REQUEST FOR PROPOSALS

Cambria County
Defense Transition Study
Metals Manufacturing Project

RFP – August 2016

BOARD OF CAMBRIA COUNTY COMMISSIONERS

Thomas C. Chernisky
B.J. Smith
Mark J. Wissinger

PROCEDURE

ORIGINAL PROPOSAL AND COPIES

The proposal must contain the completed "Vendor Information" and "Non-collusion affidavit" pages provided within this RFP. The vendor must submit **one Original Proposal**, **six (6) exact copies of their original proposal, and one electronic Adobe PDF copy of their proposal on a CD**. The Original Proposal must be marked on the front "ORIGINAL". The copies must be marked on their front "COPY". All proposals must include a detailed budget narrative.

PREPARATION OF PROPOSALS

Proposals **must** be placed in a sealed envelope and marked:

Cambria County Defense Transition Study Metals Manufacturing Project

The name and address of the vendor must be marked on the sealed envelope.

DELIVERY OF PROPOSALS

Proposals must be received in the *Cambria County Commissioners' Office, Cambria County Courthouse, 200 South Center Street, Ebensburg, Pennsylvania, 15931*, no later than **September 16, 2016 at 3:00 PM**.

INQUIRIES AND ADDENDA

Should the vendor find any discrepancies in, or omissions from the Request For Proposal, or should there be any doubt as to meaning or interpretations, or need clarification, he/she should at once notify the Cambria County Project Coordinator, John Dubnansky, by e-mail at jdubnansky@co.cambria.pa.us by September 9, 2016 at 3:00 PM. **Cambria County will not be responsible for any oral instructions**.

DUTY OF VENDOR TO MAKE NECESSARY INVESTIGATIONS

Before submitting a proposal, each vendor shall make all investigations and examinations necessary to ascertain all conditions and requirements affecting the full performance of the contract and to verify any representations made by the County that the vendor will rely upon. Ignorance of such conditions and requirements resulting from failure to make such investigations and examinations will not be a basis for any claim whatsoever for any monetary consideration on the part of the successful vendor.

EXPENSES INCURRED IN PREPARING PROPOSAL

Cambria County accepts no responsibility for any expense incurred by the vendor in the preparation and presentation of a proposal and any such expenses are to be borne exclusively by the vendor.

NON-COLLUSION AFFIDAVIT

Each vendor is required to execute a Non-Collusion Affidavit in the form annexed to the proposal. Any proposals received not containing a properly executed Non-Collusion Affidavit will be rejected.

RIGHT TO ACCEPT OR REJECT PROPOSALS

Cambria County reserves the right to accept or reject any or all proposals, to waive any informalities or irregularities in the proposals received, and to accept any proposal which is deemed most favorable to the county.

CHOICE OF LAWS

Any contract awarded shall be adjudicated, governed, and controlled in all respects as to validity, construction, capacity, performance, or otherwise by the laws of the State of Pennsylvania.

TERM OF CONTRACT

The duration of any contract awarded is anticipated to be six months or as negotiated, and shall commence upon the date an agreement is entered with the Cambria County Board of Commissioners.

ADDITIONAL INFORMATION

The proposal shall include, and may be required to supplement, information regarding relevant qualifications and work experience - especially experience with other similar projects, and past or present references.

PROCESS BY WHICH THE CONTRACT SHALL BE AWARDED

This contract will be awarded to the contractor judged to provide the best value. The terms of any contract may be subject to negotiation subsequent to the receipt of proposals. Proposals will be evaluated by the Cambria County DOD OEA Review Committee on the basis of the following:

1. Compliance with specifications and production of required and supporting documentation.
2. Ability of the consultant to responsibly and reliably perform contract requirements.
3. Ability to negotiate terms of a contract acceptable to the Commissioners of Cambria County.
4. Knowledge of metals manufacturing business development.
5. The consultants plan on how to best implement the metals manufacturing initiatives identified within the Cambria County Defense Transition Study.
6. Project Budget/Cost of Service.

The Cambria County DOD OEA Review Committee will make a recommendation to the Cambria County Board of Commissioners for final approval of a winning proposal/consultant. The Cambria County Board of Commissioners will announce the winning proposal during a regularly scheduled County Commissioner meeting. The Project Coordinator, John Dubnansky, will contact all proposers via email with the results of the decision.

SPECIFICATION OF SERVICE

OBJECTIVES OF THE SERVICE

Cambria County and the City of Johnstown need to move decisively to confront the loss of defense-related revenues and jobs. In FY 2015 Cambria County secured funding from the United States Department of Defense Office of Economic Adjustment Office to complete a study that analyzed the county's current Department of Defense funded contractors and the local economy. A final plan was developed in October 2015 titled the Cambria County Defense Transition Study that detailed several implementation strategies to help local defense contractors diversify from Department of Defense contracts. Cambria County is now taking the next step forward with our defense diversification assistance effort by implementing strategies identified within the Cambria County Defense Transition Study. The focus of this project will be on assisting those local metals manufacturers that have or recently performed DOD funded contract work. The County will achieve our goal of assisting these metals manufacturers by completing the following objectives:

1. Identification of new market strategies for local DOD metals manufacturers to aid them in diversifying away from DOD funding.
2. Identification of ways local DOD metals manufacturers can modernize and enhance their facilities to support their DOD diversification efforts.
3. Development of three DOD-company Cambria County Metals Manufacturing Market Diversification Plans.
4. Conduct an Additive Manufacturing Workshop for our local DOD metals manufacturers.

TASKS TO BE PERFORMED

The following describes the overall scope of work of the proposed project and the work tasks the selected consultant will complete.

Despite the loss of Bethlehem Steel in the 1980's, Johnstown is still a strong source of metals manufacturing since some of those people who used to work for Bethlehem Steel still reside in the area. Companies like JWF Industries and Gautier Steel perform DOD contract work and operate in former Bethlehem Steel properties. This market provides an opportunity for further growth. Many of the metals manufacturing firms with defense revenues expressed a strong interest in additive manufacturing. In discussions with industry leaders, additive manufacturing for metals applications is still an emerging sector. However, local entities such as the University of Pittsburgh at Johnstown (UPJ) and Concurrent Technologies Corporation (CTC) are already investing in this technology. Cambria County's business community seeks to ensure that its industry stays on the forefront by increasing support for additive manufacturing-related education and training. Through this project Cambria County wants to hire a consultant to work with our local metals manufacturers on identifying new domestic and international markets, commercial product development opportunities, ways for local metals manufacturers to modernize their business, and possible ways that local DOD companies could enhance their metals manufacturing businesses to allow them to move away from DOD funded contract work. All of this information will be captured in the diversification plans discussed below. This project connects with strategy 1 within our Cambria County Defense Transition Study - Position Cambria County's Metals Manufacturing Companies for Emerging Industry Opportunities

The selection process to receive services through this metals manufacturing focused program will be based on the individual being from a DOD funded metals manufacturing company operating in Cambria County. A DOD company is any company with either an active DOD contract or DOD contract work within the past 12-months. The priority ranking of defense companies participating in this program, when there are capacity limits, will be given to those that have experienced the largest reduction in DOD contracts. Otherwise, priority will be decided on a first come first serve basis. We anticipate on servicing a minimum of five companies through this program, and developing Metals Manufacturing Market Diversification Plans for three of these companies. The Cambria County Project Coordinator must approve of which companies will have plans developed prior to the development of any plan. The plans will consist of strategic planning information on how each metals manufacturer can make changes to achieve the goal of each business reducing their dependency on DOD contracts. Every effort will be made to provide assistance to those firms most significantly impacted by reduced DOD procurement. An objective selection process will be documented and provide details on why the three businesses were selected.

The consultant will organize a workshop for entrepreneurs and business leaders on additive manufacturing. The consultant will attempt to recruit experts from outside the region to brief local business leaders on the current status of the industry and the emerging market opportunities. The group will then collectively explore additional ways they can work together to support technology adoption, training and research. By completing this project we will be able to diversify existing metals manufacturers, increase job creation for DOD company employees, and help strengthen our local economy.

FINAL DELIVERABLES

The selected consultant will provide Cambria County one electronic PDF file of each project document created through this project. Specific documents that will be created through this project include:

- (3) Metals Manufacturing Diversification Plans
- (1) Report that capture the information sought in Objectives 1 and 2 of this RFP
- Additive Manufacturing PowerPoint Presentation
- Additive Manufacturing Workshop Attendance Information

All deliverables must be provided to Cambria County by April 30, 2017. The consultant will also provide monthly progress reports and financial invoices to the Project Coordinator, John Dubnansky, via email every month.

IMPLEMENTATION TIME FRAME

All work tasks must be completed by April 30, 2017. An award of this project is expected to be made to the consultant by the end of September 2016.

PROJECT BUDGET

Cambria County is requesting a detailed budget from the proposer to complete all work tasks mentioned in this RFP. The consultant must disclose in their proposal the total amount of funding needed to complete the required work tasks along with an estimated billing schedule. The funding for this project is being provided, in part, by the United States Department of Defense Office of Economic Adjustment.

ADDITIONAL REQUIREMENTS

Each consultant must supply a list and brief resume of key staff that will work on this project. Once an agreement between Cambria County and the consultant has been executed no changes to the assigned consultant staff may occur without written authorization of the Cambria County Project Coordinator, John Dubnansky.

PROPOSAL SUBMISSION REQUIREMENTS

The following content, in order, should be supplied to Cambria County by the consultant as part of their proposal submission:

- Executive Summary (one page maximum)
- Proposal Narrative (ten page maximum)
- Budget Narrative and Detail (three page maximum)
- Project Experience and Resumes (three page maximum)
- Vendor Information Sheet (one page)
- Non-Collusion Affidavit (one page)
- Draft Contract between the consultant and Cambria County (no maximum)

*Reminder: The vendor must submit one Original Proposal, six (6) exact copies of their original proposal, and one electronic Adobe PDF copy of their proposal on a CD.

VENDOR INFORMATION

VENDOR NAME (PRINTED): ____________________________________

ADDRESS: ____________________________________

____

PHONE NUMBER: ____________________________________

AUTHORIZED SIGNATURE: ____________________________________

NAME (PRINTED): ____________________________________

TITLE: ____________________________________

NON-COLLUSION AFFIDAVIT

Commonwealth of Pennsylvania)
) ss.
County of Cambria)

I, ____,* being duly sworn, depose and say:

1. I am ____,** of ____,*** the party making the foregoing proposal (hereinafter "the Proposer");
2. The proposal is genuine and not collusive; the Proposer did not collude, conspire, connive, or agree, directly or indirectly with any proposer or other person that such other proposer or person should refrain from proposing or submit a sham proposal; did not in any manner directly or indirectly seek, by any agreement or collusion or communication or conference with any person, to fix the proposal price of any proposer, or to fix any overhead, profit, or cost element of the proposal price; did not collude, conspire, or agree to secure any advantage against the County of Cambria or any person interested in the proposal
3. The Proposer did not directly or indirectly submit this proposal, or the contents thereof, or divulge information or data relative thereof, or divulge information or data relative thereto to any other proposer or association, or to any agent or member thereof.
4. I have / have not**** been convicted or found liable for any act prohibited by Federal or State law in any jurisdiction involving conspiracy or collusion with respect to bidding on any public contract within the last three years. (Such a conviction or finding of liability does not prohibit a government agency from accepting a bid from or awarding a contract to that person, but it may be grounds for administrative suspension or debarment in the discretion of the government agency under the rules and regulations of that agency or, in the case of a government agency with no administrative suspension or debarment regulations or procedures, may be grounds for consideration on the question of whether the agency should decline to award a contract to that person on the basis of lack of responsibility.)
5. The statements made herein are true to the best of Affiant's knowledge and belief.

____
SIGNATURE OF AFFIANT

Sworn and subscribed before me this ______ day of ________________, 20___.

____
SIGNATURE OF NOTARY PUBLIC

(SEAL)

My Commission expires ____________________

* Print or type the name of Affiant.
** Print or type the office (owner, president, etc.) of Affiant.
*** Print or type the name of entity submitting the proposal.
**** Strike through "have" or "have not" as appropriate.

ATTACHMENT #1

Cambria County Defense Transition Study

Cambria County Defense Transition Study

FINAL REPORT

November 17, 2015

This study was prepared under contract with Cambria County, Pennsylvania, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of Cambria County and does not necessarily reflect the views of the Office of Economic Adjustment.

Table of Contents

1

Background

- Study Purpose
- Cambria County Profile

Cambria County has historically been an important regional industrial center - boasting significant steel mill and manufacturing facilities. However, the economy peaked in the middle of last century and the population has been in decline as local manufacturing businesses scaled back operations. With support from congressional representatives, the county's defense industry flourished from the mid-1980s until the recent economic downturn in the mid-2000s. These firms added high-paying, high-skilled jobs to the economy with an emphasis on local investment, technology and innovation. In the face of declining military expenditures, however, Cambria County's defense-oriented businesses and displaced workers are now pursuing new opportunities in commercial, government and international markets. This study seeks to identify ways community stakeholders can assist these companies and individuals in making the difficult transition away from declining defense markets.

1.1 Study Purpose

The purpose of this study is to examine how Cambria County can best support the transition of its defense industry to non-defense markets in the face of declining military spending in the United States.

This includes two major challenges:

1) Transitioning local U.S. defense-oriented businesses to new markets.
2) Transitioning local displaced workers into new positions within the local labor market.

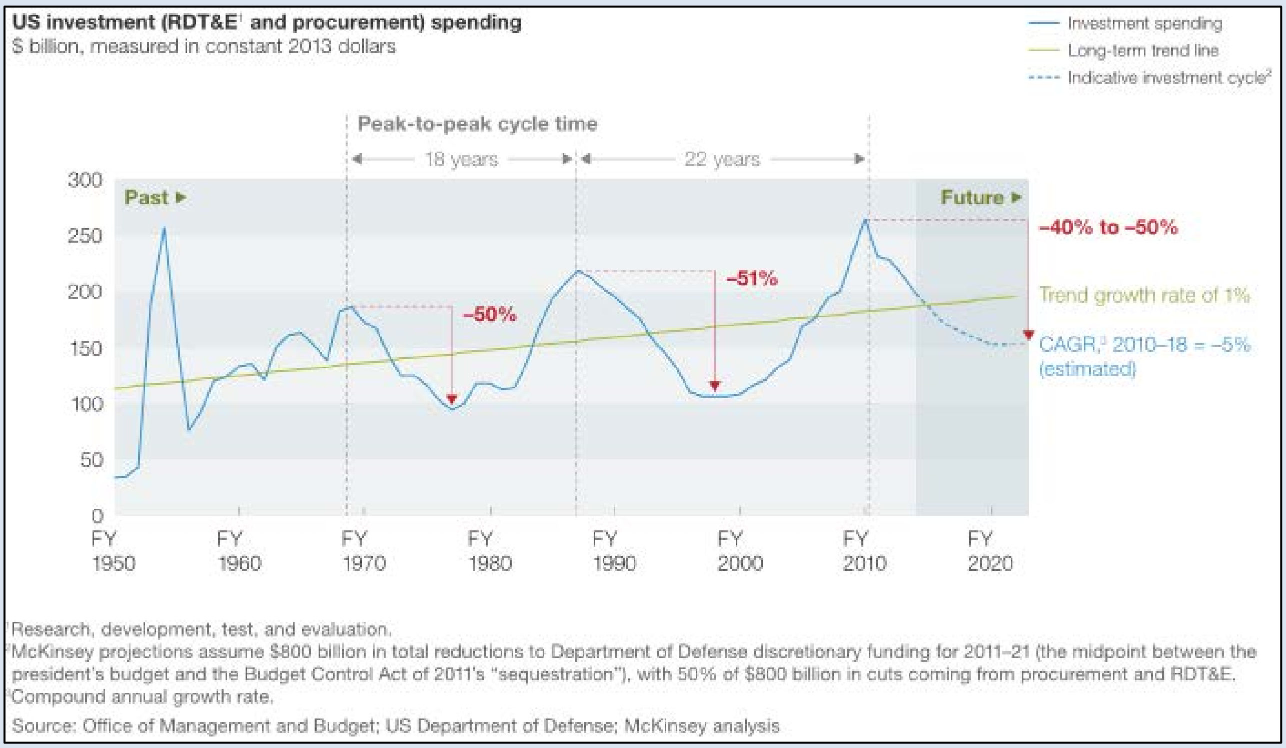
Regarding the first challenge, **businesses** with defense revenues may continue to apply their business acumen to secure new funding and grow their U.S. defense client base and revenues. For example, DRS Laurel Technologies, which is part of a multi-national electronics company, is successfully driving renewed business growth in Johnstown by moving up their defense industry's value chain from a low-revenue parts manufacturer to a value-added systems integrator. Also, Problem Solutions, a Johnstown-based IT firm, is using its unique software product offering in the defense training systems industry to expand its share of military contracts. However, evidence from recent history (see Section 1.2) and macro-economic trends (see *The Defense Spending Business Cycle, 1950-Present* at the end of this section) suggest that the county's defense-oriented firms will face a sustained and increasingly-competitive environment as overall defense spending declines. In addition, the recent job gains within a few firms have not made up for the previous heavy industry-wide losses. Cambria County also faces the loss of favorable political forces which directed defense funding to the region in previous decades. It is therefore probable that the county's defense-oriented businesses – though remaining important components of the local business community – will not be major drivers of new job creation in the intermediate to longer term. Instead, most of these firms will need to diversify their offerings to realize new growth by targeting non-defense government clients, including state and local governments; international Ministries of Defense (MODs) or other international market segments; and private-sector business and consumer markets. The question then becomes – what markets should these firms concentrate on? In addition, what can the county's economic developers, education and training service providers, and political leaders do to support the efforts of defense-oriented firms to target new markets?

While some firms will successfully make a smooth transition to non-defense market sectors – particularly those who started with a relatively small exposure to the defense market – others will struggle to find viable opportunities. Some **workers** have already been displaced by layoffs and program cancellations and others may face a similar situation in the future. Some of these displaced workers may seek positions with defense firms in other regions of the country. However, most will first attempt to secure a job in Cambria County. What challenges will these workers face in transitioning to non-defense sectors of the economy? Will they find ready employment locally or will they be forced to relocate to new areas of the country? What can the community do support these workers in their transition to fill new local job openings?

This study will examine the dual thrusts of the challenge – business and worker transitions – and attempt to identify key strategies that stakeholders in Cambria County can undertake to enhance positive outcomes. Specifically, the community desires that: 1) local defense-oriented companies quickly and effectively exploit opportunities in new markets to drive business growth and create new jobs, and 2) workers displaced from defense-related occupations will find a ready labor market for their skills in the county.

The Defense Spending Business Cycle, 1950-Present

The last downturn in U.S. defense spending occurred after the end of the Cold War. Between 1985 and 1995, the U.S. Department of Defense (DoD) reduced spending by over 50 percent and the industry did not return to the same level of investment until the mid-2000s. Similarly, the DoD cut spending by approximately 50 percent starting in the 1970s with funding not returning to a growth pattern until the 1980s. These 20-year cycles of growth (10 years) and decline (10 years) indicate there may be continued cutbacks through 2020 before defense industry revenues pick up again.



Source: Dehoff, K., Dowdy, J. and Niehaus, J. (April 2013). *Managing a downturn: How the U.S. defense industry can learn from its past*. McKinsey&Company. Retrieved June 2, 2015 from: http://www.McKinsey.com/insights/manufacturing/managing_a_downturn

1.2 Cambria County Profile

Cambria County is located in the Southern Alleghenies Region of Pennsylvania approximately 71 miles east of Pittsburgh via U.S. Route 22, and 143 miles west of Harrisburg via Interstate 76. The county has a population of approximately 143,728 (Census, 2011). Considered to be a primarily rural county, it also contains the City of Johnstown, which has an estimated Metropolitan Statistical Area (MSA) population count of 137,732 (Census, 2014).

The City of Johnstown is the metropolitan center of the county and the greater Johnstown region is the primary location of employment for many of the county's residents. With a low cost of living, Cambria County and the City of Johnstown offer residents a pleasant community to live and prosper.

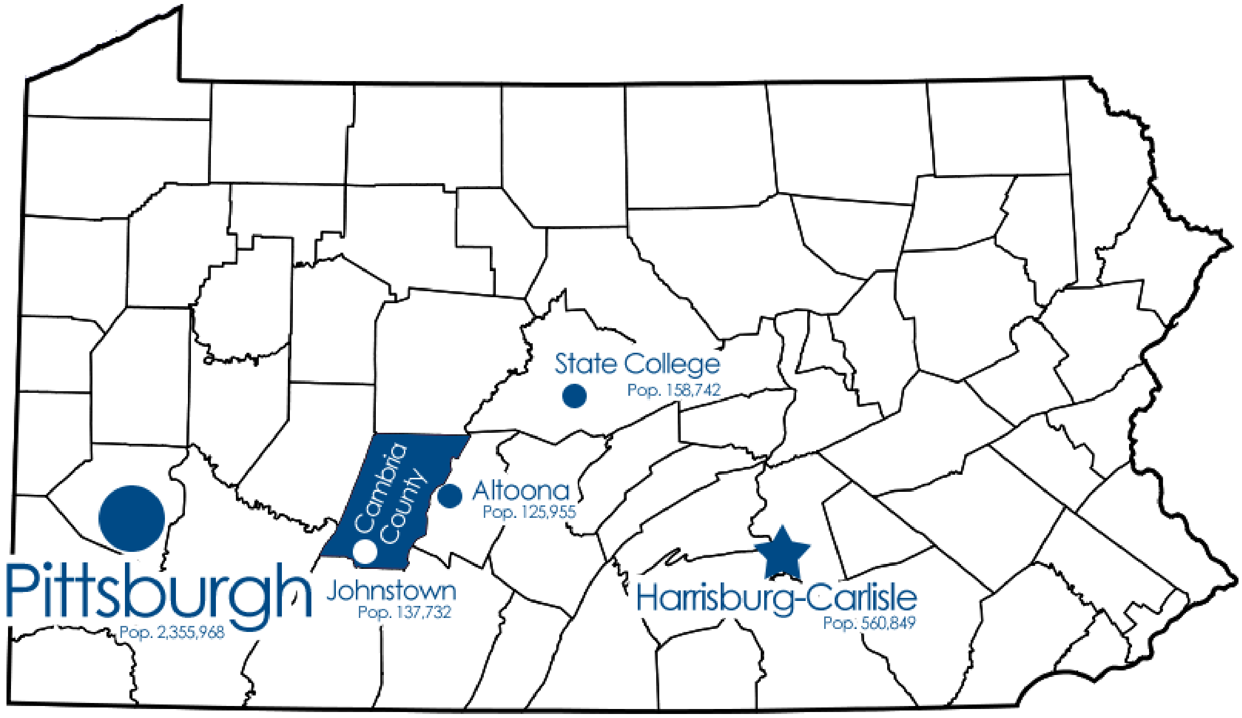


Figure 1. Neighboring Metropolitan Statistical Areas (MSAs), U.S. Census 2014 Population Estimates

1.2.1 Cambria County's Steel Industry

In the early 1800s, the region's economy was heavily dependent on the farming, flat boating, and canal transportation trades. Founded in 1804, Cambria County soon developed its rich natural resources to meet the nation's demand for coal and steel. The Cambria Iron Company was founded in 1852 and by 1860 it was the leading steel producer in the United States. Out producing factories in Pittsburgh and Cleveland, it is considered one of the greatest of the early modern iron and steel works in the nation. In 1854, the main line of the Pennsylvania Railroad was completed through Johnstown to support the industry.

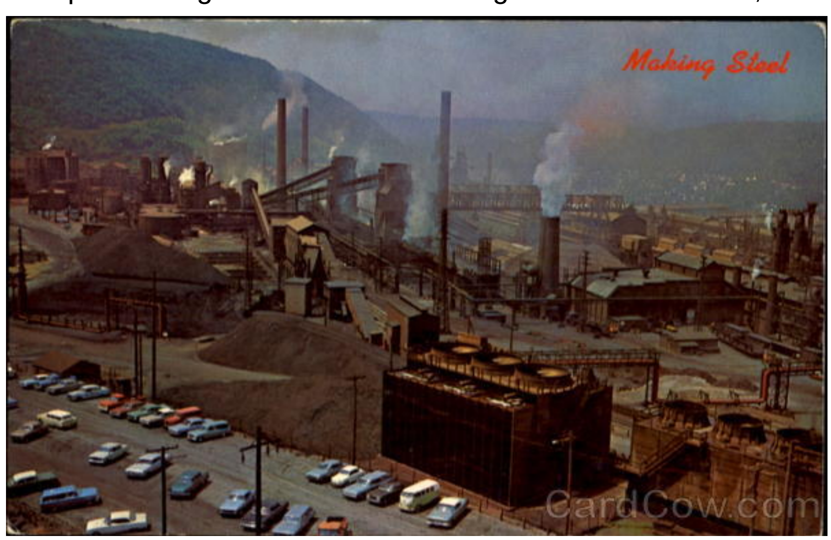


Figure 2. Photo of Bethlehem Steel Plant in Johnstown, Pennsylvania

With basic industrial operations and good rail connections East and West, Johnstown was rapidly transformed from a small canal village into a remarkable manufacturing center. Johnstown's peak as a steel maker and fabricator came in the immediate post-World War II years when the steel industry provided more than 13,000 direct full-time well-paying jobs.

Johnstown production, however, was located a considerable distance from its main source of iron ore. As domestic and foreign competition increased, the facility operators saw a steady decline in profitability. New regulations from the U.S. Environmental Protection Agency in the 1970s added to the costs of operating the aging Cambria Plant.

During this time, Johnstown Area Regional Industries (JARI) was formed and, within a year, raised $3 million for industrial development in the area. Impressed by the area's own efforts to diversify, Bethlehem Steel committed itself to bringing new steelmaking technologies to Johnstown.

Despite these efforts, the regulatory and market trends worsened for the plant. By 1982, only 2,100 workers were left and, in 1992, the Johnstown plants of Bethlehem Steel Corporation closed their doors. Johnstown abandoned most of its steel production, although some limited fabrication work continued.

1.2.2 Cambria County's Defense Industry

After the collapse of the steel industry in the 1970's and 1980's, Congressman John Murtha led the expansion of the community's defense industry-related industrial base. In many ways, this saved the local economy in the 1990's and early 2000's. New local companies such as Concurrent Technologies Corporation and KDH Defense Systems as well as branch offices of major defense contractors such as Lockheed Martin and Northrop Grumman provided an influx of thousands of high-paying jobs to replace the loss of manufacturing positions.

