

APG MARYLAND AT THE READY

BRAC Commission Staff

Harford County - Army Alliance

Aberdeen Proving Ground Community Readiness Update

July 29, 2005



The Absorptive Capacity of Harford County & its Region

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Table of Contents

List of Exhibits.....2

Introduction.....3

Harford County & its Region – an Overview3

The Absorptive Capacity of Harford County & its Region – Category by
Category.....4

 Population5

 Cost of Living6

 Safety and Crime.....7

 Medical Providers/Healthcare.....9

 Transportation.....10

 Utility Costs11

 Housing Market11

 Labor Force and Economic Environment.....13

Conclusion15

List of Exhibits

Exhibit 1: Growth in Graduate Degree Holders, 2000 vs. 2004 estimates5
Exhibit 2: Cost of Living Index, 2005Q16
Exhibit 3: Crime Rate Index, U.S. vs. Harford County, 20027
Exhibit 4: Probabilistic Earthquake Risk Map of the United States8
Exhibit 5: Hurricane Direct Hits on the Mainland U.S. Coastline by
State, 1900-20049
Exhibit 6: Rate of Active Physicians per 100,000 Population, Top 10
States, 20009
Exhibit 7: Harford County Area Transportation Map10
Exhibit 8: Annual % Growth in Building Permits11
Exhibit 9: Annual Growth in Building Permits11
Exhibit 10: Recent Building Permits12
Exhibit 11: Net Planned Units in Harford County as of December 200412
Exhibit 12: Plan-Approved Units in Harford County, MD12
Exhibit 13: Median Sales Price of Existing Single-Family Homes, 2005Q113
Exhibit 14: Employment Growth by Maryland Jurisdiction,
2004Q4 vs. 2003Q414
Exhibit 15: Proportion of Employment in Professional/Scientific/Technical
Services, Top 10 States, May 200515

The Absorptive Capacity of Harford County & its Region

Introduction

Aberdeen Proving Ground (APG) in Harford County, MD is slated to gain 2,176 direct jobs according to Base Realignment and Closure (BRAC) recommendations. Communities losing jobs to Aberdeen have suggested that the impacted area will not be able to accommodate the proposed expansion of military activities. This report systematically explores the absorptive capacity of the impacted area.

Harford County & its Region – an Overview

The Harford County Region is Enormous

Harford County is part of two metropolitan definitions; one narrow, one broad. The County's primary region or PMSA is defined by the U.S. Census Bureau as the Baltimore metropolitan area, home to roughly 2.6 million people. By implication, Harford County is also part of the Baltimore, MD-Washington, DC consolidated metropolitan area (CMSA), home to approximately 8.0 million people according to 2004 ACCRA estimates. As such, Harford County is part of the fourth largest metropolitan area in the nation, behind only New York, Los Angeles and Chicago, and ahead of 272 others.¹

The Baltimore-Washington area's footprint is even more impressive when one considers growth in population as opposed to population level. Between 2000 and 2004, the Baltimore-Washington CMSA's population is estimated to have grown 6.5 percent.² This compares to New York's 1.4 percent, Los Angeles' 4.8 percent and Chicago's 3.4 percent growth. In absolute population growth terms, the Baltimore-Washington area ranked first among metropolitan areas in the nation during this period.

Harford County reports an 8.8 percent population increase over the past 5 years, from 218,590 in 2000 to an estimated 237,900 in 2005.³ The Maryland Office of Planning projects that Harford County's 2010 population will be 257,800.

To put the Aberdeen Proving Ground expansion into perspective, the projected associated direct employment increase will add 0.16% to the Baltimore area's employment, and 0.05% to the consolidated Baltimore-Washington area's employment totals. By itself, this suggests that the Harford County region will be able to easily accommodate the proposed expansion of military activities.

Abundant Quality of Life

Military and civilian personnel locating to Maryland can expect to enjoy arguably the nation's highest quality of life. The Baltimore area boasts the nation's top-ranked

¹ US Census Bureau.

² 2004 data are estimates; ACCRA data subscribed to by SPG.

³ US Census Bureau; Maryland Department of Planning.

hospital (Johns Hopkins), the National Aquarium, two professional sports teams, Harborplace, the Maryland Science Center, the Walters Art Gallery, the Naval Academy, historic Annapolis, Fort McHenry, the renovated Hippodrome theater, the Baltimore Symphony Orchestra, the Baltimore Museum of Art, the Maryland Zoo in Baltimore, the American Visionary Arts Museum, the recently opened Reginald F. Lewis Museum of Maryland African-American History and Culture, and an abundance of historic neighborhoods offering varied architecture and price points.

As the capital of the free world, Washington, D.C. augments Baltimore's offerings, and includes world class attractions including the Smithsonian, Lincoln Memorial and the Kennedy Center for the Performing Arts. The Washington area boasts six professional sports teams, including recent arrivals DC United (MLS) and the Washington Nationals (MLB). Fans of minor league baseball are likely to be entranced by the Aberdeen Ironbirds of the New York-Penn League.

Despite Harford County's location in the midst of the nation's deepest job market (please see below) and cultural center, housing remains surprisingly affordable. In May 2005, the County reported a median home price of \$236,450. This is roughly equivalent to Baltimore area median home sales prices, reported at \$235,300 as of first quarter 2005.⁴ For the sake of comparison, the reported median home sales price in the Monmouth-Ocean, NJ metropolitan area for first quarter 2005 was \$358,500, or roughly 52 percent higher than corresponding prices in the Baltimore area.

The Absorptive Capacity of Harford County & its Region, Category by Category

The balance of this report analyzes the capacity for Harford County and its region to provide the services and people that employees and contractors will require to live and operate successfully. SPG has analyzed the eight categories routinely considered relevant by the BRAC Commission. These include:

- Population;
- Cost of living;
- Safety/Crime;
- Medical Providers/Healthcare;
- Transportation;
- Utility Costs;
- Housing Market; and
- Labor Force/Economic Environment.

In compiling statistics, SPG relegated its data collection efforts to publicly available sources. For the most part, SPG utilized easily accessible government sources.

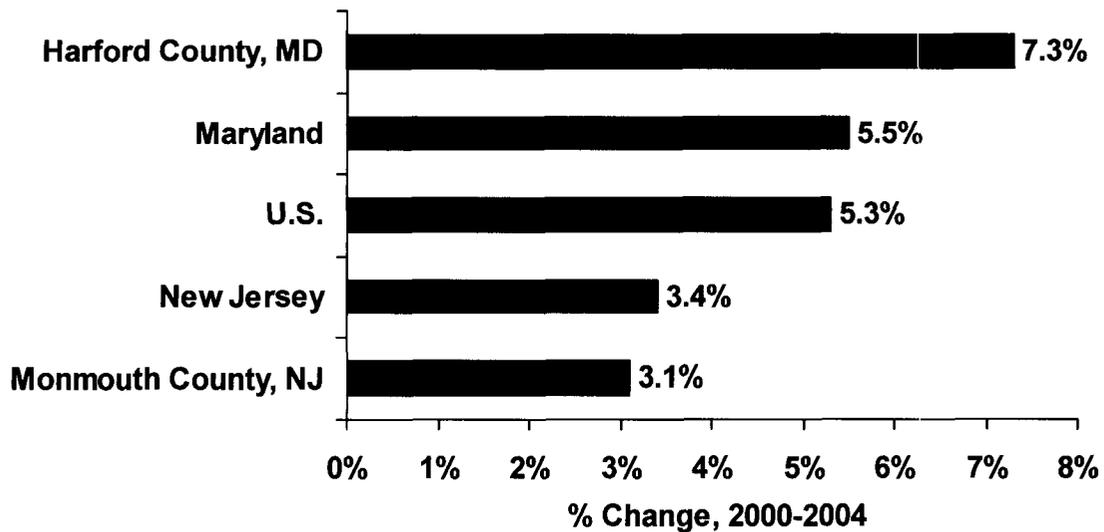
⁴ Measure is for single-family homes.

Population

Concentrated Human Capital

As stated earlier, population is expanding in Harford County and its region. But looking purely at the number of residents in the Harford County region misses much of what the region has to offer. Not only has the population of the area increased, so too has the area’s population of highly educated, technical personnel. This is reflected in part in Exhibit 1.

Exhibit 1: Growth in Graduate Degree Holders, 2000 vs. 2004 estimates



Source: ACCRA data subscribed to by SPG; US Census Bureau

The data in Exhibit 1 reflect an underlying reality. Maryland is an elite state when it comes to concentrations of human capital.

The most current U.S. Census data (2003) indicate that 15.2 percent of Maryland’s population 25 years and older have a graduate or professional degree. This ranks Maryland first out of all 50 states for educational attainment. New Jersey also ranks high (8th), with 11.8 percent of its 25 and over population holding a graduate/professional degree.

Maryland’s lofty position is confirmed when considering broader measures of educational attainment. The Progressive Policy Institute’s (PPI) most recent report on the “new economy”⁵ ranks Maryland first out of all states for an educated workforce, and takes into account advanced degrees, bachelor’s degrees, associate degree’s and other

⁵ New Economy: a strategic combination of organizational changes, policy settings and capacity building based on the innovation and creativity promoted by expanded international trade and global, networked information technologies, which achieves sustainable economic growth and social wellbeing. APEC, 2001.

higher education coursework.⁶ PPI ranked New Jersey 15th for overall educated workforce.

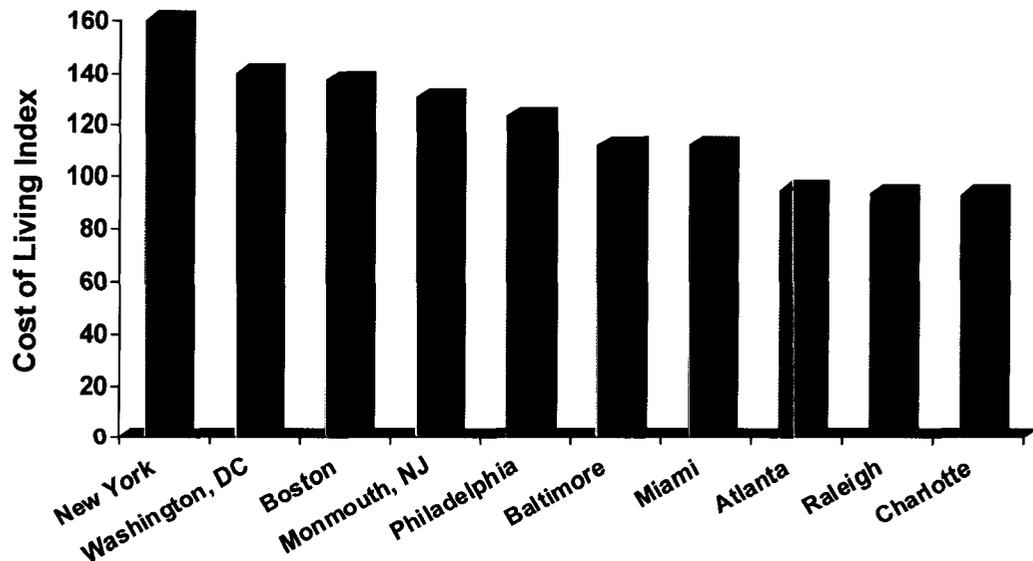
Educating the Next Generation: Available School Capacity

In many expanding communities, school capacity is an issue. This is not the case in Harford County, MD. As of January 2005, Harford County public schools were operating under capacity. State rated capacity for Harford’s public schools is 41,128 students. At 40,330 students, total enrollment for the current school year in the County’s schools is 798 students less than capacity. Harford County is home to 33 elementary schools, 8 middle schools and 9 high schools.⁷

Cost of Living

Among major East Coast metropolitan areas, few enjoy a cost of living below Baltimore’s. This is reflected in Exhibit 2, which also provides cost of living information on the Middlesex-Monmouth, NJ metropolitan area for comparison purposes.⁸

Exhibit 2: Cost of Living Index, 2005Q1



Source: ACCRA Cost of Living Index report, 2005Q1

Using the Baltimore area to proxy for Harford County actually overstates the cost of living there. According to the Maryland Department of Business and Economic Development, Harford County recorded the 14th lowest cost of living index of all 24 Maryland jurisdictions in 2000, at 97.7.⁹

⁶ Progressive Policy Institute, 2002

⁷ Harford County Public Schools.

⁸ ACCRA.

