Appendix A
Agency Coordination and Scoping Comments

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Mr. Willie R. Taylor
Director
U.S. Department of the Interior
Office of Environmental Policy and Compliance
1849 C Street, NW, Room 2342
Washington, DC 20240

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Taylor:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, the Endangered Species Act, and the Fish and Wildlife Coordination Act, the Army is assessing the potential impacts that implementation of the proposed action could have on federally protected species, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

On September 8, 2005, the BRAC Commission recommended that certain realignment actions occur at Fort Lee, Virginia. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress. Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

Fort Lee is adjacent to Petersburg, Virginia (Figure 1). It is home of the U.S. Army Combined Arms Support Command (CASCOM), an organization having the mission to develop logistics leaders, doctrine, organizations, training, and materiel solutions to sustain a campaign-quality Army with joint and expeditionary capabilities in war and peace. The BRAC realignment actions at Fort Lee include the establishment and relocation of specific organizations and activities to the installation which include: (1) establishment of a Sustainment Center of Excellence, (2) establishment of a Joint Center for Consolidated Transportation Management Training, (3) establishment of a Joint Center of Excellence for Culinary Training, (4) the consolidation of specific Defense Commissary Agency Offices, (5) the relocation of Defense Contract Management Agency Headquarters, and (6) the co-location of miscellaneous Department of Defense functions. Enclosure 1 contains more specific detail on the various

realignment actions that will occur at Fort Lee. The complete text of the BRAC Commission's recommendations can be found at http://www.brac.gov/Deliberations.aspx. The EIS will analyze and document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Lee.

The BRAC actions will result in the relocation of approximately 8,300 additional personnel to the installation. Fort Lee conducted an evaluation of all facilities and determined that there is a substantial shortfall in built space to accommodate the additional personnel and their equipment. The post's existing inventory of approximately 7.5 million square feet of space is, with very minor exception, fully used for current mission requirements. Accordingly, new construction is required. In limited instances, some units and functions could be assigned to existing facilities. Of these, some would require renovation to adequately support new occupants. Overall, however, the new and renovated facilities will account for a total of approximately 6 to 8 million square feet of built space. Areas within Fort Lee that are being evaluated as areas for placement of incoming activities are shown on (Figure 2). The EIS will assess a No Action Alternative, and other alternatives involving a combination of new construction and renovation of existing facilities.

Additionally, the Army proposes to conduct field training exercises and other operations at Fort Lee, as well as at Fort A.P. Hill, Virginia. Fort A.P. Hill is approximately 50 miles north of Fort Lee in Caroline County, Virginia, near Fredericksburg, Virginia. Figure 3 shows the locations of the proposed Forward Operating Bases (FOBs) and Explosive Ordnance Disposal (EOD) site at the installation. The installation provides realistic joint and combined arms training, logistics, and support. The majority of field training exercises will occur at Fort A.P. Hill. A limited number of ranges and supporting facilities will be constructed at Fort A.P. Hill to accommodate the increased training load.

It is requested that your input be provided within 30 days of receipt of this letter. If you have any questions or require further information regarding the BRAC action at Fort Lee, please call Carol Anderson at 804-734-5071. If you have any questions or require further information regarding the BRAC action at Fort A.P. Hill, please call Terry Banks at 804-633-8223.

Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Mr. Robert Hargrove
Division Director
U.S. Environmental Protection Agency
Office of Federal Activities
1200 Pennsylvania Avenue, NW
Room 7241
Washington, DC 20044

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Hargrove:

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The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, Clean Water Act, Clean Air Act, Noise Control Act, Resource Conservation and Recovery Act, and Toxic Substances Control Act, the Army is assessing the potential impacts that implementation of the proposed action could have on surface and ground waters, air quality, the noise environment, and hazardous and toxic materials, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

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Sincerely,

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Gwen Bingham
Colonel, US Army
Garrison Commander

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HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Mr. William Arguto
NEPA-Federal Facilities
U.S. Environmental Protection Agency
Region 3
Attn: 3EA30 - NEPA
1650 Arch Street
Philadelphia, PA 19103-2029

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Arguto:

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Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Ms. Vanessa Adams
Warden
Federal Correctional Institution
PO Box 90026
Petersburg, VA 23804-0026

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Ms. Adams:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, the Army is assessing the potential impacts that implementation of the proposed action could have on the noise environment, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

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HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Mr. Eric Davis
NEPA Coordinator
U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Davis:

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Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Ms. Jeanne Grandstaff
Hopewell Regional Wastewater Treatment Facility
PO Box 969
Hopewell, VA 23860

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Ms. Grandstaff:

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The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, the Army is assessing the potential impacts that implementation of the proposed action could have on wastewater discharges from the installation, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

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HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Superintendent Hodge
Riverside Regional Jail
1000 River Rd
Hopewell, VA 23860

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Superintendent Hodge:

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Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Ms. Ellie Irons
Program Manager
Virginia Department of Environmental Quality
PO Box 10009
Richmond, VA 23219

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Ms. Irons:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act and the Chesapeake Bay Agreement,, the Army is assessing the potential impacts that implementation of the proposed action could have on surface and ground waters, soils, and air quality, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

On September 8, 2005, the BRAC Commission recommended that certain realignment actions occur at Fort Lee, Virginia. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress. Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

Fort Lee is adjacent to Petersburg, Virginia (Figure 1). It is home of the U.S. Army Combined Arms Support Command (CASCOM), an organization having the mission to develop logistics leaders, doctrine, organizations, training, and materiel solutions to sustain a campaign-quality Army with joint and expeditionary capabilities in war and peace. The BRAC realignment actions at Fort Lee include the establishment and relocation of specific organizations and activities to the installation which include: (1) establishment of a Sustainment Center of Excellence, (2) establishment of a Joint Center for Consolidated Transportation Management Training, (3) establishment of a Joint Center of Excellence for Culinary Training, (4) the consolidation of specific Defense Commissary Agency Offices, (5) the relocation of Defense Contract Management Agency Headquarters, and (6) the co-location of miscellaneous Department of Defense functions. Enclosure 1 contains more specific detail on the various realignment actions that will occur at Fort Lee. The complete text of the BRAC Commission's

recommendations can be found at http://www.brac.gov/Deliberations.aspx. The EIS will analyze and document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Lee.

The BRAC actions will result in the relocation of approximately 8,300 additional personnel to the installation. Fort Lee conducted an evaluation of all facilities and determined that there is a substantial shortfall in built space to accommodate the additional personnel and their equipment. The post's existing inventory of approximately 7.5 million square feet of space is, with very minor exception, fully used for current mission requirements. Accordingly, new construction is required. In limited instances, some units and functions could be assigned to existing facilities. Of these, some would require renovation to adequately support new occupants. Overall, however, the new and renovated facilities will account for a total of approximately 6 to 8 million square feet of built space. Areas within Fort Lee that are being evaluated as areas for placement of incoming activities are shown on (Figure 2). The EIS will assess a No Action Alternative, and other alternatives involving a combination of new construction and renovation of existing facilities.

Additionally, the Army proposes to conduct field training exercises and other operations at Fort Lee, as well as at Fort A.P. Hill, Virginia. Fort A.P. Hill is approximately 50 miles north of Fort Lee in Caroline County, Virginia, near Fredericksburg, Virginia. Figure 3 shows the locations of the proposed Forward Operating Bases (FOBs) and Explosive Ordnance Disposal (EOD) site at the installation. The installation provides realistic joint and combined arms training, logistics, and support. The majority of field training exercises will occur at Fort A.P. Hill. A limited number of ranges and supporting facilities will be constructed at Fort A.P. Hill to accommodate the increased training load.

It is requested that your input be provided within 30 days of receipt of this letter. If you have any questions or require further information regarding the BRAC action at Fort Lee, please call Carol Anderson at 804-734-5071. If you have any questions or require further information regarding the BRAC action at Fort A.P. Hill, please call Terry Banks at 804-633-8223.

Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Mr. Bob Kirby
Superintendent
Petersburg National Battlefield
1539 Hickory Hill Rd
Petersburg, VA 23803

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Kirby:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, the Army is assessing the potential impacts that implementation of the proposed action could have on visual and aesthetic resources, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

On September 8, 2005, the BRAC Commission recommended that certain realignment actions occur at Fort Lee, Virginia. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress. Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

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document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Lee.

The BRAC actions will result in the relocation of approximately 8,300 additional personnel to the installation. Fort Lee conducted an evaluation of all facilities and determined that there is a substantial shortfall in built space to accommodate the additional personnel and their equipment. The post's existing inventory of approximately 7.5 million square feet of space is, with very minor exception, fully used for current mission requirements. Accordingly, new construction is required. In limited instances, some units and functions could be assigned to existing facilities. Of these, some would require renovation to adequately support new occupants. Overall, however, the new and renovated facilities will account for a total of approximately 6 to 8 million square feet of built space. Areas within Fort Lee that are being evaluated as areas for placement of incoming activities are shown on (Figure 2). The EIS will assess a No Action Alternative, and other alternatives involving a combination of new construction and renovation of existing facilities.

Additionally, the Army proposes to conduct field training exercises and other operations at Fort Lee, as well as at Fort A.P. Hill, Virginia. Fort A.P. Hill is approximately 50 miles north of Fort Lee in Caroline County, Virginia, near Fredericksburg, Virginia. Figure 3 shows the locations of the proposed Forward Operating Bases (FOBs) and Explosive Ordnance Disposal (EOD) site at the installation. The installation provides realistic joint and combined arms training, logistics, and support. The majority of field training exercises will occur at Fort A.P. Hill. A limited number of ranges and supporting facilities will be constructed at Fort A.P. Hill to accommodate the increased training load.

It is requested that your input be provided within 30 days of receipt of this letter. If you have any questions or require further information regarding the BRAC action at Fort Lee, please call Carol Anderson at 804-734-5071. If you have any questions or require further information regarding the BRAC action at Fort A.P. Hill, please call Terry Banks at 804-633-8223.

Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Mr. Dennis K. Morris
Executive Director
Crater Planning District Committee
PO Box 1808
Petersburg, VA 23805

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Morris:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, the Army is assessing the potential impacts that implementation of the proposed action could have on traffic and transportation, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

On September 8, 2005, the BRAC Commission recommended that certain realignment actions occur at Fort Lee, Virginia. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress. Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

Fort Lee is adjacent to Petersburg, Virginia (Figure 1). It is home of the U.S. Army Combined Arms Support Command (CASCOM), an organization having the mission to develop logistics leaders, doctrine, organizations, training, and materiel solutions to sustain a campaign-quality Army with joint and expeditionary capabilities in war and peace. The BRAC realignment actions at Fort Lee include the establishment and relocation of specific organizations and activities to the installation which include: (1) establishment of a Sustainment Center of Excellence, (2) establishment of a Joint Center for Consolidated Transportation Management Training, (3) establishment of a Joint Center of Excellence for Culinary Training, (4) the consolidation of specific Defense Commissary Agency Offices, (5) the relocation of Defense Contract Management Agency Headquarters, and (6) the co-location of miscellaneous Department of Defense functions. Enclosure 1 contains more specific detail on the various realignment actions that will occur at Fort Lee. The complete text of the BRAC Commission's recommendations can be found at http://www.brac.gov/Deliberations.aspx. The EIS will analyze and

document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Lee.

The BRAC actions will result in the relocation of approximately 8,300 additional personnel to the installation. Fort Lee conducted an evaluation of all facilities and determined that there is a substantial shortfall in built space to accommodate the additional personnel and their equipment. The post's existing inventory of approximately 7.5 million square feet of space is, with very minor exception, fully used for current mission requirements. Accordingly, new construction is required. In limited instances, some units and functions could be assigned to existing facilities. Of these, some would require renovation to adequately support new occupants. Overall, however, the new and renovated facilities will account for a total of approximately 6 to 8 million square feet of built space. Areas within Fort Lee that are being evaluated as areas for placement of incoming activities are shown on (Figure 2). The EIS will assess a No Action Alternative, and other alternatives involving a combination of new construction and renovation of existing facilities.

Additionally, the Army proposes to conduct field training exercises and other operations at Fort Lee, as well as at Fort A.P. Hill, Virginia. Fort A.P. Hill is approximately 50 miles north of Fort Lee in Caroline County, Virginia, near Fredericksburg, Virginia. Figure 3 shows the locations of the proposed Forward Operating Bases (FOBs) and Explosive Ordnance Disposal (EOD) site at the installation. The installation provides realistic joint and combined arms training, logistics, and support. The majority of field training exercises will occur at Fort A.P. Hill. A limited number of ranges and supporting facilities will be constructed at Fort A.P. Hill to accommodate the increased training load.

It is requested that your input be provided within 30 days of receipt of this letter. If you have any questions or require further information regarding the BRAC action at Fort Lee, please call Carol Anderson at 804-734-5071. If you have any questions or require further information regarding the BRAC action at Fort A.P. Hill, please call Terry Banks at 804-633-8223.

Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Ms. Wendy Stills
Project Development Specialist
U.S. Department of Transportation
400 Seventh St, SW
Washington, DC 20590-0001

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Ms. Stills:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, the Army is assessing the potential impacts that implementation of the proposed action could have on traffic and transportation, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

On September 8, 2005, the BRAC Commission recommended that certain realignment actions occur at Fort Lee, Virginia. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress. Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

Fort Lee is adjacent to Petersburg, Virginia (Figure 1). It is home of the U.S. Army Combined Arms Support Command (CASCOM), an organization having the mission to develop logistics leaders, doctrine, organizations, training, and materiel solutions to sustain a campaign-quality Army with joint and expeditionary capabilities in war and peace. The BRAC realignment actions at Fort Lee include the establishment and relocation of specific organizations and activities to the installation which include: (1) establishment of a Sustainment Center of Excellence, (2) establishment of a Joint Center for Consolidated Transportation Management Training, (3) establishment of a Joint Center of Excellence for Culinary Training, (4) the consolidation of specific Defense Commissary Agency Offices, (5) the relocation of Defense Contract Management Agency Headquarters, and (6) the co-location of miscellaneous Department of Defense functions. Enclosure 1 contains more specific detail on the various realignment actions that will occur at Fort Lee. The complete text of the BRAC Commission's recommendations can be found at http://www.brac.gov/Deliberations.aspx. The EIS will analyze and

document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Lee.

The BRAC actions will result in the relocation of approximately 8,300 additional personnel to the installation. Fort Lee conducted an evaluation of all facilities and determined that there is a substantial shortfall in built space to accommodate the additional personnel and their equipment. The post's existing inventory of approximately 7.5 million square feet of space is, with very minor exception, fully used for current mission requirements. Accordingly, new construction is required. In limited instances, some units and functions could be assigned to existing facilities. Of these, some would require renovation to adequately support new occupants. Overall, however, the new and renovated facilities will account for a total of approximately 6 to 8 million square feet of built space. Areas within Fort Lee that are being evaluated as areas for placement of incoming activities are shown on (Figure 2). The EIS will assess a No Action Alternative, and other alternatives involving a combination of new construction and renovation of existing facilities.

Additionally, the Army proposes to conduct field training exercises and other operations at Fort Lee, as well as at Fort A.P. Hill, Virginia. Fort A.P. Hill is approximately 50 miles north of Fort Lee in Caroline County, Virginia, near Fredericksburg, Virginia. Figure 3 shows the locations of the proposed Forward Operating Bases (FOBs) and Explosive Ordnance Disposal (EOD) site at the installation. The installation provides realistic joint and combined arms training, logistics, and support. The majority of field training exercises will occur at Fort A.P. Hill. A limited number of ranges and supporting facilities will be constructed at Fort A.P. Hill to accommodate the increased training load.

It is requested that your input be provided within 30 days of receipt of this letter. If you have any questions or require further information regarding the BRAC action at Fort Lee, please call Carol Anderson at 804-734-5071. If you have any questions or require further information regarding the BRAC action at Fort A.P. Hill, please call Terry Banks at 804-633-8223.

Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Ms. Pamela J. Chandler, Chief
U.S. Department of Justice
Federal Bureau of Prisons
Site Selection and Environmental Review Branch
320 First St NW, Rm 5005
Washington, DC 20534

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Ms. Chandler:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, the Army is assessing the potential impacts that implementation of the proposed action could have on the noise environment, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

On September 8, 2005, the BRAC Commission recommended that certain realignment actions occur at Fort Lee, Virginia. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress. Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

Fort Lee is adjacent to Petersburg, Virginia (Figure 1). It is home of the U.S. Army Combined Arms Support Command (CASCOM), an organization having the mission to develop logistics leaders, doctrine, organizations, training, and materiel solutions to sustain a campaign-quality Army with joint and expeditionary capabilities in war and peace. The BRAC realignment actions at Fort Lee include the establishment and relocation of specific organizations and activities to the installation which include: (1) establishment of a Sustainment Center of Excellence, (2) establishment of a Joint Center for Consolidated Transportation Management Training, (3) establishment of a Joint Center of Excellence for Culinary Training, (4) the consolidation of specific Defense Commissary Agency Offices, (5) the relocation of Defense Contract Management Agency Headquarters, and (6) the co-location of miscellaneous Department of Defense functions. Enclosure 1 contains more specific detail on the various realignment actions that will occur at Fort Lee. The complete text of the BRAC Commission's

recommendations can be found at http://www.brac.gov/Deliberations.aspx. The EIS will analyze and document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Lee.

The BRAC actions will result in the relocation of approximately 8,300 additional personnel to the installation. Fort Lee conducted an evaluation of all facilities and determined that there is a substantial shortfall in built space to accommodate the additional personnel and their equipment. The post's existing inventory of approximately 7.5 million square feet of space is, with very minor exception, fully used for current mission requirements. Accordingly, new construction is required. In limited instances, some units and functions could be assigned to existing facilities. Of these, some would require renovation to adequately support new occupants. Overall, however, the new and renovated facilities will account for a total of approximately 6 to 8 million square feet of built space. Areas within Fort Lee that are being evaluated as areas for placement of incoming activities are shown on (Figure 2). The EIS will assess a No Action Alternative, and other alternatives involving a combination of new construction and renovation of existing facilities.

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It is requested that your input be provided within 30 days of receipt of this letter. If you have any questions or require further information regarding the BRAC action at Fort Lee, please call Carol Anderson at 804-734-5071. If you have any questions or require further information regarding the BRAC action at Fort A.P. Hill, please call Terry Banks at 804-633-8223.

Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Ms. Denise Doetzer
State Conservationist
USDA, Natural Resources Conservation Service
1606 Santa Rosa Rd
Suite 209
Richmond, VA 23229-5014

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Ms. Doetzer:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act and Farmland Protection Policy Act, the Army is assessing the potential impacts that implementation of the proposed action could have on soils and geology, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

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Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Mr. Donald Bagshaw
Chairman
James River Soil & Water Conservation District
PO Box 129
Prince George, VA 23875-2527

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Bagshaw:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act and Farmland Protection Policy Act, the Army is assessing the potential impacts that implementation of the proposed action could have on surface and ground waters and soils, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

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recommendations can be found at http://www.brac.gov/Deliberations.aspx. The EIS will analyze and document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Lee.

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Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Mr. Nicholas Froelich
Environmental Manager
Virginia Department of Transportation
2430 Pine Forest Dr
Colonial Heights, VA 23834

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Froelich:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, the Army is assessing the potential impacts that implementation of the proposed action could have on traffic and transportation, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

On September 8, 2005, the BRAC Commission recommended that certain realignment actions occur at Fort Lee, Virginia. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress. Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

Fort Lee is adjacent to Petersburg, Virginia (Figure 1). It is home of the U.S. Army Combined Arms Support Command (CASCOM), an organization having the mission to develop logistics leaders, doctrine, organizations, training, and materiel solutions to sustain a campaign-quality Army with joint and expeditionary capabilities in war and peace. The BRAC realignment actions at Fort Lee include the establishment and relocation of specific organizations and activities to the installation which include: (1) establishment of a Sustainment Center of Excellence, (2) establishment of a Joint Center for Consolidated Transportation Management Training, (3) establishment of a Joint Center of Excellence for Culinary Training, (4) the consolidation of specific Defense Commissary Agency Offices, (5) the relocation of Defense Contract Management Agency Headquarters, and (6) the co-location of miscellaneous Department of Defense functions. Enclosure 1 contains more specific detail on the various realignment actions that will occur at Fort Lee. The complete text of the BRAC Commission's recommendations can be found at http://www.brac.gov/Deliberations.aspx. The EIS will analyze and

document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Lee.

The BRAC actions will result in the relocation of approximately 8,300 additional personnel to the installation. Fort Lee conducted an evaluation of all facilities and determined that there is a substantial shortfall in built space to accommodate the additional personnel and their equipment. The post's existing inventory of approximately 7.5 million square feet of space is, with very minor exception, fully used for current mission requirements. Accordingly, new construction is required. In limited instances, some units and functions could be assigned to existing facilities. Of these, some would require renovation to adequately support new occupants. Overall, however, the new and renovated facilities will account for a total of approximately 6 to 8 million square feet of built space. Areas within Fort Lee that are being evaluated as areas for placement of incoming activities are shown on (Figure 2). The EIS will assess a No Action Alternative, and other alternatives involving a combination of new construction and renovation of existing facilities.

Additionally, the Army proposes to conduct field training exercises and other operations at Fort Lee, as well as at Fort A.P. Hill, Virginia. Fort A.P. Hill is approximately 50 miles north of Fort Lee in Caroline County, Virginia, near Fredericksburg, Virginia. Figure 3 shows the locations of the proposed Forward Operating Bases (FOBs) and Explosive Ordnance Disposal (EOD) site at the installation. The installation provides realistic joint and combined arms training, logistics, and support. The majority of field training exercises will occur at Fort A.P. Hill. A limited number of ranges and supporting facilities will be constructed at Fort A.P. Hill to accommodate the increased training load.

It is requested that your input be provided within 30 days of receipt of this letter. If you have any questions or require further information regarding the BRAC action at Fort Lee, please call Carol Anderson at 804-734-5071. If you have any questions or require further information regarding the BRAC action at Fort A.P. Hill, please call Terry Banks at 804-633-8223.

Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Ms. Valerie Hubbard
Virginia National Defense Industrial Authority
PO Box 798
Richmond, VA 23218

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Ms. Hubbard:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, the Army is assessing the potential impacts that implementation of the proposed action could have on traffic and transportation, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

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Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Mr. Russell Townsend
Tribal Historic Preservation Officer
Eastern Band of the Cherokee Nation
PO Box 455
Cherokee, NC 28719

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Townsend:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act and Native American Graves Protection and Repatriation Act, the Army is assessing the potential impacts that implementation of the proposed action could have on Native American resources, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

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Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Ms. Lisa Stopp
THPO/NAGPRA Representative
United Keetoowah Band of Cherokee Indians in Oklahoma
PO Box 189
Park Hill, OK 74431

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Ms. Stopp:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act and Native American Graves Protection and Repatriation Act, the Army is assessing the potential impacts that implementation of the proposed action could have on Native American resources, as well as on other environmental, cultural, and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

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Sincerely,

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Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Virginia Council on Indians
PO Box 1475
Richmond, VA 23218

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Council Members:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

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Sincerely,

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Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 7, 2006

Office of the Garrison Commander

Mr. Richard Hill
NAGPRA Representative
Tuscarora Nation of New York
2235 Mount Hope Rd
Sanborn, NY 14123

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Hill:

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Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON-FORT LEE
1100 LEE AVENUE SUITE 112
FORT LEE, VIRGINIA 23801-1720

July 21, 2006

Office of the Garrison Commander

Mr. Marc Holma
Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

REFERENCE: PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE COMMISSION RECOMMENDATIONS AT FORT LEE, VIRGINIA

Dear Mr. Holma:

The Army is undertaking the preparation of an Environmental Impact Statement (EIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendations for Fort Lee, Virginia. The proposed action is briefly described in this letter.

The purpose of this letter is to solicit your input regarding the potential impacts of the proposed action on the human and natural resources of concern to your agency. In accordance with the National Environmental Policy Act, National Historic Preservation Act, and Archaeological Resources Protection Act, the Army is assessing the potential impacts that implementation of the proposed action could have on cultural resources, as well as on other environmental and socioeconomic resources. A Draft EIS is anticipated to be available to the public in September, 2006, and a Final EIS is anticipated to be available in February, 2007.

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Sincerely,

Encl

Gwen Bingham
Colonel, US Army
Garrison Commander

COMMONWEALTH of VIRGINIA

Virginia Council on Indians
P. O. Box 1475, Richmond, VA 23218

L. Preston Bryant, Jr.
Secretary of Natural Resources

Karenne Wood
Chair

June 23, 2006

Colonel Gwen Bingham
HQ, US Army Garrison - Fort Lee
1100 Lee Avenue, Suite 112
Fort Lee, VA 23801-1720

Dear Col. Bingham:

The Virginia Council on Indians office is in receipt of your letters of June 5 and June 8 regarding the preparation of an Environmental Impact Statement for the implementation of BRAC recommendations at Fort Lee and Fort A.P. Hill in Virginia, and an Environmental Assessment for the implementation of the RCI for Fort Lee. This letter is meant to serve as a response to both of your letters.

The Virginia Council on Indians, an advisory board to the Commonwealth of Virginia on matters of concern to the Native citizens of Virginia, has a demonstrated interest in the preservation, study and dissemination of information regarding the cultural heritage of Indians within the Commonwealth. We are concerned about the potential impact of any ground-disturbing activities on Native archaeological resources, and ask to consult with you on any such project.

We have a history of an excellent working relationship with the Cultural Resource personnel at Fort Lee and will be happy to continue that relationship as well as develop one with their counterparts at Fort A.P. Hill. If you have any questions, please contact me at the Virginia Council on Indians office at 804.225.2084, or via email at deanna@governor.virginia.gov.

Sincerely yours;

Deanna Beacham
Program Specialist

cc: Carol Anderson, Fort Lee
Terry Banks, Fort A.P. Hill

Curt Savoy, Fort Lee
Marc Holma, Virginia Department of Historic Resources

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
Name/Address	Pam Sutton Director, Plans, Analysis and Integration
Affiliation	U.S. Army Garrison, Fort Lee
EIS Areas of Concern	Socioeconomics
Comments	These are issues/questions that were mentioned to me at Station 2: • Need for greater social services (such as Army Community service, counseling, decompression classes) • Need a library on post • Need more swimming pools on post • Need to be prepared for increased criminal activity • Should have provided copies of everything on the posters • Doesn't think we've properly estimated the number of schoolchildren coming to the area.
Name/Address	Councilwoman Dama Rice Petersburg City Council Representative 1708 Hickory Hill Road Petersburg, VA 23803
Affiliation	Other: Local government
EIS Areas of Concern	Traffic and transportation
Comments	Concerned about the traffic impacts on her constituents due to the realignment of State Route 36 at Mahone Gate.
Name/Address	H. Russell Harris Chesterfield County/Community Development P.O. Box 40 Chesterfield, VA 23238
Affiliation	County
EIS Areas of Concern	Traffic and transportation Socioeconomics Administrative/logistical
Comments	• Impact of traffic/transportation on the transportation planning needs for local county governments. Especially attempting to determine impact on secondary roads leading to Ft. Lee. • I am concerned that the impact of the BRAC realignment upon local governments' social services and mental health departments is not being considered. Also the potential impacts on long term care facilities for the elderly doesn't appear to be on the radar. The full impact on schools will not be realized if only the # of students to be projected because of the realignment, of the # of potential disable/mentally challenged are not also calculated in the projection. There are costs associated with each of these which local government must be able to project to determine future budgets. • It would have been a good idea to provide handouts for participants to digest at a later time. Oh! The handouts should/could have shown the info. presented at the tables; to include projected regional impacts and project # coming to Ft. Lee (military and civilians).
Name/Address	Ladelle McWhorter University of Richmond 7971 Strath Road Richmond, VA 23231
Affiliation	Private citizen

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
EIS Areas of Concern	Traffic and transportation Cultural resources/historic properties Socioeconomics Wetlands, wildlife, endangered species Native American Resources Air quality Water quality
Comments	I strongly recommend that all buildings be constructed in accordance with principles of sustainable development. Parking areas should be constructed to minimize run-off & impermeable surfaces. Green roofing should be used on all buildings where possible. To minimize disruption to surrounding communities—traffic, noise, air pollution, etc.—planners should consider electric bus or light rail systems for employees who commute and visitors to Ft. Lee. At the very least there should be commuter stations on the 2 interstates to bring in people who live in Chesterfield or elsewhere north and south. There should be bicycle lanes on every corridor into and out of the Ft. Lee area, bike racks on post in all buildings. Low impact development is crucial to the environmental & economic health of the entire region. Wetlands must be preserved to prevent damage to the river system to preserved endangered & threatened species. The wildlife corridor must stay in the plans. Consider green buildings with recycling of grey water & solar power. Over the long haul, privatized energy sources are going to become extremely costly to contract with. Fort Lee will be safer for all its residents and employees if it is as self-sufficient as technologically possible in the area of energy production and use, as well as water. Build high density housing on post to maximize the # of residents there, because soldiers cannot afford high cost housing off post or high gasoline bills for commuting to cheaper residential areas.
Name/Address	William F. Gandel Prince George County Department of Social Services 6450 Administration Drive P.O. Box 68 Prince George, VA 23875-0068
Affiliation	Local government Civic organization County resident
EIS Areas of Concern	Socioeconomics Other: Human Services
Comments	Please include enhancements, improvements, in all aspects of Army Community Service. Please be sure to have in place counseling for all returning troops and their families, i.e., returning from deployment in combat zones. Please increase the mental health therapists and support personnel! Please have increased recreational activities for teens! Generally, there is a very great need to include improved services toward improving family life of the active duty personnel and their dependents. All of the above recommendations come from over 28 years of experience dealing with Ft. Lee. Thanks! If anyone actually looks at this please call (804) 733-2650 ext 110.
Name/Address	Valerie Hubbard Virginia National Defense Industrial Authority 901 E. Byrd Street Richmond, VA 23219
Affiliation	State government

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
EIS Areas of Concern	Construction Traffic and transportation Cultural resources/historic properties Socioeconomics Wetlands, wildlife, endangered species Noise Native American Resources Air quality Water quality
Comments	Very helpful process.
Name/Address	Jeanie Grandstaff City of Hopewell Regional Wastewater P.O. Box 969 Hopewell, VA 23860
Affiliation	City of Hopewell
EIS Areas of Concern	Other: wastewater treatment capacity
Comments	The City of Hopewell has a contract with Fort Lee to provide 2.5 MGD of treatment capacity at the wastewater plant. Fort Lee is considerably below that volume currently. Since we are in the preliminary engineering phase of nutrient removal facilities at the wastewater plant, we need to account for any additional capacity that Fort Lee may need. We also have a primary treatment plant that Fort Lee currently discharges to. This plant is nearing capacity and we are evaluating elimination of this facility and move all treatment to the regional facility as part of our nitrogen reduction project. There is more than ample capacity at the regional plant. The issue is one of timing--we need to know as soon as possible what sewer capacity Fort Lee needs and when it will be needed. Our current estimate for completion of our nitrogen reduction project is 2013. This may be extended out until 2015 or later. Knowing Fort Lee's needs is critical to our project and to meeting our commitment to Fort Lee.
Name/Address	Dave Shockley Petersburg National Battlefield 1539 Hickory Hill Rd. Petersburg, VA 23803
Affiliation	Department of the Interior
EIS Areas of Concern	Construction Traffic and transportation Cultural resources/historic properties Wetlands, wildlife, endangered species Noise Air quality Water quality Other: viewshed

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
Comments	This meeting was informative and revealed that Petersburg National Battlefield has the potential to be greatly affected by the proposed development at Fort Lee, especially in the area north of Route 36 and east of the Battlefield's visitor center. Due to the close proximity of the proposed development to the park in this area, a heightened sensitivity to the location of buildings and operations needs to be evaluated. The Battlefield's property located north of Route 36 is the most visited area of the park and the first stop on the battlefield tour. Within this area are the park's main visitor center, library, museum, and Civil War fortifications. This is the site of General Grant's initial assault on Petersburg by Union troops on June 15, 1864. Many interpretive and school educational programs along with guided ranger tours take place in this area. Additionally, the "Dictator" mortar is a highly visited attraction accessed by a heavily used trail system that connects the visitor center with numerous historical sites. We request to be an active member of the planning process so that the proposed development of the real estate adjacent to the park will have little or no impact on park resources (i.e. cultural and natural), visitation patterns (i.e. traffic), and the visitor experience (i.e. noise view sheds, and air quality).
(*)See Appendix K, *Submitted Written Comments,* for maps and other supporting materials submitted by commenters.	
Name/Address	Mark Petersohn City of Hopewell 300 N. Main St. Hopewell, VA 23160
Affiliation	City of Hopewell
EIS Areas of Concern	Traffic and transportation Socioeconomics Noise Water quality
Comments	The number one concern that we have has to do with traffic study emphasis on what's originating from the base and going from there to I-295 via route 36. We have had meetings with VDOT, with Allen Royster of Fort Lee and information has been conveyed about what they're looking for as far as the Sissisky gate. The real emphasis of our concern is what's happening on 36 congestion on that route, signalization on that route. And that being said, I think what we need is something that is outsourced by the army, not to the Corps of Engineers might not be able to handle that, you might be looking at a consultant that would come in and take a look at these numbers and do a analysis and that in turn relates back to traffic capacity. On the utility side of the equation, the city of Hopewell currently treats the sanitary sewer flow coming from the base. What we're looking for there again will be utilization numbers through Virginia American Water Company and looking at what we're going to have as far as the daily output. The podium of water and fire protection will be through that company as a franchise. What we have is essentially flowing from the base coming down Bailey's Creek outfall to our primary waste water treatment facility. For us that's probably a key point in terms of capacity, so again, what we look at is going to be sanitary discharge, so we need to see some numbers on that. In terms of housing availability, one of the points that I made at one of the stations had to do with the demographics of people coming to the base. Knowing that during this next five years of construction what we're looking for or what we're looking at in terms of military personnel that are part-time, full-time, temporary,

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
	permanent, looking at contractors that are for the most part temporary, but how temporary. Are we talking about they may be working here for a year or will they be working here say three to five years? We start talking about civilian population that's employed. Again, is that population going to be here on a temporary or permanent basis? What we're then looking at in terms of housing stock and utilities and transportation is what the local community, like in the case of Hopewell and Prince George, what are the trends. And that's something that's hard for us to get. That's something that the base sort of has to generate. So they're going to give us numbers that will show when these individuals come in, okay, what they're doing at the Fort, where they're locating to and what are the trends in terms of apartments, in terms of housing, kind of breaking it down. So we definitely could use that. I mean we're obviously seeing an increase already in terms of housing stock in terms of development, but what we don't know right now is when we take a division that's close to Fort Lee is how much of that purchasing is happening by civilians, Fort Lee officers or contractors. We don't know that. It's good information to have, because we're trying to project for what's happening in say three to five, and also when you do a traffic analysis further out like a 20 year window. We talked about the demographics of the population as far as residency, and that brings about the fact that a lot of that same residency has proximity to the Base. A concern that I have regarding information that was displayed is they talked about the increase in training small arms firearms artillery for Fort AP Hill. They did not talk about what is going to happen in terms of training at Fort Lee. What we're concerned about is going to be the type of training and the noise factor if the type of training is going to be expanded. And even if it was not, if the frequency of the small arms is going to increase. So you could have maybe no additional training outside of small arms and parachute drops and the like, but if your small arms was 20 hours a day as opposed to currently say three to five, that's a significant difference.
Name/Address	Dr. Amy Howard University of Richmond 28 West Hampton Way University of Richmond, VA 23227
Affiliation	University of Richmond
EIS Areas of Concern	Construction Traffic and transportation Socioeconomics Wetlands, wildlife, endangered species
Comments	I just want to express my concerns about the expansion, and I'll start with the on base initiative. I hope that the Government will work hard to make sure that all, if not part of the development, is low impact development and that any unoccupied buildings are repurposed for expansion instead of building new structures if they aren't needed. I also hope that green building is used as much as possible, even if it's at a higher cost including potentially putting green roofs on the top of parking decks, family housing that's being built and other structures. I also hope that there will be some key consideration into building parking decks instead of parking lots because of environmental impact studies that have been done that show the ways in which parking lots affect wetlands and run-off and are bad for the environmental air quality. And finally, I hope in building the on base housing that whichever private contractor is selected that they will consider doing higher density building rather than lower density building so that more families can live on the base rather than trying to find housing in the private market, because it's going to be expensive.