The economic downturn spawned from the 2008 financial crisis, military budget cutbacks, the ending of the wars in Iraq and Afghanistan, federal sequestration, and the passing of Congressman Murtha in 2010 has resulted in a "perfect storm" for Cambria County's defense industry. Northrop closed its doors in Johnstown and Lockheed Martin closed one of its two facilities in the area. Some local defense firms have gone out of business while others have struggled to survive while diversifying their products and services for new private-sector markets. Research from Chmura Economics & Analytics found that Johnstown had the second highest total defense contract cuts on a per capita basis nationally from 2010 to 2012 (see Table 1).

Table 1: Top 10 MSAs Impacted by Total Defense Contract Cuts, 2010-2012

MSA	Total Defense Contract Cuts 2010 to 2012	$ Cut per Capita
Oshkosh-Neenah, WI MSA	-$1,894,064,198	-$11,342
Johnstown, PA MSA	**-$782,445,252**	**-$5,446**
Hinesville-Fort Stewart, GA MSA	-$187,835,293	-$2,411

MSA	Total Defense Contract Cuts 2010 to 2012	$ Cut per Capita
Manhattan, KS MSA	-$289,552,359	-$2,278
Crestview-Fort Walton Beach-Destin, FL MSA	-$367,857,608	-$2,034
New Orleans-Metairie-Kenner, LA MSA	-$2,205,619,764	-$1,889
Columbus, GA-AL MSA	-$438,654,422	-$1,488
Tucson, AZ MSA	-$1,383,208,070	-$1,411
York-Hanover, PA MSA	-$572,827,209	-$1,317
Binghamton, NY MSA	-$308,778,050	-$1,227

1.2.3 Demographic and Employment Trends

The decline of the steel, manufacturing, and defense industries have contributed to the overall continued population decline of the county. Vacant housing litters Johnstown's urban core and the city's poverty level (34 percent) is one of the highest in Pennsylvania.[1] The Robert Wood Foundation recently ranked Cambria County as the seventh unhealthiest county in Pennsylvania.[2] According to the U.S. Census Bureau, total population in the county declined from a peak in 1940 of 213,459 to 143,674 in 2010 – a loss of 1 in every 3 people (-33 percent). The city's urban core has suffered the most. The city's population was 66,993 in 1940 and only 20,980 in 2010 – a decline of nearly 70 percent. Pennsylvania as a whole grew by 28 percent over the same period (9.9M to 12.7M).

Table 2. Cambria County Population Statistics, U.S. Census 1900-2010

Year	Population
1900	104,837
1910	166,131
1920	197,839
1930	203,146
1940	213,459
1950	209,541
1960	203,283
1970	186,785
1980	183,263
1990	163,029
2000	152,598
2010	143,679

The county's struggles in employment, however, are shared by most of the neighboring counties in the region.[3] This indicates that broader, macro-economic trends -- such as increasing urbanization, an aging workforce in rural areas, weak U.S. competitiveness in manufacturing, and a growing lower-wage service sector – are having a significant

[1] United States Census Bureau. *Johnstown (city) QuickFacts*.
[2] Robert Wood Johnson Foundation. *Health Rankings: County & Roadmaps*.
[3] Cambria County Planning Commission. (2011). *Cambria County Comprehensive Plan - Chapter 4: Economic Base*. Retrieved June 11, 2015 from: https://cambriaplanning.files.wordpress.com/2013/04/chapter4economicbase.pdf

impact on the more rural areas of Western Pennsylvania. The County's 2011 Comprehensive Plan concluded that the county – along with the region as a whole – is relatively weak in relation to other areas of the country in terms of attractiveness for the desirable high-wage technology industries such as biotechnology and information-based sectors while more investment is needed in infrastructure, business services, and workforce development.

Despite these challenges, local residents and community leaders continue to strive toward a brighter future for the county. Various initiatives are underway to revitalize Johnstown's downtown, remediate various brownfield properties, recruit new employers, promote international trade, encourage local entrepreneurship, and upgrade workforce skillsets. These efforts are helping to offset the loss of manufacturing and defense jobs with new opportunities emerging in healthcare, education, transportation and warehousing, information technology, and professional services.

2

Industry Assessment

- Cambria County Defense Industry
- Local Industry Concentrations
- Regional Industry Clusters
- Key Industry Cluster Targets

Economic growth and job creation tend to expand within networks of industry participants spread across wide geographic regions. These networks – called industry clusters – pool the talent and institutional assets needed for companies to successfully compete within national and international markets. However, not all clusters are created equal. Expansion will come more easily if Cambria County is well-connected to key high-growth industries and regions. Similarly, defense-oriented firms will find the transition to commercial ventures easier if they are able to target growing markets within strong regional clusters. It is therefore important that community stakeholders identify those defense-oriented companies which have the greatest potential to make successful transitions to non-defense markets within the context of the region's growing industry clusters as a focus for strategic planning.

2.1 Cambria County Defense Industry

Who comprises Cambria County's defense industry? The following companies in Cambria County had published contractual transactions with the U.S. Department of Defense (DoD) in the federal government's 2014 fiscal year as reported by USASpending.gov (listed alphabetically).

1. ATI Engineering Services, LLC
2. Bash Contracting, Inc.
3. Cambria Business Machines, Inc.
4. Concurrent Technologies Corporation
5. Crown American Associates
6. CTC Enterprise Ventures Corporation
7. DRS Laurel Technologies
8. H. F. Lenz Co.
9. JWF Defense Systems, LLC
10. L Robert Kimball And Associates, Inc.
11. Lockheed Martin Aeroparts, Inc.
12. Lockheed Martin Corporation
13. Martin-Baker America Inc.
14. Milkie Lawn And Garden Service, Inc.
15. Mountaintop Technologies, Inc.
16. NAVMAR Applied Sciences Corporation
17. Penn Metal Fabricators, Inc.
18. Richland Lodging Associates
19. Saint Francis University

This list, however, does not capture companies within the defense supply chain operating as subcontractors. The regional Procurement Technical Assistance Center (PTAC), which is operated by Johnstown Area Regional Industries (JARI), has worked with the following additional organizations over the past several years on defense-related procurement activities (listed alphabetically).

1. Aerofab
2. Booz Allen Hamilton
3. Cambria County Association for the Blind & Handicapped
4. CJL Engineering
5. Compass Systems
6. Diamond MT
7. Dolan's Welding
8. Dynacom
9. Electromet
10. Gautier Steel
11. J.W. Carroll & Associates

12. Hastings Machine
13. Kitron
14. Kongsberg Protech Systems
15. Master Machine
16. Para Coat
17. Principle Diversified Business Group
18. Problem Solutions
19. RNDT
20. SAIC
21. Vet Advisor

Combined, these forty (40) companies represent Cambria County's exposure to the defense industry revenue decline risk.

2.1.1 Defense Company Strategies for Success

Research conducted by McKinsey&Company in 2013 examined publicly available financial indicators and strategy statements from defense companies during the last DoD down cycle (1985-1998).[4] Firms which performed the worst were those that attempted to "weather the storm" by focusing on reducing costs and improving performance to win "pivotal but relatively scarce large defense programs." In contrast, successful companies moved aggressively to divest or consolidate poor-performing business lines and took advantage of the down market to inexpensively acquire new capabilities which held the most promise for future growth. In this latest business cycle, the researchers suggest that this repositioning strategy will also prove the most successful. However, while the last cycle saw unprecedented industry consolidation through mergers and acquisitions (M&A), firms must now look toward changing defense needs and the growth of international markets to find success. First, companies must leave declining market segments – such as support for deployed ground forces – to pursue growth opportunities emerging from modern warfare tactics such as cyber defense, robotics, sensors and information systems. Second, companies should focus on developing capabilities to provide "affordable" solutions that will appeal to both western militaries with new budget constraints and our developing-world allies who are expanding and modernizing their defense sectors.

Toward the end of 2014, Bloomberg, a large U.S. privately-held financial software and media company, conducted a webinar entitled, "How has the defense industry adapted to reduced spending?"[5] Similar to the 2013 McKinsey&Company study, the researchers evaluated publically available strategy statements and financial reports to determine which strategies have proved the most successful from 2010 to 2013 (the start of the industry decline). They conclude that top defense companies are pursuing

[4] Dehoff, K., Dowdy, J. and Niehaus, J. (April 2013). *Managing a downturn: How the U.S. defense industry can learn from its past*. McKinsey&Company. Retrieved June 2, 2015 from: http://www.mckinsey.com/insights/manufacturing/managing_a_downturn

[5] Bloomberg Government. (December 2014). *How has the defense industry adapted to reduced spending?* Webinar attended December 11, 2014.

the repositioning strategy posited by the McKinsey&Company researchers. Top defense contractors are divesting poor-performing business lines and acquiring small businesses with unique, in-demand capabilities and technologies in the areas of IT/telecommunications, aviation, cyber defense, analytics, and imaging/sensors. In addition, they are successfully pursuing foreign business to offset U.S. spending declines and are increasing productivity by reducing operating costs. While many top defense companies announced strategies to diversify into commercial markets and non-defense federal segments, this has largely not occurred.

What are the implications for Cambria County's defense-oriented firms?

The worst strategy is to continue to operate on a "business as usual" basis. All indications point to a protracted and deep defense downturn. Firms which attempt to ride out the storm will be poorly positioned for the eventual return to growth if they survive at all. Instead, they should focus their efforts on pursuing repositioning strategies such as those identified in Table 3.

Table 3. Transition/Repositioning Strategies for Defense-Oriented Firms

Strategy	Description
Select Growth Market Sectors within the Defense Industry	Companies that are best suited strategically in the defense market will be those firms which have strong capabilities in the military's emerging areas of need. Cambria County defense-oriented firms should focus on developing healthy value propositions in growth segments such as advanced materials, cyber defense, robotics, information technology, and sensors.
Pursue International Business Opportunities	Companies that understand foreign markets will be more attractive subcontractors for top prime contractors. They will also have access to new business opportunities in growing markets and have opportunities to position themselves for increasingly-globalized defense and non-defense market sectors. Cambria County firms can leverage support from such local organizations as the Southern Alleghenies Planning and Development Commission (SAP&DC), JARI, and the Foreign Trade Zone to successfully globalize their offerings. Firms with digital platforms and software that can be marketed internationally will find this transition easier than service-oriented companies, which may face higher barriers to market entry.
Target Non-Defense Government Sectors	Federal, state and even local governments have similar reporting requirements, quality standards and product/service needs as the defense industry in selected sectors. While these markets are significantly smaller than their defense counterparts, smaller companies may not find this constraint as problematic as larger firms. However, many of these institutions are also undergoing budgetary cutbacks leaving existing firms fighting for an ever-shrinking monetary pie. Firms should carefully evaluate the strength of their offerings in comparison to companies already operating in the non-defense government marketplace.

Strategy	Description
Transition to the Commercial Sector	Smaller defense-oriented companies are more agile than large prime contractors and are therefore better positioned to jump into commercial markets. Additionally, many of these firms have some experience in the commercial sector from which to build. However, the difficulty of the transition should not be underestimated. Firms will be most successful in the transition that are operating in a growing market where they will have a chance to compete for newly emerging clients and opportunities instead of wrestling away customers from incumbent firms.

Companies with the highest concentrations of defense business will struggle the most with the transition to commercial-sector activity. Cambria County firms with only a small percentage of revenues coming from defense clients may find the level of difficulty of the strategies listed in Table 3 to be reversed from defense-oriented firms – with transitioning to commercial markets easier than retooling for growth markets in the defense sector. Selecting the right repositioning strategy(ies) will depend on the firm's current market orientation, capabilities and resources.

2.1.2 Cambria County Defense Industry Sectors

As stated in Section 2.1.1, Cambria County's defense companies will be most successful in making the needed transitions to new markets – either domestically or internationally – if those markets are growing. It is therefore important to understand which defense-oriented firms are already operating in high-growth sectors of the economy. Table 4 identifies the industry focus of Cambria County's companies involved in defense contracting activities. Companies which appear to have a significant concentration of defense-related business activity are labeled as "defense-oriented" in the first column.

Table 4. Cambria County Defense Company Descriptions and Industry Focus

Company	Description	Industry
Aerofab, Inc. 722 Ridge Rd Nicktown 814-948-6015 www.aerofabpa.com	Aerofab has years of experience manufacturing quality parts for aerospace markets. Capabilities include sheet metal fabrication, machining, assembly, forming, painting, aluminum heat treating, and chem film (Alodine).	Aerospace – Aircraft Engine, Parts and Auxiliary Equipment Manufacturing and Repair Services
ATI Engineering Services LLC 469 Airport Road # 9, Johnstown 814-539-4040 www.atiesd.com (Defense-oriented)	ATI Engineering Services modifies aircraft with a specialization in Night Vision Imaging System (NVIS) aircraft lighting, electrical upgrades and avionics modifications. Work includes support to law enforcement, emergency management services, utilities and military applications – including support for special/classified missions.	Aerospace – Aircraft Engine, Parts and Auxiliary Equipment Manufacturing and Repair Services

Company	Description	Industry
Bash Contracting, Inc. 189 UFS Road Clearfield 814-765-1531 www.bashcontractinginc.com	BASH Contracting installs and dismantles woven wire, electric, board and vinyl fences. The firm also completes site preparation and seeding and mulching projects. They operate in five states: Pennsylvania, New York, Virginia, West Virginia, and Ohio.	Construction
Booz Allen Hamilton 1 Pasquerilla Plaza Suite 128 Johnstown 814-535-1351 www.boozallen.com (Defense-oriented)	Booz Allen Hamilton is an industry-leading provider of management and technology consulting services to the U.S. government in the areas of defense, intelligence and civil markets. The company has offices throughout the USA and around the world including in Pittsburgh, Philadelphia, and Johnstown, Pennsylvania.	Energy, Healthcare, Financial Services, Advanced Manufacturing – Consulting Services
Cambria Business Machines, Inc. 647 Franklin Street Johnstown 814-536-5356 http://gocbm.com	Established in 1964, Cambria Business Machines sells office equipment for commercial office automation, including copiers, printers, computers, and networking equipment. The company operates from eight regional offices located in Pennsylvania, Maryland, West Virginia and New York.	Information Technology – Retail Sales
Cambria County Association for the Blind & Handicapped 175 Industrial Park Road Ebensburg 814-472-5079 www.cabproducts.com	The company offers rehabilitation and employment services to persons with disabilities in Cambria County. They manufacture products sold through distributors such as reflectors, bags, safety apparel, rings, hooks, clips, and hangers which are sold to the mining, electrical utility, solar energy, oil and gas, transportation, and communication industries. Manufacturing facilities are located in Johnstown and Ebensburg.	Energy, Mining, Transportation, and Telecommunications – Manufacturing of Auxiliary Supplies
CJL Engineering, Inc. 232 Horner Street Johnstown 814-536-1651 www.cjlengineering.com	Established in 1938 in Pittsburgh, CJL Engineering operates as a multi-disciplined energy consulting engineering firm. It offers a range of services under categories, such as plumbing, electrical, mechanical and fire protection engineering. Experience with LEED and alternative energy systems such as wind a solar. Its client base includes data centers, central plants, airports, hotels, health care, government facilities and more.	Energy - Architecture and Engineering Design and Consulting Services

Company	Description	Industry
Compass Systems, Inc. 1001 Broad Street Johnstown 814-532-5655 www.compass-sys-inc.com (Defense-oriented)	Compass Systems is an engineering services company with a focus on designing and manufacturing C4ISR tactical systems for the U.S. military. Technical competencies include electrical engineering, software engineering, aviation systems, automatic identification technologies, and unmanned platforms. The company operates from four U.S. offices spread across the USA.	Information Technology, Telecommunications – Engineering Design and Manufacturing
Concurrent Technologies Corporation 100 CTC Drive Johnstown 814-266-2874 www.ctc.com (Defense-oriented)	CTC is an independent, nonprofit, applied R&D professional services organization providing innovative management and technology-based solutions. Services include information technology, software engineering, rapid prototyping, systems engineering, program management, training, and low-rate production.	Energy, Information Technology, Aerospace, Logistics, and Training - Engineering Design and Consulting Services
Enterprise Ventures Corporation 100 CTC Drive Johnstown 814-248-7804 www.evc.ctc.com (Defense-oriented)	An affiliate of CTC, EVC provides innovative solutions for industries including Power & Energy, Intelligence & Cyber, Systems Safety, Business Process Management, and Defense & Security. EVC was founded in 2000.	Energy, Software, Aerospace, and Healthcare – Manufacturing, Design, and Consulting
Crown American Associates 1 Pasquerilla Plaza Johnstown 814-533-4600	Crown American Associates operates the Holiday Inn in downtown Johnstown, the Holiday Inn Express in Richland township, the Frank J. Pasquerilla Conference Center, and the Pasquerilla Plaza building.	Hospitality – Hotel Operations
Diamond MT, Inc. 213 Chestnut Street Johnstown 814-535-3505 www.diamond-mt.com	Diamond MT provides conformal coatings for the protection of devices, components and surfaces against corrosion. The company provides its services for circuit boards and LEDs for the medical, automotive and aerospace industries. The company does business internationally.	Information Technology, Aerospace, and Medical Devices – Coating, Treatment and Finishing of Metals

Company	Description	Industry
Dolan's Welding & Steel Fabrication, Inc. 118 Venture Street Johnstown 814-749-8639 www.dolanswelding.com	Dolans Welding & Steel Fabrication is a machine shop located in Johnstown, PA. The company specializes in fabrication of aluminum, stainless steel, and modern alloys. Its capabilities include machining, plasma cutting, reverse engineering and robotics. The fabrication facility also performs manufacturing, punching, shearing, rolling, bending, forming and repair work. Dolans Welding & Steel Fabrication Inc. caters to utilities as well as cogeneration and power plants.	Energy – Metals Manufacturing
DRS Laurel Technologies 246 Airport Road Johnstown 814-534-8900 www.drs.com (Defense-oriented)	DRS Laurel Technologies is a Finmeccanica Company headquartered in Arlington, Virginia. The company is a major supplier of military communications and information technology equipment such as thermal imaging devices, combat display workstations, electronic sensor systems, power systems, ruggedized computers, mission recorders, environmental controls, telecommunication equipment, and military trailers.	Information Technology, Energy, and Logistics/Transportation - Manufacturing
Dynacom 900 Oak Street Johnstown 814-536-4491	Dynacom is a small machine shop operating from Johnstown, Pennsylvania. The company was founded in 1998 and manufacturers current-carrying wiring devices for specialized aircraft equipment.	Aerospace – Aircraft Engine, Parts and Auxiliary Equipment Manufacturing and Repair Services
Electromet Corporation 180 Jim Edwards Drive Johnstown 814-269-2393 (Defense-oriented)	Electromet Corporation was founded in 1974 in Hagerstown, Maryland, with manufacturing facilities also located in Johnstown. The company provides electronic packaging products and precision metal components for the defense industry.	Metal Products Manufacturing - Sheet Metal Product Manufacturing, Engineering Design Services

Company	Description	Industry
Gautier Steel, Ltd. 80 Clinton Street Johnstown, PA 15901 814-535-9200 www.gautiersteel.com	Gautier Steel is one of the United States' leading producers of hot-rolled carbon and alloy flats, sharp-cornered squares and special sections. The company's three-bar mills allow it to be more flexible to roll a broad range of shapes and sizes for its product offering. Gautier Steel's products include flats, squares and special section, and the company also offers processing capabilities, such as cleaning, heat treatment, testing, saw cutting and straightening. It is also capable of rolling a variety of steel grades, whether they be carbon, alloys, aircraft-quality or free machining grades. Gautier Steel, which employs more than 100 people, is headquartered in Johnstown, PA.	Metal Products Manufacturing (Iron & Steel)
H.F. Lenz Company 1407 Scalp Avenue Johnstown 814-269-9300 www.hflenz.com	H.F. Lenz Company offers civil structural, communications, correctional facility, educational, government, healthcare, laboratory, hospitality and other building systems, infrastructure and industry engineering services. Established by Harold F. Lenz in 1946, H.F. Lenz Company was incorporated in Pennsylvania in 1953. H.F. Lenz Company s is headquartered in Johnstown and has branch offices in Pittsburgh, Conneaut, Ohio, and Wallingford, CT.	Healthcare, Communications, Education, Housing - Architecture and Engineering Design and Consulting Services
Hastings Machine Co 192 Haida Avenue Hastings 814-247-6562 www.hastingsmachine.com	Founded in 1975, Hastings Machine Company specializes in high volume custom screw machine products with a full range of computer numerical control CNC and threading services. Some of the products offered by the company include couplings, cable wedges and anchors, bushings, fittings and fasteners.	Metal Products Manufacturing - Industrial and Commercial Machinery and Equipment

Company	Description	Industry
J.W. Carroll & Associates 1800 Dolphin Drive Johnstown (Defense-oriented)	Established in 2013 by Mr. John Carroll, the company provides defense-industry consulting services such as domestic and international business development, business opportunity analysis and prioritization, capture and proposal management, project management, supply change development, and logistics systems integration.	Aerospace – Consulting Services
JWF Defense Systems, LLC 84 Iron St Johnstown 814-539-6922 www.jwfds.com (Defense-oriented)	JWF Defense Systems is a process-based contract manufacturer in the field of metal manufacturing, specifically for armor welding and forming. The company also provides military specification-compliant coating and painting and engineering services.	Metal Products Manufacturing (Steel) - Industrial and Commercial Machinery and Equipment
Kitron 160 JARI Drive # 150 Johnstown 814-266-1452 www.kitron.com	Kitron is an Electronics Manufacturing Services (EMS) company with operations in Norway, Sweden, Lithuania, Germany, China and the USA. The company also provides technical services such as prototyping, material analyzing and test development.	Aerospace, Energy, Medical Devices, Telecommunications - Electronics Manufacturing
Kongsberg Protech Systems Industrial Park Road Suite 105 Johnstown 814-269-3142 www.kongsberg.com (Defense-oriented)	Kongsberg Protech Systems is a leading supplier of remote weapon stations (i.e., turrets) for land and sea military platforms sold to 17 national militaries. The company's parent company sells products and services related to the oil and gas industry, marine systems, energy and other military applications.	Metal Products Manufacturing – Weapon Systems
L. Robert Kimball & Associates, Inc. 615 W Highland Avenue Ebensburg 814-472-7700 www.lrkimball.com	L. Robert Kimball & Associates, based in Ebensburg, PA, offers a range of architectural and engineering services for new buildings, as well as renovations and adaptive reuse of existing ones. It also offers complete engineering services, including architectural, mechanical, electrical, plumbing, structural design and project management. Additionally, it offers civil engineering and environmental services, such as land development, geotechnical engineering, hazardous waste management, and solid waste management and facility design. Its services also include water and wastewater facilities, water resource services demolition and asbestos management.	Architecture and Engineering Services

Company	Description	Industry
Lockheed Martin Corporation / Lockheed Martin AeroParts, Inc. 211 Industrial Park Road Johnstown 814-262-3000 www.lockheedmartin.com (Defense-oriented)	Lockheed Martin AeroParts, Inc. was established in Johnstown, Pennsylvania, in 1987 as a wholly owned subsidiary of the Lockheed Martin Corporation. The organization supports the C-130, F-16, F-35 and C-5 platforms with new production and spare parts. The facility delivers machined details and subassembly and assembly components. Lockheed Martin Corporation also operates from Johnstown.	Aircraft Engine, Parts and Auxiliary Equipment Manufacturing and Repair Services
Martin-Baker America Inc. 423 Walters Avenue Johnstown 814-262-9325 www.martin-baker.com (Defense-oriented)	Martin-Baker is a leading manufacturer of ejection seats and related equipment for fixed wing aircraft and helicopters. The company was founded in 1934 in the UK and has offices in France, Italy, and Johnstown.	Aerospace – Aircraft Engine, Parts and Auxiliary Equipment Manufacturing and Repair Services
Master Machine Co 310 River Street South Fork 814-495-4900 www.mastermachineco.com	Since 1974, Master Machine Co has manufactured and repaired custom parts, including belt drives, axels, bearing carriers, wheel units, conveyor parts, torque shafts, sprockets, seats and bolt assemblies.	Metal Manufacturing - Metal Parts, Machinery and Equipment Manufacturing
Milkie Lawn And Garden Service, Inc. 461 Eisenhower Boulevard Johnstown 814-288-2420 www.johnstown landscapers.com	Established in 1970, the company offers landscape design and maintenance across a 5-county region.	Landscaping
Mountaintop Technologies Inc. 1 Pasquerilla Plaza Johnstown 814-536-7676 www.mountaintoptech.com	MountainTop Technologies is currently out of business. They produced courseware for the business, education, government, military and healthcare industries. Products included online instruction, interactive training, simulations, website development and testing.	Education and Training
Navmar Applied Sciences Corporation 1778 Frankstown Road Johnstown 814-535-5035 www.nasc.com (Defense-oriented)	Navmar Applied Sciences Corporation provides specializing professional engineering services in the areas of acoustics, electronics, aerodynamics, systems engineering, sensors, electro-optics, materials and corrosion protection. Established in 1977, the firm is headquartered in Warminster, PA, with offices across the country.	Aerospace, Marine, Information Technology - Engineering Design and Consulting Services

Company	Description	Industry
Para-Coat Technologies Inc. 817 Franklin Street Suite 100 Johnstown 814-254-4376 www.pctconformalcoating.com	Para-Coat Technologies applies parylene, acrylic, polyurethane and silicone conformal coatings to products for the electronic, medical, automotive, and aerospace industries.	Information Technology, Aerospace, and Medical Devices, Automotive – Coating, Treatment and Finishing of Metals
Penn Metal Fabricators Inc. 2103 New Germany Road Ebensburg 814-472-6000 www.pennmetalfab.com	Penn Metal Fabricators, located in Ebensburg, Pa., provides metal fabrication services to a variety of industries, including the United States military, aviation, United States Postal Service, biomedical, construction and electrical industry. Its metal fabrication capabilities include: shearing, sawing, laser cutting, machine, turning, punching, bending, deep draw, welding, assembly, finishing and packaging.	Metal Manufacturing - Sheet Metal Product Manufacturing
Problem Solutions 1407 Eisenhower Blvd Square II, Suite 303, Johnstown, PA 15904 866-413-9883 www.problemsolutions.net	Problem Solutions offers human performance learning solutions to military and commercial customers. Offerings include innovated performance and training effectiveness assessments, intelligent tutoring systems, and learning ecosystems.	Information Technology, Training
Principle Diversified Business Group, Inc. 544 Grove Avenue Suite 1 Johnstown 814-269-4666 www.principlediversifiedgroup.com	Principle Diversified Group, Inc. offers medical stenographic and document management services. The company also provides legal stenography and notary services.	Healthcare – Stenography
Richland Lodging Associates 455 Theatre Drive Johnstown 814-266-3678	Richland Lodging Associates operates the Comfort Inn & Suites in Johnstown.	Hospitality – Hotel Operations
RNDT 228 Maple Avenue Johnstown 814-535-5448 www.rndt.net	RNDT offers non-destructive testing and laboratory services in the form of industrial radiography, positive material identification, liquid penetrant, magnetic particle and ultrasonic testing. Services are provided to the shale gas industry and industrial facilities.	Energy, Other - Scientific Testing and Analysis Services

Company	Description	Industry
SAIC 227 Franklin Street, Suite 200 Johnstown 814-535-3496 www.saic.com (Defense-oriented)	SAIC is a $4-billion diversified technology and engineering company with services provided to the defense, government and commercial sectors.	Information Technology, Logistics, Education and Training - Engineering Design and Consulting Services
Saint Francis University 117 Evergreen Drive Loretto 814-472-3000 http://francis.edu	Founded in 1847, Saint Francis University is one of the oldest Catholic universities in America. The university offers more than 50 academic programs of study.	Education and Training – Post-secondary Schools
VetAdvisor 313 West High Street Suite 116 Ebensburg 814-846-4664 http://myvetadvisor.com	VetAdvisor® provides veteran-centric integrative care through proactive coaching services across behavioral health, wellness, financial, and all aspects of transition and career development for military veterans. VetAdvisor is headquartered in Falls Church, VA, and the contact center is located in Ebensburg, PA.	Healthcare

Of the 40 companies in Cambria County with defense-related business activity, more than 80 percent are active in five industries: Energy, Information Technology, Metals Manufacturing, Aerospace and Healthcare/Medical. The breakdown of companies by industry sector is provided in Table 5. Several companies are active in multiple markets.