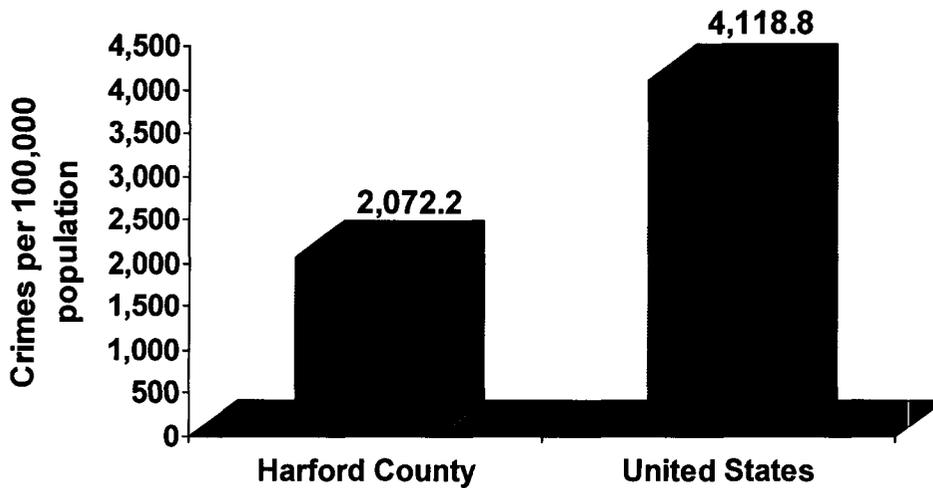
⁹ Maryland Department of Business and Economic Development.

Safety and Crime

Harford County Enjoys a Low Crime Rate

The number of reported crimes in the United States per 100,000 population (known as the crime rate index) stood at 4,118.8 in 2002.¹⁰ Maryland’s crime rate was slightly higher, at 4,747.4 reported crimes per 100,000 population. However, all of the Baltimore region’s jurisdictions except Baltimore City reported significantly lower crime rates than that of Maryland and the United States. In 2002, Harford County reported a crime rate index of 2,072.2.¹¹

Exhibit 3: Crime Rate Index, U.S. vs. Harford County, 2002



Source: US Bureau of Justice Statistics Database

Maryland not Prone to Natural Disasters

- Tornadoes

Between 1950 and 1994, there were 760 tornadoes a year on average in the US. During this period, Maryland reported an average of 3 tornadoes per year. Of all 50 states, the Disaster Center ranks Maryland 27th for tornado risk.

- Earthquakes

Maryland’s earthquake hazard rating is in the low- to very-low range. According to the Maryland Geological Survey, the state’s earthquake risk is between 4% and 10% g (maximum horizontal ground acceleration or ground shaking due to gravity). The highest risk level is above 60% g. Parts of California are the only areas in the US to report such a high earthquake risk.

¹⁰ Most current data available; US Bureau of Justice.

¹¹ US Bureau of Justice; Harford County Police Department.

Exhibit 4: Probabilistic Earthquake Risk Map of the United States



Source: Maryland Geological Survey

- Hurricanes

Between 1900 and 2004, Maryland was directly hit by one hurricane. A total of 242 hurricanes have directly hit the US mainland coastline since 1900, with 68 of them being greater than a 3 on the Saffir/Simpson hurricane classification.¹² Exhibit 5 provides additional detail on direct hits by state.

¹² A Saffir/Simpson hurricane classification between 3 and 5 is considered major.

Exhibit 5: Hurricane Direct Hits on the Mainland U.S. Coastline by State, 1900-2004

State	All Hurricanes	Major Hurricanes (3-5 on the Saffir/Simpson Scale)
Florida	64	27
Texas	38	16
North Carolina	29	11
Louisiana	27	12
South Carolina	16	4
Alabama	12	6
Mississippi	9	6
New York	9	5
Connecticut	8	3
Massachusetts	6	2
Georgia	5	0
Virginia	5	1
Rhode Island	5	3
Maine	5	0
New Hampshire	2	0
New Jersey	1	0
Maryland	1	0
Delaware	0	0

Source: National Hurricane Center

Medical Providers/Healthcare

In 2000, the nation reported 251 active physicians per 100,000 population. Maryland reported a rate of 373 active physicians per 100,000 population. This ranked Maryland third among all 50 states in the nation for physician-to-population ratio. New Jersey ranked seventh by this measure.

Exhibit 6: Rate of Active Physicians per 100,000 Population, Top 10 States, 2000

Rank	State	Active Physicians per 100,000 population
1	Massachusetts	417
2	New York	380
3	Maryland	373
4	Connecticut	351
5	Rhode Island	328
6	Vermont	327
7	New Jersey	298
8	Pennsylvania	290
9	Hawaii	265
10	Illinois	263

Source: Maryland Department of Planning

Utility Costs*Utility Costs are Competitive*

According to ACCRA, the Baltimore region's utility cost index was 115.5 in first quarter 2005 (compared to the US index set at 100). The Middlesex-Monmouth, NJ metropolitan area reports a utility cost index of 111.6.

Housing Market*Building Activity on the Rise*

Exhibit 8: Annual % Growth in Building Permits

Area	2000-2001	2001-2002	2002-2003	2003-2004	YTD May '04 v. May '05
Harford	8.34%	2.11%	4.94%	-7.09%	41.06%
Cecil	22.40%	2.98%	12.50%	-25.53%	-17.69%
Baltimore MSA	-7.59%	0.76%	1.29%	-7.64%	20.63%
Maryland	-4.28%	0.81%	2.12%	-8.46%	19.48%

Source: U.S. Census Bureau

The number of building permits issued in Harford County in May 2005 was 1,010 year-to-date, a 41.1 percent increase from year-to-date May 2004. Cecil County data are included because many employees at Aberdeen have historically lived in Cecil County.

Exhibit 9 shows that building permit issuance accelerated dramatically in early 2005 statewide. Exhibit 10 shows recent building permit activity.

Exhibit 9: Annual Growth in Building Permits

Area	2000-2001	2001-2002	2002-2003	2003-2004	YTD May '04 v. May '05
Harford	142	39	93	-140	294
Cecil	172	28	121	-278	-72
Baltimore MSA	-896	83	142	-851	732
Maryland	-1,299	234	621	-2,532	2,256

Source: U.S. Census Bureau

Exhibit 10: Recent Building Permits

Area	May 2005 YTD Building Permits
Harford	1,010
Cecil	335
Baltimore MSA	4,281
Maryland	13,836

Source: U.S. Census Bureau

Exhibit 11 indicates that Harford County has the capacity to absorb the families moving to the area to support military/homeland defense activities at APG. Exhibit 12 indicates that the housing options available to employees and their families will be varied.

Exhibit 11: Net Planned Units in Harford County as of December 2004

Type	Harford County (unincorporated)	Municipalities	County-wide Vacant Inventory (Includes Municipalities)	Total County Inventory
Plan-Approved Units	7,819	2,890	26,472	37,181
Recorded Lots	4,622	n/a	n/a	n/a

Source: Harford County

Exhibit 12: Plan-Approved Units in Harford County, MD

Area	Single-Family	Townhome	Apartment or Condominium	Other	Total
Harford County (unincorporated)	3,802	2,025	1,992	0	7,819
Aberdeen	97	187	336	0	620
Bel Air	41	0	96	0	137
Havre de Grace	979	768	386	0	2,133
Total	4,919	2,980	2,810	0	10,709

Source: Harford County

Home Prices Remain Competitive

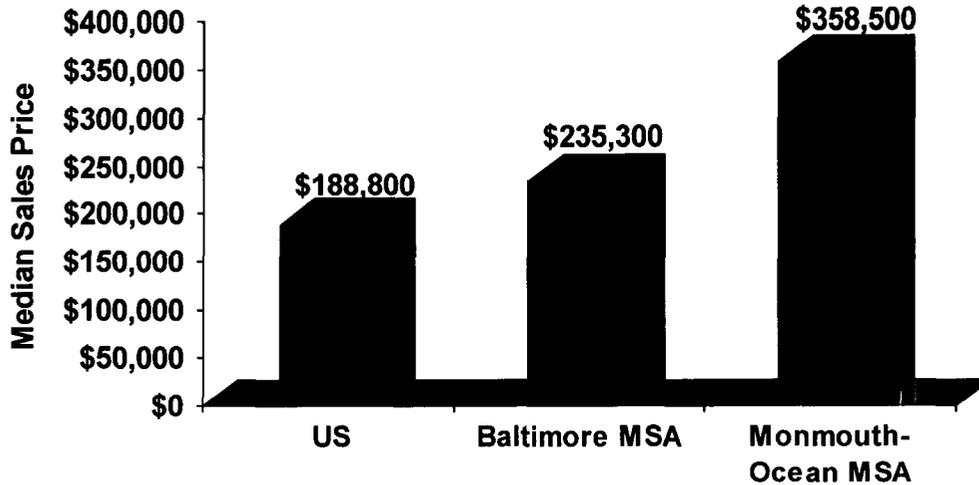
As of May 2005, median home price in Harford County was \$236,450. Cecil County reported a median home price of \$237,450 in May 2005. Maryland's median home price was \$287,439 during the same month.¹⁵

The nation reported an average sales price of \$188,800 for existing single-family homes in first quarter 2005, a 9.7 percent increase from first quarter 2004. The Baltimore region

¹⁵ Maryland Association of Realtors.

reported 6.9 percent growth in its average sales price of existing single-family homes, from \$220,100 in 2004Q1 to \$235,300 in 2005Q1. This compares to the 20.3 percent increase in median existing single-family home sales price that the Monmouth-Ocean, NJ metropolitan area experienced, from \$298,000 in 2004Q1 to \$358,500 in 2005Q2.¹⁶

Exhibit 13: Median Sales Price of Existing Single-Family Homes, 2005Q1



Source: National Association of Realtors

Labor Force and Economic Environment

Harford County Possesses a Dynamic Employment Base

In fourth quarter 2004, Harford County reported the highest 12-month percentage growth in employment among all Maryland jurisdictions (please see Exhibit 14).¹⁷ This compares to the 1.7 percent growth in the Baltimore region and the 1.6 percent growth in Maryland during the same time period.

¹⁶ National Association of Realtors.

¹⁷ Most current data available.

Exhibit 14: Employment Growth by Maryland Jurisdiction, 2004Q4 vs. 2003Q4

Rank	Jurisdiction	% Change in Employment
1	Harford	6.15%
2	Carroll	5.39%
3	Anne Arundel	4.41%
4	Wicomico	4.12%
5	Cecil	3.96%
6	Garrett	3.83%
7	Dorchester	3.73%
8	Frederick	3.61%
9	Kent	3.51%
10	Charles	3.21%
11	Calvert	3.04%
12	Baltimore	3.03%
13	Howard	2.02%
14	Caroline	1.43%
15	Queen Anne's	1.39%
16	Prince George's	1.01%
17	Allegany	0.85%
18	Talbot	0.64%
19	Montgomery	0.58%
20	St. Mary's	0.53%
21	Washington	0.34%
22	Somerset	-1.48%
23	Baltimore City	-2.79%
24	Worcester	-2.96%

Source: Maryland Department of Labor, Licensing and Regulation

The most recent data indicate that roughly 6.7 percent of Harford County's total employment is in the professional/scientific/technical services. As of May 2005, Maryland ranked second out of all fifty states for the proportion of employment in professional/scientific/technical services, at 8.3 percent. Virginia ranked just above Maryland, with 8.6 percent of employment in professional/scientific/technical services. New Jersey, with 6.3 percent of employment in professional/scientific/technical services, ranked sixth.¹⁸

¹⁸ Bureau of Labor Statistics.

Exhibit 15: Proportion of Employment in Professional/Scientific/Technical Services, Top 10 States, May 2005

Rank	State	Proportion of Employment in Professional, Scientific, and/or Technical Services
1	Virginia	8.63%
2	Maryland	8.30%
3	Massachusetts	7.03%
4	Colorado	6.61%
5	Delaware	6.33%
6	New Jersey	6.31%
7	California	6.20%
8	New York	6.06%
9	Illinois	5.61%
10	Michigan	5.50%

Source: Bureau of Labor Statistics

Between May 2004 and May 2005, Maryland's labor force grew 1.9 percent. The Baltimore region's labor force grew 3.5 percent over the same 12-month period. This compares to the nation's growth of 1.4 percent. Over the past 12-months for which data are available (March 2004-March 2005), Harford County's labor force grew 8.3 percent.¹⁹

Conclusion

Harford County has emerged as a center of dynamic economic growth. Growth in Harford County is characterized by a surge in professional and technical employment that has attracted highly educated workers from across the nation.

