INDIANA OFFICE OF
ENERGY & DEFENSE
DEVELOPMENT

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INDIANA DEFENSE ASSET STUDY
AND
BRAC-AFFECTED COMMUNITIES ANALYSIS

October 2007

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FOREWORD

The State of Indiana is facing a significant workforce challenge resulting from Department of Defense 2005 Base Realignment and Closing(BRAC) recommendations. Indiana is currently scheduled to lose approximately 1,300 jobs affecting eight different military facilities. However, given the high probability for "ripple" effects on local employment for defense subcontractors, suppliers, and local businesses, the secondary impact will certainly result in approximately 500 more jobs lost, according to the BRAC Commission's most recent report to President.

Early planning is critical to ensure that communities receive necessary and appropriate economic development and workforce assistance. This is especially true, given the limited information available on post-BRAC planning. The State of Indiana has received $1.5 million National Emergency Grant (NEG) from the U.S. Department of Labor (DOL). The NEG funding will allow Indiana to la a comprehensive response to the 2005 BRAC recommendations.

Given this challenge and the available federal support, the State's Office of Energy and Defense Development (OED) commissioned a study to assess the effects of BRAC, identify alternative work and training opportunities, and to help Hoosier businesses and researchers capture more grants and contracts from the U.S. Department of Defense (DOD), the Department of Homeland Security (DHS), and the National Aeronautics and Space Administration (NASA) market.

This work was divided into three phases: the mapping of Indiana's aerospace, defense and homeland security "assets," including skills, workers, facilities, and technology; preparing a comprehensive forecast for each of the three targeted federal departments, including the identification of areas of opportunities; and finally, identifying specific targets and creating a strategic plan for capturing greater market share of DOD, DHS and NASA contacting, and for assisting BRAC-affected communities.

The process used to develop these findings and recommendations involved significant outreach, stakeholder engagement, public comment and focus group activation. One-on-one and small group "care-about" interviews were held with scores of stakeholders, four meetings were held across the State with key influencers, six teams met on targeted areas of growth opportunities, and six regional gatherings were held statewide to solicit a region-specific feedback on the results.

As a result, as this plan is being published, the benefits of this process are already evident. New business and university collaboration is well underway. Small businesses are beginning to partner with each other. Several new projects, including an exciting new life sciences initiative between three key Indiana institutions, have been activated. Larger Indiana defense contractors are engaging with small businesses and university researchers.

Other key "deliverables" are already generating dividends as well. On June 18th, the Lt. Governor announced the availability of a new, searchable database of all Indiana federal contracts with the DOD, DHS and NASA from 2002-2006, now available on the OED's website.

A conference to help small Indiana companies learn how to sell to the federal government was held on June 28th, and a searchable compact disc with extensive tools and resources on federal government contracting was created and is being distributed across the State.

When researchers found it difficult to locate data about university skills, funding and intellectual property, a separate study was completed to consider the feasibility of a statewide university portal.

The extent to which Indiana's stakeholders are already deploying parts of the plan provides strong confidence that success is achievable. Hoosier business, universities, government, entrepreneurs and small business leaders clearly perceive the importance of this market. This effort has generated important momentum toward fully leveraging Indiana's intellectual, workforce, and military assets in the DOD, DHS, and NASA marketplace.

ACKNOWLEDGEMENTS

This study reflects the efforts, talent and leadership of many individuals. A sincere thank you is offered to them for their contributions over the past ten months

First, the support and vision provided by the Office of Energy and Defense Development (OED) within Indiana State Government, was much appreciated. The Director, John Clark, his Deputy, Dan Denning and Jason Lovell -- whose hands-on leadership made this work possible -- all deserve thanks.

Lieutenant Governor Becky Skillman oversees the OED and played a personal role in providing direction, generating media coverage and launching the online database. Her leadership was appreciated very much, and will be critical to the future success of this initiative.

The following Advisory Committee members volunteered their time and talent for this project. Their knowledge, guidance and hands-on assistance were invaluable.

Pete Bitar, President, XADS
John Dement, Science and Technology Advisor, Crane NSWC
Steve Gootee, Vice President for Operations Warfare Systems & Integration, SAIC
Mike Hudson, Chairman and CEO, IPower
Bruce Menshy, Director of Operations, Raytheon
Mike Mitchell, National Advocate Lead, Crane NSWC
Al Novick, Vice President, Marketing Intelligence & Support, Rolls-Royce Corporation
David Shelby, Vice President, Finance, Griffin Analytical Technologies
Jim Schonberger, Business Relations Manager, EG&G Technical Services and Director of Special Projects, Crane Technology Inc.
Stacey Smith, President, Prairie Quest Consulting
John Sullivan, Director, Center for Advanced Manufacturing, Purdue University
Brigadier General Omer C. (Clif) Tooley, Jr., Joint Forces Deputy Commander, Indiana National Guard
Kirk White, Director of Community Relations, Indiana University

Finally, the tremendous efforts of the consulting team has yielded an actionable plan, momentum in the focus groups and state-wide interest in growing Indiana's share of the federal defense business. Special thanks for making it happen to Brose McVey, Kurt Luidhardt, Amy Akins and Tiffany Carr at Nexpointe Strategies, Jim Wheeler at TPMA, Rear Admiral (ret) Jim Hinkle at Spectrum Group, Bruce Stach at Sigma Strategic Solutions, David Smith and Bill Kleinebecker at Technology Futures Inc and Elliott Parker at Innovo Partners LLC.

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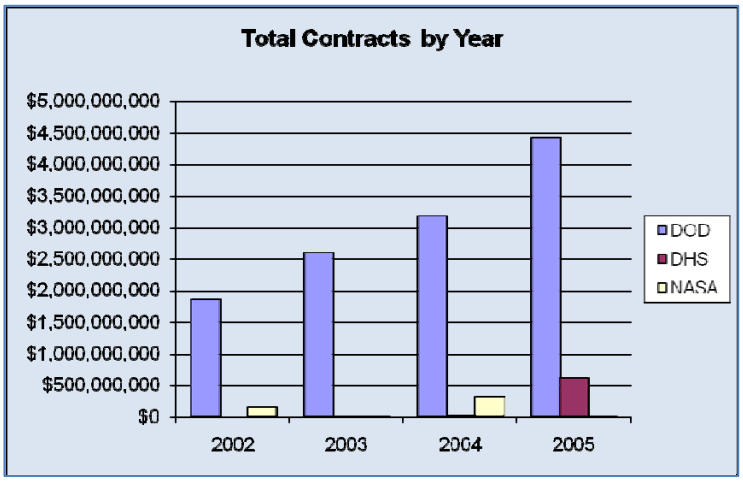
EXECUTIVE SUMMARY

The conflicts in Iraq and Afghanistan and Hurricane Katrina have highlighted Indiana's role in supporting the Nation's defense and aerospace needs. They also generated a significant increase in Indiana's receipts from the Department of Defense (DOD), and a temporary spike in receipts from the Department of Homeland Security (DHS). Indiana's recent experience with the Base Realignment and Closing (BRAC) process has served as a catalyst to focus Indiana's assets on future opportunities.

Figure 1



Between FY 2001 and FY 2005, total federal grants and contracts to Indiana from the DOD alone grew from $1.83 billion to nearly $4.5[1] billion, see Figure 1.[2] When federal payroll to active, retired and civilian military personnel are added, FY 2005 DOD spending in Indiana was $6 billion. This placed Indiana 17th on a list of all states for DOD spending.

The 2005 BRAC will cause a net total (direct and indirect) growth of over 4000 jobs statewide from 2005-2011, though some communities face significant reductions.

While the DOD numbers are expected to fall as conflicts subside, and several large procurement contracts spend out, opportunities exist to sustain and grow Indiana's share of the DOD and homeland security markets. This study and plan sets forth recommendations for how Indiana State government, industry leaders and academic researchers can work together to maximize jobs and wealth creation through government contracting and research for DOD, NASA and DHS.

Indiana's strengths and affinities are well suited to emerging defense and homeland security needs. Indiana's universities, emerging technologies and historic can-do manufacturing strengths, when matched with location, competitive cost structures and facilities, all provide a significant opportunity for Hoosier business leaders and workers.

Several immediate and emerging needs within the defense and homeland security arena favor Indiana, including:

- The global need for training for urban and complex operations, customs and border patrol, and intelligence gathering
- The need to recapitalize, rejuvenate, and replace the equipment and systems within DOD and DHS, particularly in the area of vehicles and vehicle systems, while alleviating the current backlog at national depot operations
- The Army's need to build electronic warfare capabilities into its systems, and expand its active and reserve capacity
- The need for enhanced database management, computing and informatics solutions to handle complex systems
- The need for complex sensor networks in nearly all new systems
- The DOD's goals toward energy independence and alternative energy
- The need for unmanned and autonomous vehicles and lightweight aircraft systems

[1] Data sources included in Appendix iii, iv and v. Data does not include subcontracts and intercompany transfers
[2] FY 2006 data available in Appendix XII

A thorough review of Indiana's strengths, assets and affinities, when matched with the forecasted needs of these customers, points to seven targets of particular opportunity:

- Advanced Military Informatics: the use of algorithms based on advancements in mathematical sciences applied to military and homeland security needs
- Transportation Systems: providing value added transportation platforms through improved and next generation major subsystems
- Defense Electronics: the design, manufacture and life cycle support of electronics systems
- Services and Support: the provision of products and services that enhance the usefulness and extends the life cycle of existing military platforms
- Bio Collaboration: creative collaboration between the Bio/Life Sciences and Military/Homeland Defense assets
- Future Energy Alternatives: the development of new approaches to provide energy through four components – fuels, energy conversion, storage systems, and process energy management
- MUTC Partnership: the extended use of the Muscatatuck Urban Training and Complex Operations Center as the centerpiece of a southern Indiana military training area encompassing the south central portion of the state

If aggressive effort is applied to these targets of opportunity, Indiana can achieve significant growth in the defense and homeland security contracting market. **A one percent increase in the market share of federal procurement from the DOD in FY 2006 alone would have represented an increase of $2.57 billion for Indiana**.

To fully capitalize on the market potential and the identified opportunities, immediate and sustained efforts are recommended for the state, academia, and the business community in these critical areas:

- **Establishing Leadership**
- **Enhancing Advocacy, Marketing and Branding**
- **Improving Collaboration and Connectivity**
- **Increasing University Cooperation**
- **Developing Human Capital**
- **Launching Small Business Services**
- **Attracting Funding**

Creating and funding a public/private partnership to provide the leadership to implement the strategic recommendations is a key step towards realizing more defense business for Indiana. Indiana's defense assets must be communicated and advocated to key federal influencers to better the chances of winning contracts. Improved industry/academic/government collaboration is crucial to growth in this sector and mobilization of the focus action teams is necessary to continue to build the momentum and connectivity created from the study's grass roots engagement. The majority of Indiana's defense contractors are small businesses, and these (and other small businesses new to defense contracting) need assistance in knowing how to do business with the federal government, determining opportunities that fit their businesses and complying with federal regulations.

The State must make a significant commitment to capture these opportunities. The establishment of the new Office of Energy and Defense Development (OED) was a very strong start as well as a signal of interest and commitment. OED's support and commitment of this study is already realizing benefits for Indiana. Through the study's outreach efforts, new collaborations are forming from the focus group meetings. Forty-six small businesses have received training on defense contracting. A new, searchable database of all Indiana federal contracts with the DOD, DHS and NASA from 2002-2006 is available on the OED's website. The extent to which Indiana's stakeholders are already deploying parts of the plan provides strong confidence that success is achievable. Hoosier leaders clearly perceive the importance of this market, and momentum is building towards making Indiana a much larger player in DOD, DHS, and NASA marketplaces. The following immediate next steps will continue that momentum:

Immediate Next Steps:

1. **Establish a Public/Private Partnership to Maximize Growth of Indiana's Defense Industry**

   This organization has the ultimate responsibility for optimizing DOD, Homeland Security, and NASA business for the state. It will carry out the recommendations in this proposal, and be a catalyst for the identified focus areas and for efforts that are needed to assure that a responsive, effective infrastructure exists for all Indiana stakeholders doing business with these customers.

2. **Organize and initiate a second phase of Focus Action Team meetings for each of the six targets**

   Each Focus Action Team has identified initial implementation steps for the first two years. Some immediate opportunities and initiatives have already been defined, each of which require attention. These teams need to meet on a regular basis to build on the momentum gained during the Focus Action Team sessions.

3. **Mobilize a MUTC team and utilize the public/private foundation to support the vision**

   The Muscatatuck Urban Training Center (MUTC) Partnership focus area needs to be expressed eventually as a High Level Business Case, as have the other six targets. Because of the complexity of the mission and potential needs associated with MUTC[3], a game exercise involving top level national experts is recommended, where multiple scenarios can be played out in the urban warfare, to fully identify the supporting infrastructure needed to maximize this opportunity for the state and develop a business plan to fully support the development of this opportunity to attract DOD training business.

4. **Develop bi-partisan, merit-based appropriations strategy with Indiana's Congressional delegation and State Leadership**

   One of the key findings in this report is the need for more aggressive and highly coordinated effort within the Indiana Congressional delegation toward merit-based, bi-partisan DOD and DHS projects. This report should be presented to the delegation by State leadership to inform, motivate and demonstrate commitment to these goals on the part of the State. The current working group within the delegation should be strengthened and a formal process developed for the identification and support of merit-based projects.

5. **Move on the short-term opportunities identified in this report.**

   - Human Impact Trauma Center
   - Institute of Repair Excellence
   - Networked Urban Operations Test Bed

[3] Next year 50% of the world's population will be living in urban centers and that percentage is growing. In 2015, there will be 30 world cities with a population of more than 8.4 million – more people than in all of Indiana.

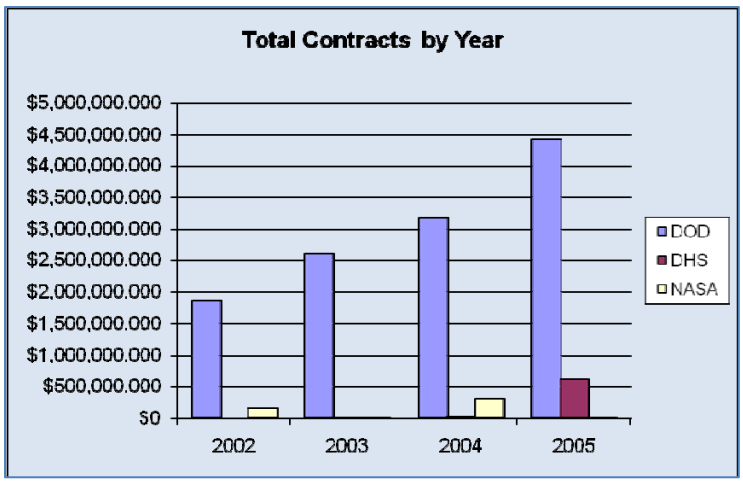
INDIANA'S DEFENSE ASSETS

DEFINING "ASSETS"

Building a successful strategic plan relies on clearly understanding the assets that can be leveraged. Indiana's defense "assets" were broadly defined as industry, academia, and government capabilities that foster Indiana's aerospace and defense (A&D) industry. Specifically, these included A&D businesses and their past contracting activity, A&D businesses and university research and development capabilities, Indiana technology and patent expertise, military installations, and other state and federal government activities and funding that support Indiana's A&D industry, such as congressional appropriations and the Indiana 21st Century Fund.

PAST CONTRACTING WITH DOD, DHS AND NASA

Figure 2



Contract data from 2002 to 2005 was used to create a snapshot of Indiana's contracting activity. As shown in Figure 2[4], DOD contracting has approached $4.5 billion[5] in Indiana, DHS and NASA contracting has exceeded $500 million only once during the same period. DOD contracts and grants to Indiana companies and researchers were significantly greater than DHS and NASA combined, and as a result, this places a proportionate focus on DOD performance and future opportunities.

Data for contracts whose principal place of performance are Indiana, was collected and placed on a searchable database and is now available for the State's use. Identifying the principal place of performance is significant for ensuring that the data truly represents activities that actually took place in Indiana. For instance, SAIC, one of the nation's top ten defense contractors, is headquartered in California. However, SAIC has a large contract in which all work was completed in Indiana.

THE DEPARTMENT OF DEFENSE (DOD), 2002-2005

Table 1

Year	Gross State Product *	DOD Prime Contracts Awarded to Indiana Companies/Universities
2005	$214,093,000,000	$4,428,000,000
2004	$211,745,000,000	$3,172,000,000
2003	$204,837,000,000	$2,607,000,000
2002	$196,828,000,000	$1,860,000,000
CAGR	2.12%	24.21%

** Source: U.S. Bureau of Economic Analysis*

Indiana's companies and universities receiving prime contracts from the DOD are diverse and encompass activities in every Industrial Traded Cluster. The value of prime contracts awarded to Indiana companies and universities during the Government Fiscal Years of 2002 to 2005 have grown significantly. Much of this spike in growth can be directly attributed to the wars in Iraq and Afghanistan. The Compound Annual Growth Rate (CAGR) in DOD contract receipts, as compared to the growth in Indiana's Gross State Product, is shown in Table 1. Defense contracting growth is over ten times the rate of Indiana's GSP

[4] Data sources included in Appendix iii, iv and v. Data does not include subcontracts and intercompany transfers FY
[5] 2006 data available in Appendix XII

growth, making it a significant opportunity for Hoosier economy. Indiana is also slowly increasing its standing among other states, as well. The State of Indiana ranks in the top 25 for all years included in this study, rising from a rank of 25th to a rank of 17th. See Table 2. Indiana's position relative to other states located in the Midwest is also healthy and rising. See Table 3

Table 2

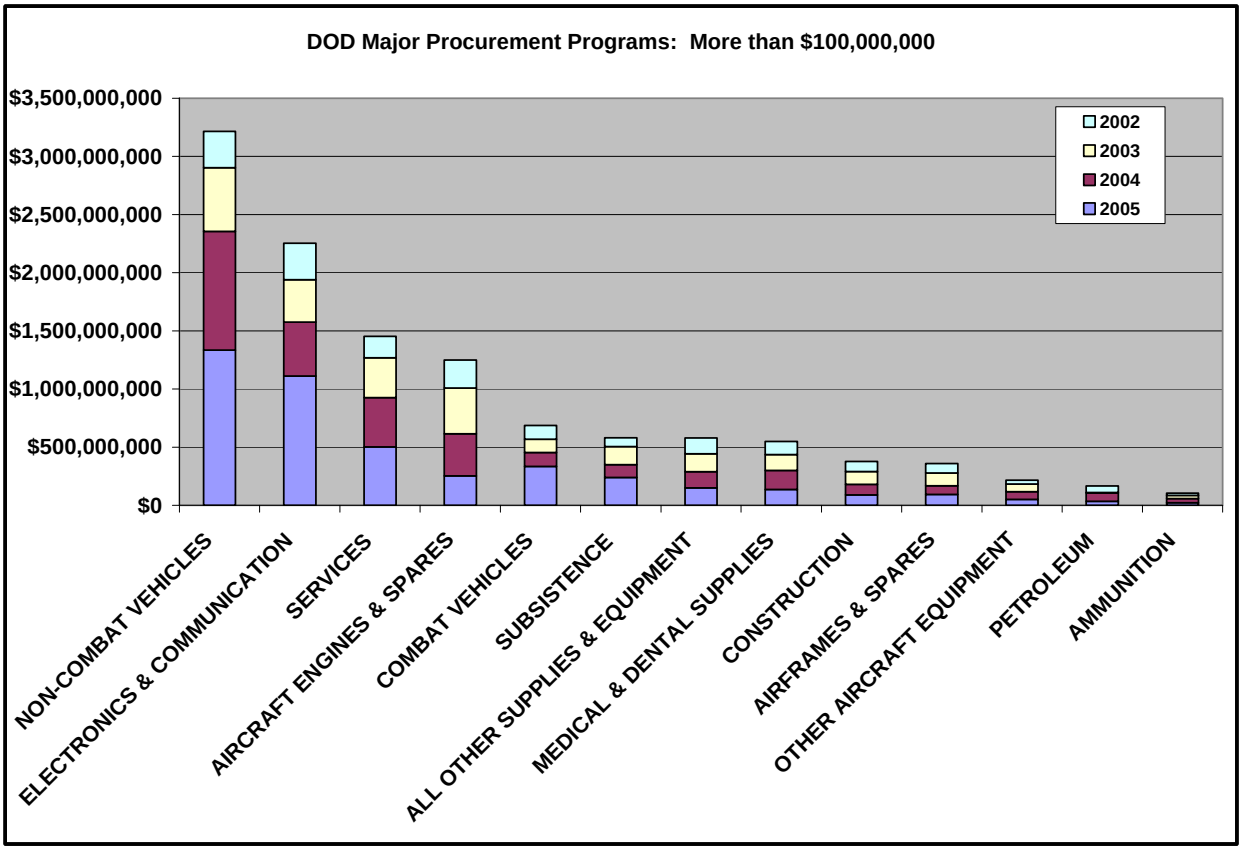
2005		2004	
STATE	Total Dollars	STATE	Total Dollars
California	$31,064,642,107	California	$27,875,153,611
Virginia	$26,809,778,660	Virginia	$23,542,532,798
Texas	$20,696,563,815	Texas	$21,044,000,809
Maryland	$10,863,496,393	Maryland	$9,206,211,317
Florida	$10,317,531,391	Connecticut	$8,959,416,245
Arizona	$9,354,635,557	Arizona	$8,430,004,770
Connecticut	$8,753,062,611	Florida	$8,385,514,544
Massachusetts	$8,332,647,081	Massachusetts	$6,961,389,359
Pennsylvania	$7,483,342,441	Missouri	$6,502,109,430
Alabama	$7,069,163,834	Pennsylvania	$6,202,808,317
Missouri	$6,981,281,883	Alabama	$5,849,359,483
New Jersey	$6,101,128,664	New York	$5,243,865,861
New York	$5,961,800,423	Ohio	$4,636,538,262
Georgia	$5,740,593,312	New Jersey	$4,196,267,101
Ohio	$5,460,279,070	Kentucky	$4,118,664,994
Washington	$4,452,521,393	Georgia	$3,905,200,966
Indiana	$4,428,469,362	District of Columbia	$3,515,106,823
Kentucky	$4,299,757,008	Washington	$3,324,921,713
Michigan	$3,961,911,259	Indiana	$3,173,310,341
Colorado	$3,689,869,057	Colorado	$3,151,257,993
Illinois	$3,571,591,200	Illinois	$3,003,795,213
District of Columbia	$3,485,726,214	Michigan	$2,611,655,051
Mississippi	$3,293,577,231	Louisiana	$2,544,011,194
Louisiana	$3,029,051,972	North Carolina	$2,213,390,021
North Carolina	$2,948,582,828	Tennessee	$2,115,758,996

Table 3

	2005	2004	2003	2002
Illinois	$3,571,591,200	$3,003,795,213	$2,564,478,655	$2,005,746,605
Indiana	$4,428,469,362	$3,173,310,341	$2,607,120,687	$1,860,420,200
Kentucky	$4,299,757,008	$4,118,664,994	$3,896,771,302	$2,268,248,997
Michigan	$3,961,911,259	$2,611,655,051	$2,524,118,472	$2,179,845,189
Ohio	$5,460,279,070	$4,636,538,262	$4,325,783,755	$3,444,476,372

The DOD categorizes its procurement activity into 25 Major Procurement Programs. A breakdown of Indiana grants and contracts by these procurement categories creates more insight into the types of goods and services provided. Indiana contractors and universities participated in every Major Procurement Program category, and Indiana's top thirteen program categories are shown in Figure 3.

Figure 3



As Figure 3 indicates, four categories dominate Indiana's historic contract activity. These are:

1. Combat and Non-Combat Vehicles
2. Electronics and Communications
3. Services
4. Aircraft Engines and Spares

The top four categories reflect the efforts of Indiana's top-tier contractors, including AM General, ITT Industries, Raytheon and Rolls Royce. Indiana is home to plants or regional facilities for a number of top-tier DOD contractors, as represented in Table 4.

Indiana contractors are located across the state. The majority of DOD contracting dollars are concentrated in Allen, Bartholomew, Greene, St. Joseph, Lake, Mario, Miami and Whitley counties.

Table 4

Contractor Name	City	Totals 2002 - 2005
AM GENERAL, LLC	SOUTH BEND	$2,618,823,432.00
ITT INDUSTRIES, INC	FORT WAYNE	$1,298,007,948.00
ROLLS-ROYCE CORPORATION	INDIANAPOLIS	$928,370,611.00
RAYTHEON TECHNICAL SERVICES CO	INDIANAPOLIS	$907,093,142.00
AM GENERAL LLC	MISHAWAKA	$690,442,853.00
RAYTHEON COMPANY	FORT WAYNE	$549,865,647.00
CARDINAL HEALTH 100, INC	MIDDLETOWN	$500,711,232.00
AMERIQUAL GROUP LLC	EVANSVILLE	$479,063,981.00
PARSONS INFRASTRUCTURE & TECHN	NEWPORT	$409,558,635.00
ALLISON TRANSMISSION, GENERAL	INDIANAPOLIS	$347,580,563.00
SCIENCE APPLICATIONS INTERNATI	SAN DIEGO	$195,750,784.00
HONEYWELL INTERNATIONAL INC	SOUTH BEND	$130,919,083.00
PETROLEUM TRADERS CORPORATION	FORT WAYNE	$129,967,131.00
EG&G TECHNICAL SERVICES, INC	GAITHERSBURG	$120,142,289.00
CUMMINS INC	COLUMBUS	$95,507,716.00

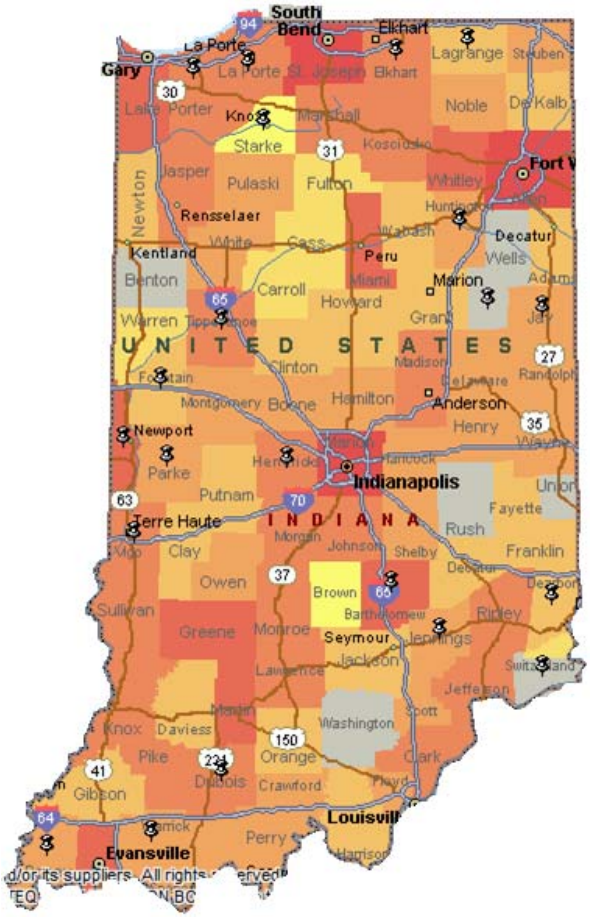


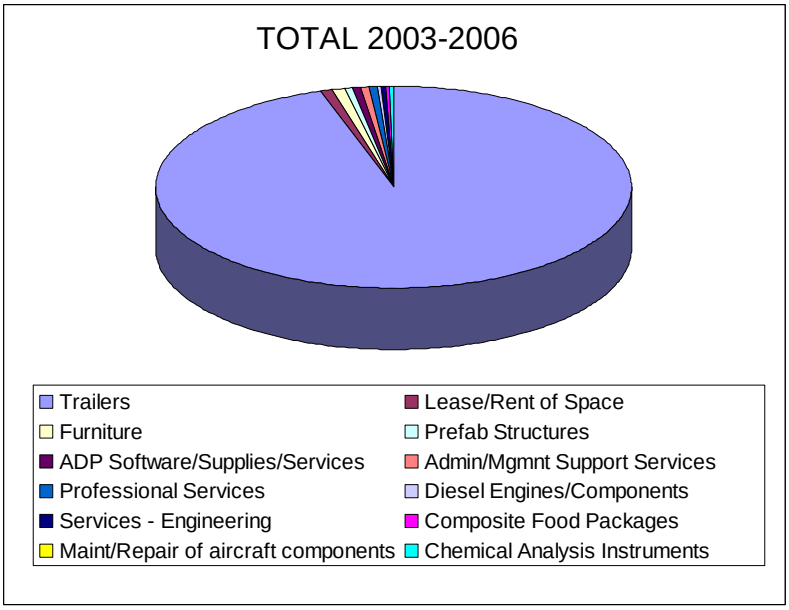
Figure 4

Each of the top counties is home to at least one major, prime DOD contractor. Figure 4 breaks down contracts by county. The darker red signifies higher contracting dollars awarded to companies in that particular county. The highest contracting counties are home to Indiana's prime contractors.

THE DEPARTMENT OF HOMELAND SECURITY (DHS), 2002-2005

Figure 5

Hoosier past contracting with the Department of Homeland Security was relatively small with one exception - the response to Hurricane Katrina. Indiana contractors earned $580 million in contracts to provide trailers to FEMA. Figure 5 demonstrates the dominance of trailer sales following Katrina. DHS also rented $5 million worth of space from Indiana companies, and purchased similar amounts of furniture and prefabricated structures in the last four years.



DHS contracts are distributed across the state. Elkhart County, with its strength in manufactured housing and

recreational vehicles, dominated the contracting (Table 5).

Table 5

INDIANA COUNTY SUMMARY DHS CONTRACTS ($25,000 or Over)					
County	**FY2003**	**FY2004**	**FY2005**	**FY2006**	**Total**
ELKHART			$530,667,582	$27,412,266	**$558,079,848**
CLARK			$37,064,276	$243,424	**$37,307,700**
WAYNE		$8,340,400	$22,483,115	$126,029	**$30,949,544**
HANCOCK		$2,518,596	$6,841,958		**$9,360,554**
MARION	$590,898	$1,596,892	$2,256,600	$4,217,312	**$8,661,702**
HAMILTON	$70,378		$3,407,958	$2,458,840	**$5,937,176**
DUBOIS	$1,015,801	$2,667,236	$98,094	$998,984	**$4,780,115**
MONROE	$271,509	$251,941	$1,316,037	$1,319,939	**$3,159,426**
BARTHOLOMEW			$685,737	$1,548,846	**$2,234,583**
ALLEN	$880,000		$754,259	$136,866	**$1,771,125**
TIPPECANOE	$96,450		$1,339,831	$200,000	**$1,636,281**
VANDERBURGH	$310,122	$28,095	$644,854	$273,749	**$1,256,820**
FLOYD			$650,000	$600,000	**$1,250,000**
STEUBEN			$550,000	$468,275	**$1,018,275**
RIPLEY			$441,018	$527,360	**$968,378**
ST JOSEPH	$353,795	$30,730		$135,859	**$520,384**
MIAMI	$213,275	$108,810	$110,350	$81,608	**$514,043**
MADISON			$480,623		**$480,623**
LAWRENCE			$405,880		**$405,880**
HARRISON		$402,832			**$402,832**
HENDRICKS		$138,791	$95,791		**$234,582**
JACKSON	$224,100				**$224,100**
VIGO	$58,647	$85,932	$70,455		**$215,034**
DEARBORN		$29,161	$88,430		**$117,591**
JASPER			$27,883		**$27,883**
TOTAL	**$4,084,975**	**$16,199,416**	**$610,480,731**	**$40,749,357**	**$671,514,479**

The top DHS contractors in Indiana are all providers of RV's to assist with Hurricane Katrina, including nearly $550,000,000 to Gulf Stream Coach. Other notable DHS contractors are Performance Assistance Network (PAN Network), Rolls Royce, and Purdue University. Again, compared to DOD, the size of each contract is relatively small. Refer to Table 6.

Table 6

DHS TOP CONTRACTORS IN INDIANA					
	FY2003	FY2004	FY2005	FY2006	TOTAL
Gulf Stream Coach Inc			$521,377,500	$26,319,725	$547,697,225
Tom Stinnett Holiday RV Center Inc			$37,064,276	$150,291	$37,214,567
Tom Raper Inc			$19,943,698		$19,943,698
Best Buy RVS Inc		$8,340,400	$1,119,819		$9,460,219
Marks RV Sales		$2,518,596	$6,841,958		$9,360,554
Great Lakes RV Center LLC			$5,020,082		$5,020,082
Performance Assessment Network Inc			$2,542,840	$2,458,840	$5,001,680
Kimball International	$963,417	$2,566,847	$34,729	$746,108	$4,311,101
Fall Creek Homes LLC			$4,270,000		$4,270,000
Envisage Technologies Corp	$271,509	$251,941	$1,316,037	$1,319,939	$3,159,426
Indiana Research Institute Corp			$685,737	$1,548,846	$2,234,583
Rolls Royce Inc		$73,454	$73,514	$1,926,201	$2,073,169
Springer Danz & Bockelman Inc		$519,990	$354,166	$644,048	$1,518,204
Long Life Food Depot			$1,419,598	$43,826	$1,463,424
Purdue University			$1,039,132	$200,000	$1,239,132

A significant consumer of the Federal Homeland Security budget is its grants programs, roughly $2.8 billion every year. These grants leave the agency to states or for research and development. The grants to states are then largely passed down to counties and cities. In Indiana, 80% of the federal DHS funding received by Indiana Department of Homeland Security is, in turn, passed down to counties. Significantly, these grants are in total larger than the contracting dollars awarded to Indiana companies (excluding $580,000,000 for trailers). In the last three years, total grant monies to Indiana counties have averaged roughly $65,000,000. Table 7 breaks these grants down by county.

Table 7

INDIANA COUNTY SUMMARY DHS GRANTS (FY 2003-2005) All Counties receiving over $500,000				
County	FY2003	FY2004	FY2005	TOTAL
MARION	$46,521,607	$26,218,273	$67,131,517	$139,871,397
LAKE	$892,008	$1,523,719	$1,431,216	$3,846,943
ALLEN	$454,235	$1,011,830	$797,131	$2,263,196
ST. JOSEPH	$556,173	$647,566	$758,566	$1,962,305
GRANT	$543,300	$861,689	$323,848	$1,728,837
PORTER	$352,370	$499,473	$777,115	$1,628,958
JOHNSON	$1,003,592	$322,452	$236,831	$1,562,875
MADISON	$217,722	$618,788	$563,340	$1,399,850
MONROE	$305,306	$391,599	$470,907	$1,167,812
GIBSON	$341,838	$307,815	$473,265	$1,122,918
VIGO	$228,904	$175,735	$664,687	$1,069,326
ELKHART	$119,510	$605,875	$323,545	$1,048,930
VANDERBURGH	$68,861	$311,814	$596,195	$976,870
JEFFERSON	$221,058	$466,455	$268,455	$955,968
TIPPECANOE	$370,982	$79,698	$503,264	$953,944
BARTHOLOMEW	$67,770	$427,164	$453,990	$948,924
WAYNE	$217,417	$142,147	$566,596	$926,160
BOONE	$75,600	$253,752	$561,818	$891,170
CLAY	$537,069	$214,517	$127,826	$879,412
KNOX	$74,727	$649,658	$145,185	$869,570
NOBLE	$312,849	$310,251	$234,630	$857,730
GREENE	$456,743	$179,317	$212,710	$848,770
HENRY	$366,574	$237,885	$237,885	$842,344
LAGRANGE	$170,481	$487,082	$167,972	$825,535
HENDRICKS	$87,075	$382,281	$338,001	$807,357
LAWRENCE	$296,942	$189,949	$303,997	$790,888
WABASH	$196,874	$84,111	$502,349	$783,334
CARROLL	$0	$353,175	$406,846	$760,021
CLINTON	$125,903	$329,856	$300,059	$755,818
MONTGOMERY	$332,727	$149,789	$244,789	$727,305
HAMILTON	$163,039	$293,438	$235,814	$692,291
OWEN	$54,648	$361,098	$273,600	$689,346
LAPORTE	$192,646	$348,150	$120,608	$661,404
PUTNAM	$316,782	$182,343	$116,892	$616,017
PARKE	$7,348	$177,089	$402,732	$587,169
CASS	$214,299	$42,188	$307,760	$564,247
BENTON	$158,480	$103,635	$301,635	$563,750
STEUBEN	$92,601	$267,074	$200,382	$560,057
FRANKLIN	$76,042	$54,000	$412,669	$542,711
SCOTT	$11,791	$297,320	$217,992	$527,103
HARRISON	$246,704	$0	$279,441	$526,145
HOWARD	$303,379	$43,077	$174,716	$521,172
VERMILLION	$58,518	$206,160	$249,565	$514,243

THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA), 2002-2005

NASA contracts are also small compared to DOD. The majority of these contracts go to universities. Purdue University received the most of all universities in Indiana with nearly $15 million in receipts over the five-year period. A more detailed discussion of these grants is included in the Indiana's University Assets section.

Table 8

	GFY 2002	GFY 2003	GFY 2004	GFY 2005	GFY 2006
NASA Budget	$14.9 billion	$15 Billion	$15.47 billion	$16.04 billion	$16.5 billion
Indiana NASA Contracts	$158.490,309	$5,783,623	$317,143,410	$6,670,339	$5,608,371
Indiana as % of NASA Budget	1.0637%	0.0386%	2.0501%	0.0416%	0.0340%

A Comparison of the NASA budget for GFY 2002-2006 and the total prime contracts awarded to Indiana companies and universities is shown in Table 8[6]. Indiana contracts are a very small portion of the total NASA budget, including GFY 2002 and GFY 2004, when fairly large development contracts were awarded to Rolls Royce and ITT.

Distribution of these contracts by city is shown in Table 9. As can be seen the distribution is fairly broad over the state; however, the majority of the contracts are concentrated in the cities where major universities are located.

Table 9

City	GFY 2002	GFY 2003	GFY 2004	GFY 2005	GFY 2006
BLOOMINGTON	$0	$624,512	$586,166	$0	$1,370,317
BRAZIL	$0	$0	$7,937	$0	$0
CARMEL		$0	$7,400	$0	$0
CONNERSVILLE	$0	$1,319,620	$0	$0	$0
CRANE	$549,444	$276,000	$111,276	$0	$0
ELKHART	$0	$0	$0	$4,284	$0
EVANSVILLE	$0	$0	$0	$6,528	$0
FORT WAYNE	$45,000	$0	$313,139,782	$970,349	$2,000,000
GREENVILLE	$1,338,168	$161,148	$69,992	$117,061	$0
HAMMOND	$998,000	$0	$0	$0	$0
INDIANAPOLIS	$148,926,726	$428,609	$404,291	$1,417,435	$325,528
JASPER	$0	$0	$85,493	$37,130	$54,449
KOKOMO	$0	$0	$0	$12,559	$12,559
LAFAYETTE	$0	$0	$0	$3,000	$325,620
LAWRENCEBURG	$0	$0	$5,219	$0	$0
LEGENDARY HILLS	$0	$0	$0	$0	$41,706
MIDDLEFIELD CT	$0	$92,392	$0	$0	$0
MUNCIE	$0	$0	$0	$193,724	$0
NEW HAVEN	$0	$0	$0	$3,500	$0
NOTRE DAME	$1,018,230	$0	$31,000	$131,997	$196,997
PENNVILLE	$0	$0	$0	$0	$77,425
RICHMOND	$0	$0	$1,535	$0	$0
SOUTH BEND	$31,000	$515,994	$8,000	$0	$0
TERRE HAUTE	$0	$0	$0	$0	$0
UNKNOWN		$31,000	$0	$996,445	$5,626
UPLAND	$39,283	$23,402	$0	$0	$0
WABASH	$0	$0	$0	$0	$7,300

[6] Source of NASA data is http://procurement.nasa.gov/cgi-bin/npms/map.cgi

WEST LAFAYETTE	$5,544,458	$2,310,946	$2,685,319	$2,776,327	$1,190,844
TOTAL	**$157,940,865**	**$5,783,623**	**$317,143,410**	**$6,670,339**	**$5,608,371**

Table 10

Contractors 2002 - 2006	Total Award Value
ITT Industries, Inc.	$315,077,744
Rolls Royce	$148,702,398
Purdue University	$13,463,607
Indiana University	$3,507,935
University of Notre Dame	$2,292,311
Space Hardware Optimization Technology Inc.	$1,569,308
Dresser, Inc.	$1,319,620
Challenger Learning Center	$998,000
En'Urga, Inc.	$966,087
Crane Division, Naval Surface Warfare Center	$936,720
Metropolitan School District Decatur	$934,000

Top contractors to NASA include ITT and Rolls Royce (see Table 10[7]), both of which received significant development contracts in the last five years. Purdue, IU, and Notre Dame have each enjoyed funding from NASA. An Indiana small business called Space Hardware Optimization Technology (SHOT) is a consistent recipient of grant funding through NASA's SBIR program. The Challenger Learning Center, located in Northwest Indiana, runs a space-related education program for 5th through 8th graders. The Decatur, Indiana public schools also earned a grant for educational work.

INDIANA'S TECHNOLOGY ASSETS

Indiana's technology assets of its commercial and academic institutions include research and development (R&D), SBIR/STTR past funding, patents, centers of excellence and institutes and earmarked congressional appropriations for Hoosier R&D projects.

PATENTS

Publicly-available patent information is one lens through which to analyze Indiana's technology expertise. When patents or applications are published, they are classified by a technology field called "Patent Classes". An analysis of the top patent classes shows where the state's expertise lies.

Table 11

Patent Class Description	Number of Published Patents or Applications, Jan. 1986 – Nov. 2006
Preparations for medical, dental or toilet purposes	1,852
Diagnosis; surgery identification	1,543
Heterocyclic compounds	1,499
Filters implantable into blood vessels; prostheses; devices providing patency to, or preventing collapsing of, tubular structures of the body	1,216
Pictorial communication, e.g. television	1,005
Investigating or analyzing materials by determining their chemical or physical properties	779
Containers for storage or transport of articles or materials	745
Peptides	683
Acyclic or carbocyclic compounds	683
Electric digital data processing	660

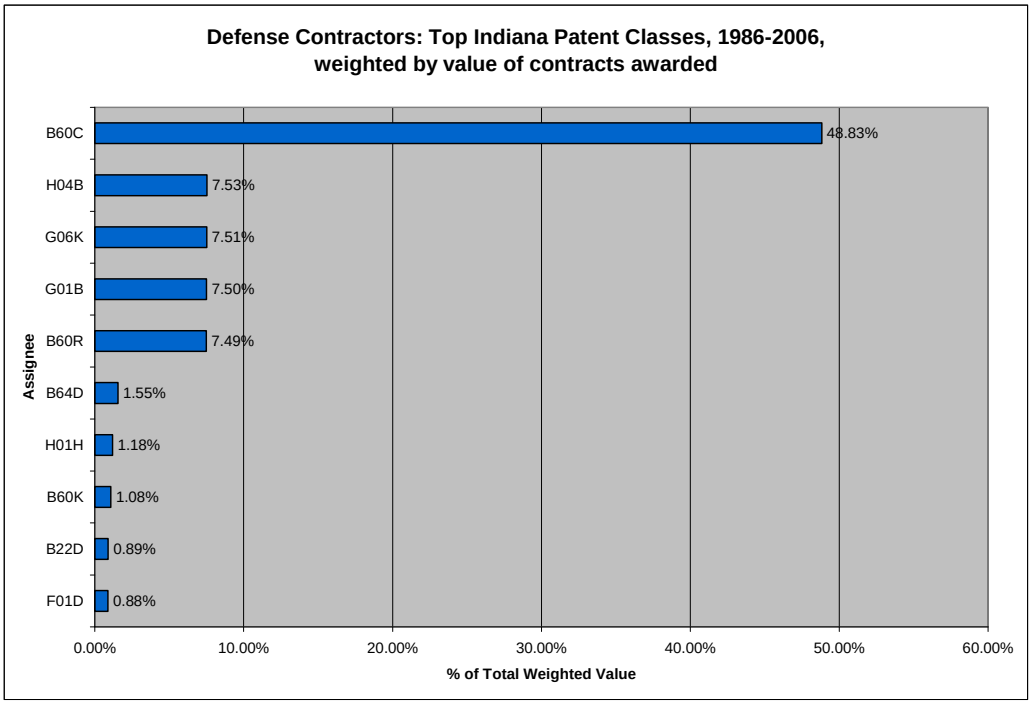
Indiana's prime defense contractors and research institutions account for a large portion of the innovation that occurs within the state. Between January 1986 and November 2006, over 48,000 patents and applications were published with attribution to an Indiana inventor, researcher and/or company. Of those patents and applications, 18% were issued to Indiana's prime defense contractors.

[7] See Report in Appendix V.

Table 11 above shows the top technology fields which had the highest number of patents from all Indiana companies, inventors and university researchers. The top patent classes are in life sciences, pictorial communications and electric digital data processing and represent the significant patenting efforts of Indiana's life sciences companies, such as Eli Lilly. The top patent classes are indicators of Indiana's technology strengths; however, they are not reflective of Indiana's major defense contractors' technology strengths because Indiana's major defense contractors are typically not life sciences companies.

Figure 6

To better understand Indiana's major prime contractor's technology strengths, the prime contractor's patents were weighed according to the value of defense contracts that have been awarded, the top patent classes shifted dramatically as shown in Figure 6.



This table reflects technologies that may have been used in past defense contracts. As the top prime defense contractor in the state, A.M. General's influence is displayed in the top patent class - vehicle tires. This analysis shows that companies with technology expertise in vehicles, vehicle parts, data processing, and measuring historically have been the most successful prime defense contractors in the state.

IPC	DESCRIPTION
B60C	VEHICLE TYRES TYRE INFLATION TYRE CHANGING CONNECTING VALVES TO INFLATABLE ELASTIC BODIES IN GENERAL DEVICES OR ARRANGEMENTS RELATED TO TYRES
H04B	TRANSMISSION
G06K	RECOGNITION OF DATA PRESENTATION OF DATA RECORD CARRIERS HANDLING RECORD CARRIERS
G01B	MEASURING LENGTH, THICKNESS, OR SIMILAR LINEAR DIMENSIONS MEASURING ANGLES MEASURING AREAS MEASURING IRREGULARITIES OF SURFACES OR CONTOURS
B60R	VEHICLES, VEHICLE FITTINGS, OR VEHICLE PARTS, NOT OTHERWISE PROVIDED FOR
B64D	EQUIPMENT FOR FITTING IN OR TO AIRCRAFT FLYING SUITS PARACHUTES ARRANGEMENTS OR MOUNTING OF POWER PLANTS OR PROPULSION TRANSMISSIONS
H01H	ELECTRIC SWITCHES RELAYS SELECTORS EMERGENCY PROTECTIVE DEVICES
B60K	ARRANGEMENT OR MOUNTING OF PROPULSION UNITS OR OF TRANSMISSIONS IN VEHICLES ARRANGEMENT OR MOUNTING OF PLURAL DIVERSE PRIME-MOVERS AUXILIARY DRIVES INSTRUMENTATION OR DASHBOARDS FOR VEHICLES ARRANGEMENTS IN CONNECTION WITH COOLING, AIR INTAKE, GAS EXHAUST
B22D	CASTING OF METALS CASTING OF OTHER SUBSTANCES BY THE SAME PROCESSES OR DEVICES
F01D	NON-POSITIVE-DISPLACEMENT MACHINES OR ENGINES , e.g. STEAM TURBINES

PATENT APPLICABILITY

Technology and innovation trends in Indiana can be determined by the size and growth trend of patent classes. Size of patent class reflects the amount of innovation, while growth trend shows whether the level of innovation is

increasing or decreasing. By combining size and growth trend into a single "Importance Score," the top areas of technology strength were identified.

Indiana's top patent classes, in terms of both size and growth, are in the life sciences. Indiana has assets that could be useful in any defense contracting opportunity directly related to life sciences. Table 12 highlights the top patent classes outside of life sciences where Indiana has technology strengths. The column labeled "specifics" translates the broad patent class descriptions into usable descriptions of product and technology expertise.

Table 12

Importance Score*	Patent Class Description	Specifics
0.382	Vehicles in general	Miscellaneous vehicle parts (seat belts, airbags, bumpers, etc.); arrangement of transmissions and propulsion units; vehicles adapted for special loads
0.284	Electric communication technique	Television technologies; transmission of digital information
0.280	Measuring; testing	Materials analysis
0.241	Computing; calculating; counting	General computing; software designed for management/forecasting
0.231	Basic electric elements	Electrically conductive connections; semiconductors; batteries
0.206	Engineering elements or units; general measures for producing and maintaining effective functioning of machines or installations; thermal insulation in general	Gearing; couplings for transmitting rotation (clutches, brakes); pipes and related connectors
0.146	Combustion engines; hot-gas or combustion- product engine plants	Controlling combustion engines; fuel injection systems and parts; combustion engines in general
0.133	Conveying; packing; storing; handling thin or filamentary material	Containers for storage or transport; devices for packaging
0.112	Generation, conversion, or distribution of electric power	Dynamoelectric machines
0.102	Physical or chemical processes or apparatus in general	Separation processes; catalysis; colloid chemistry
0.082	Machines or engines in general; engine plants in general; steam engines	Gas flow silencers, exhaust apparatus, emissions systems
0.071	Land vehicles for traveling otherwise than on rails	Various motor vehicle components; trailers; braking systems
0.063	Machine tools; metal-working not otherwise provided for	Soldering/welding/cutting with heat; boring
0.061	Building	Construction materials; tents; fences; portable toilets
0.060	Working of plastics; working of substances in a plastic state in general	Shaping or joining of plastics

RESEARCH AND DEVELOPMENT FUNDING

Indiana's universities and businesses attracted nearly $360M in federal research and development funding in 2005. Part of the funding is in Small Business Innovative Research (SBIR) and STTR grants, and Table 13 shows the amount of SBIR and

Table 13

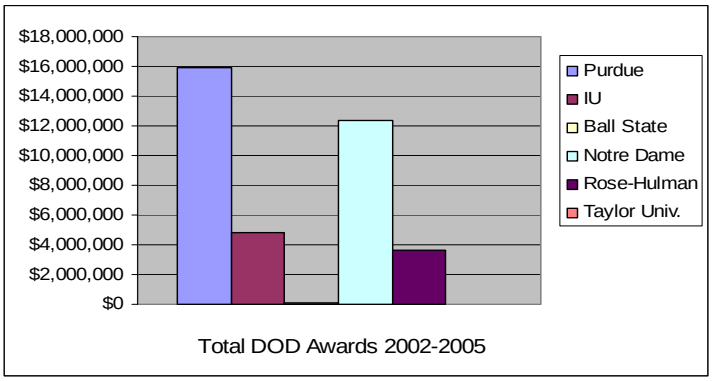
Metropolitan Statistical Area	DOC	DOD	DOE	EPA	HHS	NASA	NSF	USDA	1993 - 2005 ($000)
Lafayette-West Lafayette	91.667	2147.96	200		3161.94	34.859	1545.03	467.872	7649.334
Bloomington		584.386	118.559		1537.05	271.932	468.014	37.5	3017.44
Indianapolis		1038.44	87.468	11.667	5945.9		350.63	35	7469.103
Louisville (Floyd County)		633.489	562.409		316.657	2124.14	49.988		3686.681
Gary		70			75.771	1731.27			1877.038
South Bend		899.816	212.5	79.93	347.736			39.959	1579.941
Fort Wayne		34.992			99.625	70		61.657	266.274
Terre Haute								73.138	73.138
Evansville			9.375						9.375
Columbus		361.612		11.667					373.279
Cincinnati (Dearborn County)								64.302	64.302
Elkhart					87.862	231.116		241.167	560.145
									0
Agency Total	91.667	5770.69	1190.31	103.264	11572.5	4463.31	2413.67	1020.6	26626.05

Lousiville MSA (Floyd and Clark County): Greenville, Charlestown
Cincinnati MSA (Dearborn County) : Aurora

STTR funding received by the major metropolitan areas in Indiana. Lafayette and Indianapolis, the two largest recipients of funding, reflect the efforts of Purdue University and Indiana University in those MSA's.

Information about specific grants and contracts, as well as research and development activity information at Indiana's universities, was difficult to find. Publicly-available contract information, along with patent, contact, and other data provided by the universities, was collected to form some insight into university strengths. As a result, some universities may be under-represented in the data.

Figure 7



DOD, NASA, and DHS have awarded contracts and grants to Indiana Universities, as shown in Figure 7 and Figure 8. Universities receive most of the contracts and grants award by NASA. Purdue, with its two NASA centers, leads in NASA funding.

Detailed information on the nature of these contracts or grants was difficult to obtain. Both DOD and NASA's information reported is inadequate to make an analysis. DOD reports on these contracts using both NAICS codes and Federal Product/Service codes. However, the categories are too broad to characterize exact descriptions of research being performed. NASA does not include any coding. All NASA research is described in an inconsistent, narrative form.

Indiana's research universities cited research funding in the following areas:

- Electronics and Communication
- Environmental Protection
- Psychological Sciences
- Engineering
- Life Sciences

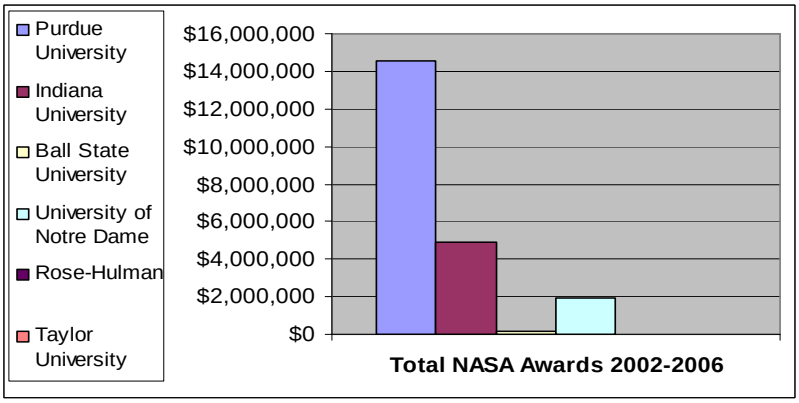


Figure 8

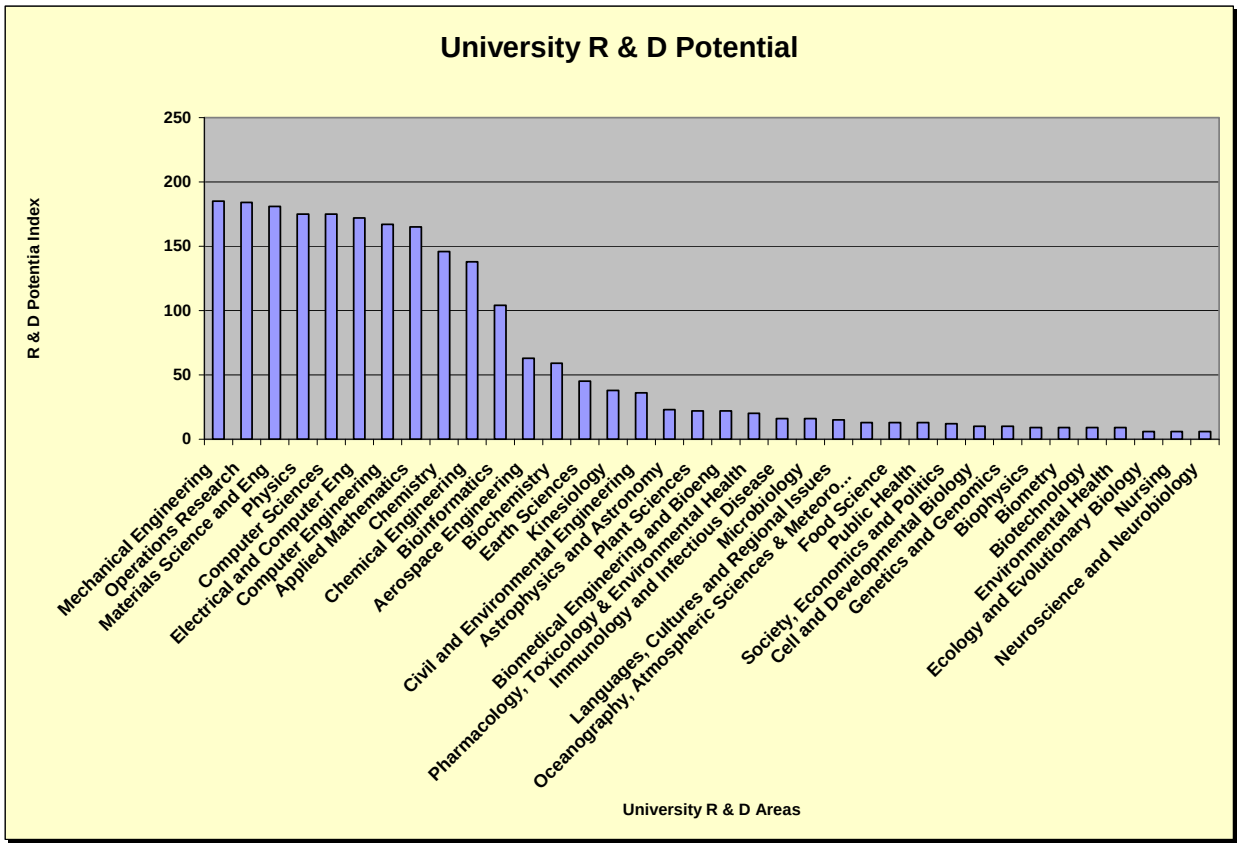
PURDUE UNIVERSITY RESEARCH EXPERTISE (PURE)

Purdue University has developed a tremendous capability to represent the skill and depth of its research capacity and talent. Developed in 2006 and now available to the public, is the Purdue University Research Expertise (PURE) database. It can be found on Purdue's web site at http://www2.itap.purdue.edu/gradschool/nrc/. This database contains information about faculty at Purdue and their areas of expertise.

Using data drawn from the PURE database, Figure 9 represents the areas of expertise and their potential for research applicable to DOD. Engineering, Operations Research, Materials Science, Physics, and Computers Science rank high.

When matched with numbers of faculty with expertise in these areas, and then mapped against DOD procurement categories, Purdue again ranks high in life sciences. Medical and Dental supplies and equipment as well as Subsistence are the top two procurement categories with high R&D potential.

Figure 9



CENTERS AND INSTITUTES

Indiana University and Purdue University have a number of centers specifically targeted towards research and development of interest to DOD, DHS and NASA. Four of the more relevant centers include the following:

PURDUE HOMELAND SECURITY INSTITUTE

Homeland security is intrinsically interdisciplinary, cutting across the full spectrum of academic disciplines at Purdue. Purdue has the core competencies to provide the needed intellectual capital as well as an intensive interest in this national-indeed, global-need. PHSI was formed during August of 2002. The mission of the Institute is threefold. First, fulfill educational and training needs of Homeland Security professionals. Second, accelerate the discovery, validation, and implementation of new knowledge and tools for sustainable homeland security. Lastly, engage with key stakeholders in meeting the challenges associated with Homeland Security

NASA INSTITUTE FOR NANOELECTRONICS AND COMPUTING AT PURDUE

The Institute for Nanoelectronics and Computing (INAC) is a University Research, Engineering, and Technology Institute supported by the NASA Office of Aerospace Technology in cooperation with the U.S. Department of Defense Research and Engineering Office. Its *NASA partner is Ames Research Center, Moffett Field, CA. The INAC mission is to (1) invent new molecular devices, (2) develop techniques to assemble them into ultra*

dense systems integrated with a silicon platform, (3) devise new system architectures that harness these heterogeneous technologies for NASA missions, and (4) train the next generation of scientists and engineers.

NASA SPECIALIZED CENTER OF RESEARCH & TRAINING IN ADVANCED LIFE SUPPORT AT PURDUE

The center supports a research program designed specifically to resolve the complex and crucial requirements of sustained human survival within an interplanetary space-based environment.

CENTER ON AMERICAN AND GLOBAL SECURITY AT INDIANA UNIVERSITY

This was formally established in March 2007. This new center is staffed by faculty from the School of Public and Environmental Affairs, the various language departments, as well as professors lecturing in law, history and business.

UNIVERSITY RANKINGS

Both major research universities, Purdue and Indiana (IU) Universities, are ranked in key areas nationwide. *US News and World Report,* Table 14, as well as *Academic Analytics* publish well-respected analyses of university rankings. Of note, Purdue is nationally ranked in Engineering, Aerospace, Nuclear Engineering, and a number of other categories. IU is nationally ranked in Language and Cultural Studies of the Near and Middle East regions, Computer Science, and the Life Sciences.

Table 14

US News & World Report			
2006 University Rankings based on their factors indicating			
quality of education for graduate programs			
Discipline/Category	***Purdue***	***IU***	***Notre Dame***
Institution as a Whole	64	70	20
Engineering	6	0	54
Medical Research	0	45	0
Computer Science-Programming Languages	0	16	0
Computer Science- PhD Programs	19	47	65
Aerospace/Aeronautical	6	0	26
Chemical Engineering	12	0	28
Computer Engineering	9	0	46
Electrical/Electronic/Computer Engineering	10	0	47
Materials Engineering	15	0	0
Mechanical Engineering	9	0	46
Nuclear Engineering	4	0	0

EXAMPLES OF RELEVANT CONGRESSIONAL APPROPRIATIONS

Indiana University has provided examples of four projects, totaling $5.22M, included in the 2007 Defense Appropriations bill:

- Advanced Linac Facility at IU Cyclotron - $1.35 million
- Next Generation Threat Detection Research - $1.17 million
- Renewable Energy Research - $1.5 million
- Cancer Care Engineering Initiative - $1.2 million

ADVANCED LINAC FACILITY

This joint project between IU and Crane, NSWC, will support the development of an advanced linear accelerator (LINAC) facility to address defense radiation effects test requirements and support government, academic, and industrial research needs. The LINAC would be housed at the IU Cyclotron Facility (IUCF)and would directly support Crane's mission of radiation effects testing. Crane currently has a 60 MeV electron LINAC facility which is chiefly utilized for prompt dose characterizations. However, the frequencies of modern microelectric technologies are much faster then when this 60 MeV was contemplated and its design no longer meets the required capabilities. Furthermore, the existing machine cannot produce the dose rates at levels required for survivability testing.

The Advanced Linac Facility (ALF), located at the IUCF, will provide higher dose rate capabilities to permit survivability characterizations; offer a large beam for large die/board coverage; and beam characteristics without microstructure. This advanced capability LINAC will afford defense users reliable access to all future generations of microelectronics for dose rate and survivability characterization, and allow Crane to enhance its testing capabilities. The emphasis of this project is the development of fully functional/operational LINAC for use by the defense community.

NEXT GENERATION THREAT DETECTION RESEARCH PROJECT

This effort is a concentrated, coordinated program that will provide both military and civilian sectors with instrumentation capable of detecting releases of chemical and biological weapons. Improved screening for these substances and explosives is required at transportation hubs such as airports, train and bus stations, ports and other cargo-handling facilities and large public gatherings such as sporting events. Such instrumentation must be small and lightweight—preferably hand-held—as well as sensitive, highly selective in detecting target compounds, reliable—i.e. give low false positive and low false negative rates, and capable of speedy analysis and assessment of potential threats. Furthermore, the analytical technology must be universal, i.e., readily reconfigured through software updates in the field to respond to new threats. The development of these technologies ties together research at IU, as well as Purdue and the University of Illinois that will be monitored and managed by Crane Naval Surface Warfare Center (NSWC).

RENEWABLE ENERGY RESEARCH

Researchers on the IUPUI campus have joined together with officials at the Army Research Lab in Adelphi, MD to research improvements in the use of renewable energy, such as ethanol and fuel cells, in military applications. Diesel engines and portable electronic devices, which are critical for use in the field, require large amounts of reliable energy for their use. This research effort will identify how to transfer renewable energy to the military field.

CANCER CARE ENGINEERING INITIATIVE

This joint project between Purdue University researchers and the IU School of Medicine faculty will apply engineering systems analysis to the cancer problem through the creation of iterative, engineering mathematical models that will identify the minimum key relevant patient data required to make effective treatment decisions. Knowing which patient parameters are critical predicator of treatment response will consequently focus and streamline discovery and development of new therapies. The models will predict system (cancer patient) behavior and will be continuously refined and optimized using actual data from military personnel. The product will be a systems engineering model which can be used to identify and detect particular health and disease probability in military personnel in the field and at home.

INDIANA'S MILITARY INSTALLATIONS

Figure 10

CAMP ATTERBURY Satellite is Muscatatuck Urban Training Center Atterbury is also 1 of 6 Power Projection Platforms in US	Edinburgh
CRANE DIVISION, NAVAL SURFACE WARFARE CENTER Over 3,000 Indiana employees Leader in Electronic Warefare, sensors, special missions	Crane
DEFENSE FINANCE AND ACCOUNTING SERVICE Gained personnel during BRAC, Air Guard Fighter Wing (FA-18)	Indianapolis
FORT WAYNE INTERNATIONAL AIRPORT AIR GUARD STATION Gained assets during BRAC	Fort Wayne
GRISSOM JOINT AIR RESERVE BASE USAFR AIR REFUELING WING 700 civilians employed, 1100 reservists	Peru
HULMAN FIELD AIR NATIONAL GUARD 275 personnel, property leased from International Airport, Guard Intelligence Station	Terre Haute
INDIANA ARMY AMMUNITION PLANT Closed in 1995 BRAC, being cleaned up andconverted to Industrial Park.	Charlestown
JEFFERSON PROVING GROUND Closed in 1995 BRAC, now partially leased to Indiana National Guard for air-to-ground training	Madison
NEWPORT CHEMICAL DEPOT Set to close after disposal of VX nerve agent, (2008-2009)	Newport

LIST OF INDIANA MILITARY INSTALLATIONS

Indiana has nine military installations, listed in Figure 10. Profiles of these installations are included in the Appendix. The two most significant military installations in the state, based on their current economic footprint, their ability to generate new jobs and economic growth and spawn and help advance new technologies, and their growing role in meeting military and homeland security needs , are the Indiana National Guard's new Muscatatuck Urban Training Center (MUTC), a team effort with DOD, the State and the Guard (a satellite of Camp Atterbury), and Crane Division, Naval Surface Warfare Center in Southern Indiana.

CRANE DIVISION, NAVAL SURFACE WARFARE CENTER

BACKGROUND AND HISTORY

Crane was initially created as an ammunition depot during World War II. After the end of World War II, Crane diversified its portfolio and developed business areas from special operations and acquisition to electronic warfare and maintenance.

Although it was not, the most recent BRAC process led to fears that Crane may be closed. State leaders have made it their top priority to reduce the likelihood of losing Crane. BRAC and its effect on Crane is covered in greater detail in section "BRAC Effects on Military Bases and Workforce." Crane Technology, Inc. has sponsored a study that takes a much deeper look at Crane and its opportunities for expansion into other government business.

CRANE STATISTICS

- 3rd Largest Navy Installation in the World
- ~100 Square Miles
- $3.3B Plant Replacement Value
- 650,000 Tons Ordnance Storage Capacity

In Indiana:

- 13th Largest Single Site Employer 3rd Largest Employer in Southwest Indiana ~2710 Navy Employees
- 60% Scientists, Engineers and Technicians
  Over 480 Scientists, Engineers and Technicians hired since January 1999 Average Age: 45.5 ~652 Army Em ployees~71% of receipts to Commercial Sources

UNITS

Naval Surface Warfare Center

Crane Army Ammunition Activity

Naval Criminal Investigation Service

Navy Resale Activity Detachment

Defense Automated Printing Service

Defense Commissary Agency Det Crane

Defense Reutilization and Marketing Office

Explosive Ordnance Disposal

U.S. Coast Guard

Great Lakes Industrial Hygiene

Letterkenny Munitions Center

MUSCATATUCK URBAN TRAINING CENTER (MUTC)

Satellite of Camp Atterbury

BACKGROUND AND HISTORY

Camp Atterbury serves as one of six Power Projection Platforms (PPP) for the mobilization of U.S. Army Reserve and Army National Guard units. It is Camp Atterbury's responsibility to coordinate medical and dental screening, soldier-readiness processing, theater-specific clothing and equipment issue, weapon familiarization and qualification, theater-specific individual readiness training, and coordinate movement of personnel into the Area of Operation.

This expanded responsibility, activated in February 2003, has expanded the base budget from $6 million in 2001 to $70 million in 2006.

Muscatatuck Urban Training Center has now been added as a satellite to Camp Atterbury. MUTC, located in Jennings County, is state owned, leased to the Federal Government, and operated by the Indiana National Guard. This effort has combined a number of activities that were independent into one effort, including Camp Atterbury's Air/Ground range, Jefferson Proving Ground, and an unutilized hospital asset at Muscatatuck.

MUTC will be operational 24/7, 365 days a year. Half of its funding is from the army and the remaining will be filled with paying customers training on site.

In addition, MUTC serves as a nexus point to integrate activities at a number of installations in Indiana. Major military exercises taking place at Muscatatuck will utilize Hulman Field.

WHAT IS MUTC?

Located in South Central Indiana's Jennings County near Butlerville, the Muscatatuck Urban Training Center (MUTC) is a secluded, self contained community, once home to the Muscatatuck State Developmental Center. The 1,000 acre site was turned over to the Indiana National Guard in July of 2005 and since has been continually evolving into a full-immersion contemporary urban training environment.

Those utilizing MUTC have access to a 180 acre reservoir and urban infrastructure consisting of 68 major buildings including a school, hospital, dormitories, light industrial structures, single family type dwellings, a dining facility and administrative buildings totaling approximately 850,000 square feet of floor space. Additionally the training area includes an extensive underground utility tunnel system and over 9 miles of roads and streets.

MUTC is a consortium of governmental, public and private entities that are pooling their unique capabilities in order to provide the most realistic training experience possible. Training that can be tailored to replicate both foreign and domestic scenarios and that can be utilized by various civilian and military organizations.

In its first year of operation the facilities at MUTC have been utilized by over 16,000 people from military, government and private agencies and is continually expanding training capabilities for future needs.

BRAC AFFECTS ON INDIANA'S MILITARY BASES AND WORKFORCE

SUMMARY OF QUANTITATIVE BRAC FINDINGS

Five significant installations were affected by the 2005 Base Realignment and Closure decisions: (1) Hulman Regional Airport Air Guard Station, (2) Newport Chemical Weapons Depot, (3) Naval Surface Warfare Center-Crane, (4) Fort Wayne International Airport Air Guard Station, and the (5) Lawrence Defense Finance and Accounting Service Center. In addition, there were six other minor installations affected: (1) Navy Reserve Center Evansville, (2) Leased Space Indianapolis, (3) Navy Recruiting District Headquarters Indianapolis, (4) US Army Reserve Center Seston, (5) US Army Reserve Center Lafayette, and (6) Navy Marine Corps Reserve Center Grissom Air Reserve Base. The overall direct and indirect impact on Indiana from the BRAC 2005 decisions is low, as shown in Table 15.

SUMMARY JOBS EFFECT:

Table 15

Economic Area	Installation	Total Direct	Total Indirect	Total Job Changes
Evansville MSA				
	Navy Reserve Center Evansville	-7	-1	-8
Fort Wayne MSA				
	FW International Airport/Air Guard Stations	313	173	486
Indianapolis MSA				
	Navy Recruiting District HQ Indpls.	-38	-15	-53
	US Army Reserve Center Seston	-12	-4	-16
	Leased Space - IN	-136	-89	-225
	DFAS - Indpls.	3495	2490	5985
Lafayette MSA				
	US Army Reserve Center Lafayette	-21	-11	-32
Martin County, IN				
	Naval Support Activity Crane	-683	-308	-991
Peru Micro Area				
	Grissom Air Reserve	-7	-1	-8
Terre Haute MSA				
	Newport Chemical Depot	-571	-267	-838
	Hulman Regional Airport	-136	-95	-231
TOTAL		**2197**	**1872**	**4069**

Source: Appendix B, "BRAC 2005 Closure and Realignment Impacts by Economic Area," Base Realignment and Closure 2005, U.S. Department of Defense, http://www.defenselink.mil/brac/vol_I_Parts_1_and_2.html#Part2.

This summary effect represents slightly over one-tenth of one percent of Indiana's workforce. Moreover, the true net positive effect is likely to be smaller. Interviews with installation personnel suggest that some of the direct gains will be smaller, and some losses larger than estimated (especially for Newport with actual impact from 30-50% larger) by BRAC 2005. Locally, the impact is significant in some instances (calculations based on November 2006 employment, from STATS Indiana).

Predicted Hulman loss as a share of Vigo County employment:	0.4%
Predicted Newport loss as a share of Vermillion County:	6.8% (act. 8.8-10.2%)
Predicted Crane loss as a share of Martin County:	16.4%

Predicted Fort Wayne gain as a share of Allen County:	0.2%
Predicted Lawrence gain as a share of Marion County:	1.3%

Regionally, however, the impact is generally modest.

Predicted Hulman loss as a share of Terre Haute MSA:	0.3%
Predicted Newport loss as a share of Terre Haute MSA:	0.7% (Act. 0.9-1.5%)
Predicted Crane loss as a share of Crane Region:	0.6%
Predicted Fort Wayne gain as a share of Fort Wayne MSA:	0.3%
Predicted Lawrence gain as a share of Indianapolis MSA:	0.6%

GENERAL CONCLUSIONS FROM THE BRAC ANALYSIS

In general, adjustments necessitated by BRAC 2005 will depend mightily on the localized implementation schedule and magnitude (actual job change is often different from planned job change). Only Newport, Crane, and the Lawrence DFAS facilities may merit special workforce policy attention.

- In the case of Crane, this policy attention is ongoing and being directed by an analysis of a Crane area diversification strategy, funded by the DOD, Office of Economic Adjustment and DOL NEG. Skill training and retraining requirements of these strategies remain unclear.
- In the case of Newport, Vermillion County's status as a part of the larger Terre Haute MSA and its proximity to Indianapolis will reduce the negative effects, but the impacts will be very concentrated in time (starting in spring 2008) and in skill sets difficult to absorb locally.
- In the case of Lawrence-Indianapolis, the relative effects are modest in such a large metro area.
    - The absolute numbers, however, are large. The local recruiting requirements are concentrated in a small number of white-collar occupation series (accountants and accounting assistants) that also are in high demand from private sector expansions.
    - This raises concerns about workforce supply and education pipeline shortages in these occupations.

DEFENSE AND DEFENSE CONTRACTOR WORKFORCE ANALYSIS

PERSONNEL PROFILE

As of the end of FY 2005, DOD had 32,896 personnel in Indiana – slightly over 1 percent of Indiana's total workforce -- most of whom were Reserve and National Guard (22,906). Nearly 9,000 civilians (8,996) and another 1000 (994) active duty military made up the rest of Indiana's DOD workforce, see Table 16. Along with retired military pay, total DOD payroll in Indiana was nearly $1.4 billion (less than 1 percent of total state earnings by place of work).

Table 16

Indiana (FY 2005, numbers and thousands of dollars)					
Personnel	**Total**	**Army**	**Navy & Marine Corps**	**Air Force**	**Other Defense Activities**
Total DOD Personnel	32,896	18,423	6,423	5,134	2,916
Active Duty Military (incl. afloat)	994	509	365	120	0
Civilian	8,996	1,928	3,109	1,043	2,916
Reserve and National Guard	22,906	15,986	2,949	3,971	0
Total DOD Payroll Outlays ('000s)	5,823,028	3,628,029	888,306	352,044	954,649
Active Duty Military Pay	52,687	20,869	15,340	16,478	0
Civilian Pay	612,870	99,352	252,043	64,458	197,017
Reserve and National Guard Pay	360,154	335,996	5,182	18,976	0
Retired Military Pay	337,324	134,174	93,299	109,851	0

It is more difficult to capture good estimates of contractor personnel devoted to federal DOD, homeland security, and Aerospace activity. Not only are these data not commonly reported, even for primes, but the subcontractor network is never reported. With limited exceptions, even the large prime contractors have a significant non-federal workload. A rough order of magnitude estimates show that DOD contractors fully employ some 21,000 to 33,000 workers on defense contract work. These estimates are not terribly accurate, but provide a range and a sense of scale.

ESTIMATE 1:

In FY 2005 Indiana received contracts and grants of $4.46 billion from DOD. It is assumed that:

- The fully loaded wage rate equaled the average total compensation of federal employees (very high relative to state average wages at $68,127), and
- Fifty percent of contracts and grants went to fully loaded wages and salaries in Indiana (both prime and subs),
- Then nearly 33,000 workers were employed full time on DOD contracts to Indiana contractors (over 1 % of Indiana's total workforce and nearly 6 % of manufacturing employment).

ESTIMATE 2:

Using the DOD listing of prime contractors and the data on sales and employment by establishment in the NETS database (a cleaned up time series based on Dunn & Bradstreet), it is possible to calculate total employment and sales of establishments that held prime contracts with DOD in 2005. This analysis is summarized in Tables 17, 18, and 19.

Table 17

Indiana Prime Contractor Characteristics
Employment, Sales, Contract Size by Establishment Size
Merge of 2005 DOD Prime Contractor and NETS Data

	Num Est	Total Value of Contracts	Avg Value of Contracts	Tot Sales	Avg Sales	Tot Emp	Avg Emp
1-9 Emp	265	$328,200,325	$1,238,492	$141,212,138	$532,876	1,070	4
10-99 Emp	440	$880,197,975	$2,000,450	$3,034,615,606	$6,896,854	14,363	33
100-499 Emp	143	$533,213,435	$3,728,765	$3,505,904,184	$24,516,812	29,256	205
500-999 Emp	19	$106,231,609	$5,591,137	$1,669,725,693	$87,880,300	13,464	709
1000+ Emp	28	$598,744,306	$21,383,725	$8,413,677,466	$300,488,481	84,216	3008
Total	**895**	**$2,446,587,650**	**$2,733,617**	**$16,765,135,087**	**$18,731,995**	**142,369**	**159**

For the over 90% of contractors that can be matched in both databases, some 142,369 employees worked for Indiana's DOD prime contractors. Most contractors are small, with average employment of 159, but over half of employment is in firms with over 1000 employees. Not all of these employees are working full time on DOD contracts. The value of contracts are some 15% of total sales (contracts may be multiyear, so the comparison is illustrative only), so a straight share would suggest some 21,355 employees are working on defense contracts at prime contractors. Indiana-based subcontracts would employ even more.

Table 18

Indiana Prime Contractor Characteristics
Employment, Sales, Contract Size by Economic Growth Region
Merge of 2005 DOD Prime Contractor and NETS Data

DWD Region	Num Est	Total Value of Contracts	Avg Value of Contracts	Tot Sales	Avg Sales	Tot Emp	Avg Emp
Reg_01	63	$86,518,147	$1,373,304	$830,454,402	$13,181,816	5,530	88
Reg_02	72	$472,467,029	$6,562,042	$1,896,951,045	$26,346,542	18,519	257
Reg_03	78	$299,005,201	$3,833,400	$2,098,972,390	$26,909,902	9,753	125
Reg_04	40	$16,298,272	$407,457	$1,464,811,140	$36,620,279	18,050	451
Reg_05	296	$853,931,718	$2,884,904	$4,688,917,002	$15,840,936	35,978	122
Reg_06	30	$10,617,917	$353,931	$652,661,922	$21,755,397	7,775	259
Reg_07	38	$138,068,371	$3,633,378	$580,174,847	$15,267,759	5,817	153
Reg_08	94	$37,529,181	$399,247	$1,046,247,946	$11,130,297	15,069	160
Reg_09	56	$50,838,819	$907,836	$665,805,713	$11,889,388	7,113	127
Reg_10	48	$15,122,932	$315,061	$281,280,112	$5,860,002	1,983	41
Reg_11	80	$466,190,063	$5,827,376	$2,558,858,568	$31,985,732	16,782	210
Total	**895**	**$2,446,587,650**	**$2,733,617**	**$16,765,135,087**	**$18,731,995**	**142,369**	**159**

Almost 36,000 of the total contractor workforce is concentrated in the Indianapolis metro region. With the rest clustered around the larger metro regions and DOD facilities. Manufacturing dominates, but professional, scientific, and technical services, and transportation, distribution and logistics are also major contract and employment categories.

Table 19

Indiana Prime Contractor Characteristics
Employment, Sales, Contract Size by 2-Digit Industry
Merge of 2005 DOD Prime Contractor and NETS Data

	Num Est	Total Value of Contracts	Avg Value of Contracts	Tot Sales	Avg Sales	Tot Emp	Avg Emp
Agriculture, Forestry, Fishing and Hunting	7	$2,677,388	$382,484	$65,290,000	$9,327,143	671	96
Mining	1	$236,465	$236,465	$6,857,100	$6,857,100	80	80
Utilities	8	$12,352,990	$1,544,124	$509,359,500	$63,669,938	1,403	175
Construction	61	$52,394,386	$858,924	$521,156,640	$8,543,551	3,553	58
Manufacturing	292	$812,448,265	$2,782,357	$7,978,287,595	$27,322,903	62,253	213
Wholesale Trade	150	$364,378,434	$2,429,190	$2,153,837,243	$14,358,915	4,634	31
Retail Trade	59	$13,923,766	$235,996	$368,087,290	$6,238,768	2,250	38
Transportation and Warehousing	19	$275,041,044	$14,475,844	$430,812,786	$22,674,357	3,645	192
Information	15	$2,941,850	$196,123	$378,517,576	$25,234,505	3,052	203
Finance and Insurance	1	$27,500	$27,500	$1,200,000	$1,200,000	12	12
Real Estate and Rental and Leasing	15	$2,407,009	$160,467	$42,563,200	$2,837,547	458	31
Professional, Scientific, and Technical Services	85	$573,376,577	$6,745,607	$440,528,265	$5,182,685	4,164	49
Administrative and Support and Waste Management and Remediation Services	59	$20,172,082	$341,900	$157,371,733	$2,667,318	1,747	30
Educational Services	21	$13,296,552	$633,169	$2,943,298,315	$140,157,063	40,944	1950
Health Care and Social Assistance	21	$5,755,226	$274,058	$414,878,025	$19,756,096	4,356	207
Arts, Entertainment, and Recreation	11	$884,018	$80,365	$88,203,000	$8,018,455	1,728	157
Accommodation and Food Services	23	$867,126	$37,701	$92,187,432	$4,008,149	2,175	95
Other Services (except Public Administration)	38	$280,240,865	$7,374,760	$172,699,387	$4,544,721	2,453	65
Public Administration	7	$13,154,307	$1,879,187	$0	$0	2,789	398
Not Elsewhere Classified	2	$11,800	$5,900	$0	$0	2	1
Total	**895**	**$2,446,587,650**	**$2,733,617**	**$16,765,135,087**	**$18,731,995**	**142,369**	**159**

IMPLICATIONS

DOD represents some 2% of Indiana's direct employment (between employees and contractors). DHS and aerospace would add further direct employment, as would the unmeasured network of subcontractors (perhaps another 0.5 to 1.0%). The indirect employment effects could range from 1.5 to 2 times larger, depending upon the multiplier model used (for a total of some 3.8-6.0% of Indiana's employment).

The survey responses suggest that the workforce issues facing the larger defense/homeland security/aerospace-supporting industries in Indiana share much in common with the larger Indiana economy. Despite the large size of some federal government suppliers, most are small. Both the large and small firms are rapidly increasing the educational profile of their workforces. Of respondents who reported on the educational requirements for their expected next year's hires, one-third of firms indicated that 50% of new hires will require a bachelor's degree or better. One quarter of firms indicated that 100% of new hires will require a bachelor's degree or better. It is important to note, however, that the survey respondents were not fully reflective of the universe of contractors.

Nonetheless, the positive outlook of survey respondents, and the net growth of DOD related employment resulting from the BRAC (and post-BRAC decisions), all point towards:

- The need to prepare for a growing and increasingly skilled DOD and contractor worker demand and an opportunity to absorb dislocated workers from the losing DOD sites in the 2005 BRAC (though with retraining and relocation potentially required)

FORECASTS – DOD, DHS, AND NASA

In order to carefully target industries and technology that will meet the future needs of DOD, DHS and NASA, it was necessary to construct long-term forecasts for the agencies. Expert panels were assembled comprised of consultants and retired senior officials from these agencies. The experts included four Lt. Generals from the Army, Air Force and Marines; three Rear Admirals from the Navy and Coast Guard; the former CFO and a former Chief of Staff for DHS, former leaders from NATO, DOT and AIAA, and consultants from the Teal Group. Bios of the expert panel are included in the Appendix.

The expert panel met on several occasions in roundtables to review and discuss a variety of research data, including five-year budget plans, agency forecasts, technology roadmaps and numerous other sources, including:

- National Security Strategy of March 2006
- National Military Strategy
- Quadrennial Defense Review of 2006
- Department of Defense Five Year Defense Plan (FYDP)
- Service Posture Statements
- AUSA Report
- AFA Report
- CRS Report for Congress on 9/11 Commission Recommendations
- Future Years Homeland Security Program (FYHSP) reports
- Civitas Group market forecast studies on DHS spending

From this data and analysis, a consensus was reached on major, long term factors affecting spending, referred herein as “drivers” of the long-term forecast. The budgeted five year forecasts, as well as commentary on the drivers and other game changing influencers are discussed in each of the agencies’ sections.

THE DEPARTMENT OF DEFENSE

INTRODUCTION

The Department of Defense (DOD) is a federal agency whose mission is to provide the military forces needed to deter war and to protect the security of the United States. Tracing its history back to 1789 with the establishment of the War Department, the DOD was consolidated in a 1949 amendment, and the three services, Army, Navy and Air Force, were placed under the directorate of the Secretary of Defense.

FIVE-YEAR FORECAST

The DOD yearly submits a six-year budget forecast, referred to as the Future Years Defense Plan of FYDP. Because of the constantly changing environment in Washington, DC, politically and militarily, these forecasts tend to be reliable for less than half of the six years. The current DOD budget forecast shown in Tables 20 and 21 makes several important statements that indicate where DOD is going in the next five years and beyond.

Table 20

DEPARTMENT OF DEFENSE FIVE YEAR BUDGET FORECAST FOR PROCUREMENT ($ in millions)					
	FY2007	**FY2008**	**FY2009**	**FY2010**	**FY2011**
Procurement Total	$84,194	$99,755	$108,622	$111,707	$117,122
Army	$16,840	$20,395	$21,878	$22,039	$23,535
Aircraft	$3,566	$4,004	$5,075	$4,601	$4,389
Missile	$1,351	$1,600	$1,651	$1,618	$1,978
WPNS&TRAC	$2,302	$2,884	$2,984	$3,579	$5,554
Ammunition	$1,903	$2,307	$2,417	$2,480	$2,305
Other	$7,718	$9,600	$9,751	$9,761	$9,309
Navy	$31,033	$38,629	$44,309	$47,544	$49,279
Aircraft	$10,869	$12,605	$17,660	$18,953	$18,305
Weapons	$2,555	$3,124	$3,936	$3,740	$3,680
Ships & Conversion	$10,578	$14,684	$13,282	$14,693	$16,433
Ammunition	$790	$847	$1,025	$1,034	$1,081
Other	$4,968	$6,033	$6,499	$7,230	$7,574
Procurement - Marine Corps	$1,273	$1,336	$1,907	$1,894	$2,206
Air Force	$32,165	$35,917	$38,018	$37,723	$40,053
Aircraft	$11,480	$14,073	$15,247	$15,318	$17,085
Missile	$4,204	$4,753	$5,091	$4,320	$4,354
Ammunition	$1,073	$1,005	$1,095	$1,075	$1,079
Other	$15,408	$16,086	$16,585	$17,010	$17,535
Other Procurement, Defense-wide	$2,861	$3,377	$3,000	$2,943	$2,774
Defense Production Act Purchases	$18	$13	$13	$13	$6
DOD Chem Demil Program	$1,277	$1,424	$1,404	$1,445	$1,475

Table 21

DOD FIVE YEAR BUDGET FORECAST ALL PROGRAMS ($ in millions)					
	FY2007	**FY2008**	**FY2009**	**FY2010**	**FY2011**
Military Personnel	$113,146	$114,602	$117,879	$121,166	$124,589
Operations & Maintainance	$152,646	$159,339	$165,260	$171,926	$174,523
Procurement	$84,197	$99,776	$108,622	$111,708	$117,722
RDT & E	$73,154	$74,388	$75,128	$73,232	$70,626
Military Construction	$12,614	$12,872	$12,592	$11,957	$10,644
Family Housing	$4,084	$3,182	$3,108	$2,960	$2,967
Rev & Management Funds	$2,436	$1,247	$2,422	$2,210	$4,430
Defense-wide Contingency					
Offsetting Receipts	-$1,426	-$1,318	-$1,341	-$1,355	-$1,369
Trust Funds	$245	$244	$243	$241	$237
Interfund Transfer	-$140	-$142	-$145	-$147	-$149
TOTAL	$440,956	$464,190	$483,768	$493,898	$504,220

Based on the 2006 Quadrennial Defense Review (QDR), the Department of Defense FYDP reflects the Department's continued shift in emphasis away from the static posture and forces of the last century toward the highly mobile and expeditionary forces and accompanying war fighting capabilities needed in the century ahead.

Looking forward, the Department will take these shifts even further – shifting, for example, from defending the homeland with a one-size-fits-all system of deterrence centered around massive nuclear retaliation, to a system of tailored deterrence designed to defend against rogue powers, terrorist networks, and rising states; from static

forces in obsolete Cold War garrisons, to a new system of military bases that will allow U.S. forces to surge as needed to trouble spots around the globe.

DOD PRIORITIES AND FORECAST DRIVERS

DOD HAS THE FOLLOWING PRIORITIES FOR ITS THREE SERVICES:

NAVY: SUSTAIN COMBAT READINESS, BUILD A FLEET FOR THE FUTURE; DEVELOP 21ST CENTURY LEADERS

In his annual guidance, the Chief Naval Officer reinforced the Navy's top three priorities and also called for "accountable execution" of key objectives and a focus on increased efficiency and effectiveness in warfighting capabilities, building strong partnerships and promoting a culture that reflects the nation's diversity. The Navy submitted a 30-year shipbuilding plan to Congress that will provide a balanced fleet of 313 ships by 2020, including LCS (Littoral Combat Ships) and DDG 1000. A number of initiatives are underway to support the "1,000-ship Navy", including an upcoming Global Fleet Stations pilot program in the U.S. Southern Command Area of Responsibility, and the partnership concept has resonated well with the leaders of maritime forces around the world. Last year's Manpower, Personnel, Training, and Education merger yielded efficiencies and effectiveness in workforce management, and the Phase 1 (Assessment) of the Diversity Campaign Plan was completed.

ARMY: WIN THE LONG WAR ON GLOBAL TERROR; SUSTAIN ALL-VOLUNTEER FORCE; BUILD READINESS; ACCELERATE FUTURE FORCE MODERNIZATION

In a statement to the Committee on Armed Services Subcommittee on Airland, US Senate, Pete Geren, Acting Secretary US Army, and General George W. Casey, Jr., Chief of Staff US Army, stated there has been considerable progress made transforming the Army from a Cold War structured organization into one best prepared to operate across the full spectrum of conflict - from full-scale combat to stability and reconstruction operations, including the irregular war faced today. Equipment was being used up at rates much faster than previously programmed. Resetting and re-capitalizing the equipment and improving the Army's strategic depth would require significant levels of funding for a minimum of two to three years beyond the duration of the current conflict. Recent decisions to grow the Army by 65,000 in the active force, 8,200 in the Army National Guard, and 1,000 in the Army Reserve were clear recognition of the need to increase ground forces Funding for Mine Resistant Ambush Protected (MRAP) vehicles and procurement of medium tactical trucks to fill existing unit shortfalls and to replace obsolete trucks in reserve component units, as well as the Future Combat Systems (FCS) were critical investment priorities. Investing in the Army's future readiness through modernization was a strategic necessity that must be considered a top national priority, not as an issue of affordability.

AIR FORCE: FIGHTING AND WINNING THE GLOBAL WAR ON TERROR; DEVELOPING AND CARING FOR AIRMEN AND THEIR FAMILIES; RECAPITALIZING AND MODERNIZING AGING AIRCRAFT AND SPACECRAFT

Air Force Chief of Staff General Moseley expects the Air Force to continue to be engaged around the world in an array of operations that demand Airmen and their equipment be more adaptive, more responsive and more expeditionary than ever. The Air Force has been in continual combat since August 1990 -- 16 straight years starting with Desert Shield, to Iraqi Freedom. The Air Force is changing the way it develops and trains Airmen, so it is better

prepared to fight the war, and deliver a better prepared force to combatant commanders. In coming years, the Air Force will consolidate many officer and enlisted career fields, resulting in Airmen with a broader set of related skills. Technical schools also will put a new emphasis on warrior skills. Major procurement programs are the KC-X Tanker program, HH-47 CSAR Helicopter, Space Based Infrared System (SBIRS), Transformational SATCOM (TSAT) and the F-35A Lightning II Multi-role Strike Aircraft. Also of concern to the Air Force is the requirement to recapitalize its fleet of aging, obsolete aircraft and spacecraft, and maintaining the older aircraft it would like to retire. Congressional legislation has specifically precluded the Air Force from retiring aircraft it no longer needs.

COMMENTARY

Several official documents and sources were analyzed and cross-referenced to determine spending trends, and the decades of military experience resident in the consulting team developing this forecast were added to assess probabilities, solid opportunities, and risks. Major world events force adjustments to national military strategy at a pace that is quickening and potentially faster than major equipment acquisition cycles.

The analysis resulted in four drivers and their effects on DOD forecast:

1. First is the **GEOPOLITICAL OUTLOOK** and how a variety of world players can influence the decision making process and strategic planning endgame, e.g., the axis of evil including two new nuclear powers in Iran and North Korea, China's hegemonic ambitions, African and South American resources.

2. Second are **National Security Interests** such as Weapons of Mass Destruction (WMD), the Long War or Global War on Terror (GWOT), and military support for civilian authority in both responding to natural disasters and defending the homeland.

3. Third is the **Defense Structure and Resource Management**, i.e., the need to recapitalize the force following the nation's involvement in Iraq, the war's impact on the All Volunteer Force and the National Guard and Reserves and the budget uncertainties.

4. Fourth is the **Defense Industrial Environment**. U.S. defense industrial policy continues to evolve to support DOD operations, roles, and missions. A major challenge (and focus) is to ensure reliable and cost-effective industrial capabilities sufficient to meet strategic objectives.

GEOPOLITICAL OUTLOOK

Despite the end of the Soviet Union as a peer competitor, it is very clear that the U.S. military needs to continue to keep standing forces and improve the full spectrum of military capabilities in the face of emerging peer competitors. The challenge is to do this while also transforming the military for lower-intensity conflict, more special operations, our homeland security role, and the Long War. In addition, the impact of escalating costs of big ticket hardware items poses a threat to an industrial base that is not only required for national security, but has enormous economic ramifications for the future.

While the most obvious potential peer competitor at this time is China, there is plenty of debate on its long-term aspirations. Some see a trend toward hegemonic ambitions at least in the region, and the continuing military build-up supports that view. On the other hand, the recent huge economic growth and China's economic engagement with numerous countries suggest a strategy of engagement and growth to improve the wealth of the nation and the prosperity of its people. U.S. Defense contractors are already creating bonds and partnerships, and relying on the lower Chinese wages to bring prices down. Aircraft parts are being manufactured in China.

Iran and North Korea spark terrific concern across a broad spectrum of issues from Iranian support of terrorism such as Hezbollah to the often fanatical, and what some describe as maniacal, leadership of North Korea. That said, recent events focusing on nuclear weapons tests in North Korea and uranium enhancement efforts in Iran give cause for great concern. This concern does not stem from their ability to target the continental United States with long range missiles vis-à-vis the former Soviet Union and China, but because of concern for proliferation.

The world geopolitical scene has always been a driver of national security strategy, but there are signs that the playing field is becoming more complex. Economic investment in third world countries in Africa by China and other countries; the "Oil Diplomacy" of Venezuela's Cesar Chavez in South and Central America, Asia, and Africa; increased demand on world resources by emerging economies; increased requirements for cultural knowledge and orientation; and near-term capability to shape choices of these countries in the wake of growing criticism of the nation's foreign policies all create huge challenges.

