REPORT OF THE COMPTROLLER GENERAL OF THE UNITED STATES

Evaluation Of The Department Of The Army's Personnel And Cost Estimates For An Electronics Research And Development Command

Formation of an electronics research and development command will consolidate in a single command

- the Army's Harry Diamond Laboratories;
- selected portions of the U.S. Army Security Agency; and
- the noncommunications and automatic data processing research, development, and acquisition elements of the U.S. Army Electronics Command, Fort Monmouth, New Jersey.

The consolidation is part of a general reorganizational change within the Army to improve the Army's materie acquisition process by establisning mission-oriented development and logistic centers.

Generally, GAO believes the Army's estimates for the personnel requirements, annual operating cost reductions, and one-time costs are reasonable.

LCD-76-465

NOV. 12, 1976

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-172707

The Honorable Clifford P. Case
United States Senate
The Honorable Harrison A. Williams, Jr.
United States Senate
The Honorable James J. Howard
House of Representatives

As requested on April 2, 1976, we reviewed the Army's estimated personnel requirements, annual operating cost reductions, and one-time costs for the proposed electronics research and development command.

As you know, our review work was directed primarily to evaluating the estimates in the Army's April 1976 Draft Environmental Impact Statement and the supporting documents. On August 20, 1976, while we were preparing our report on the results of our review, the Army filed its Final Environmental Impact Statement which contained revised estimates.

On September 2, 1976, we briefed your offices and Army representatives on the results of our evaluation of the estimates in the draft document, and, as agreed at that time, we expanded our review to include an evaluation of the revised estimates.

As you requested, we are sending copies of this report to the Secretary of Defense and to the Secretary of the Army.

Comptroller General
of the United States

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REPORT OF THE
COMPTROLLER GENERAL
OF THE UNITED STATES

EVALUATION OF THE DEPARTMENT OF THE ARMY'S PERSONNEL AND COST ESTIMATES FOR AN ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND

D I G E S T

In this report GAO reviews the Army's estimated personnel requirements, annual operating cost reductions, and one-time costs for its proposed electronics research and development command. This is part of a general reorganization within the Army to improve its materiel acquisition process by establishing mission-oriented development and logistic centers.

A summary of the Army's actions follows.

DECEMBER 6, 1973

The Secretary of the Army formed a committee to review the Army's materiel acquisition process and to recommend improvements.

APRIL 1, 1974

The committee recommended that the Army establish mission-oriented development centers by consolidating laboratories; installation and commodity command research, development, and engineering elements; project managers; support elements; selected user elements; and command elements.

The committee recommended also that logistic and readiness functions be done in logistic centers.

The Army reviewed the committee recommendations and announced the formation of some centers. An electronics research and development command is one of the mission-oriented development centers being considered. It is part of the reorganization to improve the Army's materiel acquisition process.

MAY 27, 1975

The Army published its concept study for the proposed electronics research and development center. The study described three alternatives for consolidating and integrating the Harry Diamond Laboratories, Washington, D.C., area; selected portions of the U.S. Army Security Agency, Washington, D.C., area; and the noncommunications and automatic data processing research, development, and acquisition elements of the U.S. Army Electronics Command, Fort Monmouth, New Jersey.

Subsequently, the Army obtained congressional and public comments on the study. Various new alternatives were identified for achieving consolidation with varying degrees of costs, savings, and improvements in the materiel acquisition process.

APRIL 1, 1976

The Army announced its preferred alternative for a proposed electronics research and development command. This would establish the command headquarters at the present site of the Harry Diamond Laboratories. The laser, photographic and nuclear elements at Fort Monmouth, New Jersey, would move to the Washington, D.C., area. The Electronic Warfare Laboratory at Fort Monmouth and Army Security Agency activities in the Washington area would be consolidated at Vint Hill Farms Station, Virginia.

APRIL 15, 1976

The Army issued a Draft Environmental Impact Statement and solicited comments on the environmental impact data in the document from Federal, State, and local governmental agencies; private organizations; and the public. The draft document contained 10 alternatives for achieving consolidation and for each alternative showed the impact on the environment, the personnel requirements, the annual operating cost reductions and the one-time costs.

AUGUST 20, 1976

The Army issued its Final Environmental Impact Statement which contained revised estimates and other information on the 10 alternatives being considered by the Army, including the estimated personnel requirements, annual operating cost reductions, and one-time costs. The alternatives vary by the degree of consolidation and therefore have different estimated personnel requirements, annual cost reductions, and one-time costs. (These are summarized in ch. 1, pp. 2 to 5.)