Table 5. Cambria County Defense Companies by Industry Sector

Industry	Defense-oriented Companies	Companies with Defense Contracts
Energy	• Booz Allen Hamilton • Concurrent Technologies Corporation • Enterprise Ventures Corporation	• Cambria County Association for the Blind & Handicapped • CJL Engineering, Inc. • Dolan's Welding & Steel Fabrication, Inc. • Kitron • RNDT
Information Technology	• Concurrent Technologies Corporation • Enterprise Ventures Corporation • Lockheed Martin Corporation • Navmar Applied Sciences Corporation • Problem Solutions • SAIC	• Cambria Business Machines
Metals Manufacturing	• JWF Defense Systems, LLC • Kongsberg Protech Systems • Concurrent Technologies Corporation • Enterprise Ventures Corporation	• Aerofab, Inc. • Electromet Corporation • Gautier Steel, Ltd. • Hastings Machine Co • Master Machine Co • Penn Metal Fabricators, Inc.

Industry	Defense-oriented Companies	Companies with Defense Contracts
Aerospace	• ATI Engineering Services, LLC • Concurrent Technologies Corporation • Enterprise Ventures Corporation • J.W. Carroll & Associates • Lockheed Martin Corporation • Lockheed Martin AeroParts, Inc. • Martin-Baker America, Inc. • Navmar Applied Sciences Corporation	• Aerofab, Inc. • Diamond MT, Inc. • Dynacom • Kitron • Para-Coat Technologies, Inc.
Healthcare/ Medical	• Booz Allen Hamilton • Enterprise Ventures Corporation • VetAdvisor	• Diamond MT, Inc. • H.F. Lenz Company • Kitron • Para-Coat Technologies, Inc. • Penn Metal Fabricators, Inc. • Principle Diversified Business Group, Inc.

2.2 Local Industry Concentrations

Companies with defense contracts will more easily transition to commercial-sector opportunities where a ready market of experienced personnel, suppliers and complementary partners already exists regionally. Is Cambria County heavily concentrated in the five industries where the majority of defense-related businesses operate?

The Institute for Strategy & Competitiveness at the Harvard Business School – with funding from the U.S. Department of Commerce, Economic Development Administration – maintains a website for mapping industries clusters in the USA (www.clustermapping.us). Cambria County has particularly heavy concentrations in the industries identified in Table 6.

Table 6. Cambria County's Strong Traded Industry Sub-sector Concentrations by Employment for Sub-sectors with over 100 Employees (2012)

Industry	Employment (2012)[6]	US Rank[7]	Strong Sub-sectors		
			Sub-sector	Employment (2012)	US Rank
Education & Knowledge Creation	3,420	182	Colleges, Universities, and Professional Schools	2,500	146
			Research Organizations	760	139
			Training Programs	140	347
Business Services*	2,576	415	Architectural and Drafting Services	375	107
			Engineering Services	358	349

[6] Employment figures are from the U.S. Census Bureau.
[7] Rank numbers are out of 3221 for counties.

Industry	Employment (2012)[6]	US Rank[7]	Strong Sub-sectors		
			Sub-sector	Employment (2012)	US Rank
Distribution & Electronic Commerce*	1,274	627	Wholesale of Farm Products and Supplies	385	131
			Wholesale of Metals and Minerals (except Petroleum)	120	289
Information Technology & Analytical Instruments	830	199	Computers and Peripherals	750	21
Upstream Metal Manufacturing	725	167	Wires and Springs	550	15
			Iron and Steel Mills and Forging	175	161
Insurance Services	630	295	Insurance Carriers	620	288
Production Technology and Heavy Machinery*	601	470	Agricultural and Construction Machinery and Components	331	247
			Process Equipment and Components	120	458
Metalworking Technology	541	213	Metal Processing	366	118
			Fasteners	175	231
Food Processing & Manufacturing*	503	489	Dairy Products	375	141
Automotive	309	474	Automotive Parts	195	407
			Metal Mills and Foundries	185	199
Biopharmaceuticals	375	141	Biopharmaceutical Products	375	115
Apparel	295	68	Apparel Contractors	175	37
Medical Devices	235	236	Optical Instruments and Ophthalmic Goods	175	58
Coal Mining	207	98	Coal Mining	207	98
Electric Power Generation & Transmission	175	277	Fossil Fuel Electric Power	175	181
Aerospace Vehicles & Defense*	175	234	Aircraft	175	193

*Not strong industry sector concentrations – but contain strong industry sub-sectors.

Companies with defense business are operating in many of these industries and industry sub-sectors. All five of the industry concentrations identified in Section 2.1.2 (Energy, Information Technology, Metals Manufacturing, Aerospace, and Healthcare/Medical) are represented in Table 6 as well as some not highlighted such as a few firms operating in the Education & Knowledge Creation market (Concurrent Technologies Corporation, Problem Solutions, Saint

Francis University) and in the Architectural and Drafting Services sub-sector (L. Robert Kimball & Associates, H.F. Lenz Company).

Innovation plays an important role in the competitiveness of regions within industries. The Purdue Center for Regional Development and the Indiana Business Research Center at Indiana University's Kelley School of Business – with funding from the U.S. Department of Commerce, Economic Development Administration – have created an Innovation Index which characterizes a region's innovative capacity and outcomes in terms of human capital, economic dynamics, productivity and employment, and overall economic well-being. Cambria County falls below the national average in all measures except the last.

A search of the U.S. Patent and Trademark Office (USPTO) located 63 patent applications submitted over the past 15 years – representing an average of approximately four patent applications per year. This figure may under-represent the level of innovation in the county as software is typically protected by copyright versus patents. A region such as Johnstown with a significant IT footprint may see fewer patents submitted yet still be generating important innovations. In addition, inventions at branch offices of larger corporations will likely file patent applications from their headquarters office. This would include local offices of defense firms such as SAIC, DRS Laurel Technologies, Lockheed Martin and Kongsberg Protech Systems. Furthermore, certain firms may elect to keep innovations as trade secrets versus pursuing patents. Still, patent data from the USPTO can provide valuable insight on the types of innovations supported by the community and the local companies leading new innovation efforts.

Defense businesses have been important drivers of Cambria County innovation activity. Over 30 percent of the patent applications over the past 15 years have originated from companies with defense business activity, including Concurrent Technologies Corporation, Cambria County Association for the Blind & Handicapped, Mountaintop Technologies and JWF Industries. Figure 3 depicts the number of patents by applicant firms and Figure 4 shows the number of patents by technology area.

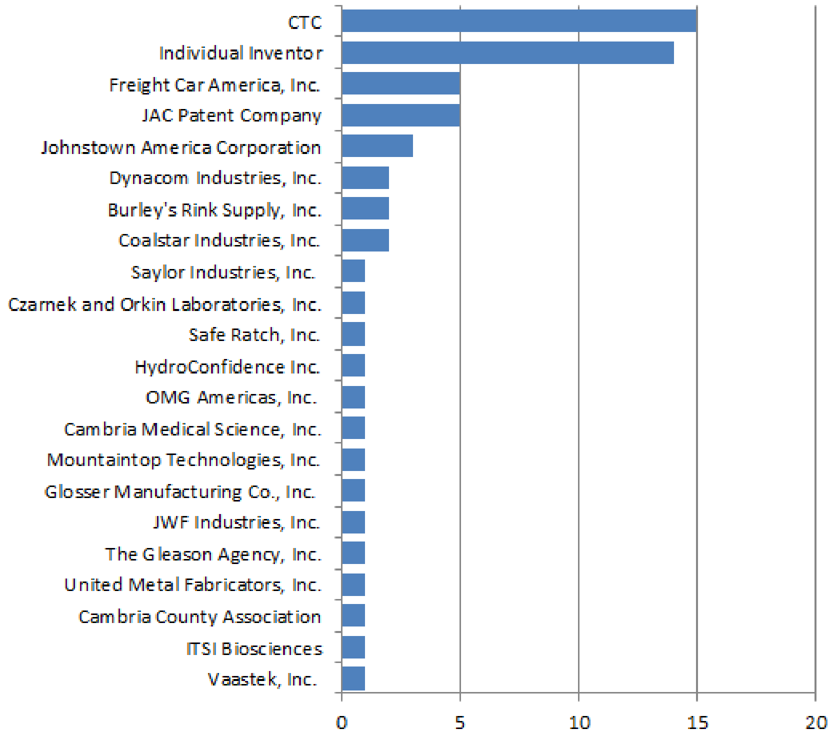


Figure 3. Cambria County Patent Applications by Company, 2000-2014

Figure 3 indicates that Concurrent Technologies Corporation has been a significant source of local innovation over the past 15 years – generating over 20 percent of the county's patent activity.

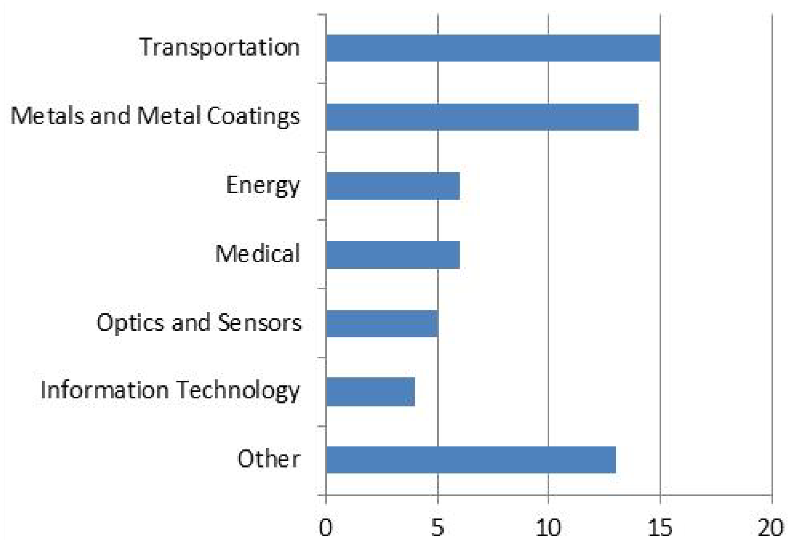


Figure 4. Cambria County Patent Applications by Technology Area, 2000-2014

As shown in Figure 4, the county's patent applications are concentrated in transportation and metals and metal coatings sectors. These two sectors account for nearly 50 percent of the patent applications submitted. Cambria County has a further 1/3 of its patent application portfolio in energy, medical, optics and sensors, and information technology. These categories align well with several of the sectors highlighted previously for industry cluster concentration, including metals, energy, healthcare/medical, and information technology.

Labor data also supports the high concentration of region's metals and computer- and software-related industries. The U.S. Bureau of Labor Statistics, Operational Employment Statistics (2004-2014) indicates that the Johnstown MSA has experienced a significant employment decline in many machine operator occupations over the past decade, but metals production and fabricating industries remain strong. The region has maintained above the U.S. average employment concentration ratios in occupations such as mechanical technicians, mechanical engineers, and welders/metal cutters. Though computer- and software-related employment dropped dramatically beginning in 2005, the Johnstown area has retained an above the U.S. average employment concentration ratio for software programmers.

Industry concentration data, patent activity and labor data suggest that Cambria County's defense firms generally operate within areas of strong local economic activity. Metals manufacturing-related activities are a particular strength of the community.

2.3 Regional Industry Clusters

Industry clusters are, "concentrations of firms in loosely defined geographic areas, with complementary rather than competitive assets, which operate through networks."[8] These clusters benefit from self-reinforcing economies of scale factors whereby key assets such as research institutes, workforce skill specializations, and education programs both arise from and contribute to the growth of these industry concentrations leading to new industry investment, business growth, and job creation. It is therefore imperative that Cambria County's stakeholders understand how local industry participants are connected to these wider networks and develop strategies which build upon these natural engines of economic growth.

One significant challenge, however, is the relative isolation of the county in a rural portion of the state. Cambria County's separation from major commercial markets and its distance (about 35 minutes) from the main east-west artery in southern Pennsylvania – I-70/I-76 – may limit cluster effects. However, Johnstown is only one hour away from the outskirts of Pittsburgh and near a few similar-sized cities such as Altoona (and I-99) and State College (and I-99 and I-80). Table 7 presents the relative industry/sub-sector rankings for the City of Pittsburgh and the State of Pennsylvania using the same industry cluster tool as in Section 2.2. Industries and sub-sectors with strong concentrations are highlighted in yellow.

Table 7. Cambria County's Strong Traded Industry Sub-sector Concentrations by Employment for Sub-sectors with over 100 Employees (2012) Compared to Pittsburgh and the State of Pennsylvania

Cambria County		Pittsburgh MSA		Pennsylvania	
Industry	Sub-sector	Industry Rank[9]	Sub-sector Rank	Industry Rank[10]	Sub-sector Rank
Education & Knowledge	Colleges, Universities, and Professional Schools	9	6	3	2

[8] World Bank. (2010). *Innovation Policy: A Guide for Developing Countries*. Washington, DC.
[9] Rank numbers are out of 917 for MSAs.
[10] Rank numbers are out of 50 for states.

Cambria County		Pittsburgh MSA		Pennsylvania	
Industry	**Sub-sector**	**Industry Rank**[9]	**Sub-sector Rank**	**Industry Rank**[10]	**Sub-sector Rank**
Creation	Research Organizations		14		7
	Training Programs		36		9
Business Services*	Architectural and Drafting Services	20	26	7	6
	Engineering Services		14		5
Distribution & Electronic Commerce*	Wholesale of Farm Products and Supplies	32	19	6	6
	Wholesale of Metals and Minerals (except Petroleum)		10		5
Information Technology & Analytical Instruments	Computers and Peripherals	22	38	7	8
Upstream Metal Manufacturing	Wires and Springs	2	16	1	1
	Iron and Steel Mills and Forging		2		2
Insurance Services	Insurance Carriers	13	13	4	4
Production Technology and Heavy Machinery*	Agricultural and Construction Machinery and Components	14	19	5	4
	Process Equipment and Components		10		6
Metalworking Technology	Metal Processing	12	16	6	7
	Fasteners		23		5
Food Processing & Manufacturing*	Dairy Products	55	56	4	5
Automotive	Automotive Parts	60	121	13	14
	Metal Mills and Foundries		9		5
Biopharmaceuticals	Biopharmaceutical Products	82	65	6	2
Apparel	Apparel Contractors	58	130	6	4
Medical Devices	Optical Instruments and Ophthalmic Goods	39	20	6	8
Coal Mining	Coal Mining	8	8	3	3
Electric Power Generation & Transmission	Fossil Fuel Electric Power	12	10	3	2
Aerospace Vehicles & Defense*	Aircraft	170	150	22	15

*Not strong industry sector concentrations – but contain strong industry sub-sectors.

Table 8 examines the six neighboring counties using the same methodology as described above. This illustrates the alignment of Cambria County's industry with those of the immediately surrounding region.

Table 8. Cambria County's Strong Traded Industry Sub-sector Concentrations by Employment for Sub-sectors with over 100 Employees (2012) Compared to Surrounding Counties

Cambria County		Clearfield		Centre		Blair		Somerset		Westmoreland		Indiana	
Industry	Sub-sector	Industry Rank[11]	Sub-sector Rank	Industry Rank	Sub-sector Rank	Industry Rank	Sub-sector Rank	Industry Rank	Sub-sector Rank	Industry Rank	Sub-sector Rank	Industry Rank	Sub-sector Rank
Education & Knowledge Creation	Colleges, Universities, and Professional Schools	760	765	509	213	912	-	1129	-	198	148	872	-
	Research Organizations		-		238		969		559		610		-
	Training Programs		509		168		403		-		316		555
Business Services*	Architectural and Drafting Services	680	1456	325	368	388	336	1234	735	228	319	550	1398
	Engineering Services		690		269		352		609		154		640
Distribution & Electronic Commerce*	Wholesale of Farm Products and Supplies	620	2159	652	1375	284	917	631	437	216	567	516	1926
	Wholesale of Metals and Minerals (except Petroleum)		339		730		679		335		288		341
Information Technology & Analytical Instruments	Computers and Peripherals	341	-	113	-	368	-	406	-	96	339	589	-
Upstream Metal Manufacturing	Wires and Springs	215	240	460	-	252	-	467	641	23	84	276	526
	Iron and Steel Mills and Forging		-		-		-		-		13		-

[11] Rank numbers are out of 917 for MSAs.

Cambria County		Clearfield		Centre		Blair		Somerset		Westmoreland		Indiana	
Industry	Sub-sector	Industry Rank[11]	Sub-sector Rank	Industry Rank	Sub-sector Rank	Industry Rank	Sub-sector Rank	Industry Rank	Sub-sector Rank	Industry Rank	Sub-sector Rank	Industry Rank	Sub-sector Rank
Insurance Services	Insurance Carriers	517	597	501	474	317	311	459	458	324	320	993	1888
Production Technology and Heavy Machinery*	Agricultural and Construction Machinery and Components	1027	693	929	-	545	176	790	603	86	535	506	256
	Process Equipment and Components		-		662		-		462		15		536
Metalworking Technology	Metal Processing	531	449	368	283	737	1155	764	905	41	98	366	261
	Fasteners		-		553		331		557		45		542
Food Processing & Manufacturing*	Dairy Products	1457	448	736	-	509	453	780	-	440	-	1416	623
Automotive	Automotive Parts	1256	1090	1588	-	732	-	418	996	169	594	979	598
	Metal Mills and Foundries		654		568		-		405		14		-
Biopharmaceuticals	Biopharmaceutical Products	-	-	264	210	-	-	-	-	-	-	-	-
Apparel	Apparel Contractors	450	98	1085	-	1105	-	1086	228	530	243	-	-

Cambria County		Clearfield		Centre		Blair		Somerset		Westmoreland		Indiana	
Industry	**Sub-sector**	**Industry Rank**[11]	**Sub-sector Rank**	**Industry Rank**	**Sub-sector Rank**	**Industry Rank**	**Sub-sector Rank**	**Industry Rank**	**Sub-sector Rank**	**Industry Rank**	**Sub-sector Rank**	**Industry Rank**	**Sub-sector Rank**
Medical Devices	Optical Instruments and Ophthalmic Goods	949	224	395	-	895	258	308	-	151	315	886	-
Coal Mining	Coal Mining	32	32	153	153	-	-	22	22	31	31	61	61
Electric Power Generation & Transmission	Fossil Fuel Electric Power	557	431	887	500	-	-	632	-	918	513	22	3
Aerospace Vehicles & Defense*	Aircraft	-	-	-	-	-	-	-	-	323	-	-	-

*Not strong industry sector concentrations – but contain strong industry sub-sectors.

Connecting these to the county's local industry concentrations in Table 6 and the defense industry concentrations in Table 5 reveals important overlaps in the areas of metals manufacturing and information technology.

Academic publishing company Elsevier and the Council of State Governments (CSG) produced *America's Knowledge Economy: A State-by-State Review* (April 2015) that examines the basic research strengths in each state.[12] Pennsylvania ranks high nationally in the areas of:

- agricultural and biological sciences (4th);
- business, management and accounting (5th); and
- earth and planetary science (8th).

None of these are particularly relevant to the areas of defense industry concentration noted in Section 2.1.2.

[12] Council of State Governments. (April 2015). *America's Knowledge Economy: A State-by-State Review*. Retrieved June 5, 2015 from: http://www.csg.org/programs/knowledgeeconomy/state_pages.aspx

2.4 Key Industry Cluster Targets

Ideally, Cambria County's defense industry specializations will have ready counterparts in commercial sector concentrations both locally and regionally. Defense-oriented businesses will be able to readily connect with customers, suppliers, partners and support organizations to pioneer new non-defense opportunities while displaced workers will find many job openings related to their prior employment in the defense sector. A mismatch will mean that current defense-oriented companies, defense industry employees, and local stakeholders must think critically about how to enhance the transition to commercial sectors. Successful transitions may still be possible by building new capabilities or cluster assets; retraining workers on different, but related skillsets; and dropping business lines with a lower probability of finding successful commercial applications. Table 9 presents an overview of the potential alignment between Cambria County companies involved in defense contracting activities and the relative industry concentrations in Cambria County, the surrounding 6-county region, and the broader Pennsylvania and City of Pittsburgh markets.

Table 9. Cambria County's Defense Industry Concentrations Alignment to Cambria County, the 6-County Region, and the Broader Market (City of Pittsburgh and State of Pennsylvania)

Defense Industry Concentration	Cambria County	6-County Region	City of Pittsburgh and State of Pennsylvania
Energy	A concentration in Fossil Fuel Electric Power.	Only two counties share the Fossil Fuel Electric Power concentration.	A similar concentration in Pittsburgh.
Information Technology	Concentration in Information Technology & Analytical Instruments.	Four of the six counties share a concentration in the same industry.	A similar concentration in Pittsburgh.
Metals Manufacturing	Concentrations in Upstream Metal Manufacturing (with specialization in Wires and Springs and Iron and Steel Mills and Forging subsectors), Metalworking Technology (with specialization in Metal Processing and Fasteners), and Automotive Metal Mills and Foundries.	All six counties share the concentration in Upstream Metal Manufacturing and four of the six are also concentrated in Metalworking Technology – (four of six in Metal Processing and five of six in Fasteners). Only two of the six counties share the Automotive Metal Mills and Foundries concentration.	Same concentration in both Pittsburgh and Pennsylvania in Upstream Metal Manufacturing (same specializations) and Automotive Metal Mills and Foundries, and a State concentration in Metalworking Technology.
Aerospace	A concentration in the aircraft industry.	No counties share this concentration.	Neither Pittsburgh nor Pennsylvania shares this concentration.

Defense Industry Concentration	Cambria County	6-County Region	City of Pittsburgh and State of Pennsylvania
Healthcare/ Medical	A concentration in Medical Devices with specialization in Optical Instruments and Ophthalmic Goods and Biopharmaceutical Products. Strong local healthcare treatment services.	Only two of the six counties share the concentration in Medical Devices and only one (Clearfield) has a concentration in Optical Instruments and Ophthalmic Goods. The concentration in Biopharmaceuticals is only shared with Centre County.	Pennsylvania shares the concentration in Biopharmaceuticals and Pittsburgh shares the concentration in Optical Instruments and Ophthalmic Goods in the Medical Device industry.
Education & Knowledge Creation	Strong employment and concentrations in Colleges, Universities, and Professional Schools; Research Organizations; and Training Programs.	No county shares the concentration in the Education & Knowledge Creation industry. However, Centre County shares the concentrations in the three sub-sectors. In addition, Westmoreland shares the sub-sector concentration in Colleges, Universities, and Professional Schools while Clearfield shares the concentration Training Programs.	Both Pittsburgh and Pennsylvania share the concentration in Education & Knowledge Creation and the specialization in Colleges, Universities, and Professional Schools. Pittsburgh also shares a concentration in Research Organizations.
Architectural and Drafting Services & Engineering[13]	While the county is not concentrated in Business Services in general, it does have a concentration in two sub-sectors: Architectural and Drafting Services and Engineering.	Only two of six counties share a concentration each of the two subsectors. Centre County is concentrated in both.	Pittsburgh shares a concentration in Engineering Services.

The strongest cluster is **Metals Manufacturing** in the areas of Upstream Metal Manufacturing and Metalworking Technology both in the immediate and larger geographic regions. Defense firms and employees operating in these areas will have an easier time transitioning to commercial opportunities within this sector. There is also strong patent activity in this sector.

[13] Business Services Industry Sub-sectors.

Information Technology represents another strong area of industry concentration. Four of the six surrounding counties and the City of Pittsburgh are also concentrated in this sector. There is also patent activity in this sector.

While the data did not show a particularly strong concentration in the **Energy** industry, the strong presence of the shale gas industry in neighboring counties and surrounding region and growing potential for alternative energy suggests that this sector also has potential. There is also a connection to the City of Pittsburgh and patent activity in this sector.

Engineering Services is a strong local concentration with connections to businesses in Centre and Westmorland Counties and the City of Pittsburgh.

The **Education & Knowledge Creation** industry is concentrated locally with high employment and strong connections to Centre County (due to Penn State University), Pittsburgh, and the State of Pennsylvania as a whole. Cambria County's colleges, universities and professional schools will likely continue to do well and be important components of the defense transition initiative as critical partner organizations for any selected strategies. However, the defense industry in Cambria County is not very concentrated in this sector with one of the key firms (Mountaintop Technologies) recently going out of business. The few remaining defense-oriented firms with education and training activities do not represent a critical mass of firms needed to build a transitional cluster development strategy. This industry does however provide the county a great opportunity to brand itself as an educational hub producing thousands of young educated engineers, healthcare workers, business personnel and information technology specialists. The county is home to five universities and colleges that, if marketed collectively, would showcase the county as an area that has young educated workers available in a low-cost area. These factors can become a magnet for attracting new businesses to the area that will create employment opportunities for defense employees transitioning to other positions within Cambria County.

The local industry involved in the **Healthcare/Medical** industry for trade (vs. local market consumption) is relatively small with weak regional concentrations in related sub-sectors such as medical devices and biopharmaceutical products. This was confirmed in meetings with local Duke Lifepoint representatives. The focus of the industry in Cambria County is on treatment and medical care versus traded goods and technologies. In addition, very few defense-related firms have specialized in this area. It is unlikely this industry can support substantial growth in employment from defense industry transitioning companies though it would be a good target for displaced worker retraining initiatives.

It appears unlikely that the region will support an **Architectural and Drafting Services** cluster specialization. Individual firms may continue to do well in this sector commercially, but it is unlikely to drive significant employment or economic growth in the near term.