This emerging picture of more competitors in the business of influencing countries that are at crossroads in their political, economic, and military development demands increased expenditure of valuable resources to ensure U.S. influence. Improved language and cultural awareness, more persistent engagement, new policy making structures, more education and training assistance, better communications, and more robust U.S. industry investment are required in the face of all the other demands on limited resources.

NATIONAL SECURITY INTERESTS

While preventing the Acquisition or use of Weapons of Mass Destruction may not represent the biggest drain on resources, it is a terribly complex task that must be done right, lest the U.S. suffers devastating consequences. It will remain a driver of strategic policy thinking and intellectual resources, and its success will rely in part on the cooperation of other responsible nations.

Nation-state proliferation of nuclear weapons is only one concern. The selling of nuclear technology and/or actual devices to rogue entities and terrorist groups presents even more uncertainty due to the challenges of tracking such activities. Continued expenditure of major resources on defense against WMD is imperative and will require significant resources. In addition to concern with nuclear proliferation, the development, storage, weaponization, transfer, and use of chemical and biological agents by terrorist groups presents a very significant and less resource-intense threat.

Overall, this driver will require increased special operations capabilities, new detection technology, better screening of shipping, new defense/neutralization concepts, and more human intelligence (HUMINT) and persistent surveillance capabilities.

While current focus is on Iraq, Afghanistan, and Al-Qaida, it's safe to assume this war will last well past resolution of current events. Impact of this driver on virtually everything DOD does will remain enormous for the foreseeable future. It is now driving major changes in force levels, re-thinking of equipment and training requirements, sparking major (and costly) efforts to quickly deal with unanticipated threats such as IEDs, and it is costing more than anyone anticipated.

The Long War has implications beyond manpower adjustments and equipment reconstitution. Reallocation of intelligence resources (HUMINT) and better fusion, more persistent surveillance, additional special operations (SOF) assets, a new family of non-lethal weapons, better urban warfare capabilities, more language and cultural awareness training, better communications, and rapid global engagement for high-value fleeting targets are some of the requirements that will compete for funding.

Beyond this competition for funding, the Long War could have implications for the All Volunteer Force and Total Force makeup (Active, Guard, and Reserves). Though return to a draft is unlikely, about the only solution to

increased recruiting to satisfy raised manpower ceilings is to incentivize service, which is yet another drain on the budget.

The National Guard and Reserves pose a different problem. The impact of continued high operations tempo is having a negative impact on employment, careers, and employer support.. As Reserve forces play an increased role in operational deployments, it will be imperative to equip them and train them as well as active forces – again, an additional drain on resources.

Defending the homeland against a terrorist attack requires the cooperation of not only multiple intelligence agencies, but multiple operations agencies as well. The long term roles of the Services, the Guard, the Reserves, States, Border Patrol, Coast Guard, FBI, and state/local law enforcement will be debated and adjusted in the near term. Developing technologies that will help solve this problem has to be a top priority in the near term for the Departments of Homeland Security and Defense. The dividing lines of responsibility and authority between DHS and DOD for this and other important tasks is still not entirely clear.

DEFENSE STRUCTURE AND RESOURCE MANAGEMENT

The war in Iraq is taking a huge toll on people and equipment. The management of the recapitalization of the force will have impacts on budgets, industry, and future generations of potential recruits.
The impact of continued deployments on The National Guard and Reserve is having a devastating effect on careers and employment, and may take years for these forces to regain any sense of normalcy and interest from the population.

As to the toll the war is taking on equipment, one only has to look to a recent *Washington Post* article that indicated the "U.S. will likely have to invest $17B to $19B per year for the next several years to replace, repair, and upgrade Army and Marine equipment." Given that readiness of the force is a key issue going forward, it is highly likely that Defense spending will not be decreased in the next decade. Although the Pentagon recently cut funding for armored vehicles, trucks, and radios, the Army's share of the overall weapons procurement budget for the past few years has been about half of that spent by the Air Force and Navy/Marines individually. One would expect a shift of these priorities as well as a shift from high tech weaponry like lasers, and next generation destroyers and jet fighters, to ground support vehicles and personnel protection devices like body armor.

DOD INDUSTRIAL POLICY AND CLIMATE

The goal of DOD's industrial base policy is to establish and sustain industrial and technological capabilities that assure military readiness. Policy responsibility rests with the Undersecretary of Defense for Acquisition, Technology and Logistics (USD/AT&L). AT&L is focusing its activities in the following areas:

FY2006 industrial base studies conducted by the Defense Contract Management Agency for AT&L provide a general sense of priorities; many of which are addressable by Indiana:

- **MATERIAL PRODUCER STUDY**
  - Look at steel, aluminum, and titanium producers
  - Identify critical suppliers and bottlenecks
- **DOMESTIC AUTOMOTIVE INDUSTRIES**
  - Look at major and subcontractors for combat and tactical vehicles
  - Identify supply interrupts resulting from industry contraction
- **AEROSPACE INDUSTRIES**
  - Look at manned fixed wing aircraft producers
  - Identify gaps between procurement plans and capacity

- **HELICOPTERS**
  - Look at rotary wing aircraft producers
  - Identify/evaluate major parts/subsystems foreign suppliers
- **PROPULSION SHAFTING**
  - Look at naval shaft unique manufacturing technologies and processes
  - Identify potential alternate suppliers to the current single source
- **LIQUID ROCKET ENGINES**
  - Look at prime and critical subcontractor reduced workload
  - Identify unique facilities, equipment, and industrial capabilities at risk

EMERGING TECHNOLOGIES

DOD has the largest Research and Development budget of all the agencies, with over 50% of FY 2008's $142.9bn federal R&D budget. Technologies identified that are needed to support current and emerging priorities in DOD are shown in Table 22.

Table 22

TRENDS			
	Macro Trends	**DOD Trends**	**Technology**
Up	Reaction to Iraq/Afghanistan	IT	UAV
	Foreign Alliances and Coalitions	Services	Alternate Fuels
	Command, Control, Communications, Computer (C4)	Logistics	Cyber Security
	Intelligence, Surveillance, and Reconnaissance (ISR)	Intel	Small Diameter Ordnance
	Military Support for Civilian Authorities	Sensors	Force Protection (armor, surveillance, etc.)
	Networkcentric	Security	Precision Weapons/ Standoff Weapons
	WMD/CBRNE	Communications	Non-Lethal Technologies
	Special Ops	Defense Electronics	Composites
	Ground Forces	Force Protection	Sense and Respond Logistics
		Trucks	Nanotechnology
			Space/Near Space- Air Operations and Sensors
			Lasers
			Hi-Energy Weapons
			Network Centric
			Stealth
			Hyper Velocity
Stay the Same	GWOT		
	Transformation		
	China Reaction		
	Missile Defense		
Down	Modernization and Procurement	Air Framers	Missile Defense
	Missile Defense	Infrastructure	

THE DEPARTMENT OF HOMELAND SECURITY

INTRODUCTION

The Department of Homeland Security (DHS) is a federal agency whose primary mission is to help prevent, protect against, and respond to acts of terrorism on United States soil. DHS is the amalgamation of 22 federal agencies, whose budgets have been consolidated and are now managed from the Secretariat level.

FIVE-YEAR FORECAST

Similar to DOD, the DHS Future Years Homeland Security Program (FYHSP) reports on its five-year resource plan. As shown in Table 23, DHS' annual budget is in excess of $40bn.

Table 23

DHS RESOURCE REQUIREMENTS BY STRATEGIC GOAL, FY2006- 2011						
DHS Resource Allocation (Gross Budget Authority, $ in Billions)						
	FY06	**FY07**	**FY08**	**FY09**	**FY10**	**FY11**
Awareness	$1.70	$1.70	$2.00	$2.10	$2.20	$2.30
Prevention	$20.30	$23.20	$16.90	$17.90	$18.80	$19.50
Protection	$11.50	$11.60	$12.90	$13.30	$13.60	$14.00
Response	$6.30	$1.70	$1.60	$1.70	$1.70	$1.80
Recovery	$2.30	$1.80	$1.90	$1.90	$1.90	$1.90
Service	$4.00	$4.40	$3.00	$3.10	$3.20	$3.30
Organizational Excellence	$0.70	$0.80	$0.70	$0.70	$0.70	$0.70
Total	**$46.80**	**$45.10**	**$39.00**	**$40.60**	**$42.10**	**$43.40**
(Numbers may not add due to rounding)						
Note: Does not reflect Project Bioshield funding-- $2.2B advance appropriated for FY 2009						

Market estimates published by the strategic and investment firm called Civitas Group place homeland security market opportunities at about $55B in FY 2006, a 29% increase over the FY 2004 estimate. Civitas predict the homeland security market will continue to grow "at a steady combined annual growth rate of between 8% and 10% over the next five years."

US Federal government spending, DHS and non-DHS	$18.2B
State and local government spending	$ 3.5B
Private sector and quasi government spending	$ 9.3B
International government spending	$17.1B
International private sector spending	$ 7.5B

DHS PRIORITIES AND FORECAST DRIVERS

CRITICAL PRIORITIES FOR DHS THAT ARE OF INTEREST TO THIS STUDY ARE:

IMMIGRATION AND BORDER SECURITY

DHS top priority is immigration and border security. Secretary Chertoff has stated the goals of implementing immigration reform and modernization and achieving substantial control of borders through substantial deployment of SBInet and the Western Hemisphere Travel Initiative along with strengthened biometric tools. Huge investment will be made in border security, including a fence that costs in an estimated $14 million per mile; detention and removal of the 1.4 million immigrants that enter this country illegally every year; and finally, some form of a temporary worker program. Funding and opportunity will spread across three agencies: Customs and Border Protection, with responsibility for the SBInet program; Immigration and Customs Enforcement, with responsibility for interior enforcement, detention and removal; and Citizenship and Immigration Service, with responsibility for benefit processing and likely hub for building a temporary worker program.

The need for better and more inclusive information sharing is apparent. Information sharing is a two-way street. Working with the White House Homeland Security Council and federal colleagues will not only help forge common federal tools for information sharing, but also work with state and local officials – and private sector infrastructure owners – to fuse and share a richer intelligence base. In short, greater real-time situational awareness will be promoted.

PREPAREDNESS AND ALL HAZARDS FEDERAL RESPONSE

In the broadest sense, preparedness addresses the full range of DHS capabilities to prevent, protect against, and respond to acts of terror or other disasters. The Department is continually improving capabilities to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and be prepared to minimize the damage and recover from attacks or natural disasters that do occur.

DHS will concentrate first and most relentlessly on addressing threats that pose catastrophic consequences. Some of the tools needed to prevent, respond and recover from such awful scenarios are already in place; but others need significant improvement.

DHS Grant Programs

Urban Area Security Initiative (ASI) … $1B

- Top 30 metropolitan areas
- 50 factors used to rank in three tiers according to risk criteria
- Threat consequence management a focus

State Homeland Security Grant Program (HSGP) … $800M

- State formula
- 40% risk formula
- .025% per state

Infrastructure protection … $400-500M

- Mass transit
- Port security
- Buffer zones for chemical plants

Overview of Grant Process

- State touches every grant but 80% goes to local authorities
- Look at University grant programs
- 7 Centers of Excellence (none in IN)
- COE established by HLS act
- Size of grants based on risk, consequence/strong Congressional influence
- Trends
- More defined, interactive grant process
- Average program size growing

For example, the retooling of FEMA continues with the recent reorganization and will hopefully take another newsmaker out of the limelight for DHS, allowing the agency to meet expectations. The initial focus will be on professionalizing personnel rather than making immediate systems overhauls.

DHS is investing some $300M in Fusion Centers in 30 states, including Indiana. The idea is to see the flow of information from these intelligence fusion centers in the states move back to DHS, instead of the one-way flow currently in use that has the intelligence generated in DHS and disseminated to the states.

DHS also seeks to improve emergency communications and response capabilities with each urban area security initiative site and each state adopting interoperable communications plans, as well as a logistics support system to manage and track services and assets during a disaster.

The grants and training programs are expected to generate almost $3 billion in awards annually. In fact, almost $18 billion dollars have been invested in these programs since 9/11, 40% of which has gone to interoperable communications without much overall progress. In part, this is due to confusion over the appropriate role of the federal government in establishing interoperability among state actors – everyone has a different idea as to roles and solutions.

The Grants program is intended to focus on preparedness and response, and it is best suited for regional solutions. A recent example is the work done in Chicago to recognize the need for a regional response capability and to make sure that the outlying regions of Chicago are interoperable with the city. With certain restrictions, grants are becoming more flexible to fund people.

Another significant area of investment for grants is in research and development (R&D). University grants fall into this category, and there are seven Centers of Excellence at seven universities that are mandated by the Homeland Security Act. None of these are located in Indiana.

There is no dedicated budget for bio/agriculture, so the program is funded through the grant program, and Purdue University is one of five universities nationally involved in this area of research.

TRANSPORTATION SECURITY AND SCREENING

Preventing the entry of individuals who pose threat will require not only the ability to accurately screen people, but also the timely availability of accurate information on individuals of interest. The Department will focus on increasing the sharing of information and coordination of efforts among law enforcement agencies and databases,

both internal and external to the Department. DHS will establish a unified, interoperable screening protocol and system by 2010 for screening cargo and people.

A critical piece of the U.S. industrial supply chain is through the ports. Port security will see a huge emphasis on improved screening equipment. Federal spending is expected to increase in this area, particularly through the grants program.

The DHS will continue its work to increase airplane security through improved passenger screening systems with better information, increased domestic screening capability, and new behavior pattern analysis tools. In addition, the next two years will see heightened activity around screening air cargo on passenger planes.
The Secretary has pledged to improve transportation security through the use of more fraud resistant documents and development of "Real ID" standards. Identification for all citizens and legal immigrants, transportation workers, and people entering the United States will make the business of credentialing and identification card manufacturing lucrative businesses as the nation moves toward a variety of bio-ID and facial recognition.

PUBLIC HEALTH EMERGENCIES/CBRNE

Facing the next pandemic or chem./bio attack will require increased emphasis in an area referred to as Chemical, Biological, Radiological/Nuclear, and Explosives (CBRNE). Investment in all of these areas will remain high, to include increased research and focus on detection and response to biological attacks. Over the next two years, DHS will deploy systems to prevent and identify biological threat agents though further development of BioShield and BioWatch capabilities and increase response capabilities by completing and testing PanFlu response plans.

Radiation detection will continue to see significant investment as DHS moves towards its goal of screening 100% of inbound container cargo for radiation. DNDO is investing over $500M this year towards the problem of detection both at the border, in the interior, and overseas; and the solution may not be easily attained. Radiation screening capability will extend to the USCG through mobile scanners, as well as to large metropolitan areas through the "Securing the Cities" pilot.

The Secretary's emphasis on improving critical infrastructure protection both in the public and private sector is expected to gain momentum. For example, DHS has issued proposed regulations for new security standards at chemical plants and reducing the threat posed by toxic rail cargo. The chemical companies have embraced the concept of standards, though work remains to be done in finalizing the scope of the regulations.

COMMENTARY

While changes in party leadership in Congress or the White House will have an impact on policy and spending, experts agree that DHS is entrenched in our government and our society and it will survive. In fact, as one pundit pointed out, DHS was an idea of the Democratic Party. Even so, in the short term, expect more oversight, especially in financial management; more hearings, limitations on human resources, and increased scrutiny on programs that invade personal privacy.

Given a terrorist attack on the rail and mass transit systems, a major change would be expected in the current priorities to address this vulnerability. This is a very open system with huge spans of track that are accessible to the public, even without TSA type passenger screening. This very difficult problem has been put on the back burner maybe because it is too hard, but with an attack, it will become a political bombshell like it did in Spain.
If Congress passes a temporary worker program, then a major refocus of several programs from credentialing and biometrics to increases in the immigration and customs forces would be expected.

The current Biowatch efforts and air quality monitoring are at best average and would require huge investment if this becomes an issue. Similarly, the nation's response to a pandemic would create a huge transfer of funds to meet this dangerous challenge.

Airport screening devices are two to three years old, reaching obsolescence and need to be replaced with new technology. There is a need for better screening for detection of explosives, and the question will be whether DHS buy or lease as the new technology emerges and the current equipment reaches its life span.

Game Changers

- Democratic Congress
  - 9/11 Commission implementation
  - Rail and mass transit
- Temporary Workers Program
- BIOWATCH (air monitoring)
- Pandemic flu
- Airport screening
  - 2-3 years obsolescence cycle
  - Reinvent/change way of doing business
  - Looking for best explosive detection tech
  - Leasing options
- Secure/interoperable communications standards – Nationwide Automatic ID System (NAIS), Rescue 21(R21), Integrated Wireless Network (IWIN)
- Counter MANPADS (shoulder fired missiles)
- Secure freight (not currently funded)
- DOD role in disaster response

Interoperability and secure communications continues to plague law enforcement and first responders. Angst between the police and fire departments continues. The question is, out of all the systems that exist, which will be the standard and what role does the federal government play in state and local issues such as this?

The first time an airliner goes down at the hands of a Stinger missile or the like, a huge diversion of funds to countermeasure devices and airline protection is expected.

Securing freight on air carriers has been largely unfunded in the past. Although passenger baggage continues to receive attention, the screening of other items being carried in cargo holds has not had the focus that it might deserve, and any incident involving cargo will refocus budgets quickly.

While infrastructure protection is a clear focus for DHS in the near term, any attack on USA infrastructure from chemical to refineries to nuclear power plants would cause an additional increase in emphasis that could and would divert funds to this critical area to accelerate the preparedness.

EMERGING TECHNOLOGIES NEEDS

The need for new technologies in homeland security is insatiable. The Office of Science and Technology in DHS has an annual $1 billion budget for R&D, half of which is to acquire and transition technologies to the field within three years. Another 25 per cent is dedicated to longer-term basic research and higher-risk innovative projects. R&D is big business and will continue to be for the foreseeable future.

The following areas are seeking technology solutions:

- Information sharing
- Interoperability
- Prevention and response
- Credentialing and biometrics
- Sensors
- Smart video
- Behavior analysis
- Air monitoring

THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

INTRODUCTION

The National Aeronautics and Space Administration's (NASA) is a federal agency whose mission is to pioneer the future in space exploration, scientific discovery and aeronautics research. Established in 1958 with a focus on putting a man on the moon, NASA has grown its focus to four mission directorates (aeronautics, exploration systems, science, and space operations) and conducts the majority of its operations in ten centers and four facilities across the nation.

FIVE-YEAR FORECAST

NASA's five-year budget forecast is shown in Table 24. The forecast reflects heavily President's Bush's new focus on Exploration. Although the proposed budget shows year on year increases, NASA finds itself in the Continuing Resolution (CR) mode, which limits expenditures to last year's level and severely restricts new starts, unless specifically authorized by Congress. This situation will more than likely continue as both parties have shown a reluctance to pass appropriation bills. As such, experts advised that NASA is expected to live within the amount of the FY06 allocation of $16.3 billion, rather than the almost $16.8 billion in the President's budget request.

Table 24

NASA FIVE YEAR BUDGET FORECAST					
$ in millions	FY2007	FY2008	FY2009	FY2010	FY2011
Science, Aeronautics, and Exploration	$10,524	$10,594	$11,136	$11,747	$15,526
Science	$5,333	$5,383	$5,437	$5,492	$5,546
Exploration Systems	$3,978	$3,982	$4,500	$5,056	$8,775
Aeronautics Research	$724	$732	$732	$723	$723
Cross-Agency Support Programs	$492	$498	$467	$477	$482
Exploration Capabilities	$6,234	$6,680	$6,442	$6,243	$2,897
Space Operations	$6,234	$6,680	$6,442	$6,243	$2,897
Inspector General	$34	$35	$36	$36	$37
Total	$16,792	$17,309	$17,614	$18,026	$18,460

LONG-RANGE FORECAST

A long-range forecast was developed from interviews with the analysts and experts, and is shown in Table 25. This forecast assumes no growth from 2006 to 2007 because of the long term Continuing Resolution now driving spending, and a modest growth is expected in 2008 of approximately three percent. It is assumed that the current effort by Senator Mikulski to bring an additional $1B to NASA in FY07 will not be finalized.

Table 25

NASA Long Range Budget Forecast (In Billions)										
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
NASA request	$16.3*	$16.8	$17.3	$17.6	$18.0	$18.5				
Projection	$16.3	$16.3	$16.8	$17.3	$17.8	$18.7	$19.6	$20.6	$22.0	$23.6
Increase (%)	0%	3%	3%	3%	5%	5%	5%	7%	7%	7%
*Without $350M Katrina supplemental appropriation										

NASA PRIORITIES AND FORECAST DRIVERS

Priorities for NASA, based on the specific components of the President's "Vision for Space Exploration" program are to:

- Retire the Space Shuttle by 2010
- Complete the Space Station program
- Develop a Crew Exploration Vehicle (CEV) by 2014
- Return humans to the moon by 2020
- Explore the Martian surface, both robotically and manned

To support NASA's exploration mission, NASA is initiating development of the Crew Exploration Vehicle (CEV) and the Crew Launch Vehicle (CLV). Launches of these two paired vehicles should be safer and more reliable than the Space Shuttle and will support our astronauts' journeys to the International Space Station, the Moon, a lunar outpost, and eventually human missions to Mars and other destinations.

The Crew Launch Vehicle, as well as a future Heavy Lift Launch Vehicle for the launch of other exploration cargo, is to be built from components of the Space Shuttle. This approach will allow NASA to use tried and tested components, benefit from an experienced workforce, and smoothly transition operations to the CEV/CLV when the Space Shuttle is retired by 2010.

NASA will continue to develop several satellite and robotic missions to explore the solar system and universe. The Lunar Reconnaissance Orbiter is scheduled to launch in the fall of 2008 to map the surface of the Moon and search for future landing sites. NASA's recent successful robotic investigations of Mars and Saturn will be followed by missions that will explore some of the least known areas of the solar system, like Mercury, the asteroids, and Pluto. The Mars Science Laboratory is scheduled to launch in 2009 to sharpen scientific understanding of the Red Planet, and future spacecraft will conduct research and test technologies to support human exploration of Mars.

The Agency also will build on a legacy of revolutionizing astronomy. NASA will continue to operate space telescopes, including Hubble, Chandra, and Spitzer, while planning for the next generation of spacecraft that will enhance researchers' ability to find planets around other stars and peer deep into the history of the universe to understand its origins and structure. NASA will also continue to play a major role in the interagency Climate Change Science Program and the international Global Earth Observing System of Systems, retaining critical investments in satellites, technologies, and research that will improve forecasting of the weather, monitoring of forest fires, and tracking the spread of pollutants on Earth. The Agency will also continue to develop space probes to study the Sun's influence on Earth and the space environment.

COMMENTARY

The President's exploration priorities for NASA will continue, as they have been embraced by Members of Congress from both parties. It may well be, however, that the schedule will be drawn out as NASA experiences cost overruns; and there will be pressure by the science community to rebalance NASA's portfolio from exploration to science. Such a change could favor the State of Indiana as they have been participating in science and robotic activity, rather than exploration.

From the interviews with analysts and experts, the following consensus was formed:

- A likely movement in the next administration from exploration to science, primarily by delaying manned Moon missions and using robotic precursors to Mars.
- Expect a delay in Space Shuttle retirement, if NASA experiences a completely safe series of flights.
- A strong Chinese manned space mission, this could ignite another space race, and considerable assets could be redirected towards NASA.

EMERGING TECHNOLOGIES

NASA has chosen to re-use Shuttle and even Apollo components, which have legacy contractors and support teams, including academia, so emerging technologies in propulsion are not expected.

In the science and instrument area NASA, NOAA and joint program offices concerned with weather and earth science will see some resurgence in investment. Earth science has been the bottom rung on the priority ladder for 8-10 years, and the Democrat Congress is likely to include additional support to this area.

TARGETING OPPORTUNITIES

In order to be successful, Indiana needs a set of targets which will lead to near-term action and long-term, sustainable benefit - one that gives Indiana an innovative, actionable economic development plan unique to the local region. These build upon the earlier work which focused on the tangibles by adding the intangibles and taking an additional focus on the future of R&D.

PRELIMINARY TARGETS OF OPPORTUNITY

From Phases 1 and 2 the following list of preliminary opportunities were identified that had a match between the future challenges of the DOD and Department of Homeland Security also shown in Table 26 and 27.

- Demand for Vehicles – Armored and Unarmored
- Sensors (CBRNE)
- Foreign language and culture
- Communications and Information Infrastructure
- Alternative/bio fuels
- Securing the Food Supply
- Security Composites
- Demand for Intelligence Analysts
- Prefabricated Housing 8
- Alternative Energy
- Non-Lethal technologies
- Nanotechnology
- Cyber Security
- Bio-metrics and credentialing
- Real-time behavioral analysis
- Lasers
- Training – disaster response, critical infrastructure protection
- Demand for Intelligence Analysts

These opportunities required further focus in Phase 3 to determine how they can be grouped to provide the greatest impact through working in collaboration over the longer term. There are also environmental factors that need to be considered in forming the final list of targets.

They were incorporated into the final targets that follow.

[8] Later in the analysis, it was determined that this opportunity was not going to be pursued as a solution in the future by DHS.

Table 26

Indiana's Strengths	Department of Homeland Security																											NASA	
	Immigration and Border Security		Coast Guard DEEPWATER Program				Port Security		Identification				Public Health Emergencies			All Hazards Federal Response							Increased use of Grants			New Space Exploration Focus	
	Construction of Border Fence	Retention and Removal of Illegal Immigrants	UAVs/ Persistent Surveillance	Ship-Building	Fixed Wing Airplanes	Helicopters	Improved Screening Equipment	Research and Development Grants	ID Card Manufacturing	Credentialing	Behavioral Analysis/ Facial Recognition	Bio-ID/RFID	Emergency Response	Communications Interoperability	CBRNE Detection/ Sensors	Prefabricated Structures	Communications Interoperability	Critical Infrastructure Protection	Security	Intelligence Fusion	Emergency Response	Research and Development	Preparedness and Response	Bio/Agriculture Research	New Crew Exploration Vehicle	Robotic Unmanned Exploraton Vehicles
Past Contracting Strengths			✓		✓	✓								✓	✓	✓	✓			✓						
Patent Strength all IN Companies												✓			✓							✓		✓		
Patent Strength Defense Contractors																										
Military Facility Strength													✓					✓			✓					
University Strengths/ Expertise							✓	✓		✓	✓	✓		✓	✓		✓			✓		✓	✓	✓		
Miscellaneous Industry Strengths	✓															✓								✓		
Other General Strengths																										

Table 27

Indiana's Strengths	Department of Defense																																		
	China as Peer Competitor			Iran & North Korea					Southern Hemisphere			WMD Proliferation			The "Long War" or GWOT							Military Support for Civilian Authority			DOD's Role in Homeland Defense		Repair and Upgrade			Misc. Technologies					
	Low-Cost Provider of Major Force Structure Programs	Cyber Security	Linguistics and Cultural Awareness	Force Protection (IED's, Body Armor)	Alternative Fuels	CBRNE Detection/ Sensors	Urban Warfare	UAVs/ Persistent Surveillance	Linguistics and Cultural Awareness/ HUMINT	Infrastructure/ Construction	Quality Military Hardware for Emerging Nations	Alternative Fuels	Missile Defense	UAVs/ Persistent Surveillance	CBRNE Detection/ Sensors	Force Protection (IED's, Body Armor)	UAVs/ Persistent Surveillance	Intelligence Fusion	Communications	Urban Warfare	New Training/ Equipment	Linguistics and Cultural Awareness/ HUMINT	UAVs/ Persistent Surveillance	Communications Interoperability	Emergency Response	Border Security, Disaster Relief	New Training/ Equipment	Replace, Repair and Upgrade Army and Marine Equipment	Ground Support Vehicles	Personnel Protection: Body Armor, Etc.	Composites	Network Centric Technologies	Alternative Energy	Nanotechnology	Lasers
Past Contracting Strengths	✓			✓		✓		✓			✓			✓	✓	✓	✓	✓	✓				✓	✓				✓	✓			✓				
Patent Strength all IN Companies	✓					✓				✓	✓				✓													✓	✓							
Patent Strength Defense Contractors	✓					✓					✓				✓													✓	✓							
Military Facility Strength	✓						✓													✓	✓					✓		✓							
University Strengths		✓	✓	✓	✓	✓			✓			✓			✓	✓			✓	✓		✓		✓			✓				✓	✓	✓	✓	✓
Miscellaneous Industry Strengths					✓					✓		✓																✓	✓						
Other General Strengths	✓																																		

ENVIRONMENTAL FACTORS

It is important to note that before Indiana can enjoy long term, net growth in its relationship to DOD, DHS or NASA, it will experience --along with the rest of the country --a partial fall off in sales, as conflicts in Iraq and Afghanistan subside. This drop will affect some contractors more than others.

Following this near-term fall off of peak DOD spending, Indiana may actually benefit from a short-term holding pattern or plateau in DOD spending, as older, legacy systems are replaced, repaired, updated and sustained, in lieu of more expensive new defense platforms now on the drawing board.

Depot operations, repair, replacement and upgrade activities will dominate post-Iraq burn down of equipment, creating opportunities for Indiana to capitalize on its strengths. The “recapitalization” of the Army will require replacement vehicles, parts and spares, as well as transmissions, engines and much more.

Industry and universities performing work in the area of sensors will capture a lot of interest from both DOD and DHS. Both are interested in sensors that can detect Chemical, Biological, Radiological, Nuclear, and Explosive materials (CBRNE).

Additionally, gaps in linguistics and cultural awareness in the US Government match well with Indiana’s expertise on the university level.

Communications and Information infrastructure of both DOD and NASA present a constant challenge. Both have invested significant funds on the R&D level to improve in this arena. Indiana has a number of large integrators active here, as well as universities researching solutions.

With the most recent spike in bio-fuels activity in Indiana, the state has created a potential to meet a largely unmet need of DOD to replace petroleum based fuels with a single, alternative fuel.

These targets of opportunity and other technologies present a chance for Indiana to continue to grow its defense sector. The Department of Defense alone is the largest consumer of products in the world. The prospect of maximizing Indiana’s assets in this arena is an economic development opportunity not to be missed.

During the aftermath of Hurricane Katrina, FEMA purchased hundreds of millions of dollars worth of trailers from Indiana companies. In the future, FEMA is trending away from trailers towards other methods. This could be, among other options, temporary or manufactured housing for emergency use. Indiana is the number one exporter of prefabricated enclosures in the United States.

CARE-ABOUT ANALYSIS

Key to the creation of an actionable, sustainable set of targets for economic development is the understanding of the basic values, ambitions, and motivation of all stakeholders. *Care-about Analysis* is a tool that seeks to get at motivations that make a strategy actionable. It recognizes the tangibles that have been generated during a project and adds the intangibles, which are important to the success of any resulting strategy. Often, these intangibles make the difference between success and failure. They address the political, cultural, and personal factors as well as the enablers that are vitally important for success. Some of the actions required are intangibles because innovation, discovery, and transfer is a social process that demands increased interaction and relationship-building. It demands skill sets and talents that are often now interdisciplinary and multi-faceted, demanding risk-taking and constant vigil. A person or a company will do what they care about.

A care-about analysis was conducted that took into account the various stakeholders from across Indiana. Over 200 stakeholders, see Figure 11. The stakeholder focus included representations from the various geographical regions of the state as well as the various demographics. Examples of these included:

- Large companies
- Small and medium companies
- Academia
- Government
- Military
- Non-profit

Figure 11

The thoughtfulness and confidences shared by the interview participants allowed the gauging of several elements at once: the depth of the discovery process, the commitment of translational and applied research, the commercialization pathways, and the personal and professional motivations limiting or expanding the region's opportunities.

The positive nature of the interview process suggests that a sense of urgency and a sense of opportunity have converged—and yet nearly all participants inquired as to the mechanism that would sustain the work on the findings and recommendations.

The following is representative of some of the findings:

- Nothing missing in state; largely a cultural thing. Need to brand Indiana as a source for intellect
- Need a person to say manufacturing is back, with new technology
- No one around to provide hands-on help
- Government is good business because there is a set date and they pay on time
- The fortitude you need to get through government red tape is formidable
- The best way to develop stuff is through small company
- The number one problem facing our company is to have management infrastructure to grow fast.
- They should not concentrate on bringing in outside (out-of-state) firm until they learn how to support companies already here.
- People don't connect well in Midwest.
- Indiana is no longer a place to build cars. It has intelligence-based businesses now.
- Small companies don't know how to get the business, the jargon, procedures, or what a mil spec is.
- Small companies don't understand the potential in the business. They see a risk in this kind of business – what if government cancels contract. 'There's always a need for cars.'
- The prime doesn't want to use the university because they wanted to protect the eventual IP and the university will need to publish.
- There is no getting together.
- The state should have an initiative to grow current businesses.
- State sponsoring a convention would help. Sure always good to have the mountain come to Mohammed
- Small companies like us find it hard to find resources to get certified – its an insurmountable task.
- We do not have big primes in state, therefore no lawyers and no accountants to know FARS/DFARS regulations.
- We don't have people retiring from primes in Indiana to help manage projects.

- Indiana's is not a well-placed Congressional delegation
- The state needs to help small business to get DOD business. It's a good place to spend state money.
- State should make connection to federal agencies.
- Our biggest strength is people want to live here. We have a stable workforce. We have cheap resources: energy, land.
- You need people to facilitate the connection between faculty and business.
- System engineering competency is missing in the state – putting together highly complex systems.
- I think Indiana can fix its aversion to risk or it will be like Michigan, stuck in its ways. Indiana is a can-do state.
- The state's biggest gap is in attracting talent – science & senior management. We have to have a program to grow our own.

An important part of the care-about process is the collection of "one chip bets." The question asked was, "if you had only one bet for the future it would be:"

- Prototype manufacturing and short-run manufacturing
- Energy from multiple technologies (many)
- Manufacturing (many)
- Portable Power Sources
- Keeping engineers in state
- Education/workforce development
- Health information
- Data Mining with cyber security
- Sensors Networks
- Optical physics
- Wireless communications
- Life sciences
- Security screening
- Predictive modeling
- Electronic warfare and special ops
- Sensors - integrated
- Environment
- Biomedical
- High-performance computing
- Aerospace
- Small UAV
- Robots
- Command and Control
- Aircraft design and manufacturing
- Know-how for getting defense business
- Human interaction- human at center
- Manufacturing medical devices

The last part of the process is called "Non-Attributable Messages". These encourage people to provide strategic non-attributable messages to the leaders of the initiative. The following are representative comments:

- Indiana is a very diverse state. I grew up in Southern Indiana and now live in Northern Indiana. Promoting a state identity would help tremendously and could help us start working in a common direction.
- Continue to encourage regions and strategies to double and triple federal procurement contractors. Support those strategies, or get out of the way.

- Get on with it. Fast and good is better than slow and perfect. Let's not keep studying this thing. We can generate the enthusiasm to do this right now. Little guys don't know what they can do to help. We could use the little guys for contract requirements. It is better when supplier is closer.
- To create the environment, stimulate ideas to product regardless of source (corporation or university). Create a knowledge infrastructure.
- Manufacturing base needs to be focused on next-generation technology that can't be mass produced in foreign countries.
- This contract ends soon, but burning question remains: What happens after? It's a terrific oversight to end there.
- Help small business to network with each other and DOD and aerospace industry. Having heard a lot of lip service from politicians over the years, it's good to hear it coming from the industry.
- Have to develop highly educated people and keep them here. Education system has to develop an appreciation for commercialization and entrepreneurism.
- Collaboration is essential no matter if at another university, another country, another company. Projections/solutions are too complex no one person knows it all.

SELECTED FOCUS AREA TARGETS

Quantitative and qualitative data was collected and analyzed during the process to determine where the region's sources of intellectual property, entrepreneurial energy, and managerial talent intersect with national growth trends. This process resulted in determining focused targeted areas in which Indiana has the resources, expertise, and potential to establish national and global-leadership positions and can maximize the generation of wealth for the individuals, companies, and the state. Through a rigorous process and extensive data collection and analysis, specific areas were identified within the DOD, Homeland Security, and Aerospace arenas on which Indiana should focus its resources, effort, and attention.

At the outset, a framework for target selection was set:

- A mix of short-term economic payoff, mid-term opportunities, and long-term growth opportunities
- Build upon the existing Stakeholders, use out of state recruitment to fill gaps
- Areas with a solid foundation in basic science and either realized or potential innovation (patent) activity
- Existing federal funding flow or the strong potential to attract significant federal funds
- Collaborative efforts underway or the potential for inter-institutional collaboration
- The ability to build public and private support around future investment
- Affinity to Indiana's culture, competencies, and capabilities
- Competitiveness

Note that each of the selected targets represents an area in which Indiana has the basic foundation necessary to build a competitive advantage. However, the methodology for selection of a target is not a predetermined or set formula.

In order to be successful, these targets will lead to near-term action and long-term, sustainable benefit-one that gives Indiana an innovative, actionable economic development plan unique to the local region, unlike a boilerplate strategic plan that is common in such endeavors. The state needs to identify champions for the actions that are part of the strategic plan who have participated in the strategy-setting process and will sustain the strategy's implementation through their leadership.

Indiana's Target Opportunities Are:

- Advanced Military Informatics
- Transportation Systems
- Defense Electronics
- Services & Support
- Bio Collaboration
- Future Energy Alternatives
- Urban Warfare Center Partnership

These are described in more detail in the following high-level business plans.

FOCUS AREA BUSINESS PLANS

The goal of the focus action teams is to create an actionable implementation plan for realizing the potential for the state in the selected target focus capabilities. Our benchmark for successful plans includes high level elements of traditional business plan approaches. Just as in a business plan, if the capabilities, leadership, technology, science, markets, and funding do not come together to grow a successful business, there will not be successful economic development. Because there is both a sense of urgency and opportunity for the state of Indiana, the focus action teams are a collaborative way for engaging leaders in the public and private sector must be identified to accelerate and expedite implementation. The intent of focused action teams is not to construct new organizations or programs, unless doing so fills a gap. The teams, and ultimately the state, should base all engagement of leaders and institutions on a "network of networks" model that brings all parties willing to collaborate around one table to exchange ideas and decide how best to get sustainable results. No one organization in the state can "own" the process, as such an endeavor of leveraging targets into scientific and economic opportunity requires heavy lifting from the entire range of state wide interests.

PROCESS

Critical to becoming competitive in the current technology-focused and agile economy and setting the ground work for the next economy is the ability of a state to leverage current strengths, opportunities, and developing capabilities to achieve excellence and become a global leader. Given the breadth and competitiveness of the technology and services industry, it is impossible to excel in every area. Targeting allows a state to hone in on a particular field and gather the specialized resources, talent, and assets necessary to become a premier destination for scientists, researchers, entrepreneurs, investors, and corporations interested in a specific industry. Targeting a handful of opportunities in the DOD, Homeland Security, and Aerospace Industries does not come easy.

Focus Action Teams were formed for each of the six targets to coordinate disparate activities, resources, and knowledge into a coherent set of strategies for implementation resulting in high level business plan.

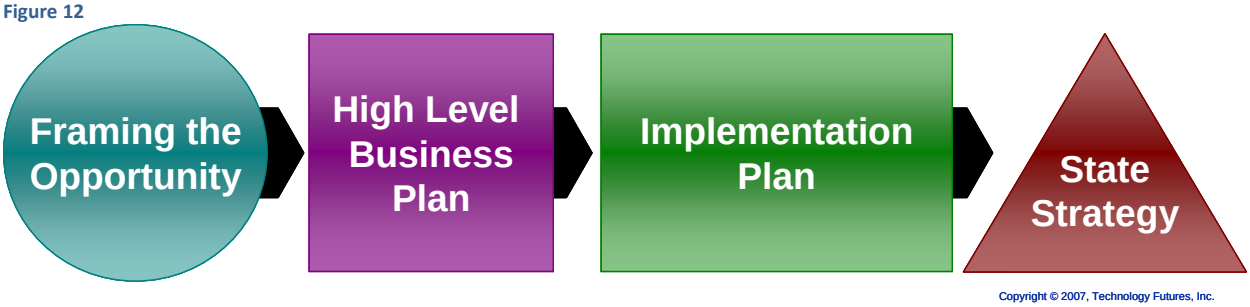
- Advanced Military Informatics
- Transportation Systems
- Defense Electronics
- Services & Support
- Bio Collaboration
- Future Energy Alternatives

The seventh target, the Urban Warfare Center Partnership, will be treated as a separate process because of its unique requirements for public and private sector coordination to fully realize the opportunity.

The prime purpose of the focus action team was to take the target areas and decide if it has the assets, capabilities, support, and leadership to pass diligence and be a supported target. If the target area passes this gate, then a high-level business and implementation plan is produced. The plan would identify new programs to enhance the future focus and leverage an ever-growing competence in collaboration throughout the state. It would identify the deliverables and resource requirements for each stage of implementation. While the purpose of these Focus Action Teams is to assess the target area and develop a go forward plan, new partnerships, teaming to explore new opportunities and even M&A activities often emerge from just gathering a focused team together. This has been the case with these action teams.

Figure 12 outlines the Focus Action Teams flow.

Figure 12



The Focus Action Teams worked during two meetings each to craft high level business plans and initiatives in support of driving the targets. This is a departure from the normal action team process that is used to generate more sustainable results. In a typical engagement, such as Bio-Crossroads, this process takes three to four months to complete. Based on the urgency, and the contractual restraints of the state, this was compressed to one month. The Focus Action Teams serve as the tool by which the analysis and reports will be converted into near-term action and accelerated results.

ADVANCED MILITARY INFORMATICS HIGH LEVEL BUSINESS PLAN

Advanced Military Informatics is the use of algorithms based on advancements in mathematical sciences in studies, analytical software tools, and devices to improve real world information gathering and synthesis that leads to improved decisions in conducting intelligence operations in the military, the intelligence community, homeland defense, and national studies. These algorithms may be used across multiple function including research, training, planning, and critical mission operations. Civilian use is anticipated in areas such as law enforcement, geographical information systems, and automated systems. This focus area derives wealth from a growth area in the target customer set based on a unique set of knowledge and tradecraft found in Indiana. The opportunity exists for Indiana to uniquely fill a white space in the countries' military, aerospace, and homeland security missions. The underlying technology created in this focus area (grid computing, handheld supercomputers, mixed reality) has application across all business and governmental sectors of the economy.

DETAILED DESCRIPTION:

It is the goal of Advanced Military Informatics to enable the conversion from data to interpretation to response in near real time. For the warfighter, this is called 'sensor to shooter' and there are equivalencies for other roles such as the first responder, border patrol (land and sea), operations planning, covert intelligence operations, and autonomous vehicles.

This focus area addresses the staff/skill shortage these customers are facing in weeding through the tidal wave of data being created by today's civilian and military systems. At the same time, the adversaries are getting more devious in their ability to hide the data needed for effective intelligence operations.

In the DOD document, Joint Vision says that the U.S. military doctrine is to dominate with information. The guide for this area is that "More knowledge is not power, it is debilitating. Informatics is how this problem is overcome." The key to protecting the country and its allies is to be preemptive and not have to respond. This can only be done through Informatics.

This target involves information technology in the areas of computation (combinatorial math, topology, signal processing, and pattern recognition), knowledge management (data mining, data fusion, real time operating systems, information sciences, image recognition and search, moving object tracking, collision avoidance, and linguistics), human understanding (visualization, mixed reality, and serious games), Information Security from both offensive and defensive sides (e.g., identity management, encryption, information assurance), and

simulation/modeling (network analysis such as swarm theory, system dynamics, control systems, and complex systems). Independent Verification & Validation skills and processes for Software is crucial to this focus area as the applications this technology will be applied to are both complex and mission critical.

Knowledge assets needed in this focus area are: Mathematical Sciences, Informatics, Advanced Computer Architecture, Software Independent Verification and Validation (IV & V), Grid Computing, Sensor based systems, Database Systems, Modeling /Simulation, Control Systems, Complex Systems Theory, Cognitive Science, Decision Theory, Visualization, and Information Security. Advanced Information Security capabilities are essential in this area to guard against the powerful capabilities and information generated by this advanced technology. Information Security disciplines such as Identity Management, Biometrics, Secure Software, Federated Databases, and Encryption are involved.

IMPORTANCE FOR INDIANA TO FOCUS AND COLLABORATE ON ADVANCED MILITARY INFORMATICS

The state can capture a competitive position by focusing on this area. Except for groups in the Washington D.C. area, there are few parts of the country capable of moving concept to product. Much of the available funding is kept in black budgets, so few have insight into the potential. Problems of the nation can only be solved with informatics to investigate, digest, improve, and act quickly on the vast amounts of data being created in the civilian world and in combat that has been enabled by digital technology.

The presence of prime contractors in the state who are involved in this area will be helpful in getting Indiana's advanced military informatics products and services into use by the military, aerospace, and homeland security.

Table 28 below indicates the extent of the Military Informatics assets in Indiana that can address military, aerospace, and homeland security opportunities. These assets are very strong and range from academic institutions clustered around IU Medical School, Purdue, IUPUI, and Notre Dame to large companies, especially in pharmaceuticals, orthopedics, and hospitals, as well as major research centers and a range of small companies involved in chemical and biological sensing, neurological treatment devices, and drug manufacturing equipment.

This focus area can augment the Muscatatuck Urban Warfare Center by providing units being trained on the ground intelligence capabilities. When those units return to their posts, they will be ready, willing, and able to use those advanced military informatics techniques and devices they used in their exercise.

Table 28

INDIANA ASSETS

University		Large Companies	Small Companies	Other
IU Center for Applied Cybersecurity Research	PU Rosen Center for Advanced Computing	Rolls Royce	Arxan Technologies	Internet 2 Network Operations Center
IU Computer Interaction Design Center	PU Center for Education and Research in Information Assurance and Security (CERIAS)	Raytheon	InfoComm	Complementary Data Mining Skills in Life Sciences at IU, PU, IUPUI and Regenstrief Institute
IU Computational Linguistics	PU Homeland Security Institute	ITT Space Systems	Stanley Security Solutions	Indiana Intelligence Fusion Center
IU Cognitive Science Department (Top 10 ranking)	PU Envision Center for Data Perceptualization	ITT Aerospace Communications	Trust Peener Labs	Wright Patterson AFB in Dayton
IU School of Informatics	PU Indiana Center for Database Systems	General Dynamics	Information-In-Place	Crane as a source for applications
IU Data and Search Institute	PU Holographic Imaging Project	Northrup Grumman Electronics	Simulex	Northwest Indiana Computational Grid
IU Distributed Sensor Network trial	PU Regional visual Analytical Center		MNB Technologies	Indiana Innovation Network
IU Pervasive Technology Labs			Advanced Process Combinatorics	
IU Advanced Network Management Lab	Notre Dame Center for Complex Network Research (CCNR)		Megaputer	
IU Community Grids Lab	Notre Dame Top 20 in Mathematical Topology		Pricise Path Robotics	
IU Knowledge Acquisition and Projection Lab	Notre Dame Amorphous Computing Project		Lite Machines	
IU Open Systems Lab	ISU Institute of Cognitive Computing Technology Lab		Humanizing Technologies	
IU Scientific Data Analysis Lab	IPFW Institute for Decision Science and Theory		Sim2K	
IU Visualization and Interactive Spaces Lab	Ball State Software Engineering Research Center		Wolf Technical Services	
			Savitar	
			ChaCha	
			Zoom Information Systems	
			American Aviation	
			PC Krause and Associates	

There is a foundation for immediate action as the following initiatives have been identified by the Hoosiers already involved in this focus area:

- Advanced Military Informatics Opportunities list based on 50 Top Indiana Brains
- Advanced Military Informatics Vision 2012 – a strategic long-term vision for leveraging Indiana's Informatics capabilities into opportunities
- Sensors to Information Analysis Challenge – a state-wide or nation-wide "DARPA-like" challenge for best development & utilization of sensor data to usable, analyzed information
- Statewide Informatics/Knowledge Management Higher Education Curriculum

- Mixed Reality Competency Center, Challenge – a "DARPA-like" challenge and/or a center of excellence for showcasing visioning, heads-up display, simulation and other mixed reality technologies and applications.

There is also a crosscut of this focus group with the Defense Electronics and Services and Support focus areas.

PROPOSED TEAM ACTION PLAN

IN YEAR ONE:

1. Convene Indiana's Top 50 Brains in Advanced Military Informatics doing a show and tell with each other. Output: Indiana Advanced Military Informatics Capabilities/Inventory list and beginnings of a glossary of standardized terms
2. Create a Community of Interest.
3. Make sure architects can transform the Capability/Inventory list into an opportunities list.
4. Communicate to university presidents that this needs to be a clear discipline area.
5. Build a picture of what Indiana is like in 5 years including such visions as students coming to Indiana universities for this area and companies coming to Indiana to set up shop, new startups.
6. Start a Sensor to Information Analysis challenge. This has as high payoff. It must stress collaboration.
7. Brief this focus area to Indiana's Congressional delegation so that they keep an eye open for opportunities.
8. Choose a leader who would then lead the group in producing a plan.

There is a dependency on entities outside this team to perform the following activities to meet this plan: a state marketing plan and a briefing on this report with the new university presidents and Ivy Tech's new chancellor. The team expects that it will participate in the planning and support for these activities.

IN YEAR TWO:

1. Identify applications of the Capabilities/Inventory List by getting Contract Manager surrogates within Indiana, such as prime contractors.
2. Review (or test run) of the Advanced Military Informatics target actions in Year 1 to spot needed changes and new initiatives.
3. Two academic programs in Advanced Military Informatics. Need to be creative in fitting Military Informatics into existing University programs.
4. Informatics/Knowledge Management degree programs at multiple campuses - consistent across campuses
5. Place students in jobs that are in this focus area to show other students that this is a good career path.
6. Obtain further funding for initiatives and infrastructure.
7. Enhance the Informatics Challenges.

There is a dependency on entities outside this team to perform the following activities to meet this plan: continual enhancement of a database for locating potential partners and a situation alert system. The team expects that it will participate in the planning and support for these activities.

IN FOLLOWING YEARS

1. Statewide initiative for Informatics/Knowledge Management degree programs
2. Four campuses that have instituted the above degree programs.

RECOMMENDED STAKEHOLDER ACTIONS

This focus area will depend on specific actions on the part of stakeholders within the state.

PUBLIC/PRIVATE DEFENSE ASSETS CONSORTIUM

- Facilitate better collaboration (meetings) between commercial companies, between universities, and Federal and State legislators to build relationships, catalyze efforts to address specific initiatives/contract opportunities, and discuss issues.
- Organize a standard tour for DOD and Homeland Security program managers and science officers to make them knowledgeable of Indiana's AMI assets.
- Create a virtual tour for DOD and Homeland Security program managers and science officers to make them knowledgeable of Indiana's AMI assets.
- Create and manage a program for marketing Indiana as a defense technologies state.
- Enable small companies and academic technology transfer organizations to reach out to large companies for commercialization assistance.
- Work with the DOD Mentor-Protégé Program or set up a statewide program to mimic it to create relationships between companies already working with DOD and Homeland Security and those seeking to do so.
- Scan for and communicate BAA's and SBIR's that apply to this focus area as well as provide information on prime contractors who are interested in responding to them.
- Tap Wright Patterson AFB for opportunities, they have a lot of SBIRs and BAAs of interest (for example, in HyperSpectral Intelligence).
- Provide a clearinghouse to shop Indiana SBIR's leaving Phase 2 to Indiana Prime Contractors and to outside the State.
- Correlate SBIRs/STTRs to BAAs to enhance commercialization opportunities and find new sources of funds for functionally extending a military informatics technology.
- Sponsor an informatics based challenge that allows technology to be wedded, for example, creating a serious game for Urban Warfare or Border Patrol or Force Protection.

STATE GOVERNMENT

- Enhance the statewide database of available state assets. A use consistent, universal definition so that assets aren't lost as is common in a novel area like this one.
- Staff an advocate in Washington D.C. to help find opportunities in military informatics within DOD and Homeland Security and to promote Indiana generated proposals in this focus area.
- Be a customer for Informatics prototypes and solutions.

INDUSTRY

- Prime contractors pay subcontractors to do work through small business set asides.
- Be proactive with academia in driving the underlying curricula for this focus area such as computational science, knowledge management, and cognitive sciences.
- Promote military informatics as a distinctive field of endeavor.
- Create a risk mitigation system for customers who might be concerned about working with a small AMI company because it is not as permanent nor reliable as a major prime contractor providing the same technology

ACADEMIA

- An academic skills and projects database that uses consistent, universal definitions
- Institute academic degree programs in military informatics and do it on a fast track basis
- Conduct conferences and symposia in this focus area.
- Take a leadership role in spawning startups.
- Staff proposal review committees at DARPA, Science Boards of the armed services, training commands, etc.
- Improve the technology transfer process to release more technology for commercialization by commercial state assets without endangering the latter's competitiveness.

IMPLEMENTATION PLAN

ORGANIZATION AND SUSTAINABILITY

For ultimate success, this focus area must have some initial wins to show that collaboration is effective and to attract other companies, especially SMEs not yet doing business with the military and homeland security, into the effort of gaining money from these customers. This means that the organizational structure has to avoid the heavy handed processes of the past in proceed in a self-organizing network manner.

Gaps in assets have been identified that must be resolved by either internal (to the state) development, finding out of state partners, or attraction into the state for: IV&V, human factors, and modeling of scalability of an algorithm. In addition, new infrastructure is needed in areas of a roadmap, training support personnel, new legal practices, and creating the net of relationships in such a new and ever-changing white space.

This focus area needs to become critical mass in two years to stay ahead and ultimately sustain.

METRICS

The following parameters are recommended as a source for three to seven vital performance measures:

- Dollars per number of contracts with key sponsors
- Number of patents, publications, and symposiums
- SMEs tapped by Federal Agencies as experts
- Number of universities with degree programs and # students graduating
- Number of new collaborations each year between industry and academia and also large and small companies
- Number of patents or other IP measure within Indiana in the area of informatics across academia and industry
- Number of Informatics related jobs in the state as a function of time
- Number of general publications to get academics
- Number students placed
- Enrollment in military informatics and allied curricula
- Diversity of companies, locations, customers

SUMMARY

Of all the focus areas identified in the Defense Assets Study, advanced military informatics has the greatest opportunity to exploit the intellectual assets of the state's universities. With an effective process for transferring Intellectual Property to commercial products and services, this potential can be realized. The best way for this to happen is to work in collaboration to provide complete solutions and assure that the supporting processes are implemented correctly. To be successful, the Advanced Military Informatics focus action team must achieve the following objectives:

1. Access to a central "consortium" that can manage marketing, the high level customer relationships, centralized infrastructure, a reputation for success, high level state relationships, and growth/renewal.
2. Active, ongoing programs to recruit, involve, and assist inexperienced SMEs in obtaining Military Informatics business
3. An improved process for getting IP out of Indiana Universities so that it can be commercialized
4. A partnership of all the players with a strong teaming attitude and knowledgeable leaders acting as catalysts not overlords
5. Attracting, retaining, and upgrading military informatics knowledge and tradecraft

TRANSPORTATION SYSTEMS HIGH LEVEL BUSINESS PLAN

Transportation systems provides value add for Military, Homeland Security, and Aerospace platforms through major subsystems such as engines, transmission systems, landing systems, and controls. Engines include rockets, diesels, jets, and rockets. Platforms of interest include lightweight armored vehicles (the HumVee replacement), small passenger jets, small- to mid-sized advanced cargo planes, helicopters, and micro satellites. This focus area is centered in one of the state's key industries and provides a new base for retaining and obtaining new business from DOD and the Department of Homeland Security. The military business depends on domestic production and is immune to off shoring thus protecting Indiana jobs.

DETAILED DESCRIPTION:

These subsystems are geared to meet the following inter related requirements for:

- Heat mitigation
- Weight to performance
- Compactness
- High speed
- Fuel efficiency
- Low environmental impact
- Ruggedness
- Low maintenance requirements
- Where needed, personnel safety (e.g., armor and seats/in cab protection)

The components and materials that go into this target embrace functions such as research, development, design for manufacturability, testing, logistics, and maintenance. There is also a crosscut of this focus area with Defense Electronics (sensors, embedded systems, wireless and wired on board communications, command & control components), Future Energy Alternatives (power systems, common fuel, and high density fuel), Advanced Military Informatics (autonomous systems, information management, mixed reality, modeling/simulation) and Services and Support (Product Life Cycle).

Knowledge assets needed in this focus area are: Rapid Prototyping, Composite Materials, Nanotechnology, Advanced Engine Design, Combustion Modeling, Telematics, Power Electronics, Autonomous Operations, Sensors, Fly by Wire, Systems Engineering, Life Cycle Support, Commercialization expertise, and Manufacturing partnerships

IMPORTANCE FOR INDIANA TO FOCUS AND COLLABORATE ON TRANSPORTATION SYSTEMS

The Departments of Defense and Homeland Security are very well funded purchasers of services, and their budgets continue to grow. The SBIR/STTR programs work very well to promote cooking advanced research and helping in new business creation and growth. The State already has the foundational assets necessary to make Indiana a top-tier product and service provider to the federal government, namely an outstanding university system and many second-tier transportation industry system providers and a business-friendly state government executive branch. Indiana does not have to create these foundational elements from scratch.

These customers are traditionally at the leading edge of transportation systems technology and will be in the new systems that are addressing 21st century needs for increased force mobility/protection, energy efficiency, avoidance of foreign dependency, and maintainability. Many have identified these needs as ushering in a next generation of transportation systems centered on alternative power systems, nanomaterials, and distributed sensing and intelligence with an objective of creating versions of vehicles that behave autonomously. Meeting these needs in a responsive way will involve closer integration of R&D, Technology, and Manufacturing as well as the cooperation among a well coordinated team of suppliers of materials, components, sub systems, and services to provide a total, quality solution. It takes a new level of collaboration to accomplish this. When this level is achieved, new opportunities to be leaders in the corresponding civilian markets will open up.

The advantage of doing business with the Military and Homeland Security is that they buy domestic products and keep jobs in country.

Table 29 below indicates the existence of Transportation Systems assets. There are academic assets, mostly at Purdue in W. Lafayette and major vehicle and systems manufacturers at major manufacturing centers in all but the southwestern quadrant where Crane offers services that can be used in this focus area. Numerous small companies are scattered throughout the state, covering such competencies as research on combustion simulation and testing, autonomous vehicles, composites, prototyping, dampening, fuel monitoring/controls, power electronics, and power management.

This focus area can augment the Muscatatuck Urban Warfare Center by providing new transportation options such autonomous vehicles, personnel protection, and heat mitigation. When those units return to their posts, they will be ready, willing, and able to use those advanced military informatics techniques and devices they used in their exercise.

Table 29

INDIANA ASSETS

University	Crane	Large Companies	Small Companies	
PU Birck Nanotechnology Center	Radiation Hardening	Cummins	Aerodine Engineering Group	In Space
PU Zucrow Laboratories	Environmental Testing	Rolls Royce	Air Bouyant	E-A-R Specialty Composites
PU Communication Research Lab	Failure Analysis	AM General (HumVee)	Tri Aerospace	Damping Technologies
PU Plasma Reformer	Acquisition Logistics	Navistar (NE International Truck)	Symphony Motors	CMW
PU School of Aeronautics and Astronautics (Ranked 6th)	System Engineering	Caterpillar	Odyssian Technology	Themco Instrument
IPFW Center for Systems Engineering	Modeling and Simulation	Sikorsky	Lite Machines	Sentilligence
Rose-Hulman		Delco Remy	Indy Robotics LLC	Metaldyne
IUPUI Lugar Renewable Energy Center		Honeywell	Wabash Technologies	Hoffco/Comet Industries
		BAE Systems	Harmon Becker	Kinetic Art and Technology
		GM Allison	Butler Engineering	I Power Energy Systems
		Raytheon	Wolf Technical Services	PowerSys
			Riverside Manufacturing	Total Concepts of Design
			Incerco Technical Ceramics	Anderson Tool & Engineering - space
Other			HK Engine Components	MSP Aviation
Indiana Small Aircraft Transportation Systems Consortium (INSATS)	Indiana Advanced Aerospace Manufacturing Alliance (IAAMA)	International Council on Systems Engineering (Crossroads of America Chapter	Ball Systems	Midwest Aerospace
Skilled Manufacturing Workforce	Electrocore Consortium branch		Visteon	Prototype Development

Indiana's assets, especially in smaller electronics engineering companies, will enable early prototypes to be coordinated within the state and through the new Urban Warfare Center centered around Muscatatuck. This will give those companies an advantage in introducing their new technology directly to the operational military and homeland defense units for assured and faster acceptance by the ultimate end user – the warfighter, the first responder, and the operations planner.

There is a foundation for immediate action as the following initiatives have been identified by the Indianans already involved in this focus area:

- Major primes/small business Alliance patterned after the Indiana Advanced Aerospace Manufacturing Alliance
- Power Propulsion/Conversion/Management
- System Engineering Academic Program
- Future of Transportation Vision Statement
- Opportunities Fair
- Customer requirement Show and Tell
- State level trade show market program
- Indiana Aerospace Consortium, modeled after the Ohio Aerospace Institute

PROPOSED TEAM ACTION PLAN

IN YEAR ONE:

1. Convene Opportunity Fair.
2. Convene a customer requirement Show and Tell.
3. Convene a how to do business with DOD conference.
4. Exhibit as a state at a trade show, for example, MBAA, Regional Airline (will be in Indianapolis), Propulsion Conference, AIAA (will be in Oshkosh).
5. Build a database of companies with competencies and capabilities.
6. Have a tangible result for multi stakeholder collaboration to show companies the benefit of being in the initiative, especially a small business.
7. Conduct a Technology fair for small technology firms. The current industry fairs are too broad. This opportunity fair has to be focused to technology rather than supplies.
8. Pick one or two initiatives coming from government, and put on a full force, collaborative effort to show an early win.

There is a dependency on entities outside this team to perform the following activities to meet this plan: a state marketing plan, and a briefing on this report with the new university presidents and Ivy Tech's new chancellor. The team expects that it will participate in the planning and support for these activities.

IN YEAR TWO:

1. Win/execute above initiatives
2. Continue to bid collaboratively on initiatives.
3. Evaluate the progress of the focus action team to identify improvements and next steps.
4. Enhance the online system of opportunities.
5. Enhance the discovery process of year one by outreach to other big customers (PW, GE, etc).
6. Have manufacturing czar in place.
7. Have the small business group in place.

RECOMMENDED STAKEHOLDER ACTIONS

This focus area will depend on specific actions on the part of stakeholders within the state.

PUBLIC/PRIVATE DEFENSE ASSETS CONSORTIUM

- Enlist major contractors and DOD/DHS agencies to show small companies how to do business with them.
- Facilitate better collaboration (meetings) between commercial companies, between universities, and Federal and State legislators to build relationships, catalyze efforts to address specific initiatives/contract opportunities, and discuss issues. For small businesses, this involves reaching out to organizations outside Washington D.C. such as national labs and out-of-state prime contractors.
- Organize national meetings with government program managers and chief technology officers to learn about capabilities needed by DOD and Homeland Security and to familiarize them with Indiana assets.
- Create a facility to provide a virtual tradeshow to address the cost of running a tradeshow, attending a tradeshow, and exhibiting at a tradeshow.
- Create a Commercialization Center for Defense SBIR Phase II companies to find funding, manufacturing partners (preferably in state), and identify civilian potential.
- Create and manage a program for marketing Indiana as a defense technologies state.
- Provide an information source for new SBIR/STTR, BAAs and other opportunities.
- Assist in attracting Angels, VCs, and Strategic Partners for funding Transportation Systems startups.
- Involve the Transportation Systems focus area team in Indiana's 2035 vision.

STATE GOVERNMENT

- Provide education for a small company new to Defense procedures and terms. DOD contracts are requiring a larger portion of works to done by small and/or minority-owned business.
- Give first-time proposers SBIR proposal preparation assistance.
- Put the 21st Century Fund SBIR matching program on a sustainable basis.
- Institute a quick grant proposal process.
- Own the statewide database of available state assets.
- Staff an advocate in Washington D.C. to help find opportunities in transportation within DOD and Homeland Security and to promote Indiana generated proposals in this focus area.
- Provide tax incentives for companies that use Indiana resources.
- Give incentives for schools to have new curricula in this area.
- When new companies set up shop in the state, have them involve local suppliers.
- At the state level, incentivize a company that builds a new plant to also place an R&D facility with it.
- Encourage more state technology incubator activity.

INDUSTRY

- Lift barriers in the SBIR process for small companies to work with large companies.
- Define the need for systems engineering skill to state's universities and assist in curriculum development and operation.
- Large companies create cross organizational teams with small businesses, academia for targeted development programs that provides a close relationships, no problems, work experience.
- Small businesses use students as interns to keep them in the state.
- Establish a "Welcome wagon" for companies moving into the state.
- Large companies help small companies going after government business with letters of support, access to their facilities, and teaming arrangements.

ACADEMIA

- Train technicians to be generalists so that they can work on next generation transportation systems that combine mechanical, electronic, software, and control systems tradecraft (Mechatronics).
- Provide more generalist education (including advanced degrees) for Aeronautical, Mechanical, Electrical, and Manufacturing Engineering, because they will have to be integrated in the Next Generation of vehicle systems.
- Dramatically expand the Systems Engineering program across the state. This is a very high priority in this focus area because of an existing shortage of this skill. Engage industry to justify and define the curriculum. Involve them in its classes.
- Create a process for companies to use foreign student with Blue Cards where FAR and ITAR allow.
- Improve the technology transfer process to release more technology for commercialization by commercial firms without endangering the latter's competitiveness. This would mean an even quicker process for small businesses because they tend to be more agile.
- Improve a company's access to university resources facilities, research, and researchers, including ability to hire for the summer or on a one-year sabbatical basis.
- Improve the collaboration between the Flagship universities and IVY Tech.

IMPLEMENTATION PLAN

ORGANIZATION AND SUSTAINABILITY

For ultimate success, this focus area must have some initial wins to show that collaboration is effective and to attract other companies, especially SMEs not yet doing business with the government, into the effort of gaining $ from these customers. This means that the organizational structure has to avoid the heavy handed processes of the past and proceed in a self-organizing network manner.

METRICS

The following parameters are recommended as a source for three to seven vital performance measures:

- Job creation directly attributable to incremental government contract work
- Federal government contract $$/capita progress in state rankings
- New business entities created / relocated to state who have been awarded government contracts
- Brain drain reversal
- Availability of additional technicians
- Connectivity
- Dual (civilian) use opportunities

SUMMARY

The Transportation Systems focus area already has a strong position in Indiana. However, there is a next generation of vehicle systems that will be needed by the military and homeland security that will involve new forms and levels of collaboration and an upgraded workforce. To be successful, the Transportation Systems focus action team must achieve the following objectives:

1. Access to a central "consortium" that can manage marketing, the high level customer relationships, centralized infrastructure, a reputation for success, high level state relationships, and growth/renewal.
2. Active, on-going programs to recruit, involve, and assist inexperienced SMEs in obtaining business from DOD and DHS.
3. An improved process for getting IP out of Indiana Universities so that it can be commercialized.
4. A partnership of all the players with a strong teaming attitude and knowledgeable leaders acting as catalysts not overlords.
5. Attract, retain, and upgrade transportation systems resources, knowledge, and tradecraft in the state.

DEFENSE ELECTRONICS HIGH LEVEL BUSINESS PLAN

Defense Electronics involves the design, manufacture, and product life cycle support of systems critical to the way the military and homeland security conducts those operations. These systems involve command and control and wireless communications. The strength and number of the State's assets in this focus area indicates that this is a critical mass that will generate even more business from this customer set through greater success of the existing prime contractors, the mission of Crane for defense electronics, and the capacity of the academic institutions to produce needed skills and IP. Because of the complexity of modern electronic system in this customer set, there is a compelling case for collaboration that would involve not only current organizations working with this customer set, but also new electronics organization that are not yet doing business with DOD or Homeland Security.

DETAILED DESCRIPTION:

This focus area addresses electronic products, systems, and services to assist military, homeland security, and aerospace operations that would involve:

- Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR)
- Voice/data/video communication networks and joint radio programs within the battlefield/disaster
- Operation and up to higher levels of command
- Sensor networks
- Radar
- Display Systems
- High Reliability Electronics (including Radiation Hardening and Proton Analysis)
- Power Amplifiers
- Electronic Warfare (Jamming, Directed Energy, and Weak Signal Detection; Lethal or non-lethal).

This focus area encompasses the technology insertion, development, manufacturing, product enhancement, and life cycle management of products and services.

Military challenges in this area include: avoidance of detection and interference with civilian operations through such technological strategies as frequency agile radios and exploitation of the extreme limits of the radio spectrum (Millimeter waves, Free Space Optics, Ultraviolet), self-forming networks of personnel, assets, and networks with increasingly smaller packages, cost, and power consumption, peer networking among warfighters and the command structure, allowing the warfighter to process more information through techniques such as mixed reality and 3D visualization, and the coexistence and migration of legacy radio systems with/to modern digital radio systems.

Homeland defense operations (i.e., First Responder, Border Patrol, and Coast Guard) have these same challenges. Solutions to these challenges also have potential with America's coalition partners and in its covert intelligence operations.

Products and services in this area must support net centric operations as well as meet key requirements in equipment protection, reliability, and the weight/size/power profile.

Platforms for these electronics subsystems and components include aircraft, land vehicles, sea-bound vessels, missiles, and space and near-space vehicles in piloted and autonomous modes, as well as the warfighter (personnel in homeland security roles) and sensor network devices.

Knowledge assets needed in this focus area are: Rapid Prototyping, Composite Materials, Nanotechnology, Radio Frequency Engineering, Radio frequency terrain modeling, Radio testing, MEMS, Software Defined Radios, Ad-Hoc Networks, Systems Engineering, Power Management, and Electronics Design and Test Software.

IMPORTANCE FOR INDIANA TO FOCUS AND COLLABORATE ON DEFENSE ELECTRONICS

DOD and Homeland Security mount complex operations that are dependable and easy to standup and maintain. They call this being Net Centric. It has been the driver for transformation in the military for almost a decade and, as the Katrina operation underscored, a much desired capability to develop for national disasters (natural or man made). Elements consist of:

- Command and control centers that include Intelligence gathering (called C4ISR in the military)
- Interfacing to Heterogeneous wireless networks in a seamless manner
- Protection from all forms of disruption
- Electronic systems for force protection and attack
- Countermeasures
- Intelligent systems
- Visualization and training
- Autonomous systems

Opportunities to provide and enhance such networks are being now being announced by the customers targeted by this study. The dollar potential is very large because this amounts to creating sophisticated networks with state of the art technology (e.g., ad hoc networks, satellite communications, and mixed reality information visualization) that is equivalent to the size of today's commercial networks in a region.

No one company has the one solution and that is why DOD and Homeland Security have stressed organizations banning together to give them the best solution. This is not an ability one state has within its borders. In fact, it is wise politically to have multi-state representation in a bid. However, the Defense Electronics knowledge assets and relationships resident in Indiana can form a basis for successful team bids by prime contractors within and without the state. The plurality of these assets and relationships means that Indiana can spread the risk in winning some part of a large opportunity within its borders.

The increase in threat vectors faced by the United States has sped up the military and homeland security generation of requirements and the need to quickly satisfy them. This can only be supported by networks of clusters that contain the tools for development already in place. This has been proven by the successes of Florida, California, Virginia, and recently Alabama.

Contracts in Defense Electronics are technology driven and will need a higher level of skills that will reduce the brain drain and allow Indiana to move up the food chain as manufacturing leaves the state. Since the Indiana workforce is a stable one, it can be transitioned to Defense Electronics easily.

There is an accelerator built into the Defense Electronics business that was not the case for Automotive and earlier Consumer Electronics. Where defense platforms change every 20 to 30 years, defense electronics systems change every three years and are refreshed every 18 months. This enables greater revenue and puts an emphasis on building new knowledge and tradecraft.

Additional assets are available that have been addressing the commercial marketplace, and these assets represent a multiplier for defense/homeland security revenue. Many commercial markets are trending to have their manufacturing and support services go offshore and, in some cases, engineering services. Department of Defense business will tend to stay in the United States. Commercial electronics firms offer a path for Defense Electronics technology with a civilian use.

Table 30 below indicates the existence of both Defense Electronics (current) and Commercial Electronics (potential) assets. They are spread throughout the state with major clusters at W. Lafayette (Purdue and small electronics companies), Fort Wayne (five prime contractors involved), Crane, and Central Indiana (automotive heritage). These assets include such unique identifiers as: being a prime for the current battlefield radio system SINCGARS (IT&T in Fort Wayne); creating a balloon based mesh network (StratoStar in Upland); offering a radio frequency test range (Crane), national leadership in Electronic Warfare (Crane), having a legacy electronics production facility (CRANE), competency in radiation hardening design, analysis, and testing (numerous locations), and possessing state-of-the-art knowledge in software defined radios (Raytheon).

Indiana's assets, especially in smaller electronics engineering companies, will enable early prototypes to be coordinated within the state and through the new Urban Warfare Center centered around Muscatatuck. This will give those companies an advantage in introducing their new technology directly to the operational military and homeland defense units for assured and faster acceptance by the ultimate end user – the warfighter, the first responder, and the operations planner.

Table 30

INDIANA ASSETS

University	Crane	Large Companies	Small Companies	
IU Cyclotron Program	UAV Competencies	IT&T (SINCGAR)	Omega Wireless	Tech Shot
PU Center for Advanced Manufacturing	Full spectrum Radar Engineering Support	Raytheon	Mudawar Thermal Systems	Technology Management Group
PU Communication Research Lab	Electronic Warfare	General Dynamics C4 Systems	Thorrn Micro Technologies	Broadcast Services (aka Teleplex)
PU Video and Image Processing Lab	LINAC	BAE Systems	L.S. Technology	PTS Electronics
PU Digital Signal Processing Lab	Microwave Technologies	Delphi Electronics & Safety	Odyssian Technology	Kimball Electronics Group
PU Electronic Image Systems Lab	Electro-Optical Systems	Siemens VDO	StratoStar Systems	Logikos
PU Multimedia Test Bed	Radiation Hardening	EG&G	Next Wave Systems	CTS
PU Wide Band Gap Research	Radio Frequency Testing Facilities	SAIC	Attero Tech	Jacyl Technology
PU CERIAS Fempto Second Optical Wave Shaping	Environmental Testing	Northrup Grumman	Trilithic	PC Krause and Associates
			Fortune Industries	
PU "Cloaking device"	Failure Analysis	**Other**		XADS
IPFW Center for Systems Engineering	Acquisition Logistics	Network Urban Operations Testbed	Indiana Space Grant Consortium	International Council on Systems Engineering (Indiana/Illinois and Crossroads of America chapters)
Taylor University LINAC	System Engineering	Air Wing – Fort Wayne	Electricore Consortium branch	
Joint University/ Business Video Compression project	Modeling and Simulation		Indiana National Defense Industrial Association	

There is a foundation for immediate action as the following initiatives have been identified by the Hoosiers already involved in this focus area:

- Electronics Analysis Test Bed
- Capture Missile Defense Agency business during move to Alabama
- A/D Microchip Competency Center
- Indiana Defense Network Grid
- UAV Center of Excellence
- RF Consortium
- Counter-IED Center of Excellence
- Networked Urban Operations Test Bed Partnership

There is also a crosscut of this focus group with each of the other identified focus areas, as electronics and wireless communications play an important part to each of these.

IN YEAR ONE:

1. A review of current state Defense Asset limitations for growth and company involvement and total picture (across companies)
2. A leadership team for Defense Electronics
3. A community of Interest with 50 companies registered
4. A conference
5. Two early success stories for collaboration
6. Establish (fund) this focus area as a Not For Profit as a coordinating arm (brokering, marketing etc.)
7. Identify three to five sub areas and develop Centers of Excellence around each; each with a roadmap and vision.
8. Identify a path for finding out of state partners/assets, starting with University of Illinois and Wright-Patterson AFB.
9. Identify/brief Legislators (state and federal) about Defense Electronics – its potential for the state, plans, and key needs from government

There is a dependency on a Defense Assets wide group to perform the following activities to meet this plan: a state marketing plan, a briefing on this report with the new university presidents and Ivy Tech's new chancellor, and elevation of importance of regional campuses in Manpower Development. It is expected that the team will participate in the planning and support for these activities.

IN YEAR TWO:

1. Be the major driver and contributor to getting the Networked Urban Operations Test bed (framework) established.
2. A Future Capability Operational Planning exercise to get in front of the government bidding process that is most time already wired to a specific team
3. Bring in national conferences involving Defense Electronics.
4. Engage state level agencies to get commitment for Centers of Excellence.

A Defense Assets-wide group to perform the following activities to meet this plan depends on the continual enhancement of a database for locating potential partners and a situation alert system. It is expected that the team will participate in the planning and support for these activities.

RECOMMENDED STAKEHOLDER ACTIONS

This focus area will depend on specific actions on the part of stakeholders within the state.[9]

PUBLIC/PRIVATE DEFENSE ASSETS CONSORTIUM

- Facilitate better collaboration (meetings) between contractors, between universities, and Federal and State legislators to build relationships, catalyze efforts to address specific initiatives/contract opportunities, and discuss issues.
- Organize national meeting with government program managers and chief technology officers to learn about capabilities needed by DOD and Homeland Security and to familiarize them with Indiana assets.
- Create a Commercialization Center for Defense SBIR Phase II companies.
- Create and manage a program for marketing Indiana as a defense technologies state.
- Attract angel/VC for IN Defense Electronic funding.
- Provide guidance (how to, best practices) to focus action teams for creating a Center of Excellence.
- Work with Crane to tap into its acquisition authority, e.g., UAV payloads.
- Encourage entrepreneurship in Defense Electronics. This focus area can benefit from new ideas because of its high technological turnover (demand) and the abundance of electronic engineers.

STATE GOVERNMENT

- Provide education for a small company new to Defense procedures and terms. DOD contracts are requiring a larger portion of work to be done by small and/or minority-owned business.
- Give first-time proposers SBIR proposal preparation assistance.
- Put the 21st Century Fund SBIR matching program on a sustainable basis.
- Legislation that clears the way for advanced airborne technologies testing in designated areas of state. This would bring the airframe manufacturer to the defense electronics prime for quicker time to user, especially when used in conjunction with the Urban Warfare Training Center.
- Institute a rapid response grant proposal process.
- Own the statewide database of available state assets. The current prototype was not useful in locating Radio Frequency oriented assets.
- Facilitate the wireless test bed.
- Facilitation bridge funding program to provide funding for an awarded contract while the contract is being written and before 1st payment

INDUSTRY

- Develop a program and strategies to involve engineering students who are foreign nationals. A hallmark of having a world class Electronics program is that it attracts the brightest from around the world. It is important for a company to attract these students as permanent hires and make them productive on DOD work as soon as possible.
- Create a Defense Electronics grid for large computing capacity needs patterned after I-Light (the state university grid).
- Encourage employees to work on university project (and universities to include company people in their projects. (See academia's need to protect company IP below)
- Matching scholarships for Juniors and Seniors

[9] Some of these actions have been collected across focus areas and will be presented as composite strategic recommendations later in this report. Where they are unique to Defense Electronics they have more detail.

- Set up technology networking among academics and companies for specific areas (for example, Radio Frequency).

CRANE

- Shift work to contractors in Westgate Technology Park as much a possible. This in turn requires academia to shape a workforce to meet the needs of the offloaded work.
- Continue to provide the facilities of the Technology Engagement Office and expand its capabilities for Defense Electronics.

ACADEMIA

- Dramatically expand the Systems Engineering program across the state. This is a very high priority in this focus area because of an existing shortage of this skill.
- Engage students in industry-based problems/pursuits.
- Provide education in program management. This is a high priority because of the complexity in working on defense electronics projects.
- Improve the technology transfer process to release more technology for commercialization by commercial state assets without endangering the latter's competitiveness.
- Improve a company's access to university resources.

ORGANIZATION AND SUSTAINABILITY

For ultimate success, this focus area must have some initial wins to show that collaboration is effective and to attract other companies, especially SMEs not yet doing business with the government, into the effort of gaining money from these customers. This means that the organizational structure has to avoid the heavy-handed processes of the past and proceed in a self-organizing network manner.

METRICS

The following parameters are recommended as a source for three to seven vital performance measures:

- # companies and # employees
- Growth in total $$ (by university, industry, color/type, etc.)
- Patents and publications
- Number of funded COEs
- A network of qualified vendors that can meet contractual requirements.
- Mentor/Protégé program that helps new companies understand processes.
- Track the number of contract based collaborations between large and small companies and industry and universities – should be increasing over time
- Win percentage of contracts versus submissions
- Conferences
- Growth in national rank in Defense Electronics, by way of other states
- Number of IP and internships and industry academic loans

SUMMARY

Defense Electronics already has a strong position in Indiana. However, the scene is shifting to requiring more collaboration to win and delivery contracts. A focus action team, such as the one recommended here, must achieve the following Goals:

1. Access to a central "consortium" that can manage marketing, the high level customer relationships, centralized infrastructure, a reputation for success, high level state relationships, and growth/renewal
2. An active, ongoing program to recruit, involve, and assist new SMEs in obtaining Defense Electronics business
3. An improved process for getting IP out of Indiana Universities so that it can be commercialized
4. A partnership of all the players with a strong teaming attitude and knowledgeable leaders acting as catalysts not overlords
5. Attracting, retaining, and upgrading defense electronics knowledge and tradecraft

SERVICES & SUPPORT HIGH LEVEL BUSINESS PLAN

Services & Support involves the provision of products and services that enhance the usefulness and extend the life of current military, homeland security, and aerospace platforms. Collaboratively, Indiana companies will respond to requests from the Military Commands dealing with the battle space and its supply chain to provide responsive, ingenious, and effective solutions for repair, system enhancement, manufacturing process improvement, testing, inspection, quality assurance, failure analysis, adaptation to new uses, and field support. This focus area takes advantage of native skill sets that are oriented to problem solving. The ability to resurrect an existing system, weapon, or support equipment and even enhance its functionality is especially valuable to the military in this time of war. The current trend in the military is to stretch out the time between system replacement with a new generation makes keeping existing systems useful much more important. Indiana's rich engineering services, such as failure analysis, failure prediction, and component redesign, can reduce the likelihood of failure and reduce field maintenance costs.

DETAILED DESCRIPTION:

These services include technology insertion, end of life replacement parts, ultra-machined retrofits, aftermarket parts, composites, and new functions in existing packaging. The collaboration also seeks to find companies to assume the supply, repair, and enhancement responsibility for orphan and alien parts and assemblies.

This focus area meets military needs to avoid being in the maintenance/enhancement business and to provide highly-scalable solutions under urgent theater of battle conditions. Of particular concern are legacy systems where the broken part may not be stocked anymore or does not meet new regulations/specifications. In order to return the legacy system to action, it is necessary to reverse engineer that part before the replacement can be made. To be cost effective, this may also involve using an obsolete machine tool and legacy skills to make the replacement part. The ability to respond quickly involves skills in sustainment engineering and obsolescence management that can help a company become the vendor of last resort. Another key service is to provide feedback on supportability when designing new system. Yet another important driver is in returning the military asset to functioning status quickly.

A similar need exists in Homeland Security for its agencies, such as the Coast Guard and the Border Patrol.
Knowledge assets needed in this focus area are: Rapid Prototyping, Materials Engineering especially Composites, Nanotechnology, Ultra precision machining, FAA Qualified procedures, Failure Analysis, Computer programming, Embedded Systems, and Life Cycle Support.

IMPORTANCE FOR INDIANA TO FOCUS AND COLLABORATE ON SERVICES & SUPPORT

DOD and Homeland Security are increasingly relying on fielded equipment to get the job done. This has been reflected in the DOD budget's shift from new programs to Operations and Maintenance as related in Part 2 of the Defense Assets report. This interestingly mirrors the trend in Indiana's manufacturing industry from new platforms and major subsystems with the focus of R&D to product enhancement and service. For example, service for HumVees has become a booming business for AmGen. In addition, the major prime defense contractors who are in the state are natural hosts for Services and Support contracts to reduce administration overhead, management resource, and risk for the small businesses who will be participating in this focus area.

The fact that some subsystems are still developed in Indiana, like the jet engines and gas turbines at Rolls Royce and diesel engines at Cummins, will be helpful in getting a focus area like this jump-started, as it will provide services and support for them. This also helps those companies provide business to small companies under contract guidelines. However, the ultimate customer will be the Defense Logistics Agency who oversees the product life cycle for DOD.

Indiana's strength lies in its expertise and excellence at translating an obsolete part/component into a modern functioning part. This applies to a large number of workers and firms. The advantage of this customer set is that the work will not be sent offshore.

The goal of the Services and Support focus action team is to make Indiana the thought leader and the standard setter for the Departments of Defense and Homeland Security in Life Cycle Support.

Table 31 below indicates the existence of known Services and Support assets in Indiana. However, it is estimated that there are thousands of similar assets spread around the state. The assets displayed here are spread throughout the state with major clusters in Lafayette (Purdue's Manufacturing-oriented centers), Fort Wayne (four prime contractors involved), the Crane area with Crane and two prime contractors, and a multitude of small specialty shops working mostly in automotive related specialties.

Table 31

INDIANA ASSETS

University	Crane	Large Companies	Small Companies	
PU Laser Based Manufacturing Center	Environmental Testing	Rolls Royce	Thermophsical Properties Research Laboratory	Anderson Tool & Engineering
PU Laser Micro-Fabrication Center	Contract Services	Cummins	Aerodine Engineering Group	Aerodyn Engineering
PU Materials Processing and Tribology Center	Failure Analysis	Navistar	E-A-R Specialty composites	HUPP Aerospace
PU Clean Manufacturing Technology and Safe Materials Center	Acquisition Logistics	AM Genearl	Smiths Aerospace	Air Bouyant
PU Production Control, Robotics, and Integration Software Skills	System Engineering	Raytheon	Allied Specialty Precision	Precision Piece Parts
PU, IU, and Notre Dame Composite Project	Reverse Engineering Services	ITT	Delaware Machinery	Kensington Machine Products
IPFW Center for Industrial Innovation and Design	Legacy System Manufacturing	Northrup Grumman	M4 Sciences	Prototype Development
PU Institute for Defense Innovation	Obsolescence Management	BAE Systems	Creative Coatings	CMW
		EG&G	Noel-Smyser Engineering	Techshot
		SAIC	Next Wave Systems	Logikos
		Honeywell Braking Systems	MSP Aviation	Thomas and Skinner
			Pyromation	Indiana Research Institute
			Makuta Technics	Burris Engineering
			SCHOTT	Incerco
			Damping Technologies	PTS Electronics
			Millennium Industries	Information-In-Place
			Manufacturing and Technology Center	Imaginestics
			DaVinci	Odyssian Technology
			Mudawar Thermal Systems	Trilithic
			GFT	MLM Enterprises
			Bentz Transport	Delaware Machinery & Tool
			TCM Network	Quality Steel Treating
			Total Concepts of Design	

These services and support assets can be leveraged to introduce enhanced legacy systems to units during exercises at the Muscatatuck Urban Warfare Center. Additionally, those units offer an excellent opportunity to create prototypes of these improvements and gain valuable feedback about use and possible improvement in preparation for re-introduction to combat units.

There is a foundation for immediate action as the following initiatives have been identified by the Hoosiers already involved in this focus area:

- Enhanced Support Facility for Distance Support
- Database of capabilities with image matching feature
- Repair Engineering curricula and Degree Programs
- Institute of Repair Excellence ("MASH"), extend with other services
- Reverse Engineering Center
- Repair Mentor Program
- Repair Certification Standards/Best Practices -common rules, tools, templates, procedures
- Exploration of possibility of obtaining a MANTECH center

There is also a crosscut of this focus area with the Defense Electronic, Future Alternative Energies, and Transportation Systems focus areas.

PROPOSED TEAM ACTION PLAN

IN YEAR ONE:

1. Institute a Public/Private clearinghouse as a neutral database. Clearinghouse becomes capable of recommending a list of companies that can meet a basic set of requirement.
2. Create a DB that could locate a company that could do work.
3. Produce a marketing plan to make key customers aware integrated with the State marketing plan.
4. Find a funding source for a conference in the December time frame that's on repair capabilities.
5. Create collateral and a display for that conference.
6. Pilot of five companies for a reverse engineering service (Steps: scan, material analysis, quick mold, cast, Finish, and Test) with a certification process. This pilot would be sourced from other companies' obsolete, alien, and stranger parts. The pilot would be for one prime.
7. Develop a plan for degree level education in Repair Technology.
8. Develop a mentor program in repair tradecraft to also be used to supply teachers for above curriculum.
9. Institute a mechanism to get business certified for doing military systems repair. It would be a repeatable process – common rules, tools, template, and procedures for small businesses to work together for proposal submission. This year would focus on a single prime command or command.
10. Win some early repair contracts for consortia of companies to show success.
11. Extend the list of potential Defense Assets services and support firms in the supply chain to see how large this team would be at a topical level.
12. Resolve Crane's critical needs. Demand on Crane from within the military is outstripping the resources both inside Crain and at its subcontractors.

There is a dependency on entities outside this team to perform the following activities to meet this plan: a state marketing plan, training source for how to win DOD/DHS contracts and administrating them, hosting of the above planned database and a briefing on this report with the new university presidents and Ivy Tech's new chancellor. The team expects that it will participate in the planning and support for these activities.

IN YEAR TWO:

1. Enlist and engage mentors in the mentor program.
2. Measure the performance of the focus action team in year one.
3. Prototype concurrent repair design with next new product at one prime. The concept is to provide "Total Care" not through repair, but through the lack of need for it.
4. Expand the reverse engineering service beyond one prime.
5. Obtain sustainable funding.

To meet the plan, there is a dependency on entities outside this team to perform continual enhancement of a database for locating potential partners and a situation alert system. The team expects that it will participate in the planning and support for these activities.

The focus action believes it needs to reach prominence for Indiana in two years, no more than three.

IN YEAR 3

1. Have an implemented program for a degree in Repair Technology.

IN FOLLOWING YEARS

1. Extend "Total Care" to legacy systems for a profit.

RECOMMENDED STAKEHOLDER ACTIONS

This focus area will depend on specific actions on the part of stakeholders within the state.

PUBLIC/PRIVATE DEFENSE ASSETS CONSORTIUM

- Facilitate better collaboration (meetings) between commercial companies, between universities, and Federal and State legislators to build relationships, catalyze efforts to address specific initiatives/contract opportunities, and discuss issues.
- Organize national meeting with government program managers and chief technology officers to learn about capabilities needed by DOD and Homeland Security and to familiarize them with Indiana assets.
- Create and manage a program for marketing Indiana as a defense technologies state.
- Work with Crane to tap into its acquisition authority, e.g., UAV payloads.

STATE GOVERNMENT

- Provide education for a small company new to defense procedures and terms. DOD contracts are requiring a larger portion of work to done by small and/or minority-owned business.
- Institute a tax break for training costs.
- Institute a tax break for equipment needed to fulfill a DOD contract.
- Institute a tax break for cost of becoming certified to do DOD business that is permanent.
- Institute a tax break for establishing a unique US. Strategic capability, such as in magnets.

INDUSTRY

- Set up technology networking among academics and companies for specific areas.
- Move pieces of legacy support (e.g., depot services, testing) outside the gate to small businesses.
- Provide a mentor program for small businesses learning how to do business with DOD and Homeland Security.
- Be of assistance to small business in understanding standards, being certifiable and the processes to become certified.
- Have large companies communicate their process requirements to small businesses.

CRANE

- Provide on-site assistance to small companies involved in providing Product Life Cycle services, such as lab access, legacy production equipment, and testing labs.
- Administer access to the Crane Industrial Park.

ACADEMIA

- Develop Repair Engineering Curricula and Degree Programs from Associate to Bachelors to Masters levels. This curriculum must provide more general worker with a combined knowledge and tradecraft in manufacturing engineering, information technology, metallurgy, mechanical engineering, design engineering and technologist. Such education is expected to be a continuing experience.
- Create programs in repair engineering for providing interns to small businesses.
- Find and implement funding for Life cycle R&D.
- Provide university lab access and technical assistance to large and small businesses.
- Create a program for faculty to work in business for mutual exchange of knowledge.
- Improve the technology transfer process to release more technology for commercialization by commercial state assets without endangering the latter's competitiveness.

IMPLEMENTATION PLAN

ORGANIZATION AND SUSTAINABILITY

For ultimate success, this focus area must have some initial wins to show that collaboration is effective and to attract other companies, especially Small Businesses not yet doing business with the government, into the effort of gaining dollars from these customers. This means that the organizational structure has to avoid the heavy handed processes of the past in proceed in a self-organizing network manner.

METRICS

The following parameters are recommended as a source for three to seven vital performance measures:

- # companies involved in the team's initiatives
- Contract wins (#, value)
- Number of collaborations (difficult to quantify)
- New hires/sustained jobs from DOD
- Increase of certified company and percent

SUMMARY

Services and support already has a strong position in Indiana because of the manufacturing skills it has developed over the decades. That experience has mostly been on the production line with a tendency to acquire more specific knowledge and skills. However, the services and support focus now requires a more general approach that leans on collaborating with multiple people and firms to achieve a total solution for increasing integrated and complex components. A focus action team, such as the one recommended here, must achieve the following objectives:

1. Access to a central "consortium" that can manage marketing, the high level customer relationships, centralized infrastructure, a reputation for success, high level state relationships, and growth/renewal
2. Active, on-going programs to recruit, involve, and assist inexperienced SMEs in obtaining product life cycle support business
3. An improved process for getting IP out of Indiana Universities so that it can be commercialized
4. A partnership of all the players with a strong teaming attitude and knowledgeable leaders acting as catalysts not overlords
5. Attracting, retaining, and upgrading services and support knowledge and tradecraft

BIO COLLABORATION HIGH LEVEL BUSINESS PLAN

The Bio Collaboration focus area is the creative collaboration between the Bio/Life Sciences and Military/Homeland Defense assets in Indiana to support the challenges of the Military and Homeland Defense. This focus area capitalizes from the intellectual, business, organizational, and branding assets that have been built up in Indiana over the recent past to where Indiana is now ranked among the top five states in the Bio/Life Sciences. Not only does the business of the Defense Assets customer set add to the justification for new bio/life sciences products, services, and infrastructure but their problem set when solved by Indiana's teams will add to the competitiveness of Indiana in bio/life sciences and assure the future.

DETAILED DESCRIPTION:

Current military challenges, which may be addressed, include:

- Rehabilitating and returning the war fighter to combat involving Life Sciences such as neurology, orthopedics, hematology, and psychology.
- Protecting the war fighter against the impact battlefield injuries through biological approaches such as pain control, trauma/impact assessment, and quick counter responses to wounds
- Analyzing the performance of the warfighter in real time monitoring through sensor vests, helmets, and other apparel) as well as using outcomes data to predict and enhance performance prior to and during an engagement
- Sensing chemical, biological, and radiation agents, specifically, the potential use of CBRNE weapons in response or by accidental discovery
- Quick response to diseases caused by a biological attack
- Equivalent challenges exist for the first responder, border patrol (land and sea) and citizen populations. Such capabilities as incoming package/person scanning and early detection of attack (e.g., Bio Shield for the food supply) in addition to those of the above paragraph are examples.

Knowledge assets needed in this focus area are: Neurosciences, Orthopedics, Chemical Analysis, Bio Sensing, Mass Spectrometry, Pharmaceutical Manufacturing, Systems Biology, Complex Systems, and Grid Computing.

A synergistic effect will more than likely occur between Defense Assets, Bio-Crossroads, and the Advanced Manufacturing/Logistics Initiative.

IMPORTANCE FOR INDIANA TO FOCUS AND COLLABORATE ON BIO COLLABORATION

A large amount of money is spent by DOD and Homeland Security in the area of biotechnology and life sciences for items such as:

- Treatment of combat troops, first responders, civilian populations, veterans, and non-combat personnel
- DOD is the largest healthcare customer in the world. It brings much needed and appreciated assets to world calamities, such as to relieve the impact of earthquakes and tsunami's
- Building sensor networks to detect and defend against chemical, biological, radiological, and nuclear attack
- Training of medical personnel

Because of the volume of casualties, their unique conditions, extreme nature of the environment, and importance attached to rehabilitation, the problems being solved by these customers push the state of science and technology. Intellectual property, products, and services created to address that market will be in a strong competitive position in the commercial market.

Besides its strong capabilities in biotechnology and life sciences, Indiana can provide talented people coming out of its universities trained in useful areas such as sports medicine, trauma, orthopedic therapy, neurology, hematology, and psychology and drug testing. The quality of life is high but wages are moderately low, a good attraction for expanding or new government medical facilities.