Depending on which alternative the Army finally selects, its personnel requirements could be reduced by 430 to 604 spaces and the annual operating costs could be reduced by $6.5 to $10.1 million.

The Army estimates that the realinement would require one-time costs of $13 to $60.3 million. The one-time costs include modification and construction costs and other costs, such as relocation costs, terminal leave payments, and recruitment costs.

Army estimates for the personnel requirements and annual operating cost reductions are reasonable, but its estimated one-time costs are understated by about $627,000 for all alternatives, except two. (See p. 8.)

The estimated one-time costs are understated because the Army does not include a provision for fencing a laser test range area which is necessary to prevent unauthorized entry into the area.

Army representatives told GAO that they solved this problem by resiting the laser range in another area, which would not require complete fencing, and that they expected to be able to resite the range at the new location within the cost estimate previously developed for the other site. GAO has not reviewed the estimated costs associated with the proposal to relocate the range.

GAO discussed the results of this review with Army representatives who concurred with the contents of this report.

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CHAPTER 1

INTRODUCTION

The Secretary of the Army formed an ad hoc committee called the Army Materiel Acquisition Review Committee in December 1973 to review the Army's total materiel acquisition process and to recommend improvements. In April 1974 the committee issued its report and recommended, among others, that the Army establish mission-oriented development centers by consolidating (1) laboratories, (2) installation and commodity command research, development, and engineering elements, (3) project managers, (4) support elements, (5) selected user elements, and (6) command elements. It also recommended that logistic and readiness functions be done in logistic centers.

The Army reviewed the committee recommendations, prepared concept plans and studies for several mission-oriented development centers, and announced the formation of some centers. An electronics research and development command is one of the mission-oriented development centers being considered by the Army. It is part of a general Army reorganization to improve the Army's materiel acquisition process.

On May 27, 1975, the Army published its concept study for the proposed electronics research and development center. The study described three alternatives for consolidating and integrating the Harry Diamond Laboratories, selected portions of the U.S. Army Security Agency, and the noncommunications and automatic data processing research, development, and acquisition elements of the U.S. Army Electronics Command.

Subsequent to publishing the study, the Army obtained congressional and public comments on the concept as part of its review of the possible consolidation of its electronics research and development work into a single, mission-oriented command. Various new alternatives were identified for achieving consolidation with varying degrees of costs, savings, and improvements in the materiel acquisition process. We made a limited review of the Army's cost estimates in the concept study and issued our report on July 24, 1975 (LCD-75-402).

Under provisions of the National Environmental Policy Act of 1969 and implementing guidelines, the Army issued a Draft Environmental Impact Statement in April 1976 and solicited comments on the environmental impact data in the document from Federal, State, and local governmental agencies;

private organizations; and the public. The draft document contained 10 alternatives for achieving consolidation and for each alternative showed the impact on the environment, the personnel requirements, the annual operating cost reductions, and the one-time costs. The Army issued its Final Environmental Impact Statement on August 20, 1976, which contained revised estimates.

DESCRIPTION OF ALTERNATIVES

The section below describes the 10 alternatives shown in the Army's Final Environmental Impact Statement, except for (1) the Atmospheric Sciences Laboratory and electronic warfare elements at White Sands Missile Range, New Mexico, (2) electronic warfare elements at Fort Meade, Maryland, (3) the nuclear effects and simulation elements at Adelphi, Maryland, and Woodbridge, Virginia, and (4) the Night Vision Laboratory at Fort Belvoir, Virginia, which remain in place for all alternatives. The Army selected alternative B-6 (see p. 4) as the preferred alternative. These alternatives are basically the same as those shown in the Draft Environmental Impact Statement, except for the personnel and cost estimates.

Alternative A forms the proposed electronics research and development command in the Washington, D.C., area by using the present Harry Diamond Laboratory facilities at Adelphi, Maryland, as the headquarters. Radar, sensor, laser, photographic, and nuclear elements and the Electronic Technology and Devices Laboratory activities would move from Fort Monmouth, New Jersey, to the Washington, D.C., area. The Electronic Warfare Laboratory at Fort Monmouth and Army Security Agency activities in the Washington, D.C., area would be consolidated at Adelphi, Maryland.

On the basis of this alternative, personnel requirements would be reduced by 604 spaces, which would save about $10.1 million annually. Construction and modification requirements would cost about $39.8 million; other one-time costs would be about $20.5 million.