Cambria County's defense industry specialization in **Aerospace** is isolated in terms of regional cluster potential. It will be extremely hard to build the requisite foundations for growth in this sector outside of the defense industry. Firms in this sector may choose to focus on the growing niche sectors in the defense aviation industry to maintain their market positions during the downturn in defense spending.

Given this assessment, Cambria County's best industry cluster targets for focusing defense transitioning planning are:

1. Metals Manufacturing
2. Information Technology
3. Energy

3

Local Assets

- Asset Directory
- Program Directory
- Asset Matrix

Local educational institutions, job training programs, economic development organizations, business incubators, entrepreneurship programs, business networks and government programs provide support for the development of healthy industry cluster ecosystems. As clusters grow, these assets tend to evolve specialized support systems that strengthen the cluster and provide increased productivity and economy of scale benefits. For example, a local college may develop specialized training courses and degree programs related to a thriving industry while another group may launch a business incubator focused on the same industry specialization. These efforts add up over time to provide positive reinforcement to cluster formation and growth.

3.1 Asset Directory

Table 10 identifies organizations which may be useful in forming or strengthening the County's industrial clusters, implementing key development programs and initiatives, and providing services to transitioning defense-oriented companies and displaced workers.

Table 10. Asset Directory

Name	Type	Description	URL
1889 Foundation	Foundation	The 1889 Foundation pursues a mission of community service dedicated to identifying and meeting the greatest health and wellness needs of the Greater Johnstown region.	http://www.1889foundation.org/
Alternative Community Resource Program (ACRP)	Social Services	A non-profit agency that provides services to children, adolescents and families. Offering programs specializing in ADHD, autism, education and mental and behavioral health across five counties.	http://www.acrpkids.org/
Ben Franklin Technology Partners (BTFP)	Business Startup Assistance	The Ben Franklin program focuses on providing early stage/technology funding and business support services to emerging tech-based startups and existing manufacturers in Pennsylvania.	http://benfranklin.org/
Cambria County Economic Development Authority	Economic Development	Established in 2013 to pursue recruitment of new companies into the County and the establishment and implementation of a Foreign-Trade Zone in Cambria County and the surrounding region.	http://cambriaeda.org/
Cambria County Industrial Development Corporation/ Authority	Economic Development	An economic development agency responsible for the creation of jobs, financing, retention and the promotion of economic development in Cambria County.	http://www.cambriacountypa.org/index.php?page=ccidc

Name	Type	Description	URL
Cambria County Planning Commission	Community Development	The primary function is to prepare and update the County Comprehensive Plan. Additional functions include: assist local municipalities with the development of their comprehensive plans, zoning ordinances, and subdivision and land development ordinances; be a standing member of the Metropolitan Planning Organization (MPO) and to act as its official secretary. Additionally, the Planning Commission prepares the County's 12-Year Transportation Program. This program lists all the major highway, bridge, mass transit and airport improvement projects to be undertaken within Cambria County.	http://cambriaplanning.org/
Cambria County Redevelopment Authority	Economic Development and Community Development	The Authority exists for the public purpose of community development and revitalization efforts through the administration of housing, infrastructure, recreation, blight elimination and economic programs.	http://www.cambriacountypa.gov/redevelopment.aspx
Cambria-Rowe Business College	Education	CRBC offers concentrated career training through specialized degree programs in high growth fields such as Applied Management, Business Office Administration, Applied Accounting, Legal Assistant, Legal Assistant, Medical Office Clinical Elective, Medical Office Administration, Application Design, and Web Development .	https://www.crbc.edu/index.html
Catalyst Connection	Economic Development	Economic development organization dedicated to helping small manufacturers in southwestern Pennsylvania improve their competitive performance.	http://www.catalystconnection.org/

Name	Type	Description	URL
City of Johnstown Department of Community and Economic Development	Economic Development and Community Development	Actively elicits community involvement when working with government, and private sectors to build strong communities, industries, and markets. Community and Economic Development is a multifaceted comprehensive approach to community change that is not limited to just poverty programs, nor is it synonymous with industrial recruitment.	http://www.icityjohnstown.com/
Community Foundation for the Alleghenies	Foundation	An umbrella organization that accepts and manages funds on behalf of its donors in support of our community.	http://cfalleghenies.org/
Conemaugh Health System School of Nursing	Education	Conemaugh Health System two-year accredited program approved by Pennsylvania State Board of Nursing.	https://www.conemaugh.org/SchoolofNursing/
Creator Square	Economic Development	Creator Square is designed to be a maker's network that connects Johnstown's creative community, industrial infrastructure, and entrepreneurial activity by establishing a focal presence in downtown's Central Park.	http://www.creatorsquarejohnstown.com/
Discover Downtown Partnership	Economic Development and Community Development	A non-profit organization dedicated to the growth, promotion and revitalization of Downtown Johnstown.	http://www.discoverjohnstown.org/
Goodwill Industries of the Conemaugh Valley	Workforce Development	Serving the community as a major workforce development provider: career development, job search, job skills training, workshops and related employment services.	http://www.gicv.org/
Easter Seals Western and Central Pennsylvania Johnstown/ Somerset Division	Social Services	Programs and services to ensure that people with disabilities or other special needs and their families have equal opportunities to live, learn, work and play in their communities.	http://www.easterseals.com/wcpenna/
Greater Johnstown Career and Technology Center	Education	Public school offering career and technical education to secondary and post-secondary students, and customized training center for business and industry.	http://www.gjctc.org/

Name	Type	Description	URL
Greater Johnstown Cambria County Chamber of Commerce	Business Association	Community organization dedicated to creating an environment where business growth and the quality of life are maximized.	http://www.johnstownchamber.com/
Greater Johnstown Chapter of the National Contract Management Association (NCMA)	Business Association	NCMA is a membership-based, professional society, whose leadership is composed of volunteer elected officers. NCMA fosters the professional growth and educational advancement of its members.	http://www.ncmahq.org/About/?navItemNumber=9894
Greater Johnstown Regional Partnership	Economic Development and Community Development	A unified civic leadership group of corporate executives and other individuals who are committed to improving the quality of life and furthering the economic development of the community.	
Human Resources Association of the Alleghenies	Business Association	Group of professionals in a human resources or related field who meet monthly to network and keep abreast of current HR trends.	https://www.hralleghenies.org/
Johnstown Business District Coalition	Economic Development and Community Development	Relieve the City of Johnstown of a portion of the burden of promoting and developing its downtown area.	
Johnstown Business District Development Corporation	Economic Development and Community Development	Organized under the Discover Downtown Johnstown Partnership for the primary purpose of Real Estate Development in the Central Business District of Johnstown.	
Johnstown Chapter--NAACP	Social Services	Ensure the political, educational, social, and economic equality of rights of all persons and to eliminate race-based discrimination.	http://www.naacp.org/pages/our-mission
Johnstown Redevelopment Authority	Economic Development and Community Development	Authority implements economic development projects to eliminate blight by purchase/eminent domain, installs infrastructure improvements, administers brownfields reuse programs	http://www.johnstown-redevelopment.org/

Name	Type	Description	URL
Johnstown Area Regional Industries	Economic Development	Local non-profit economic development organization that provides assistance with establishment and growth of companies, services and connections to the right people in government, commercial lending, equity investing, real estate, and other regional, state and federal economic development groups.	http://www.jari.com/
The Learning Lamp	Education	Non-profit agency dedicated to providing the support all students need to succeed in school. Offering high quality tutoring, preschool, child care, after school and summer school age programs.	http://www.thelearninglamp.org/
Lift Johnstown	Economic Development and Community Development	Dynamic partnership working to implement three plans seeking to "re-invent" Johnstown as a vibrant small city. Collaboration in implementing the three plans is the centerpiece of Lift Johnstown. The City of Johnstown Master Plan, 2020 Regional Vision, and Laurel Highlands Conservation Landscape Initiative.	
Mt. Aloysius College	Education	Established in 1853, a small, comprehensive, liberal arts and science-based institution with a strong career-directed focus. Mt. Aloysius has more than 70 academic program offerings on the undergraduate and graduate levels in Health Sciences and Nursing, Humanities, Education, Social Sciences, Natural and Applied Sciences, Business Administration and Pre-Professional Study. The also offer online programs in Business Administration (Associate, Bachelor, and Certificate), Criminal Justice Addictions Professional Post-Bachelor Certificate), Finance (Certificate), Medical Coding (Certificate), and Nursing (Bachelor, RN to BSN).	http://www.mtaloy.edu/

Name	Type	Description	URL
PA CareerLink®	Workforce Development	One-stop comprehensive center for employers and job seekers regarding employment, training, work-skill needs, and related services.	https://www.cwds.pa.gov/cwdsonline
PA Department of Community and Economic Development (DCED)	Economic Development and Community Development	The mission of the DCED is to foster opportunities for businesses to grow and for communities to succeed and thrive in a global economy. Also, to improve the quality of life for Pennsylvania citizens while assuring transparency and accountability in the expenditure of public funds.	http://www.newpa.com/
PA Department of Labor & Industry – Rapid Response and Unemployment Compensation	Economic Development	Rapid Response is an early intervention service that assists workers and employers affected by layoffs, plant closures, or natural disasters. It provides access to the Commonwealth's PA CareerLink system of user-friendly resources and information to help transition workers into reemployment. Rapid Response also offers assistance to local communities so that a proactive and coordinated response can be designed, and access to Pennsylvania's economic development assistance resources can be obtained. Economic development assistance programs are designed to help businesses that are at risk of closing to keep their doors open. In addition, these programs can help businesses reduce the size of a layoff.	http://www.portal.state.pa.us/portal/server.pt/community/layoff_notification/10540/rapid_response_assistance/554043
Pennsylvania Highlands Community College	Education	Public two-year community college offering associate degree, diploma and certificate programs, as well as transfer degree programs and workforce training through the CEWD. Programs are grouped into six distinct areas of study: Business, Communication Media Arts & Sciences, Education, Health Professions, Science Technology, Engineering & Mathematics, and Social Sciences, Humanities, and Liberal Arts.	http://www.pennhighlands.edu/

Name	Type	Description	URL
St. Francis University	Education	Private comprehensive university offering associate, baccalaureate, master's degrees and more than 50 academic programs of study. Undergrad programs include Health Sciences, Business, Sciences, and Arts & Letters. Graduate programs include Business, Education, and Health Sciences. Continuing education courses are offered at several sites.	http://francis.edu/
Southern Alleghenies Planning and Development Commission (SAP&DC)	Economic Development and Community Development	Provides numerous small business development services: business loans, foreign trade, government contracting, e-commerce, and workforce development. Also specializes in transportation planning.	http://www.sapdc.org/
Southern Alleghenies Workforce Investment Board (SAWIB)	Workforce Development	Leading initiatives designed to enhance the skills of the workforce in order to meet the needs of the region's employers to compete in a world economy. Through the PA CareerLink ® system, the SAWIB uses its collective expertise and resources to support a wide range of programs designed to meet the needs of the jobseeker and employer alike and help prepare the region's youth for the world of work.	http://www.sapdc.org/about/workforce-investment-board
Saint Francis Small Business Development Center	Business Startup Assistance	Offers free individual counseling in areas such as starting a business, business plan development, financing, accounting, bookkeeping, product development, international trade, business training works.	https://francis.edu/small-business-development-center/

Name	Type	Description	URL
Steel Valley Authority	Economic Development	The Steel Valley Authority is a multi-municipality governmental authority founded in 1986 to retain and revitalize the region's economic base, focused on saving and building "high road" companies and jobs. The SVA was incorporated by the City of Pittsburgh and eleven riverfront municipalities all within the Mon-Valley region. To save and create jobs, the SVA has three primary areas of focus: • Technical assistance for at-risk companies, • Responsible capital investment, and • Building sustainable communities.	http://www.steelvalley.org/saving-jobs/sewn
United Way of the Laurel Highlands	Social Services	A non-profit organization focused on advancing the common good in Cambria and Somerset counties. Fundraising efforts support various health and human care agencies which target community impact.	http://www.uwlaurel.org/
University of Pittsburgh at Johnstown	Education	The first and largest regional campus of the University of Pittsburgh grounded in liberal arts and sciences, offering 48 major fields of study and seven academic divisions: Business and Enterprise, Education, Engineering Technology, Humanities, Natural Sciences, Nursing and Health Sciences, and Social Sciences	http://www.upj.pitt.edu/
Veteran's Leadership Program	Social Services	Provides essential housing, employment, and vital support services to eligible local Veterans, service members, and their families with the goal of improving their self-sufficiency, sustainability, and quality of life.	http://www.vlpwpa.org/

3.2 Program Directory

Table 11 identifies programs provided by the organizations identified in Table 10 that may be used in support of transitioning defense-oriented companies and displaced workers.

Table 11. Program Asset Directory

Name	Description	Organizations	Website
Adult Degree & Continuing Studies	Certificate, Bachelor, and Associate degrees through adult degree programs that include Accounting, Computer Systems Management, Business, Management, Human Resources Engineering/Mechanical Technology, Renewable Energy.	Saint Francis University	http://francis.edu/adcs-degrees-and-programs/
Affiliate of energy innovation hub, Joint Center for Energy Storage Research (JCESR) sponsored by the Department of Energy's science office	Affiliation with CTC and JCESR, which pursues high-performance, inexpensive electricity storage that they expect will transform transportation and the electricity grid. "The interest is to collaborate with academia, national laboratories, industry and clients in the area of energy storage to advance scientific breakthroughs into commercial viable solutions that lead to overall system improvements." - Vicki A. Barbur, PhD, CTC's Senior Vice President and Chief Technical Officer.	CTC and Joint Center for Energy Storage Research/ Department of Energy	
Business Development	Provides several important services to the region including: Project Coordination and Assistance, Site Evaluation, New Business Start-up, and Financing.	Cambria County Industrial Development Corporation (CCIDC); Cambria County Industrial Development Authority (CCIDA); and Cambria County General Financing Authority (CCFGA)	http://www.cambriacountypa.org/index.php?page=services

Name	Description	Organizations	Website
Business Development	Statewide site and building database, community profiles and economic development contact information for relocating or expanding a business in PA.	PA SiteSearch Interactive Map	http://gis.pasitesearch.com/default.aspx
Business Services Network	Network of public sector providers available to assist entrepreneurs, existing businesses, or those considering locating a business in the any of the six counties. The network includes seventeen agencies committed to developing and enhancing the economy of the region through the provision of technical assistance and other direct services to businesses or prospective businesses.	SAP&DC	http://www.sapdc.org/about/business-services-network
Career in 9 months	Offers Adult Students the opportunity to receive a certificate in Nine (9) months in multiple areas including welding and networking technology	Admiral Peary AVTS	http://www.admiralpeary.tec.pa.us/career9mos.pdf
Center for Global Competitiveness	Provides specialized marketing and international trade assistance to business throughout a six-county region and beyond. The CGC provides a variety of services to small and medium sized business, including: Marketing consulting; Organized domestic and international trade events; Market research; Educational programs; Export/Import assistance; and Trade leads	SBDC	https://francis.edu/sbdc-services/

Name	Description	Organizations	Website
Consulting Services/Southern Alleghenies PREP Partner	Offers free individual counseling in areas such as Accounting; Banking; Business Continuity; Business Planning; Entrepreneurship Environmental Management; Financial Analysis; International Business; Marketing and Advertising; Market Planning and Research; Research; Shale Energy; Strategic Planning; Technology Services; Tools & Checklists; Website Marketing & Development	Saint Francis Small Business Development Center (SBDC)	https://francis.edu/sbdc-services/
Cook Family Idea Lab	Multi-use space devoted to idea and product development, small classes, presentations, mentorship and entrepreneurship meetings and workshops. The lab fosters the development of ideas and projects for student and community entrepreneurs.	University of Pittsburgh-Johnstown	http://www.upj.pitt.edu/en/academics/academic-divisions/business/entrepreneurship-program/the-idea-lab/
Creative Masters	Creator Square appoints Creative Masters who assist with innovative product development, additive manufacturing and entrepreneurship in the maker community. These masters will also be involved in design workshops, education and design collaborations with defense companies.	Creator Square	http://www.creatorsquarejohnstown.com/
Economic Development Services	Provides access to early-stage funding, business expertise and university resources. Offering funding and business development support services for entrepreneurs, early-stage companies, and established manufacturers looking to innovate.	Ben Franklin Technology Partners	http://cnp.benfranklin.org/programs-services/

Name	Description	Organizations	Website
Ed2go	Serves as a resource center that encourages and equips adults to achieve their goals toward socioeconomic success. Offers multiple online courses including Accounting and Finance, Business/Start Your Own Business, Technology.	Admiral Peary AVTS	http://www.ed2go.com/apavts/
Entrepreneurship Seminar	Course within the Somerset Trust Company Entrepreneurship Program designed as a pragmatic approach to converting a new idea into a viable venture, and is open to Pitt-Johnstown students of any major as well as community members.	University of Pittsburgh-Johnstown	http://www.upj.pitt.edu/en/academics/academic-divisions/business/entrepreneurship-program/entrepreneurship-seminar/
Foreign Trade Zone	The FTZ program can help businesses engage in importing by providing tariff, duty and entry fee deferment, reduction or elimination.	Cambria County Economic Development Authority (CCEDA) and Pennsylvania Foreign-Trade Zone Corporation (PAFTZ)	http://cambriaeda.org/foreign-trade-zone/
HealthQuest	HealthQuest is a program that gives high school students an opportunity to explore careers in the health sciences. Students participate in hands-on demonstrations which expose them to a variety of healthcare-related career pathways, including physical therapy, nursing, and medical imaging.	Mount Aloysius College	http://www.mtaloy.edu/

Name	Description	Organizations	Website
iCity Johnstown Program	Designed to support business investment in the City of Johnstown by providing the tools, resources and services necessary to maximize the long-term economic impact on the City of Johnstown and the region as a whole. Services available from the iCity Johnstown team include: District strategic planning; Property information and marketing; Investor support services; Project packaging; Deal financing; Public-private partnerships; Business introductions and networking; Regulatory support and review; Growth planning assistance.	City of Johnstown Department of Community and Economic Development	http://www.icityjohnstown.com/impact/
Industrial Resource Center (IRC) Cambria County/Southern Alleghenies PREP Partner	Established to help manufacturers respond to changing markets, new technology and the competitive pressures of the global economy, IRCs offer small and medium-sized businesses a wide range of services. From business growth, innovation, process improvement and training.	Catalyst Connection	http://www.catalystconnection.org/services/?area=business-growth
Industry Training/ Collaboration	Partnership with Penn Highlands Community College to provide classroom training while hands-on training is provided at the JWF plant.	JWF and Penn Highlands Community College	

Name	Description	Organizations	Website
Industry Training Partnership	GJCTC provides training offered through the following agencies: Workforce Investment Act; Office of Vocational Rehabilitation; PA Department of Education; PA High Education Assistance Agency; Private Industry Council of Westmoreland County; Southern Alleghenies Planning and Development Commission; Tableland of Somerset County; Trade Adjustment Assistance; Tri-County Private Industry Council; U.S. Department of Education; United Way; U.S. Department of Veterans Affairs.	Greater Johnstown Career and Technology Center (GJCTC)	http://www.gjctc.org/index.cfm?pID=13758
JARI Entrepreneurial Development	JARI has partnered with the Pennsylvania Small Business Development Centers (SBDC) to provide entrepreneurs in the region with the education, information, and tools necessary to build lucrative businesses.	Johnstown Area Regional Industries (JARI)	http://www.jari.com/index.php?page=entrepreneurial-development
JARI Financing and Incentives	Helps existing and would-be small business owners to achieve their goals by assisting with everything from writing a business plan to navigating key state, local, and federal agencies to lining up low-interest financing.	JARI	http://www.jari.com/index.php?page=business-financing
JARI Site Assistance	Assistance in identifying existing office and production space, and new construction for new businesses, relocating businesses, or growing companies.	JARI	http://www.jari.com/index.php?page=site-assistance
JARI Workforce Development	Provides customized workforce development programs for recruiting qualified staff, accessing industry-specific training programs for workers, or providing displaced workers with transferrable skills.	JARI	http://www.jari.com/index.php?page=workforce-devlopment

Name	Description	Organizations	Website
Job Skills Training, Career in a year	GJCTC provides training programs to help people to improve skills in their current job or to train for a new career. They provide training for workers in many industries including shale (ShaleNET)/gas industry, construction/weatherization, welding.	Greater Johnstown Career and Technology Center	http://www.gjctc.org/index.cfm?pID=13742
Job Skills, Workforce Education	Customized workforce training, Quality Assurance Training, Computer Courses, General Business Courses, Professional Certifications, IT Training programs, Microsoft IT Academy, WEDnetPA managing program partner, certification prep, and welding technology.	Pennsylvania Highlands Community College	http://www.pennhighlands.edu/
LATTE	Lay-off Aversion Technical Assistance - provides direct training and technical assistance for states, communities, business sector networks, labor unions and NGOs to establish layoff aversion programs.	Steel Valley Authority	http://www.steelvalley.org/about-us/who-we-are/19-main-information/42-layoff-aversion-technical-assistance-latte
MountainCat Veterans Program	Assists Veterans in making a successful transition into the student population.	University of Pittsburgh-Johnstown	http://www.upj.pitt.edu/en/admissions/mountaincat-veterans-program/
Outreach Centers	Saint Francis University provides outreach and connections to the local and larger geographic community through its Centers and Institutes. CERMUSA, Renewable Energy Center, Science , Science Outreach Center (Science, Technology, Engineering, Mathematics (STEM) in the community, Small Business Development Center, Southern Alleghenies Museum of Art, Center for Watershed Research & Service.	Saint Francis University	http://francis.edu/outreach-centers/

Name	Description	Organizations	Website
Regional Export Network (REN)	Provides manufacturers and service firms with export development services, including market research, market entry strategy development, technical support, and access to grants and financing programs.	SAP&DC	http://www.newpa.com/business/exporting/contact-our-trade-experts/regional-export-network
Resource Centers/ Southern Alleghenies PREP Partner	As a PREP Partner serving six West-Central PA counties the SAP&DC has the following resource centers: Business Resource Network, Procurement Technical Assistance Center (PTAC), Workforce Investment board.	SAP&DC	http://www.sapdc.org/resource-centers
School of Technology (Application Design and Web Development Training)	CRBC has recently expanded their curriculum and campus with the new School of Technology located in Richland Township to offer studies in Application Design and Web Development. Local ownership and strong relationships with area businesses enhance training outcomes.	Cambria-Rowe Business College (CRBC)	https://www.crbc.edu/index.html
SEWN	Saves manufacturing jobs throughout Pennsylvania by offering layoff aversion services to stabilize, restructure, turnaround, or attract buyers for at-risk small-to medium-sized manufacturing firms. SEWN core services include: Financial Restructuring; Operational Restructuring and Cost Management; Ownership Transition High Performance Workplace Strategies; and New Market Opportunities.	Steel Valley Authority	http://www.steelvalley.org/saving-jobs/sewn

Name	Description	Organizations	Website
'Shark Tank' Presentations	The PITTch Fest program is offered each semester and is designed to be a driver of entrepreneurial innovation in the Greater Johnstown region that provides students with real-world learning opportunities. Interdisciplinary student teams present their commercially viable products and services to a panel of judges composed of local entrepreneurs and business leaders with the hopes of garnering mentors and seed funding.	University of Pittsburgh-Johnstown	http://www.upj.pitt.edu/en/academics/academic-divisions/business/entrepreneurship-program/shark-tank-presentations/
Somerset Trust Company Entrepreneurship Program	Out-of-class opportunities that give students real-world experience and professional connections with community leaders in the region. Supported by the Allegheny Innovation, a network of community partners, including Lift Johnstown, the Community Foundation for the Alleghenies, Young Professionals of the Alleghenies, JARI, Goodwill Industries of Conemaugh Valley, the Small Business Administration, and local entrepreneurs, investors, and consultants. The goal of the group is to contribute to local economic development by systematically matching investors with entrepreneurs.	University of Pittsburgh-Johnstown	http://www.upj.pitt.edu/en/academics/academic-divisions/business/entrepreneurship-program/

Name	Description	Organizations	Website
Southern Alleghenies PREP Partner/Services/ Cambria County	As a PREP Partner serving six West-Central PA counties, the SAP&DC offers local businesses, local governments, and non-profit organizations with multiple services in the following areas: International Trade, Energy Resources, Transportation Planning, Government Contracting, Workforce, Properties and Buildings, Tourism Industry, Workforce Development, Business Lending, Online Broadband & Technology Training, Infrastructure, Local Technical Assistance Programs, Geographic Information Systems.	SAP&DC	Business: http://www.sapdc.org/business Local Government & Non-Profits: http://www.sapdc.org/gov-non-profit
Southern Alleghenies PREP Partner/ Services/Cambria County	As a PREP Partner serving multiple counties including Cambria County Catalyst Connection offers the following services: Business Growth, Operational Excellence, Talent Management, Financial Services, Explore the New Manufacturing, and Paying for Continuous Improvement Initiatives.	Catalyst Connection	http://www.catalystconnection.org/services/?area=paying-for-initiatives

Name	Description	Organizations	Website
Veteran's Employment and Training Administration Program	Assists veterans and their family members in finding unsubsidized employment. Recently separated male or female veterans, veterans and families in rural areas, and veterans released from incarceration will be the focus of this program. Benefits of the program: Individualized job counseling and assistance; Résumé preparation; Vocational counseling; Job fairs and workshops; Job placement networking and follow-up; Stipends for job training and education; and Supportive services for transportation, clothing, and tools.	Veteran's Leadership Program of Western PA	http://www.vlpwpa.org/services/
Workforce and Economic Development Network of Pennsylvania (WEDnetPA)	Created to make companies across the Commonwealth of Pennsylvania more competitive locally, nationally and internationally by updating and improving the skills of their employees to meet specific company needs. Consists of an alliance of educational providers across Pennsylvania — including State System universities, community colleges and other educational providers — that acts as a delivery mechanism for workforce training grants. Each provider, known as a WEDnetPA partner, serves as the point of contact for businesses accessing these training funds.	Pennsylvania Highlands Community College (Managing Program Partner)	

3.3 Asset Mix

Cambria County's economic development assets include a set of solid, high-performing institutions and programs that positively impact the community. However, without coordination these various assets may become underutilized or less effective in delivering productive outcomes for defense industry transition. Asset directors and managers should focus their activities on those industry clusters which hold the most promise for sustainable and long term job growth. For this initiative, this would include Metals Manufacturing, Information Technology, and Energy. The majority of the community's assets are focused on broad sections of the economy vs. specific industry clusters. New assets or programs may be needed within the targeted clusters to promote sector development. In addition, attention should be paid to the structure of the delivered services to ensure critical gaps are quickly filled.