As Bio-Crossroads has shown collaboration among the stakeholders is essential in solving the tough problems raised by these customers. Stakeholders in this focus area of the state are collaborative within Indiana, but the need is to collaborate outside the state to maximize the value proposition for these customers.

Table 32 below indicates the extent of the Bio/Life Sciences assets in Indiana that can address military and homeland security opportunities. These assets are very strong and range from academic institutions clustered around IU Medical School, Purdue, IUPUI, and Notre Dame to large companies (pharmaceuticals, orthopedics, and hospitals) to major research centers and a range of small companies involved in chemical and biological sensing, neurological treatment devices, and drug manufacturing equipment.

This focus area can augment the Muscatatuck Urban Warfare Center by training units in new procedures and devices in parallel with urban training exercises.

Table 32

INDIANA ASSETS

University	Large Companies	Small Companies		Other
IU Medical School Stark Neurological Research Institute	Eli Lilly	Yinnel Tech	2K Corporation	INCAPS
IU Medical School Department of Psychiatry	Roche Diagnostics	Andara Life Science	BioVitesse	Inproteo
IN Spinal Cord and Head Injury Research Center	Pfizer	Lafayette Instrument	Prosolia	Indiana Center for Microbiology
PU Agricultural Infrastructure Protection	Dow Agro-Science	Tech Shot	BioStorage	Indiana Biomedical Entrepreneur Network
PU Alfred Mann Institute for Biomedical Development	Zimmer	SonarMed	Endocyte	Indiana Health Information Exchange
PU Homeland Security Institute	Biomet	QuadraSpec	HemoCleanse	Local Neuro-Psychologists
PU Center for Impact Science and Engineering	DePuy	Advanced Concepts and Technology	CoLucid Pharmaceuticals	Indy Race experience in products to minimize impact of crashes
PU 'Tricorder' chemical analysis	Griffin Analytical Technologies	Micro systems Technologies	Dow Agra Sciences	
IUPUI Signature Center for BioComputing	Clarion Health	Rehab Hospital of Indiana	Physical Logic	
Notre Dame Center for Microfluidics and Medical Diagnostics	Roudebush VA Medical Center for tertiary care			
Notre Dame Interdisciplinary Center for the Study of Biocomplexity				
Notre Dame, PU, and IU Complex System Modeling				
Ivy Tech First responder program				
IN Center for Rehabilitation Sciences and Engineering Center				

The following initiatives have been identified by the Indianans already involved in this focus area and suggest immediate action:

- Impact Trauma Solutions Consortium focusing on Neurological, Orthopedic, Psychiatry
- Exemplar university business curriculum for defense related business (e.g., accounting, law, security)
- Personnel pool of university science and engineering talent for SBIR's initiative
- Muscatatuck Bio Solutions for Urban Combat Situations Test Bed
- Study of best practices for establishing an initiative involving the military and homeland security

There is also a crosscut of this focus group with the Defense Electronics and Advanced Military Informatics focus areas.

IN YEAR ONE:

1. Establish a Center for Human Impact Trauma with the following timetable: in the first three months present a proposal to the Army; Six months later funding starts; and three months later center is jump started
2. Statewide team formed to shepherd SBIR's BAA's, … that involve collaborative efforts
3. Sponsor events to discover Indiana assets, opportunities, solicit inquiries and get on bid list with ten bids as a direct result.
4. Use of Muscatatuck for trial of Indiana technologies/prototypes in this focus area, e.g., soldier sensors, simulation of heat
5. Intrastate networking event among Military facilities, University, Small companies, large companies, state NGOs with focus on Bio Collaboration for near term opportunities
6. Bio Sensors Proof-of-Concept Demo Center. Target for first demo: monitor glucose (number one sensor in military need)
7. Assess progress made and lessons learned.
8. Reconvene with larger, broader group with a more defined statement to attract them.

There is a dependency on entities outside this team to perform the following activities to meet this plan: a state marketing plan and a briefing on this report with the new university presidents and Ivy Tech's new chancellor. The team expects that it will participate in the planning and support for these activities.

IN YEAR TWO:

1. Land a major DOD facility that has $10 to 50 million core funding at a minimum with additional $ as projects start coming in.
2. Spin off companies from the Human Impact Trauma Center.
3. Establish an integrator and Task Force for this target.
4. Have five additional companies that are engaged in this focus area (new or existing).

There is a dependency on entities outside this team to perform the following activities to meet this plan: continual enhancement of a database for locating potential partners and a situation alert system. The team expects that it will participate in the planning and support for these activities.

RECOMMENDED STAKEHOLDER ACTIONS

This focus area will depend on specific actions on the part of stakeholders within the state.[10]

PUBLIC/PRIVATE DEFENSE ASSETS CONSORTIUM

- Facilitate better collaboration (meetings) between commercial companies, between universities, and Federal and State legislators to build relationships, catalyze efforts to address specific initiatives/contract opportunities, and discuss issues.
- Organize national meeting with government program managers and chief technology officers to learn about capabilities needed by DOD and Homeland Security and to familiarize them with Indiana assets.
- Create and manage a program for marketing Indiana as a defense technologies state.
- Provide guidance (how to, best practices) to focus action teams for creating a Center of Excellence.
- Make facilities available (for example, lab space).

[10] Some of these actions have been collected across focus areas and will be presented as composite strategic recommendations later in this report. Where they are unique to Bio Collaboration they have more detail.

- Provide a secure, compartmented intelligence facility (SCIF) for use by this focus area.
- Assist in attracting Angels, VCs, and Strategic Partners for funding Defense Asset related bio/life sciences startups.
- Encourage a business services infrastructure in Indiana that specializes in Defense Assets business.

STATE GOVERNMENT

- Involve the Governor in promoting this focus area.
- Provide education for a small company new to Defense procedures and terms. DOD contracts are requiring a larger portion of works to done by Small and/or Minority owned business.
- Give first-time proposers SBIR proposal preparation assistance.
- Put the 21st Century Fund SBIR matching program on a sustainable basis.
- Institute a quick grant proposal process.
- Own the statewide database of available state assets.
- Staff an advocate in Washington D.C. to help find opportunities in bio/life sciences within DOD and Homeland Security and to promote Indiana generated proposals in this focus area.

INDUSTRY

- Lead the proposal generation activity.
- Include a line item in the R&D budget of the large companies for Defense Assets projects that is a commitment over a number of years.
- (Large companies) staff a SBIR resource.
- (Large companies) provide funding for a large center and help to connect with academia.
- (Large companies) open up assets (such as Intellectual Properties, Facilities) to small companies.
- (Large companies) institute a mentor program to help a small company to do business with them and directly with DOD and Homeland Security.

ACADEMIA

- Provide facilities for writing grants and proposals.
- Staff proposal review committees at DARPA, Science Boards of the armed services, training commands, etc.
- Engage students in industry based problems/pursuits
- Provide education in program management. This is a high priority because of the complexity in working on defense electronics projects.
- Improve the technology transfer process to release more technology for commercialization by commercial state assets without endangering the latter's competitiveness.
- Improve a company's access to university resources through opening up facilities, access to faculty, and faculty loans to business
- Build Bio Hazard facilities at BL3 level.

IMPLEMENTATION PLAN

ORGANIZATION AND SUSTAINABILITY

For ultimate success, this focus area must have some initial wins to show that collaboration is effective and to attract other companies, especially small businesses not yet doing business with the government, into the effort of gaining $ from these customers. This means that the organizational structure has to avoid the heavy handed processes of the past in proceed in a self-organizing network manner.

METRICS

The following parameters are recommended as a source for three to seven vital performance measures:

- Job creation
- Creation of companies
- 25% growth in DOD $ - grants, contracts
- Establishing a major center with $20-50M annual funding in two years

SUMMARY

Bio/life sciences already have a strong position in Indiana, and the scope of opportunity is tremendous due to abundant customer needs. Many proposals and eventual business can be spawned from these needs. It is imperative, however, to collaborate to bring higher revenue and wealth from DOD and Homeland Security business. To be successful, the Bio Collaboration focus action team must achieve the following objectives:

1. Access to a central “consortium” that can manage marketing, the high level customer relationships, centralized infrastructure, a reputation for success, high level state relationships, and growth/renewal.
2. Active, on-going programs to recruit, involve, and assist inexperienced SMEs in obtaining Defense Electronics business.
3. An improved process for getting IP out of Indiana Universities so that it can be commercialized.
4. A partnership of all the players with a strong teaming attitude and knowledgeable leaders acting as catalysts not overlords.
5. Attracting, retaining, and upgrading defense electronics knowledge and tradecraft.

FUTURE ENERGY ALTERNATIVES HIGH LEVEL BUSINESS PLAN

Future Energy Alternatives addresses the development of new approaches to providing energy and power for military stations, both inside and outside the USA, homeland security, and civilian use through Fuel Production, Energy Conversion, Storage Systems, and Energy Management. The large potential for sales derived from two of the historic Indiana industries - farming and automotive/aerospace power systems - justifies an investment in meeting the two major care-abouts of the military, which include independence from foreign oil and conversion of energy based on mission location and conditions.

DETAILED DESCRIPTION:

This focus area covers the multiple ways that power is delivered for use by humans and machines. It consists of the following segments:

- Fuel Production, such as coal, synfuel and bio fuels (ethanol, bio-diesel)
- Energy Conversion, such as Internal combustion (gas engines, diesels, and gas turbines), Nuclear fusion/fission, solar, wind, hydro and geothermal
- Storage Systems, such as batteries, fuel cells, and ultra capacitors
- Precision Energy Management to delivery better quality electricity efficiently across multiple energy converters in multiple output profiles

Future fuels for the military must consider: a common fuel to reduce storage and logistics complexity (common fuel), availability at points of deployment, and sustainability of source of supply.

Energy conversion, storage, and precision energy management systems as packaged in integrated power systems will range in size from military base to forward base to enclave to personal to device. Key user requirements include: conservation/efficiency, emission control, portability (size, weight), life, ease of installation at point of deployment and maintainability. Functions provided include Studies and Consulting, Research and Development, Component Manufacturing, Systems Manufacturing and Integration, Installation and Construction, and Service and Support.

Knowledge assets needed in this focus area are: Analytical Chemistry, Nanotechnology, Composite Materials, Fisher Tropsch, Clean Coal Technologies, Sequestration, Fuel Cells, Nuclear Science, Wind turbines, Solar Cells, Power Electronics, Analytic Chemistry, and Plant Biology /Agricultural Sciences.

IMPORTANCE FOR INDIANA TO FOCUS AND COLLABORATE ON FUTURE ENERGY ALTERNATIVES

In the area of fuels, there is much wealth to be gained from the natural resources owned by Indiana's land owners from the biomass being farmed to the vast coal deposits of Southern Indiana. The state has already recognized this area as a strategic one to move itself towards self sufficiency and the addition of a military market will further justify investment in this area. Additionally, the competency at Purdue in Ethanol production and the Fischer-Tropsch method of converting coal to liquid synthetic fuel and lubricant are highly exportable ones.

In the area of energy conversion, major Indiana corporations such as Cummins (diesel engines) and Rolls Royce (gas turbines, jet engines) and other research companies have R&D resources and years of engineering experience that can be applied to new fuels in order to sustain their future success in the coming era where the world is to be weaned off of oil and gasoline. Other companies in the state are focusing on both enhancing traditional engine types and exploiting new means of energy conversion. Crane has a strong storage systems competency. There are other state companies that provide component systems that enable engines and other energy converters, harness power from transportation transmission systems, vehicle braking systems, AC/DC conversion, and fuel control systems.

The emerging and heightened needs for greater energy efficiency, reduced environmental impact, and precision power (required by the new manufacturing and information technology industries) are creating a new set of hard problems. These problems range from how to adapt existing engines to the new fuels to how to create competitive power (propulsion, electricity) from the new energy sources, and how to deliver power multiple power profiles (voltage, wattage, AC cycles) from multiple power sources simultaneously in one management system.

Because of their complexity and the many viable alternatives for their solution, the solution to these hard problems will require multiple organizations to work together. Government vehicles for getting the funding to answer these problems will require the responders to be teams working in collaboration.

Table 33 below indicates the existence of Future Energy Alternatives assets in Indiana. They are spread throughout the state, starting with a State-supported Biofuels Plants plant program (twelve new Ethanol plants and four new biodiesel plants built that were scattered throughout the state in 2006.) Also, in Columbus and Indianapolis there are large companies' involved in energy conversion systems, storage systems competency is seen at Crane, and synthetic fuel activity state with strong R&D is seen in alternative energy at Purdue, and energy Management efforts are evidenced in Anderson and West Lafayette.

Table 33

INDIANA ASSETS

University		**Large Companies**	**Small Companies**	
PU Center for Coal Technology Research	ND/Crane Center for Advanced Fuel Cell Technology	Rolls Royce	NuVant Systems	Swift Enterprises
PU Energy Center	ND Energy Center	Cummins	Trexco	Dwyer Instruments
PU International Rectifier Power Electronics Lab	ND/Crane Center for Advanced Fuel Cell Technology	Delphi Electronics and Safety	PowerSys	I Power Energy Systems
PU Hybrid Vehicle Lab	IU, PU, and ND tops in Analytical chemistry	Honeywell (fuel controls, brakes)	Altair Nanotechnologies	Water Furnace
PU Hydrogen Storage and Fuel Cells Lab	IU, PU, and ND tops in Nuclear Power	**Other**		
PU Agriculture School	Valparaiso: solar energy and nuclear radiation remediation research	State-supported Biofuels Plants	Electricore Consortium branch	Indiana Cellulosic Fuel Production Challenge
IUPUI Lugar Center for Renewable Energy	Ball State Center for Energy Research	BioTown	Huge space for Carbon Sequestration	Indiana Innovation Network
IUPUI Advanced Energy Research Lab	Rose-Hulman projects in Alternative Energy			
Crane				
Battery Competency	Energy & Power System Competency			

There is a foundation for immediate action, as the following initiatives have been identified by the Indianans already involved in this focus area:

- MicroGrid – a Precision Power Management test bed (1.5 MW output with Control System, Electrical Power Shaping, and Fuel Control components)
- Bio Diesel/Bio Gas Competency Center and Test Center
- J8 Fuel Initiative
- Lithium Ion Battery Competency Center
- Capability to quickly deploy a small bio fuel plant to a crisis spot

There is also a crosscut of this focus group with the Transportation Systems group.

PROPOSED TEAM ACTION PLAN

IN YEAR ONE:

1. A conference on the subject of DOD/DHS Energy Opportunities with 100 people
2. A team to bring people together and to mentor on DOD procedures like SBIR
3. Success on one or two specific opportunities, e.g., SBIRs/STTRs using Crane's grant priorities

To perform the following activities to meet this plan, entities outside the team must be exposed to a state marketing plan and educational activities on how to do business with the government. The team expects that it will participate in the planning and support for these activities.

IN YEAR TWO:

1. Obtain $20M in funding for grants, contracts or other awards
2. Create a Industry group like IAAMA (Indiana Advanced Aerospace Manufacturing Alliance)
3. Four Tech Transfer projects from Universities underway
4. Researchers from academia working as leads in companies working in summers or over a year
5. Testing of bio-diesel, jet fuel at level above a lab
6. A university researcher to take a difficult industry problem and find relevant funding

Entities outside this team must perform continual enhancement of a database for locating potential partners and maintaining a situation alert system to meet this plan. The team expects that it will participate in the planning and support for these activities.

RECOMMENDED STAKEHOLDER ACTIONS

This focus area will depend on specific actions on the part of stakeholders within the state.[11]

PUBLIC/PRIVATE DEFENSE ASSETS CONSORTIUM

- Facilitate better collaboration between commercial companies, between universities, and Federal and State legislators to build relationships, catalyze efforts to address specific initiatives/contract opportunities, and discuss issues.
- Organize national meeting with government program managers and chief technology officers to learn about capabilities needed by DOD and Homeland Security and to familiarize them with Indiana assets.
- Provide information on potential opportunities.
- Create and manage a program for marketing Indiana as a defense technologies state.
- Identify a champion for this focus area to help it moves forward.
- Reestablish the local chapter of the Technology Transfer Society.
- Inform potential state providers what the military wants.

[11] Some of these actions have been collected across focus areas and will be presented as composite strategic recommendations later in this report. Where they are unique to Future Energy Alternatives, they have more detail.

STATE GOVERNMENT

- Provide education for a small company new to Defense procedures and terms. DOD contracts are requiring a larger portion of works to done by Small and/or Minority owned business.
- Give first-time proposers SBIR proposal preparation assistance.
- Put the 21st Century Fund SBIR matching program on a sustainable basis.
- Institute a quick grant proposal process.
- Grow the statewide database of available state assets. Because of the breath of this focus area a mapping based on the above four segments, markets, and the idea to product lifecycle should be incorporated.
- Push Energy Conservation in the state.
- Provide champions that are involved with this focus area.
- Get Leadership's commitment all the way to the Governor's office.
- Enhance the Buy Indiana program. For example, when building a manufacturing plant, buy an Indiana-developed and built co-generator.

INDUSTRY

- Staff an SBIR coordinator with each company.
- Participate in technology cross licensing.
- Inform the Consortium of opportunities in developmental research.
- Develop, with universities, a "Technology R&D Vertical Integration" program where university researchers work on their technology in the university's research labs, then during sabbatical work in the commercial sector to transition their technology to commercialization.
- Develop a program and strategies to involve engineering students who are foreign nationals. A hallmark of having a world class Electronics program is that it attracts the brightest from around the world. It is important for a company to attract these students as permanent hires and make them productive on DOD work as soon as possible.
- Encourage employees to work on university project (and universities to include company people in their projects. (See academia's need to protect company IP below).
- Effort by large companies to find more local small companies to work as subcontractors.
- Outsource people from large companies to be executives and business development management in startups and to sit on boards.
- Liberate orphan technology.

CRANE

- Be proactive in stating requirements.
- Be proactive in technology scan.
- Make the current yearly Crane "Show and Tell".

ACADEMIA

- Develop, with the commercial sector, a "Technology R&D Vertical Integration" program where university researchers work on their technology in the university's research labs, then during sabbatical work in the commercial sector to transition their technology to commercialization.
- Dramatically expand the Systems Engineering program across the state.
- Improve the technology transfer process to release more technology for commercialization by commercial state assets without endangering the latter's competitiveness.
- Open up the availability of information about what's going on in the Institution to commercial companies, instead of merely relying on the PR pieces.

- Hold scientist to scientist exchanges within institution and among institutions.
- Improve a company's access to university resources.
- Improve the availability of intermediate level engineers.
- Educate the supporting technicians in this focus area.

IMPLEMENTATION PLAN

ORGANIZATION AND SUSTAINABILITY

The opportunities from Defense and Homeland Security group in this focus area are felt to be pretty dynamic and spontaneous. An agile organization built around small teams of stakeholders is expected to be the best way to organize rather than invest in a standing infrastructure.

The nature of this focus area is capital intensive. For example, a clean coal technology plant will average over $1 billion to build, while ethanol plants will cost over a $100 million each. Power systems take a long time to develop and prove out, thus requiring much up front investment until there is a revenue stream. While SBIRs and federal grants can help in creating new capabilities, private funding sources need to be found for sustainability.

For ultimate success, this focus area must have some initial wins to show that collaboration is effective and to attract other companies, especially SMEs not yet doing business with the government, into the effort of gaining $ from these customers. This means that the organizational structure has to avoid the heavy-handed processes of the past and proceed in a self-organizing network manner.

METRICS

The following parameters are recommended as a source for three to seven vital performance measures:

- Revenue from military and homeland security derived by collaborative efforts in this focus area
- Investments made to secure military business
- Jobs created or retained
- Research $ obtained
- Student involvement
- # of SBIRs that go to Phase 3

SUMMARY

The Future Energy Alternatives focus area already has momentum for the fuel production segment from the state's strategic plan, and collaborative activity in this area is underway. The other segments in this focus area can be converged to concentrate on power systems in a variety of configurations that will fit a standard architecture and unleash the economics of mass production and commercial off the shelf (COTS) products for military and homeland security. If it is pursues on pursued from the ground floor, this capability concentration can give Indiana companies a major source of revenue over a long period of time. To seize these opportunities, the Future Energy Alternatives team must achieve the following objectives:

1. Access to a central "consortium" that can manage marketing, the high level customer relationships, centralized infrastructure, a reputation for success, high level state relationships, and growth/renewal
2. An active, on-going program to recruit, involve, and assist SMEs in obtaining Defense Assets business
3. An improved process for getting IP out of Indiana Universities so that it can be commercialized

4. A partnership of all the players with a strong teaming attitude and knowledgeable leaders acting as catalysts not overlords
5. Attracting, retaining, and upgrading knowledge and tradecraft relating to those fuel production and power systems that match Indiana's assets

MUTC PARTNERSHIP

There lies incredible potential for Indiana as represented by the Muscatatuck Urban Training Center (MUTC) and all that can grow around it. This is why a MUTC Partnership has been treated separately from the other six target areas.

At MUTC, the leadership of the Indiana National Guard (ING) has established the beachhead for what is already well on its way to becoming a national and international center of training, testing and simulation for defense, homeland security and related operations. The ING leadership has done a tremendous job, in a quiet, unique and effective manner, in establishing this tremendous new asset for Indiana and the Nation.

The long-term vision for this platform includes most of southern Indiana, with links across the state and beyond state lines.

Grissom, Fort Wayne, Seymour, Columbus and Terre Haute airports, as well as nearby communities, can play a key role, and enjoy significant economic gain. The Crane Naval Surface Warfare Center (CNSWC) is already a vital aspect of the plan, as is Jefferson Proving Ground, Camp Atterbury and other local and regional assets.

As work at Newport is completed, and the base closing and realignment plan begins in the near future, the training and testing mission at MUTC points to significant new opportunities for Newport and its displaced workers.

Purdue University, already a named partner in the MUTC program, as well as Indiana University, will both play important roles, and stand to gain significant exposure, research and teaching and tremendous new funding opportunities. The historic strength of IU's culture and linguistics programs represents a perfect fit to serve the needs of the MUTC training mission and should be fully leveraged. Other Indiana-based universities and colleges, including Ball State, Vincennes, Ivy Tech Community College, and Indiana State University, should all play a role and benefit by the full potential of the MUTC vision. For more information, refer to the MUTC analysis in Appendix VIII.

MUTC IMPACT ON CRANE

While the value of Crane to the MUTC is well known to leadership in both organizations, the full potential for Crane and Hoosier stakeholders represented by this vision will require aggressive marketing and support from the State and others. If managed and marketed correctly, Crane will enjoy tremendous exposure to new DOD customers, be able to grow its mission as a key electronic warfare, maintenance and testing facility, diversify its role, and gain significant sustainability.

In addition, as a direct result of this growing role, Crane can become a gateway and gatekeeper to these customers for new technologies and suppliers to the military and homeland security, and specifically for Indiana-based small businesses. To fully empower this potential, a new commitment to small business advocacy and technology development at Crane is needed by the State and business community.

To support and grow the use of MUTC and southern Indiana by the U.S. Military and homeland security customers, significant, new technology and infrastructure will need to be in place. Current commitments by these users already include significant budgets for infrastructure development to support testing, simulation and logistics, as well as housing and support services.

However, Indiana state government and other stakeholders can enable growth and expand the full impact and scope of the MUTC mission through parallel and coordinated investments in a world class information technology infrastructure, housing, transportation and other investments. Through a well-governed "MUTC Partnership," using a new, not-for-profit foundation or similar organization, a strong public-private partnership can be formed to attract funding, engage the community, market the mission, and manage projects outside the scope and capacity of the Indiana National Guard.

In addition, significant land use and planning, real estate acquisition and intergovernmental engagement will be a critical and ongoing necessity to fully realize the MUTC potential. It is critical that State government act soon to fully develop this vision and begin to act on various fronts to form this partnership.

RECOMMENDED ACTIONS

To fully capture this historic opportunity for Indiana, near term actions by the State should:

1. Pursue the land acquisition.
2. Establish a non profit foundation or organization to serve as the single public-private partner to state government in support of the full MUTC vision.
3. Activate the Military Base Planning Council to begin to engage opportunities and issues consistent with its statutory mission.
4. Clarify assignments, duties and roles within state government and the ING as it relates to both the Title 10 and Title 32 roles around MUTC.
5. Review state budget commitments and funding sources in support of ING, the facilities and all of aspects of the MUTC mission and vision, and align appropriate resources to fully leverage this opportunity.
6. Review Internet connectivity and capacity needs in and around MUTC and consider ways to utilize IHETS and other state backed or regulated facilities to strengthen the MUTC capability in the short term.
7. Engage Indiana University leadership to fully apply the language and cultural capabilities there toward this mission.
8. Establish a non profit technology and small business ombudsman capacity at Crane, using new or existing programs. This will supplement and work in complete harmony with Crane's existing, federal small business and buy Indiana programming.
9. Establish an interagency working group to rapidly facilitate key enablers for MUTC optimization.

SWOT ANALYSIS

STRENGTHS

Historic Contracting

- Vehicles
- Electronics and Communications
- Services
- Aircraft Engines and Spares
- Subsistence (Meals-Ready-to-Eat (MRE's))
- Prefabricated Enclosures (Trailers, recreational vehicles, housing)
- Sensors (Space, Air, Ground, human)

University & Technology

- Vehicles & Tires
- Transmissions
- Pharmaceutical
- Bio-Chemical Sensors
- Computing & IT
- Data Interpretation/ data handling
- Measuring
- Electronics and Communications
- Environmental Protection
- Linguistics
- Engineering
- Psychological Sciences

Military Facilities

- Camp Atterbury and the Muscatatuck Urban Training Center
- Crane NSWC
- Supporting physical facilities, including Hulman Field, Jefferson Proving Ground, Grissom and Newport.

WEAKNESSES

- Skills and educational attainment averages (workforce)
- Lack of coordinated Congressional advocacy efforts
- Lack of focus and leveraging of significant university strengths
- Lack of connectivity between the state and prime contractors/government
- Lack of historic focus by state government on DOD and DHS contracting
- Indiana's national image among high tech firms, employees
- Historical culture against government contracting, lobbying
- Limited number of prime contractor headquarters in state
- Passenger flight service to key coastal destinations
- Small number of significant military facilities

THREATS

- Fall-off in Defense spending
- Potential replacements of key Indiana defense products
- Continuing consolidation of defense suppliers
- Competition With Crane's Value-Added Functions

OPPORTUNITIES

- Advanced Military Informatics: the use of algorithms based on advancements in mathematical sciences applied to military and homeland security needs
- Transportation Systems: providing value added transportation platforms through improved and next generation major subsystems
- Defense Electronics: the design, manufacture and life cycle support of electronics systems
- Services and Support: the provision of products and services that enhance the usefulness and extends the life cycle of existing military platforms
- Bio Collaboration: creative collaboration between the Bio/Life Sciences and Military/Homeland Defense assets
- Future Energy Alternatives: the development of new approaches to provide energy through four components – fuels, energy conversion, storage systems, and procession energy management
- MUTC Partnership: extend the use of the Muscatatuck Urban Training Center to be a statewide asset in support of the mission

BEST PRACTICES ANALYSIS

A best practices study was conducted to determine how states were organizing to attract defense funding. The approach of the study was to research states which were the leaders in DOD funding, and review organizations focused on aerospace and defense industry growth, funding attraction, and technology commercialization. Government, public/private and non profit organizations were evaluated. Results of the study are summarized in Table 34.

Eleven organizations from six states (CA, TX, AL, OH, MA, VA) and one multi-state collaboration (MD, DE, PA, NJ) were researched. Eight of the organizations were industry/government/academia (public-private) collaborations, two were government economic development organizations and one was an advisory council to the state's governor. The most common legal structure was a 501-C3 non-profit, funded by the members. It was noted that the top four DOD-funded states (CA, VA, TX, MD) had significant number of military installations compared to AL, OH and MA, which implied that military payrolls constituted a large portion of those states' funding.

The two organizations of note were: the Ohio Aerospace Institute (OAI) and the Mid Atlantic states' (MD, DE, PA, NJ) collaboration: Strengthening the Mid Atlantic Region for Tomorrow (SMART). Both these organizations reported significant grant/contract receipts, effective government/industry/academia collaborations, and a focus on advocacy and small business training and events.

OAI membership includes private industry, academia, government and federal labs, and its mission is to build Ohio's aerospace economy through research and technology development, education and training, and networking and information exchange. OAI had the highest-reported revenue and organization size ($20M annual revenue from grants/contracts and 100 employees), $175M in secured funding and over 250 contracts/awards. OAI has two GSA schedule contracts in IT and professional engineering. It offers research services in six technology focus areas and services in funding and grant procurement. The OAI model has synergy with the Defense Study in that it focuses on key areas of technology strength, has industry, government and academic participation, is focused on training and education and has created a "BioCrossroads-like" organization to facilitate its mission. The size of the organization seems quite large however.

SMART membership consists of private industry, senators and congressmen, governors, university researchers and government labs from the four states, and its focus is acquiring federal R&D technology funding. SMART is organized into thirteen technology and enabling cluster groups, and is currently progressing fifteen projects. Since 1999, it has hosted 44 major events and 155 regions/working group events such as: defense procurement training events, receptions on the hill, government caucuses, state governors meetings, technology transfer events, and technology cluster working meetings (that have lead to contracts). SMART reported $410M in contracts and awards. The website for SMART is www.smartstates.com The SMART model has terrific synergy with the six target focuses emerging from the Defense Study, and is a dynamic solution for effective advocacy and small business training. SMART has one full-time executive director (funded through membership fees) and seventy-five volunteers. It is currently seeking to add 3 – 6 staff members pending additional funding and one key need expressed from the technology cluster directors is an federal grant/contract opportunity "clearinghouse" for SMART.

Details on the two organizations are included in the Appendix.

Based on the best practices study, dedicated leadership in a public-private entity are the keys to success for states attracting federal grants and contracts. A 501-C3 non-profit, members-funded organization is recommended as an umbrella organization to foster the focus action teams and grow the number of opportunities in the six targeted areas of opportunity, oversee education and training events and harness the leadership and advocacy activities for the state.

Table 34

	California	Virginia	Texas	Mid Atlantic (DE,MD,PA,NJ)	Massachusetts	Alabama	Ohio
DOD Funding National Ranking (2005)	1	2	3	4* (MD)	8	10	15
$bn Contract, 2005	31.06	26.8	20.69	10.86* (MD)	8.33	7.06	5.46
# A&D Companies	1138	160	524	348 (total all 4 states)	96	300	223
Major A&D Companies	Northrup Grumman, Rockwell Collins, Teledyne, P&W Rocketdyne; GenCorp; Boeing Satellite Systems; Aerojet;	General Dynamics; BAE, EADS; Northrup Grumman Mission Systems; CACI International	Boeing, Lockheed Martin, Raytheon, Bell Helicopter Textron, L-3 Communications, BAE Systems; Weber Aircraft;	Lockheed Martin, Northrup Grumman Electronics Systems; United Industrial Group, AMETEK, Teleflex Inc; Triumph Group; BAE	Raytheon, Wyman-Gordon	GKN Westland, Pemco Aviation	General Electric; BAE Systems; Goodrich; Honeywell; Parker Hannifin
# Military Installations	25: Beale AFB, Camp Pendleton, DLI FLC Presidio-Monterey, Defense Distribution Depot San Joaquin, Edwards AFB, Fort Irwin, Los Angeles AFB, MCAGCC 29 Palms, MCAS Miramar, MCLB Barstow, MCRD San Diego, March ARB, McClellan AFB, NAS Lemoore, NAS North Island, NAS Pt. Mugu, NB Point Loma, NCBC Port Heuneme, NS San Diego, NWS China Lake, Naval Post Graduate School, Travis AFB, USCG TRACEN Petaluma, Vandenberg AFB,	20: Defense Supply Ctr; FCTCLANT, Fort Belvoir, Fort Eustis, Fort Lee, Fort Monroe, Fort Myer, Fort Story, Henderson Hall, Langley AFB, NAB Little Creek, NAS Oceana, NS Norfolk, NSGA Northwest, NSWCDD Dahlgren, NWS Yorktown, Quantico, SCSC Wallops Island, USCG Hampton Roads, USCG TC Yorktown	17: NASA LBJ Space Center; Brooks AFB, Dyess AFB, Fort Bliss, Fort Hood, Fort Sam Houston, Goodfellow AFB, Kelly AFB, Lackland AFB, Laughlin AFB, NAS Corpus Christi, NAS JRB Fort Worth, NAS Kingsville, NS Ingleside, Randolph AFB, Red River Army Depot, Sheppard AFB	19: Carlisle Barracks, Defense Depot Susquehanna, Defense Supply Ctr Philadelphia, NAS JRB Willowgrove, Tobyhanna Army Depot, Aberdeen Test Center, Andrews AFB, Fort Detrick, Fort Meade, NAS Patuxent River, NSGA Ft. Meade, US Naval Academy, Dover AFB, Fort Dix, Fort Monmouth, McGuire AFB, NAES Lakehurst, NWS Earle, Picatinny Arsenal	3: Devens Reserve Training Area, Hanscom AFB, Soldier Systems Center	6: Redstone Arsenal; Marshall Space Flight Center; Ft Rucker; Maxwell-Gunter AFB; Nat. Space Science & Technology Center; Anniston Army Depot	3; NASA Glenn and Wright Patterson AFB; Defense Supply Ctr

	California	Virginia	Texas	Mid Atlantic (DE,MD,PA,NJ)	Massachusetts	Alabama	Ohio
Association Name	**DEFCOMM - San Diego Defense & Space Technology Consortium**	**AFCEA INTERNATIONAL & NDIA (membership orgs HQ'd in VA)**	**Dept. of Economic Development & Tourism**	**SMART: Strengthening Mid Atlantic Region for Tomorrow**	**MDTI Massachusetts Defense Technology Initiative**	**AAIA; Alabama Aerospace Industry Association**	**OAI: Ohio Aerospace Institute**
Year Established	1997	AFCEA: 1946 NDIA: 1997	n/a	Early 1990s	2003	2003	1989
Members	58 Members range from individuals to start-up companies, small and medium sized defense contractors to multibillion dollar conglomerates, academia to economic development and members of the uniformed services.	military, government, industry, and academia	government	Academia, Government, Major Industry, Small Business, Start Up Businesses, Support Organizations	Entities desiring to enhance the competitiveness of the regional defense technology sector and promote the creation of high-quality technology jobs across Mass, as well as in their own orgs.	AAIA membership is open only to companies with an Alabama address that are directly involved in the aerospace industry in Alabama.	joint initiative of the NASA Glenn Research Center, the Air Force Research Laboratory at Wright-Patterson Air Force Base, the State of Ohio, ten Ohio public and private universities granting doctoral degrees in aerospace related engineering disciplines, and numerous companies engaged in aerospace activities
Annual Funding	members fees and possible funding from GSA contract	membership fees	n/a	Membership fees,	MassDTI is principally funded through annual contributions from private, non-profit and academic organizations with a vested interest in the future of the Massachusetts defense technology cluster.	membership fees	$20M through grants/contracts, industry & Ohio Board of Regents
Legal structure	Non-profit mutual benefit corporation	non profit membership organizations	state government	Non-profit	Public-private partnership.	Non-profit	Non-profit; 100 employees
Mission	Promote the growth and competitiveness of the San Diego Defense & Space Technology industry through the creation of innovative government-industry-academia alliances	AFCEA: serves as an ethical forum for advancing professional knowledge and relationships in the fields of communications, IT, intelligence, and global security. NDIA: provide a legal and ethical forum for exchange of information between Industry and Government on National Security issues	Economic development	Economic growth and development of technical enterprise and intellectual vitality of the Mid-Atlantic region through the promotion of active partnerships between industry, academia, technical and government institutions	establish MA as the definitive global leaders in defense technology industry	Promote the growth of the aerospace industry in Alabama by providing a unified voice in the state on issues of mutual interest, especially education, workforce development, and economic development.	Education & Training, Research & Technology, Networking & Events, Collaborations & Partnerships

	California	Virginia	Texas	Mid Atlantic (DE,MD,PA,NJ)	Massachusetts	Alabama	Ohio
Key Activities & Accomplishments	Among other things, Defcomm has established a 28,500+ square foot Software Engineering Center and Small Business Incubator, successfully delivered several prototypes of The Joint Integrated Satellite Communications Technology program to the Air Force, achieved a GSA schedule 70 IT contract, and serve as a voice for the industry at the local, state, and federal level.	AFCEA: education, professional development, events, scholarship; NDIA: manages many of the govt. conferences and events; business development, professional development	Recommendations: Collaboration; Workforce; Business Climate	Industry cluster-related projects and events. $410M of federal R&D funding during past 8 years	Provide leadership and spearhead advocacy for: 1) enhance competitiveness of local technology cluster 2) promote expansion of military installation missions 3) enhance image of state's defense cluster 4) generate growth oppty's for businesses	Workshops, seminars,. Members receive: Access to internet database of Alabama aerospace-related companies, Listing on AAIA website, Members Directory	Workshops, fellowships, internships, 15 US patents in 2006, R&D collaborations More than $175 Million in secured funding, More than 250 federal awards, More than $2.8 Million in NASA, OSGC and University for over 600 internships and scholarships
Other Key State Assets & Activities			$295 million enterprise fund, $200M emerging technology fund	None		AL's workforce training program ranked #1 in USA by Site Selection magazine; Voted 2004 State of the Year for job & economic development growth	Wright Brothers Institute
Other Association Name		**VA Economic Development Partnership**		**AMTC: Aerospace Materials Technology Consortium**			**OADAC: Ohio Aerospace & Defense Advisory Council**
Year Established		1995		2002			2001
Members		government		Government, industry, academia			11 voting members and 6 non-voting
Annual Funding				Unknown.			funded by gov't, industry and academia
Legal structure		state authority (similar to IEDC)		Unknown - Project developed by Naval Air Systems Command			Advice council. No operational authority.
Mission		focus on cultivating new business investment, fostering international trade growth and encouraging the expansion of existing Virginia businesses		Online community of aerospace technologists from government, industry and academia working in virtual partnerships with easy access to relevant content and advanced collaboration toolsets.			Provides advice to the governor

	California	Virginia	Texas	Mid Atlantic (DE,MD,PA,NJ)	Massachusetts	Alabama	Ohio
Key Activities & Accomplishments				Web-based tool for online collaboration.			1) Build a more comprehensive strategy for OH A&D industry 2) create an industry database & info system to develop new biz oppty's and linkages among co's 3) Align OH Dept of Dev to support A&D industry 4) Create & support more effective advocacy

REGIONAL INTERPRETATION AND ANALYSIS

The State of Indiana's economic development blueprint, called *Accelerating Growth*, sets forth a framework for regional planning and cooperation. With the results of this study in hand, a series of six regional meetings were held across the State with community, economic development and business leaders.

The three-hour briefings and discussions were held in Valparaiso, Fort Wayne, Muncie, Indianapolis, Seymour, and Vincennes.

These gatherings were designed to raise awareness about the opportunities, identify those elements of the "targets of opportunity" most relevant to each part of the State, and identify assets and champions that might be activated to support work in those areas. Past DOD contracting data, analyzed for each of the six regions and shown in Figure 13, was presented at these meetings.

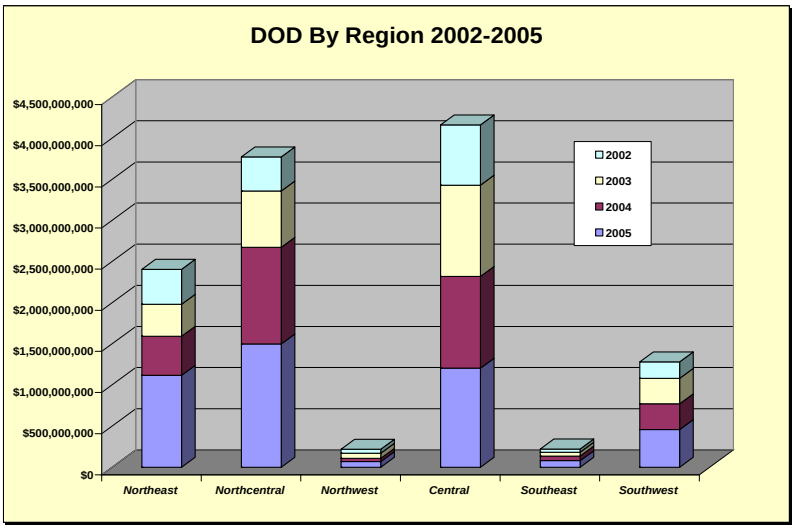


Figure 13

NORTHWEST

This region of the state is characterized by its location and transportation infrastructure and its heritage in steel, chemical and petroleum refining. In general, past contracting data suggested no significant history or commitment to federal government contracting, or a strong bias toward the defense market.

However, upon closer inspection, this area brings several interesting and powerful assets and champions to the DOD and DHS contracting market.

These include Congressman Peter Viscloskey, Indiana's only member of a congressional appropriations committee and a key, national leader in energy policy.

In addition, this region enjoys a unique access point to the Great Lakes and a significant port facility. In addition, the growing presence of Purdue University's regional campus, a new technology incubator offers significant assets.

Finally, the existence of the State-sponsored Regional Development Authority of Northwest Indiana (RDA) and the proximity to the Chicago area, home to significant regional federal agency offices, creates promising possibilities for this region. A new intermodal facility in this region would further increase its ability to compete in the logistics, warehousing and transportation aspects of the defense business.

NORTHEAST

The northeastern corner of Indiana has a strong, existing interest and history in DOD contracting. Home to regional offices and operations for ITT, Raytheon, General Dynamics, International Truck and Engine, Petroleum Traders and other government prime contractors, the area is strongly positioned to grow and diversify in this arena.

In addition to these prime contractors, the region enjoys strong support from the Indiana University-Purdue University Fort Wayne (IPFW) regional campus, where a Systems Engineering curriculum is only one product of the strong working relationship it has with the area's defense contracting community.

In addition to strengths in electronics and manufacturing, the area has capabilities in plastics and fiberglass, a good location and access to several Interstate highways. The Army's Tank and Automotive Command (TACOM) is located just north in the Detroit area, and incubators like the Northeast Innovation Center (NIIC) represent a thriving entrepreneurial culture as well.

EAST CENTRAL

The heart of Indiana's traditional automotive and manufacturing sector, this region has been hard hit by economic restructuring and a resulting job loss. It is also home to significant agriculture, food and biofuels industries.

However, the area is not without strong interest in defense and homeland security contracting, and assets to support that goal. Two major assets, Ball State University and the Flagship Enterprise Center in Anderson, stand out.

Ball State's relevant strengths include its leadership in wireless communications, architecture, multi-media, training, entrepreneurship and its Human Performance Lab.

The Anderson area is home to the Flagship Center and its business partners, Anderson University, Ivy Tech Community College and Purdue. The Center is already home to one of Indiana's most promising defense contractors, XADS, and has already chosen to focus on DOD and DHS contracting. The community also has excess factory and other real estate facilities available for further development.

This region is also home to significant experience and skill in engineering, manufacturing, power electronics, energy and metal work, pointing to a possible role in the support and services aspects of this Plan.

CENTRAL

As the home of state government, a central crossroads of the state and region, and several major prime government contractors including Raytheon and Rolls Royce, Central Indiana is one of two of the most promising growth areas for DOD and DHS contracting.

The Indiana University Medical School, IUPUI, the Central Indiana Corporate Partnership (CICP) and a host of strong, small businesses highlight the assets and champions resident in this region. In addition, Purdue, Indiana University, Rose Hulman and several other strong universities are all located within this area.

The region's commitment to life sciences, informatics and advanced manufacturing are all consistent priorities for the region, and suggest a strong predisposition toward this new market.

In addition, the Health Exchange Network, strong private and public hospitals and the Roudebush Veterans hospital are all strong assets.

SOUTHEAST

The vision behind the Muscatatuck (MUTC) training and testing mission is the dominant take-away from the southeastern part of Indiana in terms of DOD and DHS contracting. The capacity building necessary to realize this vision will require real estate, rail, highway and information technology infrastructure, as well as growth in housing, retail, services, hotel, and restaurant capacity.

Although past DOD contracting has been low in this area, it is a region not without assets or advocates. For example, the access to the Ohio River, and the corresponding warehouse, logistics and transportation systems, including a port, are valuable for target opportunities in services and support. Interstate 65 gives this region access to Louisville and points north and south, and dissects the facilities at Jefferson Proving Ground, Camp Atterbury and Muscatatuck.

SOUTHWEST

Energy resources and know-how, including coal, mining and water resources, are all key connections between this part of the State and a vision for increased DOD and DHS business. In addition, the Crane Naval Surface Warfare Center, a 100-square-mile facility located in the middle of this region, represents Indiana's most familiar and proven defense asset, and can generate significant new opportunities.

The Muscatacuck training and testing mission also affects this part of the state. Hulman field at Terre Haute already plays an integral role in supporting the MUTC function, and Crane is a crucial partner in this partnership as well.

A number of small and private universities, as well as IU and ISU, anchor the diverse and impressive higher education offerings in southwestern Indiana. Vincennes University is already a valued provider of critical skilled workers to Crane and area businesses and is launching a new Advanced Manufacturing facility and program as well.

The Evansville area is home to Ameriqual, one of Indiana's top defense contractors, as well as a significant number of large corporations. In addition, this region also has access to a port, the Ohio River and a petroleum refinery.

Table 35

	Northwest	Northeast	East Central	Central	South East	South West
What do these findings and targets mean for your community?	Electronics Energy Manufacturing Steel	Electronics Metals Plastics Services/ support RFID Fiberglass	Wireless Data mining Architecture Training Multi-media Entrepreneurship Wind turbines (jay co.) Human Perf. Lab (BSU)	Bio/Life Sciences Transportation	MUTC Manufacturing Logistics	Services Energy Coal to liquids Crane MUTC Manufacturing Plastics
Does a focus on DOD/DHS/NASA contracting appeal to your region?	yes	yes	yes	yes	maybe	yes
What assets do you bring to bear with these agencies?	Purdue Tech Center Whiting refinery Rep. Pete Viscloskey Purdue Calumet X-ray and wireless Security Army depot in Hammond Location Highway, rail Airport Port Lake MI ING @ airport	NIIC Regional ED groups Big DOD contractors IPFW Rep. Souder State legislators VA hospital Micro welding Medical wire Medical informatics Logistics capacity Medical metal/wire Grants professionals Tire and auto production	BSU Inst. For Digital Fabrication Ctr. For Energy Research Excess facilities in Anderson for reuse Location Quality of life/cost Flagship Center Huge power capacity (Anderson) Muncie water treatment Muncie angel network Cluster computing lab Biofuels production	DOD contractors Universities Access/location Bio X Cost of living/prod' n CICP Associations Airport FedEx	Univ. of S. IN Ivy Tech Hanover College IU Columbus Small biz Highway/rail access MUTC JPG Work ethic Logistics Access to River/ports	River, ports, railroad, location Westgate techpark & its developer/stakeholders CTI Corporate assets: Vectren, GE Plastics (Mt Vernon), Kimball, BWXT, Bristol Myers Squibb; Cook; Pfizer, Lilly Congressman Elsworth is on the Armed Services Committee. Refinery in Mt Vernon LEDO directors in the counties. IU, Vincennes Univ., new Ivy Tech campus in Evansville Resort at French Lick Goose Pond in Greene County Win Energy Purdue Tap office is coming to Jasper and Evansville. Advanced Manufacturing center operated by Vincennes Univ. & advanced manufacturing center operated by Ivy Tech at Terre Haute. Transmissions plant. ISU IU supply chain management program.
What are your Strengths, Weaknesses, Threats and Opportunities?	Image issues(-) Location(+) Intermodal (+) Chicago connection(+) Small machine shops(+) Ed/skills (-) Missing big primes	Advocates/leaders (-) Location/access (+/-) Noble Co. metals(+) Fiberglass skills(+) Castings(+) RFID skills(+) Big DOD contactors(+) Local experience(+) Strategic materials(+) Image (-)	Applied research capability (+) Battery (+) Power electronics(+) Unemployment(-) Rust belt image(-) Leadership(-) Educ. Attainment(-) Rural counties finances(-) Rural schools (threat)	IUPUI mission still fuzzy, not independent Cost of living/prod' n(+) Retired/experienced mgmt Image (-) Political advocacy(-)	Access to water (-) Image(-) Conservative attitude(-) Broadband access(+/-)	Making Crane a permanent solution (like a national lab.) (+) Build and R&D center outside of Crane (Westgate techpark) and align with entrepreneurial pipeline. (+) MUTC has tremendous potential for all surrounding SW counties (+) Creating a template for collaboration for companies, so companies are comfortable to work with each other. (-) Broadband access. (-) No research institutions (IU is counted in central Indiana) (-) GSA contracting is really difficult. Trying to contract with Crane (buy Indiana) has been very difficult. Need processes that make contracting much easier. (-) Highway access. (-) Right now seems nebulous – we need an opportunity to jump on right away. (Greg) (-) Crane is an asset for small business training & education. (-)

	Northwest	Northeast	East Central	Central	South East	South West
What champions could be expected to advocate, support a focused effort ?	NWI Forum Reg. Dev. Authority(RDA) Rep. Viscloskey NIPSCO Whiteco Purdue Calument Tech Center	Regional ED groups Cole Foundation Other foundations Mayor Nat' l trade associations NIIC Prime Contractors	Muncie 2020 Vision Legislators Regional ED groups NIIC IPFW DOD contractors Anderson leaders Flagship leaders Anderson University Hospitals Value Recovery Group Joann Gora (sp?) Elaine Fisher Larry Cox Roy Sabatini Chuck Staley Roy Budd Will David Steve Anderson Katie Frederick Scott Trapp	University Presidents DOD prime contractors St. Senator Ford St. Senator Hume LG Skillman Rep. Welch Mike Hudson Lilly manufacturing Craig Stewart @IU Bill Smith, ret' d Lilly CICP	Ned Pfau Bill Bailey, Seymour Steve Stemler Bill Graham, Scottsburg Rep. Ellsworth Charles Garmon, Clark S. IN. Rural Development Partnership (SIRDP) WIB Boards One Southern Indiana S. Central Econ Development Corp Rural Development Council Diversity Council Thayer Richey	Steve Chancellor from Ameriqual and formerly Black Beauty Coal Universities LEDO WIB Directors
What are key Must-Do's to succeed?	Focus on incubator companies	ID key leader/group Clearinghouse/broker Ombudsman to Universities	ID champions Take action! Clearing house for info Communicate assets ID key contact at BSU Connect w. customers	Create broker of opps Focus on development, nor research Define success Link big/small biz	Raise awareness of opportunities, including MUTC value Educate community	
What are the appropriate next steps?	Organizational mtg.@ tech center Brief Viscloskey	Define value/benefits Elevate on agenda ID a Champion/owner Create local capacity in matchmaker role	Connect w. MUTC Add Human Performance Center to focus action team Add Miller Biz to teams Get Roy Budd activated Brief Terry King @BSU	Create connectivity effort Identify owner/champion Elevate internal IU funding for Linguistics Small biz TA Case study or pilot project Clearinghouse or broker Access to secure networks	Fully brief ED community Connect to MUTC Higher ed focus on systems engineering	Fix the perception that a lot of businesses have about doing business with the federal government is too difficult. Strengthen & focus 8a mentoring program. Put together a flow figure that shows the different buckets of the DOD so the small businesses can figure out where they fit. Ombudsman program
Other Comments and Recommendations		Define value proposition to small biz Must have one big group own and elevate as big priority Higher Ed Commission is roadblock to new curriculum key to this sector				Not thinking big enough. Let's reinvent Crane and make it a national lab? Do we know of anyone in Indiana that has been in the DOD mentoring program or anyone that has benefited from the mentoring program. Share of % of DOD business to small businesses needs to grow – this requires legislation changes.

RECOMMENDATIONS

Recommendations for this study represent the strategic views of the consulting team as well as the groupthink of the Focus Team participants. Throughout the study, similar themes regarding needs and solutions were expressed by participants in the focus groups, the care-about interviews, and the regional meetings. These themes, and the relevant best practices, have been consolidated into seven recommendations that are critical for success: Establish Leadership, Enhance Advocacy/Marketing, Improve Collaboration, Increase University Cooperation, Develop Human Capital, Launch Small Business Services and Attract Funding.

The implementation of Defense Study includes not only an action basis, but one that is holistic in scope. In order to create the most positive atmosphere in which to create wealth by maximizing Indiana's participation in federal defense, homeland security and aerospace contracting, Indiana state leaders must make significant progress in the following critical areas:

ESTABLISH LEADERSHIP

Indiana's current economy from the federal defense industry is largely the result of efforts by private industry. In order to make doing business with the military and homeland security a greater priority, manpower and resources must be allocated accordingly. This kind of commitment is expressly important in the federal defense and contracting arena. For the state, the creation of the Office of Energy and Defense Development, and the completion of the Defense Asset Study are the beginnings of focused efforts. Leadership and a sustaining organization are necessary to realize the goal of doing more business with the federal government and to continue to build the momentum that was initiated by the outreach efforts of this study. Best practice research points to a 501C-3 non-profit organization with public, private membership as the most effective organization structure for growing defense contracting business, and Indiana has a tremendous example of success with a similar organization in the life sciences industry, BioCrossroads.

GOALS

- Create Public/Private partnership organization.
- Have industry, government and academic leadership, organization, and program management in place quickly to ensure the success of the strategic initiatives resulting from this plan and to transition the focus teams to the next level where action and results can happen.
- Strengthen interagency coordination with IEDC, OCRA, IDHS, and DWD.
- Hang out an "open for business" sign in defense and homeland security contracting.

ACTION STEPS

- Establish a public/private/partnership with a dedicated executive director that leads and implements the strategies in the study.
- Continue to utilize the Defense Asset Study Advisory group until a PPP is established.
- Place key defense contractors on IEDC target list.
- Develop an interagency working group in IEDC, OCRA, IDHS, DNR, INDOT, and DWD to support the strategy.
- Create a Commercialization Center for SBIR Phase II companies that would shop Indiana SBIR's leaving Phase 2 to Indiana Primes and outside the state.
- Work to maximize procurements by federal facilities from Indiana companies.

ENHANCE ADVOCACY, MARKETING, AND BRANDING

Indiana is home to tremendous strengths and capabilities well-suited to the needs of the Nation's defense. However, its image among key decision-makers within the U.S. military and its industrial complex is outdated or unknown. Indiana's technology, key prime presence, universities, business climate, location and can-do manufacturing culture must be communicated and advocated before key audiences, including federal agencies, key legislators, Indiana's congressmen and senators, the governor, and the nation's prime contractors.

GOALS

- Create opportunities to showcase the capabilities, talents, and success of Indiana companies that provide products and services to DOD, DHS, and NASA. Especially showcase Indiana's unique ability to manufacture, maintain, upgrade and sustain systems
- Redefine and strengthen Indiana's image in DOD, NASA, DHS agency and prime contractor communities.
- Grow capacity of federal and DOD specific government affairs/lobbying efforts.
- Make Indiana an international center for training and testing.
- Strengthen, empower and clarify the role of the Office of Energy and Defense Development (OED) within State.

ACTION STEPS

- Have the Governor visit with key defense, homeland security and other federal agency targets to explain strategy. He should also go to the primes who are headquartered out of state but have a state presence like Raytheon, ITT, etc.
- Do a targeted public awareness campaign in key defense publications to re-brand Indiana, focusing on MUTC, universities, and targeting strategy.
- Establish between the State and its Congressional delegation a merit-based approach/formula for support of defense and related appropriations requests.
- Develop a systematic marketing campaign to target agencies and contractors.
- Organize meetings with government program managers and chief technology officers to learn about capabilities needed by DOD and Homeland Security and to familiarize them with Indiana assets.
- Be the producer of a state exhibit at a national show especially those that are staged in Indiana or the Midwest. Examples of such shows are: the Regional Airline Conference (recently held in Indianapolis), American Institute of Aeronautics and Astronautics AirVenture Conference in Oshkosh in July, and the GEOINT Symposium.
- Work to place Hoosier defense leaders on science, requirements, grant and review boards at the federal level.
- Fund a Washington D.C. based group to lobby specifically for Indiana DOD and DHS initiatives.
- Publicize tangible results to show organizations, especially small businesses,, the benefit of being in the initiative.
- Develop and market a 21st Century repair and maintenance "MASH" unit to support DOD systems.
- Support for the development of the Networked Urban Operations Test Bed (NUOTB).
- Establish a federal funding "clearinghouse" to manage federal funding research and acquisitions opportunities, customer plans and state wide information.
- Aggressively publicize recent public policy successes within DOD contactor community, including R&D and tax policies.

IMPROVE COLLABORATION AND CONNECTIVITY

Indiana and its companies, leaders and educators are relatively disconnected from the key customers, influencers and government decision-makers. Within communities, universities and industries, some of Indiana's most talented individuals and companies are disconnected from the people, systems, techniques, and resources necessary to fuel their success and growth. Better connectivity and collaboration are crucial to growth in this sector and mobilization of the focus action teams is necessary to continue to build the momentum and connectivity created from the study's grass roots engagement.

GOALS

- Foster connectivity and collaboration between:
    - Indiana-to-Washington
    - Washington-to-Indiana
    - Indiana-to-Indiana
        - Large business-to-small business
        - University-to-business
    - Indiana-to-"out-of-state" primes and universities active in target areas
- Link, consolidate, and strengthen related trade and professional associations.
- Establish and maintain a database of federal contracts and contractors.

ACTION STEPS

- Continue and build on Focus Action Teams and involve them in the Indiana 2035 Vision program. The Defense Assets initiatives can lever the civilian parts of the Vision through the principal dual use.
- Establish a national Hoosier "Connect" program for Hoosiers and alumni inside DOD companies and targeted federal agencies.
- Establish a VIP Speakers program within the DOD/DHS community, targeting individuals with Hoosier connections.
- Facilitate better collaboration (meetings) between contractors (current and potential), universities, and Federal and State legislators to build relationships, catalyze efforts to address specific initiatives/contract opportunities, and discuss issues.
- Build a defense contractor supply chain program and a defense research network that helps primes, large universities, and DOD agencies locate small firms and small universities to participate on bid or execution teams.
- Start to build a small/medium enterprise (SME) federation to get D.C. pressure for more business for Indiana's small businesses.
- Proactively network with Indiana stakeholders, especially small businesses.
- Industry to support mentoring of small businesses and letters of support and access to facilities for small businesses wanting to enter the Defense Assets domain.
- Build a statewide, online database of university research and skills, and university and industry intellectual property, including orphan technology.
- Build a mechanism that allows Universities to inform the Consortium of opportunities in developmental research that should merit state support.
- Develop, with universities, "Technology R&D Vertical Integration" where university researchers work on their technology in the university's research labs, then do sabbatical work in the commercial sector to transition technology to commercialization.
- Enhance internships within Indiana's defense industry and at the Department of Defense.
- Work to maximize procurement by federal facilities and the State of Indiana
- Coordinate a statewide RF Alliance.
- Work with Crane to more fully leverage its acquisition authority.

- Support civilian work by encouraging pre existing and new firms to locate in Westgate Technology Park to shift work out of base to meet Crane's headcount limits.
- Hold the current yearly Crane "Show and Tell" conference more often inviting professors and companies.
- The MUTC should be used to showcase Indiana technology to improve the opportunity for final acceptance of the product by the field forces.
- The state National Guard should be a customer for the services and prototypes created by the initiatives of the Focus Action Teams.

INCREASE UNIVERSITY COOPERATION

Indiana's research universities are strong potential assets in a growth strategy focused on these markets. However, significant effort by key universities has yet to demonstrate consistent results. Additional streamlining of incentives, laws and practices affecting technology transfer, tenure, security, sponsored research are needed. In addition, more transparency and visibility on cutting-edge talent and intellectual property could generate significantly increased benefits in terms of federal funding and job creation.

GOALS

- Streamline, apply best national practices, and harmonize technology transfer policies at state universities.
- Expand external visibility of university-based talent, skills, IP, assets, projects, and faculty interests relevant to DOD, etc. activity within the state and at the federal agencies.
- Facilitate active pursuit of DOD, NASA, and DHS research and its transfer at Indiana Universities.
- Maximize role of culture, language skills, and computational capability within MUTC mission.

ACTION STEPS

- Establish a statewide university skills database and Internet portal to showcase Indiana academic strengths.
- Establish a secure R&D center at an Indiana research university (linked and available to all Indiana universities).
- Establish and recruit a senior DOD R&D liaison to specifically crosswalk between DOD and Indiana faculty and labs (perhaps one each at Purdue and IU and a third for the other state colleges and universities) and integrate federal lobbying between and among research universities and with the Governor's office.
- Connect IHETS and I-Light II to all facets of the MUTC mission and to Crane.
- Support and expand existing efforts to establish a 21st Century manufacturing worker program at ITSC and other technical and certificate establishments.
- Leverage the strong role of Vincennes University in DOD worker training.
- Establish a statewide, inter-university and commercial industry computing grid to support advanced research and testing.
- Improve the technology transfer process to release more technology for commercialization by commercial firms.
- Standardize the Academic IP Process across Indiana's university providing common templates to make it easier for industry to tap that IP.
- Develop courses to address Knowledge Management for the coming economy where knowledge is critical and is ever increasing.
- Give faculty an opportunity to form companies.
- Improve access for companies to university resources and make it easier for small business to work with academia without losing their IP.

DEVELOP HUMAN CAPITAL

Like many technology dependent industries, the DOD, DHS, and NASA market placed a heavy premium on engineering, complex systems and advanced manufacturing skills. Indiana is blessed with at least five engineering schools, significant technical and community capacity and a strong labor force. A stronger focus within Indiana's education community on specific defense contractor needs –most specifically systems engineering and a focused effort on retaining engineering talent in the state would generate significant dividends for Indiana.

GOALS

- Focus engineering and other curricula and faculty recruiting on 21st Century DOD and Homeland security needs in focus areas
- Target BRAC-affected workers and work to retain them in Indiana and place within targeted area of needs, including the MUTC mission.
- Strengthen work-study and internship programs with defense agencies and top government prime contractors.
- Strengthen commitment to STEM (science, technology, engineering and math) education.
- Create focus at DWD to assess and support manpower requirements of defense industry and facilities (including BRAC dislocations).
- Target related talent in the governor's "Hoosier Comeback" program.
- Focus curricula on systems engineering, complex systems.

ACTION STEPS

- Solicit and establish endowed chairs and professorships within DOD/DHS disciplines
- Consider a dedicated program within the Chamber's "InterNet Program."
- Link two WIRED regions to DOD manpower, training, technical assistance programs
- Target BRAC-affected workers and place with Hoosier defense contractors, facilities.
- Recruit retired DOD and defense contractors to teach in Indiana classrooms.
- Implement reverse brain-drain strategies within DOD and industry to attract eminent scholars, critical employees and small firms
- Identify and develop programs to deliver workers with critical skills to contractors and facilities.
- Develop program and strategies targeting engineering students that can involve foreign nationals.
- Facilitate use of academics on industry projects and industry employees on university projects.
- Establish domain-specific technology networks among academics and industry researchers and engineers.
- Teach complex system engineering (systems of systems involving human groups) in secondary schools.
- Expand engineering programs, particularly Systems Engineering, across the state's universities. To meet the shortfall in engineering/technical skills, people with Blue Cards (where FAR, ITAR allow) should be tapped.
- Create and expand an educational program that brings together mechanical, electronic, software, and control systems knowledge both for the technician level (aka, Mechatronics) and university trained graduate engineers.
- Fully leverage US DOL workforce traning funds and target training to required skills.

LAUNCH SMALL BUSINESS SERVICES

In the past, technical assistance and training programs based in Indiana were largely ineffective, and phased out over time. In recent years, new, more powerful programs are emerging again, fueled by new leadership, a renewed interest in federal contracting and the desire to diversify away from a dependency on automotive

manufacturing. Small business is desperate for guidance, assistance and leadership in this arena, and a highly coordinated strategy is needed to maximize and fully leverage limited resources.

GOALS:

- Establish a clearinghouse for matching DOD, NASA, and DHS customer needs and solicitations with Indiana businesses
- Create a sustainable technical assistance and training program (T&A) in government contracting
- Establish a single small business development and technology portal to Crane and MUTC, and to flag out-of-state customers such as Wright Patterson AFB in Dayton. This function should not just provide information, but identify opportunities and help market capabilities.
- Streamline access for small business to university technology, assistance, and recruiting.

ACTION STEPS

- Elevate, leverage and synchronize all Indiana small business services, including SBDC, SBIR, the 21st Century Grant program, PTAC, IEDC and OED services.
- Institute a quick grant proposal review process.
- Reform the PTAC affiliate in northern Indiana and make it a statewide program.
- Create a new, independent small business and technology ombudsman at Crane.
- Establish a technology transfer advocate within State government to represent Indiana businesses within the university technology community.
- Create a role within the proposed public/private partnership to perform strategic research, planning and opportunity brokerage for Hoosiers
- Provide education on defense contracting, requirements, procedures and terms.
- Provide first-time proposers SBIR preparation assistance.
- Sustain and enhance 21st Century Fund SBIR matching program.
- Provide technical support for small businesses to obtain ISO 9000/FAA certification.
- Include in comprehensive training program a segment on how to obtain security clearances for facilities and personnel.

ATTRACT FUNDING

Funding is necessary to mobilize the strategies and plans identified in this study and to support the recommended public/private partnership. Funding should be attracted from a variety of sources, including membership fees in the consortium, in-kind support of personnel from member organizations, line-item budget appropriations from the state, and funding from specific grants or contracts from state or federal agencies.

GOALS:

- Create mechanisms to raise and pool funds to support the agenda and the resulting public/private partnership.
- Strengthen sustainable funding for OED to support the strategy
- Establish administrative guidelines such that the organization can participate in grant and contract proposals with a view towards sustainable funding.
- Ensure that state technology funding continues to support the defense industry.

ACTION STEPS

- OED and IEDC seed the start up cost for a single, public/private partnership to support all the goals set forth in this plan, including TA, MUTC, clearing house functions.
- Approach Wired 1 and 2 directors for potential funding for supporting growth in entrepreneurial defense contracting business development.
- Approach DWD for funding of defense contracting training and education opportunities
- Attract Indiana Defense startup and small company funding through angels, venture capitalists, and strategic partners.
- Continuing support for the organization is covered as a General and Administrative Costs cost on all state and federal grant and contract proposals that the organization supports.
- A portion of the SBIR matching funds provided by IEDC are used to support the organization for all SBIR's that the organization is successful in helping businesses capture.
- Place the 21st Century Fund SBIR matching program on a sustainable basis.

BRAC AFFECTED AREAS RECOMMENDATIONS

The 2005 Base Realignment and Closure decisions affected five installations across Indiana with significantly positive or negative impacts: (1) Hulman Regional Airport Air Guard Station, (2) Newport Chemical Weapons Depot, (3) Naval Surface Warfare Center-Crane, (4)Fort Wayne International Airport Air Guard Station, and the (5) Lawrence Defense Finance and Accounting Service Center. In addition, there were six other minor installations affected: (1) Navy Reserve Center Evansville, (2) Leased Space Indianapolis, (3) Navy Recruiting District Headquarters Indianapolis, (4) US Army Reserve Center Seston, (5) US Army Reserve Center Lafayette, and (6)Navy Marine Corps Reserve Center Grissom Air Reserve Base. This analysis concentrated on the five significant installation impacts. Post BRAC decisions by DOD and the services have in some cases altered the numeric impacts and are included in the analysis.

The net direct and indirect impact on Indiana as a whole from the BRAC 2005 decisions is modestly positive (net 4069 jobs -- 2197 direct and 1872 indirect). Subsequent positive and negative actions result in a slightly more negative impact for the State, but still net positive. Local impacts, however, have much larger consequences, both positive and negative.

This section of the report focuses on very location-specific workforce related issues. These issues intersect with the broader defense, homeland security, and aerospace strategy in several ways (noted in the location-specific recommendations). At the highest level, individuals with defense-related experience and skills, and often with security clearances will become available for employment in the focus areas. Since talent is one of the key growth issues for firms across Indiana, this asset may be more important than the simple numbers suggest. In particular, the pool could be particularly useful in supporting the rapid expansion of the Muscatatuck Urban Training Center.

HULMAN REGIONAL AIRPORT AIR GUARD STATION

The realignment of the 181stFW from Hulman International Airport does not pose a major workforce challenge by itself (a loss of 232 jobs, 136 direct and 96 indirect – 0.26% of MSA employment). The effect is clearly negative and the identification of replacement employment for dislocated full-time workers may be difficult due to the general economic climate of Vigo County and the Terre Haute MSA. This action, however, will compound the significant looming dislocation at the Newport Chemical Weapons Depot (see below), just 30 minutes north of Terre Haute.
The facility's proximity to the Indianapolis Metro Region, and the mission conversion of the 181st into an Air Support Operations Squadron (+350 positions) and a Distributed Common Ground Station (+70 positions) make the policy challenge one of managing timing and skill mismatches. Skill requirements differ markedly, as does timing. The new positions are higher skill, information technology intensive, while the departing positions are heavily blue-collar maintenance and support. The departing positions will leave by mid FY2008 and most of the incoming units will arrive over a more extended period.

An additional unique challenge, though small in number of employees, is the fire department for the Hulman International Airport. At present, the Air National Guard funds the fire department. With the transfer of the flying mission, this funding disappears and will need replacing. This is not just a regional airport. It is the regional DHS response hub and is the air gateway that will support the Muscatatuck Urban Training Center operations.

POLICY RECOMMENDATIONS:

1. Regional Workforce WorkOne staff to use existing DWD programs and leverage DOD BRAC adjustment programs to:

    - Provide training and other assistance to maximize the local absorption of dislocated federal employees by the new mission elements and local business (expected to be modest).

- Provide training and other assistance to take advantage of growing DOD positions at DFAS-Indianapolis and the Muscatatuck Urban Training Center. The latter is one of the major growth opportunities identified in this analysis, and one that access to experienced personnel with defense-related experience and clearances would be a significant asset.

2. DWD/Office of Energy and Defense Development should apply for U.S. Department of Labor, and petition for Rapid Response funding in a combined effort to manage the Terre Haute and Newport actions (see below for Newport).

NEWPORT CHEMICAL DEPOT

The Newport Chemical Depot poses a major workforce challenge to Vermillion County, which is part of the Terre Haute MSA. Newport is currently the largest employer in the county. The workforce is dispersed rather widely, both in and outside the MSA. All but a handful of the workers are contractor employees, and eligible for less BRAC adjustment assistance than government employees. Proximity to the Indianapolis Metro Region will help reduce the long-term negative effects to the State of the installation's closure, but the local impact is significant.

Timing is very important. Once the chemical agent is neutralized (as early as June/July 2008 under current projections), staffing requirements drop substantially (as many as 220-355). Security requirements will decrease. This will release 70-80 security personnel (as well as several county emergency management staff supported by Treaty funding). The facility then goes into tear-down, requiring fewer employees than neutralization. Exact numbers remain unclear, but current estimates range from 150 to 275 additional layoffs, followed by gradual ongoing reductions as teardown progresses. There may be further churn at this point as the employee skills required for operations are quite different from those for tear-down. The contractors simply do not yet know if the current employee base has the required skills. Although exact timing and specific staff reductions remains unclear, the facility will be closed within three years. These job losses could begin phasing in sooner, if neutralization and teardown continues to progress ahead of schedule. There are very limited opportunities in the region to absorb this large a number of dislocated workers, with their skill and education mix.

Total employee numbers used in the BRAC calculations and the current staffing shows significant variance. BRAC estimated a maximum potential reduction of 838 jobs (571 direct and 267 indirect). Actual employment on base at the end of 2006 was 918 direct positions. Current employment may be somewhat less, but using the same multiplier as used by the BRAC analysis against this higher base results in indirect job losses of an additional 429 workers (for a total of 1347).

POLICY RECOMMENDATIONS:

1. Regional Workforce WorkOne staff to use existing DWD programs and leverage DOD BRAC adjustment programs to:

   - Provide training and other assistance to maximize the local absorption of dislocated contractor employees by the new mission elements in Terre Haute and local business (expected to be modest, industrial maintenance staff and heavy equipment operators are in short supply and should be relatively easy to place, security personnel and operations staff will be much more difficult to place locally).
   - Provide training and other assistance to take advantage of growing DOD positions at DFAS-Indianapolis and the Muscatatuck Urban Training Center, as well as other federal facilities and defense contractors around the state. Personnel have security clearances and a variety of other skills that may be in demand at secure operations, especially in furtherance of the recommendation of the overall Asset study to strongly support expansion of the Muscatatuck strategy.

2. DWD/Office of Energy and Defense Development should apply for US DOL training funds and petition for Rapid response Funding in a combined effort to manage the Terre Haute and Newport actions. The time line for employee RIFs are such that such funding to begin as soon as possible. One-on-one personnel planning needs to begin no later than fall 2007. This probably requires an on-base, full or part time employee assistance position for the duration, combined with targeted placement and training programs.

3. Pursue the possibility of using Newport as a staging site for Muscatatuck Urban Training Center exercises. It is close to Hulman Airport where the participants will arrive. The site has considerable space and the use would be compatible with existing reuse plans. The site serves as a host for the National Guard after 9/11. Since it is an Army facility, such a decision could be worked internally as part of the BRAC process without waiting for final tear-down.

4. The state should negotiate with the Army to begin BRAC-related closure processes "now" so that reuse activity can begin early enough to help absorb workers as their positions become redundant.

NAVAL SURFACE WARFARE CENTER, CRANE

The Crane realignment decision is of potentially great significance at the most local level and regionally. The realignment was estimated to have a maximum potential reduction of 796 jobs (547 direct and 249 indirect). Although Crane employees are widely dispersed across the region, this is a major negative impact for the largely rural surrounding communities, especially since average wages at Crane significantly exceed regional, indeed, state average wages. The realigned positions range from graduate engineers to highly skilled technicians to experienced administrative and management occupation.

Given the timelines, Crane HR is working to minimize the impact of the realignment on individuals, through internal transfers, retirements, and other personnel actions. Their goal is to have in place a team that is either willing to move or take retirement at the point at which the function is ready to move. In the short-run, the war is supporting employment on base and for Crane support contractors, easing the immediate challenge. We anticipate that as we move into the BRAC end-game (2009-2011), at least some of the direct job reductions may require external assistance. For the community, the total reduction of jobs (796) and incomes will not change, and the net indirect jobs lost (249) may require targeted adjustment assistance (especially for small specialized contractors) .

Affected workers who live in Monroe and, to a lesser extent, Lawrence County, will be able to tap into the robust job markets in the Indianapolis Metro Region and the growing biomedical supplies industry of Bloomington (perhaps requiring some retraining). For those living farther south and west, the success of the Crane Region diversification strategy (funded by OEA) is critical to absorbing the reductions. In particular, the expansion/attraction strategies in the zone around Crane and the "West Gate" technology park are highly focused on defense related industries and specific firms that will employ the kind of skills to be released in the realignment.

POLICY RECOMMENDATIONS:

1. Regional Workforce WorkOne staff to use existing DWD programs and leverage DOD BRAC adjustment programs to:

    - Provide training and other assistance to maximize the local absorption of dislocated Navy and contractor employees by existing Crane mission growth and Indiana-based contractors.
    - As above, provide training and other assistance to take advantage of growing DOD positions at DFAS-Indianapolis and the Muscatatuck Urban Training Center, as well as other federal facilities and

defense contractors around the state. Dislocated navy and contractor personnel have security clearances and a variety of other skills that may be in demand at secure operations.

2. Consider including Crane in the DWD/Office of Energy and Defense Development application for US DOL training funds and petition for Rapid Response funding in a combined effort to manage the Terre Haute and Newport actions (see above). The Crane impacts will be later, and have a different skill mix, but there is considerable logic in integrated planning, if it fits within USDOL guidelines. Rapid Response funding is relatively near-term, but NEG funding for BRAC-related impacts can be applied for today.

3. Whether together with the Terre Haute/Newport or as a separate request, seek additional federal funding to support targeted elements of the Crane Region Diversification Strategy that was created with OEA funding.

FORT WAYNE INTERNATIONAL AIR GUARD STATION

The Fort Wayne International Air Guard Station is a net recipient of personnel because of BRAC 2005. However, a post BRAC decision to reduce Air Guard wing size will result in smaller actual personnel increases. The BRAC findings estimated a net increase of 313 employees (57 military and 256 civilian). Actual increases will be from one-third to one-half lower.

In a workforce region as large as the Fort Wayne MSA, the demand/supply challenges are minimal. Most of the incoming personnel will require training, but it is specialized and provided by the Air force. However, the expansion intensifies an existing training challenge. Local reserve personnel in flight operations and maintenance, despite deep military equipment skills and experience, are finding it difficult to find related local civilian employment. As it turns out, the Fort Wayne MSA has a shortage of airframe maintenance workers and Ivy Tech Community College-Fort Wayne has started a new program to address this local need, independently of the Air Guard realignment. The project team facilitated a discussion between the Base Commander and the Regional Ivy Tech Chancellor, resulting in the launch of on-base training in the desired skill sets, paid for by the Air Guard.

POLICY RECOMMENDATION:

1. The State should determine if additional facilities or support are required to facilitate meeting Air Guard training desires and community needs for airframe maintenance workers.

LAWRENCE DEFENSE FINANCE AND ACCOUNTING SERVICE

The size of proposed Lawrence DFAS facility additions (3,495 direct, inducing additional 2,490 indirect positions) may pose a significant demand-side challenge, even in a city as large as the Indianapolis Metro Region. As of January 2006, 800 of these positions were hired, 80% from the local market, the rest transferred from other sites. By June 2007, the DFAS BRAC office reported that nearly half of the required recruiting was compete, with no major challenges.

The policy challenges appear manageable. While the number of additional workers is large, the facility's location in the Northeast section of Marion County give ready access to growing suburban housing markets in Hancock, Hamilton, and Northeast Marion County. In similar fashion, nearby school districts are experienced with managing strong student body growth.

However, the skills and education mix required are similar to several recent major expansions and relocation announcements in the metro area's large Finance, Insurance, and Real Estate sector. Regional workforce staff members are concerned that the remaining DFAS recruiting may face more serious demand gaps. Exact skill and education mix details will be necessary to assist the local workforce staff and training providers to fully judge what specific assistance may be necessary.

POLICY RECOMMENDATIONS:

1. Prepare a detailed skills profile of the remaining DFAS recruiting requirements in comparison to the known requirements of the announced attraction/expansion deals, and determine if an actual near-term skills gap exists.

2. Facilitate a meeting among DWD, regional workforce staff, and key training and education providers to clarify strategies to address both near-term and sustained skills requirements.

3. Seek guidance from USDOL to determine if NEG funding criteria can be utilized to fill the gap. Most federal and state workforce funding does not cleanly address the challenges of receiving sites under BRAC realignment.

4. Pursue targeted workforce actions that has clear DOL/DOD guidelines, such as:

    - Provide training and adjustment assistance for spouses of BRAC-impacted workers that are moving to Indianapolis (they qualify as dislocated workers).
    - Use existing training and adjustment assistance programs to:

        - Direct USDOL Workforce Investment Act-eligible individuals towards DFAS employment
        - Target WorkOne efforts to help dislocated federal employees at other state BRAC-impacted sites. With the right training and skills, BRAC dislocated workers receive preferential DFAS hiring status
        - Target WorkOne efforts to assist dislocated federal contractors at other state BRAC-impacted sites. Although they do not receive preferential hiring status, they have clearances and other experience and skills that can give them advantages in DFAS hiring.

The BRAC 2005 impact on the state is modestly positive, with some significantly negative impacts in specific locations. The skills mix of workers from the shrinking sites does not match closely the skills mix of the expanding sites. To some extend, however, the shrinking site workers fit many of the prospective positions that will be created as the Muscatatuck Urban Training Center expands and as the strategy proposed in the full Asset Report is implemented. Location specific policies and initiatives are proposed to deal with the site specific worker adjustment challenges. Other non-workforce related initiatives associated with BRAC adjustment are addressed at various other points throughout the full report.

SUMMARY AND IMMEDIATE NEXT STEPS

Indiana's defense industry has grown dramatically since 9/11, with funding rising nearly 200% to over $6 billion in 2006 and predominantly driven by DOD contracts. In order to continue to grow this industry, Indiana's industry, government and academic leaders must aggressively focus on leveraging Indiana's strengths and affinities to emerging defense and homeland security needs. Targeted opportunities in defense electronics, military informatics, future energy systems, transportation systems, services and support, bio-collaboration and MUTC all favor Indiana's universities, emerging technologies, historic can-do manufacturing strengths, location, competitive cost structures and facilities.

To fully capitalize on the targeted opportunities, immediate and sustained efforts are required by the state, academia, and the business community in leadership, advocacy and marketing, collaboration, human capital and small business services. The immediate next steps are:

1. **Establish a Public/Private Partnership around to Maximize Growth of Indiana's Defense Industry**

   This organization has the ultimate responsibility for optimizing DOD, Homeland Security, and NASA business for the state. It will carry out the recommendations in this proposal, and be a catalyst for the identified focus areas and for efforts that are needed to assure that a responsive, effective infrastructure exists for all Indiana stakeholders doing business with these customers.

2. **Organize and initiate a second phase of Focus Action Team meetings for each of the six targets**

   Each Focus Action Team has identified initial implementation steps for the first two years. Some immediate opportunities and initiatives have already been defined, each of which require attention. These teams need to meet on a regular basis to build on the momentum gained during the Focus Action Team sessions.

3. **Mobilize a MUTC team and utilize the public/private foundation to support the vision**

   The Muscatatuck Urban Training Center (MUTC) Partnership focus area needs to be expressed eventually as a High Level Business Case, as have the other six targets. Because of the complexity of the mission and potential needs associated with MUTC[12], a game exercise involving top level national experts is recommended, where multiple scenarios can be played out in the urban warfare, to fully identify the supporting infrastructure needed to maximize this opportunity for the state and develop a business plan to fully support the development of this opportunity to attract DOD training business.

4. **Develop bi-partisan, merit-based appropriations strategy with Indiana's Congressional delegation and State Leadership**

   One of the key findings in this report is the need for more aggressive and highly coordinated effort within the Indiana Congressional delegation toward merit-based, bi-partisan DOD and DHS projects. This report should be presented to the delegation by State leadership to inform, motivate and demonstrate commitment to these goals on the part of the State. The current working group within the delegation should be strengthened and a formal process developed for the identification and support of merit-based projects.

[12] Next year 50% of the world's population will be living in urban centers and that percentage is growing. In 2015, there will be 30 world cities with a population of more than 8.4 million – more people than in all of Indiana.

5. **Move on the short-term opportunities identified in this report.**

   - Human Impact Trauma Center
   - Institute of Repair Excellence
   - Networked Urban Operations Test Bed

This study is already realizing benefits for Indiana. Through its outreach efforts, new collaborations are forming from the focus group meetings. Forty-six small businesses have received training on defense contracting. A new, searchable database of all Indiana federal contracts with the DOD, DHS and NASA from 2002-2006 is available on the OED's website. The extent to which Indiana's stakeholders are already deploying parts of the plan provides strong confidence that success is achievable. Hoosier leaders clearly perceive the importance of this market, and momentum is building towards making Indiana a much larger player in DOD, DHS, and NASA marketplaces.

APPENDIX I

CONSULTING TEAM PROFILES

LISA LAUGHNER

Executive Vice President, Conexus Indiana

Lisa Laughner is the Executive Vice President for Conexus Indiana, an initiative focused on Indiana's advanced manufacturing and logistics industries. On loan from Rolls-Royce, she is responsible for implementing the initiative's focus activities in supply chain, business and technology development opportunities, workforce development, and industry image and awareness marketing.

Prior to this role, Lisa was Vice President, Rolls-Royce Corporate Ventures, for Rolls-Royce North America. She has had numerous management posts in the defense business for Rolls-Royce, including Program Manager,RTM322 engine for the UK MoD Apache Helicopter program, LiftFan Externals and Integration Leader for the Joint Strike Fighter Program, and New Ways of Working Team Leader for Defense Services.

Lisa has 20+ years experience in new product development, program management and process improvement in the aerospace industry. She holds a Bachelor Science Mechanical Engineering from Purdue University, a Masters Business Administration from Open University (Milton Keynes England), and a Professional Engineering License in Indiana.

BROSE A. MCVEY

Managing Partner, Nexpointe Strategies

Brose McVey has over 20 years of experience in government relations, public policy and public affairs. He began his career in Washington, DC as an intern to U.S. Senator Richard Lugar and went on to serve then-U.S. Senator Dan Quayle as a Legislative Assistant, Special Assistant and Deputy Press Secretary.

After serving as Executive Vice President of a national trade association, Brose returned to his home state of Indiana in 1991 to manage the successful statewide reelection campaign of then-U.S. Senator Dan Coats, now the U.S. Ambassador to Germany.

Following the 1992 Senate campaign, McVey founded his own public affairs firm and has served clients since then. In 2002, Brose was the Republican nominee for Congress in Indiana's 7th Congressional District, challenging a long time incumbent. His campaign attracted national attention and was highly targeted by the White House and top Republican Party organizations.

KURT LUIDHARDT

Project Manager, Business to Government Services, Nexpointe Strategies

Kurt Luidhardt manages the Business to Government Services Department at Nexpointe Strategies. In that capacity, he has coordinated multiple projects and strategic sales campaigns for Nexpointe's clients.

Kurt has 5 years experience in state government politics. Most recently he worked as Manager of Political Affairs for the Indiana Chamber of Commerce. At the Indiana Chamber, Kurt was integral in increasing fundraising for the Chamber's PAC, Indiana Business for Responsive Government, and implementing a new software system for contact management and contribution tracking.

Before working at the Indiana Chamber, Kurt ran his own political and marketing consulting business, worked for the Senate Republican Campaign Committee and for the Indiana State Republican Party.

BRUCE STACH

President, Sigma Strategic Solutions

Bruce Stach served as Director of Business Development, Space Systems, for Fort Wayne's ITT Industries for 16 years. ITT Industries is one of the largest, most successful government contractors in the State of Indiana. While at ITT, Bruce created a multi-year business plan to extend ITT's leadership in space-based remote sensing and navigation systems.

Bruce Stach is a strong strategic thinker and team builder. He has excellent strategic planning and operational planning experience. Before ITT, Bruce worked with the National Aeronautics and Space Administration during the Gemini and Apollo programs as Mission Flight Controller. He has a B.S. in Mathematics, with minors in Physics and Inorganic Chemistry.

Bruce is still an innovative executive, forming his own company in 2005, Sigma Strategic Solutions, to help businesses all over develop strategic plans and DOD Contracting Strategies.

JIM WHEELER

Thomas P. Miller and Associates

Jim Wheeler has been deeply engaged in strategy development and implementation for various international, national, state, and local policy organizational and economic development issues. During his 30-year career he has led and created interagency and intergovernmental boards and committees, helped to create and/or transform community-based public-private-academe partnerships, and led numerous visioning and strategic exercises.

Jim's recent projects include the development of Indiana's Strategic Economic Development Plan, the City of Indianapolis' economic development plan of the late '90s, and current project to create a regional strategy and organizational structure around the Orange County casino license and tax transfers. In addition, Jim headed the consulting team that supported Naval Surface Warfare Center, Crane Division in its award winning "Business and Process Reengineering" project.

REAR ADMIRAL JIM HINKLE

US Navy, Project Manager, The Spectrum Group

Rear Admiral Jim Hinkle recently concluded a 33-year career with the United States Navy as Deputy Chief of Navel Personnel and Commander of the Navy Personnel Command in Millington, Tennessee. A former surface warfare officer, Admiral Hinkle commanded the Eisenhower Battle Group. As Commodore of a Naval Destroyer Squadron, he created the multi-national force that conducted maritime interception operations in the Red Sea enforcing UN sanctions against Iraq.

Admiral Hinkle also served as Director, Navy Programs, in the Navy Office of Legislative Affairs and was the Director of the Navy's participation in the First Quadrennial Defense Review (QDR). Admiral Hinkle holds a B.S. in math from the University of New Mexico, and a Master's Degree in Operations Research from The Naval Postgraduate School in Monterey, California.

VICE ADMIRAL STEPHEN F. LOFTUS

Aviation, The Spectrum Group

Vice Admiral Stephen F. Loftus is the Senior Executive Vice President of The Spectrum Group. Culminating a 35-year career in the United States Navy as the Deputy Chief of Naval Operations for Logistics, he brings to The Spectrum Group experience in aviation operations and maintenance, facilities and installation management, environmental policy development, logistics, and financial management. Admiral Loftus also served as the Director of the Department of the Navy's Budget, and later as the senior uniformed advisor on the personal staff of the Secretary of the Navy.

He became the Navy's senior logistician and a member of the Joint Logistics Commanders in 1990, with direct responsibility to the Chief of Naval Operations for the materiel readiness of the United States Navy throughout the Gulf War.

Admiral Loftus holds an undergraduate degree from the University of Massachusetts in Amherst, and a Master's degree in Financial Management from the Naval Postgraduate School in Monterey, California.

CHARLIE DALE

Strategic Planning and International Affairs, The Spectrum Group

Charlie Dale has held key strategic planning and program management positions in the United States Department of Defense and at the North Atlantic Treaty Organization (NATO). He was one of the principal architects of NATO's Partnership for Peace program. Most recently, Mr. Dale was the Director for Defense Cooperation and Partnership on the staff of the Secretary General of NATO in Brussels.

Before taking his NATO position, Mr. Dale was a defense policy advisor to the United States Ambassador to NATO and the Head of Policy Planning in the Office of the Defense Advisor in the U.S. Mission to NATO. During a twenty-four year career in the U.S. Navy, Mr. Dale served on the staff of the Chief of Naval Operations for Air Warfare and in the Office of the Assistant Secretary of Defense for International Security Affairs, as the Director for South Asia. He was responsible for regional US defense policies and bilateral defense relations with India, Pakistan, and the other nations in South Asia.

ANDREW B. MANER

Former Chief Financial Officer, Department of Homeland Security

Mr. Maner was appointed by President George W. Bush in January 2004 as the Chief Financial Officer (CFO) for the Department of Homeland Security (DHS). Prior to his present appointment, Mr. Maner served at the U.S. Customs Service from January 2002 to January 2004. In that capacity he was the Commissioner’s principal operating officer on enforcement, trade, finance, budget, transition, and management issues

He has also worked in the Strategic Sourcing Practice at A.T. Kearney and held positions in international strategy, marketing and communications at the Chicago Board of Trade and with Powell Tate, a Washington D.C. based lobbying and communications firm.

NICOLLE SCIARA RIPPEON

Partner, ABM, LLC

Nicolle Sciara Rippeon is currently a partner at ABM LLC, an advisory services firm specializing in federal strategic sales advice, marketing and message delivery, and government procurement techniques and policies. Nicolle joined ABM LLC in January 2007 after serving as Chief of Staff to Assistant Secretary for Policy Stewart A. Baker at the Department of Homeland Security.

As Chief of Staff, she managed the transition and growth of the newly formed office, crafting the budget, hiring plan, and organizational structure for the office. She also served as primary advisor to the Assistant Secretary for homeland security policy, international operations, strategic planning, intra-department coordination, and external outreach to private sector stakeholders.

ELLIOTT R. PARKER

Co-Founder, Innovo Partners

Elliott Parker is co-founder of Innovo Partners, a consultancy specializing in innovation and entrepreneurial business development for clients in the public and private sectors. He is a specialist in intellectual property management and new venture creation.

Prior to founding Innovo Partners, Elliott was a Manager of Business Development at Roche Diagnostics Corporation, where he sourced and managed new opportunities for the company's business incubator. He also managed Roche’s unique MBA internship program, the Innovation Accelerator. Prior to Roche, Elliott was a consultant in intellectual asset management at Arthur Andersen.

Elliott holds a bachelor's degree in finance from Brigham Young University and an MBA from UCLA Anderson School, where he was a Venture Fellow and a recipient of the Dean's Fellowship. While at UCLA, he founded two startup companies.

DAVID SMITH

Vice President, Consulting, Alliances, and Education, Technology Futures, Inc.

A futurist, strategist, and technologist with over 30 years of experience, Mr. Smith combines these disciplines to deliver consulting and strategic services that focus on the emerging trends of the technological future. He has worked with an array of technologies and industries offering expertise in technology transfer, strategic and technology planning, communications, roadmapping, consortia startup and management, and collaborative alliances.

David has organized and participated in targeting and conducting action plans for organizations in Indiana, including working with Bio-Crossroads and other Indiana initiatives.

In the federal government and DoD areas, David has prepared numerous forecasts, technology plans, and Grand Challenges services. As a leader in innovation, his work includes establishing the framework and process for In-Q-Tel, the intelligence community's research and development venture capital solution. He has worked with a range of organizations from government agencies to large international companies to small companies to universities in setting and implementing a strategy for the future. Mr. Smith has also held key positions in two of the largest and most successful consortia in the United States—SEMATECH and the Microelectronics and Computer Technology Corporation (MCC). In addition, he served on the CSIS steering committee to draft a new mission for the federal labs and has been involved in several prestigious roadmapping projects. And was the co leader of the first National Technology Roadmap.

BILL KLEINEBECKER

Senior Consultant, Technology Futures, Inc.

Bill Kleinebecker has assisted a range of organizations from government agencies to large companies to small companies to universities in understanding the impact of technological and societal change and what they can do to take advantage of those changes while at Technology Futures.

Bill has organized and participated in targeting and conducting action plans for organizations in Indiana, including working with Bio-Crossroads and other Indiana initiatives.

Previous to joining TFI, Bill worked at IBM for more than 30 years, where he held management and project management positions in field marketing, systems design and architecture, customer service, and headquarters staff.

APPENDIX II

FORECASTING EXPERT PANEL BIOS

ABM, LLC

Andy Maner was appointed by President George W. Bush in January 2004 as the Chief Financial Officer (CFO) for the Department of Homeland Security (DHS) and left that post in March of 2006. As the CFO, Mr. Maner was responsible for all the $45 billion budget, finance and accounting, strategic planning and evaluation and financial systems for DHS for Secretaries Ridge and Chertoff. He was also responsible for the on-going integration of all those functions within the new Department to include agencies such as the United States Coast Guard, United States Secret Service, U.S. Customs and Border Protection and FEMA.

Nicolle Sciara Rippeon is currently a partner at ABM LLC, an advisory services firm specializing in federal strategic sales advice, marketing and message delivery, and government procurement techniques and policies. Nicolle joined ABM LLC in January 2007 after serving as Chief of Staff to Assistant Secretary for Policy Stewart A. Baker at the Department of Homeland Security. As Chief of Staff, she managed the transition and growth of the newly formed office, crafting the budget, hiring plan, and organizational structure for the office. She also served as primary advisor to the Assistant Secretary for homeland security policy, international operations, strategic planning, intra-department coordination, and external outreach to private sector stakeholders.

THE SPECTRUM GROUP

Rear Admiral Richard A. Appelbaum, United States Coast Guard (ret) completed thirty-five years of active service in the United States Coast Guard. During his career, he experienced a broad variety of shipboard and shore-based operational and administrative assignments, including command at sea and several positions within the field of law. He served on the East, West, and Gulf Coasts, The Great Lakes, overseas, and on the U. S. Coast Guard Academy faculty. As a flag officer, Admiral Appelbaum commanded the Ninth (Great Lakes) and Eleventh (Pacific Southwest) Coast Guard Districts and the National Pollution Funds Center, which he created to manage the billion-dollar Oil Spill Liability Trust Fund established by the Oil Pollution Act of 1990, following the Exxon Valdez incident. Additionally, Admiral Appelbaum served in Coast Guard Headquarters as the Chief of the Office of Navigation Safety and Waterway Services, and the Chief of the Office of Law Enforcement and Defense Operations (Chief of Operations). As such, he directed every major operational program of the Coast Guard. He was the capital resources director for all Coast Guard ships, boats, and aircraft (fixed and rotary wing), as well as several types of shore units and training facilities. Admiral Appelbaum had responsibility for over $2 billion in annual operating funds plus a capital plant valued at over $18 billion.

Lieutenant General Arthur "Art" Blades retired from the United States Marine Corps after 32-years of military service initially as an Infantry officer and then as a Naval Aviator. His assignments include Deputy Chief of Staff for Plans, Policies and Operations, Deputy Commander US Forces Japan, Commanding General Third Marine Aircraft Wing and Assistant Deputy Chief of Staff for Aviation.