Alternative A-1 establishes the proposed electronics research and development command in the Washington area by using the present Harry Diamond Laboratories at Adelphi as the headquarters. Radar, sensor, laser, photographic, and nuclear elements and the Electronic Technology and Devices Laboratory activities would relocate from Fort Monmouth to the Washington area. The Electronic Warfare Laboratory at Fort Monmouth and Army Security Agency activities would be consolidated in the Washington area by using the Army's Vint Hill Farms Station in Virginia.

On the basis of this alternative, personnel requirements would be reduced by 559 spaces, which would save about $9.1 million annually. Construction and modification requirements would cost about $25.6 million; other one-time costs would be about $19.6 million.

Alternative B locates the proposed command's headquarters at Fort Monmouth by moving command elements from Adelphi and Army Security Agency activities to Fort Monmouth. Radar, physics, fluidics, and ordnance elements also would move to Fort Monmouth. Nuclear, photographic and laser elements at Fort Monmouth would move to the Washington area.

On the basis of this alternative, personnel requirements would be reduced by 526 spaces, which would save about $8.7 million annually. Construction and modification requirements would cost about $21.9 million; other one-time costs would be about $10.8 million.

Alternative B-1 places the headquarters of the proposed command at Fort Monmouth. Fluidics, physics, and radar elements and Army Security Agency activities would move from the Washington area to Fort Monmouth. Laser, photographic, and nuclear elements at Fort Monmouth would relocate to the Washington area.

On the basis of this alternative, personnel requirements would be reduced by 490 spaces, which would save about $7.8 million annually. Construction and modification requirements would cost about $10.3 million; other one-time costs would be about $5.9 million.

Alternative B-2 situates the proposed command's headquarters at Adelphi. Fluidics, physics, and radar elements and Army Security Agency activities would relocate from the Washington area to Fort Monmouth. Laser, photographic, and nuclear elements at Fort Monmouth would move to the Washington area.

On the basis of this alternative, personnel requirements would be reduced by 487 spaces, which would save about $7.7 million annually. Construction and modification requirements would cost about $10.2 million; other one-time costs would be about $5.9 million.

Alternative B-3 establishes the proposed command's headquarters at Fort Monmouth. Radar, physics, and laser elements and Army Security Agency activities in the Washington area would move to Fort Monmouth. The nuclear element at Fort Monmouth would relocate to Adelphi.

On the basis of this alternative, personnel requirements would be reduced by 483 spaces, which would save about $7.6 million annually. Construction and modification requirements would cost about $9.6 million; other one-time costs would be about $4.6 million.

Alternative B-4 forms the proposed command's headquarters at Adelphi. Physics, radar, and laser elements at Adelphi would relocate to Fort Monmouth. The nuclear element at Fort Monmouth would relocate to Adelphi. The Electronic Warfare Laboratory at Fort Monmouth and Army Security Agency activities would be consolidated in the Washington area at Vint Hill Farms Station.

On the basis of this alternative, personnel requirements would be reduced by 445 spaces, which would save about $6.8 million annually. Construction and modification requirements would cost about $6.8 million; other one-time costs would be about $7.4 million.

Alternative B-5 places the proposed command's headquarters at Adelphi. Laser, photographic, and nuclear elements at Fort Monmouth would relocate to the Washington area. Army Security Agency activities in the Washington area would move to Fort Monmouth.

On the basis of this alternative, personnel requirements would be reduced by 484 spaces, which would save about $7.6 million annually. Construction and modification requirements would cost about $8.6 million; other one-time costs would be about $4.8 million.

Alternative B-6 is the Army's preferred alternative. The proposed command's headquarters would be located at Adelphi. The laser and photographic elements at Fort Monmouth would move to the Washington area. The Electronic Warfare Laboratory at Fort Monmouth and Army Security Agency activities in the Washington area would be consolidated at Vint Hill Farms Station.

On the basis of this alternative, personnel requirements would be reduced by 430 spaces, which would save about $6.5 million annually. Construction and modification requirements would cost about $5.9 million; other one-time costs would be about $7.1 million.

Alternative C establishes two new organizations—an electronics research and development command and the Fort Monmouth Development Center. The electronics research and development command would be located in the Washington

area, with the headquarters at Adelphi. This command would manage the research activities of the Battlefield Surveillance and Target Acquisition Laboratory. This laboratory would relocate from Fort Monmouth to Adelphi, but with the laser research and photographic equipment becoming a part of the Night Vision Laboratory at Fort Belvoir. Nuclear research elements at Fort Monmouth would also move to Adelphi.

The Fort Monmouth Development Center would be located at Fort Monmouth. This center would manage communications and automatic data processing units, the Electronic Technology and Devices Laboratory, and the combined signals intelligence and electronic warfare research activities of the Electronics Command and the Army Security Agency.

