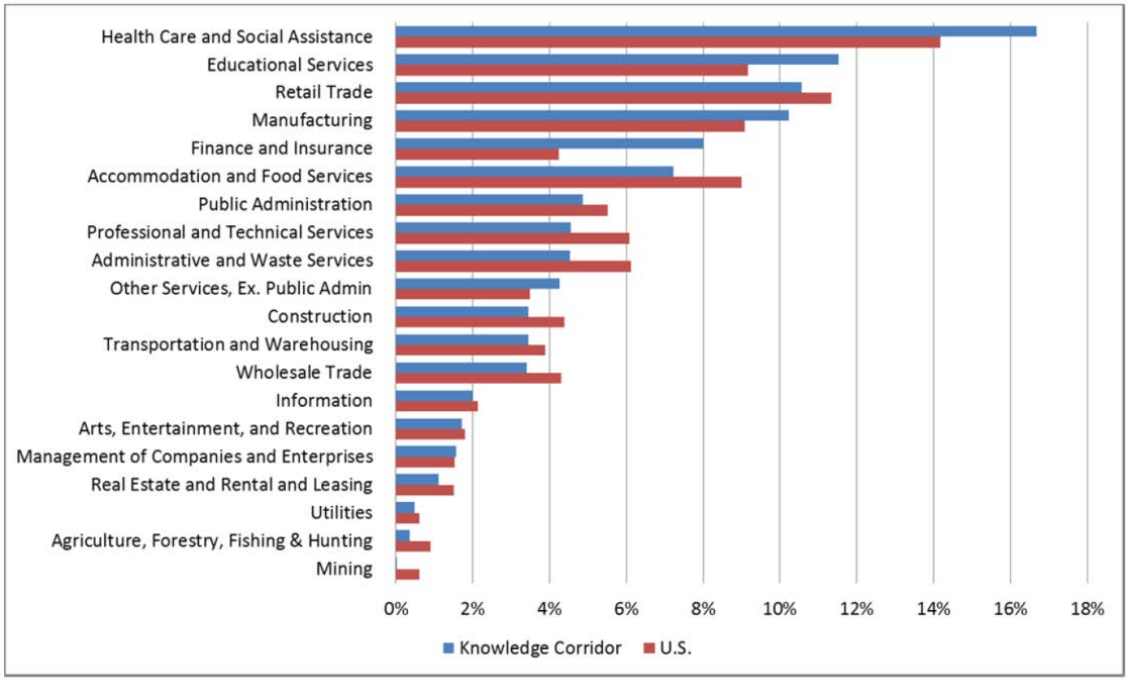
Source: U.S. Bureau of Labor Statistics, MA Office of Labor and Workforce Development, 2013

[9] Labor Market Trends in the Pioneer Valley Region, 2012
[10] PVPC CEDS Ten-Year Update, 2014
[11] PVPC CEDS Ten-Year Update, 2014

Employment Share by Industry

Over the past ten years, the Springfield Metropolitan Area economy has continued to transition from a large manufacturing sector (14.4% in 2000) to a smaller, more specialized manufacturing cluster (8.8% in 2012) and an expanding service industry (comprising 54% of the private sector in 2011), including education and healthcare services. Although growth slowed significantly during the recent recession, the fastest growing sectors over the past ten years have been health care and social assistance; educational services, public administration, utilities, and a wide-ranging 'other services' sector that includes personal, household, automobile, and social services. In contrast, industries that experienced significant declines were information, construction, wholesale trade, and transportation and warehousing.[12] Figure 8 illustrates employment share by industry according to 2012 data in comparison to that at the national level.

Figure 8: Share of Industry Employment[13]



Source: CT Department of Labor, QCEW; MA Executive Office of Labor and Workforce Development, ES-202; BLS, QCEW

Strategic Takeaways:

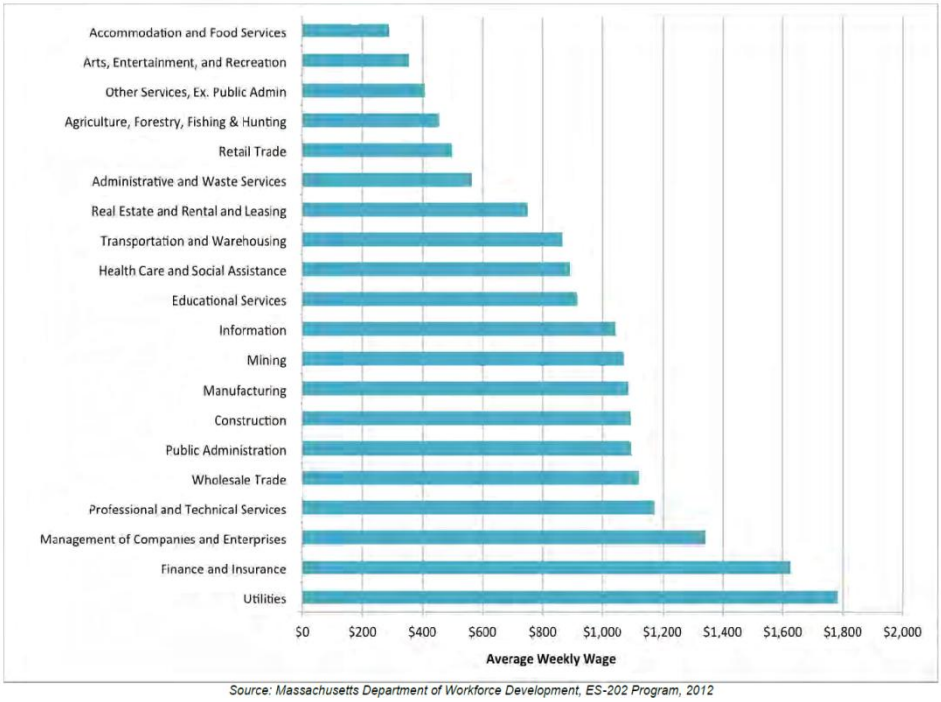
- **Less (more specialized) manufacturing, more service industries**
- **Healthcare and Education ('meds and eds')**

[12] Ibid.
[13] *Knowledge Corridor Talent and Workforce Strategy, 2014*

Annual Wages by Industry

Workers in utilities, finance and insurance, and management of companies and enterprises are on average offered the highest weekly wages within the Pioneer Valley, with each industry offering a weekly wage greater than $1,300. Manufacturing, educational services, and healthcare, which again are among the region's largest employers, offer average weekly wages ranging from $891 and $1,085. Other industries which are among the region's fastest growing, such as accommodation and food services, are also among the lowest paying with average weekly wages between $290 and $408. Figure 9 depicts the average weekly wages by industry in the Pioneer Valley.

Figure 9: Average Weekly Wages by Industry



Source: Massachusetts Department of Workforce Development, ES-202 Program, 2012

Strategic Takeaways:

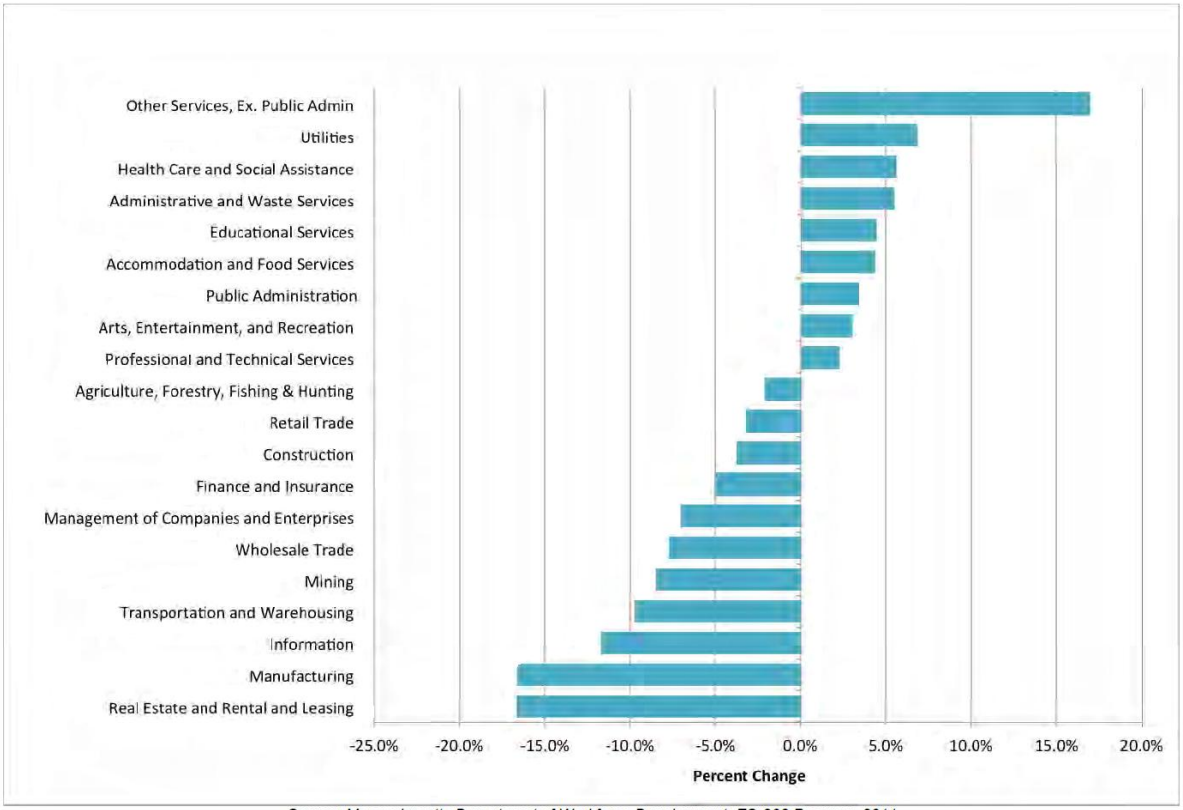
- **Service industries one of the fastest growing, but also lowest paying**
- **Higher wages for industries in demand (manufacturing, healthcare, education, etc.)**

Change in Annual Average Employment

Figure 10 represents the change in Pioneer Valley employment by major industry from 2007-2012. Of concern are the losses in both the information sector and management of companies and enterprises sector, which are relatively new industries offering good wages and employ sough-after workers.[14]

[14] PVPC CEDS Ten-Year Update, 2014

Figure 10: Change in Annual Average Employment



Source: Massachusetts Department of Workforce Development, ES-202 Program, 2011

Strategic Takeaways:

- **Biggest growth in service industries, utilities, and healthcare**
- **Decline in Real Estate coincident with housing crash of 2008**

Top Employers

According to the Economic Development Council of Western Massachusetts, the following companies are the largest regional employers (based on number of employees) found within the Knowledge Corridor:

Table 7: Largest Employers in Knowledge Corridor (MA and CT)	
Company Name	**Employees**
United Technologies Corp	26,400
The Hartford Financial Group	12,100
Baystate Health	10,000
Aetna, Inc	7,200
University of Massachusetts	8,200
Mercy Medical Center and Sisters of Providence Health System	5,000
Hartford Hospital	6,300
Travelers	6,200

Table 7: Largest Employers in Knowledge Corridor (MA and CT)	
Bank of America	5,100
MassMutual Financial Group	6,300
Cigna	4,300
U.S. Postal Service	4,200
Big Y Foods, Inc.	4,250
Northeast Utilities	4,150
University of Connecticut	4,000
St. Francis Hospital & Medical Center	3,900
Yankee Candle	3,700
ESPN	3,000
ABB, Inc	3,000
Cooley Dickinson Hospital	1,725
Hasbro Games (Milton Bradley)	1,700
Holyoke Hospital	1,320

Source: The Economic Development Council of Western Massachusetts

Strategic Takeaway:

- **Largest employers coincide with industries most in demand**

COMMUNITY CAPACITY ASSESSMENT

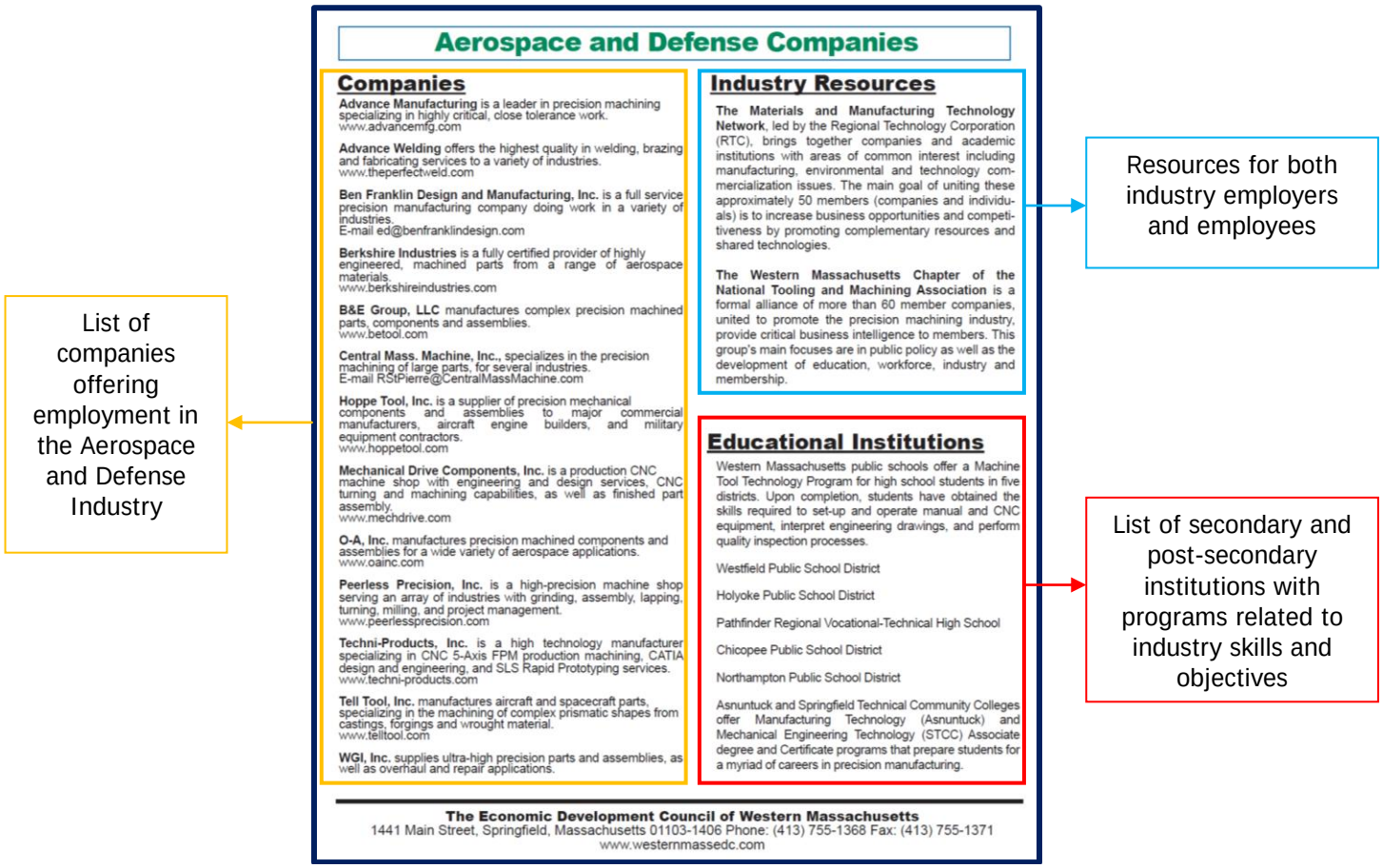
Labor Force and Education/National Benchmarking

In today's global environment where a company can operate almost anywhere in the world, one distinguishing component remains the quality and quantity of an available, appropriately educated and trained labor force. Thomas Friedman's best-selling book, The World is Flat, suggests that since certain trends have made it easier for companies to compete around the globe, intangible "people assets" may be the one remaining competitive advantage left to an area. In other words, "companies follow people; people no longer follow companies."

One of the primary strengths of the Springfield Metropolitan Area has been, and remains, its highly-trained workforce. This is in part due to the impacts of the Knowledge Corridor and the inherent emphasis on higher learning and advanced skills. In order to capitalize on these "people assets," the Pioneer Valley has long cultivated a symbiotic relationship between the region's major industries, or clusters, and related educational institutions. By pairing these resources, both companies and employees can simultaneously benefit. Businesses gain from employing a highly-trained workforce, employees benefit from being gainfully employed by prosperous companies, and academic institutions reap the benefits of sustained demand for their programs. An example of these pairings is demonstrated by materials from the EDC of Western Mass (see Figure 13), which promotes the advantages of choosing the Pioneer Valley for work and education.

In continuing to recognize the reciprocal relationship between labor and education, the Pioneer Valley Planning Commission recently sponsored a report known as the *Knowledge Corridor Talent and Workforce Strategy*, as part of the Knowledge Corridor Sustainability Plan. The study was conducted by the UMass Donahue Institute Center for Economic and Public Policy Research and published in June 2014. The study brought together stakeholders from five different regional focus groups – Healthcare, Manufacturing, Early Childhood Education, K-12 Education, and Community Colleges – and much like a business plan, developed a comprehensive vision for the future of workforce training and education and the action steps needed in order to accomplish that vision. In particular, efforts to remedy the previously discussed local high school and college graduation rates, as well as the retention and employment thereof, were a central focus of the report.

Figure 13: Example of Labor and Education Pairing



Overall, the region shows promise in the development of talent and workforce, even while a shortage of workers looms due to expected Baby Boomer retirements and despite the continuing struggle with local educational attainment rates. Assuming the Pioneer Valley continues to implement and evaluate the effectiveness of these workforce and educational initiatives, the region should remain well positioned as a competitor in both the current and future business markets.

Strategic Takeaways:

- **Strong links between local industries and education**
- **Knowledge Corridor enhances workforce training and "people assets."**
- **Local educational attainment rates lag behind Commonwealth.**
- **Students of higher education institutions leave area after graduation.**

Business Climate

The Springfield Metropolitan Area and Pioneer Valley hold the advantage of embracing an accommodating, encouraging, and involved business climate. Two organizations spearheading the business development effort at Westover Airport are the Westover Metropolitan Development Corporation (WMDC) and MassDevelopment; however,

numerous examples exist of the many other public sector and economic development-related entities throughout the region. Among those are the Economic Development Council (EDC) of Western Massachusetts, Westmass Area Development Corporation (Westmass), Pioneer Valley Planning Commission (PVPC), Massachusetts Alliance for Economic Development (MassEcon), Regional Employment Board of Hampden County (REBHC), Hartfield-Springfield Economic Partnership (HSEP), Massachusetts Office of Business Development (MOBD), Massachusetts Office of International Trade and Investment (MOITI), and more.

Significant coordination and collaboration continually occurs between these groups, as well as others from the private, civic, and academic sectors, as evidenced by the various studies and reports cited throughout this summary. As such, a holistic approach to the Westover Airport Business Plan, or one that encompasses the resources and directives identified by these other economic development entities, should be encouraged and maintained for the ultimate benefit of the surrounding region's business climate.

Strategic Takeaways:

- **Significant collaboration exists between agencies at local, regional, and state level.**
- **Holistic approach incorporated into many planning aspects and initiatives**

Sites and Buildings

Over the past two decades economic and business development has shifted from a real-estate based model to an intellectual "people-based" model. However, the availability of developable sites and buildings remains a practical necessity. Since tasked with overseeing the conversion of former military property at Westover Air Force Base in 1974, the WMDC has acquired over 1300 acres and has developed them into four industrial parks (Westover Airpark West, South, etc.) and the civilian airport. Over 50 companies have located to the airparks, and employ over 3200 people.

The Westover Airparks are included among the Massachusetts initiative known as the Chapter 43D Priority Development Site program, which is intended to bring sites across the Commonwealth to market in a timely manner, ensuring expedited permitting within 180 days. Similarly, MassEcon offers the ReadyMass 100 program, which identifies premiere sits available in each region of the Commonwealth as certified for immediate occupancy or development. MassEcon also provides custom searches/matches (Site Finder Service) for businesses seeking locations to meet their unique needs, as well as a listing of Co-Working Sites with space available around the Commonwealth. Both programs have had success attracting new business development; however the Westover Airparks are not included in these categories.

Finally, Westmass, a private not-for-profit industrial and business development

corporation created to promote and assist business growth specifically in western Massachusetts, also maintains an inventory of zoned, pre-permitted, and "shovel ready" sites available for development. This means that upon submittal of specific site plans, the timeframe for project approval can be measured in days, not months.[15] By reducing the time it takes a company to begin construction of a new facility, this provides valuable savings to the business and sooner job opportunities to local residents. Westmass currently lists four business parks as having available land resources in the Springfield Metropolitan Area. Those parks are the Chicopee River Business Park, the Deer Park Industrial Center, the Hadley University Business Park, and the Ludlow Mills Preservation and Redevelopment Project. Again, the Westover Airparks are not included in this inventory.

Strategic Takeaway:

- **Several initiatives in place at the regional and state levels to expedite permitting and development process**

Utilities and Infrastructure

In addition to maintaining developable sites and buildings, providing adequate municipal services to accommodate existing and future businesses is critical to any economic development. The sites listed under Chapter 43D, ReadyMass 100, and Westmass are fully serviced with roads, water, sewer, electric, natural gas, and telecommunications.

Concerning telecommunication utilities in general, the Springfield Technical Community College Technology Park allows Springfield to offer high-tech infrastructure featuring state-of-the-art fiber optic telecommunications for voice lines, high-speed data, and Internet access. The technology park makes Springfield one of the least expensive locations for a business to send and receive high-speed data transmissions in New England. Springfield also serves as a major switch hub for the Northeast region, and is home to the switching centers of several major long-distance telephone carriers. In addition, the region benefits from low cost, redundancy, and route diversity because of Springfield's location among the crossroads of all national and international fiber optic backbones serving the Northeast.[16]

Strategic Takeaway:

- **High-tech infrastructure serves as an advantage.**

Social Media and Marketing

In building upon the high-tech infrastructure and telecommunications available in the Springfield Metropolitan area, it is necessary to discuss the importance of social media and marketing as part of any business development effort. Crucial to attracting new development and reaching out to market users, is the ability for businesses to access

[15] Westmass Area Development Corporation
[16] EDC of Western Mass

and share information both quickly and easily. Fortunately, the age of social media allows information to be obtained efficiently, effectively, and inexpensively. The networks established among sites such as Facebook, Twitter, Google +, YouTube, and more, allow businesses and market users to instantaneously access and distribute pertinent information.

Of concern is Westover Airport's seemingly deficient use of technology in its marketing strategies.[17] While efforts are underway to improve the Airport's website and social media presence, Figure 14 illustrates the Westover Airport's homepage as of June 2014. As depicted, the website appears somewhat dated, offering a layout more typical of the late 1990s and early 2000s, rather than 2014. There is an inefficient and asymmetric use of space, and the fonts and graphics seem listless. Moreover, there is no easy way for users to navigate the content within.

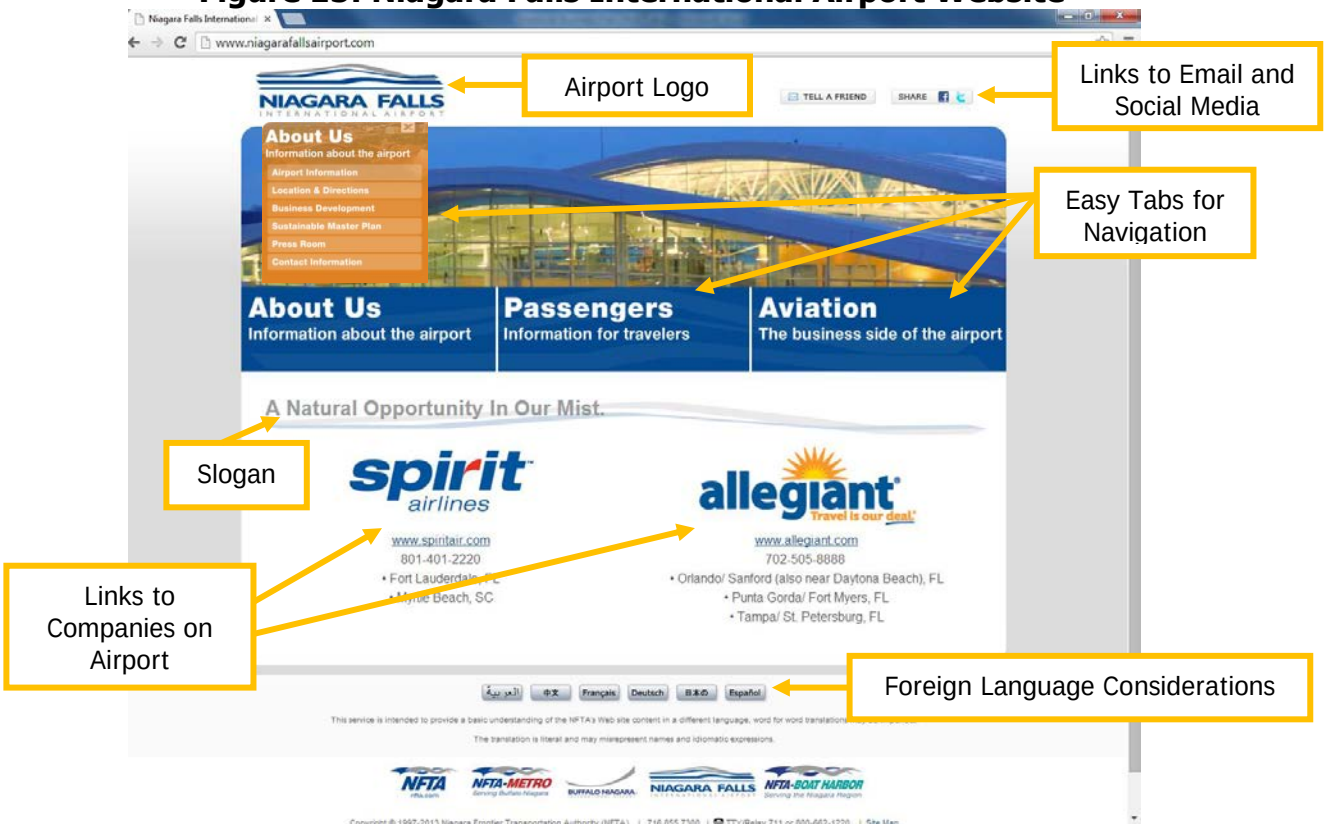
Figure 14: Westover Airport Homepage, 2014

Source: Westover Airport

In contrast, the website of the Niagara Falls International Airport (NFIA), which is another civilian and joint-use military airport, is shown to illustrate the disparities between the airports' websites. Overall, the NFIA website appears modern and vibrant, with an efficient and symmetrical use of space. There are interactive links and tabs, and colorful graphics that make the site more aesthetic. The ease of use is apparent and makes the dissemination of information effective.