JOAN BONDAREFF concluded a distinguished 25-year government career. Her last position was as Chief Counsel and (Acting) Deputy Administrator of the Maritime Administration, U.S. Department of Transportation (DOT). She heads TSG's Homeland Security Division. Since joining TSG, Ms. Bondareff has handled several major lobbying projects including working for immigration and health care clients. In the past five years, Ms. Bondareff has successfully obtained legislation three times to reauthorize and expand the Conrad State 30 Program (J-1 Visa program for doctors). Ms. Bondareff has also written port security grants for clients and advised on port and maritime security issues.

Lieutenant General Gus Cianciolo has held a wide variety of important command and staff positions during his 33-year Army career, culminating as the Military Deputy to the Assistant Secretary of the Army for Research, Development, and Acquisition

Charlie Dale leads The SPECTRUM Group's International Division. He has extensive experience in defense and international security affairs, including eight years in Europe. He has held key strategic planning and program management positions in the United States Department of Defense and at the North Atlantic Treaty Organization (NATO). He was one of the principal architects of NATO's Partnership for Peace program. Most recently, Mr. Dale was the Director for Defense Cooperation and Partnership on the staff of the Secretary General of NATO in Brussels. He directed the development of the Partnership for Peace from 1995 through three NATO Summits and managed the individual cooperation programs with the twenty-seven partner nations.

LIEUTENANT GENERAL JOE Defrancisco, USA (ret.) culminated a 34 year Army career as Deputy Commander in Chief and Chief of Staff of US Pacific Command. He commanded the 24th Infantry Division (Mechanized) and the 7th Infantry Division (Light) Artillery. He also was Operations Officer for Combined Forces Command/US Forces Korea/Eighth US Army in Korea. In the Pentagon he served as Chief of Army War Plans and later as Executive Officer to the Secretary of the Army.

Cort Durocher led the American Institute of Aeronautics and Astronautics (AIAA) from 1988 to 2005. As Executive Director of the world's largest professional aerospace organization, he managed all operational aspects - - publications, technical symposia, standards, education, public policy and membership development.

Lieutenant General Skip Hall, Jr. (ret.) concluded a 33-year career with the U.S. Air Force as the Commander of United States Forces Japan and 5th Air Force. During his career, he also served as Director of East Asia and Pacific Security Affairs in the Office of the Secretary of Defense and as Director of Planning and Programming for Pacific Air Forces.

Rear Admiral Jim Hinkle (ret.) recently concluded a 33-year career with the United States Navy as Deputy Chief of Navel Personnel and Commander of the Navy Personnel Command in Millington, Tennessee. A former surface warfare officer, Admiral Hinkle commanded the Eisenhower Battle Group.

Rear Admiral Tj Wilson, Iii retired in 2003 from a 30 year career in the Navy. His service included three commands, one each as a Commander, Captain and Flag officer. As a flag officer Admiral Wilson was Commander Standing Naval Force Atlantic, one of NATO's then four standing naval forces and as Deputy Director Surface Warfare Division, Navy Headquarters Staff.

THE TEAL GROUP

Marco A. Caceres, Senior Analyst and Director of Space Studies, joined the Teal Group in 1990 and edits the Defense & Aerospace Companies Briefing service, and is the lead analyst on the World Space Systems Briefing. He also directs all special studies involving the space market. He has performed major market studies for a variety of industry clients, including Boeing, EADS, General Dynamics, Lockheed Martin, and NASA. Previously, he was a market analyst for Jane's Information Group of the UK. As editor of both the Jane's DMS Defense & Aerospace Agencies and DMS Electronic Systems publications, Marco analyzed and wrote about the R&D and procurement activities within the defense- and aerospace-related agencies of the federal government.

APPENDIX IIa

LIST OF PARTICIPATING COMPANIES AND UNIVERSITIES

ABM, LLC
Advanced Concepts & Technologies Intnl
Analytical Engineering
Anderson Tool & Engineering Co. Inc
Bioenergy Development Company
Briljent
Butler
Central Indiana Corporate Partnership
Clarian Health
CMW, Inc.
Crane
Crane NSWC
Cummins
Delaware Machinery & Tool Company, Inc.
EG&G Technical Services, Inc.
General Dynamics C4S
Griffin Analytical
IN Space, LLC
Incerco Technical Ceramics
Indiana Biomedical Entrepreneur Network
Indiana National Guard
Indiana University
Information in Place, Inc.
Innovo Partners
IPFW, Center for System Engineering
I-Power
ITT, Space Systems Division
IUPUI
Miami County Economic Development
MNB Technologies
Nexpointe Strategies
Prairie Quest
Purdue University
QuadraSpec
Quality Steel Treating
Radiation Effects Research Associates
Raytheon
Riverside Manufacturing Inc.
Rolls-Royce Corporation
Rose-Hulman
SAIC
Security Logic
Sentelligence, Inc.
Sigma Strategic Solutions
Taylor University
Technology Management Group, Inc.
Technology Futures Inc.
TechShot
The Spectrum Group
The Teal Group
Thomas P. Miller and Associates
Total Concepts of Design, Inc.
Wolf Technical Services
XADS

APPENDIX III

The Indiana Defense Industry

An Assessment of Department of Defense Contracts Awarded to Indiana Companies and Universities during GFY's 2002 – 2005

January 2007

Prepared for:
Nexpointe Strategies, LLC

Prepared by:
Sigma Strategic Solutions, LLC
3344 East 500 North
Columbia City, In 46725

Contents

Appendix

Sigma Strategic Solutions, LLC, its agents, representatives, members, and successors, shall not be responsible for, and shall be held harmless for, any data deemed or found to be erroneous or missing from the Department of Defense ("DOD") documents used in the compilation of information provided by Sigma Strategic Solutions, LLC

1.0 Department of Defense:

The Department of Defense (DOD) is a large and diverse organization whose procurement requirements encompass the entire range of Traded Industrial Clusters. Thus the DOD is a market, not an Traded Industry Cluster. The DOD is an immense organization. The DOD budgeting and procurement process is extremely complex. The DOD Budget is subdivided into the following basic categories:

a. Military Personnel
b. Operations and Maintenance
c. Research, Development, Test and Evaluation
d. Military Construction
e. Family Housing
f. Revolving and Management funds
g. Other related Agencies

Each of the following DOD organizations has the procurement authority:

a. Department of the Army
b. Department of the United States Air Force
c. Department of the Navy
d. Defense Logistics Agency
e. Corps of Engineers
f. Other Defense Agencies

While the purpose of this report is to provide an analysis of DOD contracting in the state of Indiana, it is instructive to provide information concerning the total estimated revenue being gained by the state of Indiana for not only DOD procurements. U.S. government's fiscal year begins on October 1 of the previous calendar year and ends on September 30 of the year with which it is numbered. The following table defines these totals for GFY years 2002 – 2005.

	2005	2004	2003	2002	2001
Payroll Outlays - Total	**$1,363,035**	**$1,298,906**	**$1,106,168**	**$1,052,263**	**$949,012**
Active Duty Military Pay	**$52,687**	**$55,673**	**$54,852**	**$44,901**	**$44,294**
Civilian Pay	**$612,870**	**$510,805**	**$486,256**	**$450,694**	**$430,924**
Reserve and National Guard Pay	**$360,154**	**$327,960**	**$249,000**	**$237,558**	**$160,374**
Retired Military Pay	**$337,324**	**$404,468**	**$316,060**	**$319,110**	**$313,420**
Contracts - Total	**$4,428,478**	**$3,173,322**	**$2,607,131**	**$1,860,428**	**$1,824,049**
Supply and Equipment Contracts	**$3,588,172**	**$2,361,736**	**$1,870,599**	**$1,415,413**	**$1,092,088**
RDT&E Contracts	**$158,394**	**$185,454**	**$205,163**	**$153,341**	**$136,764**
Service Contracts	**$620,551**	**$561,788**	**$460,658**	**$236,234**	**$553,066**
Construction Contracts	**$12,397**	**$28,711**	**$27,141**	**$25,456**	**$16,717**
Civil Function Contracts	**$48,964**	**$35,633**	**$43,570**	**$29,984**	**$25,414**
Grants	**$31,515**	**$48,622**	**$40,405**	**$34,790**	**$21,539**
Total	**$5,823,028**	**$4,520,850**	**$3,753,704**	**$2,947,481**	**$2,794,600**
Dollar Amounts in 000's					

Table 1.0

The data used for this analysis was collected from the Department of Defense (DOD). The raw data was extracted from DD350. DD350 form is used by the DOD to capture relevant data on all prime contracts issued by the DOD within any given year. The **DOD PERSONNEL & PROCUREMENT STATISTICS** organization maintains a web site: http://siadapp.dior.whs.mil/index.html. This site captures and produces many standard reports for use within the DOD.

These reports contain information summarized by State, County, and Type of Weapon System procured as well as historical information. Information is also included on DOD personnel. Of most interest is the "wewbdata". This data contains all the information collected via the DD350 form. The DD350 raw data is available from 1966 to 2005. The major drawback of this data is that it is in the form of Comma Delimited Data. Additionally the data sets are very large. For example, the raw GFY 2005 webdata consists of over 1.3 million rows of information with each row containing over 70 items of information.

The specific form of the report that is used here is known as the "Principal Place of Performance Report, referred to as the POP report. The POP report records the state and city where the contractual effort required by any given contract is actually performed. For example, a contractor in Ohio may actually be awarded the contract; however a division of that company located in Indiana could be the principal place of performance of the efforts required to fulfill the contract requirements.

The concept of POP should not be confused with the concept of an Inter-Divisional/Department Work Authorization (IDWA). The IDWA is normally employed by a company where some of the contractual efforts are performed within a portion of a company which is not located at the same location as the part of the company which was awarded the DOD prime contract. Information on the DD350 does not contain any details of IDWA's.

2.0 Where Indiana Stands: Indiana's Companies and Universities receiving prime contracts from the Department of Defense are diverse and encompass activities in every Industrial Traded Cluster. The value of prime contracts awarded to Indiana companies and universities during the GFY's of 2002 -2005 have grown significantly of this timeframe. Specifically, the growth as compared to the growth in Indiana's Gross State Product is shown in Table 2.0 below:

Year	Gross State Product *	Department of Defense Prime Contracts Awarded to Indiana Companies/Universities
2005	**$214,093,000,000**	**$4,428,000,000**
2004	**$211,745,000,000**	**$3,172,000,000**
2003	**$204,837,000,000**	**$2,607,000,000**
2002	**$196,828,000,000**	**$1,860,000,000**
CAGR	**2.12%**	**24.21%**

* Source: U.S. Bureau of Economic Analysis

Table 2.0

Table 2.0 depicts a comparison of the Indiana State Gross Product with the magnitude of the DOD Prime Contracts awarded to companies where the principal place of performance is within the state of Indiana. The growth of the Indiana prime contracts has been significant, growing at a Compound Annual Growth Rate of over 12 times the states Gross Product. A portion of this growth could be directly attributable to the "Global War on Terrorism".

When compared to the remainder of the states in the United States, Indiana's ranking for the 2002 – 2005 timeframe is very favorable.

2002		2003		2004		2005	
STATE	**Rank**	**STATE**	**Rank**	**STATE**	**Rank**	**STATE**	**Rank**
California	**1**	**California**	**1**	**California**	**1**	**California**	**1**
Virginia	**2**	**Texas**	**2**	**Virginia**	**2**	**Virginia**	**2**
Texas	**3**	**Virginia**	**3**	**Texas**	**3**	**Texas**	**3**
Florida	**4**	**Florida**	**4**	**Maryland**	**4**	**Maryland**	**4**
Arizona	**5**	**Connecticut**	**5**	**Connecticut**	**5**	**Florida**	**5**
Maryland	**6**	**Maryland**	**6**	**Arizona**	**6**	**Arizona**	**6**
Georgia	**7**	**Arizona**	**7**	**Florida**	**7**	**Connecticut**	**7**
Missouri	**8**	**Massachusetts**	**8**	**Massachusetts**	**8**	**Massachusetts**	**8**
Connecticut	**9**	**Missouri**	**9**	**Missouri**	**9**	**Pennsylvania**	**9**
Massachusetts	**10**	**Alabama**	**10**	**Pennsylvania**	**10**	**Alabama**	**10**
Alabama	**11**	**Pennsylvania**	**11**	**Alabama**	**11**	**Missouri**	**11**
Pennsylvania	**12**	**Ohio**	**12**	**New York**	**12**	**New Jersey**	**12**
New York	**13**	**New York**	**13**	**Ohio**	**13**	**New York**	**13**
New Jersey	**14**	**Kentucky**	**14**	**New Jersey**	**14**	**Georgia**	**14**
Ohio	**15**	**New Jersey**	**15**	**Kentucky**	**15**	**Ohio**	**15**
Washington	**16**	**Georgia**	**16**	**Georgia**	**16**	**Washington**	**16**
Colorado	**17**	**Washington**	**17**	**D. C.**	**17**	**Indiana**	**17**
D. C.	**18**	**Indiana**	**18**	**Washington**	**18**	**Kentucky**	**18**
Mississippi	**19**	**Illinois**	**19**	**Indiana**	**19**	**Michigan**	**19**
Kentucky	**20**	**Michigan**	**20**	**Colorado**	**20**	**Colorado**	**20**
Michigan	**21**	**Colorado**	**21**	**Illinois**	**21**	**Illinois**	**21**
Illinois	**22**	**Mississippi**	**22**	**Michigan**	**22**	**D. C.**	**22**
Indiana	**23**	**Tennessee**	**23**	**Louisiana**	**23**	**Mississippi**	**23**
Louisiana	**24**	**North Carolina**	**24**	**North Carolina**	**24**	**Louisiana**	**24**
Oklahoma	**25**	**Louisiana**	**25**	**Tennessee**	**25**	**North Carolina**	**25**

Table 3.0

The state of Indiana ranks in the top 25 for all years included in this study. Rising from a rank of 25th in GFY 2002 to a rank of 17th in GFY 2005, while this is not a truly significant upward movement, the trend is definitely upward. However; what is truly important is not the ranking of the state of Indiana against the other 50 states, but the absolute value of the contracts awarded by DOD to Indiana companies and Universities. The magnitude of the Prime Contracts awarded to Indiana companies and universities for GFY 2004 – 2005 is presented below.

2005		2004	
STATE	**Total Dollars**	**STATE**	**Total Dollars**
California	**$31,064,642,107**	**California**	**$ 27,875,153,611**
Virginia	**$26,809,778,660**	**Virginia**	**$ 23,542,532,798**
Texas	**$20,696,563,815**	**Texas**	**$ 21,044,000,809**
Maryland	**$10,863,496,393**	**Maryland**	**$ 9,206,211,317**
Florida	**$10,317,531,391**	**Connecticut**	**$ 8,959,416,245**
Arizona	**$9,354,635,557**	**Arizona**	**$ 8,430,004,770**
Connecticut	**$8,753,062,611**	**Florida**	**$ 8,385,514,544**
Massachusetts	**$8,332,647,081**	**Massachusetts**	**$ 6,961,389,359**
Pennsylvania	**$7,483,342,441**	**Missouri**	**$ 6,502,109,430**
Alabama	**$7,069,163,834**	**Pennsylvania**	**$ 6,202,808,317**
Missouri	**$6,981,281,883**	**Alabama**	**$ 5,849,359,483**
New Jersey	**$6,101,128,664**	**New York**	**$ 5,243,865,861**
New York	**$5,961,800,423**	**Ohio**	**$ 4,636,538,262**
Georgia	**$5,740,593,312**	**New Jersey**	**$ 4,196,267,101**
Ohio	**$5,460,279,070**	**Kentucky**	**$ 4,118,664,994**
Washington	**$4,452,521,393**	**Georgia**	**$ 3,905,200,966**
Indiana	**$4,428,469,362**	**District of Columbia**	**$ 3,515,106,823**
Kentucky	**$4,299,757,008**	**Washington**	**$ 3,324,921,713**
Michigan	**$3,961,911,259**	**Indiana**	**$ 3,173,310,341**
Colorado	**$3,689,869,057**	**Colorado**	**$ 3,151,257,993**
Illinois	**$3,571,591,200**	**Illinois**	**$ 3,003,795,213**
District of Columbia	**$3,485,726,214**	**Michigan**	**$ 2,611,655,051**
Mississippi	**$3,293,577,231**	**Louisiana**	**$ 2,544,011,194**
Louisiana	**$3,029,051,972**	**North Carolina**	**$ 2,213,390,021**
North Carolina	**$2,948,582,828**	**Tennessee**	**$ 2,115,758,996**

Table 4.0

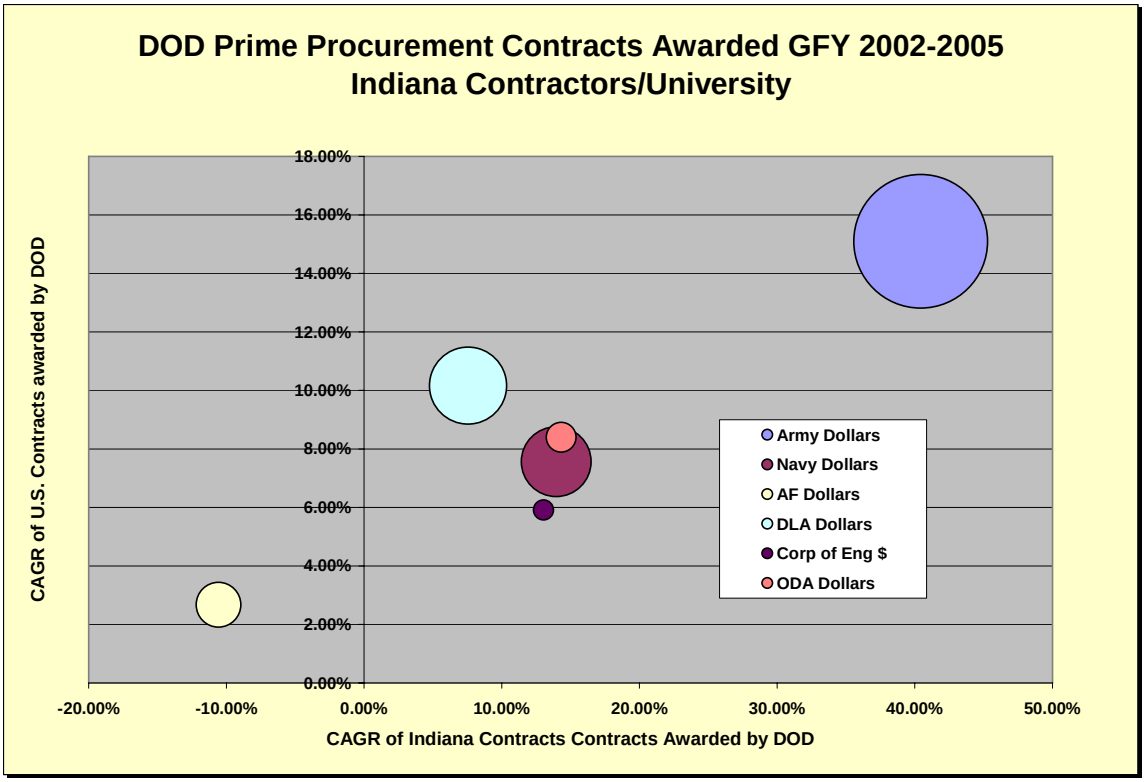
Indiana's position relative to other states located in the Midwest portion of the United States is presented in Table 5.0

	2005	2004	2003	2002
Illinois	$3,571,591,200	$3,003,795,213	$2,564,478,655	$2,005,746,605
Indiana	$4,428,469,362	$3,173,310,341	$2,607,120,687	$1,860,420,200
Kentucky	$4,299,757,008	$4,118,664,994	$3,896,771,302	$2,268,248,997
Michigan	$3,961,911,259	$2,611,655,051	$2,524,118,472	$2,179,845,189
Ohio	$5,460,279,070	$4,636,538,262	$4,325,783,755	$3,444,476,372

Table 5.0

The growth of the Department of Defense's budget over the time frame of 2003 – 2005, during the "Global War on Terrorism" is depicted graphic detail in Graph 1.0.

The concept of this graph is as follows. The horizontal axis represents the Compound Annual Growth Rate (CAGR) of the total contracts prime contracts awarded to Indiana contractors from each Department of the DOD over the GFY 2003-2005 timeframe. The vertical axis represents the CAGR of the specific Department's CAGR for their individual budgets over the timeframe of GFY 2003 -2005. The size of the "bubbles" represents the relative magnitude of the total prime contracts awarded by each DOD department over the analysis timeframe.



Graph 1.0

This graph clearly indicates that the Army contracts to Indiana prime contractors have been growing at a CAGR of about 2.5 times the Department of the Army procurement budget, while the USAF contracts have actually decreased on a yearly basis of about -10.0 % per year. In general the other DOD department's growth and Indiana's growth in prime contracts is approximately equal.

The detailed data used in the formulation of this graph is contained in Tables 5.0 and 6.0 below:

The summary of all DOD procurements by Department is defined in Table 6.0 below:

	Total Dollars	Army Dollars	Navy Dollars	AF Dollars	DLA Dollars	Corp of Eng $	ODA Dollars
2005	$236,985,765,883	$70,048,071,014	$62,774,660,198	$51,670,780,462	$23,112,483,561	$4,384,421,528	$24,995,349,120
2004	$212,740,245,860	$56,026,118,822	$58,371,239,147	$52,245,165,129	$19,909,816,945	$3,261,610,725	$22,926,295,092
2003	$202,589,000,032	$48,771,250,978	$55,648,361,075	$54,132,511,375	$18,737,901,632	$3,683,116,207	$21,615,858,765
2002	$170,585,464,789	$39,919,050,438	$46,896,732,514	$46,490,283,252	$15,692,742,912	$3,484,564,914	$18,102,090,759

Table 6.0

The Value of DOD contracts awarded to Indiana companies and universities is defined in Table 7.0 below:

	Total Dollars	Army Dollars	Navy Dollars	AF Dollars	DLA Dollars	Corp of Eng $	ODA Dollars
2005	$4,428,469,362	$2,965,897,692	$516,773,604	$139,462,678	$619,003,081	$48,962,982	$138,369,325
2004	$3,173,310,341	$1,772,597,941	$535,965,379	$207,079,686	$579,038,058	$35,630,305	$42,998,972
2003	$2,607,120,687	$1,230,946,740	$476,463,151	$191,424,714	$592,033,309	$43,566,047	$72,686,726
2002	$1,860,420,200	$762,465,683	$306,382,993	$218,040,299	$462,516,347	$29,983,192	$81,031,686
Total	$12,069,320,590	$6,731,908,056	$1,835,585,127	$756,007,377	$2,252,590,795	$158,142,526	$335,086,709

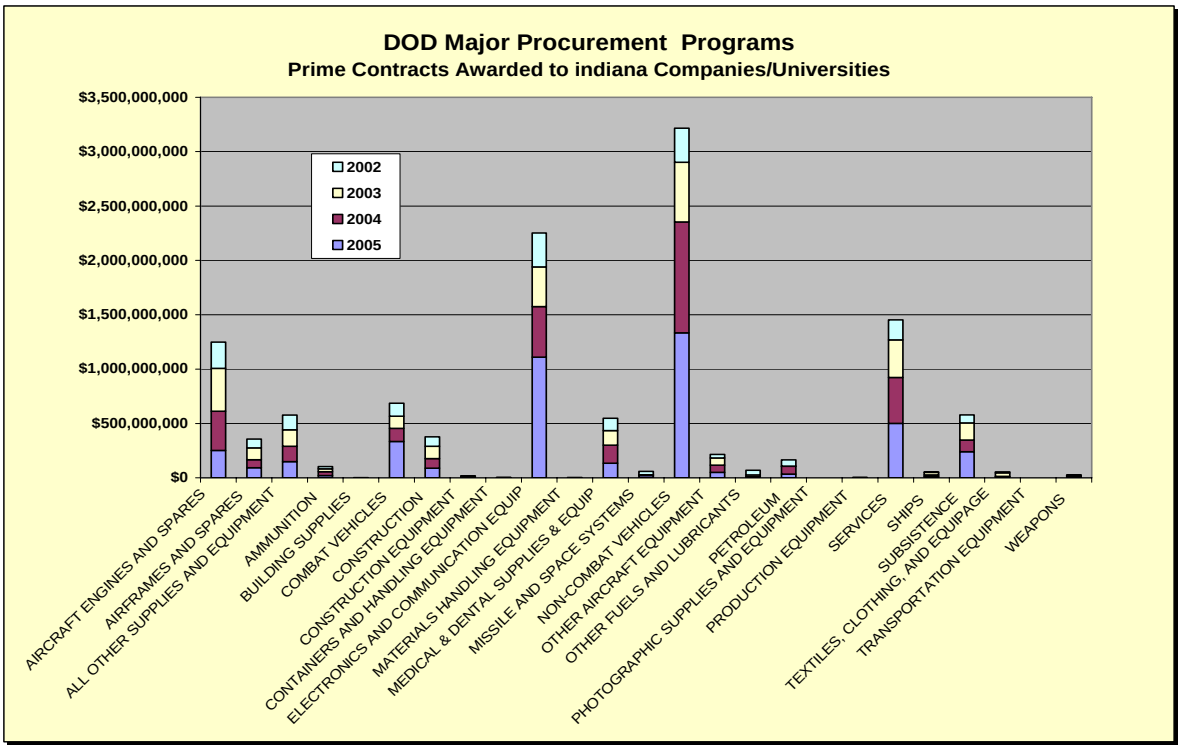
Table 7.0

The DOD consolidates the summaries of the procurement actions into the following major categories;

AIRCRAFT ENGINES AND SPARES
AIRFRAMES AND SPARES
ALL OTHER SUPPLIES AND EQUIPMENT
AMMUNITION
BUILDING SUPPLIES
COMBAT VEHICLES
CONSTRUCTION
CONSTRUCTION EQUIPMENT
CONTAINERS AND HANDLING EQUIPMENT
ELECTRONICS AND COMMUNICATION EQUIP
MATERIALS HANDLING EQUIPMENT
MEDICAL & DENTAL SUPPLIES & EQUIP
MISSILE AND SPACE SYSTEMS
NON-COMBAT VEHICLES
OTHER AIRCRAFT EQUIPMENT
OTHER FUELS AND LUBRICANTS
PETROLEUM
PHOTOGRAPHIC SUPPLIES AND EQUIPMENT
PRODUCTION EQUIPMENT
SERVICES
SHIPS
SUBSISTENCE
TEXTILES, CLOTHING, AND EQUIPAGE
TRANSPORTATION EQUIPMENT
WEAPONS

Table 8.0

The DOD summarizes their yearly procurement into the Major Procurement Programs shown in Table 8.0. The Contractors and Universities located in Indiana participated in every Major Procurement Program of the DOD. Graph 2.0 depicts the totals for the GFY 2002 – 2005.



Graph 2.0

This graphical representation of this data clearly indicates which of these major procurement programs dominate the Indiana prime contracts. These Are:

Non Combat Vehicles
Electronics and Communications
Services
Aircraft Engines and Spares
Subsistence

While the information depicted in the graph is informative, due to the scale of the graph, some of the details are not clearly shown. The graph is included to depict the relative magnitudes of the participation in these DOD major procurement programs. The detailed values of all prime contracts awarded are shown in Table 9.0.

The values of the contracts awarded during GFY 2002 – 2005 are segregated into Major Procurement Programs as follows:

	2005	2004	2003	2002
AIRCRAFT ENGINES AND SPARES	$253,066,373	$360,275,102	$393,756,095	$241,565,873
AIRFRAMES AND SPARES	$92,039,802	$75,532,773	$108,500,062	$81,186,920
ALL OTHER SUPPLIES AND EQUIPMENT	$149,209,186	$139,915,882	$153,375,673	$135,301,826
AMMUNITION	$21,286,954	$34,851,668	$28,074,781	$19,122,321
BUILDING SUPPLIES	$463,171	$49,605	$543,668	$0
COMBAT VEHICLES	$333,917,506	$120,634,601	$112,091,051	$118,295,174
CONSTRUCTION	$87,948,304	$90,313,140	$111,853,537	$87,064,144
CONSTRUCTION EQUIPMENT	$12,472,470	$726,462	$1,654,177	$2,774,527
CONTAINERS AND HANDLING EQUIPMENT	$1,650,547	$1,336,365	$77,273	$188,535
ELECTRONICS AND COMMUNICATION EQUIP	$1,111,120,432	$464,353,795	$365,126,073	$312,195,767
MATERIALS HANDLING EQUIPMENT	$2,668,054	$180,357	$148,306	$95,346
MEDICAL & DENTAL SUPPLIES & EQUIP	$134,743,447	$165,703,387	$134,054,813	$113,579,801
MISSILE AND SPACE SYSTEMS	$21,860,001	$3,877,507	$1,954,946	$31,350,134
NON-COMBAT VEHICLES	$1,334,381,020	$1,020,504,479	$548,743,087	$312,586,802
OTHER AIRCRAFT EQUIPMENT	$50,466,162	$65,909,614	$66,904,056	$31,029,573
OTHER FUELS AND LUBRICANTS	$10,823,928	$0	$16,513,911	$41,491,477
PETROLEUM	$33,467,598	$72,688,320	$2,668,993	$56,230,905
PHOTOGRAPHIC SUPPLIES AND EQUIPMENT	$16,304	$55,549	$446,549	$32,775
PRODUCTION EQUIPMENT	$1,067,481	$1,563,419	$183,151	$362,797
SERVICES	$500,672,394	$423,671,693	$344,175,655	$184,577,281
SHIPS	$14,546,236	$12,156,043	$22,677,826	$4,054,092
SUBSISTENCE	$240,057,298	$107,968,686	$156,642,491	$74,668,805
TEXTILES, CLOTHING, AND EQUIPAGE	$9,299,808	$4,995,601	$31,051,454	$9,269,652
TRANSPORTATION EQUIPMENT	$20,390	$0	$0	$0
WEAPONS	$11,204,496	$6,046,293	$5,903,059	$3,395,673
	$4,428,469,362	$3,173,310,341	$2,607,120,687	$1,860,420,200

Table 9.0

The major procurement programs where there is a value of $0.0 in a particular year occurred because of a change in the DOD classification of such programs. The only Exception to this is for Other Fuels and Lubricants in GFY 2004 which had no contracts during this year.

All the information contained in this report has considered the GFY timeframe of 2002 -2005. The "Global War on Terrorism" commenced in the Middle East in GFY 2002. The information in Table 10.0 modifies the time frame to include only GFY 2003 – 2005. This was changed in an attempt to isolate growth in both DOD budgets and Indiana prime contracts from pre "Global War on Terrorism" budgets and contracts awarded. The information contained in Table10.0 provides insight into the relative growth rate, CAGR, of the DOD budgets for the major procurement programs and the relative growth rate of Indiana Prime contracts for these major procurement programs.

Major Procurement Programs	DOD CAGR 2003-2005	Indiana Prime Contracts CAGR 2003-2005
AIRCRAFT ENGINES AND SPARES	-3.33%	-13.70%
AIRFRAMES AND SPARES	-1.42%	-5.34%
ALL OTHER SUPPLIES AND EQUIPMENT	9.14%	-0.91%
AMMUNITION	10.25%	-8.81%
BUILDING SUPPLIES	6.16%	-5.20%
COMBAT VEHICLES	34.54%	43.89%
CONSTRUCTION	2.20%	-7.70%
CONSTRUCTION EQUIPMENT	82.64%	96.09%
CONTAINERS AND HANDLING EQUIPMENT	33.61%	177.46%
ELECTRONICS AND COMMUNICATION EQUIP	11.51%	44.91%
MATERIALS HANDLING EQUIPMENT	22.95%	162.03%
MEDICAL & DENTAL SUPPLIES & EQUIP	-2.02%	0.17%
MISSILE AND SPACE SYSTEMS	3.70%	123.62%
NON-COMBAT VEHICLES	30.28%	34.47%
OTHER AIRCRAFT EQUIPMENT	4.45%	-8.97%
OTHER FUELS AND LUBRICANTS	75.33%	-13.13%
PETROLEUM	23.25%	132.32%
PHOTOGRAPHIC SUPPLIES AND EQUIPMENT	15.19%	-66.83%
PRODUCTION EQUIPMENT	2.99%	79.96%
SERVICES	7.94%	13.31%
SHIPS	2.80%	-13.76%
SUBSISTENCE	49.41%	15.29%
TEXTILES, CLOTHING, AND EQUIPAGE	-2.56%	-33.09%
TRANSPORTATION EQUIPMENT	-33.93%	0.00%
WEAPONS	5.16%	23.81%
Total	7.41%	19.32%

Table 10.0

A comparison of the relative growth rate clearly indicates that the “Global War on Terrorism” has had a significant impact on Indiana Companies. Clearly the increased production of 1. Non-combat vehicles, 2. Combat vehicles, 3. Electronics and communications equipment have been the major DOD procurement programs with the greatest impact on the economy of Indiana.

The data in Table 10.0 depicts the relative rate of growth rate, defined as the compound annual growth rate, CAGR over the timeframe of GFY 2003-2005. The column “CAGR of DOD” indicates the relative growth rate of all of the major procurement programs over the timeframe of interest. For example, the Aircraft Engines and Spares programs decreased at an annual rate of -3.37%, while the CAGR of Indiana Prime contracts for this type of procurement program decreased at a -13.7% CAGR. This indicates that even though the DOD market was shrinking, Indiana companies were losing market share at a faster rate. While combat vehicles, the DOD growth was 6.95%; however the growth if Indiana was 43.89% indicating a growth in market share.

The information in Table 10.0 is included in order to place the DOD major procurement programs in perspective relative to the magnitude of the DOD prime contracts awarded to Indiana companies/universities for the DOD major procurement programs.

Major Procurement Programs	2005	2004	2003
AIRCRAFT ENGINES AND SPARES	$6,750,677,975	$6,489,675,435	$7,473,600,077
AIRFRAMES AND SPARES	$27,463,672,640	$27,835,244,963	$28,665,891,479
ALL OTHER SUPPLIES AND EQUIPMENT	$17,497,752,158	$14,279,989,873	$13,459,599,971
AMMUNITION	$3,604,164,645	$2,993,518,362	$2,689,299,168
BUILDING SUPPLIES	$28,463,007	$18,154,444	$23,793,245
COMBAT VEHICLES	$7,903,676,570	$4,539,062,539	$3,245,652,529
CONSTRUCTION	$15,420,735,238	$13,401,398,529	$14,447,600,147
CONSTRUCTION EQUIPMENT	$1,095,896,805	$138,335,196	$179,886,370
CONTAINERS AND HANDLING EQUIPMENT	$72,880,514	$41,009,357	$30,557,604
ELECTRONICS AND COMMUNICATION EQUIP	$25,141,171,779	$21,573,888,439	$18,133,515,188
MATERIALS HANDLING EQUIPMENT	$182,467,565	$135,620,268	$98,176,991
MEDICAL & DENTAL SUPPLIES & EQUIP	$3,679,695,527	$2,386,260,036	$3,912,515,823
MISSILE AND SPACE SYSTEMS	$16,650,214,817	$16,657,879,327	$14,931,340,526
NON-COMBAT VEHICLES	$5,679,537,285	$3,218,035,224	$2,568,249,230
OTHER AIRCRAFT EQUIPMENT	$8,258,725,973	$8,901,479,582	$7,247,782,082
OTHER FUELS AND LUBRICANTS	$1,069,455,821	$128,846,866	$198,421,478
PETROLEUM	$5,638,837,983	$3,609,994,738	$3,011,607,602
PHOTOGRAPHIC SUPPLIES AND EQUIPMENT	$83,218,643	$71,564,501	$54,451,076
PRODUCTION EQUIPMENT	$287,668,392	$204,725,030	$263,370,583
SERVICES	$63,820,422,760	$54,377,162,109	$50,745,782,312
SHIPS	$12,290,429,452	$13,719,206,515	$11,313,810,031
SUBSISTENCE	$7,897,296,063	$2,820,168,058	$2,367,972,701
TEXTILES, CLOTHING, AND EQUIPAGE	$2,639,811,760	$2,549,854,705	$2,852,956,699
TRANSPORTATION EQUIPMENT	$5,225,212	$18,133,638	$18,120,443
WEAPONS	$3,823,667,299	$3,278,862,126	$3,287,530,106
Total	$236,985,765,883	$203,388,069,860	$191,221,483,461

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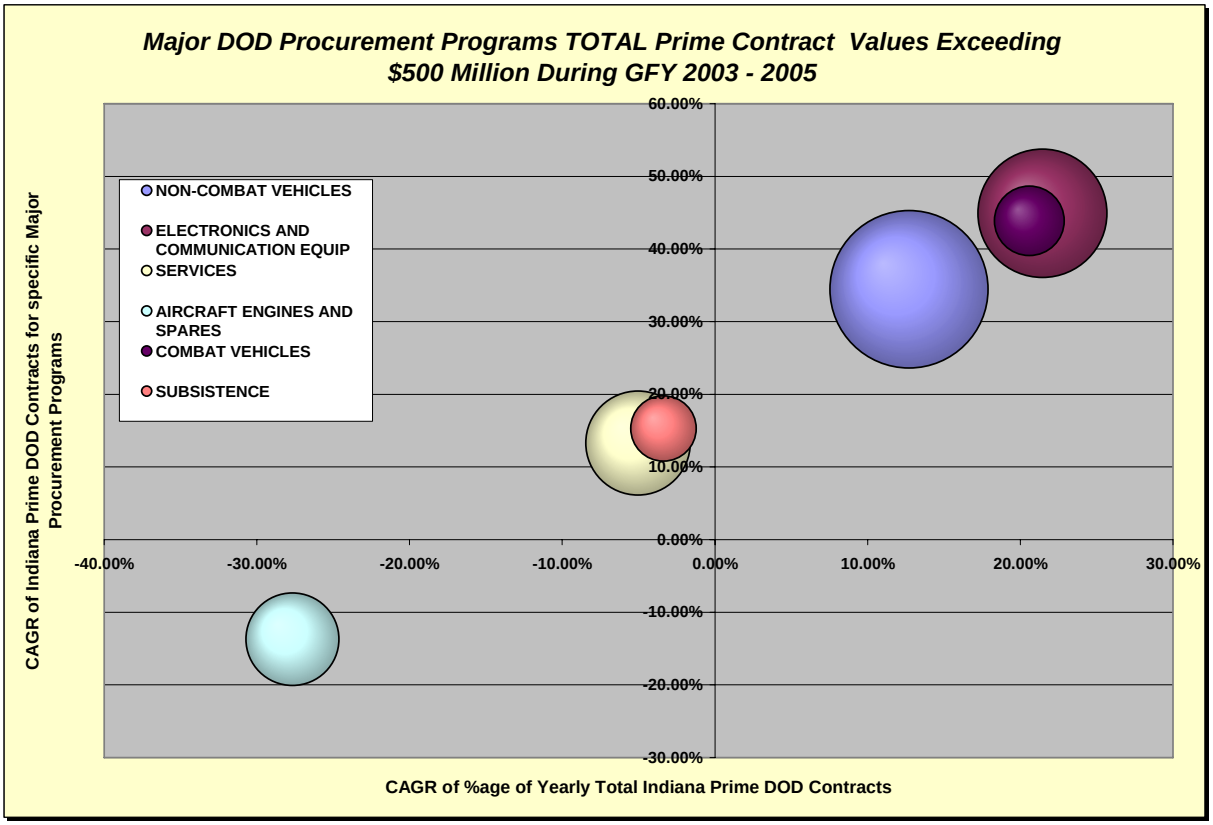
Table 10.0

The information presented in Graph 3.0 defines the six major procurement programs where Indiana companies were awarded prime contracts which totaled over $500 million during the GFY 2003 – 2005 timeframe. The horizontal axis of this graph represents the CAGR of the percentage that the DOD major procurement program represented of the total DOD prime contracts awarded to Indiana Companies. The vertical axis represents the CAGR of the total prime contracts awarded to Indiana companies for the top six major procurement programs. Clearly three of the major procurement programs were growing at a substantial rate while simultaneously becoming more important to the Indiana economy. While the remaining three, even though two are realizing a growth CAGR of between 10% and 20%, their relative importance to the Indiana economy is decreasing.

The one major procurement area, Aircraft Engines and Spares experienced a decrease in both its growth rate and its relative importance to the economy of Indiana. This is not to imply a decrease in the competitive position of these companies, simply a reflection of the purchasing patterns of the DOD during the “Global War on Terrorism”. Or stated

another way, the “Global War on Terrorism” is predominately a ground war and therefore it is to be expected that there would be less demand for the major procurement programs related to aircraft and their spare components.



Graph 3.0

The distribution of the prime contracts awarded to Indiana companies/universities includes every of the twenty five (25) DOD major procurement programs. This distribution clearly demonstrates the breath and depth of the participation of Indiana in the DOD procurement process. While some of the areas of participation are relatively small compared to the top six areas, some of these smaller participation areas have experienced a greater growth than the larger areas.

Major Procurement Programs	2005	2004	2003
AIRCRAFT ENGINES AND SPARES	$253,066,373	$360,275,102	$393,756,095
AIRFRAMES AND SPARES	$92,039,802	$75,532,773	$108,500,062
ALL OTHER SUPPLIES AND EQUIPMENT	$149,209,186	$139,915,882	$153,375,673
AMMUNITION	$21,286,954	$34,851,668	$28,074,781
BUILDING SUPPLIES	$463,171	$49,605	$543,668
COMBAT VEHICLES	$333,917,506	$120,634,601	$112,091,051
CONSTRUCTION	$87,948,304	$90,313,140	$111,853,537
CONSTRUCTION EQUIPMENT	$12,472,470	$726,462	$1,654,177
CONTAINERS AND HANDLING EQUIPMENT	$1,650,547	$1,336,365	$77,273
ELECTRONICS AND COMMUNICATION EQUIP	$1,111,120,432	$464,353,795	$365,126,073
MATERIALS HANDLING EQUIPMENT	$2,668,054	$180,357	$148,306
MEDICAL & DENTAL SUPPLIES & EQUIP	$134,743,447	$165,703,387	$134,054,813
MISSILE AND SPACE SYSTEMS	$21,860,001	$3,877,507	$1,954,946
NON-COMBAT VEHICLES	$1,334,381,020	$1,020,504,479	$548,743,087
OTHER AIRCRAFT EQUIPMENT	$50,466,162	$65,909,614	$66,904,056
OTHER FUELS AND LUBRICANTS	$10,823,928	$0	$16,513,911
PETROLEUM	$33,467,598	$72,688,320	$2,668,993
PHOTOGRAPHIC SUPPLIES AND EQUIPMENT	$16,304	$55,549	$446,549
PRODUCTION EQUIPMENT	$1,067,481	$1,563,419	$183,151
SERVICES	$500,672,394	$423,671,693	$344,175,655
SHIPS	$14,546,236	$12,156,043	$22,677,826
SUBSISTENCE	$240,057,298	$107,968,686	$156,642,491
TEXTILES, CLOTHING, AND EQUIPAGE	$9,299,808	$4,995,601	$31,051,454
TRANSPORTATION EQUIPMENT	$20,390	$0	$0
WEAPONS	$11,204,496	$13,103,051	$5,903,059
Total	$4,428,469,362	$3,180,367,099	$2,607,120,687

Table 11.0

The information presented in Table 12.0 and 13.0 is the details of the performance of:

1. CAGR of DOD Prime Contracts Awarded in Specific Major Procurement Program
2. CAGR of Growth in Prime Contracts Awarded in Specific Major Procurement Programs to Indiana Prime Contractors
3. CAGR of Relative Growth of Specific DOD Major Procurement Programs Prime Contracts Awarded as a %age of Total DOD Prime Contracts
4. CAGR of Relative Growth of Specific Major Procurement Programs Prime Contracts Awarded to Indiana Companies as a %age of Total Indiana DOD Prime Contracts

The information is presented in the terms of CAGR's in order to facilitate a rapid understanding of the relative rates of change of various elements of the DOD and its procurement actions awarded to Indiana companies/universities.

The information is additionally "flagged" with either a red or green indicator.

1. The “green “indicator is representative of major procurement programs where the CAGR of the Indiana procurement actions has experienced a greater growth rate relative to the DOD growth rate.
2. The “red” indicator is representative of major procurement programs where the CAGR of the Indiana procurement actions has experienced a lesser growth rate relative to the DOD growth rate.

Major Procurement Programs	CAGR of DOD Prime Contracts Awarded in Specific Major Procurement Programs	CAGR of Growth in Prime Contracts Awarded in Specific Major Procurement Programs to Indiana Prime Contractors	Relative Growth
AIRCRAFT ENGINES AND SPARES	-3.33%	-13.70%	
AIRFRAMES AND SPARES	-1.42%	-5.34%	
ALL OTHER SUPPLIES AND EQUIPMENT	9.14%	-0.91%	
AMMUNITION	10.25%	-8.81%	
BUILDING SUPPLIES	6.16%	-5.20%	
COMBAT VEHICLES	34.54%	43.89%	
CONSTRUCTION	2.20%	-7.70%	
CONSTRUCTION EQUIPMENT	82.64%	96.09%	
CONTAINERS AND HANDLING EQUIPMENT	33.61%	177.46%	
ELECTRONICS AND COMMUNICATION EQUIP	11.51%	44.91%	
MATERIALS HANDLING EQUIPMENT	22.95%	162.03%	
MEDICAL & DENTAL SUPPLIES & EQUIP	-2.02%	0.17%	
MISSILE AND SPACE SYSTEMS	3.70%	123.62%	
NON-COMBAT VEHICLES	30.28%	34.47%	
OTHER AIRCRAFT EQUIPMENT	4.45%	-8.97%	
OTHER FUELS AND LUBRICANTS	75.33%	-13.13%	
PETROLEUM	23.25%	132.32%	
PHOTOGRAPHIC SUPPLIES AND EQUIPMENT	15.19%	-66.83%	
PRODUCTION EQUIPMENT	2.99%	79.96%	
SERVICES	7.94%	13.31%	
SHIPS	2.80%	-13.76%	
SUBSISTENCE	49.41%	15.29%	
TEXTILES, CLOTHING, AND EQUIPAGE	-2.56%	-33.09%	
TRANSPORTATION EQUIPMENT	-33.93%	0.00%	
WEAPONS	5.16%	23.81%	

Table 12.0

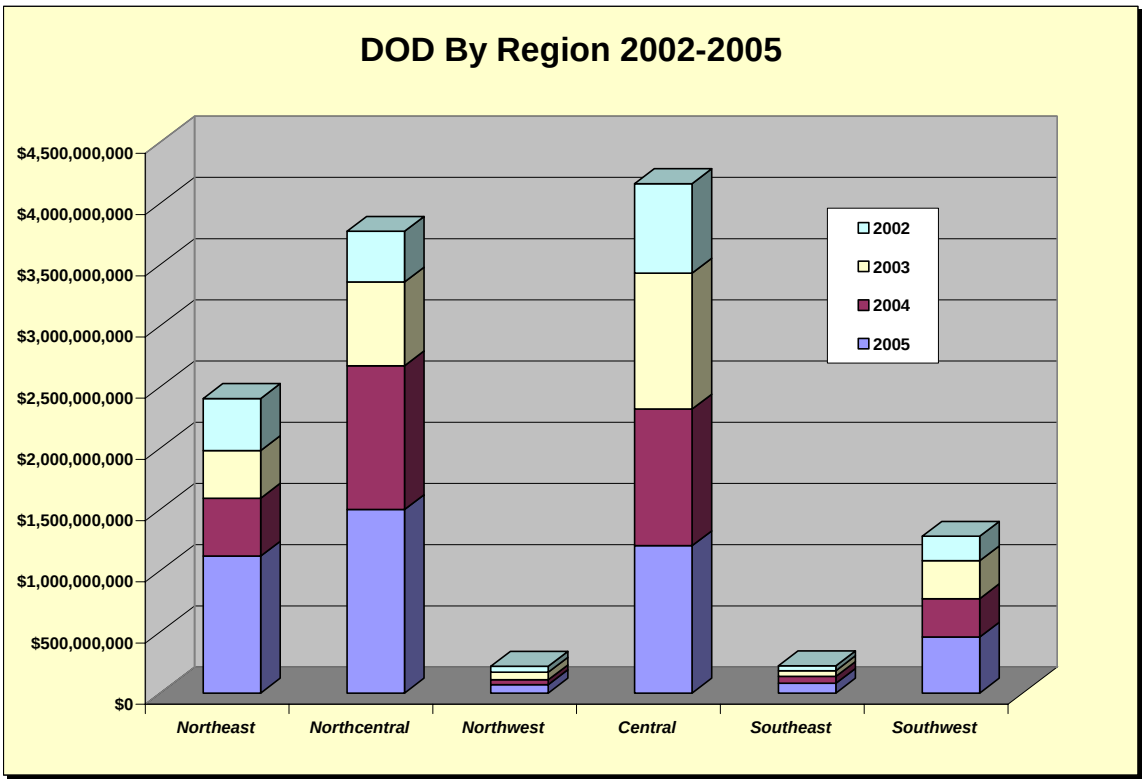
Major Procurement Programs	CAGR of Relative Growth of Specific DOD Major Procurement Programs Prime Contracts Awarded as a %age of Total DOD Prime Contracts	CAGR of Relative Growth of Specific Major Procurement Programs Prime Contracts Awarded to Indiana Companies as a %age of Total Indiana DOD Prime Contracts	Relative Growth
AIRCRAFT ENGINES AND SPARES	-10.01%	-27.67%	
AIRFRAMES AND SPARES	-8.22%	-20.66%	
ALL OTHER SUPPLIES AND EQUIPMENT	1.61%	-16.95%	
AMMUNITION	2.64%	-23.58%	
BUILDING SUPPLIES	-1.17%	-20.55%	
COMBAT VEHICLES	25.25%	20.59%	
CONSTRUCTION	-4.86%	-22.64%	
CONSTRUCTION EQUIPMENT	70.03%	64.35%	
CONTAINERS AND HANDLING EQUIPMENT	24.39%	132.54%	
ELECTRONICS AND COMMUNICATION EQUIP	3.81%	21.45%	
MATERIALS HANDLING EQUIPMENT	14.46%	119.61%	
MEDICAL & DENTAL SUPPLIES & EQUIP	-8.79%	-16.05%	
MISSILE AND SPACE SYSTEMS	-3.46%	87.42%	
NON-COMBAT VEHICLES	21.29%	12.70%	
OTHER AIRCRAFT EQUIPMENT	-2.76%	-23.71%	
OTHER FUELS AND LUBRICANTS	63.23%	-27.20%	
PETROLEUM	14.75%	94.71%	
PHOTOGRAPHIC SUPPLIES AND EQUIPMENT	7.24%	-72.20%	
PRODUCTION EQUIPMENT	-4.12%	50.83%	
SERVICES	0.49%	-5.04%	
SHIPS	-4.30%	-27.72%	
SUBSISTENCE	39.09%	-3.37%	
TEXTILES, CLOTHING, AND EQUIPAGE	-9.28%	-43.93%	
TRANSPORTATION EQUIPMENT	-38.49%	0.00%	
WEAPONS	-2.09%	3.77%	

Table 13.0

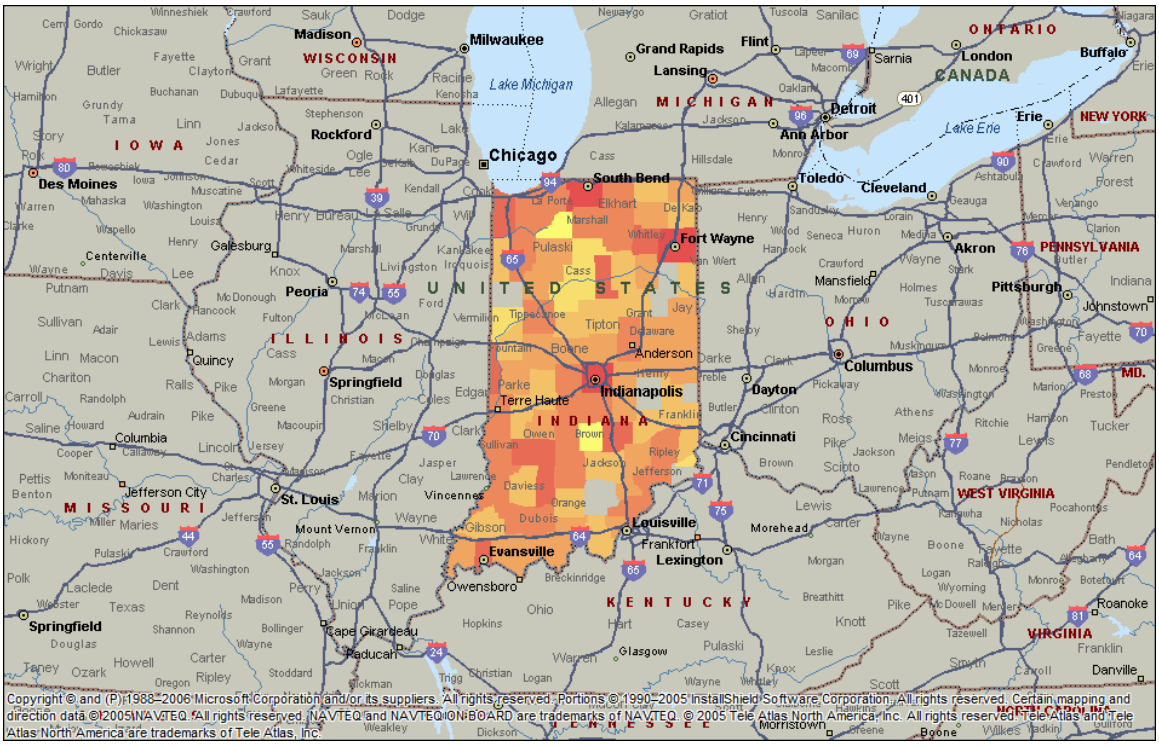
3.0 Geographic distribution of DOD Prime contracts within Indiana.

The geographical representations will be presented in the following manner:

1. By Indiana Economic Development Corporation Regions
2. By County
3. By major cities



Graph 4.0



Map 1.0

The depiction in Map 1.0 is intended to indicate the relative magnitude of the total DOD Prime Contracts awarded to Indiana companies/universities for GFY 2002 – 2005 by Indiana County. The information is plotted in seven discrete logarithmic scales from $1,000 to $9,999,999,999 in prime contract values. The details of the county – by – county distribution are contained in the following tables 14.0 ,15.0 and 16.0 The table has been split to accommodate the large numbers of counties in Indiana.

County	2005	2004	2003	2002
Adams	$152,916	$371,334	$24,235	$50,591
Allen	$1,078,146,810	$426,636,900	$364,031,928	$393,310,394
Bartholomew	$59,055,782	$36,596,813	$25,212,157	$18,145,055
Benton	$0	$0	$0	$0
Blackford	$0	$0	$0	$0
Boone	$461,447	$8,105	$225,573	$3,130,709
Brown	$0	$2,875	$0	$0
Carroll	$39,890	$116,779	$0	($57,393)
Cass	$7,260	$5,995	$0	$40,111
Clark	$11,125,487	$10,532,767	$7,389,483	$8,949,449
Clay	$115,811	$44,689	$85,364	$98,863
Clinton	$0	$96,809	$5,562	$0
Crawford	$1,013,544	$515,711	$145,015	$69,000
Daviess	$236,841	$11,290	$0	$0
Dearborn	$86,288	$83,473	$19,975	$0
Decatur	$17,886	$0	$110,300	$67,900
De Kalb	$87,089	$153,190	$214,495	$19,500
Delaware	$5,056,983	$0	$1,806,924	$366,621
Dubois	$12,947,976	$23,676,125	$13,403,664	$16,420,866
Elkhart	$24,202,969	$10,503,083	$12,086,178	$12,525,431
Fayette	$356,302	$71,889	$0	$90,635
Floyd	$1,471,508	$609,010	$940,929	$897,238
Fountain	$119,305	$228,516	$0	$0
Franklin	$313,735	$338,914	$26,100	$203,272
Fulton	$8,552	$0	$0	$31,000
Gibson	$47,160	$99,996	$0	$0
Grant	$114,199	$64,016	$0	$0
Greene	$85,564,459	$51,106,386	$18,371,466	$5,619,404
Hamilton	$5,387,878	$907,120	$1,079,559	$498,899

Table 14.0

County	2005	2004	2003	2002
Hancock	$521,065	$246,307	$290,309	$183,376
Harrison	$98,950	$10,635	$0	$0
Hendricks	$379,226	$3,866,250	$1,071,673	$6,326,092
Henry	$51,600	$457,684	$606,812	$408,015
Howard	$2,889	$0	$220,274	$8,858
Huntington	$595,072	$1,271,065	$403,228	$197,946
Jackson	$151,532	$0	$180,209	$180,554
Jasper	$2,513,148	$804,416	$23,824,376	$3,401,457
Jay	$36,822	$707,262	$2,375,695	$0
Jefferson	$3,502,240	$2,047,705	$10,267,588	$4,389,806
Jennings	$269,112	$261,027	$540,435	$21,542
Johnson	$907,419	$2,348,290	$7,839,943	$2,258,955
Knox	$2,170,313	$1,339,079	$9,024,321	$5,550,057
Kosciukso	$7,481,044	$2,700,171	$1,622,104	$176,238
Lagrange	$280,911	$85,000	$342,570	
Lake	$60,565,511	$29,879,910	$28,220,371	$37,531,757
La Porte	$2,244,977	$4,780,350	$5,520,579	$5,909,193
Lawrence	$7,935,637	$5,822,744	$5,085,270	$5,691,476
Madison	$66,407,671	$1,214,856	$617,638	$404,515
Marion	$975,073,294	$1,006,727,628	$1,007,828,516	$638,133,321
Marshall	$7,362,270	$6,153,734	$2,399,787	$2,852,315
Martin	$99,593,697	$105,880,447	$82,325,632	$62,628,013
Miami	$39,762,132	$32,787,975	$47,639,150	$23,698,893
Monroe	$11,574,271	$7,744,680	$7,472,441	$6,180,200
Montgomery	$1,965,687	$852,313	$378,146	$1,173,045
Morgan	$3,837,448	$1,711,187	$7,459,608	$8,183,028
Newton	$17,214	$10,252	$93,594	$0
Noble	$1,954,442	$0	$556,891	$0
Ohio	$26,458	$0	$0	$0
Orange	$166,564	$381,729	$384,665	$52,036
Owen	$805,935	$388,599	$262,139	$371,012
Parke	$756,915	$273,493	$5,489	$141,732
Perry	$1,529,109	$1,561,075	$2,232,853	$1,742,015
Pike	$7,736,787	$6,237,253	$2,501,488	$168,287
Porter	$4,114,405	$2,981,405	$5,048,226	$1,935,081
Posey	$1,549,419	($247,552)	$1,243,887	$644,633
Pulaski	$15,634	$85,716	$924,953	$0

Table 15.0

County	2005	2004	2003	2002
Putnam	$8,985	$0	$0	$103,613
Randolph	$4,725	$144,119	$0	$1,116,555
Ripley	$3,342,671	$5,430,774	$1,673,629	$5,602,046
Rush	$0	$0	$0	$0
St. Joseph	$1,420,540,997	$1,122,414,286	$620,564,641	$374,446,293
Scott	$214,715	$237,170	$456,996	$930,016
Shelby	($128,552)	$1,472,011	$3,756,900	$373,476
Spencer	$379,804	$341,097	$586,745	$1,755,349
Starke	$0	$2,310	$2,310	$0
Steuben	$1,441,650	$2,013,237	$1,209,512	$991,846
Sullivan	$5,614,983	$1,758,786	$5,425,114	$2,493,189
Switzerland	$0	$0	$0	$0
Tippecanoe	$13,590,638	$17,830,954	$23,397,800	$4,843,874
Tipton	$114,460	$30,000	$5,980	$0
Union	$0	$0	$0	$0
Vandenberg	$229,369,842	$115,198,263	$167,293,973	$96,698,779
Vermillion	$100,267,418	$23,393,797	$27,178,111	$30,587,605
Vigo	$11,606,403	$43,113,283	$16,482,556	$25,896,014
Wabash	$39,821	$70,811	$42,869	$36,940
Warren	$0	$73,000	$0	
Warrick	$1,671,863	$67,895	$1,403,347	$1,449,271
Washington	$0	$0	$0	
Wayne	$4,861,451	$2,975,693	$1,880,458	
Wells	$0	$0	$0	
White	$47,886	$33,643	$3,979	$1,297,656
Whitley	$35,384,705	$42,554,742	$23,766,000	$30,776,685

Table 16.0

The distribution of the number of cities, where contractors/universities receiving DOD prime contracts were located during GFY 2002 – 2005 were.

GFY	Number of Cities in Indiana where DOD Prime Contracts were Awarded
2005	249
2004	206
2003	179
2002	138

Table 17.0

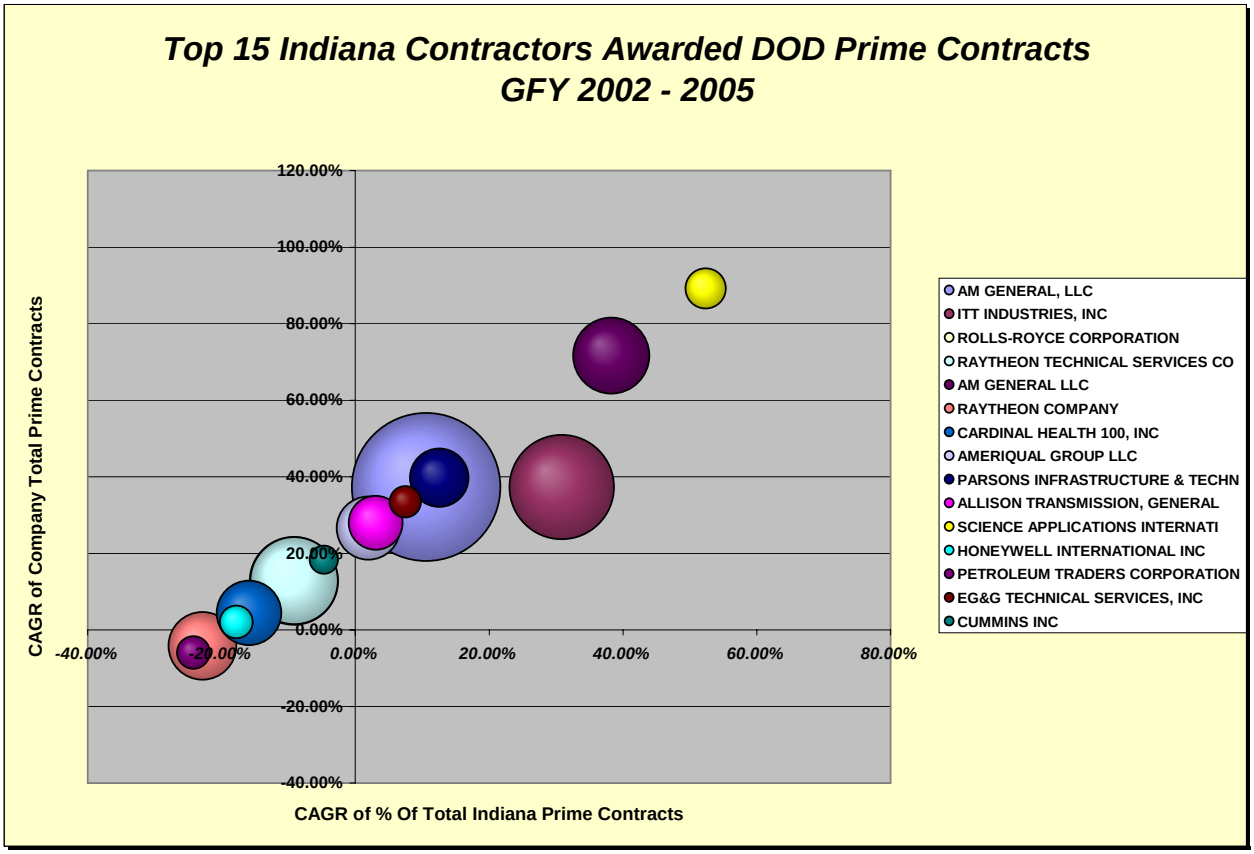
The distribution by city is dramatic, with two cities, South Bend and Fort Wayne having total contract awards of over $1,000,000,000 for the timeframe of GFY 2002 – 2005, to Indianapolis, with just under the Billion Dollar threshold, to Warsaw with just over $ 5,000,000. The rank of Warsaw within all the cities in Indiana receiving contracts was 49th out of 249 cities in GFY 2005.

The Indiana cities with a total award of at least $ 5,000,000 during the timeframe of GFY 2002 – 2005 were:

Community	Total Dollars	Army Dollars	Navy Dollars	AF Dollars	DLA Dollars	Corps of Eng. $	ODA Dollars
South Bend	$1,083,806,388	$1,059,196,062	$4,216,153	$11,760,132	$7,157,477	$1,424,747	$51,817
Fort Wayne	$1,065,137,018	$927,345,185	$8,872,693	$15,150,417	$64,070,273	$420,532	$49,277,918
Indianapolis	$972,120,626	$422,760,127	$238,818,362	$70,433,173	$212,669,324	$1,946,127	$25,493,513
Mishawaka	$335,218,824	$241,866,876	$414,788	$1,275,689	$90,712,112	$0	$949,359
Evansville	$229,236,897	$1,920,458	$503,206	$19,710	$186,242,458	$193,873	$40,357,192
Newport	$100,297,232	$100,293,029	$0	$0	$0	$4,203	$0
Crane NAVWSC	$86,917,515	$0	$86,885,895	$31,620	$0	$0	$0
Bloomfield	$85,483,114	$0	$85,464,290	$0	$18,824	$0	$0
Anderson	$66,407,671	$64,054,109	$12,736	-$5,844	$178,894	$0	$2,167,776
Columbus	$36,244,035	$35,500,984	$606,898	$0	$136,153	$0	$0
Griffith	$36,207,525	$27,655,040	$0	$0	$800,536	$7,751,949	$0
Columbia City	$35,384,705	$10,572	$34,840,817	$0	$533,316	$0	$0
Edinburgh	$22,777,188	$22,618,334	$0	$0	$158,854	$0	$0
Peru	$20,644,107	$170,773	$9,121	$310,879	$7,651	$20,146,709	-$1,026
Grissom AFB	$19,088,075	$757,157	$0	$18,314,732	$16,186	$0	$0
Hammond	$14,363,129	-$19,802	$0	$0	$10,885,061	$3,497,870	$0
Goshen	$12,009,829	$25,393	$3,667	$7,649	$11,973,120	$0	$0
Elkhart	$11,879,707	$1,085,557	$164,491	$4,928	$1,033,290	$8,338	$9,583,103
Terre Haute	$11,594,812	$1,006,566	$1,995,422	$3,806,414	$4,766,016	$0	$20,394
Bloomington	$11,497,258	$1,504,465	$8,548,706	$1,359,315	$27,023	$40,502	$17,247
Jasper	$11,429,536	$4,479,427	$3,826,966	$2,681,343	$115,917	$45,709	$280,174
Crane	$11,201,033	$265,111	$9,066,752	$0	$892,124	$0	$977,046
West Lafayette	$9,820,279	$2,038,007	$3,064,370	$4,493,167	$2,610	$10,125	$212,000
Bedford	$7,877,283	$149,318	$7,459,745	$0	$268,220	$0	$0
Scottsburg	$7,720,711	$7,178,805	$541,906	$0	$0	$0	$0
Plymouth	$7,263,362	$6,831,202	$0	$0	$432,160	$0	$0
New Haven	$6,895,571	$543,652	$0	$9,805	$6,342,114	$0	$0
East Chicago	$5,924,558	$1,041,034	$0	$0	$261,458	$4,622,066	$0
Warsaw	$5,166,440	$1,147,060	$1,195,073	$1,557,162	$1,266,619	$0	$526

Table 18.0

The top fifteen contractors during the analysis period are shown in Graph 5.0. Here the relative CAGR's of the contractors are depicted. The horizontal axis represents the CAGR of the individual prime contractors percentage of the total prime contracts awarded, while the vertical axis represents the CAGR of the particular companies growth in prime contract value. As can be observed there is wide diversity in relative growth in both axis. The detailed performance numbers are contained in Table 19.0.



Graph 5.0

There is also a wide spread between the amounts awarded to the state DOD prime contractors. Of primary note is that for GFY 2005, the top two contractors, AM General and ITT Industries were awarded in excess of 47% of the total value of all DOD prime contracts awarded to Indiana companies/universities. While the presence of these two major DOD contractors being located within the state is important, it also provides a certain level of concern regarding the future. The two companies are the sole producers of the HMMWV (High-Mobility Multipurpose Wheeled Vehicle) and the SINCGARS (Single Channel Ground and Airborne Radio System). While these two critical DOD systems will remain in production for the foreseeable future, there will be a competition in the future for their replacement systems.

Table 19.0 clearly illustrates the impact these two major DOD prime contractors have on the states economy. These two contractors were awarded $2,190,454,101 in total prime contracts in GFY 2005.

Contractor	Value of Prime Contracts	Percentage of State Total	Cumulative Percentage of State Total
AM GENERAL, LLC*	$1,026,624,309.00	23.18%	23.18%
ITT INDUSTRIES, INC	$831,516,690.00	18.78%	41.96%
AM GENERAL LLC **	$332,313,102.00	7.50%	49.46%
RAYTHEON TECHNICAL SERVICES CO	$249,414,983.00	5.63%	55.10%
ROLLS-ROYCE CORPORATION	$225,873,954.00	5.10%	60.20%
ALLISON TRANSMISSION, GENERAL	$216,435,881.00	4.89%	65.08%
AMERIQUAL GROUP LLC	$182,513,224.00	4.12%	69.20%
RAYTHEON COMPANY	$150,595,367.00	3.40%	72.60%
CARDINAL HEALTH 100, INC	$121,802,657.00	2.75%	75.36%
PARSONS INFRASTRUCTURE & TECHNOLOGY	$97,404,387.00	2.20%	77.55%
SCIENCE APPLICATIONS INTERNATIONAL	$87,388,445.00	1.97%	79.53%

* South Bend

** 'MISHAWAKA

Table 19.0

The location and magnitude of the top fifteen DOD prime contractors is shown in Table 20.0 for DOD GFY's 2002 - 2005

Contractor Name	City	Totals 2002 - 2005	CAGR % of Indiana Total Prime contracts	CAGR of Company Prime Contracts
AM GENERAL, LLC	**SOUTH BEND**	**$2,618,823,432.00**	**10.57%**	**37.34%**
ITT INDUSTRIES, INC	**FORT WAYNE**	**$1,298,007,948.00**	**30.85%**	**62.53%**
ROLLS-ROYCE CORPORATION	**INDIANAPOLIS**	**$928,370,611.00**	**-9.19%**	**12.79%**
RAYTHEON TECHNICAL SERVICES CO	**INDIANAPOLIS**	**$907,093,142.00**	**-9.13%**	**12.86%**
AM GENERAL LLC	**MISHAWAKA**	**$690,442,853.00**	**38.24%**	**71.71%**
RAYTHEON COMPANY	**FORT WAYNE**	**$549,865,647.00**	**-22.86%**	**-4.18%**
CARDINAL HEALTH 100, INC	**MIDDLETOWN**	**$500,711,232.00**	**-15.90%**	**4.46%**
AMERIQUAL GROUP LLC	**EVANSVILLE**	**$479,063,981.00**	**1.94%**	**26.63%**
PARSONS INFRASTRUCTURE & TECHN	**NEWPORT**	**$409,558,635.00**	**12.53%**	**39.77%**
ALLISON TRANSMISSION, GENERAL	**INDIANAPOLIS**	**$347,580,563.00**	**3.03%**	**27.98%**
SCIENCE APPLICATIONS INTERNATI	**SAN DIEGO**	**$195,750,784.00**	**52.36%**	**89.24%**
HONEYWELL INTERNATIONAL INC	**SOUTH BEND**	**$130,919,083.00**	**-17.80%**	**2.10%**
PETROLEUM TRADERS CORPORATION	**FORT WAYNE**	**$129,967,131.00**	**-24.22%**	**-5.88%**
EG&G TECHNICAL SERVICES, INC	**GAITHERSBURG**	**$120,142,289.00**	**7.48%**	**33.51%**
CUMMINS INC	**COLUMBUS**	**$95,507,716.00**	**-4.70%**	**18.37%**

Table 20.0

4.0 DOD contracts by type of Products and/or Services Procured.

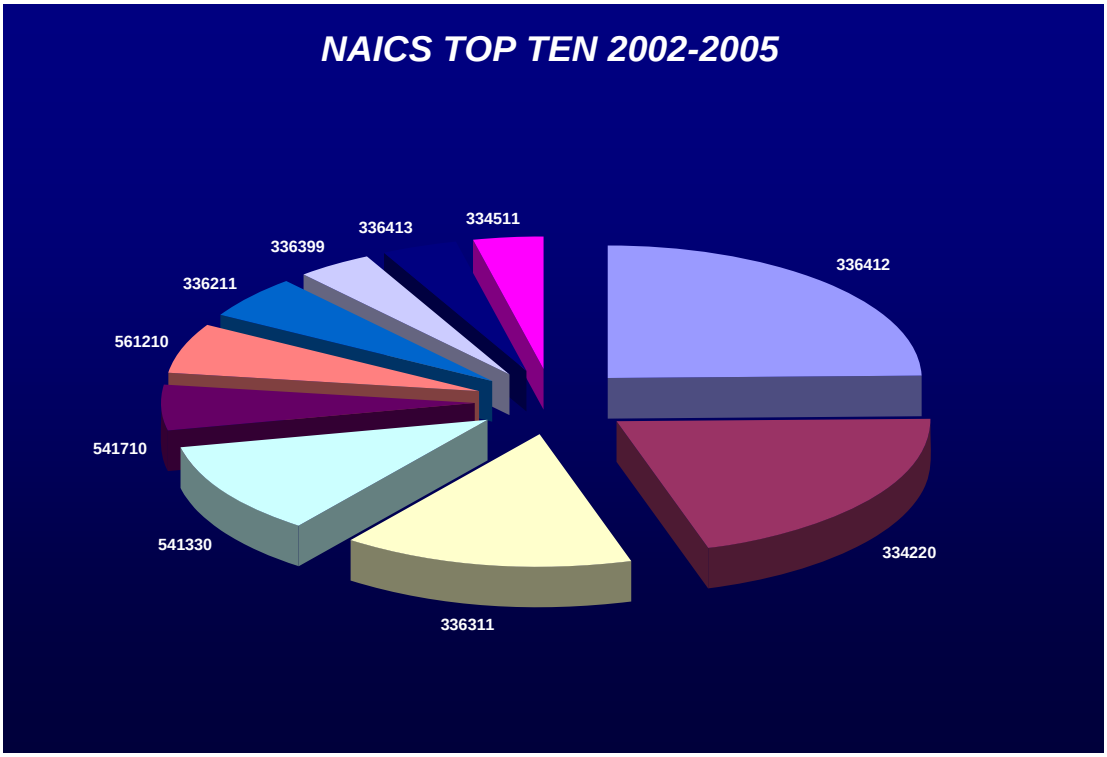
The DOD provides information concerning the nature of their prime contracts utilizing both the North American Industry Classification System (NAICS) system and the Federal Procurement Product and Service system of Codes (PSC).

North American Industry Classification System (NAICS) is a system for classifying business establishments. It is the first economic classification system to be constructed based on a single economic concept. Economic units that use like processes to produce goods or services are grouped together. This "production-oriented" system means that statistical agencies in the United States will produce data that can be used for measuring productivity, unit labor costs, and the capital intensity of production; constructing input-output relationships; and estimating employment-output relationships and other such statistics that require that inputs and outputs be used together.

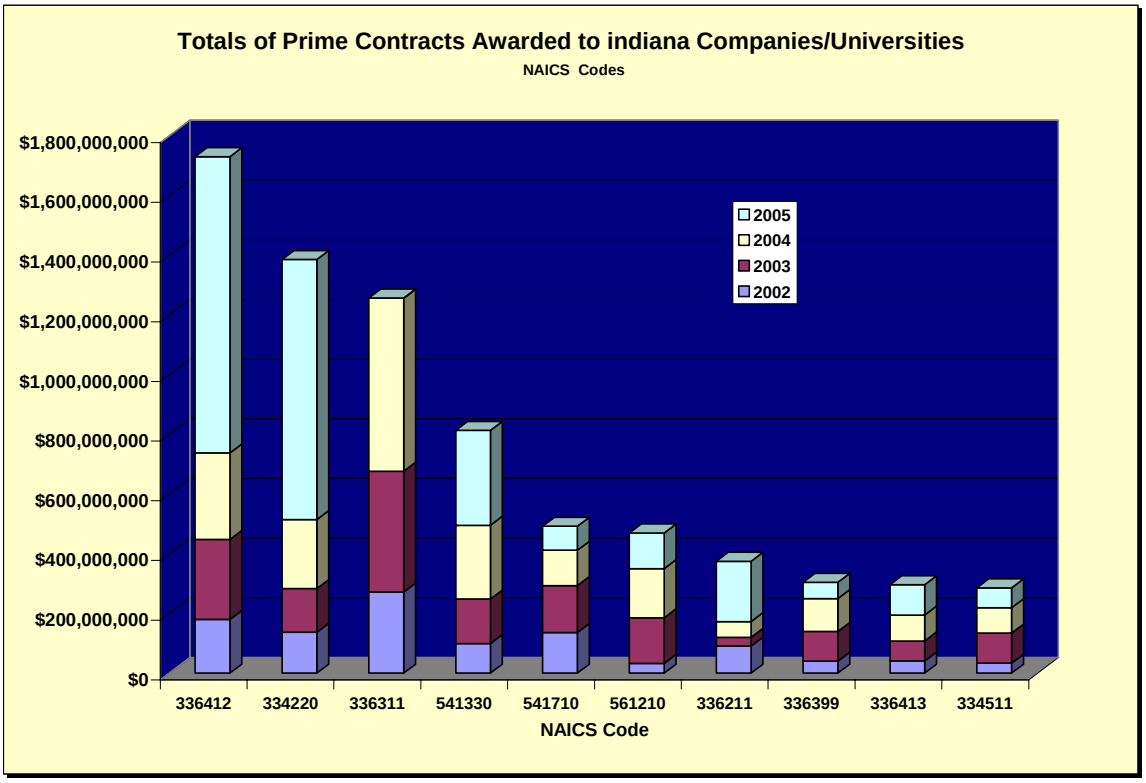
The Top ten NAICs Codes representing DOD contracts awarded to Indiana Companies/Universities for GFY 2002 2005 are:

NAICS #	Description
336412	Aircraft Engine and Engine Parts Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
336311	Carburetor, Piston, Piston Ring, and Valve Manufacturing
541330	Engineering Services
541710	Research and Development in the Physical, Engineering, and Life Sciences
561210	Facilities Support Services
336211	Motor Vehicle Body Manufacturing
336399	All Other Motor Vehicle Parts Manufacturing
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing

Table 20.0



Graph 6.0



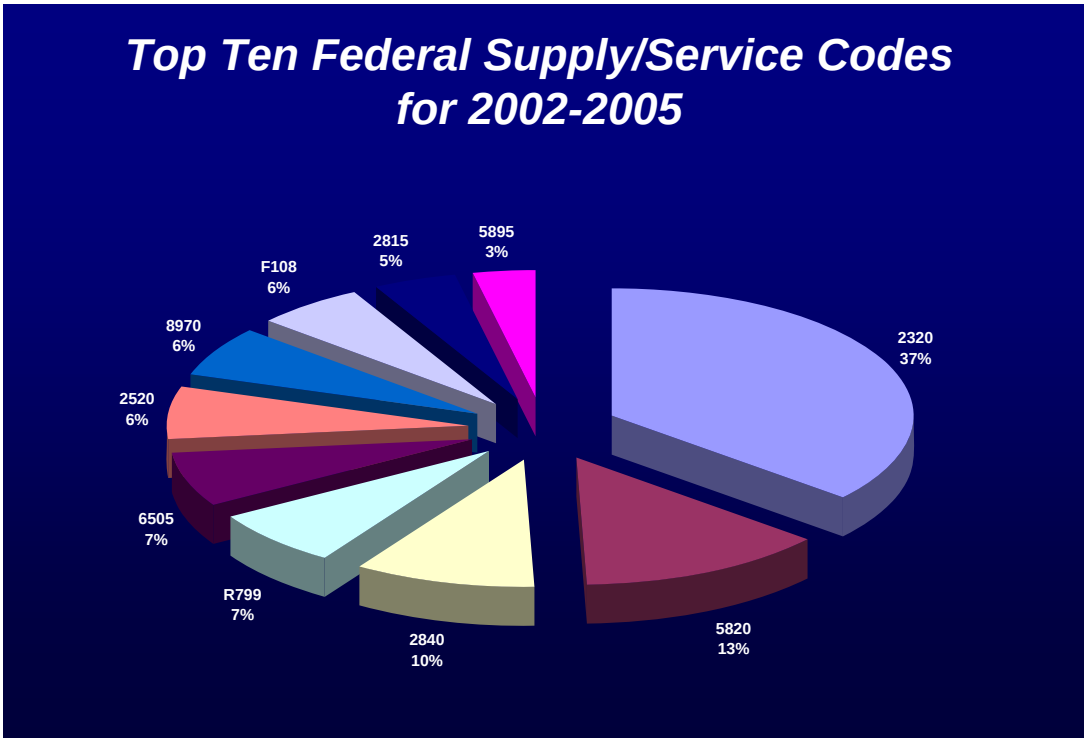
Graph 6.0

Federal Product/Service Codes are categorizations of the kinds of "things" that the U.S. Government Buys. They consist of Federal Supply Classification codes developed to categorize tangible products and service codes developed specifically for use in the Federal Procurement Data System. Research and Development codes cover all aspects of research, development, and evaluation (including management and support). Services include all other non-tangible services AND purchase or lease of buildings.

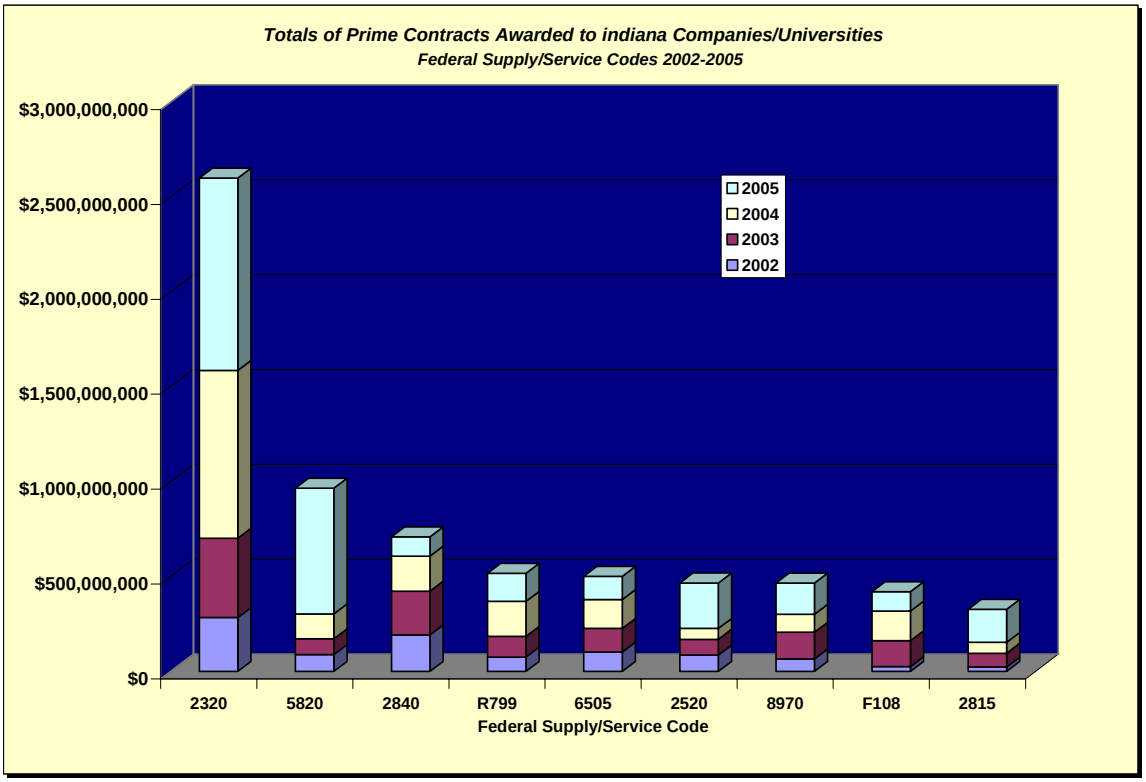
The top ten Federal Supply and Service Codes representing the DOD prime contracting with Indiana companies/universities for the timeframe GFY 2002 - 2005 are:

FSC #	Description
2320	Trucks and Truck Tractors, Wheeled
5820	Radio and Television Communications Equipment, Except Airborne
2840	Gas Turbines and Jet Engines, Non,Aircraft; and Components
R799	Diesel Engines and Components
6505	Drugs and Biological
2520	Vehicular Power Transmission Components
8970	Composite Food Packages
F108	Hazardous Substance Removal, Cleanup, and Disposal Services and Operational Support
2815	Diesel Engines and Components
5895	Miscellaneous Communications Equipment

Table 21.0



Graph 7.0



Graph 8.0

Information concerning the diversity of contracts awarded is contained in Tables 22.0 thru 26.0

Size of Small Business	2005	2004	2003	2002
Not Small Business	$4,369,650,069	$3,128,478,121	$2,534,598,822	$1,813,855,460
50 or Fewer, Employees	$3,524,881	$4,119,275	$4,417,407	$10,699,751
51 - 100, employees	$3,740,093	$3,121,051	$3,474,651	$8,992,973
101 - 250, Employees	$469,061	$798,881	$4,880,739	$3,007,466
251 - 500, Employees	$4,512,823	$1,222,696	$348,452	$3,553,171
501 - 750, Employees	$366,293	$839,045	$314,382	$0
751 - 1000, Employees	$325,047	$458,478	$991,869	$70,675
$1 Million or Less in Annual Gross Revenues	$2,496,117	$4,001,539	$5,463,799	$7,128,751
Over $1 Million to $2 Million in Annual Gross Revenues	$25,063,368	$14,225,760	$32,461,911	$9,094,903
Over $2 Million to $3.5 Million in Annual Gross Revenues	$2,176,147	$605,472	$1,007,829	$547,693
Over $3.5 Million to $5 Million in Annual Gross Revenues	$5,954,003	$2,401,062	$10,009,579	$1,428,154
Over $5 Million to $10 Million in Annual Gross Revenues	$2,549,102	$8,809,034	$3,933,438	$1,266,372
Over $10 Million to $17 Million in Annual Gross Revenues	$7,642,358	$4,229,927	$5,407,463	$774,831
Total	$4,428,469,362.0	$3,173,310,341	$2,607,310,341	$1,860,420,200

Table 22.0

Veteran Status	2005	2004	2003	2002
Non Veteran	$4,399,031,443	$3,162,273,622	$2,587,485,492	$1,851,302,957
Service - Disabled Veteran	$9,626,891	$5,408,419	$1,196,165	$243,157
All Other Veterans	$19,811,028	$5,628,300	$18,341,604	$8,874,086
Total	$4,428,469,362	$3,173,310,341	$2,607,023,261	$1,860,420,200

Table 23.0

Women Owned Business	2005	2004	2003	2002
No	$4,383,253,737	$3,149,497,778	$2,578,110,320	$1,837,108,505
Uncertain	$2,863,578	$1,970,405	$867,783	$1,213,934
Yes	$42,352,047	$21,842,158	$28,045,158	$22,097,761
Total	$4,428,471,367	$3,173,312,345	$2,607,025,264	$1,860,422,202

Table 24.0

Set Aside Program	2005	2004	2003	2002
None	$4,303,170,466	$3,100,517,243	$2,499,163,128	$1,786,722,909
Total SB Set-Aside	$96,048,418	$50,787,448	$73,183,399	$60,314,901
Partial SB Set-Aside	$935,351	$1,247,606	$3,184,931	$269,879
Section 8(a) Set-Aside or Sole Source	$24,143,372	$18,364,539	$31,298,780	$12,115,212
Total SDB Set-Aside	$648,989	$784,539	$0	$839,396
Very small Business Set-Aside	$0	$8,226	$10,153	$0
Emerging Small Business Set-Aside	$134,953	$63,294	$182,870	$127,903
HUB Zone Set-Aside or Sole Source	$3,070,042	$1,429,211	$0	$30,000
Combination HUB Zone and 8(a)	$317,771	$108,235	$0	$0
	$4,428,469,362	$3,173,310,341	$2,607,023,261	$1,860,420,200

Table 25.0

Ethnic Group	2005	2004	2003	2002
Asian-Indian American	$4,855,274	$1,809,122	$7,819,623	$4,089,497
Asian-Pacific American	$6,981,225	$8,116,889	$6,022,535	$5,714,227
Black American	$6,876,850	$2,414,211	$9,892,608	$4,196,837
Hispanic American	$4,259,106	$6,617,964	$1,302,120	$188,842
Native American	$4,418,155	$123,501	$214,266	$122,072
Other	$3,701,595	$1,563,331	$2,414,732	$6,935,418
No Representation	$18,252,208	$16,982,531	$32,431,935	$13,078,658
Total	$49,344,413	$37,627,549	$60,097,819	$34,325,551

Table 26.0

The FMS program is regulated by the Arms Export Control Act (P.L. 90-269, or the AECA), as amended. In order to purchase weapons through FMS, countries must meet all the eligibility requirements contained in the Foreign Assistance Act and the Arms Export Control Act. The Foreign Military Sales (FMS) program manages government-to-government purchases of weapons and other defense articles, defense services, and military training. A military buying weapons through the FMS program does not deal directly with the company that makes them. The Defense Department serves as an intermediary, usually handling procurement, logistics and delivery and often providing product support and training.

Foreign Military Sales	2005	2004	2003	2002
No	$4,236,259,701	$3,082,461,527	$2,510,881,817	$1,767,438,029
Yes	$192,209,661	$90,848,814	$96,141,444	$92,982,171
Total	$4,428,469,362	$3,173,310,341	$2,607,023,261	$1,860,420,200

Table 27.0

Small Business Innovation Research Program (SBIR):
SBIR is a highly competitive program that encourages small business to explore their technological potential and provides the incentive to profit from its commercialization. By including qualified small businesses in the nation's R&D arena, high-tech innovation is stimulated and the United States gains entrepreneurial spirit as it meets its specific research and development needs.

Competitive Opportunity for Small Business:
SBIR targets the entrepreneurial sector because that is where most innovation and innovators thrive. However, the risk and expense of conducting serious R&D efforts are often beyond the means of many small businesses. By reserving a specific percentage of federal R&D funds for small business, SBIR protects the small business and enables it to compete on the same level as larger businesses. SBIR funds the critical startup and development stages and it encourages the commercialization of the technology, product, or service, which, in turn, stimulates the U.S. economy.
Since its enactment in 1982, as part of the Small Business Innovation Development Act, SBIR has helped thousands of small businesses to compete for federal research and development awards. Their contributions have enhanced the nation's defense, protected our environment, advanced health care, and improved our ability to manage information and manipulate data.
SBIR Qualifications:
Small businesses must meet certain eligibility criteria to participate in the SBIR program.

- American-owned and independently operated
- For-profit
- Principal researcher employed by business
- Company size limited to 500 employees

The SBIR System:
Each year, eleven federal departments and agencies are required by SBIR to reserve a portion of their R&D funds for award to small business.

- Department of Agriculture
- Department of Commerce
- Department of Defense
- Department of Education
- Department of Energy
- Department of Health and Human Services
- Department of Homeland Security
- Department of Transportation
- Environmental Protection Agency
- National Aeronautics and Space Administration
- National Science Foundation

These agencies designate R&D topics and accept proposals.

Three-Phase Program:
Following submission of proposals, agencies make SBIR awards based on small business qualification, degree of innovation, technical merit, and future market potential. Small businesses that receive awards then begin a three-phase program.

- Phase I is the startup phase. Awards of up to $100,000 for approximately 6 months support exploration of the technical merit or feasibility of an idea or technology.
- Phase II awards of up to $750,000, for as many as 2 years, expand Phase I results. During this time, the R&D work is performed and the developer evaluates commercialization potential. Only Phase I award winners are considered for Phase II.

- Phase III is the period during which Phase II innovation moves from the laboratory into the marketplace. No SBIR funds support this phase. The small business must find funding in the private sector or other non-SBIR federal agency funding.

The data in Table 28.0 defines the DOD SBIR contracts awarded during GFY 2002 – 2005.

Program Level	2005	2004	2003	2002
NOT a SBIR Program	$4,419,344,889	$3,165,245,909	$2,602,991,208	$1,857,581,601
Program Phase I	$2,452,502	$756,658	$1,353,093	$793,419
Program Phase II	$5,369,971	$4,519,808	$2,678,960	$2,045,180
Program Phase III	$1,302,000	$2,787,966	$0	$0
	$4,428,469,362	$3,173,310,341	$2,607,023,261	$1,860,420,200

Table 28.0

The DOD also identifies their procurements as either commercial or developmental. Commercial indicates that a federal stock number or National Spock Number, NSN exists for the equipment or service being procured. Table 29.0 indicates the segregation of these categories.