On the basis of this alternative, personnel requirements would be reduced by 517 spaces, which would save about $8.6 million annually. Construction and modification requirements would cost about $16.0 million; other one-time costs would be about $14.0 million.

The present and proposed location of laboratory elements are summarized by alternative in appendix I.

CHAPTER 2

ESTIMATED PERSONNEL REQUIREMENTS AND ANNUAL OPERATING COST REDUCTIONS

PERSONNEL REQUIREMENTS

The personnel estimates presented in the Army's Draft Environmental Impact Statement showed a projected June 30, 1976, beginning baseline of 4,626 civilian and military spaces for each of the 10 alternatives for the proposed command. The projected ending baseline as of September 30, 1982, varied by alternative between 4,012 and 4,171 spaces. We found that the Army had not completed its evaluation of the personnel requirements at the time the draft document was issued and that the estimated personnel requirements were being revised. Therefore, we did not make a detailed evaluation of the estimates presented in the draft document.

The Army's Final Environmental Impact Statement issued in August 1976 presents the revised estimates for each of the 10 alternatives being considered for the proposed command. The following table summarizes the Army's estimates of the net personnel space reductions from June 30, 1976 (beginning baseline), to September 30, 1982 (ending baseline), as the result of the establishment of an electronics research and development command.

Alternative	Beginning baseline	Ending baseline	Difference
A	4,605	4,001	604
A-1	4,605	4,046	559
B	4,605	4,079	526
B-1	4,605	4,115	490
B-2	4,605	4,118	487
B-3	4,605	4,122	483
B-4	4,605	4,160	445
B-5	4,605	4,121	484
B-6	4,605	4,175	430
C	4,605	4,088	517

We reviewed these estimates and believe they are reasonable. Appendix II shows the estimated changes in personnel levels by location for all alternatives.

COST REDUCTIONS

The estimated annual operating cost reductions were based entirely on the estimated reductions in personnel requirements. Because some of the work currently being done in-house is expected to be transferred to contract on a one-to-one basis, not all of the personnel reductions result in cost reductions to the Army.

The following table summarizes by alternative the estimated net changes in personnel requirements, including those expected to be transferred to contract, and the estimated cost reductions expected to result from the establishment of the proposed command.

Alternative	Estimated total personnel reduction	Estimated transfers to contract	Estimated net personnel savings	Estimated operating cost reductions
				(millions)
A	604	225	379	$10.1
A-1	559	217	342	9.1
B	526	199	327	8.7
B-1	490	199	291	7.8
B-2	487	199	288	7.7
B-3	483	199	284	7.6
B-4	445	190	255	6.8
B-5	484	199	285	7.6
B-6	430	187	243	6.5
C	517	195	322	8.6

We reviewed the Army's estimates and believe they are reasonable.

CHAPTER 3

ESTIMATED ONE-TIME COSTS

In reviewing the Army's one-time cost estimates presented in the Draft Environmental Impact Statement, we found that some of the modification and construction cost estimates were overstated and others were understated. For example:

--Modification and construction cost estimates for alternatives B, B-1, B-2, B-3, B-5, and C were overstated by several million dollars because the Army planned to build a larger addition to the Electonic Warfare Laboratory building at Fort Monmouth than was needed for the proposed command elements planned for Fort Monmouth.

--Modification and construction cost estimates for alternatives A, A-1, B, B-1, B-2, B-5, B-6, and C were understated because the Army planned to modify the laser test range at Fort A. P. Hill, Virginia, but it could not be modified due to health and safety considerations and must be resited at an increase in cost.

The Army's Final Environmental Impact Statement presents one-time cost estimates for each of the 10 alternatives. We reviewed the Army's revised estimates and believe the estimated modification and construciton costs are understated by about $627,000 for alternatives A, A-1, B, B-1, B-2, B-5, B-6, and C. We believe the other estimated one-time costs are reasonable.

The table on the following page summarizes the Army's latest estimated one-time costs of establishing an electronics research and development command.

Alternatives	Estimated modification and construction costs	Estimated other one-time costs	Estimated total costs
	(millions)		
A	$39.8	$20.5	$60.3
A-1	25.6	19.6	45.2
B	21.9	10.8	32.7
B-1	10.3	5.9	16.2
B-2	10.2	5.9	16.1
B-3	9.6	4.6	14.2
B-4	6.8	7.4	14.2
B-5	8.6	4.8	13.4
B-6	5.9	7.1	13.0
C	16.0	14.0	30.0

Appendix III shows the detailed modification and construction cost estimates by location and alternative, and appendix IV shows the detailed other one-time cost estimates.