[17] This excludes the Westover Air Reserve Base, which maintains a separate website and Facebook page, both of which are aesthetic, informative, and user-friendly.

Figure 15: Niagara Falls International Airport Website



Source: Niagara Falls International Airport

Comparable improvements could also be made with regard to information surrounding the Westover Airparks located at the Westover Airport since presently there are no links in place to view available industrial sites or buildings on airport property. In contrast to the WMDC, MassEcon provides a full property report on each of the ReadyMass 100 sites that lists acreage, ownership, utilities, permitting, contant information, and more. Similarly, Westmass offers an up-to-date, interactive website that provides extensive details about available sites and buildings, including maps. Finally, along with the airport website, additional efforts should be made to increase the presence of the Westover Airport on social media sites such as Facebook, Twitter, etc. as the redundancy of information outlets both influences and increases marketing effectiveness.

Strategic Takeaways:

- **Lack of comprehensive airport marketing/branding**
- **Use of Social Media would enhance marketing/branding efforts**

Quality of Life/Community Image

The Westover Airport is located in the Pioneer Valley region of western Massachusetts. The Pioneer Valley is a mixture of urban, suburban, and rural areas, with a housing

market suited to meet any of those preferences. The average commute with less than 20 minutes, and the local/regional transportation network provides easy access to larger urban cores such as Boston and New York for both business and recreational purposes.

Western Massachusetts provides a variety of ways to experience the great outdoors with offerings such as the Appalachian Trail, the Connecticut River Valley, and a multitude of state parks. If more of a seashore setting is desired, the beaches of Cape Cod are only a short drive away.

The Springfield Metropolitan Area has a strong arts community, offering museums, symphonies, and other cultural events, which is greatly influenced and sustained by the concentration of colleges and universities within the Knowledge Corridor. The academic and industry partnerships that thrive within the Pioneer Valley have proven advantageous for the region and continue to provide endless resources and opportunities, among them being high-quality healthcare and high-tech infrastructure.

Strategic Takeaway:

- **The Springfield Metropolitan Area is an ideal place for families and businesses.**

Incentives

The Springfield Metropolitan Area offers multiple business incentives for companies looking to develop and operate in the region:

Tax Incentives

The Economic Development Incentive Program (EDIP) is a tax incentive program designed to foster job creation and stimulate business growth throughout the Commonwealth of Massachusetts, and is administered by the Economic Assistance Coordinating Council (EACC). Participating companies may receive state and local tax incentives in exchange for job creation, manufacturing job retention, and private investment commitments.

Workforce Incentives

The Regional Employment Board (REB), in conjunction with the Commonwealth of Massachusetts' Workforce Training Fund Program (WTFP), will assist with workforce development through grants and their nationally recognized One Stop Career Centers. The WTFP provides grants of up to $1 million for upgrading the skills of employees. These grants have no income guidelines and are especially applicable for ongoing training needs. The Hiring Incentive Training Grant (HITG) Program of the WTFP provides cash grants to employers to hire Massachusetts residents who have been unemployed for 6 months or more, or Massachusetts residents who are military veterans. The REB can also provide job training resources for low-income employees, assist with recruitment and hiring of job applicants, and even conduct local job fairs.

Financing Incentives

MassDevelopment, the state's finance and development authority, works as both a lender and developer alongside private- and public-sector clients to stimulate economic growth by eliminating blight, preparing key sites for development, creating jobs, and increasing the state's housing supply. Among the numerous services offered to companies interested in relocating or expanding their operations to the region are:

- Real-Estate Loans up to $3 million
- Equipment Loans
- Emerging Technology Fund used to help technology-based companies
- New Markets Loan Fund dedicated to serving low-income Census tracts
- Brownfields Redevelopment
- Manufacturing Innovation Initiative loans for planning and growth[18]

Strategic Takeaways:

- **Region exhibits strong pro-business climate**
- **Programs in place to assist with business development**

Fiscal Sustainability

As mentioned earlier, the purpose of the ABP is the development of goals and actions that will improve the financial and mission sustainability of the Westover Airport. The ABP offers recommendations for immediate action (within 18 months), near-term (3 years), mid-term (5 years), and long-term (over 5 years), which are centered on responding to the speed of business and economic trends/demands. However, as noticed in this report, the conditions and the economy of the Springfield Metropolitan Area have notably changed over the last two decades and will presumably continue to change. In order for the Westover Airport to sustain prosperity, the airport must position itself for the future. Consequently, an ongoing assessment of revenue-generating sources, not only for short-term business development purposes, but also for long-term fiscal sustainability should be a high and continuous priority.

Strategic Takeaway:

- **Flexibility is key to sustainability**

[18] EDC of Western Mass

TRANSPORTATION

Regional Network and Assets

The Westover Airport is conveniently centered within the local and regional transportation networks servicing the New England area. These multi-modal networks serve as an asset to Westover Airport, facilitating the efficient movement of both people and goods across the Northeast and enabling the airfield to further capitalize on supply-chain logistic capabilities which are deemed advantageous to surrounding businesses. Figures 11 and 12 (see Appendix A) show the local and regional transportation assets, which are described in more detail below.

Highway

With regard to roadway infrastructure, Westover Airport is approximately three miles from both the Massachusetts Turnpike (I-90), which runs east to west connecting Boston and Albany, and Interstate 91, which travels north to south through the Pioneer Valley as it stretches from northern Vermont to southern Connecticut. These major arterial highways link most of the major urban centers in the region, and are supplemented by U.S. Route 5 and U.S. Route 20 along with other smaller roadways which make up the local road network that provides access to all municipalities in the region, both urban and rural. Approximate distances and drive times can be seen in Table 8.

Table 8: Driving Distance and Time from Springfield

Destination	Distance	Time
Albany, NY	85 miles	1.5 hours
Boston, MA	91 miles	1.5 hours
New York, NY	140 miles	3.0 hours

Source: Pioneer Valley Planning Commission Regional Transportation Plan, 2012

With regard to transportation services within the Springfield Metropolitan Area, Peter Pan Bus Lines offers passenger service to more than 100 cities daily from its company headquarters, located within the Peter L. Picknelly Transportation Center in downtown Springfield. Pioneer Valley Transit Authority operates the region's public transportation services with a fleet of more than 350 vehicles within 24 communities daily. It is the state's largest regional transit authority.

Rail

The Pioneer Valley is serviced by the following freight railroads: CSX, Pan Am Southern, New England Central, Pioneer Valley, MassCentral, and Connecticut Southern. Combined, the network of railroad tracks provides for the movement of goods across the state of Massachusetts to larger centers of multi-modal transportation such as Albany, Boston, and New York City.

Passenger rail services in the Pioneer Valley are provided by Amtrak. Amtrak services

the area's commercial rail needs through a downtown Springfield station with several trains running daily North/South and East/West routes that parallel I-90 and I-91. This service includes Amtrak's Vermonter route, which operates one scheduled train per day between Washington, D.C. and St. Albans, Vermont. In 2009, a Knowledge Corridor Passenger Rail Feasibility Study was completed on behalf of the Pioneer Valley Planning Commission (PVPC) with regard to potential improvements to travel time, accessibility, infrastructure, and economic development as it relates to sustaining rail service as an overall transportation asset within the Pioneer Valley.[19]

Port

According to the U.S. Department of Transportation's Maritime Administration (MARAD), nearly 99% of the volume of overseas trade (62% by value) enters or leaves the U.S. by ship.[20] Given the distances and drive times shown in Table 9, Westover Airport is located approximately two to three hours from several major ports in the New England area, including the Port of New York and New Jersey, which is ranked the number three port in the U.S. based on tonnage, and is the largest port on the East coast. Table 9 depicts the proximity and details of the ports which serve as part of the greater multi-modal transportation network available to the Westover Airport.

Table 9: New England Ports Near Westover Airport

Port City	Distance	Time	Rank by Tonnage
Albany, NY	85 miles	1.5 hours	79
Boston, MA	91 miles	1.5 hours	28
New York, NY	140 miles	3.0 hours	3
Providence, RI	85 miles	1.5 hours	46
New Haven, CT	74 miles	1.2 hours	60

Source: American Association of Port Authorities, U.S. Waterborne Foreign Trade Port Ranking by Cargo Volume

Air

Figure 12 illustrates the numerous airports approximate to the Springfield Metropolitan Area. This network consists of both commercial service airports and general aviation airfields. Those airports considered having the potential to impact operations and development at Westover Airport are discussed below:

Commercial

Bradley International Airport, located 20 minutes from Springfield, offers more than 200 daily flights to 32 destinations, making it the second busiest New England Airport behind Boston Logan International Airport. Boston Logan International Airport, located 90 minutes from Springfield, offers over 100 domestic and international destinations on its nearly 40 airlines. Additionally, Worcester Airport, which is operated by the same entity as Boston Logan, is approximately 75 minutes away and also has commercial airline service. In fact, JetBlue, which began service at Worcester in November of

[19] *Knowledge Corridor Passenger Rail Feasibility Study, 2012*
[20] U.S. Department of Transportation, Marine Transportation System

2013, is on pace to serve over 100,000 passengers in its first year of operation.[21] Having these well-known and successful commercial service airports in such proximity allows residents of the Springfield Metropolitan Area greater access and flexibility when deciding upon air service. Conversely, these commercial service airports potentially limit the ability of Westover Airport to attract and retain its own scheduled air service.

General Aviation

Westfield-Barnes Municipal Airport is a neighboring facility operated in the City of Westfield, just 25 minutes away. Similar to Westover Airport, Westfield-Barnes has civilian and military activity, specifically the Massachusetts Air National Guard (MANG) 104th Fighter Wing. The MANG utilizes F-15s to fly air sovereignty alert missions 24 hours a day, 7 days a week. Another major airport tenant, Gulfstream Aerospace, which is a subsidiary of Gulfstream, provides full-service maintenance to corporate aircraft. In addition, there are plans to develop portions of Westfield-Barnes into an industrial park.[22] Due to the close proximity and substantial similarities between the two airports, a crucial component to the Westover Airport Business Plan was finding successful, sustainable development options that differentiate, or set apart, Westover from its competitors.

Strategic Takeaways:

- **Multi-modal access to and from region**
- **Located along crossroads of major transportation routes**
- **Aviation market congested; difficult to compete**

Commercial Air Service

The proximity of Westover Airport to several notable commercial service airports such as Albany International, Bradley International, Boston Logan, and Worcester Regional, causes concern for Westover Airport's ability to attract and retain commercial air service in the already congested New England airspace. This section addresses those concerns and the feasibility of implementing commercial airline service at Westover Airport.

Previous Airline Service

SkyBus was the last airline to operate scheduled service at Westover Airport when the airline operated service from Westover Airport to Columbus, Ohio, and Greensboro, North Carolina, from July 2007 through April 2008, using Airbus A319 aircraft. SkyBus ended its service at Westover Airport when the airline filed for bankruptcy; however, SkyBus proved Westover Airport could generate traffic when low-cost service is available at the airport. SkyBus generated as many as 4,475 enplanements in February 2008 and enplaned more than 24,000 passengers over the eight months the airline reported Westover Airport traffic to the DOT. Based on the average number of enplanements per month SkyBus generated in the eight months it reported data, it would have enplaned approximately 36,400 passengers over a 12-month period. The

[21] Massport – Worcester Airport, 2014
[22] Pioneer Valley Planning Commission Regional Transportation Plan, 2012

airline would have generated 53,700 enplanements based on the 4,475 enplanements generated in February 2008.

Similar former SkyBus airports in competitive airport regions have successfully regained service under the ULCC model. Both Portsmouth International at Pease, and the Northeast Florida Regional Airport at St. Augustine, have each successfully attracted an Ultra-Low-Cost-Carrier (ULCC) in the past two years (Allegiant and Frontier, respectively). In both cases, service has provided an added boost to the region as opposed to attracting passengers from nearby airports, thanks to the ULCC product model. Westover Airport is now the only former SkyBus airport not have airline service reintroduced.

Ultra Low Cost Carrier Operating Model

The ULCC model is a new type of business model with a different product than has been traditionally seen in the US domestic market. The ULCCs offer lower fares and an unbundled product, meaning that consumers only pay for the services they desire (i.e. checked baggage, carry-on baggage, priority boarding, seat assignments, and food and beverages). In many cases, these ULCCs (Spirit, Frontier, and Allegiant) have stimulated demand in markets much like how Southwest during the 1990s. Passenger demands are increasing not by changing their airline preferences but rather their mode of transportation, or making additional air travel trips. Some of these ULCCs like Allegiant, bundle vacation packages into their already low fares which help create additional value to consumers and often times result in new demand from families or groups that may have previously traveled by car.

Presently, none of the surrounding commercial service airports have service provided by a ULCC, the nearest airports with a ULCC are Boston Logan International Airport, nearly two hours away with Spirit Airlines, Stewart International Airport in Newburgh, NY, and Portsmouth International at Pease, both of which have Allegiant Air and located just under 2 hours and 30 minutes from Westover.

Average Air Fare Differences

In 2013, average domestic air fares in the U.S. were $381.[23] Citizens in the Massachusetts study region paid higher than the national average fares at Hartford-Bradley International (5.8 percent higher) and Albany International (13.6 percent higher) in 2013. Prior to the last quarter of 2013, fares were even higher at both Hartford-Bradley and Albany International.

One newspaper headline from November of 2013 read: "Bradley Fares $36 More Costly Than National Average." The secondary headline stated: "Three-Quarters of Top 100 Airports had Lower Fares." The article went on to say that of the 100 busiest airports in the country, 25 had higher fares than Bradley. Comparing Hartford's fares to similarly

[23] USDOT, Bureau of Transportation Statistics: http://www.rita.dot.gov/bts/airfares/programs/economics_and_finance/air_travel_price_index/html/AnnualFares.html

sized airports, Cleveland's average trip cost $32.80 more, and the other eight airports closest in size were all cheaper. Flights from Buffalo were $100 cheaper. So were those from Fort Meyers. New Orleans flights were $60 less.[24] The Hartford Business Journal had a similar headline in August of 2012 that read: "Bradley Airfares Highest in Region and Rising." Thus, the high air fares at Bradley have been known and discussed for some time.

Worcester Regional Airport is roughly 51 miles and a one hour drive from Westover Airport. Worcester features one airline - JetBlue. Average fares from Worcester were $281.35 in 2013 - 26.1 percent below the national average. However, JetBlue, while low cost, is not considered an ultra low cost carrier.

Boston Logan International is 91 miles away from Westover Airport and a 90 minute drive with no traffic. Similar to Albany, the airport is outside the proximity concern area, but was included because some air travelers in central Massachusetts use Logan International. Air fares averaged $376.60 in the fourth quarter of 2013, which was 1.1 percent lower than the national average.

Albany International is 93 miles away from Westover Airport and a 90 minute drive in low traffic. This airport is clearly outside the proximity concern area, but was included because some air travelers in western Massachusetts use Albany International frequently. Air fares averaged $432.91 in the fourth quarter of 2013. As mentioned, this was 13.6 percent higher than the national average.

A good comparison to what may happen at Westover Airport with a ULCC would be Niagara Falls, NY, which is served by two ULCCs: Allegiant Air and Spirit Airlines. While being in the vicinity of other commercial service airports of Buffalo-Niagara and Rochester International airports, neither has been adversely affected by the ULCC service at Niagara Falls. The average fare for the airport was $135.40 in 2013.[25] This was 64.5 percent below the national average. A cost comparison to Niagara Falls also works because the distance the two ULFCs fly to vacation destinations in Florida and elsewhere would be about the same for Westover Airport.

Overall, citizens in Western Massachusetts have not had adequate access to ULCC service in the past. If passengers were able to pay reduced airfares, the annual savings to local area residents would be substantial, numbering in the millions. Consequently, this places Westover Airport in a competitive position to capitalize on ULCC service and offer area residents a unique airline product. This would not only benefit Westover Airport, but also contribute to the region's air service options overall. Moreover, because the ULCC operating model would be distinct, the close proximity of surrounding airports would have minimal impact on demand for air service at Westover Airport. Subsequently, ULCC service at Westover Airport could be seen as a supplement to

[24] Mara Lee, "Bradley Fares $36 More Costly Than National Average," (The Hartford Courant, Nov 6, 2013).
[25] USDOT, Bureau of Transportation Statistics

existing air service in the region rather than detracting from it.

Strategic Plan for Meeting Air Service Needs

Westover Airport currently has no air service, and service on an ultra low-cost carrier such as Allegiant or Frontier is the most likely type of air service the airport can expect to attract. In meetings with each carrier, both Allegiant and Frontier have expressed interest in serving Westover. Allegiant is particularly interested in the Westover market as an alternative airport to the airports in Hartford, Boston, and Worcester. Discussions with Frontier seem promising. Given Frontier's recent new service from the airport in Wilmington, DE as an alternate to airline service offered from Philadelphia, Frontier service from Westover, as an alternate to airline service at Boston, Hartford, and Worcester seems reasonable.

Both Allegiant and Frontier have operated Atlantic City charters from Westover in the past, so the airport has proven its airfield can accommodate the type of aircraft Allegiant and Frontier would operate at Westover, and that Westover's terminal can handle the passenger volume. With a 14,600-square-foot passenger terminal and over 300,000 square feet of hangar space, Westover Airport has all of the facilities and FAR Part 139 certifications needed to begin airline service immediately, including a TSA checkpoint. The existing facilities accommodate up to 100,000 passengers per year, with only minor changes needed. The Airport would need additional TSA personnel once the airline service began and parking lots may need to be expanded, but those changes can be made quickly. Thus, the facilities side of the Airport is adequate to accommodate airline service without delay.

To invite a new carrier to serve Westover Airport, the WMDC must offer incentives to defray costs and limit risks. Both Allegiant and Frontier have expressed the need for Westover to bear a portion of the financial risk each airline would incur if it were to begin service at Westover Airport. Most airlines will not "test" a new market without risk sharing, and Allegiant has written a letter supporting this proposal. The WMDC has proposed several forms of start-up incentives such as free air service advertising initially and airport fee waivers releasing carriers from costs associated with ground handling, terminal usage, runway landings, etc. for the first two years of service.

As of July 2014, the WMDC, which is the Airport Sponsor, is pursuing a Small Community Air Service Development Program (SCASD) grant to offset the costs associated with start-up commercial air service at Westover Airport via an ULCC service provider.

Strategic Takeaways:

- **The proximity of surrounding commercial service airports will have minimal impact on the demand for airline service at Westover Airport primarily because of the type of service being solicited.**
- **Westover Airport would offer the only ULCC service in the region, thus**

providing a different fare product, and ultimately contributing to the region, rather than competing with neighboring airports.

- Westover Airport is poised to begin commercial air service immediately.
- WMDC will assume some of the financial risks and provide incentives to initiate commercial air service
- WMDC is pursuing a SCASD grant to assist with start-up costs.

MILITARY COMPONENTS

Overview

The Westover Air Reserve Base (WARB) occupies approximately 2,511 acres, making it the largest ARB in the nation in terms of land mass. The WARB is one of six core military installations in the Commonwealth of Massachusetts and is home to the 439th Airlift Wing. The mission of the 439th Airlift Wing is to provide worldwide air movement of troops, supplies, equipment, and medical patients. In support of this mission, the 337th Airlift Squadron, which is the Wing's flying unit, operates the C-5B Galaxy, one of the biggest cargo aircraft in the world. The C-5B specializes in missions involving outsized and oversized cargo that no other aircraft can carry. Strategically sited in western Massachusetts, Westover ARB is the closest, fully-operational, U.S.-owned military base to Europe, providing world-class support to military aircraft and service personnel leaving for and coming back from missions overseas. This proximity to Europe and NATO countries holds high strategic value.

Westover ARB employs approximately 3,902 Air Force personnel. These include 2,826 military members, 766 civilian employees, and 310 other civilians (contractors or non-appropriated fund employees). An additional 2,160 people are employed through the multiple Army, Navy, and Marine Corps Reserve units on base. The air base is one of the biggest employers in the area and produces an estimated $238 million in economic impact at current levels. Westover ARB also spends approximately $46.6 million on construction, services, and procurement of materials, equipment and supplies in the region.

Civilian airport operations at WARB are managed by the Westover Metropolitan Development Corp (WMDC), which has acquired more than 1,300 acres and developed them into three industrial parks along with the Westover Airport. More than 50 companies have located in the industrial parks, employing over 3,200 people. The corporation manages day-to-day operations of the Westover Airport and the continuing development of commercial and industrial real estate at each of the parks. WMDC is proposing several property exchanges to help mitigate WARB clear zone conflicts and antiterrorism concerns. WMDC is proposing an additional 100-acre development area referred to as Airpark South.

Facilities and Infrastructure

Landside

Approximately 127 buildings totaling 1,692,633 square feet (SF) make up the Westover ARB complex. These buildings include a fire station, aircraft hangars, maintenance buildings, and a ten-story Air Traffic Control Tower (ATCT) which was constructed in 2002. The average age of the buildings is 44 years, with an overall replacement value of $1.556 billion. Since 2010, the base has seen more than $78 million in infrastructure upgrades, including a $29.2 million flight line and runway upgrade, and a $24.5 million

fuel hydrant system.
The infrastructure of the base (communication systems, electrical systems, natural gas distribution, storm water systems, wastewater system and the water supply and distribution system) is of various ages, conditions, and suppliers:

- The electrical system is privatized, with power to the base being supplied by Chicopee Electric Lighting. The electrical system underwent a complete refurbishment in 1993.
- Natural gas is supplied by Columbia Gas of Massachusetts; the distribution system was replaced in 1991.
- The City of Chicopee owns the sanitary sewer lines on base except for sewer lines within 5 feet of buildings.
- Water is supplied by the City of Chicopee.

Airside
Westover ARB has two runways. Runway 5-23 is the primary runway, measuring 11,597 feet long and 300 feet wide. It is configured in a northeast-southwest orientation and is one of the longest runways on the East Coast. The crosswind runway, Runway 15-33, is 7,082 feet long and 150 feet wide and extends northwest-southeast. Several taxiways and taxilanes service these runways, allowing aircraft to transition between the airside and landside components. Additionally, the WARB features several large aircraft aprons and pads which are used for staging and maneuvering:

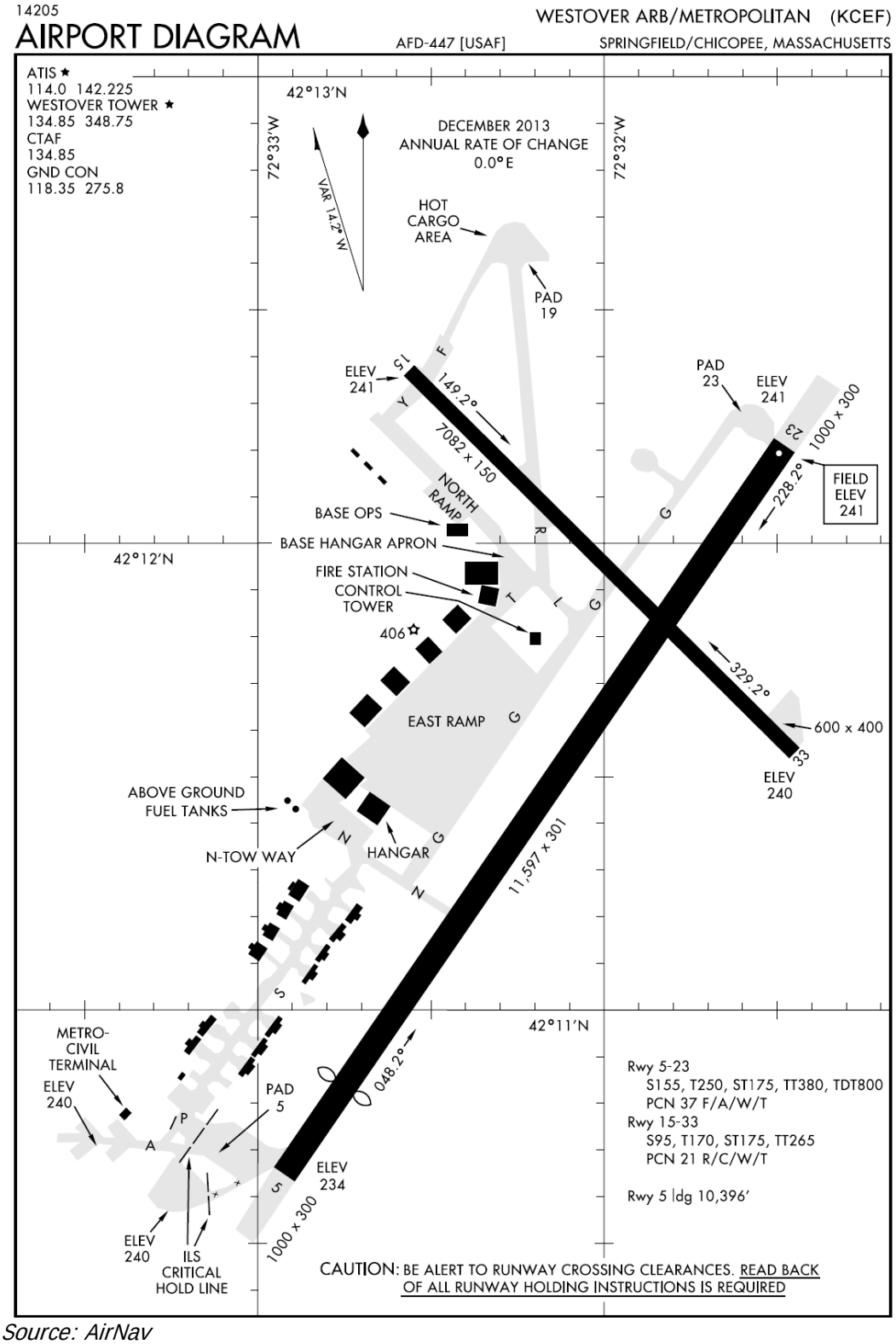
- East Ramp – 377,024 square yards (SY)
- North Ramp (Transient Apron) – 97,829 SY
- Hot Cargo Pad – 36,053 SY
- Arm/De-Arm Pads – 56,474 SY

Figure 16 illustrates the overall layout of the Westover ARB.