In response to commercial growth, residential building permit activity is on the rise, suggesting that Harford County's absorptive capacity is keeping pace with its dynamism. Data also indicate available space in County classrooms. Despite an abundance of economic, cultural and quality of life opportunities in its region, housing in Harford County remains quite affordable by East Coast terms.

Harford County also reports low crime and is not prone to climatic or natural disaster. Its presence in the midst of a transportation hub also makes it productive from both military and civilian perspectives.

The analysis above makes it clear that the Harford County region has the capacity to absorb an expansion of activities at APG, and to supply needed technical and professional personnel. Indeed, Harford County and its region have emerged as centers of human capital formation in the United States.

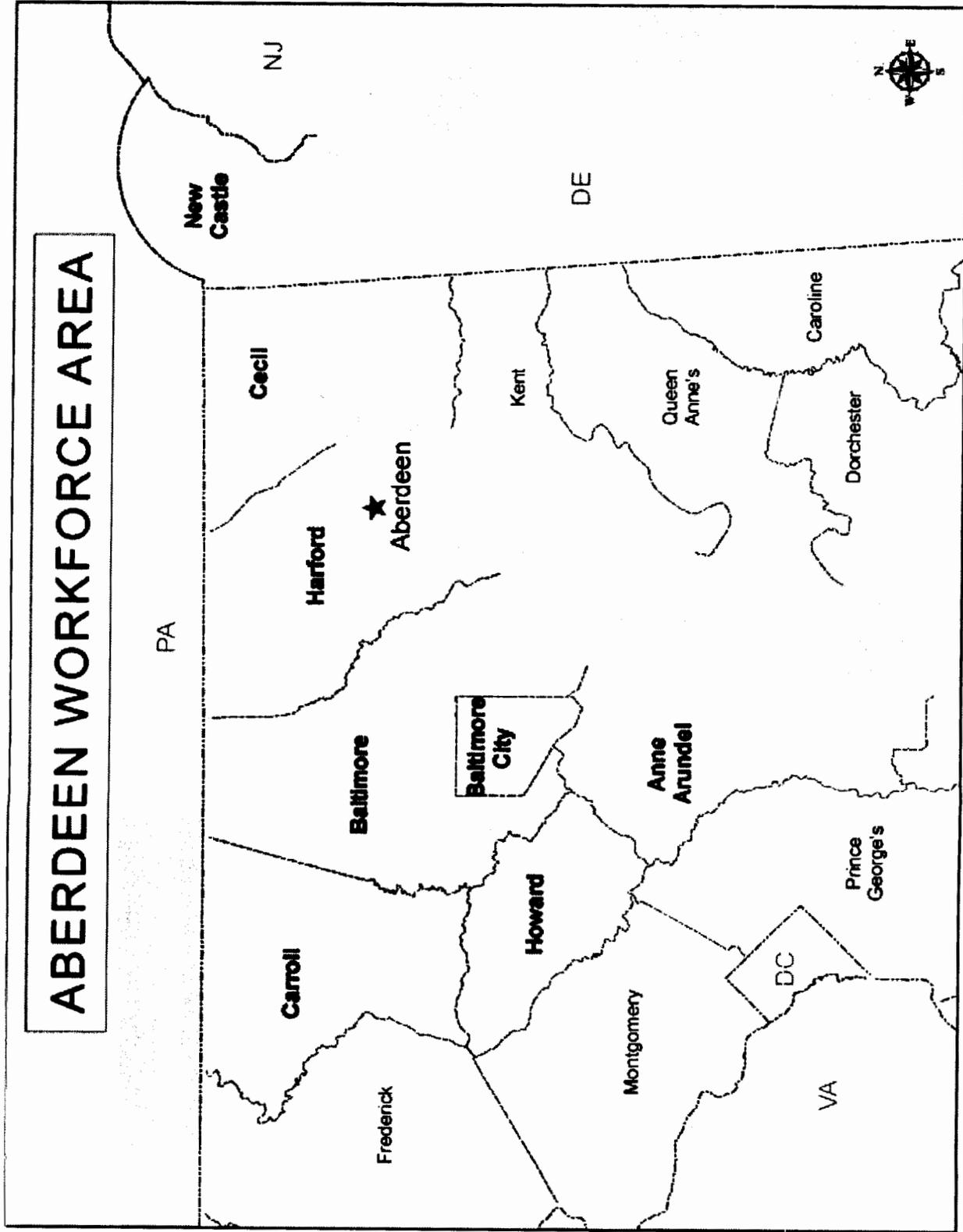
¹⁹ Id.



WORKFORCE ANALYSIS

This document was written by Maryland's Department of Business and Economic Development (DBED) to provide the BRAC Commission and staff with workforce analysis regarding the labor pool supporting the Aberdeen Proving Ground.

July 8, 2005



I. Workforce Availability

The Aberdeen Proving Ground [APG] draws on a plentiful pool of sophisticated talent to support current capabilities, and has worked with county and state officials, as well as the leaders of Maryland’s academic institutions, to provide a future pipeline of talent. Maryland provides the Aberdeen Proving ground with a highly skilled workforce. According to the Department of Labor, Maryland ranks first among the states with the highest percentage (24%) of professional and technical workers in the state’s labor pool. In addition, in 2003 the US Department of Commerce found that Maryland is statistically tied with Massachusetts as the top state in the nation for educational attainment. Nearly 38% of Maryland’s population 25 years of age and above have earned a bachelor’s degree or higher.

There is a nationally recognized science and technology workforce concentrated in and around Harford County, host to the APG. Nearly half a million professionals working in the management, business, computer and mathematics, science and engineering sectors live within a 90 minute drive of APG. Although a little more than 200,000 professionals work within a 60 minute drive of APG, it is neither uncommon nor unreasonable to drive an additional thirty minutes for work in this region. For example, professionals living in Annapolis, MD regularly drive more than an hour to Washington, DC every day for work. Please see the chart and illustrative map on the following two pages for more details.

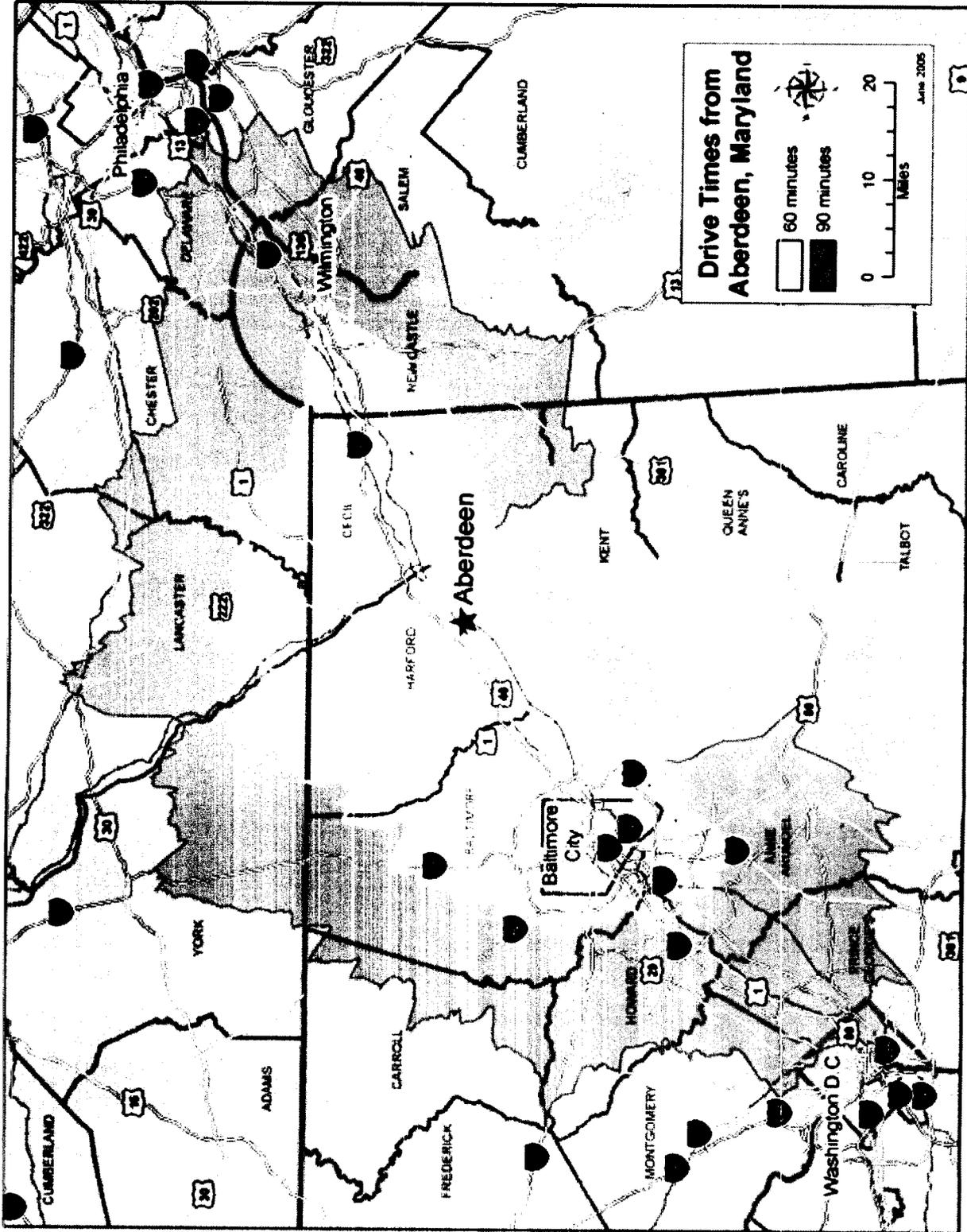
Employed Persons by Selected Occupational Group - 2004 (estimate)
Residence within a 60 or 90 minute drive of Aberdeen Proving Ground

Occupational Group	Number of Persons	
	60-minute drive	90-minute drive
Management	93,304	254,389
Business / Financial	52,793	140,051
Computer and Mathematical	28,920	92,261
Architecture / Engineering	23,164	58,538
Life Science / Physical Science / Social Science	15,342	41,269
Totals	213,523	586,508

Source: ESRI ArcGIS Business Analyst
 Note: Drive-time estimated by ESRI ArcGIS Business Analyst

June 2005

APG Workforce Analysis



Employers in Baltimore City and Anne Arundel, Baltimore, Cecil, Carroll, Howard and Harford Counties hire a wide variety of high-tech talent today. According to the Department of Labor 2002 estimates, Baltimore city and the counties listed above employ nearly 153,000 professionals, including 40,359 in computer science and mathematics and nearly 24,000 engineers and architects. Furthermore, in 2012, it is projected that more than 185,000 professionals will be employed in the Baltimore metro area.

In 2004, more than 2,000 engineers earned associate, undergraduate, masters, and doctorate degrees from Maryland universities. The National Science Foundation (NSF) recognized Maryland in 2001 as the state with the second highest concentration of doctoral scientists and engineering in the nation. The NSF also noted Maryland ranks second in the nation for employed PhD scientists and engineers per 100,000 employed workers. It is not surprising, therefore, that in 2004 the US Technology Administration named Maryland among the top ten states with an intense technology business base. The ranking is a reflection of, among others, the number of high-tech industries located in Maryland and the large percentage of entrepreneurial high-tech start-ups in the state.

**Occupational Employment Estimates, by place of employment
Baltimore metropolitan area
2002 estimates & 2012 projections**

Occupational Category	2002	2012
Management (11-3000)	23,644	28,427
Business and Financial Operations (13-1000, 13-2000)	57,687	67,540
Computer and Mathematical Science (15-1000, 15-2000)	40,359	55,396
Architecture and Engineering (17-1000, 17-2000, 17-3000)	23,824	25,702
Life and Physical Science (19-1000, 19-2000, 19-4000)	7,483	8,407
Totals	152,997	185,472

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics (OES), and Maryland Department of Labor, Licensing & Regulation.

Note: Baltimore, Maryland area includes Baltimore City, Anne Arundel, Baltimore, Carroll, Cecil, Harford and Howard Counties.