4

Potential Solutions

- Previous Studies and Ongoing Efforts
- Case Studies

Cambria County, the City of Johnstown, and the Southern Alleghenies Planning and Development Commission (SAP&DC) have previously undertaken broad studies and strategic planning initiatives to help define a path forward that maximizes job growth, economic development, and quality of life for the region's residents. As a result, the local community is already investing in a diverse mix of entrepreneurial support, job training, industrial development, foreign trade, and related programs. Sound economic development policy for defense industry transition must account for these ongoing community efforts. In addition, communities across the country have encountered defense industry transition challenges similar to Cambria County. Lessons can be learned from their experiences and can help local stakeholders avoid hidden mistakes to rapidly replicate proven strategies.

4.1 Previous Studies and Ongoing Efforts

Initiatives at the city, county, and regional level are attempting to tackle the challenges facing the community. Published strategies, studies, and plans reveal these stakeholders are engaged in a broad-based set of activities as summarized in Table 12.

Table 12. Economic Development Strategies and Recommended Actions

Document	Organization	Key Strategies
Cambria County Comprehensive Plan: Toward a Sustainable Future 2030	Cambria County Planning Commission	• Transportation – *improved connections to nearby metropolitan areas, enhanced accessibility to rural areas, multi-modal transport (air/rail)* • Property Development – *in-fill, brownfields redevelopment, resource management and protection, agricultural preservation* • Key Industry Development – *shale gas, "clean coal," wind power, advanced technology manufacturing, professional services* • Water Quality – *resolve acid mine drainage and sanitary sewage overflows* • Marketing – *website tab and county app, messaging, sites and buildings information, business parks, incentives* • Tourism – *nature-tourism site development, natural resource preservation, improved organizational coordination*
FY2015-2019 Five Year Consolidated Plan and FY2015 Annual Action Plan (DRAFT)	City of Johnstown	• Housing – *rehabilitation of housing stock, new construction, fair housing, homeownership program, emergency shelters and transitional housing, homelessness support services and Continuum of Care, special needs housing support, code enforcement* • Neighborhood Development – *parks, recreation facilities, water and sewer improvements, flood control, social/welfare programs, blight removal, cleanup* • Economic Development – *job training, employment programs, low-interest loan program, redevelopment of vacant commercial and industrial properties*

Document	Organization	Key Strategies
Johnstown Community Revitalization: A Resource Roadmap	City of Johnstown	• Safe Streets & Drug Prevention – *increase police force, new drug prevention and treatment programs* • Downtown & Neighborhood Revitalization – *blight removal, brownfields redevelopment, streetscape corridors development* • Manufacturing Revitalization – *workforce, entrepreneurship* • Sustainable Community Revitalization – *community gardens, walking/biking trails, municipal building energy retrofits, storm water management, flood control, clean fueling stations* • Arts, Culture & Historic Revitalization – *train station restoration, Johnstown Flood Museum*
Revitalization Strategy for the City of Johnstown	City of Johnstown	• Downtown & Neighborhood Development – *mixed-use districts, open/green space, entertainment, in-fill, streetscape improvements, community gateways, housing, brownfields redevelopment* • Industry Development – *bio-technology corridor, business recruitment strategy* • Marketing – *public relations campaign, "Place Marketing Strategy," history-based story narratives* • Workforce – *trade skills, technology skills training, school district relationships with universities, university presence in downtown*
Comprehensive Economic Development Strategy: 2012-2016	Southern Alleghenies Planning & Development Commission (SAP&DC)	• Diversified Job Growth – *education and training in technology industries, manufacturing development, service sector job development and training, tourism marketing/hotel expansion /site development* • Infrastructure Development – *broadband network expansion, highway and roadway projects, sewer and water upgrades, industrial site and buildings development* • Labor Force – *technical skills training, technical school enrollment, new programs for job placement* • Regional Branding – *reduce blight and vacant properties, downtown development* • Land Use – *create land use planning control and guidance tools, apply zoning regulations, promote rural villages and boroughs*

Document	Organization	Key Strategies
Johnstown 2020: Report and Recommendations for 2020 Regional Vision	Cambria County Alliance for Business and Industry, Greater Johnstown Regional Partnership, Community Foundation for the Alleghenies, Greater Johnstown/Cambria County Chamber of Commerce, Johnstown Area Regional Industries, and the Richland Township Supervisors	• Engage Young Professionals for Local Workforce Retention – *Young Professionals of the Alleghenies (YPA) promotion, internship program, website, marketing* • Downtown Redevelopment – *remove blight, Adopt-a-Highway program, green spaces, recreation and arts districts, retail development, walk and bike paths* • Local "Pride" Campaign – *sign the Lift Johnstown pledge, awards program for young professionals, buy local campaign*
Vision 2025	Coalition of Business and Civic Leaders with the support of Carnegie Mellon University	• Good Governance – *creating a collaborative approach to economic development where all stakeholders work together* • Vibrant and Open Local Economy – *encourage the growth of entrepreneurship, local business growth, and downtown development* • Life-Sustaining Landscapes – *remove blight, build up neighborhoods, improve city gateways, address water quality issues, promote walking districts that connect cultural, historic, recreation and entertainment destinations* • Strong Sense of Community – *increase community awareness and volunteerism, build sports leagues, increase community activities* • Build Regional Ties – *improve passenger rail, improve education, reduce duplication in public services*

Area Development Magazine (www.areadevelopment.com) conducts an annual survey of top executives within companies involved in manufacturing (35); finance, insurance and real estate (13 percent); construction and trades (11 percent); distribution, warehousing and logistics organizations (8 percent); data processing, software and computer-related services (4 percent), and healthcare and life sciences (4 percent). Respondents represent firms with over 500 employees (38 percent), 100-500 employees (31 percent), and under 100 employees (32 percent). Their *29th Annual Survey of Corporate Executives* identifies these executives' priorities for site selection.[14] These factors provide a good framework for categorizing local economic development strategies. Table 13 presents a matrix that compares the 36 site selection factors with the strategies contained in the seven community planning initiatives.

[14] Area Development Magazine. *29th Annual Survey of Corporate Executives: A Realignment of Location Priorities*. (2015). Q1 2015. Retrieved June 4, 2015 from: http://www.areadevelopment.com/Corporate-Consultants-Survey-Results/Q1-2015/annual-corporate-executive-business-expansion-survey-287775.shtml

Table 13. Local Economic Development Strategies by Site Selection Factors, Ranked by Priority

Factors	Cambria County Comprehensive Plan	FY2015-2019 Five Year Consolidated Plan	Johnstown Community Revitalization	Revitalization Strategy for the City of Johnstown	Comprehensive Economic Development Strategy	Johnstown 2020	Vision 2025
SITE SELECTION FACTORS							
1. Highway Accessibility	⊙	⊙			⊙		
2. Occupancy and Construction Costs	⊙						
3. Available Land	⊙	⊙	⊙	⊙	⊙		
4. Available Buildings	⊙	⊙	⊙	⊙	⊙		⊙
5. Availability of Skilled Labor	⊙	⊙	⊙	⊙	⊙	⊙	⊙
6. Labor Costs							
7. Right-To-Work (RTW) State							
8. Proximity to Major Markets	⊙						
9. Energy Availability	⊙						
10. Corporate Tax Rate							
11. (Tied) Tax Exemptions	⊙						
11. (Tied) State and Local Incentives	⊙						
13. Expedited or “Fast-track” Permitting							
14. Low Union Profile							
15. Inbound/Outbound Shipping Costs	⊙				⊙		
16. Environmental Regulations							
17. Availability of Long-term Financing		⊙					⊙
18. Training Programs	⊙	⊙	⊙	⊙	⊙		⊙
19. Accessibility to Major Airport	⊙						
20. Proximity to College/Technical Training		⊙		⊙			⊙
21. Proximity to Suppliers							
22. Raw Materials Availability							
23. Availability of Unskilled Labor				⊙	⊙		⊙
24. Availability of Advanced ICT Services					⊙		
25. Water Availability					⊙		⊙
26. Railroad Service	⊙						⊙
27. Waterway or Oceanport Accessibility	⊙						
QUALITY OF LIFE FACTORS							
1. Low Crime Rate			⊙				
2. Rating of Public Schools				⊙			
3. Healthcare Facilities							
4. (Tied) Housing Availability		⊙	⊙			⊙	⊙
5. (Tied) Housing Costs		⊙	⊙				⊙
6. Colleges and Universities in Area		⊙	⊙			⊙	⊙
7. Recreational Opportunities	⊙	⊙	⊙		⊙	⊙	⊙
8. Cultural Opportunities	⊙		⊙			⊙	⊙
9. Climate (i.e., Weather Patterns)							

As Table 13 illustrates, the community's existing plans cover the majority of the site selection and quality of life factors of most interest to business executives. This provides a solid foundation of economic development activity currently underway to address broad-based challenges such as labor force availability and skill development, property development and availability, infrastructure development, transportation and housing.

Several studies mention the importance of the defense industry to the local economy, but little focus is placed on defense industry transition or promotes industry cluster-specific strategies.

- In the *Johnstown Community Revitalization: A Resource Roadmap*, defense contractors are mentioned as one of the "big picture" narratives that defines the region.
- SAP&DC's *Comprehensive Economic Development Strategy: 2012-2016* included the following comments on the vulnerability of defense-related jobs: "While most of these [defense] jobs are likely to remain, some changes could occur in the future due to funding or political changes," and stable defense-related employment in the region is "critical" to the development of other high-skilled industry sectors such as biotechnology and information technology.
- In the *Johnstown 2020: Report and Recommendations for 2020 Regional Vision*, the authors recommend diversification away from defense. The report states that: "In order to survive, the Johnstown region must take a proactive position to attract a wider variety of employers in preparation for the post-Murtha era."
- The County's *Cambria County Comprehensive Plan: Toward a Sustainable Future 2030* notes: "There has been some success in attracting higher-tech jobs into Cambria County especially in the case of businesses in defense and higher education" and the report mentions the involvement of JARI and the Chamber of Commerce in the annual Showcase for Commerce – an important defense contracting exhibit – and the presence of six defense firms in JARI's 223-acre Johnstown Industrial Park.

None of the studies provide specific action items related to the defense industry and little focus is paid to high-tech sectors of the economy in general. However, many of the strategies and action steps proposed in the various plans – such as workforce training and entrepreneurship programs – may indirectly aid the defense transition.

4.2 Case Studies

Selected communities across the nation have faced economic disruption from the loss of defense-related investment and spending in the past. Leaders in these communities have – like Cambria County – sought to transition the local industry and workforce to alternative opportunities. Several examples are highlighted in the sections below that illustrate attempts at addressing these types of challenges. Some of the older examples include indications that their efforts have been successful while some of the newer examples show what others are currently doing but it is still too soon to assess whether these efforts will be successful.

4.2.1 Long Island Defense Diversification Initiative (Bethpage and Long Island, New York / Nassau County)

Bethpage is a hamlet located on Long Island within the Town of Oyster Bay in Nassau County with a population of 16,429 in 2010 (U.S. Census Bureau).[15] In the 1990s, Long Island saw a significant decrease in defense industry activity from its peak of $4 billion. With funding from DoD Office of Economic Adjustment (OEA), New York worked with educational, research, and high-tech institutions to implement the Long Island Defense Diversification Initiative.

The initiative's main focus was to help defense contractors in the region commercialize their technologies for private-sector markets. The plan called for identifying the subcontractors and suppliers most likely to succeed in diversifying into other industrial sectors and providing supportive services. The project's research had concluded that the defense industry managers had to learn new sales and marketing skills in order to effectively enter commercial markets. A secondary focus was on creating new workforce and entrepreneurship opportunities for workers displaced by the defense downsizing.

An economic development agency used additional OEA funding to provide the training on commercial sales and marketing to former defense company managers. Funds were also secured from the Economic Development Administration (EDA) to provide practical technical assistance to over 100 companies in the region. By the end of the decade, the Long Island economy had rebounded from defense industry cutbacks. A major defense complex in Bethpage was also successfully repurposed for commercial activities.

4.2.2 St. Louis Defense Adjustment Program (St. Louis, Missouri)

St. Louis (population 318,416 in 2013), had a large presence of defense contractors in the 1980s with over 700 prime contractors operating in the region. One out of seven workers was employed in the defense industry. McDonnell Douglass (now part of Boeing) alone employed more than 40,000 people. Between 1989 and 1997, total defense employment dropped nearly 40 percent from 159,000 to 99,000 employees – a loss of 60,000 jobs.

Community leaders used OEA funding to form the St. Louis Defense Adjustment Program to plan a coordinated and comprehensive regional response to the defense industry downsizing. The response focused on the following seven strategies:

1. Public/private investment and partnership through a U.S. Department of Labor (DOL) Business Diversification pilot project.
2. Conferences, seminars, and training for economic diversification activities.

[15] Note: Nassau County Population 1.339 (2010 census), 1.358 Million (2014 estimate); Town of Oyster Bay Population 293,214 (2010 census)

3. Employee retention through both the Cornerstone partnership (a regional training center) and the McDonnell Douglass Worker Retraining Center.
4. Small business growth and entrepreneurship through St. Louis Enterprise Centers and Center for Emerging Technologies.
5. A Regional Revolving Loan Program to help develop business in the area.
6. Increased focus on exports through the newly-created World Trade Center in St. Louis with funding from the EDA.
7. Diversification of the regional industry and business base by focusing on advanced manufacturing, biotechnology and life sciences, and the environment.

By 1994, 75 percent of all workers laid off from the defense industry earlier were re-employed in the greater St. Louis region. Two-thirds of those workers earned as much or more money than they did while working at their previous job, including 10 percent that started their own businesses.

4.2.3 Realignment of the Naval Surface Warfare Center at Crane (Martin County, Indiana)

Approximately 35 percent of the workforce over a six-county region was dependent on the Naval Surface Warfare Center at Crane (Crane) which was the second largest employer in Southwest Indiana. Over $1.5 billion in annual revenue from Crane accounted for about $400 million in salaries in the community. In the 2005 Base Realignment and Closure (BRAC) round, several missions were designated for realignment.

After a year-long study was completed in December 2007, the Crane Regional Economic Development Organization (CREDO) was created to implement a diversification plan with support from a broad regional alliance across the six-county area. The plan was to leverage Crane's assets to diversify into new, non-defense markets by:

1. Establishing a learning and employment center for veterans with disabilities at Crane.
2. Creating a tech center designed to leverage Crane's technical capabilities to attract non-defense basic employers.
3. Develop support programs for technology-based businesses in the battery and fuel cell industries.
4. Promote the area regionally through a selection of outreach and marketing-related projects.

The focus on new technology-based industries gained traction in the advanced battery sector with major defense and non-defense employers and university research and technology transfer programs as part of a larger state-wide industry cluster.

4.2.4 Realignment of the Sheppard Air Force Base (Wichita County, Texas)

Wichita Falls (population 132,047 in 2013) suffered from the shutdown of several key manufacturing plants and a BRAC recommendation to realign the Sheppard Air Force Base's basic medical training mission. The manufacturing closures were projected to reduce the region's manufacturing base by 10 percent and the BRAC realignment was forecasted to cost nearly 2,000 direct and indirect jobs and over $200 million in annual investment in the local economy.

The 2008 strategy focused on the following three main objectives in cooperation with ongoing community initiatives:

1. Develop, retain, attract and engage talent.
2. Diversify and grow the economic base.
3. Promote Wichita Falls to the Dallas-Fort Worth area.

Implemented activities have included providing job placement assistance to displaced workers from the manufacturing plant closures and creating an entrepreneur-friendly environment through the Small Business Development Center at Mid-Western State University.

4.2.5 Realignment of the Malmstrom Air Force Base (Cascade County, Montana)

In 2007, the Air Force announced plans to deactivate Malmstrom's 564th Missile Squadron to result in the loss of approximately 500 of the base's 3,600 military personnel. Cascade County (population 81,327 in 2010) identified the following key response strategies.

- Strengthen the agriculture processing industry cluster.
- Attract and support entrepreneurs.
- Address local workforce needs for training.

4.2.6 Iowa Innovation Gateway (Newton, Iowa)

Newton (population 15,136 in 2013) is the county seat and most populous city in Jasper County (population 36,641 in 2013). The town is located 30 miles east of Des Moines in Central Iowa. In 2006, Whirlpool purchased Maytag and decided to move out of Iowa.[16] The small town of Newton was faced with losing the company that had been its largest employer and the backbone of its economy for more than a century.

Local leaders developed a new economic and workforce development strategy that coordinated local initiatives with growth engines in a 10-county region that included the cities of Des Moines and Ames. The plan created a new "Iowa Innovation Gateway" initiative that targeted the alternative energy, telecommunications and

[16] Note: While not a defense transition example, there are many similarities between Jasper County and Cambria County which makes their success an interesting model.

advanced manufacturing industries. The region created more than the 1,200 jobs originally lost by the Maytag facility closing.

4.3 Solution Matrix

The DoD OEA provides a series of guides for defense transition planning initiatives. Their *Quick Start Guide to Organizing Regional Economic Adjustment Response: A Local Official's Guide to Defense Industry Adjustment* offers four types of strategies that best support defense industry transition: cluster development, entrepreneurial development, workforce development focus, and university-focused strategies. Table 14 compares the solutions offered in the local plans (Section 4.1) and case study examples (Section 4.2) against these four categories.

Table 14. Local Plans and National Case Studies by OEA's Four Strategy Types

4 Strategies	Cluster Development	Entrepreneurial Development	Workforce Development Focus	University-Focused Strategies
Definitions:	Focus on industry concentrations.	Increase the number of startup companies and helping new firms grow.	Upgrade worker skills through education and training.	Leverage college and university assets.
Cambria County Comprehensive Plan	◉			◉
FY2015-2019 Five Year Consolidated Plan			◉	
Johnstown Community Revitalization		◉	◉	
Revitalization Strategy for the City of Johnstown	◉		◉	◉
Comprehensive Economic Development Strategy	◉		◉	
Johnstown 2020			◉	
Vision 2025		◉	◉	
Long Island Defense Diversification Initiative		◉	◉	
St. Louis Defense Adjustment Program	◉	◉	◉	

4 Strategies	Cluster Development	Entrepreneurial Development	Workforce Development Focus	University-Focused Strategies
Definitions:	Focus on industry concentrations.	Increase the number of startup companies and helping new firms grow.	Upgrade worker skills through education and training.	Leverage college and university assets.
Realignment of the Naval Surface Warfare Center at Crane	●		●	●
Realignment of the Sheppard Air Force Base		●	●	●
Realignment of the Malmstrom Air Force Base	●	●	●	
Iowa Innovation Gateway	●			

As identified in the previous table, Cambria County stakeholders are already engaged in successful broad-based strategies which will facilitate defense-industry transitions, particularly ongoing job training and placement programs.

5

Stakeholder Inputs

- Stakeholder Interactions
- Displaced Worker Survey
- SWOT Summary

Defining effective strategies requires the community to identify local needs that can be addressed through new initiatives and obtain the buy-in of stakeholders who will be responsible for supporting implementation. The study team interacted with over 50 stakeholders to validate the strengths, weaknesses, opportunities and threats (SWOT) elements which can be used to formulate concrete action plans. These interactions began with a series of one-on-one meetings followed by three facilitated group discussions organized around the three targeted industry sectors. Additional one-on-one meetings were held after the facilitated discussions to validate specific strategic ideas identified during the group discussions. In addition, the team conducted a survey of previously-displaced defense workers to identify needs based on their experience in transitioning employment.

5.1 Stakeholder Interactions

The study team spoke with over fifty (50) community stakeholders to identify relevant SWOT inputs. The individuals identified in Table 15 participated in one-on-one interviews, attended industry-sector facilitated discussion groups, and provided feedback on the strategic plan.

Table 15: Stakeholder Involvement Record

Organization	Individual	Interviewed	Industry Meeting	Strategy Feedback
1889 Foundation	Sue Mann, President	▲		
Aptima Ventures	Kevin Coppersmith, Investor, Operator, Advisor		▲ (Information Technology)	
Ben Franklin Technology Partners, Southern Alleghenies Office	Brian Krier, Director, Business Development	▲		▲
Cambria County Association for the Blind & Handicapped	Dick Bosserman, President	▲	▲ (Metals)	
Cambria County Economic Development Authority	Nick Felice, Executive Director	▲	▲ (Metals, Energy, Information Technology)	▲
Cambria County Planning Commission	Ethan Imhoff, Executive Director	▲		▲
Cambria-Rowe Business College	Mike Artim, Chief Executive Officer		▲ (Information Technology)	
Catalyst Connection	Ed Wagner, Regional Director	▲		▲
Catalyst Connection	Connie Palucka, Managing Director, Regional Initiatives	▲		▲
Catalyst Connection	Pam Grove, Senior Business Advisor	▲		▲
City of Johnstown Community & Economic Development	Renee Daly, Director	▲	▲ (Information Technology)	▲
City of Johnstown Economic Development	Josh Summits, Economic Development Coordinator	▲		
CJL Engineering	Jim Vizzini, Principal Engineer/Managing Partner	▲		
Community Foundation for the Alleghenies	Mike Kane, President	▲		
Concurrent Technologies Corporation	Kevin Klug, Director, Manufacturing Tech	▲		

Organization	Individual	Interviewed	Industry Meeting	Strategy Feedback
Concurrent Technologies Corporation	George Appley, Sr. VP, Technology Group	▲		▲
Concurrent Technologies Corporation	Corey Norris, Director, Software Solutions Discipline Lead		▲ (Information Technology)	
Concurrent Technologies Corporation	Jerry Hudson, Sr. VP, Engineering Group	▲		
Concurrent Technologies Corporation	Roger Jenkins, Market Segment Lead/Energy	▲		
Concurrent Technologies Corporation	Mike Pollock, Sr. Director, Advanced Concepts & Prototyping Discipline	▲	▲ (Metals)	
Concurrent Technologies Corporation	Dan Markiewicz, Sr. Principal Electrical Engineer		▲ (Energy)	
Concurrent Technologies Corporation	Edward Sheehan, Jr., President & CEO	▲		▲
Concurrent Technologies Corporation	Ken Sabo, Manager, Advanced Concepts	▲	▲ (Metals)	▲
Conemaugh Health System	Scott Becker, CEO	▲		
Congressman Keith Rothfus	Jose Otero, Constituent Advocate		▲ (Information Technology)	
DRS Technologies	Tony Caper, Vice President, Site Lead	▲		
Eagles Ridge Industries	Matt Sernell, President		▲ (Information Technology)	▲
Enterprise Ventures Corporation	Tim Brown, Vice President	▲		▲
Enterprise Ventures Corporation	Brett Wilmotte, Manager, Technical Support		▲ (Information Technology)	▲
Environmental Tank & Container and JWF Defense	Bill Polacek, CEO/JWF	▲		
Environmental Tank and Container	Matt Hughes, Vice President	▲	▲ (Energy)	
Gautier Steel	Dale Gray, Assistant Controller	▲		
Gautier Steel	Jackie Kulback, CFO Controller	▲		
Good Future Innovation	Don Bonk, Principal	▲		▲

Organization	Individual	Interviewed	Industry Meeting	Strategy Feedback
Greater Johnstown Chapter of the National Contract Management Association	Craig Duppstadt, President		▲ (Energy)	▲
Greater Johnstown/Cambria County Chamber of Commerce	Bob Layo, CEO	▲	▲ (Metals)	
HF Lenz	John Boderocco, President	▲	▲ (Metals, Energy)	
HF Lenz	Dave Blackner, Principal, Structural Engineering	▲	▲ (Metals)	
ISCM Bethesda/FTZ Consultant	Sean Lydon, President		▲ (Metals, Energy)	
Jemcor / Cambria Industrial Development	Dave Layman, CEO	▲	▲ (Metals)	▲
Johnstown Area Regional Industries	Linda Thomson, President	▲	▲ (Metals, Energy, Information Technology)	▲
JWF Industries	Shawn Koontz, Business Development Director		▲ (Metals)	▲
Kitron	Ron Sanders, General Manager	▲		
Marcellus shale Coalition	Eric Cowden, Community Outreach Manager	▲		
Mt. Aloysius College	Kim Asonevich, Asst. Prof. Business Administration/Chairperson Business & IT		▲ (Information Technology)	
Mt. Aloysius College	Karen Watt, Asst. Prof. IT / Coordinator IT Program		▲ (Information Technology)	▲
North American Höganäs High Alloys	Avi Gore, President & CEO	▲	▲ (Metals)	▲
North American Höganäs High Alloys	Dave Hamaty, VP, Human Resources	▲	▲ (Metals)	
North American Höganäs High Alloys	Terry Heinrich, VP, Finance		▲ (Metals)	
Pennsylvania Department of Community & Economic Development	Michael Rossman, Executive Director, Governor's Action Team	▲		

Organization	Individual	Interviewed	Industry Meeting	Strategy Feedback
Pennsylvania Department of Community & Economic Development	Sue Suleski, Grant Program Coordinator	▲		
Pennsylvania Department of Environmental Protection, Office of Pollution Compliance and Energy Assistance	Kerry Campbell, Environmental Group Manager	▲		
Pennsylvania Highlands Community College	Dr. Ted Nichols, Vice President for Academic Affairs and Student Services		▲ (Metals, Energy, Information Technology)	
Pittsburgh Technology Council	Brian Kennedy, Senior Vice President	▲		
Prime Design Solutions	Brian Law, President		▲ (Information Technology)	
Problem Solutions	Mike Hruska, President & CEO	▲	▲ (Information Technology)	▲
Regional Small Business Development Center at St. Francis University	Jeffrey Boldizar, Senior Consultant	▲		
Sardonyx Capital	Tyler Trimbath, Co-founder		▲ (Information Technology)	
Shale Gas Innovation and Commercialization Center	John Siggins, Assistant Director	▲		
Southern Alleghenies Planning and Development Commission	Tina Taylor, International Trade Program Manager	▲		
Southern Alleghenies Planning and Development Commission	Debbi Prosser, Business Development Manager	▲		▲
University of Pittsburgh-Johnstown	Joyce Radavonic, Assistant to the President for Community Engagement	▲		
University of Pittsburgh-Johnstown	Dr. Ray Wrabley, Chair, Division of Social Sciences	▲		

Organization	Individual	Interviewed	Industry Meeting	Strategy Feedback
Wessel & Company	Jean Solarczyk, Marketing Director			▲

NOTE: "▲" indicates that the individual participated in the designated event or activity.

The three facilitated discussion events were held for the Metals, Energy, and Information Technology industries. Discussions focused on identifying needs for new initiatives which would support the growth of a specific industry sector across the headings in Figure 5. These headings originated from an examination of the possible solutions in Section 4 and discussions with local stakeholders.