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
	Finally, on base I hope that the ecologists plan that's currently being put forth to include a wildlife corridor will be put in at all costs to conserve what wildlife there is on the base and near base for civilians as well as people living on the base. Off campus -- off base the major problems that I'm concerned about are affordable housing for the people who are coming to work. The first wave of people that are coming are the people who will build the expansion on the base, and I'm wondering where these people are going to live and if there will be enough high quality, safe, affordable housing for these workers and then later for the military families who move into the area. The transportation impact on the region is also a major problem and public transportation should be expanded and improved regionally in order to accommodate the increase in population in the area, and again, that increase will start with the waves of workers who come to build the expansion as well as when the base is finally reoccupied in 2002. Another infrastructure problem is the schools in the area and how they will accommodate all the new children who are going to be living here, both the children of workers who come to build the base as well as the families that move in later, what resources will be allocated to help improve schools and to help with the large influx of the students into the public school system in and around Petersburg is major issue and one that deserves immediate attention, because the long-range affects could be detrimental for these families and their kids. Thanks.
Name/Address	Adrienne Volenik University of Richmond School of Law Richmond, VA 23173
Affiliation	University of Richmond
EIS Areas of Concern	Construction Socioeconomics Wetlands, wildlife, endangered species
Comments	I wanted to raise concerns too that deal primarily with the impact on school systems and the impact concomitantly on children who will be served, because they are members of families on the base but also those children who are likely to be among the children of construction workers who may move to the area. I think that there is probably no doubt that during the construction phase even before base housing is done and people move to the base there has been demand on the schools. And I think it's really important that the schools be involved from the beginning with the planning process so that they can begin to anticipate what their needs are. And I suspect they may be behind the curve with their tax base on the ability to hire teachers, bring in trailers or whatever space is necessary to accommodate the influx that's likely to come with the new construction on the base and then ultimately the new housing and new families that are incorporated into it. I'm also concerned about the resources that will be available to meet the needs of special needs children who are undoubtedly going to be part of the new influx of population, and I suspect also children whose primary language may not be English and that may also have a big impact on the schools. So those are considerations, and again I think working with the schools from the early point won't necessarily make those problems go away, but may at least help the schools to anticipate the extent of issues that they're going to be facing. There was also some discussion of actually constructing a school on the base by Prince George County, and I would courage consideration of a green school as well. It's going to be near wetlands, it's going to be near the housing, and a green

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
	environment would be very friendly not only to the environment but to the children who will attend. So I hope that there will be consideration for that. One other thing too is that I don't know the locations of elementary schools, etc. that are around the base right now, but I hope that there is considerable attention given to what new traffic patterns may mean for particularly elementary schools and elementary school children or other school children who walk to schools in those areas, because the increased traffic could have a negative impact on those children. In addition, I hope some thought is given to providing support services on the base to families of children who are going to be enrolled in the local communities. There is a dearth of services for certain special needs children in this region, and that if the base can anticipate that and perhaps work with schools again so that resources are there so that the children can get appropriate educations, because as I said, there are difficulties in meeting the needs of all those children currently in the community and an influx of more may have a negative impact. I think that's all I have.
Name/Address	Cornelius H. White Refuge Church 930 Cool Spring Drive Petersburg, VA 23803
Affiliation	Refuge Church
EIS Areas of Concern	Socioeconomics
Comments	My concern as I was reading the paper and noticed that this meeting was being held based on the increase of personnel coming to Fort Lee to be assigned in the Petersburg area, a couple of nights ago I was in the Southside Regional medical facilities visiting an older sister in the church and I noticed there was a number, a tremendous number of military people in the emergency room and some were very ill, very sick waiting to be seen by medical personnel. And my concern is with this increase of personnel coming to the Petersburg area, are they considering reopening and enlarging and providing more medical individuals to the Kenner Army Hospital. Are they going to bring Kenner Army Hospital back to the place it used to be some fifteen, 20 years ago? And the reason I'm concerned about that is because being a retired military personnel myself and to see the individuals in the emergency room waiting to be seen and the individual I went to see stayed down in the emergency room for I guess about eight or ten hours waiting for a bed, and I can't imagine what these soldiers went through waiting around with heads hung down and seems like in deplorable condition, so that's my concern. I know that they are using Randolph Hospital in Hopewell and Petersburg Southside Regional and also I guess Chippenham in the Richmond area, but I see since it was available 20 years ago it should be reinstated. That's my concern.
Name/Address	Jay "C" Paul Commonwealth's Attorney P.O. Box 730 Prince George, VA 23875
Affiliation	Commonwealth of Virginia
EIS Areas of Concern	Socioeconomics
Comments	I have some concerns that haven't been addressed this evening. The infrastructure concerns have addressed. It looks like you guys have done a fine job as far as making sure there's enough roads. The road problems are solved. The infrastructure on the base and that type of thing are solved.

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
	The thing that we haven't looked at is the social problems. For instance what I would question is whether or not the rec services would be increased, whether or not the social services on base would be increased, JAG office and other support offices would be increased. With the soldiers that you're going to bring here, in particular the trainees, a whole host of social problems arise. You have young men and ladies who are 1,000, 2,000, 3,000 miles away from home who certainly will have some controls on base, but they get off base now, they have gotten off base and at times there problems. DUIs, under age drinking and that kind of stuff. Additionally with the instructors who are going to be 6, 7s and 8s, a lot of them will live off base. For the lower level enlisted people that live off base even with BAQ, variable housing allowance and all the other types of pay they get there's going to be financial stress on them, and that often bleeds to domestic violence situations and other situations. Is there going to be -- are there going to be enough people to support them while they're out in the community? If they're not supported, we're going to have problems in court, with police officers and other situations. The thing that I haven't seen tonight is statistics. We know where these soldiers are coming from, what schools they're in; you also know what percentage of them have gotten into problems. It would seem to be fairly easy to me to get those numbers and take them and present them to the localities and tell them that while your overall crime rate may be going down because we only enlist the best folks to become soldiers, that the crime rate is going to go up, not the percentage but the amount of crime is going to go up. Our county needs to have police officers in place to be able to deal with this prior to the arrival of the soldiers, not when they're here. It takes approximately one to three years, depending on the police officer, to have them fully trained. It's going to be too late after the soldiers are already here. We're going to be behind the eight ball. We need to be proactive and not reactive. Additionally, if the housing isn't completed on time for the younger soldiers, they're going to live off post. We recently had shaken baby case within the last week at the Comfort Inn in Prince George County that involved a young soldier and his even younger wife. Prince George County is going to have to deal with this if the facilities aren't up in enough time to take care of these folks. I would hope that someone can take the projected crime rate, social services problems and other problems from these other bases, project them here in Prince George, Dinwiddie, Hopewell, Colonial Heights and Petersburg, and make sure that there is enough support staff on base to adequately address these problems. From what I have seen tonight and through my discussions, I don't believe that anyone's looked at these problems. If I can be of any assistance I will be happy to help. That would be it.
Name/Address	Joseph A. Leming, ND Prince George County Board of Supervisors P.O. Box 68 Prince George, VA 23875-0068
Affiliation	Prince George County Board of Supervisors
EIS Areas of Concern	Traffic and transportation Socioeconomics
Comments	My concerns really relate to transportation issues, educational infrastructure issues and other local infrastructure capital improvement requirements. Transportation issues surrounding U.S. Army Base Fort Lee are complex and at the moment grossly underfunded. The main gate, the Sissisky gate I believe they call

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
	it, is actually estimated to require approximately 30 millions of dollars and today is unfunded. Additionally there are four other gates into and out of U.S. Army Base Fort Lee which will require significant upgrades to their transportation infrastructure. I understand that the Virginia Department of Transportation have retained a different firm to look at the gate issues, however at the moment there is no funding source for any of those gate issues. And generally speaking that means that when there is a local need for transportation infrastructure improvement absent a clear cut federal or state funding source, for which there is none at the moment, those infrastructure needs will be borne by the localities on an as available basis. Clearly we should not allow this to happen and the transportation infrastructure needs proximate to the BRAC 2005 law are just incredible. Education issues. U.S. Army Base Fort Lee now represents upwards of 27 to 28 percent of the student population in Prince George County. Under the current Federal Impact Aide I am led to believe that those students pay less than 50 percent of the operating costs of their annual educational expenses incurred by the County of Prince George. This number is very concerning and may actually trigger some other statutory options by the locality, hopefully none of which will ever be implemented. Nevertheless, as the Base Realignment Closure Commission 2005 Act is implemented, the number of those children will also rise and the impacts on the Prince George County School System appear to be daunting, if not devastating. Clearly federal impact aide needs to be increased in its timeliness as well as in its amounts to help mitigate or offset the impacts caused by the Base Realignment Closure Commission 2005 Federal Act on the County of Prince George's school infrastructure system. Capital impacts. It is clear that within the school system itself the Base Realignment and Closure Commission 2005 Law will have proximate capital impacts within the school educational system itself. Those impacts themselves may approach hundreds of millions of dollars in the six years surrounding the Base Realignment Closure Commission Act. But the infrastructure capital improvements go beyond just the school systems. Fire stations may well have to be constructed for new people living here. A fire station in my county costs at least two million dollars a fire station. There are currently six. Additional police cruisers will need to be purchased. Our social services will require not only an expansion of its operating staff, but because that operating staff is now in cramped quarters also require capital expansion into a new physical home in order to serve the needs of the county and the new needs of those relocating to the county on and off the base because of the Base Realignment and Closure Commission 2005 Act. I will remind the reader that the Department of Social Services for the County of Prince George provides social services interdictions both on the base, remembering that the base is actually a federalized reservoir, I can't think of that word, in the county, but the county maintains certain jurisdictions within the base. So the impacts that occur because of the people coming both on and off the base will be absorbed fully by the Department of Social Services. The other capital impacts also appear daunting and range from the need for public libraries. There is no branch of the Appomattox Regional Library System to date. That need is in our capital improvements plan but is unfunded. There is a need for a community center. It is my understanding that there is no pool facility, swimming aquatics pool facility on the U.S. Army Base Fort Lee. Prince George County likewise does not have an aquatics facility and we likewise see this as an opportunity to improve the living environment both for county residents as well as Fort Lee residents.

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
	In summary, transportation infrastructure impacts, educational operating impacts, educational capital impacts as well as other local infrastructure impacts proximate to the Base Realignment and Closure Commission Act of 2005 appear to be totally unfunded and unaddressed. It is hoped that in the environmental impact study that is currently ongoing those impacts will at least be acknowledged and recommendations forthcoming to try to address and fund those impacts. Thank you.
Name/Address	Dr. Charles Maranzano Dinwiddie County Public Schools P.O. Box 7 Dinwiddie, VA 23841
Affiliation	Dinwiddie County Public Schools
EIS Areas of Concern	Socioeconomics
Comments	Thank you for the opportunity to address this forum tonight sponsored by Fort Lee and the United States Army Corps of Engineers and representative consultants from Tetra Tech, Incorporated. I am Dr. Charles Maranzano, Jr., Superintendent of Schools for Dinwiddie County Public Schools and a member of the Seven Rivers National Coalition for Military Growth in Pre-K through 12 Schools. Our school division is one of several surrounding the Fort Lee installation that will be significantly impacted by the future growth in this region of Virginia and one of seven regions of the country similarly affected by the BRAC expansion, including the military bases of Fort Benning, Little Rock Air Force Base, Fort Carson, Fort Riley, Fort Sill and Fort Bliss. Dinwiddie County consists of 540 square miles of mainly rural land, the second largest geographic county in Virginia with a population of about 25,000 citizens. One-fourth of our population is of school age. We have five elementary schools, one middle school and one high school. About 20 percent of the military children from Fort Lee currently reside in our county according to a document obtained 19 January, 2005 from the civilian military counsel briefing and our own accounts of student population. I'm honored tonight to represent a number of school divisions, both locally and around the country, that serve children of military families at installations expected to gain a large number of personnel over the next few years. In all, 30,000 school age children of military personnel will be moving to seven regions of the country in eight states consisting of Alabama, Georgia, Arkansas, Colorado, Kansas, Oklahoma, Tennessee and Virginia. My comments tonight will focus on the growth expected to impact the region surrounding Fort Lee, and in particular my concerns for Dinwiddie County. Let me state for the record that I have a respectful and professional disagreement with the projections supplied by Fort Lee which indicated that approximately 3,000 children will be moving into our area as a result of the upsizing of the base. According to the 2005 Military Child Education Coalition School Transition Workbook and the statistics supplied by the attendance of the BRAC Final Commission recommendations employment impact by economic areas and states, as many as 6,472 children may be expected to fill the schools in Southside Virginia as a result of the BRAC upsizing. This disparity represents a range between 3,000 to 6,500 students with a difference of 3,500 students and makes planning for school facilities very difficult for those of us who will be charged with providing space and instruction for the increase in school growth. There are three distinct factors that impact the regions of the country experiencing growth in the military bases identified as receiving installations. First is

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
	the recently completed BRAC, which if fully appropriated effectively doubles the size of Fort Lee. The second is the process of the transformation of the Army. With the end of the Cold War our enemies have changed. Our military is changing the profile and composition of our defenses to meet this change as the Army strives to meet the needs of now and future threats to the safety and welfare of our country. Third is the process of global repositioning. For example, the Department of Defense is bringing home to America as many as 50,000 troops from Europe and Korea who will need to find places for their families and school children. I am proud that our community will be part of the effort to serve our military families who play such an important role in our nation's defense. We welcome these new families. We want to establish a strong relationship with the administration of Fort Lee and all those who serve there. Our nation has placed its trust in capable hands and we are prepared to do our part. However, it is imperative that I share with you the very real problems that this new surge in students will cause. The largest challenge facing us is the need to construct new schools and classrooms to accommodate the expected influx of students in our area. In a conservative mode about 3,000 students may distribute themselves across the region. In a worse-case scenario as many as 6,500 students could arrive in this area of the country. Simply stated, without significant new construction we will have nowhere to put these new students. Dinwiddie County is currently operating 37 classrooms across the division in temporary space identified as modulars or trailers. There is a recognizable shortage of classroom space here in the county, and we are working to remedy that situation by constructing two new schools, one high school and one elementary school which will free up space at the existing high school for middle school-aged students. But these plans do not account for any additional student growth for military families or civilian contractors. If the current ratios of students flow into our school division as a result of army expansion, then we anticipate a range of 600 to 1300 additional school age children to arrive in Dinwiddie County in the next five or more years, representing 20 percent of total projected expansion. Dinwiddie County is potentially an area that will receive even more of the projected total due to our proximity to Fort Lee and the available land and development capability. Over 1600 new homes are currently in the development process and several hundred will quickly follow. Most of these homes are in the affordable range that will attract military and civilian contractors and their families. Thousands of acres of birding land are prime for future development in this county as developers eye the potential for growth in Dinwiddie. If school facilities are not planned and built to accommodate the expected surge in growth, we will be forced to add more trailers and modulars to an already stretched inventory of school facilities. Children may be forced to attend classes in every available space including the cafeteria, auditorium, media center, hallways, closets and even store rooms. These substandard spaces lack technology and connectivity, and students will have to forego in extra curricular activities because the space will no longer be available. Lunch periods may begin as early as 9:00 in the morning and continue through late afternoon. Our transportation system will be stretched to capacity or beyond as some students will have to be picked up and arrive at school well before classes begin and others depart well after classes end. We may be forced to adopt double sessions at all levels, a concept that is almost unheard of for elementary and middle school students. The additional expenses of hiring teaching staff, support staff, specialists to administer to students with identified special needs, cafeteria workers, transportation

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
	workers, janitors, nurses, psychological specialists and the full range of other professionals necessary to ensure an appropriate education will place added burdens on school divisions like Dinwiddie. Additional expenditures for books, desks, chairs, tables, computers and other resources will add to the problem facing schools. Compounding these issues are the long-term effects on teacher morale and student performance. I hope you can appreciate the magnitude of this problem and the need to do something about it. All of these teaching facilities, scheduling and transportation issues do not just affect students but they are disruptive to family schedules. The fathers and mothers of military children who are serving their nation in Iraq, Afghanistan and other critical regions of the world deserve better. We know that when military personnel prepare for each new assignment, among their most immediate concerns is the availability of good housing and good schools. The transition to an all volunteer army is contingent upon job satisfaction for those who choose this path in life. The issues of the quality of life are critical for soldier morale and are increasingly important as the Army's divorce rate as soared in the past three years and the service faces challenges in recruitment and re-enlistment. How would it appear to prospective members of the Army if we say to them you can move to Dinwiddie County, but we do not have room for any of your children in our schools? The "no room at the inn" theme would not play well in any of the seven regions of the country expecting a surge in the military population. Military families will be increasingly demoralized and stressed if we do not provide a remedy to this situation in advance of their arrival. We have made several trips to Washington to alert the federal policy makers of the pending impact on our schools and have met with a very positive response to a point. No one we talked with denies the size and scope of what confronts us. However, they are overwhelmed by the cost of addressing it, and no one has stepped forward to accept even part of the responsibility that upsizing military bases has on the communities affected. The costs are significant. School structures alone in the Seven Rivers Region could approach two billion dollars. We need at least 100 million dollars in Dinwiddie County alone over the next five years to build additional schools or refurbish existing facilities. We are doing everything possible to address this grave situation at the state and local level. Traditionally, the costs of school construction have been borne by localities and local tax payers. There are notable exceptions to this when the Department of Defense expanded to meet the challenges of World War II and built several schools in Virginia. The General Assembly of Virginia also provided emergency funding for schools during the 1950s, but this is a different era and yet the challenges remain much the same. The people in Dinwiddie County and surrounding areas are willing to do their part. As stated, we are embarking on a building project effort in the county with the hopes of adding two additional schools, but this will not address the military need nor the influx of children from defense-related contractors and suppliers. In order to fulfill this mission, we need to have help from the federal government and the state government in building new schools and classrooms to house these students. We also need very much the support of officials from Fort Lee in order to adequately plan for this expected surge in student population. No one of us has a crystal ball, but if we are unable to collaborate in the best interest of the children, then we will lose this battle on more than one front. This issue will not go away and deserves the full attention of federal, state and local military personnel and government officials. The clock is already ticking and

Scoping Comments for the Environmental Impact Statement Being Prepared for Implementation of the Base Realignment and Closure (BRAC) Commission's Recommendation for Realignment of Fort Lee, Virginia	
	the armor piercing issue is simple, if we are to maintain a strong voluntary armed force, we must provide a quality of life for our military families that they so richly deserve. Without federal and state assistance or without sufficient collaboration with military personnel, this is not within our reach. I thank you for your attention and for the opportunity to bring this dilemma to your attention.
(*)See Appendix K, *Submitted Written Comments*, for maps and other supporting materials submitted by commenters.	

Appendix B

Summary Of Emissions Estimates For The 2005 BRAC Action At Fort Lee

Fort Lee 2005 BRAC Clean Air Act General Conformity Analysis

General Conformity Determination, 2005 Base Realignment at Fort Lee, Virginia

SUMMARY OF EMISSIONS ESTIMATES FOR THE 2005 BRAC ACTION AT FORT LEE

OVERVIEW

Emissions for the 2005 BRAC action at Fort Lee were estimated for incoming activities from the following DoD installations:

- Aberdeen Proving Grounds, Maryland
- Fort Eustis, Virginia
- Redstone Arsenal, Alabama
- Lackland AFB
- Navy Great Lakes Culinary (Formerly at Lackland)
- Defense Contract Management Agency (DMCA)
- Defense Commissary Agency (DECA)

In addition, emissions for infrastructure expansion and development on Fort Lee were estimated for each year from 2007 to 2012. The predominant emission sources from incoming activities would be internal combustion engines and vehicles. The largest infrastructure-expansion emissions would be due to construction activities, such as site clearing, grading, building new facilities, and roadwork.

Details of the action, including the construction schedule and movement of incoming activities, are still in the preliminary planning stages. When available, information from Fort Lee or incoming activities was used to perform the emission calculations. Otherwise, reasonable assumptions were made on the basis of technical documents from emission models. Emissions from all sources were categorized as follows:

1. Vehicular Emissions (military and GSA vehicles, and privately owned vehicles for incoming activities)
2. Stand-alone Internal Combustion Engines and External Combustion Equipment Emissions (equipment would be used as training aids for incoming activities)
3. Construction Emissions
4. Area Source Emissions (painting, lawn mowing, degreasing, pesticides/herbicides)
5. Boilers/Heating Emissions
6. Emergency Generator Emissions
7. Stage-I Tank Filling Emissions
8. Ordnance Detonation/Firing Range Emissions
9. Paint Spray Booth Emissions

Because NO_X and VOCs are the identified precursors for ozone, the applicable nonattainment pollutants of concern in the Richmond/Petersburg AQCR, they were carried forward for detailed analysis.

1. VEHICULAR EMISSIONS

Incoming vehicles were divided into three categories: (i) Privately Owned Vehicles (POVs), (ii) Government Owned Military Vehicles and (iii) Government Owned GSA Vehicles. Information regarding the number of vehicles, type of vehicle and vehicle miles driven (VMT) were obtained from the respective incoming bases/activities. The following sections describe the assumptions and input parameters for each vehicle category.

Privately Owned Vehicle. The number of POV VMT was based on the student load and permanent party authorizations provided by Fort Lee Planning. Fort Lee provided the anticipated average daily load (ADL) for incoming students for Advanced Individual Training (AIT), the Noncommissioned Officers Academy (NOA) and for *Other* training. Fort Lee also provided the number of permanent party (pp) authorizations for military, civilian and contractor personnel.

AIT students are expected to live in barracks and not have POVs. Students in the NOA and the *others category* are expected to live off-post. Married military PP personnel were assumed to have housing accommodations on-post and would have and average of 2.1 vehicles per family. Unmarried military permanent party personnel were assumed to be housed in unaccompanied personnel housing (UPH) on-post and to have one vehicle each. All civilians and contractors were assumed to live off-post. Table B-1 summarizes the assumptions used in calculating number of vehicles and VMT. Figure B-1 shows the distribution of annual VMT by POVs among different personnel categories.

Table B-1
Number of POVs and Average Vehicle Miles Traveled (VMT)[a]

Category	Number of people	Accommodation type (location)	Average number of vehicles	Total vehicles	On-post daily VMT per vehicle	Off-post Daily VMT per vehicle	Total VMT
NOA and other students (ADL)	1,786	Off the economy (off-post)	1	1,786	10	10	8,572,800
Married Military PP	640	Housing (on-post)	1	640	10	NA	1,536,000
Family of Married PP	640[b]	Housing (on-post)	1.1	704	5	NA	1,284,800
Unmarried Military PP	694	UPH (on-post)	1	694	10	5	2,099,350
Civilians	1,662	Independent housing (off-post)	1	1,662	10	20	11,966,400
Contractors	256	Independent housing (off-post)	1	256	10	20	1,843,200
Total Annual VMT by POVs							27,302,550

Table B-1 Notes:

[a] Assumptions:

Number of workdays per year was assumed to be 240.

Occupancy per vehicle for work related commute was assumed to be one.

Total VMT except for married military PP personnel includes work-related miles traveled on weekdays + non-work related miles traveled on-post during weekend.

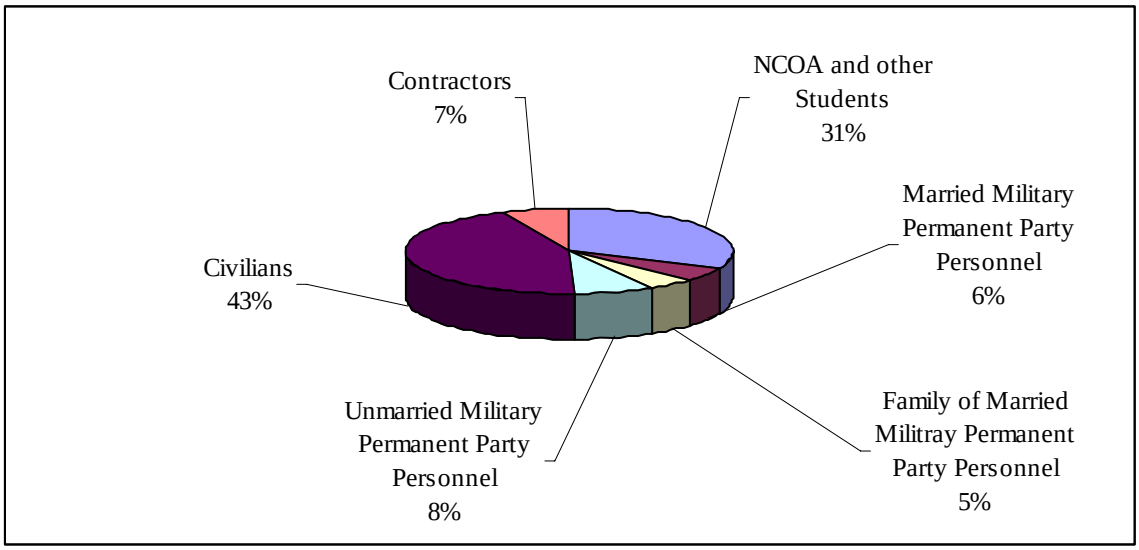
Total VMT for married military PP personnel include only work-related miles traveled on weekday by employees + non-work related miles traveled by family vehicle on on-post weekdays and during weekend. On weekend, usage of one car per family has been assumed.

On an average married PP personnel are expected to have 2.1 cars per family. One car for employee and 1.1 for the family.

Daily VMT was an assumption based on approximate average distance between housing locations and work place.

[b] Number of Families

Figure B-1
VMT distributions



Government Owned Military Vehicles. This category includes a variety of military vehicles that are used as training aids for students. Total VMT were derived from several different sources of information, including number of operating hours and annual fuel usage supplied by the incoming activities. For vehicles that are driven as part of training, an average speed of 10 miles/hour was assumed. For vehicles that idle during training an average speed of 2.5 mile/hour was assumed for emission estimation purposes. Unless otherwise mentioned, all military vehicles were assumed to run on diesel. Table B-2 represents the incoming number of government military vehicles and their total annual VMT.

Table B-2
Number of incoming military vehicles and vehicle miles traveled (VMT)

Incoming activity	Number of military vehicles	Estimated annual VMT
Aberdeen Proving Ground	88	216,253
Redstone Arsenal	128	40,459
Fort Eustis	24	29,660
Lackland AFB	4	28,400
DCMA	None	None
DECA	None	None
Total	**244**	**314,772**

Government Owned GSA Vehicles. Some of the incoming activities use GSA vehicles for their work-related transportation needs. For emission assessment, all vehicles were assumed to be heavy-duty gasoline vehicles. An average of 30 VMT per day was assumed. Table B-3 shows the number of GSA vehicles and their total annual VMT.

Table B-3
Number of GSA vehicles and vehicle miles traveled (VMT)

Incoming activity	Number of GSA vehicles	Estimated annual VMT
Aberdeen Proving Ground	56	343,672
Redstone Arsenal	None	None
Fort Eustis	10	169,976
Lackland AFB	None	None
DCMA	6	46,800
DECA	None	None
Total	**72**	**560,448**

Emissions were calculated for the vehicles on the basis of the VMT estimates and emission factors from EPA's MOBILE6 Emissions Model. Total emissions were calculated for each year from 2008 through 2012 for each vehicle category and each incoming activity. It was assumed that all military vehicles associated with the incoming activities would be moved to Fort Lee. For GSA vehicles, it was assumed that an equivalent number of vehicles would be assigned to Fort Lee. Note that for each year total emissions decrease for the same vehicle data set because of decreases in vehicle emission rates.

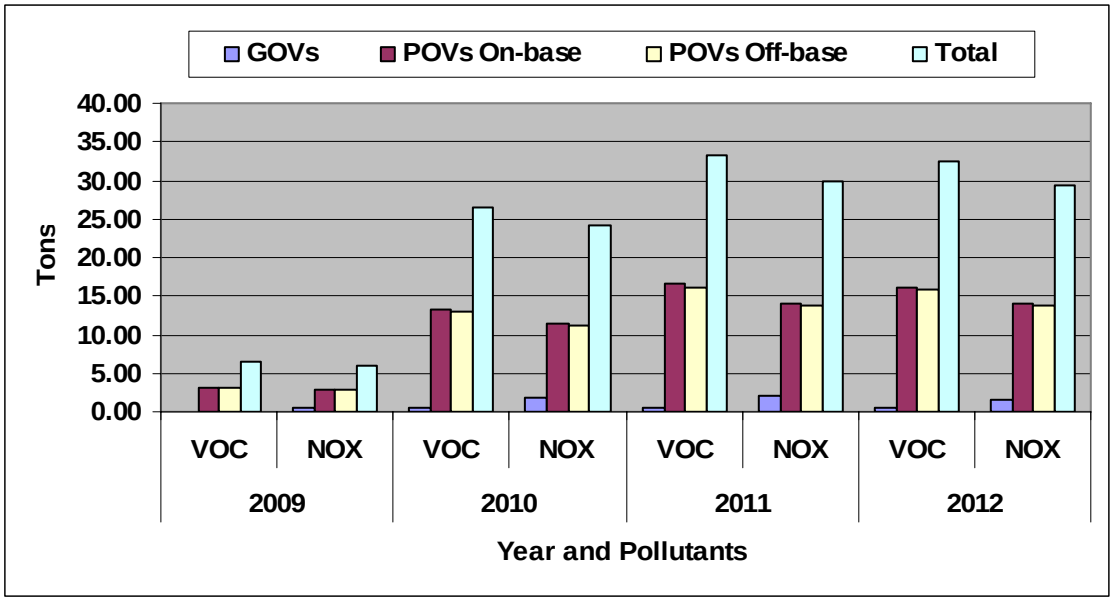
To distribute the emissions of the incoming vehicles, total emissions for the appropriate year were multiplied by the percentage of construction completed by that year. This was based on the assumption that vehicles would move to Fort Lee in the same proportion as the construction completed. The emissions are assigned to Fort Lee in the year following construction completion. For example, if 16 percent of the construction would be over in 2008, 16 percent of the vehicles

were assumed to move to Fort Lee in the year 2009. Table B-4 and Figure B-2 show the annual emission estimates for incoming vehicles.

Table B-4
Estimated vehicular emissions from incoming vehicles (tpy)

Category	2009		2010		2011		2012	
	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X
Emissions attributed	***16%***		***70%***		***94%***		***100%***	
GOVs (Military + GSA)	0.12	0.46	0.50	1.78	0.64	2.06	0.40	1.66
POVs on-post	3.24	2.80	13.19	11.35	16.54	14.11	16.16	13.98
POVs off-post	3.16	2.74	12.88	11.09	16.16	13.79	15.79	13.66
Total	**6.682**	**6.00**	**27.277**	**24.22**	**34.28**	**30.9**	**33.355**	**29.30**

Figure B-2
Estimated vehicular emissions



GOV includes government-owned military vehicles and GSA vehicles.

2. STAND-ALONE INTERNAL COMBUSTION ENGINES AND EXTERNAL COMBUSTION EQUIPMENT

The stand-alone engines are internal combustion engines used for training purposes. They include both small, gasoline engines and larger diesel/JP8 fueled engines. Engine sizes range from one horsepower up to several hundred horsepower. Typically, students take the engines apart, rebuild

them, and test them. The external combustion sources include burners, dryers, and heating units. The external equipment such as boilers to be used at Fort Lee for space heating and for hot water supply are discussed separately under item 5 below. Emissions were calculated either on the basis of horsepower rating of the engine or quantity of fuel consumed. Table B-5 summarizes the approximate number of pieces of equipment associated with incoming activities.