Aircraft Operations

Flight activity at Westover ARB includes military aircraft based there, transient military aircraft, and civilian aircraft. According to the current AICUZ Report, dated February 2013, the C-5B based aircraft operates approximately 260 days per year. Transient and civilian operations occur 365 days per year. Helicopter operations use the landing pad but account for less than 1 percent of all operations at Westover. In 2013, there were 48,222 annual aircraft operations, of which 27,337 were military operations. Thus, military activity accounts for approximately 56.7% of all aircraft operations at Westover.

Figure 16: Airport Diagram



Source: AirNav

Aircraft Maintenance

Aircraft maintenance is an important function of the WARB, as Westover serves as an isochronal inspection center for the nation's entire fleet of C-5Bs. Isochronal inspections (ISO) are thorough examinations of the entire aircraft. During these ISO inspections, aircraft maintainers look for and repair problems in every system, from nose to tail and wingtip to wingtip. This component of the WARB was reinforced as part of the Air Force's recent consolidation from eight to three C-5B ISO inspection/repair facilities, making WARB one of the only three in the country and the only one in the Reserve Command. It was projected that Westover ARB would double isochronal aircraft inspections from 13 to 26 per fiscal year as a result of this consolidation, and it did. Figure 17 depicts the typical facilities used for ISO inspection of the C-5B aircraft.

Figure 17: Isochronal Inspection Docks

Sources: WARB

Given the importance of these maintenance missions, the 439th Maintenance Group (MXG) occupies more facility space than any other unit on base. However, despite this presence there is currently a space deficiency of at least 45,000 SF, which would need to be remedied. Although, the maintenance unit is authorized for two fully enclosed hangars and two nose docks, most of the space deficit results from a lack of aircraft maintenance dock space.

Direction of Air Force

A review of an interview of Secretary of the Air Force, The Honorable Deborah Lee James that was published in the Summer 2014 edition of Strategic Studies Quarterly reveals several key Air Force development philosophies that will have an influence on the potentials and the future of Westover Air Reserve Base and its missions. Secretary James relays three priorities for the Air Force including: taking care of people; balancing today's readiness with tomorrow's readiness; and ensuring that "we have the very best Air Force that we can have, at the best value for the taxpayer." That best value approach included an acknowledgement that these philosophies necessarily mean that new approaches will need to be explored. "It . . . means leveraging new ideas from our innovative Airmen to find better ways of doing business – to be more efficient, minimize redundancy, and protect our limited resources." The future of the Air Force will be a smaller force but with an Air Force that remains on the cutting edge of technology and with great capability to meet the nation's needs. The decision to reduce capacity to gain capability means the Air Force will continue to make reductions in manpower and force structure.[26]

Principal Deputy Assistant Secretary of the Air Force for Installations, Environment, and Energy, Kathleen Ferguson, in a statement before the House Appropriations Committee stated that managing Air Force installations "involves understanding and balancing mission requirements, risk, market dynamics, budgets, and conditions of our assets." They constantly have to evaluate how to reduce costs while improving the ways they manage their real estate, energy, and housing demand, which includes considerations of third-party financing through public-public and public-private partnerships and the lease of under-utilized portions of their portfolio of installations, environment, and energy. "Despite our best efforts and innovative programs . . . we continue to spend money maintaining excess infrastructure that would be better spent recapitalizing and sustaining our weapon systems, training for readiness, and investing in the quality of life needs of Airmen. Divestiture of excess property on a grander scale is a must."[27]

Strategic Takeaways:

- **Westover ARB has an opportunity to identify creative strategic solutions that set the stage and pattern to align with Air Force Policy directions while maintaining the quality of the installation and the mission at Westover ARB.**
- **Because of today's fiscal challenges, the Air Force is eager to consider new methods of joint operations between itself and other public agencies or private entities. Identifying potential opportunities for**

[26] "An Interview with The Honorable Deborah Lee James, Secretary of the Air Force" Strategic Studies Quarterly, Summer 2014.

[27] United States Air Force presentation Before the House Appropriations Subcommittee on Military Construction- Veterans Affairs, Military Construction, Military Family Housing, Environmental, Energy, and BRAC, Witness Statement of Ms Kathleen I. Ferguson, Acting Assistant Secretary of the Air Force (Installations, Environment & Logistics) April 12, 2013.

community assistance/sharing could benefit local and regional communities economically and simultaneously benefit the Air Force in its goals to decrease its costs while improving its facilities and services.

- **Proposals and initiatives from Westover Airport that help cover costs now borne by the military should be well received.**

Base Realignment and Closure (BRAC)

The Air Force is on record as calling for another round of BRAC. While there has been no recent excess infrastructure capacity analysis since 2004, the 2004 analysis estimated that the Air Force had 24 percent excess infrastructure and resulted in the Air Force asking for 10 closures. However, BRAC 2005 directed that the Air Force close only 8 minor installations and conduct 63 realignments that affected 122 installations. Since that directive, the Air Force has reduced force structure by more than 500 aircraft and reduced active duty military strength by almost 8 percent. The Air Force is predicting that in the next five years they will further cut an additional 500 airplanes and reduce the number of personnel by approximately 20,000. These cuts will result in more facilities and installations that are not fully utilized.

The findings in the report from the National Commission on the Structure of the Air Force do align, in large part, with the Air Force's current directions. There is symmetry with the three thoughts of continuum of service, more associations, and greater collaboration and integration. The last thought of greater collaboration and integration may be an opportunity for installations to remain viable and sustainable. One element that was offered in the report was the recommendation to disestablish the Air Force Reserve Command (AFRC). The Air Force disagrees with this recommendation as it would lead to less efficient Total Force organizational structure and would increase costs. The relationship and mission integration between the active and reserve components of the Air Force is essential to the attainment of Air Force goals and directives. Westover ARB is positioned to remain an important component in the accomplishment of Air Force development directions.

As reported in the Westover ARB periodical, the Patriot, April 2014 - Westover Air Reserve Base will lose half its C-5B cargo planes and more than 300 jobs as a result of military budget cuts. Eight of the 439th Airlift Wing's 16 military transport aircraft will move to Joint Base San Antonio-Lackland in Texas beginning March 2015. The changes are a result of Pentagon cuts. The job cuts include the expected loss of approximately 59 full-time enlisted personnel and 275 reservists starting in October of 2015.

The cuts are part of an effort to slash $487 billion from the nation's defense budget over eight years. The winding down of the wars in Iraq and Afghanistan and automatic federal budget cuts has hastened the changes at Westover.

Strategic Takeaways:

- **Westover ARB is and will be in transition for the next few years. The final results will depend on ideas and posturing that are progressed.**
- **The upcoming loss of aircraft and personnel in 2015 will open the ARB facilities to host potential consolidation of other missions at smaller bases around the country.**

Potential Partnerships and Initiatives

The possibilities of community partnering with Air Force installations are numerous and many have been successfully employed at other locations across the country. Here are some proven partnering efforts:

Air Force Encroachment Management Program.

The Air Force needs access to airspace and ranges from its air bases to ensure its ability to conduct test and evaluation missions and operational and training missions. The economic and land use initiatives that local and regional communities around these installations, especially those developments that abut Air Force installations or are under airspace safety zones, has the potential to limit Air Force options for current and future mission needs. The Air Force already works with local and regional communities to address encroachment issues early on to identify, address, and actively work with community planners and conservation groups to develop compatible uses through joint land use and airspace studies that preserve the options for both the Air Force and those of the surrounding communities. The Westover community is currently working with Westover ARB to manage off base land use issues.

Air Force Energy Program

The Air Force is the largest single consumer of energy in the federal government with over 85% of its energy costs tied to aviation fuel. The Air Force is working with the Department of Defense on siting of varying types of renewable energy projects and how best to work with developers and communities to minimize or mitigate potential impacts. More than 1,500 projects have been cleared for further development to date.

In the FY2014 President's Budget, the Air Force requested nearly $1 billion for operational and facility energy initiatives to improve resiliency, reduce energy demand, increase energy efficiency, diversify supply, and improve mission effectiveness. Included is $215 million for energy conservation projects on Air Force installations.

Renewable energy sources are an Air Force focus. Currently the Air Force has 256 renewable energy projects in operation or under construction across a wide variety of energy sources, including wind, solar, geothermal, and waste-to-energy projects. (Renewable energy project funding through Air Force channels is rarely cost effective when compared to commercial utility rates.) The Air Force is using existing authorities such as Enhanced Use Leases (EULs) and Power Purchase Agreements (PPAs) to attract private industry to develop renewable energy projects on underutilized land at Air Force

installations. A potential of over $1 billion in third party investments is anticipated over the next 5 years to construct on-base renewable projects. The Air Force has set a goal to identify $5 billion worth of EULs and over half of this value will be for energy projects.

The Air Force is also reinvigorating third party financing to fund energy conservation projects through Energy Savings Performance Contracts (EPSC) and Utility Energy Service Contracts (UESC). In July of 2012, the Air Force awarded an ESPC contract at Tinker AFB, OK for $81 million that decentralizes all or parts of the central boiler plants located throughout Tinker, replacing them with smaller more efficient boilers in 70 buildings. This will save over $6 million annually.

Strategic Takeaways:

- **Energy projects that are jointly developed between the community and Westover ARB may have potential.**

Air Force Community Partner Initiative

A very promising initiative recently started with the Air Force is the Air Force Community Partner Initiative. The Air Force is enthusiastically exploring the potential of installation-community partnerships as a means to reduce operating and service costs in support of the Air Force mission while retaining or enhancing quality. The concept was embodied in the Fiscal Year 2013 National Defense Authorization Act language 10 USC Sec 2336 and has the potential to increase DOD and Service Departments (Air Force) latitude in pursuing creative public-public and public-private, or "P4" partnership initiatives. The goal – develop a process through which installation and community leaders are motivated to develop creative ways to leverage their capabilities and resources and in the process, reduce mutual operating costs. Over 40 locations are being supported under this program by the Air Force where installation and community leaders have embraced the concept. Westover ARB is among the selected bases. The Air Force will use these prototype initiatives to drive the development of policy, identification of an oversight/governance structure and training requirements, types of potential opportunities and requisite resource requirements and priorities. Each of these initiatives is base/community specific.

Westover ARB held multiple meetings in 2014 in association with the Air Force Community Partner Initiative and more are scheduled in 2015. Several ideas that align with the Westover Airport Business planning effort were identified for further exploration. These ideas were grouped into three categories – Infrastructure and Mission, Services and Education, and Medical and other, and are briefly outlined below. Community participants at these meetings included:

- Chicopee Chamber of Commerce
- City of Chicopee
- City of Springfield
- Pioneer Valley Planning Commission
- State of Massachusetts
- Town of Ludlow

- Westover ARB
- Galaxy Community Council
- Town of South Hadley
- Westover Job Corps Center
- Westover Metropolitan Development Corp (WMDC)

Preliminary ideas from the Westover ARB Community Partnership Initiative included the following:

Infrastructure and Mission	
Contracted Services	Re-fueling station
Contract ATCT	Electric vehicles
Bulk Purchasing Power	Energy and Utilities
Shooting Ranges	Share Vehicles
Connect to local water system	Privatized Housing
Emergency Management – MAA	Prisoner Detention
Expanded Airfield Hours	Base Access and Security
WMDC fueling of DoD aircraft	Revert Ownership to WMDC

Services and Education	
High School Education	Aircraft Maintenance Training
Basic Skills Training	Law Enforcement and Fire Protection
Emergency Driver Training	Civilian Aviation Training
Commercial Driver Training (CDL)	ATCT Training/Jobs
Internships	Volunteer Labor
Veterans' Services	Chaplain/Clergy Disaster Response
Suicide Prevention	Use of Recreational Facilities

Medical and Economic Development	
Airmen Physicals	Shared Nursing
Partner with Federal Agency Offices	Deployment Medical Requirements
Alternative Sources of Funding	Commercial Use of Airfield
Housing, Industrial, and Commercial Development	

Strategic Takeaways:

- **The Air Force Community partnership Initiative at Westover will reveal many opportunities for a business case analysis to show the viabilities of a true joint business planning effort between Westover ARB and the regional community.**
- **From the list of ideas considered, only a few involve aviation. Thus, Westover Airport's direct role in these partnerships will likely involve cost sharing of aviation functions.**

MAINTENANCE, REPAIR, AND OVERHAUL (MRO)

Given the assets available at Westover Airport, including the significant airside infrastructure such as runways, taxiways, and advanced instrument approaches along with the established network of maintenance personnel, the provision of an MRO facility appears to be an important opportunity to consider.

Within the MRO market a number of large segments exist such as logistics, airframe, engines, interiors, technology and training. Each of these segments is labor intensive, employing a large number of people at each site and providing value to the industry and the communities in which these businesses exist.

In the Northeast several MROs of varying size exist. On the larger end of the spectrum examples include Jet Aviation at Hanscom Field in Massachusetts and MidairUSA at Griffiss International Airport in New York State. Both of these airports have a military heritage in common as do others across the Northeast with successful MRO facilities.

These facilities are looking for a strong labor force, reasonable costs for existing facilities or ground lease rates on new buildings. Often, runway length is critical given the larger aircraft that can be served.

Westover appears to have several of the 'must have' characteristics available with little to no improvements required. It is clear from discussions with industry experts that the initial success of an MRO is often tied to the efforts of one to a handful of key people involved in the business. This will be an important factor in considering how or if an investment should be made in the pursuit of this type of tenant at Westover Airport.

Perhaps the most similar airport with a major MRO in proximity to Westover Airport is Griffiss International Airport. At Griffiss in Rome, NY; the airport's largest tenant is MidairUSA, an MRO that is known for its work with Transaero Airlines of Russia and more recently AirCastle, LLC. This MRO performs everything from heavy checks and structural modifications to painting and graphics predominantly on Boeing 747 and 777 aircraft. They employ approximately 200 people at the Griffiss site. Recent discussion in the county indicates the company's desire to expand further at the site. The company also has an agreement with Mohawk Valley Community College, which offers an Airframe and Powerplant (A&P) Technology Program. Having a local college that supplies a steady stream of skilled laborers has helped the business grow. The A&P course regularly turns away new entrants due to space constraints.

The business at Griffiss is an enterprise that has a regional impact and has helped establish the airports legitimacy amongst other competitors for federal and state funds to help build costly but necessary infrastructure improvements.

Parallels between Griffiss and Westover Airport can easily be drawn and given the

success at Griffiss, the concept of an MRO at a facility such as Westover appears well established.

Strategic Takeaways:

- **Many of the most successful MROs are located at Joint-Use or converted military airfields.**
- **A strong labor force is critical to the success of a large scale MRO operation.**
- **Runway length and apron size are key factors in determining where to place a large scale MRO.**
- **A 'champion' that is familiar with the industry will likely be required to pursue the development/relocation of an MRO to Westover.**

CHAPTER 2 - COMPETITIVE MARKET ASSESSMENT

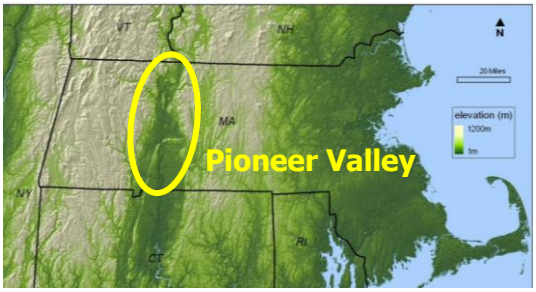
Introduction

This Chapter evaluates the economic forces at play within Westover Airport's geographic market. The ultimate goal of Westover Airport is to capture an increased share of both the existing customer market and a share of the natural regional growth of general aviation demand. To do so, the Airport must find the right balance of product/service, price, and value to offer the market. This offering should be based on a strong and unique position when compared to the competition.

The analysis that follows presents a market assessment of competing airports and existing activity, which will serve as a basis for selecting strategies for revenue enhancement.

Airport Geographic Market Area

The Springfield Metropolitan Area (SMA) encompasses forty-three communities throughout Hampden and Hampshire Counties and covers approximately 1,200 square miles, a region roughly the size of Rhode Island. The SMA is located in the western region of Massachusetts known as the "Pioneer Valley." This valley runs north to south, bordering the Connecticut River as it spans the length of Massachusetts, thus creating a corridor through the region. The SMA is made up of Hampden and Hampshire Counties; however, the Pioneer Valley also includes Franklin County to the North.



For the purpose of this market assessment, the immediate market area considered is within a 60 nautical mile radius from Westover Airport. The Westover Airport market area is illustrated by **Figure 12** in Appendix A. This geographic area represents the primary market from which Westover is likely to draw local and regional users and activity that will assist in driving revenue growth.

Importantly, users within the Westover Airport market area behave differently based on the types of services used or sought. For example, users of scheduled commercial service have fewer options for domestic and international travel and therefore are generally more willing to travel further within the market area to find destinations and fares to meet their needs. Conversely, general aviation users and operators typically wish to utilize facilities that are proximate to their residence and/or business, and therefore prefer to balance a convenient location with services at prices that are within operating budgets. Nuances between general aviation and commercial service demands within the Westover Airport market area will be explored later in this section.

Market Area Airports and Activity

The Westover Airport market area includes 15 airports, both commercial service and general aviation facilities. Like Westover, Laurence G. Hanscom Field is a joint military and civilian facility and is categorized as a general aviation airport. These airports are listed below by type of facility:

Commercial Service Airports	
Bradley International	Tweed New Haven
T.F. Green State	Worcester Regional
General Aviation Airports	
Boire Field	Laurence G. Hanscom Field
Columbia County	Orange Municipal
Danbury Municipal	Pittsfield Municipal
Dillant-Hopkins	Waterbury Oxford
Groton New London	Westfield-Barnes Municipal
Hartford Brainard	

These 15 airports - and the airside and landside facilities and services they offer - represent the competition in Westover Airport's market for aviation products and services. **Table 10**, located in Appendix B, presents information regarding the facilities offered by these airports for comparison purposes. Based on this data, Westover Airport ranks as follows in terms of airfield facility and current based aircraft activity:

- 1st in Size (Acres)
- 1st in Runway Length
- 13th - Based Jet Aircraft
- 14th – Based Multi-Engine Aircraft
- 15th – Based Single Engine Aircraft
- 16th – Total Based Aircraft

With Westover Airport ranking toward the bottom of market area facilities in terms of based aircraft, it is important to understand where aircraft are located to surmise what forces may be attracting owners and operators to base aircraft at other airports in the market. There are 1,718 fixed-wing aircraft based at market area airports, with the following breakdowns by type and percentage of total by airport:

Airport	Jet	% Total	Multi	% Total	Single	% Total	Total	% Total
Westover	3	1%	3	2%	11	1%	17	1%
COMMERCIAL SERVICE								
Bradley International	26	12%	7	4%	1	0%	34	2%
T.F. Green State	6	3%	1	1%	22	2%	29	2%
Tweed New Haven	4	2%	8	5%	31	2%	43	3%
Worcester Regional	0	0%	6	4%	59	4%	65	4%
GENERAL AVIATION								
Boire Field	16	8%	26	16%	181	14%	223	13%

Airport	Jet	% Total	Multi	% Total	Single	% Total	Total	% Total
Columbia County	2	1%	3	2%	23	2%	28	2%
Danbury Municipal	10	5%	37	22%	244	18%	291	17%
Dillant-Hopkins	2	1%	5	3%	60	4%	67	4%
Groton New London	6	3%	8	5%	36	3%	50	3%
Hartford Brainard	4	2%	9	5%	119	9%	132	8%
Laurence G. Hanscom	88	41%	30	18%	254	19%	372	22%
Orange Municipal	0	0%	2	1%	37	3%	39	2%
Pittsfield Municipal	4	2%	7	4%	20	1%	31	2%
Waterbury Oxford	31	15%	8	5%	128	10%	167	10%
Westfield-Barnes Municipal	11	5%	7	4%	112	8%	130	8%
Total	**213**		**167**		**1,338**		**1,718**	

Source: Airport Master Record, retrieved September, 2014 (www.gcr1.com/5010web/)

As shown, Laurence G. Hanscom, Waterbury Oxford, Bradley International and Boire Field claim 161 based jet aircraft, accounting for over 75% of based jets in the market area. Based single and multi-engine aircraft are similarly concentrated, such that:

- 6 airports account for 78% of based single engine aircraft;
- 3 airports account for 56% of based multi-engine aircraft; and,
- 4 airports account for 61% of all based fixed-wing aircraft.

In terms of total operations, Laurence G. Hanscom is the busiest airport in the group, with approximately 154,448[1] annual operations. After Hanscom Field, Bradley International, Hartford Brainard, T.F. Green, Danbury Municipal, and Boire Field round out the top 5 most active airports.

Looking closer at GA itinerant operations activity, Hanscom claims the top spot with over 72,600 annually, followed in descending order by Hartford Brainard (36,900), Danbury Municipal (32,200), and Boire Field (29,900). Itinerant operations represent those aircraft operations that either originate from outside the local area and arrive at the airport or depart from the local area en route to a destination outside the local area.

Airport	Total Ops	% Total	GA ITN Ops	% Total GA ITN
Westover	40,236	4%	10,123	3%
Commercial Service Airports				
Bradley International	102,705	11%	15,359	4%
T.F. Green State	75,475	8%	15,602	4%
Tweed New Haven	33,551	4%	14,349	4%

[1] Source: Airport Master Record, Data Effective Date: August 29, 2014; www.gcr1.com/5010web

Airport	Total Ops	% Total	GA ITN Ops	% Total GA ITN
Worcester Regional	47,911	5%	26,414	7%
General Aviation Airports				
Boire Field	65,965	7%	29,935	8%
Columbia County	19,200	2%	8,000	2%
Danbury Municipal	69,424	7%	32,210	9%
Dillant-Hopkins	49,027	5%	7,456	2%
Groton New London	35,650	4%	20,759	6%
Hartford Brainard	81,474	9%	36,927	10%
Laurence G. Hanscom Field	154,488	16%	72,644	20%
Orange Municipal	33,025	4%	15,000	4%
Pittsfield Municipal	33,000	4%	9,000	2%
Waterbury Oxford	47,987	5%	24,017	7%
Westfield-Barnes Municipal	51,762	6%	25,137	7%
Total	940,880		362,932	

Source: Airport Master Record, retrieved August, 2014 (www.gcr1.com/5010web/)

The average GA itinerant operations among market area airports is about 22,700, and eight market area airports have less than this average. Similar to based aircraft, total operations are concentrated at about half of market area airports, such that:

- 7 airports comprise 64% of all operations in market
- 7 airports account for 68% of general aviation itinerant activity

Itinerant operations are a good measure of business and transient use of an airport, as they indicate the attractiveness of certain airports over others when operators are flying to an area. In terms of growth opportunities at general aviation airports, attracting itinerant operators represents a large segment of prospective demand that can boost fuel sales and support on-airport aviation-related providers or local businesses.

Several preliminary deductions can be made regarding Westover Airport's performance in the market based upon this review of airport facilities, based aircraft, and operational activity. Primarily, these are:

- **Abundance of Airports, Aircraft, and Activity:** A total of 16 airports within a 60 nautical mile distance from Westover Airport represent a significant number of airports and a wide variety of facilities, services, and activity. While Westover dominates the field in terms of sheer size and runway length, airports such as Danbury Municipal and Hartford Brainard – with primary runways of 4,421 feet and 4,417 feet, respectively and a combined 423 based aircraft including 14 jet aircraft - demonstrate that size may not be the most important factor to owners and operators when selecting a basing facility. A total of 1,716 aircraft are based at area airports, and Westover Airport claims 1% of based aircraft. Similarly, based on current data available from Airport Master Records, Westover Airport is home to 4% of total operations and 3% of general aviation itinerant

operations.

- **Airport Clusters and Centers of Activity:** Out of the 16 airports in the Westover Airport market area, 6 are located along the Interstate 84/Interstate 91 Corridor, beginning with Danbury Municipal and including Waterbury Oxford, Hartford Brainard, Bradley International, Westfield-Barnes, and Westover. Removing Westover Airport from the mix, the remaining 5 airports account for 754 based aircraft (44% of total based aircraft in the market area), and approximately 37% each of market area general aviation itinerant and total operations.

  Five airports are located east and northeast of Westover, and include Worcester Regional, Orange Municipal, Dillant-Hopkins, Laurence G. Hanscom Field, and Boire Field. This group of 5 airports account for 435 based aircraft (25% of total based aircraft), approximately 37% of total operations, and 41% of general aviation itinerant operations.

  Given that Westover claims just 3-4% of market area operations, and only 1% of market area based aircraft, it is clear that Westover Airport is on the outside of these two concentrated areas of activity. This is especially so considering the geographic proximity of Westover Airport to Westfield-Barnes, which has more than twice the itinerant traffic and over 7 times the number of based aircraft at Westover Airport.

From this high-level look at airports and activity, it becomes clear that the market has "selected" some facilities as preferred airports, leaving Westover Airport at the bottom in terms of based aircraft, and most similar to Columbia County, Pittsfield Municipal, Dillant-Hopkins, and Orange Municipal in terms of itinerant operations.

Market Area Services

Aviation services available at area airports include airframe repairs, powerplant repairs, flight instruction, charter services, avionics, aircraft sales, and aircraft rental. As shown in **Table 11**, also located in Appendix B, Westover Airport is the only facility that does not offer airframe or powerplant repairs; all other airports offer the capability to perform major repairs in both areas. Similarly, Westover Airport is the only general aviation facility that does not offer flight instruction. Avionics is offered at 6 market area airports; Westover Airport is among 9 other airports without avionics services.