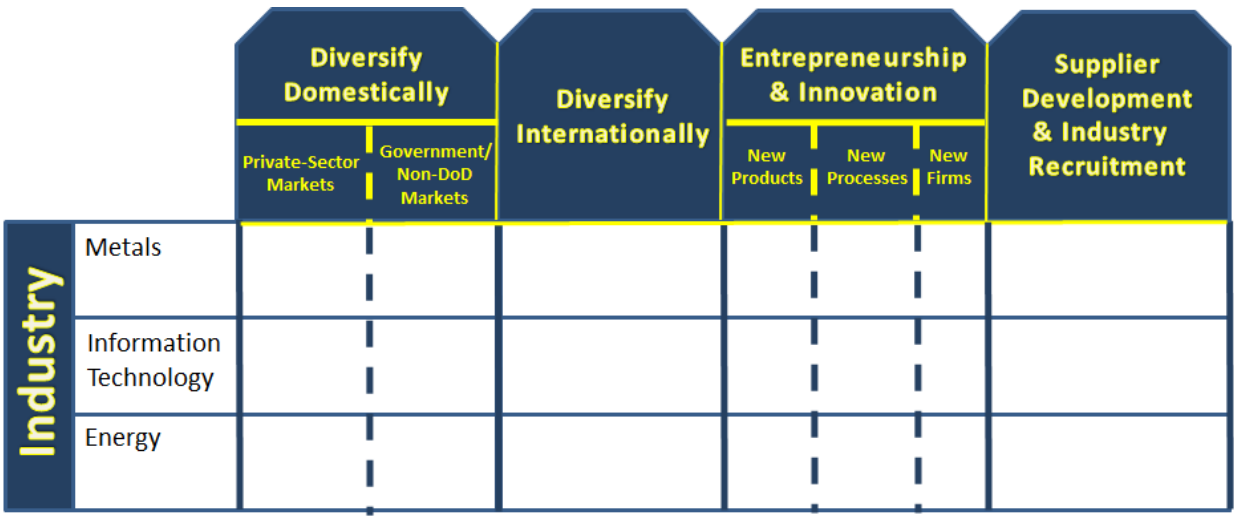


Figure 5. Topic Matrix

Several firms are pursuing defense-oriented growth strategies – DRS is moving up the value chain to become a system integrator, Concurrent Technologies Corporation is focusing on growing sectors of the defense market such as cyber defense, and Problem Solutions continues to gain new clients for its education and training technology. However, the intention of this study was to find ways to diversify away from a defense-related markets towards new opportunities in private-sector, non-DoD government, and international markets. In addition, discussions also focused on entrepreneurship and innovation – both new business creation and innovations within existing firms – and supplier development and recruitment.

5.2 Displaced Worker Survey

In addition to the stakeholder meetings, the project team conducted a survey of local workers displaced from previous defense layoffs. Follow-up interviews were conducted with five of these workers. While survey respondents and interviewees generally expressed satisfaction with the level of support received from local organizations and programs to support laid-off workers, a number of mid-to-higher skilled workers noted a lack of training available to support transition into the local workforce.

Educated and experienced defense workers do not qualify for government training programs such as those available under the Workforce Investment Act (WIA) because they already possess "marketable skills." However, many of these individuals find that their experience and certifications are only marketable outside the region. They are forced to move away from the community to finds jobs for which they are qualified as no assistance is available for retraining them for locally available opportunities.

At the same time, many of the local employers we talked to expressed difficulties in recruiting and retaining highly qualified employees. These organizations are growing but lack the talent necessary to further their expansion. In addition, many businesses find it challenging to recruit top talent to relocate to Cambria County because they seek career opportunities in larger urban markets instead of rural areas.

Consequently, there is a gap in funding for existing mid-to-high skilled worker retraining. The community could close this gap – ensuring that local talent is able to stay in the community to meet current employment opportunities.

5.3 SWOT Analysis

Looking at strengths, weaknesses, opportunities and threats can guide effective strategy formation. Organizations and regions perform best when playing to their strengths and capitalizing on long-term macro-economic trends. This requires strategists to understand, mitigate and/or avoid weaknesses and threats to growth. Figure 6 depicts Cambria County's SWOT inputs for the defense industry transition collected from secondary research and interviews with regional stakeholders.

STRENGTHS	WEAKNESSES
• Strong education sector • High quality of life • Tight local supplier integration • New regional "esprit de corps" related to community development • New product development and market penetration expertise, especially in metals-related industries • Strong local expertise in many metals-related fields • A moderately strong base of IT programmers and workers involved in data analytics	• Poorly educated and aging workforce / "Brain Drain" – educated youth leaving the area for better jobs • Blight in the City of Johnstown • Difficulties in recruiting talent from outside the region • Low concentration of advanced technology companies • Past negative self-image and a lack of collaboration among local and regional organizations supporting economic development and small business development
OPPORTUNITIES	**THREATS**
• Shale gas industry growth • Linkages to rapidly expanding Pittsburgh IT industry • Digital technology transforming manufacturing • Reshoring of higher skill manufacturing jobs • Globalization is creating connections for Johnstown firms • Regional manufacturing designation by the U.S. Department of Commerce	• Urbanization trends and declining population in many rural areas • Low-cost foreign competition in metals manufacturing industry sectors

Figure 6. Cambria County Defense Transition SWOT Analysis

5.3.1 Strengths

The community possesses some key strengths that can be leveraged to expand economic growth.

First, the region has a very **strong education sector** which is home to the University of Pittsburgh-Johnstown, Saint Francis University, Mount Aloysius College, Penn Highlands Community College, and Cambria-Rowe Business College. Penn State University is also a short distance away. Multiple stakeholders in the metals manufacturing, information technology, and engineering services industries commented on the advantage gained by having a ready supply of well-trained personnel and access to interns from these institutions.

Second, most stakeholders expressed that Cambria County's **quality of life** provided the area with an advantage in terms of talent and business recruitment. Inexpensive housing, available retail, entertainment and services, transportation and increasing progress in the redevelopment of Johnstown's urban core is making the county a good place to live and work.

Third, the region possesses **strong local supplier integration** with many company executives expressing a preference for buying locally. Many of the firms in the metals manufacturing sector in particular work closely with their neighboring businesses to source materials and components. For example, as DRS Laurel Technologies moved up the value chain to become a systems integrator, the company outsourced the development of the cabling it used to produce to Compass Systems. Also, CCABH purchases a lot of wire for its products from Johnstown Wire Technology.

Fourth, the community has a certain pride in itself and is learning to work together with a renewed "**esprit de corps.**" While intangible, this represents a fundamental shift in how stakeholders interact which increases the likelihood of success for new collaborative ventures that are essential for economic growth strategy implementation.

Fifth, while stakeholders themselves tend to downplay the community's ability to innovate, numerous firms have demonstrated strong capabilities in **new product development and market penetration**. In the energy sector, for example:

- Environmental Tank and Container, a subsidiary of JWF, built upon its defense industry capabilities to design and produce a new metal container product for the oil and gas industry,
- Cambria County Association for the Blind and Handicapped created a new cabling product for use in solar systems that is creating new orders in excess of what was previously lost from defense-related revenues, and
- North American Höganäs is creating a new product (five patent applications submitted) that will improve shale gas rig operations.

And, outside of the energy sector, Gautier Steel is putting in a game-changing capability for titanium-related manufacturing, and Cambria Industrial Development (CID) is now one of the few domestic producers of high carbon ferromanganese ore in the country. This capacity to innovate provides Cambria County with an invaluable resource for adapting to market changes and diversifying its economy.

Finally, as documented previously in this report, Cambria County has strong local expertise in many **metals-related fields** and a moderately-strong base of **IT programmers** and workers involved in **data analytics**. These two industry concentrations have traditionally seen significant defense-related activity.

5.3.2 Weaknesses

Despite these strengths, stakeholders recognize that the community faces some significant weaknesses.

First, there is near-universal agreement among employers that the area suffers from a **poorly educated and aging workforce**. This appears across all skill levels – from college graduates and managers to low-skilled workers with basic skills and a clean record. This weakness is ironically juxtaposed with the county's strong educational institutions. However, it appears that many graduates leave the area upon graduation for opportunities elsewhere. Some community stakeholders are attempting to limit this trend by holding industry tours which introduce college students to local employers. U.S. Internal Revenue Service records indicate that Cambria County has consistently experienced a net population out migration. And, because many of those who are leaving the community are younger, the average median age in the county reached 43.8 years in 2010 compared with a national average of 37.2.[17] This local "brain drain" draws away many of the community's most promising young people to opportunities outside of the county.

Blight in Johnstown's downtown urban core is a second major weakness cited by many stakeholders. While many of the former steel mills are now occupied with new businesses, their external facades often appear dilapidated while approximately 1,200 housing units are vacant. Several efforts by private companies, economic developers, and other community leaders are attempting to address the issue and it is expected the problem will be reduced over time with a focus on the city's gateways. Gautier Steel, for example, has recently submitted a $2 million grant application to PennDOT for landscaping and sidewalk improvements along the one-quarter mile of roadway facing the downtown property.

Third, Cambria County faces a challenging time **recruiting talent** from outside the region. Various reasons were provided by stakeholders such as: tech workers tend to prefer urban environments instead of rural communities, pay scales are lower, if a recruited employee leaves the job another may not be readily available in the local

[17] Sources: http://www.irs.gov/uac/SOI-Tax-Stats-County-to-County-Migration-Data-Files and http://www.census.gov/did/www/saipe/data/statecounty/data/2010.html

market, and workers do not want to relocate from their current location. The community has focused on Johnstown's "diaspora" – former residents who have left for job prospects elsewhere may be more inclined to return. Some community stakeholders are holding meetings in Pittsburgh and Harrisburg with alumni from local universities to create new partnerships, investment opportunities and mentoring opportunities. However, as employers cite a problem locating qualified people locally, the inability to effectively recruit from outside the region in general creates a serious talent deficit.

Fourth, Cambria County has a **low concentration of advanced technology companies**. Patent activity is relatively low and there are few "tech companies" headquartered in the county. Defense technology companies have not traditionally focused on commercialization outside of defense markets while the intellectual property of many branch offices are owned by parent companies located outside the region. Local Research and Development (R&D) has yielded few home-grown breakthrough innovations leading to compelling technical solutions. Technology-oriented companies tend to drive economic growth in many regions and provide higher-paying job opportunities. Without a critical mass of these types of firms, Cambria County will continue to struggle to be a competitive business region.

Finally, while the improving "esprit de corps" is changing **past mindsets**, the region continues to struggle to overcome a negative self-image (i.e. "there are no jobs here," "Johnstown is dying," "we only have a short time to make a change," etc.) and a fractured economic development landscape. The declining population, surprising number of vacant properties, blighted downtown, and related factors are hard to ignore. At the same time, a recent paper documented over 40 organizations involved in economic development. With so many organizations – each focused on a particular area – it can be hard to see the big-picture issues that need to drive development priorities and implement long-term, comprehensive strategies.

5.3.3 Opportunities

Some of the most powerful opportunities for growth arise when large-scale external trends create situations whereby weaknesses can be addressed or strengths can be leveraged to support improved business success and job creation. Cambria County has access to a few critical opportunities which may provide key strategic pivots for economic growth.

First, the rise of the shale **gas industry** in Pennsylvania has given a strong lift to local economies across the state. A 2014 review of the industry in the state by the U.S. Bureau of Labor Statistics found that from 2007 and 2012, Pennsylvania had the second highest annual average employment increase in the oil and natural gas industry (behind only Texas) – representing an increase of nearly 260 percent over the six-year period.[18] The

[18] Source: U.S. Bureau of Labor Statistics. (February 2014). *The Marcellus shale gas boom in Pennsylvania: employment and wage trends*. Monthly Labor Review. Retrieved August 15, 2015 from: http://www.bls.gov/opub/mlr/2014/article/the-marcellus-shale-gas-boom-in-pennsylvania.htm

industry also saw a corresponding growth in wages. While this growth was particularly concentrated in the Allegheny, Bradford, Indiana and Lycoming counties, some Cambria County businesses – such as Environmental Tank and Container and North American Höganäs – are finding opportunities to provide products and services to this sector. While persistent low gas prices are causing a significant slow-down in the industry (an industry known for its dramatic boom-bust cycles), the region can expect to see shale gas continue to drive substantial growth opportunities for several decades. Former defense firms that can position themselves to take advantage of the next boom cycle stand to capture sizeable revenue growth.

Second, **Pittsburgh's IT industry** is growing rapidly. Major companies such as Google and Uber have located offices in the area and IT jobs are becoming harder to fill. Commentators feel Pittsburgh could become the "Silicon Valley of the East." Cambria County, located within an hour's drive of the city, is close enough to feel a rise in IT-related business activity and job growth if connections can be made between the county's IT companies and Pittsburgh's growing IT sector.

Third, the U.S. manufacturing industry is undergoing a profound transformation through the application of **digital and IT-related technologies** to enable new capabilities such as Additive Manufacturing (AM) and 3D simulation and modeling design systems. As Cambria County retains a sizeable metals manufacturing industry, companies in this sector can embrace these advanced systems to gain new competitive advantages in the future. Many of the county's companies expressed an interest in learning more about these types of systems and how they can be applied to their business operations as they mature.

Fourth, the number of manufacturing jobs in the USA is increasing – indicating a new increase in the favorable conditions for the U.S. manufacturing sector and a "**reshoring**" of formerly exported jobs. Figure 7 shows the number of manufacturing jobs added to the U.S. economy since 2008 as reported in a May 1, 2015 MarketWatch article.[19] This trend represents a reversal of previous activity over the past two decades. As Cambria County has retained its manufacturing base, it stands to gain from the forces driving this renewed growth in U.S. manufacturing. Discussions with local employers, however, did not reveal any direct impacts from this trend on their specific operations.

[19] Source: Cheng, A. (May 2015). *Record number of manufacturing jobs returning to America*. MarketWatch. Retrieved August 15, 2015 from: http://www.marketwatch.com/story/us-flips-the-script-on-jobs-reshoring-finally-outpaced-offshoring-in-2014-2015-05-01?utm_source=SSTI+Weekly+Digest&utm_campaign=928bdf887c-SSTI_Weekly_Digest_for_5_28_2015&utm_medium=email&utm_term=0_ecf5992d4c-928bdf887c-212417853

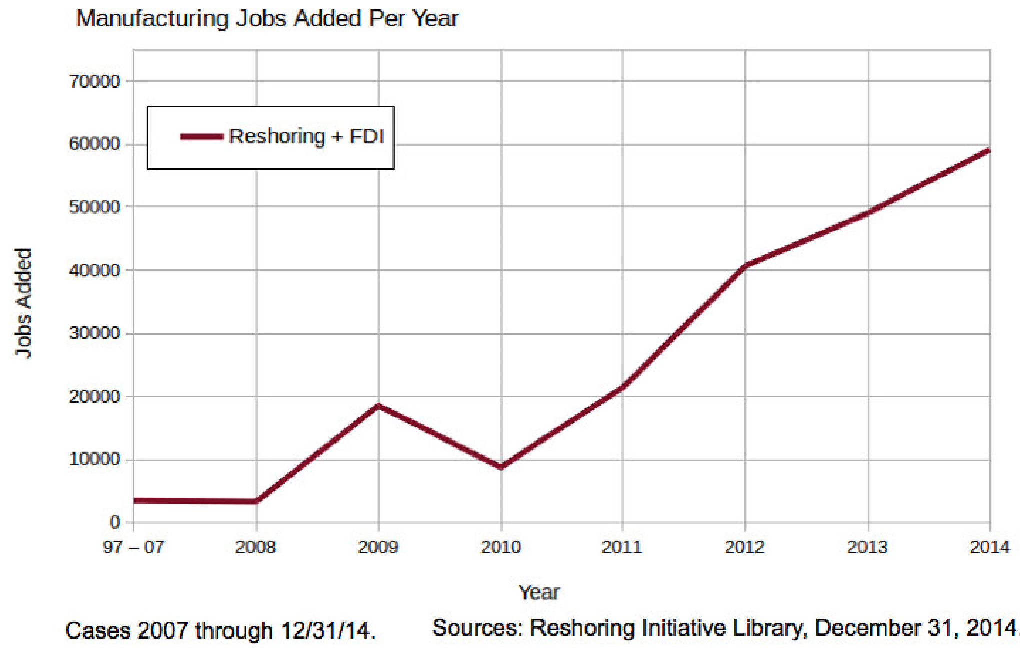


Figure 7. U.S. Manufacturing Jobs Added per Year, 2007-2014

Fifth, the drumbeat of **globalization** continues to pound a steady rhythm into the future. Defense companies in particular are well-suited for developing export programs. Cambria County has experienced a high level of success in recruiting international firms to the region. For example, Kongsberg and North American Höganäs, which have major operations in the Johnstown area, are both headquartered in European Union (EU) countries. In addition, many local businesses sell their products internationally. The International Trade Administration's 2014 Metropolitan Area Export Overview showed the Johnstown MSA's exports increasing 15 percent from 2013 to 2014 to reach $144 million.[20] Key exports include "primary metal manufactures; fabricated metal products; transportation equipment; computer and electronic products; and machinery." The county can continue to leverage local, regional and state assets to increase the level of exporting and recruit international firms as international market opportunities expand. The same International Trade Administration report found that nearby Altoona had more than twice the export volume as Johnstown in similar sectors. This could indicate significant potential for growth.

Finally, Cambria County has recently been recognized by the U.S. Department of Commerce as part of the **Greater Pittsburgh Metals Manufacturing Community**. This federal initiative provides priority status for $1 billion in funding from 11 government agencies and a chance to increase collaboration regionally.[21] Funding programs

[20] Source: Bal, K. (July 2015). Report: Johnstown region shows increased exports. The Tribune-Democrat. Retrieved September 29, 2015 from: http://www.tribdem.com/news/report-johnstown-region-shows-increased-exports/article_b676c2f0-2a22-11e5-9632-233f5e515132.html

[21] Source: Bal, K. (July 2015). Cambria-Somerset region wins manufacturing designation. The Tribune-Democrat. Retrieved September 29, 2015 from: http://www.tribdem.com/news/cambria-somerset-region-wins-manufacturing-designation/article_3acdc9d4-2958-11e5-82cd-a37b4a23bc38.html

include workforce development, training, research, international trade, capital and economic development. While our region is one of 12 nationally, this designation provides ample opportunities over the next several years to increase federal support for local initiatives in the manufacturing sector.

5.3.4 Threats

Similar to opportunities, the most significant threats to Cambria County's growth are large external trends which may undermine development.

First, **urbanization** is a global trend whereby people are increasingly residing in cities instead of rural areas. Cities offer economies of scale advantages that maximize labor productivity, provide more opportunities for workers, and increases cluster-based advantages for industry development. A recent McKinsey&Company article noted, "More than half of the world lives in cities, and that figure is likely to increase to 60 percent by 2030…the world's urban population will grow by 65 million people a year, or almost 179,000 every day."[22] Conversely, Cambria County is a largely rural community which has consistently lost population over more than half a century. Young people – particularly the educated and entrepreneurial – are increasingly drawn to nearby urban centers. The rise of Pittsburgh's IT industry, for example, entices many IT workers from Cambria County to relocate. These pressures will increase the faster the industry grows and wages rise.

Second, metals manufacturing remain under the long-term threat from **lower-cost foreign imports**. In particular, some countries appear to have subsidized the production of steel – historically a strong industry for Cambria County. Below-market priced steel entering the U.S. guts domestic production opportunities. America in general has experienced a long-term decline in manufacturing employment and competitiveness. Cambria County firms have found unique market niches and developed capabilities that provide globally-competitive market advantages. The local industry must continue to mature technical capabilities to remain competitive as globalization increases the flow of low-cost foreign-produced metal products.

[22] Bouton, S., Dearborn, J., Sergienko, Y. & Woetzel, J. (June 2015). *Unlocking the future: The keys to making cities great*. McKinsey&Company. Retrieved August 15, 2015 from: http://www.mckinsey.com/insights/infrastructure/unlocking_the_future_the_keys_to_making_cities_great?cid=other-eml-alt-mip-mck-oth-1506

6

Action Plan

- Strategy Formation Approach
- Strategies
- Strategy Implementation

Defense transitions are problematic. However, Cambria County's defense-oriented firms and former defense industry employees can successfully capitalize on non-defense sector opportunities through the appropriate allocation of resources from local stakeholders and insightful leadership. The community should focus on specific industry clusters that hold the greatest promise for transition and general economic/job growth – building key assets (organizations, programs and initiatives) that support development in these sectors in the areas of entrepreneurship, firm capacity building, workforce development, and university partnerships.

Previous community-sponsored studies and planning activities examined a diverse spectrum of issues to develop broad-based approaches to economic development. These more comprehensive efforts are essential for building foundational community resources such as basic infrastructure (i.e., roads, water, industrial properties, etc.), essential business services (i.e., financing, technical services, etc.), and workforce capacity (i.e., K-12 education, job training, etc.). However, in contrast with previous studies, this defense transition report offers specific solutions and outlines initiatives that reverse longer-term economic stagnation caused by declining defense industry employment levels in Cambria County. Building on national best practices, successful transitions are facilitated by cluster-based efforts that incorporate entrepreneurship, workforce development, and university partnership initiatives. As described in Section 4.2 of this report, communities have also found targeted capacity-building projects for defense industry firms and employees to be effective.

6.1 Strategy Formation Approach

Effective strategies hinge upon a key pivot point which levers a critical insight to achieve an important objective. For example, the ancient general Hannibal marched his army over the Alps which were previously thought to be impassable to attack Rome's unprotected countryside. Congressman Murtha's use of his congressional-level influence to spur the creation of Cambria County's defense industry is a local example of an effective strategy. Cambria County now needs a similarly coherent and effective strategy for transitioning its defense industry into new job-generating areas.

The previous sections of this report provide valuable insights which can be leveraged into workable strategies. OEA guidance and best practices from other communities (Section 4) suggest that efforts should primarily focus on industry-specific cluster development activities. Various city, county, and regional studies and plans outline a broad-based agenda to address key economic development priorities such as blight removal, transportation, crime reduction, and education (Section 4). However, there is a lack of sector-specific development plans. Cambria County's best chance for a successful defense transition is to first focus on the most promising industry sectors – specifically, those industries with existing high local concentrations of companies, innovations and workers which are also well-connected with regional clusters. As described in Section 2, these clusters are the metals manufacturing, energy and information technology industries.

Effective strategies for these clusters will play into Cambria County's strengths (Section 5) and build upon its existing assets and programs (Section 3). A previous effort to build a biotechnology cluster in Johnstown failed to achieve meaningful progress in part because the strategy was pursued without the necessary supporting structures and assets to be successful. The research team worked with the stakeholder group to define these strengths and assets and validate their usefulness for future economic development initiatives.

Winning strategies will also leverage larger trends to increase the likelihood of initiative success. Going against major market-driven trends requires high levels of resource expenditure and very favorable value propositions, which are often hard to locate. Cambria County's defense industry, which is already facing strong headwinds from shrinking federal budgets and a local population decline, is unlikely to succeed by working counter to these trends. Fortunately, there are several areas where strengths and opportunities (Section 5) favorably align for the county's defense transition efforts.

In addition, the community should address any issues that might undermine the chance of successful cluster development. These could be particularly acute weaknesses that need to be overcome or external threats.

Finally, the participation of local stakeholders in strategy formation is required. Stakeholder engagement ensures action plans are realistically achievable and based on validated industry needs. In addition, participant involvement is critical to gaining stakeholder commitment in implementation efforts. Without these commitments, strategies are unlikely to gain the needed momentum to achieve results.

The following strategies incorporate these requirements for effective formation. Some strategies involve complex long-term endeavors that require the engagement of multiple organizations and resources. Others are rather straightforward recommendations which can be implemented by a single organization.

6.2 Strategy 1: Position Cambria County's Metals Manufacturing Companies for Emerging Industry Opportunities

Cambria County's metal manufacturers have a demonstrated capacity for reinvention, adaption, and resiliency that has allowed them to remain competitive despite many market challenges. Indeed, while many of the region's IT defense industry players have suffered setbacks or gone out of business entirely, defense-related metal manufacturers are finding new ways to remain competitive in the defense market or rapidly diversifying into new non-defense market sectors. In addition, economic development organizations such as Catalyst Connection and JARI provide valuable services to support these manufacturers.

Local manufacturing companies, however, have expressed interest in additional services to support the development of new capabilities and products. This assistance will help local metals manufacturers keep pace with the rapidly evolving technology impacting their markets, including opportunities related to shale gas, additive manufacturing, and digital technologies.

Initiatives:

- New Product Development Support
- Exploration of Shale Gas Drilling Platform Product Needs
- Preparing for Additive Manufacturing
- Building Capacity for Digital Technologies in Manufacturing

> This strategy focuses on innovation and private-sector market diversification for the metals industry. It plays to a regional strength in new product development and market penetration to:
>
> 1.) capitalize on the four emerging opportunities – shale gas industry growth, the transformation of manufacturing through digital technology, the "reshoring" of manufacturing jobs, and the regional manufacturing community designation – and
>
> 2.) mitigate the persistent threat from low-cost foreign competitors.

6.2.1 Initiative 1: New Product Development Support

Prime Stakeholder Groups:

- Small- to medium-sized metal manufacturers
- Entrepreneurship community
- Universities

Solution Description:

Several of the smaller firms have requested support for new product development. With limited resources to invest in R&D, these companies seek help evaluating the private-sector market potential of defense products. Can these products be retooled for other industries? What similar products could be fabricated using the company's capabilities? How can these firms increase their capacity for innovation?

The community needs a new, limited-duration initiative to provide training on innovation practices and work one-on-one with interested companies to evaluate new product concepts for private-sector markets. This could include looking at commercial applications of defense products. The goal of this effort is to expand the county's innovation capacity – giving industry improved skills and techniques for their own innovation efforts in the future.

The consulting work should be provided by an experienced firm with a national reputation for innovative product designs for metal products. Companies that have expressed an interest in these services should have a voice in the selection of the consulting company. Participating firms should also be expected to provide a portion of the funding for the consulting services (match).

The training should be in the form of a training seminar on innovation and product development. The seminar could be delivered by the company selected to perform the one-on-one consulting work.

The consultant could work with a selected group of local entrepreneurs to review their business plans and product concepts. Entrepreneur engagements should be coordinated through the county's entrepreneurship programs such as Entrepreneurial Alchemy, UPJ's entrepreneurship program, Creator Square, and the Somerset Trust Company's entrepreneurship program.