Table B-5
Number of stand-alone engines and external combustion equipment

Incoming activity	Stand-alone engines	External combustion equipment
Aberdeen Proving Ground	433	12
Redstone Arsenal	12	0
Fort Eustis	6	0
Lackland AFB	4	12
DCMA	0	0
DECA	0	0
Total	**455**	**24**

Emissions were estimated using the engine rating, operating hours or annual fuel consumption, and emissions factors from AP-42 Tables 3.3-1 and 3.4.1. To distribute the emissions of the incoming fuel combustion equipment, total emissions were multiplied by the fraction or percentage of construction completed each year. This approximation was based on the assumption that the combustion equipment would move to Fort Lee in the same proportion as the construction is completed. The emissions are assigned to Fort Lee in the year following construction completion. For example, assuming 16 percent of the construction would be over in 2008, 16 percent of the equipment was assumed to move to Fort Lee in the year 2009. Table B-6 presents the emissions from the combustion equipment.

Table B-6
Emissions from stand-alone engines and external combustion equipment (tpy)

Category	2009		2010		2011		2012	
	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X
Emissions attributed	*16%*		*70%*		*94%*		*100%*	
Stand-alone engines	0.22	3.31	0.94	14.5	1.26	19.4	1.34	20.7
External combustion sources	0.00	0.01	0.00	0.03	0.00	0.03	0.00	0.04
Total	**0.22**	**3.31**	**0.94**	**14.5**	**1.26**	**19.5**	**1.34**	**20.7**

3. CONSTRUCTION ACTIVITY EMISSIONS

The total square footage proposed for construction on Fort Lee would be 6,538,876. For estimating emissions, it was assumed that the total project area would be divided into a number of smaller projects that would be completed over a period of 6 years. Each smaller project would be expected to be finished in 2 to 2.5 years. It was expected that construction would start in 2007 and finish by 2012.

The construction activities evaluated include site grading, hauling, building construction, asphalt paving, architectural coating, and associated worker commute trips. For emissions estimation, each activity was considered separately. The following subsections explain the methodology, assumptions, and basic input parameters used for each of the construction activities.

Grading. Approximately 518 acres would be subject to some sort of grading activity. A yearly distribution was estimated on the basis of the area of the building construction starting in that year. Table B-7 shows the annual distribution of the area to be graded.

Table B-7
Annual distribution of graded area

Year	2007	2008	2009	2010	2011
Total construction area to be started (ft^2)	1,020,612	3,530,557	758,641	807,732	413,333
% of total area	16%	54%	12%	12%	6%
Area to be graded (acres)	80.95	280.03	60.17	64.07	32.78
Total area disturbed (ft^2/day)	20.24	70.01	15.04	16.02	8.20

On average 25 percent of the total area to be graded was assumed disturbed each day. For every 10 acres disturbed, four pieces of grading equipment (rubber-tired loader, grader, crawler tractor, and backhoe) was assumed. These numbers were extrapolated to estimate the number of equipment required for the total area to be disturbed daily (Table B-8). Emissions were estimated using emission factors (lbs of pollutant/day per equipment) taken from the SMAQMD. A total of 105 grading days per year was assumed.

Table B-8
Number of pieces of grading equipment used daily

Year	2007	2008	2009	2010	2011	2012
Rubber-tired loader	2	7	2	2	1	0
Grader	2	7	2	2	1	0
Crawler tractor	2	7	2	2	1	0
Tractor/loader/backhoe	2	7	2	2	1	0
Total pieces of equipment	**8**	**28**	**6**	**6**	**3**	**0**

Hauling. It was assumed that each loader used in table B-8 above would fill one haul truck (20 cubic yards) every 30 to 45 minutes. Using an 8-hour workday, the number of haul trucks were estimated (Table B-9). Each haul truck was assumed to travel 6 miles on Fort Lee. Total emissions were estimated by multiplying the total number of miles traveled and the emission factor (pound/mile) obtained from MOBILE6.

Table B-9
Number of haul trucks used daily

Year	2007	2008	2009	2010	2011	2012
Loaders used/day	2	7	1.5	1.6	.8	0
Haul trucks/day	21.6	74.7	16	17.1	8.7	0

Building Construction. Using the following assumptions, a construction schedule reflecting the total area started each year was developed (Table B-10).

- For each mission facility to be constructed, the building area was assigned to the year in which construction would start.
- For housing units, construction would start on one third of the units in 2009, 2010, and 2011.
- Construction for support facilities would begin in 2010.

Table B-10
Assumed construction schedule (square footage of projects starting)

	2007	2008	2009	2010	2011	2012	Total
Area started (ft^2)	1,020,612	3,530,557	758,641	807,732	413,333	0	6,530,875
% started	16%	54%	12%	12%	6%	0%	100%

It was expected that each project would take about 2 to 2.5 years to complete. Therefore, it was assumed that in a given year, total ongoing construction would include projects that started in that year and would include projects carried over from the previous year(s).

A floor area of 50,000 ft^2 (referred to as a *unit project*) has been assumed for the purpose of estimating construction equipment requirements and determining emissions. It was assumed that each unit project would take 6 months to complete, or at least a 6-month period would involve the use of heavy construction equipment. For example, to build 100,000 ft^2 in 6 months, two teams of construction workers would be working independently and simultaneously on two unit projects. Further, the unit project could extend beyond 6 months, but use of emission-generating equipment was limited to 6 months only.

Twenty pieces of emission-generating equipment has been assumed for each unit project. The assumption for the number and type of equipments was based on technical documents developed for the Air Force Conformity Emission Model Version 4.2 (ACAM) (USAF 2005) and the Urban Emissions Model Version 8.7 (URBEMIS). The actual number and type of equipment could

differ from assumptions used. Table B-11 shows the number of construction equipment assumed (USAF 2005).

Table B-11
Number of pieces of equipment per unit project per day

Equipment type	Number of pieces equipment
Concrete industrial saw	5
Other equipment*	10
Rough terrain forklift	5

* Could include delivery trucks, dump trucks, and such

To determine the number of unit projects needed to complete a construction project, the total area (ft^2) proposed to start in a year has been divided by the area of a unit project (50,000 ft^2). Assuming a project would take about 2 years to complete, the number of unit projects were distributed over two years. In other words, 50 percent of the unit projects would begin in the start year and remaining 50 percent would begin in the second year. Table B-12 shows the number of unit projects needed and the number of units projects considered in a given year. In addition, the following was used when evaluating emissions.

- Construction work would be done for 252 days per year. Therefore, construction days needed for a unit project would be 126 days.
- The unit project could continue beyond the 6-month period, but use of emission-generating equipment has been limited to 126 days.
- Emissions from unit projects were multiplied by the number of ongoing unit projects in a year to arrive at the total emissions from building construction in that year.

Table B-12
Number of unit projects

	2007	2008	2009	2010	2011	2012
Total area (ft^2)	1,020,612	3,530,557	758,641	807,732	413,333	0
No. of unit projects (project distribution in two parts)	20 (10 + 10)	71 (35 + 36)	15 (7 + 8)	16 (8 + 8)	8 (4 + 4)	0
Unit projects starting (carried over + new)	10	***10*** + 35	***36*** + 7	***8*** + 8	***8*** + 4	***4***
Total ongoing unit projects	**10**	**46**	**43**	**16**	**12**	**4**

Note: Numbers in italics and bold are the number of projects carried over from previous year

Asphalt Paving. On the basis of information provided by Fort Lee, an area of 823,416 square yards would be paved. The total paved area includes roadway, parking garages, and parking surfaces (Table B-13).

Table B-13
Total area to be paved

Surface type	Area (ft^2)	Area (acres)
Roadway	767,360	158.5
Parking garage	82,578	17.1
POV parking	6,706	1.4
ORG parking	49,350	10.2
Total Area	**823,416**	**170.1**

It was assumed that all paving would take place during the years 2009, 2010, and 2011. An area of 10 acres was assumed as a base unit area (i.e., the area on which team(s) can work in one day). It was assumed that 3 days (1 day for aggregate laying and 2 days for asphalt application) would be needed to finish paving for a base unit area (10 acres) (Table B-14). Using construction equipment emission factors from SMAQMD, emissions were estimated and equally distributed over the years 2009, 2010, and 2011.

Table B-14
Number and type of equipment (10 acres paved per day)

Equipment type	Engine rating (horsepower)	Load factor	Paving hours/day	Number of pieces of equipment/day
Grader	174	0.575	8	2
Off-highway trucks	417	0.49	8	2
Paver	132	0.59	8	2
Paving Equipment	111	0.53	8	2
Rollers	114	0.43	8	4
Total				**12**

Source: SCAQMD 2005.

Architectural Coating. Emission factors relating emissions to number of housing units or total square footage to be built were used to estimate VOC emission from architectural coating activities. For residential units, an emission factor based on pounds of pollutants per residential unit were used. For office space, the square root of the total floor area to be constructed has been multiplied by 1.63 to arrive at the total VOC emissions (1.63 lbs of VOC per ft^2).

Worker Trips. Emissions from vehicles used by workers to travel to and from Fort Lee work sites were estimated separately for each category of construction activity. Only travel on Fort Lee has been considered. It was assumed each worker would drive 8 miles per day on Fort Lee. MOBILE6 was used to determine the emission rates for the worker vehicles. For the estimation of the number of workers and the number of commute days, the following activity specific assumptions were made:

Grading Assumptions

- 1.25 workers for each piece of grading equipment
- Grading days per year equals 105

Table B-15 presents the estimated number of workers for grading activities.

Table B-15
Estimated number of workers for grading

	2007	2008	2009	2010	2011	2012
No. of pieces of equipment/day	8.1	28.0	6.0	6.4	3.3	0.0
Number of workers	10.1	35.0	7.5	8.0	4.1	0.0

Building Construction. The number of workers was based on the type of construction (Table B-16 and B-17). The number of days workers commute was assumed to be 252 days per year.

Table B-16
Basis to estimate number of workers

Construction type	Number of workers
Multifamily units	0.36 per unit
Single family units	0.72 per unit
Commercial	0.32 per 1000 ft^2
Office/Industrial	0.42 per 100 ft^2

Source: USAF 2005 and SCAQMD 2005.

Table B-17
Estimated number of building construction workers per day

	2007	2008	2009	2010	2011	2012
Single family units	0	0	307	307	307	0
Office/Industrial buildings	214	956	722	150	77	87
Total	**214**	**956**	**1,029**	**457**	**384**	**87**

Asphalt Paving Assumptions.

- 1.25 workers for each piece of paving equipment (assuming 12 pieces of paving equipment per day, the number of workers would be 15)
- Paving would be done for 51 days per year
- Asphalt paving would be done only for 3 years (i.e., 2009, 2010, and 2011)

Total construction emissions were calculated for construction activities. The expected emissions due to construction activities are given in Table B-18.

Table B-18
Rollup of construction emission estimates (tpy)

Activity type	2007		2008		2009		2010		2011		2012	
	NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC
Grading	3.72	0.39	12.9	1.36	2.77	0.29	2.95	0.31	1.51	0.16	0.00	0.00
Hauling	0.17	.0.01	0.58	0.05	0.11	0.01	0.11	0.01	0.05	0.00	0.00	0.00
Building construction	64.2	11.8	286	52.8	270	49.7	98.5	18.16	76.8	14.2	26.0	4.79
Worker trips	0.42	0.61	2.25	3.22	2.24	3.19	0.93	1.32	0.73	1.03	0.15	0.21
Asphalt	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.12	1.12	0.12	1.12	0.12
Architectural coating	0.00	0.00	0.00	0.00	0.00	0.82	0.00	8.53	0.00	7.47	0.00	7.50
Total (tpy)	**68.51**	**12.81**	**301.73**	**57.43**	**275**	**54.01**	**104**	**28.45**	**80.21**	**22.98**	**27.27**	**12.62**

4. AREA SOURCE EMISSIONS

This category considers emissions related to residential activities such as cleaning, degreasing, painting, lawn mower use, and the use of pesticide and herbicides. To estimate area source emissions, 640 housing units were assumed, each with 2.4 persons. This resulted in 1,536 residents. Only emissions from housing units were evaluated. Emissions from lawn mowers were an estimate per housing unit per day (SCAQMD 2005). It was assumed that each housing unit would have one lawn mower (i.e., 640 lawn mowers), and mowing would be done for a period of 6 months during the year. Emissions for degreasing/cleaning, painting, and pesticide/herbicide use were based on the number of PP personnel living in the housing units (640 units). The emission factors were expressed in terms of pounds per person (SCAQMD 2005).

Emissions in this category would begin as housing units were completed and occupied. It was assumed that construction would begin on one-third of the housing units in 2009. Thus, it would be expected that by the year 2010, one-third of the housing units would be occupied; in the year 2011, two-thirds of the housing units would be occupied; and by the year 2012, all the housing units would be occupied. Therefore, total emissions were proportionately attributed to the years 2010 through 2012. Table B-19 shows the emissions due to area sources.

Table B-19
Emissions from area sources (tpy)

Category	2010		2011		2012	
	NO_X	VOC	NO_X	VOC	NO_X	VOC
Residential emissions	0.00	-	-	0.01	-	0.01
Degreasing emissions	0.27	-	-	0.54	-	0.81
Surface-coating emissions	0.88	-	-	1.77	-	2.65
Others (pesticides, herbicide, etc.)	2.34	0.46	0.92	4.68	1.38	7.02
Lawn mowers	0.01	0.00	0.01	0.02	0.01	0.03
Total emissions	0.46	3.51	0.93	7.01	1.39	10.52

5. SPACE HEATING/BOILERS

Energy requirements were assessed on the basis of the floor area (ft^2) for each building to be constructed. Table B-20 shows the energy requirements using square footage for buildings in the southern half of the United States. The appropriate energy requirement was assigned to buildings on the basis of their intended use inferred from a brief description of building types provided by Fort Lee. The square footage for each new building was also provided by Fort Lee Planning.

Table B-20
Basis for energy requirement assessment

Energy requirements	MMBtu/ft^2
Commercial/Retail	0.0711
Education	0.0678
Office	0.0907
Service	0.157
Warehouse	0.0329

Source: USAF 2005 and DOE 1999

The energy requirements for each building were used to estimate the size of boiler/heater that would be installed. It was assumed that boilers and heaters would use natural gas. Emission factors used to calculate emissions from the boilers were taken from AP-42 Tables 1.4-1 and 1.4-2. Total estimated emissions of NO_X and VOCs for all buildings were 25.1 and 4.1 tons per year respectively. However, it is anticipated that occupancy of the newly constructed buildings would be staggered according to when construction would be completed. Thus, the emissions were distributed over the years 2009 to 2012. The distribution was based rough data provided by Fort Lee that indicated the year in which some construction projects would be completed. Table B-21 shows the boiler emissions over the years 2008 to 2012.

Table B-21
Boiler emissions (tpy) allocated by year

2008		2009		2010		2011		2012	
NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC
0.0	0.0	3.21	0.18	17.0	0.94	18.3	1.01	25.1	1.4

6. EMERGENCY/STANDBY GENERATOR EMISSIONS

There was no data available regarding the size or number of emergency generators to be installed at Fort Lee due to the 2005 BRAC action. It is anticipated that there would be some new emergency generators installed. To account for some of the associated emissions, it was assumed that four 500 kW emergency generators would be installed. It was also assumed that the fuel type would be diesel and that limits would be taken on operating hours.

Emissions were calculated using emissions factors obtained from AP-42 Table 3.4-1 Operating hours were limited to 250 hours per year per unit. The startup date for the generators was staggered to match a staggered construction schedule. It was assumed the first generator would begin operation in 2010, three generators would be operating in 2011, and all four would operate by 2012. The estimated emissions attributed to the generators for the years 2010 through 2012 are given in table B-22.

Table B-22
Generator emissions (tpy) allocated by year

2010		2011		2012	
NO_X	VOC	NO_X	VOC	NO_X	VOC
2.01	0.05	6.03	0.16	8.04	0.22

7. STAGE I TANK FILLING EMISSIONS

Fuel-dispensing emissions were included as part of the MOBILE6 modeling performed for military vehicles and POVs associated with incoming activities. The increase in on-post vehicles would have a subsequent increase in deliveries of gasoline and associated dispensing.

The new emissions associated with more frequent tank filling (greater throughput) were estimated using AP-42 emissions factors for balanced submerged filling (Stage I), and underground tank breathing and emptying. The additional throughput was estimated from the number of incoming vehicles and the assumption that each vehicle would use 1,045 gallons of gasoline per year. This assumption was based on historical fuel use and the number of PP and non-AIT students present at the time (fuel throughput divided by the number of personnel with vehicles).

For estimating fuel throughput increases due to BRAC, the number of new personnel anticipated to have vehicles was multiplied by the 1,045 gallons per year. The fuel throughput was then distributed according to the percentage of construction completed each year. The gasoline throughput was assigned to Fort Lee in the year following construction completion. For example, assuming 16 percent of the construction would be over in 2008, 16 percent of the additional

throughput was assumed for the year 2009. Table B-23 shows the annual VOC emission due to the increased throughput allocated for the years 2009 through 2012.

Table B-23
Stage I filling—VOC emissions (tpy)

Year	2009	2010	2011	2012
Emissions (tpy)	0.53	2.38	2.78	3.42

8. ORDNANCE DETONATION/FIRING RANGES

Emissions from ordnance detonation would be expected to be small in comparison to emissions from other activities. The primary pollutants from ordnance detonation are particulate matter and carbon monoxide, which are not of concern in the area. In addition, inspection of emission statements for installations hosting incoming activities showed that total installation-wide VOC emissions from ordnance detonation/firing range use would be typically 1 to 2 tpy. Only a portion of these emissions would be attributed to the incoming activities. Because of these factors, emissions for ordnance detonation/firing range use were considered negligible.

9. PAINT SPRAY BOOTHS

Historical emissions from paint spray booths associated with installations that host incoming activities were small (3 tpy or less). Two of the installations that host incoming activities (Redstone Arsenal and Fort Eustis) do not track paint emissions (VOC emissions) by organization. They determine only total basewide emissions. As a result, it was not possible to determine how much of the paint spray booth emissions reported by those installations would be associated with the incoming activities/organizations. As a result, conservatively all the paint spray booth emissions from those installations were included.

In addition, Aberdeen Proving Ground provided data for paint spray booth operations for museum operations that might move to Fort Lee. Historical emissions from the paint spray booth operations were also included in the Fort Lee analysis. Table B-24 provides a summary of the paint booth VOC emissions. The emissions in Table B-23 were included in the Fort Lee analysis beginning in the year 2010.

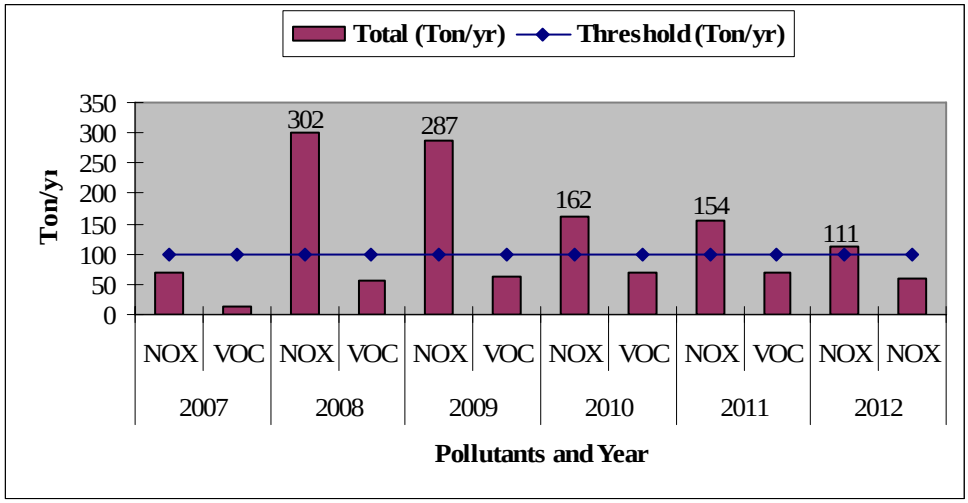
Table B-24
VOC emissions due to paint booth operations

Base/Incoming activity	VOC emissions (tpy)
Fort Eustis	3.10
Redstone Arsenal	1.00
Aberdeen Proving Ground	1.32
Total	**5.42**

Emission Summary

Total emissions are shown in Figure B-4 and Table B-25. NO_X emissions in each of the years 2008 through 2012 exceed the *de minimis* threshold that requires a conformity determination. The construction emissions make the largest contribution to the high levels of NO_X emissions. In the absence of construction emissions, Fort Lee would be below the 100-tpy threshold.

Figure B-4
Total estimated annual emissions



NO_X emissions would exceed the de minimis threshold during the years 2008 to 2012. VOC emissions would be below threshold of 100 tpy for all years.

Table B-25
Estimated Total Emissions

Category	2007		2008		2009		2010		2011		2012	
	NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC
Site grading	3.72	0.39	12.9	1.36	2.77	0.29	2.95	0.31	1.51	0.16	-	-
Construction site hauling	0.17	0.01	0.58	0.05	0.11	0.01	0.11	0.01	0.05	0.00	-	-
Building construction	64.2	11.8	286.3	52.8	269.8	49.7	98.5	18.2	76.8	14.2	26.0	4.79
Asphalt application	-	-	-	-	-	-	1.12	0.12	1.12	0.12	1.12	0.12
Architectural coating	-	-	-	-	-	0.82	-	8.53	-	7.47	-	7.50
Construction worker trips	0.42	0.61	2.25	3.22	2.24	3.19	0.93	1.32	0.73	1.03	0.15	0.21
POVs, GOVs, & engine training	-	-	-	-	9.31	6.73	38.7	27.5	49.4	34.6	50.0	33.7
Boilers/Heaters—natural gas	-	-	-	-	3.21	0.18	17.0	0.94	18.3	1.01	25.1	1.40
Emergency generators (see note C)	-	-	-	-	-	-	2.01	0.1	6.03	0.2	8.04	0.2
Area sources (See note D)	-	-	-	-	-	-	0.46	3.51	0.46	3.51	0.46	3.51
Paint spray booths	-	-	-	-	-	-	-	5.38	-	5.38		5.38
Ordnance detonation/weapons use	-	-	-	-	-	-	-	-	-	-	-	-
Degreasing/parts cleaning	-	-	-	-	-	-	-	-	-	-	-	-
Stage I filling	-	-	-	-	-	0.53	-	2.38	-	2.78	-	3.42
Total (ton/yr)	**0.42**	0.61	**2.25**	3.22	14.76	0.53	59.1	2.38	74.92	2.78	83.751	3.42

DRAFT
FORT LEE
2005 BRAC CLEAN AIR ACT GENERAL CONFORMITY ANALYSIS

PREPARED BY

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Germantown MD 20874

August 2006

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure No. **Page No.**

LIST OF APPENDICES

Appendix

LIST OF COMMONLY USED ACRONYMS

ACAM	Air Force Conformity Emission Model
ADL	Average Daily Load
AIT	Advanced Individual Training
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CASCOM	Combined Arms Support Command
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulation
CSS	Combined Services Support
DECA	Defense Commissary Agency
DMCA	Defense Management Contract Agency
DoE	Department of Energy
DPWL	Department of Public Works and Logistics
GOV	Government Owned Vehicle
GSA	General Services Administration
GVW	Gross Vehicle Weight
HDGV	Heavy Duty Gasoline Vehicle
kW	Kilowatt
lb	Pound
LDGV	Light Duty Gasoline Vehicle
LDGT	Light Duty Gasoline Truck
MMBtu	Million British thermal unit
NAAQS	National Ambient Air Quality Standards
NCOA	Non-Commissioned Officers Academy
NEPA	The National Environmental Policy Act
NO_x	Nitrogen Oxides
NSR	New Source Review
POV	Privately Owned Vehicles
PP	Permanent Party
PSD	Prevention of Significant Deterioration
SMAQMD	Sacramento Air Quality Management District
SIP	State Implementation Plan
sq ft	Square Feet
tpy	Ton Per Year
TRADOC	U.S. Army Training and Doctrine Command
UPH	Unaccompanied Personnel Housing
URBEMIS	Urban Emissions Model
USEPA	U.S. Environmental Protection Agency
VADEQ	Virginia Department of Environmental Quality
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
yr	year

EXECUTIVE SUMMARY

Due to the 2005 BRAC action, Fort Lee VA will be expanding to accommodate new activities that are being realigned to Fort Lee VA. The realigned activities (incoming activities) will result in approximately an 80 percent increase in the number of students trained daily and will more than double the number of permanent party personnel (military, civilian, and contractors) assigned to Fort Lee.

This expansion will have air quality impacts on Fort Lee. The purpose of this document is to determine if BRAC 2005 will trigger a general conformity determination at Fort Lee, and if general conformity is triggered, identify means (controls) to reduce air emissions below trigger levels.

Data needed to estimate emissions of Nitrogen Oxides (NO_x) and Volatile Organic Compounds (VOCs) from incoming activities was collected through site visits and through written data requests. Very limited information was available on the proposed construction activities and as a result, a number of assumptions were made. Main assumptions used were based on the estimate square footage of building space to be constructed (6,538,876 square feet) and the total acreage to be developed. Examples of the types of sources for which emissions were calculated included; motor vehicles, internal combustion engines used as training aids and emergency generators, boilers/heaters, construction equipment, fueling/storage tank filling operations, painting and ordnance detonation. Emissions were calculated for the years 2007 through 2012.

Results of emission estimates showed that the BRAC action would result in NO_x emissions that far exceed the 100 ton per year (tpy) threshold that triggers a conformity determination. The highest emissions NO_x were estimated in 2008 and 2009 at 302 and 288 tpy respectively. The largest contributors to these high emission rates were construction activities. Total non-construction emissions were below the 100-tpy trigger threshold for all the years considered.

Because of coordination with the Virginia Department Environmental Quality (VADEQ), the projected emissions of NO_x and VOC generated from the 2005 Fort Lee BRAC action are to be included in the Richmond maintenance plan to be submitted to the USEPA. This action proposed by the VADEQ will address any general conformity issues relating to the expansion of Fort Lee. Thus, the Fort Lee BRAC action as described in this report will conform to the latest SIP revisions. This proposal is contingent upon Federal approval of the Richmond maintenance plan.

APPENDIX B: 1.0 INTRODUCTION

Versar, GEOMET Division has contracted with the United States Army Corp of Engineers (Norfolk District Contract Number W91236-04-D-0083) to perform a Base Realignment and Closure (BRAC) Clean Air Act (CAA) Study for Fort Lee VA. Because of the 2005 BRAC action, Fort Lee VA will be expanding to accommodate new activities that are being realigned to Fort Lee VA.

Fort Lee is a US Army Training and Doctrine Command (TRADOC) installation. It is the home of the Combined Arms Support Command (CASCOM) and the 49th Quartermaster Group. The two primary mission elements at Fort Lee are the Army Logistics Management College, and the Quartermaster Center and School. Under BRAC 2005, a Combined Service Support (CSS) Center will be created at Fort Lee. In addition, Fort Lee will become the home of two joint centers: one for consolidated transportation-management training and the other for joint culinary training. The following list summarizes the activities that will be realigned to Fort Lee and have been examined in this study.

- Ordnance Center and School, Aberdeen Proving[1] Grounds, MD
- Transportation Center and School[2], Fort Eustis, VA
- Missile and Munitions Center, Redstone Arsenal, AL
- Navy Culinary School, Great Lakes, IL
- Air Force Culinary Training, Lackland AFB, TX
- Transportation Management Training, Lackland AFB, TX
- Defense Contract Management Agency (DMCA), Alexandria VA
- Defense Commissary Agency (DECA)[3]

[1]: Ordnance Museum Included in Study, [2]: Transportation Museum Included in Study
[3]: Consolidating offices from Virginia Beach, San Antonio TX, Hopewell VA, and Sacramento CA.

The realigned activities (incoming activities) listed above will result in approximately an 80 percent increase in the number of students trained daily and will more than double the number of permanent party personnel (military, civilian, and contractors) assigned to Fort Lee.

Regulatory Background and Applicability

Section 176(c) (1) of the CAA contains legislation that ensures Federal activities conform to relevant State Implementation Plans and thus do not hamper local efforts to control air pollution. Conformity to a State Implementation Plan (SIP) is defined as conformity to a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards. Because of the legislation, Federal agencies prior to taking an action are responsible for determining that the proposed action, when taken, will conform to the SIP.

The thrust of the rule is to require all Federal agencies in a non-attainment or maintenance area to determine that their actions conform to applicable SIPs, when emissions caused by those actions exceed specified amounts. In the case of Fort Lee, which is in a marginal non-attainment area (Richmond/St Petersburg VA region) for ozone, a general conformity determination must be performed if either the Volatile Organic Compounds (VOC) or Nitrogen Oxides (NO_x) emissions from the planned action exceed 100 tpy (see note).

Note: The thresholds that trigger a conformity determination vary depending on the level of ozone non-attainment (extreme, severe, serious, moderate or marginal), and whether the location is in an ozone maintenance or ozone transport region. A general conformity determination is also triggered in a non-attainment or maintenance area if the emissions are regionally significant (emissions of individual pollutants amount to 10 percent or more of area's total emissions of that pollutant). In addition, certain activities are exempt by the rule. They include Federal highway and transit actions (separate transportation conformity requirements may apply), emergency response actions, actions with de minimis increases in emissions (twenty-one types of actions identified), and other actions (ex. actions where NEPA analysis was completed, actions that require a NSR or PSD permit, etc.).

When considering conformity both direct and indirect emissions associated with the proposed action must be evaluated. Direct emissions are those that occur as a direct result of the action. For example, emissions from new equipment that are a permanent component of the completed action (e.g. boilers, heaters, generators, paint booths, etc.) are considered direct emissions. Indirect emissions are those that occur at a later time or at a distance from the proposed action. For example, increased vehicular/commuter traffic because of the action is considered an indirect emission. Construction emissions must also be considered. For example, the emissions from vehicles and equipment used to clear and grade building sites, build new buildings, and construct new roads must be evaluated. These types of emissions are considered direct.

The rules governing general conformity can be found in the Code of Federal Regulations (CFR) at 40 CFR 51 Subpart W and 40 CFR 93 Subpart B.

Objectives

The objective of this study is to determine if BRAC 2005 will trigger a general conformity determination at Fort Lee. If general conformity is triggered, identify means (controls) to reduce emissions below trigger levels. The specific objectives are outlined below.

- Identify sources of CAA regulated pollutants.
- Estimate the impact that restationing (BRAC) will have on actual, "direct" and "indirect" emissions of VOCs and NO_x at Fort Lee.

- Determine if the estimated amounts exceed significance thresholds for conformity found under 40 CFR 93 Subpart B.
- For emissions that exceed significance levels, identify methods to reduce emissions below significance levels. Methods to be considered include but are not limited to use of "dripless nozzles" to dispense fuel, the use of water base coatings over solvent-based coatings, and the implementation of commuter ride reduction methods.

Report Format

In addition to the introductory material provided in this Section, a description of the projects/activities that will occur on Fort Lee due to BRAC and for which VOC and NO_x emissions have been calculated are described in Section 2.0. Section 3.0 presents the methodology and assumptions to calculate emissions and summarizes the calculation results. Section 4.0 provides a summary and the conformity findings. Section 5.0 provides a list of references consulted when preparing this report.

Data Collection Methodology

Data for incoming activities was obtained using a written data request/questionnaire, follow-up email and phone conversations, and in some cases site visits. Information regarding BRAC induced infrastructure changes on Fort Lee were obtained through site visits and coordination with Fort Lee the Directorate of Public Works and Logistics (DPWL) Planning office. Appendix A provides one example of the type data request made to incoming activities. Table 1-1 below lists the individuals contacted to obtain the data that was the basis of the emission calculations discussed in Section 3.0.

Table 1-1
Points of Contact for Data Collection

Name	Phone Number	Email Address
Ordnance Center and School, Aberdeen Proving Ground, MD		
Greg Mullins	410-278-3198	gregory.mullins@ocs.apg.army.mil
Philip Yi	410-278-3862	philip.yi@us.army.mil
Tina Carr	410-278-3489	
Transportation Center and School, Fort Eustis, VA		
Paul Hollyfield	757-878-2039	paul.hollyfield@eustis.army.mil
LTC Andy Peters	757-878-6287	andrew-peters@us.army.mil
Goeffrey Peters		goeffrey.peters@us.army.mil
Edward Stepp		Edward.m.stepp@us.army.mil
Jim Willett	757-878-5501 ext. 222	Albert.willett@us.army.mil
David Hanselman	757-878-1115	David.hanselman@us.army.mil
Dwayne Perry	757-878-4679	dwayne.b.perry@eustis.army.mil

Name	Phone Number	Email Address
Daniel Musel	757-878-4123 ext. 297	Dan.Musel@eustis.army.mil
Missile and Munitions Center, Redstone Arsenal, AL		
Gerry Andress	256-876-4959	Gerald.adress@us.army.mil
James Haskins	256-842-2940	rod.haskins@us.army.mil
Mike Wassel	256-876-8607	michael.wassell@redstone.army.mil
Thomas A. Self	256-842-2938	tom.self@us.army.mil
Transportation Management Training, Lackland AFB, TX		
Michael Dunkelberger	210-671-0670	Michael.dunkelberger@lackland.af.mil
Greg James	210-671-2918	Gregory.james@lackland.af.mil
Allen Dove	210-671-0912	doveac@lackland.af.mil
Air Force Culinary Training, Lackland AFB. TX		
Chief Steven Bedford	210-671-0098	Steven.bedford@lackland.af.mil
Navy Culinary Training, Lackland AFB/Great Lakes		
Ricardo Diegor	210-671-0471	ricardo.diegor@lackland.af.mil
Defense Contract Management Agency, Alexandria, VA		
Thomas Karst	703-428-1468	Thomas.Karst@dcma.mil
Robert (Bob) Murphy	703-428-0782	
Defense Commissary Agency		
Cecil Saunders	804-734-8414	
Fort Lee		
Carol L. Anderson	804-734-5071	carol.leigh.anderson@us.army.mil
Craig Norris	804-734-3772	craig.norris@us.army.mil
Fritz Brandt	804-734-4519	fritz.brandt@us.army.mil
Fort Jackson		
Steve McWilliams	410-278-2824	Steven.McWilliams1@us.army.mil
Clint Zaengle,	410 278-3608	Clint.Zaengle@us.army.mil
Harvey Jackson	803-751-7286	harvey.jackson@us.army.mil
CW3 Pickering	803-751-5482.	gariet.pickering@us.army.mil
Debbie Lowrance	803-751-2559	lowranced@jackson.army.mil
Fort Gordon		
Canda Weng	706-791-3735	canda.weng@gordon.army.mil
Captain Price	706-791-7452	pricejpe@gordon.army.mil
Virginia Department of Environmental Quality		
Thomas Ballou	804-698-4406	trballou@deq.virginia.gov

The table above includes activities for Fort Jackson, SC (187th Maintenance Battalion – Wheeled Vehicle Maintenance School) and Fort Gordon, GA (Ordnance Electronic Maintenance Training Department/73rd Ordnance Battalion). Initial information provided

indicated these activities would move to Fort Lee as discretionary stationing actions during the same timeframe that BRAC actions were implemented at Fort Lee. However, recent information provided by Fort Lee indicated that there is currently no funding for the discretionary actions and thus they have not been included in the conformity analysis. Data collected can be used to refine or update the current analysis if the discretionary actions are initiated.