There are a variety of geographic factors, and social and economic forces that affect activity at airports. As such, drawing direct correlations between specific services offered, facilities available, and activity is difficult. However, active airports generally have a strong base of social and economic activity that supports and drives their use. Examples of this are described below for the three market area airports with all services considered:

- **Laurence G. Hanscom Field:** Hanscom Field has the 2nd most based jets, which is likely due to its location within the Boston metro area. As a facility with a full complement of aviation services, combined with its convenient location to Greater Boston *and* Boston-Logan International Airport, the area boasts a large population and strong economic base to support businesses that rely heavily on aviation.

- **Danbury Municipal:** Danbury ranks 2nd in based single-engine aircraft, which may be the result of attracting aircraft from New York State due to more favorable tax regulations in Connecticut. Danbury's broad service offering and location convenient to the Hudson Valley of New York State and Connecticut are likely attractive to many small business operators and active private pilots.

- **Hartford Brainard:** Hartford Brainard ranks 4th in based multi-engine and single engine aircraft in the market area, which may be due to its location in the state capital area. Hartford Brainard's full offering of services combined with its location makes the facility a preferred choice for businesses and as a facility supporting state and local government in central Connecticut.

These three airports benefit from geographically advantageous locations that have a strong economic base to support aviation. For Hanscom Field and Hartford Brainard, Greater Boston and Hartford are the primary economic centers that support these facilities. Danbury Municipal's location benefits from the diversity of the Hudson Valley and the interactions between New York and Connecticut state regulatory environments.

As noted, Westover is the only market area airport without airframe or powerplant repair capabilities and the only general aviation airport without flight instruction. Considering that Westover has the least amount of based aircraft – yet is only 12½ miles from Westfield Barnes, which has 130 based aircraft and over 25,100 itinerant operations - it may be possible that the lack of these services is affecting basing activity at Westover Airport. As such, these services may be a minimum requirement in the market – especially for private and small business owners – such that owners and operators may choose to base their aircraft only where such services are available.

Market Area Niches/Competitive Positioning

Expanding upon the activity data and insights, this section takes a qualitative look into the functions or competitive niches market area airports fulfill in the region. Once the variety of positions in the market are identified and qualified in terms of their niche, what remains may provide some guidance for Westover Airport to identify a brand and position for the Airport going forward.

Considering the abundance of airports, high levels of based aircraft and operations, and the geographic clusters of airports, market area facilities were segmented into three different tiers. These tiers were developed to reflect the nature and level of activity at

market area airports so that Westover Airport's current niche and/or competitive position can be understood.

The first tier of airports in the market area is commercial service airports, which are listed below. Niche descriptions summarize carrier types and destinations.

Airport	Niche
Tier 1 – COMMERCIAL SERVICE	
Bradley International	Legacy and Low Cost Carriers Destinations: Midwest, Mid-Atlantic, Southeast, Canada
T.F. Green State	Legacy, Charter, and Regional Carriers Destinations: Midwest, Mid-Atlantic, Southeast
Tweed New Haven	Legacy Carrier Destination: Philadelphia
Worcester Regional	Low Cost Carrier Destination: Orlando, Ft. Lauderdale

While Westover may compete with all airports in the market area in some fashion (whether it be for itinerant fuel sales or attracting based aircraft), this assessment dismisses the 4 commercial service airports as direct competition for Westover Airport. This is based largely on their roles and niches as passenger hubs. Should Westover Airport be able to attract scheduled service in the future, then these airports would then become direct competitors for passengers in the region.

Considering just general aviation airports, based aircraft and itinerant traffic data indicate that there are two distinct types of general aviation airports within the market area. These tiers are corporate/business aviation facilities serving a broader geographic region, and private/recreational facilities serving a more localized customer base. These tiers are shown below with a general description of the niche for each airport.

Airport	Niche
Tier 2 – CORPORATE/BUSINESS – REGIONAL GENERAL AVIATION	
Boire Field	Manchester Suburb Alternative
Groton New London	Connecticut Coast
Danbury Municipal	Hudson Valley Alternative
Hartford Brainard	Connecticut Capitol Area Preferred
Laurence G. Hanscom	Boston Suburb Alternative
Waterbury Oxford	New Haven/Hartford Alternative
Westfield-Barnes Municipal	Springfield Preferred
Tier 3 – PRIVATE/RECREATIONAL – LOCAL GENERAL AVIATION	
Columbia County	Northern Hudson Valley
Dillant-Hopkins	Southwest New Hampshire
Orange Municipal	North-central Massachusetts

Airport	Niche
Pittsfield Municipal	Northwestern Massachusetts
Westover	Western Massachusetts

The seven airports grouped into Tier 2 stand apart from the five airports grouped into Tier 3 in based either on jet aircraft *or* itinerant traffic. Tier 2 airports have based aircraft levels from 50 (Groton New London) to 291 (Danbury Municipal), and itinerant operations from 20,800 (Groton New London) to 72,600 (Hanscom Field). All Tier 3 airports have four or fewer based jet aircraft and less than 15,000 itinerant operations annually.

As described, Tier 2 and Tier 3 GA airports are distinguished using based aircraft and itinerant traffic levels as a means to segregate facilities in the competitive landscape. The niche descriptors shown are based taglines or other information from each airport's website and any other 1st page Google results from a search for each airport. This research did not yield extremely strong or definitive results concerning each airport's niche, so a descriptor was assigned based upon the general location of each airport and a quick assessment of what activity levels at each airport might mean – as if based aircraft and itinerant traffic represented the collective voice of the market. For example, Hartford Brainard was assigned the descriptor "Connecticut Capitol Area Preferred," and Westfield-Barnes Municipal was described as "Springfield Preferred." These descriptors are intended to reflect the voice of the aviation consumer in the CEF market area.

It is among these two Tiers of GA airports in the market that Westover Airport must make a play to standout. This play is Westover Airport's unique selling proposition (USP), which will serve as the guiding marketing message and pitch for efforts to create a brand identity and build brand equity in the market. Westover Airport's USP should recognize that the abundance of airports and clusters of activity means that customers will demand a unique value that is not currently offered by other airports.

Enhancing Westover's Market Position

The Airport's USP can build upon the successes toward implementation of the following alternatives described in detail in *Chapter 4, Alternatives & Recommendations:*

- MRO
- Fractionals/Air Charter
- General Aviation/Corporate
- Airline Service

While alternatives such as Airline Service and an MRO might be considered home runs in terms of offering large impacts to gross revenues, the market analysis presented here indicates that gains in GA activity could have a substantial impact. For example:

- a 3% increase in itinerant traffic would more than double existing itinerant operations; and,
- a 3% increase in based aircraft would quadruple total existing based aircraft.

Such improvements would significantly increase fuel sales, while also increasing other airport fee collections, not the least of which would be rents for hangar storage.

Depending upon which of these alternatives gains traction in the market first, Westover's market position can be expanded in a number of directions. *Chapter 3, Brand Equity Assessment* explores CEF's existing brand equity in the market and presents ideas for further developing a brand for Westover Airport.

CHAPTER 3 - BRAND EQUITY ASSESSMENT

Introduction

This Chapter evaluates the Westover Airport brand, and documents a qualified estimate of Westover Airport's brand equity in its market. As described in *Chapter 2, Competitive Market Assessment*, the market for Westover Airport (the Springfield Metropolitan Area) encompasses a region in the Pioneer Valley of Western Massachusetts roughly the size of Rhode Island. While the relative strength, or equity, of the Airport's brand likely extends to include anyone in any location who knows about Westover Airport, this assessment considers the Westover Airport market area a suitable proxy for the overall purpose of the Plan.

Brand and Brand Equity Defined

Prior to this assessment, it is important to define what a brand is, and how brand equity is understood and measured. Widely accepted definitions and descriptors of each are as follows:

- **Brand:** The American Marketing Association defines a brand as "a name, term, sign, symbol or design, or combination of them, intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competitors."

  Consumers learn about brands through experiences with the product or service, ultimately seeking out which brands satisfy their needs. Brands simplify decision-making, and are at their best when they reduce risk for the consumer. Consumers may evaluate identical products or services differently depending upon how they are branded. Brands offer companies legal protection for unique features via trademarks, patents, copyrights, etc.

- **Brand Equity:** There are a variety of nuanced definitions to brand equity in the field of marketing and branding; however, the core of these definitions focuses on the knowledge of brands in the minds of consumers (whether individuals or organizations) that drives choices. A brand has positive equity when consumers react more favorably to a product - and the way it is marketed - when the brand is identified than when it is not. Strong brands with high levels of equity can fetch a premium over generic equivalents. For this assessment, brand equity may simply be defined as "awareness" and "goodwill" that adds value to the brand and attracts consumers to Westover from alternative options (other airports in the market area).

The Westover Airport Brand and Current Equity

Constructed in 1940, Westover Air Force Base served as a bomber and fighter crew

training facility throughout World War II[1], thus establishing the Westover brand as a military airport. Over the years, this use of Westover has undergone changes as the facility transitioned from a Strategic Air Command Base to an Air Reserve Base for the 439th Airlift Wing (AW), a unit of the Air Force Reserve Command.

Despite changes to Westover's military mission and the conversion of 91 acres for public use as a regional civilian airport in the mid 1970's, the Airport is not fully understood or credited for its general and corporate aviation use. Given the military's contribution to the region in terms of jobs on the base and broader impacts on local businesses and social organizations, this is certainly not a negative attribute. However, the Airport's distinctly military image does present a tremendous challenge for building a distinct brand identity for the civilian side of the facility that can drive the types of expansion in activity sought by many stakeholders.

The consumer knowledge and brand equity of Westover is somewhat difficult measure in quantifiable terms. However, insights can be found by reviewing activity data presented in Chapter 2. A snapshot of this activity is shown below.

As a measure of Westover Airport's brand equity, this data suggests that 1-3% of the market of general aviation owners and operators associate a strong brand with Westover, based solely on aircraft based on the airfield and itinerant operations as a percentage of total activity in the market.

Airport	Based Aircraft	% Total	Total Ops	% Total	GA ITN Ops	% Total
Westover	17	1%	40,236	4%	10,123	3%
Bradley International	34	2%	102,705	11%	15,359	4%
T.F. Green State	372	22%	75,475	8%	15,602	4%
Tweed New Haven	29	2%	33,551	4%	14,349	4%
Worcester Regional	43	3%	47,911	5%	26,414	7%
Boire Field	221	13%	65,965	7%	29,935	8%
Columbia County	28	2%	19,200	2%	8,000	2%
Danbury Municipal	291	17%	69,424	7%	32,210	9%
Dillant-Hopkins	67	4%	49,027	5%	7,456	2%
Groton New London	50	3%	35,650	4%	20,759	6%
Hartford Brainard	132	8%	81,474	9%	36,927	10%
Laurence G. Hanscom	65	4%	154,488	16%	72,644	20%
Orange Municipal	39	2%	33,025	4%	15,000	4%
Pittsfield Municipal	31	2%	33,000	4%	9,000	2%

[1] Source: http://www.westoverafbhistory.com/

Airport	Based Aircraft	% Total	Total Ops	% Total	GA ITN Ops	% Total
Waterbury Oxford	167	10%	47,987	5%	24,017	7%
Westfield-Barnes Municipal	130	8%	51,762	6%	25,137	7%
Total	1,716		940,880		362,932	

Considering total market area activity, Westover Airport appears to be on the outside looking in, and has much to gain from improving its brand identity and equity in the market. Importantly, it stands to reason that owners and operators not currently operating at Westover Airport may not necessarily associate a negative image with the Airport. Rather, their knowledge of the Airport may be rendered neutral in comparison with their market area airport of choice. However, this nuance does not necessarily soften the reality that Westover Airport claims some of the lowest activity levels in the market.

In addition to brand equity in the regional market for general aviation consumers, brand equity at Westover Airport might also be understood via the extent to which knowledge of the civilian operation is present among military personnel. Currently, 2,500 reservists are assigned to Westover, training one weekend each month and also serving a 15-day annual tour of duty each year. On a day-to-day basis, Westover is also operated by a work force of about 1,000 civilians, including 501 Air Reserve Technicians[2].

This population of military personnel and civilian employees at the base represents a large contingent of involved local stakeholders. However, and anecdotally, interactions with some military personnel during a recent visit by the consultant team revealed that some were not quite clear how to direct visitors to the public portion of the airfield. While not a scientific survey, it is telling that about 4,000 local stakeholders directly engaged at the Airport are likely not making any notable contribution to the Airport's brand equity or market identity. Additionally, if military personnel stationed at the base are unfamiliar with the existence and location of the public airfield, achieving strong brand equity in the community at large and in the broader Pioneer Valley region may indeed be a significant challenge.

Building Brand Equity for Westover Airport

Looking forward, building brand equity for Westover Airport stands to benefit significantly from a coordinated and focused effort. To start, it is helpful to consider how brands and brand equity are built by thought-leaders in the marketing and branding industry. One highly regarded model for building brand equity is the Consumer-Based Brand Equity Model, published by Kevin Lane Keller, a leader in the study of brands[3].

[2] Source: http://apps.militaryonesource.mil/
[3] Tuck School of Business, Dartmouth College, http://www.tuck.dartmouth.edu/

This model is illustrated below:

This model illustrates that building a strong brand requires breaking down barriers and communicating a compelling identity in such a way that invokes feelings and attracts users into a relationship with the brand. Businesses must make a concerted effort to shape how customers think and feel about their product or service – or their competitors will. To do so, strong brands craft experiences that produce specific and positive thoughts, feelings, beliefs, opinions, and perceptions in the minds of consumers.

This model is instructive for Westover Airport, because improving the Airport's brand equity can ultimately drive customers to choose Westover over other airports in the market, recommend Westover to others, and devote their loyalty to the Airport over time.

Applying the Model for Westover

Building brand equity at Westover Airport must first begin with a vision for the future of the Airport, and constructing a new brand that is different from its legacy as a military-only facility. Referencing the model above, this refers to Step 1 at the bottom of the pyramid - establishing Westover Airport's new identity.

Selection of a new brand identity for Westover might best begin with a new, more focused name for the civilian Airport. Strong brand names for general aviation airports are succinct and relevant, often combining a geographic reference and indication of the level of aviation services offered. Today, the name Westover Metropolitan Airport is a bit misleading, as the word "Metropolitan" invokes images of an urban setting with a large population base surrounding the airport. In reality, Springfield is the closest large city and has a population less than 160,000. While local municipal names such as Springfield, Chicopee, Ludlow, or Granby are available, they would significantly limit the meaning of the Airport's identity beyond Pioneer Valley or Western Massachusetts.

Considering these obstacles, some possibilities for a new Airport name might include:

- Western Massachusetts Regional Airport
- West Mass Executive Airport
- West Mass Executive Airfield (links to established military presence and history)
- Westover Civil Air Terminal (links to present military operations)
- Westover Field Civil Air Terminal (Ditto)
- Westover Regional Airport
- Westover Executive Airport
- Westover Executive Airfield

Please Note: Concurrent to this writing, the Airport initiated an effort to update the existing logo and airport name. The result of this process, as is noted here, was that the term 'Metropolitan' was confusing and did not aid in branding. Therefore, as of October 2014, the name was changed to 'Westover Airport,' and provided with an updated logo seen in the footer below.

While any number of variations is available, separation from the military side of the facility in a new name might be warranted in order to start fresh and establish a distinct civilian airport identity. Once a new brand identity, logo, and name is selected, other elements such as the type and quality of services offered, employee training and attention to customer service, can be developed to reinforce and deliver on the promise of value the Airport is prepared to make to the market.

Progressing up the model, the new Westover Airport brand should create meaning and value in a way that stands apart from other market area airport brands. As described in Chapter 2, this meaning comes from a unique value proposition - the promise of value that the Airport can make to customers. The unique value proposition should draw meaning from and communicate value to users from the following alternatives presented in Chapter 4:

- MRO Services
- Fractionals/Air Charter
- General Aviation/Corporate
- Airline Service

Of these, providing ultra low cost airline service may likely have the greatest potential to expand knowledge of the Westover Airport brand and improve brand equity because it will engage a greater segment of surrounding population than the other aviation options listed. There is also good support within the community-at-large and among political representatives for becoming a scheduled commercial service and public cargo facility.

If the Airport can communicate value and meaning successfully, and deliver on this value impeccably over time, the new Airport brand will begin to invoke feelings and positive judgments that can attract more users from other airports in the market. It's at this point in the model where prospective users can migrate from Step 3 to Step 4,

where they will engage with the Airport and consider a relationship. Here again, delivering on the promise of value will pay dividends in building and strengthening the new Airport brand.

CHAPTER 4 - ALTERNATIVES AND RECOMMENDATIONS

Introduction

The purpose of this chapter was to evaluate the airport development options that resulted from the Strategic Planning Charrette and project research and analysis. Through a collaborative SWOT Analysis and industry research, the planning effort identified twelve initial options, or alternatives, the Westover Airport should consider in order to improve the airport's position from a business perspective. Those alternatives were then assembled into a conceptual evaluation matrix which was used to provide a more detailed assessment of each initial option.

Alternative Evaluation Criteria

The evaluative matrix contained eight different criteria developed to provide preliminary assessment of the various alternatives. The eight criteria are as follows:

- Market Demand
- Facilities Required
- Labor Force Required
- Marketing Efforts Required
- Likelihood of Success
- Timeframe
- Value to Westover Civilian Operation
- Value to Military

Upon completion of the initial alternatives matrix, it was determined that the Airport Business Plan should focus on those options with the best potential for success. Doing so is the best use of the limited resources of the Airport. The other initial alternatives, while not unfeasible, were considered to be more difficult, for varying reasons, to implement. Those options not advanced, and their respective sections of the alternative matrix, are shown in the following section:

Initial Alternatives Not Advanced

The following alternatives were not advanced for further evaluation at the time of this writing. A brief description follows in each matrix section.

Military Mission Changes	
Description: This alternative would include the impacts of either a decrease or increase in the military mission at Westover. The changes may be as soon as 2015 when there is a predicted loss of 8 of the 16 C-5B aircraft currently positioned at Westover due to an increase of mission with new aircraft. Implementation of this option would be dependent upon future Department of Defense decisions.	
Market Demand	The market demand is not a factor in this option but rather fallout of any Department of Defense decisions relative to changes in the mission of Westover ARB.
Facilities Required	Depending on the changes mandated by the Department of Defense, facility requirements could vary from an overage of facilities that might be transitioned

Military Mission Changes	
	in the future for civilian use to a shortage of facilities (if there is a mission increase) that could potentially affect available development land adjacent to the airfield.
Labor Force Required	If there is a loss of aircraft, there is a potential for an immediate availability of skilled aircraft personnel that might be available to the community. If there is an increase in the military mission there would be requirements for additional support personnel from the community and region to support the increased mission.
Marketing Efforts Required	The character and level of marketing will vary with the specifics of any changes in the military mission at Westover.
Likelihood of Success	Any changes in the military mission will be a result of a Department of Defense decision. The successes that might be associated with the changes will be a community driven response to either a loss or a gain for Westover ARB.
Timeframe	According to the Air Force Reserve, eight C-5Bs will transfer from Westover to Joint Base San Antonio-Lackland, Texas beginning in 2015. The C-5B fleet is scheduled to be upgraded to the re-engined M-models. In the plan, Westover will retain eight of the refurbished C-5Ms. Personnel losses include 59 full-time enlisted and 275 drilling reservists. This number has not been finalized nor has a timeline been released yet.
Value to Westover Civilian Operation	Significant either way the military mission at Westover progresses.
Value to Military	Significant either way the military mission at Westover progresses.

The Military Mission Change alternative was not advanced at this time due to its strong reliance on DOD decision making. As the direction and timing of DOD directives relating to Westover ARB and the C-5B Galaxy were well outside of the control of civilian decision making, the numerous contingencies associated with this option ultimately prevented tangible actions from being identified and carried out as part of a strategic plan. As such, this alternative was removed from further assessment. However, collaboration between the air force and civilian stakeholders is critical to the long term success of Westover ARB. As such, concepts to consider for planning purposes have been included at the end of this Chapter.

Additionally, two other military missions were not advanced in this analysis because of the need for military decision and input. These are:

- Air Force Purchasing Partnership Initiative-Shared Purchasing Power: This alternative examines an array of potential costs saving measures that might be achieved through a variety of opportunities that would link military, community, regional and even potential private organizations to combine resources in the purchasing of goods and services for all.

- Military as Tenant on Civilian Airfield: This alternative involves the reversal of roles currently held at Westover Airport with the WMDC, or a quasi-governmental agency, becoming the owner of the property and the military organization becoming tenants on the property. There are several models of this

arrangement across the country that can be examined for analysis and comparisons. This option would require a full analysis and is beyond the scope of this study.

Large Air Cargo Operation	
Description: This alternative would include the attraction of an air cargo operation to base at Westover Airport	
Market Demand	Market demand for air cargo facilities is based upon air cargo carrier supply. That is, air cargo companies are limited, and they typically dictate where their hubs will be located. Hubs in Hartford (CT), Manchester (NH) and Boston (MA) will make attracting any new air cargo activity at Westover difficult.
Facilities Required	A sorting facility would be needed, even on a small scale. These require intermodal interface with trucks, which makes the layout very specific. No such facilities are available on the civilian side.
Labor Force Required	Air cargo companies would have to have workers located at the Airport. Cargo operations at Albany International (NY) provide 300 jobs. Stewart International has 150 cargo-related jobs. Thus, Westover would likely need 150-300 jobs.
Marketing Efforts Required	A significant marketing effort would be needed to attract an air cargo carrier to Westover. Significant incentives would be required.
Likelihood of Success	While remotely possible, it is not likely that a significant air cargo operation (e.g. FedEx, UPS, DHL) would be successful due to existing air cargo operations at Hartford-Bradley International, Manchester-Boston Regional Airport, and Boston Logan International Airport.
Timeframe	More than 5 years would be needed to market, plan, develop, and implement air cargo operations at Westover
Value to Westover Civilian Operation	Air cargo operations would benefit the civilian airport via jobs, aircraft operations, fuel sales, and hangar rentals.
Value to Military	The military is not likely to benefit from the location of air cargo operations on the Airport. Instead, the cargo operators would likely require operating hours after the Tower (operated by the military) was closed. The rules now state the Airport cannot be open without its Tower.

The Air Cargo option was not advanced for a number of reasons. Air cargo companies take years, or sometimes decades, to make major investments related to where their hubs will be located, and when this occurs, there is very little input from outside interests. Moreover, only the most lucrative air routes are sought after given their higher costs compared to ground movement and deliveries. In addition, cargo hubs in Hartford, Manchester, and Boston make it very hard to attract any new major air cargo activity at Westover. Finally, there are no appropriate facilities available on the civilian side of the Airport to accommodate a large cargo operation. As such, this alternative was removed from further assessment, with the understanding that smaller air cargo opportunities can likely be implemented with relative ease and will not result in significant additional revenues or jobs.

Large-Scale Aviation Development
Description: This alternative would include the construction of an extension of Taxiway G into a full-length parallel taxiway, proceeding from Taxiway N west of Runway 5-23 to Pad 5 and connecting to Taxiway P, situated east of existing and aging nose dock hangar facilities. Other large-scale aviation

Large-Scale Aviation Development	
development could also align with MRO, GA/Corporate, Air Service, Air Cargo, and/or Fractionals/Air Charter options.	
Market Demand	The market demand for taxiway development in particular, or other large-scale aviation development is undocumented. A full-length parallel taxiway would see instant use from the military and other operators, which could improve the marketability of existing hangars, and make available larger portions of land that could be assembled for that right prospective user.
Facilities Required	Extension of Taxiway G to full-length parallel. Costs have been estimated at approximately $16M for this project. Construction may also require demolition of existing nose-docks and/or other hangars.
Labor Force Required	Taxiway construction and/or hangar demolition will draw on widely available construction trade labor force. Any labor force requirements for large-scale aviation development will depend upon the nature of the business operation.
Marketing Efforts Required	Significant market testing and marketing/PR programs would be necessary to attract a well-capitalized business for a development that would make extension of Taxiway G a viable project. Efforts would have to be undertaken early in the process and focus on land available and attractiveness of existing hangars.
Likelihood of Success	Success of a full-length taxiway and large-scale aviation development is highly dependent on the identification of well-positioned and capitalized private interests with the long-term vision and backing to make private investment and public funding justifiable. Demand for this project must be well-documented.
Timeframe	Property for these projects is on-Airport, and available. FAA approval and funding will require further study and documentation, in addition to design and construction. This option may take at least 24 months to be operational, which is in addition to time necessary to identify demand, attract private interests, and capital.
Value to Westover Civilian Operation	A new taxiway would be of primary value to the civilian operation - especially a large aviation tenant - if existing land becomes available and hangars become more attractive and marketable. The value of large-scale aviation development is assumed high; however, market analysis would have to prove benefits of the investment.
Value to Military	Value to the ARB at Westover is yet to be determined, as current operations occur without significant issue. A new taxiway could improve operating efficiency for the military, and provide for further separation between civilian and military operations that could enhance overall operational safety.

The Large Scale Aviation Development option was not advanced primarily because of its cost. Unless other factors can be identified, the benefits versus the costs would not show a positive outcome. It is believed that the extension of Taxiway G would cost roughly $16M. The benefit to the civilian side would be marginally increased marketability of existing hangars, and it would make available larger portions of land that could be assembled for the right prospective users.

Recommended Alternatives Selected for Further Consideration by Westover Airport

The following five alternatives were examined in more detail to provide additional consideration of the requirements and implications associated with each option.

The overviews specifically included the following elements:

- Defined Goals and Objectives
- Operational Components
- Financial Factors
- Explicit Action Items

Each of the alternatives selected for further analysis are considered feasible, however each option requires varying levels of effort, capital, and risk as evidenced within the analysis completed below.

Option 1: Maintenance, Repair, and Overhaul (MRO)

This alternative examines establishing an MRO facility at the Airport. For the purposes of this analysis, it is assumed that a major effort would be targeted to an MRO that would create significant revenue and job creation. Smaller MRO operations may be desirable but do not require the level of analysis completed herein.