CONSTRUCTION AMD MODIFICATION COSTS

The Army's estimated modification and construction costs for alternatives B, B-1, B-2, B-3, B-5, and C which were presented in the Draft Environmental Impact Statement included about $9.7 million to construct an addition to the Electronic Warfare Laboratory building at Fort Monmouth. The proposed addition was to accommodate between 300 and 400 people.

We found that there was considerable vacant space at the Fort Monmouth facilities which could be modified for use by the proposed command. We discussed this matter with Army representatives who told us that the primary reason why they planned to construct the addition rather than utilize the vacant space was to collocate all of the electronic warfare elements.

The Army has reevaluated the need to collocate the elements and changed its plan in the Final Environmental Impact Statement. The Army's revised plan is to build a $3 million addition to accommodate a computer element of about 36 people from the Army Security Agency. The element is planned to be relocated from the Washington area to Fort Monmouth as part of alternatives B, B-1, B-2, B-3, B-5, and C. We believe that the requirement is valid and that the estimated cost is reasonable.

Another modification cost estimate we questioned related to the costs for a proposal to modify the laser test range at Fort A. P. Hill for all alternatives except B-3 and B-4. Changes in the existing laser test range at Fort A. P. Hill are needed because the Army plans to relocate a laser research and development element from Fort Monmouth to Fort Belvoir, and a high-intensity, long-range laser test range is needed for the planned mission.

We found that the Fort A. P. Hill range could not be modified to accomplish the high-intensity laser tests because of health and safety considerations. We brought this matter to the attention of Army representatives and they agreed with us. The Army now plans to build a new 5,000-meter range at an estimated cost of about $390,000 at Fort A. P. Hill and a 1,000-meter range at an estimated cost of about $147,000 at Fort Belvoir.

We reviewed the Army's latest estimates and believe the Army understated the estimated cost for the 5,000-meter range at Fort A. P. Hill. The Army's estimate does not include costs of about $627,000 to fence the area. We believe a fence is needed to prevent unauthorized personnel, such as reservists who train at the location, from entering the area.

We discussed this matter with Army representatives on September 28, 1976, who told us that the Army has again resited the range after filing the Final Environmental Impact Statement to minimize interference with military training activities conducted at Fort A. P. Hill. Since the Army recently made the decision to resite the range again, we were unable to review the costs associated with the resiting at the new location. The Army representatives told us that they expected to be able to resite the range at the new location within the $390,000 estimate previously developed for the other site. They said that the new site would not require fencing the entire area because it was located away from training areas and that a fence is planned for range areas where the laser beams would come within 10 feet of the ground, such as in the hilly areas.

OTHER ONE-TIME COSTS

Other one-time cost estimates include such costs as military and civilian relocation costs, terminal leave payments, severance pay, recruitment costs, and costs to move equipment and to purchase new equipment. As shown on page 9, the estimated other one-time costs vary by alternative

from a low of about $4.6 million for alternative B-3 to a high of about $20.5 million for alternative A.

The various alternatives involve varying degrees of consolidation and therefore involve the movement of different mission elements, people, and equipment. As a result, some alternatives require greater one-time costs than others. For example, the estimated civilian relocation cost for alternative A-1 is about $6,396,000 and for alternative B-3 the cost is about $588,000. Alternative A-1 involves consolidating most of the Army's electronic research and development mission elements in the Washington area and requires relocating about 856 civilian personnel, most of whom are being relocated from Fort Monmouth. On the other hand, alternative B-3 involves much less actual physical consolidation and requires relocating only 77 people.

Another example which illustrates why there are large differences in the estimated one-time costs is the costs associated with the purchase of equipment. Equipment purchases are required primarily to provide new mission-essential equipment and to replace equipment which cannot be relocated. The estimated equipment purchase cost for alternative B-6 is about $450,000 and for alternative A the cost is about $1,722,000. Both alternatives require the replacement of a $250,000 generator and the purchase of shipping containers estimated at about $200,000 which will be used to ship nuclear materiels. However, alternative A also requires the purchase of various other equipment estimated at about $1,272,000 which is currently being shared with other Army commands at Fort Monmouth and therefore cannot be relocated to the Washington area.

We reviewed the Army's estimates for the other one-time costs and believe the estimates are reasonable.