APPENDIX B: 2.0 PROJECT DESCRIPTION

There will be a number of construction projects on Fort Lee to expand the infrastructure to accommodate incoming activities realigned because of BRAC 2005. Details of the construction activities were not available at the time the study was conducted. Information that was available is described below.

Eighty buildings/structures that are classified as mission facilities are planned for construction. Total square footage for all mission facility buildings combined was 4,896,477. Individual building sizes ranged from less than 1,000 square feet up to 782,725 square feet.

In addition, some data was available regarding possible construction of support facilities. Approximately 18 support facilities were identified. They included 640 family housing units that accounted for 1,248,000 square feet. The total square footage combined for the remaining support facilities totaled 394,399.

Table 2-1 below provides a breakdown of the mission and support facilities by square footage.

Table 2-1
Summary of New Building Square Footage

Facility Category	Square Feet/Bldg	No. of Buildings	Total Square Feet
Mission	>500,000	3	2,017,370
	250,000 - 499,999	1	388,837
	100,000 - 249,999	5	768,652
	50,000 - 99,999	11	816,358
	10,000 - 49,999	31	792,140
	<10,000	29	113,119
	Sub -Total	*80*	*4,896,477*
Support	1,950*	640*	1,248,000
	50,000 – 125,000	2	170,749
	<50,000	16	223,650
	Sub Total	*18***	*1,642,399*
	Total	**98****	**6,538,876**

*: Family Housing Units
**: Total Excludes Family Housing Units

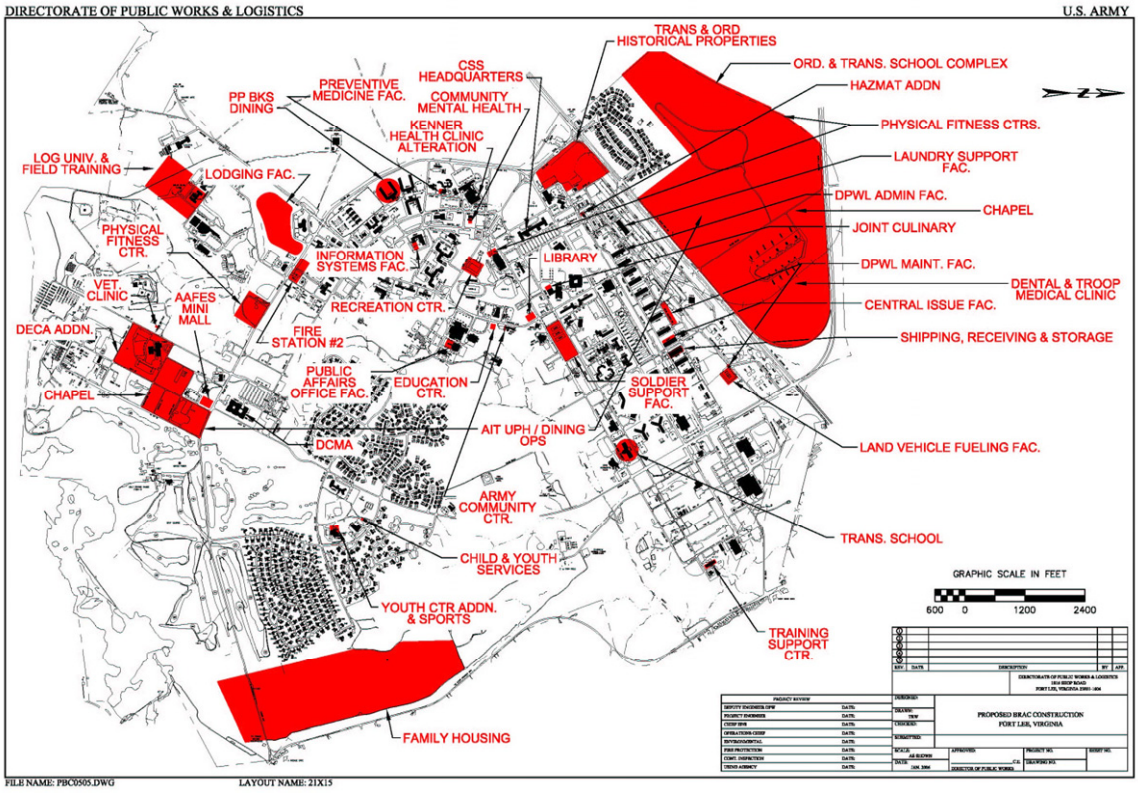
The use/purpose of the buildings varies considerably. Mission facilities include dormitories, dinning facilities, classroom space, administrative space, maintenance areas

and shops, and storage/warehouse space. The largest mission facilities are for vehicle maintenance instruction and unaccompanied personnel housing. Two of the vehicle maintenance buildings alone account for 1,234,645 square feet (approximately ¼ of the total square footage of all mission facilities). Support facilities included medical facilities, recreation facilities, a youth center, retail facilities, etc. When considering both mission facilities and support facilities total square footage to be constructed is 6,538,876. This includes the square footage for the 640 housing units.

Limited data was also available regarding road construction/improvement projects. Approximately 767,360 square yards of roadway will be subject to construction and improvement. In addition, 138,634 square yards of parking area will be added.

Figure 2-1 shows the location of expected development on Fort Lee. The largest site (approximately 333 acres) is north of main cantonment area (north of Route 36) and includes the area where the Ordnance Transportation Center and School, is to be located. Portions of this area are heavily wooded and will be subject to significant site clearing and grading.

Figure 2-1
2005 BRAC Planning Map



Little information regarding construction was available. In some cases, information was available regarding both construction start and completion year. In general, however, only a start year was available. Specific assumptions regarding construction are provided in Section 3.0. Some of the key broad assumptions used are given below.

- BRAC related construction will begin in 2007 and will be completed in 2012
- With the exception of family housing, support facility construction will lag mission facility construction and begin in 2010.
- Family housing construction will begin in 2009.
- Individual construction projects will progress in a linear manner and will overlap.
- A majority of the construction in terms of square feet will start in 2007 and 2008 (see note*).
- Site grading will occur in the years 2007 through 2011 and will be proportional to the square footage started for each year. No prescribed burning is planned at this time.
- No demolition of older/existing buildings is anticipated.
- Heating for new buildings will be decentralized (no central heat plant(s)).
- Natural gas will be the fuel type for new heating units/boilers.

*Note: Based on project start years provide by Fort Lee and the assumption that family housing and mission facility construction will begin in 2009 and 2010 respectively, of the total square footage to be constructed (6,538,876 square feet) 16 percent will begin in 2007, 54 percent in 2008, 12 percent in 2009 and 2010, and 6 percent in 2011. No new construction will begin in 2012.

It is also useful to describe the "Project" at Fort Lee in terms of incoming personnel. The number and type (category) of incoming personnel will have implications on the number of additional privately owned vehicles that will be introduced to Fort Lee. As described in Section 3.0 all incoming permanent party personnel will have a personal vehicle and a portion of the student load will contribute additional personal vehicles. Table 2-2 below provides a summary of incoming personnel.

Table 2-2
Summary of Incoming Personnel

School Totals		Permanent Party Authorizations				
		Military			Civilian	Contractors
Annual Load	Average Daily Load	Officers	Warrant Officers	Enlisted		
26,318	4,218	217	64	1,053	1,662	256

A more detailed breakdown by incoming activity is provided in Appendix B.

APPENDIX B: 3.0 EMISSIONS ANALYSIS

Emissions were estimated for the incoming activities listed in Section 1.0. In addition, emissions estimates were made for infrastructure expansion and development on Fort Lee. The predominant emission sources from incoming activities are internal combustion engines and vehicles (military and privately owned vehicles). On Fort Lee the predominate sources of emissions were construction activities and combustion equipment for heating and power generation.

Emissions have been estimated for each year from 2007 to 2012. The year 2007 represents the year when BRAC related construction activities would start and 2012 represents the year when BRAC related construction and movement of new personnel to Fort Lee is likely to be completed.

The emissions have been estimated only for BRAC related activities. Emissions for discretionary actions related to Fort Jackson and Fort Gordon have not been included in this analysis.

BRAC details including the construction schedule and movement of incoming activities are still in the early planning stages. Therefore, detailed information and data was not available at the time emissions were calculated. Where actual data was not available, a logical assumption was made to approximate emissions. Assumptions either have been derived from available information from Fort Lee or incoming activities, or have been based on literature including technical documents from emission models. Emissions from all sources have been categorized as follows.

- Vehicular Emissions (Military and GSA vehicles, and privately owned vehicles for incoming activities)
- Emissions From Stand-alone Internal Combustion Engines and External Combustion Equipment (equipment is primarily used as training aids for incoming activities)
- Construction Emissions
- Area Source Emissions (painting, lawn mowing, degreasing, pesticides/herbicides)
- New Boilers/Heating Emissions
- Emergency/Standby Generator Emissions
- Stage-I Tank Filling Emissions
- Ordnance Detonation/Firing Range Emissions
- Paint Spray Booth Emissions

Emissions for each of the above categories are discussed in following subsections. Emissions were calculated for NO_X and VOCs, the pollutants of concern for a conformity determination in the Petersburg/Fort Lee area.

3.1 Vehicular Emissions

Incoming vehicles were divided into three categories. These categories are: (i) Privately Owned Vehicles (POVs) (ii) Government Owned Military Vehicles and (iii) Government Owned GSA Vehicles. Information regarding the number of vehicles, type of vehicles and vehicle miles driven (VMT) were obtained from the respective incoming bases/activities. However, information obtained varied in format and level of detail. Therefore, data gaps were filled by making logical assumptions. The following subsections describe primary assumptions and input parameters for each vehicle category:

(i) Privately Owned Vehicles

The number of POVs and VMT was based on the student load and permanent party authorizations given in the spreadsheet "22 Feb 06 BRAC Numbers". This spreadsheet provided the anticipated average daily load (ADL) for incoming students for Advanced Individual Training (AIT), the Non-commissioned Officers Academy (NCOA) and for "Other" training. It also provided the number of permanent party authorizations for military, civilian and contractor personnel. Appendix B summarizes the data shown in the spreadsheet.

For AIT students it was assumed that they would live in barracks and would not have POVs. Students in the NCOA and the "others category" are expected to live outside Fort Lee (off the economy) and will drive to and from Fort Lee in their personal vehicles. It was assumed married military permanent party (PP) personnel would have housing accommodations on Fort Lee and on average would have 2.1 vehicles per family. For unmarried military permanent party personnel it was assumed they will be housed in unaccompanied personnel housing (UPH) accommodations on base and are expected to have one vehicle each. All civilians and contractors were assumed to live off base.

Table 3-1 presents the total annual VMT and summarizes the assumptions used in calculating number of vehicles and VMT. Figure 3-1 shows the distribution of annual VMT by POVs among different personnel categories.

Table 3-1
Number of POVs and Average Vehicle Miles Traveled (VMT)[a]

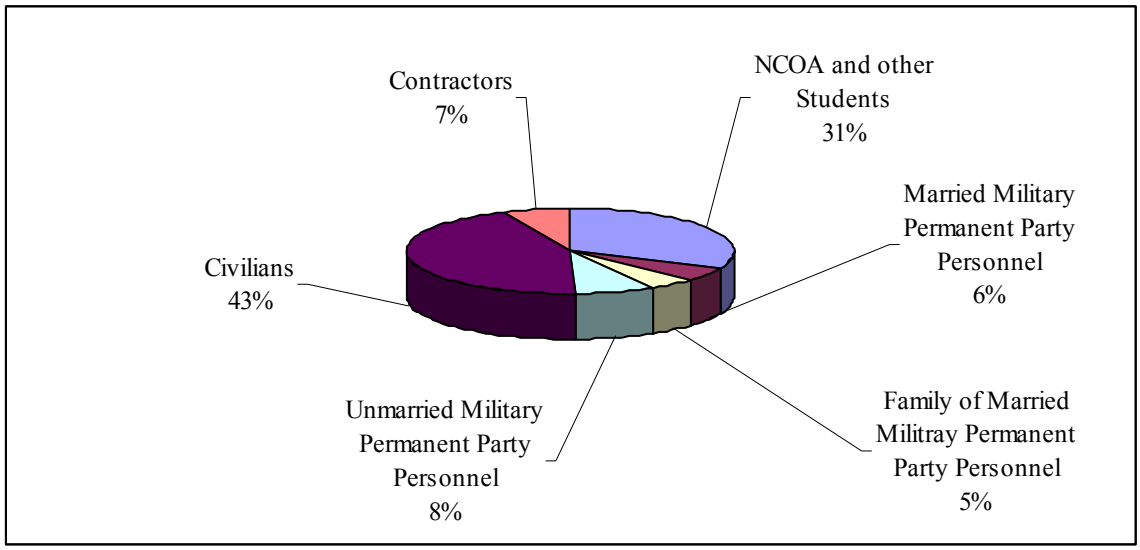
Category of Personnel	No. of People	Accommodation Type (Location)	Average No. of Vehicles	Total No. of Vehicles	On-base Daily VMT Per Vehicle	Outside base Daily VMT Per Vehicle	Total VMT
NCOA and other Students (ADL)	1,786	Of the Economy (Outside the base)	1	1,786	10	10	8,572,800
Married Military PP	640	Housing (On base)	1	640	10	-	1,536,000
Family of Married PP	640*	Housing (On base)	1.1	704	5	-	1,284,800
Unmarried Military PP	694	UPH (On base)	1	694	10	5	2,099,350
Civilians	1,662	Independent Housing (Outside the base)	1	1,662	10	20	11,966,400
Contractors	256	Independent Housing (Outside the base)	1	256	10	20	1,843,200
Total Annual VMT by POVs							**27,302,550**

*: Number of Families

[a]: A*ssumptions:*

- *Number of workdays per year is 240.*
- *Occupancy per vehicle for work related commute is one (1).*
- *Total VMT except for married military permanent party personnel include work related miles traveled on weekdays and non-work related miles traveled on base during weekends.*
- *Total VMT for married military permanent party personnel include only work related miles traveled on weekdays by employees plus non-work related miles traveled by family vehicle on base on weekdays and during weekend days. On weekends, usage of one car per family has been assumed.*
- *On an average married permanent party personnel are expected to have 2.1 cars per family (1 car for the employee and 1.1 car(s) for the family members).*
- *Daily VMT is an assumption based on approximate average distance between housing locations and work places on Fort Lee.*

Figure 3-1
VMT Distributions



"Civilians" and "NCOA & others" together account for 74% of VMT. Both these category live outside Fort Lee.

(ii) Government Owned Military Vehicles

This category includes a variety of military vehicles that are used as training aids for students. The available information for these vehicles came from the respective incoming activities and was in different formats. Some activities provided VMT while others gave the number of operating hours. Still others had annual fuel usage for vehicles. Therefore, VMT for vehicles has been calculated using alternative approaches. For example, average speeds were assumed to calculate VMT from hours of operation. Average mileage (miles/gallon) was used to calculate VMT if total fuel used was available.

For correct selection of emissions factor, gross vehicle weight (GVW), if not available, was obtained from information available on the website www.security.org. In assuming the weight, a conservative approach was adopted. If an exact match was not available, the closest higher weight was chosen.

For vehicles that are driven as part of training, an average speed of 10 miles/hr has been assumed. For vehicles that idle during training an average speed of 2.5 mile/hr was assumed for emission estimation purposes. Unless otherwise mentioned, all military vehicles have been assumed to run on diesel. Table 3-2 represents the incoming number of government military vehicles and the respective total annual VMT.

Table 3-2
Number of Incoming Military Vehicles and Estimated VMT

Incoming Activity	No. of Military Vehicles	Estimated Total Annual VMT
Aberdeen Proving Ground	88	216,253
Redstone Arsenal	128	40,459
Fort Eustis	24	29,660
Lackland AFB	4	28,400
DCMA	None	None
DECA	None	None
Total	**244**	**314,772**

(iii) Government Owned GSA Vehicles

Some of the incoming activities use GSA vehicles for their work related transportation needs. For emission assessment purposes, all vehicles have been assumed to run on gasoline and are in the category of Heavy Duty Gasoline Vehicles (HDGV2B). An average of 30 VMT per day was assumed. Table3-3 shows the number of GSA vehicles and the total estimated annual VMT associated with these vehicles.

Table 3-3
Number of GSA Vehicles and Estimated VMT

Incoming Base/Activity	No. of GSA Vehicles	Estimated Total Annual VMT
Aberdeen Proving Ground	56	343,672
Redstone Arsenal	None	None
Fort Eustis	10	169,976
Lackland AFB	None	None
DCMA	6	46,800
DECA	None	None
Total	**72**	**560,448**

Estimated Emissions

Emissions have been calculated for the vehicles based on the VMT estimates and emission factors derived from EPA's MOIBLE6 Emissions Model. Total emissions were calculated for each year starting from 2008 through 2012 for each vehicle category and for each incoming activity. It was assumed that all military vehicles currently associated with the incoming activities would be moved to Fort Lee. For GSA vehicles, it was

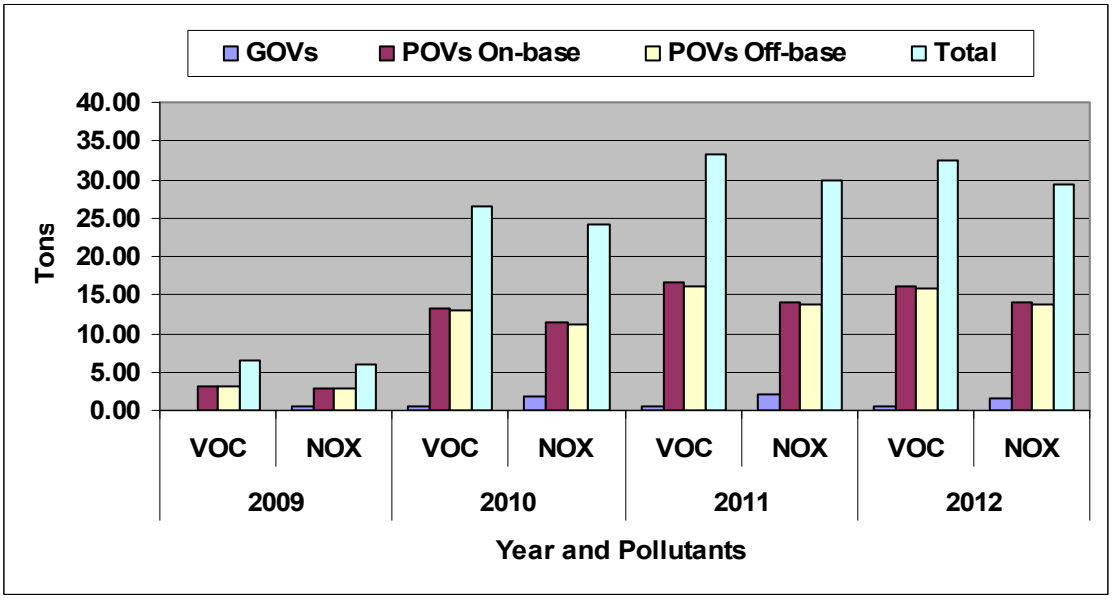
assumed that an equivalent number of vehicles would be assigned to Fort Lee once an activity has been realigned. Note that for each year total emissions decrease for the same vehicle dataset because of decreases in vehicle emission rates.

To distribute the emissions of the incoming vehicles, total emissions for the appropriate year have been multiplied by the percentage of construction completed by that year. This approximation is based on the assumption that vehicles will move to Fort Lee in the same proportion as the construction is completed. The emissions are assigned to Fort Lee in the year following construction completion. For example, assuming 16% of the construction is completed in 2008 then 16% of the vehicles are assumed to move to Fort Lee in the year 2009. Table 3-4 shows the annual emission estimates for incoming vehicles. Figure 3-2 presents the results in a graphical form.

Table 3-4
Estimated Vehicular Emissions From Incoming Vehicles (tons/yr)

Category	2009		2010		2011		2012	
	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x
Emissions attributed	***16%***		***70%***		***94%***		***100%***	
GOVs (Military +GSA)	0.12	0.46	0.50	1.78	0.64	2.06	0.40	1.66
POVs on base	3.24	2.80	13.19	11.35	16.54	14.11	16.16	13.98
POVs off-base	3.16	2.74	12.88	11.09	16.16	13.79	15.79	13.66
Total (ton/yr)	**6.52**	**6.00**	**26.57**	**24.22**	**33.34**	**29.96**	**32.35**	**29.30**

Figure 3-2
Estimated Vehicular Emissions



GOV: includes both government owned military vehicles and GSA vehicles.

3.2 Stand-alone IC Engines and External Combustion Equipment

The stand-alone engines are internal combustion engines used for training purposes/aids. They include both small gasoline engines and larger diesel/JP8 fueled engines. Engine sizes range from one to two horsepower up to several hundred horsepower. Typically, students take the engines apart then rebuild them and run the engines to test their repair skills. The external combustion sources include burners, dryers and heating units. Note that external combustion equipment such as boilers to be used at Fort Lee for space heating and for hot water supply have been discussed separately in Section 3.5.

Emissions have been calculated either based on horsepower rating of the engine or quantity of fuel consumed. Table 3-5 summarizes the approximate number of pieces of equipment associated with incoming activities.

Table 3-5
Numbers of Stand-alone Engines and External Combustion Equipment

Incoming Base/Activity	No. of Stand Alone Engines	No. of External Combustion Equipment
Aberdeen Proving Ground	433	12
Redstone Arsenal	12	None
Fort Eustis	6	None
Lackland AFB	4	12
DCMA	None	None
DECA	None	None
Total	**455**	**24**

Emissions have been estimated using the engine rating, operating hours or annual fuel consumption and emissions factors from AP-42 Tables 3.3.1 and 3.4.1. To distribute the emissions of the incoming fuel combustion equipment, total emissions have been multiplied by the fraction/percentage of construction completed each year. This approximation is based on the assumption that the combustion equipment will move to Fort Lee in the same proportion as the construction completes. The emissions are assigned to Fort Lee in the year following construction completion. For example, assuming 16% of the construction is over in 2008 then 16% of the equipment is assumed to move to Fort Lee in the year 2009. Table 3-6 presents the emissions from the combustion equipment.

Table 3-6
Emissions from Stand-alone Engines and External Combustion Equipment (tons/yr)

Category	2009		2010		2011		2012	
	VOC	NO_X	VOC	NO_X	VOC	NO_X	VOC	NO_X
Emissions attributed	*16%*		*70%*		*94%*		*100%*	
Stand Alone Engines	0.22	3.31	0.94	14.5	1.26	19.4	1.34	20.7
External Combustion Sources	0.00	0.01	0.00	0.03	0.00	0.03	0.00	0.04
Total (ton/yr)	**0.22**	**3.31**	**0.94**	**14.5**	**1.26**	**19.5**	**1.34**	**20.7**

3.3 Construction Activity Emissions

The total square footage proposed for construction on Fort Lee is 6,538,876. The square footage was obtained from 1) a spreadsheet (060413_FaclitySF.xls) provided by Fort Lee Planning and 2) presentation materials titled "BRAC Construction Requirements". For estimating emissions, it was assumed that the total project square footage will be divided into a number of smaller projects that will be completed over a period of 6 years. Each smaller project is expected to be finished in 2 to 2 ½ years. It is expected that construction would start in the year 2007 and finish by the year 2012. The exact schedule of the projects is unknown at this time. Therefore, a number of additional assumptions have been made. These assumptions were based on limited information available from Fort Lee and construction industry standards including construction emissions models.

The construction activities evaluated include site grading, hauling, building construction, asphalt paving, architectural coating, and associated worker commute trips. For emissions estimation, each of these activities has been considered separately. The following subsections explain the methodology, assumptions and basic input parameters used for each of the construction activities.

(i) Grading

It has been assumed approximately 518 acres will be subject to some sort of grading activity. Since the exact annual distribution of area to be graded was not available, a yearly distribution has been estimated based on the square footage of the building construction starting in that year. Table 3-7 shows the annual distribution of the area to be graded.

Table 3-7
Annual Distribution of Graded Area

	2007	2008	2009	2010	2011
Total Construction Area to be Started (Sq. Ft)	1,020,612	3,530,557	758,641	807,732	413,333
% of Total Area	16	54	12	12	6
Area to be Graded (acres)	80.95	280.03	60.17	64.07	32.78
Total Area Disturbed (per day)	20.24	70.01	15.04	16.02	8.20

Based on the information available at Sacramento Air Quality Management District (SMAQMD) Council of Environmental Quality (CEQ), on average 25% of the total area to be graded is assumed to be disturbed each day. For every 10 acres disturbed four (4) pieces of grading equipment (Rubber Tired Loader, Grader, Crawler Tractor, and Backhoe Tractor/Loader) was assumed. These numbers have been linearly extrapolated to estimate number of equipment required for the total area (acres) to be disturbed daily. Table 3-8 shows the number of pieces of equipment proposed to be used for grading activities.

Table 3-8
Numbers of Pieces of Grading Equipment Used Daily

Equipment Type	2007	2008	2009	2010	2011	2012
Rubber Tired Loader	2	7	2	2	1	0
Grader	2	7	2	2	1	0
Crawler Tractor	2	7	2	2	1	0
Tractor/Loader/ Backhoe	2	7	2	2	1	0
Total Number of Equipment	**8**	**28**	**6**	**6**	**3**	**0**

The emissions have been estimated using emission factors (lb of pollutant per day per equipment) taken from the SMQAMD. For emission estimation purposes, a total of 105 days per year has been assumed.

(ii) Hauling

Hauling is an activity on which *no information* was available at the time emissions were estimated. It was assumed that each loader used in Table 3-8 above would fill one haul truck (20 cubic yards) every 30 to 45 minutes. Based on an 8-hour workday the number of haul trucks were estimated and are presented in Table 3-9.

Table 3-9
Number of Haul Trucks Used Daily

Equipment	2007	2008	2009	2010	2011	2012
Loaders Used /Day	2	7	1.5	1.6	.8	0
Haul Trucks/Day	21.6	74.7	16	17.1	8.7	0

It was assumed each haul truck would travel 6 miles on Fort Lee. Total emissions were estimated by multiplying the total number of miles traveled and the emission factor (lb of pollutant/mile) obtained from MOBILE6.

(iii) Building Construction

A total floor area of 6,530,875 square feet is proposed for construction (includes both mission facilities and support facilities). At the time of this study very limited information was available regarding the actual construction schedule. For a few construction projects, a start year and end year was available. In most cases however, only an approximate start year was available. Using the following assumptions a construction schedule reflecting the total amount of square footage to be started each year was developed.

- For each mission facility/building to be constructed the building square footage was assigned to the year in which construction would start.
- For housing units, construction will begin in 2009 (construction would start on 1/3 of the units in 2009, 2010, and 2011 respectively).
- Construction for support facilities/buildings would begin in 2010.

Table 3-10 shows the construction schedule reflecting square footage started based on the above assumptions.

Table 3-10
Construction Schedule (Square Footage of Projects Starting)

	2007	2008	2009	2010	2011	2012	Total (Sq. Ft.)
Sq Ft Started	1,020,612	3,530,557	758,641	807,732	413,333	0	6,530,875
% Started	16	54	12	12	6	0	100

In addition, there was no information available regarding the amount of total square-footage that would be under construction at a given time. However, it is expected that each project would take about 2 to 21/2 years to complete. Therefore, it has been assumed that in a given year, ongoing construction would include the projects that started in that year and the projects carried over from the previous year(s).

A floor area of 50,000 square feet (henceforth referred to as "unit project") has been assumed for the purpose of estimating construction equipment requirements and determining emissions. It was assumed that each unit project would take 6 months to complete, or at least a 6-month period would involve the significant use of heavy construction equipment. To elaborate these assumptions, if one needs to build 100,000 square feet in 6 months, two teams of construction workers would be working independently and simultaneously on 2 unit projects (50,000 square feet each). The unit project may extend beyond six months but significant use of emission generating equipment would be limited to six months only.

Twenty (20) pieces of emission-generating equipment has been assumed for each unit project. The assumption for the number and type of equipment is based on technical documents developed for the Air Force Conformity Emission Model Version 4.2 (ACAM) and the Urban Emissions Model Version 8.7 (URBEMIS). Actual number and type of equipment may differ from assumptions used but total emissions are expected to be in the range of estimated emissions. Table 3-11 shows the number of construction equipment assumed.

Table 3-11
Numbers of Pieces of Equipment per Unit Project per Day

Equipment Type	No. of Pieces Equipment
Concrete Industrial Saw	5
Other Equipment*	10
Rough Terrain Forklift	5

*: Other construction equipment may include delivery trucks, dump trucks, etc.

Emission factors from ACAM have been used to estimate the emissions from the construction equipment.

To determine the number of unit projects needed to complete a construction project, the total area (square feet) proposed to start in a particular year has been divided by the area of a unit project (50,000 square feet). Assuming a project would take about 2 years to complete, the number of unit projects have been distributed over two years. In other words, 50% of the unit projects would begin in the start year and remaining 50% would begin in the second year. Table 3-12 shows the number of unit projects needed and number of units projects considered in a given year.

Table 3-12
Number of Unit-Projects

	2007	2008	2009	2010	2011	2012
Total Area (Sq Ft)	1,020,612	3,530,557	758,641	807,732	413,333	0
No. of Unit-Projects (project distribution in two parts)	20 (10+10)	71 (35+36)	15 (7+8)	16 (8 +8)	8 (4+4)	0
Unit-Projects Starting (Carried Over + New)	10	***10***+35	***36***+7	***8***+8	***8***+4	***4***
Total Ongoing "Unit Projects" in the Year	10	46	43	16	12	4

Note: *Number in italics and bold are the number of projects carried over from previous year.*

In addition, the following was assumptions were used when evaluating emissions.

- Construction work would be done 252 days per year. Therefore, construction days needed for a unit project would be 126 days.
- The unit project may continue beyond the 6- month period but use of significant emission-generating equipment has been limited to 126 days.
- Emissions from unit-projects have been multiplied by the number of ongoing unit-projects in a particular year to arrive at the total emissions from building construction in that particular year.

(iv) Asphalt Paving

Based on information provided by Fort Lee, an area of 823,416 square yards is expected to be paved. The total paved area includes roadway, parking garages and parking surfaces. Table 3-13 shows the distribution of area to be paved.

Table 3-13
Total Area to be Paved

Surface Type	Area (Sq. Ft.)	Area (Acre)
Roadway	767,360	158.5
Parking Garage	82,578	17.1
POV Parking	6,706	1.4
ORG Parking	49,350	10.2
Total Area	**823,416**	**170.1**

At the time of report writing paving details such as exact schedule and type of paving was not known, therefore assumptions have been made to calculate emissions. It has been assumed that all significant paving would take place during the year 2009, 2010 and

2011. An area of 10 acres has been assumed as a base unit area (i.e. the area on which a team(s) can work in one day). It has been assumed that 3 days (1 day for aggregate laying and 2 days for asphalt application) would be needed to finish paving for a base unit area (10 acres). Therefore, total paving days to finish 170 acres would be 51. Table 3-14 gives the number of pieces of equipment (from URBEMIS) used for asphalt paving.

Table 3-14
Number and Type of Equipment Based on 10 Acres Paved per Day

Equipment Type	Engine Rating (hp)	Load Factor	Paving Hours/Day	No. of Pieces of Equipment/Day
Grader	174	0.575	8	2
Off-highway trucks	417	0.49	8	2
Paver	132	0.59	8	2
Paving Equipment	111	0.53	8	2
Rollers	114	0.43	8	4
Total				**12**

Note: Number of pieces of equipment per 10 acres is from URBEMIS

Using construction equipment emission factors from the SMAQMD emissions were estimated and equally distributed over the years 2009, 2010 and 2011.

(v) Architectural Coating

The only pollutant of concern from architectural coating is VOCs. At the time of this study, details of coating activities such as the type of paint to be used, actual area to be coated, and quantity of paint to be used were not available. Therefore, simpler emission factors relating emissions to number of housing units or total square footage to be built have been used. For residential units, an emission factor based on pounds of pollutants per residential unit has been used. For office space, the square root of the total floor area to be constructed has been multiplied by 1.63 to arrive at the total VOC emissions (1.63 lbs of VOC per square foot). These emission factors and methodologies are based on URBEMIS and ACAM guidance.

(vi) Worker Trips

Emissions from vehicles used by workers to travel to and from Fort Lee work sites have been estimated separately for each category of construction activity. Only travel on Fort Lee has been considered. It was assumed each worker would drive 8 miles per day on Fort Lee. Fifty percent of the worker vehicles were assumed to be LDGV. The remaining fifty percent were assumed to be LDGT3. MOBILE6 was used to determine the emission rates for the worker vehicles. For the estimation of the number of workers and the number of commute days, the following activity specific assumptions were made.