Every two years, the Milken Institute, an independent economic think tank located in Santa Monica, CA, publishes the “State Technology and Science Index.” The report ranks the states according to their technology and science workforce. The report uses a variety of economic, academic and political measures to rank the states, including whether there is sufficient depth of high-end technical talent, technology concentration and outcomes, as well as a policy decisions that support technology-based economic development. Maryland maintained its 2002 ranking as 4th in the nation for the concentration of technology and science among the workforce. The Milken report describes Maryland’s “most poignant strengths” in the life sciences and communications technology, “two sectors with extremely bright long-term prospects, and where it has some of the best and deepest talent in the nation.” In addition, Maryland policymakers’ are committed to fostering a high-tech economy. The report notes that the Ehrlich Administration recently released a roadmap to foster development of advanced technology business in the state.

In addition to the professionals in Maryland willing to commute to APG for work, more than 25,000 Delaware residents are employed within 90 miles of APG and represent a viable labor pool for the military installation. In fact, 333 New Castle, DE residents commute to Harford County for work every day. Also, more than a quarter of a million skilled workers live in Pennsylvania counties that are located within a 90 minute drive of APG. The counties are listed below.

**Occupational Employment Estimates, by place of employment
New Castle County, Delaware - 2003**

Occupational Category	Employment
Management (11-3000)	4,650
Business and Financial Operations (13-1000, 13-2000)	15,230
Computer and Mathematical Science (15-1000, 15-2000)	9,300
Architecture and Engineering (17-1000, 17-2000, 17-3000)	4,070
Life and Physical Science (19-1000, 19-2000, 19-4000)	5,080
Totals	38,330

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics (OES); Delaware Department of Labor. Estimates for November, 2003.

**Occupational Employment Estimates, by place of employment
Southeastern Pennsylvania - York, Lancaster, and Philadelphia metropolitan areas
May 2004 estimates**

Occupational Category	York MSA	Lancaster MSA	Philadelphia MSA
Management (11-3000)	1,880	2,900	36,710
Business and Financial Operations (13-1000, 13-2000)	4,650	6,020	109,020
Computer and Mathematical Science (15-1000, 15-2000)	1,550	2,100	64,340
Architecture and Engineering (17-1000, 17-2000, 17-3000)	3,080	3,180	39,790
Life and Physical Science (19-1000, 19-2000, 19-4000)	420	1,040	18,210
Totals	11,580	15,240	268,070

Note: York Metropolitan Statistical Area (MSA) includes only York County; Lancaster MSA includes only Lancaster County; Philadelphia MSA includes five counties in Pennsylvania (Bucks, Chester, Delaware, Montgomery, Philadelphia) plus four counties in New Jersey (Burlington, Camden, Gloucester, Salem).

II. Workforce Sustainability

In addition to the existing workforce in Maryland, the Aberdeen Proving Ground is surrounded by two and four-year academic institutions that can replenish the workforce. These universities provide a continual pipeline of new, fresh talent. As the Milken report notes, the number of bachelor's degrees awarded within a state is an indication of "both the level of educational attainment and the type of skills that are demanded by the state's firms." In 2004, more than 8,000 Bachelor's degrees were awarded to graduates in high-tech, business, engineering and science programs in Maryland's four-year universities. In Delaware, a state that currently provides and will continue to provide APG with professionals, more than 1,800 graduates earned Bachelor's degrees. As the chart below illustrates, more than 7,000 Master's degrees and 563 Doctorate degrees were awarded in science, engineering, technology and business to graduates from Maryland and Delaware universities in 2004. In Washington, D.C., which neighbors Maryland, more than 7,000 students graduated in 2004 with associate, undergraduate, graduate and PhD degrees in a variety of disciplines, including science, business, engineering and technology.

**Degrees Awarded by Maryland and Delaware Colleges and Universities in 2004
Selected Programs**

Program	Degree				Total
	Associate	Bachelors	Masters	Doctorate	
All institutions					
Biological Science	269	1,461	354	167	2,251
Business and Management	1,794	5,062	4,384	16	11,256
Computer Science	1,292	2,350	1,284	32	4,958
Engineering and Technology	881	1,219	884	205	3,189
Mathematics	1	259	86	27	373
Physical Science	0	285	175	116	576
Total	4,237	10,636	7,167	563	22,603

Note: Associate includes Associate Degrees, Lower and Upper Division Certificates; Bachelors includes Bachelors Degrees; Masters includes Masters Degrees and Post Baccalaureate Certificates; Doctorate includes Doctoral Degrees.

Sources: Maryland Higher Education Commission; Delaware Higher Education Commission / IPEDS Completions Survey.

**Degrees Awarded by Washington, D.C. Colleges and Universities in 2002
Selected Programs**

Program	Degree				Total
	Associate	Bachelors	Masters	Doctorate	
All institutions					
Biological Science	0	304	186	43	533
Business and Management	190	1,961	1,850	20	4,021
Computer Science	179	1,233	589	7	2,008
Engineering and Technology	11	124	359	39	533
Mathematics	0	32	20	6	58
Physical Science	0	93	101	27	221
Total	380	3,747	3,105	142	7,374

Note: Associate includes Associate Degrees, Lower and Upper Division Certificates; Bachelors includes Bachelors Degrees; Masters includes Masters Degrees and Post Baccalaureate Certificates; Doctorate includes Doctoral Degrees.

Source: National Center for Education Statistics - IPEDS Completions Survey.

Nearly 300,000 students currently attend 58 accredited two- and four-year colleges and universities in Maryland. These educational resources include the eleven campuses of the University System of Maryland as well as Johns Hopkins University. The University System of Maryland alone offers over 600 degree programs delivered in classrooms, laboratories, education centers, and online. The four-year colleges, such as Villa Julie, provide intense, hands-on training for future careers in the sciences. Maryland's sixteen community colleges operate a network of 23 campuses and numerous learning centers throughout the state.

The Milken report notes "the total number and percentage of the population with advanced degrees or higher are important to a state because large concentrations of people with advanced degrees are a good indicator of a state labor pool's sophistication and level of skill development." Employers recognize the importance of locating their companies in states with strong academic institutions. They are also a reflection of a "solid advanced education system."

**Degrees Awarded by Maryland Colleges and Universities in 2004
Selected Programs**

Program	Degree				Total
	Associate	Bachelors	Masters	Doctorate	
<i>Four-year Institutions</i>					
Biological & Natural Sciences	269	1,301	344	163	2,077
Business and Management	1,458	3,797	3,848	16	9,119
Computer Science	1,213	2,224	1,226	27	4,690
Engineering & Technology	710	1,027	809	158	2,704
Mathematics	0	247	76	22	345
Physical Science	0	238	161	89	488
Total	3,650	8,834	6,464	475	19,423

Note: Associate includes Associate Degrees, Lower and Upper Division Certificates; Bachelors includes Bachelors Degrees; Masters includes Masters Degrees and Post Baccalaureate Certificates; Doctorate includes Doctoral Degrees.

Source: Maryland Higher Education Commission.

In addition to Maryland's outstanding academic institutions listed above, the Harford County government joined with the state, academia and local businesses to create a facility called the "Higher Education and Applied Technology (HEAT) Center." The HEAT Center is a 152-acre campus located in Harford County that supports the mission of APG, helps support regional technology transfer initiatives and provides business incubator space. The HEAT Center also plays a significant role in workforce training by offering associate degrees, certificates, continuing education from the following academic institutions:

- College of Notre Dame of Maryland
- Johns Hopkins University
- Towson University
- University of Maryland at College Park
- University of Phoenix

- Villa Julie College
- Harford Community College
- Cecil Community College

The HEAT Center is located less than ten minutes from the base and is utilized by neighboring defense contractors, academia and government officials. Harford County plans to develop the entire HEAT Center campus with academic institutions and major private sector entities that support the mission of APG. Pursuant to this, in 2001 the Battelle Memorial Institute, one of the world's largest private research and development organizations, purchased 89-acres at HEAT for the development of its new Battelle Eastern Science and Technology (BEST) Center. The first phase of construction was completed in 2002 with the opening of a new \$20 million, 80,000 square foot facility complete with office space, a conference center and 16 biology and chemistry labs.

In 2005, the Harford County Council approved a revised Master Land Use plan for Harford County which provides an additional 100+-acres to the HEAT Center campus in order to sustain the growth of industry activity and educational programming.

TABLE OF CONTENTS

**COUNTERPOINTS TO
FT. MONMOUTH'S
INFORMATION** 1

**MARYLAND'S MODEL
PATUXENT NAVAL AIR STATION** 2

SUPPORTING NEWS ARTICLES
RDECOM MAGAZINE
TEN BEST INVENTIONS - IED 3
GAO REPORT
COMMUNICATIONS CAPABILITIES
SYRACUSE ANTI-IED SYSTEM

**HARFORD COUNTY
TRANSPORTATION NEEDS STUDY** 4

LETTERS
ECONOMIC DEVELOPMENT - J. THOMAS SADOWSKI
MD DBED - ARIS MELISSARATOS
RDECOM, RETIRED - MAJ GEN (Ret) JOHN C. DOESBERG
ARMY ALLIANCE - WYETT H. COLCLASURE 5
ARMY ALLIANCE - ALAN BENTON
ATC, RETIRED - ARMY ALLIANCE - JAMES FASIG
DTC, RETIRED - ARMY ALLIANCE - BG (Ret) DEAN ERTWINE
ATC, RETIRED - ARMY ALLIANCE - COL (Ret) ANDREW ELLIS

APG MARYLAND AT THE READY

27-Jul-05

Consolidation of Communications-Electronics Efforts At Aberdeen Proving Ground

The broad context of BRAC is change – to transform our military forces, to enhance our ability to provide new capabilities to the warfighter, and to save money.

1. The DOD recommendations will actually enhance – not reduce – the Army's ability to provide capabilities to the war fighter.

- DOD knowingly started this process in this time of conflict.
- Changes are intended to achieve faster fielding of better equipment.
- Comments on support to Iraq operations have been misleading: the fielded IED countermeasures equipment was funded by ARL at APG and developed by ARL at White Sands – not at Fort Monmouth.
- The major Fort Monmouth role is managing contracts and procurement: those office activities are easily relocated.

2. Moving C4ISR functions from Fort Monmouth to Aberdeen Proving Ground will create a "brain enhancement."

- Past BRAC rounds indicate that good leadership and solid effort can result in 80 percent of the workforce relocating (e.g. Patuxent River Naval Air Station).
- Fort Monmouth's workforce will change regardless: 34 percent are retirement eligible.
- Strong contractor base with firms that already support both locations

3. The Department of Defense's cost data on relocating C4ISR to APG was developed by disinterested Army cost analysts over the period of two years, certified by Army managers (including those at Fort Monmouth), and has been validated by the GAO.

- Data presented by New Jersey advocates is unsubstantiated, proprietary, and was generated by local community consultants.
- New Jersey officials did not consider space made available by relocation of the Ordnance Center & Schools (2,170,000 sq. ft.).
- Enhanced Use Lease (existing, available now) presents an additional opportunity for reduction of relocation costs.

4. The “mega-base” proposal is a no-action proposal.

- The DOD Joint Base McGuire-Dix-Lakehurst recommendation was proposed based on administrative efficiencies and not operations.
- The proposed modification puts Fort Monmouth Garrison activities under DLM management (23 miles away), with other changes to be considered at some later date.
- It is a no-change option: no cost reduction; no synergy; and no benefit to Army.
- It yields none of the benefits of synergy and jointness that are made possible by the move to APG.

5. Bottom line.

- The New Jersey approach would leave Fort Monmouth standing alone, out of touch with DOD philosophy and Army organization.
- Opportunities for synergy, jointness, and better support to forces in the field would be lost.
- Evidence outranks rhetoric – and the evidence says move the functions to APG.

Maryland Stands Ready - APG The NAVAIR Model

NAVAIR's Model is a full spectrum acquisition model for the 21st century. The result is a **Center of Excellence** which brings synergy among Science and Technology, Research and Development, Test and Evaluation, procurement and acquisition, logistics and maintenance.

The NAVAIR Model consolidated and streamlined functions from 16 separate geographic locations to a single, integrated air warfare research, development, test, evaluation and acquisition center

NAVAIR Model leads the nation in streamlining, consolidating and downsizing:

- 47% reduction in personnel (FY89 – FY 99)
- Downsized nearly 27,000 people
- Closed 3 of 6 Naval Aviation Depots
- Closed 4 Of 9 Naval Air Warfare Product Development Center

Today the Patuxent River Complex is a National Asset and is recognized as national model for streamlining in the U. S. Government

- Integrates best business practices of our nation's private sector corporations
- Creates a national asset with a workforce of nearly 18,000 personnel; approximately 14,000 acres of land
- 1 million cubic miles of airspace, and over \$2.6 billion infrastructure in place

Result:

Military Value: Impacts current and future mission capabilities:

- Synergy from cradle to grave
- Consolidates organizations – ready access, networking among collocated professionals and stream-lined organizational structure.
- Technology Gains – spiral development, latest technology standards
- Provided test range/air space integration with other acquisition activities
- NAS recognized as a Center of Excellence

Workforce

Personnel moved from various locations. The % of personnel who transitioned is listed below. Note: Numbers are greater than polls showed.