	2002	2003	2004	2005	CAGR
Commercial	$1,317,584,488	$1,982,882,845	$1,606,906,747	$2,486,233,621	17%
Developmental	$542,835,712	$624,140,416	$1,566,403,594	$1,942,235,741	38%
Total	$1,860,420,200	$2,607,023,261	$3,173,310,341	$4,428,469,362	24%

Table 29.0

APPENDIX IV

Fiscal Year 2003
Under $25,000

Dept	Agency	Contracting Office Name	Vendor Name	County	Obligation
DHS	BICE	FEDERAL PROTECTIVE SERVICE - 10PS	RHINO SAFETY BARRIERS LLC.		$22,225
DHS	BICE	FEDERAL PROTECTIVE SERVICE - 5PS	PHOTO SCAN SECURITY SYSTEMS	MARION	$4,003
DHS	BICE	FEDERAL PROTECTIVE SERVICE - 5PS	PHOTO SCAN SECURITY SYSTEMS	MARION	$21,507
DHS	FLETC		PETROLEUM TRADERS CORP	ALLEN	$11,856
DHS	FLETC		PETROLEUM TRADERS CORP	ALLEN	$12,024
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	INAIR AVIATION SERVICES CO	MARION	$10,675
DHS	USCG	CO CIVIL ENGINEERING UNIT, CLEVELAND	MIDWEST MACHINERY INC.	LAPORTE	$137
DHS	USCG	COMMANDER (V) MAINT & LOG CMD PAC	TELECTRO MEK INCORPORATED	ALLEN	$0
DHS	USCG	MAINT & LOGISTICS CMD ATLANTIC FINANCE DIV	SHERRY LAB	DELAWARE	$1
					$82,428

Fiscal Year 2003
$25,000 or More

Dept	Agency	Contracting Office	Vendor Name	County	Obligation
DHS	BCBP	NATIONAL ACQUISITION CENTER	VOHNE LICHE KENNELS	MIAMI	$153,275
DHS	BCBP	NATIONAL ACQUISITION CENTER	AT&T GOVERNMENT SOLUTION	VANDERBURGH	$310,122
DHS	BCBP	NATIONAL ACQUISITION CENTER	JOFCO INC	DUBOIS	$25,122
DHS	BCBP	NATIONAL ACQUISITION CENTER	GNP CONSULTANTS	MARION	$82,547
DHS	BCBP	NATIONAL ACQUISITION CENTER	KIMBALL INTERNATIONAL, INC	DUBOIS	$45,165
DHS	BCBP	OFFICE OF PROCUREMENT	ENVISAGE TECHNOLOGIES CORP	MONROE	$271,509
DHS	BICE	FEDERAL PROTECTIVE SERVICE - 5PS	ADT SECURITY SVCS, INC.	HAMILTON	$70,378
DHS	FEMA	EPR	CITY OF FORT WAYNE	ALLEN	$480,000
DHS	FEMA	EPR	FORT WAYNE CITY OF (1029)	ALLEN	$400,000
DHS	FEMA		KIMBALL INTERNATIONAL MARKETIN	DUBOIS	$725,341
DHS	TSA		KIMBALL INTERNATIONAL, INC	DUBOIS	$95,280
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	HONEYWELL INTERNATIONAL INC	ST. JOSEPH	$353,795
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	INAIR AVIATION SERVICE	MARION	$34,441
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	METAL AIR SERVICES	JACKSON	$224,100
DHS	USCG	COMMAND OFFICER (FP) IS COM MIAMI	J SQUARED, INC.	MARION	$52,000
DHS	USCG	COMMAND OFFICER (FP) IS COM, MIAMI	J SQUARED, INC.	MARION	$46,175
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$375,735
DHS	USCG	COMR, HDQ SUPPORT COM L&SP HSC(A-3)	STYLINE INDUSTRIES INC	DUBOIS	$27,262
DHS	USCG	ENGINEERING & LOGISTICS COM	SHENANGO INDUSTRIES INC.	VIGO	$58,647
DHS	USSS		LAFAYETTE INSTRUMENT CO	TIPPECANOE	$96,450
DHS	USSS		VOHNE LICHE KENNELS	MIAMI	$60,000
DHS	USSS		KIMBALL INTERNATIONAL, INC	DUBOIS	$97,631
					$4,084,975

Fiscal Year 2004
Under $25,000

Dept	Agency	Contracting Office Name	Vendor Name	County	Obligation
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	ATLAS VAN LINES, INC	VANDERBURGH	$0
DHS	FEMA	EMERTGENCY PREPAREDNESS AND RESPONSE	FIRST BANKERS CORPORATION	MARION	$17,615
DHS	FLETC		PETROLEUM TRADERS CORP	ALLEN	$16,869
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	INAIR AVIATIONSERVICES CO	MARION	$0
DHS	USCG	CO CIVIL ENGINEERING UNIT, CLEVELAND	ENCORE DREDGING INC.	HARRISON	($15,000)
DHS	USCG	CO CIVIL ENGINEERING UNIT, CLEVELAND	ENCORE DREDGING INC.	HARRISON	($15,000)
DHS	USCG	CO CIVIL ENGINEERING UNIT, CLEVELAND	SWAGER COMMUNICATIONS INC	STEUBEN	$0
DHS	USCG	CO CIVIL ENGINEERING UNIT, CLEVELAND	MIDWEST MACHINERY INC.	LAPORTE	$0
DHS	USCG	CO CIVIL ENGINEERING UNIT, CLEVELAND	MIDWEST MACHINERY INC.	LAPORTE	$0
DHS	USCG	CO CIVIL ENGINEERING UNIT, CLEVELAND	ML ENTERPRISES LLC	VIGO	$8,577
DHS	USCG	CO CIVIL ENGINEERING UNIT, CLEVELAND	SHERRY LAB	DELAWARE	$1
DHS	USCG	CO (FP) INTEGRATED SUPPORT COM, MIAMI	J SQUARED, INC.	MARION	$0
DHS	USCG	CO (FP) INTEGRATED SUPPORT COM, MIAMI	J SQUARED, INC.	MARION	$0
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SP HSC(A-3),	ALAN AIRCRAFT SERVICES	WELLS	$0
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SP HSC(A-3),	CVS SYSTEMS, INC		$0
DHS	USCG	COMMANDING OFFICE, RES & DEV CNTR	DONNELL SYSTEMS, INC	ST. JOSEPH	$0
DHS	USCG	INTEGRATED SUPPORT COMMAND, SEATTLE	KIMBALL INTERNATIONAL, INC	DUBOIS	$0
					$13,062

Fiscal Year 2004
$25,000 or More

Dept	Agency	Contracting Office	Vendor Name	County	Obligation
DHS	BCIS	CIS CA SERVICE CENTER	INDEPENDENT STATIONERS INC	MARION	$143,947
DHS	BCIS		ENVISAGE TECHNOLOGIES CORP	MONROE	$131,791
DHS	BCBP	NATIONAL ACQUISITION CENTER	SPRINGER DANZ & BOCKELMAN INC	MARION	$519,990
DHS	BCBP	NATIONAL ACQUISITION CENTER	BARTEL COMMUNICATIONS INC	DEARBORN	$29,161
DHS	BCBP	OFFICE OF PROCUREMENT	ENVISAGE TECHNOLOGIES CORP	MONROE	$25,000
DHS	BCBP	OFFICE OF PROCUREMENT	GOODWILL INDUSTRIES OF CENTRAL IN	MARION	$131,316
DHS	BCBP	OFFICE OF PROCUREMENT	GOODWILL INDUSTRIES OF CENTRAL IN	MARION	$48,315
DHS	FEMA	EPR	COACH USA, INC	ST. JOSEPH	$30,730
DHS	FEMA	EPR	ATLAS VAN LINES, INC	VANDERBURGH	$28,095
DHS	FEMA	EPR	MARK'S RV SALES	HANCOCK	$541,646
DHS	FEMA	EPR	BEST BUY RVS INCORPORATED	WAYNE	$8,340,400
DHS	FEMA	EPR	MARK'S RV SALES	HANCOCK	$1,801,300
DHS	FEMA	EPR	MARK'S RV SALES	HANCOCK	$175,650
DHS	FLETC		ENVISAGE TECHNOLOGIES CORPORAT	MONROE	$95,150
DHS	OFSEC	OFFICE OF PROCUREMENT OPS	LUI PLUS LIMITED LIABILITY COMPANY	DUBOIS	$100,389
DHS	TSA		INDIANAPOLIS AIRPORT AUTHORITY (5397)	MARION	$41,575
DHS	TSA		KIMBALL HOSPITALITY FURNITURE INC	DUBOIS	$35,172
DHS	TSA		KIMBALL INTERNATIONAL	DUBOIS	$1,744,234
DHS	TSA		KIMBALL INTL, INC. C/O MOI	DUBIOS	$665,395
DHS	TSA		ATA HOLDINGS CORPORATION (5077)	MARION	$53,971
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CTR	INAIR AVIATION SERVICES	MARION	$153,158
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CTR	ROLLS ROYCE DEFENSE ENERGY INC	MARION	$73,454
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CTR	INAIR AVIATION SERVICES CO	MARION	$59,249
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CTR	NBH INCORPORATED	HENDRICKS	$95,791
DHS	USCG	CO CE UNIT, CLEVELAND	ENCORE DREDGING INCORPORATED	HARRISON	$201,416
DHS	USCG	CO CE UNIT, CLEVELAND	ENCORE DREDGING INCORPORATED	HARRISON	$201,416
DHS	USCG	CO CE UNIT, CLEVELAND	ML ENTERPRISES LIMITED LIABILITY CO	VIGO	$85,932
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$314,159
DHS	USCG	ENGINEERING & LOGISTICS COMMAND	COMMUNICATIONS MAINTENANCE INC	MARION	$30,687
DHS	USCG	INTEGRATED SUPPORT COMMAND,	J SQUARED, INC.	MARION	$27,071
DHS	USCG	IS COM ST. LOUIS	LANDMARKS BUILDERS INCORPORATED	HENDRICKS	$43,000
DHS	USSS		VOHNE LICHE KENNELS INC.	MIAMI	$108,810
DHS	USSS		KIMBALL INTERNATIONAL INC (8210)	DUBOIS	$122,046
					$16,199,416

Fiscal Year 2005
Under $25,000

Dept	Agency	Contracting Office	Vendor Name	County	Obligation
DHS	BCIS	CIS CALIFORNIA SERVICE CENTER	INDEPENDENT STATIONERS INC	MARION	$2,973
DHS	BCIS		STYLINE INDUSTRIES INC	DUBOIS	$2,514
DHS	BCIS		DENISON PARKING INCORPORATED	MARION	$1,500
DHS	BCIS		KIMBALL INTERNATIONAL, INC	DUBOIS	$4,586
DHS	BCIS		KIMBALL INTERNATIONAL, INC	DUBOIS	$24,383
DHS	BCIS		STYLINE INDUSTRIES INC	DUBOIS	$8,134
DHS	BCIS		KIMBALL INTERNATIONAL, INC	DUBOIS	$10,044
DHS	BCBP	MARFA BORDER PATROL SECTOR HQ	FIRE KING INTERNATIONAL LLC	FLOYD	$20,515
DHS	BCBP	NATIONAL ACQUISITION CENTER	ROHRCOM 1 COMMUNICATIONS	MARION	$2,954
DHS	BCBP	NATIONAL ACQUISITION CENTER	LAUTH PROPERTY GROUP	MARION	$2,400
DHS	BCBP	NATIONAL ACQUISITION CENTER	HONEYWELL INTERNATIONAL INC (0650)	ST. JOSEPH	$3,779
DHS	BCBP	NATIONAL ACQUISITION CENTER	INDY EXPRESS INCORPORATED	MARION	$2,376
DHS	BCBP	NATIONAL ACQUISITION CENTER	INDY EXPRESS INCORPORATED	MARION	$2,376
DHS	BCBP	NATIONAL ACQUISITION CENTER	INDIANA BLACK EXPO INCORPORATED	MARION	$5,965
DHS	BCBP	NATIONAL ACQUISITION CENTER	BARTEL COMMUNICATIONS INC	DEARBORN	$8,398
DHS	BCBP	NATIONAL ACQUISITION CENTER	P T R INCORPORATED	HAMILTON	$2,832
DHS	BCBP	NATIONAL ACQUISITION CENTER	BELL KENNELS	MARION	$5,110
DHS	BCBP	NATIONAL ACQUISITION CENTER	JASPER SEATING COMPANY INC	DUBOIS	$17,333
DHS	BCBP	NATIONAL ACQUISITION CENTER	CREATIVE BUSINESS INTERIORS (1364)	HAMILTON	$4,853
DHS	BCBP	NATIONAL ACQUISITION CENTER	STANLEY SECURITY SOLUTIONS INC	MARION	$6,640
DHS	BCBP	NATIONAL ACQUISITION CENTER	JOFCO INC	DUBOIS	$4,744
DHS	BCBP	NATIONAL ACQUISITION CENTER	PAC-VAN, INC.	MARION	$4,260
DHS	BCBP	NATIONAL ACQUISITION CENTER	KIMBALL INTERNATIONAL, INC	DUBOIS	$23,769
DHS	BCBP	NATIONAL ACQUISITION CENTER	SPRINGER DANZ AND BOCKELMAN INC	MARION	$0
DHS	BCBP	OFFICE OF PROCUREMENT	ENVISAGE	MONROE	$0
DHS	BCBP	OFFICE OF PROCUREMENT	GOODWILL INDUSTRIES OF CENTRAL	MARION	$18,730
DHS	BCBP	OFFICE OF PROCUREMENT	SPILL 911 INCORPORATED	HAMILTON	$9,670
DHS	BICE	FEDERAL AIR MARSHAL SERVICE	LAUGHERY VALLEY FOP LODGE NO 146 PO	DEARBORN	$6,000
DHS	BICE	HQ, PROCUREMENT DIVISION. DC	LAFAYETTE INSTRUMENT COMPANY INC	TIPPECANOE	$15,618
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	MODERN TRAILER SALES INC	MADISON	($57,598)
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	MARION CITY OF (1102)		$20,175
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	CLYDE T PFISTERER PRIN	MARION	$0
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	CLYDE T PFISTERER PRIN	MARION	$1,968
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	CLYDE T PFISTERER PRIN	MARION	$993
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	CLYDE T PFISTERER PRIN	MARION	$992
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	CLYDE T PFISTERER PRIN	MARION	$2,450

Fiscal Year 2005
Under $25,000

Dept	Agency	Contracting Office	Vendor Name	County	Obligation
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	DEBRA J JARVIS CONSULTING	MARION	$1,195
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	DEBRA J JARVIS CONSULTING	MARION	$975
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	DEBRA J JARVIS CONSULTING	MARION	$6,185
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	DEBRA J JARVIS CONSULTING	MARION	$975
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	DEBRA J. JARVIS CONSULTING	MARION	($975)
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	DEBRA J. JARVIS CONSULTING	MARION	$1,857
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	INDIANA UNIVERSITY	MONROE	$5,500
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	CITY OF FORT WAYNE	ALLEN	$0
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	KIMBALL INTERNATIONAL INC (8210)	DUBOIS	$24,696
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	ROD		$0
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	ROD MCGAVOCK'S PREMIER RV INC	CLARK	$500
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	ADVANCE TACTICS SECURITY	MARION	$9,005
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	SLOANE JR MARION L	MARION	$2,500
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	SLOANE JR MARION L	MARION	$2,440
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	TEETER DAVID S	HAMILTON	$2,187
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	CLYDE T PFISTERER PRIN	MARION	$1,035
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	CLYDE T PFISTERER PRIN	MARION	$780
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	CLYDE T PFISTERER PRIN	MARION	$1,248
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	DEBRA J JARVIS CONSULTING	MARION	$5,977
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	DEBRA J JARVIS CONSULTING	MARION	$1,395
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	DENVER INCORPORATED	DUBOIS	$5,400
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	KIMBALL INTERNATIONAL INC (8210)	DUBOIS	$21,323
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	SLOANE JR MARION L	MARION	$2,438
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	SLOANE, JR., MARION L.	MARION	($2,438)
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	KIMBALL INTERNATIONAL INC (8210)	DUBOIS	$3,182
DHS	FEMA	EMERGENCY PREPAREDNESS AND RESPONSE	BEST BUY RVS INCORPORATED	WAYNE	$0
DHS	FLETC		PETROLEUM TRADERS CORPORATION	ALLEN	$719
DHS	FLETC		RYAN WESLEY ASSOCIATES	HAMILTON	$1,879
DHS	FLETC		WALTON J BRANCH	BARTHOLOMEW	$1,313
DHS	FLETC		WALTON J BRANCH	BARTHOLOMEW	$1,313
DHS	FLETC		PETROLEUM TRADERS	ALLEN	$14,832
DHS	FLETC		INDEPENDENT STATIONERS INC	MARION	$2,165
DHS	OFSEC	OFFICE OF PROCUREMENT OPERATIONS	DREAMING TREE TECHNOLOGY INC	HAMILTON	$6,867
DHS	OFSEC	OFFICE OF PROCUREMENT OPERATIONS	DREAMING TREE TECHNOLOGY, INC.	HAMILTON	$0
DHS	TSA		KIMBALL INTL, INC. C/O MOI	DUBOIS	$0
DHS	TSA		BAYNES AND ASSOCIATES	HAMILTON	$17,977

Fiscal Year 2005
Under $25,000

Dept	Agency	Contracting Office	Vendor Name	County	Obligation
DHS	TSA		CONNOR JOHN E AND ASSOCIATES INC	MARION	$6,740
DHS	TSA		HARRIS MARK A	LAWRENCE	$0
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	BAE SYSTEMS CONTROLS INC	ALLEN	($6,900)
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	BAE SYSTEMS CONTROLS INC	ALLEN	$12,800
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	BAE SYSTEMS CONTROLS INC	ALLEN	$0
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	PYNCO INCORPORATED	LAWRENCE	$900
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	INAIR AVIATION SERVICES CO	MARION	$18,163
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	PYNCO INC	LAWRENCE	$1,910
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	PYNCO INC	LAWRENCE	$0
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	PYNCO INCORPORATED	LAWRENCE	$0
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	TELECTRO MEK INCORPORATED	ALLEN	$15,876
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	BAE SYSTEMS CONTROLS INC	ALLEN	$12,800
DHS	USCG	CO CIVIL ENGINEERING UNIT, CLEVELAND	TANK TRANSPORT RESOURCES INC	NEWTON	$0
DHS	USCG	CO(FCP), USCG TRACEN, PETALUMA	TRILITHIC INCORPORATED	MARION	$7,070
DHS	USCG	CO(FCP), USCG TRACEN, PETALUMA	KIMBALL INTERNATIONAL, INC	DUBOIS	$2,614
DHS	USCG	CO(FCP), USCG TRACEN, PETALUMA	CENTRAL PRODUCTS INC	MARION	$2,414
DHS	USCG	CO(FCP), USCG TRACEN, PETALUMA	KIMBALL INTERNATIONAL, INC	DUBOIS	$5,859
DHS	USCG	CO(FCP), USCG TRACEN, PETALUMA	KIMBALL INTERNATIONAL, INC	DUBOIS	$7,389
DHS	USCG	CO(FCP), USCG TRACEN, PETALUMA	KIMBALL INTERNATIONAL, INC	DUBOIS	$10,422
DHS	USCG	CO(FCP), USCG TRACEN, PETALUMA	JOFCO INC	DUBOIS	$4,542
DHS	USCG	COMMAND MAINTEN. & LOGIST COMMAND	WHAYNE SUPPLY	VANDERBURGH	$3,581
DHS	USCG	COMMAND MAINTEN. & LOGIST COMMAND	ACCUTEMP PRODUCTS INC	ALLEN	$4,790
DHS	USCG	CO (FP) USCG ISCOM, MIAMI	BLACK & COMPANY	MARION	$795
DHS	USCG	COMMAND OFFICER (FP) ISCOM, MIAMI	INWOOD OFFICE FURNITURE INC	DUBOIS	$6,798
DHS	USCG	COMMAND OFFICER (FP) ISCOM, MIAMI	J SQUARED, INC.	MARION	$8,603
DHS	USCG	COMMAND OFFICER (FP) ISCOM, MIAMI	J SQUARED, INC.	MARION	$11,676
DHS	USCG	COMMAND OFFICER (FP) ISOM, MIAMI	JOFCO INC	DUBOIS	$2,909
DHS	USCG	COMMAND OFFICER (FP)ISCOM, MIAMI	J SQUARED, INC.	MARION	$4,889
DHS	USCG	COMMANDANT (G-ACS-3A	ARMOR METAL GROUP MADISON INC	JEFFERSON	$11,350
DHS	USCG	COMMANDANT (G-ACS-3A	ARMOR METAL GROUP MADISON INC	JEFFERSON	$11,750
DHS	USCG	COMMANDER (FCP) MAINT & LOGISTICS CMD PACIFIC	CORVIDAE ENTERPRISES INC	MARION	$12,000
DHS	USCG	COMMANDER (FCP) MAINT & LOGISTICS CMD PACIFIC	COMMUNICATIONS PRODUCTS INC	MARION	$12,901
DHS	USCG	COMMANDER (FCP) MAINT & LOGISTICS CMD PACIFIC	COMMUNICATIONS PRODUCTS INC	MARION	$4,885
DHS	USCG	COMMANDER (FCP) MAINT & LOGISTICS CMD PACIFIC	KIMBALL INTERNATIONAL, INC	DUBOIS	$2,844
DHS	USCG	COMMANDER (V) MAINT & LOG CMD PACIFIC	TELECTRO MEK INCORPORATED	ALLEN	$3,337
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SP HSC(A-3),	ALAN AIRCRAFT SERVICES	WELLS	$2,866

Fiscal Year 2005
Under $25,000

Dept	Agency	Contracting Office	Vendor Name	County	Obligation
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SP HSC(A-3),	FITNESS FLOORING INC	MARION	$13,958
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SP HSC(A-3),	CVS SYSTEMS, INC		$16,525
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SMP HSC(A-3),	STYLINE INDUSTRIES INC	DUBOIS	$4,715
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SP HSC(A-3),	CVS SYSTEMS, INC		$16,525
DHS	USCG	COMMANDING OFFICE, RES & DEV CNTR	DONNELL SYSTEMS, INC	ST. JOSEPH	$2,294
DHS	USCG	INTEGRATED SUPPORT COMMAND, SEATTLE	STYLINE INDUSTRIES INC	DUBOIS	$3,204
DHS	USCG	INTEGRATED SUPPORT COMMAND, SEATTLE	KIMBALL INTERNATIONAL, INC	DUBOIS	$7,071
DHS	USCG	INTEGRATED SUPPORT COMMAND, SEATTLE	HELMER INCORPORATED	HAMILTON	$5,022
DHS	USCG	ISC CLEVELAND	COMMERCIAL AUDIO SYSTEMS INC	PORTER	$154
DHS	USCG	ISC CLEVELAND	GENERAL ELECTRIC COMPANY (9340)	MARION	$1,989
DHS	USCG	ISC KETCHIKAN	HY PRO CORPORATION	HAMILTON	$1,521
DHS	USCG	RECRUITING COMMAND	COPPINGER EXHIBITS INCORPORATED	MARION	$2,189
DHS	USCG	USCG CIVIL ENGINEERING UNIT, MIAMI	NATIONAL BUILDERS INCORPORATED	MARION	$18,000
DHS	USCG	USCG ENGINEERING & LOGISTICS COMMAND	PETROLEUM TRADERS CORPORATION	ALLEN	$1,050
DHS	USCG	USCG ENGINEERING & LOGISTICS COMMAND	INDIANA RESEARCH INSTITUTE CORP	BARTHOLOMEW	$0
DHS	USCG	USCG ENGINEERING & LOGISTICS COMMAND	ROLLS ROYCE NAVAL MARINE INC	MARION	$12,578
DHS	USCG	USCG ENGINEERING & LOGISTICS COMMAND	ABSOCOLD CORPORATION	WAYNE	$9,777
DHS	USCG	USCG INTEGRATED SUPPORT COMMAND,	TEKONSHA CORPORATION	KOSCIUSKO	$975
DHS	USCG	USCG INTEGRATED SUPPORT COMMAND,	FIRE KING INTERNATIONAL, INC	FLOYD	$8,691
DHS	USCG	USCG INTEGRATED SUPPORT COMMAND, ALEMEDA	A & A SHEET METAL PRODUCTS INC	LAPORTE	$3,880
DHS	USCG	USCG INTEGRATED SUPPORT COMMAND, ALEMEDA	J SQUARED, INC.	MARION	$8,496
DHS	USCG	USCG INTEGRATED SUPPORT COMMAND, HONOLULU	ADAPTIVE MICRO WARE INCORPORATED	ALLEN	$1,314
DHS	USCG	USCG INTEGRATED SUPPORT COMMAND, KODIAK	CENTRAL PRODUCTS INC	MARION	$3,814
DHS	USCG	USCG INTEGRATED SUPPORT COMMAND, NEW ORLEANS	KIMBALL INTERNATIONAL, INC	DUBOIS	$6,384
DHS	USCG	INTEGRATED SUPPORT COM, PORTSMOUTH COMPTROLLER	TEKONSHA CORPORATION	KOSCIUSKO	$650
DHS	USCG	INTEGRATED SUPPORT COM, PORTSMOUTH COMPTROLLER	J SQUARED, INC.	MARION	$3,925
DHS	USCG	INTEGRATED SUPPORT COM, PORTSMOUTH COMPTROLLER	KIMBALL INTERNATIONAL, INC	DUBOIS	$5,299
DHS	USCG	INTEGRATED SUPPORT COM, PORTSMOUTH COMPTROLLER	J SQUARED, INC.	MARION	$4,044
DHS	USCG	USCG MAINTENANCE AND LOGISTICS COMMAND - ATLANTIC	STYLINE INDUSTRIES INC	DUBOIS	$5,582
DHS	USSS		BROADCAST SERVICES INC	MARION	$75
DHS	USSS		BROADCAST SERVICES INCORPORATED	MARION	$5,311
DHS	USSS		STYLINE INDUSTRIES INC (6548)	DUBOIS	$22,753
DHS	USSS		BROADCAST SERVICES INCORPORATED	MARION	$5,003
DHS	USSS		LESEA BROADCASTING CORPORATION	ST. JOSEPH	$4,980
DHS	USSS		MID AMERICA RADIO GROUP INC	MORGAN	$2,772
DHS	USSS		WLFI TV INCORPORATED	TIPPECANOE	$9,000

Fiscal Year 2005
Under $25,000

Dept	Agency	Contracting Office	Vendor Name	County	Obligation
DHS	USSS		VAN AUSDALL AND FARRAR INC	MARION	$4,500
DHS	USSS		KIMBALL INTERNATIONAL, INC	DUBOIS	$17,000
DHS	USSS		QUARTERMASTER LAW ENFORCEMENT EQUIP	HAMILTON	$2,910
					$788,384

Fiscal Year 2005
$25,000 or More

Dept	Agency	Contracting Office	Vendor Name	COUNTY	Obligation
DHS	BCIS		ENVISAGE TECHNOLOGIES CORP	MONROE	$149,991
DHS	BCIS	CIS CA SERVICE CTR	INDEPENDENT STATIONERS INC	MARION	$39,840
DHS	BCIS	CIS CA SERVICE CTR	INDEPENDENT STATIONERS INC	MARION	$100,796
DHS	BCIS	CIS CA SERVICE CTR	INDEPENDENT STATIONERS INC	MARION	$129,905
DHS	BCIS	CIS CA SERVICE CTR	INDEPENDENT STATIONERS INC	MARION	$74,572
DHS	BCBP	EL PASO BORDER PATROL SECTOR HQ	INDIANA FURNITURE INDUSTRIES INC	DUBOIS	$34,996
DHS	BCBP	LAREDO BORDER PATROL SECTOR HQ	NEOTERIC INCORPORATED	VIGO	$29,848
DHS	BCBP	NATIONAL ACQUISITION CENTER	VOHNE LICHE KENNELS INC	MIAMI	$40,500
DHS	BCBP	NATIONAL ACQUISITION CENTER	DIVERSE STAFFING SERVICES INC	MARION	$128,174
DHS	BCBP	NATIONAL ACQUISITION CENTER	VOHNE LICHE KENNELS INC.	MIAMI	$39,500
DHS	BCBP	NATIONAL ACQUISITION CENTER	BARTEL COMMUNICATIONS INC	DEARBORN	$88,430
DHS	BCBP	NATIONAL ACQUISITION CENTER	DIVERSE STAFFING SERVICES INC	MARION	$102,318
DHS	BCBP	NATIONAL ACQUISITION CENTER	SPRINGER DANZ & BOCKELMAN INC	MARION	$354,166
DHS	BCBP	NATIONAL ACQUISITION CENTER	LONG LIFE FOOD DEPOT	WAYNE	$26,098
DHS	BCBP	NATIONAL ACQUISITION CENTER	RYAN CONSULTING GROUP	HAMILTON	$865,118
DHS	BCBP	NATIONAL ACQUISITION CENTER	BRAMMALL INC.	STEUBEN	$550,000
DHS	BCBP	OFFICE OF PROCUREMENT	BRUCE FOX INCORPORATED	FLOYD	$650,000
DHS	BCBP	OFFICE OF PROCUREMENT	PERFORMANCE ASSESSMENT NETWORK INC	HAMILTON	$945,000
DHS	BICE	FEDERAL AIR MARSHAL SERVICE	ENVISAGE TECHNOLOGIES CORP	MONROE	$265,000
DHS	BICE	HQ PROCUREMENT DIV DC	ENVISAGE TECHNOLOGIES CORP	MONROE	$451,046
DHS	FEMA	EPR	ROOTS RV INC	LAWRENCE	$405,880
DHS	FEMA	EPR	FREEDOM ROADS, LLC		$15,813,012
DHS	FEMA	EPR	GULF STREAM COACH INCORPORATED	ELKHART	$270,937,500
DHS	FEMA	EPR	LEE'S RV CENTER, INC	RIPLEY	$441,018
DHS	FEMA	EPR	BEST BUY RV"S, INC	WAYNE	$711,159
DHS	FEMA	EPR	GREAT LAKES RV CENTER LLC	ELKHART	$757,878
DHS	FEMA	EPR	TOM STINNETT HOLIDAY RV CENTER INC	CLARK	$37,064,276
DHS	FEMA	EPR	GREAT LAKES RV CENTER LLC	ELKHART	$2,569,351
DHS	FEMA	EPR	MODERN TRAILER SALES INCORPORATED	MADISON	$480,623
DHS	FEMA	EPR	GREAT LAKES RV CENTER LLC	ELKHART	$1,692,853
DHS	FEMA	EPR	TOM RAPER INCORPORATED	WAYNE	$5,320,298
DHS	FEMA	EPR	FALL CREEK HOMES LLC	ELKHART	$4,270,000
DHS	FEMA	EPR	TOM RAPER INCORPORATED	WAYNE	$14,623,400
DHS	FEMA	EPR	BEST BUY RVS INCORPORATED	WAYNE	$74,900
DHS	FEMA	EPR	BEST BUY RV	WAYNE	$333,760
DHS	FEMA	EPR	JOHNSON MEAD AND COMPANY	VANDERBURGH	$420,947

Fiscal Year 2005
$25,000 or More

DHS	FEMA	EPR	BILL GARDINER RV SUPER CENTER LLC	TIPPECANOE	$300,699
DHS	FEMA	EPR	MARKS R V AND BOAT SALES INC	HANCOCK	$4,959,000
DHS	FEMA	EPR	KIMBALL INTERNATIONAL INC (8210)	DUBOIS	$34,729
DHS	FEMA	EPR	ALLCAR, LLC	MARION	$89,610
DHS	FEMA	EPR	RV EXPERIENCE LIMITED LIABILITY COMPANY	MARION	$160,091
DHS	FEMA	EPR	GULF STREAM COACH INC	ELKHART	$250,440,000
DHS	FEMA	EPR	MARK'S RV'S	HANCOCK	$1,882,958
DHS	FEMA	EPR	LONG LIFE FOOD DEPOT	WAYNE	$1,393,500
DHS	FEMA	EPR	FIRST BANKERS CORPORATION	MARION	$52,203
DHS	FEMA	EPR	DIAMOND EQUIPMENT, INC.	VANDERBURGH	$118,637
DHS	FLETC		PETROLEUM TRADERS	ALLEN	$59,908
DHS	FLETC		PETROLEUM TRADERS	ALLEN	$86,699
DHS	FLETC		PETROLEUM TRADERS	ALLEN	$41,835
DHS	FLETC		PETROLEUM TRADERS	ALLEN	$42,842
DHS	OFSEC	OFFICE OF PROCUREMENT OPS	ENVISAGE TECHNOLOGIES CORP	MONROE	$450,000
DHS	OFSEC	OFFICE OF PROCUREMENT OPS	GENERAL DYNAMICS C4 SYSTEMS INC	ALLEN	$35,970
DHS	TSA		PERFORMANCE ASSESSMENT NETWORK INC	HAMILTON	$1,597,840
DHS	TSA		PURDUE UNIVERSITY (0535)	TIPPECANOE	$1,039,132
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CTR	INAIR AVIATION SERVICES	MARION	$159,825
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CTR	INAIR AVIATION SERVICES CO	MARION	$59,170
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CTR	ROLLS ROYCE	MARION	$73,514
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CTR	NBH INCORPORATED	HENDRICKS	$95,791
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CTR	BAE SYSTEMS CONTROLS INC.	ALLEN	$61,000
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CTR	INAIR AVIATION SERVICES	MARION	$170,802
DHS	USCG	CO CE UNIT, CLEVELAND	TANK TRANSPORT RESOURCES INC	JASPER	$27,883
DHS	USCG	COMMAND OFFICER (FP) ISC, MIAMI	J SQUARED, INC.	MARION	$39,567
DHS	USCG	COMMAND OFFICER (FP) ISC, MIAMI	J SQUARED, INC.	MARION	$31,387
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$152,651
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$209,421
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$55,851
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$36,829
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$35,909
DHS	USCG	COMR, TIS COM	UNICOR FEDERAL PRISON INDUSTRIES INC	VIGO	$40,607
DHS	USCG	CIVIL ENGINEERING UNIT, JUNEAU	DIAMOND EQUIPMENT INCORPORATED	VANDERBURGH	$105,270
DHS	USCG	ENGINEERING & LOGISTICS COM	INDIANA RESEARCH INSTITUTE COR	BARTHOLOMEW	$685,737
DHS	USCG	NATL POLLUTION FUNDS CENTER	INDIANA FURNITURE INDUSTRIES,	DUBOIS	$28,368
DHS	USSS		VOHNE LICHE KENNELS INC.	MIAMI	$30,350

Fiscal Year 2005
$25,000 or More

DHS	FLETC		PETROLEUM TRADERS	ALLEN	$41,835
DHS	USSS		PETROLEUM TRADERS CORPORATION	ALLEN	$426,004
					$626,293,742

Fiscal Year 2006
Under $25,000

Dept	Agency	Contracting Office Name	Vendor Name	County	Obligation
DHS	BCIS	CIS NE SERVICE CENTER	INDEPENDENT STATIONERS INC	MARION	$6,550
DHS	BCIS		STANLEY SECURITY SOLUTIONS INC	MARION	$2,528
DHS	BCIS		KIMBALL INTERNATIONAL, INC	DUBOIS	$8,286
DHS	BCIS		KIMBALL INTERNATIONAL, INC	DUBOIS	$6,335
DHS	BCIS		JOFCO INC	DUBOIS	$4,750
DHS	BCIS		JASPER SEATING COMPANY INC	DUBOIS	$3,714
DHS	BCIS		KIMBALL INTERNATIONAL, INC	DUBOIS	$10,645
DHS	BCIS		KIMBALL INTERNATIONAL, INC	DUBOIS	$11,479
DHS	BCIS		JASPER SEATING COMPANY INC	DUBOIS	$9,270
DHS	BCBP	EL CENTRO BORDER PATROL SECTOR	DOVER INDUSTRIES, INC	JEFFERSON	$23,674
DHS	BCBP	EL PASO BORDER PATROL SECTOR HQ EL PASO	INDIANA FURNITURE INDUSTRIES INC	DUBOIS	$3,205
DHS	BCBP	EL PASO BORDER PATROL SECTOR HQ EL PASO	EXECUTIVE FURNITURE INC	DUBOIS	$15,291
DHS	BCBP	LAREDO BORDER PATROL SECTOR HQ LAREDO	KIMBALL INTERNATIONAL, INC	DUBOIS	$19,899
DHS	BCBP	NATIONAL ACQUISITION CENTER	ROHRCOM 1 COMMUNICATIONS	MARION	$1,313
DHS	BCBP	NATIONAL ACQUISITION CENTER	KIMBALL INTERNATIONAL, INC	DUBOIS	$16,112
DHS	BCBP	NATIONAL ACQUISITION CENTER	KIMBALL INTERNATIONAL, INC	DUBOIS	$9,652
DHS	BCBP	NATIONAL ACQUISITION CENTER	SPRINGER DANZ AND BOCKELMAN INC	MARION	$14,441
DHS	BCBP	NATIONAL ACQUISITION CENTER	BARTEL COMMUNICATIONS INC	DEARBORN	$6,180
DHS	BCBP	NATIONAL ACQUISITION CENTER	BARTEL COMMUNICATIONS INC	DEARBORN	$20,796
DHS	BCBP	NATIONAL ACQUISITION CENTER	INDY EXPRESS INCORPORATED	MARION	$2,520
DHS	BCBP	NATIONAL ACQUISITION CENTER	BARTEL COMMUNICATIONS, INC	DEARBORN	($2,960)
DHS	BCBP	NATIONAL ACQUISITION CENTER	INDIANA BLACK EXPO INCORPORATED	MARION	$5,950
DHS	BCBP	NATIONAL ACQUISITION CENTER	BELL KENNELS	MARION	$3,836
DHS	BCBP	NATIONAL ACQUISITION CENTER	FULLER ENGINEERING COMPANY LLC	BOONE	$2,790
DHS	BCBP	NATIONAL ACQUISITION CENTER	LAUTH PROPERTY GROUP	MARION	$2,590
DHS	BCBP	NATIONAL ACQUISITION CENTER	CIM AUDIO VISUAL INCORPORATED	BARTHOLOMEW	$5,518
DHS	BCBP	NATIONAL ACQUISITION CENTER	INDIANA FURNITURE INDUSTRIES,	DUBOIS	$4,200
DHS	BCBP	NATIONAL ACQUISITION CENTER	JOFCO INC	DUBOIS	$9,615
DHS	BCBP	NATIONAL ACQUISITION CENTER	SPILL 911 INCORPORATED	INDIANA	$3,121
DHS	BCBP	NATIONAL ACQUISITION CENTER	RMS	MARION	$5,000
DHS	BCBP	NATIONAL ACQUISITION CENTER	SUSAN A CALDWELL	ST. JOSEPH	$9,037
DHS	BCBP	NATIONAL ACQUISITION CENTER	PFIZER INCORPORATED (5170)	VIGO	$0
DHS	BCBP	OFFICE OF PROCUREMENT	GOODWILL INDUSTRIES OF CENTRAL	MARION	$21,303
DHS	BICE	FEDERAL AIR MARSHAL SERVICE	ENVISAGE TECHNOLOGIES CORP	MONROE	$23,980
DHS	BICE	FEDERAL PROTECTIVE SERVICE - 5PS	BROADCAST SERVICES INC	MARION	$3,877
DHS	BICE	HQ PROCUREMENT DIVISION. DC	JOFCO INC	DUBOIS	$2,271

Fiscal Year 2006
Under $25,000

Dept	Agency	Contracting Office Name	Vendor Name	County	Obligation
DHS	BICE		KIMBALL INTERNATIONAL, INC	DUBOIS	$5,139
DHS	BICE		KIMBALL INTERNATIONAL, INC	DUBOIS	$8,823
DHS	BICE		KIMBALL INTERNATIONAL, INC	DUBOIS	$4,675
DHS	FEMA	EPR	BLOOMINGTON CITY OF (0954)	MONROE	$19,426
DHS	FEMA	EPR	BLOOMINGTON, CITY OF	MONROE	$17,543
DHS	FEMA	EPR	MARION CITY OF (1102)		$14,918
DHS	FEMA	EPR	MARION, CITY OF		$22,604
DHS	FEMA	EPR	BEST BUY RVS INCORPORATED	WAYNE	$9,287
DHS	FEMA	EPR	JERRY ELLISON (8747)	WARRICK	$1,500
DHS	FEMA	EPR	KINDER MOVING AND STORAGE INC	VANDERBURGH	$2,438
DHS	FEMA	EPR	SOUTHERN INDIANA GAS AND ELECTRIC CO	VANDERBURGH	$3,000
DHS	FEMA	EPR	TERRE HAUTE INN DEVELOPERS LTD PTNRSHP	VIGO	$1,076
DHS	FEMA	EPR	PAC-VAN, INC.	MARION	$8,962
DHS	FEMA	EPR	HERITAGE FINANCIAL GROUP, INC	ELKHART	$4,088
DHS	FEMA	EPR	LONG LIFE FOOD DEPOT	WAYNE	$0
DHS	FEMA	EPR	BATESVILLE CASKET COMPANY THE	RIPLEY	$0
DHS	FEMA	EPR	MARION L SLOANE JR	MARION	$2,349
DHS	FEMA	EPR	MARION L SLOANE JR	MARION	$2,480
DHS	FEMA	EPR	SLOANE JR MARION L	MARION	$2,245
DHS	FEMA	EPR	STATE EMERGENCY MANAGEMENT AGENCY	MARION	$639
DHS	FEMA	EPR	TEETER DAVID S	HAMILTON	$19,503
DHS	FEMA	EPR	TEETER, DAVID S	HAMILTON	$0
DHS	FEMA	EPR	TRUSTEES OF INDIANA UNIVERSITY	MONROE	$1,500
DHS	FEMA	EPR	TRUSTEES OF INDIANA UNIVERSITY	MONROE	$7,500
DHS	FEMA	EPR	TRUSTEES OF INDIANA UNIVERSITY	MONROE	($2,500)
DHS	FEMA	EPR	TRUSTEES OF INDIANA UNIVERSITY (1673)	MONROE	$11,500
DHS	FEMA	EPR	CLYDE T PFISTERER PRIN	MARION	$1,248
DHS	FEMA	EPR	CLYDE T PFISTERER PRIN	MARION	$989
DHS	FEMA	EPR	DEBRA J JARVIS CONSULTING	MARION	$2,490
DHS	FEMA	FL LONG TERM RECOVERY OFC	BEST BUY RVS INCORPORATED	WAYNE	($158,063)
DHS	FLETC		RYAN WESLEY ASSOCIATES	HAMILTON	$1,879
DHS	FLETC		KIMBALL INTERNATIONAL, INC	DUBOIS	$7,264
DHS	FLETC		RYAN WESLEY ASSOCIATES	HAMILTON	$1,879
DHS	FLETC		RYAN WESLEY ASSOCIATES	HAMILTON	$14,000
DHS	OFSEC	OFFICE OF PROCUREMENT OPERATIONS	JOFCO INC	DUBOIS	$14,502
DHS	OFSEC	OFFICE OF PROCUREMENT OPERATIONS	JOFCO INC	DUBOIS	$4,605

Fiscal Year 2006
Under $25,000

Dept	Agency	Contracting Office Name	Vendor Name	County	Obligation
DHS	OFSEC	OFFICE OF PROCUREMENT OPERATIONS	JOFCO, INC.	DUBOIS	$0
DHS	OFSEC	OFFICE OF PROCUREMENT OPERATIONS	GENERAL DYNAMICS C4 SYSTEMS INC	ALLEN	($30)
DHS	OFSEC	OFFICE OF PROCUREMENT OPERATIONS	KEYSTONE OFFICE	HENDRICKS	$3,482
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	INAIR AVIATIONSERVICES COMPANY	MARION	($4,690)
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	BAE SYSTEMS CONTROLS INC	ALLEN	$12,225
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	BAE SYSTEMS CONTROLS INC	ALLEN	($5,600)
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	ROLLS ROYCE DEFENSE ENERGY INC	MARION	$0
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	PYNCO INCORPORATED	LAWRENCE	$0
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	INAIR AVIATIONSERVICES COMPANY	MARION	$0
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	PYNCO INCORPORATED	LAWRENCE	$1,648
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	PYNCO INC	LAWRENCE	$0
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	BAE SYSTEMS CONTROLS INC	ALLEN	$23,220
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	TRIUMPH CONTROLS INCORPORATED	SHELBY	$19,199
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	INAIR AVIATIONSERVICES COMPANY	MARION	$658
DHS	USCG	CO(FCP), USCG TRACEN, PETALUMA	KIMBALL INTERNATIONAL, INC	DUBOIS	$9,196
DHS	USCG	COMMAND MAINTEN. & LOGIST COMMAND	MID AMERICA FOUNDATION SUPPLY INC	ALLEN	$8,200
DHS	USCG	CM OFR (FP) IS COMMAND, MIAMI	J SQUARED, INC.	MARION	$8,814
DHS	USCG	COMMANDANT (G-ACS-3A	CUMMINS INCORPORATED (7090)	BARTHOLOMEW	$0
DHS	USCG	CMR (FCP) MAINT & LOGISTICS CMD PAC	CORVIDAE ENTERPRISES INC	MARION	($2,380)
DHS	USCG	CMDR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$12,000
DHS	USCG	CMDR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS, INC.	MARION	$3,714
DHS	USCG	CMDR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$10,994
DHS	USCG	CMDR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$13,999
DHS	USCG	CMDR (FCP) MAINT & LOGISTICS CMD PAC	INDIANA FURNITURE INDUSTRIES,	DUBOIS	$15,167
DHS	USCG	CMDR (FCP) MAINT & LOGISTICS CMD PAC	KIMBALL INTERNATIONAL, INC	DUBOIS	$4,187
DHS	USCG	COMMANDER (V) MAINT & LOG CMD PACIFIC	KIMBALL INTERNATIONAL, INC	DUBOIS	$15,044
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SP HSC(A-3),	ROLLS ROYCE DEFENSE SERVICES INC	MARION	$6,000
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SP HSC(A-3),	ROLLS ROYCE DEFENSE SERVICES INC	MARION	$4,800
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SP HSC(A-3),	ROLLS ROYCE DEFENSE SERVICES INC	MARION	$24,000
DHS	USCG	CMDR, HDQ SUPPORT COMMAND L&SP HSC(A-3),	STYLINE INDUSTRIES INC	DUBOIS	$0
DHS	USCG	CMDR, TELECOM AND INFORMATION SYSTEM COM	STAR CASE MANUFACTURING COMPANY INC		$1,913
DHS	USCG	COMMANDING OFFICER CE UNIT, PROVIDENCE	Swager Communications, Inc.	STEUBEN	$4,800
DHS	USCG	CO, FACILITIES DESIGN & CONSTR CTR. (ATLANTIC)	DA-LITE SCREEN COMPANY, INC.	KOSCIUSKO	$721
DHS	USCG	CONTRACTING OFCR CIVIL ENG. UNIT, OAKLAND	SWAGER COMMUNICATIONS INC	STEUBEN	$0
DHS	USCG	CONTRACTING OFCR CIVIL ENG. UNIT, OAKLAND	SWAGER COMMUNICATIONS INC	STEUBEN	$0
DHS	USCG	HOMELAND SECURITY, ATC MOBILE	TEKONSHA CORPORATION	KOSCIUSKO	$546

Fiscal Year 2006
Under $25,000

Dept	Agency	Contracting Office Name	Vendor Name	County	Obligation
DHS	USCG	INTEGRATED SUPPORT COMMAND, SEATTLE	PI ROD INCORPORATED	MARSHALL	$825
DHS	USCG	INTEGRATED SUPPORT COMMAND, SEATTLE	BLACK & COMPANY	MARION	$157
DHS	USCG	INTEGRATED SUPPORT COMMAND, SEATTLE	A & A SHEET METAL PRODUCTS INC	LAPORTE	$3,343
DHS	USCG	ISC CLEVELAND	KIMBALL INTERNATIONAL, INC	DUBOIS	$4,008
DHS	USCG	ISC KETCHIKAN	TEKONSHA CORPORATION	KOSCIUSKO	$709
DHS	USCG	RESERVE TRAINING CENTER (FCP)	ABSOCOLD CORPORATION	WAYNE	$900
DHS	USCG	RESERVE TRAINING CENTER (FCP)	BLACK & COMPANY	MARION	$10,466
DHS	USCG	CIVIL ENGINEERING UNIT, JUNEAU	DIAMOND EQUIPMENT INCORPORATED	VANDERBURGH	$0
DHS	USCG	COM AND CONTROL ENGINEERING CTR (C2EC)	BLACK & COMPANY	MARION	$2,934
DHS	USCG	ENGINEERING & LOGISTICS COMMAND	RAYTHEON INTELLIGENCE&INFORMATION SUSTEMS	ALLEN	$0
DHS	USCG	INTEGRATED SUPPORT COMMAND,	WELLS & WELLS	BARTHOLOMEW	$4,296
DHS	USCG	INTEGRATED SUPPORT COMMAND,	SPACEGUARD, INC	JACKSON	$2,432
DHS	USCG	INTEGRATED SUPPORT COMMAND,	ABSOCOLD CORPORATION	WAYNE	$2,814
DHS	USCG	INTEGRATED SUPPORT COMMAND,	BLACK & COMPANY	MARION	$2,934
DHS	USCG	INTEGRATED SUPPORT COMMAND, ALEMEDA	J SQUARED, INC.	MARION	$2,386
DHS	USCG	INTEGRATED SUPPORT COMMAND, KODIAK	CENTRAL PRODUCTS INC	MARION	($135)
DHS	USCG	INTEGRATED SUPPORT COMMAND, KODIAK	LONG LIFE FOOD DEPOT	WAYNE	$11,552
DHS	USCG	IS COMMAND, NEW ORLEANS	ADVANCED RADIANT SYSTEMS INCORPORATED	HAMILTON	$3,577
DHS	USCG	IS COMMAND, ST. LOUIS	PAITSON BROS HEATING & AIR CONDITIONING INC	VIGO	$5,464
DHS	USCG	MAINTENANCE AND LOGISTICS COM - ATLANTIC	FIRE KING INTERNATIONAL, INC	FLOYD	$780
DHS	USCG	MAINTENANCE AND LOGISTICS COM - ATLANTIC	ENOCHS MANUFACTURING INCORPORATED	MARION	$3,345
DHS	USSS		LAFAYETTE INSTRUMENT COMPANY INC	TIPPECANOE	$20,165
DHS	USSS		BROADCAST SERVICES INCORPORATED	MARION	$5,727
DHS	USSS		MID AMERICA RADIO GROUP INCORPORATED	MORGAN	$2,772
DHS	USSS		WLFI TV INCORPORATED	TIPPECANOE	$9,000
DHS	USSS		KIMBALL INTERNATIONAL, INC	DUBOIS	$2,696
DHS	USSS		KIMBALL INTERNATIONAL, INC	DUBOIS	$14,000
DHS	USSS		PERFORMANCE ASSESSMENT NETWORK, INC.	HAMILTON	$14,274
DHS	USSS		OLYMPIA BUSINESS SYSTEMS INCORPORATED	WABASH	$2,937
DHS	USSS		BROADCAST SERVICES INC	MARION	$0
DHS	USSS		BROADCAST SERVICES INCORPORATED	MARION	$5,078
DHS	USSS		LAFAYETTE INSTRUMENT COMPANY INC	TIPPECANOE	$5,315
DHS	USSS		HERFF JONES INCORPORATED	MARION	$13,484
DHS	USSS		PETROLEUM TRADERS CORPORATION	ALLEN	$15,000
DHS	USSS		US MOLDERS INCORPORATED	WHITE	$7,563
DHS	USSS		KIMBALL INTERNATIONAL, INC	DUBOIS	$6,860

Fiscal Year 2006
Under $25,000

Dept	Agency	Contracting Office Name	Vendor Name	County	Obligation
DHS	USSS		UNIFORM HOUSE INCORPORATED THE	MARION	$16,948
DHS	USSS		UNIFORM HOUSE INCORPORATED THE	MARION	$0
DHS	USSS		UNIFORM HOUSE INCORPORATED THE	MS	$13,612
DHS	USSS		KIMBALL INTERNATIONAL, INC	DUBOIS	$7,263
DHS	USSS		STYLINE INDUSTRIES INC	DUBOIS	$6,780
					$780,344

Fiscal Year 2006
$25,000 or More

Dept	Agency	Contracting Office	Vendor Name	County	Obligation
DHS	BCIS	CIS CA SERVICE CENTER	INDEPENDENT STATIONERS INC	MARION	$44,655
DHS	BCIS		ENVISAGE TECHNOLOGIES CORP	MONROE	$37,500
DHS	BCIS		JASPER SEATING COMPANY INC	DUBOIS	$120,835
DHS	BCIS		ENVISAGE TECHNOLOGIES CORP	MONROE	$149,858
DHS	BCBP	MCALLEN BORDER PATROL SECTOR HQ	INWOOD OFFICE FURNITURE INC	DUBOIS	$59,216
DHS	BCBP	NATIONAL ACQUISITION CENTER	SPRINGER DANZ & BOCKELMAN INC	MARION	$250,000
DHS	BCBP	NATIONAL ACQUISITION CENTER	CROWE CHIZEK AND COMPANY LLC	ST. JOSEPH	$105,000
DHS	BCBP	NATIONAL ACQUISITION CENTER	KIMBALL INTERNATIONAL, INC	DUBOIS	$43,517
DHS	BCBP	NATIONAL ACQUISITION CENTER	SPRINGER DANZ & BOCKELMAN INC	MARION	$70,840
DHS	BCBP	NATIONAL ACQUISITION CENTER	SPRINGER DANZ & BOCKELMAN INC	MARION	$143,226
DHS	BCBP	NATIONAL ACQUISITION CENTER	SPRINGER DANZ AND BOCKELMAN INC	MARION	$179,981
DHS	BCBP	OFFICE OF PROCUREMENT	BRUCE FOX INC	FLOYD	$600,000
DHS	BCBP	OFFICE OF PROCUREMENT	ENVISAGE TECHNOLOGIES CORP	MONROE	$449,988
DHS	BCBP	OFFICE OF PROCUREMENT	PERFORMANCE ASSESSMENT NETWORK INC	HAMILTON	$861,000
DHS	BICE	HQ, PROCUREMENT DIVISION. DC	ATA HOLDINGS CORPORATION (5077)	MARION	$390,000
DHS	BICE	HQ, PROCUREMENT DIVISION. DC	ENVISAGE TECHNOLOGIES CORPORAT	MONROE	$682,593
DHS	BICE		LONG LIFE FOOD DEPOT	WAYNE	$43,826
DHS	BICE		INWOOD OFFICE FURNITURE INC	DUBOIS	$72,824
DHS	FEMA	EPR	BATESVILLE CASKET COMPANY THE	RIPLEY	$257,920
DHS	FEMA	EPR	BATESVILLE CASKET COMPANY, THE	RIPLEY	$269,440
DHS	FEMA	EPR	CITY OF RICHMOND	WAYNE	$55,975
DHS	FEMA	EPR	FORT WAYNE CITY OF (1029)	ALLEN	$63,922
DHS	FEMA	EPR	TOWN OF CLARKSVILLE	CLARK	$30,525
DHS	FEMA	EPR	TOWN OF CLARKSVILLE	CLARK	$36,243
DHS	FEMA	EPR	GULF STREAM COACH INCORPORATED	ELKHART	$26,319,725
DHS	FEMA	EPR	UNITED LEASING INCORPORATED	VANDERBURGH	$94,391
DHS	FEMA	EPR	KIMBALL INTERNATIONAL, INC	DUBOIS	$114,191
DHS	FLETC		POLAR KING INTERNATIONAL, INC.	ALLEN	$46,224
DHS	FLETC		IN COALITION AGAINST DOMESTIC VIOLENCE	MARION	$25,000
DHS	TSA		PERFORMANCE ASSESSMENT NETWORK INC	HAMILTON	$1,597,840
DHS	TSA		KIMBALL INTL, INC. C/O MOI	DUBOIS	$250,000
DHS	TSA		TOM STINNETT HOLIDAY RV CENTER INC	CLARK	$150,291
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	INAIR AVIATION SERVICES	MARION	$213,315
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	ROLLS ROYCE DEFENSE ENERGY INC	MARION	$1,840,000
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	HONEYWELL INTERNATIONAL INC (0650) 994	ST. JOSEPH	$30,859
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	ROLLS ROYCE DEFENSE ENERGY INC	MARION	$86,201

Fiscal Year 2006
$25,000 or More

Dept	Agency	Contracting Office	Vendor Name	County	Obligation
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	PURDUE UNIVERSITY	TIPPECANOE	$200,000
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	BAE SYSTEMS CONTROLS INCORPORATED	ALLEN	$26,720
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	INAIR AVIATION SERVICES	MARION	$135,153
DHS	USCG	AIRCRAFT REPAIR & SUPPLY CENTER	INAIR AVIATIONSERVICES COMPANY	MARION	$128,471
DHS	USCG	CO (FP) IS COMMAND, MIAMI	J SQUARED, INC.	MARION	$38,586
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$49,685
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$86,914
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$205,026
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$107,235
DHS	USCG	COMR (FCP) MAINT & LOGISTICS CMD PAC	COMMUNICATIONS PRODUCTS INC	MARION	$144,091
DHS	USCG	CO CE UNIT, PROVIDENCE	SWAGER COMMUNICATIONS INCORPORATED	STEUBEN	$173,575
DHS	USCG	CONTRACTING OFCR CE UNIT, OAKLAND	SWAGER COMMUNICATIONS INCORPORATED	STEUBEN	$294,700
DHS	USCG	USCG CIVIL ENGINEERING UNIT, JUNEAU	DIAMOND EQUIPMENT INCORPORATED	VANDERBURGH	$61,792
DHS	USCG	USCG CIVIL ENGINEERING UNIT, MIAMI	DIAMOND EQUIPMENT INC	VANDERBURGH	$84,167
DHS	USCG	ENGINEERING & LOGISTICS COMMAND	INDIANA RESEARCH INSTITUTE COR	BARTHOLOMEW	$773,372
DHS	USCG	ENGINEERING & LOGISTICS COMMAND	INDIANA RESEARCH INSTITUTE CORP	BARTHOLOMEW	$600,058
DHS	USCG	ENGINEERING & LOGISTICS COMMAND	INDIANA RESEARCH INSTITUTE COR	BARTHOLOMEW	$175,417
DHS	USCG	ENGINEERING & LOGISTICS COMMAND	ALUMINUM TRAILER COMPANY THE	ELKHART	$853,089
DHS	USCG	IS COMMAND, PORTSMOUTH COMPT	ABSOCOLD CORPORATION	WAYNE	$26,228
DHS	USCG	IS COMMAND, ST. LOUIS	WOOTEN NORMAN INCORPORATED	CLARK	$26,365
DHS	USSS		KIMBALL INTERNATIONAL, INC	DUBOIS	$174,686
DHS	USSS		KIMBALL INTERNATIONAL, INC	DUBOIS	$122,998
DHS	USSS		KIMBALL INTERNATIONAL, INC	DUBOIS	$40,716
DHS	USSS		VOHNE LICHE KENNELS INCORPORATED	MIAMI	$81,608
DHS	USSS		ALUMINUM TRAILER COMPANY THE	ELKHART	$49,999
DHS	USSS		UNIFORM HOUSE INCORPORATED THE	MARION	$26,730
					$40,474,302

APPENDIX V

The Indiana Space Industry

An Assessment of National Aeronautics and Space Administration (NASA) Prime Contracts Awarded to Indiana Companies and Universities GFY's 2002 – 2006

January 2007

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The currently stated Strategic Goals for the organization are:

> Strategic Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010.
>
> Strategic Goal 2: Complete the International Space Station in a manner consistent with NASA's International Partner commitments and the needs of human exploration.
>
> Strategic Goal 3: Develop a balanced overall program of science, exploration, and aeronautics consistent with the redirection of the human spaceflight program to focus on exploration.
>
> Strategic Goal 4: Bring a new Crew Exploration Vehicle into service as soon as possible after Shuttle retirement.
>
> Strategic Goal 5: Encourage the pursuit of appropriate partnerships with the emerging commercial space sector.
>
> Strategic Goal 6: Establish a lunar return program having the maximum possible utility for later missions to Mars and other destinations.

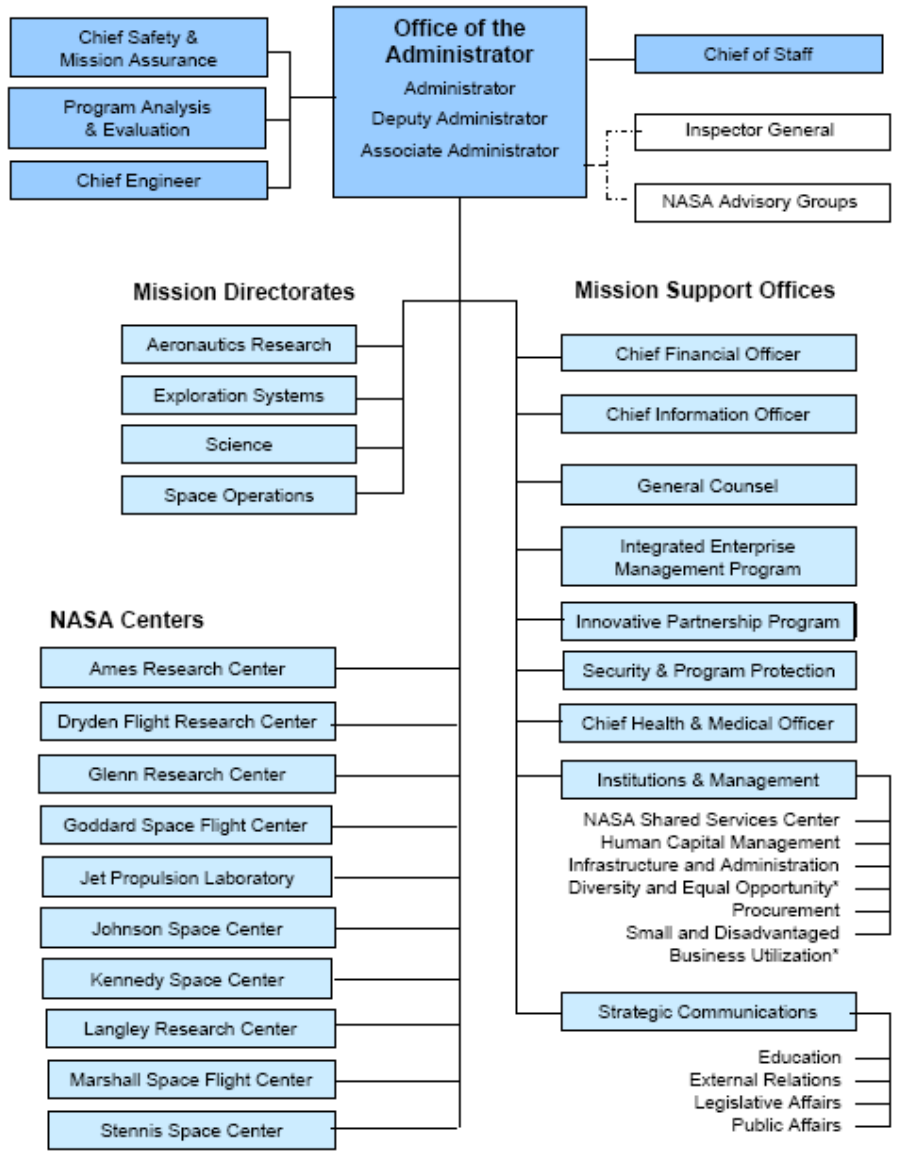
NASA's organizational structure is rather unique it consists of four of Mission Directorates:

1. Aeronautics Research
2. Exploration Systems
3. Science
4. Space Operations

This is complimented by a series of Mission Support Offices, usually described as staff functions. Then there are the various NASA Centers located around the United States. This structure is even more complex is that any given NASA center can support any of the four Mission Directorates or any of the Mission Support Offices. Additionally, there is one NASA Center, The Jet Propulsion Laboratory (JPL), which is totally unlike the remainder of the NASA Centers. The JPL is managed by a University and not the NASA Headquarters. It receivs general guidance and funding from NASA Headquarters; however, the employees are not NASA employees. In that JPL is a contractor to NASA; all its contractors are indeed subcontractors in the true sense of this report. Due to this organizational structure NO DATA is available on JPL contractors.

The NASA organization is shown in Figure 1.0

National Aeronautics and Space Administration



* In accordance with law, the offices of Diversity and Equal Opportunity and Small and Disadvantaged Business Utilization maintain reporting relationships to the Deputy Administrator and Administrator.

Figure 1.0

The location of the various NASA Centers is depicted in Map 1.0

Map 1.0

The primary purpose of each of the NASA Centers are:

Ames Research Center
Ames Research Center specializes in research geared towards creating new knowledge and new technologies that span the spectrum of NASA interests.

Dryden Flight Research Center
As the lead for flight research, Dryden continues to innovate in aeronautics and space technology.

Glenn Research Center
Glenn Research Center develops and transfers critical technologies that address national priorities through research, technology development, and systems development for safe and reliable aeronautics, aerospace, and space applications

Goddard Space Flight Center
The mission of the Goddard Space Flight Center is to expand knowledge on the Earth and its environment, the solar system, and the universe through observations from space.

Jet Propulsion Laboratory
The Jet Propulsion Laboratory, managed by the California Institute of Technology is NASA's lead center for robotic exploration of the Solar System

Johnson Space Center
From the early Gemini, Apollo, and Sky Lab projects to today's Space Shuttle and International Space Station programs, Johnson Space Center continues to lead NASA's effort in Human Space Exploration.

Kennedy Space Center
Kennedy Space Center is America's Gateway to the Universe -- leading the world in preparing and launching missions around the Earth and beyond.

Langley Research Center
Langley continues to forge new frontiers in aviation and space research for aerospace, atmospheric sciences, and technology commercialization to improve the way the world lives.

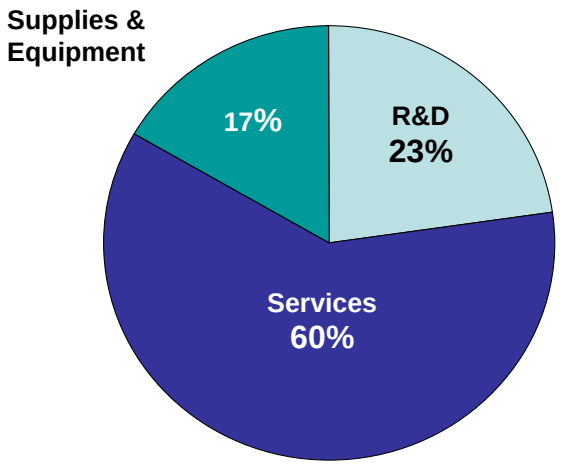
Marshall Space Flight Center
Bringing people to space; bringing space to people. Marshall Space Flight Center is world leader in the access to space and use of space for research and development to benefit humanity.

Stennis Space Center
Stennis is responsible for NASA's rocket propulsion testing and for partnering with industry to develop and implement remote sensing technology.

NASA purchases the following broad categories of items from industries and universities:

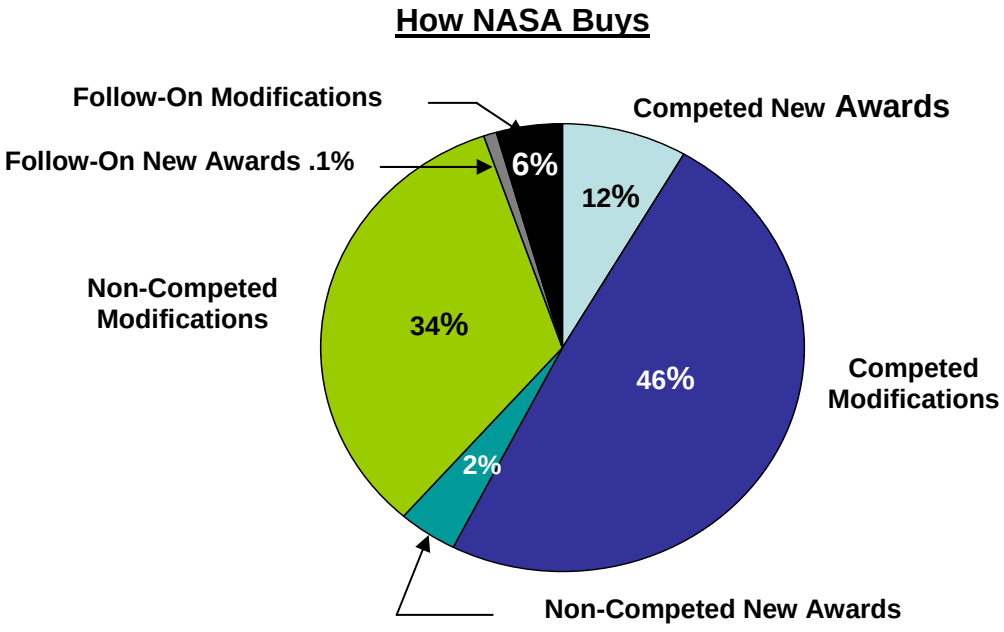
1. Supplies and Equipment
2. Research and Development
3. Services

The distribution of these three categories during GFTY 2006 is shown in Graph 1.0



Graph 1.0

The procurement methodology of NASA during GFY 2006 is depicted in Graph 2.0



Graph 2.0

A Comparison of the NASA budget for GFY 2002 – 2006 and the total prime contracts awarded to Indiana Companies and Universities is contained in Table 1.0. As can be observed Indiana contacts are a very small portion of the total NASA budget. Even when considering GFY 2002 and GFY 2004, when fairly large development contracts were awarded to Rolls Royce and ITT.

	GFY 2002	GFY 2003	GFY 2004	GFY 2005	GFY 2006
NASA Budget	$14,900,000,000	$15,000,000,000	$15,470,000,000	$16,040,000,000	$16,500,000,000
Indiana NASA Contracts	$158,490,309	$5,783,623	$317,143,410	$6,670,339	$5,608,371
Indiana as % of NASA Budget	1.0637%	0.0386%	2.0501%	0.0416%	0.0340%

Table 1.0

The distribution of the Prime Contracts awarded to Indiana Companies and Universities for the timeframe of GFT 2002 – 2006 is shown in Table 2.0

NASA Center	GFY 2006	GFY 2005	GFY 2004	GFY 2003	GFY 2002
Ames Research Center	$94,596	$19,240	$458,789	$552,817	$3,045,000
Dryden Flight Research Center	$0	$0	$79,311	$61,000	$166,520
Glenn Research Center	$596,524	$1,424,633	$2,267,866	$1,798,018	$151,985,407
Goddard Space Flight Center	$3,067,818	$3,038,648	$314,018,741	$2,434,317	$1,559,198
Johnson Space Flight Center	$1,647,752	$4,284	$81,474	$201,122	$670,000
Kennedy Space Flight Center	$0	$0	$52,213	$0	$0
Langley Research Center	$201,681	$369,639	$141,016	$250,994	$0
Marshall Space Flight Center	$0	$785,207	$44,000	$485,355	$491,441
Stennis Space Center	$0	$0	$0	$0	$110,000
Not Attributed to a Center	$0	$1,028,688	$0	$0	$462,743
	$5,608,371	$6,670,339	$317,143,410	$5,783,623	$158,490,309

Table 2.0

The NASA prime contracts shown if Table 2.0 consists of various types of contractual award vehicles. Except the large contracts in GFY 2004, to ITT and in GFY 2002 to Roles Royce, the vast majority of all contracts were of the award to university type. Distribution of the awards by type is shown in Table 3.0

Award Type	GFY 2006	GFY 2005	GFY 2004	GFY 2003	GFY 2002
Not Specified	$20,600	$996,445			
Cooperative Agreement	$1,323,907		$1,318,738	$321,848	$353,852
Fixed Price	$2,538,781	$654,307	$20,347,582	$2,143,124	$1,536,911
Cost Plus			$293,005,676		$148,500,000
Grant	$1,725,083	$5,019,587	$2,125,502	$3,042,651	$7,550,102
Purchase Order	$0	$0	$345,912	$276,000	$549,444
	$5,608,371	$6,670,339	$317,143,410	$5,783,623	$158,490,309

Table 3.0

Distribution of these contracts by city is shown in Table 4.0 As can be seen the distribution is fairly broad over the state; however the majority of the contracts are concentrated in the Cities where major universities are located.

City	GFY 2002	GFY 2003	GFY 2004	GFY 2005	GFY 2006
BLOOMINGTON	$0	$624,512	$586,166	$0	$1,370,317
BRAZIL	$0	$0	$7,937	$0	$0
CARMEL		$0	$7,400	$0	$0
CONNERSVILLE	$0	$1,319,620	$0	$0	$0
CRANE	$549,444	$276,000	$111,276	$0	$0
Elkhart	$0	$0	$0	$4,284	$0
Evansville	$0	$0	$0	$6,528	$0
FORT WAYNE	$45,000	$0	$313,139,782	$970,349	$2,000,000
GREENVILLE	$1,338,168	$161,148	$69,992	$117,061	$0
HAMMOND	$998,000	$0	$0	$0	$0
INDIANAPOLIS	$148,926,726	$428,609	$404,291	$1,417,435	$325,528
JASPER	$0	$0	$85,493	$37,130	$54,449
Kokomo	$0	$0	$0	$12,559	$12,559
Lafayette	$0	$0	$0	$3,000	$325,620
LAWRENCEBURG	$0	$0	$5,219	$0	$0
LEGENDARY HILLS	$0	$0	$0	$0	$41,706
MIDDLEFIELD CT	$0	$92,392	$0	$0	$0
Muncie	$0	$0	$0	$193,724	$0
New Haven	$0	$0	$0	$3,500	$0
NOTRE DAME	$1,018,230	$0	$31,000	$131,997	$196,997
PENNVILLE	$0	$0	$0	$0	$77,425
RICHMOND	$0	$0	$1,535	$0	$0
SOUTH BEND	$31,000	$515,994	$8,000	$0	$0
TERRE HAUTE	$0	$0	$0	$0	$0
Unknown, No City in Source Data		$31,000	$0	$996,445	$5,626
UPLAND	$39,283	$23,402	$0	$0	$0
WABASH	$0	$0	$0	$0	$7,300
WEST LAFAYETTE	$5,544,458	$2,310,946	$2,685,319	$2,776,327	$1,190,844
	$157,940,865	$5,783,623	$317,143,410	$6,670,339	$5,608,371

Table 4.0

The distribution of these NASA contracts for GFY 2002 – 2006 is contained in the following tables. The definition of the location of Indiana

GFY 2002 Contractors

Contractor	Total Award Value
AEROSPACE STATES ASSOCIATION INDIANAPOLIS IN	$300,000
ALLISON ADVANCED DEVELOPMNT CO INDIANAPOLIS IN	$148,500,000
APPLIED COMPOSITES ENGINEERING INDIANAPOLIS IN	$66,393
BIOANALYTICAL SYSTEMS INC WEST LAFAYETTE IN	$29,350
CHALLENGER LEARNING CTR NW IN HAMMOND IN	$998,000
ENGINE RESEARCH ASSOCIATES FORT WAYNE IN	$45,000
INDIANA UNIV INDIANAPOLIS INDIANAPOLIS IN	$60,333
NATIONAL CONSORT GD MIN ENGRG SOUTH BEND IN	$31,000
PURDUE RESEARCH FOUNDATION WEST LAFAYETTE IN	$203,939
PURDUE UNIV WEST LAFAYETTE IN	$5,284,169
SPACE HARDWARE OPTIM TECH INC GREENVILLE IN	$1,338,168
SPECTRALINE INC WEST LAFAYETTE IN	$27,000
TAYLOR UNIV UPLAND IN	$39,283
UNIV NOTRE DAME NOTRE DAME IN	$1,018,230
US NAVAL SEA SYSTEMS COMMAND CRANE IN	$124,720
US NAVAL SURFACE WARFARE CTR CRANE IN	$424,724
	$158,490,309

Table 5.0

GFY 2003 Contractors

Contractor	Total Award Value
ALLISON ADVANCED DEVELOPMNT CO INDIANAPOLIS IN	$202,398
DRESSER INC CONNERSVILLE IN	$1,319,620
INDIANA UNIV BLOOMINGTON BLOOMINGTON IN	$327,920
INDIANA UNIV INDIANAPOLIS INDIANAPOLIS IN	$186,237
NATIONAL CONSORT GD MIN ENGRG SOUTH BEND IN	$31,000
PURDUE UNIV WEST LAFAYETTE IN	$2,310,946
RAYTHEON TECHNICAL SERVICES CO INDIANAPOLIS IN	$39,974
ROSE HULMAN INSTITUTE TECH TERRE HAUTE IN	$23,402
SPACE HARDWARE OPTIM TECH INC GREENVILLE IN	$161,148
STAR ENTERPRISES INC BLOOMINGTON IN	$296,592
UNIV NOTRE DAME NOTRE DAME IN	$515,994
US NAVAL SEA SYSTEMS COMMAND CRANE IN	$65,000
US NAVAL SURFACE WARFARE CTR CRANE IN	$211,000
ZYGO CORP MIDDLEFIELD CT	$92,392
	$5,783,623

Table 6.0

GFY 2004 Contractors

Contractor	Total Award Value
BADER MECHANICAL INC RICHMOND IN	$1,535
BATESVILLE PRODUCTS INC LAWRENCEBURG IN	$5,219
COMPUTER AIDED ENGINEERING CARMEL IN	$7,400
EN URGA INC WEST LAFAYETTE IN	$393,027
FORT WAYNE METALS FORT WAYNE IN	$3,090
HURCO COMPANIES INC INDIANAPOLIS IN	$10,315
I T T CORP FORT WAYNE IN	$313,005,676
I T T INDUSTRIES INC FORT WAYNE IN	$72,068
INDIANA FURNITURE LTD JASPER IN	$50,084
INDIANA UNIV BLOOMINGTON BLOOMINGTON IN	$586,166
INDIANA UNIV INDIANAPOLIS INDIANAPOLIS IN	$247,980
INWOOD OFFICE FURNITURE INC JASPER IN	$11,482
JACYL TECHNOLOGY INC FORT WAYNE IN	$5,548
K J S ASSOCIATES INC INDIANAPOLIS IN	$44,218
KIMBALL INTERNATIONAL INC JASPER IN	$23,927
NATIONAL CONSORT GD MIN ENGRG SOUTH BEND IN	$8,000
OPEN STORAGE SOLUTIONS INC INDIANAPOLIS IN	$12,687
PRAXAIR SURFACE TECH INC INDIANAPOLIS IN	$23,102
PRECISION CRYOGENIC SYS INC INDIANAPOLIS IN	$62,030
PURDUE UNIV WEST LAFAYETTE IN	$2,247,067
SPACE HARDWARE OPTIM TECH INC GREENVILLE IN	$69,992
STANLEY SECURITY SOLUTIONS INC INDIANAPOLIS IN	$3,959
TECHNIFAB PRODUCTS INC BRAZIL IN	$7,937
TELOPS U S A INC FORT WAYNE IN	$53,400
THERMOPHYSICAL PROPERTIES RES WEST LAFAYETTE IN	$45,225
UNIV NOTRE DAME NOTRE DAME IN	$31,000
US NAVAL SURFACE WARFARE CTR CRANE IN	$111,276
	$317,143,410

Table 7.0

FY 2005 Contractors

Contractor	Total Award Value
Aerodyne Engineering Inc	$35,819
Alcoa Incorporated	$3,000
Ball State University	$193,724
Cindas, LLC	$10,066
EN Urga Inc	$388,105
Grindex Pum,ps A B Sweden (8950)	$800,099
Haynes International Inc	$12,559
Howell Kathleen	$10,000
Hungry Minds, Inc	$39,562
Indiana Furniture Industries	$20,696
Indiana University	$536,678
Industrial Filter Manufacturers Inc.	$6,528
Inwood Office Furniture, Imc	$5,347
Kimball international, Inc	$20,253
Kimball International, Inc	$6,270
Kinetic Art and Technology	$667,046
Loy Instrument Inc	$4,312
Lux Company, Inc.	$4,284
Magnetic Instrumentation Inc	$3,250
Metropolitan School District Decatur	$934,000
Motion Engineering Company Inc	$12,000
Petroleum Traders Corp	$229,853
Praxair Surface Technologies, Inc	$7,924
Precision Cryogenics Systems, Inc	$25,145
Purdue Research Foundation	$705,000
Purdue University	$1,450,169
S and S Optical Company, Inc	$3,500
Thermophysical Properties RES	$5,060
University of Notre Dame	$460,090
University of Notre Dame Du Lac	$70,000
	$6,670,339

Table 8.0

GFY 2006 Contractors

Contractor	Total Award Value
ADDRESSING MACHINES & SUPPLY, CO. INDIANAPOLIS, IN	$16,018
AERODYN ENGINEERING INCORPORATED INDIANAPOLIS IN	$39,019
BIHRLE APPLIED RESEARCH INCORPORATED JERICHO NY	$5,626
CARVER FRED S INC WABASH IN	$7,300
ENURGA INCORPORATED WEST LAFAYETTE IN	$184,955
GENERAL ELECTRIC COMPANY (9340) INDIANAPOLIS IN	$41,706
GFT LIMITED LIABILITY COMPANY PENNVILLE IN	$77,425
HAYNES INTERNATIONAL INCORPORATED KOKOMO IN	$12,559
HUNGRY MINDS, INC INDIANAPOLIS IN	$27,201
INDIANA FURNITURE INDUSTRIES, JASPER IN	$27,359
INDIANA UNIV BLOOMINGTON BLOOMINGTN IN	$17,500
INDIANA UNIVERSITY BLOOMINGTON IN	$1,137,568
INDIANA UNIVERSITY CYCLOTRON FACILITY BLOOMINGTON IN	$72,000
ITT INDUSTRIES SPACE SYSTEMS LIMITED LIABILITY COMPANY	$2,000,000
KIMBALL INTERNATIONAL, INC JASPER IN	$27,090
LOY INSTRUMENTINC INDIANAPOLIS IN	$4,312
MAGNETIC INSTRUMENTATION INCORPORATED INDIANAPOLIS IN	$3,250
MOTION ENGINEERING COMPANY INCORPORATED INDIANAPOLIS IN	$12,000
PRAXAIR SURFACE TECHNOLOGIES INCORPORA INDIANAPOLIS IN	$7,924
PRECISION CRYOGENIC SYSTEMS INCORPORATED INDIANAPOLIS IN	$23,500
PURDUE UNIV WEST LAFAYETTE IN	$391,366
PURDUE UNIVERSITY W LAFAYETTE IN	$603,562
PURDUE UNIVERSITY WEST LAFAYETTE IN	$267,389
SCHWAB CORP LAFAYETTE IN	$3,002
THERMOPHYSICAL PROPERTIES RESEARCH INC. WEST LAFAYETTE IN	$13,300
THERMOPHYSICAL PROPERTIES RESEARCH LABORATORY INC	$52,890
TRUSTEES OF INDIANA UNIVERSITY BLOOMINGTON IN	$335,553
UNIV NOTRE DAME NOTRE DAME IN	$121,997
UNIVERSITY OF NOTRE DAME DU LAC NOTRE DAME IN	$75,000
	$5,608,371

Table 9.0

As can be observed from Tables 5.0 thru 9.0 the contracts are all relative low value in nature except for the two large contracts in GFY 2002 and GFY 2004. Discerning the technologies being contracted with Indiana companies and universities is much more difficult that with the Department of Defense. NASA does not utilize the DD350 form to characterize their contract awards. NASA provided a very limited set of data with each contract and much of the time the data supplies varies from NASA center to another NASA center.

As a result the Specific details of each contract, including a technical description of the efforts being performed is contained in the following pages. Due to formatting limitations these pages are not number sequentially.

APPENDIX VI

PROFILES OF INDIANA MILITARY FACILITIES

CAMP ATTERBURY

BACKGROUND AND HISTORY

The Joint Forces Maneuver Training Center (Camp Atterbury) was activated February 2003 to support OPERATION NOBLE EAGLE/ENDURING FREEDOM/IRAQI FREEDOM. Camp Atterbury receives and processes individual non unit-related personnel (civilians and military from all branches of the armed forces) for deployment and redeployment to/from the theater of operations.

Camp Atterbury serves as a Power Projection Platform (PPP) for the mobilization of U.S. Army Reserve and Army National Guard units. It is Camp Atterbury's responsibility to coordinate medical and dental screening, soldier readiness processing, theater-specific clothing and equipment issue, weapon familiarization and qualification, theater-specific individual readiness training, and coordinate movement of personnel into the Area of Operation. Camp Atterbury receives, processes, equips, trains, and deploys personnel based on Deployment Orders published from FORSCOM and First U.S. Army.

The mission of Camp Atterbury is threefold:

1. To serve as a Forces Command Mobilization Station – it is the designated mobilization site for many units of the National Guard and U.S. Army Reserve.

2. To serve as a premier training site for both individuals and units from all branches of service for both Reserve and Active Duty training and other special training events.

3. To serve as a training site for all Public Service organizations such as Department of Homeland Security, State and Local Police, and other first responders.

Camp Atterbury is the home base for many ARNG and USAR, USMCR, and other units that train and mobilize here. As Reserve Component Units, their home stations are, of course, at numerous armories across several counties and states. Camp Atterbury offers the unit commander the support required to function as a complete unit for mission training. In support of the Global War on Terror, Camp Atterbury and its partner, 3-85th Training Support Brigade has mobilized over 30,000 and demobilized over 20,000 soldiers, sailors, and airmen for duty in the United States and overseas.

The live fire ranges, from small arms to A-10 Thunderbolt aerial gunnery tables, along with over 33,000 acres of maneuver training area and dozens of artillery and mortar firing points, are the primary focus. The ranges are premier across all of the nation's military bases. From computerized small arms, squad and platoon maneuver courses, to a 1200 acre Bradley and tank range their modern, state-of-the-art range complexes are among the best in the nation. Coupled with a new multi-building Joint Simulation Training and Exercise Center and numerous other state-of-the-art training aids and simulation equipment, as well as housing and headquarters facilities, the installation can support full spectrum, integrated live, virtual, and constructive training events for brigade combat teams.

Source: www.campatterbury.org

CRANE DIVISION, NAVAL SURFACE WARFARE CENTER

BACKGROUND AND HISTORY

The initial mission of Crane Division, Naval Surface Warfare Center was to prepare, load, renovate, receive, store, and issue all ammunition, including pyrotechnics and illuminating projectiles, and to act as a principal source of supply at a most critical time - the early days of World War II. After the end of World War II, NSWC Crane began to develop expertise in engineering and electronics that carried the facility into a leadership position in today's Navy. Today NSWC Crane is a multi-mission, multi-service product center with both a fleet support and industrial base mission. The fleet support mission is performed in a joint, cross-service, and cross-platform environment when possible. In fulfilling the industrial base mission, NSWC Crane acts as a steward of microwave tubes, printed wiring boards, pyrotechnics, radiation hardened devices and batteries.

NSWC Crane serves a modern and sophisticated Navy as a recognized leader in diverse and highly technical product lines in the areas of ordnance, electronics and electronic warfare. The professionalism and pride of NSWC Crane's workforce significantly benefits the Navy and the taxpayer through better products at lower cost. NSWC Crane is an industrial leader in applying better processes and technologies to the development, acquisition and support of modern naval combat weapons systems. NSWC Crane is unique in all of DoD with the co-location of a range of diverse capabilities complemented by NSWC Crane's acquisition professionals, material logistics expertise, and the product test ranges on a 100-square mile property.

NSWC Crane serves the Navy well not only by recruiting and training the very best personnel - both civilian and military - but also by acquiring state of the art equipment and facilities. Modern management practices are used to meet today's needs and to insure NSWC Crane's transition into the future. Partnerships with industry, academia and other government activities leverage the strengths of each to meet the needs of the Fleet. NSWC Crane's many tenant activities, including the Crane Army Ammunition Activity, the Coast Guard and others, enable them to realize the synergies possible only through joint-service cooperation.

Statistics

3rd Largest Navy Installation in the World ~100 Square Miles
$3.3B Plant Replacement Value
650,000 Tons Ordnance Storage Capacity In Indiana:
13th Largest Single Site Employer
3rd Largest Employer in Southwest Indiana
~2710 Navy Employees
60% Scientists, Engineers and Technicians
Over 480 Scientists, Engineers and Technicians hired since January 1999
Average Age: 45.5
~652 Army Employees
~71% of receipts to Commercial Sources

Units

Naval Surface Warfare Center
Crane Army Ammunition Activity
Naval Criminal Investigation Service
Navy Resale Activity Detachment
Defense Automated Printing Service
Defense Commissary Agency Det Crane
Defense Reutilization and Marketing Office

Explosive Ordnance Disposal
U.S. Coast Guard
Great Lakes Industrial Hygiene
Letterkenny Munitions Center

Sources: www.crane.navy.mil
www.GlobalSecurity.org

CRANE'S TECHNICAL CAPABILITIES

by Dave Reece 3/15/05

Crane's overall capability can be subdivided into several "technical capability" areas. Each of these areas actually is a combination of technical and industrial capability. These capability areas include: Electronic Warfare Systems; Radar Systems; Microwave Components; Microelectronics; Electronic Module Test and Repair; Electrochemical Power Systems; Acoustic Sensors; Small Arms; Conventional Ammunition; Pyrotechnics; Defense Security Systems; and, Night Vision/Electro-Optics & Chemical/Biological Sensors. The following paragraphs summarize these capability areas.

Electronic Warfare Systems: These systems include both airborne and surface Electronic Warfare Systems. Virtually all surface combatant ships are supported. Aircraft supported include EA-6B, F/A-18, F-14, EP-3E, and UAV. A wide variety of Electronic Warfare and surveillance systems are supported.

Crane provides comprehensive, integrated engineering, logistics and maintenance through all life cycle phases - eg concept to deactivation. This includes acquisition, integration, installation, direct support to fleet operations, system upgrades, repair and maintenance, and program management. An estimate of the percentages of the workforce involved in the various support aspects is: R&D 5%; product and logistics development 20%; acquisition engineering 10%; manufacturing 5%; In service engineering 15%; and, repair and maintenance 45%.

Crane's full performance level Electronic Warfare technical personnel average over 16 years in EW systems, subsystems and components, microwave theory and technology. The workforce includes: EW systems and logistics engineers and technicians; RF engineers and technicians; acquisition engineers; program managers; software engineers; electronic, mechanical, chemical and industrial engineers; computer engineers; technicians and programmers; and, logistics specialists. The workforce of 420 includes 110 engineers and scientists, 140 technicians, 120 electronic mechanics, and 50 logistics and other specialists.

Integrated engineering, test, and repair facilities include: 250,000 sq ft of air and surface EW labs; EW system test beds; corrosion control and physical repair shop; outdoor and indoor RF antenna test range and anechoic chambers; EMI/RFI chambers; wind tunnel; operational and maintenance software development labs; failure, material and chemical analysis labs; microwave tube repair and test facilities; solid state device repair and test facilities; composite materials lab; and, technical documentation facility. Facilities include $30M plant and $100M equipment.

Radar: All Navy Surface Combatant and Marine Corps Expeditionary Warfare radar systems are supported. These include shipboard detection and fire control, synthetic aperture, shipboard navigation, and land based air defense radars. Also included are radar data distribution and radar stimulator and simulator systems.

Functional capabilities include: Design analysis; product development; prototyping and limited manufacturing; test & evaluation; obsolescence recovery; technology evaluation and insertion; production engineering; acquisition engineering; depot maintenance, system retirement, and failure analysis. An estimated breakdown is: acquisition engineering 15%; development 20%; test & evaluation 20%; In service engineering 10%; and repair and maintenance 40%.

Highly experience engineers and technicians make up a workforce with in-depth expertise in the disciplines of electromagnetic theory, radar system technology engineering, antenna structural engineering, tribophysics, monolithic microwave circuit design, radar performance evaluation, material analysis, spectral analysis, industrial engineering, reverse engineering, prototype analysis, radio frequency design and analysis and maintenance. The workforce includes 30 engineers and scientists and 55 technicians.

Crane's integrated engineering, test, and industrial facilities include: DoD's most comprehensive antenna analysis facility with out-door far field and near field ranges, anechoic chambers, and active aperture measurement test vehicle; component test and evaluation facility with class 10,000 clean rooms, transmit/receive module repair and test lab; microwave solid state module design lab; and a shipboard radar test lab. Facilities include $20M plant and $60M equipment.

Microwave Components: Highly complex, extremely expensive microwave power tubes are supported for Navy, Army, and Air Force radar, fire control, countermeasure, communications, and missile systems.

Supports the full life cycle of microwave components including design, testing, qualification, failure analysis, repair, acquisition engineering, procurement, and in-service engineering. Estimated work breakdown: Development 20%; Acquisition engineering 10%; Test & evaluation 30%; In-service engineering 10%; and, repair 30%.

Crane's workforce has over 30 years of experience in engineering disciplines applied to microwave components including electronic, physics, mechanical, metallurgical, logistics, acquisition and industrial engineering. This workforce is unique in the DoD in the area of microwave tube theory, design analysis and manufacturing, with nationally recognized microwave device experts. The workforce includes 45 engineers and scientists, 65 technicians, and 45 logistics, acquisition and other specialists. Crane is the DOD Executive Agent for microwave tubes.

Crane's integrated microwave engineering, test and repair facilities include: a unique DOD 90,000 sq ft test lave; specialized microwave and high voltage test equipment, vacuum process & failure analysis laboratory, integrated environmental test facility and microwave integrated circuits test & evaluation lab. The microwave plant value is $40M and the equipment value is $125M.

Microelectronics: due to the extensive use of microelectronics in virtually every DOD system, Crane provides microelectronic technology support to many systems deployed on diverse platforms. These systems include: Marine Corps command and control; Navy cooperative engagement; submarine integrated combat; Navy standard signal processors; and, Trident FBM navigation, fire control, launcher, and missile.

Crane microelectronic capabilities and support include: Requirements definition; design; product development; test & evaluation; technology evaluation and insertion; production engineering; commercial technology application; modeling and simulation; system life cycle support, acquisition engineering; and, failure and materials analysis. An estimate of the work breakdown: Acquisition engineering 5%; development 65%; test & evaluation 10%; in-service engineering 10%; and repair 10%.

Crane's microelectronics personnel have an average of 16 years on the job. Full performance requires formal training plus 5-10 years experience. Professional disciplines include electronic engineering, mechanical engineering, chemistry, physics, materials engineering and electronic technology. The workforce includes 225 engineers and scientists, 205 technicians and 15 logistics and other specialists.

Crane's microelectronic facilities include: Comprehensive material and failure analysis lab with extensive electron optic instrument capability; semiconductor radiation effects facility with linear accelerator and other simulation sources; electronic/photonic component engineering lab; electronic design concepts and simulation lab; open architecture and computer standards lab; and, embedded computer performance evaluation lab. Equipment value exceeds $90M.

Electronic Module Test and Repair: Crane supports a wide range of weapons systems with electronic module technical and industrial capability. These systems include: surface ship combat; gun & fire control; tension winch controllers; antisubmarine warfare; standard computers and peripherals, strategic fire control; submarine combat control; test equipment and repair tools; and, surface and airborne control systems.

Functional capability and support includes: maintenance engineering; acquisition support; equipment design and manufacture; test and evaluation; prototyping and limited manufacture; reverse engineering; life cycle support of automatic test equipment; logistic support; industry liaison; technology evaluation and insertion; manufacturing process engineering. A breakdown of support: acquisition engineering 20%; test & evaluation 10%; prototype/manufacture 15%; repair 35%.

The workforce has over 30 years of experience in electronic module design, production, test and evaluation, repair, and obsolescence management. The workforce includes 35 engineers and 105 technicians.

The electronic module test and repair facility of some 160,000 sq ft includes: a model depot; a progressive level repair lab; an electronic module test and analysis lab; and a printed circuit technology and manufacturing facility. The plant is valued at $30M with some $45M of equipment.

Electrochemical Power Systems: Crane's battery capability supports a wide variety of Navy systems including: Shipboard and underwater; tactical and strategic missile; special warfare; communications; navigation; smart munitions; mines and torpedoes; aircraft and avionics; satellites and space based; surveillance and intelligence; ground support equipment; and, power generation.

Crane capabilities and support include: Applied research; requirements definition; design; development; prototyping and limited manufacturing; acquisition engineering; test & evaluation; safety certification; technology evaluation and insertion; production engineering; in-service engineering; maintenance; fleet training; and, disposal. A breakdown of support: Applied research 10%; development 30%; acquisition engineering 30%; and, test & evaluation 30%.

Crane's workforce is nationally and internationally recognized as one of the leaders in the electrochemical power systems community. A unique in-depth core of electrochemical power systems experience. The workforce includes 55 scientists and engineers and 50 technicians.

Crane's power systems facility of 131,000 sq ft is DOD's largest. It includes: a unique in the world battery evaluation and abuse lab; missile & mine battery evaluation lab; aircraft & aerospace battery evaluation lab; submarine and surface ship battery evaluation lave; material and failure assessment lab; and, battery prototyping facility. The plant value is $20M with some $30M of equipment.

Acoustic Sensors: Crane's acoustic sensor capability supports a wide range of acoustic systems including: Air launched sonobuoys; airborne low frequency sonar; torpedo & sonar acoustic countermeasures; submarine towed array handler; and, surface ship and submarine sonars. It also supports transducer and elastomeric products used by these systems.

Crane supports these systems with: Product development and engineering; low rate manufacture; test & evaluation; prototyping; modeling & simulation; technology insertion; design; in-service engineering; acquisition engineering; systems engineering; and, depot maintenance. A break out of effort: Acquisition engineering 30%; development 25%; manufacture 20%; test & evaluation 20%; In-service engineering 5%.

Crane's acoustic sensor workforce experience exceeds 20 years. Workforce makeup includes some 55 scientists and engineers and 50 technicians.

Specialized acoustic sensor facilities include: large high pressure test tanks; over water radio frequency test pond; tow and sea state simulation; elastomer manufacturing shop; and, a 450 acre quiet lake with underwater ordnance capability. Plant exceeds 100,000 sq ft valued at $20M with $30M equipment.

Small Arms: Crane provides small arms weapon systems to all ships for self-protection and for security and boarding activities and to special warfare and construction battalions to perform their missions. Small arm systems that Crane supports include: sniper weapons; automatic weapons; pistols; rifles; shotguns; crew served gun mounts; gyro-stabilized and electrically-powered guns systems for small boats, ground combat vehicles and helicopters; shipboard gun systems; ammunition up to 25mm including match-grade; law enforcement; shotgun; cartridge grenades; rifle grenades; hand grenades; mortar ammo; shoulder fired un-guided missiles; recoilless rifle ammo; and, land mines.

Crane small arms functions include: Concept design; structural analysis; computer modeling; prototype fabrication and limited production; environmental and functional test; safety certification; full-scale development; acquisition; hardware fielding; logistic planning and support; training; maintenance and repair; inventory management; and, disposal. A breakdown of function: Research 5%; development 35%; acquisition engineering 20%; test & evaluation 20%; in-service engineering 10%; and maintenance 10%.

Crane workforce personnel have an average of 12 years experience in their field. The workforce includes 65 engineers and 35 technicians and specialists.

Small arms facilities include: 120,000 sq ft high security laboratory and repair facility; 25 yard indoor test range; 100 meter underground test facility with walk in environmental chamber; small arms repair facility; prototype fabrication shop; vast small arms storage are; 1000 yard outdoor test range; ammunition loading facility for limited production; 18,000 sq ft of explosives storage. Plant value exceeds $25M with some $20M equipment.