Grading:

- 1.25 workers for each piece of grading equipment (Source: URBEMIS).
- Grading days per year is 105

Table 3-15 presents the estimated number of workers for grading activities.

Table 3-15
Estimated Number of Workers for Grading

	2007	2008	2009	2010	2011	2012
No. of Pieces of Equipment /day	8.1	28.0	6.0	6.4	3.3	0.0
Number of Workers	10.1	35.0	7.5	8.0	4.1	0.0

Building Construction:

The number of workers was based on the type of construction. Table 3-16 presents the basis used to estimate number of workers and Table 3-17 presents the total estimated number of workers for building construction.

Table 3-16
Basis to Estimate Number of Workers

Construction Type	Number of Workers
Multifamily Units	0.36 per unit
Single Family Units	0.72 per unit
Commercial	0.32 per 1000 square foot
Office/Industrial	0.42 per 100 square foot

Source: ACAM and URBEMIS

Table 3-17
Estimated Number of Building Construction Workers per Day

	2007	2008	2009	2010	2011	2012
Single Family Units	0	0	307	307	307	0
Office/Industrial Buildings	214	956	722	150	77	87
Total	**214**	**956**	**1,029**	**457**	**384**	**87**

The number of days workers commute is the same as the number of construction days (i.e. 252 days per year).

Asphalt Paving:

- 1.25 workers for each piece of paving equipment (assuming 12 pieces of paving equipment per day, the number of workers would be 15)
- Paving is done for 51 days per year
- Asphalt paving would be done only for three years (i.e. 2009, 2010 and 2011)

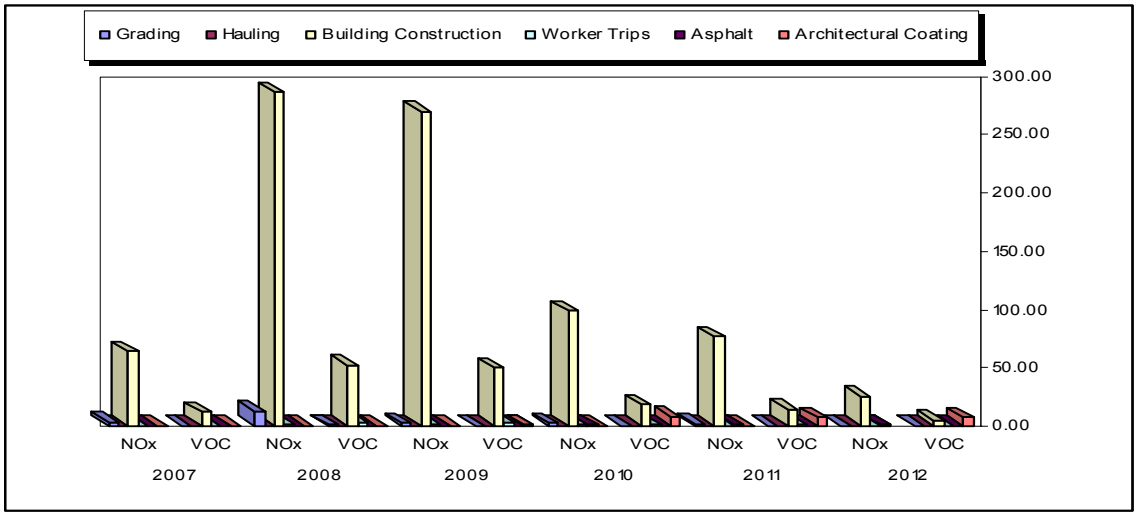
Estimated Emissions

Based on the assumptions described above emissions were calculated for construction activities. The expected emissions due to all construction activities are given in the Table 3-18. Figure 3-3 presents the results graphically.

Table 3-18
Rollup of Construction Emission Estimates (ton/yr)

Activity Type	2007		2008		2009		2010		2011		2012	
	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC
Grading	3.72	0.39	12.9	1.36	2.77	0.29	2.95	0.31	1.52	0.16	-	-
Hauling	0.17	0.01	0.58	0.05	0.11	0.01	0.11	0.01	0.05	0.00	-	-
Bldg. Const.	64.2	11.8	286	52.8	270	49.8	98.9	18.2	77.1	14.2	26.2	4.82
Worker Trips	0.42	0.61	2.25	3.22	2.24	3.20	0.94	1.33	0.73	1.04	0.15	0.21
Asphalt	-	-	-	-	-	-	1.12	0.12	1.12	0.12	1.12	0.12
Arch. Coating	-	-	-	-	-	0.82		8.53	-	7.47	-	7.50
Total (ton/yr)	68.51	12.8	302	57.4	275	54.1	104	28.5	80.5	23.0	27.5	12.7

Figure 3-3
Emissions From Construction Activities



Building construction contributes the largest amount of emissions.

3.4 Area Source Emissions

This category considers emissions related to residential activities such as cleaning/degreasing, painting, lawn mower use, and the use of pesticide/herbicides. To estimate area source emissions, 640 housing units each with 2.4 persons has been assumed. This results in a total of 1,536 residents for the purpose of estimating emissions. Only emissions from housing units have been evaluated. The emissions from barracks and UPH are likely to be comparatively small and has not been included.

Emissions from lawn mowers have been estimated using emission factors from URBEMIS. The factors provide an estimate of emissions per housing unit per day (lbs/SFHU/day). It has been assumed that each housing unit would have one lawn mower (i.e. 640 lawn mowers) and mowing would be done during a period of 6 months each year.

Emissions for degreasing/cleaning, painting, and pesticide/herbicide use are based on the number of permanent party personnel living in the housing units (640 units). The emission factors used were obtained from URBEMIS and are expressed in terms of lb per person or pound per employee.

Emissions in this category are dependent on personal activities and will start occurring as housing units are completed and occupied. It was assumed construction will begin on one-third of the housing units in 2009. Thus it is expected that by the year 2010, one-third of the housing units will be occupied, in the year 2011 two-thirds of the housing units will be occupied, and by the year 2012 all the housing units will be occupied. Therefore, total emissions have been proportionately attributed to the years 2010 through 2012. Table 3-19 shows the emissions due to area sources.

Table 3-19
Emissions From Area Sources

Emission Category	2010		2011		2012	
	NO_x	VOC	NO_x	VOC	NO_x	VOC
Residential Emissions	-	0.00	-	0.01	-	0.01
Degreasing Emissions	-	0.27	-	0.54	-	0.81
Surface Coating Emissions	-	0.88	-	1.77	-	2.65
Others (Pesticides, Herbicide etc)	0.46	2.34	0.92	4.68	1.38	7.02
Lawn Mowers	-	0.01	0.01	0.02	0.01	0.03
Emissions (tons/yr)	**0.46**	**3.51**	**0.93**	**7.01**	**1.39**	**10.52**

3.5 Space Heating/Boilers

At the time of this study the number and size/capacity of heating units/boilers to be installed as part of new construction were unknown. Therefore, energy requirements have been assessed based on the floor area (square feet) for each building to be constructed. Table 3-20 shows the energy requirements based on square footage for buildings located in the southern half of the United States. The appropriate energy requirement was assigned to buildings based on their intended use inferred from a brief description of building types provided by Fort Lee. The square footage for each new building was also provided by Fort Lee Planning.

Table 3-20
Basis for Energy Requirement Assessment

Energy Requirements (Southern U.S.)	MMBtu/sq ft
Commercial/Retail	0.0711
Education	0.0678
Office	0.0907
Service (use of industrial)	0.157
Warehouse	0.0329

Source: ACAM & DoE

The energy requirements for each building were used to estimate the size boiler/heater that would be installed. It was assumed that boilers and heaters would use natural gas. Emission factors used to calculate emissions form the boilers were taken from AP-42 Tables 1.4-1 and 1.4-2.

Total estimated emissions of NO_x and VOCs for all buildings were 25.1 and 4.1 tons per year respectively. However, it is anticipated that occupancy of the newly constructed buildings will be staggered based on when construction is completed. Thus, the emissions have been distributed over the years 2009 to 2012. The distribution is based on rough data provided by Fort Lee that indicated the year in which some buildings/construction projects would be completed. Table 3-21 shows the boiler emissions over the years 2008 to 2012.

Table 3-21
Boiler Emissions (tons/yr) Allocated by Year

2008		2009		2010		2011		2012	
NO_x	VOC	NO_x	VOC	NO_x	VOC	NOx	VOC	NO_x	VOC
0.0	0.0	3.21	0.18	17.0	0.94	18.3	1.01	25.1	1.4

3.6 Emergency/Standby Generator Emissions

There was no data available regarding the size or number of emergency generators to be installed at Fort Lee due to the 2005 BRAC action. It is anticipated that there will be at least some new emergency generators installed. To account for some of the associated emissions it was assumed that there will be four 500 kW emergency generators installed. It was also assumed that the fuel type will be diesel and that limits will be taken on operating hours.

Emissions were calculated using emissions factors obtained from AP-42 Table 3.4-1 Operating hours were limited to 250 hours per year per unit. The startup date for the generators was staggered to match a staggered construction schedule. It was assumed the first generator would begin operation in 2010, three generators would be operating in 2011, and all four would operate by 2012. The estimated emissions attributed to the generators for the years 2010 through 2012 are given in Table 3-22.

Table 3-22
Generator Emissions (ton/yr) Allocated by Year

2010		2011		2012	
NO_x	VOC	NO_x	VOC	NO_x	VOC
2.01	0.05	6.03	0.16	8.04	0.22

3.7 Stage I Tank Filling Emissions

Fuel dispensing emissions have been included as part of the MOBILE6 modeling performed for military vehicles and POVs associated with incoming activities. However, a larger number of vehicles on Fort Lee will also mean more frequent deliveries of gasoline to Fort Lee storage tanks that are associated with fuel dispensing.

The new emissions associated with more frequent tank filling (greater throughput) have been estimated using AP-42 emissions factors for balanced submerged filling (Stage I) and underground tank breathing and emptying. The additional throughput was estimated based on the number of incoming vehicles and the assumption that each vehicle will use 1,045 gallons of gasoline per year. This assumption was based upon historical fuel use and the number of permanent party and non-AIT students present at the time (fuel throughput divided by the number of personnel with vehicles).

For the purpose of estimating fuel throughput increases due to BRAC, the number of new personnel anticipated to have vehicles was multiplied by the 1,045 gallons per year. The fuel throughput was then distributed according to the percentage of construction expected to be completed each year. The gasoline throughput is assigned to Fort Lee in the year following construction completion. For example, assuming 16% of the construction is over in 2008 then 16% of the additional throughput is assumed for the year 2009. Table

3-23 shows the annual VOC emission due to the increased throughput allocated for the 2009 through 2012.

Table 3-23
Stage I Filling - VOC Emissions

	2009	2010	2011	2012
lb/yr	1,068	4,764	5,561	6,844
ton/yr	0.53	2.38	2.78	3.42

3.8 Ordnance Detonation/Firing Ranges

Emissions from ordnance detonation are expected to be insignificant in comparison to emissions from other activities. The primary pollutants from ordnance detonation are particulate matter and carbon monoxide, which are not of concern for this conformity study. In addition, inspection of emission statements for installations hosting incoming activities showed that total base-wide VOC emissions from ordnance detonation/firing range use is typically one to two tons per year. Only a portion of these emissions would be attributed to the incoming activities. Because of all of the above, emissions for ordnance detonation/firing range use have not been calculated at this time.

3.9 Paint Spray Booths

Historical emissions from paint spray booths associated with installations that host incoming activities have been small (3 tons/yr or less). Two of the installations that host incoming activities (Redstone Arsenal and Fort Eustis) do not track paint emissions (VOC emissions) by organization. They only determine total base-wide emissions. As a result it is not possible to determine how much of the paint spray booth emissions reported by those installations are associated with the incoming activities/organizations. Therefore, to be conservative we have included all the paint spray booth emissions from those installations in our analysis.

In addition, Aberdeen Proving Ground provided data for paint spray booth operations for museum operations that may move to Fort Lee. Historical emissions from these paint spray booth operations are also included in the Fort Lee analysis. Table 3-24 provides a summary of the paint booth paint booth VOC emissions that are being assumed due to BRAC at Fort Lee.

Table 3-24
VOC Emissions (ton/yr) Due to Paint Booth Operations

Base/Incoming Activity	VOC Emission Rate
Fort Eustis	3.10
Redstone Arsenal	1.00
Aberdeen Proving Ground	1.32
Total (ton/yr)	**5.42**

The emissions in Table 3-24 have been included in the Fort Lee analysis beginning in the year 2010.

APPENDIX B: 4.0 FINDINGS AND CONCLUSIONS

Emissions described in Section 3.0 have been summed and are illustrated in Table 4-1. Figure 4-1 presents the results graphically and compares them against the threshold that triggers a conformity determination . The table and figure clearly illustrates that NO_x emissions in each of the years 2008 through 2012 exceed the threshold (100 tons per year) that requires a conformity determination. The construction emissions make the largest contribution to the high levels of NO_x emissions. Table 4-2 shows the breakdown of the construction emissions versus all other emission sources combined.

In the absence of construction emissions Fort Lee would be below the 100 ton per year threshold. Construction emissions alone exceed the conformity determination level in the years 2008, 2009, and 2010. In the years 2008 and 2009 the construction emissions are approximately 3 times greater than the 100 tons per year trigger level. The very large nature of the NO_x emissions in 2008 and 2009 would make it very difficult and potentially expensive for Fort Lee to take measures (implement controls) that would avoid triggering a general conformity determination. Some means to reduce air emissions from diesel construction equipment include the use of cleaner or alternative fuels, such as emulsified diesel (mixture of diesel, water, and other additives) and the installation of pollution control equipment such as diesel exhaust oxidation catalysts.

As in the case of the Fort Lee BRAC action, when a general conformity is triggered there are several means/criteria to demonstrate if an action conforms to relevant SIP requirements and milestones. These criteria include the following.

- The project emissions are specifically identified and accounted for in the SIP attainment or maintenance demonstration.

- The emissions are fully offset within the same non-attainment or maintenance area through a revision to the applicable SIP or a similarly enforceable measure that affects emissions reductions so that there is no net increase in emissions of that pollutant.

- Modeling results demonstrate that air quality standards will not be exceeded. This includes demonstrating that the action will not cause or contribute to new violations of any NAAQS, increase the frequency or severity of any existing violation of any NAAQS; or delay timely attainment of any NAAQS or interim emission reductions.

- The emissions are determined and documented by the State agency primarily responsible for the applicable SIP to result in a level of emissions that, together with all other emissions in the non-attainment or maintenance area, would not exceed the emissions budgets specified in the applicable SIP.

- The emissions are determined by the State agency responsible for the applicable SIP to result in a level of emissions that, together with all other emissions in the

non-attainment or maintenance area, would exceed an emissions budget specified in the applicable SIP, and the state Governor or the Governor's designee for SIP actions makes a written commitment to the USEPA that includes the following:

- A specific schedule for adoption and submittal of a revision to the SIP which would achieve the needed emission reductions prior to the time emissions from the Federal action would occur;

- Identification of specific measures for incorporation into the SIP that would result in a level of emissions that, together with all other emissions in the non-attainment or maintenance area, would not exceed any emissions budget specified in the applicable SIP;

- A demonstration that all existing applicable SIP requirements are being implemented in the area for the pollutants affected by the Federal action and that local authority to implement additional requirements has been fully pursued;

- A determination that the responsible Federal agencies have required all reasonable mitigation measures associated with their action; and

- Written documentation that includes all air quality analyses supporting the conformity determination.

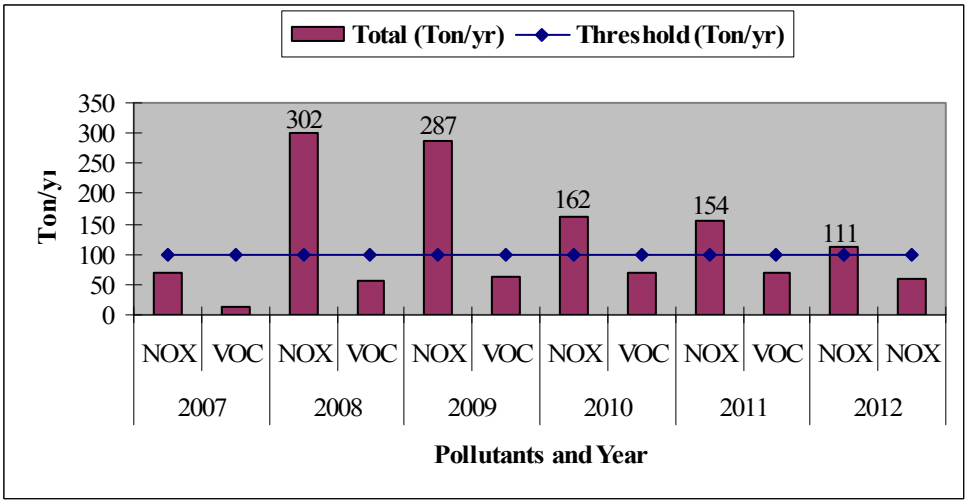
Table 4-1
Estimated Total Emissions

Emission Category	2007		2008		2009		2010		2011		2012	
	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC
Site Grading	3.72	0.39	12.9	1.36	2.77	0.29	2.95	0.31	1.52	0.16	-	-
Construction Site Hauling	0.17	0.01	0.58	0.05	0.11	0.01	0.11	0.01	0.05	0.00	-	-
Building Construction	64.2	11.8	286	52.8	270	49.8	98.9	18.2	77.1	14.2	26.2	4.82
Asphalt Application	-	-	-	-	-	-	1.12	0.12	1.12	0.12	1.12	0.12
Architectural Coating	-	-	-	-	-	0.82		8.53	-	7.47	-	7.50
Construction Worker Trips	0.42	0.61	2.25	3.22	2.24	3.20	0.94	1.33	0.73	1.04	0.15	0.21
POVs, GOVs, & Engine Training	-	-	-	-	9.31	6.73	38.7	27.5	49.4	34.6	50.0	33.7
Boilers/Heaters - Natural Gas	-	-	-	-	3.21	0.18	17.0	0.94	18.3	1.01	25.1	1.40
Emergency Generators	-	-	-	-	-	-	2.01	0.1	6.03	0.2	8.04	0.2
Area Sources	-	-	-	-	-	-	0.46	3.51	0.46	3.51	0.46	3.51
Paint Spray Booth (s)	-	-	-	-	-	-	-	5.38	-	5.38	-	5.38
Ordnance Detonation/Range Use	-	-	-	-	-	-	-	-	-	-	-	-
Degreasing/Parts Cleaning	-	-	-	-	-	-	-	-	-	-	-	-
Stage I Filling (AAFES)	-	-	-	-	-	0.53	-	2.38	-	2.78	-	3.42
Total (ton/yr)	**68.5**	**12.8**	**302**	**57.4**	**288**	**61.6**	**162**	**68.3**	**155**	**70.5**	**111**	**60.3**

Table 4-2
Breakdown of Construction Versus Non-construction Emissions

Emission Category	2007		2008		2009		2010		2011		2012	
	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC
Total Construction Activity	68.5	12.8	302	57.4	275	54.1	104	28.5	80.5	23.0	27.5	12.7
Total Non-Construction	-	-	-	-	12.5	7.44	58.2	39.8	74.2	47.5	83.6	47.6
Total (ton/yr)	**68.5**	**12.8**	**302**	**57.4**	**288**	**61.5**	**162**	**68.3**	**155**	**70.5**	**111**	**60.3**

Figure 4-1
Total Estimated Annual Emissions



VOC emissions are below threshold of 100 tpy but NO_X emissions are exceeding threshold during the years 2008 to 2012. Once the construction activities are completed (after 2012) NO_X emissions are expected to be below threshold.

Conformity Determination

The Virginia Department of Environmental Quality (VADEQ) is requesting that the Richmond-Petersburg 8-hour ozone non-attainment area be redesignated as an attainment area. VADEQ has prepared a maintenance plan to be submitted to the USEPA to ensure that acceptable ozone levels to continue in the future. The maintenance plan constitutes a SIP revision, provides for maintenance of the relevant NAAQS in the area for at least 10 years after redesignation, and includes additional measures to ensure prompt correction of any violation of the NAAQS.

Fort Lee has coordinated with the VADEQ, and the estimated emissions of NO_x and VOC generated from the 2005 Fort Lee BRAC project are to be included in the Richmond maintenance plan to be submitted to the USEPA. This action proposed by the VADEQ will address any general conformity issues relating to the expansion of Fort Lee. Thus, the Fort Lee BBRAC action as described in his report will conform to the latest SIP revisions. This action is contingent upon approval Federal approval of the Richmond maintenance plan.

APPENDIX B: 5.0 REFERENCES

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Sacramento Metropolitan Air Quality Management District. *Guide to Air Quality Assessment in Sacramento County*. July 2004.

White, Greg, Director, Public Works and Logistics, *Fort Lee VA. BRAC Construction Requirements*. Presentation. November 2005.

Fort Lee Excel Spreadsheet, *22 Feb 06 BRAC Numbers.xls.*

Fort Lee Excel Spreadsheet, *06413_FacilitySF.xls.*

Reference Note: Data collected via phone interviews and written requests are not referenced here but are recorded and are available upon request.

APPENDIX A (OF EIS APPENDIX B)
Example Data Request/Questions for Incoming Activities

- **Vehicle Fleet Information** – types and number of government/military/tactical vehicles to be moved to Fort Lee and some assumptions that will allow an estimate of their usage (annual vehicle miles traveled) on Fort Lee and/or Fort Pickett.

- **Fueling Requirements** - for any vehicles/vehicle fleet to be assigned to Fort Lee an estimate of what fuel use might be. Past fuel use can be used as a starting point.

- **Privately Owned Vehicles** – an estimate the number and type of privately owned vehicles (POVs) that military/government personnel or other employees will bring to Fort Lee. If trainees bring their own vehicles an estimate of the number and type of those vehicles is also needed.

- **Fixed or Mobile Generators (Internal Combustion Engines**) - the following information is needed for any generator that will be moved to Fort Lee or Fort Pickett as part of training activities or for emergency power/support.: 1) number of engines, 2) size (hp or kW) of the engines 3) fuel type used, and 4) hours per year that they will operate.

  Information on any other combustion device that may be used for daily operations or training on Fort Lee and/or Pickett. This would include the type and size of the equipment, how much it is to be used (hours per year), and the fuel type used. Some examples of other fuel combustion devices are portable heaters or cooking equipment.

- **Vehicle Maintenance and Motor Pools** - the types and quantities of solvents/degreasers and paints that are currently used, and will continued to be used on Fort Lee. Depending on what is used and how much, NSN numbers may be required to retrieve MSDS information.

- **Paint Spray Booths** - for any paint spray booths that will be moved or constructed on Fort Lee, the types of paints and solvents to be used and estimate of the quantity to be used.

- **Ordnance Detonation/Firing Ranges** - the type of ordnance to be used on Fort Lee or Fort Pickett as well as an estimate of the annul rounds to be fired by ordnance type.

- **Weapons Cleaning** - the type of cleaner/degreaser used, and the quantity used.

- **Welding and Carpentry Activities** – data pertaining to size and types of materials used in any welding or carpentry activities that will be transferred to

Fort Lee. For example, under welding, the type and amount of welding materials and gases used.

- **Miscellaneous** - any other activity that involves the use of chemicals/materials (solvents, paints, adhesives, fuels, etc.) or equipment that will cause air pollution.

Permits and other Documentation/Information Requirements (some of the types of data described above may already be summarized in one or more of documents/permits listed below)

- Air Quality Operating or Construction Permits for any sources or activities that will be moved to Fort Lee or Fort Pickett.

- Tile V Permit or State Facility-Wide Permit to Operate. These types of permits (if required) include a compilation of all significant emission sources at the facility.

- Latest Annual (CY04) Air Emission Statement

- Latest Air Emission Inventory

- Any recent environmental studies (Environmental Impact Statements, NEPA reviews, etc.) that evaluated air quality impacts with regard to projects conducted ant your facility that will be moved to Fort Lee or Fort Pickett.

- Any descriptions of activities conducted at the facility that will be moved to Fort Lee, particularly those dealing with field training involving fuel burning equipment, vehicle fueling and ordnance detonation..

If available any estimates of square footage requirements for training, maintenance, and administrative facilities at Fort Lee.

Appendix B (of EIS Appendix B)
Fort Lee Summary of Incoming Personnel Due to BRAC 05

Incoming BRAC Activity	AIT		NCOA		Others		School Totals		Permanent Party Personnel					
	Annual Load	ADL	Annual Load	ADL	Annual Load	ADL	Annual Load	ADL	Total Officers	Total Warrant Officers	Total Enlisted	Mil Totals	Civilians	Contractors
Electronics & Munitions, RSA	1,073	327	913	85	717	486	2,703	898	21	20	209	250	122	40
Ordnance, Aberdeen	5,683	1,425	2,704	250	3,916	547	12,303	2,222	54	39	546	639	239	111
SMPT, Aberdeen	0	0	0	0	906	32	906	32	0	0	0	0	19	0
Transportation, Eustis	704	87	1,034	77	4,172	309	5,910	473	67	5	143	215	403	40
EOD Phase I, RSA	742	157	0	0	0	0	742	157	3	0	50	53	27	0
USAF Culinary Tng, Lackland	1,832	217	0	0	0	0	1,832	217	1	0	58	59	1	0
USN Culinary Tng, Lackland/Great Lakes	1,373	122	0	0	0	0	1,373	122	1	0	23	24	0	0
USAF Transportation Training, Lackland	612	97	0	0	0	0	612	97	0	0	15	15	3	0
DECA, Multiple Locations	0	0	0	0	0	0	0	0	1	0	0	1	337	0
DCMA, Alexandria	0	0	0	0	0	0	0	0	69	0	9	78	511	65
Total Incoming Activities	12,019	2,432	4,651	412	9,711	1,374	26,381	4,218	217	64	1,053	1,334	1,662	256

ADL: Average Daily Load, RSA: Redstone Arsenal, Tng: Training, SMTP: School of Military Packaging Technology

FINAL
GENERAL CONFORMITY DETERMINATION
2005 BASE REALIGNMENT AT FORT LEE, VIRGINIA

MEMORANDUM OF RECORD

SUBJECT: Final General Conformity Determination
2005 Base Realignment of Fort Lee, Virginia

DATE PREPARED: January 29, 2007

Introduction

This Final General Conformity Determination has been prepared to assess if actions by the U.S. Army regarding the proposed 2005 Base Realignment at Fort Lee, Virginia (hereafter referred to as the "Project") comply with the requirements of the Clean Air Act (CAA) (42 United States Code [U.S.C.] 7401–7671q), General Conformity Rule. This General Conformity determination has been prepared in conjunction with a comprehensive analysis of the environmental consequences of the proposed Project that is required under the National Environmental Policy Act (NEPA).

Project Description

The BRAC Commission made the following recommendations concerning Fort Lee that have been approved and are required to be implemented as part of the project, in accordance with provisions of the in the Defense Base Closure and Realignment Act of 1990. The approval became final on November 9, 2005.

- Establish a Sustainment Center of Excellence at Fort Lee. Activities that would relocate to Fort Lee are portions of the Transportation Center and School from Fort Eustis, Virginia; the Ordnance Maintenance Mechanical School (OMMS) of the Ordnance Center and School from Aberdeen Proving Ground, Maryland; and the Ordnance Munitions and Electronics Maintenance School (OMEMS) of the Missile and Munitions Center from Redstone Arsenal, Alabama. The Transportation Center and School and the Ordnance Center and School would be consolidated with the Quartermaster Center & School, the Army Logistic Management College, and the Combined Arms Support Command to form the SCOE.
- Establish a Joint Center for Consolidated Transportation Management Training. Transportation Management Training at Lackland Air Force Base, Texas, would relocate to Fort Lee, Virginia, to accomplish this.
- Establish a Joint Center of Excellence for Culinary Training. Culinary Training at Lackland Air Force Base, Texas, would relocate to Fort Lee.
- Co-locate Miscellaneous DoD, Defense Agency, and Field Activity Leased Locations. Close Metro Park III and IV (6350 and 6359 Walker Lane), a leased installation in Alexandria, Virginia, by relocating the Defense Contract Management Agency Headquarters to Fort Lee, Virginia.
- Relocate all components of the Defense Commissary Agency (DeCA) to Fort Lee. Defense Commissary Agency Eastern, Midwestern Regional, and Hopewell, Virginia, Offices would be consolidated at Fort Lee. Leased facilities at 300 AFCOMS Way in San Antonio, Texas; 5258 Oaklawn Boulevard in Hopewell, Virginia; and 5151 Bonney Road in Virginia Beach, Virginia, would be closed.

- In addition to the five actions above, through which Fort Lee would gain functions, facilities, and personnel, the BRAC Commission recommended the creation of Joint Mobilization Sites that would result in a loss at Fort Lee. Under this recommendation, all mobilization processing functions at Fort Lee, Virginia; Fort Eustis, Virginia; and Fort Jackson, South Carolina would be relocated to Fort Bragg, North Carolina, and Fort Bragg would be designated Joint Pre-Deployment/Mobilization Site Bragg/Pope.

The Project would result in relocating approximately 7,700 additional personnel to Fort Lee, and constructing additional facilities to accommodate relocated personnel and functions. Fort Lee's military and civilian population consists of two major categories of personnel: students attending professional schools (on a temporary duty or permanent change of station basis) and permanent party personnel. Following implementation of the Project, Fort Lee's average daily population would nearly double, rising from 12,593 personnel to 20,703 personnel. The project would require renovation and construction of over six million square feet of new facilities, associated parking, roads, and guest control (gates) to accommodate the influx of personnel and activities to Fort Lee.

Regulatory Background

United States Environmental Protection Agency (EPA) Region 3 and the Virginia Department of Environmental Quality (VDEQ) regulate air quality in Virginia. The CAA (42 U.S.C. 7401–7671q), as amended, gives EPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that set acceptable concentration levels for seven criteria pollutants: fine particulate matter (PM_{10}), very fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), carbon monoxide (CO), oxides of nitrogen (NO_x), ozone (O_3), and lead. Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program; however, the Commonwealth of Virginia accepts the federal standards.

Section 176(c) of the CAA states that federal agencies cannot engage, support, or provide financial assistance for licensing, permitting, or approving any project unless the project *conforms* to the applicable State Implementation Plan (SIP). A SIP is a compilation of a state's air quality control plans and rules, approved by EPA. EPA's goals are to eliminate or reduce the severity and number of violations of NAAQS and achieve expeditious attainment of these standards. EPA has developed two distinctive sets of conformity regulations: one for transportation projects and one for nontransportation projects. Nontransportation projects are governed by general conformity regulations (40 CFR Parts 6, 51, and 93), described in the final rule for *Determining Conformity of General Federal Actions to State or Federal Implementation Plans,* published in the *Federal Register* on November 30, 1993. The general conformity rule became effective January 31, 1994. The general conformity rule became applicable 1 year after the 8-hour O_3 nonattainment designation became effective. In addition, the Commonwealth of Virginia has adopted conformity regulations (9 Virginia Administrative Code [VAC] 5-160-10 through 9 VAC 5-160-200). The Virginia General Conformity regulations were approved as part of the SIP by EPA on January 7, 2003 (68 FR 723). This is after the new O_3 standards were approved, but before they went into effect, so the approved rules were written with the new standards established.

In addition, EPA has published the following guidance to address compliance with the CAA and General Conformity with respect to the new 8-hour NAAQS in the interim period:

- U.S. Environmental Protection Agency 40 CFR Parts 50, 51, and 81—*Federal Register*, Vol. 69, No. 84, Friday, April 30, 2004, *Final Rule to Implement the 8-Hour O_3 National Ambient Air Quality Standard—Phase 1*
- U.S. Environmental Protection Agency 40 CFR Parts 51, 52, and 80—*Federal Register*, Vol. 70, No. 228, Tuesday, November 29, 2005, *Final Rule to Implement the 8-Hour O_3 National Ambient Air Quality Standard—Phase 2*

Applicability

The General Conformity Rule defines a federal action as any activity engaged in or that a department, agency, or instrumentality of the federal government supports in any way, provides financial assistance for, licenses, permits, or approves. The General Conformity Rule applies to federal actions in locations designated as nonattainment or maintenance areas for any criteria air pollutant under 40 CFR Part 81, Designation of Areas for Air Quality Planning Purposes. A federal action is subject to the General Conformity Rule if it is not classified as an exempt activity, as listed in 40 CFR Part 93 Subpart B and if the total direct and indirect emissions of a pollutant (or its precursors), for which the area is classified as nonattainment or a maintenance area, exceed (1) emission thresholds established in the General Conformity regulations or (2) 10% of the total emissions budget for the entire nonattainment or maintenance area. If emissions are less than these levels, the federal action is presumed to conform to the SIP.

Federal regulations designate Air Quality Control Regions (AQCRs) in violation of the NAAQS as *nonattainment* areas. Federal regulations designate AQCRs in compliance with the NAAQS as *attainment* areas. *Maintenance* areas have previously been designated *nonattainment*, and the EPA has redesignated them *attainment* for a probationary period through implementing maintenance plans. Depending on the severity of the pollution problem in a region, EPA categorizes nonattainment areas as marginal, moderate, serious, severe, or extreme. Implementation of the Project would generate additional emissions at Fort Lee, which is within the State Capital Intrastate AQCR (AQCR 225). EPA designates AQCR 225 as a marginal nonattainment area for the new 8-hour O_3 standard. EPA designates AQCR 225 as an attainment area for all other criteria pollutants. Previously, AQCR 225 was a maintenance area for the 1-hour O_3 standard. EPA revoked the 1-hour O_3 standard, and it is no longer in affect for this region.