- 80% from Crystal City – Naval Air Systems Command
- 41% from Trenton, NJ – Naval Air Propulsion Center (NAPC)
- 46% from Warminster, Pennsylvania – Naval Air Development Center (NADC)

Outreach: Partnership Between Installation and Community (The "Team")

The Team visited installations on numerous occasions to educate and promote the new location to ease worker family and transition stress. The HRO of the installation, local and state agencies hosted events to provide spouse employment resources and opportunities.

The Community collectively prepared (local and state economic development, Tri County Council, Realtors, School Board, federal resources) to address quality of life, including:

- Housing affordability
- Schools and needed expansion
- Grants

And it didn't stop there! Partnerships...

After consolidation at Patuxent River was announced, the Southern Maryland Navy Alliance's (SMNA) focus was to secure support for the funding and constructions, through state and local resources, of schools, roads, higher education and other infrastructure necessary to support a complex high technology organization and its workforce.

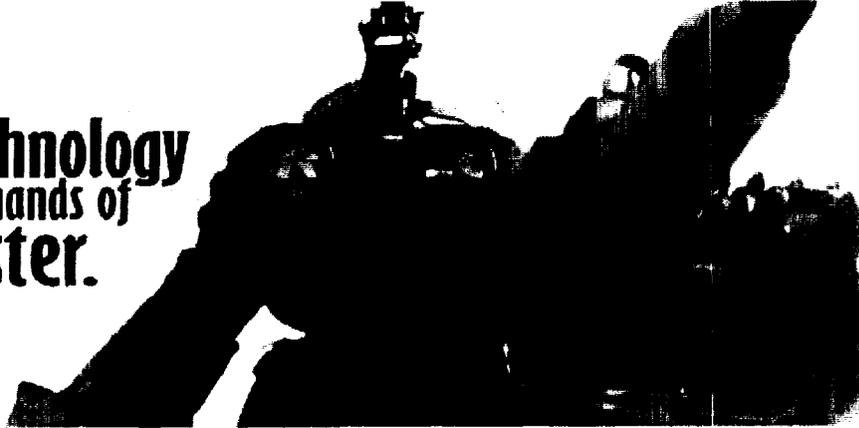
Eventually an infrastructure committee was developed and recommendations were made to the Governor, which resulted in a \$250 million infrastructure improvement program. Overall, \$350 million from state and county resources were invested in support of the Navy mission. The state government team at the Maryland Department of Business and Economic Development provided strong support through out the consolidation and the years following.



A publication of the U.S. Army Research, Development and Engineering Command

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Getting the right technology in the hands of soldiers faster.



- NEWS DE
- in the l
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- partne
- people
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home > partnership > article

Army announces greatest Army inventions for 2005

RDECOM Public Communications Office

The commanding general of the U.S. Army Materiel Command, the U.S. Army vice chief of staff and other senior Army science and technology leaders will recognize the U.S. Army's "Top Ten Greatest Inventions of 2005 " in an awards ceremony June 8 at the Hilton McLean Tyson's Corner.

The Army-wide awards program is dedicated to recognizing the best technology solutions for the Soldier.

"Nominations for the program were submitted from across the Army laboratory community," said Gen. Benjamin. S. Griffin, commander, AMC.

The Army -- from active duty divisions to the Training and Doctrine Command to the Army's vice chief of staff -- chose the ten winning programs based upon their impact on Army capabilities (breadth of use and magnitude of improvement over existing systems), inventiveness, and potential benefit outside the Army.

Like previous years, there are no differentiating categories so that a variety of inventions could be recognized.

Each of the 10 selected teams will receive an award; the other nominated team members will receive certificates of participation.

The U.S. Army Greatest Inventions Program selections are:

*Armor Survivability Kit for the HMMWV

U.S. Army Research Laboratory Weapons and Materials Research Directorate

In August 2003 as Operation Iraqi Freedom casualties were increasing, the Army Research Laboratory initiated an effort that

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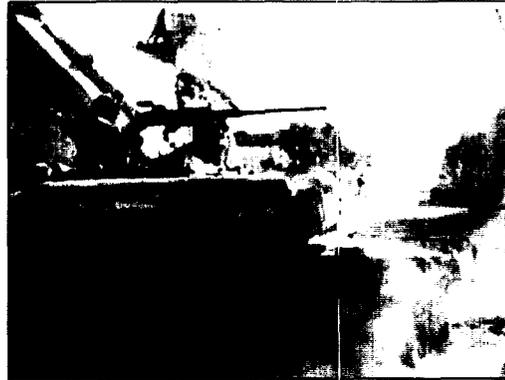
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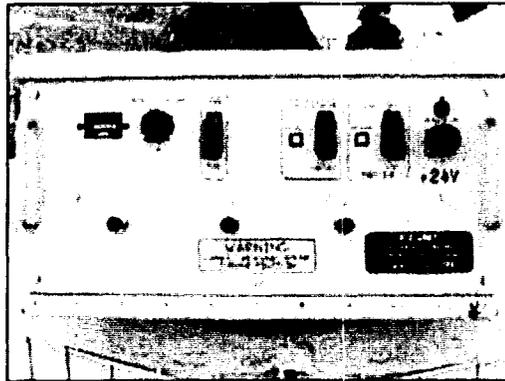
rapidly investigated HMMWV protection options and then quickly down selected to a solution that could be fielded in an expedient manner. In late 2003, the ARL began producing prototype kits that were later installed in theatre. The effort was transitioned to the TARDEC, who further developed the solution so that it could be mass produced by the Army Depot System. As of December 2004, the Army has fielded more than 8000 kits.



• IED Countermeasure Equipment

U.S. Army Research Laboratory

The IED Countermeasure Equipment (ICE) is a radio-controlled IED countermeasure designed by Army Research Laboratory soldiers, Survivability Lethality Analysis Directorate and Physical Science Lab New Mexico State University engineers to defeat certain RCIEDs. The SLAD/PSL team designed and built the system in less than four months by leveraging existing corporate knowledge and capability. The ICE design is government-owned and is completely composed of commercial off the shelf technology. The Department of the Army IED Task Force identified ICE as a preventative solution to IED casualties and vetted the system through its confirmation process.



• Unattended Transient Acoustic MASINT

U.S. Army Research Laboratory

UTAMS is an acoustic localization system based on classic sound ranging principles with advanced and unique signal processing techniques that can detect and isolate transient events such as mortar or rocket firings, munitions impacts, and other explosive events. In its current configuration, each of the UTAMS' three to five acoustic sensor arrays independently processes the detected events based on statistics from the signal content against the background noise, computes line-of-bearing to the firing locations, and sends the line-of-bearing information to a central base station laptop computer via



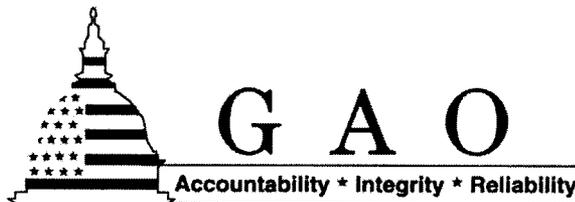
GAO

Report to the Chairman,
Committee on Appropriations
House of Representatives

June 2005

DEFENSE ACQUISITIONS

Resolving
Development Risks in
the Army's Networked
Communications
Capabilities Is Key to
Fielding Future Force



Results in Brief

The JTRS Cluster 1 program began development several years ago with an aggressive schedule, immature technologies, and a lack of clearly defined and stable requirements. Since then, the program has continued to struggle to mature and integrate key technologies and has been forced to make major design changes. For example, the Cluster 1 design does not generate sufficient power or meet size and weight constraints. Consequently, the radio's projected range is only 3 kilometers—well short of the 10 kilometer range required. In addition, the radio design is not sufficient to meet security requirements for operating in an open networked environment. These factors have contributed to significant cost and schedule problems that led the Army in December 2004 to propose restructuring the program by adding \$458 million and 24 months to the development effort. However, recently the Department of Defense (DOD) directed that work on the Cluster 1 radios be stopped while an assessment is conducted to determine the future of the program. In addition, the Army is concerned about the contractor's ability to develop the radios and notified the contractor that it was considering a contract termination. At this point it is not clear what the outcome will be and what impact this will have on the future of the program. Consequently, it is unlikely the Cluster 1 radios will be available for the start of the first spiral of the FCS network, slated for fiscal year 2008. This is especially critical for FCS, as Cluster 1 is to provide what has been called the backbone of the FCS network—a Wideband Networking Waveform that will serve as the main conduit of information to and from Army tactical units.

The JTRS Cluster 5 program has also experienced technical challenges and program changes that have impeded progress. Meeting requirements for JTRS Cluster 5 radios is even more challenging than for Cluster 1, given Cluster 5 radios' smaller size, weight, and power needs. For example, the smallest of these radios, which weigh only about 1 pound each, compared with 84 pounds for Cluster 1, are not going to be able to provide the power and cooling needed for the Wideband Networking Waveform. In addition, the program will require a new networking waveform, the Soldier Radio Waveform. Several programmatic changes and a contract award bid protest have also slowed progress of the Cluster 5 program. Furthermore, in light of unresolved technical issues with the Cluster 1 program, DOD has initiated an assessment to restructure the Cluster 5 program. Consequently, Cluster 5 small form radios needed for the first spiral of FCS may not be available in time. The Army is seeking ways to accelerate program deliveries.

The WIN-T program also began with an aggressive schedule and immature technologies. None of the critical technologies will be fully mature at the

time production begins in March 2006. The tightly compressed schedule assumes nearly flawless execution and may not allow sufficient time for correcting problems. In addition, significant interdependencies among critical technologies further increase overall program risk. Any delay in maturing an individual technology may hinder the program's ability to achieve its performance objectives—specifically, on-the-move communications. Other critical program issues, such as deciding on a suitable airborne platform to achieve on-the-move communications, remain unresolved. More recently, the program shifted its focus to deliver networking and communications capabilities sooner to meet near-term warfighting needs while continuing to support the restructured FCS program. A plan for how to develop and field WIN-T capabilities sooner to address FCS needs remains undetermined.

SOSCOE faces the dual challenge of a software development that is high-risk and evolving requirements. According to Army program officials, SOSCOE software may not reach the necessary technical maturity level required to meet program milestones. In addition, top-level FCS requirements are still evolving and have not been translated into more detailed specifications necessary for writing SOSCOE software. As a result, it is unclear whether SOSCOE will be sufficiently developed to support the first spiral of FCS beginning in fiscal year 2008.

Given the criticality of these four systems to the performance of the FCS network, this report makes recommendations to the Secretary of Defense aimed at reducing their development risks so that they provide the first spiral of FCS with enabling communications and networking capabilities. In commenting on a draft of our report, DOD generally concurred with our findings and recommendations. As part of its comments, DOD provided some information on actions it has begun to take to address each of our recommendations. While these actions should help strengthen the management of JTRS, WIN-T, and SOSCOE, we remain concerned that a demonstration of FCS's communications and networking capabilities will not be known for some time. Until these capabilities are demonstrated, investment in FCS platforms and systems carries substantial risk.



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07/06/05

Army turns to Syracuse Research for anti-IED system

By [Dawn S. Onley](#)
GCN Staff

The Army has awarded a \$550.5 million contract to Syracuse Research Corp. of Syracuse, N.Y., to develop, field and maintain a next-generation electronic system to protect soldiers in Iraq against remote-controlled improvised explosive devices (RCIEDs).

The indefinite-delivery, indefinite-quantity contract, awarded June 30 by the Communications-Electronics Life Cycle Management Command (CECOM) Acquisition Center at Fort Monmouth, N.J., is known as CREW-2, or Counter RCIED Electronic Warfare Increment Two.

The contract will run for four years and includes production systems, training, field support, vehicle installation, maintenance and system upgrades.

Designed to meet an operational need for a field-programmable, electronic countermeasure system for roadside bombs, the contract will provide force protection against RCIED detonation ambushes, according to a release sent out by CECOM.