CHAPTER 4

OTHER ECONOMIC CONSIDERATIONS

The Final Environmental Impact Statement addresses other cost factors related to the various alternatives, in addition to those discussed in chapters 2 and 3. We did not review these factors; however, we are including them in this report since they are a part of the economic factors a decisionmaker should consider and the Army is considering them.

ECONOMIC PROJECTIONS

The Final Environmental Impact Statement includes projections related to changes in business volume, personal income, employment and investment which could occur based on the Army's decision to implement any of the alternatives under consideration. These projections were made for each economic area affected by the various alternatives and are shown in appendix V.

Generally the economic projections provide for identifying potential economic problems in quantifiable terms, which will help the decisionmaker to include consideration of the optimum economic location in his decision. The projections are intended only as a planning and information tool for the decisionmaker and should not be treated as absolute.

The economic projections show the total impact on the community attributable to gains and losses in the Government payroll which, in turn, affects the non-Government payroll relating to support provided to the Government workers. A Department of Commerce earnings multiplier, which varies by geographic areas, is applied to increases or decreases in the Government payroll to show the total economic impact on the various communities. Failure to apply a multiplier would result in ignoring the ripple effect of the estimated change in Government payroll on private payrolls in the nearby communities.

Changes in employment

Changes in employment projections show the total increase or decrease in jobs which could occur in the three economic areas as a result of any particular alternative being selected. For example, if alternative A were implemented, a decrease of about 13,787 jobs could occur in the Fort Monmouth economic area, whereas the Washington

area could expect to have an increase of about 6,832 jobs and the Vint Hill Farms area would lose about 176 jobs.

Changes in personal income

These projections represent the total gain or loss to the economic area in terms of salaries.

Changes in business volume

Changes in business volume projections represent the total gain or loss to the economic area's businesses in terms of sales volume.

Changes in investment

Changes in investment represent the gain or loss of revenues to the areas which could be used for such purposes as business expansion and housing.

CHAPTER 5

SCOPE OF REVIEW

We conducted our review at Headquarters, Department of the Army, Washington, D.C.; U.S. Army Materiel Development and Readiness Command, Alexandria, Virginia; U.S. Army Electronics Command, Fort Monmouth, New Jersey; U.S. Army Security Agency, Vint Hill Farms Station, Virginia; Harry Diamond Laboratories, Adelphi, Maryland; U.S. Army Mobility Equipment Command, Fort Belvoir, Virginia; and the Woodbridge Research Test Facility, Woodbridge, Virginia.

We reviewed the Army's personnel and cost estimates presented in the April 1976 Draft Environmental Impact Statement and the August 1976 Final Environmental Impact Statement to determine the reasonableness of the Army estimates. We also examined related Army records and documents to determine whether (1) the methodology and rationale for the estimates were reasonable, (2) the various cost factors used by the Army in computing the cost estimates were reasonable, and (3) the estimates could be relied upon for decisionmaking purposes. We interviewed Department of the Army and Army Audit Agency representatives and toured the major facilities affected by the proposed realinement action.

In response to our questions concerning the Army's rationale for selecting the preferred alternative, Army representatives told us that they are reevaluating the preferred alternative because of the information presented to the Secretary of the Army by the New Jersey Congressional Delegation on September 30, 1976, and the results of our review.

We discussed the results of this review with Army representatives who concurred with the contents of this report.

CURRENT AND PROPOSED LOCATIONS OF ARMY ELECTRONICS RESEARCH AND DEVELOPMENT WORK

Current laboratories and elements (note a)	Current locations	Proposed locations								
		A	A-1	B	B-1	B-2	B-3	B-4	B-5	B-6	C
Headquarters and support	W,FM	W	W	FM	FM	W	FM	W	W	W	W
Harry Diamond Laboratories--radar	W	W	W	FM	FM	FM	FM	FM	W	W	W
Combat Surveillance and Target Acquisition Laboratory--radar and sensor	FM	W	W	FM	FM	FM	FM	FM	FM	FM	W
Harry Diamond Laboratories--laser	W	W	W	W	W	W	FM	FM	W	W	W
Combat Surveillance and Target Acquisition Laboratory--laser and photographic	FM	W	W	W	W	W	FM	FM	W	W	W
Harry Diamond Laboratories--nuclear	W	W	W	W	W	W	W	W	W	W	W
Electronic Technology and Devices Laboratory--nuclear	FM	W	W	W	W	W	W	W	W	FM	W
Harry Diamond Laboratories--ordnance	W	W	W	FM	W	W	W	W	W	W	W
U.S. Army Security Agency--signals intelligence and electronic warfare	W	W	W	FM	FM	FM	FM	W	FM	W	FM
Electronic Warfare Laboratory	FM	W	W	FM	FM	FM	FM	W	FM	W	FM
Electronic Technology and Devices Laboratory	FM	W	W	FM	FM	FM	FM	FM	FM	FM	FM
Harry Diamond Laboratories:											
Physics	W	W	W	FM	FM	FM	FM	FM	W	W	W
Fluidics	W	W	W	FM	FM	FM	W	W	W	W	W