Because NO_X and VOCs are the identified precursors for O_3, the applicable nonattainment pollutant of concern in AQCR 225, they were carried forward for detailed analysis. The construction and operational emissions associated with the Project were estimated (Table 1). Emission estimates were made for incoming activities and for on-post infrastructure expansion and development. Emissions were estimated for each year beyond 2007. The year 2007 is the year when construction activities would start, and 2012 represents the year when construction and movement of new personnel to Fort Lee would be completed. After 2012, only operation emissions are anticipated. Emissions from all sources were categorized as follows:

1. Vehicular Emissions (Military, GSA, and privately owned vehicles)
2. Standalone Internal Combustion Engines and External Combustion Equipment Emissions
3. Construction Emissions
4. Area Source Emissions (painting, lawn mowing, degreasing, pesticides/herbicides)
5. New Boilers/Heating Emissions

6. Emergency/Standby Generator Emissions
7. Stage-I Tank Filling Emissions
8. Ordnance Detonation/Firing Range Emissions
9. Paint Spray Booth Emissions

Detailed methodologies for estimating both construction and operational air emissions are in the EIS.

Table 1
Air emissions compared to applicability thresholds

Construction year	NO_x (tpy)	VOC (tpy)	*De minimis* threshold (tpy)	Would emissions equal/exceed *de minimis* levels? (Yes/No)
2007	69	13	100	No
2008	302	57	100	Yes
2009	287	61	100	Yes
2010	161	64	100	Yes
2011	154	66	100	Yes
2012	110	56	100	Yes
Ongoing Operational Emissions	83	44	100	No

tpy = tons per year

The Project is a federally supported, nontransportation project in a nonattainment area. In addition, the estimated emissions from the Project would exceed the *de minimis* threshold values during the calendar years 2008 through 2012 (Table GC-1). Therefore, the general conformity rule is applicable and this formal conformity demonstration has been prepared.

The State Implementation Plan and Conformity Determination

The 8-hour O_3 standard is in the initial implementation stages. Currently the AQCR 225 has no applicable SIP for the 8-hour O_3 standards. VDEQ has published the *Draft Maintenance Plan for the Richmond-Petersburg Nonattainment Area* (VDEQ 2006a) and is in the process of petitioning EPA to redesignate the region as a *maintenance* area for the 8-hour O_3 standard (VDEQ 2006b). This maintenance plan constitutes a SIP revision and will provide for maintenance of the 8-hour NAAQS in the area for at least 10 years after redesignation, including additional measures to ensure prompt correction of any violation of the NAAQS. The Project's emissions have been included in VDEQ emission inventory within the maintenance plan.

The direct and indirect emissions from the proposed projects were assessed. General Conformity under the CAA, section 176 has been evaluated according to the requirements of 40 CFR Part 93, Subpart B and 9 VAC 5-150. The Project is presumed to conform because the total direct and indirect emissions from the Project are specifically identified and accounted for in the applicable implementation plan's attainment or maintenance demonstration *The Draft Maintenance Plan for the Richmond/Petersburg Area.* Supporting documentation and emission estimates appear in the NEPA Documentation.

References

USEPA (U.S. Environmental Protection Agency). 2004. Final Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard—Phase 1. U.S. Environmental Protection Agency Federal Register, April 30, 2004, 69:23951

USEPA (U.S. Environmental Protection Agency). 2005. Final Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard—Phase 2. U.S. Environmental Protection Agency *Federal Register*, November 29, 2005, 70:71612

VDEQ (Virginia Department of Environmental Quality). 2006a. Maintenance Plan for the Richmond-Petersburg Nonattainment Area Consisting of the Cities of Petersburg, Colonial Heights, Hopewell, and Richmond, and The Counties of Prince George, Chesterfield, Hanover, Henrico, and Charles City—Effective DRAFT. Virginia Department of Environmental Quality, Richmond, Virginia.

VDEQ (Virginia Department of Environmental Quality). 2006b. Request for Redesignation to Attainment for The Richmond-Petersburg Nonattainment Area Consisting of the Cities of Petersburg, Colonial Heights, Hopewell, and Richmond, and The Counties of Prince George, Chesterfield, Hanover, Henrico, and Charles City—DRAFT. Virginia Department of Environmental Quality, Richmond, Virginia.

Appendix C
Weapon Expenditures and Range Operations Used in Noise Contour Calculations

Table C-1
Fort A.P. Hill Range Operations
Existing Demolition and Large Caliber Weapon Expenditure

Firing Location	Weapon and Ammunition Type	Day Shots 0700-2200	Night Shots 2200-0700
Aerial Gunnery Daniel	2.75" Rocket, HE	198	0
	2.75" Rocket, Inert	93	0
Aerial Gunnery Upper Zion	20mm Gun, HE	800	0
Demo Site 71A	Demolition, Chain 8 x 2.5 lb blocks	2	0
	Demolition, MICLIC, HE	3	0
	Mine, M14	3	0
	Mine, M15	2	0
	Mine, M16	2	0
	Mine, M19	1	0
	Mine, M2	2	0
	Mine, M3	2	0
Demo Site 71C	Demolition, Bangalore, M1A2	50	0
	Demolition, C4 1.25 lbs	480	0
Firing Point 1	105mm Howitzer, HE	213	0
Firing Point 14	105mm Howitzer, HE	124	0
	105mm Howitzer, Inert	15	0
Firing Point 2	105mm Howitzer, HE	321	0
	105mm Howitzer, Inert	33	0
Firing Point 20	155mm Howitzer, HE	145	0
	155mm Howizter, Inert	16	0
Firing Point 26	155mm Howitzer, HE	270	0
	155mm Howizter, Inert	30	0
Firing Point 3	105mm Howitzer, HE	363	0
	105mm Howitzer, Inert	33	0
Firing Point 40	105mm Howitzer, HE	117	0
Firing Point 43	60mm Mortar, HE	50	0
	60mm Mortar, Inert	9	0
	81mm Mortar, HE	222	0
Firing Point 47	60mm Mortar, HE	728	0
Mortar Point 8	60mm Mortar, Inert	105	0
	81mm Mortar, Inert	78	0
Observation Point 1	60mm Mortar, HE	170	0
	60mm Mortar, Inert	99	0
Observation Point 2	60mm Mortar, HE	1,938	0
	60mm Mortar, Inert	691	0
	81mm Mortar, HE	2,116	0
	Demolition, Foxhole Digger 1.38 lbs	150	0
	TOW Missile, Inert	8	0
Observation Point 4	TOW Missile, HE	3	0
Observation Point 5	20mm Gun, Inert	800	0
Observation Point 8	120mm Mortar, HE	24	0
	60mm Mortar, HE	323	0
	60mm Mortar, Inert	180	0
	81mm Mortar, HE	100	0
Range 06	Grenade, Hand, HE	2,143	0
Range 07	Mine, M18A1	20	0
Range 15	40mm Grenade, HE	1,670	0
	AT4 Rocket, HE	84	0
	LAW Rocket, HE	39	0
	RAAWS Rocket, Inert	113	0

Note: Inert is defined as any round that does not create noise upon impact.

Table C-1
Fort A.P. Hill Range Operations
Existing Demolition and Large Caliber Weapon Expenditure *(continued)*

Firing Location	Weapon and Ammunition Type	Day Shots 0700-2200	Night Shots 2200-0700
Range 16	40mm Grenade, HE	4,065	0
	AT4 Rocket, HE	7	0
	SMAW Rocket, Inert	23	0
Range 18	Demolition, C4 1.25 lbs	64	0
Range 19	40mm Grenade, HE	3,502	0
Range 21	25mm Gun, Inert	275	0
	40mm Grenade, HE	26,166	0
	81mm Mortar, Inert	704	0
	AT4 Rocket, HE	294	0
	Dragon Rocket, Inert	12	0
	Mine, M18A1	2	0
	SMAW Rocket, HE	1	0
	TOW Missile, Inert	41	0
Range 22	Demolition, Bangalore, M1A1	6	0
	Demolition, Bangalore, M1A2	63	0
	Demolition, C4 1.25 lbs	1,619	0
	Demolition, Chain 8 x 2.5 lb blocks	8	0
	Demolition, Cratering 40 lbs	29	0
	Demolition, Cratering 55 lbs	10	0
	Demolition, Linear 35 lbs	200	0
	Demolition, Shape 15 lbs	25	0
	Demolition, Shape 40 lbs	4	0
	Demolition, TNT 0.25 lb	367	0
	Demolition, TNT 1 lb	251	0
	Mine, M15	3	0
	Mine, M18A1	48	0
	Mine, M19	3	0
	Mine, M21	3	0
Range 24	20mm Gun, Inert	2,405	0
	25mm Gun, Inert	5,307	0
	Demolition, C4 1.25 lbs	2	0
Range 25	20mm Gun, Inert	500	0
	40mm Grenade, HE	1,014	0
	AT4 Rocket, HE	14	0
	Demolition, Chain 8 x 2.5 lb blocks	6	0
	SMAW Rocket, Inert	5	0
Range 28	AT4 Rocket, Inert	18	0
	Mine, M18A1	8	0
	RAAWS Rocket, Inert	17	0

Note: Inert is defined as any round that does not create noise upon impact.

Table C-2
Fort A.P. Hill Range Operations
Existing Small Caliber Weapon Expenditure

	PISTOL, 9 MM, LIVE	TRAINER AT4, 9MM TPT	RIFLE, 5.56 MM, LIVE	RIFLE, 5.56 MM, BLANK*	MACHINE GUN, 7.62 MM, LIVE	MACHINE GUN, .50 CAL, LIVE	MACHINE GUN, .50 CAL, BLANK*	SHOTGUN, 12 GAUGE
RANGE 1 CPCQ	X							
RANGE 2 CPQC	X							X
RANGE 3 MPMG			X		X	X		
RANGE 4 ZERO			X					
RANGE 5 MG ZERO					X	X		
RANGE 8 AFF			X					
RANGE 9 ZERO			X					
RANGE 10 KD			X		X	X	X	
RANGE 10A KD			X		X			
RANGE 14 ZERO			X					
RANGE 15 LIGHT AT		X						
RANGE 18 FM			X		X			
RANGE 19 MP		X	X		X	X		
RANGE 21 MP			X		X	X		
RANGE 23 ZERO			X					
RANGE 24 IPBC			X		X	X		
RANGE 25			X	X	X	X		
RANGE 26 IPBC			X		X	X		
RANGE 27 IPBC			X		X	X		
RANGE 28 IPBC			X		X	X		
RANGE 32 ARF			X	X				
RANGE 34 ARF			X					
RANGE 35 ZERO			X					
RANGE 37 AFF			X					
RANGE 38			X					
OP2			X			X		
OP5			X		X			

*BLANK: any cartridge containing propellant but no bullet.

Table C-3
Fort Lee Range Operations
Existing Small Caliber Weapon Expenditure

	PISTOL, 9 MM, LIVE	RIFLE, .270 CAL, LIVE	RIFLE, 30/30, LIVE	RIFLE, 5.56 MM, LIVE	SHOTGUN, 12 GAUGE
POW RANGE		X	X		X
RANGE 2				X	
RANGE 4				X	
RANGE 5	X				
RANGE 6	X				
SKEET & TRAP RANGE					X

Appendix D
Coastal Zone Management Act (CZMA)
Consistency Determination
For Fort Lee and Fort A.P. Hill
Proposed Implementation of BRAC

This document provides the Commonwealth of Virginia with the Fort Lee Consistency Determination under CZMA section 307(c) (1) and 15 CFR Part 930, sub-part C, for the implementation of BRAC actions at the installation. The information in this Consistency Determination is provided pursuant to 15 CFR section 930.39. The proposed action involves those activities described below.

[The following paragraphs of text summarize the proposed federal activity. A full description of the proposed activity may be found in the Environmental Impact Statement for the Implementation of the Base Realignment and Closure Commission's Recommendations at Fort Lee, Virginia, which is incorporated by reference into this Consistency Determination].

The proposed action is to implement the BRAC Commission's recommendations to realign Fort Lee. Implementing the BRAC Commission's recommendations would consist of three major components: (1) The BRAC Commission's recommendations would result in the relocation of approximately 7,700 additional personnel to Fort Lee, (2) additional facilities at both Fort Lee and Fort A.P. Hill would be constructed to accommodate relocated personnel and functions, and (3) the Army would conduct training and other operations at both Fort Lee and Fort A.P. Hill. Details of these components are provided in below.

The BRAC Commission made six recommendations concerning Fort Lee, which would be implemented under the proposed action as provided below.

- *Combat Service Support Center.* Fort Eustis, Virginia, would be realigned by relocating the Transportation Center and School to Fort Lee. Aberdeen Proving Ground, Maryland, would be realigned by relocating the Ordnance Mechanical Maintenance School of the Ordnance Center and School to Fort Lee. Redstone Arsenal, Alabama, would be realigned by relocating the Ordnance Munitions and Electronics Maintenance School of the Ordnance Center and School to Fort Lee. The Transportation Center and School and the Ordnance Center and School would be consolidated with the Quartermaster Center and School, the Army Logistic Management College, and Combined Arms Support Command to establish a Combat Service Support Center at Fort Lee.
- *Joint Center for Consolidated Transportation Management Training.* Lackland Air Force Base, Texas, would be realigned by relocating the Transportation Management training to Fort Lee.
- *Joint Center of Excellence for Culinary Training.* Lackland Air Force Base, Texas, would be realigned by relocating Culinary Training to Fort Lee, establishing it as a Joint Center of Excellence for Culinary Training.
- *Co-locate Miscellaneous DoD, Defense Agency, and Field Activity Leased Locations.* Metro Park III and IV (6350 and 6359 Walker Lane), a leased installation in Alexandria, Virginia, would be closed and the Defense Contract Management Agency (DCMA) Headquarters would be realigned to Fort Lee.
- *Consolidate Defense Commissary Agency Eastern, Midwestern Regional, and Hopewell, Virginia, Offices.* Defense Commissary Agency (DeCA) offices at 300 AFCOMS Way, a leased installation in San Antonio, Texas; 5258 Oaklawn Boulevard, a leased installation in Hopewell, Virginia; and 5151 Bonney Road, a leased installation in Virginia Beach, Virginia, would be closed and Headquarters components of DeCA would be relocated to Fort Lee.

- *Create Joint Mobilization Sites*. Fort Eustis, Virginia; Fort Jackson, South Carolina; and Fort Lee would be realigned by relocating all mobilization processing functions to Fort Bragg, North Carolina, designating it as Joint Pre-Deployment/Mobilization Site Bragg/Pope.

These recommendations would be implemented as described below.

FACILITIES

Implementation of the proposed action would require renovation of existing facilities and construction of new facilities to accommodate the influx of personnel and activities to Fort Lee. These facilities would support the new SCOE, U.S. Air Force (USAF) consolidated transportation management training (to include culinary training for Air Force and Navy personnel), the DeCA, the DCMA, and Warrior Training at Fort A.P. Hill.

A. Sustainment Center of Excellence

Facilities for the SCOE would require new construction and renovation amounting to 2.8 million square feet of space. In addition to the proposed built space, there would be 144,046 square yards (29.8 acres) of new surfaced parking lots for organizational and privately owned vehicles

B. Joint Culinary Center of Excellence and Consolidated Transportation Management Training

Under the proposed action, USAF culinary training would relocate from Lackland Air Force Base (AFB) and U.S. Navy (USN) culinary training would relocate from U.S. Naval Station Great Lakes to Fort Lee to establish a Joint Center for Culinary Training. In addition, Transportation Management training would relocate from Lackland AFB to Fort Lee. Facilities for these proposed relocations would require 277,495 square feet of built space and 19,800 square feet of tent pads for field culinary operations training at Fort Lee.

C. Defense Commissary Agency

Fort Lee proposes to construct a 71,000-square-foot addition to the existing DeCA Headquarters Building (Building 11200) and provide an additional 280,000 square feet (approximately 6.5 acres) of parking.

D. Defense Contract Management Agency

The 654 personnel of DCMA would occupy a renovated Building 10500, a 159,000-square-foot facility that now houses the CASCOM headquarters. CASCOM would relocate to Mifflin Hall (Building 5000), which would be renovated and expanded or demolished and reconstructed to provide a new SCOE Headquarters building.

E. Warrior Training, Fort A.P. Hill

The BRAC Commission found the capacity of Fort Lee sufficient to meet the new training requirements created by consolidating four schools onto the installation, except for insufficient land and space available to conduct Warrior Training involving heavy weapons and explosives. The Commission determined that the shortfall could be successfully mitigated by using nearby training sites at Fort Pickett. Further evaluation by the Army determined that Fort Pickett does not have suitable training areas or facilities and lacks schedule availability to support Warrior

Training for SCOE students. Accordingly, the Army selected Fort A.P. Hill to conduct Warrior Training, on the basis of its proximity to Fort Lee, its suitable lands, and its schedule availability.

Operations at Fort A.P. Hill would primarily involve field skills and technical training. Soldiers participating in training at Fort A.P. Hill would operate under the austere conditions of a logistics support area that would be established in the Pender Area (at the northern portion of the post) and at a range (located east of the impact area). Under the proposed action, structures and facilities installed at Fort A.P. Hill to accommodate the training would be minimal, and no permanent structures or facilities would be built.

TRAINING

CASCOM would provide students undergoing advanced individual training at Fort Lee with realistic field training in combat skills. The concept of operations for training at Fort A.P. Hill would involve transporting approximately 800 students and 80 noncommissioned officers of the Noncommissioned Officers Academy from Fort Lee to Fort A.P. Hill on Monday morning and their return to Fort Lee Thursday evening. During their 4-day stay at Fort A.P. Hill, all trainees would engage in intensive training for approximately 10 hours each day; they would then be quartered in SEAhuts or bivouac in general-purpose medium tents in the evenings. Training would involve military operations on urban terrain (MOUT) exercises, weapon and convoy live-fire exercises, patrolling, force protection, convoying, and technical training. Skills training in the field at Fort A.P. Hill would extend to select "warrior tasks" and "battle drills."

Training at Fort Lee would be predominantly indoors in classrooms, laboratories, simulators, and maintenance shops. Additional training would occur outdoors at Fort Lee's designated training areas. In addition to the off-post training that would occur at Fort A.P. Hill, there would be a limited amount of training at Fort Eustis, Virginia. This training, by personnel attending the Transportation Center and School, would involve using existing rail and maritime equipment at Fort Eustis. (Please refer to Section 4.0, Affected Environment and Consequences, for further discussion).

The Virginia Coastal Resources Management Program contains the applicable enforceable policies in the left column of the table below. Fort Lee has determined that the implementation of the BRAC Commission's recommendations would affect the land or water uses or natural resources of Virginia as described in the right column of the following table.

Based upon the information, data, and analysis, as contained in the EIS, Fort Lee finds that the proposed action is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Resources Management Program. Pursuant to 15 CFR section 930.41, the Virginia Coastal Resources Management Program has 60 days from the receipt of this document in which to concur with or object to this Consistency Determination, or to request an extension under 15 CFR section 930.41(b). Virginia's concurrence will be presumed if its response is not received by Fort Lee on the 60th day from receipt of this determination. The State's response should be sent to Ms. Carol Anderson, Fort Lee Environmental Management Office, IMNE-LEE-PWE, 1816 Shop Road, Fort Lee, Virginia, 23801.

Applicable Enforceable Policy	Effects of the Federally Proposed Action
Fisheries Management The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (Virginia Code '28.2-200 to '28.2-713) and the Department of Game and Inland Fisheries (Virginia Code '29.1-100 to '29.1-570). The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The MRC, DGIF, and VDACS share enforcement responsibilities (Virginia Code '3.1-249.59 to '3.1-249.62).	**NO EFFECT** The proposed action would not involve building, dumping, or otherwise trespassing on or over, encroaching on, taking or using any material from the beds of the bays, ocean, rivers, streams, or creeks within Virginia. The proposed action would not have a reasonably foreseeable effect on fish spawning, nursery, or feeding grounds, and therefore none on fisheries management per the Virginia Marine Resources Commission and the Department of Game and Inland Fisheries. No paints containing Tributyltin will be used under this proposed action.
Subaqueous Lands Management The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality, Water Division. The program is administered by the Marine Resources Commission (Virginia Code '28.2-1200 to '28.2-1213).	**NO EFFECT** No subaqueous land use is proposed under this action. This project involves no encroachments in, on, or over state-owned submerged lands.
Wetlands Management The purpose of the wetlands management program is to preserve tidal wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation. (i) The tidal wetlands program is administered by the Marine Resources Commission (Virginia Code §28.2-1301 through '28.2-1320). (ii) The Virginia Water Protection Permit program administered by the Department of Environmental Quality includes protection of	**NO EFFECT** The proposed action would not affect any tidal wetlands at either Fort Lee or Fort A.P. Hill. It is unlikely that the proposed action would require a Virginia Water Protection Permit as it does not propose to conduct any of the following activities in a wetland: 1. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions. 2. Filling or dumping.

wetlands --both tidal and non-tidal. This program is authorized by Virginia Code § 62.1-44.15.5 and the Water Quality Certification requirements of Section 401 of the Clean Water Act of 1972.	3. Permanent flooding or impounding. 4. New activities that cause significant alteration or degradation of existing wetland acreage or functions. During the course of the proposed action, however, if it became evident that an impact would occur, then the installation would apply for a VWP permit prior to commencing the activity. Additionally, the installation would prepare and adhere to an Erosion and Sediment Control Plan to prevent sedimentation from entering surface waters (see non-point source pollution control section below).
Dunes Management Dune protection is carried out pursuant to The Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission (Virginia Code '28.2-1400 through '28.2-1420).	**NO EFFECT** No permanent alteration of or construction upon any coastal primary sand dune will take place under the proposed action.
Non-point Source Pollution Control Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by the Department of Conservation and Recreation (Virginia Code'10.1-560 et seq.).	**NO EFFECT** The proposed action would require a substantial amount of ground disturbance for facility construction. Fort Lee is developing an Integrated Storm Water Pollution Prevention Plan (SWPPP) that will be used to comprehensively manage storm water protection efforts and implement effective storm water controls. This general SWPPP will provide information regarding all storm water-related activities, NPDES permit requirements, and the requirements that pertain to each portion of the program. Site-specific storm water plans developed by the construction contractors will provide information relevant to each activity. These plans will become temporary additions to the SWPPP for the duration of the activity.
Point Source Pollution Control The point source program is administered by the State Water Control Board pursuant to Virginia Code '62.1-44.15. Point source pollution control is accomplished through the implementation of the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to Section 402 of the federal Clean Water Act and administered in Virginia as the VPDES permit program.	**NO EFFECT** Fort Lee holds the following NDPES permits: Wastewater treament for mobile reverse osmosis water purification units, MS4, general permit for storm water discharges from construction sites, and general permit for storm water discharges associated with industrial activity. Fort A.P. Hill holds the following NPDES permits: Two wastewater treatment plant permits, POL industrial general permit, and a general permit for storm water discharges from construction sites. Both installations would work with VDEQ to revise the permits as necessary as the BRAC program was implemented, and both installations would adhere to all conditions of their respective permits.

Shoreline Sanitation The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code '32.1-164 through '32.1-165).	**NO EFFECT** Septic systems on Fort Lee would not be affected by the proposed action. A septic system at Pender Camp in Fort A.P. Hill would be used during training activities and would be maintained and pumped in accordance with specifications. The septic field is not close to streams, rivers, or other waters of the Commonwealth, and no adverse effects on Commonwealth waters would result from use of the system.
Air Pollution Control The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code '10-1.1300).	**NO EFFECT** The estimated emissions from the Preferred Alternative would exceed the *de minimis* threshold values during the calendar years 2008 through 2012. A conformity determination will be prepared and placed in the EIS as an appendix. The conformity determination will outline the ways that the proposed action does not increase the frequency or severity of any existing violation of any standard in AQCR 225, cause or contribute to any new violations of a standards in AQCR 225, or delay timely attainment of any standard or any required interim emission reductions or other milestones in AQCR 225.
Coastal Lands Management A state-local cooperative program administered by the Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act; Virginia Code §§ 10.1-2100 through 10.1-2114 and Chesapeake Bay Preservation Area Designation and Management Regulations; Virginia Administrative code 9 VAC10-20-10 et seq.	**NO EFFECT** Buffer areas of not less than 100 feet adjacent to and landward of the components listed in 9 VAC 10-20-80 Resource Protection Areas would be adhered to. Best management practices (BMPs) will be developed and implemented in accordance with the NPDES SWPPP. Fort Lee is developing an Integrated Storm Water Pollution Prevention Plan (SWPPP) that will be used to comprehensively manage storm water protection efforts and implement effective storm water controls. Site-specific storm water plans will be developed by the construction contractors.

APPENDIX E
ECONOMIC IMPACT FORECAST SYSTEM (EIFS) MODEL ANALYSES FOR FORT LEE, VIRGINIA AND FORT A.P. HILL, VIRGINIA

APPENDIX E

ECONOMIC IMPACT FORECAST SYSTEM (EIFS) MODEL ANALYSIS FOR FORT LEE, VIRGINIA

Socioeconomic Impact Assessment

Socioeconomic impacts are linked through cause-and-effect relationships. Military payrolls and local procurement contribute to the economic base for the ROI. In this regard, base realignment at Fort Lee would have a multiplier effect on the local and regional economy. With the proposed action, direct jobs would be created, generating new income and increasing personal spending. This spending generally creates secondary jobs, increases business volume, and increases revenues for schools and other social services.

The Economic Impact Forecast System

The U.S. Army, with the assistance of academic and professional economists and regional scientists, developed EIFS to address the economic impacts of NEPA-requiring actions and to measure their significance. As a result of its designed applicability, and in the interest of uniformity, EIFS should be used in NEPA assessments for RCI. The entire system is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand but still have firm, defensible bases in regional economic theory.

EIFS was developed under a joint project of the U.S. Army Corps of Engineers, the U.S. Army Environmental Policy Institute, and the Computer and Information Science Department of Clark Atlanta University. EIFS is implemented as an online system supported by the U.S. Army Corps of Engineers, Mobile District. The system is available to anyone with an approved user-ID and password. U.S. Army Corps of Engineers staff are available to assist with the use of EIFS.

The databases in EIFS are national in scope and cover the approximately 3,700 counties, parishes, and independent cities that are recognized as reporting units by federal agencies. EIFS allows the user to define an economic ROI by identifying the counties, parishes, or cities to be analyzed. Once the ROI is defined, the system aggregates the data, calculates multipliers and other variables used in the various models in EIFS, and prompts the user for forecast input data.

The EIFS Model

The basis of the EIFS analytical capabilities is the calculation of multipliers that are used to estimate the impacts resulting from Army-related changes in local expenditures or employment. In calculating the multipliers, EIFS uses the economic base model approach, which relies on the ratio of total economic activity to basic economic activity. Basic, in this context, is defined as the production or employment engaged to supply goods and services outside the ROI or by federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to basic income is measurable (as the multiplier) and sufficiently stable so that future changes in economic activity can be forecast. This technique is especially appropriate for estimating aggregate impacts and makes the economic base model ideal for the EA and EIS process.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its base sector; for example, a dollar increase in local expenditures due to an expansion of its military installation. EIFS estimates its multipliers using a location quotient approach on the basis of the concentration of industries within the region relative to the industrial concentrations for the nation.

The user inputs into the EIFS model the data elements that describe the Army action: definition of the ROI; the change in local procurement, contracting, and purchases; number of affected (moving) civilian personnel and their salaries; number of affected (moving) military employees and their salaries; and the percent of affected military living on-post.

The proposed realignment action at Fort Lee would result in a net increase of about 6,000 military personnel (permanent party and students) and about 2,123 civilian personnel (civilian employees and contractors). Average annual income for the military personnel was estimated at $30,000, and average annual income for civilian personnel was about $45,000 (Webster 2005). About 40 percent of military personnel can live on-post. On the basis of the more urban or suburban nature of the area surrounding Fort Lee, the available labor force, and unemployment rates, it was estimated that 50 percent of the new jobs created would require the relocation of civilians from outside the area.

Implementation of the proposed realignment action also would require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Lee. Renovation and construction of facilities would begin about 2007 and be completed by 2011 (5 years), with all new incoming personnel arriving by 2011. The current working estimate for the cost of renovation and construction of facilities ($1,093.8 million) was divided over the 5-year development period and input into the EIFS model as the change in expenditures ($380,767,600 per year) (Fort Lee 2006b).

Once the input variables are entered into the EIFS model, the model is run and projects changes to the local economy's business sales volume, income, employment, and population—the four indicator variables are used to measure and evaluate socioeconomic impacts. Sales volume is the direct and indirect change in local business activity and sales (total retail and wholesale trade sales, total selected service receipts, and value-added by manufacturing). Employment is the total change in local employment due to the proposed action, including not only the direct and secondary changes in local employment, but also those personnel who are initially affected by the military action. Income is the total change in local wages and salaries due to the proposed action, which includes the sum of the direct and indirect wages and salaries, plus the income of the civilian and military personnel affected by the proposed action. Population is the increase or decrease in the local population as a result of the proposed action.

The Significance of Socioeconomic Impacts

Once model projections are obtained, the RTV profile allows the user to evaluate the significance of the impacts. This analytical tool reviews the historical trends for the defined region and develops measures of local historical fluctuations in sales volume, income, employment, and population. These evaluations identify the positive and negative changes within which a project can affect the local economy without creating a significant impact. The greatest historical changes define the boundaries that provide a basis for comparing an action's impact on the historical fluctuation in an area. Specifically, EIFS sets the boundaries by multiplying the maximum historical deviation of the following variables:

		Increase	Decrease
Sales volume	X	100%	75%
Income	X	100%	67%
Employment	X	100%	67%
Population	X	100%	50%

These boundaries determine the amount of change that will affect an area. The percentage allowances are arbitrary, but sensible. The maximum positive historical fluctuation is allowed with expansion because economic growth is beneficial. While cases of damaging economic growth have been cited, and although the zero-growth concept is being accepted by many local planning groups, military base reductions and closures generally are more injurious to local economics than are expansion.

The major strengths of the RTV are its specificity to the region under analysis and its basis on actual historical data for the region. The EIFS impact model, in combination with the RTV, has proven successful in addressing perceived socioeconomic impacts. The EIFS model and the RTV technique for measuring the intensity of impacts have been reviewed by economic experts and have been deemed theoretically sound.

The following are the EIFS inputs and output data and the RTV values for the Fort Lee ROI. These data form the basis for the socioeconomic impact analysis presented in Section 4.1.9.2.1.