Conventional Ammunition: Crane provides complete support of surface ship conventional ammunition and Marine Corps ground launched conventional ammunition. Crane also supports selected items of air launched conventional ammunitions. Products supported include medium caliber and small arms ammunition; off-board countermeasures; special warfare and explosive ordnance disposal demolition devices; FBM ordnance components; missile fuzes; recoilless rifles; anti-armor missiles and rockets; anti-tank mines; medium and large caliber gun ammo; mortar and howitzer systems and air defense missiles.
Crane Navy provides program management; design and development; simulation and modeling; acquisition and in-service engineering; surveillance; maintenance and logistics support; and, demilitarization functions. A break down: acquisition engineering 20%; development 40%; test & evaluation 25%; In-service engineering 10%; repair 5%.

Crane Army provides production; maintenance; storage; demilitarization; and, shipping of conventional ammunition and other explosive ordnance items from tiny detonators to huge shock charges. Crane Army breakout: Production 35%; demilitarization 40%; handling & storage 25%.

Crane has over 60 years of conventional munitions experience. Crane Navy's experience is in technical functions and Crane Army in industrial functions.

Crane Navy workforce includes: 165 scientists and engineers; 120 technicians; 25 ordnance mechanics; and, 35 logistics and other specialists.

Crane Army's workforce includes: 15 engineers; 75 technicians; 250 ordnance mechanics; and 60 other specialists.

Crane Navy facilities include some 52 engineering and test buildings of 300,000 sq ft that include: 10 major test and analysis and prototype laboratories; 78 explosive magazines; 90 acre explosive test range; and, comprehensive environmental test facilities. The facilities are valued at some $75M with another $30M of equipment.

Crane Army facilities include some 180 operating buildings, 1600 explosive magazines, and 200 inert magazines. The plant replacement value of these facilities exceeds $2B.

Pyrotechnics: Crane provides total life cycle support for all Navy pyrotechnic devices. These products include: aircraft infrared countermeasure; surface launched pyrotechnic signaling and illumination devices; submarine launched signaling and illumination devices; air launched signaling and illumination devices; marking devices; smokes and obscurants; and, countermeasure dispenser systems.

Crane Navy support functions include design and development; product improvement; acquisition and production engineering; test & evaluation; in-service engineering; prototyping and limited production; and, demilitarization and disposal. Support breakout: Research 10%; development 10%; acquisition engineering 20%; test & evaluation 40% and prototyping 20%.

Crane Army support functions include production and demilitarization. Breakout: Production 75%; demilitarization 25%.

Crane Navy workforce has 40 years of pyrotechnics experience. Workforce includes 55 scientist and engineers; 35 technicians; and, 10 pyrotechnic mechanics. Crane is the Navy's corporate knowledge base.

Crane Army workforce also has 40 years of pyrotechnic production experience. Workforce includes 5 engineers; 20 technicians; 60 pyrotechnic mechanics; and 15 other specialists.

Crane Navy facilities include: prototype manufacture shop; wind-stream test facility; automated infrared test; 90 acre ordnance test range; missile seeker characterization lab; and, mobile measurement vans and tracking mounts. Plant value is $15M and equipment value $20M.

Crane Army facilities include 20 production buildings.

Defense Security systems: Crane supports shipboard and shore-based physical security systems including: Badging and access control; biometrics; intrusion detection; CCTV surveillance; smart card technology; high security locking systems; shipboard wireless communications systems; barriers, fencing & lighting systems; and, arms, ammunition and explosives physical security systems.

Crane's capabilities include: DOD center of expertise for badging systems; advanced physical security technology assessment and insertion; system integration; design, development, acquisition and installation; logistics planning and support; on-site support, systems enhancement and training; repair and maintenance of high security locking devices.

Crane's workforce has over 500 work-years of experience in physical security programs and includes 20 scientists and engineers, 10 technicians, and 5 physical security specialists.

Specialized physical security facilities include: shipboard mock-up to support tests; security and biometrics test lab; prototype manufacturing for shipboard application; and, fiber optic secure networking lab.

Night Vision/Electro-Optics: Crane supports a wide spectrum of : Night vision goggles; surface and aircraft multi-sensor systems; special warfare electro-optic devices; surface night vision devices; Army avionics systems; man-portable thermal imagers; shipboard chemical warfare agent stand-off and point detection systems; automatic chemical agent detection alarms; joint biological point detection system; joint service lightweight standoff chemical agent detector, joint chemical agent detector, chemical agent monitor.

Crane provides full life cycle support for Navy, Marine Corps, Army, Air Force and special Operations equipment. Crane's support includes: Development; acquisition engineering; contracting; acceptance testing; laser safety

evaluation; image intensifier tube testing; repair; system installation; training; in-service engineering; systems integration; failure analysis and casualty report resolution; and, value engineering.

Crane's workforce has over 700 work-years of experience in night vision/electro-optic and chemical biological detection. The experience base includes program managers, microbiologists, electronic and mechanical engineers, technicians, equipment specialists, logistic management specialists, optical equipment repair specialists; and, computer specialists. The workforce includes 50 engineers and scientists; 40 technicians; and 35 related specialists.

Crane's facilities include a unique 65,000 sq ft electro-optic center with: 40,000 sq ft lab; 5,000 sq ft class 100,000 clean room; and, 80 ft tower with line of sight distances to 40 miles. Facilities also include a 25,000 sq ft chemical and biological detection engineering and repair lab. Facilities investment is some $15M with equipment cost of $20M.

The above technical capability areas map into the Crane technology areas or "core equities" that information was provided on previously as follows:

Ordnance	Electronics
Small Arms	Microelectronics
Conventional Ammunition	Electronic Module Test & Repair
Pyrotechnics	Electrochemical Power Systems
Chemical/Biological Sensors	Acoustic Sensors
Electronic Warfare	Anti-Terrorism/Force Protection
Electronic Warfare Systems	Defense Security Systems
Radar Systems	Night Vision/Electro-Optics & Microwave Components

Crane's Base Support: The primary organizations that support the mission organizations at the base are: Navy Facility Command Detachment with some 290 employees consisting of a few engineers (20) but mostly trades personnel that maintain the facilities, run the water and sewer plants and the electric, gas, and communication utilities; the Naval Supply System detachment with some 200 employees, predominantly trades, that do the contracting, storage and transportation functions; and the Personnel Department of some 230 employees that provide security and police, fire, personnel, communications, training, and other general support; and, finally there is the Business Department with some 75 employees that provide budgeting and tracking, planning, and related base wide business systems and control.

The above capability facts and figure are all obviously estimated with several different sources of information including my memory!

DEFENSE FINANCE AND ACCOUNTING SERVICE

The Defense Finance and Accounting Service - Indianapolis (formerly the U.S. Army Finance and Accounting Center) was activated Jan. 20, 1991.

The Center is responsible for oversight of a network of six operating locations. These six locations are:

1. Europe
2. Lawton, OK
3. Orlando, FL
4. Rock Island, IL
5. Rome, NY
6. St. Louis, MO

DFAS Indianapolis disburses more than $104 billion annually. It provides services to a population which exceeds 1.9 million people and includes active army and reserve component soldiers and families as well as former soldiers and spouses.

Source: www.dod.mil/dfas

DEPARTMENT OF HOMELAND SECURITY

OFFICE AND UNIT LOCATIONS IN INDIANA

Transportation Security Administration
- Fort Wayne
- Indianapolis

Customs and Border Protection
- Fort Wayne
- Indianapolis

Citizenship and Immigration Services
- Indianapolis

U.S. Coast Guard
- Dana
- Clinton
- Indianapolis (recruiting)
- Jeffersonville (auxiliary)
- Crane (tenant)

U.S. Secret Service
- Indianapolis

FORT WAYNE INTERNATIONAL AIRPORT AIR GUARD STATION

BACKGROUND AND HISTORY

The Indiana Air National Guard was a direct outgrowth of the 113th Observation Squadron, which flew the Curtis OX-2 "Jenny" biplane near Kokomo, Indiana. From 1927 to 1939, aircraft conversions included the 0-1, 0-2, 0-38 (the last of the biplanes), and just before World War II, 0-47s, a three place mid-wing observation monoplane.

On 9 December 1946, the 122d Tactical Fighter Group (TFG) was formed at Stout Field, Indianapolis, Indiana, and assigned the P-51 "Mustang". On 10 November 1947, federal recognition was granted to the 163rd Tactical Fighter Squadron at Baer Field, Fort Wayne, Indiana. Flying the "Mustangs," the unit was federally activated during the Korean Conflict from 1951 -1952.

The unit's first jet aircraft, the Lockheed F-80 "Shooting Star," was assigned in September 1954. The jet era continued with the conversion to the F-86 "Sabrejet" eighteen months later; and in January 1958, the Republic F-84F "Thunderstreak" gave the 122TFW a new dimension for the next thirteen years.

In June 1971, the unit converted to the F-100 "Super Sabre." In 1976, the unit participated in its first Red Flag Exercise and also deployed overseas to Lakenheath Air Base, England. The F-4C "Phantom" arrived on 18 November 1979; and the unit flew this new aircraft to Balikesir, Turkey in 1983 for exercise "Coronet Crown."

On 17 July 1991, the unit entered the high-tech jet age with the arrival of the first four F-16C "Fighting Falcons" from Hahn Air Base, Germany. Twenty additional aircraft were received: twelve more from Hahn Air Base, seven from Shaw Air Force Base, South Carolina, and one from McConnell Air Force Base, Kansas. In the fall of 1992, the 122FW completed its conversion to the General Dynamics F-16C/D aircraft and finalized acceptance of the new Pratt & Whitney 220E engine.

Source: www.goang.com

GRISSOM JOINT AIR RESERVE BASE

BACKGROUND AND HISTORY

Grissom Air Reserve Base is one of twelve Air Force Reserve Command (AFRC) facilities in the US. The base is one of the few "stand alone" facilities, where the 434th Air Refueling Wing (ARW) maintains and operates the entire base infrastructure. The base is located on 1,100 acres of land, nestled in the corn and soybean fields of north-central Indiana. The unit employs over 700 civilians who provide the continuity of a Reserve unit to more than 1100 reservists who train monthly at the base.

Grissom ARB was named in the honor of Lt. Col. Virgil Grissom. The base was realigned as an Air Force Reserve facility in October 1994. Today, the base is home to the 434th. Air Refueling Wing (ARW) and is one of only four Air Reserve Bases in the nation.

The mission of the 434th ARW is to provide mid-air refueling to long-range bombers, fighters, and cargo aircraft. The KC-135s provide support to all major commands of the Air Force as well as the Navy, Marine Corps and allied nations.

The 434th ARW is one of the key refueling units in the Air Force Reserve. The 434th ARW regularly participates in exercises and front-line operations to support America's national interests.

During the summer of 2003 nine Air Force Reserve Command installations were re-designated joint bases or stations to reflect the multiservice use of the facilities. The locations and their new designations are: Dobbins Joint Air Reserve Base, Ga.; Grissom JARB, Ind.; Homestead JARB, Fla.; March JARB, Calif.; Minneapolis-St. Paul Joint Air Reserve Station, Minn.; Niagara Falls JARS, N.Y.; Pittsburgh JARS, Pa.; Westover JARB, Mass.; and Youngstown JARS, Ohio.

Missions

434th Operations Group
- 434th Operations Support Squadron
- 72nd Air Refueling Squadron
- 74th Air Refueling Squadron

434th Maintenance Group
- 434th Maintenance Operations Squadron
- 434th Aircraft Maintenance Squadron
- 434th Maintenance Squadron

434th Mission Support Group
- 434th Mission Support Squadron
- 434th Services Flight
- 434th Security Forces Squadron
- 434th Civil Engineer Squadron
- 434th Communications Squadron
- 434th Operational Contracting Flight
- 434th Logistics Readiness Squadron
- 49th Aerial Port Flight
- 434th Aerospace Medicine Squadron

Tenants

Headquarters 2/239th Regiment
U.S. Army Reserve
(765) 689-9170

199th Quartermaster Company
U.S. Army Reserve
(765) 689-9179

Detachment 1, Communications Company
U.S. Marine Corps Reserve
(765) 688-4404

Naval Reserve Center
U.S. Navy Reserve
(765) 688-3766

U.S. Army Corps of Engineers
Louisville District, Grissom Project Office
(765) 689-8375

Local Economic Impact

In addition to its contributions to our nation's defense, Grissom Air Reserve Base plays an important part in the local community. It has a combined military-civilian work force and is the largest employer in Miami County and the third largest in north central Indiana. Its annual economic impact is more than $80 million per year. Grissom units are heavily involved in community activities, including the "Toys for Tots" program, and the base was designated as a "Tree City" by the National Arbor Day Foundation.

Source: www.grissom.afrc.mil
www.GlobalSecurity.org

JEFFERSON PROVING GROUND

HISTORY AND BACKGROUND

Jefferson Proving Ground (JPG), a 55,265 acre facility, was established December 1940, fired its first round 5 months later, and operated until 1995. JPG's primary mission was to perform production and post-production tests of conventional ammunition components and other ordnance items and conduct tests of propellant ammunition/weapons systems and components for the U.S. Army.

1941 - Began operations.

1944 - 100,000th round fired.

1953 - Peak staffing (1,774 employees) and 24 hour continuous testing during the Korean Conflict.

1960's - Peak of testing activity during the Vietnam War.

1989 - Congress identified JPG for closure (421 employees).

1991 - Peak of testing activity during the Persian Gulf War.

1993 - Jefferson Proving Ground Redevelopment Board (JPG RDB) formed.

1994 - Restoration Advisory Board (RAB) formed. Munitions testing ceased.

1995 - Local Redevelopment Authority (LRA) formed. JPG closed.

1996 - Property disposal process began: environmental site assessments and cleanup, unexploded ordnance (UXO) removal actions, and property lease/transfer.

1997 - Memorandum of Agreement established between The Army Test and Evaluation Command (TECOM) and the U.S. Fish and Wildlife Service for "ecosystem-based" management of 51,000 acres in the northern part of the base.

1998 - Memoranda of Understanding established between the U.S. Department of Army and the Indiana Air National Guard. In exchange for continued use of the Jefferson Range air-to-ground training area, the Air National Guard will provide assistance to the Army in the operations and maintenance of the 51,000-acre impact area.

2000 - Big Oaks National Wildlife Refuge created as an overlay refuge.

The Base Realignment and Closure (BRAC) program is a U.S. Department of Defense (DoD) program to streamline military operations and transfer land and facilities to civilian use, where possible.

In 1989, JPG was identified for base closure under the BRAC program. Over the past decade, the U.S. Army has successfully managed the closure, cleanup, and transfer of property and will continue to fulfill the President's goal to promote early reuse of the installation by expediting environmental cleanup.
The U.S. Army's Installation Support Management Activity (ISMA) under the Assistant Chief of Staff for Installation Management (ACSIM) is responsible for managing JPG's closure, cleanup, and property transfer.

The BRAC Cleanup Team (BCT) manages environmental programs for JPG. The team includes ISMA, U.S. Environmental Protection Agency (EPA) Region V, and the Indiana Department of Environmental Management (IDEM).

The Restoration Advisory Board (RAB) is a forum for discussion and exchange of information regarding JPG's BRAC program. The community participates and advises the BCT on ongoing and planned activities.

Source: www.jpgbrac.com

NEWPORT CHEMICAL DEPOT

BACKGROUND AND HISTORY

Newport Chemical Depot (NECD or the Depot) is located in west central Indiana, approximately 2 miles south of Newport and 70 miles west of Indianapolis. NECD has a multi-faceted mission. NECD was transferred from the U.S. Army Industrial Operations Command to the U.S. Army Chemical and Biological Defense Command in 1995. Both of these are subordinate organizations of the U.S. Army Material Command which continues to have major command responsibilities. NECD is a government-owned, contractor operated facility. There are 11 civil service employees and one military commander that comprise the Contracting Officer's Representative (COR) staff. Mason & Hanger Corporation, with headquarters in Lexington, Kentucky, is the Operating Contractor. Approximately 222 full-time contractor employees work at NECD. The total acreage of NECD is 7,098, with easement rights in effect for an additional 1,400 acres. In 2005, DoD recommended to close Newport Chemical Depot as part of its BRAC Recommendations.

Workers began chemically neutralizing 1,269 tons of VX nerve agent late in the summer of 2004. Neutralizing all the VX should take about 2 ½ years.

On November 14, 1941, authorization was granted for the construction of an RDX facility two miles south of Newport, Indiana. The E.I. Du Pont de Nemours & Company, Incorporated (Wilmington, Delaware) was awarded the construction contract for the construction of a five-line RDX facility in December 1941. Construction of this RDX Manufacturing Area (RDX-MA) comprising approximately 300 acres in the north central portion of the site, was completed in October 1943 at a cost of $45,717,500. In 1951, while Du Pont was manufacturing heavy water, the Liberty Powder Defense Corporation of East Alton, Illinois, rehabilitated two of the five RDX lines and related facilities at a cost of $4,361,652. Liberty Powder Defense Corporation operated the plant under contract with the U.S. Army from August 1951 until March 1957. During the period 1957 through 1960, there was no production at the site.

In 1959, the U.S. Army announced the award of a contract to the FMC Corporation of New York City, New York, for the design and construction of a facility to manufacture Chemical Agent VX. The facility was located in the area formerly used for the production of heavy water. The new facility, completed in 1961 at a cost of $16,498,000 and operated under US Army contract by FMC, remained in production until 1968 when it was placed in standby. The completion of the new VX nerve agent production plant at the Newport Chemical Plant in 1961 created a need for disposal specialists at the site. A detachment of Technical Escort Unit personnel was assigned to the plant the same year.

The Army produced its entire stockpile of VX, a rapid-acting, lethal nerve agent, at Newport. Munitions such as land mines, spray tanks and rockets were shipped to Newport by rail, filled with chemical agent, then shipped to U.S. Defense sites worldwide. President Richard Nixon halted production of all chemical weapons, including VX, in 1968 and declared a moratorium on shipment in 1969, leaving the final two batches of 1,269 tons in storage on the depot. The manufacturing plant was decontaminated as much as was possible without disassembly, then fenced off and left to rust.

The nerve agent VX stockpiled at the Newport Chemical Depot in Indiana is stored in 1,690 steel ton containers commonly known as "TCs". These containers are designed specifically for the maintenance, storage, and transportation of bulk chemical agent. The Newport Chemical Depot (NECD) stores bulk nerve agent VX in ton containers that are over six and one-half feet long, and almost three feet in diameter. The solid steel sidewalls are roughly a half inch thick, and each end is about one inch thick. When empty, the containers weigh 1,600 pounds. When filled to capacity, the containers can hold up to 170 gallons of liquid, though the TCs stored at Newport have a layer of nitrogen gas that occupies a 10 percent void within the TC. Ton containers are designed to withstand pressures up to 25 times greater than the pressure of our atmosphere, and internal pressures up to 500 pounds

per square inch. The ton containers at Newport are stacked in rows three containers high, and are clamped together for stability on top of wooden concave cradles inside a single warehouse of corrugated steel sheet metal supported by steel beams. In order to provide maximum protection to facility personnel and the environment, storage personnel are trained in handling ton containers storing chemical agent and monitoring the containers for signs of leakage.

The Newport Chemical Depot employs numerous security measures to ensure the safety of the stockpile. The depot entrances are guarded 24-hours per day and the outer perimeter is secured by a single chain link barbed wire fence. The storage area is surrounded by double fences and equipped with intrusion detection devices and television monitors. In addition, personnel entering the area must follow strict safety and security procedures.

The chemical agent storage area has alarms and detection systems that monitor the air 24-hours per day for signs of chemical agent release. In addition, four Automatic Continuous Air Monitoring Systems (ACAMS) monitor the storage building. Should the ACAMS detect chemical agent vapor, it would activate a series of alarms, both visual and audible, and alert emergency response teams. Certified personnel also conduct visual monitoring regularly to inspect the condition of the ton containers housed in the storage building. If a ton container shows evidence of leaking, detailed emergency response procedures are in place to rectify the problem and to protect the health of site personnel and the community.

The Newport Chemical Depot will continue to store bulk chemical agent in ton containers until it is safely disposed of by the Chemical Stockpile Disposal Program. Once the agent has been removed, the containers will be cleaned and decontaminated in accordance with federal, state and local laws, and then shipped off-site for recycling.

Under the terms of the Chemical Weapons Convention treaty ratified in April 1997, the U.S. must destroy its entire inventory of chemical weapons and production facilities by 2007. The Army plans to break ground in late 1999 for a pilot neutralization plant at the Newport depot to destroy the VX stockpile. The facility will destroy 4.1% of the nation's original chemical stockpile including nerve agent in ton containers.

VX stored in bulk containers will be pilot tested at NECD using the chemical neutralization process followed by supercritical water oxidation (SCWO) as a potential disposal technology for the bulk agent VX stored at Newport Chemical Depot (NECD). The proposed facility will be used to demonstrate, as part of a research and development program, the neutralization process followed by SCWO, to destroy VX agent currently stored in ton containers at NECD. At one time, the option of sending the neutralization hydrolysate to an off-site biotreatment facility was under consideration by the Army; however, technical and programmatic evaluations have concluded that off-site biotreatment is not suitable at this time.

On February 18, 1999, the Army awarded the $295 million contract to Parsons Infrastructure and Technology Group, Inc., and its partnership team headed by AlliedSignal to complete the facility design; build, operate and close the disposal facility. Within a year, construction was scheduled to begin on this new facility that will destroy 1,269 tons of liquid VX stored in carbon steel ton containers. The Parsons-Allied Signal Team will dispose of the Newport stockpile using a low-pressure, low-temperature neutralization process, followed by a post-treatment process called supercritical water oxidation (SCWO) which reduces the neutralized by product to distilled water and salt.

VX was produced in four steps, numbered zero through three. The first three steps are located outside the current chemical agent storage area and were scheduled to be completely demolished by August 2002. Step III, which is located inside the storage area, will be completed by February 2007. Step III is where the precursors were combined to actually create the VX. During VX production the installation’s contractor was FMC Corp. The depot’s current contractor, Mason & Hanger Corp., employs 205 workers who provide safe and secure storage of the stockpile. A handful of employees from the VX production days still work at the depot today.

BRAC 2005

In its 2005 BRAC Recommendations, DoD recommended to close Newport Chemical Depot. There was no additional chemical demilitarization workload slated to go to Newport Chemical Depot. The projected date for completion of existing workload was 2nd quarter of 2008. There would be no further use for Newport Chemical Depot.

The total one time cost to the Department of Defense to implement this recommendation would be $7.1M. The net of all costs and savings to the Department during the implementation period would be a savings of $95.6M. Annual recurring savings to the Department after implementation would be $35.7M with a payback expected immediately. The Net present value of the costs and savings to the Department over 20 years would be a savings of $436.2M. Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 838 jobs (571 direct jobs and 267 indirect jobs) over the 2006 – 2011 period in the Terre Haute, IN Metropolitan Statistical Area (0.9 percent). Environmentally, continued management and/or deed restrictions would be necessary to ensure future protection of the Federally listed species. Restoration, monitoring, access control, and deed restrictions might be required for former waste management areas to prevent disturbance, health and safety risks, and/or long term release of toxins to environmental media. Restoration and monitoring of contaminated sites would likely be required after closure to prevent significant long-term impacts to the environment. This recommendation would require spending approximately $1.3M for environmental compliance activities. Newport Chemical Depot reported approximately $1.2M in environmental restoration costs DoD must pay regardless of whether an installation is closed, realigned, or remains open.

Disposal Schedule:
Construction: 2000-2002*
Testing: 2002-2003*
Operations: 2004*
Closure: 2005*
Dates are based on using the neutralization process

Source: www.GlobalSecurity.org

HULMAN FIELD ANG

Terre Haute International Airport

BACKGROUND AND HISTORY

The 181st Fighter Wing (FW) of the Indiana Air National Guard occupies 891.88 acres of leased land on the Terre Haute International Airport-Hulman Field, situated approximately five miles east of downtown Terre Haute, located in west central Indiana. The mission of the 181st FW is to provide trained personnel and equipment to protect life and property, and preserve the peace, order and public safety of the state of Indiana when directed by the Governor. The unit currently flies the F-16 Falcon. The 181st FW occupies 4 administrative, 23 industrial, and 4 services buildings totaling approximately 323,335 square feet with 275 full-time personnel. A unit training drill is conducted once a month and results in a surge of up to a total of 1250 personnel.

The Terre Haute International Airport - Hulman Field has a unique history which dates back to 1943 when the groundbreaking for the airport, known as Hulman Field, occurred. The initial airport site contained approximately 638 acres and was donated to the City of Terre Haute by Anton Hulman, Jr. The late Mr. Hulman, a successful local businessman, was more nationally recognized as the owner of the Indianapolis Motor Speedway. With the assistance of Federal funding, the airport was constructed and then dedicated on October 3, 1944. The airport consisted of three runways, taxiways, apron area, and a terminal building.

A local Air National Guard Base was established at the airport in 1954 and the 113th Tactical Fighter Squadron, a part of the 181st Tactical Fighter Group, was stationed at the airport. The 181st Tactical Fighter Wing remains stationed at the airport and now flies F-16 aircraft, which replaced the F-4E aircraft.

In the early 1960's, significant improvement projects were completed: in 1961, and ILS (Instrument Landing System) was commissioned; in 1962, Runway 5-23 was extended to 9,025 ft; and in 1964 , much of the airport pavement was overlaid. The airport's secondary runway 14-32 was recently extended to 7,200 feet. Both runways are equipped with an avionics system for military users.

BRAC 2005

Secretary of Defense Recommendations: In its 2005 BRAC Recommendations, DoD recommended to realign Hulman Regional Airport Air Guard Station, IN. The 181st Fighter Wing's F-16s would be distributed to the 122d Fighter Wing, Fort Wayne International Airport Air Guard Station, IN (nine aircraft), and retirement (six aircraft). The 181st Fighter wing's ECS elements would remain in place. DoD claimed that this recommendation was made because Hulman (119) was ranked low in military value by the fighter MCI.

Secretary of Defense Justifications: Capital (115) and Hulman (119) were both ranked low in military value by the fighter MCI. Although somewhat lower (130) the ANG recommended Fort Wayne be retained because of its record of recruiting and its proximity to Hulman--allowing the experienced airmen there to remain available to the Indiana ANG. This recommendation would also help to align common versions of the F-16. Establishing a CIRF at Capital would consolidate F110 engine intermediate maintenance for F-16 aircraft from five air reserve component units, and complements other Air Force CIRF recommendations. The Capital CIRF would be centrally located in proximity to the serviced installations, and would utilize Capital's experienced people and existing facilities as part of an Air Force effort to standardize stateside and deployed intermediate-level maintenance concepts. Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 269 jobs (163 direct jobs and 106 indirect jobs) over the 2006-2011 period in the Springfield, IL, Metropolitan Statistical economic area (0.2 percent).

Community Concerns: The Illinois community objected to DoD's proposal to send Capital's aircraft to installations ranked lower in military capability and importance. Community leaders disagreed with DoD's assertion that the recruiting base will be stronger in Indiana, and emphasized Capital AGS is located close to St Louis, Chicago, and Louisville and is strategically located for homeland defense missions. They noted that DoD's overall proposals hurt Illinois significantly, with 2,700 jobs slated to move out of the state, and added that the installation's 355 full-time and 774 part-time Guardsmen contribute an estimated $44.7 million into the region's economy each year. The airport authority and state are willing to contribute land and some of the funds necessary to construct a needed munitions storage facility there.

Commission Findings: The Commission supports the Department of Defense recommendation to realign Capital Air Guard Station and Hulman Regional Airport Air Guard Station. While valid community concerns were expressed over these realignments, the Commission found that the Air National Guard F-16 inventory is shrinking and that these two bases should have the capability to transition to emerging missions as they become defined. Therefore the Commission revised the DoD recommendation to be consistent with the Commission's Air National Guard and Air Force Reserve Laydown Plan.

A second aspect of the Department of Defense recommendation is related to a realignment of Dane County Regional Air Guard Station/Truax Field, Joe Foss Field Air Guard Station, Des Moines Air Guard Station, Fort Wayne Air Guard Station and Lackland Air Force Base. The Commission found the relocation of base-level F-110 intermediate maintenance to Capital, establishing a Centralized Intermediate Repair Facility (CIRF) at Capital for F-16 engines, consistent with selection criteria and Force Structure Plan.

This recommendation directing aircraft movement and personnel actions in connection with Air National Guard installations and organizations is designed to support the Future Total Force. The Commission expects that the Air Force will find new missions where needed, provide retraining opportunities, and take appropriate measures to limit possible adverse personnel impact. The Commission's intent was that the Air Force will act to assign sufficient aircrew and maintenance personnel to units gaining aircraft in accordance with current, established procedures; however, the Commission expects that all decisions with regard to manpower authorizations will be made in consultation with the governor of the state in which the affected Air National Guard unit is located. Any manpower changes must be made under existing authorities, and must be made consistent with existing limitations. Some reclassification of existing positions may be necessary, but should not be executed until the Air Force and the state have determined the future mission of the unit to preclude unnecessary personnel turbulence.

Commission Recommendations: The Commission found that the Secretary of Defense deviated substantially from final selection criterion 1, as well as from the Force Structure Plan; therefore, the Commission recommended the following:

Realign Capital Airport Air Guard Station, IL. Distribute the 15 F-16 aircraft assigned to the 183d Fighter Wing, Capital Airport Air Guard Station, IL and the 15 F-16 aircraft assigned to the 122d Fighter Wing, Fort Wayne International Airport Air Guard Station, IN, to meet the Primary Aircraft Authorizations (PAA) requirements established by the Base Closure and Realignment recommendations of the Secretary of Defense, as amended by the Defense Base Closure and Realignment Commission.

Establish 18 PAA F-16 aircraft at the 183d Fighter Wing, Fort Wayne International Airport Air Guard Station, IN.

The Illinois ANG State Headquarters and the 217th Engineering Installation Squadron remain in place at Capital Airport Air Guard Station, IL.

If the State of Illinois decides to change the organization, composition and location of the 183d Fighter Wing to integrate the unit into the Future Total Force, all personnel allotted to the 183d Fighter Wing, including the wing Expeditionary Combat Support (ECS) elements, will remain in place and assume a mission relevant to the security interests of the State of Illinois and consistent with the integration of the unit into the Future Total Force, including but not limited to the Centralized Intermediate Repair Facility (CIRF) at Capital for F110 engines, air mobility,

C4ISR, Information Operations, engineering, flight training or unmanned aerial vehicles. Where appropriate, unit personnel will be retrained in skills relevant to the emerging mission.

This recommendation does not effect a change to the authorized end-strength of the Illinois Air National Guard. The distribution of aircraft currently assigned to the 183d Fighter Wing is based upon a resource-constrained determination by the Department of Defense that the aircraft concerned will better support national security requirements in other locations and is not conditioned upon the agreement of the state.

Realign Hulman Regional Airport Air Guard Station, IN. Distribute the 15 F-16 aircraft assigned to the 181st Fighter Wing to meet the PAA requirements established by the Base Closure and Realignment recommendations of the Secretary of Defense, as amended by the Defense Base Closure and Realignment Commission. The 181st Fighter Wing's ECS elements remain in place.

If the State of Indiana decides to change the organization, composition and location of the 181st Fighter Wing to integrate the unit into the Future Total Force, all other personnel allotted to the 181st Fighter Wing will remain in place and assume a mission relevant to the security interests of the State of Indiana and consistent with the integration of the unit into the Future Total Force, including but not limited to air mobility, C4ISR, Information Operations, engineering, flight training or unmanned aerial vehicles. Where appropriate, unit personnel will be retrained in skills relevant to the emerging mission.

This recommendation does not effect a change to the authorized end-strength of the Indiana Air National Guard. The distribution of aircraft currently assigned to the 181st Fighter Wing is based upon a resource-constrained determination by the Department of Defense that the aircraft concerned will better support national security requirements in other locations and is not conditioned upon the agreement of the state.

Realign Dane County Regional Air Guard Station/Truax Field, WI; Joe Foss Field Air Guard Station, SD; Des Moines Air Guard Station, IA; Fort Wayne Air Guard Station, IN; and Lackland Air Force Base, TX; by relocating base-level F-110 intermediate maintenance to Capital Air Guard Station, IL, establishing a Centralized Intermediate Repair Facility (CIRF) Capital for F110 engines.

The Commission found that this change and the recommendation as amended are consistent with the final selection criteria and the Force Structure Plan.

Source: www.globalsecurity.org

APPENDIX VII

LOCAL/REGIONAL PROFILES- INDIANA COMMUNITIES/REGIONS AND BRAC 2005

The 2005 round of Base Realignment and Closure (BRAC) decisions had significant implications, both positive and negative, for five communities/regions across the State of Indiana:

- Hulman Regional Airport Air Guard Station
- Newport Chemical Depot
- Naval Surface Warfare Center (NSWC) Crane
- Fort Wayne International Airport Air Guard Station
- Lawrence Defense Finance and Accounting Services (DFAS) facility

For each of the five regions, a regional/community profile has been prepared to identify the facility, the impact of BRAC 2005, and regional/local demographics.

Hulman Regional Airport Air Guard Station

Terre Haute, Indiana

Background

The 181st Fighter Wing (FW) of the Indiana Air National Guard occupies 891.88 acres of leased land on the Terre Haute International Airport-Hulman Field, situated approximately five miles east of downtown Terre Haute, located in west central Indiana. The mission of the 181st FW is to provide trained personnel and equipment to protect life and property, and preserve the peace, order and public safety of the state of Indiana when directed by the Governor. The 181st FW occupies 4 administrative, 23 industrial and 4 services buildings totaling approximately 323,335 square feet with **275** full-time personnel. A unit training drill is conducted once a month and results in a surge of up to a total of **1250** personnel.

BRAC 2005 Decision

In its 2005 BRAC Recommendations, the Department of Defense (DoD) recommended to realign Hulman Regional Airport Air Guard Station, Indiana. The 181st Fighter Wing's F-16s would be distributed to the 122d Fighter Wing, Fort Wayne International Airport Air Guard Station, Indiana (nine aircraft), and retirement (six aircraft). The 181st Fighter wing's expeditionary combat support (ECS) elements would remain in place. The Department of Defense claimed that this recommendation was made because Hulman (119) was ranked low in military value by the fighter Mission Capability Index (MCI). Although somewhat lower (130) the Air National Guard (ANG) recommended Fort Wayne be retained because of its record of recruiting and its proximity to Hulman allowing the experienced Airmen there to remain available to the Indiana Air National Guard. This recommendation also helps align common versions of the F-16.

BRAC 2005- Estimated Workforce Impact Predicted by DoD

Assuming no economic recovery, the BRAC recommendation could result in a maximum potential reduction of **232 jobs (136 direct jobs and 96 indirect jobs)** over the 2006-2011 period in the Terre Haute Metropolitan Statistical economic area (Clay, Sullivan, Vermillion, and Vigo Counties), which is 0.26% of economic area employment.

Current Status

In **June 2006**, it was announced that two new Air Force missions that could include staffing up to **420 people** will be established at the Hulman Regional Airport Air Guard Station. Members of the 181st Fighter Wing will be converted to an Air Support Operations Squadron and a Distributed Common Ground Station. The new assignments will replace the F-16 missions that were eliminated as a part of the Base Realignment and Closure (BRAC) in 2005. The Air Support Operation Squadron (ASOS) is a liaison between ground forces and aircraft to direct close air support for combat troops. It is expected that **70 personnel** will be assigned to ASOS. The Distributed Common Ground Station (DGS) provides real time data to battlefield commanders via imagery, electronic and human and intelligence analysis. There will be approximately **350 staff** assigned to this mission work.

Community Profile

Population

	Vigo County		**Terre Haute MSA***	
Population		% Change	**Number**	% Change
1990	106107		166,578	
2000	105,848	-0.24%	170,943	2.62%
2005	95,094	-10.16%	158,940	-7.02%

Sources: US Census Bureau; * Terre Haute MSA includes Clay, Sullivan, Vigo, and Vermillion Counties

Workforce

	Vigo County	*Terre Haute MSA	Workforce Region 7
Total Labor Force	51,980	83,510	107,040
Employed	48,320	77,810	99,743
Unemployed	3,660	5,700	7,297
Unemployment Rate- July 2006	7.0%	6.8%	6.8%

Source: Indiana Department of Workforce Development - July 2006

Major Employers in Vigo County

Employer Name	Industry	City	Employer Size	Annual Sales (*in thousands*)
Columbia House Records	Music Dealers(451140)	Terre Haute	1,000 - 4,999	$100,000 - $499,999
Digital Audio Disc Corp	Video Tapes & Discs-Manufacturers(512220)	Terre Haute	1,000 - 4,999	$100,000 - $499,999
Maternal Health Clinic	Clinics(621493)	Terre Haute	1,000 - 4,999	$20,000 - $49,999
Union Hospital Health Group	Hospitals(622110)	Terre Haute	1,000 - 4,999	$100,000 - $499,999
Aet Inc	Plastics-Fabrics,Film-Etc Producer (Mfr)(326113)	Terre Haute	500 - 999	$100,000 - $499,999
Associated Physicians & Srgns	Physicians & Surgeons(621111)	Terre Haute	500 - 999	$100,000 - $499,999

Maintenance	Airports(488119)	Terre Haute	500 - 999	$50,000 - $99,999
Terre Haute Regional Hospital	Hospitals(622110)	Terre Haute	500 - 999	$50,000 - $99,999
US Penitentiary	Textile Goods Nec (Manufacturers)(314999)	Terre Haute	500 - 999	$50,000 - $99,999

Sources: Indiana Department of Workforce Development

Employment and Earnings by Industry

Employment and Earnings by Industry (2004)	Employment	Percent	Earnings ($000)	Percent	Avg. Earnings Per Job
Farm	2,019	2.20%	$53,824	1.70%	$26,659
Nonfarm	89,352	97.80%	$3,045,881	98.30%	$34,089
Private	75,280	82.40%	$2,441,142	78.80%	$32,427
Accommodation, Food Service	6,551	7.20%	$80,131	2.60%	$12,232
Arts, Entertainment, Recreation	974	1.10%	$8,807	0.30%	$9,042
Construction	5,007	5.50%	$175,951	5.70%	$35,141
Health Care, Social Services	10,117	11.10%	$367,247	11.80%	$36,300
Information	964	1.10%	$33,328	1.10%	$34,573
Manufacturing	12,081	13.20%	$698,590	22.50%	$57,826
Professional, Technology Services	2,460	2.70%	$81,287	2.60%	$33,043

Retail Trade	12,957	14.20%	$282,470	9.10%	$21,801
Transportation, Warehousing	2,460	2.70%	$92,816	3.00%	$37,730
Wholesale Trade	1,801	2.00%	$98,071	3.20%	$54,454
Other Private (not above)	17,794	19.50%	$464,119	15.00%	$26,083
Government	14,072	15.40%	$604,739	19.50%	$42,975

Source: US Bureau of Economic Analysis

Top Ten Occupations by Employment in 2005

Occupation	Employment	Average Annual Wage
Retail Salespersons	2,650	$18,830
Cashiers	2,120	$14,700
Team Assemblers	1,990	$26,290
Secretaries, Except Legal, Medical, and Executive	1,490	$24,590
Combined Food Preparation and Serving Workers, Including Fast Food	1,440	$13,390
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	1,290	$19,870
Office Clerks, General	1,290	$21,100
Registered Nurses	1,270	$46,270

Waiters and Waitresses	1,110	$13,500
Maintenance and Repair Workers, General	940	$29,830

Source: Bureau of Labor Statistics

The following table outlines the change in levels of employment for the top ten occupations in 2005. In the 2005 column, the occupations are listed in descending order of size. In the 2000 column, while the occupations were not necessarily the top ten occupations of the year 2000, those that were in the top ten are highlighted in blue. The same format follows throughout the rest of the report.

Change in Employment by Occupation in the Terre Haute Metropolitan Area (2000-2005)

2005			**2000**			**% Change 2000-2005**
Occupation	**# Employed**	**Ave. Annual Salary**	**Occupation**	**# Employed**	**Ave. Annual Salary**	
Retail Salespersons	2,650	$18,830	Retail Salespersons	2,340	$18,880	13.25%
Cashiers	2,120	$14,700	Cashiers	2,370	$13,810	-10.55%
Team Assemblers	1,990	$26,290	Team Assemblers	310	$25,630	541.94%
Secretaries, Except Legal, Medical, and Executive	1,490	$24,590	Secretaries, Except Legal, Medical, and Executive	1,080	$22,910	37.96%

Combined Food Preparation and Serving Workers, Including Fast Food	1,440	$13,390	Combined Food Preparation and Serving Workers, Including Fast Food	1,780	$12,650	-19.10%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	1,290	$19,870	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	1,480	$16,650	-12.84%
Office Clerks, General	1,290	$21,100	Office Clerks, General	1,060	$19,320	21.70%
Registered Nurses	1,270	$46,270	Registered Nurses	1,090	$30,810	16.51%
Waiters and Waitresses	1,110	$13,500	Waiters and Waitresses	1,270	$14,710	-12.60%
Maintenance and Repair Workers, General	940	$29,830	Maintenance and Repair Workers, General	1,170	$28,300	-19.66%

Source: Bureau of Labor Statistics

Top Ten Occupations by Wage

Occupation	Employment	Average Annual Wage
Microbiologists	N/A	$119,150
Engineering Managers	70	$99,900
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	N/A	$93,420
Lawyers	100	$92,120
Industrial Production Managers	120	$89,080
Pharmacists	130	$87,680
Computer and Information Systems Managers	60	$78,490
Securities, Commodities, and Financial Services Sales Agents	90	$76,930
Marketing Managers	30	$76,510
General and Operations Managers	700	$76,220

Source: Bureau of Labor Statistics

Average Wage

Average Wage- May 2005		
Mean		
Terre Haute MSA	$31,020/yr	$14.91/hr
Indiana	$34,080/yr	$16.38/hr
United States	$37,870/yr	$18.21/hr
Median		
Terre Haute MSA	$25,590/yr	$12.30/hr
Indiana	$27,670/yr	$13.30/hr
United States	$29,430/yr	$14.15/hr

Source: US Bureau of Labor Statistics; Indiana Department of Workforce Development

Educational Attainment

Terre Haute Metropolitan Area Educational Attainment, Ages 25 years and older

	Year 2000	% of total pop.	**Year 2005**	% of total pop.	**% Change 2000-2005**
Total	**95,428**		**104,789**		9.81%
High school graduate (includes equivalency)	**36,271**	38.01%	**40,735**	38.87%	12.31%
Associate's degree	**5,257**	5.51%	**8,483**	8.10%	61.37%
Bachelor's degree	**9,907**	10.38%	**12,948**	12.36%	30.70%
Master's degree	**5,455**	5.72%	**4,785**	4.57%	-12.28%
Professional school degree	**1,166**	1.22%	**1,090**	1.04%	-6.52%
Doctorate degree	**1227**	1.29%	**1477**	1.41%	20.37%

Source: US Census, 2000

Vigo County Educational Attainment, Ages 25 years and older

	2000		2005		% Change 2000-2005
Total	**66,714**		**61,940**		-7.16%
High school graduate (includes equivalency)	**23,226**	34.81%	**21,142**	34.13%	-8.97%
Associate's degree	**3,604**	5.40%	**4,692**	7.58%	30.19%
Bachelor's degree	**7,799**	11.69%	**9,323**	15.05%	19.54%
Master's degree	**4,435**	6.65%	**3,581**	5.78%	-19.26%
Professional school degree	**910**	1.36%	**963**	1.55%	5.82%
Doctorate degree	**1123**	1.68%	**1362**	2.20%	21.28%

Source: US Census, 2000

Major Educational Institutions in Region 7

Institution
Indiana State University
Ivy Tech State College
St Mary's of the Woods College
De Pauw University
Area 30 Career Center
Indiana Business College
Computrain
Sylvan Learning Center

Source: Indiana Department of Workforce Development

Newport Chemical Weapons Depot

Newport, Indiana

Background

Newport Chemical Depot (NECD or the Depot) is located in west central Indiana, approximately 2 miles south of Newport and 70 miles west of Indianapolis. NECD has a multi-faceted mission. NECD was transferred from the U.S. Army Industrial Operations Command to the U.S. Army Chemical and Biological Defense Command in 1995. Both of these are subordinate organizations of the U.S. Army Material Command which continues to have major command responsibilities. NECD is a government-owned, contractor operated facility. There are 11 civil service employees and one military commander that comprise the Contracting Officer's Representative (COR) staff. Mason & Hanger Corporation, with headquarters in Lexington, Kentucky, is the Operating Contractor. Approximately 222 full-time contractor

employees work at NECD. The total acreage of NECD is 7,098, with easement rights in effect for an additional 1,400 acres. In 2005, DoD recommended to close Newport Chemical Depot as part of its BRAC Recommendations. Workers began chemically neutralizing 1,269 tons of VX nerve agent late in the summer of 2004. Neutralizing all the VX should take about 2 years, 6 months.

BRAC 2005 Decision

In its 2005 BRAC Recommendations, the Department of Defense recommended to close Newport Chemical Depot. There was no additional chemical demilitarization workload slated to go to Newport Chemical Depot. The projected date for completion of existing workload was 2nd quarter of 2008. There would be no further use for Newport Chemical Depot. The total one time cost to the Department of Defense to implement this recommendation would be $7.1M. The net of all costs and savings to the Department during the implementation period would be a savings of $95.6M. Annual recurring savings to the Department after implementation would be $35.7M with a payback expected immediately. The Net present value of the costs and savings to the Department over 20 years would be a savings of $436.2M.

BRAC 2005- Estimated Workforce Impact Predicted by DoD

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 838 jobs (571 direct jobs and 267 indirect jobs) over the 2006 – 2011 period in the Terre Haute, IN Metropolitan Statistical Area (0.9 percent).

Current Status

There will be no further use for Newport Chemical Depot after the completion of existing workload in the 2nd Quarter of 2008.

Population

	Vermillion County		Terre Haute MSA	
Population	**Number**	% Change	**Number**	% Change
1990	16,773		166,578	
2000	16,788	0.09%	170,943	2.62%
2005	16,562	-1.35%	158,940	-7.02%

Sources: US Census Bureau; American Community Survey; *Vermillion and Sullivan Counties were not included in the Terre Haute MSA calculation in 1990

Workforce

	Vermillion County	*Terre Haute MSA	Workforce Region 7
Total Labor Force	8,094	83,510	107,040
Employed	7,501	77,810	99,743
Unemployed	593	5,700	7,297
Unemployment Rate- Sept. 2006	6.2%	6.8%	6.8%

Source: Indiana Department of Workforce Development - July 2006 *Terre Haute MSA includes: Clay, Sullivan, **Vermillion** and Vigo Counties

Major Employers in Vermillion County

Employer Name	Industry	City	Employer Size	Annual Sales (*in thousands*)
Eli Lilly & CO	Pharmaceutical Products-Wholesale(424210)	Clinton	500 - 999	$1,000,000+
Mason Hanger	Environmental & Ecological Services(541710)	Newport	500 - 999	$50,000 - $99,999
West Central Community Hosp	Hospitals(622110)	Clinton	250 - 499	$20,000 - $49,999
Newport Chemical Depot	Installation Service(238210)	Hillsdale	100 - 249	$20,000 - $49,999
Premier Box	Paper-Manufacturers(322121)	Cayuga	100 - 249	$50,000 -

Board Ltd				$99,999
Vermillion Convalescent Ctr	Residential Care Homes(623312)	Clinton	100 - 249	$5,000 - $9,999
Wal-Mart	Department Stores(452111)	Clinton	100 - 249	$20,000 - $49,999
Clinton Iga	Grocers-Retail(445110)	Clinton	50 - 99	$20,000 - $49,999
Heritage House of Clinton	Nursing & Convalescent Homes(623110)	Clinton	50 - 99	$2,500 - $4,999
Mc Donald's	Restaurants(722211)	Clinton	50 - 99	$1,000 - $2,499

Source: Indiana Department of Workforce Development

Employment and Earnings by Industry

Employment and Earnings by Industry (2004)	**Employment**	**Percent**	**Earnings ($000)**	**Percent**	**Avg. Earnings Per Job**
Farm	2,019	2.20%	$53,824	1.70%	$26,659
Nonfarm	89,352	97.80%	$3,045,881	98.30%	$34,089
Private	75,280	82.40%	$2,441,142	78.80%	$32,427
Accommodation, Food Service	6,551	7.20%	$80,131	2.60%	$12,232
Arts, Entertainment, Recreation	974	1.10%	$8,807	0.30%	$9,042
Construction	5,007	5.50%	$175,951	5.70%	$35,141

Health Care, Social Services	10,117	11.10%	$367,247	11.80%	$36,300
Information	964	1.10%	$33,328	1.10%	$34,573
Manufacturing	12,081	13.20%	$698,590	22.50%	$57,826
Professional, Technology Services	2,460	2.70%	$81,287	2.60%	$33,043
Retail Trade	12,957	14.20%	$282,470	9.10%	$21,801
Transportation, Warehousing	2,460	2.70%	$92,816	3.00%	$37,730
Wholesale Trade	1,801	2.00%	$98,071	3.20%	$54,454
Other Private (not above)	17,794	19.50%	$464,119	15.00%	$26,083
Government	14,072	15.40%	$604,739	19.50%	$42,975

Source: US Bureau of Economic Analysis

Occupational Data

The occupation data, including occupations by employment, and occupations by wage were run for Metropolitan Statistical Areas (MSA's). Vermillion County is a part of the Terre Haute MSA and the data for the Terre Haute MSA can be found in the previous section.

Wages

Wage- May 2005		
Mean		
Terre Haute MSA	$31,020/yr	$14.91/hr
Indiana	$34,080/yr	$16.38/hr
United States	$37,870/yr	$18.21/hr
Median		
Terre Haute MSA	$25,590/yr	$12.30/hr
Indiana	$27,670/yr	$13.30/hr
United States	$29,430/yr	$14.15/hr

Source: US Bureau of Labor Statistics; Indiana Department of Workforce Development

Educational Attainment

Terre Haute Metropolitan Area Educational Attainment, Ages 25 years and older

	Year 2000	% of total pop.	**Year 2005**	% of total pop.	**% Change 2000-2005**
Total	**95,428**		**104,789**		9.81%
High school graduate (includes equivalency)	**36,271**	38.01%	**40,735**	38.87%	12.31%

Associate's degree	**5,257**	5.51%	**8,483**	8.10%	61.37%
Bachelor's degree	**9,907**	10.38%	**12,948**	12.36%	30.70%
Master's degree	**5,455**	5.72%	**4,785**	4.57%	-12.28%
Professional school degree	**1,166**	1.22%	**1,090**	1.04%	-6.52%
Doctorate degree	**1227**	1.29%	**1477**	1.41%	20.37%

Source: US Census, 2000; American Community Survey 2005

The data for Vermillion County was available for the year 2000; however the county was not included in the 2005 American Community Survey. Thus, using the available data it was possible to make estimations for the educational attainment of Vermillion County in 2005. In order to make that estimation population for the Terre Haute MSA less Vigo County was calculated. From that, it was possible to calculate the share of the population of the Terre Haute MSA less Vigo that belonged to Vermillion (Vermillion population/Terre Haute MSA less Vigo population). The same calculations were applied to the educational attainment numbers—Terre Haute MSA less Vigo and multiplied by the Vermillion share to give a weighted average. This calculation was performed for the 2000 data, where actual data was available for Vermillion and it proved to be quite accurate. The calculation was very accurate for population, high school diploma, associates and bachelors, and tended to over-predict for degrees beyond the bachelor's degree.

Vermillion County Educational Attainment, Ages 25 years and older

	Year 2000	% of total population	Year 2005*	% of total population	% Change 2000-2005
Total	**11,410**		**11,115**		-2.58%
High school graduate (includes equivalency)	**5,158**	45.21%	**5,083**	45.73%	-1.46%
Associate's degree	**735**	6.44%	**983**	8.85%	33.80%
Bachelor's degree	**825**	7.23%	**940**	8.46%	13.98%
Master's degree	**293**	2.57%	**312**	2.81%	6.60%
Professional school degree	**103**	0.90%	**33**	0.30%	-68.02%
Doctorate degree	**58**	0.51%	**30**	0.27%	-48.57%

Source: US Census Bureau 2000; American Community Survey 2005

* Because of data unavailability this calculation is based on estimation—see methodology above

Naval Surface Warfare Center (NSWC)- Crane

Crane (Martin County), Indiana

Background

Employing over 4,000 personnel, the Naval Surface Warfare Center (NSWC), Crane Division operates as a Defense Business Operations Fund Command and depends on its ability to efficiently and effectively provide essential services and products to customers. The Crane Division is one of five divisions of NSWC which maintains a full

spectrum research, development, acquisition, test and evaluation and support capability for surface warfare combat and weapon systems and hull, mechanical, and electrical systems.

The Crane Division is a leader in diverse and highly technical product lines such as microwave devices, acoustic sensors, small arms, microelectronic technology, as well as other products. It is also a leader in providing enhanced methods and technology in production of modern naval combat weapons systems.

Considering Crane's tenants, large contractors, and small contractors, as well as the operations of the navy itself, few organizations surpass Crane in their impact on South Central Indiana and the state overall. Crane is directly and indirectly responsible for almost 6,800 jobs in Indiana, and the over $241 million in wages associated with those jobs. It also adds over $22.2 million in tax revenues to state and local coffers.

Crane Army Ammunition Activity is a tenant activity at Crane Division, Naval Surface Warfare Center, is located on a 62,473-acre (a 100-square mile) site approximately thirty miles south of Bloomington, Indiana. This vast area includes 209 administrative and production buildings, 177 warehouses to store inert material, and 1,600 explosive magazines. The local infrastructure includes 168 miles of rail and 407 miles of road. The production, handling, and storage of munitions require specialized equipment and related facilities. The Activity maintains the only operational white phosphorous demilitarization conversion plant in North America. The technology contained in this plant allows the Activity to extract deadly white phosphorous from old munitions and convert it into relatively harmless phosphoric acid that may ultimately be used in carbonated beverages and fertilizer. X-ray equipment is used in the nondestructive, real time testing of items such as 40mm mortar rounds to ensure quality products to the warfighter. A variety of special lifting devices allows workers to easily handle objects as large as 1,000-pound bombs.

The Activity's manufacturing capabilities include the ability to produce finished items as diverse as detonators weighing only 20 grams to 40,000-pound cast shock test charges. The Activity has extensive renovation and maintenance capabilities for conventional munitions, and is the recognized center of technical expertise in the production of pyrotechnic devices including signal smoke, illuminating and infrared flares, and distress signals. The Activity is one of four Tier 1 Ammunition Storage Sites within the Department of Defense which stores war reserve ammunition to meet initial ammunition needs in the first 30 days of a conflict.

BRAC 2005 Decision

The Department of Defense recommended realigning Naval Surface Warfare Center Crane, IN, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except gun/ammo, combat system security, and energetic materials to Naval Air Weapons Station China Lake, CA. All actions would relocate technical facilities with lower overall quantitative Military Value (across Research, Development & Acquisition and Test & Evaluation) into the Integrated RDAT&E center and other receiver sites with greater quantitative Military Value.

Consolidating the Navy's air-to-air, air-to-ground, and surface launched missile RD&A, and T&E activities at China Lake, CA, would create an efficient integrated RDAT&E center. China Lake would be able to accommodate with minor modification/addition both mission and lifecycle/ sustainment functions to create synergies between these traditionally independent communities. This recommendation would enable technical synergy, and position the Department of Defense to exploit center-of-mass scientific, technical and acquisition expertise with weapons and armament Research, Development & Acquisition that resided at 10 locations into the one Integrated RDAT&E site, one specialty site, and an energetics site.

The Department of Defense would also realign Naval Surface Warfare Center Division Crane, IN, by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ. This recommendation would realign and consolidate those gun and ammunition facilities working in Weapons and Armaments (W&A) Research (R), Development & Acquisition (D&A). This realignment would result in a more robust joint center for gun and ammunition Research, Development & Acquisition at Picatinny Arsenal. This location was already the greatest concentration of military value in gun and ammunition W&A RD&A. This recommendation would include Research, Development & Acquisition activities in the Army and Navy. It would promote jointness, enable technical synergy, and position the Department of Defense to exploit center-of-mass scientific, technical, and acquisition expertise within the weapons and armament Research, Development & Acquisition community that resided at this Department of Defense specialty location.

BRAC 2005- Estimated Workforce Impact Predicted by DoD

Assuming no economic recovery, these recommendations could result in a maximum potential reduction of 796 jobs (547 direct jobs and 249 indirect jobs) over the 2006-2011 period in the Martin County, IN, economic area (9.3 percent).

Current Status

NSWC currently employs approximately 2,710 Navy Employees. 60 percent are scientists, engineers and technicians. Since January 1999, over 480 scientists have been hired. The average age of employees is 45.5. Crane Army Ammunition Activity employs 652 Army Employees.

Community Profile

Population

	Martin County		Crane Region*	
Population	**Number**	% Change	**Number**	% Change
1990	10,369		220,126	
2000	10,369	0	239,831	8.95%
2005	10,386	0.16%	242,141	0.96%

Sources: US Census Bureau; Indiana Business Research Center *Crane Region includes Daviess, Greene, Martin, Monroe, and Lawrence Counties as defined in IEDC Diversification Study.

Although 95% of the Crane base is located in Martin County, the Department of Defense identified an impacted region surrounding Crane that includes Daviess, Greene, Martin, Monroe and Lawrence Counties. Furthermore, the Indiana Economic Development Corporation also refers to this as the impacted region in the Diversification Study. Thus, the region is also identified here as an independent region for the purpose of symmetrical analysis.

Workforce

	Martin County	Crane Region*	Workforce Region 8
Total Labor Force	5,167	125,863	155,204
Employed	4,885	119,071	146,567
Unemployed	282	6,792	8,637
Unemployment Rate-October 2006	5.50%	5.40%	5.6%

Source: Indiana Department of Workforce Development - October 2006 *Crane Region includes Daviess, Greene, Martin, Monroe, and Lawrence Counties as defined in IEDC Diversification Study.

Major Employers in Martin County

Employer Name	Industry	City	Employer Size	Annual Sales (*in thousands*)
US Naval Surface Warfare Ctr	Ammunition-Except For Small Arms (Mfrs)(332993)	Crane	1,000 - 4,999	$500,000 - $999,999
United States Gypsum CO	Gypsum & Gypsum Products (Manufacturers)(327420)	Shoals	250 - 499	$100,000 - $499,999
Perfect Fit Inc	Textile-Manufacturers(999999)	Loogootee	100 - 249	$20,000 - $49,999
Stone Belt Freight Lines	Trucking(484230)	Shoals	100 - 249	$10,000 - $19,999
Buehler's Buy-Low Supermarket	Grocers-Retail(445110)	Loogootee	50 - 99	$5,000 - $9,999
Jefferson Trucking CO	Trucking-Motor Freight(484230)	Shoals	50 - 99	$5,000 - $9,999
Loogootee Nursing Ctr	Nursing & Convalescent Homes(623110)	Loogootee	50 - 99	$2,500 - $4,999
Martin County Healthcare Ctr	Nursing & Convalescent Homes(623110)	Loogootee	50 - 99	$2,500 - $4,999
Stoll's Lakeview Restaurant	Restaurants(722211)	Loogootee	50 - 99	$1,000 - $2,499

Source: Indiana Department of Workforce Development

Employment and Earnings by Industry

Employment and Earnings by Industry in 2004	Employment	Percent	Earnings ($000)	Percent	Avg. Earnings Per Job
Farm	4,267	3.00%	$67,515	1.50%	$15,823
Nonfarm	135,956	97.00%	$4,541,205	98.50%	$33,402
Private	103,660	73.90%	$3,067,463	66.60%	$29,592
Accomodation, Food Serv.	10,077	7.20%	$126,596	2.70%	$12,563
Arts, Ent., Recreation	1,902	1.40%	$16,380	0.40%	$8,612
Construction	7,873	5.60%	$255,566	5.50%	$32,461
Health Care, Social Serv.	10,665	7.60%	$422,185	9.20%	$39,586
Information	1,936	1.40%	$86,481	1.90%	$44,670
Manufacturing	15,025	10.70%	$761,077	16.50%	$50,654
Professional, Tech. Serv.	5,059	3.60%	$178,512	3.90%	$35,286
Retail Trade	15,792	11.30%	$299,033	6.50%	$18,936
Trans., Warehousing	3,162	2.30%	$100,260	2.20%	$31,708
Wholesale Trade	3,154	2.20%	$135,070	2.90%	$42,825
Other Private (not above)	24,399	17.40%	$600,942	13.00%	$24,630
Government	32,296	23.00%	$1,473,742	32.00%	$45,632

Source: US Bureau of Economic Analysis

Wages

Wage- May 2005		
Mean		
Bloomington MSA	$31,760/yr	$15.27/hr
Indiana	$34,080/yr	$16.38/hr
United States	$37,870/yr	$18.21/hr
Median		
Bloomington MSA	$25,430/yr	$12.23/hr
Indiana	$27,670/yr	$13.30/hr
United States	$29,430/yr	$14.15/hr

Source: US Bureau of Labor Statistics; Indiana Department of Workforce Development

Educational Institutions in Region 8

School
Indiana University
Indiana State University (Switz City)
Ivy Tech State College
Orange County Area Learning Center

Twin Rivers Vocational School
Oakland City University
PC Consultants
Bloomington Learning Center
Martin Community Learning Center

Source: Indiana Department of Workforce Development

Fort Wayne International Airport Air Guard Station
Fort Wayne, Indiana

Background

The Fort Wayne International Airport Air Guard Station, originally known as Baer Field, was built in 1941 as a WWII base. At the height of its use, nearly 100,000 military personnel served at the airport. After the war, the federal government sold the air station to the city of Fort Wayne and it was renamed Fort Wayne International Airport. However, it retained some of its military identity. The 122nd Fighter Wing of the Air National Guard occupied 166 acres of the airport. There were approximately 287 full-time employees at the air station, however, during the bi-monthly training sessions there could be up to 974 personnel on base.

2005 BRAC

The 2005 BRAC recommendations called for the realignment of the 122nd Fighter Wing at the Fort Wayne International Airport—transferring nine aircraft from the Hulman base in Terre Haute and fifteen aircraft from Capital Airport in Springfield, Ill, and retiring fifteen F-16s from the Fort Wayne base. Although ranked lower then the other closing bases, the Fort Wayne Air Guard Station was retained because of its solid recruiting results and its proximity to Hulman. Thus, experienced airmen are allowed to stay in Fort Wayne in order to serve the Air National Guard.

BRAC 2005 Project Workforce Impact Predicted by DoD

According to the United States Air Force, the Fort Wayne International Airport Air Guard Station will enjoy an overall gain in employment because of the recommendations from the Department of Defense. Overall, the Air Guard Station will lose 5 military personnel, but gain 62 and lose no civilian employees and gain 256—totaling a net gain of 313 employees.

Current Status

The Pentagon recommended the realignment of the Fort Wayne International Airport Air Guard Station, which would mean the addition of more than 300 jobs and would bring new aircraft to the area.

Community Profile

Population

	Allen County		**Fort Wayne MSA**	
Population Over Time	**Number**	% Change	**Number**	% Change
1990	300,836		354,435	
2000	331,849	10.31%	390,156	10.08%
2005	338,279	1.94%	395,458	1.36%

Source: US Census Bureau

* The 2005 Fort Wayne MSA includes Allen, Wells, and Whitely

Workforce

	Allen County	Fort Wayne MSA	Workforce Region 3
Total Resident Labor Force	179,272	271,132	380,512
Employed	169,837	256,747	358,761
Unemployed	9,435	14,385	21,751
Unemployment Rate	5.3	5.3	5.7
September 2006 Unemployment Rate	**4.7**	**4.7**	

Source: Indiana Department of Workforce Development

Major Employers

Employer Name	Industry	City	Employer Size	Annual Sales (*in thousands*)
Fort Wayne Orthopaedics	Clinics(621493)	Fort Wayne	1,000 - 4,999	$100,000 - $499,999
Ge CO	Motor & Generator-Manufacturers(335312)	Fort Wayne	1,000 - 4,999	$100,000 - $499,999
International Truck & Engine	Truck-Distributors(423110)	Fort Wayne	1,000 - 4,999	$1,000,000+

Itt Industries Inc	Manufacturers(339999)	Fort Wayne	1,000 - 4,999	$100,000 - $499,999
Lutheran Children's Hospital	Hospitals(622110)	Fort Wayne	1,000 - 4,999	$100,000 - $499,999
Lutheran Hospital of Indiana	Hospitals(622110)	Fort Wayne	1,000 - 4,999	$100,000 - $499,999
Parkview Health System	Hospitals(622110)	Fort Wayne	1,000 - 4,999	$100,000 - $499,999
Post Masters	Mailing & Shipping Services(541860)	Fort Wayne	1,000 - 4,999	$100,000 - $499,999
Raytheon CO	Computers-Electronic-Manufacturers(334111)	Fort Wayne	1,000 - 4,999	$100,000 - $499,999
State Development Ctr	Hospitals(622110)	Fort Wayne	1,000 - 4,999	$100,000 - $499,999
Supervalu	Grocers-Retail(445110)	Fort Wayne	1,000 - 4,999	$100,000 - $499,999
Uniroyal Goodrich Tire Mfg	Tire-Manufacturers(326211)	Woodburn	1,000 - 4,999	$500,000 - $999,999
Bae Systems Platform Solutions	Aircraft Engines-Servicing & Maintenance(488190)	Fort Wayne	500 - 999	$50,000 - $99,999
Dana Corp	Axles-Manufacturers(336399)	Fort Wayne	500 - 999	$100,000 - $499,999
Fort Wayne Newspapers	Newspapers (Publishers)(511110)	Fort Wayne	500 - 999	$50,000 - $99,999
Journal Gazette	Newspapers (Publishers)(511110)	Fort Wayne	500 - 999	$50,000 - $99,999
Meijer C Store	Grocers-Retail(445110)	Fort Wayne	500 - 999	$50,000 -

				$99,999
Mullnix Packages Inc	Plastics & Plastic Products (Mfrs)(326199)	Fort Wayne	500 - 999	$20,000 - $49,999
Norfolk Southern Railway CO	Railroads(482111)	Fort Wayne	500 - 999	$100,000 - $499,999
Parker-Hannifin Corp	Refrigerators/Freezers-Supls/Parts-Mfrs(332214)	New Haven	500 - 999	$100,000 - $499,999
Spicer Light Axle	Automobile Parts & Supplies-Mfrs(336399)	Fort Wayne	500 - 999	$100,000 - $499,999
St Joseph Hospital	Hospitals(622110)	Fort Wayne	500 - 999	$50,000 - $99,999
Wal-Mart	Department Stores(452111)	Fort Wayne	500 - 999	$50,000 - $99,999
Wise Business Forms Inc	Printers-Business Forms(323116)	Fort Wayne	500 - 999	$100,000 - $499,999

Source: Indiana Department of Workforce Development

Employment and Earnings by Industry

Employment and Earnings by Industry in 2004 (NAICS)	Employment	Pct Dist. in Region	Earnings ($000)	Pct Dist. In Region	Avg. Earnings Per Job
Farm	6,529	2.0%	$134,055	1.1%	$20,532
Nonfarm	320,898	98.0%	$12,346,529	98.9%	$38,475
Private	291,988	89.2%	$11,076,708	88.8%	$37,935

Accomodation, Food Serv.	21,911	6.7%	$285,130	2.3%	$13,013
Arts, Ent., Recreation	4,240	1.3%	$52,293	0.4%	$12,333
Construction	19,685	6.0%	$784,025	6.3%	$39,829
Health Care, Social Serv.	32,332	9.9%	$1,422,068	11.4%	$43,983
Information	4,708	1.4%	$323,157	2.6%	$68,640
Manufacturing	59,057	18.0%	$3,437,474	27.5%	$58,206
Professional, Tech. Serv.	11,199	3.4%	$499,245	4.0%	$44,579
Retail Trade	37,396	11.4%	$754,606	6.0%	$20,179
Trans., Warehousing	11,543	3.5%	$601,129	4.8%	$52,077
Wholesale Trade	14,516	4.4%	$743,588	6.0%	$51,225
Other Private (not above)	65,269	19.9%	$1,877,081	15.0%	$28,759
Government	28,910	8.8%	$1,269,821	10.2%	$43,923

Source: US Bureau of Economic Analysis

Occupation by Employment—Top Ten Occupations in Fort Wayne Metropolitan Area by Employment

Occupation	Employment	Average Annual Wage
Retail Salespersons	6,330	$22,350
Combined Food Preparation and Serving Workers, Including Fast Food	5,520	$15,360
Cashiers	5,300	$15,780
Team Assemblers	4,870	$34,910
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	4,310	$23,370
Registered Nurses	4,280	$48,190
Office Clerks, General	3,520	$22,580
Laborers and Freight, Stock, and Material Movers, Hand	3,500	$22,700
Waiters and Waitresses	3,310	$14,670
Truck Drivers, Heavy and Tractor-Trailer	3,220	$39,650

2005			2000			% Change 2000-2005
Occupation	**# Employed**	**Ave. Annual Salary**	**Occupation**	**# Employed**	**Ave. Annual Salary**	
Retail Salespersons	**6,330**	**$22,350**	Retail Salespersons	7,410	$19,750	-14.57%
Combined Food Preparation and Serving Workers, Including Fast Food	**5,520**	**$15,360**	Combined Food Preparation and Serving Workers, Including Fast Food	3,120	$13,510	76.92%
Cashiers	**5,300**	**$15,780**	Cashiers	6,430	$15,020	-17.57%
Team Assemblers	**4,870**	**$34,910**	Team Assemblers	7,100	$22,190	-31.41%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	**4,310**	**$23,370**	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	4,130	$19,760	4.36%
Registered Nurses	**4,280**	**$48,190**	Registered Nurses	4,110	$40,270	4.14%
Office Clerks, General	**3,520**	**$22,580**	Office Clerks, General	4,130	$20,920	-14.77%
Laborers and Freight, Stock, and Material Movers, Hand	**3,500**	**$22,700**	Laborers and Freight, Stock, and Material Movers, Hand	4,830	$20,390	-27.54%
Waiters and Waitresses	**3,310**	**$14,670**	Waiters and Waitresses	4,370	$13,600	-24.26%

Truck Drivers, Heavy and Tractor-Trailer	**3,220**	**$39,650**	Truck Drivers, Heavy and Tractor-Trailer	6,280	$35,480	-48.73%

Change in Employment by Occupation in the Fort Wayne Metropolitan Area (2000-2005)

Occupation by Wages—Top Ten Occupations in Fort Wayne Metropolitan Area by Average Annual Wage

Occupation	Employment	Average Annual Wage
Surgeons	150	$193,550
Oral and Maxillofacial Surgeons	80	$184,150
Family and General Practitioners	N/A	$160,700
Chief Executives	520	$146,900
Physicians and Surgeons, All Other	N/A	$113,460
Securities, Commodities, and Financial Services Sales Agents	210	$107,830
Health Diagnosing and Treating Practitioners, All Other	250	$103,860
Chiropractors	40	$96,940
Engineering Managers	210	$89,360
General and Operations Managers	2,340	$88,870

Source: Bureau of Labor Statistics

Wages

Wages - May 2005	
Mean	
Fort Wayne MSA	$16.44/hr, $34,190/yr
Ind.	$16.38/hr, $34,080/yr
U.S.	$18.21/hr, $37,870/yr
Median	
Fort Wayne MSA	$13.45/hr, $27,970/yr
Ind.	$13.30/hr, $27,670/yr
U.S.	$14.15/hr, $29,430/yr

Source: US Bureau of Labor and Statistics and

Indiana Dept. of Workforce Development

Educational Attainment

Fort Wayne Metropolitan Area Educational Attainment, Ages 25 years and older

	2000		2005		% Change 2000-2005
Total	**316,575**		**251,257**		-20.63%
High school graduate (includes equivalency)	**116,184**	36.70%	**83,042**	33.05%	-28.53%
Associate's degree	**23,868**	7.54%	**26,547**	10.57%	11.22%
Bachelor's degree	**40,188**	12.69%	**38,134**	15.18%	-5.11%
Master's degree	**15,560**	4.92%	**13,512**	5.38%	-13.16%
Professional school degree	**4,263**	1.35%	**3,928**	1.56%	-7.86%
Doctorate degree	**1346**	0.43%	**1867**	0.74%	38.71%

Source: US Census Bureau

Major Institutions in Region 3

Institution
Indiana University Purdue University of Fort Wayne (IPFW)
University of St. Francis
Indiana Institute of Technology
Taylor University
Ivy Tech Community College – Northeast
Anthis Career Center
International Business College
Huntington College
Manchester College
Brown Mackie College
Indiana Wesleyan University
Tri-State University

Source: Indiana Department of Workforce Development

Allen County Educational Attainment, Ages 25 years and older

	2000		2005		% Change 2000-2005
Total	**208,769**		**213,009**		2.03%
High school graduate (includes equivalency)	**66,688**	31.94%	**66,043**	31.00%	-0.97%
Associate's degree	**16,907**	8.10%	**23,046**	10.82%	36.31%
Bachelor's degree	**31,229**	14.96%	**34,698**	16.29%	11.11%
Master's degree	**11,651**	5.58%	**11,696**	5.49%	0.39%
Professional school degree	**3,407**	1.63%	**3,558**	1.67%	4.43%
Doctorate degree	**1105**	0.53%	**1758**	0.83%	59.10%

Source: US Census Bureau

Lawrence DFAS Facility
Lawrence, Indiana

Background

DFAS-Indianapolis was established in 1991 after the closure of Fort Harrison and has played an integral part in transforming DOD's accounting, military pay, travel pay and commercial pay support services for the nation's military personnel, civilians and retirees.

With 3,000 employees, DFAS-Indianapolis currently has the largest number of employees of any DFAS facility in the country and the greatest capacity for growth. It oversees 40 percent of DOD's network including eight smaller DFAS facilities, disbursing more than $39 billion annually and providing services to 1.9 million people.

2005 BRAC

Recommendation was made to realign DFAS centers and add 3,495 jobs to DFAS- Lawrence

Current Status

Currently, over 3,000 people are employed at DFAS. In January 2006, 800 employees were hired. Out of that number, 80% were hired locally and 20% were transferred in from other facilities.

Community Profile

Population

	Marion County		**Indy MSA**	
Population Over Time	**Number**	% Change	**Number**	% Change
1990	797,159		1,294,217	
2000	860,454	7.94%	1,525,104	17.84%
2005	844,187	-1.89%	1,608,730	5.48%

Source: US Census Bureau

* The Indianapolis MSA includes Boone, Brown, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Putnam, and Shelby

Workforce

Labor Force in 2005	Marion County	Indianapolis MSA	Workforce Group 5
Total Resident Labor Force	465,934	941,858	449,842
Employed	439,848	894,941	430,654
Unemployed	26,086	46,917	19,188
Unemployment Rate	5.6	5.0	4.3
September 2006 Unemployment Rate	**4.9**	**4.4**	**3.7**

Source: Indiana Department of Workforce Development

Major Employers in Marion County

Employer Name	Industry	City	Employer Size	Annual Sales (*in thousands*)
Allison Transmissions	Data Processing Service(518210)	Indianapolis	5,000 - 9,999	$500,000 - $999,999
Clarian Health Partners Inc	Hospitals(622110)	Indianapolis	5,000 - 9,999	$500,000 - $999,999
Eli Lilly & CO	Physicians & Surgeons Equip	Indianapolis	5,000 -	$1,000,000+

	& Supls-Mfrs(339112)		9,999	
Methodist Hospital	Hospitals(622110)	Indianapolis	5,000 - 9,999	$500,000 - $999,999
St Vincent Hospital & Health	Hospitals(622110)	Indianapolis	5,000 - 9,999	$500,000 - $999,999
Amtrak	Government-Railroads Line-Haul Operators(482111)	Beech Grove	1,000 - 4,999	$100,000 - $499,999
Brylane	Telemarketing Services(561422)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
Community Health Network	Hospitals(622110)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
Community Hospital North	Hospitals(622110)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
Covance Central Lab Svc	Physicians & Surgeons(621111)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
Covance Inc	Laboratories-Medical(621511)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
Hewlett-Packard CO	Computers-Wholesale(423430)	Indianapolis	1,000 - 4,999	$1,000,000+
International Truck & Engine	Engines-Diesel-Manufacturers(333618)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
King-Size	Men's Clothing & Furnishings-Retail(448110)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
Lane Bryant	Women's Apparel-Retail(448120)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
Metal Fabricating Div	Automobile Body-Manufacturers(336111)	Indianapolis	1,000 - 4,999	$1,000,000+

On Demand Staffing	Employment Agencies & Opportunities(561310)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
Raytheon Technical Svc CO	Electronic Equipment & Supplies-Repair(811211)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
Redcats USA Finance	Mail Order & Catalog Shopping(454113)	Indianapolis	1,000 - 4,999	$1,000,000+
Roche Diagnostics	Physicians & Surgeons Equip & Supls-Mfrs(339112)	Indianapolis	1,000 - 4,999	$500,000 - $999,999
Securitas Security Svc USA Inc	Security Guard & Patrol Service(561612)	Indianapolis	1,000 - 4,999	$10,000 - $19,999
St Francis Healthcare Fndtn	Hospitals(622110)	Beech Grove	1,000 - 4,999	$100,000 - $499,999
St Francis Hospital & Health	Hospitals(622110)	Beech Grove	1,000 - 4,999	$100,000 - $499,999
State Life Insurance CO	Insurance(524210)	Indianapolis	1,000 - 4,999	$100,000 - $499,999
Utc/Carrier	Air Conditioning/Htg/Refrig Equip (Mfrs)(333415)	Indianapolis	1,000 - 4,999	$500,000 - $999,999
Visteon Corp	Automobile Parts & Supplies-Mfrs(336399)	Indianapolis	1,000 - 4,999	$500,000 - $999,999
Wishard Health Services	Hospitals(622110)	Indianapolis	1,000 - 4,999	$100,000 - $499,999

Source: Indiana Department of Workforce Development

Employment and Earnings by Industry

Employment and Earnings by Industry in 2004 (NAICS)	Employment	Pct Dist. in Region	Earnings ($000)	Pct Dist. In Region	Avg. Earnings Per Job
Farm	7,644	0.7%	$164,488	0.3%	$21,519
Nonfarm	1,116,189	99.3%	$50,532,025	99.7%	$45,272
Private	986,948	87.8%	$44,124,851	87.0%	$44,708
Accomodation, Food Serv.	78,986	7.0%	$1,302,598	2.6%	$16,492
Arts, Ent., Recreation	22,233	2.0%	$709,172	1.4%	$31,897
Construction	71,006	6.3%	$3,704,133	7.3%	$52,166
Health Care, Social Serv.	106,341	9.5%	$4,700,393	9.3%	$44,201
Information	19,528	1.7%	$1,138,811	2.2%	$58,317
Manufacturing	110,749	9.9%	$9,240,026	18.2%	$83,432
Professional, Tech. Serv.	60,351	5.4%	$3,622,429	7.1%	$60,023
Retail Trade	125,066	11.1%	$3,278,656	6.5%	$26,215
Trans., Warehousing	49,876	4.4%	$2,135,702	4.2%	$42,820
Wholesale Trade	48,587	4.3%	$3,050,392	6.0%	$62,782

Other Private (not above)	280,516	25.0%	$10,815,047	21.3%	$38,554
Government	129,241	11.5%	$6,407,174	12.6%	$49,575

Source: US Bureau of Economic Analysis

Occupation by Employment—Top Ten Occupations in Indianapolis Metropolitan Area

Occupation	Employment	Average Annual Wage
Retail Salespersons	26,070	$23,190
Laborers and Freight, Stock, and Material Movers, Hand	23,270	$23,640
Combined Food Preparation and Serving Workers, Including Fast Food	21,370	$15,500
Cashiers	19,880	$16,860
Registered Nurses	17,280	$53,350
Office Clerks, General	15,240	$24,750
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	15,020	$19,840
Secretaries, Except Legal, Medical, and Executive	14,870	$28,030
Waiters and Waitresses	14,720	$14,560
Truck Drivers, Heavy and Tractor-Trailer	14,070	$39,230

Source: Bureau of Labor Statistics

Change in Employment by Occupation in the Indianapolis Metropolitan Area (2000-2005)

2005			2000			% Change 2000-2005
Retail Salespersons	**26,070**	**$23,190**	Retail Salespersons	22,740	$21,470	14.64%
Laborers and Freight, Stock, and Material Movers, Hand	**23,270**	**$23,640**	Laborers and Freight, Stock, and Material Movers, Hand	15,760	$23,220	47.65%
Combined Food Preparation and Serving Workers, Including Fast Food	**21,370**	**$15,500**	Combined Food Preparation and Serving Workers, Including Fast Food	13,400	$14,440	59.48%
Cashiers	**19,880**	**$16,860**	Cashiers	22,620	$15,310	-12.11%
Registered Nurses	**17,280**	**$53,350**	Registered Nurses	16,160	$45,080	6.93%
Office Clerks, General	**15,240**	**$24,750**	Office Clerks, General	12,640	$20,730	20.57%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	**15,020**	**$19,840**	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	12,400	$19,410	21.13%
Secretaries, Except Legal, Medical, and Executive	**14,870**	**$28,030**	Secretaries, Except Legal, Medical, and Executive	10,940	$23,710	35.92%

Waiters and Waitresses	**14,720**	**$14,560**	Waiters and Waitresses	12,530	$13,770	17.48%
Truck Drivers, Heavy and Tractor-Trailer	**14,070**	**$39,230**	Truck Drivers, Heavy and Tractor-Trailer	14,220	$35,640	-1.05%

Source: Bureau of Labor Statistics

Top Ten Occupations by Average Annual Wage in Indianapolis Metropolitan Area

Occupation	Employment	Average Annual Wage
Surgeons	670	$192,980
Obstetricians and Gynecologists	50	$171,790
Psychiatrists	80	$154,230
Chief Executives	1,860	$149,820
Health Diagnosing and Treating Practitioners, All Other	380	$149,050
Physicians and Surgeons, All Other	510	$145,660
Family and General Practitioners	670	$134,440
Internists, General	550	$131,540
Dentists, General	720	$127,890
Orthotists and Prosthetists	N/A	$111,270

Source: Bureau of Labor Statistics

Average Wage

Wages - May 2005	
Mean	
Indianapolis MSA	$17.78/hr, $36,970/yr
Ind.	$16.38/hr, $34,080/yr
U.S.	$18.21/hr, $37,870/yr
Median	
Indianapolis MSA	$14.24/hr, $29,620/yr
Ind.	$13.30/hr, $27,670/yr
U.S.	$14.15/hr, $29,430/yr

Indianapolis Metropolitan Area Educational Attainment, Ages 25 years and older

	2000		2005		% Change 2000-2005
Total	**553,459**		**543,827**		-1.74%
High school graduate (includes equivalency)	**163,991**	29.63%	**162,155**	29.82%	-1.12%
Associate's	**30,860**	5.58%	**36,413**	6.70%	17.99%

degree					
Bachelor's degree	**92,419**	16.70%	**94,249**	17.33%	1.98%
Master's degree	**31,038**	5.61%	**33,385**	6.14%	7.56%
Professional school degree	**11,964**	2.16%	**10,648**	1.96%	-11.00%
Doctorate degree	**5129**	0.93%	**6225**	1.14%	21.37%

Marion County Educational Attainment, Ages 25 years and older

	2000		**2005**		**% Change 2000-2005**
Total	**553,459**		**543,827**		-1.74%
High school graduate (includes equivalency)	**163,991**	29.63%	**162,155**	29.82%	-1.12%
Associate's degree	**30,860**	5.58%	**36,413**	6.70%	17.99%
Bachelor's degree	**92,419**	16.70%	**94,249**	17.33%	1.98%
Master's degree	**31,038**	5.61%	**33,385**	6.14%	7.56%
Professional school degree	**11,964**	2.16%	**10,648**	1.96%	-11.00%

Doctorate degree	**5129**	0.93%	**6225**	1.14%	21.37%

Source: American Community Survey

Major Institutions in Region 5

Institution
Indiana University-Purdue University of Indianapolis
Indiana University School of Medicine
Butler University
Marian College
Ivy Tech Community College
ITT Educational Services
Lincoln Technical Institute
Martin University
C1 Professional Training Center
Indiana Business College

Source: Indiana Workforce Development

FEDERAL R&D OBLIGATIONS TO UNIVERSITIES AND COLLEGES BY STATE, FY 2000–2004

Source: *Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, FY 2004,* Division of Science Resources Statistics, National Science Foundation, http://www.nsf.gov/statistics/nsf07316/ (Table 5)

Note: Total includes American Samoa, Guam, Trust Territory of the Pacific Islands, and the Virgin Islands. Dollars are in thousands.

To download this data in Microsoft Excel format, **click here**.
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	2000		2001		2002		2003		2004		5-Year Change	
State	**$**	**Rank**	**$**	**Rank**	**$**	**Rank**	**$**	**Rank**	**$**	**Rank**	**%**	**Rank**
Alabama	280,642	20	311,538	19	361,373	19	343,766	21	326,075	22	16.2	50
Alaska	50,961	43	72,694	40	70,385	42	74,250	43	77,972	42	53	7
Arizona	214,768	25	226,765	26	249,994	25	260,208	26	290,624	24	35.3	33
Arkansas	64,331	39	68,234	42	73,232	41	75,952	41	83,045	40	29.1	42
California	2,517,086	1	2,697,229	1	2,951,472	1	3,193,421	1	3,458,540	1	37.4	26
Colorado	441,435	12	476,803	13	494,898	14	523,145	14	569,159	12	28.9	43
Connecticut	330,699	17	360,442	17	405,423	17	439,972	17	460,469	17	39.2	22
Delaware	46,158	45	44,173	46	54,152	47	67,016	45	59,642	47	29.2	41
District of Columbia	161,206	28	204,379	27	205,656	28	172,342	30	188,247	29	16.8	49
Florida	415,928	13	483,123	12	531,146	12	541,132	13	535,443	14	28.7	44

Georgia	340,688	16	398,573	15	445,152	15	483,676	15	508,349	15	49.2	9
Hawaii	81,332	37	101,153	36	132,132	33	146,697	33	169,376	32	108.3	1
Idaho	28,560	49	27,900	50	35,758	49	42,471	49	38,222	49	33.8	36
Illinois	617,106	8	713,052	8	745,840	8	875,051	8	893,052	8	44.7	14
Indiana	248,253	22	267,126	23	283,542	23	307,368	23	335,397	21	35.1	34
Iowa	194,940	26	234,135	25	243,288	26	255,717	27	274,304	26	40.7	19
Kansas	96,928	35	126,346	34	115,422	36	131,630	35	132,237	36	36.4	29
Kentucky	112,669	33	136,101	32	153,054	30	186,334	29	181,254	30	60.9	5
Louisiana	141,723	29	144,601	29	177,833	29	202,832	28	210,720	28	48.9	11
Maine	25,228	50	27,491	51	25,480	50	30,326	50	25,604	51	1.5	52
Maryland	1,051,387	4	1,122,508	5	1,296,852	4	1,294,617	5	1,382,909	4	31.5	38
Massachusetts	998,935	5	1,072,847	6	1,147,940	6	1,220,700	6	1,342,045	6	34.4	35
Michigan	532,619	9	606,597	9	638,682	9	714,343	9	729,710	9	37	27
Minnesota	279,295	21	277,441	22	296,241	22	316,924	22	335,851	20	20.3	47
Mississippi	116,722	32	127,392	33	147,541	31	147,875	32	162,127	34	38.9	23
Missouri	403,780	14	439,070	14	510,129	13	550,507	12	539,541	13	33.6	37
Montana	47,095	44	64,636	43	57,210	45	75,051	42	68,158	44	44.7	14
Nebraska	62,822	40	86,662	38	91,398	39	105,520	39	116,334	37	85.2	2

Nevada	54,548	42	57,590	44	60,070	43	73,725	44	74,107	43	35.9	31
New Hampshire	98,809	34	118,743	35	125,781	35	139,984	34	141,066	35	42.8	17
New Jersey	285,633	19	290,759	20	319,593	21	362,230	20	301,721	23	5.6	51
New Mexico	120,935	31	136,866	31	131,066	34	125,084	36	169,542	31	40.2	20
New York	1,410,518	2	1,580,912	2	1,682,187	2	1,857,646	2	1,948,714	2	38.2	24
North Carolina	636,881	7	766,285	7	841,951	7	938,818	7	948,086	7	48.9	10
North Dakota	33,133	48	35,275	48	45,825	48	58,392	47	60,136	46	81.5	3
Ohio	495,168	10	542,781	10	594,046	10	603,563	11	672,900	10	35.9	30
Oklahoma	74,315	38	80,105	39	102,234	38	114,872	37	105,192	39	41.6	18
Oregon	224,744	24	251,112	24	261,171	24	288,553	24	286,895	25	27.7	45
Pennsylvania	1,082,830	3	1,239,294	3	1,378,756	3	1,417,348	3	1,489,570	3	37.6	25
Puerto Rico	45,450	46	52,648	45	57,302	44	61,445	46	67,293	45	48.1	12
Rhode Island	86,536	36	92,988	37	104,329	37	114,025	38	112,695	38	30.2	40
South Carolina	121,398	30	144,460	30	147,193	32	167,329	31	165,703	33	36.5	28
South Dakota	21,590	51	22,503	52	20,898	51	28,047	51	33,206	50	53.8	6
Tennessee	236,778	23	287,048	21	339,492	20	372,788	19	411,875	19	73.9	4
Texas	958,185	6	1,147,752	4	1,222,324	5	1,385,229	4	1,342,911	5	40.2	21
Utah	183,107	27	189,282	28	230,906	27	260,661	25	240,067	27	31.1	39

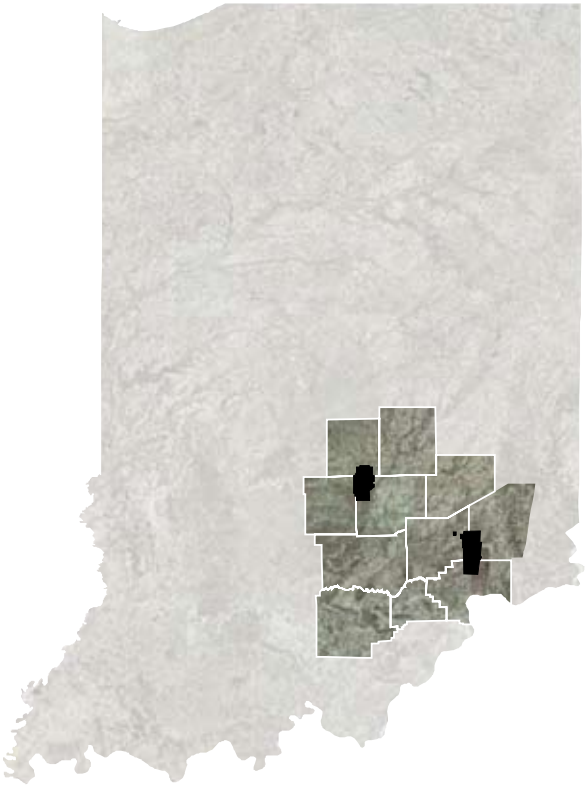
Vermont	56,766	41	69,034	41	75,235	40	84,524	40	81,709	41	43.9	16
Virginia	289,503	18	356,664	18	377,659	18	397,947	18	441,042	18	52.3	8
Washington	444,763	11	535,764	11	584,402	11	628,324	10	652,589	11	46.7	13
West Virginia	42,748	47	43,771	47	54,185	46	42,532	48	53,995	48	26.3	46
Wisconsin	355,986	15	392,093	16	432,200	16	471,861	16	482,815	16	35.6	32
Wyoming	20,501	52	32,058	49	18,212	52	23,437	52	24,481	52	19.4	48
U.S. Total	**17,289,808**		**19,390,159**		**21,154,646**		**22,804,253**		**23,810,839**		**37.7**	

State Science & Technology Institute

APPENDIX VIII

I. Introduction

Figure 1. the Muscatatuck region



The recent investments in the Muscatatuck Urban Training Center offer the promise of increased economic vitality for the local region. They also hold the threat of strained local resources in a traditionally rural area. This report arms the reader with a better understanding of local economic and infrastructure conditions.

Properly understood, Muscatatuck is part of a larger, regional homeland security and defense capacity being developed in southeastern Indiana at three sites:

- Muscatatuck Urban Training Center
- Camp Atterbury
- Jefferson Proving Ground

The growing importance of these facilities—especially Muscatatuck—suggests a regional analysis of ten counties:

- Bartholomew
- Brown
- Decatur
- Jackson
- Jefferson
- Jennings
- Johnson
- Ripley
- Scott
- Shelby
- Washington

For the remainder of this report, these eleven counties will be referred to as the "Muscatatuck region." Data and research is presented for each county separately and as a group. That analysis begins on the following page.

II. Population

the muscatatuck region

total population

Figure 2 shows the incredible variation of growth in the region. The more southern and rural counties in the region are growing slowly. Johnson County, as a major recipient of Indianapolis-led population growth, is one of the fastest growing counties in the state. Its influence creates robust growth for the whole region. However, the proximity of Johnson County residents to the job markets of Greater Indianapolis may dampen the extent to which they can be viewed as a labor resource for the Muscatatuck facility.

Year 2000 population = 446,901

Year 2006 population = 474,952

Total 2000-06 growth rate = 6.3% (Indiana's rate = 3.8%)

Projected 2010 population = 485,686

Figure 2. 2000-06 population growth by county

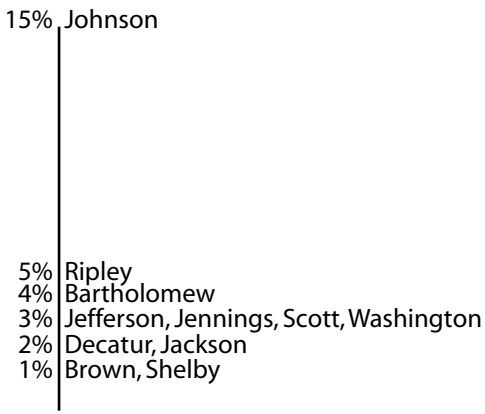


Figure 3 shows a further critical aspect of the region's population. Johnson County is by far the least rural, with only I-65 associated with a clear pattern of city and town development. Even then, only Greenwood and Columbus could be considered cities in any true sense and the population centers of Johnson County the only ones that are growing appreciably.

Figure 3. 2005 population and 2000-05 growth of the region's largest towns

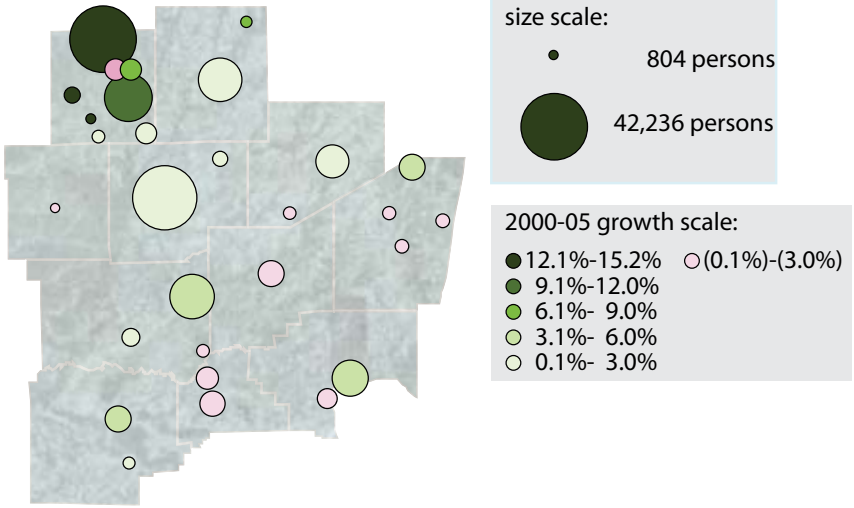
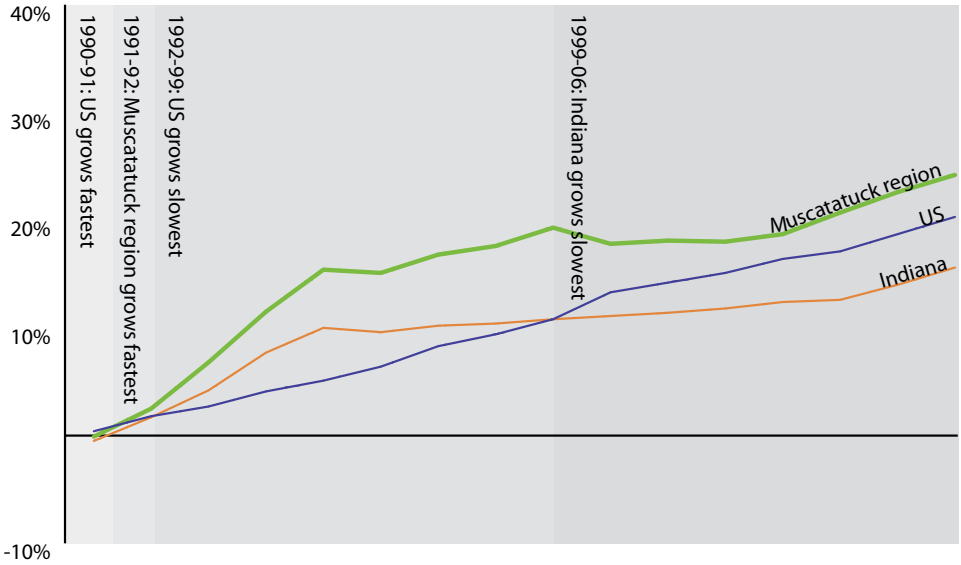


Figure 4. cumulative labor force growth 1990-2006



labor force

Despite the population growth cited to the left, the region has enjoyed higher cumulative labor force growth since 1990. To be sure, the more recent period is associated a more difficult environment. The late 1990's and early part of this decade were associated declining or stagnant growth. Since then, growth rates have approximated the state and nation.