MRO	
Description: This alternative involves the attraction of a full-scale Maintenance, Repair and Overhaul (MRO) operator to base at the airport. Services could include airframe repair, engine maintenance, major overhaul, painting, avionics, interior refurbishment, etc. for both fixed-wing and/or rotary-wing aircraft. MROs that work on large jets require significant runway length and large amounts of hangar space.	
Market Demand	Overall market demand for MRO services is expected to grow slowly over the next five years. However, several large MROs are in operation in surrounding states with less favorable tax treatment, which creates opportunity for a Westover/Massachusetts-based operation
Facilities Required	Runway length can accommodate any size aircraft. For the larger operators, new hangars would be required. Smaller operators, such as those geared toward helicopters, may be able to use existing or rehabilitated facilities. Both Governor Patrick's FY15 Capital Plan and MassDOT's plan, have allocated up to $100,000 for the study and design of hangar renovations if there is a serious opportunity to bring in an MRO and the jobs associated with it.
Labor Force Required	If sufficient hangar space could be developed, a large MRO would be desired for Westover. These operators typically have contracts with carriers or independent operators using large aircraft. An MRO focusing on rotary-wing aircraft could also be beneficial, especially if it contracted with a manufacturer. Labor force needed would be 30-60.
Marketing Efforts Required	Westover Metropolitan Development Corporation would need to set aside marketing funds to attract an MRO operator. This would likely involve attending the MRO annual conference and a lot of personal contacting of MRO firms. Incentives will be needed.
Likelihood of Success	The number of MRO firms in the U.S. is shrinking due to consolidation. Thus, attracting a new entrant to the MRO business is unlikely. Rather, the best option would involve the relocation or expansion of an existing firm.
Timeframe	Because the hangar facilities needed for the largest MROs are not prepared, there is a minimum timeframe of 2-3 years. Marketing of the MRO can be ongoing simultaneous to the development of adequate hangar facilities.

MRO	
Value to Westover Civilian Operation	The value to the civilian operation is significant because: the MRO will pay rent; local residents will be employed at the facility; and hangar facilities will be developed.
Value to Military	While the value to the military is not as significant compared to that of civilian operations, the military benefits when the civilian operation is better able to cost share on potential airfield projects. Also, active reservists and retired military could apply for jobs at the MRO, which provides additional value as well.

Defined Goals and Objectives

The following goals and objectives provide a direction for accomplishing this alternative:

- **Goal 1 – Attract an MRO firm to Westover Airport within 3 years.**
  - Objective 1 - Identify MRO Market: The first step in attracting an MRO firm to Westover Airport (CEF) is the identification of the MRO market in the Northeast U.S. This requires knowledge of the existing airline maintenance market (both passenger and cargo) and the amount of in-house work performed by the airlines themselves.

  - Objective 2 - Determine Outside Marketing Needs: If the first objective cannot be adequately reached, it may be determined that a specialized MRO consultant is needed to help with the overall process. If so, information about costs of the consultant compared to potential returns from the successful attraction of an MRO need to be assessed.

  - Objective 3 - Seek Funding for Marketing Effort: If the financial requirements for marketing MROs are determined, this objective would be to acquire those funds by means available to Westover Metropolitan Development Corporation.

- **Goal 2 - Add 30 to 60 Jobs with New MRO.**

  - Objective 1 - Seek to Fit the MRO Size to the Airport Facility: Roughly 77 percent of MRO firms are non-employers. That is, they are single person firms. That leaves 23 percent of the remaining MROs as potential significant employers. The solicitation of firms should focus on the larger companies that have the ability to expand into new locations or that can potentially relocate to Westover.

  - Objective 2 - Determine Whether Hangars Along Taxiway S can be used for MRO Operations: Hangars along Taxiway 2 are roughly 210' wide and up to 175' in length (nose to tail). The door height needs to be 42' unless outside mobile tent structures can be used to enclose an aircraft's tail section.

- Objective 3 - If Useable by MRO, Fund Renovation of at least One Hangar: Each hangar has roughly 30,000 square feet, which equates to a utilization rate of between 30 and 60 employees. If greater numbers of jobs are desired, the hangar space must be increased to permit multiple aircraft and adequate work space. As noted earlier, Commonwealth funding is set aside to study and design hangar renovation options.

Goal 2 would likely occur concurrently with Goal 1 so marketing efforts can be "right-sized" to the facilities available and/or pros/cons of more expansive infrastructure projects to allow for a larger MRO can be determined.

- **Goal 3 - Utilize Aviation Education Initiative for MRO Training**
  Implementation of an aviation maintenance program would augment the MRO workforce by producing a steady stream of qualified, skilled laborers. Conversely, the MRO facility would generate substantial demand and interest in the aviation maintenance program, thus making the degree initiative more sustainable.

  - Objective 1 - Coordinate implementation of Aviation Education Initiative and MRO recruitment: Presently, Westfield Vocational High School is coordinating with Westfield-Barnes Airport to establish an air manufacturing program that includes an Airframe and Powerplant (A&P) certificate. Westover should capitalize on this program by offering a post-secondary aviation program that further enhances students' skills and enables attainment of a college degree. This would be accomplished in conjunction with a consortium of local colleges and universities. Additionally, if the potential partnership between the high school and Westfield-Barnes fails to materialize, Westover should implement an A&P program as part of the post-secondary degree. Finally, the educational component should be incorporated into the recruitment efforts of an MRO facility.

  - Objective 2 - Provide Space for Maintenance Training: While it is convenient to provide aircraft maintenance training in hangars with airport access, it is not necessary for many maintenance functions. Space off of the flight line can be used by students for many classes and workshops. Other training may need flightline access. This brings into play the need to incorporate the program with efforts to develop the Aviation Education Initiative facility.

  - Objective 3 - Assemble Data Needed by Training Partners: Colleges and universities require information on the scope of demand for a particular program prior to instituting a curriculum. Typically, they will set up a "datum committee" to explore topics such as the market for aviation

mechanics, pay scales, technical requirements, availability of qualified instructors, tooling, space needed, etc. If much of this data can be assembled in advance, it will make the decision process easier and perhaps quicker for the potential academic or vocational institution. This effort would likely occur separately as part of the Aviation Education Initiative; however it should consider MRO needs.

Operational Components

Preliminary research indicated that Massachusetts has fewer than 120 MRO firms in the state (1.3 percent of U.S. total). This is compared with more than 1,100 MROs in Florida, which has the highest concentration of firms in the U.S. (13.0 percent of U.S. total). Functional components that may be included as part of an MRO operation at Westover Airport include:

- **Hangar Space**
  The primary functions of an MRO cannot be performed without an appropriately sized and located hangar. To accommodate most narrow-bodied aircraft in the fleet, hangar doors must be at least 130' wide and 42' in height. (A 45' height will accommodate a Boeing 757 aircraft). The 42' door would accommodate aircraft such as the Boeing 737, Airbus 320, and MD-80 series aircraft. The B-757 is 155' 3" in length, which would fit into the 175' long hangar size along Taxiway S (roughly 30,000 square feet). In addition to a hangar building itself, an MRO requires auto parking, secure access, and a large apron.

- **Employee and Access Considerations**
  Other operational components include the need for employee auto parking for 60, hangar apron space equal to hangar footprint, interior fire suppression systems, and office space of up to 5,000 square feet.

- **Other Storage Space**
  Some MROs park client aircraft in outdoor locations away from immediate access to the hangar. Workloads and logistical considerations often require parking space for aircraft and sometimes aircraft that are to be disassembled and sold for parts. For aesthetic purposes, these locations should be away from the Airport entrance viewscape. This unique MRO requirement should be located on an airport in such a manner as to not adversely impact large events that take place on the airfield or other users.

Financial Factors

Financial factors associated with the recruitment of an MRO involve the needs and amounts of funding, identification of funding sources, and possible creative incentives that could be devised to provide multiple benefits across complementary activities.

- **Funding Sources**
  Funding sources include those from state and federal programs, as well as self-funded borrowing that relies on future rental fees to repay debt service. In addition, marketing funds and incentives will be needed to attract potential tenants.

- **Funding Needs**
  At a minimum, the following developmental, marketing, and incentive funding will be needed:

  - Funding for the renovation of a hangar along Taxiway S, this is estimated between $2M and $3M, and assumed to be nearer the higher end estimate of $3M.

  - Marketing funds will be needed to attract an MRO to Westover. These will likely involve the retention of a marketing firm/consultant with MRO specialty. The estimated cost is $50,000.

  - Incentives are paid only when a company moves to the Airport. In addition to low cost loans and other tax incentives, there are tax credits for a Gateway community (Chicopee is one) of up to 10% per job capped at $30,000 over a five year period. Other "in-kind" incentives could be offered by WMDC to include reduced rent to offset utility bills, free apron space, free building maintenance, etc.

    Additionally, should WMDC not wish to embark on a large and speculative hangar development without a contract with a committed MRO tenant, an incentive package could be structured in a way that combines public and private monies and reduces initial capital outlays and risk assumed by either party.

Action Items

As with any project that requires marketing and a response from the private sector, the action items are aimed at attracting an MRO firm to locate at Westover Airport. Because of the speculative nature of this project, the action items are listed in the order required. No steps can be skipped unless there is clear evidence that a commitment by an MRO is imminent.

- **Marketing**
  - Seek funding for MRO marketing effort. Without resources, very little gets accomplished.
  - Hire marketing firm/consultant with MRO specialty.
  - Identify potential MROs with expansion needs

- **Facility Development**
  - Develop conceptual site plan with costs.
  - Seek funding to renovate hangar.

- **Incentives**
  - Establish incentive package for potential MROs that include labor training, tax abatement, low/no interest loans, and grants.
  - Obtain commitment from MRO

- **Implement Development Plan**
  - Begin hangar renovation.
  - Coordinate efforts with economic development agencies.

Hangar renovation may be useful for other initiatives and as part of an overall plan for the Airport. Consideration should be given to multi-purpose hangar space that can accommodate a variety of options.

Summary

The MRO alternative is highly dependent upon the ability to accurately assess the market and hire a 'business builder' with close ties to the industry. Initial assessment indicates that this alternative would result in significant increases in revenue; however appropriate infrastructure is required, which reduces the overall bottom line benefit. The critical elements in making this alternative a reality would include:

- Developing incentives and finding the right MRO marketer
- Identifying an MRO that is a good fit for Westover
- Obtaining timely financing or grant funding for hangar space renovation
- Setting up the labor side in helping to supply highly skilled workers and a college or vocation program that supplied these workers for the future

Option 2: Fractionals/Air Charter

This section considers new establishing a base of operations for a fractional jet ownership company or air charter operation to serve the region.

Fractionals/Air Charter	
Description: This alternative includes the attraction of a fractional jet ownership company, or Part 135 air charter operator, to locate at Westover Airport. Typically, to establish a base for either of these operator types, the size of the operation would involve two or more based jets. Alternatively, this focus could be on the attraction of itinerant operations from these operators, with no based aircraft. From the Airport's perspective, the based aircraft option is preferred.	
Market Demand	Market demand for a fractional operator is much less significant than the demand for air charters. In 2014, there have been 10 charter flights enplaning 672 passengers thus far. In 2012, there were 17 flights with 1,074 passengers, so the demand for charter flights exists. Additionally, existing Part 135 activity at Bradley International in Hartford, CT is an example of this demand.

Fractionals/Air Charter	
Facilities Required	For fractional jet activity, long runways and a Fixed Base Operator (FBO) terminal building are needed. For air charter work, a passenger terminal, screening, baggage handling, etc. would be needed as well.
Labor Force Required	No significant changes to the labor force are needed.
Marketing Efforts Required	Moderate marketing would be required on the part of Westover Metropolitan Development Corp. This would involve working to attract fractionals, making sure the Airport was prequalified, etc. WMDC could share Air Charter marketing costs.
Likelihood of Success	Because Air Charter is already occurring at the Airport, success is highly likely. Fractional operators, on the other hand, are more likely to be itinerant than based at the Airport. Still, the proximity between New York and Boston makes Westover an ideal location for ease of use and at rates less than what can be found at these larger airports and cities.
Timeframe	Air Charter timeframe is immediate. There is no reason that Fractional operators would have to wait either.
Value to Westover Civilian Operation	There is significant value to the civilian operation, particularly if the Airport could enplane more than 10,000 passengers, or if scheduled air charter could help reach that number. This would ensure $1 million in FAA entitlement grants would be available to the Airport for future development.
Value to Military	The military could benefit from increased funding from the Civilian side, particularly if it was in support of a project that benefitted both the civilian and military operation.

Defined Goals and Objectives

The following goals and objectives provide a direction for accomplishing this alternative:

- **Goal 1 – Increase the number of Air Charters using Westover Airport over the next 5 years.**

  - Objective 1 - Retain Marketing Firm: Retain marketing firm to explore new sources of air charter and fractional jet operator activity. This could include a retainer agreement, consulting (hourly) basis, or commission basis.

  - Objective 2 - Market Known Sources of Existing Air Charter Activity: This would include discussions with air charter companies in the region, and college and university athletic programs that fly using charter aircraft. Attracting corporate users from Bradley International should be included in this focus, as well as emphasis on Westover's proximity to New York and Boston.

    Moreover, while not yet a known source, consideration should be given to larger regional employers who could potentially benefit from increased air charter operations. This includes those listed in Table 7, *Largest Employers in Knowledge Corridor (MA and CT)* of Chapter 1, *Regional Background*. Finally, with the proposed $800 million MGM Springfield

development scheduled to break ground in 2015 and open in 2017, marketing efforts should be ardent about identifying, and capitalizing on, possible new air charter demands and opportunities that may result from the casino project.

- Objective 3 - Target 2,000 Passengers for Air Charter: This would complement an additional 8,000 scheduled air carrier enplanements (for non-primary entitlement grants).
  - In 2013, there were 1,619 enplanements from charter flights from Westover. By increasing these numbers by 4.3 percent per year, the goal of 2,000 enplanements can be reached in 5 years.

- **Goal 2 – Increase the number of Fractional Jet operations at Westover Airport.**

  - Objective 1 - Target increases to 150 Fractional Jet (65% increase) and 250 business class annual arrivals (43% increase) over the next 2 years. Of 622 recorded flight plans in 2013, 91 were identifiable as Fractional Jet Operators, while 175 business class aircraft arrivals (mostly jets) had tail numbers blocked. Increases in these operations would come through the marketing and branding process.

  - Objective 2 - Increase Market Share: Westfield Barnes had 1,947 recorded flight plans during the same period - more than 3 times that of Westover. Charting progress in Goal 2 can use market share comparisons of activity at Westover Airport versus Westfield Barnes.

Operational Components

The Airport is already set up to receive business general aviation and air charter activity. There are two new or expanded operational components associated with this alternative:

- **Expanded Use of the Existing Terminal Building**
  Use of the Terminal Building and ramp area can be one source of income for the Airport. By increasing the number of flights and passengers, this source of revenue can grow.

- **Seek 24-hour Airport Operation**
  In order to attract more business aircraft, the Airport **must have** 24-hour operation. Flexibility and continuous access are keys to attracting corporate jets and business aircraft, thus making 24-hour operability an essential requirement for Westover to remain a contender with competitor airports. As such, actions must be taken with the military to work out plans for 24-hour Airport operation.

- Extend Control Tower Hours: One option would be to extend the hours of the control tower such that night operations (11 pm to 7 am) are covered.

- Change Current Rules of Operation: The second option would be to allow the Airport to be open even when the Control Tower is closed. Such is the case at many general aviation and small airline airports across the U.S.

Financial Factors

Again, because the Airport is already set up to accommodate general aviation and air charter flights, the financial factors associated with this alternative are few.

- **Marketing Funds:**
  Marketing funds will be needed to attract more Air Charters and Fractional Operators to Westover. Even a modest budget of $15,000 to $20,000 per year would help expand the brand and reach of Westover Airport. It is believed that the following marketing activities are needed:

  - Internet and Social Media - Any brand makeover will require exposure to Internet and Social Media outlets. The Airport's web page is undergoing an upgrade as of this writing, which is a needed improvement. Social media links to the web page could expand the reach of the Airport to stakeholders and other interested parties.

  - Direct Marketing - Some marketing activities can be undertaken using direct contact means. For example, contacts with air charter companies and local colleges and universities about flights from Westover could serve to increase those numbers. Contacts through conferences such as NBAA National and Schedulers and Dispatchers are also recommended.

- **Control Tower Funding**
  Funding for Control Tower operation during night hours may be needed. There may be creative methods that WMDC can use to contribute to the military funding of the tower. The coverage needed is between 11 pm and 7 am - an eight hour shift, seven days per week = 56 hours. Given the need to have two controllers in the tower during each shift, this translates into 2.4 full time equivalent workers. It is likely that the cost of funding this additional time would range between $250,000 and $300,000 annually, which would appear to negate the financial benefit of this initiative. Other creative options must be explored.

Explicit Action Items

To fully execute this alternative, there are a number of action items that should be undertaken. Because the Airport already receives air charter and fractional jet operations, a go/no-go decision for this alternative will not result in a loss of this

activity. Instead, the benefit of undertaking this action is to increase the respective activity and thereby boost revenues in the form of fuel sales and possibly Passenger Facility Charges (PFCs). With this in mind, the following action items are recommended:

- Seek Funding for Marketing and Tower Operations:
  - It is estimated that a minimum of $15,000 to $20,000 per year will be needed for marketing air charter and fractional jet operators.

- Continue to work with the Military to permit 24-hour operation of the Airport:
  - It is estimated that between $250,000 and $300,000 would be needed to fund 24-hour operation of the Control Tower.
  - It is possible that the Airport rules could be changed to allow operation during night hours without a Tower, but such a change may take significant time to receive approval and be implemented.

- Market Known Sources of Existing Air Charter Activity:
  - This would include discussions with air charter companies in the region, especially at Bradley International, and college and university athletic programs that fly using charter aircraft.

- Identify target Fractional Jet Operators that currently use nearby airports:
  - Prepare direct marketing materials for fractional jet operators
  - Use new Airport branding in direct marketing materials

- Coordinate efforts with economic development agencies.

Summary

Key to the success of this alternative will involve the retention of a marketing firm that has general aviation expertise and/or additional staff time at Westover. In addition, the change in operating hours for the Airport will be important in attracting more air charter and fractional jet operators. Similarly, the general aviation/corporate component (discussed next) will also have a significant stake in 24/7 Airport operation. Because this alternative involves marginal gains in activity, it may not receive the priority it deserves. This is particularly true of the fact that some air charter activity can be counted toward the 10,000 annual enplanement threshold for non-primary airport entitlement funding. Thus, this component of activity may have a disproportionate return on investment (above and beyond fuel sales and hangar space rentals).

Option 3: General Aviation/Corporate

This option refers to attracting business aircraft owners and operators of varying size to locate on the Airport.

General Aviation/Corporate	
Description: This alternative considers the attraction of general aviation and corporate/business aircraft to the Airport. Additional activity can be in the form of based aircraft or itinerant operations. Ideally, based aircraft would draw from business jets and multi-engine aircraft in the area and any new growth that may occur naturally because of business needs in the service area. Itinerant aircraft would be attracted for similar reasons, but also for maintenance or other aircraft-specific needs.	
Market Demand	Examination of the business aircraft population in Hampden and Hampshire Counties indicates a total of 8 jets and 14 multi-engine aircraft. Westfield Barnes Regional Airport has 11 jets and 7 multi-engine based aircraft, indicating that a number of them are from outside the two counties. Activity at Bradley International similarly indicates a strong demand, and could serve as a potential source of new traffic at Westover.
Facilities Required	Runway length would accommodate any size aircraft. Hangar facilities would be needed - particularly the mid-size types between 5,000 and 10,000 square feet. Service amenities would also be needed, lavatory service, catering, APU, aircraft maintenance, etc.
Labor Force Required	This would not be a factor, in that corporate and business aviation interests would provide their own crews, dispatch, maintenance, etc.
Marketing Efforts Required	Westover Metropolitan Development Corporation would need to market business and corporate aviation. This would likely involve attending the NBAA annual conference and marketing regional operators. Incentives will be needed.
Likelihood of Success	There may be limited success because of the competitive options available. Westfield Barnes has extremely low fuel prices and great facilities. Hartford-Bradley is close enough to provide competition as well. Thus, Westover should find some small niche that is specific to the corporate operator that competitors cannot provide. The intent would be to complement existing corporate activity by capitalizing on what is currently not offered in the region. This particularly applies to Westfield Barnes given its proximity and placeholder as a Massachusetts business-friendly airport.
Timeframe	Because the hangar facilities needed for corporate activity are not prepared, there is a minimum timeframe of 2-3 years. Marketing of business aviation can be ongoing simultaneous to the development of adequate hangar facilities.
Value to Westover Civilian Operation	The value to the civilian operation is significant because: corporate/business GA aircraft buy large quantities of fuel; rent large hangars; and purchase aircraft maintenance.
Value to Military	The value to the military operation is not as significant as its value to the civilian operation. The military benefits when the civilian operation is better able to cost share on potential airfield projects.

Defined Goals and Objectives

The following goals and objectives provide a direction for accomplishing this alternative:

- **Goal 1 - Seek to double the number of corporate jets and add 10 smaller GA based aircraft at Westover Airport**

    - Objective 1 - Launch New Airport Branding and Marketing Campaign: To grow this activity, WMDC should fund, develop, and launch marketing and promotional campaigns that target corporate owners and operators and smaller general aviation aircraft owners and pilots. Again, larger regional employers should be considered, as well as opportunities that could

possibly stem from economic development projects such as MGM Springfield.

- Objective 2 – Initiate Creative Pricing Promotions to Increase Jet Fuel Sales: Advertise and promote Westover aggressively to increase jet fuel sales by 50 percent over the next 5 years.

- **Goal 2 - Increase the number of itinerant operations by all aircraft types, with focus on corporate jet operations and fractional jet operators.**

- **Goal 3 - Develop or rehabilitate hangar space to accommodate new based aircraft. Achieve 20,000 additional square feet of conventional hangar storage and 10 box hangars or T-hangars for smaller general aviation aircraft.**

  - Objective 1 – Identify Available Land for New Hangar Development and/or Existing Facilities Suited for Rehabilitation.

  - Objective 2 – Create Development Concepts for Use on Airport Website and in Marketing and Promotional Materials.

Operational Components

Similar to the discussion on Air Charter and Fractional Jet Operators, the Airport is already set up to receive business general aviation activity. There are three new or expanded operational components associated with this alternative:

- **24-Hour Operation**
  Seek 24-hour Airport operation via shared funding of Tower or a change in the military rules requiring Tower operation for Airport operation. This will help attract the corporate jet operators who require 24 hour air access.

- **Corporate Aircraft Services and Amenities**
  Provide services for corporate aircraft including lavatory service, ground power units, deicing, and catering. If unavailable through Airport Operator, consider third party service.

- **Business Amenities and Services**
  Ensure convenient ground transportation and conference room availability in the terminal building.

  - Hertz Rent-a-Car is located just off the Airport, but prior arrangements must be made to have cars delivered to the facility during business hours. After hours ground transportation services are needed either via a

courtesy car, on-airport satellite rental car facility with a small inventory of cars, or other means.

Financial Factors

Again, because the Airport is already set up to accommodate general aviation activity, the financial factors associated with this alternative reflect those of the air charter and fractional jet operator scenario. In addition, the cost of developing hangar space is included here.

- **Marketing Funds**
  Marketing funds will be needed to attract more general aviation and corporate operators to Westover. This item was described previously for the fractional jet and air charter scenario. Funding for one will be utilized to jointly market for the other.

- **Control Tower Funding**
  Funding for Control Tower operation during night hours may be needed. This item was described previously for the fractional jet and air charter scenario.

- **Hangar Development Funding**
  Funding will be needed for hangar space, including conventional hangars and box hangars for smaller aircraft (approximately 20,000 square feet of conventional hangar space and 10 T-hangar or small box hangar units). Roughly $3 million will be needed for construction or renovation of hangar space. It is possible that private enterprise may cover a portion or all of this investment in partnership with the Commonwealth which has budgeted for study and design funds.

Explicit Action Items

To fully execute this alternative, there are a number of action items that should be undertaken. Because the Airport already receives general aviation and corporate aviation activity, a go/no-go decision for this alternative will not result in a loss of this activity.

- Hangar Development Funding
  - Seek funding for hangar development or permit private enterprise to develop new hangar space.

- Seek funding for branding and marketing
  - Funding for this activity should be budgeted as a part of Airport operations.
  - Use direct marketing for all registered jets and other business class aircraft.

- Work with Military to permit 24-hour operation of the Airport.
  - Seek funding, if necessary to contribute to Control Tower operation.
  - Alternatively, determine whether rule changes from the military would permit the Airport to be open when the Tower is not open.

- Develop useable hangar space for corporate aviation (20,000 sf).
  - This assumes that hangar development funding was achieved or that private enterprise will develop the space.

- Market the Airport to general aviation and corporate aviation interests.
  - Continue to brand the Airport via Internet, social media, and trade shows.
  - Coordinate efforts with economic development agencies and projects, such as the MGM Springfield casino.

Summary

Keys to the success of this alternative will involve the ability to fund development of hangar space at the Airport. This can be through grants, low interest loans, or private enterprise development. The attraction of new based aircraft will also depend, in part, on the retention of a marketing firm that has general aviation expertise. Similar to the fractional jet and air charter scenario, the change in operating hours for the Airport will be important in attracting more corporate aviation. Because the Airport already accommodates general aviation and corporate jet operators, the financial gains will be marginal regarding fuel sales, hangar rentals, and other revenues.

Option 4: Air Service

This option refers to attracting commercial passenger service to the Airport.

Air Service	
Description: This alternative focuses on reestablishing commercial passenger air service to the airport. Based upon market research and a competitive analysis, it is believed that pursuit of an Ultra Low Cost Carrier (ULCC) is the best opportunity for air service at Westover. Traditional legacy carriers serving Hartford-Bradley International and other airports in the region have little to gain by splitting their operations to include Westover. Thus, seeking out a ULCC with the goal of offering a different type of passenger product to service the greater region providing complementary service, rather than competing, will allow the greatest chance for success.	
Market Demand	Presently there is no ULCC serving the region within two hours of Westover, leading to potential for higher demand. It is assumed that this type of airline would best succeed with service to leisure destinations, such as cities in Florida, and/or larger Origin and Destination markets like Chicago or Washington DC.
Facilities Required	Airside facilities are already in place. Terminal facilities are ideally suited for ULCC operations. Some modification and expansion of auto parking lots would be required.
Labor Force Required	Some additional operations and police staff will be required during flight operations, but the majority of labor force will be airline operations crew (non-WMDC).