CREW-2, sponsored by the Joint IED Defeat Task Force, which coordinates all counter IED programs in DOD, would allow soldiers to detect remote-controlled improvised explosives in Iraq, officials said.

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Transportation Needs Study 2005 to 2025

Aberdeen Proving Ground, MD Harford County, MD

July 18, 2005

Project Outline

Significant growth is anticipated at Aberdeen Proving Ground over the next ten to twenty years and it is essential that adequate transportation infrastructure, both on and off the installation, be provided to support this growth and the operation of the Post. Specific projects, which may add to an over \$2 Billion in investment at APG, include many new positions through the 2005 BRAC process, The GATE Enhanced Use Lease (EUL) project at Maryland Boulevard, the Security Training facility at Lauderick Creek, the Joint -Use project at Phillips Airfield and a Chem/Bio laboratory research center on the Southern Peninsula.

With these on base expansion projects, it is also anticipated that significant growth and development will occur off-Post in the form of commercial and industrial space to house private contractors that support missions at APG. In addition, construction is anticipated in the areas of housing for the expanded employment base on and off Post and commercial, governmental, recreational and institutional facility expansion to provide essential services to the new businesses and residents.

With all of this expansion activity, an increase in traffic and transportation service demand is also expected. This will include private and public transportation in the form of commuter traffic, service and commercial traffic, public and private commercial and service bus, commuter rail and regional rail. Fortunately, APG and Harford County are strategically located and well served by transportation facilities including I-95, US Route 40, many arterial State Highways (MD 24, MD 22, MD 715, MD 543, and others) and Amtrak and MARC rail with stations at Aberdeen and Edgewood.

Also fortunately, extensive planning has occurred on the various transportation facilities in Harford County that serve APG and the surrounding communities. The APG Garrison, the US Army, Harford County Government, the National Railroad Passenger Corporation (Amtrak), the Maryland Department of Transportation, the Maryland Transportation Authority, the City of Aberdeen and the City of Havre de Grace have all prepared various plans and studies relating to facilities under their jurisdiction, as well as general anticipated growth and development patterns, in recent years. While variously coordinated, these plans and studies focused on different elements within the interrelated systems, looked at different planning horizons and made project specific assumptions with respect to demand growth. Certainly, the recent BRAC recommendations and EUL project specifics were not known at the time of these plans and studies.

To better focus the various transportation needs over the next twenty years serving APG and the surrounding communities, this study is proposed to document current conditions and transportation demand, make a regional planning level assessment of anticipated demand growth over the next twenty years and identify various transportation system improvements needed to meet this demand.

It is recommended that a Project Guidance Team be assembled to oversee project progress and provide oversight and guidance to FWA. Team configuration will be determined through discussion with the Army Alliance after project inception. The project term is proposed at three months and monthly Project Guidance Team meetings are anticipated.

The assumed Project Area is I-95 to the west to the gates accessing APG to the south, Baltimore County to the south and the Susquehanna River to the north.

The project will be developed in four phases:

Phase 1 – Assembly and Compilation of Existing Information

Existing transportation reports, studies and plans will be assembled from the various related agencies and jurisdictions. They will be reviewed and summarized with respect to time horizons, assumptions, scope, analyses and conclusions. In addition, all appropriate stakeholder organizations will be identified and individual contacts will be established.

Phase 2 – Analysis of Existing Baseline Conditions

Once existing information is compiled, an inventory of transportation system elements will be developed. These will include not only facilities such as highways, roadways, rail lines, rail stations, etc. but will also include operational programs such as commuter bus systems, MARC trains and other available transportation programs which make use of the facilities and provide opportunities for operational efficiencies.

Existing information will then be extrapolated for the existing facilities and programs to develop an Existing Baseline Condition for the year 2005. This assessment will provide a generalized characterization of the operation of these facilities and programs, identifying capacity, service demand and areas of stress and opportunity.

Phase 3 – Evaluation of Future Demand

Once existing conditions are established, projected growth in the project area, both on and off APG, will be evaluated and characterized by general trends. Specific projects will be identified, with particular focus on activities on APG, and expanded to include expected off post demand due to potential BRAC decision, the GATE EUL project, joint-use of Phillips Airfield, the CAST project and the Chem/Bio Lab project on the Southern Peninsula. Working with APG planners, estimated growth, location and timeline for these various projects will be estimated as well as expected related off-post growth for contractor commercial space, housing, jobs and service uses. Working with local and state planners, background growth in the area, beyond that expected and influenced by APG, will be estimated over the planning horizon.

Projected growth will then be evaluated as transportation demand and contrasted with the baseline condition inventory with a re-characterization of operation of the various transportation facilities and programs over time.

Phase 4 - Development of Facility and Program Expansion Options

Once the general impact of future growth is understood, various options for facility and program expansion will be developed. Alternatives identified in the existing plans and reports will be considered as well as possible new options. Options may include general or specific road or highway improvements, expansion of public transportation programs, or other possible system improvements. Options will be recommended or prioritized through discussions with appropriate stakeholder organizations. Improvement options will be presented with discussion and description and will be related to specific demand needs identified under Phase 3.

DAVID R. CRAIG
HARFORD COUNTY EXECUTIVE



JOHN J. O'NEILL, JR.
DIRECTOR OF ADMINISTRATION

J. THOMAS SADOWSKI
DIRECTOR
OFFICE OF ECONOMIC DEVELOPMENT

HARFORD COUNTY GOVERNMENT

July 27, 2005

The Honorable Anthony J. Principi
Chairman
Base Realignment and Closure Commission
2521 South Clark Street
Suite 600
Arlington, Virginia 22202

Dear Chairman Principi:

The citizens of Harford County and the great State of Maryland appreciated the opportunity to present our testimony to you on July 8, 2005 at the Regional Hearing held in Baltimore at Goucher College. I believe Team Maryland successfully articulated our collective readiness and ability to accept the operations recommended for relocation to Aberdeen Proving Ground (APG).

The concern that "brain drain" will result from the move of the C4ISR mission to APG is one matter we feel particularly confident in addressing. The data we presented reflected the quality of Maryland's workforce. It documented the vast market from which APG draws its skilled labor and the opportunity for employees throughout the Baltimore Region, as well as from outside the State of Maryland, to commute to Aberdeen. We presented information attesting to the deep pool of talent nurtured and supplied by our Maryland and Delaware-based universities. Our testimony highlighted our regional transportation infrastructure and how it is being enhanced. We cited Department of Defense accepted reports ranking our quality of life the best among major military communities. And finally, we listed numerous companies that comprise a well established, regional contractor community that supports both current C4ISR activities and APG-based operations.

Perhaps the one area requiring further discussion is our utilization of "the Pax River" or "NAVAIR" model. This refers to the manner in which our neighbors in Southern Maryland responded when tasked with aiding in the consolidation of sixteen separate geographic locations into a single, integrated air warfare research and development, test, evaluation and acquisition center at the Patuxent River Naval Base during the 1995 BRAC. Overall, relocation rates of 80% from Crystal City, Virginia; 41% from Trenton, New Jersey; and 46% from Warminster, Pennsylvania were achieved. This was due to Southern Maryland's proactive planning efforts and responsiveness to the impacted employees. The State of Maryland, Harford and Cecil Counties began replication of the Pax/NAVAIR model seven years ago with the creation of the Army Alliance, and since, have taken the following strategic steps in preparation for the current BRAC round:

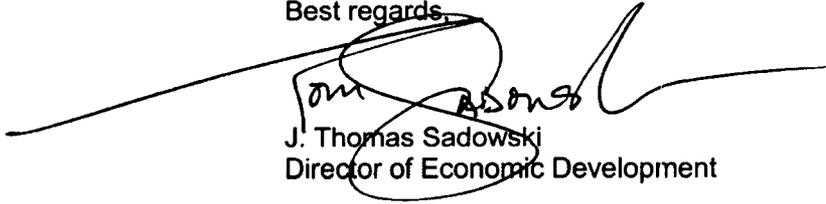
- Launched Marylandready.com providing community information and various relocation related services (over 150,000 hits thus far – vast majority from Ft. Monmouth).
- Briefed more than 70 incoming commanders and operation leaders.
- Volunteered and in process of scheduling on-site community orientations at bases and locations impacted in Virginia, Texas and New Jersey.
- Responding to spousal re-employment inquiries and planning regional job fair events.
- Established local real estate community contacts to provide professional relocation assistance.
- Coordinated immediate Federal, State and local cooperation required to service growth at APG and facilitate employee retention, from the commitment of more than \$170 million in State and County infrastructure funding to the \$1.2 million in U.S. Department of Labor funds for employee recruitment and training assistance.
- Initiated development of a 2005 to 2025 Community/APG Transportation Master Plan to determine and pursue Federal, State and County capital funding requests.
- Arranged for the establishment of a “war room” at the Higher Education and Applied Technology (HEAT) Center in Aberdeen to facilitate coordination, planning and implementation of final BRAC recommendations.

A summary of the Pax/NAVAIR experience is attached for your consideration. Upon review, you will find the steps we have taken are consistent with those taken in Southern Maryland. We are therefore confident in our readiness to support the Department of Defense (DoD) recommendations and help retain the highest percentage of employees possible.

So, as the data and demographics we have presented show, as the evidence of our past experience in Maryland reflects, and as our collective efforts to date demonstrate, we are ready. We are committed to this effort and anticipate similar, if not better, results this BRAC round. Simply put, Team Maryland has done this before and there will be no “brain drain” experienced with the implementation of the current DoD recommendations. Instead, the necessary steps are being taken to facilitate the desired result - greater military productivity, efficiency and “brain enhancement.”

Thank you once again for your consideration.

Best regards,



J. Thomas Sadowski
Director of Economic Development

Attachment



DEPARTMENT OF BUSINESS &
ECONOMIC DEVELOPMENT

DCN: 110 *Copy: Mike Hayes*

Robert L. Ehrlich, Jr.
Governor

Michael S. Steele
Lt. Governor

Aris Melissaratos
Secretary

Christopher C. Foster
Deputy Secretary

July 18, 2004

The Honorable Francis J. Harvey
Secretary of the Army
101 Army Pentagon, Room 3E560
Washington, D.C. 20310

Dear Secretary *FRAN* Harvey:

As Secretary of Maryland's Department of Business and Economic Development (DBED), I have closely followed the Department of Defense's (DoD) Base Realignment and Closure (BRAC) 2005 recommendations. Maryland figures prominently in the recommendations, due in part to the available professional and technical resources in the state that perform much of DoD's science and engineering work. The DoD BRAC criteria included a score for high military value in recognition of Maryland's talented workforce. In addition, the reputation of our capabilities, especially at Aberdeen Proving Ground (APG) and Ft. Meade, are well respected and well known throughout the nation. As you know, APG and Ft. Meade were selected as centers of excellence for the Army's and the DoD's transformation to support future military operations.

There is a direct parallel between what we accomplished while serving as executives with Westinghouse and what DoD has proposed to do with the recommendation to move Ft. Monmouth to APG. The development of an agile, multi-disciplined research and development, test and evaluation (RDTE) capability is essential to integrate the various sciences underlying the Army's network centric force. If you will recall, we came to the same determination at Westinghouse, that in order to develop the most advanced technologies, we determined, much like the US Army, that stand alone laboratories and engineering centers needed to be co-located.

The APG has a history of supporting America's warfighters that dates back to 1917 and boasts deep roots in defense against chemical and biological weapons. The APG mission has broadened immensely over time and now includes 65 tenant agencies. The breadth of science and technology programs, along with the full spectrum of acquisition programs, provides APG with a reputation that is second to none among Army facilities. The large volume of work performed by in-house Army civilians rather than contractors is an example of the technical talent-performing research and development functions at APG. Under scrutiny from previous DoD officials and BRAC Commissions, APG fared well, due in part to the existing intellectual capital and infrastructure at APG.

The Honorable Francis J. Harvey
July 18, 2005
Page 2

Maryland has shown it can accommodate moves that require quick recapitalization of a technical workforce. The prior BRAC decision that moved Navy personnel from Crystal City, Virginia to Patuxent River, Maryland provides a case study for overcoming the argument that the loss of intellectual capital will result from implementing the recommendation to move Ft. Monmouth capabilities to APG. In that move, 80% of the people from Virginia relocated because state and local officials highlighted Southern Maryland's attractive attributes, including affordable housing, low taxes, and a quality education system. The 2005 BRAC military value score assigned to Patuxent River is a reflection of the success of the previous relocation to Maryland. I assure you that Maryland State and local officials, business leaders and the community will welcome the people from Ft. Monmouth.