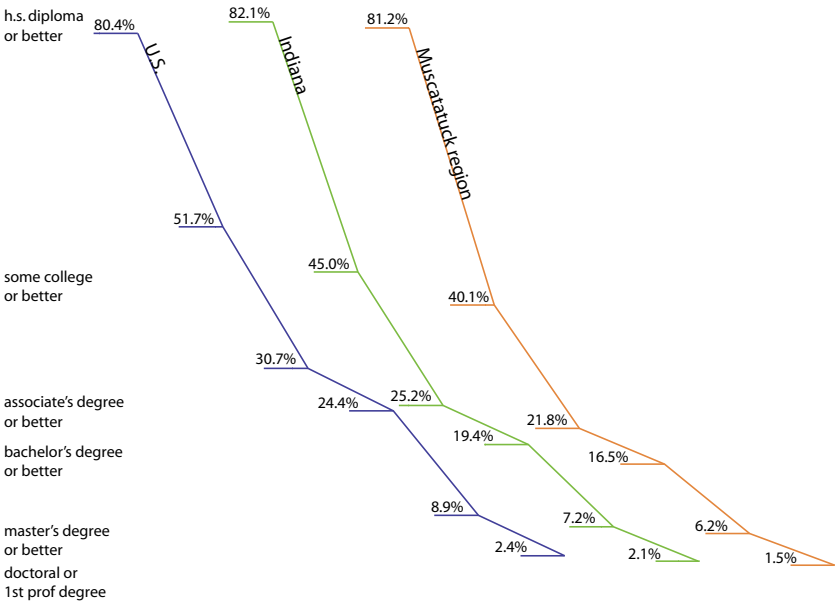
educational attainment

Unfortunately, the small size of many of the region's counties prevent their inclusion in the American Community Survey's dataset. As a result, the most recent educational attainment for the whole region is from the Year 2000.

However, to the extent that the main thrust of Figure 4 is the significant gap between the educational attainment profiles of the region and the State, it is unlikely that much has changed since 2000. The rapid population growth of Johnson County will have improved its profile but the more rural areas are likely to have stayed the same or gotten worse in the last seven years.

Figure 4 shows a "cascading" educational attainment profile in which each level includes the percentage achieving that level, as well as the percentage that achieved a higher level. For example, 21.8% of the Muscatatuck region's 25+ population had earned an associate's degree or a higher degree.

Figure 5. cascading 25+ educational attainment of the Muscatatuck region relative to Indiana



The sub-set graph in Figure 4 helps clarify the Year 2000 gap. It shows the ratio between the percentage at each attainment level in Indiana and the percentage at each attainment level in the Muscatatuck region. As the graph shows, the share of the regional population with a high school diploma is roughly on par with the State. The percentage with college experience is quite a bit less, with a particular difference in the percentage with a doctoral or first professional degree.

Total 25+ high school diploma holders: 235,994

Total 25+ with post-secondary experience: 116,529

Total 25+ with an associate's degree or better: 63,257

Total 25+ with a bachelor's degree or better: 47,868

Total 25+ with a master's degree or better: 17,976

Total 25+ with a doctoral or first professional degree: 4,267

industry

As figure 6 shows, the region is much more manufacturing intense than the nation and even state as a whole. This comes at the expense of lower employment in the management of companies and enterprises, etc. category (generally the highest paying service industries); the healthcare, social services, etc. category (generally the second highest paying service industries); and the real estate, rental & leasing, etc. category of industries.

In terms of growth, the region diverges significantly from the state and nation. It has been much harder hit in the goods-producing industries. Is growing more quickly in the healthcare, etc. category and is growing signicantly more rapidly in the real estate, etc. category of industries.

Figure 6. percentage of total employment, Q2 2006 and rate of growth by industry group, Q2 2001-Q2 2006

	US	IN	region
share of total			
construction, utilities, mining, farming, forestry, & fishing	7.8%	6.5%	6.5%
manufacturing, transportation, wholesale trade & warehousing	18.9%	28.3%	34.4%
mgmt of companies & enterpr., infor., fin. & insur., prof. & tech. services	13.7%	9.2%	6.6%
healthcare, social services, educational services & government	26.6%	25.0%	22.7%
retail trade, arts, entertainment, recreation, accomodation & food services	21.6%	21.2%	21.7%
real estate, rental & leasing, administrative & waste services, & other services	11.4%	9.9%	8.1%
growth			
construction, utilities, mining, farming, forestry, & fishing	7.9%	0.8%	- 4.1%
manufacturing, transportation, wholesale trade & warehousing	- 9.5%	- 6.9%	- 9.2%
mgmt of companies & enterpr., infor., fin. & insur., prof. & tech. services	1.5%	- 1.5%	1.1%
healthcare, social services, educational services & government	8.2%	7.5%	11.2%
retail trade, arts, entertainment, recreation, accomodation & food services	4.5%	- 1.5%	3.9%
real estate, rental & leasing, administrative & waste services, & other services	4.5%	7.5%	20.9%
total	**2.7%**	**0.3%**	**1.7%**

net migration

In all, the region experienced a positive net migration relative to its surrounding Indiana counties between 1995 and 2000, meaning the region drew more population from those counties than it sent to them. Much of this was due to suburban movements away from Marion County, as Figure 5 shows.

total net migration to region = 13,916
net migration from border counties = 6,282
intra-migration within region = 18,188

Figure 7. surrounding Indiana counties' net migration levels with the Muscatatuck region, 1995-2000

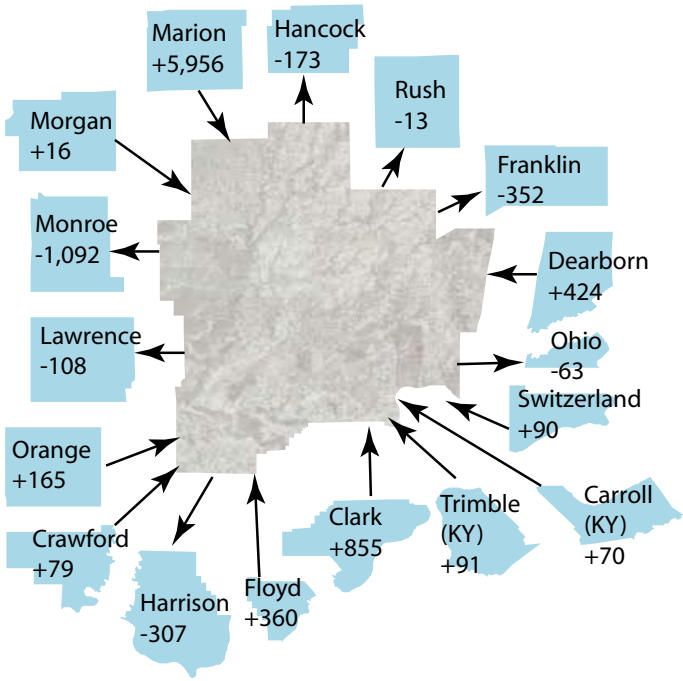


Figure 8. Total road mileage

Indiana	93,609
Bartholomew	1,057
Brown	455
Decatur	810
Jackson	1,024
Jefferson	742
Jennings	778
Johnson	985
Scott	453
Shelby	1,026
Washington	942
region total	**8,272**

infrastructure: roads

There are three major interstates that run through the region, all of which originate in Indianapolis and two that connect to two nearby metropolitan regions, Louisville and Cincinnati. Interstate 69 begins in Indianapolis and only runs through a small Northwest corner of Johnson County before continuing South through Morgan and Monroe Counties on the Westside of the region. Interstate 65 originates in Indianapolis and travels south to Louisville, running through Johnson, Bartholomew, and Scott Counties. Interstate 74, also originates in Indianapolis and travels East through Shelby and Decatur Counties towards Cincinnati.

In 2000, the region held 8.84% of the road mileage in the state.

Through 2015, the region is slated to undergo more than $174 million worth of new road construction under the Major Moves Initiative.

Figure 9. Major Moves planned construction

Route Description	Start	Estimated Cost
I 65 I-65 Interchange with SR 58	2010	$ 6,633,348
SR 46 State St from Marr Rd to Mapleton/Pence St	2008	$ 3,940,556
US 31 From CR 50N 1.48 miles S SR 46 to 2.46 miles N of SR 46	2010	$ 23,638,841
I 65 At SR 11	2011	$ 1,248,276
US 50 From US 31 to West UAB of North Vernon	2014	$ 20,759,781
SR 250 From SR 7 To US 421	2011	$ 22,843,442
SR 62 From SR 56 E jct to bridge over Big Clifty Creek	2009	$ 11,571,216
US 421 Madison-Milton Bridge	2012	$ 10,000,000
US 50 From West UAB of North Vernon to East UAB of North Vernon	2015	$ 27,216,073
I 65 Just south of the Main Street/Greenwood Road interchange	2006	$ 405,000
SR 135 From Stones Crossing Rd (CR 700N) to CR 850N	2010	$ 10,733,963
SR 135 From SR 144 to Stones Crossing Rd (CR 700N)	2012	$ 24,934,928
SR 60 From SR 56 (E of Salem at Quaker Rd) S on New Alignment to SR 60	2009	$ 32,358,620
region total:		**$174,275,987**

infrastructure: railroads & airports

All of the region's counties have at least one railroad line running through the county. There are six different lines running through the counties—Indiana Railroad (INRD), CSX Transportation (CSX), Central Railroad of Indiana (CIND), CPMA, and LI.

There are ten public use airports located throughout the region. Brown County is the only county without an airport.

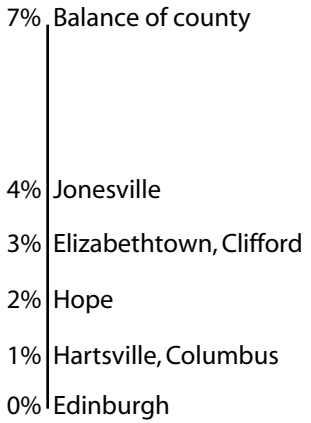
Figure 10. railroads

Bartholomew	LI
Brown	INRD
Decatur	CIND
Jackson	CSX
Jackson	LI
Jefferson	CPMA
Jennings	CSX
Jennings	CPMA
Johnson	INRD
Johnson	LI
Scott	LI
Shelby	CSX to CIND
Washington	CSX

Figure 11. airports

Bartholomew	Columbus Municipal
Johnson	Franklin Flying Field
Decatur	Greensburg- Decatur County
Jefferson	Hanover - Lee Bottom
Jefferson	Madison Municipal
Jennings	North Vernon
Washington	Salem Municipal
Scott	Scottsburg
Jackson	Seymour-Freeman Municipal
Shelby	Shelbyville Municipal

Figure 12. 2000-05 population growth by city or town



bartholomew county

total population

Bartholomew County's population growth is just slightly higher than Indiana's: 4.2% versus 4.8%. As Figure 6 shows, the fastest growth is occurring outside the boundaries of traditional cities and towns. This reflects two trends. One is the major metropolitan sprawl associated with Indianapolis. The second is a nationally prevelant "mini-sprawl" that sees sub-division growth just beyond the legal edge of smaller cities and towns.

Year 2000 population = 71,435

Year 2006 population = 74,444

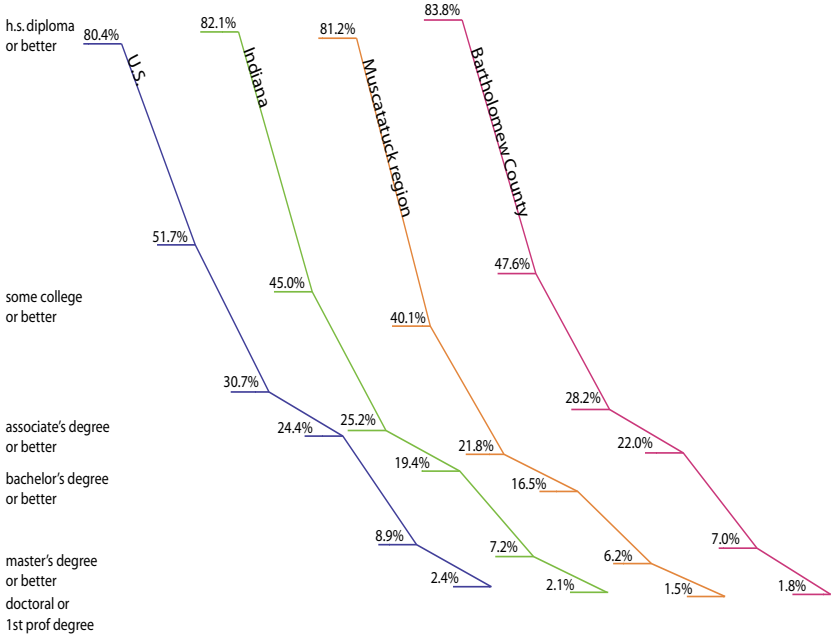
Total 2000-06 growth rate = 4.2% (Indiana's rate = 3.8%)

Projected 2010 population = 71,257

educational attainment

Bartholomew County has a higher level of educational attainment than both the region and the state. This is especially true for the college-educated. For example, the percentage of the 25+ population with a bachelor's degree in Bartholomew County is 22.03%, while the region and the state are below 20%. Bartholomew County only lags behind the state in the percentage of professional and doctoral degrees in the population.

Figure 13. cascading 25+ educational attainment of Bartholomew County relative to the region and Indiana



Total 25+ without a high school diploma: 7,640

Total 25+ high school diploma holders: 39,469

Total 25+ with post-secondary experience: 22,431

Total 25+ with an associate's degree or better: 13,304

Total 25+ with a bachelor's degree or better: 10,379

Total 25+ with a master's degree or better: 3,963

Total 25+ with a doctoral or first professional degree: 845

Figure 14. net migration with Muscatatuck region counties, 1995-2000

Brown	– 56
Decatur	+278
Jackson	–139
Jefferson	+106
Jennings	–517
Johnson	–304
Ripley	+ 64
Scott	– 55
Shelby	+ 68
Washington	0

net migration

Between 1995 and 2000, Bartholomew County was a net exporter of people to the larger Muscatatuck region. This was largely a result of significant net movements west (Jennings County) and toward Indianapolis (Johnson County).

net migration = -244

net migration from bordering counties = -670

net migration with Muscatatuck region = -555

brown county

total population

Brown County is the smallest in the entire region. It has also, as shown in Figure 2, been the most slowly growing in recent years. This is despite its inclusion in the larger Indianapolis Metropolitan Statistical Area beginning in 2004. Given the former, the latter suggests a continuous decline in Brown County's homegrown job opportunities.

Year 2000 population = 14,957

Year 2006 population = 15,071

Total 2000-06 growth rate = 0.8% (Indiana's rate = 3.8%)

Projected 2010 population = 16,419

Figure 15. 2000-05 population growth by city or town

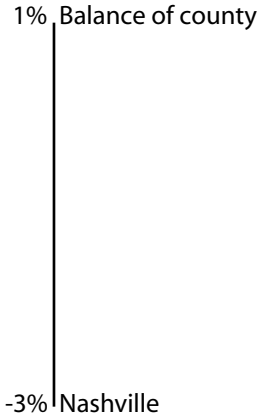
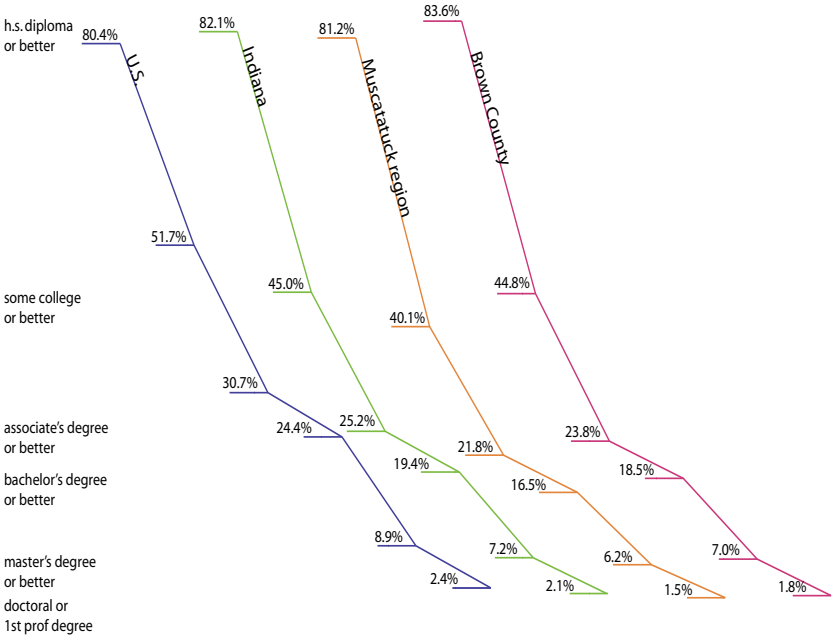


Figure 16. cascading 25+ educational attainment of Brown County relative to the region and Indiana



educational attainment

The educational attainment of Brown County's population is falls well short of the US and Indiana populations. However, the local population is more educated than that of the region as a whole.

Total 25+ without a high school diploma: 1,724

Total 25+ high school diploma holders: 8,806

Total 25+ with post-secondary experience: 4,715

Total 25+ with an associate's degree or better: 2,505

Total 25+ with a bachelor's degree or better: 1,943

Total 25+ with a master's degree or better: 741

Total 25+ with a doctoral or first professional degree: 192

net migration
Between 1995 and 2000, Brown County was a net gainer of migratory populations. It was a particularly strong draw for residents of the Muscatatuck region.

net migration = +206

net migration from bordering counties = +250

net migration with Muscatatuck region = +504

Figure 17. net migration with Muscatatuck region counties, 1995-2000

Bartholomew	+ 56
Decatur	+ 16
Jackson	– 21
Jefferson	+ 4
Jennings	+ 18
Johnson	+263
Ripley	- 1
Scott	+ 88
Shelby	+ 79
Washington	+ 2

Figure 18. 2000-05 population growth by city or town

decatur county

total population

Decatur County ranks ninth among the region's eleven counties in 2006 population size. It has also, as shown in Figure 2, been growing slowly in recent years.

Year 2000 population = 24,555

Year 2006 population = 24,948

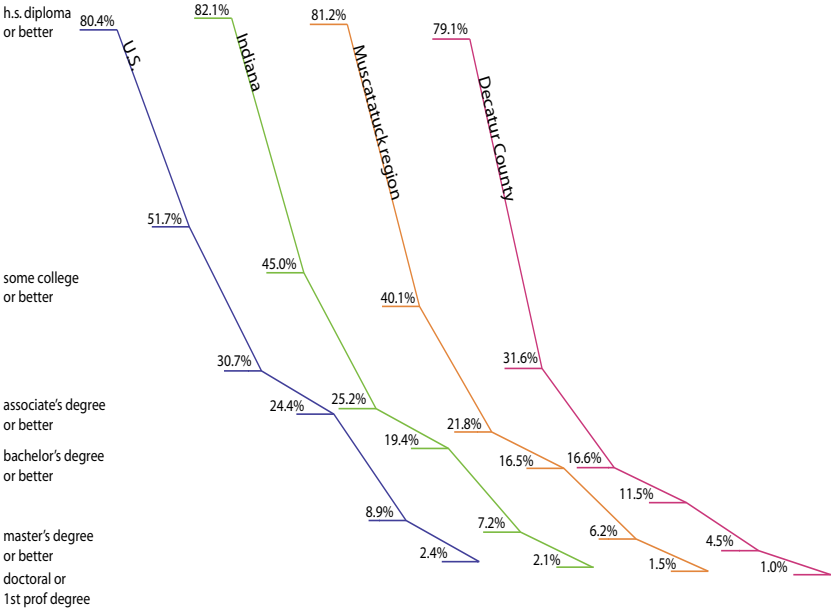
Total 2000-06 growth rate = 1.6% (Indiana's rate = 3.8%)

Projected 2010 population = 24,789

educational attainment

The educational attainment profile of Decatur County compares very poorly to the region, state, and nation. This is particularly true for the college educated segment of the population. While roughly one-in-four Americans 25 and older have a bachelor's degree, the ratio for Decatur County is approximately one-in-nine.

Figure 19. cascading 25+ educational attainment of Decatur County relative to the region and Indiana



Total 25+ without a high school diploma: 3,339

Total 25+ high school diploma holders: 12,609

Total 25+ with post-secondary experience: 5,036

Total 25+ with an associate's degree or better: 2,646

Total 25+ with a bachelor's degree or better: 1,829

Total 25+ with a master's degree or better: 710

Total 25+ with a doctoral or first professional degree: 163

Figure 20. net migration with Muscatatuck region counties, 1995-2000

Bartholomew	–278
Brown	– 16
Jackson	– 47
Jefferson	– 32
Jennings	– 56
Johnson	– 45
Ripley	– 56
Scott	– 1
Shelby	–141
Washington	– 5

net migration

Between 1995 and 2000, Decatur County lost significant numbers of people to out-migration. This was true of its migration exchange with both the world, its surrounding counties, and the Muscatatuck region. The exit was so consistent that Decatur County experienced a net outflow to each of the Muscatatuck region's ten other counties, with the movement toward Greater Indianapolis (Bartholomew and Shelby Counties) evident.

net migration = -1,080

net migration from bordering counties = -466

net migration with Muscatatuck region = -677

jackson county

total population

Jackson County ranks fourth among the region's eleven counties in 2006 population size. However, its relatively larger size has not contributed to relatively faster growth; its 2000-06 growth ranked eighth in the Muscatatuck region.

Year 2000 population = 41,335

Year 2006 population = 42,404

Total 2000-06 growth rate = 2.6% (Indiana's rate = 3.8%)

Projected 2010 population = 41,827

Figure 21. 2000-05 population growth by city or town

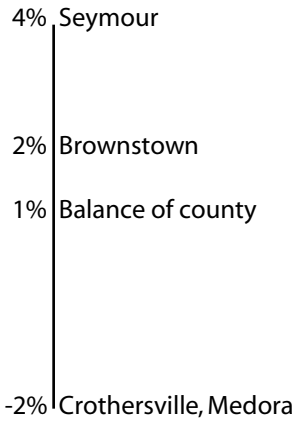
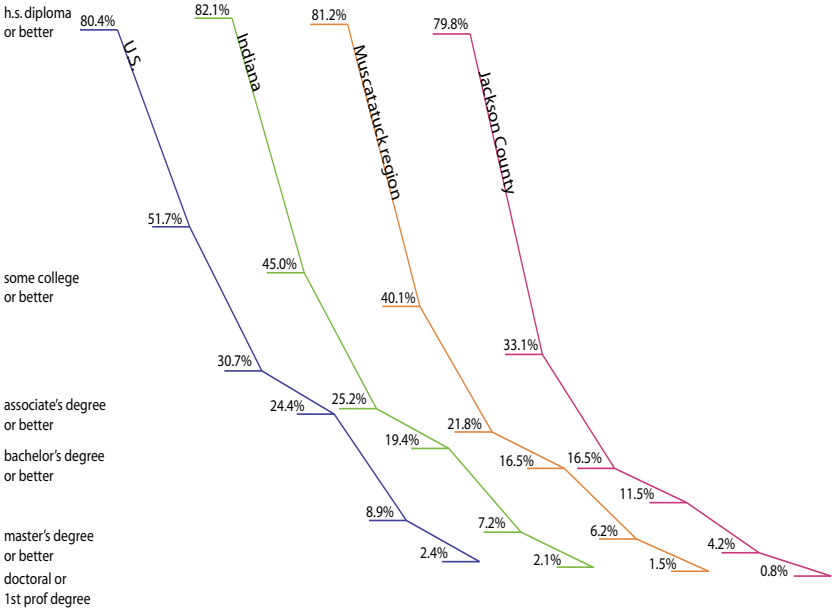


Figure 22. cascading 25+ educational attainment of Jackson County relative to the region and Indiana



educational attainment

The educational attainment profile of Jackson County compares roughly to Decatur County and others in the region at the lower end of attainment. Approximately one-in-nine Jackson County resident aged 25-and-older have earned a bachelor's degree.

Total 25+ without a high school diploma: 5,474

Total 25+ high school diploma holders: 21,657

Total 25+ with post-secondary experience: 8,984

Total 25+ with an associate's degree or better: 4,467

Total 25+ with a bachelor's degree or better: 3,107

Total 25+ with a master's degree or better: 1,135

Total 25+ with a doctoral or first professional degree: 225

net migration

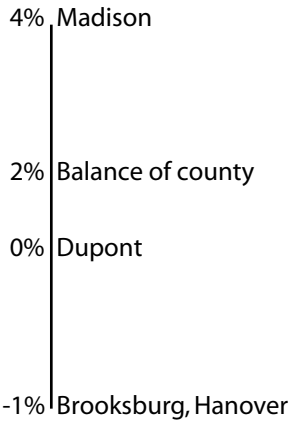
Between 1995 and 2000, Jackson County gained population from in-migration. However, it experienced a net loss of population to its surrounding counties and the Muscatatuck region. The exit was so consistent that Decatur County experienced a net outflow to each of the Muscatatuck region's ten other counties.

net migration = +774
net migration from bordering counties = -128
net migration with Muscatatuck region = -107

Figure 23. net migration with Muscatatuck region counties, 1995-2000

Bartholomew	+139
Brown	+ 21
Decatur	+ 47
Jefferson	– 12
Jennings	–166
Johnson	–143
Ripley	+ 55
Scott	– 14
Shelby	+ 16
Washington	– 50

Figure 24. 2000-05 population growth by city or town



jefferson county

total population

Jefferson County ranks fifth among the region's eleven counties in 2006 population size. However, its size puts it in much closer company to those farther down the ranking list than those farther up. There is only a 9,000 person difference between it and the tenth largest county in the region but there is a 10,000 person difference between it and the fourth largest county in the region. The county is growing more slowly than the State as a whole.

Year 2000 population = 31,705

Year 2006 population = 32,668

Total 2000-06 growth rate = 3.0% (Indiana's rate = 3.8%)

Projected 2010 population = 33,293

educational attainment

The educational attainment profile of Jefferson County is near the middle of the regional pack among the lower attainment levels. However, it ranks second in the region in terms of the percentage of iits population with a doctoral or first professional degree.

Total 25+ without a high school diploma: 3,907

Total 25+ high school diploma holders: 16,698

Total 25+ with post-secondary experience: 8,418

Total 25+ with an associate's degree or better: 4,254

Total 25+ with a bachelor's degree or better: 3,372

Total 25+ with a master's degree or better: 1,456

Total 25+ with a doctoral or first professional degree: 436

Figure 25. cascading 25+ educational attainment of Jefferson County relative to the region and Indiana

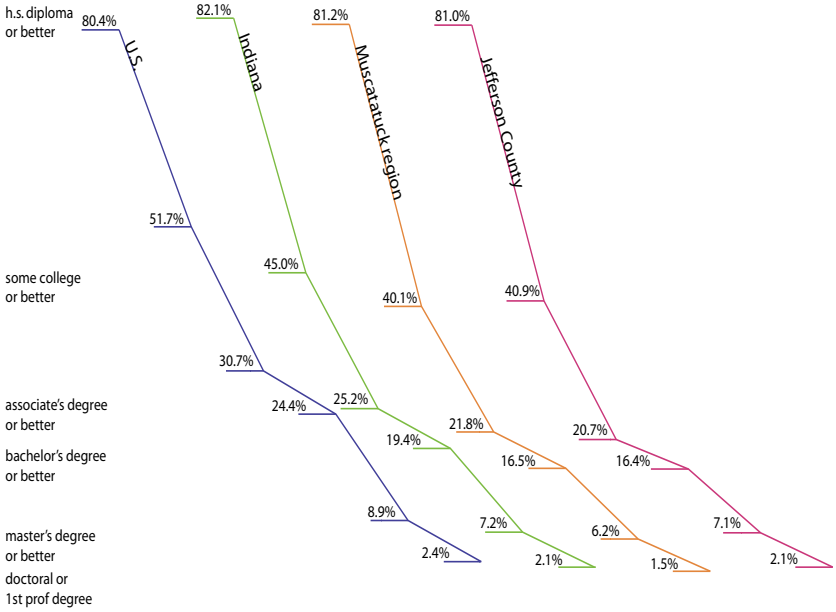


Figure 26. net migration with Muscatatuck region counties, 1995-2000

Bartholomew	–106
Brown	– 4
Decatur	+ 32
Jackson	+ 12
Jennings	– 94
Johnson	– 61
Ripley	+ 42
Scott	+320
Shelby	– 32
Washington	+ 3

net migration

Between 1995 and 2000, Jefferson County gained population from in-migration. A relatively large share of this in-migration came from outside the Muscatatuck region and Jefferson County's surrounding Indiana counties. However, Jefferson County did draw large numbers (+320) from nearby Scott County while sending large numbers to the Indianapolis the region's counties that are in the Indianapolis Combined Statistical Area (-293).

net migration = +1,405
net migration from bordering counties = +268
net migration with Muscatatuck region = +112

jennings county

total population

Jennings County ranks sixth among the region's eleven counties in 2006 population size. The county is growing more slowly than the State as a whole and ranked seventh in the region in its 2000-06 growth rate.

Year 2000 population = 27,554

Year 2006 population = 28,473

Total 2000-06 growth rate = 3.3% (Indiana's rate = 3.8%)

Projected 2010 population = 30,547

Figure 27. 2000-05 population growth by city or town

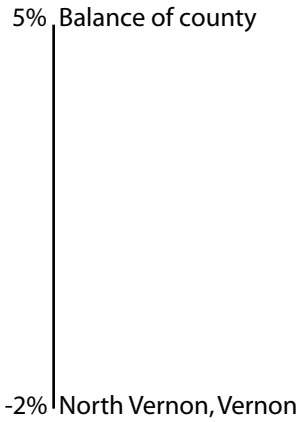
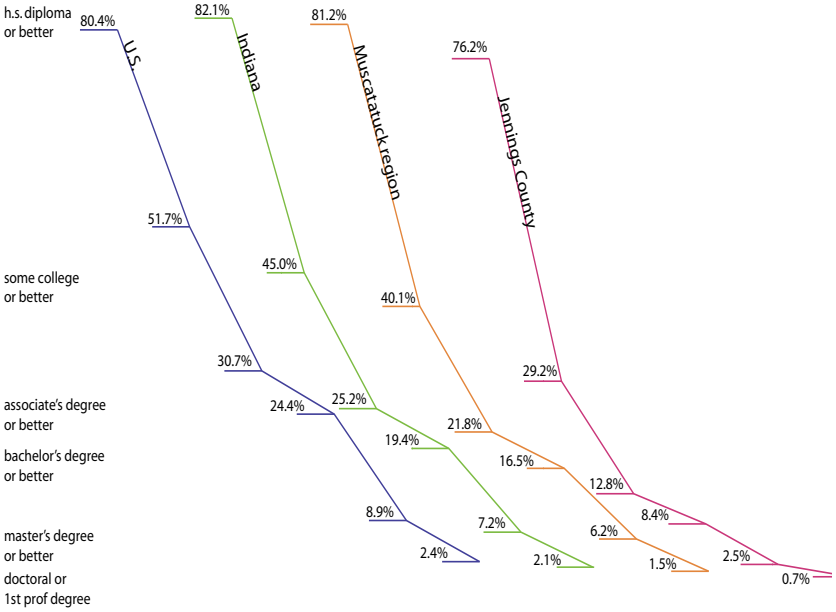


Figure 28. cascading 25+ educational attainment of Jennings County relative to the region and Indiana



educational attainment

Jennings County generally has the worst educational attainment profile in the region. It ranks ninth in the percentage of adults with a high school diploma or better, tenth in the percentage with some college experience or better, and eleventh out of eleven in each higher category.

Total 25+ without a high school diploma: 4,222

Total 25+ high school diploma holders: 13,487

Total 25+ with post-secondary experience: 5,174

Total 25+ with an associate's degree or better: 2,265

Total 25+ with a bachelor's degree or better: 1,479

Total 25+ with a master's degree or better: 435

Total 25+ with a doctoral or first professional degree: 123

net migration

Despite its low educational attainment profile, Jennings County stands above the rest of the region as a recipient of in-migration. Only Johnson County saw a ratio of 1995-2000 level of net migration to Year 2000 population that was higher than Jennings County. Moreover, in terms of in-migration from the Muscatatuck region, Jennings County saw the highest level, with 1,026 net entrants. The next highest was Brown County, with 504. The dynamics that drove this change help explain the recent inclusion of Jennings County in the Indianapolis Combined Statistical Area.

net migration = +2,106
net migration from bordering counties = +924
net migration with Muscatatuck region = +1,026

Figure 29. net migration with Muscatatuck region counties, 1995-2000

Bartholomew	+517
Brown	– 18
Decatur	+ 56
Jackson	+166
Jefferson	+ 94
Johnson	– 23
Ripley	+ 53
Scott	+ 38
Shelby	+ 31
Washington	+112

Figure 30. 2000-05 population growth by city or town

johnson county

total population

Johnson County is overwhelmingly the largest in the Muscatatuck region. It is also by far the fastest growing.

Year 2000 population = 115,209

Year 2006 population = 133,316

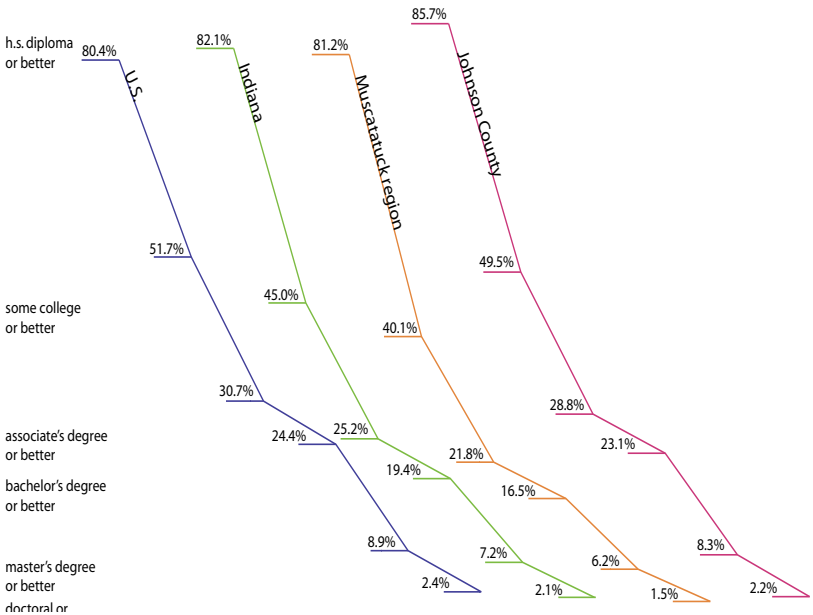
Total 2000-06 growth rate = 15.7% (Indiana's rate = 3.8%)

Projected 2010 population = 140,736

educational attainment

Along with its population size and growth rate, Johnson County ranks first in the region in general educational attainment. It has the highest percentage at each attainment level with the sole exception of the share of the population with a master's degree or higher, where it ranks second behind Bartholomew County.

Figure 31. cascading 25+ educational attainment of Ripley County relative to the region and Indiana



Total 25+ without a high school diploma: 10,575

Total 25+ high school diploma holders: 63,391

Total 25+ with post-secondary experience: 36,589

Total 25+ with an associate's degree or better: 21,322

Total 25+ with a bachelor's degree or better: 17,076

Total 25+ with a master's degree or better: 6,123

Total 25+ with a doctoral or first professional degree: 1,630

Figure 32. net migration with Muscatatuck region counties, 1995-2000

Bartholomew	+304
Brown	–263
Decatur	+ 45
Jackson	+143
Jefferson	+ 61
Jennings	+ 23
Ripley	– 1
Scott	+ 6
Shelby	+ 50
Washington	+ 33

net migration

Unsurprisingly given its dynamic suburban nature, Johnson County drew large numbers of in-migrants between 1995-2000.

net migration = +10,032
net migration from bordering counties = +12,176
net migration with Muscatatuck region = +401

ripley county

total population

Despite its location at the fringe of the Muscatatuck region, Ripley County has been one of the region's more rapidly growing. Curiously, this is despite strong out-migration, as shown in Figure 29.

Year 2000 population = 26,523

Year 2006 population = 27,748

Total 2000-06 growth rate = 4.6% (Indiana's rate = 3.8%)

Projected 2010 population = 28,324

Figure 33. 2000-05 population growth by city or town

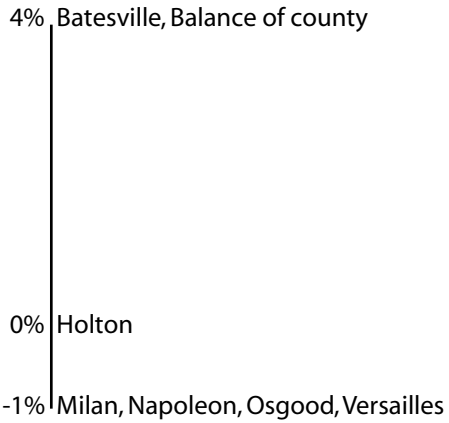
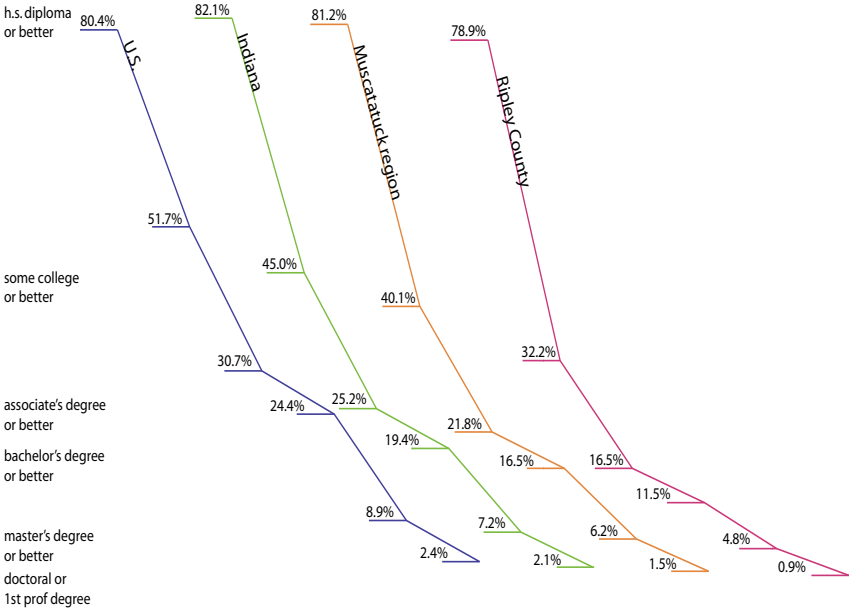


Figure 34. cascading 25+ educational attainment of Ripley County relative to the region and Indiana



educational attainment

In general, Ripley County is in the middle of the region's educational pack. At its worst, it ranks eighth in the percent of the 25+ population with a high school diploma. At its best, it ranks fifth in the percentage of the 25+ population with a master's degree.

Total 25+ without a high school diploma: 3,586

Total 25+ high school diploma holders: 13,441

Total 25+ with post-secondary experience: 5,474

Total 25+ with an associate's degree or better: 2,811

Total 25+ with a bachelor's degree or better: 1,962

Total 25+ with a master's degree or better: 812

Total 25+ with a doctoral or first professional degree: 150

net migration

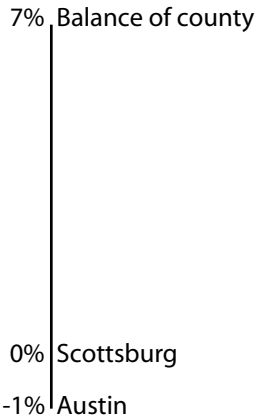
As mentioned, Ripley County has been one of the region's faster growing counties this decade despite negative net migration between 1995 and 2000.

net migration = -406
net migration from bordering counties = -464
net migration with Muscatatuck region = -187

Figure 35. net migration with Muscatatuck region counties, 1995-2000

Bartholomew	– 64
Brown	+ 1
Decatur	+ 56
Jackson	– 55
Jefferson	– 42
Jennings	– 53
Johnson	+ 1
Scott	– 14
Shelby	– 20
Washington	+ 3

Figure 36. 2000-05 population growth by city or town



scott county

total population

Scott County is relatively small, even by the region's standards, ranking tenth out of 11 counties in the Year 2006. Despite its inclusion in the Louisville Combined Statistical Area, it is also growing slowly and posted a 2000-06 growth rate less than the State's.

Year 2000 population = 22,960

Year 2006 population = 23,704

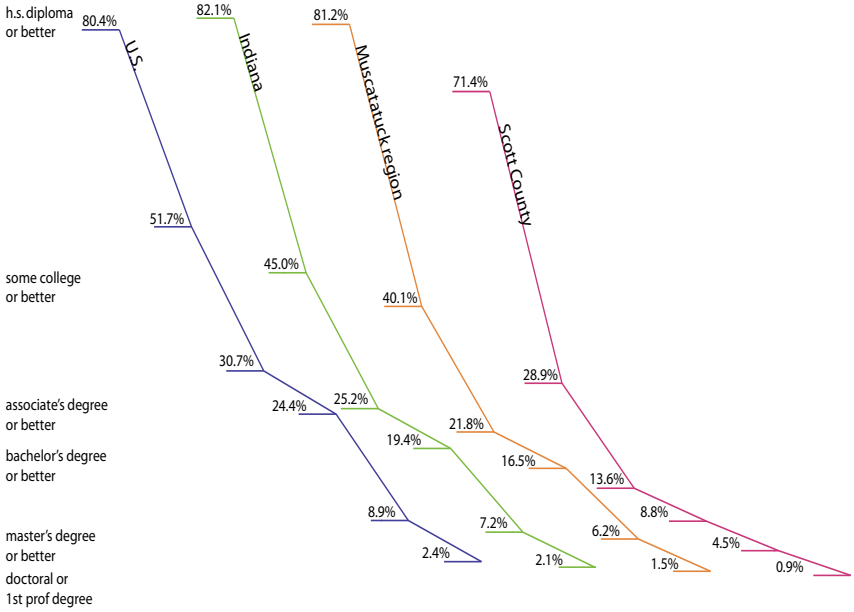
Total 2000-06 growth rate = 3.2% (Indiana's rate = 3.8%)

Projected 2010 population = 24,947

educational attainment

Among those with lesser educational attainment, Scott County ranks at the bottom of the region. It is 11*th* in the percentage of the 25+ population with a high school diploma or better, 11*th* in the percentage with some college experience or better, tenth in the percentage with an associate's degree or better, and tenth in the percentage with a bachelor's degree or better. However, its percentage with a graduate degree ranks Scott County in the middle of the Muscatatuck region.

Figure 37. cascading 25+ educational attainment of Scott County relative to the region and Indiana



Total 25+ without a high school diploma: 4,228

Total 25+ high school diploma holders: 10,532

Total 25+ with post-secondary experience: 4,259

Total 25+ with an associate's degree or better: 2,011

Total 25+ with a bachelor's degree or better: 1,302

Total 25+ with a master's degree or better: 658

Total 25+ with a doctoral or first professional degree: 138

Figure 38. net migration with Muscatatuck region counties, 1995-2000

Bartholomew	+ 55
Brown	– 88
Decatur	+ 1
Jackson	+ 14
Jefferson	–320
Jennings	– 38
Johnson	– 6
Ripley	+ 14
Shelby	– 34
Washington	– 58

net migration

Scott County drew a small number of net in-migrants from the world between 1995 and 2000. However, it lost a fair number of net out-migrants to the region, largely due to a significant outflow to Jefferson County

net migration = +235
net migration from bordering counties = +94
net migration with Muscatatuck region = -460

shelby county

total population

Despite its inclusion in the Indianapolis Metropolitan Statistical Area, Shelby County ranks tenth in its rate of growth. Recent trends have been so stagnant that the county is actually projected to lose population over the next four years.

Year 2000 population = 43,445

Year 2006 population = 44,114

Total 2000-06 growth rate = 1.5% (Indiana's rate = 3.8%)

Projected 2010 population = 43,934

Figure 39. 2000-05 population growth by city or town

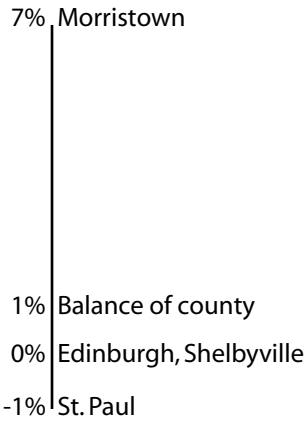
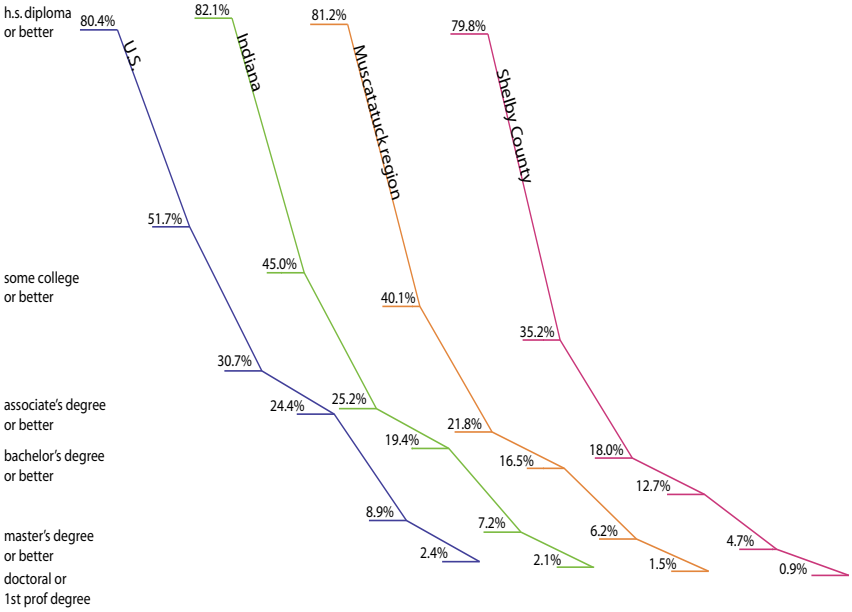


Figure 40. cascading 25+ educational attainment of Shelby County relative to the region and Indiana



educational attainment

Despite its slow population growth, Shelby County's educational attainment profile is affected by its status as a part of a major metropolitan area. It generally ranks in the middle of the Muscatatuck region.

Total 25+ without a high school diploma: 5,715

Total 25+ high school diploma holders: 22,636

Total 25+ with post-secondary experience: 9,964

Total 25+ with an associate's degree or better: 5,101

Total 25+ with a bachelor's degree or better: 3,613

Total 25+ with a master's degree or better: 1,345

Total 25+ with a doctoral or first professional degree: 240

net migration

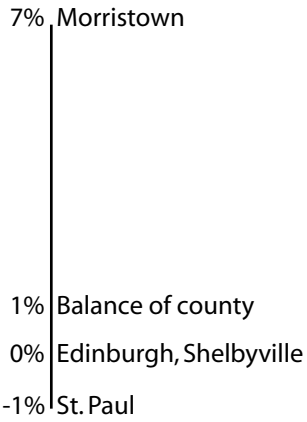
As might be expected from its slow population growth, Shelby County was a slight loser of population through out-migration between 1995 and 2000, despite a significant inflow from Decatur County. The latter was effectively cancelled out by movements away from Shelby County toward other parts of Greater Indianapolis area.

net migration = -39
net migration from bordering counties = +216
net migration with Muscatatuck region = -17

Figure 41. net migration with Muscatatuck region counties, 1995-2000

Bartholomew	– 68
Brown	– 79
Decatur	+141
Jackson	– 16
Jefferson	+ 32
Jennings	– 31
Johnson	– 50
Ripley	+ 20
Scott	+ 34
Washington	0

Figure 42. 2000-05 population growth by city or town



washington county

total population

Washington County's growth patterns call to mind the curiosity of Shelby County's context. Despite its inclusion in the Louisville Metropolitan Statistical Area, Washington County is growing more slowly than Indiana as a whole. However, it should be noted that Louisville is not growing anywhere near as rapidly as Indianapolis.

Year 2000 population = 27,223

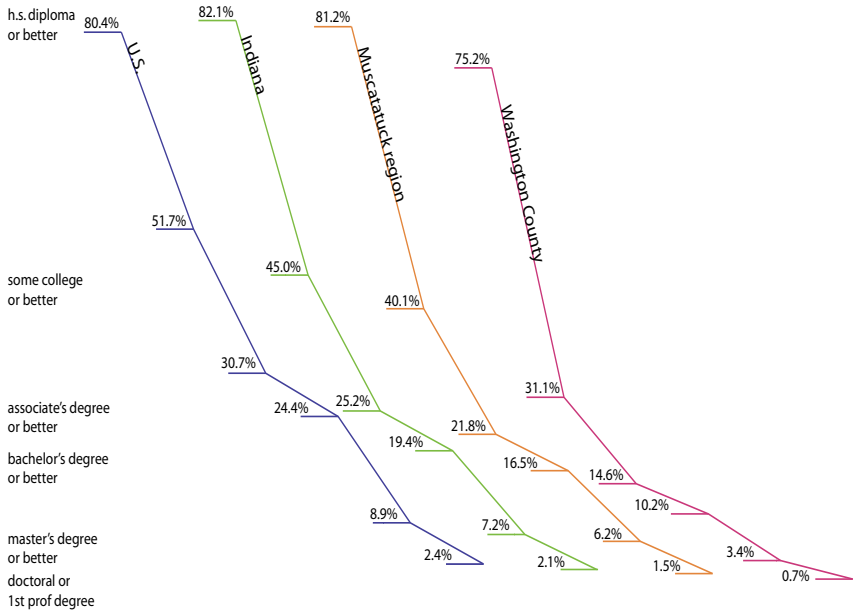
Year 2006 population = 28,062

Total 2000-06 growth rate = 3.1% (Indiana's rate = 3.8%)

Projected 2010 population = 29,613

educational attainment
Washington County's educational attainment profile places it near the bottom of the region. It ranks tenth in the percentage of its 25+ population with a high school diploma or better, its percentage with a master's degree or better, and its percentage with a doctoral or first professional degree. For the other educational attainment levels, it ranks ninth.

Figure 43. cascading 25+ educational attainment of Washington County relative to the region and Indiana



Total 25+ without a high school diploma: 4,380

Total 25+ high school diploma holders: 13,268

Total 25+ with post-secondary experience: 5,485

Total 25+ with an associate's degree or better: 2,571

Total 25+ with a bachelor's degree or better: 1,806

Total 25+ with a master's degree or better: 598

Total 25+ with a doctoral or first professional degree: 125

Figure 44. net migration with Muscatatuck region counties, 1995-2000

Bartholomew	0
Brown	– 2
Decatur	+ 5
Jackson	+ 50
Jefferson	– 3
Jennings	–112
Johnson	– 33
Ripley	– 3
Scott	+ 58
Washington	0

net migration

Despite Washington County's slow growth, it saw a strong level of net in-migration from the world and from its neighboring counties. It should be noted, however, that there was a net outflow to the Muscatatuck region, particularly to Jennings County.

net migration = +927
net migration from bordering counties = +402
net migration with Muscatatuck region = -40

APPENDIX IX

OAI – OHIO AEROSPACE INSTITUTE

Ohio Aerospace Institute (OAI) was founded in 1989. Its mission is to build Ohio's aerospace economy through research and technology, education and training, and networking and information exchange. Today, OAI has approximately 100 employees and $20M in annual revenue.

OAI is a joint initiative of the NASA Glenn Research Center, the Air Force Research Laboratory at Wright-Patterson Air Force Base, the State of Ohio, ten Ohio public and private universities granting doctoral degrees in aerospace related engineering disciplines, and numerous companies engaged in aerospace activities. OAI is a 501(c) (3), not-for-profit organization.

OAI is funded by a variety of sources, including: grants and contracts with the federal government; financial support from industry; and the State of Ohio through the Ohio Board of Regents. It is one of the earliest examples of a collaborative university/industry/government institute supported in part by NASA. To date, OAI has managed more than $150 million in funds, and more than 250 federal awards. IT has engaged in collaboration with more than 100 industry, university, and government organizations.

OAI is led by Michael L. Heil, President and CEO. OAI has three organizational teams. The Research and Educational Programs Team, led by Vice President Ann Heyward, carries out sponsored research projects in a broad range of disciplines and also provides a variety of education and training programs designed to build a strong aerospace workforce in Ohio now and in the future. The Technology and Innovation Partnerships Team, led by Vice President Donald Majcher, forms collaborative partnerships with industry, universities, and government agencies for research and technology development, provides a variety of technology commercialization and development services, and creates networking and information exchange opportunities. The Operations and Finance Team, led by Tony Smith, Sr., is responsible for all OAI contract management services, accounting and finance, human resources, corporate communications, information technology and the OAI facility.

OAI's Board of Trustees is composed of representatives of our member universities, our industry partners, and liaison (non-voting) representatives of the Air Force Research Laboratory at Wright Patterson Air Force Base and the NASA Glenn Research Center.

OAI
Ohio Aerospace Institute

Our Mission:

To help build Ohio's aerospace economy

We accomplish this through research, education, and networking opportunities that:

- Inspire new technologies
- Add to human knowledge
- Accelerate innovation
- Solve problems
- Create opportunities
- Increase reward/reduce risk

We provide these opportunities for Ohio-based aerospace companies, federal laboratories and universities. And, we do it by building bridges to national markets and knowledge, leading global aerospace companies, federal labs and government agencies.

OAI @ work

- More than $175M in secured funding
- More than 250 federal awards
- More than 100 industry, university and government participants
- More than 2,700 internships
- More than $2.8M from NASA, OSGC, Universities, and OAI for over 600 scholarships and fellowships
- 15 U.S. and 4 foreign patents; 17 licenses
- More than 50 expert researchers in residence
- More than 50 events hosted by or held at OAI annually
- More than 300 graduate engineering classes
- More than 9:1 leverage of State support

OAI achieves and delivers on its mission through:

Research & Technology Development

- Aerospace researchers and subject-matter experts
- Pre-competitive research collaborations
- Technology development, exchange, and commercialization activities
- Public/private partnerships to secure research and technology funding
- Comprehensive project management and services

Education & Training

- Continuing graduate education
- Customized short courses
- Lectures by distinguished presenters
- Student internship programs, scholarships, and fellowships
- Faculty fellowships

Networking & Information Exchange

- Major research and technology conferences
- Emerging technology workshops
- Small business networking events
- Web based information and capabilities exchange
- Turnkey event planning

OAI is delivering talent, ground-breaking research, new technologies, and education and training to Ohio's aerospace companies, federal laboratories and universities.

"OAI has a wonderful history of establishing productive collaborations. I see an even bigger need for this capability as we move into a period of constrained R&D budgets."

William U. Borger, Director, Propulsion Directorate, Air Force Research Laboratory

To learn more, please visit www.oai.org or call (440) 962-3000

APPENDIX X

SMART

The Smart Organization is based on groups of interested parties (businesses/individuals) who have as a goal to increase their market share of Research and Development funding. These groups, organized into "Technology Clusters", benefit by leveraging the power of the region's technical enterprise through networking, collaboration and teaming with other businesses and organizations. The SMART umbrella is designed to add value by channeling these initiatives into intra regional partnerships that will have a synergistic benefit to two or more member states. This is accomplished by facilitating activities such as meetings, technical fairs, symposiums etc., providing assistance in obtaining funding through various means (government and private) and maintaining a dynamic structure that can adapt to new opportunities. The SMART organization seeks to identify emerging technologies for exploitation in the region, to expand the influence of the region nationally and internationally, and to attract new business to the nation and region through these Technology Clusters. The Organization supports a Congressional Caucus committed to assist in the achievement of these goals.

Annual Membership fees:

Government: $1000 Federal Agency; $500 State Agency; $250 Local Agency
Major Industry: $5000
Small Business: $1000
Start-up Business: $200
Support Organizations: $250
Academia: $1000 University; $500 Community College; $250 Primary/Secondary

Technology Clusters – each cluster is made up of experts who have a common interest in an area of technology or a related market. Their objective is to maintain a focused technical orientation and provide members with interesting and productive programs designed to:

Identify opportunities for partnering/teaming
Maintain a technical roadmap to assist with identifying new and emerging technologies or needs
Assist with assembling projects which can be marketed
Assist in identifying funding or sponsors for those projects.
Inter Cluster coordination is encouraged particularly as it relates to clusters whose focus is market driven. (E.g. Defense and International)

Output of Technology Clusters:

Teaming/partnering agreements
Identification of emerging or required technology
Support for individual businesses/organizations
Tech Fairs
Meetings/receptions
Social events/outings
Projects that can benefit the region and country

The Organization structure is intended to support the Technology Clusters and to coordinate with the Congressional Caucus. It is governed by a Board of Directors and Managed through an Executive Director.

Direct Support Provided to Technology Clusters

Administrative (including IMS)
Legal
Funding of Cluster activities

Membership fees and structure
Tech Trends Symposium
State and inter state coordination
Database Maintenance
Indirect Support Provided to Technology Clusters
Public Relations
Newsletter
Congressional Coordination
Congressional briefings/education
Capitol Hill Receptions
Project Lists
Special contacts
Organizational promotion
Newsletter
Tech Trends Symposium
Informational Material

TECHNOLOGY CLUSTER CHAIRS & DEPUTIES POC LIST - SEPT 23, 2006

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	Jack Pappas, Pappas Associates International	MD	cjpappas@paii.biz	301-862-5312

APPENDIX XI

Findings and Recommendations
Phase One Feasibility Study

Project INDURE
INdiana **D**atabase of **U**niversity **R**esearch **E**xpertise

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June 30, 2007

Prepared for the
Office of Energy and Defense Development
State of Indiana

The Central Indiana Corporate Partnership (CICP)
and Nexpointe Strategies, LLC

About The Project

Between May 1 and June 30, 2007, the Central Indiana Corporate Partnership (CICP) and its subcontractor, Nexpointe Strategies, LLC, completed a feasibility analysis to examine the issues and best practices associated with the development of a cooperative, statewide system to showcase and make easily accessible university skills, capabilities and possibly other information.

For purposes of this study, this concept is referred to here as "INDURE," or Indiana Database of University Research Expertise. This study examines issues such as what a statewide tool might look like, and what structures and processes could be used to create it and maximize its usefulness and accuracy.

Issues and Opportunity

The Indiana Office of Energy and Defense Development (OED), and the consulting team involved in the OED's Indiana Defense Assets Study, identified serious barriers and difficulties in assessing capabilities and research activities within Indiana's research universities.

(1) There is no single source or location to learn about skills, strengths or research activities at Indiana's universities.
(2) Only one university, Purdue, has created a method or resource to identify information on faculty and their areas of expertise.
(3) No university in Indiana can give a complete accounting of all research being conducted, or other critical information necessary to foster collaboration, sponsored research or economic development.
(4) Many universities are reluctant to disclose or report information, regardless of the source of the request.

Because of these deficiencies, Indiana universities may be missing opportunities to:

(1) Collaborate with the business community, i.e., sponsored research, etc.,
(2) Capture grants, sponsorships, funding and contracts,
(3) Transfer their technology to the marketplace,
(4) Attract appointments to key research boards, review panels and other assignments and opportunities.
(5) Media Exposure.

Scope of Work

Step One - The Stakeholders

The contractor focused on selecting and meeting with potential users and beneficiaries of INDURE in order to determine:

- ✓ Would this capability bring value to:
    - Business Leaders
    - Economic Development Officials
    - State Government agencies
    - Universities
- ✓ Would you use this database?
- ✓ Would you as a company/LEDO/university/government official be willing to help fund this program?
- ✓ Would this help your business, region, city grow?
- ✓ Would this help attract business to the state?

Step Two - University Engagement

Contractor focused on determining if the universities themselves have interest in this project, and what process and structures would facilitate their maximum participation. Questions posed to representatives of the various universities include:

- ✓ Is there a benefit for universities?
- ✓ Would such a tool cause competitive problems between universities?
- ✓ How could tools and technology be shared?
- ✓ What level of comfort exists for sharing information?
- ✓ What issues exist with regard to ownership of data?
- ✓ What would a common, statewide tool look like?
- ✓ What protocols would maximize participation?
- ✓ How would data be updated, managed, supported?
- ✓ What legal, financial, practical barriers exist?

Step Three - Best Practices Evaluation

Contractor focused on determining if other efforts of this kind exist around the country, how they are structured, and how they perform. Research and interviews were designed to answer the following questions.

- ✓ Has this been attempted before in Indiana? What has been the experience?
- ✓ Where has this been attempted before in other states?
- ✓ What are processes that have worked?
- ✓ Would this provide a competitive advantage for Indiana?

- ✓ How might the Purdue PURE model serve as a starting point or resource?
- ✓ What similar tools are used for other purposes, like supply chain management?

Step Four - Cost Estimates and Funding Possibilities

Contractor made initial efforts to estimate the cost of the design and development of a statewide database and search tool. In addition, research was conducted to determine how the future development and execution of this project could be funded, with sources being examined in the following sectors:

- ✓ Foundations
- ✓ Federal Government
- ✓ State Government
- ✓ Private Industry and Associations
- ✓ Universities
- ✓ Non-Profit groups
- ✓ Business Groups

Stakeholder Engagement

Following is a list of institutions interviewed as part of this analysis. The individuals interviewed were offered anonymity in order to maximize insight and frank feedback. In several cases, multiple contacts were made within a single institution.

- Ball State University
- Cook Group, Inc.
- Economic Development Coalition of SW Indiana
- Indiana affiliate, National Federation of Independent Business (NFIB)
- Indiana Commission on Higher Education
- Indiana Department of Workforce Development (DWD)
- Indiana Economic Development Corporation (IEDC)
- Indiana Manufacturers Association (IMA)
- Indiana Office of Energy and Defense Development (OED)
- Indiana University
- Indiana University Purdue University Fort Wayne (IPFW)
- Northeast Indiana Regional Development Marketing
- Office of Governor Mitch Daniels
- Purdue University
- Rose-Hulman Insitute of Technology
- Taylor University

Business Community Feedback

Larger companies heavily involved in research and development, and therefore often most experienced in university collaboration, welcome such a tool, if it adds significant value to the sophisticated tools and direct working relationships they already enjoy. There is healthy skepticism among senior business leaders about another database that becomes outdated, adds little new value and is difficult to use.

Smaller businesses and their associations voice moderate interest, given the modest number of Indiana small businesses actively pursuing university research or intellectual property. However, their leaders acknowledge a growing number of entrepreneurial companies, often borne of university knowledge, are dependant on strong R&D; they, therefore, voice support for the concept

University Engagement

Conversations have been underway for several years among and between Indiana universities about the development of a statewide database such as INDURE. However, many barriers have prevented its creation, including: the absence of a high-level champion, inadequate funding, technology limitations, and mixed interest among some universities. As a result, only limited progress has been made. The ATAIN organization can be credited with some progress toward this end, as represented by the Indiana Innovation web site, which is described later in this report.

With this history in mind, interviews were held with top university officials at Indiana's major research universities, as well as one small, private college and one regional campus. Here is an aggregate summary of the responses:

- ✓ Is there a benefit for universities?
    - All parties agree that they will benefit significantly if they could make their expertise, technologies and research easy to locate for funding sources and collaborators in government and private industry.
- ✓ Would such a tool cause competitive problems between universities?
    - By ensuring that management of INDURE is administered by a neutral third party outside of any university, problems of politics and rivalry can be avoided.
    - For many years, universities have participated in the Community of Science database, often relying on it as the only mechanism to promote their expertise.
- ✓ How could the technologies be shared?

- Universities like Purdue already list available IP and information about potential research projects online and little sensitivity exists about exposure.

✓ What level of comfort exists for sharing information?

- Again, the growth of an INDURE concept has been restrained not because of sensitivity to disclosure, security or confidentiality, but due to the absence of an acceptable model for the statewide marketing of skills, IP and projects.

✓ What issues exist with regard to ownership of data?

- Ownership of the data would remain with each individual university if INDURE is to be constructed according to the PURE model. The system would act as a specialized 'search engine' which will permit expertise to be mined from the universities' own databases.

✓ What protocols would maximize participation?

- By directly involving the upper-levels of university leadership during the development of the project, the benefits of INDURE can be continually promoted by the institutions' own policy makers.
- Outreach and leadership by the State should represent the first step in a development process, and the offer of funding and demonstration of a commitment will create favorable results.
- The governance and administration of the project should be housed by a neutral body, outside the universities.

✓ How would data be updated, managed, supported?

- A state agency or non-profit organization should oversee the database maintenance by working directly with universities to encourage their timely efforts to keep the data updated.
- Regular and routine reviews of the data quality should be scheduled, and protocols developed to prevent an erosion of data quality.

✓ What legal, financial, practical barriers exist?

- Some modest legal considerations will require attention as the project develops. These include ownership and licensing rights to INDURE, security and governance issues.
- Ideally, INDURE would be developed, housed and governed by the State or an appropriate, neutral not-for-profit organization. A Steering Committee of university officials and possibly other stakeholders could serve as a management committee.

- ✓ What would a common, statewide tool look like?
    - At this point, it might be reasonable to expect that INDURE might combine the best characteristics of commercial e-commerce practices and the following three related tools:
        - PURE {http://www2.itap.purdue.edu/gradschool/nrc/} – A strong example of a university skills and expertise database;
        - iBridge {http://www.ibridgenetwork.org/} – Primarily tech transfer-oriented database that is open for use to all institutions;
        - Robert C. Byrd National Technology Transfer Center (NTTC) website {http://www.nttc.edu/technologies/search.asp} – A client-based tech transfer product listings website.

Feedback

In nearly all cases, the response to the concept was a very positive one. Almost all seemed motivated to participate due to opportunities for economic development and institutional advancement that could result from this cooperative effort.

Some of the concerns or considerations raised included:

- The need to create something more dynamic and useful than a simple database,
- The need to keep data current and accurate,
- The willingness of faculty to participate,
- The degree of difficulty a university might have to load data,
- Reconciling a very public, marketing site with security and access considerations.
- Consider adding outstanding research projects and intellectual property (IP).
- Consider the idea of listing corporate IP as well.

The specific details gathered during the interviews include a number of points and concerns to be considered which are highlighted below.

Security

- Methods are necessary to ensure restricted or classified information is not included in data.
- Permit universities to be fully responsible for preparing their propriety databases for interface with INDURE and maintaining their own data, thereby eliminating any concerns about external causes of data corruption.

Utility & Adaptability

- Initial design should permit future adaptations for integrating additional data types and search methods.
- Design must include a solution-oriented approach to be considered worthwhile to companies and agencies seeking expertise, specifically addressing search methods with the understanding of long-term technology applications.
- Powerful search capabilities should be part of the design, augmented by participating university departments and faculty members to assign their own keywords or "tags" for indexing their expertise and technologies, thus enabling a technology's full spectrum of applications to be indexed.
- Pay close attention to taxonomy[1] variables – specifically the differences in nomenclature used between academia and industry, as well as the project applications, e.g. – medical and aerospace industries may utilize the same devices, but use different terminology.
- Encourage collaboration between industry and universities for the purpose of devising optimum taxonomies to be applied as keywords indexing "tags".

Data Quality

- Maintenance of data should be top priority so that INDURE can be relied upon as a trusted resource for up-to-date information;
- INDURE's administrative body should oversee usefulness and accuracy of data at the top-level requiring compulsory maintenance of the data for each participating university, which subsequently enacts policies of making each individual faculty member and department responsible for the keeping their own data current;
- Conduct detailed study to develop standardized search terms based on both academic, government and industry taxonomies.

Potential Users/Uses

- Faculty peer-to-peer collaborations
- Graduate student recruiting
- Collaboration between industry and faculty
- Industry R&D sponsored research
- Government research and leadership recruiting for boards, review committees
- Technology transfer opportunities

Best Practices Compilation and Evaluation

[1] Taxonomy is the practice or policies associated with classification, terminology and categorization, in this case, of research disciplines.

Research concerning best practices in use around the country and within Indiana has revealed a variety of significant models containing varying levels of sophistication and addressing a variety to similar goals.

Higher Education

In general, available university expertise is promoted according to discipline or applicable industry, and is offered through industry-specific consortiums or institutes staffed by professors from various universities. These are generally limited to fields such as chemistry, economics, environment, etc. and do not include information concerning experts outside of the consortium or institute. There does not appear to be any type of broad national or regional data warehouse available anywhere in the world, nor any catalogues prepared by governments, associations or private enterprises which offer broad-spectrum data for universities on a regional or national basis. Historically, the Community of Science (COS) database has been the only resource available for locating faculty experts, but this is available only to subscribers, not the general public. Recently, the newly launched iBridge database has emerged as a publicly available catalogue for finding university experts and technologies. Although it is currently still in its Beta stage, it shows a great deal of promise.

National Tools

Community of Science

www.cos.com

Known as 'COS', many universities rely upon this service as the primary method by which their faculties' expertise is promoted. It is a global centralized data warehouse of expertise available from member institutions that pay hefty subscription fees. Access to the listings is restricted to members of COS, therefore usability of the system has not been assessed. However, a help page on the website (http://expertise.cos.com/exptoc.shtml) indicates the following search parameters are available:

Search All of COS Expertise
Search/Browse by Member Institution
Search COS Expertise Geographically
Search/Browse by Researcher Name
Search by COS Keyword Index
COS Funding Match

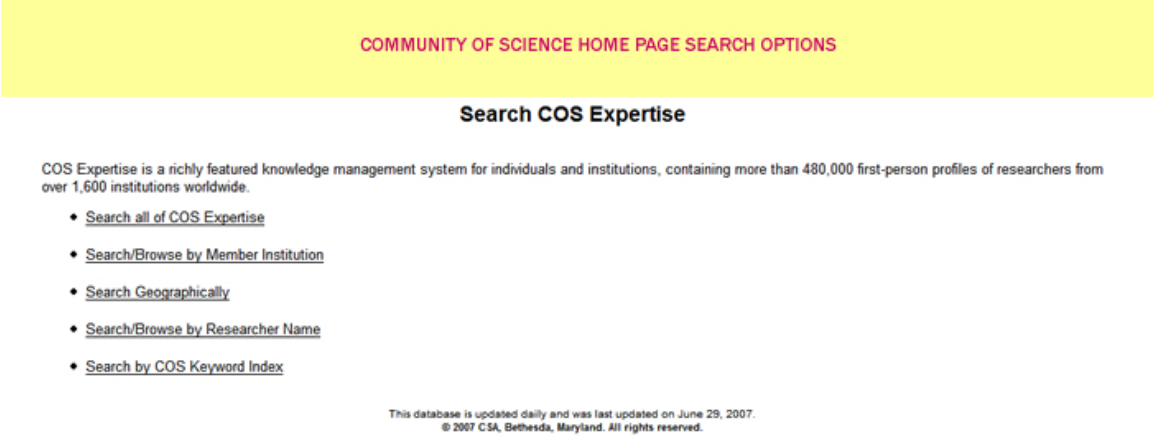
In addition, it appears that it is possible to search for terms contained in the citations of a researcher's publications that are listed in their CV.

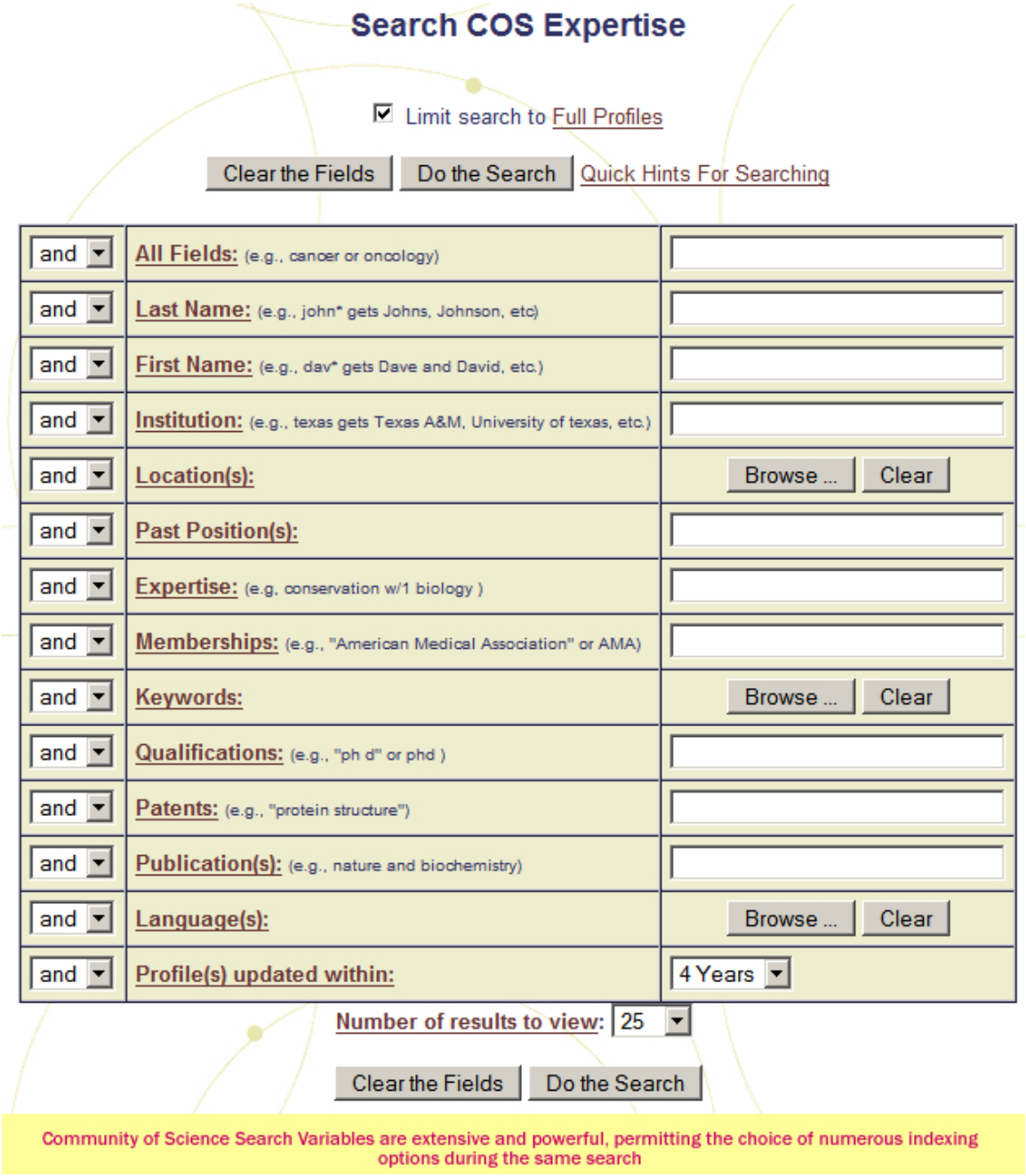
A significant number of universities worldwide are members of this service, which is no longer as relied upon as it formerly was due to several factors:

- Faculty members do not regularly update their profiles, nor do the universities;
- Though the predominately outdated information can be accessed by other COS members, outsiders (non-subscribers) generally cannot search it to locate individuals possessing the expertise they seek.
- Does not synchronize with a university's already-existing faculty expertise database to permit automated updating of profiles.

Because COS does not permit searching of its data by businesses and individuals who are not paid members, many universities have built their own faculty expertise databases for public access. As universities become more focused on tech transfer and faculty expertise as a source of revenue, the restrictive nature of COS may ultimately lead to continuing erosion in use.

The images below demonstrate the way in which COS permits searches according to numerous indexing parameters. Many of these features should be considered for inclusion in an INDURE system.





iBridge

www.ibridgenetwork.org

The Kauffman Foundation has funded and built a newly-launched database for the purpose of enhancing entrepreneurship opportunities between universities and businesses. Attractive and easy to navigate, it is destined to be successful if effectively promoted –

especially due to the fact that it appears to have been ***developed entirely and exclusively by a neutral non-profit***, as opposed to being a product of one or more dominating universities. Thus, the historic rivalry and competition between universities does not appear to be an issue in this project.

According to a Kauffman Foundation press release:
http://www.kauffman.org/items.cfm?itemID=759

> "With over 700 research projects listed, the iBridge Web site, www.iBridgeNetwork.org, is fast becoming the place for researchers and technology transfer officers to post research from their universities, as well as the place to go to find research occurring at other institutions. The Web site is designed to ease the transaction burden on university technology transfer offices and encourage more open and efficient access to research. ***The flexible nature of the site allows universities to adapt it to best complement their existing processes for collaboration and technology transfer***. Universities may use the iBridge Web site to license and distribute a variety of items, including software, research tools, databases, teaching materials, surveys, and reference materials. Postings may include a variety of research materials and descriptions of ongoing research activities."

Features of the iBridge system include:

- Dynamic cataloging structure permits searching by keyword, university, technology, faculty expert name;
- Can include publications, licensable technologies, expertise, available partnerships – anything the posting entity wishes to make available;
- Versatile and impressive, with a great deal of potential if marketed effectively and kept up-to-date;
- Not searchable by geographic indexers;
- Not limited to institutions within a specific region;
- Currently in the Beta stage – future modifications are possible;
- At the present time, only information from a limited number of participating universities is available while the system is being tested as a Beta version – it is not being promoted on a large scale (it is unknown whether or not a promotional campaign will be undertaken in the future);
- It appears that the system *will not* be a limited to *paid subscribers* like the other databases listed below;
- Focused on Tech Transfer of technologies presently available for commercial and licensing purposes, this new database appears to be an excellent resource for this purpose;
- The system's structure appears flexible and very user-friendly;
- While it is not specifically designed to provide faculty expertise, the listings can include whatever the posting entity wishes to include – no exclusion of expertise was mentioned in the Terms of Service;
- Unless it is promoted as a faculty expertise resource, it may not become a commonly-utilized database for this purpose.

The images below demonstrate the iBridge system's power and user-friendliness, and may serve as a method for conceptualizing INDURE's preliminary design.

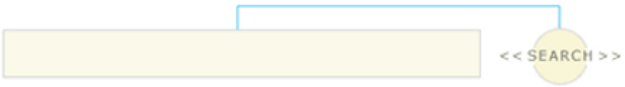
3 Primary Search Methods presented on Home page:

KEYWORD SEARCH BOX

DRILL DOWN FEATURE beginning with 5 top-level options:
- All Innovations
- Physical Sciences
- Life Sciences
- Information Technology
- Application

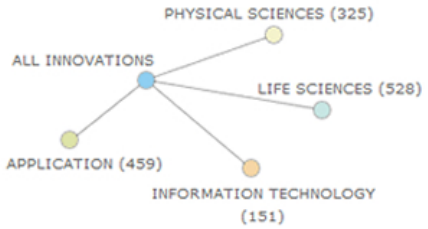
DRILL DOWN FEATURE beginning with popular topics or 'tags'
Ideal for searchs according to technology applications

ADDITIONAL SEARCH OPTIONS are available at the deeper levels, via the hyperlinked terms - searches according to:
- University
- Technology Categories
- Tags



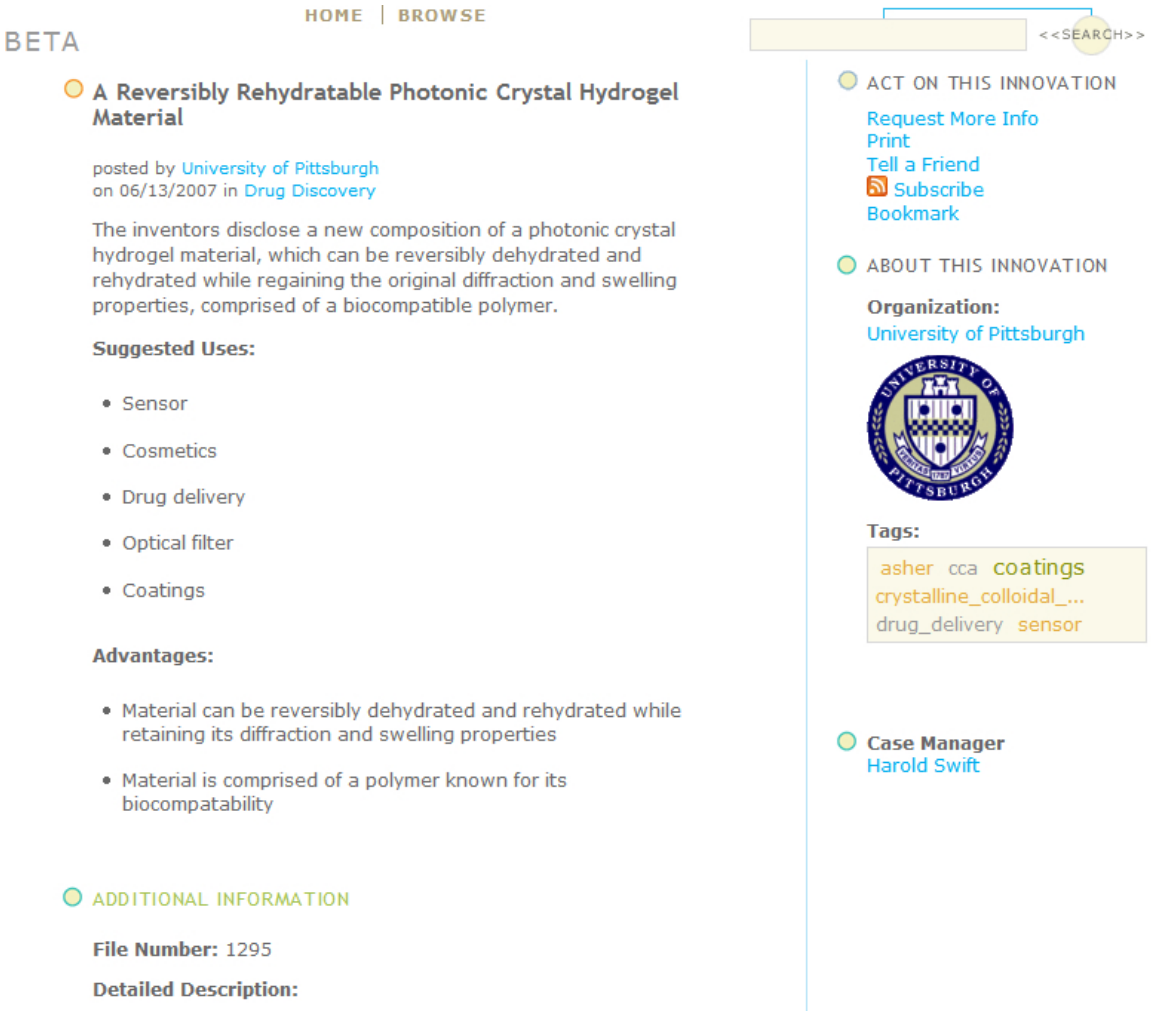
BROWSE INNOVATIONS

[Currently listing 806 research innovations]



WHAT'S HOT ON THE iBRIDGE NETWORK

alzheimer's antibodies antibody apoptosis assay asthma bacteria cancer chemotherapy chest coatings diabetes diagnostic disease dna food fruit gene gene_therapy imaging knockout laser lung mammography mickle mouse_model mri oncology plant plants polymer polymers produce protein proteins radiation research_tool rfid semiconductor sensor sepsis software target therapeutic tissue_engineering transgenic tumor vaccine vector virus



The ‘search result’ image above reveals information that has been posted by a university case manager concerning available technology. All tags applied to the technology appear at the right, and each is hyperlinked for continued searching of related technologies. Not all technologies are posted with such clear descriptions of potential applications, as appears above in the 'Suggested Uses' heading. Each technology is individually uploaded by the case manager and written according to the manager's personal marketing style. Standardization of data presentation is currently a challenge for iBridge.

Practices In Indiana

Like all other states, the majority of universities in Indiana operate nothing more than a faculty directory, providing a list of members’ names with their contact information. Some universities have taken things a step further by providing a very simple expertise directory for the purpose of media relations, an example of which may be found at Indiana University (http://newsinfo.iu.edu/web/page/normal/1287.html).

Most Indiana universities provide departmental web pages which list faculty and staff, and some include faculty profile pages. For individuals attempting to locate an expert in a particular specialized field, however, the process is often lengthy and may or may not return the desired results. It may be necessary to visit countless departmental pages at numerous universities before the appropriate university expertise is located.

Most of the groundwork leading to this study was generated by the organization of technology transfer leaders within Indiana's university community, known as ATAIN, or Access Technology Across Indiana.

Access Technology Across Indiana (ATAIN)
www.atain.org

ATAIN is a "Consortium of research institutions and organizations promoting scientific advances and developments and facilitating their transfer to industry." The purpose of ATAIN is to provide "a single point of contact to participating research institutions."

Full Members
Ball State University
Bose McKinney & Evans
Crane Division, NSWC
Indiana Health Industry Forum
Indiana State University
Indiana University School of Dentistry & Oral Health Research Institute
Ivy Tech

Purdue University
Rose-Hulman Institute of Technology
University of Notre Dame

Associate Members
21st Century R&T Fund
Calumet College of St. Joseph
Franklin College
IUPUI
IPFW
Taylor University

Technical Assistance Program (TAP)
TechPoint
Purdue University - Calumet
Purdue University - North Central
University of Southern Indiana
Valparaiso University
Butler University

The home page of their website invites people to contact ATAIN for:

* Technology-based resources
* Research facilities and experts
* Business incubators and support services
* Partners and collaborators on projects

However, none of this can be accomplished on the ATAIN website, which is merely an 'online brochure' describing its mission, purpose and members. For information

concerning the bullet points above, website visitors are directed to the **Indiana Innovation Network (IIN).**

Indiana Innovation Network (IIN)
www.indianainnovation.com

Created by ATAIN, the IIN is "a non-profit organization established to enhance technology transfer in the state of Indiana. The IIN is dedicated to promoting the growth and success of Indiana's technology research base and technology-based entrepreneurial ventures." Its mission "is to accelerate technology transfer and commercialization in the state by strengthening the connections between and within Indiana's research institutions and the marketplace."

As stated on IIN's web page, its organizers at ATAIN intend for this new resource to "serve as a catalyst for Indiana's 'innovation' economy." The site offers an online database of research expertise available from ATAIN's member institutions. In addition, the website lists various links to the member institutions' tech transfer departments and technology incubators on the 'Resources' page, as well as external links to a variety of useful news services and research publications websites.

The IIN offers periodic workshops and seminars aimed at fostering business and university partnerships in various technology sectors. These events are publicized on the website, and the presentations from past events are often available for unrestricted download.

The 'Experts Database' permits various search methods for pulling up brief profiles of faculty at the ATAIN member institutions.

Characteristics of IIN's database include:

- While the news features are recent, the faculty expertise has not been updated since the time it was launched;
- Drill-down searches are available beginning with eight primary categories including:

Advanced Materials	Systems Engineering
Aerospace	Technology Parks
Digital Fabrication	Wireless
Energy	Orthopedics
Homeland Security	Defense
Laser Manufacturing	

- Very basic keyword search utility to locate expertise does not appear operational;
- Easy drop-down menus permit searching to locate expertise available:
  - at a specific university;

    - within a technology sub-category stemming from the above 8 primary categories;
- Searches can also be done according to expert or facility name, however, this function does not presently appear operational;
- Expertise is available only from institutions in Indiana which are members of ATAIN.

Purdue University Research Expertise (PURE)

http://www2.itap.purdue.edu/gradschool/nrc

Clearly one of the top university expertise sites in the Nation, PURE is clearly a model for use in developing a statewide INDURE tool. It is relatively simple to support and connects to faculty members' individual web sites, eliminating a need for duplicative data inputs and updating. PURE may serve as a model or solution for other Indiana universities participating in a future INDURE statewide interface.

Indiana University

http://www.research.indiana.edu/faculty/index.html

Very similar to the Arizona State University expert directory, the main page offers links to either the university's COS directory, or their Media Relations directory (http://newsinfo.iu.edu/web/page/normal/1287.html) which permits the following types of searches:

- Search for an expert by keyword - very basic with limited available keywords as indexers;
- Drill-down feature which permits browsing experts by:
    - Topic - basically a site map of 100 selected university departments and topics with names like 'Tips from the Department of Psychological and Brain Sciences';
    - IU Campus, School or Department;
    - Expert Name.

Universities Across the Nation

Many universities are beginning to seriously address the need to promote their expertise, technologies and research projects. In the past, their capabilities and expertise were posted only in the Community of Science (COS) database, which does not allow public access to the information. While COS was understood to be beneficial in allowing university experts to locate and collaborate with one another, it is now seen as too restrictive for the purpose of promoting expertise to companies and individuals outside of the academic world. More recently, however, many universities are providing **basic faculty expert directories** for media relations purposes, while others are building or participating in **external or multi-purpose databases** which can index experts, publications and research opportunities.

Generally, the media relations-style of directories are geared not to promote funding or collaboration, but are intended to provide access to experts who have agreed to make themselves available to members of the media.

Although most faculty directories do not include publications, projects and research opportunities, they generally do have links to departmental and faculty member profile pages where such details can sometimes be found.

It appears that universities worldwide, including Purdue, do not take advantage of the Internet's full marketing capability for promoting their faculty expertise. Marketing via search engines is commonly practiced by universities for the purpose of attracting students. However, there is little evidence of a similar, proactive commitment to promote faculty expertise.

Listed below are several university faculty expertise directories of various formats, none of which are as effective as PURE for locating experts based on academic and technical keywords. In addition, PURE's search format appears superior because it not only catalogues the enormous number of experts, but also because it permits several methods of searching.

University of Maryland
www.newsdesk.umd.edu/experts/search.cfm

- This database is searchable by subjects broken down into categories that range from agriculture to social sciences – permits drilling down to locate experts.
- Not marketed to the search engines - no meta-tags for spidering (indexing by search engines like Google), like most universities; thus, only someone experienced in searching for university expertise might encounter their database.
- Better than most other university faculty expertise databases - more user-friendly, with a variety of effective search options.
- PURE still appears to be more comprehensive, with more attention being paid to updating the faculty profiles and including research activities on the professors' home pages.

Penn State University - FRED
www.fred.psu.edu/nav/about.htm

- FRED provides a directory of investigators at Penn State University and The Milton S. Hershey Medical Center who are involved in basic and clinical research.
- FRED identifies investigators having expertise in designated topic areas.
- Research publications are also available in their system.
- Keyword searching is only available for the purpose of locating top-level categories – further searching requires drilling down.

- Not marketed to the search engines.
- Appears inferior to PURE in structure and usability.

University of Georgia

www.globalexperts.uga.edu/

- Not marketed to the search engines.
- Significantly less comprehensive than PURE & University of Maryland.
- Substantially inferior to database structure of PURE.
- Only contains a total of 260 records at present.
- Does not allow for drilling down in categories to locate experts.
- Seemingly small number keywords available as indexers.

University of Arizona

http://web.arizona.edu/~rso/frs/

- Not marketed to the search engines.
- Significantly less comprehensive than PURE & University of Maryland.
- Substantially inferior to database structure of PURE.
- Does not allow for drilling down in categories to locate experts.
- Seemingly small number keywords available as indexers.

Arizona State University

http://researchadmin.asu.edu/COS/

Very similar to the Indiana University expert directory, the main page offers links to either the university's COS directory, or their Media Relations directory (http://209.147.173.79:8080/experts/) which permits the following types of searches:

- Search by Faculty Expert Name, Department or Keyword;
- Drill-down feature permits browsing by topics (a total of 217) or foreign language spoken.

University of Bristol, UK

http://www.bris.ac.uk/index/

- Geared towards students, rather than tech transfer or expertise purposes.
- Ineffective keyword searching utility for research expertise.
- Not marketed to search engines.

University of California, San Diego

Faculty Experts Directory
http://ucsdnews.ucsd.edu/facultyexperts/

Like the IU and Arizona State University directories, UCSD's Media Relations Department lists only experts that have agreed to make themselves available to members of the media who are in need of information.

- Keyword search for a UCSD Faculty Expert;
- Search by a faculty member's name;
- Fast production of search results, but limited information returned,
    - only hyperlinked faculty member names are provided,
    - must drill down from each name to reach either a brief profile, or departmental page in order to determine if the faculty member's expertise actually relates to the search query;
- Attractive appearance of webpage gives impression of user-friendliness, but structure of search results is far less powerful than PURE.
- Drill down categories include:
    - Homeland Security
    - Earthquakes/Tsunamis
    - Hurricanes
- The three drill-down categories simply link to pages that list expert names with a brief profile, but refer searchers to the university's PR staff for initial contact.

Massachusetts Institute of Technology

www.mit.edu

As a globally-recognized and highly-regarded applied research university, it is surprising to find that MIT has not developed anything close to PURE.

- No university-wide or centralized directory;
- Searching for faculty expertise is time-consuming – like the majority of universities, searchers must visit each school or departmental page and examine faculty profile pages one-by-one;
- Google Quick Search Box on all MIT pages allows for 'advanced searching', available at http://web.mit.edu/search.html;
    - Names of people;
    - Names of offices;
    - General search terms;
    - Advanced searching available with Boolean-based keyword search boxes/fields for limiting results according to parameters:
        - with all of the words
        - with the exact phrase
        - with any of the words
        - without the words
    - May or may not retrieve faculty expertise information;
    - Most likely will pull up departmental pages where searchers can drill deeper to faculty profile pages;
    - Publications and news articles are included in search results.

Hosted by MIT's Sloan School of Management Newsroom
http://mitsloan.mit.edu/newsroom/expertise-guide.php

- Appears limited to faculty of Sloan School;
- Permits drilling-down according to Topic, Geography and Industry;

- Left-side navigation tree include access to MIT Sloan Working Papers -
    - MIT Sloan working papers offer a unique perspective: a window onto research in process. A working paper is a faculty member's first attempt at compiling research results, drawing conclusions, and shaping solutions.
    - Working papers are available in our online collection, which is hosted by the Social Science Research Network (http://www.ssrn.com/link/MIT-Sloan-School.html).
    - Working papers are also available in the MIT Sloan collection on DSpace, MIT's research repository (https://hpds1.mit.edu/handle/1721.1/1777).
    - Copies of older working papers are available for a fee from the MIT Libraries' Document Services (http://libraries.mit.edu/docs).

Economic Development Sites and Tools

Economic Development Directory

www.ecodevdirectory.com

Old style web page with links, categorized according to geography.

Example Link:
California Economic Development Agencies
http://www.ecodevdirectory.com/california.htm

Southern Arizona Tech Council (SATC) Member Directory

www.satc-az.com/members/search

The mission of this non-profit organization is to promote and implement high-tech industry economic development in Tucson and Southern Arizona. Regional companies seeking to promote their services and technologies join the SATC and enter their corporate info into the online membership directory which permits searching according to Company Name, Keywords, and the following Industry Clusters:

- Aerospace, Manufacturing & Information Technology
- Arizona Optics Industry Association
- Bioindustry Organization of Southern Arizona
- Environmental Technology Industry Cluster
- Nanotechnology
- Plastics/Advanced Composites

Searches can also be conducted by drilling down according to 12 different Business Types, then subsequently by assorted sub-categories relating to each business type.