EIFS REPORT

PROJECT NAME

Fort Lee BRAC EIS

STUDY AREA

51041	Chesterfield County, VA
51053	Dinwiddie County, VA
51149	Prince George County, VA
51570	Colonial Heights, VA
51670	Hopewell, VA
51730	Petersburg, VA
51760	Richmond, VA

FORECAST INPUT

Change In Local Expenditures	$380,767,600
Change In Civilian Employment	2,123
Average Income of Affected Civilian	$45,000
Percent Expected to Relocate	50
Change In Military Employment	6,001
Average Income of Affected Military	$30,000
Percent of Military Living On-post	40

FORECAST OUTPUT

Employment Multiplier	3.69	
Income Multiplier	3.69	
Sales Volume – Direct	$427,084,800	
Sales Volume – Induced	$1,148,858,000	
Sales Volume – Total	$1,575,943,000	7.12%
Income – Direct	$336,107,600	
Income - Induced	$250,577,500	
Income – Total (place of work)	$586,685,100	3.81%
Employment – Direct	10,308	
Employment – Induced	5,876	
Employment – Total	16,184	4.12%
Local Population	17,586	
Local Off-base Population	11,609	3.05%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	13.54%	12.18%	4.09%	1.59%
Negative RTV	-6.83%	-5.11%	-2.82%	-1.02%

RTV DETAILED

SALES VOLUME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1805614	7890533	0	0	0
1970	1935021	7991637	101104	-92581	-1.16
1971	2096110	8300596	308959	115274	1.39
1972	2310908	8850777	550182	356497	4.03
1973	2568356	9271765	420987	227302	2.45
1974	2838368	9224696	-47069	-240754	-2.61
1975	3058466	9114229	-110467	-304152	-3.34
1976	3375248	9518199	403970	210285	2.21
1977	3747683	9893884	375684	181999	1.84
1978	4207460	10350352	456468	262783	2.54
1979	4648822	10273897	-76455	-270140	-2.63
1980	5132967	9957956	-315941	-509626	-5.12
1981	5592828	9843377	-114579	-308264	-3.13
1982	5982034	9930176	86799	-106886	-1.08
1983	6322131	10178631	248455	54770	0.54
1984	6829634	10517636	339005	145320	1.38
1985	7344574	10943415	425779	232094	2.12
1986	7880860	11506056	562641	368956	3.21
1987	8730288	13531946	2025890	1832205	13.54
1988	9250229	12580312	-951634	-1145319	-9.1
1989	9727856	12548934	-31378	-225063	-1.79
1990	10087709	12407882	-141052	-334737	-2.7
1991	10198685	12034448	-373434	-567119	-4.71
1992	10632909	12121516	87068	-106617	-0.88
1993	10954770	12159795	38279	-155406	-1.28
1994	11381687	12292222	132428	-61257	-0.5
1995	11843273	12435436	143214	-50471	-0.41
1996	12302126	12548168	112732	-80953	-0.65
1997	12988494	12988494	440326	246641	1.9
1998	13687292	13413546	425052	231367	1.72
1999	14300275	13728264	314717	121032	0.88
2000	15148869	14088448	360185	166500	1.18

INCOME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1680741	7344838	0	0	0
1970	1772501	7320429	-24409	-323356	-4.42
1971	1928148	7635466	315037	16090	0.21
1972	2105178	8062832	427365	128418	1.59
1973	2326189	8397542	334710	35763	0.43
1974	2603230	8460498	62955	-235992	-2.79
1975	2914989	8686667	226170	-72777	-0.84
1976	3231601	9113115	426447	127500	1.4
1977	3617978	9551462	438348	139401	1.46
1978	4093742	10070605	519143	220196	2.19
1979	4651949	10280807	210202	-88745	-0.86
1980	5254586	10193897	-86910	-385857	-3.79
1981	5856409	10307280	113383	-185564	-1.8
1982	6303552	10463896	156616	-142331	-1.36
1983	6765716	10892803	428907	129960	1.19
1984	7395696	11389372	496569	197622	1.74
1985	7890649	11757067	367696	68749	0.58
1986	8469100	12364886	607819	308872	2.5
1987	9303834	14420942	2056056	1757109	12.18
1988	10056271	13676529	-744414	-1043361	-7.63
1989	10945198	14119305	442776	143829	1.02
1990	11467266	14104737	-14568	-313515	-2.22
1991	11717888	13827107	-277630	-576577	-4.17
1992	12378037	14110962	283855	-15092	-0.11
1993	12881304	14298248	187286	-111661	-0.78
1994	13535412	14618246	319998	21051	0.14
1995	14037314	14739179	120933	-178014	-1.21
1996	14616939	14909278	170098	-128849	-0.86
1997	15417300	15417300	508022	209075	1.36
1998	16312521	15986271	568971	270024	1.69
1999	17053067	16370944	384673	85726	0.52
2000	18184009	16911129	540185	241238	1.43

EMPLOYMENT

Year	Value	Change	Deviation	%Deviation
1969	287191	0	0	0
1970	288020	829	-2851	-0.99
1971	290715	2695	-985	-0.34
1972	299110	8395	4715	1.58
1973	315701	16591	12911	4.09
1974	324635	8934	5254	1.62
1975	319690	-4945	-8625	-2.7
1976	324953	5263	1583	0.49
1977	332184	7231	3551	1.07
1978	342708	10524	6844	2
1979	348113	5405	1725	0.5
1980	347312	-801	-4481	-1.29
1981	343613	-3699	-7379	-2.15
1982	340944	-2669	-6349	-1.86
1983	341549	605	-3075	-0.9
1984	346202	4653	973	0.28
1985	356932	10730	7050	1.98
1986	365480	8548	4868	1.33
1987	379460	13980	10300	2.71
1988	380339	879	-2801	-0.74
1989	382612	2273	-1407	-0.37
1990	383201	589	-3091	-0.81
1991	371240	-11961	-15641	-4.21
1992	371765	525	-3155	-0.85
1993	372156	391	-3289	-0.88
1994	379632	7476	3796	1
1995	382198	2566	-1114	-0.29
1996	386493	4295	615	0.16
1997	392409	5916	2236	0.57
1998	394000	1591	-2089	-0.53
1999	398127	4127	447	0.11
2000	404966	6839	3159	0.78

POPULATION

Year	Value	Change	Deviation	%Deviation
1969	455557	0	0	0
1970	454652	-905	-5076	-1.12
1971	458141	3489	-682	-0.15
1972	453005	-5136	-9307	-2.05
1973	459374	6369	2198	0.48
1974	456103	-3271	-7442	-1.63
1975	458691	2588	-1583	-0.35
1976	465887	7196	3025	0.65
1977	477646	11759	7588	1.59
1978	479723	2077	-2094	-0.44
1979	486472	6749	2578	0.53
1980	491603	5131	960	0.2
1981	497544	5941	1770	0.36
1982	498835	1291	-2880	-0.58
1983	500629	1794	-2377	-0.47
1984	502087	1458	-2713	-0.54
1985	506515	4428	257	0.05
1986	512606	6091	1920	0.37
1987	519730	7124	2953	0.57
1988	525234	5504	1333	0.25
1989	530778	5544	1373	0.26
1990	541444	10666	6495	1.2
1991	547324	5880	1709	0.31
1992	556240	8916	4745	0.85
1993	561836	5596	1425	0.25
1994	566126	4290	119	0.02
1995	566983	857	-3314	-0.58
1996	569890	2907	-1264	-0.22
1997	576511	6621	2450	0.42
1998	582188	5677	1506	0.26
1999	585920	3732	-439	-0.07
2000	589042	3122	-1049	-0.18

****** End of Report ******

ECONOMIC IMPACT FORECAST SYSTEM (EIFS) MODEL ANALYSIS FOR FORT A.P. HILL

The proposed realignment action at Fort Lee would result in increased training activity at Fort A.P. Hill. About 900 troops (about 800 students and about 80 instructors) could be bused from Fort Lee to Fort A.P. Hill each Monday for intensive training, and they would return to Fort Lee on Thursday. Because no planning charettes have been held and no funding has been secured for the proposed activity at Fort A.P. Hill, a best-guess estimation was made regarding the facilities and additional personnel that would be needed to support the new training activity and the cost of these facilities. The following facilities and structures could be constructed on Fort A.P. Hill in the Pender Camp area and Training Areas 26 and 27 (for more information, see Section 2.2.2): barracks, dining hall, administrative facility, classrooms or labs, multipurpose shelter, warehouse shelter, SEAhuts, military operations and urban terrain facilities, contemporary operational environmental village, demolition ranges, security tower and wall, fencing, bleachers, C-17 mock-up, concrete and cement pads for tents and ammunition, staging areas for ammunition transfer holding point and parking lot, and an M-16 zero range. It was also estimated that an additional 50 full-time civilian employees could be needed at Fort A.P. Hill to handle the increased workload.

The cost of these proposed facilities is unknown. As mentioned earlier, no planning charettes have been held, and no funding has been officially estimated or authorized. Therefore, a total cost range of $8 to $35 million was estimated. These low- and high-end estimates for the cost of the construction of the facilities were divided over the 5-year development period (2007 through 2011) and input into the EIFS model as the change in expenditures ($1.6 million per year for the low end estimate and $7 million per year for the high end estimate). It also was estimated that the proposed action would require 50 full-time civilian personnel to be hired. The ROI's per capita personal income of $31,500 was input as the income for these personnel. On the basis of the available labor force in the ROI, it is assumed that all 50 positions could be filled by persons already living in the region.

The following are the EIFS inputs and output data and the RTV values for the Fort A.P. Hill ROI. These data form the basis for the socioeconomic impact analysis presented in Section 4.2.9.2.1.

EIFS REPORT

PROJECT NAME

Fort A.P. Hill – Low Estimate

STUDY AREA

51033 Caroline County, VA
51057 Essex County, VA
51099 King George County, VA
51177 Spotsylvania County, VA
51179 Stafford County, VA
51630 Fredericksburg City, VA

FORECAST INPUT

Change In Local Expenditures	$1,600,000
Change In Civilian Employment	50
Average Income of Affected Civilian	$31,500
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	2.6	
Income Multiplier	2.6	
Sales Volume – Direct	$2,866,300	
Sales Volume – Induced	$4,586,080	
Sales Volume – Total	$7,452,380	0.10%
Income – Direct	$1,823,412	
Income - Induced	$712,022	
Income – Total (place of work)	$2,535,433	0.05%
Employment – Direct	61	
Employment – Induced	18	
Employment – Total	79	0.08%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	12.61%	11.46%	4.21%	3.40%
Negative RTV	-9.02%	-7.47%	-6.18%	-2.46%

PROJECT NAME

Fort A.P. Hill – High Estimate

STUDY AREA

51033 Caroline County, VA
51057 Essex County, VA
51099 King George County, VA
51177 Spotsylvania County, VA
51179 Stafford County, VA
51630 Fredericksburg City, VA

FORECAST INPUT

Change In Local Expenditures	$7,000,000
Change In Civilian Employment	50
Average Income of Affected Civilian	$31,500
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	2.6	
Income Multiplier	2.6	
Sales Volume – Direct	$8,266,300	
Sales Volume – Induced	$13,226,080	
Sales Volume – Total	$21,492,380	0.28%
Income – Direct	$2,661,800	
Income - Induced	$2,053,444	
Income – Total (place of work)	$4,715,244	0.09%
Employment – Direct	83	
Employment – Induced	52	
Employment – Total	135	0.13%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	12.61%	11.46%	4.21%	3.40%
Negative RTV	-9.02%	-7.47%	-6.18%	-2.46%

RTV DETAILED

SALES VOLUME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	176114	769618	0	0	0
1970	183489	757810	-11809	-91078	-12.02
1971	212074	839813	82003	2734	0.33
1972	235964	903742	63929	-15340	-1.7
1973	264558	955054	51312	-27957	-2.93
1974	294792	958074	3020	-76249	-7.96
1975	319465	952006	-6068	-85337	-8.96
1976	365043	1029421	77416	-1853	-0.18
1977	408228	1077722	48301	-30968	-2.87
1978	454405	1117836	40114	-39155	-3.5
1979	508016	1122715	4879	-74390	-6.63
1980	558178	1082865	-39850	-119119	-11
1981	659034	1159900	77034	-2235	-0.19
1982	706771	1173240	13340	-65929	-5.62
1983	801694	1290727	117488	38219	2.96
1984	936549	1442285	151558	72289	5.01
1985	1036467	1544336	102050	22781	1.48
1986	1163989	1699424	155088	75819	4.46
1987	1313191	2035446	336022	256753	12.61
1988	1446070	1966655	-68791	-148060	-7.53
1989	1591680	2053267	86612	7343	0.36
1990	1665147	2048131	-5136	-84405	-4.12
1991	1698505	2004236	-43895	-123164	-6.15
1992	1789483	2040011	35775	-43494	-2.13
1993	1934343	2147121	107110	27841	1.3
1994	2113964	2283081	135960	56691	2.48
1995	2257804	2370694	87613	8344	0.35
1996	2420927	2469345	98651	19382	0.78
1997	2677896	2677896	208551	129282	4.83
1998	2883151	2825488	147592	68323	2.42
1999	3230262	3101051	275563	196294	6.33
2000	3555078	3306223	205171	125902	3.81

INCOME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	272082	1188998	0	0	0
1970	295451	1220213	31214	-136004	-11.15
1971	354289	1402984	182772	15554	1.11
1972	412015	1578017	175033	7815	0.5
1973	475902	1718006	139989	-27229	-1.58
1974	545664	1773408	55402	-111816	-6.31
1975	610338	1818807	45399	-121819	-6.7
1976	695533	1961403	142596	-24622	-1.26
1977	782490	2065774	104371	-62847	-3.04
1978	908636	2235245	169471	2253	0.1
1979	1019327	2252713	17468	-149750	-6.65
1980	1181326	2291773	39060	-128158	-5.59
1981	1362448	2397908	106136	-61082	-2.55
1982	1487122	2468622	70714	-96504	-3.91
1983	1655220	2664904	196282	29064	1.09
1984	1895337	2918819	253915	86697	2.97
1985	2084045	3105227	186408	19190	0.62
1986	2312157	3375749	270522	103304	3.06
1987	2581719	4001664	625915	458697	11.46
1988	2858137	3887066	-114598	-281816	-7.25
1989	3161556	4078407	191341	24123	0.59
1990	3363361	4136934	58527	-108691	-2.63
1991	3479332	4105612	-31323	-198541	-4.84
1992	3720071	4240881	135269	-31949	-0.75
1993	4002862	4443177	202296	35078	0.79
1994	4342690	4690105	246929	79711	1.7
1995	4625649	4856931	166826	-392	-0.01
1996	4997876	5097833	240902	73684	1.45
1997	5478586	5478586	380753	213535	3.9
1998	5802017	5685977	207391	40173	0.71
1999	6314821	6062228	376251	209033	3.45
2000	7032229	6539973	477745	310527	4.75

EMPLOYMENT

Year	Value	Change	Deviation	%Deviation
1969	31157	0	0	0
1970	31058	-99	-2863	-9.22
1971	33486	2428	-336	-1
1972	35544	2058	-706	-1.99
1973	37640	2096	-668	-1.77
1974	39164	1524	-1240	-3.17
1975	39610	446	-2318	-5.85
1976	41601	1991	-773	-1.86
1977	43671	2070	-694	-1.59
1978	45209	1538	-1226	-2.71
1979	46327	1118	-1646	-3.55
1980	46981	654	-2110	-4.49
1981	49645	2664	-100	-0.2
1982	49966	321	-2443	-4.89
1983	52658	2692	-72	-0.14
1984	55968	3310	546	0.98
1985	59700	3732	968	1.62
1986	63554	3854	1090	1.72
1987	69236	5682	2918	4.21
1988	70981	1745	-1019	-1.44
1989	75511	4530	1766	2.34
1990	78608	3097	333	0.42
1991	78619	11	-2753	-3.5
1992	80968	2349	-415	-0.51
1993	84447	3479	715	0.85
1994	90186	5739	2975	3.3
1995	94107	3921	1157	1.23
1996	97918	3811	1047	1.07
1997	102768	4850	2086	2.03
1998	107876	5108	2344	2.17
1999	114330	6454	3690	3.23
2000	119604	5274	2510	2.1

POPULATION

Year	Value	Change	Deviation	%Deviation
1969	83924	0	0	0
1970	85040	1116	-4182	-4.92
1971	88326	3286	-2012	-2.28
1972	91438	3112	-2186	-2.39
1973	95214	3776	-1522	-1.6
1974	100654	5440	142	0.14
1975	105275	4621	-677	-0.64
1976	109665	4390	-908	-0.83
1977	116097	6432	1134	0.98
1978	122215	6118	820	0.67
1979	126221	4006	-1292	-1.02
1980	128183	1962	-3336	-2.6
1981	130530	2347	-2951	-2.26
1982	132895	2365	-2933	-2.21
1983	135418	2523	-2775	-2.05
1984	139020	3602	-1696	-1.22
1985	142675	3655	-1643	-1.15
1986	147537	4862	-436	-0.3
1987	153858	6321	1023	0.66
1988	162105	8247	2949	1.82
1989	171004	8899	3601	2.11
1990	182501	11497	6199	3.4
1991	189173	6672	1374	0.73
1992	196328	7155	1857	0.95
1993	203851	7523	2225	1.09
1994	212231	8380	3082	1.45
1995	219267	7036	1738	0.79
1996	226890	7623	2325	1.02
1997	232184	5294	-4	0
1998	237387	5203	-95	-0.04
1999	244665	7278	1980	0.81
2000	253474	8809	3511	1.39

****** End of Report ******

Appendix F
Ordnance Munitions Electronic Maintenance School
HMWMS Inventory

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
0110 ZEPYNAMIC A HOSPITAL DISINFECTANT - 20 oz each	240	oz	12
0135 FLUSH'N KILL INSECTICIDE - 22.5 oz each	540	oz	24
0-238 LUBRICATING OIL ENGINE GRADE30	1	qt	
0455 ZEP CITRUS CLEANER	1	gal	
0470 ALUMINUM - 1 gal each	2	gal	2
0812 ZEP COMMERCIAL FLOOR FINISH FOR HIGH TRAFFIC FLOORS -5 gal each	10	gal	2
1,1,1 TRICHLOROETHANE, TECH (O-T-620C) - 12 oz each	48	oz	4
100% MINERAL SPIRITS PAINT THINNER - 1 gal each	2	gal	2
100% SILICONE RTV ADHESIVE SEALANT TYPE I PSI 601CL	268.8	oz	96
10005 WASP & HORNET KILLER II	410	oz	20
10917 ARMOR ALL CLEANING WIPES	2	lb	4
10W30 MOTOR OIL	1	qt	
1133 ZEP VANTIO (NO. 1455 DETERGENT)	26	lb	4
12 YEAR INTERIOR FLAT ANTIQUE WHITE 49201	5	gal	
12 YEAR INTERIOR SEMI-GLOSS WHITE 1358	5	gal	3
1210 FIRE HYDRANT RED	1	gal	
1210-0150 ULTRA-HIDE LATEX FLAT INTERIOR WHITE TINT BASE	124	fluid oz	
1260-0110 UH AIRLESS HIGH-BUILD FLAT INT/EXT WHITE BASE	4	gal	
1315 KRYLON SANDABLE PRIMER, WHITE PRIMER	12	oz	
1317 KRYLON SANDABLE PRIMER, RUDDY BROWN 1317	12	oz	
1318 KRYLON SPRAY PRIMER SANDABLE GRAY	12	oz	3
1400 PURE WHITE BASE UNTINTED	5	gal	2
140-0506 SUPERACRYLIC CONTROLS RUST ENAMEL, HARD GLOSS BLACK	12	oz	
140-0571 SUPERACRYLIC CONTROLS RUST GLOSS YELLOW	12	oz	4
1412-0300 UH LATEX EGGSHELL INT WALL & TRIM, INTERMEDIATE	118	fluid oz	
1416-0300 UH LATEX SEMI-GLOSS INTERMEDIATE TINT BASE	5	gal	
1506 KRYLON INTERIOR/EXTERIOR PAINT, ALMOND	12	oz	
15W40 MOTOR OIL 60018	11	qt	11
1602 KRYLON INTERIOR EXTERIOR ULTRA FLAT BLACK	12	oz	
1608 LAURA ASHLEY PAINT	1	gal	
1613 KRYLON INT/EXT ENAMEL SEMI FLAT BLACK	12	fluid oz	5
1654 FLUORESCENT ORANGE INDUSTRIAL CHOICE SPRAY PAINT	11	oz	2
1656 ORANGE FLUORESCENT SPRAY PAINT	132	oz	12
1910 KRYLON INT/EXT ENAMEL TRUE BLUE	12	oz	
1955 PAINTER'S TOUCH RED-ORANGE FLUORESCENT SPRAY	11	oz	
1979 GLOSS BLACK PAINTERS TOUCH (NON-AEROSOL)	32	fluid oz	2
2 CYCLE OIL	16	oz	2
2 STROKE ENGINE OIL	2.6	fluid oz	
2 STROKE ENGINE OIL	13	fluid oz	3
20013 BRAKE FLUID OZ GOLD PREMIUM HEAVY DUTY	12	fluid oz	
2016 KRYLON INT/EXT EMERALD GREEN	12	oz	

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
206286 BLUE BASE AMERICAN TRADITIONS	29	fluid oz	
222140 GLOSS WHITE HIGH GLOSS ENAMEL PAINT	1	gal	
2358 RED-ORANGE FLUORESCENT HARD HAT MARKING SPRAY PAINT	121	oz	11
2416-0110 WHITE TINT BASE	4	gal	
2416-0110 WHITE TINT BASE	4	gal	
2416-0400 UH DURUS ACRYLIC EXTERIOR TINT BASE	4	gal	4
242 THREADLOCKER P/N 24231	50	mm	2
2516-0100 ULTRA HIDE ALKYD SEMI-GLOSS FINISH EXT. WHITE	1	gal	
2516-0400 ULTRA-HIDE DURUS ALKYD EXT S/G DEEP TINT BASE	1	gal	2
2518-0400 DEEP TINT BASE	1	gal	
2593 WHITE MARKING PAINT	18	fluid oz	6
26843 AMERICAN TRADITIONS PLASTIC ENAMEL SUNSHINE YELLOW	12	oz	3
27208 AMERICAN TRADITIONS PLASTIC ENAMEL LANDSCAPE GREEN	12	oz	4
282 ROSIN FLUX CORED SOLDER	1	lb	2
28860 GLOSS ENAMEL - LATEX BLACK	12	oz	
30-30 INTERIOR FIRE RESISTANT PAINT	1	pint	
32184 COLOR PLACE FLAT WHITE SPRAY ENAMEL PAINT	40	oz	4
32252 COLOR PLACE BLACK SPRAY ENAMEL PAINT (20004)	10	oz	
3543 KRYLON INT/EXT PAINT, CELERY	12	oz	
3712-33-1 CALIBRATING FLUID OZ 1290	500	mm	
3712-33-1 CALIBRATING FLUID OZ 1290	8	fluid oz	
3-IN-ONE HOUSEHOLD OIL/MULTI-PURPOSE OIL	3	fluid oz	
3M BRAND DESK AND OFFICE CLEANER 573	15	oz	
4020-1000 FLEXIBLE ACRYLIC ADHESION DEVFLEX FLAT WHITE	18.62	liter	
40237 WHITE AMERICAN TRADITION SEMI-GLOSS ENAMEL	1	gal	
40240 AMERICAN TRADITION SEMI-GLOSS ENAMEL BASE 4	1	gal	
41539 OLYMPIC OIL BASED WOOD STAIN DRIFTWOOD	0.5	pint	
42096 OUTERS SPORTSMEN GUN OIL	5	gal	
42150 OLYMPIC ONE STEP SATIN HONEY OAK	5	qt	5
4308-0300 DEVGUARD INTERMEDIATE TINT BASE IND ENAMEL	122	fluid oz	2
4308-6650 ALKYD INDUSTRIAL GLOSS ENAMEL MEDIUM GREEN	1	gal	
4308-7460 DEVOE COATINGS DEVGUARD ARCHITECT BROWN	1	gal	
4308-9400 DEVOE DEVGUARD SAFETY YELLOW	1	gal	
44912 ALEX ULTRA WINDOWS, DOORS, TRIM, SIDING AND MOLDING	60.6	oz	6
449GS BASE LATEX TEXTURE SMOOTH PAINT	20	gal	4
4670 ACCENT BASE PREMIUM PAINT	5	gal	
47009 OUTERS NITRO POWDER SOLVENT	5	gal	
47543 WHITE SEVERE WEATHER EXTERIOR LATEX SEMI-GLOSS	5	gal	
48233 AMERICAN TRADITIONS OIL PORCH AND FLOOR BASE	116	fluid oz	
48233 AMERICAN TRADITIONS OIL PORCH AND FLOOR BASE	1	gal	3
4830 WHITE PRIMER	4.5	gal	
49816 WHITE AMERICAN TRADITION INT/EXT PORCH & FLOOR ENAMEL	10	gal	10
49818 AMERICAN TRADITIONS LATEX FLOOR BASE 4	3.43	liter	
51007 ANTI-SEIZE LUBRICANT	1	lb	

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
51048 MOLY PASTE	8	oz	
5135 PRO 1000 4:1 CLEARCOAT	1	gal	
5239 FLOOR STRIPPER	13	gal	13
52580 FIRE TRUCK RED ENAMEL	36	oz	3
5340 PREMIUM PLUS EXTERIOR SEMI-GLOSS DEEP BASE	5	gal	
5440 INTERIOR LATEX SEMI-GLOSS WALL & TRIM LIGHT BASE	1	gal	
5468 COLORPLACE INTERIOR LATEX PRIMER SEALER, WHITE	1	gal	
5468 COLORPLACE INTERIOR LATEX PRIMER SEALER, WHITE	5	gal	
550 REMARKABLE MARKER BOARD CLEANER	16	oz	5
5W30 MOTOR OIL	1	qt	
6688 CLP CLEANER, LUBRICANT AND PRESERVATIVE	1	gal	4
67115 ALUMINUM SEARS BEST	1	gal	
69429 POWER STEERING FLUID OZ, SUPER TECH	1	qt	
6MT41 DEMKOTE BLUE FORD ENAMEL	216	oz	18
70% ISOPROPYL RUBBING ALCOHOL	16	oz	
7132 RTV ADHESIVE SEALANT	6	oz	
72203 PREMIUM INTERIOR SEMI-GLOSS MIDTONE BASE	4.92	gal	
72205 PREMIUM INTERIOR S/G NEUTRAL BASE	12	gal	12
72541 AMERICAN TRADITIONS OIL PORCH & FLOOR BASE 4	3.43	liter	2
72926 AMERICAN TRADITIONS INT FLAT ANTIQUE WHITE	7	gal	7
73103 OLYMPIC BASE 3 EXTERIOR LATEX SATIN	480	fluid oz	4
73205 OLYMPIC EXTERIOR SEMI-GLOSS LATEX	4.53	gal	
7649 PRIMER N 19269	1	gal	
78010 OLYMPIC FASTHIDE INTERIOR FLAT WHITE	1	gal	2
78315 OLYMPIC FAST HIDE EXT LATEX FLAT PAINTERS WHITE	1	gal	2
784228 A241 DECORATIVE ENAMEL GLOSS BLACK	1	qt	
7924 MOSS GREEN AMERICAN ACCENTS PAINT	12	oz	2
83035 INT/EXT LATEX RED BASE	12	oz	3
83321 DURAMAX LATEX GLOSS FINISH BLACK	5	gal	5
8610 RED EXT/INT HIGH GLOSS ENAMEL PAINT	5	gal	5
8700 CARB AND CHOKE CLEANER	13	oz	
922 SLATE GRAY EPOXY SEAL	5	gal	5
96005 WHITE COLOR PLACE HOUSE PAINT	5	gal	
9920A DEVRAN 224 HS BASE	5	gal	5
A8T54 A-100 EXTERIOR GLOSS ULTRA DEEP BASE	118	fluid oz	2
ABM STENCIL & MARKING INK RED 31136 AS-R	12	oz	2
AC-236 CLASS B BASE AND ACCELERATOR SEALANT	12	fluid oz	
ACCELERATOR MC-236	6	lb	6
ACETONE	32	oz	
ACRYLIC LACQUER OLIVE DRAB 14064	13	oz	
ACRYLIC LATEX FLAT HD 6113	1	pint	
ADHESIVE CID AA-5291-TU	8	oz	
ADHESIVE, RUBBER CEMENT	12	fluid oz	3
AIR FRESHENER FLORAL SCENT	56	oz	4

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
AIRCRAFT GREASE G-372	1	oz	
AIRUP TIRE INFLATOR & SEALER, PERMANENT SEAL	108	oz	6
ALL PURPOSE NEUTRAL CLEANER GC532	1	gal	
ALLEN SOLDERING FLUX PASTE	2	oz	
AMDRO INSECTICIDE BAIT	1	lb	
AMDRO KILLS FIRE ANTS	1	lb	
AMERICAS FINEST EXTERIOR LATEX SEMI-GLOSS HM3318 PASTEL TINT	123	fluid oz	2
ANTISEPTIC BIO-HAND CLEANER	76	oz	
ANTISEPTIC BIO-HAND CLEANER	44	fluid oz	11
AQUA-MAR WATER REDUCIBLE ENAMEL SP-10607	16	oz	
ARGON	180	lb	6
B25W25 PREPRITE INTERIOR/EXTERIOR BLOCK FILLER, WHITE	5	gal	
B25WV26 MASTER FILL INT/EXT LATEX BLOCK FILLER	5	gal	
B54T104 INDUSTRIAL ENAMEL ULTRADEEP BASE	120	fluid oz	5
B-9 CHEMDIP CARBURETOR & PARTS CLEANER	96	fluid oz	2
BAR & CHAIN OIL	2	gal	2
BEHR PREMIUM PLUS EXT SATIN ENAMEL ULTRA PURE WHITE 9050	5	gal	
BEHR PREMIUM PLUS EXTERIOR SATIN ENAMEL DEEP BASE 9340	580	fluid oz	5
BEHR PREMIUM PLUS INT/EXT HI-GLOSS ENAMEL BLACK 8620	1	gal	
BEHR PREMIUM PLUS INT/EXT PORCH & FLOOR DEEP BASE 6730	1160	fluid oz	10
BLACK COLOR CAST ENAMEL	30	oz	3
BRASSO METAL POLISH	3	gal	3
BREAK FREE CLP	1	pint	9
BREAKTHROUGH SOLVENT	40	lb	
BREAKTHROUGH SOLVENT	25	lb	
BREAKTHROUGH SOLVENT	10	oz	
BREAKTHROUGH SOLVENT	30	gal	
BREAKTHROUGH SOLVENT	15	gal	2
BRUSH-B-GON POISON IVY & POISON OAK KILLER	24	fluid oz	
BULLSEYE 1-2-3 PRIMER SEALER	1	gal	3
BUTANE	16.8	oz	8
CARBURETOR AND PARTS CLEANER	96	fluid oz	
CARTER'S RUBBER CEMENT THINNER 22-844	32	fluid oz	
CHARCOAL LIGHTER	32	fluid oz	
CHARCOAL LIGHTER	64	fluid oz	
CHROMICOAT L-25	32	fluid oz	
CLEANER, LUBRICANT AND PERSERVATIVE	1	gal	
CLEANING COMLB SOLVENT	39	oz	3
CLEAR ACRYLIC HIGH GLOSS SEALER	22	oz	2
CLEAR GLOSS POLYURETHANE 71030	1	qt	
CLEAR WATERPROOFING SEALER #235	1	gal	
CLOROX REGULAR BLEACH	1	gal	
C-N-200 NEATS FOOT OIL TYPE I	4	pint	4
COAL TAR EPOXY, PART A LB-80A	4	gal	

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
COAL TAR EPOXY, PART A LB-80A	1	qt	
COATING COMLB BITUMINOUS SOLVENT TYPE, BLACK	1	qt	
COLOR CREATIONS INDOOR/OUTDOOR SILVER ALUMINUM 20012	55	oz	5
COLOR PLACE ACCENT BASE 22093	1	gal	
COLOR PLACE EXTERIOR SATIN ACCENT BASE 96535 BY VALSPAR	5	gal	
COLOR PLACE INDOOR/OUTDOOR EQUIPMENT GRAY PRIMER 20010	11	oz	3
COLORPLACE INT LATEX SEMI-GLOSS WALL & TRIM 5435 COUNTRY WHI	1	gal	
COLORPLACE SPRAY ENAMEL BANNER RED 20025	11	oz	
COLORPLACE SPRAY ENAMEL GLOSS BLACK 20008	10	oz	
COLORPLACE SPRAY ENAMEL RUST RESIST RED OXIDE PRIMER 20011	10	oz	
COLORPLACE SPRAY ENAMEL YELLOW 20003	30	oz	3
COLORPLACE SPRAY ENAMEL, FIRE RED 20005	10	oz	
COLORPLACE SPRAY ENAMEL, GOLD 20013	44	oz	4
COLORPLACE SPRAY ENAMEL, GREEN 20002	77	oz	7
COLORPLACE SPRAY ENAMEL, ORANGE 20017	11	oz	
COLORPLACE SPRAY ENAMEL, WALNUT 20006	44	oz	4
COLORPLACE SPRAY PAINT 20009 FLAT WHITE	11	oz	
COMPRESSED AIR	354	lb	177
CONTACT CLEANER 2000	56	oz	4
CORROSION RESISTANT COATING 8030-00-065-0957	1	qt	
CRAFT BOND MULTI-PURPOSE SPRAY ADHESIVE	11	oz	
CROWN MINERAL SPIRITS	1	gal	
CROWN PAINT THINNER	32	fluid oz	
CROWN PAINT THINNER	128	fluid oz	
CROWN SILICONE LUBRICANT #8034	48	oz	3
CRYSTAL CLEAR GLASS & UTILITY CLEANER #112	16	gal	16
CUTTER OUTDOORSMAN INSECT REPELLENT STICK	7	oz	7
D-CON KILLS MICE AND RATS	3	oz	2
DECK AND SIDING CLEANER	1	gal	2
DEEP BLUE	6	qt	6
DEEP WOODS OFF AEROSOL INSECT REPELLENT	486	oz	81
DEEP WOODS OFF AEROSOL INSECT REPELLENT	44	oz	4
DEEP WOODS OFF AEROSOL INSECT REPELLENT	216	oz	24
DENATURED ALCOHOL	5	pint	6
DEVOE DF 300 SEALER	1	gal	2
DEVOE PAINT DR1749 SEMI-GLOSS EXT ACRYLIC PURE TINT WHITE	4	gal	
DEVOE WONDER TONES 3849-01 HIGH HIDE BASE	15	qt	5
DEVTHANE 378 WHITE TINT BASE	3	gal	3
DISINFECTANT DETERGENT (PINE OIL)	256	fluid oz	8
DOW CORNING 2-1143 SILICONE BRAKE FLUID OZ	5	gal	5
DR52553 DEEP BASE SEMI-GLOSS	116	fluid oz	
DRY CLEANING SOLVENT	5	gal	5
DRY CLEANING SOLVENT	1	qt	
DUST MOP/DUST CLOTH TREATMENT	2	lb	2

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
DYNAMATCH STENCIL MARKING INK	12	oz	
EASY START BBQ CHARCOAL LIGHTER FLUID OZ	32	fluid oz	3
E-BOND 1240/1241 AND 1238/1239 STANDARD SET EPOXY ADHESIVE	10	oz	
ECO-SURE A-A-2787 TYPE I, GLOSS OLIVE DRAB 14064	1	oz	4
ECO-SURE A-A-2787 TYPE I, GLOSS OLIVE DRAB 14064	10	oz	2
ENAMEL GLOSS WHITE 17875	110	oz	11
ENDUST FOR ELECTRONICS DUSTER	8	fluid oz	2
ENTERPRISE 12 YEAR EXTERIOR FLAT BASE 4 1261	348	fluid oz	3
ENTERPRISE 2540 WHITE LATEX TRAFFIC MARKING PAINT	5	gal	
ENTERPRISE 700 OIL BARN GLOSS RED	5	gal	
ENTERPRISE DURAMAX GLOSS RED 902 83322	2	gal	2
EPOCAST 167-A (EPOXY RESIN)	20	lb	
EPOXY ACTIVATOR PART B LB-80B	1	gal	
EPOXY ACTIVATOR PART B LB-80B	1	qt	
EPOXY RESIN COMLB OPL 3963 (PART A)	1	gal	
EPOXY SYNTACTIC HARDENER 167-B	0.2	lb	
EPOXY SYNTACTIC HARDENER 167-B	3	lb	
EXPO 2 WHITE BOARD CLEANER 81823	8	fluid oz	
EXPO CLEANER FOR DRY ERASE SURFACES	176	fluid oz	22
EXPO TOWELLETTES 81850	12	oz	
EXPO TOWELLETTES 81850	0.5	lb	
EZ PAINT THINNER	32	fluid oz	
FAVOR FURNITURE POLISH LEMON	12.5	fluid oz	3
FELLOWES DUSTER 99790	10	oz	2
FLECTO VARATHANE INTERIOR GLOSS 9041 CLEAR	1	qt	
FLEET 15W40 HEAVY DUTY ENGINE OIL	1	gal	
FLEET CHARGE ANTIFREEZE & COOLANT	1	gal	
FLOETROL LATEX PAINT CONDITIONER	1	gal	
FLOOR FINISH	210	gal	42
FLOOR STRIPPER (65-10F-49678)	4	gal	4
FLOOR STRIPPER (N.I.B.)	2.5	gal	5
FLOOR STRIPPER (N.I.B.)	1	gal	5
FLOOR STRIPPER (N.I.B.)	27	gal	27
FLUX SOLDERING TYPE RMA GF-1415	1	oz	
FUEL CAMPING	1	gal	
FURNITURE POLISH 7930-00-266-7121	15	qt	15
G-403 GREASE AUTOMOTIVE & ARTILLERY	1	lb	
GAGE BLOCK CLEANER	123.5	oz	13
GAGE BLOCK PRESERVATIVE 0497	123.5	oz	13
GL3517-0100 GLIDDEN ULTRA-HIDE INT/EXT SEMI-GLOSS WHITE	31.25	fluid oz	
GLASS CLEANER, REGULAR	224	fluid oz	28
GLASS CLEANER, REGULAR	16	fluid oz	2
GLASS CLEANER, REGULAR	8	fluid oz	
GLASS CLEANER, REGULAR	608	fluid oz	38