Maryland is ready, willing, and able to support the BRAC recommendation to move people from Ft. Monmouth, New Jersey to APG in Maryland. I appreciate the path the Army has chosen for the future and the hard work the BRAC Commission has undertaken to further the Nation's security. It is a sound business decision to bring related technology centers together. I applaud the Army's and the DoD's recommendations outlined in the BRAC report. We stand by ready to ensure that Maryland provides all it can to support this endeavor.

Sincerely,



Aris Melissaratos
Secretary

Oak Ridge National Laboratory
One Bethel Valley Road
P.O. Box 2008, MS-6252
Oak Ridge, TN 37831-6252

July 27, 2005

The Honorable Anthony J. Principi, Chairman
Base Realignment and Closure Commission
2521 South Clark Street, Suite 600
Arlington, Virginia 22202

Dear Chairman Principi and Members of the Commission:

I am Major General (Retired) John C. Doesburg. I retired effective 1 January 2005. My last assignment was as the Commanding General, U.S. Army Research, Development and Engineering Command (RDECOM) and for five years I also served as the Installation Commander, Aberdeen Proving Ground. I understand there has been extensive discussion about the closure of Ft. Monmouth, New Jersey, and the movement of most of the organizations there to Aberdeen Proving Ground. I would like to take this opportunity to outline the inception of RDECOM, underscore why the move of the Communications and Electronic Command (CECOM), the Communications and Electronics Research, Development, and Engineering Center (CERDEC), Night Vision Laboratory, and the associated Program Executive Officers (PEOs) and Acquisition Center make sense.

The original concept of RDECOM was to break down the "stovepipes" (technology/functionally restricted or unilateral organizations) that existed among the Army Research, Development, and Engineering Centers (RDECs), develop a system-of-systems approach to research and development, fuel collaboration among the best scientists and engineers regardless of where they were assigned, and to provide technology to warfighters as quickly as possible by leveraging the other concepts listed. Unfortunately, under that original concept I was directed to not move organizations or people regardless of potential synergies or savings. This was primarily driven by the contentious nature of changing the command and control of the RDECs.

Even in the early stages it was apparent that some level of consolidation was needed to meet the original concept of breaking stovepipes and improving collaboration within the entire RDT&E community. As time went on, I developed several options on how consolidation could be accomplished, focusing on technology synergies and savings in infrastructure and personnel costs.

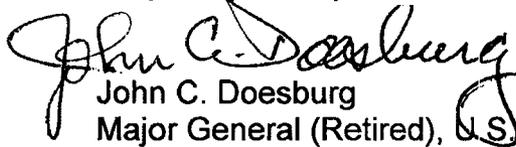
One of my major options called for the CERDEC to move from Ft. Monmouth to Aberdeen Proving Ground (APG) because of the strong relationship of CERDEC to the Army Research Laboratory (ARL), located at both APG and Adelphi, MD. Specifically, ARL is a national and world leader in sensor, electronics and computational science. These technologies by and large transition directly to CERDEC. I also felt there was a strong relationship between CERDEC and several other organizations located at APG – the Edgewood Chemical and Biological Center (ECBC), the Developmental Test Command (DTC) and the Aberdeen Test Center (ATC). Key parameters for me – many of ECBC's chemical and biological sensors require CERDEC developmental skills to translate data into actionable information; plus APG (DTC and ATC) had a large testing and range complex, extensive security for CERDEC's classified programs and was a major location for evaluating the Future Combat System, in which CERDEC has a critical support role.

After the BRAC announcement it was clear someone had a bigger vision than I did. By moving the other components of the Life Cycle Management Command (formerly CECOM, the PEOs and Acquisition Center) to APG they had really thought through the complexities of transitioning technology, gaining intellectual power through co-location, and the need for a single integrated center for research and development across multiple domains. By moving most of the assets of Ft. Monmouth to APG they have created an intellectual nexus that can solve today's and tomorrow's challenges across a wide spectrum.

As the former Installation Commander I can state that Aberdeen Proving Ground has sufficient land space for this move. The surrounding communities have sufficient land for housing and commercial development to support the influx. The universities within the region have undergraduate and graduate programs in disciplines that support the skills needed (more importantly several are world class).

Bottom Line – this is the right move. If it was within my power, I would have made this move two years ago. Our Army, the other Services and our young warfighters are better served by this move.

Very Respectfully,


John C. Doesburg
Major General (Retired), U.S. Army



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July 21, 2005

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The Honorable Anthony J. Principi, Chairman
Base Realignment and Closure Commission
2521 South Clark Street, Suite 600
Arlington, Virginia 22202

Dear Chairman Principi:

As we continue to analyze the New Jersey portion of the testimony at the July 8 BRAC hearing in Baltimore, MD, there are more and more questions without answers. In particular, the "megabase" proposal raised at the hearing is not well defined, it is incomplete, and the whole argument was conclusionary without facts and logic to support it.

The New Jersey proposal would create, by decree, a so-called megabase. Neither operations, real estate, nor facilities on Fort Dix, Lakehurst Naval Air Engineering Station, or McGuire Air Force Base would change except for a sign. This was presented as increasing jointness, but there was not even a suggestion that there would be any change in operations at any of the separate locations. At Fort Dix, for example, the mission is to prepare soldiers for deployment, primarily to combat areas. And it is receiving greater mobilization responsibility under the DoD's realignment recommendation. It is hard to imagine Fort Dix taking on a test role that would permit outside organizations from Ft Monmouth to tap people and interrupt that crucial training. One can imagine that an administrative consolidation of headquarters functions might save a few overhead spaces but the proposal should be given at least the same level of analysis as was given to the basic DoD recommendations. The proposal offered no improved facilities, no common operating philosophy, and the individual bases are just as distinct.

It was recommended that the Air Force have command of the megabase, but that alone does not create jointness. Jointness is enhanced when similar requirements and functions make use of the same procedures and facilities. For example, Aberdeen Proving Ground tests both Navy and USMC waterborne equipment, and both Army and Air Force airdrop equipment, using the same facilities and test support personnel. The Dix-Lakehurst-McGuire (DLM) Megabase would still have different people doing

different things. And, despite the claim that DLM would create >60,000 acres in close proximity, close is not always useful. When you have to stop a vehicle, or shut off a radio signal, and repackage a system to cross a civilian street or move from one property to another, "close" is still very far apart. Put simply, the DLM Megabase proposal is a smoke screen, with no increase in military value.

The New Jersey testimony spoke at length about errors in the DoD calculations of costs to move and the costs to replace personnel. The basis for much of that discussion was work done by Bliss & Associates, a firm of 4 people (as listed on their web site) local to Fort Monmouth in nearby Wayne, NJ. The relevant question is not whether another model can produce different numbers, but whether the output can be correlated with data developed in great detail over a two year period by DoD. As required by law, the Government Accountability Office has published its analysis of the DoD selection process and recommendations.¹ It had criticism, but also confirmation. These GAO statements are relevant:

- "DOD's process relied on certified data."² During the BRAC process, data were certified by senior officials at DOD installations. Each official certified that the information was accurate and complete to the best of his or her knowledge and belief.
- "...the DOD Inspector General and the military service audit agencies...generally found the data sufficiently reliable to support BRAC decision making."³
- "...the COBRA model was designed to provide consistency across the military services...[and DOD]...has improved upon its design to provide better estimating capability. In our past and current reviews of the COBRA model, we found it to be a generally reasonable estimator for comparing potential costs and savings among various BRAC options."⁴

The emphasis of the New Jersey testimony on a single point estimate, generated by a proprietary process which cannot be reliably compared to other figures, does not offer a sound basis for decision making.

One of DoD's goals is to concentrate life cycle program management into four centers. The New Jersey proposal nullifies that approach and creates a single

¹ Analysis of DOD's 2005 Selection Process and Recommendations for Base Closures and Realignment, Government Accountability Office, GAO-05-785. July 2005.

² Page 5.

³ Page 6.

⁴ Page 32.

outlier organization. There is no substantive logic offered for doing so, other than a new set of independent and unverified numbers.

Finally, the New Jersey testimony alluding to construction costs for new facilities at Aberdeen Proving Ground gave no consideration to the use of space which will be made available by the departure of the Ordnance Center and Schools – 2,171,031 square feet of facilities – and failed to acknowledge that DoD has already considered and factored in essential construction of new facilities.

We respectfully ask that you take these facts into consideration during your deliberations.

Sincerely,


— Wyatt H. Colclasure II
President

PO Box 5867
Darlington, Maryland 21034
25 July 2005

Chairman Anthony J. Principi
Base Realignment and Closure Commission
2521 South Clark Street
Arlington, Virginia 22202

Dear Chairman Principi and Members of the Commission:

As a former evaluator in the Army Test and Evaluation community for 30 years and now a member of the local defense industry, I feel qualified to comment and provide input on the proposed BRAC realignments at APG.

As background and my understanding of the Army's acquisition and Test and Evaluation process, I was an analyst and manager of reliability, availability and maintainability (RAM) evaluations for the Army Materiel Systems Analysis Activity (AMSAA) from 1964 – 1994 and manager of ILS evaluations (AMSAA and OPTEC) from 1994 – 1999. As a civilian employee of the Army at Aberdeen Proving Ground, my positions required intimate knowledge of how the various systems, fielded and in development, how they were designed, and how well they performed with respect to RAM. I worked with systems across a broad range of materiel types, including those developed and acquired by the MICOM, TACOM and CECOM. I took part in high-level program reviews both at Ft. Monmouth and in the Pentagon. I am familiar with the Ft. Monmouth programs and the command's approach to new system development.

I believe the CECOM, CERDEC and PEOs C3I and IEWS would benefit significantly from collocation with the Army research and test organizations at APG. This would alleviate the continuing problems with CECOM systems that historically have had difficulty in meeting RAM requirements in operational testing, via closer cooperation with the expert technical leadership and staff talent in existing APG organizations and in the neighboring defense industry organizations. During my years in overseeing RAM evaluations of Army programs a significant number of CECOM programs failed to meet operational reliability requirements in their initial operational testing, some even after satisfying developmental requirements. These included Single Channel Objective Tactical Terminal (SCOTT), Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T), Single Channel Anti-jam Man-portable (SCAMP) terminal, Enhanced Positioning Locating Radio System (EPLRS), Global Positioning System (GPS) 1 & 2 Channel, All Source Analysis System (ASAS), PRC-119 radio, and SINCGARS – the soldier's primary combat net radio. The SINCGARS finally did meet its user requirement after years of pressure directed through the Ft. Monmouth Program Manager by the Deputy Commanding General, US Army Materiel Command. My experience with other commodity commands was more favorable with regard to satisfying reliability requirements in Operational Test (OT).

Granted, this was for a period of time largely in the late 70s to the early 90s. However, a recent Army study that reviewed programs across commodity commands and Program Executive Officers (PEOs) revealed that the CECOM programs managed by PEOs C3I

and IEWS continue to fail to satisfy RAM requirements in OT at a higher rate than is the case with other PEOs, even those with successful DTs. The statistical evidence suggests that there is a highly significant difference in met/not met between DT and OT for these programs. When looking at all PEOs where sufficient data exist on DT, OT performance, only C3I and IEWS programs exhibited a statistically significant difference. All others with sufficient data (AMMO, AV, CBD, CSCSS, SDR) were not significant at any reasonable level.

While there are limitations on some of the data and testing, all PEO programs were treated similarly. The overwhelming evidence suggests that there appear to be differences in how CECOM has been doing business. Relocating to APG would benefit from the synergies created by the relocation of ATEC Headquarters and AEC, the consolidation of ARL directorates and a C4ISR life cycle management command at APG. These synergies would help by identifying and working problems earlier in the developmental testing process and affecting earlier system level platform integration between hardware, software and the soldier in the development cycle. Clearly these actions will help to reduce the incidences of failing to satisfy OT requirements, which causes serious delays in fielding new equipment, and significantly increased test costs, end item costs, and logistical support costs.

Thank you very much for your service, and for this opportunity to comment on your effort to improve our nation's defense capabilities.