Under-utilized by universities, there are a few listings for Arizona institutions, but keyword indexing for expertise relating to specific technologies is not employed.

The Connectory

A project of the East County Economic Development Council
http://www.connectory.com/

An initiative to serve the Defense Logistics Agency, this web-based database was conceived as "*DLA Connectory Project*". Its initial purpose:

> "To meet critical requirements of the military, the Department of Defense (DOD) needs access to the best available technologies from all sources, especially small and medium sized companies not normally accessed by the Defense acquisition process. In order to field new technologies and capabilities faster and within budget, new approaches are needed to efficiently locate, fund and acquire the latest emerging, cutting edge technologies and manufacturing capabilities that reside in U.S. companies."

It is now also being used as an economic development tool:

> "The Connectory is a living application, and we anticipate several enhancements and content additions as the initiative unfolds. In the very near future, we will develop a "How-To" guide within the application that will help you get the most out of using the Connectory."
>
> "The Connectory.Com Buyer-Supplier Network the premier business-to-business communication and marketing tool that started in the San Diego region is expanding to cover the state of California. It links industrial and technology companies -- across all industries at every level of the supply chain – to each other and to global markets. New programs have brought Connectory.com to the attention of Federal agencies."
>
> "Investments from public, private, and non-profit sponsors allow companies to profile in and use Connectory.Com at No Cost. "

- Database listings are limited to California-based companies with the ability to limit listings according to East County;
- Searchable according to keywords, city, zip code, county, SIC code, or NAICS code;
- Easy to navigate;
- Focused on promoting only state-based businesses;
- No university research expertise is overtly marketed, but may be available via consultancies.

AzTechBizDev.com

http://www.aztechbizdev.com/

The AzTechBizDev.com website was made possible by the collaborative efforts of the Arizona Department of Commerce, the Arizona Technology Council and the Southern Arizona Tech Council (SATC).

Designed as a tool for economic and business development, this website is primarily a dressed up version of old-style web directories containing mostly published economic development reports and external links to outside websites.

The website's "*AZ Company Directory*" contains listings of Arizona-based businesses and appears very similar to the Southern Arizona Tech Council (SATC) Member Directory (http://www.satc-az.com/members/search/) discussed above. As noted above, AzTechBizDev.com was produced in part by SATC.

- Only searchable by keywords, or alphabetically by company name;
- Under-utilization of keywords as indexers is extremely problematic;
- No drill-down searches are available;
- No industry categorization has been applied to businesses.

One link of significance leads to the Finn Foundation which contains a series of reports concerning Biosciences, The Arts, and a directory of bioscience-related companies and individuals.

Finn Foundation Biodirectory
http://www.flinn.org/bio/bio_directory.cms

This is a very industry-specific database which is extremely limited in its searchability.

- 1417 listings available in the database;
- A scant selection of university-based entities are listed;
- System claims to have a search box for searching company or person name, but it does not appear to function;
- Search alphabetically according company name;
- Search via a drop-down menu listing a total of 28 bioscience categories within the following areas: drugs, hospitals, medical devices, “org & agri chems”, and research & testing.

Commercial Expertise Databases

Collexis

www.collexis.us

According to its website, “Collexis develops software that supports the knowledge intensive market with tools to search and mine large sets of information.”

*Using keywords, synonyms and homonyms, Collexis claims to index and identify experts, documents and other data for universities, governments, as well as the financial and pharmaceutical industries. They are marketing two products similar to INDURE’s concepts, as well as two more which focus on indexing publications.

Texpert
http://texpert.collexis.com/
The sources of their data have not been identified, but do not appear to be restricted to any geographic or linguistic confines. Principle utilities and data available via Texpert are listed on their website:

Find an expert
Browse or search for top experts. Simply paste the contents of a report, article or other documents and Texpert will find the most relevant experts automatically.

Build your own teams or community
Easily form a project team or share ideas amongst the communities you build.

Check out the experts' library
Find out what the experts have to say and search the documents they have written.

Administration
Change your profile by editing it or by submitting new documents.

Collexis Search
http://www.collexis.us/?id=99
This is a system to add “Enterprise Search Capability” to an already-existing data structure.

SyynX Knowledge Dashboard
http://www.collexis.us/?id=99
This tool is “...A solution that enables the scientist in a life sciences field to analyze vast amounts of data about a defined topic.”

SyynX Clinical Consult Application
http://www.collexis.us/?id=99
“Provides the health professional with relevant publications for the individual patient.”

Intota Expert Knowledge Services
http://www.intota.com/taxonomy.asp

"Business-for-business Internet service that provides Expert Consulting, Expert Witness, and Product Realization services through confidential telephone or e-mail consulting and extended project consulting from a certified network of experts. The network includes individuals with expertise in more than 30,000 areas of science, technology and business."

- Identities of individual experts are concealed in the database.
- A very limited number of experts are available.
- This is a fee-based system – once an area of expertise has been located, the database searcher must pay a fee to get in contact with the listed expert.
- Experts must know about, and register with Intota to be listed.

Presented below are images of the Intota system which demonstrate an easily-navigable system with an aesthetic appearance designed for commercial purposes.

INTOTA HOME PAGE

Keyword Search Box

Drill Down Feature for searching according to industry sectors.

Search for Experts

Enter area of expertise: [ ] Find Experts

or browse the directory below to find an expert.

Industry and Technology

- Aerospace
- Biotechnology
- Chemicals
- Computers
- Consumer Electronics
- Defense
- Electronics
- Energy
- Food and Beverages
- Household Chemicals
- Industrial Hygiene and Safety
- Information Technology
- Instrumentation and Testing
- Internet
- Manufacturing
- Medical/Healthcare
- Mining
- Packaging
- Paint and Coatings
- Personal Care Products
- Petroleum and Natural Gas
- Pharmaceuticals
- Printing and Publishing
- Semiconductors
- Telecommunications
- Transportation

Engineering and Science

- Chemistry/Chemical Engineering
- Civil Engineering
- Earth and Space Sciences
- Electrical Engineering
- Environmental Engineering
- Life Sciences
- Mathematics
- Mechanical Engineering
- Physics

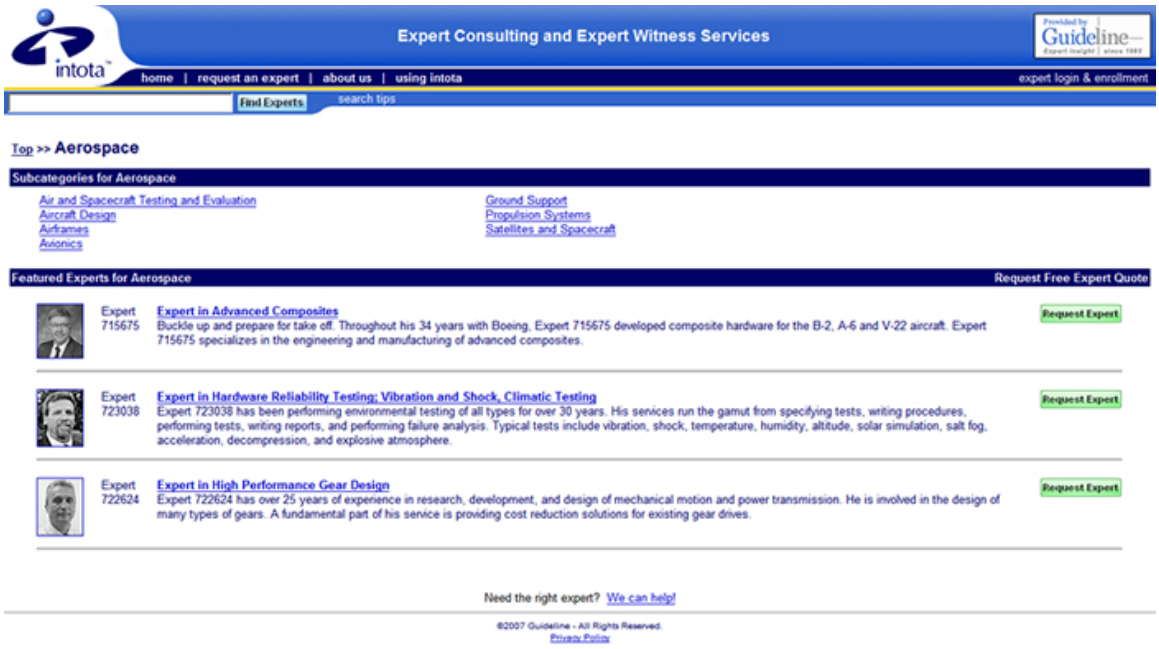
Materials

- Adhesives and Sealants
- Ceramics and Glass
- Composites
- Fibers and Textiles
- Industrial Minerals and Jewels
- Metals and Alloys
- Polymers and Elastomers
- Pulp, Paper and Wood

Business

- Business Intelligence
- Business Operations
- Business Strategies
- Economics
- Product Development
- Sales and Marketing

Need the right expert? We can help!



Search Results Display from drill-down in Aerospace industry category

From this display, user can drill further to get details about experts similar to those presented on university faculty profile pages. To contact the expert, an request for contact must be submitted through Intota.

Business Intelligence & Supply Chain Management Databases

The following well-known databases may or may not include university assets, but they do employ sophisticated database systems.

Dun &Bradstreet (D&B) and Hoovers provide detailed corporate background and intelligence reports – these profiles are their products. In addition, their queries can be defined to include various related companies – these search results can also be considered another product. Since PURE's equivalent of a 'product' is faculty expertise or a profile of a specific professor, the databases are all very similar. In addition, PURE's search results generated from keyword queries produces an output much like Hoovers and D&B's lists of related companies.

Both Hoovers and D&B actively market their databases, unlike any of the universities that have made the effort to build thorough databases like PURE. Indeed, even Purdue appears to have made little effort to market PURE on the Internet. For INDURE to be of any service, its existence would require promotion in both the traditional and internet marketing channels.

Dun & Bradstreet

Supplier Locator

www.dnb.com/us/dbproducts/supply_management/locate_suppliers/supply_locator/index.html

Subscription permits access to D&B's proprietary database of companies which can be searched according to the following parameters:

- Primary Company SIC numbers
- Primary Company NAICS numbers
- Primary Company UNSPSC numbers
- General Keywords
- Company Size
- Geography
- Years in Business
- ISO Designation
- Risk Level
- Federal Diversity Designations

Hoover's Online

www.hoovers.com/free/tools/generate

The free search tool available permits accessing *limited* company information according to the following parameters:

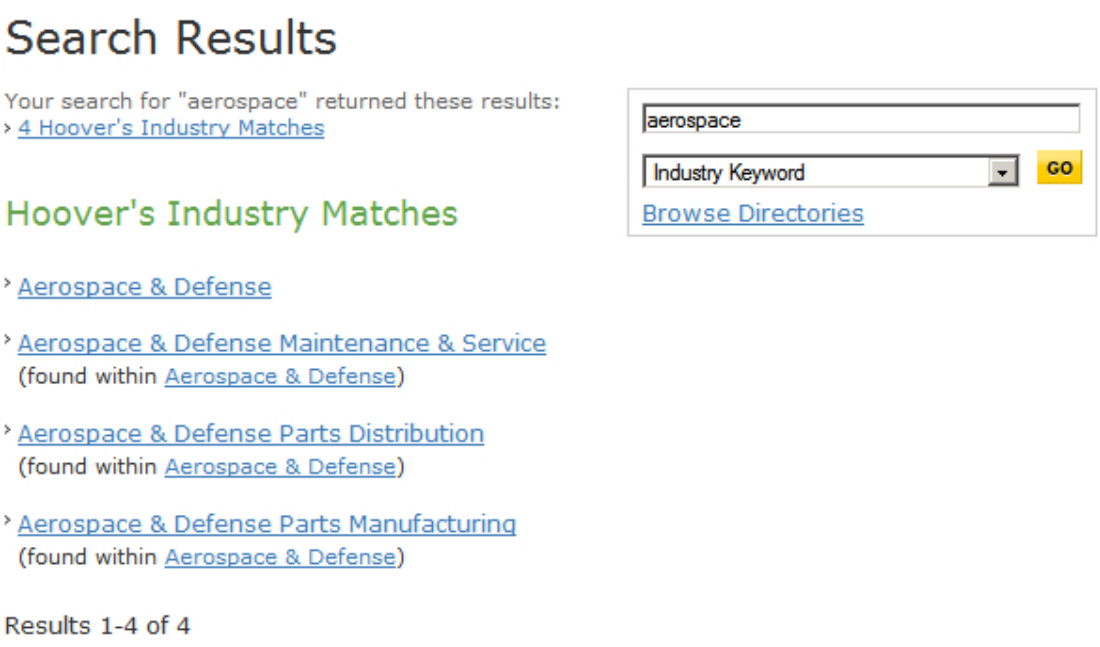
- Number of Employees
- Annual Sales
- Hoovers Industry Name
- Geography
- Primary Company SIC numbers
- Primary Company NAICS numbers

The system's subscription-based search tool permits accessing complete company data according to the same parameters listed above, as well as the following:

- Area Code, ZIP Code, ZIP Code Range or Region
- Company Keyword
- D&B D-U-N-S Number
- Company Type
- Fiscal Year End
- Exchange
- Rankings
- Auditors
- Employee Growth
- Sales Growth
- Net Income

- Net Income Growth
- Assets
- Advertising Expense
- R&D Expense
- Market Cap

The images presented below demonstrate the format of the Hoover's system, which could serve as a model for INDURE. The images show the progression of a simple keyword query with its subsequent drill-down method for locating desired data.



Aerospace & Defense Overview

Companies that manufacture and/or distribute aerospace or defense products and/or provide aerospace or defense services.

Subscribers can see a full overview of this industry. View A Sample

Most Viewed Aerospace & Defense Companies

- General Electric Company
- The Boeing Company
- Motorola, Inc.
- Northrop Grumman Corporation
- Lockheed Martin Corporation
- American International Group, Inc.
- Honeywell International Inc.
- Raytheon Company
- General Dynamics Corporation
- United Technologies Corporation

View more Aerospace & Defense companies

Aerospace & Defense Family Tree

- Aerospace & Defense
  - Aerospace & Defense Maintenance & Service
  - Aerospace & Defense Parts Distribution
  - Aerospace & Defense Parts Manufacturing
  - Aircraft Leasing
  - Aircraft Manufacturing
    - Commercial Aircraft Manufacturing
    - Military Aircraft Manufacturing
  - Military Ship & Submarine Manufacturing
  - Weaponry & Related Product Manufacturing

Other Industries Related to Aerospace & Defense

- Transportation Services

Main Industry Directory

Raytheon Company (NYSE: RTN)

870 Winter St.
Waltham, MA 02451-1449 (Map)
http://www.raytheon.com

Phone: 781-522-3000
Fax: 781-522-3001

Hoover's coverage by James Bryant

BUY THIS REPORT

Overview

Raytheon ("light of the gods") has taken a shine to its place in the upper pantheon of US defense contractors (along with Lockheed Martin, Boeing, and Northrop Grumman). The company's defense offerings include missile systems (Patriot, Sidewinder, and Tomahawk), radars, and reconnaissance, targeting, and navigation systems. Raytheon also makes radios, air traffic control systems and radars, and satellite communications systems. The company's Raytheon Aircraft unit (which is being sold) makes turboprop aircraft and Beech and Hawker jets. Raytheon also offers commercial electronics products and services, but the US government accounts for nearly 85% of sales.

» Sample Overview & History

Key Numbers

Key financials for Raytheon Company (NYSE: RTN)

Company Type	Public (NYSE: RTN)
Fiscal Year-End	December
2006 Sales (mil.)	$20,291.0
1-Year Sales Growth	(7.3%)
2006 Net Income (mil.)	$1,283.0
1-Year Net Income Growth	47.3%
2006 Employees	80,000
1-Year Employee Growth	0.0%

» Get more Key Numbers

Key People

Key people and executives for Raytheon Company (NYSE: RTN)

Chairman and CEO	William H. Swanson Connect to this executive Hoover's can help you e-mail this executive
SVP, Business Development and CEO, Raytheion International	Thomas M. Culligan Connect to this executive Hoover's can help you e-mail this executive
SVP and CFO	David C. Wajsgras Connect to this executive Hoover's can help you e-mail this executive

Top Competitors

Top competitors of Raytheon Company (NYSE: RTN)

- Boeing
- Lockheed Martin
- Northrop Grumman

» **There are 34 competitors for Raytheon; see more.**

TIP: Analyze the **Competitive Landscape** to view a head-to-head comparison of a firm's profitability, operations, growth, and valuation versus that of its top three competitors.

Industry Information

Primary and secondary industries for Raytheon Company (NYSE: RTN)

- Aerospace & Defense
  - **Weaponry & Related Product Manufacturing** (primary)
  - Aerospace & Defense Maintenance & Service
  - Aerospace & Defense Parts Manufacturing
  - Aircraft Manufacturing
    - Military Aircraft Manufacturing

» **View More Industry Information**

Industry Watch

Industry analysis videos for the industries of Raytheon Company (NYSE: RTN)

iPhone Launch: Buy or Sell? (4:43)
06/19/07 1:15ET - UBS Investment Research Analyst Ben Reitzes and CNBC's Jim Goldman discuss how one might play the iPhone launch.

» **View more industry interviews**

Subsidiaries/Affiliates Covered By Hoover's

Subsidiaries/affiliates of Raytheon Company (NYSE: RTN)

- Flight Options LLC
- Hawker Beechcraft Corporation
  - Hawker Beechcraft Services
- JPS Communications, Inc.
- Photon Research Associates, Inc.
- Raytheon Integrated Defense Systems

» **View more Subsidiaries/Affiliates of Raytheon**

Rankings

See how Raytheon Company (NYSE: RTN) ranks in standard industry listings such as Fortune 500, S&P 500, and Dow Jones

- #96 in FORTUNE 500
- S&P 500
- #372 in FT Global 500

Databases Using Standardized Commercial Codes

Infoport

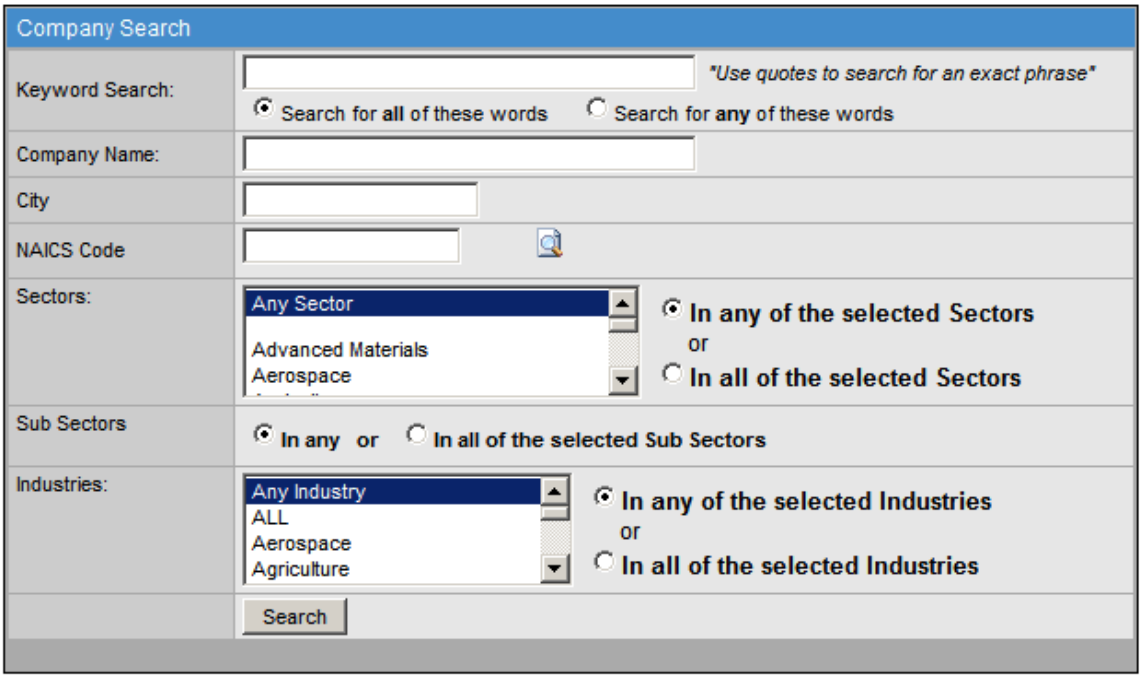
http://www.infoport.ca/bins/sector_company.asp

A Canadian database of technology companies in Alberta which permits searches via numerous parameters, including NAICS. A substantial number companies are listed which makes the system appear well-recognized as an economic and industry development tool. On the "Company Search" page, Infoport describes its database as:

> "… the first step in the development of a Web-based Intelligence Centre as a portal to information to enhance collaboration development, and communications between Alberta companies and to assist in marketing the Alberta Technology Sector."

Supported by Calgary Technologies, Inc. - CTI (http://www.calgarytechnologies.ca/bins/content_page.asp?cid=5255-5284), INFOPORT is a project developed through partnerships with various Alberta technology industry associations as a vehicle to assist tech companies in promoting themselves. Companies (and presumably universities) can list themselves free of charge in the website's business directory, as well as submit news releases for internet distribution.

- Very powerful database structure which permits a variety of search methods;
- Although universities could utilize this resources, it does not appear that they have listed themselves in Infoport;
- Permits drill-down searches for companies
  - alphabetically by company name;
  - in 43 different categories of industry sectors;
- Database query portal provides numerous search parameters and an extensive list of sectors and sub-sectors from which to choose, as shown below:



Manufacturers' News, Inc. - MNI Online

www.mnileads.com/

Subscription database of manufacturers listed according to NAICS and SIC codes – includes option to search according to geography, company size and industry.
www.mnileads.com/industry_naics.asp
www.mnileads.com/industry_sic.asp

Source One - Expert System Sourcing Database

www.sourceoneinc.com/expert_system.html

More of a service than a mere internet-based database, Source One utilizes its access to the various items and services that it is sourcing daily, and uses this information to see price points and identify alternate vendors for its clients. It also claims to own, "a proprietary database that is accessible by all of their employees. This database contains a structured vocabulary of over 70,000 product and service terms including over 35,000 preferred industry terms, and 35,000 synonyms. The 70,000 terms are structured into multiple categories across all industries, and can be related to one another based on the product and service groupings it belongs to ... (and) also provides cross-mappings to the industry recognized UNSPSC (Universal Standard Products and Services Classification), NAICS, and SIC classification systems."

- No database available for online searching;

- This company's databases and services do not appear to include identification of university tech transfer opportunities, probably limiting its data to commercial consulting vendors who may utilize university expertise.

Online Professional Expertise Directories

Martindale-Hubbell

http://resources.martindale.com/mhes/categoryHome.jsp/1010001/;jsessionid=2717D35CE7BA7D371FD18F5CE6C9D15A

Directory of professional experts and consultants useful for the legal industry – university experts are not a primary resource. Part of the Lexis-Nexis Network, it is structured like many other web-based directories and databases for all industries.

Thomson Expert Directory

http://scientific.thomson.com/press/experts/

This is an online directory of various Thomson technical experts qualified and willing to assist technical writers. It is not very impressive technologically, or in terms of content.

- Experts are not necessarily university faculty.
- Extremely limited expertise available.

OceanExpert

http://oceanexpert.org/search.php

"Ocean Expert (or the Global Directory of Marine (and Freshwater) Professionals) is a database, developed and maintained by the Intergovernmental Oceanographic Commission of UNESCO (IOC), containing information on individuals and institutions involved in all aspects of Marine or Freshwater Research and Management. It is intended to be a tool for scientists, policy makers and anyone who needs to contact a marine or freshwater professional."

- Can be searched by drilling down from primary categories;
- Advanced searches are available according to the parameters of experts, institutions, jobs, or events;
- Advanced search utility appears to have limited keyword functionality.

Analysis of Best Practices

Clearly, the most powerful and contemporary example of a similar tool is iBridge. Ideally, Indiana universities are or could fully benefit by participation in that new, national resource. Convening and focusing university officials in Indiana on the

INDURE concept may offer an opportunity to link to, cooperate with and maximize Indiana participation in the iBridge tool.

Second, Purdue's PURE system is clearly well ahead of most or all similar tools across Indiana and the Nation, and serves as both a benchmark and potential framework for the development of INDURE, but could represent an available tool for use by other Indiana universities. This concept should be a central part of the next phase of INDURE development.

At present, it appears that the majority of US and foreign universities market their faculty expertise for tech transfer cooperative research purposes either on a strictly independent basis, or via the *Community of Science* database (COS). Research and technical experts may also list themselves in industry, professional and economic development directories but infrequently do so.

Numerous directories, software and database systems are in commercial use by private enterprise, each of which includes elements similar to those envisioned for the INDURE concept. However, participation by universities is inconsistent at best, and does not benefit one state.

Government and business can easily locate manufacturers and private sector technical expertise using numerous online directories maintained by industry associations and consortia. In databases available through Hoover's Online, Martindale-Hubbell or Infoport, listings can be obtained using various indexing parameters, such as Standard Industry Code (SIC) and North American Industry Classification System (NAICS) codes, as well as keywords and geography.

Missed Opportunities

There is very little evidence that universities utilize commonplace Internet marketing strategies for the purpose of promoting faculty expertise. They often take the essential first steps by establishing web sites, searchable databases and outreach organizations, but appear to do little to initiate or sustain follow-up marketing programs – the most cost effective and obvious method.

Surprisingly, while universities make considerable effort to market to prospective students using standard Internet marketing techniques, there is much less evidence of similar investments to promote their faculty expertise and technology transfer opportunities. Even the most sophisticated university expertise directories (iBridge, Purdue and the University of Maryland) appear to lack supporting marketing campaigns.

Recap of Findings

- ✓ Has this been attempted before in Indiana? What have been the problems?

- *ATAIN has been a leader in this arena, having launched the Indiana Innovation Network (http://www.indianainnovation.com/). However, as this organization's members concede, these efforts have been limited. The system does not include Indiana University, and has not attempted to provide updated faculty data on a regular basis.*

- *Clearly, the INDURE concept goes well beyond ATAIN's current efforts, and has demonstrated a statewide university desire for this kind of tool. The absence of funding and strong, centralized leadership by the State were cited as contributing to the limited scope of these efforts.*

- *The Purdue PURE tool is a superior tool and represents a starting point and possible platform on which to build INDURE.*

✓ Where has this been attempted before in other states?

- *Although similar databases have been developed, none appear to have been designed with the same scope of data, or purpose as proposed for INDURE. In general, such databases target national audiences on an industry-specific scale by including data about entities across the country rather than those from a single state or region.*

- *Some databases attempt to promote the technologies and services of a specific region's private enterprises, but do not include university technologies or expertise.*

- *The new iBridge resource represents the most contemporary and impressive tool and should be closely examined in developing an Indiana-specific tool. In addition, participation in iBridge should be encouraged by Indiana universities.*

✓ What are processes that have worked?

- *The Kauffman Foundation's iBridge (http://www.ibridgenetwork.org/) serves as an example of solid database design principles combined with a business model that avoids issues of inter-university politics because it is funded and administered by a neutral, non-academic body. Participation in the system is voluntary.*

- *"The Connectory" (http://www.connectory.com/) is an example of a regionally developed database system created for the purpose of serving the Defense Logistics Agency – it promotes the products and services of defense-related private enterprises in East County, California.*

✓ Would this provide a competitive advantage for Indiana?

- *Integral to making Indiana's university expertise more accessible and desirable to government contractors and other potential industry partners, INDURE could help Indiana leapfrog other states in this arena.*

- *While numerous universities and organizations are moving toward this kind of tool, it does appear that Indiana would be the first of its kind to create a statewide tool of this type, creating a substantial economic development, innovation and research advantage, at least for a period of time.*

✓ How might the Purdue PURE model serve as a starting point or resource?

- *The PURE design establishes a very workable foundation on which to begin the scoping and requirements phase, and its designers represent a tremendous resource toward the development of INDURE. In addition, the PURE model may represent a tool that can be shared with other Indiana universities to support their individual participation in the INDURE concept.*

✓ What similar tools are used for other purposes, like supply chain management?

- *As demonstrated in the section above, commercially available tools, such as Dun & Bradstreet, InfoPort and Hoover's Online, are relied upon by government and private industry for the purpose of locating products and services. Their powerful indexing capabilities make them useful, and they have been successfully marketed to their end users.*

Cost Estimates and Funding Possibilities

Cost Estimates

An initial estimate[2] for construction and launch of INDURE is as follows.

Build statewide interface/portal	$50,000
Build out university-level databases (4@$35,000)	$140,000[3]
Project management	$60,000
Marketing, branding, launch PR	$100,000[4]
Web services to migrate, manage	$20,000
Miscellaneous	$5000
TOTAL	$375,000[5]

[2] Total costs, including contribution by universities, donors, etc.
[3] Could be paid in full or in part by each individual university. On-site university expertise can also create in-kind contribution at the statewide and university levels.
[4] Completely a function of type of marketing, advertising, available funding.

Funding Sources

An extensive review of grant programs and interviews with potential funding sources suggests that Indiana State Government is the most likely and logical underwriter. And, as part of this process, the Indiana Economic Development Corporation (IEDC) signaled its interest in taking a lead role.

However, in-kind and cash contributions from participating universities, federal grants and business and industry groups are all potential contributors. In particular, strategic marketing alliances with key industry groups could reduce hard costs while making significant contributions to the exposure of a future INDURE site.

A list of some possible grant sources is listed in the Appendix, and further research on private foundation and corporate support should be undertaken should the project move forward.

RECOMMENDATIONS

Critical Factors for Success

Based on the responses of those interviewed and the subsequent research to follow-up on some of the issues they raised, the following **critical factors for success** emerged as constant themes that should be paramount in a future development of the INDURE concept.

- To maximize economic development value, a system must provide users access to information concerning:
  - University technologies available for commercialization;
  - University research projects in-progress and in need of collaboration or additional sponsorship;
  - And, available faculty expertise.
  - If possible, available corporate I.P.

- Make it easy to participate in the process. (The PURE process shows this to be possible.)

- Build a social networking/blog/interactive component to maximize traffic, use, exposure, utility and to provide incentives for faculty to update data.

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[5] Assumes estimated cost to State of $250,000

- Build a developmental, management and governance process during and after launch to oversee changes, management decisions, and marketing.

- Assume the need for a meaningful marketing budget to maximize benefits. Web-based or internet marketing methods should be highly effective, and make marketing affordable and economical.

- Secure a top-level commitment from universities early in the process to drive participation. Take advantage of new university leadership and keep everyone involved over the long-term.

- Build measurement devices to track traffic, visits, utilization and where possible, collaboration activity.

- Establish an early, clear, strong, consistent commitment from the State Administration to stakeholders in order to provide incentives for development and participation.

- Establish a process and commitment to continuing upgrades and improvements.

- Partnerships with economic development and commerce organizations will maximize opportunities to mutually benefit all potential parties involved.

Bringing Cutting Edge Advantages to Indiana Universities

The internet landscape is filled today with powerful search engines, databases and information technologies that produce precisely targeted results with great ease and in very little time. The private sector has been capitalizing on many of these technologies and integrating them into common Internet systems or utilities. For example, Google has included 'scraping' features into its search engine so that it can mine information from screen-displayed content as well as from the usual binary data structure. The Cha Cha search engine, being created in Indiana, includes novel programming to rank websites through an adaptive learning process. However, even the best university and economic development sites and tools appear to be missing or passing on the opportunity to capitalize on such new commercial marketing concepts. If it is built, INDURE should integrate some of these significant commercial advantages in order to place it ahead of other similar systems while simultaneously demonstrating Indiana's high-caliber technological resources.

Recommended Next Steps

1. Move ahead with INDURE, with the goal to launch Version 1.0 by 12.15.07.

2. Establish the initial goal to establish a single Indiana portal/interface/site to foster collaboration, maximize R&D funding and build wealth by illuminating:
    - Indiana university research projects,
    - University and possibly corporate intellectual property (IP),
    - University research talent.

3. Establish a small steering committee within State Government to meet monthly. Could use existing committee or inter-agency structure?

4. Retain a project management consultant to lead the effort.

5. Recruit and chair small working groups from industry and the universities, designed to ensure objective advice and decision-making about:

    - the scope of the project,
    - cutting edge technology capabilities,
    - project design and requirements,
    - development of an RFP to build the tool(s).

    Such working groups, who should be chaired by the State's prime contactor, could include one such group each for:

    - creative,
    - technology and technical issues,
    - university cooperation and participation,
    - legal, intellectual property and security,

    All of this process would be designed to produce a best-of-class outcome while minimizing destructive competition or issues within the stakeholder community.

6. Define the *initial* list of university participants to be included in Version 1.0 of INDURE as those whose faculty members are involved in research and development of technology, products and services meaningful to the marketplace. The list also will include intellectual property (IP) and outstanding research projects.

    By defining the target participants in this manner, difficult decisions can be avoided concerning which universities can participate. There may well be a case for expanding participants beyond this at some point. And, as the technology emerges, it may become clear that a larger audience can participate immediately. However, this initial objective is a credible and defensible starting position.

7. Assume that Purdue's PURE tool is a good starting point and MIGHT play a heavy role in a statewide tool. However, let the technical working groups analyze the requirements and creative and technical design issues. By relying upon the commercial talents and expertise of top-rated design professionals, a methodical approach can be taken in determining the parameters of a future INDURE took, and

then determining how PURE stacks up. This is consistent with a merit-based, objective process. However, it might be assumed this process will point to PURE as part of the solution, especially for other participating universities.

8. In the overall budget for this project, assume the need for meaningful marketing funds to expose and brand the site. The full benefit to Indiana will not be realized unless the research and development community in the federal government and in the private sector sees the site, and a high-profile "brand" must be built and maintained. Consider approaching business groups and foundations, as well as the universities, to share in this aspect of the cost, as it will benefit the universities and therefore might attract outside funding.

9. Build one, stand-alone, branded URL for the statewide interface tool. This will maximize exposure and support internet marketing. Other state, university, non-profit and LEDO sites can thereafter place an easily visible link from their websites to the tool, allocating whatever exposure and space is appropriate for their own use. A brand or membership logo developed for this purpose will elevate the tool's profile and become a symbol for Indiana's quality technology resources.

Possible Project Phases

Phase One

Phase one is represented by this feasibility study and recommendations.

Phase Two

- Create a management committee and process empowered to govern the project, approve the project design and select vendors.

- Identify, recruit and operate several small working groups to bring objective, best of class talent to the development process.

- Examine private sector participation, especially in the arena of "orhan" technology and collaboration, and integrate findings into project design.

- Develop a scope of work and technical specifications of all technologies required to create a statewide interface/database of research university skills, research projects and intellectual property.

- Create and release a Request For Proposals (RFP) to all interested parties, outlining the technical specifications of the tool(s) and technologies, and related services, needed to achieve the project goal.

- Select vendors, technologies, service providers necessary to complete the project.

Phase Three

Vendor builds tool(s).

Phase Four

1. Activate and load/connect university data and activate statewide search engine.
2. Activate management and oversight group.
3. Publicity and marketing efforts to highlight nationally.

Appendix

Other University Search Tools

USDA National Agricultural Library
www.nal.usda.gov/wqic/expertise.shtml

Transportation Research Board - Research in Progress
UNIVERSITY EXPERTISE MATRIX
http://rip.trb.org/browse/dproject.asp?n=4319

"The purpose of the Transportation Operations Work Order No. 1 is to develop university partnership strategies for the Transportation Operations and Systems Research and Development Partnership. These strategies include developing a university based expertise matrix that can be used for all Transportation Operations work order to identify appropriate researchers and principal investigators." Details concerning the development of this matrix are listed below, however, it does not appear that it has been completed.

> Start date: 1997/7/30
> Status: Active
> TRB Accession Number: 782374
> Contract/Grant Number: 359528 Work Order 1
> Total Dollars: 20000
> Source Organization: Pennsylvania Department of Transportation
> Date Added: 07/10/2002
> Index Terms: Transportation operations, Strategic planning, Matrices (Mathematics), Researchers, Systems, Research projects,

*No evidence of this project's completion has been located.

Das Deutsche Institut für Wirtschaftsforschung (DIW Berlin)
German Institute for Economics
http://www.diw.de/english/dasinstitut/kooperationen/personen/index.html

A detailed catalogue of resident and contributing researchers which serves to demonstrate the common methods of promoting university expertise via involvement in policy councils, think tanks and research centers, similar to those based in Washington DC.

Network of Excellence on Micro-Optics (NEMO Consortium)
http://www.micro-optics.org/deper

European consortium has created an online "Directory of European Photonics Expertise in Research" (called DEPER) which includes institutions, universities and SMEs who wish to increase their participation in European funded research projects by advertising their expertise, capabilities and equipment.

The National Academies
http://www.nationalacademies.org/directories/

Membership listings for each of the National Academy of Sciences are available online, as illustrated in the example below.

> National Academy of Sciences
> Online Membership Directory
> http://www.nasonline.org/site/Dir?sid=1011&view=basic&pg=srch
>
> - No contact information available.
> - Very limited membership, thus, limited available expertise.

Directory of Water Resources Expertise
http://www.nceas.ucsb.edu/exp/

"The Directory of Expertise has more than 2,000 listings of faculty and staff from the University of California and California State University systems, and experts from state and federal agencies all of whom are involved with water-related/wildland-related research and resource management in California."[6]

[6] May no longer be active site.

Other Commercial Search Tools

GENIOS - German Business Information
www.genios.de/r_startseite/index.ein?WID=11202-8460197-41309_10

Similar to Hoovers and D&B, GENIOS is known in Europe for providing comprehensive business information and credit reports. It is more like a cross between Lexis-Nexis and D&B because it adds additional information options in its search results pages, including articles and press releases.

GENIOS collates data from a variety of sources, including newspapers, digital government records depositories, journals, other data collectors and their own database. Their instantly available online business reports appear to be generated by accessing and pulling data from external databases and bundling it together with their own data. The search results pages are generated by running business name, registration number or keyword searches. More like some early library databases, there is no drill-down feature for conducting searches.

Impressive for the amount of information provided, GENIOS is not as versatile when it comes to searching for companies according to parameters allowed by D&B and Hoovers.

Miscellaneous Search Tools

Robert C. Byrd National Technology Transfer Center (NTTC)
www.nttc.edu/technologies/search.asp

A federally-funded effort to promote technology transfer on the national level, with no serious effort being made to market it on the internet, the NTTC works to commercialize technologies. According to the website: "Established by Congress in 1989, NTTC offers technology assessment services and develops lasting partnerships among industry, academia and government agencies. Our government and commercial clients look to the NTTC to provide technology transfer services more effectively than they can provide on their own."

- Poor keyword search capability - it appears no keywords are associated with each listing.
- Permits drilling-down to search for "Available Technologies" and "Technology Needs" according to 24 general categories ranging from Aerodynamics to Toxicology.
- Only 269 records are available for available technologies.
- 0 records are available for needed technologies.

- It appears to have the technical capability to be useful, but its limited amount of information impairs it performance.
- No specific expertise is offered online for potential business partnerships.
- The database does not appear to be actively marketed on the internet - no meta-tags are used, nor were any recent press releases noted.

Defense Supplier Marketplace

http://dsm.catt.okstate.edu/about2.htm

Indiana defense contractors should waste no time in becoming participants of this supply chain database designed for the DoD. Companies which manufacture parts and products for use by the DoD use this portal to list their items for online ordering by the government. A link from the Indiana Office of Energy and Defense website to http://dsm.catt.okstate.edu/ can immediately begin benefiting Indiana companies and increasing the visibility of state's defense-related resources.

The Defense Supplier Marketplace (DSM) is a part of the Computer Assisted Technology Transfer (CATT) (http://catt.okstate.edu/asset/index.html) project, funded by the U.S Department of Defense (DOD) as part of the Aging Systems Sustainment and Enabling Technologies (ASSET) project. ASSET is a National Reinvention Laboratory initiated in 1994 by Oklahoma State University to address Department of Defense (DOD) procurement problems, and is a government-academic-business partnership. Partners include the Defense Logistics Agency, Oklahoma City Air Logistics Center, Oklahoma State University, Knowledge Base Engineering, Mercer Engineering Research Center and Sverdrup Technologies Inc.

http://dsm.catt.okstate.edu/

"The DSM is an on-line ordering and parts supplier catalog system for the DOD. Information on DOD parts will be maintained in a catalog format for on-line ordering. DOD procurement personnel will use the on-line ordering system to allow secure, convenient, and timely ordering of parts. This Internet based system will also give DOD buyers the ability to interact with SME (Small and Medium Enterprises) parts manufacturers. The DOD will be able to quickly locate manufacturers of needed parts, and then generate orders and bid requests from selected manufacturers. The system will help small manufacturers by guiding them through some of the complicated processes required when dealing with the DOD."

- Access to the system is restricted to registered users (the system has not been explored to determine its quality for the purpose of this report, as a result);
- SMEs can log in to modify their data to update their profile, capabilities and available parts;
- Government Buyers can search according to Part Name, Part Number, Supplier Name or Manufacturer Capabilities.

World Resources Institute - Earth Trends

http://earthtrends.wri.org/searchable_db/index.php?theme=10

Complex and comprehensive database listing global statistics compiled for economic development purposes. The database structure demonstrates one specific method for categorizing extremely complex data sets, most of which are in different formats – the task of unifying the datasets of Indiana's universities will likely be less complicated.

Gateway to various World Bank Data Sets

http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,menuPK:232599~pagePK:64133170~piPK:64133498~theSitePK:239419,00.html

The World Bank is considered a global warehouse of statistics, research, directories and resources relating to economics, policy, social services and demographics. Well-known for its purpose, it does not apparently find it necessary to actively market its databases and services. Nonetheless, its systems are impressive and easily found on the web. In addition, many of the databases permit the download of data in to Excel spreadsheets – a useful tool that would be handy for people searching INDURE.

> *Specific Database relating to health, nutrition and population*
> http://devdata.worldbank.org/hnpstats/
> Deals with complex data collected worldwide, its complex structure appears similar to the *US Census website* (http://factfinder.census.gov/servlet/DatasetMainPageServlet) which is well-known for its legendary complexity.
>
> *World Bank Experts Directory*
> http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:20041497~menuPK:34489~pagePK:116743~piPK:36693~theSitePK:4607,00.html
> Smaller-scale directory which is searchable by topic, language or name. Garden-variety technology commonly found on the internet drives this database. INDURE would be substantially more powerful.

Possible Funding Sources

Economic Development-Related

11.302 ECONOMIC DEVELOPMENT SUPPORT FOR PLANNING ORGANIZATIONS
http://12.46.245.173/pls/portal30/CATALOG.PROGRAM_TEXT_RPT.SHOW?p_arg_names=prog_nbr&p_arg_values=11.302

(Section 203 Grants for Planning and Administrative Expenses)

FEDERAL AGENCY:

ECONOMIC DEVELOPMENT ADMINISTRATION,
DEPARTMENT OF COMMERCE

AUTHORIZATION:

Public Works and Economic Development Act of 1965, as amended; Sec. 203, 42 U.S.C. 3143.

OBJECTIVES:

To help States, sub-state planning units, Indian Tribes, and local governments strengthen economic development planning capacity and formulate and establish comprehensive economic development strategies designed to reduce unemployment and increase incomes. Current investment priorities include proposals that assist local leaders embrace the principles of entrepreneurship and technological innovation, and enhance regional clusters.

TYPES OF ASSISTANCE: Project Grants.

USES AND USE RESTRICTIONS: Grants are used to help pay the cost of economic development planning and administrative expenses of organizations that carry out the planning.

ELIGIBILITY REQUIREMENTS

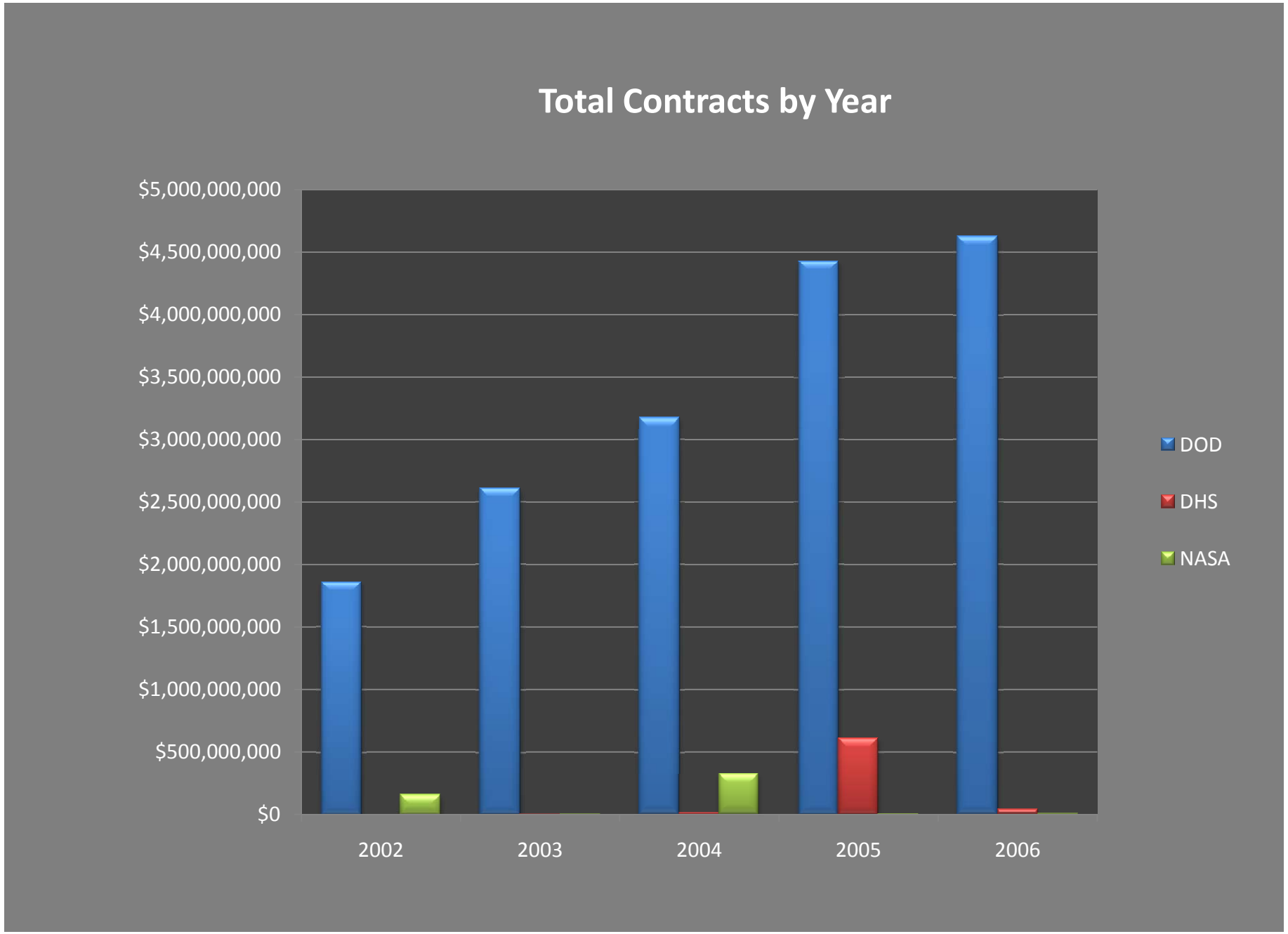
Applicant Eligibility

EDA planning investments support partnerships with Economic Development District organizations, Indian Tribes, community development corporations, non-profit regional planning organizations, and other eligible recipients. As defined in 13 C.F.R. 300.3, 'eligible recipients' include a State, city, county, or other political subdivision of a State, including a special purpose unit of a State or local government engaged in economic or infrastructure development activities, or a consortium of such political subdivision, an institution of higher education or a consortium of institutions of higher education, an Economic Development District organization, a private or public nonprofit organization or association, including a faith-based non-profit organization, acting in cooperation with officials of a political subdivision of a State, or an Indian Tribe, or a consortium of Indian Tribes. Individuals, companies, corporations, and associations organized for profit are not eligible. As used in this paragraph, 'State' includes the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau.

Beneficiary Eligibility

None. The purpose of EDA planning investments is to provide support to planning organizations for the development, implementation, revision or replacement of Comprehensive Economic Development Strategies (CEDS), and for related short-term planning investments and State plans designed to create and retain higher-skill, higher-wage jobs, particularly for the unemployed and underemployed in the nation's most economically distressed regions.

APPENDIX XII


Total Contracts by Year
$5,000,000,000
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$2,500,000,000
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2002
2003
2004
2005
2006
DOD
DHS
NASA

APPENDIX XIII

Crane Region Economic Diversification Plan Implementation

September 7, 2007

ESOP Advisors' Team
ESOP Advisors
Strategic Development Group
Nemfakos and Associates

Table of Contents

I. Implementation Plan Overview

A. Introduction

This draft document presents the means of implementing the Crane Region Economic Diversification Plan (EDP). The EDP project has been divided into three phases: economic assessment, strategic plan, and implementation. This implementation plan (IP) is ESOP Associates' (EA) draft final document for phase three. The EDP is a regional and state-wide economic development strategy that is built on regional and state assets. One of Indiana's most important economic assets is Naval Support Activity (NSA) Crane.

The IP should serve as an action plan that can be used by leadership to oversee the economic diversification of the region's economy and the development of the state's economy.

Once this document is finalized and approved by the Crane Regional Economic Development Organization (CREDO) group and Crane Technology, Inc. (CTI), the EA team will revise the final reports from each of the three phases and combine them into the EDP.

B. Executive Summary

The Implementation Plan (IP) is built upon five key diversification strategies:

1. Leveraging Crane Capabilities
2. Growing Government Contractors
3. Growing Current Non-Defense Clusters
4. Growing Homeland Security Businesses
5. Developing Regional Resources

Based upon these strategies are 12 Specific Diversification Approaches (SDAs) that will drive the next 18 months of activities.

The SDAs are:

1. Develop Non-Defense-oriented basic employers by creating a Tech Center in the region, which will leverage NSA Crane's capabilities.
2. Assist established government contractors to expand their non-defense operations in the Crane region.
3. Develop new opportunities for Life Sciences business through a new approach to technology transfer and improving access to Health Care

4. Support regional development of non-defense Manufacturing clusters such as Automotive, Small Arms, and General Components operations.
5. Develop the region's Wholesale, Transportation, and Logistics sector.
6. Support specific new Energy projects in the region, such as a Coal-to-Liquids facility that will leverage local assets.
7. Develop support programs for technology-driven business sectors such as Batteries and Fuel Cells to increase those sector jobs in the Crane region.
8. Drive the growth of new employment through a regional program that assists in new business creation and new business attraction.
9. Create a national model Learning & Employment Center for Veterans with Disabilities at NSA Crane.
10. Improve the Crane region's business infrastructure by ensuring greater access to Broadband telecommunication services.
11. Build upon the growing number of Information Technology businesses in the region.
12. Grow the number of Homeland Security businesses and jobs in the Crane region through opportunities to vend to programs such as the Muscatatuck Urban Training Center.

The IP will cover 18 months of activities. However, the overall strategy will need approximately five years to significantly reduce the economic dependence of the region on NSA Crane.

In addition, the IP will require the creation of a Crane Regional Economic Diversification Operations (CREDO) group. CREDO will initially be composed of the leading local economic development organization of each of the six counties and CTI. NSA Crane will participate as a non-voting member.

Finally, implementing the EDP will have significant costs. NSA Crane has a $1.5 billion annual impact upon the region. The IP will need funding from a variety of local, regional, state and federal sources - both public and private.

C. Background

The purpose of the EDP is to diversify the regional economy of the six-county Indiana region of Daviess, Greene, Lawrence, Martin, Monroe, and Orange counties. The area needs to be less dependent upon Naval Support Activity (NSA) Crane's $1.5 billion economic impact. Economic diversification will take time: completion of the Implementation Plan (IP) should be seen as a five-year project.

Since October 2006 many individuals and organizations have contributed to the EDP. This project has been funded by the Indiana Economic Development Corporation (IEDC) with the support of the Department of Defense (DOD), Office of Economic Adjustment (OEA). CTI has

played a variety of critical roles throughout this project, from liaisoning with OEA to providing insights into how NSA Crane can assist the state of Indiana with new economic opportunities. In addition, the Indiana Office of Energy and Defense Development and the economic development professionals have helped in the creation of the diversification plan. Finally, Lieutenant Governor Skillman and the Indiana Military Base Plan Commission have given the project the benefit of their guidance.

The IP is designed to provide a roadmap to effect economic diversification in the Crane region. The IP has been developed to take advantage of available resources. While implementation of all recommended diversification approaches could take up to five years, this document focuses upon specific activities that will be carried out over an 18-month time period. The IP includes implementation actions that have already begun.

Accomplishing the activities recommended in this plan for the next 18 months should result in an economy that will have begun to diversify away from a dependence upon NSA Crane and the DOD. This will require considerable resources. Fortunately, the great deal of interest generated by the EDP planning process and the initial implementation activities has begun to stimulate interest and support from stakeholders.

D. Implementation Plan Phasing

The IP builds upon Economic Assessment and the five regional Diversification Strategies developed in the Strategic Plan. The IP focuses upon 12 Specific Development Approaches (SDAs) that will be pursued within the next 18 months.

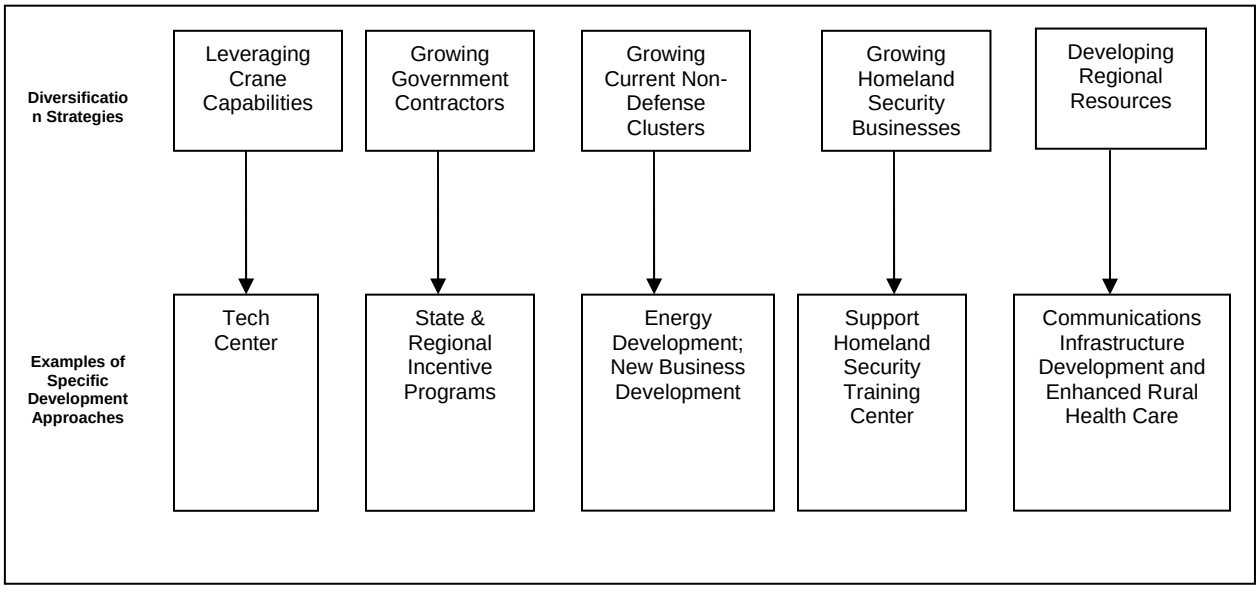
The IP focuses upon an 18-month period that extends through December 2008.

The IP presents objectives, milestones and tasks for each SDA, which was chosen for implementation, and recommends resource requirements for implementation.

E. Implementation Plan Elements

One key to the success of regional implementation efforts is to develop initial successes on which to build the five-year strategy. These achievements will attract the necessary funding and attention required to continue the effort over time. The activities are based on the general regional Diversification Strategies and the Specific Development Approaches (SDAs) that were developed in the regional strategic plan. Chart 1 illustrates those strategies and sample SDAs.

Chart 1: Diversification Strategies & Specific Development Approaches



The Diversification Strategies in Chart 1 above led to a consideration of over 50 SDAs during phase two of the planning process. Chart 2 below describes the 12 SDAs that have been chosen for implementation.

F. Specific Development Approaches

During Phase Two of the EDP planning process it was decided to focus on a relative few Strategic Development Approaches (SDAs) for the first 18 months of implementation. These 12 SDAs were chosen based on regional resources and assets and on the potential of funding:

Chart 2: The 12 SDAs for Implementation

No.	SDA	Diversification Strategy
1	Develop Non-Defense-oriented basic employers by creating a Tech Center in the region, which will leverage NSA Crane's capabilities.	Leveraging NSA Crane Capabilities
2	Develop support programs for technology-driven business sectors such as Batteries and Fuel Cells to increase those sector jobs in the Crane region.	Leveraging NSA Crane Capabilities
3	Assist established government contractors to expand their non-defense operations in the Crane region.	Growing Current Government Contractors
4	Develop new opportunities for Life Sciences business through a new approach to technology transfer and improving access to Health Care	Growing Current Non-Defense Clusters
5	Support regional development of non-defense Manufacturing clusters such as Automotive, Small Arms, and General Components operations.	Growing Current Non-Defense Clusters
6	Develop the region's Wholesale, Transportation, and Logistics sector.	Growing Current Non-Defense Clusters
7	Support specific new Energy projects in the region, such as a Coal-to-Liquids facility that will leverage local assets.	Growing Current Non-Defense Clusters
8	Drive the growth of new employment through a regional program that assists in new business creation and new business attraction.	Growing Current Non-Defense Clusters
9	Create a national model Learning & Employment Center for Veterans with Disabilities at NSA Crane.	Leveraging NSA Crane Capabilities
10	Improve the Crane region's business infrastructure by ensuring greater access to Broadband telecommunication services.	Developing Regional Resources
11	Build upon the growing number of Information Technology businesses in the region.	Growing Current Non-Defense Clusters
12	Grow the number of Homeland Security businesses and jobs in the Crane region by supporting programs such as the Muscatatuck Urban Training Center.	Growing Homeland Security Businesses

Collectively these SDAs represent a comprehensive approach to economic diversification. They include areas in which the region already has economic strengths such as Manufacturing and the Life Sciences. The implementation approach also builds on NSA Crane's substantial non-defense capabilities in a wide range of fields – from small arms to testing and evaluation.

In addition to the 12 SDAs, the IP calls for the creation of a Crane Regional Economic Diversification Operations (CREDO) group. CREDO will initially be composed of the leading local economic development organization of each of the six counties and CTI. NSA Crane will participate as a non-voting member.

G. Initial Implementation Activities

As Phase Two of the EDP process was concluding, it was clear that there were some early stage opportunities that should be pursued immediately. The ESOP team was asked to look at some of the most promising areas over a 60-day period. Chart 3 outlines the current status of activities.

Chart 3: Early Implementation Activities

Early Opportunity:	Recent Activities
1. Business Expansion of Crane Contractors	EA helped set up a meeting between SAIC CEO Ken Dahlberg and Indiana Lt. Governor Skillman to discuss ways to bring additional business to Indiana. SAIC has just broken ground on a new facility in Daviess County.
2. Targeted Program to attract Life Science Companies to Crane Area	EA is attempting to create a program to direct Life Science technology from the National Institutes of Health Office of Technology Transfer directly to Indiana in concert with CTI, Indiana Economic Development Corporation, health care organizations, and Indiana University among others.
3. Technical Center Development	EA is working on a marketing plan for the Technical Center.
4.Battery and Fuel Cell technology to Tech Center	Discussions with General Motors have been initiated.
5. Promotion of Indiana Technology Assets as Consortium	EA has reviewed the DARPA RFP and will assist CTI and IEDC (and others) in moving forward with a proposal.
6. Assist in Funding Proposals	EA has reviewed a number of potential requests for proposals, including funding from the Department of Labor funding, EDA, OEA, Broadband S1190.
7. Create a Regional Implementation Oversight Group	EA has facilitated three meetings of CTI, local economic development organizations, and NSA Crane to create the Crane Regional Economic Diversity Organization (CREDO). The Southern Indiana Rural Development Project has agreed to host this regional entity until it decided to create a more formal organization.
8. Crane Learning & Employment Center for Veterans with Disabilities	Since early spring 2007 CTI has led a task force to develop a pilot project. As of July 15, 2007, CTI has received a $400,000 grant from the Indiana Department of Workforce Development for the pilot, and it has been asked to submit a grant proposal to the Lilly Endowment. CTI expects to begin the project in October 2007.
9. Development of Small Arms Manufacturing	EA is exploring the possibility of locating a small facility near NSA Crane.
10. Development of Renewable Energy Operations	CTI has been working with the State of Indiana and others on examining the possibility of a Coal-to-Liquids Facility at or near NSA Crane.

These ten activities will be continued as part of appropriate SDAs in the IP.

H. Oversight of Strategy and Implementation

The implementation of the economic diversification strategy requires a regional effort that will be carried out over a period of years. Therefore, the strategy needs an organization to oversee the plan as it is implemented over time. A Crane regional implementation group, CREDO, has been created to oversee the plan and to ensure that milestones are met.

This group will meet monthly to review development activities and changes that were not anticipated in the current plan and to revise the plan. The oversight organization is comprised of:

- The Orange County Economic Development Partnership
- NSA Crane (will serve as a non-voting member)
- Martin County Economic Development
- The Lawrence County Economic Growth Council
- The Greene County Economic Development Corporation
- The Daviess County Economic Development Corporation
- Crane Technology, Inc. (CTI)
- The Bloomington Economic Development Corporation

Members of CREDO have decided to initially not incorporate. Instead it will be hosted by the Southern Indiana Rural Development Project (SIRDP), a 501(c) 3 corporation. The group has discussed contracting through SIRDP for administrative support, but it has not made any decisions to-date.

Some of the activities that the regional group might undertake include:

- Resource development for on-going diversification activities.
- Communications to inform residents, workers, and businesses in the region about the importance of diversification and the organization's long-term strategy.
- Liaison activities with organizations such as the Indiana Economic Development Corporation, the Indiana Office of Energy and Defense Development, the Indiana Office of Community and Rural Affairs, and the Indiana Military Base Planning Council.

To carry out these and other activities, CREDO will require funding. A small portion of those funds will result from membership dues. Grants and donations will drive the larger share of the group's financial resources.

I. Managing the Strategy

The IP identifies specific organizations for managing each diversification strategy. Undertaking the development efforts to lessen the dependence of the region's economy on NSA Crane is a substantial undertaking – one that will require significant management skills. While volunteers are essential in almost every area of economic development, programs that last years are usually more successful if there is one or more professionally managed organizations responsible for the program.

Each of the five diversification strategies[1] has an organization (or organizations) responsible for carrying out the strategy, its specific development approaches, and the objectives associated with each approach. The discussion of the objectives earlier in this section illustrates how this recommendation can be implemented. An organization that is responsible for the diversification strategy will have the ability to bring in other organizations on an as needed basis.

- Leveraging NSA Crane Capabilities will be managed by CTI.
- Growing Government Contactors, Growing Current Non-Defense Clusters, and Developing Regional Resources will be managed by the six local economic development organizations collectively.
- Growing Homeland Security Businesses will be managed by the six local economic development organizations and CTI.

Thus, each diversification strategy, its priority SDAs, their objectives and tasks will be undertaken by the organization or organizations mentioned in the list above.

The IP will show budget requirements, based upon individual implementation activities and will match these with potential resources.

J. Implementation Action Plan

The IP includes an Action Plan that delineates the activities that will be undertaken. Activities are shown by calendar quarter.

The Action Plan also shows the activities that are required for the operation of CREDO such as sourcing required funding for staffing services and implementing the communications and marketing program.

There will be opportunities for various partnerships among the SDAs. For example, CTI will manage the independent Tech Center as a project of CTI. However, it will likely need the

[1] See Chart One on page five.

support of NSA Crane, the six local economic development organizations, state government, and university technology transfer programs.

K. Marketing and Communications Approach

A Marketing and Communications Approach recommended for the region is shown in detail in Section III. This plan outlines regional and state-wide communication activities to ensure stakeholder support of the implementation process. The plan also includes national marketing of the regional resources in Information Technology (IT) and the Life Sciences, as well as a marketing effort in Washington, D.C. to avail the region of national funding and programmatic support that can be leveraged from existing and new federal programs.

L. Budget

The following budget shows potential sources of funding and expense allocations for each major SDA by quarter for the first 18 months of implementation. The ability of regional leadership to raise these funds will be a critical implementation factor.

The sources of funding are varied, ranging from federal and state government to private foundations. For purposes of budgeting, it is assumed that during the first nine months of implementation, there will be little or no program income.

Chart 4: Tentative Implementation Budget

	III Q 2007	IV Q 2007	I Q 2008	II Q 2008	III Q 2008	IV Q 2008	Total
Possible Sources							
CREDO Partners		3,000	3,000	3,000	3,000	3,000	15,000
Regional Stakeholders		10,000	10,000	10,000	10,000	10,000	50,000
Other Federal Grants				150,000	250,000	100,000	500,000
EDA Funding			400,000				400,000
DARPA -- Regional Allocation				125,000	125,000		250,000
U. S. DOL _Veterans Division			50,000				50,000
IEDC	60,000	150,000			150,000		360,000
OED		50,000	50,000		50,000		150,000
Broadband, S 1190			-	150,000	150,000		300,000
Foundations	400,000	50,000		125,000		50,000	625,000
IDWD	400,000				50,000		450,000
INDOT		50,000					50,000
Program Income (Tech Center)				25,000	25,000	50,000	100,000
Total	**860,000**	**313,000**	**513,000**	**588,000**	**813,000**	**213,000**	**3,300,000**

	III Q 2007	IV Q 2007	I Q 2008	II Q 2008	III Q 2008	IV Q 2008	Total
Expenditures							
CREDO Activities		3,000	20,000	20,000	25,000	15,000	83,000
CTI/Tech Center		80,000	125,000	25,000	75,000	75,000	380,000
Growing Government Contractors		15,000	10,000	10,000	5,000	5,000	45,000
Growing Life Sciences & Health Care		25,000	5,000	5,000	5,000	5,000	45,000
Growing Manufacturing Clusters		35,000	50,000	40,000	40,000	40,000	205,000
Growing Wholesale, Transportation, & Logistics			35,000	15,000			50,000
Growing Regional Energy			50,000	50,000			100,000
Support Expansion of Battery/Fuel Cells		25,000	25,000	25,000	25,000	25,000	125,000
Develop and recruit New Businesses			100,000	75,000	40,000	25,000	240,000
Create Pilot Crane Center for Disabled Veterans	100,000	100,000	100,000	200,000	150,000	150,000	800,000
Promote Access to Broadband Services				125,000	125,000	50,000	200,000
Promote IT Development				10,000	10,000	10,000	30,000
Growing Homeland Security Businesses		20,000	50,000	50,000	50,000	25,000	195,000
TOTAL EXPENDITURES	**100,000**	**303,000**	**570,000**	**650,000**	**550,000**	**425,000**	**2,598,000**

The above budget is estimated. The revenue side is considerably larger than the expense projections because much of the income will depend upon the success of federal and state grants. Also it is important to note that some of the potential revenue identified will be dedicated funds for specific projects. For example, the Crane Learning & Employment Center for Veterans with Disabilities has already raised $400,000, all of which must be used for that program.

M. Creating a Framework for a Unified Approach to R&D Funding

In addition to funding specific programs that have arisen from the EDP planning process, the EDP approach creates a framework that will promote and integrate the State of Indiana's Military, Technical, and Academic assets into one consortium to access federal sponsored R&D Funds. One example is a major request for proposals being issued by the Defense Advanced Research Planning Agency (DARPA). The solicitation is "to identify and pursue high-risk/high- payoff research initiatives throughout a broad spectrum of the science and engineering disciplines, and to transform these initiatives into important, radically new military capabilities."

As the state begins to consider a specific strategy to improve the Indiana economy by focusing upon its defense assets, it will be critical to have a framework that enables state agencies, not-for-profit organizations and regional economic development programs to plan together.

II. Implementation Action Plan

Introduction

The Action Plan for the EDP is organized by Specific Development Activity (SDA); the plan is divided into two sections. In the first section each SDA and its key activities are described. In the second section the quarterly actions of each SDA are outlined in matrix form.

Section 1: Description of SDA Activities

A. Tech Center

A specific development approach in using NSA Crane technology and capabilities as an engine for diversification is to create a special program of CTI's that will work with NSA Crane. The Tech Center will serve as an interface for NSA Crane's technical assistance program.

CTI, with financial support from state government, will create a Tech Center in the Crane region with programs in diverse areas. Each technical program area will support current regional and state businesses and new business development. The Tech Center will support and facilitate the deployment of NSA Crane capabilities into existing regional and statewide business clusters and will incubate new NSA Crane capability-

based businesses. This approach will be facilitated by CTI and NSWC Crane (a tenant at NSA Crane) entering into a Partnership Intermediary Agreement (PIA).

Eventually, the Tech Center will house a new state-supported Product & Process Improvement Program (PPIP). The PPIP will serve all Indiana manufacturers and to assist them in becoming more competitive by improving their products and processes.

The PPIP can become a leading edge of growth support and outreach to businesses in conjunction with the Purdue TAP and NSA Crane technology engagement programs. As the Tech Center matures, some technical areas could evolve into stand alone operations.

Tech Center Early Development Tasks include:

- Forming an agreement (for example a PIA) between CTI and NSWC Crane on technology engagement and liaison activities.
- Resource development.
- Deciding on initial Tech Center program areas.
- Development of a Tech Center client marketing program.
- Outlining how PPIP will evolve from the Tech Center operation.

The Tech Center will be organized as a formal program area of CTI, which will require approval by CTI's board of directors. An advisory board will be established to include LEDOs, Purdue Technical Assistance Program (TAP), and the regional Small Business Development Centers (SBDCs).

The Tech Center operation will focus on a small number of program areas. PIPP and Batteries/Fuel Cells are probable initial program areas. The Tech Center should be established; current CTI offices can be used for initial activities. Tech Center initial implementation activities can be supported by a part-time staff person. However, within 90 days of implementation, a full-time marketing/sales director should be brought on board.

Proposed Tech Center program areas are related to NSWC Crane capabilities. Some of the program areas could include:

- Public-Private Partnership in Aircraft Survivability
- Electronic Sensors
- Test & Evaluation: becomes PIPP program
- NSA Crane spin-offs

For the first 90 days the Tech Center will have a simplified program structure, in which CTI (staff and volunteers) oversee specific program areas.

Day-to-day management tasks will be accomplished by current staff or by short-term contractors.

Detailed Recommendations for CTI Tech Center Operations:

Product and Process Improvement Program (PIPP) Program Area

Goal: Develop Product and Process Improvement Program to assist regional and state-wide industrial and technology firms

Objective: Create the PPIP, with state funding, to manage an interface between NSA Crane and prospective clients with technology assistance needs

Tasks:

- Determine that NSA Crane is willing and able to work with an interface and what its capacity for clients is
- Identify the specific technology assistance programs and technology areas that will be interfaced.
- Secure State funding
- Hire/contract staff
- Review selected past NSA Crane technology assistance client projects.
- Create interface process.
- Create information and liaison campaign to promote Crane's assistance programs.
- Implement marketing campaign
- Serve 15 new regional clients through PIPP in first 6 months
- Serve 50 new client firms in first 12 months

Batteries and Fuel Cells Tech Center Program Area

Goal: Startup Battery/Fuel Cell program inside the Tech Center and support spin-offs into stand alone venture

Objective: Establish Center for Battery Systems Technology as public-private partnership with NSWC Crane and CTI

Tasks:

- Establish programmatic link with NSWC Crane and agreements: CRADA, MOU, etc.
- Identify current private sector participants with expansion needs
  - General Motors Fuel Cell Activities
  - Korean battery companies

        - US battery manufacturers and start-ups
    - Identify US DOE and DOD requirements and funding
    - Hold Industry Days for battery industry

B. Growing Government Contractors

The SDA for this project is to utilize state and regional tax and other development incentives to support current regional contractors' and other government contractors' internal efforts to develop business from non-defense customers.

The objectives for this SDA are to:

- Assist government contractors to expand their non-defense activities in the region.
- Develop a private sector business case for the expansion of 500 jobs in the next 12 months.

Specific tasks include:

- Convene meetings among contractors, LEDOs, and state economic development agencies to develop state incentives targeted toward government contractors.
- Meet with regional and state-wide government contractors concerning their growth requirements and the potential to expand in the region.
- Create regional low-interest loan program for contractor expansion efforts.
- Where possible, liaison with county LEDOs to work with contractors.
- Tech Center staff assists contractors with development of business plan for expansion and with assistance of LEDO in local financing.
- ID growth process and schedule with contractors.
- Celebrate successes with public announcements.
- State, LEDOs and CTI continue to refine current incentive programs based on lessons learned from initial effort.

C. Growing Life Sciences & Health Care

The SDA combines both life sciences and health care. These two related topics give rise to two areas focus.

For Growing Life Sciences, the objectives include:

- Create a more dynamic technology transfer system, in life sciences, using national and state resources.
- Develop new small businesses in the region that can take advantage of life sciences technology transfer.
- Recruit new drug and medical device workers to the region, without causing worker dislocation in other regions.

Specific tasks include:

- Develop a regional marketing effort.
- Connect to the West Lafayette-Indianapolis-Bloomington Life Sciences Corridor.
- Work closely with the Bloomington Life Sciences Partnership.
- Develop state and regional interface with CREDO, IEDC, Indiana universities and National Institutes of Health, Office of Technology Transfer (NIH-OTT).
- Develop Washington, D.C. presence for interface.
- Integrate with State IEDC programs and funding.
- Integrate with existing state programs and organizations and national partners including Indiana Life Sciences Initiative, BioCrosssroads, and Indiana Health Industry Forum.

For Promoting Regional Health Care, the will be on supporting the region's health care providers and institutions. The objective here is to retain and grow existing rural health care services and operations.

Tasks include:

- Develop a regional health care industry forum to develop plans to maintain and strengthen health care services in the region.
- Develop a strategy to help rural health care facilities compete with their urban counterparts.
- Create a Broadband link among all regional health providers.
- Promote and support training for professional growth for health care jobs in the region.
- Work with IU to determine opportunities for strengthening rural health care in the region.
- Identify resources other partners to improve rural health care in the region.
- Partner with state universities, the private sector, and the region's entrepreneurial pilot program to create new technology-driven health care enterprises.

D. Growing Non-Defense Manufacturing

In this SDA the region will focus on three clusters: Automotive, Small Arms, and General Components.

For the Automotive Cluster, the focus will be on encouraging regional component manufacturers to supply the parts of the automotive parts/assembly industry that are currently growing.

The objective is to successfully realign one established component manufacturer to begin vending to new automotive clients.

Tasks include:

- Meet with existing regional automotive components firms to ID interest in and obstacles to alignment with vending delivery and quality requirements.
- Determine potential state, regional, and private sector incentive programs.
- Work with individual firms.
- Integrate with PIPP support, the region's entrepreneurial program, and Purdue University's TAP.

For General Industrial Components, the emphasis will be on supporting existing component manufacturing to improve products or processes through subsidized program of the PPIP. The objective is to retain and grow jobs in general manufacturing.

Tasks include:

- Meet with each regional general component manufacturer.
- Identify areas for PPIP assistance from each firm.
- Define PPIP priorities for general manufacturing.
- Integrate Firm's needs with PPIP Schedule.
- Tie program to the state's advanced manufacturing strategy.

For Small Arms, the focus will be on building new small, technology-driven arms manufacturers that can take advantage of NSA Crane's Small Arms Evaluation and Testing capabilities.

Tasks include:

- Develop agreement with NSA Crane on promoting its Small Arms capabilities for business.
- Create marketing plan.
- Consider creating a dedicated program at the PIPP.

- Work with existing Small Arms manufacturers across the U. S. to explore the possibility of using new technology to create prototypes at the Tech Center.

E. Growing Wholesale, Transportation & Logistics

The SDA is 1) to ensure that communities and counties identify potential sites along the proposed route of I-69 and 2) to secure these sites.

Tasks include:

- Identify potential sites along 1-69 route and near interchanges
- Determine site ownership
- Describe site development requirements
- Hold discussions with site owners
- Secure future sites

F. Growing Regional Energy

The combined energy-related SDA includes:

- Support implementation of Clean Coal and other clean energy technologies by current regional energy suppliers.
- Position region to be "favored" site for DOD and commercial synthetic fuels production.
- Develop use of regional resources in energy development

Gas resources

  - Geological resources suitable for CO2 sequestration
  - Support expansion of battery and fuel cell firms in region.

Long-term, this SDA will focus on facilitating clean energy projects in the Crane region and particularly in conjunction with NSA Crane.
Tasks include:

- Represent the Crane region in state-wide energy policy organizations to initiate discussions in conjunction with OED, private sector, and academic institutions.
- Determine DOD synthetic fuels program potential for region.
- Identify specific projects to support current private sector energy development in region and outside region.

G. Support Expansion of Battery/Fuel Cells

The SDA for this issue is to help diversify the regional economy through a focus on batter/fuel cell businesses.
Objective: Create new battery/fuel cell businesses in the Crane region.
Tasks include:

- Startup Battery/Fuel Cell program inside the Tech Center and support spin-offs.
- Establish Center for Battery Systems Technology as public-private partnership with Crane and CTI @ West Gate.
- Establish programmatic link with Crane and agreements: CRADA, etc.
- Identify Current private sector participants with expansion needs.
    - General Motors Fuel Cell Activities
    - Korean battery companies
- US battery manufacturers and start-ups
- Identify US DOE and DOD requirements and funding.
- Industry Days for Battery Industry.

H. Help Create New Businesses and Attract New Businesses

The SDA combines several regional activities. It is focused on New Business Development, which will include both Small Business Creation and New Business Attraction. The objective is to create more businesses in the region – especially those that sell goods and services outside of the Crane region.

For New Business Attraction, it will be essential to make the region more competitive for new business recruitment by creating a centralized and cooperative marketing program.

Tasks include:

- Identify best practice models.
- Form regional marketing group.
- Develop marketing plan.
- Determine costs for participation.
- Create materials.
- Implement marketing plan.

For Small Business Creation, there are two areas of focus. First, create regional entrepreneurial pilot program will be created with a focus on basic employers with moderate-to-high growth potential. Second a rural entrepreneurship program will be developed to ensure opportunities for every community in the region. The objective

here is to create new businesses in the Crane region that have high growth potential, that provide quality professional and technical employment, or that can provide new jobs in rural areas.

The tasks include:

- Develop pilot program in conjunction with partners: Indiana Venture Center and South Central SBDC.
    - Develop evaluation vehicle to identify high growth potential businesses.
    - Provide rural entrepreneurship services to existing or prospective businesses.
    - Establish small business mentoring program.
        - Professional mentors.
        - Provide volunteer advisory boards for each client.
    - Work with Indiana Venture Center to establish a regional angel funding network.

I. Create Pilot Crane Learning and Employment Center for Veterans with Disabilities

This project surfaced relatively late in the planning process. It combines the strategies of leveraging NSA Crane capabilities and regional resource development.

The objective is to create a pilot program that takes a new method for assisting veterans with disabilities in re-entering the workforce. The pilot will provide provides wrap-around support services, training and education, and possible long-term jobs at NSA Crane.

Tasks include:

- Form the program development committee.
- Develop the program.
- Sign agreements between CTI and each partnering agency.
- Find funding for the 18-month pilot.
- Contract with staff.
- Screen candidates.
- Organize housing and transportation.
- Oversee the pilot operation.

This program has already received approximately half of the funding needed for the pilot program.

J. Promote Access to Broadband Services

The SDA is to improve business and worker access to broadband telecommunications services. The objective is to increase the access to broadband services in the Crane region.

Tasks include:

- Create Crane region broadband task force to oversee the project.
- Survey businesses and health care facilities to determine level of broadband access.
- Create local/regional broadband manual for communities.
- Develop plan to ensure regional health care facilities' access to broadband services.
- Determine strategy and identify resources.
- Assist with resource development in grants writing.
- Work with local basic employers and LEOs to increase broadband access.

K. Promote Information Technology (IT) Development

The SDA goal is to increase the region's professional and technical employment through the promotion of the Bloomington area IT community. The objective is to grow IT employment for the Crane region by initially promoting the greater Bloomington community's resources for IT businesses, preparing each county by ensuring that key elements (e.g. broadband, worker training, office space, etc.) is available.

Tasks include:

- Develop a checklist of the criteria required for supporting IT employers
- Evaluate each community in Crane region by that set of criteria
- Create program to improve those communities in the region that do not meet all of the criteria
- Prepare a regional marketing effort to promote both new business locations and new business start-ups in the region
- Work with business prospects looking for locations

L. Growing Homeland Security (HS) Businesses

The SDA's goal is to help diversify the regional economy by developing HS business opportunities in the Crane region.

The objective is to build HS business operations by working with Indiana's current HS assets such as the Regional Homeland Security Training Center in Muscatatuck.

Tasks include:

- Support the extra-regional development of the Regional Homeland Security Training Center.
- Identify potential HS venders currently in the region.
- Create an HS program as an area of the Tech Center.
    - Sensors
    - Optical devices
    - Tailored weapons
    - Systems integration
    - Chem/Bio detection
    - Aerostats
- Work with a regional firm that can support HS Safety and Training programs using the outsourcing model developed to support pharmaceutical operations.

Section 2: SDA Activity Matrix

The following activity matrix delineates for the regional oversight group the activities that to be undertaken in order to implement its operation and support the five diversification strategies. This matrix shows the recommended activities by calendar quarter, beginning in the third quarter of 2007 and extending through the end of the fourth quarter of 2008.

The matrix also shows the activities required for the ongoing operation of the regional oversight group, including sourcing required funding for operations and the economic development program, and implementing the communications & marketing program.

The matrix outlines the regional group carrying out a number of activities in the five approved Diversification Strategies for the region. The matrix activities are organized by quarter.

Chart 5. Implementation Action Plan						
Activity	**III Quarter 2007**	**IV Quarter 2007**	**I Quarter 2008**	**II Quarter 2008**	**III Quarter 2008**	**IV Quarter 2008**
CREDO	Resource development Determine staffing approach	Engage Staff Support Begin Government Contractor Marketing	Continue Government Contractor Marketing Determine Next SDA to Initiate	Continue Government Contractor Marketing Begin new SDA project	Continue projects	Revise EDP and Implementation efforts for next year
Technology Center	Deciding on Initial Tech Center program areas Establish programmatic link with Crane and agreements: such as PIA	Development of Tech Center client marketing program Review selected past NSA Crane technology assistance client projects. Create PIPP interface process Secure Funding Hire contract staff Outline how PPIP will evolve from Tech Center operation	Implement marketing campaign Serve 15 new regional clients through PIPP in first 6 months	Full-time marketing and client liaison staff on board at Tech Center Serve 15 new regional clients through PIPP in first 6 months	Negotiate first Battery company expansion	Serve 50 total regional clients through PIPP in first 12 months
Growing Government Contractors	Follow-up with SAIC Meet with contractors, assisted by appropriate county LEDOs to present State incentives to 500 job expansion Assist Contractors in presenting case for incentives to State Identify timing of jobs expansion	Determine Incentive Package for SAIC Integrate announcement of job expansion into Communications Plan Develop an incentive proposal to IEDC Meet with other Crane Contractors	Determine status and timeline for new program at Muscatatuck & VA Existing contractors informed of opportunities at Muscatatuck	National marketing effort begins	Marketing effort continues	Marketing effort continues

Chart 5. Implementation Action Plan						
Activity	**III Quarter 2007**	**IV Quarter 2007**	**I Quarter 2008**	**II Quarter 2008**	**III Quarter 2008**	**IV Quarter 2008**
Growing Regional Non-Defense Cluster: Life Sciences and HealthCare	Initiate meetings with regional bio-tech firms to identify areas of technical interest for NIH	Nominate members of state NIH task force Negotiate MOU Between NIH & Indiana Begin meetings with regional health care providers	Begin NIH Tech Transfer program in connection with existing programs at IU, etc.	Regional NIH Tech Transfer Implement small business development program for Life Sciences companies Create regional Health Care provider growth strategy	Participation in State-wide NIH program Implement Health Care provider strategy	Continue Life Sciences and Health Care programs
Growing Regional Non-Defense Manufacturing	initiate Meetings with state officials, Initiate Meetings with small arms manufacturer Initiate meetings with LEDOs and Auto component manufacturers to identify potential for these firms to realign to requirements and support needed to do so	Regional Group considers regional marketing for Auto components Complete auto component asset inventory	Formation of Regional Angel Investor Group	Mtg. of Angel Investor Group to review potential deals	Mtg. of Angel Investor Group to review potential deals	Business location of small arms manufacturer
Develop the region's Wholesale, Transportation, and Logistics Sector	Inform Crane region counties and communities about INDOT planning grants Attend INDOT information meetings	Meet with county commissioners, mayors, and town council presidents to discuss including WTL sector in I-69 land use plans	Have CREDO representatives on each community's I-69 corridor plan	Continue with local corridor planning effort Meetings with Indiana wholesale /distribution firms that may want to expand into I69 corridor	Identify potential WTL sites with access to I-69 in each county Assist in having sites protected by community and county plans	Register sites with the Indiana Economic Development Corporation Market sites to WTL companies

Chart 5. Implementation Action Plan						
Activity	**III Quarter 2007**	**IV Quarter 2007**	**I Quarter 2008**	**II Quarter 2008**	**III Quarter 2008**	**IV Quarter 2008**
Support specific new Energy in the region	Work with OED and other organizations in studying Energy Assets and Crane Region potential	Work with NSA Crane on possible location for Energy facility on base	Review DOD Synthetic Fuels program Continue working with state, NSA Crane, and universities	Continue program	Continue program	Continue program
Grow Battery and Fuel Cell Businesses	Initiate Meeting with General Motors Alternative Energy Group Initiate Meetings with 2 Korean Fuel cell and Battery companies	Identify Current private sector participants with expansion needs, including General Motors Fuel Cell Activities, Korean battery companies, US battery manufacturers and start-ups	Identify and initiate meeting with US Battery and Fuel cell firm with expansion potential to assess potential for expansion in region	Startup Battery/Fuel Cell program inside the Tech Center Identify US DOE and DOD requirements and funding Develop Marketing Program	Hold Industry Days for Battery Industry Implement Marketing Program	Continue Marketing Program
Drive Employment Growth through New Business Creation and New Business Recruitment	Start up activities of Angel Investors and early stage management mentor network in Southwest Indiana supported by Indiana Venture Center and regional SBDC, Meetings with Indiana Venture Center and the South-Central SBDC	Form Regional Marketing Group Angel Investor education meetings with regional businesses Develop Rural Small Business Development Plan	Tie IU technology transfer findings into entrepreneurship program Raise Funds Development Marketing Plan	Implement Marketing Plan Launch Rural Small Business Development Plan	Continue Business Attraction Marketing and Rural Small Business Development Plan	Continue Business Attraction Marketing and Rural Small Business Development Plan

Chart 5. Implementation Action Plan						
Activity	**III Quarter 2007**	**IV Quarter 2007**	**I Quarter 2008**	**II Quarter 2008**	**III Quarter 2008**	**IV Quarter 2008**
Create Pilot Crane Learning & Employment Center for Veterans with Disabilities	Finalize concept Raise Funding	Initiate 18-month pilot program at NSA Crane Form Advisory Council	Manage program Begin Post-Secondary Education program with Vincennes University and Ivy Tech Community College	Advisory Council begins to develop plans for the next phase of the pilot program	Some participants will graduate from the program and take full-time jobs Brief state and federal officials	Program continues through first quarter of 2009
Improve Access to Broadband Telecommunications Services		Create Crane Region Broadband Task Force	Survey businesses and health care facilities to determine levels of access	Identify potential Internet Broadband strategic partners Develop Regional Broadband strategy	Implement strategy	Review funding requirements for the next 12 months.
Grow Information Technology Businesses		Develop checklist of IT employer criteria	Evaluate each community in the region by that set of criteria	Create strategy to improve Broadband access in each community that does not meet the criteria	Prepare a Regional Marketing Plan to promote new business locations and start-ups	Work with business prospects looking for sites with appropriate Broadband access
Homeland Security		Develop vendor requirements for Crane Vet Center	Identify potential for regional business expansion to support Crane Vet center	Develop vendor requirements for Muscatatuck Training Center	Identify potential for regional business expansion to support Muscatatuck Training Center	Publish via electronic newsletter and email distribution lists services and goods sought by MTC. Hold meetings to discuss how to vend to homeland security programs at the national, state, regional, and county levels

Chart 5. Implementation Action Plan						
Activity	**III Quarter 2007**	**IV Quarter 2007**	**I Quarter 2008**	**II Quarter 2008**	**III Quarter 2008**	**IV Quarter 2008**
Communications	Acknowledgement letter to Stakeholders Press release about formation of organization Outreach to IEDC, OEDD, Indiana Ventures, and the Military Base Planning Council, Crane, SBDCs, Grow Crane concerning PR and support: present EDP Announcement of EDP Outreach to USA Today to FU on June article on impact of Crane	Implement Communications Plan Prepare Marketing materials on PIPP to regional and state industry Business Relocation Technology Transfer Regional resources to national market	Press Release on Kick-off of EDP Implementation PR for Tech Center, PIPP Marketing to regional firms for PIPP & TAP Announcement of Entrepreneurial Programs Marketing for West Gate @ Crane in conjunction with developer	DC oriented marketing: Technology Transfer: NIH Power Industry Organizations Federal R&D programs: DOE, DOD Economic Development Funding: EDA, USDA	National Marketing *Batteries* *Fuel Cells* *IT community* *Co2 sequestration*	Continue National Marketing
Resource Development	Proposal for DOL Funding	Research other Funding Sources	Submit Proposal to DARPA	Begin DARPA Funding	Continue Funding Research	Continue Funding Research
	Begin Receiving Funds					
		Begin Proposal to DARPA	Revise Foundations Proposals	Begin Foundations Funding	Continue DARPA Funding	
		Proposal to EDA				
	Proposals to IEDC	Proposals for Funding from Foundations	Continue EDA-EDA Funding	Begin Rural Broadband Initiative	Begin Drawdown of Rural Broadband Initiative	
		Proposal to OEA for Tech Center Funding				

Chart 5. Implementation Action Plan						
Activity	**III Quarter 2007**	**IV Quarter 2007**	**I Quarter 2008**	**II Quarter 2008**	**III Quarter 2008**	**IV Quarter 2008**
	Proposal to OEA for Communications Funding	Proposals for funding through Rural Broadband Initiative (S-1190), USDA	Revise Rural Broadband Initiative	Foundation Funding Initiative Continued		
		Proposal for WIRED Grant (DOC)				
					Apply for new EDA Funding	

III. Communications & Marketing Approach:

Communication and marketing are integral to the success of the effort. The communication plan will focus on obtaining a buy-in from the stakeholders in the State of Indiana. Also, CREDO must endeavor to continue to communicate with private industry and the federal government about the economic assets in the region.

A. Communicating the Economic Diversification Plan

First Goal: Communicating the EDP and the programs within it to as many people in the region and beyond as possible.

Second Goal: Obtaining buy-in and support by stakeholder organizations such as NSA Crane, CTI, LEDOs, Grow Crane, local political leaders, and State level organizations such as IEDC, OEDD, SBDCs, Indiana Venture Center, and the Military Base Planning Council. It will be critical to have the full support of Governor Daniels and Lieutenant Governor Skillman.

Third Goal: Demonstrating to leaders of established businesses that the EDP has value for their companies. The initial targets will include Government Contractors, Energy, Medical, Homeland Security, and Pharmaceuticals.

For all three of these goals, there is some funding for development of communications materials available from DOD, OEA.

B. Marketing of Economic Diversification Programs

The EDP includes a wealth of programs and activities. After the general communications and marketing of the EDP is completed, the next focus will be to roll out each of the programs. Following are examples of key programs:

- Tech Center
- PIPP to regional and state industry
- Growing government contractors
- Creating a regional-state-national partnership for Life Sciences Technology Transfer
- Energy
- Crane Learning & Employment Center for Veterans with Disabilities

In order to develop appropriate levels of funding for these programs, the Crane Regional Implementation Team (CRIT) must show prospective funding organizations that its programs are in sync with those organizations' goals. For example, if a state economic development program measures its success in jobs retained and created, the CRIT must be able to indicate its programs' successes in terms of jobs.

C. Segmenting Geographical Markets

The CRIT's communications & marketing program can be divided in terms of geographical focus. There are three primary areas:

- Within the Crane Region
- State-Wide
- Nationally, with an emphasis in Washington, D.C.

Here are examples of communications that will be primarily centered within the Crane Region:

- Announcement of EDP
- Kick-off of Implementation
- PR for Tech Center and PIPP
- Marketing to regional firms for PIPP & TAP
- Announcement of Entrepreneurial Programs
- Entrepreneurship training
- Mentor program
- Angel funding network
- PR for regional success stories
- Marketing for West Gate @ Crane in conjunction with developer

State-wide there are three primary audiences:

- State agencies
- State business executives
- Indiana colleges and universities

The CRIT is unlikely to have sufficient funding for a full national marketing effort. Following are some of the activities:

- Technology Transfer: NIH (Washington, D.C.)
- Power Industry Organizations (Washington, D.C.)
- Federal R&D programs: DOE, DOD (Washington, D.C.)
- Economic Development Funding: EDA, USDA-RD (Washington, D.C.)

- National Marketing
    - Batteries
    - Fuel Cells
    - IT community
    - CO_2 sequestration

D. Managing the Communications & Marketing Process

CREDO and the individual organizations responsible for carrying out the EDP will have to decide how to manage the Communications & Marketing Program. For the CRIT, it will have to decide whether to fully out-source it or hire staff.

IV. Some Potential Funding Sources

Integral to Implementation Plans are meeting the funding requirements to keep the program working. The multiple funding opportunities that we have identified are listed on the subsequent table. The timeline for application and receiving funding for the implementation plan is also indicated in the table.

A. EDA

The U. S. Department of Commerce's Economic Development Administration (EDA) has a series of grants available. Initial discussions with the Chicago based EDA representatives have indicated that all six counties meet or exceed the eligibility requirements for applying for these funds based upon higher unemployment levels than are present nationwide, and lower income levels than nationally.

EDA also considers BRAC-related reductions in employment in evaluating grant proposals.

B. Short-Term Resources

- DOL Emergency Grant Allocation from State
- Phase 1 from current grant
- Phase 2 from forthcoming grant
- OEA Grant: for development of communications and marketing materials
- State
- Private Sector:

- Grow Crane
- Industry investment for specific projects
- Foundations: to support specific programs such as Broadband communication, Technology Transfer in Life Sciences
- In Kind Support from CTI, LEDO's, and other local and regional economic development entities, Purdue TAP

C. Long-Term Resources

- Federal
    - EDA for Infrastructure planning and development for Wholesale & Distribution, West Gate @ Crane I-69 access, Energy Development
    - USDA for rural development
    - DOD and DOE for energy development planning and R&D
- State
- Private Sector
- Energy Development
- Sustainment of CTI
- Broadband communications development
- Foundations
- In Kind support

V. Conclusion

The economic diversification planning process that regional leaders have undertaken has been essential. The process has laid the ground work for a long-term effort to improve the region's economic assets.

Critical to a successful mission is having a new, active regional organization with the appropriate resources. The regional organization needs to have experience in economic development and in working with NSA Crane. Without such a coordinating entity, economic diversification will be much more difficult.

As was mentioned earlier in this report, transition from economic dependence upon NSA Crane will require significant financial resources and leadership at both the regional and state levels.

There are 12 fundamental programs that will be carried out in the first 18 months of the EDP. Each of these is important. Programs such as the Tech Center and the technology-driven approach to Life Sciences build upon the region's assets and hold great economic promise.

Lessening NSA Crane's economic influence on this six-county region will not be an easy task. As the economic assessment in Phase I demonstrated, NSA Crane is a major source of employment and income for entire area. It is the most important economic factor for four of the counties in the region.

Nonetheless, the strategic plan that was developed in Phase II and its accompanying implementation plan from Phase III have enabled regional leaders to create a roadmap for moving the region's economy forward.

While some recent small steps toward implementation have been encouraging, the Crane region still has much to do before its economy is more evenly balanced and less dependent upon NSA Crane. This plan will help state and regional leaders achieve that balance.