Air Service	
Marketing Efforts Required	Marketing and branding efforts would be essential for success. Promoting the airport around the entire region and making travelers aware of the new choices and services offered would be a noteworthy effort.
Likelihood of Success	Success is greatly contingent upon airline reliability and marketing efforts, as changing passenger travel booking behavior requires effort. With no ULCC in the region however, this increases the chance for success.
Timeframe	The airport is ready and able to accommodate scheduled air service today.
Value to Westover Civilian Operation	Successful air service would provide an extremely valuable contribution to the surrounding community and provide a true purpose for the airport to the region.
Value to Military	While there is no direct value to the military; military personnel would benefit from additional civilian travel options and perhaps Westover cost offsets from services provided by the military.

Defined Goals and Objectives

The following goals and objectives provide a direction for accomplishing this alternative:

- **Goal 1 - Attract an Ultra Low Cost Carrier (ULCC) to Westover Airport within 2 years**
    - Objective 1 - Create a cost proposal package to present to prospective airlines. Cost proposal should be extremely attractive to the cost sensitivities of a ULCC and provide a clear cost advantage over other airports in the region.
    - Objective 2 - Meet with potential ULCC's to present cost proposal to start service at Westover. Negotiate cost agreement that is acceptable to both parties.
- **Goal 2 – Should airline service be obtained, raise awareness in consumer market using comprehensive marketing program.**
    - Objective 1 - Promote the Start of Airline Service: A complete marketing and advertising program is necessary to provide media exposure for newly acquired passenger service. The plan for marketing and advertising involves: television, radio, newspaper, and strategically located outdoor boards. In addition, a comprehensive social media campaign should be included to best appeal to all generations.
    - Objective 2 – Identify and Set Aside Marketing Budget: It is suggested that a total of $125,000 be set aside to cover marketing efforts over a two year period. Due to the need to generate the image, message and marketing materials in advance, the first year portion will amount to approximately $75,000. To sustain the message in year two, the second year portion will be approximately $50,000. Westover should maximize opportunities to leverage marketing with other agencies such as tourism

and local chambers of commerce. Westover can also consider bartering and in-kind marketing/advertising support.

- Objective 3 – Review and Evaluation of Marketing Program Effectiveness: Periodic review should be conducted quarterly to evaluate the effectiveness of the message and media employed. Adjustments should then be made as needed to ensure the most efficient return on investment.

- **Goal 3 - Should airline service be obtained, seek to enplane 10,000 passengers on an annual basis to achieve eligibility for $1 million in primary airport entitlement funding.**

  - Objective 1 – Continued Marketing and Promotions Campaigns.

- **Goal 4 – Maximize revenue potential from new air service.**

  - Objective 1 – Implement a Passenger Facility Charge (PFC) of $4.50 per passenger. Additional revenue from the PFC imposed on each ticket sold from the Airport can be used towards improving airport facilities and also serve as the local match on grant funded projects.

  - Objective 2 – Implement Auto Parking Fees. Fees for parking should start at around $5.00 per day for the first two years, then ramp up to approximately $8.00 per day by year three.

Operational Components

Westover Airport intends to continue its meetings and discussions with both Allegiant and Frontier until service is successfully launched. If service were to begin in the summer of 2015, the service would likely be announced sometime in March or April of 2015. Service to leisure destinations in Florida would likely be announced in the summer with a late fall/early winter start date. Regardless of when the service is launched, the cost proposal and marking program provided would continue for two years.

Proposed Project Timelines	
Activity/Project Milestone	**Estimated Dates**
Develop Airline Cost Proposal	November 2014
Airline Meetings	Ongoing Until Service Obtained
Announce Service	March 2015/6 or July 2015/6
Market/Advertise Route (Pre-Launch)	April - June 2015/6
Monitor Advance Bookings	April - June 2015/6
Adjust Marketing Plan Based on Advanced Bookings	April - June 2015/6
Begin Service	June 2015/6 or November 2015/6
Market/Advertise Route (Post-Launch)	From Commencement of Service

Proposed Project Timelines	
Monitor Route Performance	Ongoing

In addition to these airline service milestones, other associated operational components include the following:

- **TSA and Local Law Enforcement**
  Work with the Transportation Security Administration (TSA) and local law enforcement to ensure airline schedule is covered by adequate security screening. The current arrangement with TSA is for on-call service as needed by qualifying air charter flights or diverted airline flights. This arrangement would have to be upgraded to provide screening service when airline flights are scheduled.

- **Ground Handling**
  Ground handling involves servicing an aircraft usually when it is parked at the gate of an airline terminal. Typically, it includes cabin cleaning service, catering, and ramp service.

  - When developing the operational requirements and cost proposal, the airport should evaluate both in-house as well as contracted out ground handling services.

  - The value of ground handling has been estimated to total $600 per aircraft flight. With four flights per week, the value of ground handling is $125,000 per year. Over the two-year project period, this totals $250,000.

- **Auto Parking**
  Develop an auto parking logistics solution for increased auto parking demand and remote lots. Currently, there are roughly 125 parking spaces within walking distance to the Terminal building. Additional parking spaces would likely be required with ULCC service. A range to be expected would be between 50 and 80 vehicles per departure. Additional parking could be accommodated on other existing pavement or temporary gravel surfaces. Due to the added expense, shuttle operations should be avoided if at all possible.

Financial Factors

There are a variety of financial and organizational factors or questions that need to be addressed during the implementation of this service. The total anticipated cost is $686,000. This cost includes community-provided cash and the value of in-kind airport incentives. The community cash funding would total $25,000 from the Westover Metropolitan Development Corporation and $100,000 from the Commonwealth of Massachusetts. In addition, $311,000 would come from in-kind airport services. A

grant application was submitted under the U.S Department of Transportation's Small Community Air Service Development Program (SCASDP) in 2014 to cover the remaining $250,000. However, the grant was not awarded, leaving a $250,000 shortfall from the original plan. Other funding sources and in-house resources should be considered to provide the lowest cost possible to a prospective airline.

In addition to the anticipated cost associated with the implementation of service, other financial considerations are noted below:

- **Matching Funds**
  Obtain previously committed matching funds for unsuccessfully SCASDP grant ($125,000). Of this total, the Commonwealth of Massachusetts has pledged $100,000 and the WMDC has pledged $25,000. While the SCASDP grant was not received, these funds should be reserved for use when the Airport successfully attracts an airline or to match a future SCASDP grant application.

- **Institute Airport Fee Waivers**
  Fee waivers issued by the Airport to the ULCC involve Landing Fees, Aircraft Parking/Apron Fees, and Terminal Use Fees.

  - Landing Fees: The Airport currently charges $1.43 per 1,000 pounds in landing fees for commercial aircraft such as the MD-80 or Airbus 319. These fees would be waived for a two year period as a start-up incentive. With four flights per week, the value of waiving the landing fees is $44,500 per year for the MD-80 and $49,400 for the Airbus 319.

  - Aircraft Parking/Apron Fees: Westover Airport currently charges $250 for aircraft parking. This translates into $52,000 in waived parking fees per year.

  - Terminal Use Fees: Terminal use fees are valued at $260 per flight. This translates into $54,100 in waived fees per year.

- **Structure Airline Lease Agreement**
  Prior to the institution of air service, WMDC must structure an airline lease agreement for space within the Terminal building. This lease should include a description of the responsibilities and services to be provided by Westover along with those to be provided by the airline. These should follow the proposed lease arrangements described in the airline cost proposal.

- **Institute Passenger Facility Charge (PFC) Program**
  Once airline service is established, WMDC should institute a PFC program using the maximum permitted passenger facility charge (currently $4.50 per enplaned passenger). Given the forecasts of passenger demand for this new service, it is

estimated that up to $138,000 can be generated annually from PFCs for use towards eligible projects.

Explicit Action Items

The action items associated with this alternative are associated with the recruitment and successful launch of commercial service operations at the airport. There is a tremendous amount of work that is required not only to recruit an air carrier to start service, but also to prepare for and to sustain service as well.

- Focus on Ultra Low Cost Carriers
  - Continue to work with ULCCs rather than legacy carriers, which already serve Hartford-Bradley International. The model for this airline service only works with ULCCs because of the proximity of traditional or legacy carriers. In short, the low pricing of these fares stimulates markets that exist below regular airline pricing.

- Airline Cost Proposal Package
  - The key to attracting a ULCC is providing a cost advantage over other potential airports. Low airport costs and minimal facilities allow the airline to offer lower fares and further stimulate passenger demand. A comprehensive cost proposal should be prepared to present to ULCCs including items such as fee waivers and in-kind services.

- Auto Parking Logistics
  - Develop an auto parking logistics solution for increased auto parking demand and remote lots. Auto parking can be on existing or new pavement/gravel. The lot configuration should ideally lend itself to revenue control (payment) points. Shuttling passengers provides and added cost and should be considered a last resort.
  - Develop a fee strategy for auto parking that encourages growth in air service but drives additional revenue for the Airport.

- TSA Coordination
  - Coordination with TSA and Local law enforcement for adequate airline service schedule coverage.

- Marketing
  - Initiate marketing program once service agreements are reached. The marketing program for Westover will require a wide variety of media outlets as well as social media to reach a multi-generational passenger base. The primary challenge in the marketing effort is to change passenger booking behavior to educate potential fliers on the new airport choice in the region

Summary

The presence of a comprehensive plan and cost-friendly operating environment are crucial to attracting a ULCC. The Airport is targeting either Allegiant Air or Frontier Airlines to provide the low-cost service. It is believed that these two carriers, and perhaps Spirit Airlines, are the only ULCCs that could make Westover Airport a successful launch point for scheduled airline service. The Airport already has all of the facilities and certifications required by the FAA and TSA to begin airline service immediately, and can accommodate up to 100,000 passengers per year with only minor changes to the existing terminal building facilities.

Option 5: Aviation/Aerospace Education Initiative

This section details the concept of establishing aviation degree and/or certification programs in partnership with local institutions of higher-education. This option also encompasses partnerships with those institutions that already have, or are likely to have, aviation-related programs in place such as UMASS and Westfield Vocational High School.

Aviation/Aerospace Education Initiative	
Description: This alternative focuses on the establishment of aviation-related academic degree and/or certificate programs at the post-secondary level, in partnership with local colleges and universities. The option exists to implement 2-year and/or 4-year programs, as well as the potential to later incorporate similar curricula into K-12 schools with STEM initiatives. Possible degree concentrations include aircraft maintenance (A&P), avionics technology, aviation security, aeronautical engineering, air traffic control, supply-chain logistics/procurement, computer science, airport management, and professional flight.	
Market Demand	Reports from the U.S. Government Accountability Office indicate substantial existing and future demand for aviation and aerospace industry personnel. These reports are supported by thriving aviation programs across the country, which are often proximate to other aviation businesses and Research and Development (R&D) initiatives. Additionally, the surrounding cluster of competing higher-education institutions and their related student populations indicate an on-going demand for unique degree programs that will attract new students. The proposed UMASS/NASA Aviation Research and Training Center emphasizing ATC and UAS/UAV programs is a prime example of this.
Facilities Required	Classroom facilities and technologies will be required, either through the use of existing colleges and universities, or through the renovation of on-airport buildings. To date, several buildings at Westover have been earmarked to serve this purpose. In addition, degree programs that regularly incorporate the practical application of curriculum objectives - maintenance, technology, flight ratings, etc. - will require hands-on learning environments such as ATC and radar simulators, maintenance parts and tools, and avionics consoles.
Labor Force Required	Academic instructors and curriculum specialists will be needed. The pool of surrounding colleges/universities should be utilized, along with that of experienced military personnel, particularly those with aviation-specific skill sets (A&P, ATC, etc.). Industry professionals should also be considered.
Marketing Efforts Required	Educational institutions should advertise the addition of any new degree programs and/or funding initiatives from government contracts related to aviation and aerospace. Marketing should be done in conjunction with the military, K-12 schools, industry leaders, and economic development agencies. Efforts should include regions beyond the local area, including other parts of Massachusetts and

Aviation/Aerospace Education Initiative	
	adjacent states. Illustrative of this is the partnership between the Commonwealth and New York to serve as an FAA Test Site.
Likelihood of Success	Numerous aviation-related programs have been successfully developed and implemented across the country in at both the secondary and post-secondary levels, particularly those working with private industry and/or government funded programs. The recent emphasis on Unmanned Aerial Vehicles (UAV) research and training is an example of this, particularly as demonstrated by partnering efforts between UMass Amherst and NASA/FAA. This alternative would strengthen numerous aviation development options (R&D, MRO, manufacturing), which would benefit from a supply of qualified workers and sharing in the resources provided to academic institutions. Finally, given the established high school aviation program at Westfield-Barnes, a post-secondary degree would complement and build upon that curriculum, making further success likely.
Timeframe	Time is required to coordinate with regard to curriculum design and approval within academia once a partner can be identified. Assuming a typical academic calendar, education classes could be offered as early as Fall 2016. Additional time considerations should be given if airport facilities are to be renovated and transformed into classrooms/labs. However, institutions with curriculum already in place, such as UMASS, could facilitate earlier start dates.
Value to Westover Civilian Operation	College/University funding and endowments could possibly be utilized for the creation of an aviation degree program, which would contribute to the local workforce and potentially attract a greater emphasis on public/private/military partnerships in the industry to the region. Grants related to STEM initiatives and transportation technologies are available through organizations such as the Federal Highway Administration (FHWA) and NASA. This initiative could also develop a pipeline of workers to support other alternatives.
Value to Military	The military could potentially utilize this partnership as a way to offset costs related to training, certification, and R&D, particularly with regard to A&P, ATC, and UAV programs. These programs are likely to result in new R&D investment on and around the base as well as support the advancement of new military missions. Finally, an aviation/aerospace education initiative would provide more degree options to local military personnel seeking to utilize their GI Bill.

Defined Goals and Objectives

The following goals and objectives provide direction for implementing this alternative from the ground up (i.e. no degree program). If Westover partners with institutions that already have degrees and curricula in place, these goals and objectives should be modified accordingly:

- **Goal 1 – Establish Aviation Education Partnerships**
  Outreach with local and regional stakeholders and/or decision-makers should be initiated to garner resources and support.

  - Objective 1 – Identify Stakeholders: Individuals and organizations to be impacted by, or benefit from, an aviation degree program should be identified. These include K-12 schools, colleges and universities, military units and veterans, industry leaders, economic development agencies, and more. Stakeholders currently pursuing their own partnerships

(UMass/NASA/FAA) should be sought after in particular.

- Objective 2 – Initiate Communication: The first step is to conduct individual meetings with local and regional stakeholders to seek buy-in and support for the establishment of aviation education programs.

- Objective 3 – Identify Active Partnerships: It is anticipated that continued communication with stakeholders will result in the identification of tangible opportunities for partnerships, as well as potential market demand. The purpose of this objective is to "qualify" prospective users into groups or cohorts ranging from those who are interested and are able to partner (i.e. collaborate, invest, and/or otherwise actively support), to those who would support an aviation degree program, but do not have the resources to commit to an active partnership.

- Objective 4 – Document Support and Coalesce Project Advancement Team: Once active partners are identified, it will be important to document their support and gain commitment from partners to leverage their resources as they relate to advancement of the project. For example, these resources may include academic facilities, program funding, marketing efforts, and potential staffing. A consortium of colleges and universities from those listed in Chapter 1 - Table 3, *Educational Institutions in the Knowledge Corridor*, in would strengthen these efforts

- **Goal 2 – Develop Aviation Curriculum**
  The curriculum development process should focus on achieving the following objectives:

  - Objective 1 – Define Curriculum Program: The stakeholders which form the educational partnerships/cohorts should define which curriculum program should be developed first (i.e., aviation maintenance, professional pilot, ATC and UAV programs, etc.) as the courses and resources required for each will vary substantially. Also, the cohort should determine whether the curriculum will be completed via 2-year or 4-year programs, or result in an Associate's or Bachelor's degree, respectively. Certificate programs could also be considered, particularly for the A&P (Aircraft & Powerframe) programs. Degree programs which would further other alternatives mentioned in this chapter, such as the MRO and increased tower operating hours, should be given priority. Similarly, consideration should be given for the ability to expand on programs (i.e. 2-year programs later become 4-year programs or Aviation Maintenance could serve as a Major with an A&P certification as a Minor).

If partnering academic institutions currently have curricula and degree programs that are, or could be, related to aviation and aerospace, those existing courses and programs would meet all objectives under this goal, and should be given first consideration.

- Objective 2 – Identify Degree Objectives: Once the curriculum program has been narrowed and defined, the educational cohort must identify the curriculum objectives, or learning outcomes, for that specific degree program. What skills are required to be competitive in the workforce? What tasks will students need to master in order to be successful? What lessons will instructors cover in order to prepare students for real-world application? Are there certain outcomes stipulated by NASA or FAA grant monies? Stakeholders should provide input on curriculum objectives as they relate to the overall direction of aviation within the Commonwealth. Finally, accrediting bodies may be consulted for additional direction and resources.

- Objective 3A – Formulate Aviation Courses: Beginning with the end objectives in mind, the educational cohort should design the various courses needed to achieve those objectives. Courses should follow the typical progression of higher-order thinking outlined in Bloom's taxonomy, as should the overall degree program (i.e. freshman level classes versus senior level classes). Again, curriculum standards should be consulted as applicable, and many existing aviation/aerospace degree programs display their course descriptions and program requirements/credit hours online which could be utilized for comparison. An essential step to be included is the selection of textbooks to be used for each course, as they often provide a natural progression of introductory to mastery level topics.

- Objective 3B – Identify Necessary Resources: As courses are being developed, the logistical details of teaching those classes should be considered. Will they be taught on campus or at the Airport? Do they require a classroom or lab setting (i.e. hangar space, maintenance tools, simulators, or instructional aircraft)? Can the cohort identify potential instructors to teach, or staffers to handle student registration and orientation? Which of these resources can be provided through, or funded by, existing higher-education institutions? Are there other sources of funding available through donations, endowments, or grants? Is military surplus an option for garnering materials and tools? Can student co-ops be implemented with industry and military partners? Further study will be needed to refine facility requirements and funding sources, and establish an organizational framework.

- Objective 4 – Submit Curriculum for Approval: New degree programs will

need to be approved by the partnering academic institutions and accrediting bodies. Given the multiple number of departments and levels of academic governance, curriculum approval could take months, particularly if revisions are needed. It is advisable to work closely with academic partners and accrediting entities to ensure proper procedures and protocols are followed.

- **Goal 3 – Market Aviation Degree Program**
  Once approved, the aviation/aerospace program will need to be advertised to existing college students and prospective users (high schools, military units, industry employers, etc.). Partnering education institutions should have some level of marketing already in place, but additional efforts should be coordinated with the Airport and future users.

Operational Components

Functional components of an aviation/aerospace degree were identified based on knowledge of existing programs; however, some of these operational aspects could differ greatly depending on the chosen curriculum. Those operational components are addressed briefly below:

- **Administrative/Classrooms**
  It is assumed that facilities utilized at existing colleges and universities have been designed, and demonstrated, to satisfactorily foster and accommodate a learning environment. However, the age and condition of existing airport facilities may demand substantial renovation and rehabilitation prior to implementation of the degree program. Those facilities must be adequately sized for purpose/function and the number of anticipated occupants. All structures should be in accordance with local building and fire codes, including drainage and fire suppression systems to accommodate spillage or combustion of aircraft fuel/oil. Facilities must constitute an environment suitable for learning, including distractions from noise, fumes, heat, cold, and more. Non-instructional space such as lavatories and break rooms should also be considered. Further study will be required to identify detailed costs and needs related to transforming existing airport buildings into learning facilities. Additional deliberation regarding the logistics of course offerings/student scheduling (on campus or on airport) will need to be included.

- **Instructional Materials**
  Using an A&P program for example, the following tools, equipment, and materials are needed to comply with standards:

  - Airframe and Powerplant: Per FAA regulations, an aviation maintenance school must provide various kinds of airframe structures, airframe systems/components, powerplants, and powerplant systems/components

(including propellers) of a quantity and type suitable to complete the practical projects required by its approved curriculum. Additionally, FAA regulations permit no more than eight (8) students to work on any unit of equipment at one time; thus, multiple units may be required. Options for procurement of these materials include purchase and/or donation. If funds cannot be found to purchase instructional aircraft, donations of aircraft and aircraft parts should be sought.

- Shop Equipment: Provisions such as work benches, work tables, cleaning solvents, pressurized air systems, wash areas, airframe jacks, powerplant stands, inspecting scaffolds, etc. must be provided for students. A more comprehensive listing, and related costs, should be formulated to determine approximate need and potential sources.

- Maintenance Tools: Special tools required for instruction must be included in the school inventory per FAA regulations. Tools must be in satisfactory working condition and maintained accordingly. Schools may either provide common hand tools to students, or require students to furnish their own. Any tools the school requires the student to furnish must be listed in the curriculum and that list provided to students.

As stated earlier, these materials could change with the focus of the curriculum. Thus, consideration should be given to the procurement of instructional materials, as well as how their purpose and function will impact the siting and layout of future learning spaces.

- **Airport Security**
  The use of existing airport hangars and structures to serve as the site of future learning facilities warrants consideration of the airport's security program and TSA badge requirements (fingerprints, background check, etc.), as students and staff associated with the aviation/aerospace program could potentially have access to the Aircraft Operating Area (AOA), including military operations. Consideration to the cost, timing, and training required to receive Secure Identification Display Area (SIDA) badges should be accounted for during development and implementation of the program.

Financial Factors, Organization and Ownership

As discussed, there are a variety of financial and organizational factors that need to be addressed during formulation and implementation of this alternative.

- **Financial Factors**
  Broadly speaking, the successful implementation of an aviation education program will require funding for the following expenses:

- Curriculum Design
- Department Staffing
- Airport Renovations
- Materials Procurement
- Marketing Efforts

These costs will have to be discussed and negotiated between the Airport and partnering educational institutions, at a minimum. Potential funding sources to cover these costs may come in the form of existing academia channels, aviation and/or education grants, and private investment/donations.

- **Organization and Ownership**
  Given the intertwining of financial and operational aspects, the Airport and its educational partners should explore how their distinct roles and functions will enable this alternative to be jointly implemented.

Explicit Action Items

For successful implementation of this alternative, the following actions should be taken:

- Contact institutions of higher education, military officials, industry leaders, and economic development groups for potential collaboration.
  - UMass Amherst, Springfield Technical Community College, and Westfield State to be targeted as part of larger consortium
  - Quantify demand and likelihood of success
- Connect this effort to the UMass Amherst Aviation Research Development and Training Center's creation as appropriate
- Identify specific aviation program to be established; create curriculum.
  - Coordinate with FAA
- Create timeline for curriculum design/approval and other needs
- Identify needs and costs related to implementation of degree program
  - Identify potential sources of funding
  - Assign educational partners to champion specific needs/sources
- Secure funding
- Address organizational hierarchy and financial income/expenditures between Airport and partnering institution
- Receive any initial accreditations as necessary

- Accept students for program matriculation
- Participate in continuing evaluation of program and student success

Summary

Based on industry data, government reports, and regional attributes within the Pioneer Valley, the Aviation/Aerospace Education Initiative is a prudent and practical option to undertake as it relates to airport and community development. This alternative would capitalize on the Knowledge Corridor's resources and student population, while fostering specialized workforce training that benefits public and private aviation employers and military users, including potential mission changes. While some capital investment is needed for structural renovations and material procurement, many components of this alternative are already in place.

Option 6: Consolidated Public Safety Facility

This section describes the concept of constructing a consolidated public safety facility on the Airport.

Consolidated Public Safety Facility	
Description: As envisioned, a consolidated public safety facility at CEF is aimed at centralizing multiple types of public safety training capabilities and facilities into one co-located facility/complex at the Airport. Such a facility would include firefighting, police/MP, and other first responder training programs that served all municipalities and providers in the Springfield area and beyond.	
Market Demand	The civilian market demand is unknown, but would provide a training option for civilian EMS, corrections, police, and firefighters. This facility would see instant use from the military, who would be a tenant. Additionally, local colleges may base curriculum around the availability of the facility.
Facilities Required	A new facility would need to be constructed to house the required facilities. The multi-use nature of the building would result in a high cost of construction. Construction is likely in the $20-30M range; however, the re-use of existing facilities and phasing of training components (i.e. shooting range first, burn facilities next, etc.) would reduce initial costs.
Labor Force Required	Much of the labor force needed is likely to currently exist at the Westover ARB. Additional labor would come from existing civilian facilities, which would consolidate at the new facility.
Marketing Efforts Required	Little to no initial marketing efforts would be required. However, the facility should be marketed beyond local services to include other areas in Massachusetts and perhaps adjacent states.
Likelihood of Success	Many other states have successfully developed this type of consolidated facility such as the James M. Robey Public Safety Facility in Howard County, MD.
Timeframe	Property is readily available. Funding will likely take time to coordinate, as will design and construction. Overall, this option would likely take at least 24 months to be operational. Focusing on implementing one particular training component at a time would result in quicker execution, but a longer timeframe overall.
Value to Westover Civilian Operation	If grant funding could be found to cover most of the costs, an immediate source of new revenue would be created for the Westover Airport.
Value to Military	Westover is looking for an off base site close to the gate which would support military weapons qualification needs while also serving the needs of regional law enforcement agencies and supporting commercial/recreational shooting. This

Consolidated Public Safety Facility	
	kind of facility would eliminate the need for a military funded facility. Further, a consolidated facility should reduce the military's operating costs for other training functions as well.