Actions List:

Ref	Action	Responsibility	Duration	Cost
1.1	Coordinate a seminar on innovation.	Regional Service Providers	6-12 Months	Low
1.2	One-on-one business consulting on product development for established metals manufacturing businesses.	Regional Service Providers	12-24 Months	Medium
1.3	One-on-one business consulting on product development for entrepreneurs creating startup companies in the metals manufacturing sector.	Regional Service Providers	12-24 Months	Medium

6.2.2 Initiative 2: Exploration of Shale Gas Drilling Platform Product Needs

Prime Stakeholder Groups:

- Metal manufacturers with an interest in shale gas opportunities

Solution Description:

Several local metals companies have already developed successful products for the energy sector. However, the shale gas industry is still relatively immature with many opportunities to engineer new solutions to lower operating costs for drilling platforms. A collaborative approach to analyzing shale industry challenges may be able to identify specific market needs that Cambria County businesses can fill better, faster or cheaper than current offerings in the marketplace.

The Marcellus shale formation has the distinction of being the second most productive gas field in the world. The Marcellus shale is a rock formation that underlies approximately two-thirds of PA and portions of NY, OH, WV, MD, KY, and VA. This shale formation holds trillions of cubic feet of natural gas that has traditionally been considered too costly to access. Advances in drilling technology have allowed access to this gas. The most productive interval of the formation occurs at a depth of 5,000 to 8,000 feet below the surface, which means the areas of Southwest, Northcentral, and Northeast PA have the most productive geology for extraction.

The process of extracting natural gas from the Marcellus shale requires both vertical and horizontal drilling, combined with a process of hydraulic fracturing or “fracking.” The well is drilled, cased and cemented to protect groundwater and prevent the escape of natural gas and other fluids. Drillers then pump large amounts of water mixed with sand and other fluids into the shale formation under high pressure to fracture the shale, allowing the natural gas to flow.

The drilling and extraction of the natural gas in this formation has powered Pennsylvania out of the recent recession with significant opportunities for the growth of gas-related manufacturing investments as well as the export of the commodity to foreign markets. Significant investments have been made in drill sites, pipelines, and power plants.

In discussions with major drillers, including Consol Energy, Dominion, and Sunoco, the prices for natural gas have widely fluctuated since the Marcellus and Utica shale formations were first drilled. In 2004, gas prices averaged $5.45 at the wellhead and rose to over $10.00 in 2005 and 2008. At the end of 2012, the price averaged $3.35. Prices have fallen as low as $1.89 over the last several years. In response, rig counts have decreased significantly in the U.S. over the past year, with current counts at 875 (down almost 1,000 rigs from this time last year). Active rig counts, per Baker Hughes, are a leading indicator of demand for products used in drilling, completing, producing and processing hydrocarbons. In Pennsylvania, rigs operating in September of 2011 numbered 111 while in October 2013, the number of rigs operating was down to 57. The drop in the number of operational rigs directly correlates to the amount of supply chain activity and the lack of expansion onto new well pads. Organizations such as the

Marcellus Shale Coalition (MSC) and the PA Independent Oil and Gas Association (PIOGA) support the state's shale industry.[23]

Although Cambria County has had only five unconventional wells drilled over the past five years, local organizations such as JARI continue to position our region as a great location for investment for regional offices, training facilities, and warehousing operations. In addition, our valuable water resources are ready to accommodate the needs of the industry. Excess capacity in both the existing defense-related manufacturing and service sectors, with their high quality/competitive pricing/on-time delivery processes, is readily adaptable to support the energy sector, including the shale gas supply chain today and into the future as the uncertainties of the pricing of gas unfolds. Today's gas production is a fraction of what it could be and will be into the future based upon the trillions of cubic feet of gas under our region.

Discussions with industry stakeholders found that the most promising opportunities for metals manufacturers within the shale gas industry are potential solutions for a set of challenges facing drilling platform operators. These may include:

1. New Abrasive-resistant Materials – The combination of high pressure, heat and sand creates an environment where abrasion degrades materials such as valves and flanges.
2. High Pressure Technologies – New wells are experiencing much higher pressure conditions (from 3-5K PSI to 10-15K PSI).
3. Footprint Reduction Innovations – Well pad footprints need to be made smaller so companies are looking for any solutions which will reduce the horizontal space of associated equipment success as centrifuges and drying equipment. Some equipment may be replaced by new chemical processes.
4. Water Treatment/Reuse/Disposal – Innovative water management-related technologies have the potential to significantly reduce costs.
5. Material Handling of Sand – Reducing the number of times sand is handled/stored prior to arriving at a fracking site is an industry priority.
6. Gasification Micro-plants – Use liquid natural gas to run well pad equipment.

To capitalize on these potential opportunities, a local stakeholder like JARI or Catalyst Connection can help local metals manufacturers connect with the Ben Franklin Technology Partners' Shale Gas Innovation & Commercialization Center located in State College, Pennsylvania.[24] This center helps to vet new innovations and product concepts for the shale gas industry, local seed funding for development and connect with industry customers. The organization also hosts a business competition whereby firms can propose new products for chance to win $100,000 in funding and an annual technology showcase. Cambria County firms can leverage this resource to pioneer their own innovations.

[23] For more information, see: www.pioga.org and www.marcelluscoalition.org.
[24] For more information, see: www.sgicc.org.

In addition, the representative from the Shale Gas Innovation & Commercialization Center expressed an interest in participating in a workshop focused on defining specific metals-related commercialization projects that might involve Johnstown-area companies. Firms would have the opportunity to talk with industry participants to validate industry needs and better determine where to spend new product development investments.

Actions List:

Ref	Action	Responsibility	Duration	Cost
2.1	Connect local companies to the Shale Gas Innovation & Commercialization Center services.	JARI	12-24 Months	Low
2.2	Host a local workshop on shale gas-related product innovation.	JARI	6-12 Months	Low

6.2.3 Initiative 3: Preparing for Additive Manufacturing

Prime Stakeholder Groups:

- Metal manufacturers with an interest in additive manufacturing
- Universities

Solution Description:

Many of the metals companies in the region interviewed for this report expressed an interest in adopting additive manufacturing applications and obtaining assistance in gaining capabilities to be able to apply additive manufacturing in the future. Industry leaders, however, understand that additive manufacturing for metals is not yet mature enough for wide adoption. Cambria County stakeholders are interested in building regional capacity in additive manufacturing through such things as research, niche market development/recruitment and workforce training.

Definition for Additive Manufacturing of Metals

The process of joining metal materials to make objects from 3D model data, usually layer upon layer, as opposed to subtractive manufacturing technologies, such as metal cutting, forming, and routing technologies.

Adapted from definition developed by ASTM International's Standard

Western Pennsylvania and Ohio are creating one of the nation's strongest industrial bases in metals-related additive manufacturing (AM). For example, both General Electric and Alcoa are building advanced manufacturing research and additive manufacturing centers near Pittsburgh. America Makes, a public-private partnership which was established to accelerate the adoption of additive manufacturing technologies by U.S. manufacturers, is based in Youngstown, OH. The EWI Additive Manufacturing Consortium, an industry group established to promote innovation in additive manufacturing technologies, is headquartered in Columbus, OH. And, numerous companies that manufacture products, produce metal materials, and provide technical services for the AM industry are located in the region.

In the Johnstown area, Concurrent Technologies Corporation is providing applied AM-related research, development, computer-aided design, and testing services to various federal agencies, including the U.S. Navy, U.S. Air Force, and the National Institutes of Standards. In addition, during interviews with metal material manufacturers – including North American Höganäs High Alloys – and metal fabricators in the Johnstown area, executives expressed a strong interest developing the expertise needed to compete for new business as the market for metal-related AM products expands. This may also provide the Johnstown area with opportunities to build a base of AM-related service providers in areas such fabrication, design/testing, materials analysis and process/product improvement.

The metals-related AM industry, which has its roots embedded in technologies developed in the mid-1990s, was originally focused predominantly on rapidly producing lower-cost prototypes, but it is increasingly being adapted to manufacture final products primarily for specialized defense, aerospace, automotive and biomedical applications. However, there are significant challenges that need to be addressed in order to expand the markets for AM-made commercial products. For example, the AM industry is just beginning to:

- Develop standards that address quality, performance, safety, reliability and interchangeability issues associated with AM equipment and processes.
- Create more advanced AM technologies capable of producing higher volumes of lower-cost parts.
- Investigate performance and cost issues for various metals and alloys used to produce AM parts.
- Assess the most effective methods for designing and testing complex parts.
- Develop more/better metal materials for the various processes and applications.

In the United States, the federal government has formed an interagency working group – consisting of the Department of Commerce, the National Science Foundation, the Department of Energy, and a number of other agencies – to:

- Create more advanced AM technologies.
- Support the development of AM-related standards.
- Promote the deployment of AM technologies.
- Educate workers/business executives on the benefits of AM.

As a part of this commitment, the federal government has also invested in America Makes, which is part of the nation's National Network for Manufacturing Innovation (NNMI) and is affiliated with the National Center for Defense Manufacturing and Machining (NCDMM). CTC is partnering with America Makes on several projects for federal agencies.

Given the national importance of the emerging AM industry and the growth of a strong AM cluster in the Western Pennsylvania/Ohio region, Johnstown-area leaders identified a need to build a greater capacity to support the growth of the metals-related AM industry. This would include initiatives designed to engage Johnstown-area organizations in applied research, development and testing activities, especially efforts to:

- Investigate the performance characteristics and cost issues associated with various metals and alloys currently used to produce AM parts,
- Analyze the performance characteristics and cost issues associated with new types of metals that may provide superior attributes for certain applications,
- Assess the most effective methods for designing and testing complex parts, and
- Assess current and develop enhanced information systems related to the design and testing of materials and parts.

This would include initiatives to catalog advancements and performance characteristics related to both: (1) the performance of metals and alloys used in AM applications, and (2) best practices in the design and testing of complex parts. This would also include industrial outreach activities to firms interested in learning more about these characteristics and practices.

As a part of an effort to promote the deployment of AM-related technologies, Johnstown leaders also expressed a strong interest in developing an AM-related workshop to provide training and demonstration services targeted to entrepreneurs and small businesses that are interested in using and/or adopting polymer-based AM technologies. The demonstration center would be part of a new Creator Square workshop in downtown Johnstown.

In addition, U.S. universities, such as Virginia Tech and Youngstown State University, are developing curriculum, operating laboratories and conducting research to advance AM metals-related applications. In addition, both Penn State University and Carnegie Mellon University operate research centers conducting metals-related AM research – the Center for Innovative Materials Processing through Direct Digital Deposition (CIMP-3D) and the Next Manufacturing Center respectively. The University of Pittsburgh at Johnstown (UPJ) should explore the further development of AM-related courses within their engineering program. As the local AM industry matures, a specialization in metals AM education will help support industry growth in the future.

Actions List:

Ref	Action	Responsibility	Duration	Cost
3.1	Support collaborative initiatives for additive manufacturing-related research, development, test and evaluation (RDT&E) activities with the involvement of local industry.	CTC, UPJ	24-36 Months	Low
3.2	Host an AM-related technology workshop for entrepreneurs and small businesses.	Creator Square	12-24 Months	Low
3.3	Expand AM education course offerings in collaboration with industry.	UPJ	12-24 Months	Low

6.2.4 Initiative 4: Building Capacity for Digital Technologies in Manufacturing

Prime Stakeholder Groups:

- Metal manufacturers with an interest in additive manufacturing
- Universities

Solution Description:

New applications from information technology – beyond just additive manufacturing – are transforming manufacturing operations with improved productivity and efficiency. Cambria County is strong in both metals manufacturing and information technology. There are opportunities to leverage local information technology expertise to improve the operations of the county's manufacturing businesses.

U.S. manufacturers are gaining competitive advantages in the global marketplace through the application of advanced technologies. These include new solutions across the full range of manufacturing operations as shown in Figure 8.[25] These types of technologies provide superior production efficiencies, speed-to-market, and operational flexibility.

1	Product Design	Increasingly powerful visualization and simulation software is enabling manufacturers to speed and improve product design, testing, and optimization.
2	Production Planning	Automation design technology makes it possible to digitally design entire factories or individual pieces of equipment, and then simulate and optimize against a range of production scenarios for cost, speed, productivity, utilization, energy usage, and quality.
3	Engineering	Modern production may have hundreds of interrelated automation components. New software makes it possible for engineers to program and coordinate all automation tasks from a single portal, optimizing workflows and improving productivity.
4	Execution	Manufacturing execution systems monitor production performance in real time, enabling short-term control of manufacturing output and long-term optimization of production-unit configuration.
5	Service	Mobile devices, powerful networking, and "big data" analytics are enabling technology-based services opportunities such as remote monitoring and advanced predictive failure analysis that will reduce costs and improve utilization and productivity.

Figure 8. Emerging Technologies that Drive Competitive Advantages for U.S. Manufacturers

Pennsylvania has supported small manufacturers in adopting these types of solutions, which are often dependent upon strong broadband infrastructure. A recent study from

[25] Ludwig, H. & Spiegel, E. (January 2014). *America's Real Manufacturing Advantage*. Strategy+Business. Spring 2014, Issue 74. Retrieved July 7, 2015 from: http://www.strategy-business.com/article/00240

McKinsey Global Institute finds that internet-connected systems have the potential to deliver huge economic impact globally with the potential for $1.2 to $3.7 trillion dollars in new value generated in factories in 2025 if these solutions are adopted with additional value generated from additional logistics and office support systems.[26] Research sponsored by Pennsylvania's Manufacturing Extension Partnership (MEP) network and performed by Dr. Irene Petrick at Penn State University reached similar conclusions. In her 2014 report, *Jumping the Digital Hurdle: Changing the rules of the game for SMEs*, she identifies the following five key trends:

1. Technical (high-performance) computing capabilities enable complex design and simulation.
2. Additive manufacturing attains commercial viability for multiple materials.
3. Cloud-based IT solutions reduce administrative overhead for smaller enterprises and enable new business models.
4. Social media-based funding models democratize production investments.
5. Internet savvy do-it-yourself hobbyists embrace open source innovation tools.

Dr. Petrick's research conclusions focus on the potential future impact of 3D/AM on manufacturing processes and business models. Additionally, she points out there are a range of already-mature solutions such as Enterprise Resource Planning (ERP), E-Commerce, Customer Relationship Management (CRM), and Warehouse Management System (WMS) systems which can improve manufacturers' business operations.

Smaller manufacturers often require assistance in adopting these types of advanced information technology-enabled systems. Beyond the support for AM technologies, Cambria County's metals manufacturers can benefit from assistance with these technologies from organizations such as Catalyst Connection and JARI. Catalyst Connection, for example, is currently implementing part of a state-wide grant to support broadband technology adoption through mini-grants and consulting support.

Actions List:

Ref	Action	Responsibility	Duration	Cost
4.1	Leverage the state broadband grant program to fund ongoing support for local manufacturers.	Catalyst Connection	0-6 Months	Low
4.2	Secure additional funding for continued support in information technology adoption by metals manufacturers.	Catalyst Connection, JARI	6-24 Months	Medium

[26] Manyika, J., Chui, M., Bisson, P., Woetzel, J., Dobbs, R., Bughin, J., & Aharon, D. (June 2015). Unlocking the Potential of the Internet of Things. McKinsey Global Institute. Retrieved July 7, 2015 from: http://www.mckinsey.com/insights/business_technology/The_Internet_of_Things_The_value_of_digitizing_the_physical_world?cid=other-eml-alt-mgi-mck-oth-1506

6.3 Strategy 2: Connect Cambria County's Information Technology Companies with a Broader Set of Market Opportunities and Partners

Cambria County's defense-related information technology firms deliver innovative national and international best-in-class products and services. The sector was significantly impacted by the decline in defense spending. To effectively diversify, these firms cite a need for improved regional connections.

While the metals manufacturing strategy looks to the long-term sustainability of the industry cluster, the IT strategy provides a very near-term opportunity to expand the cluster.

Initiatives:

- Build a Bridge to Pittsburgh
- Create Partnerships with Research Universities
- Host a New Showcase for Commerce Event

Broadband Infrastructure

Some stakeholders identified insufficient broadband infrastructure as a significant weakness in business and talent recruitment and entrepreneurship. Further investigation found that Cambria County – like most rural communities – does indeed have a weak competitive market among Internet Service Providers (ISPs). The cost of internet services is generally 20 to 30 percent higher for local business versus their more-urban counterparts in Pittsburgh. While significant, these costs are offset by the generally lower cost for such things as facility space and internet services are typically a small part of overall business operations. In addition, inducing ISPs to make costly infrastructure investments would require substantial external funding. While small businesses could benefit from lower cost internet service, the scale of this effort relative to the potential benefits indicates that this should be a longer-term community priority.

This strategy focuses on domestic diversification in private-sector markets and non-defense government markets and innovation. It leverages the strengths of a strong education sector and the county's high quality of life to participate in the opportunity presented by Pittsburgh's rapidly-expanding IT industry. It also mitigates the threat of urbanization and partially addresses the weakness in recruiting talent to the region.

6.3.1 Initiative 5: Build a Bridge to Pittsburgh

Prime Stakeholder Groups:

- Information Technology Companies

Solution Description:

The rise of Pittsburgh's IT industry will only benefit Cambria County businesses if there are profitable business connections between local firms and companies in Pittsburgh's IT cluster. These connections could include supplier or outsourcing relationships, joint ventures and business partnerships. County businesses seek assistance in increasing the breadth and quality of connections to Pittsburgh's IT industry.

Industry stakeholders cited increased interaction with the Pittsburgh Technology Council (PTC) as an easy stepping stone to improved industry connections. The PTC (www.pghtech.org) provides networking opportunities for software and hardware companies throughout the greater Pittsburgh region. These include connections to business opportunities, partners, finance opportunities, customers and talent. Several Cambria County firms already participate in PTC events, but greater involvement from county industry members will strengthen the opportunity pipeline from Pittsburgh's growing IT sector.

A second concept raised by stakeholders was a way to address the growing need for IT talent in Pittsburgh. The need is becoming acute and wage rates are escalating. Cambria County firms can offer access to local telecommuters to fill those vacancies – close enough to drive into town for face-to-face meetings but far enough offsite to benefit from a lower cost of living. Cambria County retains a particularly high concentration of software programmers. This function is often cited as one which is more easily outsourced. A search on Dice.com – a technology job-placement website – found that of the 634 open IT positions listed for the Pittsburgh region, 125 or 20 percent of them were for software programmers. Cambria County firms could provide access to Pittsburgh IT companies to our local software programmer talent pool. Programmers seeking an alternative to urban living may be attracted to the county if a steady supply of opportunities were available.

Industry stakeholders repeatedly remarked on the challenges of recruiting and retaining top IT talent due to the lack of urban development and cultural offerings – one of the major community growth weaknesses identified in the SWOT analysis (Section 5.3.2). It is important that community leaders continue to pursue broad-based community and economic development activities to renew Johnstown's urban core as documented in local strategic plans. In addition, some stakeholders proposed an increase in commuter train access to Pittsburgh. While these ideas are beyond the scope of this plan, they are critical to the success of strengthening connections between Cambria County and Pittsburgh.

Actions List:

Ref	Action	Responsibility	Duration	Cost
5.1	Promote increased involvement in relevant PTC hosted networking events and activities.	Cambria County	6-12 Months	Low
5.2	Work with local IT companies to explore and market opportunities for outsourcing software programming talent.	Cambria County, Innovation Works	12-24 Months	Low

6.3.2 Initiative 6: Create Partnerships with Research Universities

Prime Stakeholder Groups:

- Information Technology Companies

Solution Description:

IT companies in Cambria County currently have a limited exposure to new innovations from the region's research universities. These innovations offer companies opportunities to develop new products with unique capabilities and intellectual property protections. Local IT companies expressed an interest in building stronger connections with leading research universities such as Carnegie Mellon, Penn State, and the University of Pittsburgh. Connecting with these universities will require an understanding of the existing solutions and markets offered by Cambria County firms and the related department leads at the various research institutions in the region.

Actions List:

Ref	Action	Responsibility	Duration	Cost
6.1	Validate the technology foci of Cambria County's IT companies interested in exposure to leading research.	Cambria County	0-6 Months	Low
6.2	Facilitate connections to research points of contact and support licensing activities where applicable.	Cambria County	6-24 Months	Low

6.3.3 Initiative 7: Enhance the Showcase for Commerce's Government Procurement Expo with a Focus on IT Solutions

Prime Stakeholder Groups:

- Information Technology Companies
- JARI

Solution Description:

Cambria County IT companies are targeting non-defense federal government agencies and expressed an interest in showcasing their software products to these organizations. JARI, which conducts an annual Showcase for Commerce event focused on connecting local venders with defense-related agencies, can assist these companies by including selected non-defense government participants who purchase the types of software solutions offered by the county's IT companies in the Government Procurement Expo. The key will be identifying and recruiting potential customers that are likely to purchase products offered by local IT companies. In addition, the stakeholders may seek other, similar venues in which to connect the county's defense-related IT companies with non-DoD federal buyers.

Actions List:

Ref	Action	Responsibility	Duration	Cost
7.1	Work with IT companies to identify solutions, buyers and government agencies for the Government Procurement Expo.	JARI	12-24 Months	Low

6.4 Strategy 3: Improve Cambria County Technology Business Growth through New Entrepreneurship Support Programs

Cambria County has many of the components needed to build a successful entrepreneurship ecosystem that includes key players such as UPJ, the Community Foundation, St. Francis University, JARI, Creator Square and Somerset Trust Company. These organizations provide critical services such as training, mentorship, collaborative space, and support programs. However, the grant funding Entrepreneurial Alchemy's programs are currently scheduled to end within one year, and there are also a few key unmet service needs. While additional funding is being sought to sustain Entrepreneurial Alchemy, strengthening the county's entrepreneurial ecosystem will help support the formation of new, high-growth companies with the targeted industry clusters.

Initiatives:

- Build Additional Business Incubation Capacity
- Create a Local Angel Investment Fund

This strategy spans all industry sectors with a focus on innovation and entrepreneurship. It leverages the strength of the rising "esprit de corps" among regional stakeholders to address the weakness of a low concentration of advanced technology companies.

6.4.1 Initiative 8: Build Additional Business Incubation Capacity

Prime Stakeholder Groups:

- Community Foundation, JARI, Somerset Trust Company, Ed2go, Creator Square
- Universities
- Entrepreneurs

Solution Description:

Incubators play a vital role in the creation of new technology firms. Cambria County stakeholders expressed a need for new incubation facilities to help mature fledgling businesses.

Cambria County's entrepreneur ecosystem currently includes the following core programs:

1. UPJ's entrepreneur training degree program for students, Cook Family Idea Lab (see: http://upj.pitt.edu/en/academics/academic-divisions/business/entrepreneurship-program/the-idea-lab/), and business competitions (i.e., PITTch Fest 'Shark Tank' Presentations).

2. Entrepreneurial Alchemy's entrepreneur network, Pitchfest event, and planned local private equity fund operated by the Community Foundation (see: http://www.eajohnstown.org/equity-funding/ and http://cfalleghenies.org/pitch-your-idea-win/).
3. Saint Francis University's Small Business Development Center (SBDC) and continuing education courses in business and technology.
4. JARI entrepreneurial support efforts including facility space (see: http://www.jari.com/index.php?page=entrepreneurial-development).
5. Somerset Trust Company Entrepreneurship Program which links students with professional connections and investors and offers an Entrepreneurship Seminar for UPJ students and community members (see: http://www.upj.pitt.edu/en/academics/academic-divisions/business/entrepreneurship-program/).
6. Bottleworks operates an incubator for the arts in Johnstown.
7. Ed2go - a set of short training programs from Admiral Peary Area Vocational-Technical School which includes topics in business and business startups (http://www.ed2go.com/apavts/).

In addition, two organizations are planning to develop business incubators in the future. Creator Square (http://www.creatorsquarejohnstown.com/) is a planned additive manufacturing incubator to be located in downtown Johnstown as part of a "makers network" that connects Johnstown's creative community, industrial infrastructure, and entrepreneurial activity. The Community Arts Center of Cambria County is investigating similar opportunities and potential collaboration. Cambria-Rowe also intends to open a business incubator in the Conrad Building once the facility has been refurbished. Both of these programs, however, require large capital infusions for facility development prior to successful launch. It may take several years before these programs become fully operational. Stakeholders should continue to pursue this funding while looking for a shorter-term solution for business incubation support, particularly for the information technology sector.

One solution might be to pursue external sources of funding to develop a short-term "bridge" incubator to provide services until the Creator Square and/or Cambria-Rowe business incubators can become fully operational. For example, the EDA Office of Innovation and Entrepreneurship (OIE) has released its second round of a grant program to fund the startup of Proof of Concept Centers (POCCs) and Commercialization Centers (CCs). POCCs are centers that work to demonstrate early-stage innovations from initial conception to Technology Readiness Level (TRL) 3-6. They seek to answer the questions of "can this be done?" (technical) and "should this be done?" (market/financial). CCs are centers that work with later-stage innovations to move opportunities from TRL 3-6 to viable businesses. These programs offer services such as technology advisement, market evaluations, business planning, mentorship and access to capital and provide a key component within a broader entrepreneurship ecosystem. Cambria County stakeholders could collaboratively seek to participate in the third round of the program in 2016. The grant requires a 50 percent match and covers a 3-year period of performance. Grant funding of up to $500,000 is typically available in federal contribution.

However, in addition to the facilities needed for incubators, the community must also ensure that they are able to provide the full-range of entrepreneur-related services needed by local start-up companies and the community must develop a sustainability plan to ensure that funding for these services is available. Although many of the services are available through various existing organizations, gaps in service delivery should be identified, those gaps should be addressed, and plans should be devised to ensure that service delivery efforts are coordinated on a collaborative basis by available service providers.

Actions List:

Ref	Action	Responsibility	Duration	Cost
8.1	Develop a sustainability plan that allows stakeholders to collaborate in providing the full-range of entrepreneurship-related services needed by start-up businesses in the region.	All entrepreneurship-related stakeholders in the region	9 Months	Low
8.2	Secure funding for the redevelopment of the Creator Square facility and program startup.	Creator Square	24-48 Months	High
8.3	Secure funding for the redevelopment of the Conrad Building and incubation program startup.	Cambria Rowe, Cambria County	24-48 Months	High
8.4	Pursue near-term funding for a business incubation "bridge program."	Cambria County	12-24 Months	Medium

6.4.1 Initiative 9: Create a Local Angel Investment Fund

Prime Stakeholder Groups:

- Community Foundation/Entrepreneurial Alchemy
- Entrepreneurs

Solution Description:

Access to capital is a critical requirement for healthy entrepreneurial ecosystems. While there is ready access to debt financing, the community lacks strong equity investment opportunities. Stakeholders noted that even regionally there is a lack of venture capital to fund startup companies. Angel investors are wealthy individuals who seek a return on their capital through investments in local startups. A local angel investment fund would encourage the growth of new technology businesses in Cambria County.

Several stakeholders active in the county's entrepreneurial community have come together to start the Allegheny Innovation Capital Fund. Their goal is to raise $10 million from local investors interested in economic and job growth in the region. The fund will invest in companies located in the 7-county Alleghenies region (Bedford, Blair, Cambria, Center, Indiana, Somerset, and Westmoreland) with unique or superior technology and sustainable business models. While seeking to provide a favorable return for investor capital, the fund will also provide a vehicle for encouraging entrepreneurship, innovation and economic growth.