a/Mission elements at (1) Atmospheric Sciences Laboratory and Electronic Warfare Elements at White Sands Missile Range, (2) Electronic Warfare Elements at Fort Meade, (3) Night Vision Laboratory at Fort Belvoir, and (4) nuclear effects and simulation elements at Adelphi and Woodbridge remain in place for all alternatives and are not shown in this table.

KEY:

FM--Fort Monmouth, area.
W--Washington, area.

APPENDIX I

ESTIMATED PERSONNEL CHANGES

AS A RESULT OF REALINEMENT

Location	June 30, 1976 (note a)	A	A-1	B	B-1	B-2	B-3	B-4	B-5	B-6	C
Washington area:											
Adelphi	1,299	1,045	692	-1,007	-269	-128	-246	-104	-83	-29	267
Fort Belvoir	514	108	108	143	109	97	-3	-9	[illegible]	76	94
Woodbridge	110	14	14	-12	-15	-15	-15	-15	-15	-15	-15
Fort Meade	50	0	0	0	0	0	0	0	0	0	0
Arlington Hall, Va.	38	-38	-38	-38	-38	-38	-38	-38	-38	-38	-38
Vint Hill Farms	36	-36	362	-36	-36	-36	-36	367	-36	360	-36
	2,047	1,093	1,138	-950	-249	-120	-338	201	-75	354	272
Fort Monmouth area	1,669	-1,669	-1,669	452	-213	-339	-117	-618	-381	-756	-761
White Sands Missile Range	889	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28
Total	4,605	-604	-559	-526	-490	-487	-483	-445	-484	-430	-517

a/The June 30, 1976, figures shown are the estimated personnel spaces related to the electronics research and development command's assigned spaces as of June 30, 1976, and are not necessarily the total personnel levels at the locations.

APPENDIX II

ESTIMATED CONSTRUCTION AND MODIFICATION COSTS

Locations	A	A-1	B	B-1	B-2	B-3	B-4	B-5	B-6	C
	(000 omitted)									
Vint Hill Farms:										
Alterations	$ -	$ 383	$ -	$ -	$ -	$ -	$ 383	$ -	$ 383	$ -
Fort Belvoir:										
Alterations	174	174	174	174	174	-	-	174	174	174
Construct short laser range	147	147	147	147	147	-	-	147	147	147
Fort A. P. Hill:										
Construct long laser range	390	390	390	390	390	-	-	390	390	390
Woodbridge Research Facility:										
Construct test building and tower	221	221	-	-	-	-	-	-	-	221
Blossom Point, Md.:										
Construct test facility	291	-	-	-	-	-	-	-	-	-
Washington, D.C.:										
Alterations	380	380	-	-	-	-	-	-	-	380
Lakehurst Air station, N.J.:										
Construct labs and radome	-	-	1,534	1,534	1,534	1,534	1,534	-	-	-
Wayside Test Facility, N.J.:										
Construct research facility	-	-	2,774	-	-	-	-	-	-	-
Construct test facility	-	-	288	288	288	288	288	288	288	-
Fort Monmouth:										
Modifications to hexagon	-	-	2,755	564	639	976	359	670	345	407
Construct addition to electronic laboratory and expand substation	-	-	3,007	3,007	3,007	3,007	-	3,007	-	3,007
Construct fuse environment simulation facility	-	-	4,241	-	-	-	-	-	-	-
Alterations to Building 2525	-	-	433	433	238	29	274	158	250	39
Alterations to Building 2705	-	-	-	-	-	-	170	-	170	-
Construct test facilities	-	-	3,657	3,657	3,657	3,657	3,657	3,657	3,657	2,827
Construct gun tube test facility	-	-	2,377	-	-	-	-	-	-	-
Forest Glen, Md.:										
Dismantle Diamond Ordnance Radiation Facility	115	115	115	115	115	115	115	115	115	115
Adelphi, Md.:										
Alterations	231	231	-	-	-	-	-	-	-	231
Construction:										
Buildings	36,523	22,217	-	-	-	-	-	-	-	8,109
Test facilities	1,308	1,308	-	-	-	-	-	-	-	-
Total	$39,780	$25,566	$21,892	$10,309	$10,189	$9,606	$6,780	$8,606	$5,919	$16,047