Defined Goals and Objectives

The following goals and objectives provide a direction for accomplishing this alternative:

- **Goal 1 – Project Exploration, Discovery, and Definition**
  The process of constructing a consolidated public safety facility should proceed via the following objectives, which shall serve as the exploratory and discovery stage of development:

  - Objective 1 – Identify Facility Requirements: The first step toward developing a consolidated public safety facility is to define the requirements for each functional use of the prospect facility. This consists of identifying the training needs of potential law enforcement, firefighting, emergency medical, corrections, and military users. This step includes quantifying specific spatial, technological, facility, and equipment needs for each functional component such that a consolidated facility can be conceptualized and located on the Airport.

  - Objective 2 - Identify Development Options: The second step is to identify various development options, which should include reuse or redevelopment of existing facilities on the Airport, completely new development on a vacant Airport parcel, or some combination of new construction and redevelopment. Development options might also be crafted to consider phasing for basic, intermediate, and advanced, or highly specialized, training depending upon prospective users. One example of this would be to focus on constructing a shooting range initially, and then adding additional desired training facilities as demand warrants.

  - Objective 3 – Design Concepts and Costs: Once several viable development options have been identified, 2-3 development concepts should be advanced based on benefits and obstacles presented by the development option. Additionally, planning level cost estimates and pro formas for each development option should be prepared.

- **Goal 2 – Outreach with Prospective Users**
  Once Goal 1 is accomplished, the process should proceed to outreach with prospective users (local and regional stakeholders and decision-makers) in order to gain support.

  - Objective 1 – Initial Communication: Meet with local and regional

jurisdictions and/or agencies to seek buy-in and support, including the military and entities belonging to the Air Force Community Partnership Program. This objective is akin to selling a product or service, where the concept of a consolidated regional public safety facility is presented and sold to local and regional "customers".

- Objective 2 – Identify Active Partners/Partnerships: It is anticipated that initial rounds of communication will result in the identification of real opportunities to partner with local and regional jurisdictions or agencies. The purpose of this objective is to "qualify" prospective users into groups ranging from those who are interested and able to partner (i.e., collaborate, invest, and/or otherwise actively support) to those who would utilize the facility if it was available but do not have the resources to commit to an active partnership.

- Objective 3 – Document Support and Coalesce Project Advancement Team: Once active partners and support is identified, it will be important to document this support and gain commitment from partners and agree to leverage resources to advance the project.

Importantly, Goal 2 can be pursued prior to or concurrently with Goal 1 as identified here, depending upon the sponsor's knowledge and understanding of the local and regional political and cultural environment. As described here, it is proposed to first develop concepts that can be taken to decision-makers and arouse interest and excitement for this idea. It is assumed that generating support may rely heavily on capturing the imagination of prospective users with illustrations and information about how the facility will meet their needs better than their current facilities. However, the WMDC could choose to conduct outreach first and prior to exploring requirements and developing facility concepts and design options.

- **Goal 3 – Document Business Case**
  At this point in the process, the sponsor would document the following:
  - Quantify Market Demand
  - Refine Facility Requirements
  - Identify Funding Sources (i.e., local and regional budgets, and/or state and federal grant programs)
  - Explore Organizational, Ownership, and Legal Framework

Operational Components

Preliminary research was performed to identify functional components that may be included as part of a consolidated public safety facility at Westover Airport.
The components and summary information described here are credited to the following similar facilities found during this research:

- Public Safety Training Campus, Montgomery County, Pennsylvania
- Treasure Coast Public Safety Training Complex, Indian River State College, Fort Pierce, Florida
- Public Safety Training Center Concept, Hagerstown Community College, Washington County, Maryland
- Public Safety Training Center, Bloomington, Indiana
- Public Safety Training Center, Clackamas County, Oregon

Functional components of these facilities include:

- **Administrative/Classrooms**
  Facilities noted spaces for administrative functions and classroom training, some of which were large enough to house an auditorium, full commercial kitchen and cafeteria facilities, apparatus/equipment storage bays, or other general facilities suitable to co-location. Also mentioned is a backup facility for county or regional 911 communications and/or emergency operations centers. Research indicates up to 50,000 square feet for this functional component. Such a building or functional component permits and supports emergency medical services training at various levels, such as EMT and paramedic.

- **Firefighting Training Facilities**
  Research returned a variety of facilities for use by firefighting agencies for training, including:

  - Structural Burn Building: One such 20,000-square-foot building has three sections configured to simulate the types of structures and conditions firefighters are most likely to encounter.

  - Drill Tower: One facility offered a drill tower, which is an open four and five-story structure with a wide variety of uses, including aerial apparatus and ladder training, rappelling, rope rescue training, multi-story hose advancement and use of standpipes.

    There is presently a three-story fire training tower on the military base, which includes a 30-foot tower for rappelling and laddering, and two burn rooms. The Chicopee Fire Department also utilizes this structure for training.

  - Other Firefighter Training Facilities: Another facility offered extended facilities such as a two-story smoke house, drafting pit, and flammable gas pad. The smoke house contains a maze to familiarize trainees with the use of breathing apparatus and to practice search and rescue skills. The drafting pit is for training in pump operations and the flammable gas pad is used for fire extinguisher training.

The military base is equipped with a flammable gas pad. The pad utilizes a large, empty airframe that is set aflame via a controlled propane unit. The airframe allows for aircraft fire extinguisher training related to FAA Class "E" ARFF standards.

- **Law Enforcement/Police**
  Research returned a variety of facilities for use by firefighting agencies for training, including:

  - Tactical Response Training Center: One tactical response training center is primarily a firearms training complex and is comprised of an indoor 50 yard range, an indoor 100 yard range and a classroom equipped with a firearms simulator. Others include specialized tactical labs and simulators with large facilities being over 20,000 square feet, and small specialized buildings comprised of just 5,000 square feet. Some complexes and/or campuses also offered:

    - Freshwater lake for underwater search and recovery, accident staging and site-related environmental mitigation;
    - Skid pad for tactical and defensive driving training; and,
    - Agility course for trainees to strengthen physical ability and teamwork.

    The military performs tactical and defensive driver training along Taxiways G and R, including PAD 19 (Hot Cargo Area) which serves as the skid pad. Additionally, there is an outdoor shooting range that is utilized for weapons training/currency; however, it is in disrepair and does not favor particular types of ammunition.

    Two parcels of land have been identified to serve as potential sites for an indoor firing range and agility course. These parcels are located at the end of Dexter Road, adjacent to the terminal apron area. The proposed sites are ideal in that they would allow military access from the airfield, implying that weapons and personnel would not need to be transported off property. Moreover, one of the parcels features sandy terrain and a 25-foot grade change, which may greatly facilitate an agility training course.

  - Live Fire Shoot House: Another public safety facility offered a live fire shoot house, which was comprised of five rooms and three breaching doors. The facility provides training for law enforcement officers in close quarters combat and high risk entries.

Law enforcement and/or police training facilities also support use and training by corrections academies or agencies.

- **Military**
  For the purpose of this alternative option at Westover Airport, any military training function to be housed within a consolidated regional public safety facility would have to meet the needs of the Westover ARB mission, which would be defined during completion of Goal 2. It is clear that much of the functionality of the facility would be similar to training requirements for similar military job functions such as military police and firefighting.

Financial Factors, Organization and Ownership

Beyond defining facility requirements and outreach to gain traction, support, and partners, there are a variety of financial and organizational factors or questions that need to be addressed during the exploration and discovery process of this project. These include:

- **Funding and Financial Factors**
  The funding and financial side of this project represents finding capital dollars for construction and also annual financial support to operate such a facility. This presents a significant hurdle, as it is likely that no one or two agencies have the resources to fund such a large project alone. As such, WMDC may need to attract broad support in order to mobilize and align state and federal funding programs with local and regional capital budgetary and even election cycles.

- **Organization and Ownership**
  In concert with addressing funding and financial obstacles, WMDC and the advancement team must explore options for organization, ownership, and operation of a public safety facility. For example, this could be a singular agency that is positioned to lead. In such an instance, an existing agency would participate as the lead assuming all of the legal risk, but funded initially and annually by partners that adopt resolutions to allocate funding. Alternatively, the advancement team could consider creation of a new, third-party independent agency that is owned, operated, staffed and funded equally or in tiers and governed by its own leadership to which all partners contribute.

Explicit Action Items

Due to the complex nature of this alternative option, this Plan cannot include a full feasibility assessment to advance this option further to a go or no-go decision point. Therefore, it will be necessary for WMDC to study all items discussed here in greater detail. With this in mind, the following action items are recommended:

- Explore Facility Requirements and Concepts
  - Quantify Spatial Requirements

  - Identify On-Airport Locations
  - Explore Reuse/Redevelopment Options
  - Explore New Development Options

- Craft Development Schematics and Cost Estimates
  - Design Conceptual Drawings
  - Develop Planning Level Cost Estimates

- Marketing and Development Outreach to Prospective Users
  - Develop Marketing Brochure and/or PowerPoint
  - Conduct Initial Round of Local and Regional Stakeholder Meetings
  - Identify and Qualify Potential Partner Groups
  - Document Support/Issues

- Mobilize Advancement Team
  - Conduct Feasibility Study
  - Shop for State and Federal Funding Programs and Support

- Go/No-Go Decision

Following the action items listed here will allow WMDC to achieve the goals and objectives described in this section, and may help further advance this alternative option from concept toward reality. This Plan assumes that a 24 month construction period would be required to realize an operationally complete first phase, there is likely a prolonged and unpredictable period of building support in the exploration and discovery phase.

Recommendations

The recommendations resulting from this Airport Business Plan are as follows:

- MRO
- Fractionals/Air Charter
- General Aviation/Corporate
- Air Service
- Aviation/Aerospace Education Initiative
- Consolidated Public Safety Facility

Please note that each of the alternatives presented should be pursued in an opportunistic manner. However, rather than focusing on one or two at the expense of all others, an inclusive, or holistic, strategy should be embraced by pursuing multiple opportunities simultaneously. Although some alternatives presented result in stronger revenue for the airport, each alternative adds significant value to the operation and sustainability of both the civilian and military facilities. Moreover, it is possible that several of these recommendations may be interwoven with each other, implying that their individual success is dependent upon that of another. Additionally, attached is a financial narrative and pro forma, which provides further analysis of revenue and expenses for each alternative evaluated. The financial analysis can be used to help program future capital funds based on those opportunities which meet the established vision for the airport, the base, the community, and the Commonwealth.

Further Consideration and Commentary on Military Mission Options

Westover ARB faces challenges similar to many military installations in these times of strategic economization, yet their unique infrastructure and excess capacity provides tremendous opportunity for growth in support of military mission needs. The Department of Defense is constantly evaluating and reevaluating the geographies of missions across the services while attempting to balance the matchup of requirements and resources on a national and international basis. Budget reductions further influence this decision making process making value propositions a welcome consideration for DOD decision makers.

Military mission decisions are generally made solely by military leadership. These decisions rely on the DOD requirements for missions and mission support. The other half of the decision making process lies in the resources – i.e. facilities, airspace, manpower, supply chains, access, etc. – that are available or may be made available at a location. The resources at Westover ARB that will weigh in any mission development scenario for the Base include such items as its geographic location, airside capacity, buildings and facilities, manpower, and existing uses in terms of conflicting or complementary functions.

The Air Force recently initiated a ground breaking rethink of exploring opportunities with local and regional communities adjacent to and near its facilities. The Air Force

Community Partnership Program was established by the Secretary of the Air Force in an effort to tap into new ideas for base and community partnerships that might yield innovation and prove to be mutually beneficial to involved parties. Innovation and partnership concepts could then be shared with other installations for potential repeats of value added actions. The Air Force Community Partnership Program is currently being processed at Westover ARB and has yielded some strong potential for further exploration and consideration.

Successful joint development of the Westover Airport and Westover Air Reserve Base will take an expansion of the new construct exhibited in the Air Force Community Partnership initiative with continuing efforts and opportunities to be explored that will mutually benefit the military and community stakeholders.

The strong partnership between Westover Airport, Westover Air Reserve Base, and the Military Asset and Security Strategy Task Force will allow all of the following recommendations to be studied in the near future. The Task Force and Westover have agreed to pursue any program with the potential to reduce Air Force operating costs, enhance Air Force mission, and enhance economic development opportunities for MA and the region.

Military Recommendations

It is recommended that coordination with the Air Force at the appropriate level is maintained, and the following opportunities are considered as the next step in executing the Airport Business Plan as it relates to advancing joint military/civilian opportunities:

- **Joint Westover Plan or Joint Land Use Study:**
  The Air Force and the Airport currently perform periodic planning efforts to assess and direct future development efforts for their respective portions of the airport. While each is cognizant of the others efforts when each entity's planning begins, the plans are generally more viewed as establishing limits to the current facilities rather than an opportunity for mission and airport development. A joint Westover master plan sponsored and supported equally by the Air Force and Airport, or through the DOD's Joint Land Use Study program could be a logical and productive follow on to the Air Force Community Partnership initiative currently underway at Westover. Sharing the goals and objectives of each entity at the onset of a planning effort and completing the process collaboratively could serve to identify new yet undiscovered opportunities.

  This concept is further embellished when any overages in resources, such as a spare Air Force hangar or facility resulting from any loss of mission at the Air Base could be considered for civilian use – even on a temporary basis to provide revenue to the military.

- **Preservation of Capacity:**
  The pending loss of 8 C-5Bs at Westover ARB will not result in excess facilities of any magnitude. The loss of aircraft will, however, result in a loss of some full-time enlisted and drilling reservist positions. There will be additional ramp space available for new missions in the future. Not knowing the future of Department of Defense needs and subsequent budget allowances, Westover ARB should seek to preserve current capacities for future new missions – new missions that may include a return to 16 C-5B/M aircraft.

  Air Force Reserve Command (AFRC) is slated to conduct a Strategic Basing Process in the near future to determine future basing for Air Force Reserve Tanker Aircraft the KC-46A. Westover ARB, by virtue of being an ARB will fall in the pool for consideration. Westover ARB might want to consider learning and addressing the particular basing attributes that AFRES would be considering for tanker basing. Developing an approach now is beneficial in moving towards creating a tanker compatibility facility if desired.

- **Expansion of Aerial Port Capabilities:**
  Westover ARB currently maintains a small aerial port capability. Cargo is not a primary mission of Westover at this time as Dover AFB maintains the primary aerial port capabilities on the east coast for the C-5B missions. A future consideration could include examination and promotion of Westover as a primary departure port for Europe (as the closest U.S. military C-5B base to Europe) while Dover would focus on the Middle East and other regions. Transcom (Transportation Command) makes the decisions as to the movement of military personnel and goods and would be a starting point for considerations needed to be addressed for this concept.

- **New Fixed or Rotary Wing Mission Potential:**
  The North Ramp at Westover maintains space that could accept a new mission for the installation. While there are no plans for any new mission at Westover, it is always prudent to consider possibilities in the interest of preserving the viability of Westover to remain in Military mission mode. A squadron of either fixed or rotary wing aircraft could be a viable new mission for Westover with plenty of ramp space available and land available for the development of supporting facilities.

- **Supply Chain Space Offer:**
  Westover ARB mission aircraft work in concert with Dover AFB to load and unload their payloads primarily because the supply chain distribution network better serves the Dover area. If there were opportunities to encourage a portion of the supply chain distributors to the Westover area by virtue of offering space on Westover ARB to these suppliers; a proactive approach to reorienting/supplementing/redirecting the supply chain support decisions more

toward Westover ARB, thus strengthening the geographic posture and the regional economics of Westover, may result.

- **New Controlled Airfield Technology – SATAS:**
  The discussions and analyses of operating the airfield at Westover on a 24 hour basis offer a host of advantages to civilian airfield operations. The civilian side of the Airport is exploring options for 24 hour airfield operations which includes one option of going to an uncontrolled airfield situation from the hours of 11 pm to 7 am. Although there are requirements to make this change, including a public input component, there are real opportunities to pursue 24 hour operations at Westover. Both civilian and military aircraft can land on uncontrolled airfields with one exception; military aircraft are not allowed to land on an uncontrolled airfield if that airfield is a DOD installation. Thus, Westover ARB currently requires a manned tower to make it a controlled airfield.

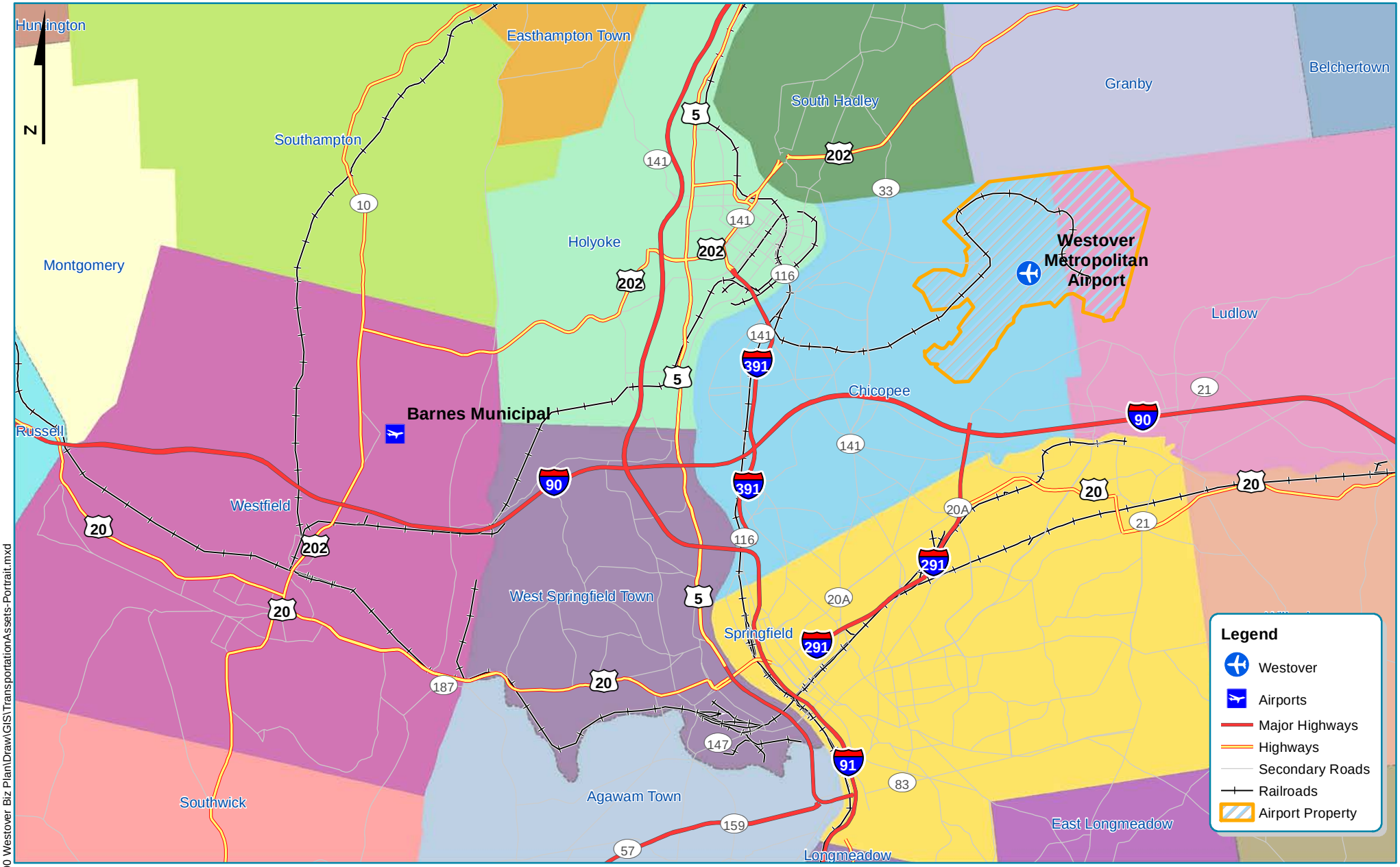
  The "uncontrolled" language is currently a red flag to military operators and operations due to the military's preference for manned towers. However, there is new developing technology that may change definitions of controlled and uncontrolled airfields. The new technology has been tested as proof of concept in the State of West Virginia and developers are currently working with the FAA, the state of West Virginia, and private investors to advance this new technology. There is potential that the Commonwealth of Massachusetts and the Air Force might be able to secure some of the technology for Westover's 24 hour operation and also assist in advancing the development of a new aviation technology solution. The upshot of the technology provides communications about obstacles and other aircraft to the aircraft operators by virtue of a system of radars and new communication software and in many ways eliminates the need for a manned control tower in some situations.

The opportunities represented in the above concepts, if desired for the future, should be well documented and packaged for future use in selling the ideas to potential advocates for Westover ARB. The packaging of the ideas should include documenting the need, the possibilities and the resources that would be required to carry the ideas forward. A similar approach has been used during past BRAC processes whereby an installation identified a "wish list" of potential new missions that the base has the infrastructure and workforce to take on. Each idea was separately packaged for presentation to influence decision makers with supporting cost benefit analysis. The packages represented both the desires and support from the installation associated with each idea and offered additional details to support the logic and the benefits of each idea.

APPENDIX A

LOCAL TRANSPORTATION ASSETS

FIGURE 11



WESTOVER METROPOLITAN AIRPORT

0 2.5 5 Miles

DATE: JULY 2014

McFarland Johnson

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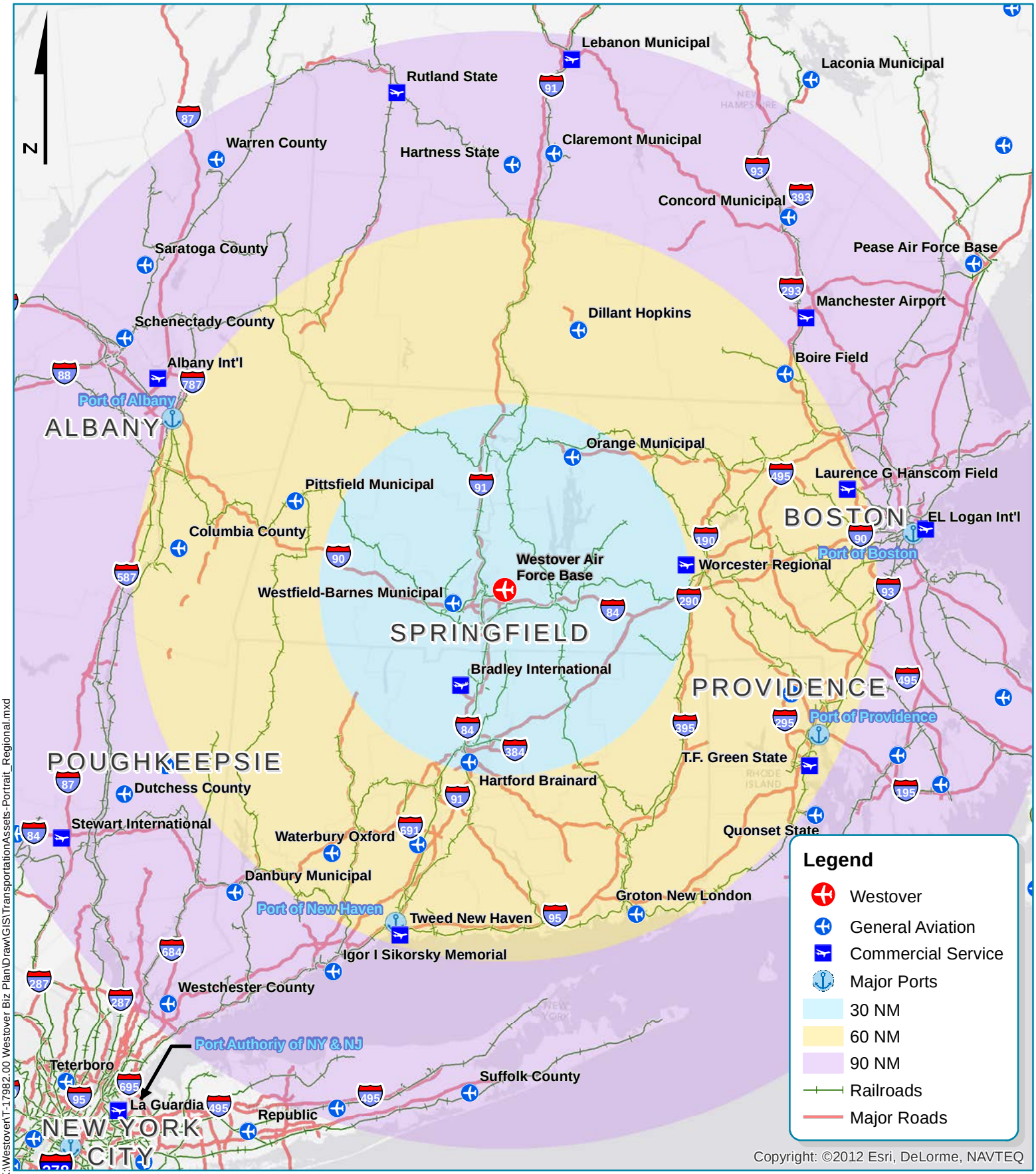
REGIONAL TRANSPORTATION ASSETS

FIGURE 12



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WESTOVER METROPOLITAN AIRPORT

0 20 40 Miles

DATE: JULY 2014

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APPENDIX B

Table 10 – Westover Airport Market Assessment – Comparison of Market Area Airport Facilities

Airport	Based Aircraft									Runway (feet)		NAVAID	
	Owned	Acres	Jet	Multi	Single	Heli	Glider	Mil	Total*	First (L x W)	Second (L x W)	(Highest)	Tower
Westover	Public	2,500	3	3	11	1	2	16	17	11,597 x 301	7,082 x 150	Precision	Y
COMMERCIAL SERVICE													
Bradley International	Public	2,432	26	7	1	4	0	17	34	9,510 x 200	6,847 x 150	Precision	Y
T.F. Green State	Public	1,125	6	1	22	15	0	0	29	7,011 x 150	5,107 x 150	Precision	Y
Tweed New Haven	Public	1,111	4	8	31	0	0	0	43	7,166 x 150	6,081 x 150	Precision	Y
Worcester Regional	Public	394	0	6	59	0	0	0	65	5,600 x 150	3,626 x 100	Precision	Y
GENERAL AVIATION													
Boire Field	Public	400	16	26	181	9	4	0	223	6,000 x 100	N/A	Precision	Y
Columbia County	Public	260	2	3	23	0	0	0	28	5,350 x 100	N/A	Non-Precision	N
Danbury Municipal	Public	248	10	37	244	2	0	0	291	4,421 x 150	3,135 x 100	Non-Precision	Y
Dillant-Hopkins	Public	939	2	5	60	1	0	0	67	6,201 x 100	4,001 x 150	Precision	N
Groton New London	Public	489	6	8	36	1	0	2	50	5,000 x 150	4,000 x 96	Precision	Y
Hartford Brainard	Public	201	4	9	119	3	1	0	132	4,417 x 150	2,314 x 71	Precision	Y
Laurence G. Hanscom	Public	1,000	88	30	254	15	0	0	372	7,001 x 150	5,000 x 100	Precision	Y
Orange Municipal	Public	580	0	2	37	0	0	0	39	4,999 x 75	4,801 x 75	Non-Precision	N
Pittsfield Municipal	Public	550	4	7	20	0	0	0	31	5,791 x 100	3,496 x 100	Non-Precision	N
Waterbury Oxford	Public	424	31	8	128	1	0	0	167	5,800 x 100	N/A	Precision	Y
Westfield-Barnes Municipal	Public	1,200	11	7	112	0	0	18	130	9,000 x 150	5,000 x 100	Precision	Y

Source: Airport Master Record, retrieved September, 2014 (www.gcr1.com/5010web/)

* Note: Total based aircraft number represents fixed-wing and civilian aircraft only; helicopters, gliders, and military aircraft are removed from this total.