Additional funding may be available from other sources. For example, the EDA Office of Innovation and Entrepreneurship (OIE) – the same one mentioned in for Initiative 8 above – has launched a grant program for seed capital. Communities applying for this funding must meet certain criteria and the competition for the funds will be high. However, regional stakeholders may find success if the application is married to the incubator application. Both can be applied for in the same fiscal year.

Actions List:

Ref	Action	Responsibility	Duration	Cost
9.1	Support the growth of the Alleghenies Innovation Capital Fund until fully vested.	Mike Hruska, Don Bonk	0-12 Months	High
9.2	Explore additional opportunities for local investment capital such as the OIE grant.	Cambria County	12-24 Months	Medium
9.3	Connect local entrepreneurs with these new sources of seed capital.	Mike Hruska, Don Bonk, Cambria County	12-48 Months	Low

6.5 Strategy 4: Increase Support Mechanisms for International Recruitment and Business Opportunities

Cambria County has a proven track record of recruiting international metals manufacturers who have added valuable jobs and investment in the local community. Ongoing efforts by many of the region's economic developers continue to locate new opportunities supported by strong state and federal programs. Additional support for these efforts could yield improved results.

<u>Initiatives</u>:

- Secure and Promote the Foreign Trade Zone
- Develop a Local International Business Support Program

This strategic move spans all industry sectors with a focus on international diversification. It capitalizes on the opportunities presented by increased globalization and "reshoring."

6.5.1 Initiative 10: Secure and Promote the Foreign Trade Zone (FTZ)

Prime Stakeholder Groups:

- Metal Manufacturers
- Economic Developers

Solution Description:

The Foreign Trade Zone (FTZ) proposal with Alternative Site Framework (ASF) designation is currently under review for South Central Pennsylvania with a decision expected by December 2015. If approved, the FTZ will serve Cambria and six other Pennsylvania counties including Bedford, Blair, Centre, Fulton, Huntingdon and Somerset.

From discussions with industry, there is mixed reception for the FTZ initiative. Some companies expect to use the FTZ while others do not currently source materials internationally. There are a few organizations that source materials from both domestic and foreign sources as well as growing organizations that do not have an immediate need for the FTZ, but both feel that the FTZ will be an advantage in growing international markets. In addition, the FTZ can be a recruitment tool for international companies.

Alternative Site Framework (ASF)

Figure 9 shows U.S. exports from FTZs year over year – with a big increase from 2009 to 2014. This increase was caused by the creation of the Alternative Site Framework in 2009. The Traditional Site Framework became cumbersome and quite difficult to manage. When a County or Port Authority wanted to create an FTZ they had to designate a specific area such as an industrial park, it had to be connected and abide by the 60-mile limit or 90-minute drive rules from its affiliated port. It was very difficult to make any changes without a lengthy process and a lot of bureaucratic difficulty.

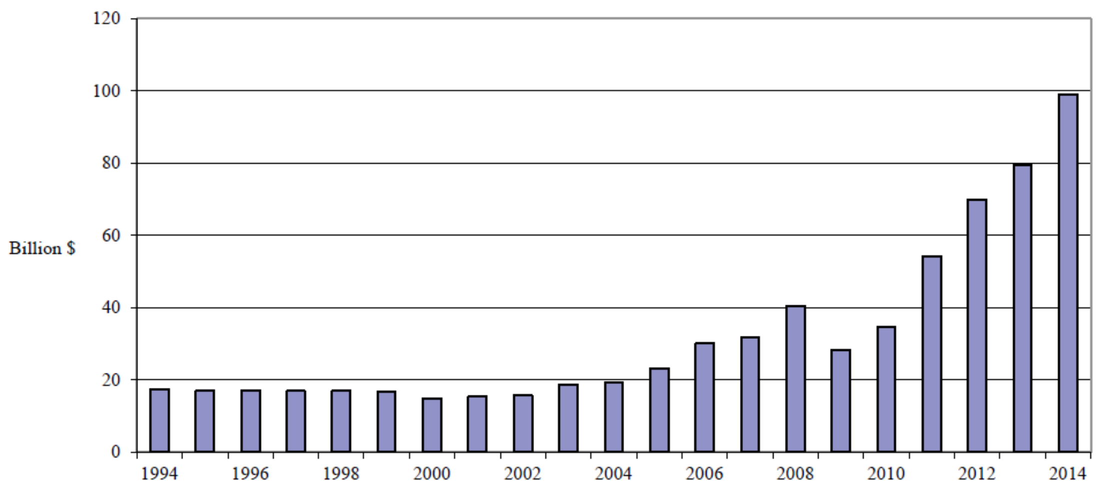


Figure 9. FTZ Export Volume by Year (1994-2014)

ASF allows more flexibility in determining the general purpose zone area such that subzones can be established at specific industrial facilities instead of designated specific-purpose business parks. In addition, the ASF streamlines the application to 30-days using a simplified form. ASF allows zone designation for any company that needs it, eliminating the need for zone grantees to predict where the zone will be needed. Companies can partition parts of their warehouse or facilities as FTZ areas and do not have to relocate or build a new facility. This is particularly useful for companies that bring in raw materials or components to build locally and send out to foreign markets without crossing the U.S. tariff border. There are also advantages to firms importing into the U.S., buying in bulk and only declaring when delivered. This provides a financial advantage for some firms and allows ability to shorten supply schedules.

Purpose and Benefits

FTZs help facilitate and expedite international trade, conduct international trade related operations in competition with foreign locations, encourage and facilitate exports, help attract offshore activity and encourage retention of domestic activity, assist state/local economic development efforts, and help create employment opportunities.

Benefits of the FTZ include:

- **Duty Exemption** - No duties or quota charges on products brought in and then re-exported (still need production authority to do any processing to the import).
- **Duty Deferral** - Ability to bring products in, use the zone as a staging area to keep inventory before it is sold, as it is sold and leaves the zone; it clears customs and that is when you pay your duties and taxes. This serves as a really great tool for managing cash flow especially if you have larger products such as auto makers. Customs duties and federal excise tax deferred on imports improves cash flow.
- **Inverted Tariff** - Can import parts and materials without paying duties and make them into your final product and then take the product of the zone and pay duties on the final product which may be a lower tariff. Where zone production results in a finished product that has a lower duty rate than the rates on foreign inputs (inverted tariff), the finished products may be entered at the duty rate that applies to its condition as it leaves the zone (requires prior authorization).
- **Logistical Benefits** - Companies using FTZ procedures may have access to streamlined customs procedures (e.g., "weekly entry" or "direct delivery"). Allows immediate use of materials in processing prior to Customs clearance. Lower brokerage costs with fewer entries.
- **Other Benefits** - Foreign goods and domestic goods held for export are exempt from state/local inventory taxes. FTZ status may also make a site eligible for state/local benefits which are unrelated to the FTZ Act.
- **Scrap/Waste** - Duty may be reduced on foreign articles that become scrap/waste through FTZ activity (includes defective parts).
- **Import of Production Equipment** - Production Equipment may be admitted without payment of duties until completely assembled, installed, tested and used in full-scale production. Equipment is subject to classification according to its character, condition, and quantity at the rate of duty applicable at the time the equipment is used in production.

Considerations

According to figures released by the U.S. Foreign-Trade Zones Board in its most recent Annual Report to Congress published in August 2015, the value of exports from America’s FTZs increased by 24.8 percent in 2014, to a record-high $99.2 billion in merchandise exported.[27] The 2014 export figure also represents a threefold growth of FTZ exports in the five years since 2009.

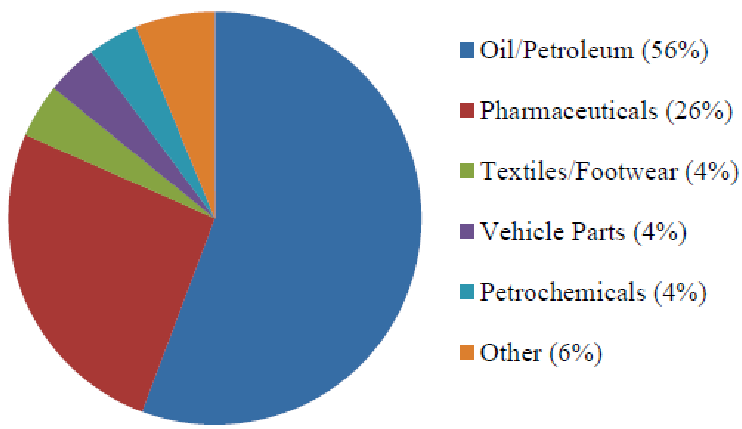
FTZ employment also set a new record in 2014, with 420,000 jobs reported, representing a 7.7 percent increase over 2013 – far surpassing the overall U.S. employment growth of 1.9 percent.

Foreign-status inputs to FTZs totaled $288.3 billion in 2014, accounting for 12.1 percent of all U.S. goods imports. FTZ imports have tripled as a share of U.S. imports over the past two decades.

There were 179 active FTZs during 2014, with a total of 311 active production operations; 2,700 firms used FTZs during the year. The FTZ Board processed 57 applications for new or expanded production authority in 2014, and reorganized 18 zones under the ASF.

FTZ activity for Pennsylvania is reported in Figure 10.

Top Foreign-Status Products by Value



State Summary

Merchandise Received:	$10,000-25,000 mil
Exports:	$250-500 mil
Total Shipments:	$10,000-25,000 mil
Employees:	12,001-13,000

Figure 10. Pennsylvania FTZ Activity Summary

According to the Report to Congress, Pennsylvania is number 10 among the top 25 states for FTZ activity for merchandise received and number 21 among the top 25 for exports (see Figure 11 on the following page).

[27] Source: Foreign Trade Zones Board. (2015). *76th Annual Report of the Foreign Trade Zones Board to the Congress of the United States* (ISSN 1544-2322). Retrieved September 9, 2015, from http://enforcement.trade.gov/ftzpage/annualreport/ar-2014.pdf

Top 25 States for FTZ Activity

Merchandise Received

	State
1	Texas
2	Louisiana
3	California
4	Kentucky
5	Illinois
6	South Carolina
7	New Jersey
8	Ohio
9	Tennessee
10	Pennsylvania
11	Alabama
12	Mississippi
13	Washington
14	Florida
15	Puerto Rico
16	Indiana
17	Georgia
18	Maryland
19	Delaware
20	Hawaii
21	New York
22	Michigan
23	Arizona
24	North Carolina
25	Alaska

Exports

	State
1	Texas
2	Louisiana
3	South Carolina
4	Alabama
5	Mississippi
6	Florida
7	California
8	Puerto Rico
9	Tennessee
10	Indiana
11	Kentucky
12	Hawaii
13	Illinois
14	Georgia
15	Washington
16	Michigan
17	New Jersey
18	Virginia
19	Ohio
20	Alaska
21	Pennsylvania
22	New York
23	Massachusetts
24	Arizona
25	North Carolina

Figure 11. Comparative Pennsylvania FTZ Activity Volume

As a result of the declining population and defense industry spending, local companies are looking for ways to expand their markets and create employment opportunities. There are many local companies interested in and/or are already involved in international work. Some growing companies need assistance globalizing; others currently have distributors in Canada, China, and Australia. There are well established companies that have sold products in Africa and South America and have past work in Norway, Canada, and Brazil. A local major university is increasing international student recruitment to make up for the local population decline, increasing from three Chinese students in 2007 to 60-70 students in 2015 and have hired their first international recruiter.

The U.S. FTZ program is open to all U.S.-based producers, whether they are U.S.-owned companies or foreign-owned affiliates, and makes an attractive selling point for foreign direct investment (FDI) recruitment particularly for foreign suppliers and distributors to local/regional industry. FTZs serve as a local economic development tool to help attract FDI to a community creating local jobs.

The FTZ can assist Cambria County to secure reshoring initiatives, such as the Wal-Mart $250B program. With a major Wal-Mart distribution center approximately 40 minutes from the planned importation hub, a local economic development authority is planning events such as “How to Sell to Wal-Mart” for Johnstown companies.

There is a high reporting and tracking requirement which adds cost to the business case; however, defense companies with robust reporting infrastructures are already well-positioned to participate in the FTZ program. These businesses will have a lower cost for implementation versus firms operating purely in commercial markets. It is also possible to set up a company that utilizes the FTZ to act as a platform for smaller firms who then do not have to manage the complex reporting requirements.

The FTZ provides special privileges for companies that import foreign products for processing prior to clearing customs or inventorying the imported products prior to clearing customs. This benefit may be especially useful in recruiting foreign-based firms to the region as part of broader set of incentives. The increased business activity for some already-established Cambria County businesses and the newly-recruited companies will create new jobs for the community.

Actions List:

Ref	Action	Responsibility	Duration	Cost
10.1	Secure final approval for the FTZ.	Cambria County	0-3 Months	Low
10.2	Promote the FTZ to existing companies in the region where conditions are favorable.	Cambria County, JARI	6-24 Months	Medium
10.3	Encourage the use of the FTZ vehicle in international business recruitment activities in collaboration with local economic development organizations.	Cambria County, JARI, CCIDC	6-36 Months	Low

6.5.2 Initiative 11: Develop a Local International Business Support Program

Prime Stakeholder Groups:

- Metal Manufacturers
- Information Technology Companies
- Economic Developers
- Universities

Solution Description:

Attracting foreign direct investment and developing partnerships between local firms and foreign companies both present complex challenges. Despite the availability of mature programs for business support from local, state and federal economic development organizations, firms expressed a need for new services which would allow them to better evaluate the business potential of foreign market opportunities and connect with these resources.

Local firms are sometimes offered business opportunities from international partners, local economic developers, or other sources but lack the capability to fully vet these opportunities. These companies are interested in establishing an initiative to assist in seeking out and vetting these opportunities in coordination with the state and federal trade assistance service providers. An integrated business support program would allow these firms to better assess the potential of emerging international opportunities and expand exports to new markets.

Key service providers include:

- **SAP&DC** – SAP&DC offers international business assistance in the form of free market research, business trip planning and coordination, trade missions, compliance support, shipping/payment/delivery troubleshooting and product development opportunities. The organization has access to a network of 20 in-country Authorized Trade Representatives that work in over 70 markets world-wide.
- **U.S. Commercial Service** – The U.S. Commercial Service offers market research, trade mission support and business partner identification and vetting services on a fee basis. The organization fields a global team of trade representatives around the world.
- **JARI** - JARI is part of a statewide team currently engaged in a CORE PA Global Initiative that provides assistance for opportunity development in the “T” region of the state through outreach and trade mission support. This program will continue for another 1.5 years.

A successful program will leverage the capacity of these government resources to define specific opportunities for local companies. In many cases, local businesses may not be aware of the scope of services readily available through these programs.

In addition, Cambria County is home to several local branches of international companies. JARI has used these contacts to recruit Foreign Direct Investment (FDI) to the region while identifying new business opportunities. However, stakeholders felt more could be done if JARI had additional resources to focus specifically on leveraging these contacts. Securing new funding for JARI’s international outreach and business recruitment efforts should be a priority for the community.

Actions List:

Ref	Action	Responsibility	Duration	Cost
11.1	Host an international market opportunity workshop to define local needs and describe current program offerings.	SAP&DC	6-12 Months	Low
11.2	Leverage existing international businesses to increase FDI and international business opportunities.	JARI	12-24 Months	Low
11.3	Continue to leverage the CORE program for business support.	JARI	18 Months	Low

6.5 Strategy 5: Support and Leverage Local Education and Training Programs

Cambria County is home to five colleges – University of Pittsburgh at Johnstown, Penn Highlands Community College, Mount Aloysius College, Cambria-Rowe Business College, and Saint Francis University – and strong vocational and job training programs. The county can leverage these assets to expand services, promote regional business connections and support the recruitment of new businesses in targeted industry clusters.

Initiatives:

- Provide Funding for the Retraining of Mid-to-High Skilled Displaced Defense Workers
- Promote the Region's Strength in Education to Support Recruitment and Business Development

This strategic move spans all industry sectors. It leverages the strength of a strong education sector to address the weaknesses in recruiting talent from outside the region to fill local jobs and a poorly educated workforce.

6.5.1 Initiative 12: Provide Funding for the Retraining of Mid-to-High Skilled Displaced Defense Workers

Mid-to-high skilled defense workers typically do not qualify for government training programs -- such as those available under the Workforce Investment Act (WIA) -- because the workforce-related federal agencies have determined that these workers already possess "marketable skills." However, many of these workers are finding that their experience and certifications are only marketable outside the region. They are forced to move away from the community to finds jobs for which they are qualified because no assistance is available for retraining them for locally available job opportunities.

The research team conducted a survey and follow-up interviews of displaced defense workers. Overall, these individuals were happy with the support provided by local workforce organizations in their transitions to new employment. However, a number of respondents noted that they were unable to find new employment in the local job market. These individuals were often forced to relocate their families to other areas. This issue is particularly pressing as Cambria County companies have noted the challenges in recruiting high-quality workers from outside the region. The county can ill-afford to let productive members of the community migrate to other regions.

One of the key complaints from these individuals was that they were not eligible for workforce retraining programs which would have allowed them to re-tool for the local job market. JARI already provides assistance with:

- recruiting employees for companies in the region,
- completing job-specific training needs assessments,
- developing short- and long-term worker training plans,
- finding funding sources to defray training costs, and
- accessing workforce-related services from other employer service agencies.

However, JARI is unable to provide services to individuals who do not meet the federal government's funding criteria – specifically, individuals with "marketable skills" are not able to participate in training programs. While these individuals may have "marketable skills" for their industry as a whole, many find that there is a lack of job openings in the local market and they must search elsewhere for employment.

Providing short-term supplemental training funds for displaced defense workers would allow the organization to extend training/retraining opportunities to fill the gap in training resources for these individuals who are falling through the cracks of the current funding regime. The community can help close this gap by providing a new source of retraining dollars that will allow these workers to participate in job training programs they would otherwise be ineligible for.

The community should ensure the program carefully examines the local workforce opportunities to align training dollars with local job opportunities and the existing skillset of potential program participants. In addition, safeguards should be established which require current funding options to be expended first before the supplemental funding is applied to ensure it reaches the right individuals.

Actions List:

Ref	Action	Responsibility	Duration	Cost
12.1	Review retraining program alignment with job opportunities and displaced worker pools to validate new "non-eligible" training opportunities and volume.	JARI	0-6 Months	Low
12.2	Locate and secure funding for the previously ineligible displaced workers.	JARI	6-12 Months	Low
12.3	Operate program through the likely remainder of the current defense industry downturn.	JARI	12-48 Months	Medium

6.5.2 Initiative 13: Promote the Region's Strength in Education to Support Recruitment and Business Development

Cambria County's education institutions operate independently of each other yet produce highly educated students that leave our area for better employment opportunities in other counties. Collectively, these colleges are producing thousands of highly skilled engineers, healthcare workers, and information technology workers. By uniting these college's abilities through a strategic branding and marketing campaign, Cambria County can showcase a "brain trust" of employment ready workers to organizations from across the world. By marketing this availability of a "brain trust" of engineers, healthcare workers, and information technology specialists – in a low-cost area to operate, Cambria County may be able to attract new economic development opportunities to the region. These opportunities will create new jobs that our current DoD workers could migrate to as we wean ourselves from DoD funding.

Actions List:

Ref	Action	Responsibility	Duration	Cost
13.1	Identify specific skillsets being developed from our local universities and colleges.	Cambria County	6-12 Months	Low

Ref	Action	Responsibility	Duration	Cost
13.2	Conduct strategic marketing effort related to college graduates in targeted disciplines.	Cambria County	6-12 Months	Medium
13.3	Conduct Business Market Analysis to determine what industry clusters could develop and prosper within Cambria County.	Cambria County	6-12 Months	Low
13.4	Evaluate international markets that our educational branding can attract and support.	Cambria County	6-12 Months	Low

6.6 Strategy Implementation

Cambria County has developed a set of strategies and initiatives to support the growth of targeted industry clusters to aid the defense industry transition. Table 16 provides an overview of the associated action items for these strategies. Note: these strategies are not listed in priority order and will be implemented based on current financial opportunities and community support.

Table 16: Cambria County Defense Industry Transition Action List

Ref	Action	Responsibility	Duration	Cost
S1	**Position Cambria County County's Metals Manufacturing Companies for Future Industry Strategies**			
1	**New Product Development Support**			
1.1	Coordinate a seminar on innovation.	Regional Service Providers	6-12 Months	Low
1.2	One-on-one business consulting on product development for established metals manufacturing businesses.	Regional Service Providers	12-24 Months	Medium
1.3	One-on-one business consulting on product development for entrepreneurs creating startup companies in the metals manufacturing sector.	Regional Service Providers	12-24 Months	Medium
2	**Exploration of Shale Gas Drilling Platform Product Needs**			
2.1	Coordinate with the SGICC to support shale gas-related product innovation.	JARI	12-24 Months	Low
2.2	Host a local workshop on shale gas-related product innovation.	JARI	6-12 Months	Low
3	**Preparing for Additive Manufacturing**			
3.1	Support collaborative initiatives for additive manufacturing-related research, development, test and evaluation (RDT&E) activities with the involvement of local industry.	CTC, UPJ	24-36 Months	Low
3.2	Host an AM-related technology workshop for entrepreneurs and small businesses.	Creator Square	12-24 Months	Low
3.3	Expand AM education course offerings in collaboration with industry.	UPJ	12-24 Months	Low
4	**Building Capacity for Digital Technologies in Manufacturing**			
4.1	Leverage the state Broadband grant program to fund ongoing support for local manufacturers.	Catalyst Connection	0-6 Months	Low

Ref	Action	Responsibility	Duration	Cost
4.2	Secure additional funding for continued support in information technology adoption by metals manufacturers.	Catalyst Connection, JARI	6-24 Months	Medium
S2	**Connect Cambria County's Information Technology Companies Connect with a Broader Set of Market Opportunities and Partners**			
5	**Build a Bridge to Pittsburgh**			
5.1	Promote increased involvement in relevant PTC hosted networking events and activities.	Cambria County	6-12 Months	Low
5.2	Work with local IT companies to explore and market opportunities for outsourcing software programming talent.	Cambria County, Innovation Works	12-24 Months	Low
6	**Create Partnerships with Research Universities**			
6.1	Validate the technology foci of Cambria County's IT companies interested in exposure to leading research.	Cambria County	0-6 Months	Low
6.2	Facilitate connections to research points of contact and support licensing activities where applicable.	Cambria County	6-24 Months	Low
7	**Enhance the Showcase for Commerce's Government Procurement Expo with a Focus on IT Solutions**			
7.1	Work with IT companies to identify solutions, buyers and government agencies for the Government Procurement Expo.	JARI	12-24 Months	Low
S3	**Improve Cambria County Technology Business Growth through New Entrepreneurship Support Programs**			
8	**Build Additional Business Incubation Capacity**			
8.1	Develop a sustainability plan that allows stakeholders to collaborate in providing the full-range of entrepreneurship-related services needed by start-up businesses in the region.	All entrepreneurship-related stakeholders in the region	9 Months	Low
8.2	Secure funding for the redevelopment of the Creator Square facility and program startup.	Creator Square	24-48 Months	High
8.3	Secure funding for the redevelopment of the Conrad Building and incubation program startup.	Cambria Rowe, Cambria County	24-48 Months	High
8.4	Pursue near-term funding for a business incubation "bridge program."	Cambria County	12-24 Months	Medium
9	**Create a Local Angel Investment Fund**			
9.1	Support the growth of the Allegheny Innovation Capital Fund until fully vested.	Mike Hruska, Don Bonk	0-12 Months	High
9.2	Explore additional opportunities for local investment capital such as the OIE grant.	Mike Hruska, Don Bonk	12-24 Months	Medium
9.3	Connect local entrepreneurs with these new sources of seed capital.	Mike Hruska, Don Bonk, JARI	12-48 Months	
S4	**Increase Support Mechanisms for International Recruitment and Business Opportunities**			
10	**Secure and Promote the Foreign Trade Zone (FTZ)**			

Ref	Action	Responsibility	Duration	Cost
10.1	Secure final approval for the FTZ.	Cambria County	0-3 Months	Low
10.2	Promote the FTZ to existing companies in the region where conditions are favorable.	Cambria County, JARI	6-24 Months	Medium
10.3	Encourage the use of the FTZ vehicle in international business recruitment activities in collaboration with local economic development organizations.	Cambria County, JARI, CCIDC	6-36 Months	Low
11	**Develop a Local International Business Support Program**			
11.1	Host an international market opportunity workshop to define local needs and describe current program offerings.	SAP&DC	6-12 Months	Low
11.2	Leverage existing international businesses to increase FDI and international business opportunities.	JARI	12-24 Months	Low
11.3	Continue to leverage the CORE program for business support.	JARI	18 Months	Low
S5	**Support and Leverage Local Education and Training Programs**			
12	**Provide Funding for the Retraining of Mid-to-High Skilled Displaced Defense Workers**			
12.1	Review retraining program alignment with job opportunities and displaced worker pools to validate new “non-eligible” training opportunities and volume.	JARI	0-6 Months	Low
12.2	Locate and secure funding for the previously ineligible displaced workers.	JARI	6-12 Months	Low
12.3	Operate program through the likely remainder of the current defense industry downturn.	JARI	12-48 Months	Medium
13	**Promote the Region’s Strength in Education to Support Recruitment and Business Development**			
13.1	Identify specific skillsets being developed from our local universities and colleges.	Cambria County	6-12 Months	Low
13.2	Conduct strategic marketing effort related to college graduates in targeted disciplines.	Cambria County	6-12 Months	Low
13.3	Conduct Business Market Analysis to determine what industry clusters could develop and prosper within Cambria County.	Cambria County	6-12 Months	Low
13.4	Evaluate international markets that our educational branding can attract and support.	Cambria County	6-12 Months	Low

Successful implementation of these action items will require the involvement of many community stakeholders working together. New opportunities and action items will likely present themselves while these current items are being implemented. The community should remain opportunistic in implementing these new opportunities and maintain awareness of emerging challenges which could derail the cluster development efforts. In addition, the strategies and initiatives in this plan should be reviewed annually to ensure they remain relevant over the longer term.

The stakeholders involved with this plan should realize that some initiatives may not be successful. Approval or funding might not be secured. Implementation may prove impractical. Other complications may arise. However, the five strategies should remain relevant for the next 3-5 years as keys to economic growth for the defense industry companies seeking to transition to new markets. As long as the leadership group continues to see progress in actualizing these strategies with concrete progress on the ground, the prospects for the defense industry transition will remain positive. The core leadership group should continue to meet regularly to review the status of the various action items, identify support needed, and address issues to keep the strategies on track.