Very respectfully,



Alan Benton, PhD
Senior OR Analyst
Northrop Grumman

copy-

BRAC Commission

JUL 13 2005
James Fasig
Received
Churchville, Md.
7 July 2005

The Honorable Phillip Coyle
Commissioner
2005 Defense Base Closure and Realignment Commission
2521 S. Clark Street, Suite 600
Arlington, Va. 22202

Dear Sir:

Considerable concern has been voiced over the impact of moving the Communication and Electronics (C&E) Command from Fort Monmouth to APG, especially at a time when the Army & DOD transformation is in full swing. The move of C&E Com to APG is clearly profound since C&E Com is a major player in the transformation process. However, careful examination shows that it not only makes sense; it is necessary to meet the Army goals of a Networkcentric Joint Warfighter. This conclusion is based on three important factors.

1. The Future Combat System (FCS) has already committed its technical base to APG. Investing \$30 million to build an East Coast Networkcentric System Node at the proving ground.
2. The act of creating a Triad that includes Acquisition, R&D and T&E stationed together has proven exceptional in delivering quality and timely systems to the warfighter.
3. APG has a plethora of R&D and T&E facilities, technical expertise and instrumentation unmatched anywhere available to C&E Com.

Examining each of these factors individually will bring a clear understanding of how the move assures and promotes the Army Transformation providing a coherent acquisition base for decades into the future.

1. Boeing, SAIC and APG have partnered to build a \$30 million Network Centric Node at the proving ground to test, prove, and develop the FCS family of systems. Presently FCS consists of 8 manned platforms, 4 unmanned aerial (UAV) platforms and 4 unmanned ground (UGV) systems. These systems must function in a Joint Multi-National Force. To assure the success of this concept Boeing, the system integrator, contracted with Aberdeen Test Center to build an East Coast Networkcentric Node. The node will enable any combination of the FCS systems to be networked operationally while simultaneously being stressed electronically and mechanically. Computer, software and commo systems can be tested and at the same time viewed to prove performance in a simulated battle space. The node can also simulate all kinds of variants, placing systems into the network even before the hardware is ready. This gives the design, development and user community knowledge and confidence in the system capability to meet mission requirements.

The node is networked to ATC's VISION system to get complete online data streams

JUL 13 2005

from platforms, personnel and commo centers throughout the APG. This system has been proven during Stryker tests and Nationwide for the Dept of Transportation. Also the VISION system is used throughout all ATEC test centers thereby linking Boeing's node throughout the country. The Boeing node is tied directly to the California based System of Systems (SoSIL) laboratory. These powerful network linkages provide data and technical knowledge across the FCS acquisition, R&D and T&E family. It enables government industry and research labs to function as one when building the new Units of Action for FCS. It also assures rapid insertion of new technology to the warfighter as systems are proven.

Bringing C&E Com to this partnership will benefit the total process. Clearly many of the C&E systems will be incorporated into FCS and will provide a major part of the Networkcentric capability essential to FCS success. Adding C&E Com completes a mosaic that will bring rapid transition seamlessly to the transformation force. The wealth of existing R&D, T&E capability brought Boeing/FCS to APG; C&E Com will benefit even more as a result of the FCS Network Node.

2. A triad of Acquisition, R&D and T&E at one location has proven its value time and again. The latest example is PAX River where the Navy implemented this triad concept. The benefits are powerful: synergy builds from the experts in the three disciplines being readily available to work each problem as it occurs. The Army has built its centers of excellence the same way, i.e. MICOM @ Redstone.

The history of communication systems in the Army has been difficult. Frequently systems have failed OT&E for lack of adequate DT&E. At one point, six systems failed in OT. Failure in OT is extremely costly. Even worse, delays fielding of an essential product to our war fighter. Acquisition of new systems does not have the luxury of time and is strangled by cost growth, a given when OT has to be repeated. Just recently, a C&E system passed its OT&E. The OT test was conducted at APG after a solid DT at the proving ground confirming acquisition, R&D, and T&E work best together. With the FCS node and the extensive technical based facilities also in place at Aberdeen, the triad naturally belongs at APG.

3. APG brings a foundation of support to C&E Com that is truly exceptional:

a. A Scalable Networkcentric Development and Test Range, that includes Army controlled air, ground and littoral environments, provides an instrumented capability to evaluate transformation systems. The keystone of this complex is the U.S. Army Phillips Airfield with an 8000 foot runway and restricted special use air space. This airfield has been extremely useful for UAV tests; Finder, Telemaster, Dragon Eye, Spider, Joker, Scout, etc.. Sensor testing is linked with UAVs, since these systems are mainly designed to provide reconnaissance. The restricted air space allows extensive flying of the systems without the need for chase planes. Since APG has a wealth of foreign material the systems are tested against typical targets. Adjacent to the airfield is Range 8 where system signatures are carefully measured. This sensor test capability includes IR, electromagnetic, seismic, millimeter wave, visible chromatic and spatial measurements. Therefore, these precise measurements can be compared to the output of the sensors on UAVs, UGVs, and combat systems. Night Vision Lab uses these assets extensively. This powerful RDT&E capability is essential to FCS. In a single mission scenario, the technical

BEAC Commission

JUL 13 2005

personnel can evaluate the performance of the carrier systems (UAV, UGV, CV) at the same time the sensor systems are being measured. All data is automatically transmitted to the FCS Node and the ATC Vision System.

b. Aberdeen Proving Ground has DOD's premier high performance computer center. This complex of computers is used extensively to model and simulate systems in design and development. Also, it has proven exceptional in test and evaluation. The ability to use hard test data to confirm model and design parameters is key to assuring predictable performance. Once validated, these models can be used to explore high risk system performance without damaging the hardware. Ballistic shock is a good example. Extensive electronic systems, sensors, and commo gear can be stressed on the computer system, thereby minimizing destructive testing. This will become even more critical as new armor systems are incorporated to reduce overall platform weight. It is important not only for the armor to stop the threat, but also the systems inside must continue to function after attack.

c. The survivability R&D, T&E center of excellence is also at APG. All live fire tests of ground systems have been conducted at the Proving Ground. Aerial systems have been tested by the Research Center at Aberdeen. Close in air support by helos and aircraft have in large measure been hardened by this Aberdeen team effort.

d. Robotic systems, R&D, T&E, are another center of excellence in the Aberdeen tool bag. Using all the technology to develop and field landbased systems ATC and ARL have helped field a number of robotic systems. Examples include mine sweepers for the Army and Marine Corp, security systems, and UAVs. Road shock and vibration are frequent killers of electronic systems. ATC has test courses that span the spectrum of off and on road conditions worldwide. These courses incorporated with unique facilities- Roadway Simulator, Shock and Vibration test cells, Environmental and Electromagnetic chambers provide an array of environmental conditions as stressors to proposed systems, including manportable equipment.

e. ATC and ARL Human Research Lab have a unique test and development capability for Soldier Systems. ATC and PM Soldier have teamed to create an instrumented reconfigurable Urban environment for development and test of the many systems the soldier carries. This facility coupled with the air and littoral ingress/egress gives PM Soldier a full spectrum of environment to assess his systems. The modern soldier will be dressed in C&E gear, bringing the developers and C&E acquisition team to APG, will enable onsite corrective action, full identification of capability early in the development cycle.

f. The Chesapeake Regional Range Complex (CRRC) is an asset of incalculable value to the joint warfare RDT&E. This Complex is a partnership of commands throughout the Chesapeake region. It includes: ATC, Joint Interoperability Com. Indian Head, Pax River, AP Hill, Fleet Forces Command and NSWC@ Dahlgren and Dam Neck. This team has accomplished many unique joint training exercises. It enables joint warfare scenarios. The partnership opens capability of one command to all. Therefore, Pax can fly mission in ATC's restricted airspace, use Phillips as a staging area, and test sensor systems using ATC's Scalable Networkcentric Range. Similarly, ATC can work tests in PAC's ranges and facilities. This combined command complex is another reason FCS has come to the proving ground. It gives easy access to a broad range of activities. The CRRC not only provides shared facilities, it has a broad range of technical experts to apply to any development or test problem.

BRAC Commission

JUL 13 2005

In summary, the foundation of technology found at Aberdeen for support of the soldier and joint warfighter is unmatched. If the system moves across the ground, has to sense the enemy, or survive attack, it will come to Aberdeen. C&E Com systems do all these things, therefore, bringing that command to Aberdeen only strengthens Army acquisition. It will assure success of FCS and joint warfare.

There is no question moving a command is difficult for the personnel. Some will not come. However, it is time to look at the long term technical advantage of the move. As disturbing as the move is to some, the overall outcome is bright for Army transformation and the fielding of C4ISR systems.

Yours Truly,



Jim Fasig

Aberdeen Test Center Technical Director Ret.

JUL 13 2005

Received

July 8, 2005

The Honorable Philip Coyle
Commissioner
2005 Defense Base Closure and Realignment Commission
2521 S. Clark Street, Suite 600
Arlington, VA 22202

Dear Sir:

As former commanders in the Army test community, Aberdeen Proving Ground (APG) residents, and now members of the local defense industry, we feel qualified to provide input on the proposed BRAC realignments at APG.

We believe that the DoD recommendation to create a soldier-focused center of excellence at APG will deliver the projected cost savings, but more importantly will improve the integration and effectiveness of our warfighting systems. The collocation of joint CB defense research assets, the relocation of ATEC Headquarters and AEC, and the consolidation of ARL directorates at APG are all supportable and justified on the basis of efficiency and mission enhancement. The rationale for these moves is adequately described elsewhere. However, the justification of a C4ISR life cycle management command at APG may not be as obvious, so we welcome the opportunity to highlight a few points which reinforce that particular DoD recommendation.

CECOM, CERDEC and PEOs C3T and IEWS would greatly benefit from collocation with the Army research and test organizations at APG. This in itself would be a large step to alleviate the problems CECOM systems have historically had with operational testing. Problems would be identified and worked earlier in the developmental testing process. System-level platform integration between hardware and software would be affected much earlier in the development cycle. These actions will prevent embarrassing OT performance and the associated unprogrammed cost growth.

As the Army moves into network-centricity with its Future Combat System (FCS) concept, early hardware and software integration, experimentation, evaluation, and testing can be accomplished in an efficient and effective manner at APG. In fact, Boeing, SAIC, and APG have partnered to build a \$20M Network Centric communications node at APG to develop and test the FCS. In addition, APG's unrestricted airspace for UAV operations and communications, and the APG supercomputing assets, enhance the ability to conduct C4ISR research, development, and testing.

APG is already a major technology center with emphasis on RDT&E and acquisition. Technical personnel supporting the existing organizations have many of the same skill sets that are required of the transferring organizations. The Maryland and Delaware educational institutions can easily provide the technical workforce that will enable the C4ISR mission to flourish at APG. Beyond that, the local availability of interns, post doctoral students, and

The Honorable Philip Coyle
Page 2

JUL 18 12 00 2005

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exchange researchers, coupled with the sharing of highly advanced laboratory equipment between the government and academia, further enhance APG's ability to meet DOD's requirements.

APG has the necessary footprint to absorb the gains currently indicated in the DoD BRAC recommendations. Additionally, APG has more than 300 acres on contract for development as an Enhanced Use Leasing project. This project allows a commercial enterprise to make capital investments on federal property, and lease back the use of the property to the government. This provides an alternative to MILCON or facility renovation, and an opportunity for CERDEC/NVL to occupy new laboratories specifically designed for their mission.

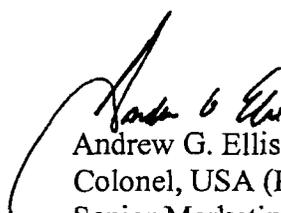
We can both testify that the quality of life in northern Maryland is excellent. The reasonable cost of living, availability of real estate, ease of commute, and excellent transportation infrastructure are conducive for expansion and growth of the area. Of equal importance, the BRAC recommendations continue to build on the area's existing technical strengths and have the strong support of the local and state governments.

We urge you to support the DoD's initial recommendations regarding APG. Aberdeen is well positioned for the future and is fully capable of receiving CECOM and CERDEC, their subordinate organizations, and the C4ISR mission. The consolidation of these additional missions at APG will enhance DOD's ability to meet the needs of its warfighters both now and in the future.

We would like to thank you for your service as a commissioner, and thank you for the opportunity to input on such a critical issue. We are fully aware of the scope of your responsibilities and realize what little time you have to research and digest the myriad issues. To that end we offer your staff our assistance in collecting any information you need on APG, or anything else that would be of help.

Sincerely,


Dean R. Ertwine
Brigadier General, USA (Ret)
Vice President, Army Sector
Battelle Eastern Science and Technology Center
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cc: ✓ R. Gary Dinsick, Army Team Leader, BRAC Commission Staff
Dean Rhody, Army Senior Analyst