Table 11 – Westover Airport Market Assessment – Comparison of Market Area Airport Services

Airport	Frame Repairs	Power Repairs	Flight Instruction	Charter Service	Avionics	Aircraft Sales	Aircraft Rentals	Other
Westover	N	N	N	Y	N	N	Y	Transient Hangar, Tie-Downs
COMMERCIAL SERVICE								
Bradley International	Major	Major	N	Y	Y	Y	N	Oxygen, Air Freight, Cargo, Transient Hangar, Tie-Downs
T.F. Green State	Major	Major	Y	Y	N	Y	Y	Air Freight, Cargo, Transient Hangar, Tie-Downs
Tweed New Haven	Major	Major	Y	Y	N	Y	Y	Oxygen (High), Transient Hangar, Tie-Downs
Worcester Regional	Major	Major	Y	Y	Y	N	Y	Cargo, Transient Hangar, Tie-Downs
GENERAL AVIATION								
Boire Field	Major	Major	Y	Y	N	Y	Y	Transient Hangar, Tie-Downs
Columbia County	Major	Minor	Y	Y	N	N	N	Oxygen, Transient Hangar, Tie-Downs
Danbury Municipal	Major	Major	Y	Y	Y	Y	Y	Oxygen, Air Freight, Aerial Survey, Transient Hangar, Tie-Downs
Dillant-Hopkins	Major	Major	Y	Y	N	Y	Y	Oxygen, Transient Hangar, Tie-Downs
Groton New London	Major	Major	Y	Y	Y	N	Y	Oxygen, Air Freight, Cargo, Aerial Survey, Transient Tie-Downs
Hartford Brainard	Major	Major	Y	Y	Y	Y	Y	Air Freight, Transient Hangar, Tie-Downs
Laurence G. Hanscom	Major	Major	Y	Y	Y	Y	Y	Oxygen, Air Freight, Air Ambulance, Transient Hangar, Tie-Downs
Orange Municipal	Minor	Minor	Y	Y	N	Y	Y	Parachute Jumping Area, Transient Tie-Downs
Pittsfield Municipal	Major	Major	Y	Y	N	Y	Y	Oxygen, Transient Hangar, Tie-Downs
Waterbury Oxford	Major	Major	Y	Y	N	Y	Y	Transient Hangar, Tie-Downs
Westfield-Barnes Municipal	Major	Major	Y	Y	N	Y	Y	Oxygen, Air Freight, Transient Hangar, Tie-Downs

Source: Airport Master Record, retrieved August, 2014 (www.gcr1.com/5010web/)

APPENDIX C

FINANCIAL PRO FORMAS

Information concerning historical revenues and expenses for the Airport was provided by Westover Metropolitan Development Corporation (WMDC). For purposes of this analysis, the most recent three year financial data history and current one year budget was used (2011-2014) because it represents the most relevant historical financial performance of the Airport. In addition, this data is most applicable for financial forecasting because it gives some indication of the recent trends. Table 1 shows the historical revenue as documented in the income and revenue spreadsheets provided by the Airport. Revenues from Airport operations are derived from the following:

- ***Flight Services:*** This includes fees for aircraft handling and terminal services.
- ***Fuel Sales:*** The Airport sells fuel and collects the margin between wholesale and retail pricing.
- ***Hangar Rent:*** This includes rental revenues from leased hangars owned by the WMDC.
- ***Landing Fees:*** This income results from the published landing fee schedule, which scales higher charges for larger aircraft.
- ***Lease Income:*** Income from lease land and facilities.
- ***Miscellaneous/Interest***: Revenue from interest earned on Airport investments and other miscellaneous categories
- ***Oil:*** Revenue from the sale of various grades of aircraft oil direct to operators.
- ***Parking Fees:*** Revenue from automobile parking.
- ***Rental Car Income:*** Income from agreements with rental car companies that service the Airport.
- ***Security Income:*** Reimbursement income for costs of TSA screening.

Table 1 - Historical Airport Revenues

Operating Revenues Category	Actual 2011	Actual 2012	Actual 2013	Forecast 2014*
Flight Services	$45,910	$47,841	$73,298	$64,800
Fuel Sales - Jet-A	$823,458	$884,861	$1,220,097	$1,193,200
Fuel Sales -100LL	$69,856	$104,264	$59,235	$38,532
Hangar Rent	$134,484	$185,415	$180,043	$172,800
Landing Fees	$30,104	$25,418	$34,542	$33,000
Lease Income	$896,737	$958,532	$613,221	$432,979
Misc./ Interest Income	$26,945	$21,802	$237,157	$85,000
Oil	$67	$5,216	$1,357	$1,500
Parking Fees	$5,580	$5,965	$8,323	$8,014
Rental Car Income	$3,564	$7,281	$4,722	$4,020
Security Income	$11,440	$10,539	$11,622	$10,000
TOTAL REVENUE	**$2,048,145**	**$2,257,135**	**$2,443,617**	**$2,043,844**

* Budget forecast year

Historical expenses are presented in Table 2 and are mostly self-explanatory except for the following:

- ***EDC Contract:*** These expenses are what it will cost to have WMDC operate the Airport.
- ***Joint Use Charges:*** These are fees that the military has charged for civilian use of the Airport. This cost has been reduced significantly in recent years.
- ***Terminal:*** These expenses are significantly associated with utility costs.

Table 2 - Historical Airport Expenses

Operating Expenses Category	Actual 2011	Actual 2012	Actual 2013	Forecast 2014*
Credit Card Fees	$12,489	$8,729	$9,773	$10,700
EDC Contract	$591,254	$593,609	$596,605	$599,588
Fuel - Jet-A	$620,742	$682,414	$961,192	$945,000
Fuel - 100LL	$60,640	$89,925	$52,207	$32,900
Fuel Farm	$3,948	$11,518	$5,756	$9,217
Insurance	$76,860	$78,081	$78,397	$79,176
Interest on Debt	$130,633	$130,573	$129,303	$128,375
Joint Use Charges	$80,203	$81,440	$4,168	$4,500
Maintenance	$76,897	$68,217	$76,973	$61,210
Marketing	$12,538	$10,303	$828	$5,000
Office Operations	$31,797	$28,378	$25,703	$28,867
Plowing	$8,942	$7,044	$9,137	$10,000
Professional Fees	$47,583	$31,977	$16,447	$32,000
Security	$7,327	$9,489	$9,669	$9,177
Telephone	$12,574	$12,490	$16,977	$16,489
Terminal	$89,533	$82,604	$63,946	$61,191
Travel & Meetings	$15,987	$12,959	$13,334	$10,500
Uniforms	$3,772	$4,276	$5,539	$4,000
Vehicles	$37,344	$41,224	$61,408	$45,000
TOTAL EXPENSES	**$1,921,061**	**$1,985,249**	**$2,137,364**	**$2,092,891**

* Budget forecast year

Net revenues for the four year period shown in the tables includes the following:

- 2011 $127,083
- 2012 $271,886
- 2013 $306,252
- 2014 ($49,047) Budget Forecast

Scenario Pro Formas

Using the historical revenues and expenses as a baseline, forecasts of future performance were developed for each alternative scenario. Much of the growth is tied to CPI, however, there are a few areas where revenue and expenses will grow (or decrease, in one instance) by other rates. Once the baseline projection was developed, the impacts of each alternative were added. Tables 10-12 present a summary of all of the pro formas, assuming every scenario was implemented. Pro forma specifics for each alternative are described in the following subsections.

Scenario 1 - MRO

MRO revenues and expenses above and beyond the baseline financial forecasts included the following components:

Revenues

- ***Hangar Rent:*** The primary source of Airport income from MRO activity is the rental of hangar facilities. For the assumed 30,000 square feet of hangar space, a rental income of $180,000 per year was estimated (based on current rental rate being charged on the Airport) and forecast to grow by CPI in future years.

Expenses

- ***Debt Service:*** If borrowing is used to renovate hangar space, the debt service associated with that will include interest and principal payments of $199,655 annually.
- ***Marketing Expense:*** Marketing expenses will be needed to hire an MRO specialist and then to reinvest a smaller amount each year. First year costs estimated at $50,000, followed by $15,000 annually.
- ***Maintenance:*** Maintenance, including utilities, will be required for the facility. An increase in costs of approximately 15% from 2013 figures, or $9,000/year, is assumed for year 1 and forecast to grow by the CPI in year 2. In year 3, these costs are passed on entirely to the MRO tenant.

Table 3 presents revenues, expenses, and net profit for Scenario 1.

Table 3 – Scenario 1 – MRO - Forecast

	2015	2016	2017	2018	2019
Operating Revenues	$0	$0	$180,000	$183,600	$187,272
Operating Expenses	$59,181	$68,605	$111,340	$108,099	$104,757
Net Profit	**-$59,181**	**-$68,605**	**$68,660**	**$75,501**	**$82,515**

Scenario 2 – Fractionals/Air Charter

To attract more fractional and air charter activity to the Airport, this pro forma captures the revenues and expenses associated with the strategy.

Revenues

- ***Fuel Sales:*** Increases in air charter flights from 25 to 35 were projected for the first five year period, which is growth of about 10% annually. Also, 60 additional fractional jet operations were projected over the next two years. Fuel sale revenue increases were based upon additional jet fuel sales of about 20,800 in the first year, growing to almost 70,000 gallons by year five. Fuel margins of roughly $1 per gallon could be applied to these forecasts.
- ***Landing Fees:*** Landing fees associated with the additional commercial operations were estimated beginning at $3,750 in year one and growing to $5,250 by year five.

Expenses

- ***Marketing Expense:*** There are no expenses other than $15,000 in annual marketing for this activity. Existing Airport facilities and services are adequate to accommodate increases without additional investment.

Table 4 presents revenues, expenses, and net profit for Scenario 2.

Table 4 – Scenario 2 – Fractionals/Air Charter - Forecast

	2015	2016	2017	2018	2019
Operating Revenues	$24,530	$45,610	$61,450	$66,750	$74,700
Operating Expenses	$15,000	$15,000	$15,000	$15,000	$15,000
Net Profit	**$9,530**	**$30,610**	**$46,450**	**$51,750**	**$59,700**

Scenario 3 - Corporate and General Aviation

The pro forma for the attraction of more corporate and general aviation activity includes revenues and expenses associated with these additional activity components. Assumptions used in developing the pro formas included:

Revenues

- ***Fuel Sales:*** Two additional based jets and itinerant business jets are assumed to add approximately 49,600 gallons in jet fuel sales revenues to the Airport's income. This volume represents 50% of annual fuel spend for these additional jets, which will purchase the other half elsewhere. In addition, smaller amounts of Avgas fuel sales revenues will be generated by the 10 based aircraft assumed to locate at the Airport in this scenario.
- ***Hangar Rents:*** With additional based aircraft, there are anticipated increased hangar rental revenues. These revenues will be tempered by the cost of building or renovating hangars.

Expenses

- ***Marketing Expense:*** In order to draw more corporate and general aviation activity to the Airport, marketing will be required. This expense is anticipated to add $15,000 annually to the budget.
- ***Debt Service:*** If borrowing is used to renovate and/or build hangar space, the debt service associated with that will include interest and principal payments of $116,466 annually. Total hangar space to be developed includes 10,000 square feet of T-hangars and 20,000 square feet of conventional hangars. T-hangar space may be converted to box hangar space, depending upon demand.

Landing fees were not included in the revenues because it was assumed that fuel purchases would result in waivers of the fees.

Table 5 presents revenues, expenses, and net profit for Scenario 3.

Table 5 – Scenario 3 – Corporate and General Aviation- Forecast

	2015	2016	2017	2018	2019
Operating Revenues	$26,300	$197,823	$207,013	$314,318	$315,684
Operating Expenses	$15,000	$66,613	$64,641	$92,101	$88,880
Net Profit	**$11,300**	**$131,210**	**$142,372**	**$222,217**	**$226,803**

Scenario 4 - Airline Service

There are a number of circumstances that would have to work out favorably for airline service by ultra low fare carriers to begin at the Airport. However, should these occur, revenues and expenses associated with this activity would include:

Revenues

- ***Fuel Sales:*** Given the negotiations used by ultra low fare carriers to purchase fuel, it was assumed that only an upload charge of $150 per fueling would be collected by WMDC.
- ***Landing Fees:*** It was also assumed that landing fees would be waived for the first three years of service. Thereafter, landing fees of $45,000 which were waived would be charged.
- ***Auto Parking Fees:*** In order to build the service, it was assumed that auto parking fees would begin at $5 daily for the first two years. Thereafter, it was assumed that the parking fee would be increased $2-3 every three years. Total revenues by year five: approximately $675,600. To account for the costs of providing parking, which could vary widely based on either contracting with a third party operator or performing parking functions in house, total revenue was reduced by 25% annually.
- ***Rental Car Fees:*** These fees were estimated by assuming 20 percent of deplanements would rent cars. Using a 10 percent surcharge, an estimated $15 per rental car was assumed, totaling $92,100 by year five.

- ***Terminal Rental Fees:*** These fees were assumed to be waived for the first three years of airline operation. After that, terminal use fees of $54,100 which were waived would be charged.
- ***Non-Operating Revenues:*** Passenger Facility Charges (PFCs) of $4.50 per passenger will generate $138,150 by year five, while the Non-Primary Airport Entitlement grants will be $1,000,000 annually, beginning by year three. Revenues are assumed to begin in year three due to a lengthy FAA process of application and approval to establish a PFC program at the Airport.

Expenses

- ***Subsidy:*** It was assumed that WMDC would have to contribute $25,000 to subsidize the first year of operation. During this time, it was assumed that the State of Massachusetts would contribute $100,000.
- ***Additional Security:*** Law enforcement costs beyond TSA screening were estimated to be $50,000 per year.

Table 6 presents revenues, expenses, and net profit for Scenario 4.

Table 6 – Scenario 4 – Airline Service

	2015	2016	2017	2018	2019
Operating Revenues	$203,940	$307,425	$494,016	$777,352	$851,888
Operating Expenses	$75,000	$50,000	$50,000	$50,000	$50,000
Net Profit	**$128,940**	**$257,425**	**$444,016**	**$727,352**	**$801,888**

Scenario 5A – Aviation Education Initiative (Land)

The establishment of an aviation degree and/or certification program in partnership with local institutions of higher education has been analyzed in two ways. Scenario 5A is indicative of a situation where the airport leases land to the institution to construct the facility utilizing other funds and is detailed below:

Revenues

- ***Lease Income:*** The sole source of Airport income from this scenario is the land lease of ground for the private development of the necessary facilities. For the assumed 40,000 square feet of building space, a land lease income of $10,000 per year was estimated and forecast to grow by the CPI in future years.

Expenses

- ***None***

Table 7 presents revenues, expenses, and net profit for Scenario 5A.

Table 7 – Scenario 5A – Aviation Education Initiative (Land)					
	2015	**2016**	**2017**	**2018**	**2019**
Operating Revenues	$10,000	$10,200	$10,404	$10,612	$10,824
Operating Expenses	$0	$0	$0	$0	$0
Net Profit	**$10,00**	**$10,200**	**$10,404**	**$10,612**	**$10,824**

Scenario 5B – Aviation Education Initiative (Reno)

The establishment of an aviation degree and/or certification program in partnership with local institutions of higher education has been analyzed in two ways. Scenario 5B is where the Airport rehabilitates, and expands if necessary, an existing hangar and subsequently leases the space to the educational institution. The pro forma below captures the forecast revenues and expenses associated with this alternative:

Revenues

- ***Hangar Rent:*** The sole source of Airport income from this scenario is the rental of hangar and building space at the airport to support the initiative. For the assumed 40,000 square feet of space required, including hangars and support facilities, a rental income of $240,000 per year (or $20,000/month) was estimated upon completion of renovations/construction, and forecast to grow by the CPI in future years.

Expenses

- ***Debt Service:*** If a combination of grant funding and borrowing were utilized to complete the renovation and construction of the facility, it is assumed that approximately $1 Million of funds would be borrowed. With a 15 year repayment schedule, and 5% interest, annual payments of $94,895 would be required.
- ***Insurance:*** Increased insurance coverage will be required for the facility. An increase in premiums of approximately 10% from 2013 figures, or $8,000/year, is assumed and forecast to grow by the CPI in future years.
- ***Maintenance:*** Maintenance, including utilities, will be required for the facility. An increase in costs of approximately 15% from 2013 figures, or $9,000/year, is assumed and forecast to grow by the CPI in future years.

Table 8 presents revenues, expenses, and net profit for Scenario 5B.

Table 8 – Scenario 5B – Aviation Education Initiative (Reno)					
	2015	**2016**	**2017**	**2018**	**2019**
Operating Revenues	$0	$0	$240,000	$244,800	$249,696
Operating Expenses	$0	$51,567	$63,705	$61,577	$59,329
Net Profit	**$0**	**-$51,567**	**$176,295**	**$183,223**	**$190,367**

Scenario 6 – Consolidated Public Safety Facility

The construction of the Consolidated Public Safety Facility will bring additional revenues to the airport, which will be offset by increasing expenditures. These revenues and expenses are included in the following accounting revenue and expense categories:

Revenues

- ***Miscellaneous/Interest Income:*** Through this scenario, it is assumed that the sole source of Airport income would be associated with fees charged to users/students of the facility. Based on information from other similar facilities, a sample course size of 20 students utilizing the facility each week of the year was assumed. For the start year, an average fee of $500/student was estimated and forecast to grow by the CPI in future years. Additional income can be realized from charging individual user fees for use of the shooting range, should the facility be offered for use by the general public; however, the pro forma considers these revenues largely unknown and does not speculate on revenues derived from these fees during the period.

Expenses

- ***Debt Service:*** It was assumed that grant funding would be procured for much of the cost to construct the facility. For this scenario, it is assumed that debt service will be required on approximately $2 Million of the construction cost. As a result, the debt service associated with that will include interest and principal payments of approximately $189,790 annually.
- ***Insurance:*** Insurance will be required for the new facility. An increase in premiums of approximately 10% from 2013 figures, or $8,000 year, is assumed and forecast to grow by the CPI in future years.
- ***Maintenance:*** Maintenance, including utilities, will be required for the new facility. An increase in costs of approximately 15% from 2013 figures, or about $9,000/year, is assumed and forecast to grow by the CPI in future years.
- ***Other/Miscellaneous:*** There will be a cost to provide services for groups/students at the facility. While specific costs will be based on the number of staff members working at the facility and the number of classes booked at the facility each year, a starting cost of $380,000 to operate the facility is utilized based on previous discussions. This cost is forecast to grow by the CPI in future years.

Table 9 presents revenues, expenses, and net profit for Scenario 6.

Table 9 – Scenario 6 – Consolidated Public Safety Facility

	2015	2016	2017	2018	2019
Operating Revenues	$0	$0	$520,000	$530,400	$541,008
Operating Expenses	$0	$100,913	$490,213	$493,212	$496,117
Net Profit	**$0**	**-$100,913**	**$29,787**	**$37,188**	**$44,891**

Tables 10-12 present a summary of all each scenario's pro forma in aggregate, providing a snapshot of the total impact on future financial performance if every

scenario was implemented. Totals shown are separated for Aviation Education Initiative 5A (Land) and 5B (Reno).

Table 10 –Alternative Scenarios Forecast – All Scenarios Included					
Operating Revenues					
Category	**2015**	**2016**	**2017**	**2018**	**2019**
Flight Services	$67,526	$70,366	$73,325	$76,410	$79,624
Fuel Sales - Jet-A	$1,282,173	$1,377,780	$1,480,517	$1,590,914	$1,709,543
Fuel Sales -100LL	$39,302	$40,088	$40,890	$41,708	$42,542
Hangar Rent	$176,256	$179,781	$183,377	$187,044	$190,785
Landing Fees	$35,349	$37,864	$40,559	$43,446	$46,538
Lease Income	$441,639	$450,471	$459,481	$468,670	$478,044
Misc./Interest Income	$86,700	$88,434	$90,203	$92,007	$93,847
Oil	$1,530	$1,561	$1,592	$1,624	$1,656
Parking Fees	$8,567	$9,158	$9,789	$10,465	$11,187
Rental Car Income	$4,297	$4,594	$4,911	$5,250	$5,612
Security Income	$10,079	$10,159	$10,239	$10,320	$10,402
BASELINE REVENUE	**$2,153,417**	**$2,270,256**	**$2,394,883**	**$2,527,857**	**$2,669,779**
MRO	$0	$0	$180,000	$183,600	$187,272
Fractionals/Air	$24,530	$45,610	$61,450	$66,750	$74,700
Corporate & GA	$26,300	$197,823	$207,013	$314,318	$315,684
Airline Service	$203,940	$307,425	$494,016	$777,352	$851,888
Aviation Ed. (Land)	$10,000	$10,200	$10,404	$10,612	$10,824
Aviation Ed. (Reno)	$0	$0	$240,000	$244,800	$249,696
Cons. Public Safety	$0	$0	$520,000	$530,400	$541,008
TOTAL REVENUES – ALTERNATIVE SCENARIOS FORECAST					
ALTERNATIVES (Scenario 5A Land)	**$2,418,187**	**$2,831,314**	**$3,867,766**	**$4,410,889**	**$4,651,155**
ALTERNATIVES (Scenario 5B Reno)	**$2,408,187**	**$2,821,114**	**$4,097,362**	**$4,645,077**	**$4,890,026**

Table 11 –Alternative Scenarios Forecast – All Scenarios Included					
Operating Expenses					
Category	**2015**	**2016**	**2017**	**2018**	**2019**
Credit Card Fees	$10,914	$11,132	$11,355	$11,582	$11,814
EDC Contract	$602,296	$605,015	$607,747	$610,491	$613,247
Fuel - Jet-A	$1,020,600	$1,102,248	$1,190,428	$1,285,662	$1,388,515
Fuel - 100LL	$33,558	$34,229	$34,914	$35,612	$36,324
Fuel Farm	$9,401	$9,589	$9,781	$9,977	$10,176
Insurance	$79,964	$80,759	$81,562	$82,373	$83,192

Interest on Debt	$127,720	$127,069	$126,421	$125,776	$125,134
Joint Use Charges	$4,590	$4,682	$4,775	$4,871	$4,968
Maintenance	$62,434	$63,683	$64,956	$66,255	$67,580
Marketing	$5,100	$5,202	$5,306	$5,412	$5,520
Office Operations	$29,445	$30,034	$30,634	$31,247	$31,872
Plowing	$10,200	$10,404	$10,612	$10,824	$11,041
Professional Fees	$32,640	$33,293	$33,959	$34,638	$35,331
Security	$9,361	$9,548	$9,739	$9,933	$10,132
Telephone	$16,819	$17,155	$17,499	$17,849	$18,206
Terminal	$62,415	$63,663	$64,936	$66,235	$67,560
Travel & Meetings	$10,710	$10,924	$11,143	$11,366	$11,593
Uniforms	$4,080	$4,162	$4,245	$4,330	$4,416
Vehicles	$45,900	$46,818	$47,754	$48,709	$49,684
BASELINE EXPENSE	**$2,178,146**	**$2,269,608**	**$2,367,765**	**$2,473,142**	**$2,586,306**
MRO	$59,181	$68,605	$111,340	$108,099	$104,757
Fractionals/Air	$15,000	$15,000	$15,000	$15,000	$15,000
Corporate & GA	$15,000	$66,613	$64,641	$92,101	$88,880
Airline Service	$75,000	$50,000	$50,000	$50,000	$50,000
Aviation Ed. (Land)	$0	$0	$0	$0	$0
Aviation Ed. (Reno)	$0	$51,567	$63,705	$61,577	$59,329
Cons. Public Safety	$0	$100,913	$490,213	$493,212	$496,117
TOTAL EXPENSES – ALTERNATIVE SCENARIOS FORECAST					
ALTERNATIVES (Scenario 5A Land)	**$2,342,327**	**$2,570,739**	**$3,098,960**	**$3,231,554**	**$3,341,060**
ALTERNATIVES (Scenario 5A Reno)	**$2,342,327**	**$2,622,306**	**$3,162,665**	**$3,293,131**	**$3,400,389**

Table 12 indicates that the range of total net profit could range from more than $1.31M to nearly $1.49M in 2019.

Table 12 –Alternative Scenarios Forecast – All Scenarios Included

	2015	2016	2017	2018	2019
BASELINE NET PROFIT	**($24,729)**	**$648**	**$27,117**	**$54,714**	**$83,472**
TOTAL NET PROFIT - ALTERNATIVES (Land)	**$75,860**	**$260,575**	**$768,806**	**$1,179,335**	**$1,310,094**
TOTAL NET PROFIT - ALTERNATIVES (Reno)	**$65,860**	**$198,808**	**$934,697**	**$1,351,946**	**$1,489,637**