APPENDIX III

ESTIMATED OTHER ONE-TIME COSTS

	A	A-1	B	B-1	B-2	B-3	B-4	B-5	B-6	C
	(000 omitted)									
Relocation--military	$ 111	$ 98	$ 48	$ 42	$ 48	$ 37	$ 38	$ 48	$ 34	$ 69
Relocation--civilian	6,361	6,396	4,128	1,089	1,125	588	2,319	1,018	2,171	2,509
Terminal leave	1,308	1,209	176	290	342	205	527	340	610	630
Severance pay	1,925	1,611	2,550	767	701	589	898	564	1,063	1,048
Recruitment	194	140	83	15	15	-	58	15	71	63
Training	400	407	172	32	32	-	120	32	144	131
Overtime and temporary duty	214	214	214	214	214	214	214	214	214	214
Equipment movement	2,034	1,954	1,894	1,874	1,878	1,484	1,615	1,550	1,687	2,044
Equipment purchase	1,722	1,331	1,022	1,022	1,022	1,022	1,022	450	450	1,254
Homeowners assistance	500	500	94	112	140	86	198	140	230	252
Leases	5,355	5,355	-	-	-	-	-	-	-	5,355
Layaway and caretaker	423	423	423	423	423	423	423	423	423	423
Total	$20,547	$19,638	$10,804	$5,880	$5,940	$4,648	$7,432	$4,794	$7,097	$13,992

APPENDIX IV

ECONOMICS OF VARIOUS ALTERNATIVES

	A	A-1	B	B-1	B-2	B-3	B-4	B-5	B-6	C
Net manpower space savings	379	342	327	291	288	284	255	285	243	322
Annual personnel cost savings (millions)	$10.1	$9.1	$8.7	$7.8	$7.7	$7.6	$6.8	$7.6	$6.5	$8.6
Construction costs (millions)	$39.8	$25.6	$21.9	$10.3	$10.2	$9.6	$6.8	$8.6	$5.9	$16.0
Other one-time costs (millions)	$20.5	$19.6	$10.8	$5.9	$5.9	$4.6	$7.4	$4.8	$7.1	$14.0
Total one-time costs (millions)	$60.3	$45.2	$32.7	$16.2	$16.1	$14.2	$14.2	$13.4	$13.0	$30.0
Payback period (years)	6.0	5.0	3.8	2.1	2.1	1.9	2.1	1.8	2.0	3.5
Fort Monmouth economic region:										
Change in employment (staff years)	-13,787	-13,786	7,322	1,103	-752	871	-3,040	-1,335	-5,788	-4,671
Change in personal income (millions)	$-151.1	$-151.1	$80.3	$12.1	$-8.2	$9.5	$-33.2	$-14.6	$-63.5	$-51.2
Change in business volume (millions)	$-149.5	$-149.6	$79.4	$11.8	$-8.2	$9.3	$-33.0	$-14.5	$-62.8	$-50.5
Change in investment (millions)	$-34.7	$-34.7	$18.3	$3.6	$-1.9	$2.8	$-7.7	$-3.3	$-14.6	$-11.9
Washington economic region:										
Change in employment (staff years)	6,832	4,465	-4,088	-942	-377	-1,393	-797	-173	-14	1,867
Change in personal income (millions)	$91.7	$60.7	$-54.9	$-12.9	$-4.8	$-18.9	$-10.6	$-2.3	$-0.2	$25.4
Change in business volume (millions)	$65.3	$42.8	$-39.1	$-9.5	$-3.1	$-13.9	$-7.7	$-1.7	$-0.1	$17.7
Change in investment (millions)	$21.1	$14.0	$-12.6	$-3.0	$-1.2	$-4.3	$-2.4	$-1.0	$-0.1	$6.6
Vint Hill Farms economic region:										
Change in employment (staff years)	-176	1,988	-175	-175	-175	-175	2,016	-175	1,964	-175
Change in personal income (millions)	$-1.8	$20.6	$-1.8	$-1.8	$-1.8	$-1.8	$20.9	$-1.8	$20.4	$-1.8
Change in business volume (millions)	$-1.7	$19.5	$-1.8	$-1.8	$-1.8	$-1.8	$2.2	$-1.8	$4.0	$-1.8
Change in investment (millions)	$-0.4	$4.8	$-0.4	$-0.4	$-0.4	$-0.4	$4.8	$-0.4	$4.7	$-0.4

APPENDIX V