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
GLASS CLEANER, REGULAR	1552	fluid oz	97
GLIDDEN SPRED ENAMEL LATEX S/G DEEP TINT BASE 3780	120	fluid oz	
GLID-GUARD ALKYD INDUSTRIAL ENAMEL 4580	120	fluid oz	5
GLID-GUARD ALKYD INDUSTRIAL ENAMEL SAFETY RED 4520	1	gal	2
GOLDEAGLE STA-BIL CONCENTRATED FUEL STABILIZER 1104	8	fluid oz	6
GOLDEAGLE STA-BIL CONCENTRATED FUEL STABILIZER 1104	32	oz	
GOO GONE	12	oz	
GOO GONE	8	oz	
GOOF OFF CLEANER	4.5	fluid oz	
GRADE 30 LUBRICATING OIL ENGINE 9150-00-189-6729	5	gal	
GREASE AUTOMOTIVE & ARTILLERY	32	oz	
GREASE, AUTOMOTIVE AND ARTILLERY	9	qt	9
GREASE, AUTOMOTIVE AND ARTILLERY	120	lb	2
GREASE, AUTOMOTIVE AND ARTILLERY	1	qt	
GREASED LIGHTNING ALL PURPOSE CLEANER	32	oz	
GRO-DISK/DRUM WHEEL BEARING GREASE	5	lb	
HARD HAT HIGH TEMPERATURE BLACK 2176	11.25	oz	2
HARDHAT PRIMERS AND TOPCOATS - SAFETY RED V2163	225	oz	15
HAVOLINE SAE 20W50 MOTOR OIL	1	qt	
HD 9011 GLIDDEN EVERMORE WALL LATEX FLAT PURE WHITE	5	gal	
HD0860 ZEP ALL PURPOSE CLEANER & DEGREASER	1	gal	3
HD-6780 DEEP TINT BASE HOUSE & TRIM	120	fluid oz	3
HEAVY DUTY CLEAR SOLVENT CEMENT FOR PVC	352	fluid oz	11
HIGH TEMP ELECTRIC MOTOR AND ROLLER BEARING	8	oz	
HI-LEX BLEACH	10	gal	10
HM1411 AMERICAS FINEST LATEX INT SEMI-GLOSS BASE 1	5	gal	
HM4316 STEEL GRAY INTERIOR/EXTERIOR LATEX FLAT PORCH & FLOOR	1	gal	2
HNH1100 DECROLON SPRAY ENAMEL GLOSS WHITE	30	oz	3
HNH1105 DECROLON GLOSS BLACK	20	oz	2
HOME DEFENSE INDOOR AND OUTDOOR INSECT KILLER	1.33	gal	2
HOT SHOT WASP & HORNET	14	oz	2
HYDRAULIC FLUID OZ H-544 TYPE 1	8	gal	8
INDUSTRIAL ENAMEL 2766 HIGH GLOSS WHITE	1	gal	2
INDUSTRIAL MAINTENANCE COATINGS MIDTONE BASE B54W102	615	fluid oz	5
INK MARKING STENCIL OPAQUE RED 31136	10.5	oz	3
INK MARKING STENCIL OPAQUE RED 31136	1	pint	
INNERBOND C-910 GENERAL PURPOSE SEALANT	10.1	fluid oz	2
INSECTICIDE, D-TRANS ALLETHRIN RESMETHRIN NSN 6840-01-067-21	143	oz	13
INTEGRAL FUEL TANK SEALANT MC-236	33	lb	11
INTERIOR/EXTERIOR VINYL SPACKLING	8.3	lb	
INTERNAL COMBUSTION ENGINE, LUBEOIL (0-1236) 15W40 103700	3	qt	3
ISOPROPYL ALCOHOL	12	oz	3
ISOPROPYL ALCOHOL	5	gal	2
ISOPROPYL ALCOHOL 70%	16	oz	2

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
ISOPROPYL ALCOHOL, TECH	8	fluid oz	
ISOPROPYL RUBBING ALCOHOL	1	pint	
KILL ZONE WASP BEE HORNET	15	fluid oz	
KLEAN-STRIP LACQUER THINNER	1	gal	
KRYLON 1518 PRIMER	12	oz	
KRYLON CAMOUFLAGE PAINT SYSTEM KHAKI 8141	12	oz	
KRYLON CAMOUFLAGE PAINT SYSTEM, OLIVE DRAB 8143	12	oz	
KRYLON COLOR CREATIONS HIGH GLOSS CANARY KDH 5007	32	fluid oz	
KRYLON COLOR CREATIONS SATIN WHITE KDH5004	12	oz	
KRYLON INDOOR/OUTDOOR FLUORESCENT PINK	12	oz	
KRYLON INT/EXT 1501 GLOSSY WHITE	12	oz	3
KRYLON INTERIOR/EXTERIOR PAINT 2504 BEIGE	12	oz	
LATEX TRAFFIC MARKING PAINT YELLOW 2541	5	gal	
LATEX TRAFFIC MARKING PAINT YELLOW 2541	12	oz	
LEAK-TEC FORMULA #FM1 (POISON)	4	oz	3
LEMON OIL FURNITURE POLISH	1	qt	
LEMON PLEDGE 94430	17.7	oz	
LIMEPAK	1540	lb	35
LIQUID PLUMR	40	fluid oz	
LITHIUM BATTERY	4	lb	2
LN-601 LIQUID NAILS FOR PROJECTS & CONSTRUCTION	10.5	oz	2
LO LUBRICATING OIL, GENERAL PURPOSE (0-196)	3	fluid oz	
LOCQUIC(R) PRIMER N 7649	1.75	oz	3
LOCQUIC(R) PRIMER N 7649	1	gal	
LOCTITE 222MS THREADLOCKER LOW STRENGTH	50	mm	2
LOCTITE 271 THREADLOCKER HIGH STRENGTH	10	mm	
LOCTITE 271 THREADLOCKER HIGH STRENGTH	80	mm	3
LUBE OIL ENGINE 15W-40 (0-1236)	1	qt	3
LUBE OIL ENGINE OE/HDO-10W30	576	oz	18
LUBE OIL, GEAR, MULTIPURPOSE 80W-90	17	qt	17
LUBRICATING ENGINE OIL 15W 40	5	qt	5
LUBRICATING OIL AIR COMPRESSOR	1	qt	2
LUBRICATING OIL GENERAL PURPOSE, PERSERVATIVE	1	qt	
LUBRICATING OIL MOLYKOTE G-N PASTE	36.4	oz	13
LUBRICATING OIL, GENERAL PURPOSE 0-190	3	qt	3
LYSOL BRAND II DISINFECTANT SPRAY	19	oz	2
MAGIC GLAZE	1	qt	
MARINE GOLD BOND GLAZING COMPD	31.5	fluid oz	3
MARKERBOARD CLEANER	16	fluid oz	2
MASK OUT TAN S-249	52	oz	4
METAL POLISH	6	pint	6
METHYL ETHYL KETONE	1	gal	
MINWAX FAST DRYING POLYURETHANE CLEAR SATIN 71028	11.5	oz	
MINWAX POLYCRYLIC WATER-BASED FINISH 3333 CLEAR SATIN	11.5	oz	2

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
MOBILGREASE 28	5	lb	
MOORCRAFT SUPER HIDE INT LATEX PRIMER/UNDERCOATER 284	5	gal	
MS-122DF PTFE RELEASE AGENT/DRY LUBRICANT	64	oz	4
NEW II ENVIRONMENTALLY PREFERRED PARTS CLEANER	55	gal	
NITROGEN	17	lb	7
NITROGEN	30	lb	3
NITROGEN COMPRESSED	80	lb	4
NO PEST WASP & HORNET KILLER	340	oz	20
NON RECHARGEABLE BATTERY	2	lb	
NON-FLAMMABLE GAS MIXTURE ISOBUTYLENE/OXYGEN/NITROGEN	36	lb	18
NUODEX OIL ANDEROL LUBRICATING OIL	1	pint	
NUTS N BOLTS 423	20	oz	5
OATEY PIPE JOINT COMLB	16	oz	
OFF INSECT REPELLENT II	6	oz	
OFFICE DEPOT CLEANING DUSTER	140	oz	14
OLIVE DRAB SPRAY PAINT	11	oz	
ONE & ONLY FLAT FINISH FLAT BLACK 05917	120	oz	10
ONE & ONLY SPRAY FLAT WHITE 05985	72	oz	6
OPTICAL LENS CLEANING COMLB	1	pint	2
OPTICAL LENS CLEANING COMLB	2	fluid oz	
OPTICAL LENS CLEANING COMLB	6	pint	6
ORANGE PAINT	11	oz	2
ORTHO FLYING INSECT KILLER	15	oz	
ORTHO WEED-B-GON LAWN WEED KILLER	1.33	gal	2
OUTDOORSMAN INSECT REPELLENT AEROSOL	7.5	oz	
OXYGEN	152	lb	76
OXYGEN	336	lb	16
PAINT THINNER	1	gal	2
PAINTERS TOUCH AEROSOL FLUORESCENT MARKING PAINT 1991	11	oz	4
PAINTERS TOUCH BRUSH TOPCOAT APPLE RED 1966 (NON-AEROSOL)	32	fluid oz	2
PAINTER'S TOUCH SANDABLE PRIMER GRAY 1980	32	fluid oz	2
PAINTERS TOUCH SUN YELLOW 1945 AEROSOL	12	oz	
PC-10 FAST LACQUER THINNER	1	gal	
PCB ETCHANT SOLUTION 276-1535A	16	fluid oz	
PEAK ANTIFREEZE & SUMMER COOLANT	1	gal	4
PENESOLV SAFE 100	16	oz	2
PENNZOIL MOTOR OIL HD-SAE-30	1	qt	3
PENNZOIL MOTOR OIL HD-SAE-30	32	oz	
PENNZOIL SAE 10W-30 MOTOR OIL	1	qt	2
PENSOLV L805	13	oz	2
PERMETHRIN ARTHROPOD REPELLENT	150	oz	25
PFA016 STEEL GRAY	1	gal	
PINE 'Q' PINE ODOR DISINFECTANT	1	gal	
PINE SOL	1.12	gal	2

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
PLEDGE AEROSOL - ORIGINAL	17.7	oz	
POLYAMIDE RESIN COMPONENT PART B	1	gal	
POS-A-LOC SF-2 LIQUID FLUX	3	oz	2
POULAN 2 CYCLE ENGINE OIL WEEDEATER 40:1	16	oz	
PRESTONE ENGINE STARTING FLUID OZ AS237	16	fluid oz	
PRIMER COATING YELLOW	1	gal	
PROFESSIONAL LYSOL DISINFECTANT SPRAY	72	oz	4
PROFESSIONAL OIL BASED ENAMEL ALUMINUM TOP COAT 7715	55	oz	5
PROPANE	16.4	oz	
PROPANE	870	lb	29
PSI-601 ADHESIVE SEALANT SILICONE RTV	61.8	fluid oz	6
PSI-690 PRIMER	4	oz	8
PSI-690 PRIMER	27	oz	18
QUAKER STATE PEAK PERFORMANCE 10W30 MOTOR OIL	1	qt	2
QUICK CLEAN	19	oz	4
R7K212 ACRYLYD ACRYLIC ENAMEL REDUCER, MEDIUM	1	gal	
RAID ANT & ROACH KILLER	17.5	oz	2
RAID FUMIGATOR FUMIGATING FOGGER	2.45	oz	7
RAID FUMIGATOR FUMIGATING FOGGER	18	oz	4
RAID HOUSE & GARDEN BUG KILLER	66	oz	6
RAID HOUSE & GARDEN BUG KILLER	15	oz	
RAID WASP AND HORNET KILLER	42	oz	3
REAL-KILL WASP & HORNET KILLER	123	oz	6
RED ENAMEL 10005	11	oz	3
REFRESH CINNAMON	1	pint	
REGULAR CLEAR PVC CEMENT	8	fluid oz	2
REGULAR GLASS CLEANER	320	fluid oz	20
REPEL INSECT REPELLENT SPORTSMEN FORMULA 29	6.5	oz	
REPEL INSECT REPELLENT UNSCENTED SPORTSMEN FORMULA	325	oz	50
REPEL INSECT REPELLENT UNSCENTED SPORTSMEN FORMULA	4	fluid oz	
REPEL INSECT REPELLENT UNSCENTED SPORTSMEN FORMULA	6.5	oz	2
RIFLE BORE CLEANER	1	qt	2
ROACH & FLEA FOGGER	8.1	oz	2
ROACH, ANT & SPIDER KILLER	15	oz	
ROUNDUP WEED & GRASS KILLER READY-TO-USE PLUS	64	fluid oz	3
ROUNDUP WEED AND GRASS KILLER CONCENTRATE	1.33	gal	
ROYCO 315	1	qt	3
ROYCO 634	4	oz	6
ROYCO 634	0.5	oz	
ROYCO 770	21	gal	21
ROYCO 782	5	gal	5
RUG AND UPHOLSTERY CLEANER	20.6	oz	
RUG CLEANING COMLB	0.5	gal	
RUST-OLEUM AMERICAN ACCENTS TAPESTRY CLARET WINE 7954	120	oz	10

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
RUST-OLEUM CLEAN ALMOND METAL PRIMER 7882	12	oz	2
RUSTOLEUM HIGH PERFORMANCE INDUSTRIAL ENAMEL 0964 SAFETY RED	1	gal	
RUST-OLEUM INDUSTRIAL ENAMEL 0634 HIGH GLOSS BLACK	1	gal	
RUST-OLEUM INDUSTRIAL ENAMEL 944 SAFETY YELLOW	1	gal	
RUST-OLEUM PROFESSIONAL OIL BASED ENAMEL PRIMER 7769	1	gal	
S-749 LUBRICANT, SOLID FILM PERMA-SLIK NSN 9150-01-260-2534	16	oz	
SAE 30 WEIGHT 4-STROKE ENGINE OIL	20	fluid oz	
SAE 30 WEIGHT 4-STROKE ENGINE OIL	28	oz	
SATIN LUSTRE NEUTRAL BASE 009.3914-05	5	gal	
SAVIN BLACK DISPERSANT	67.6	oz	
SCHULTZ ROSE & FLOWER INSECT SPRAY	24	fluid oz	
SCOTCHGRIP 847 RUBBER AND GASKET ADHESIVE	105	fluid oz	21
SEVERE WEATHER EXT LATEX SATIN FINISH WHITE 47511	5	gal	5
SHOPMASTER (INDUSTRIAL STRENGTH DEGREASER)	5	gal	
SHOPMASTER (INDUSTRIAL STRENGTH DEGREASER)	16	oz	2
SIGHT SAVERS BRAND ANTI-FOG LIQUID	16	oz	4
SIGHT SAVERS BRAND ANTI-FOG LIQUID	1	gal	
SKILCRAFT GLASS CLEANER, ANTI-FOGGING	16	fluid oz	
SKILCRAFT PINE OIL 19.9% DISINFECTANCT, DETEREGENT	946.4	fluid oz	28
SO SURE BLACK 37038 (8010-00-910-8154)	10.5	fluid oz	
SO SURE BROWN 30109	97.5	oz	10
SOLDER FLUX	1	pint	2
SOLDERING FLUX	1	lb	2
SOLID FILM LUBRICANT (S-1738)	1	pint	
SOLVENT CEMENT	16	oz	2
SO-SURE AEROSOL ACRYLIC LACQUER ENAMEL RED 11136	40	oz	4
SO-SURE ENAMEL AEROSOL GOLD 17043	1	pint	
SO-SURE FLAT BLACK PAINT (ENAMEL # 37038)	10.5	oz	
SOSURE INK, MARKING STENCIL, OPAQUE BLACK 37038	1	pint	
SOSURE INK, MARKING STENCIL, OPAQUE BLACK 37038	10.5	oz	2
SO-SURE LACQUER FLAT WHITE 37875	13	oz	2
SO-SURE LACQUER FLAT WHITE 37875	10.5	oz	
SPECTRACIDE TRIPLE STRIKE GRASS-WEED-ROOT KILLER	1	gal	
SPECTRACIDE WASP AND HORNET KILLER II	20	oz	2
SPRAYON HEAVY DUTY OPEN GEAR & WIRE ROPE LUBE S00201	15.5	oz	
SPRAYON T.F.E. DRY LUBE S00708	15.5	oz	
STA-LUBE MOLYGRAPH GREASE	14	oz	
STATICIDE ANTI-STAT	64	fluid oz	4
STIHL BAR AND CHAIN LUBRICANT	5	gal	5
STOPS RUST CRYSTAL CLEAR AEROSOL 7701	12	oz	
STOPS RUST ENAMEL AEROSOL HUNTER GREEN 7738	12	oz	3
STOPS RUST ENAMEL AEROSOL TOP COAT 7747 SUNBURST YELLOW	12	oz	
STOPS RUST ENAMEL TOP COAT 7786830	128	fluid oz	2
STP SON OF A GUN ONE STEP TIRE PROTECTANT	84	oz	4

Ordnance Munitions and Electronic Maintenance School
HWMWS Inventory
Redstone Arsenal

Product	Quantity	Unit[1]	Number Used[2]
SUPER 77 SPRAY ADHESIVE	49.5	oz	3
SUPER TECH HIGH MILEAGE SAE 10W40 MOTOR OIL	1	qt	
SUPER TECH MULTI-DUTY COMPLEX HI-TEMP GREASE	16	oz	
SYNTHETIC MOTOR OIL 10W-30	1	qt	
TECH 2000 GL-5 SAE 80W90 GEAR LUBE	1	qt	
TECHNICAL PETROLATUM	1	qt	2
TECHNICAL PETROLEUM (S-743)	10	lb	5
THOMPSON WATER SEAL WATERPROOFER	5	gal	
TOMCAT ULTRA PELLETED MOUSE AND RAT BAIT	150	gram	2
TT-E-516A SO SURE OLIVE DRAB (34088)	13	oz	2
TT-E-516A SO SURE OLIVE DRAB (34088)	10.5	fluid oz	2
TT-E-516A SO SURE OLIVE DRAB (34088)	1	pint	
TW-25B HIGH TECH LUBRICANT	28.5	oz	19
TW-25B HIGH TECH LUBRICANT	72	oz	9
TWO STROKE ENGINE OIL	3.2	oz	
TYPE I GLASS CLEANER, REGULAR	32	fluid oz	
UNIVERSAL 2 CYCLE ENGINE OIL	105.6	oz	33
UNSCENTED BACKWOODS CUTTER INSECT REPELLENT	6	oz	
URETHANE ACRYLIC ACTIVATOR PART B	1	pint	
URETHANE ACRYLIC PART A	1	pint	
VAC, LUBRICATING OIL GENERAL PURPOSE MIL-L-7870	1	qt	
WASP BEE & HORNET KILLER	72	oz	6
WATER SEAL WATERPROOFER PLUS CLEAR WOOD PROTECTOR	1	gal	
WD-40	11	oz	
WD-40	8	oz	3
WD-40	1	gal	4
WD-40	12	oz	4
WD-40	13.2	oz	
WINDEX	32	fluid oz	6
WINDSHIELD CLEANING COMLB	55	gal	
WL30060 WHITE LIGHTNING ALL PURPOSE ADHESIVE CAULK WHITE	10	fluid oz	
WONDER-TONES EGGSHELL INTERIOR LATEX ENAMEL ACCENT TINT BASE	4	gal	2
XL-105 PRECISION CLEANING COMLB	16	oz	
YELLOW #33538 124330	1	pint	
ZIP STRIP DENATURED ALCOHOL	32	fluid oz	
ZUC-32 ZEP COMMERCIAL UPHOLSTERY CLEANER	32	fluid oz	3

[1] gal = gallon; lb = pound; mm = millimeter; oz = ounce; qt = quart

[2] Where "Number Used" is unspecified, number = 1.

Appendix G
Intent to Prepare Environmental Impact Statements for Realignment Actions Resulting from the 2005 Base Closure and Realignment Commission's Recommendations

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

In addition to those disclosures generally permitted under 5 U.S.C. 552a(b) of the Privacy Act, these records or information contained therein may specifically be disclosed outside the DoD as a routine use pursuant to 5 U.S.C. 552a(b)(3) as follows: The 'Blanket Routine Uses' published at the beginning of the Air Force's compilation of record system notices apply to this system.

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Maintained in file folders, note books/ binders, in computers and on computer output products.

RETRIEVABILITY:

Retrieved by name, Social Security Number and detachment number.

SAFEGUARDS:

Records are accessed by person(s) responsible for servicing the record system in performance of their official duties and by authorized personnel who are properly screened and cleared for need-to-know. records are stored in locked rooms and cabinets. Those in computer storage devices are protected by computer system software.

RETENTION AND DISPOSAL:

Records at unit of assignment are destroyed one year after acceptance of commission or one year after disenrollment. Records at HQ AFROTC for disenrolled cadets are destroyed after three years. Computer records are destroyed when no longer needed. Records are destroyed by tearing into pieces, shredding, pulping, macerating or burning. Computer records are destroyed by erasing, deleting or overwriting.

SYSTEM MANAGER(S) AND ADDRESS:

Director of Senior Program, Air Force Reserve Officer Training Corps, 551 East Maxwell Boulevard, Maxwell Air Force Base, AL 36112–6110, and Commander of appropriate AFROTC detachment.

Official mailing addresses are published as an appendix to the Air Force's compilation of systems of records notices.

NOTIFICATION PROCEDURE:

Individuals seeking to determine whether this system of records contains information on them should address inquiries to the AFROTC Detachment Commander at location of assignment. Official mailing addresses are published as an appendix to the Air Force's compilation of system of records notices.

Request for information involving an investigation for disenrollment should be addressed to Commander, Air Force Reserve Officer Training Corps, 551 East Maxwell Boulevard, Maxwell Air Force Base, AL 36112–6110. Requests should include full name and SSN.

RECORD ACCESS PROCEDURES:

Individuals seeking to access records about themselves contained in this system should address requests to the AFROTC Detachment Commander at location of assignment. Official mailing addresses are published as an appendix to the Air Force's compilation of systems of records notices.

Request for information involving an investigation for disenrollment should be addressed to Commander, Air Force Reserve Officer Training Corps, 551 East Maxwell Boulevard, Maxwell Air Force Base, AL 36112–6110. Requests should include full name and SSN.

CONTESTING RECORD PROCEDURES:

The Air Force rules for accessing records, and for contesting contents and appealing initial agency determinations are published in Air Force Instruction 33–332; 32 CFR part 806b; or may be obtained from the system manager.

RECORD SOURCE CATEGORIES:

Sources of records in the system are educational institutions, secondary and higher learning; government agencies; civilian authorities; financial institutions; previous employer; individual recommendations, interviewing officers; and civilian medical authorities.

EXEMPTIONS CLAIMED FOR THE SYSTEM:

Portions of this system may be exempt under the provisions of 5 U.S.C. 552a(k)(5), as applicable, but only to the extent that disclosure would reveal the identity of a confidential source.

Parts of this system may be exempt pursuant to 5 U.S.C. 552a(k)(5), but only to the extent that disclosure would reveal the identity of a confidential source.

[FR Doc. 05–23131 Filed 11–22–05; 8:45 am]

BILLING CODE 5001–06–M

DEPARTMENT OF DEFENSE

Department of the Army

Intent To Prepare Environmental Impact Statements for Realignment Actions Resulting From the 2005 Base Closure and Realignment Commission's Recommendations

AGENCY: Department of the Army, DoD.

ACTION: Notice of intent.

SUMMARY: The Defense Base Closure and Realignment (BRAC) Commissions were established by Public Law 101–510, the Defense Base Closure and Realignment Act of 1990 (BRAC Law), to recommend military installations for realignment and closure. The 2005 Commission's recommendations were included in a report which was presented to the President on September 8, 2005. The President approved and forwarded this report to Congress on September 16, 2005. Since a joint resolution to disapprove these recommendations did not occur within the statutorily provided time period, these recommendations have become law and must be implemented in accordance with the requirements of the BRAC Law.

The BRAC Law exempts the decision-making process of the Commission from the provisions of the National Environmental Policy Act of 1969 (NEPA). The Law also relieves the Department of Defense from the NEPA requirement to consider the need for closing, realigning, or transferring functions and from looking at alternative installations to close or realign. Nonetheless, the Department of the Army must still prepare environmental impact analyses during the process of property disposal, and during the process of relocating functions from a military installation being closed or realigned to another military installation after the receiving installation has been selected but before the functions are relocated. These analyses will include consideration of the direct and indirect environmental and socioeconomic effects of these actions and the cumulative impacts of other reasonably foreseeable actions affecting the installations.

The Department of the Army intends to prepare individual Environmental Impact Statements (EIS) pursuant to section 102(2)(C) of NEPA, regulations of the Council on Environmental Quality (40 CFR 1500–1508), and the Army NEPA regulation (32 CFR 651 *et seq.*) for each of the actions listed below.

Opportunities for public participation will be announced in the respective local newspapers. The public will be

invited to participate in scoping activities for each EIS and comments from the public will be considered before any action is taken to implement these actions.

Environmental Impact Statements are planned for each of the following realignment actions:

a. Fort Meade, Maryland. The BRAC realignment action will co-locate and consolidate Department of Defense information and information technology missions at Fort Meade.

(1) EIS alternatives could include evaluating siting locations for structures and related projects within Fort Meade that involve new building construction only or new building construction combined with renovation of existing facilities. The alternatives would evaluate areas to provide for construction of, but not be limited to, six to eight 4-story administration buidlings, a full day care child development center, a standard-design Whole Barracks Complex, and a physical fitness center.

(2) The proposed BRAC action may have significant environmental impacts due to the infrastructure and facilities construction that will be required to accommodate an estimated increase of over 5,500 personnel. Significant issues to be analyzed in the EIS may include potential impacts to air quality from increased vehicle emissions, installation and regional traffic increases, land use changes, natural resources, water use, solid waste, cultural resources, and cumulative impacts from increased burdens to the facility based on projected growth.

b. Aberdeen Proving Ground (APG), Maryland. APG will be receiving numerous Army, Navy and Air Force activities to transform it into a full spectrum research, development, acquisition center for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Defense Chemical and Biological Systems. The Army Test and Evaluation Command Headquarters and Civilian Personnel Offices will also be consolidated at APG.

(1) Alternatives to be examined in the EIS could include alternative distribution of new activities between APG and the Edgewood Area for military field training exercises; alternative siting schemes for placement of buildings and related infrastructure to accommodate an increase of about 15,000 Army personnel within the APG and Edgewood Area. These may include siting schemes for new building construction only, or new building construction combined with renovation of existing facilities.

(2) The proposed BRAC action may have significant environmental impacts due to the large amount of infrastructure and facilities construction that will be required to accommodate an increase of personnel and military training operations. Significant issues to be analyzed in the EIS will include on-post and local air quality conditions, on-post and regional traffic conditions, housing, socioeconomics, noise due to increased vehicle use, threatened and endangered species to include bald eagle habitat, historic buildings and archeological resources, wetlands, biological resources, land use, and community facilities and services.

c. Fort Belvoir, Virginia. Fort Belvoir will be receiving numerous Department of Defense activities from leased space within the National Capital Region (NCR); National Geospatial Intelligence Agency units from various NCR leased locations and Bethesda, Maryland; primary and secondary medical care functions from Walter Reed Medical Center to a new, expanded DeWitt Army Hospital; and inventory control point functions for consumable items to the Defense Logistics Agency from the Naval Support Activist, Mechanisburg and Wright-Patterson Air Force Base, Ohio.

(1) EIS alternatives may consist of moving all activities to the Fort Belvoir Main Post, moving all activities to the Engineer Proving Ground (EPG), or moving a portion of the activities to the Main Point and a portion to the EPG. Other alternatives could include alternative land locations for specific projects within Fort Belvoir, within the EPG, or a combination of both; new construction only; new construction combined with renovation of existing facilities; alternative facility siting schemes, or other modifications of specific projects.

(2) The proposed BRAC action may have significant environmental impacts due to the large amount of infrastructure and facilities construction that will be required to accommodate an estimated increase of over 18,000 personnel. Significant issues to be analyzed in the EIS will include potential impacts to air quality condition in the Northern Virginia region, transportation systems in the Northern Virginia region, traffic conditions with Fort Belvoir, threatened and endangered species, historic buildings and archeological resources, wetlands, biological resources, land use, and community facilities and services.

d. Fort Lee, Virginia. Fort Lee will receive the Transportation Center and School from Fort Eustis, Virginia, and the Ordnance Center and School from Aberdeen Proving Ground, Maryland. These functions will be consolidated with the Quartermaster Center and School, the Army Logistics Management College, and Combined Arms Support Command to establish a Combat Service Support Center at Fort Lee.

(1) Alternatives to be examined in the EIS may include the usage of only Fort Lee for field training exercises, the usage of other military installations (Fort A.P. Hill) for field training exercises, or a combination of both; alternative land locations for specific projects with Fort Lee and Fort A.P. Hill; new construction only; new construction combined with renovation of existing facilities; alternative facility siting schemes, or other modifications of specific projects.

(2) The proposed BRAC action may have significant environmental impacts due to the large amount of infrastructure and facilities construction that will be required to accommodate an estimated increase of over 7,000 personnel. Significant issues to be analyzed in the EIS will include air quality conditions, traffic conditions, noise due to increased training activities, threatened and endangered species, historic buildings and archeological resources, wetlands, biological resources, land use, and community facilities and services.

e. Fort Benning, Georgia. Fort Benning will receive the Armor Center and School from Fort Knox, Kentucky; 81st Regional Readiness Center from Fort Gillem, Georgia; and the U.S. Army Reserve Center from Columbus, Georgia.

(1) Alternatives to be examined by the EIS may consist of alternative siting locations with Fort Benning for facility construction projects, new construction only, renovation and use of existing facilities, or a combination of both new construction and use of existing facilities, and usage of alternatives land locations within Fort Benning for training activities.

(2) As a result of new construction and training activities associated with moving nearly 10,000 personnel to Fort Benning, the BRAC action has the potential to cause significant environmental impacts to threatened and endangered species such as the red-cockaded woodpecker, archeological sites, wetlands, soil erosion, and increased noise impacts to the surrounding public.

f. Fort Sam Houston, Texas. Navy and Air Force medical training activities from various locations within the U.S. and the 59th Medical Wing from Lackland Air Force Base, Texas, will move to Fort Sam Houston to form a Department of Defense medical training

center. The Army Installation Management Agency (IMA) Headquarters from Virginia, the Northwest IMA Regional office from Illinois, and the Army Environmental Center from Maryland will also move to Fort Sam Houston.

(1) Alternatives to be examined in the EIS could consist of alternative locations within Fort Sam Houston for siting facility construction, new construction only, renovation and use of existing facilities (to include historic buildings), or a combination of both new construction and use of existing facilities, and usage of alternative locations within Camp Bullis, a sub-post of Fort Sam Houston, for training activities.

(2) As a result of moving approximately 9,000 new personnel to Fort Sam Houston and associated new construction, renovation and training activities, implementing the proposed BRAC action could have potential significant impacts to traffic on and off post, air quality and historic properties, to include contributing elements of the Fort Sam Houston National Historic Landmark District.

g. Fort Carson, Colorado. Fort Carson will receive a Heavy Brigade Combat team and a Unit of Employment Headquarters from Fort Hood, Texas, and the inpatient care services from the U.S. Air Force Academy, Colorado. Another Infantry Brigade Combat Team from overseas could also be transferred to Fort Carson as a result of the BRAC recommendation.

(1) Alternatives that may be considered in the Fort Carson EIS could include phasing movement of units to the fort, alternative siting locations within the post of placement of new facilities, construction of only new facilities, utilization and renovation of existing facilities, a combination of new construction and utilization of existing facilities, and utilization of alternative locations within Fort Carson for training activities.

(2) Fort Carson will gain approximately 10,000 Army personnel as a result of the BRAC action. Construction of new facilities, renovation of existing infrastructure and additional training activities could have significant environmental impacts on Fort Carson and its environs. Impacts could concur to local air and water quality, archaeological resources, noise and traffic.

h. Pinion Canyon Maneuver Site, Colorado. Pinion Canyon Maneuver Site (PCMS) is a subpost of Fort Carson and a primary training area for units stationed at Fort Carson and other Army posts. The new combat units stationed at Fort Carson will increase the training tempo at the PCMS.

(1) The EIS to be prepared for the PCMS will examine a number of implementation alternatives that could include alternative placement of new construction projects, alternative locations within the PCMS for training activities, and alternative timing for units to conduct training activities at the PCMS.

(2) The Fort Carson BRAC action has the potential to significantly impact natural resources at the PCMS since the approximately 10,000 new personnel to be stationed there will now be training at the PCMS on a regular basis. New construction and increased training activities at the PCMS could have an impact on archaeological resources, natural resources, air and water quality, and soil erosion.

FOR FURTHER INFORMATION CONTACT: Public Affairs Office of the affected installations or the appropriate higher headquarters as indicated: (1) Fort Meade, MD—(301) 677–1301; (2) Aberdeen Proving Ground, MD—(410) 278–1147; (3) Fort Belvoir, VA—(703) 805–2583; (4) Fort Lee, VA—(804) 734–6862; (5) Fort Benning, GA—(706) 545–3438; (6) Fort Sam Houston, TX—(210) 221–1099; (7) Fort Carson and Pinion Canyon Maneuver Site, CO—(910) 396–2122/5600.

Dated: November 18, 2005.

Addison D. Davis IV,

Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health), OASA(I&E).

[FR Doc. 05–23162 Filed 11–22–05; 8:45 am]

BILLING CODE 3710–08–M

DEPARTMENT OF DEFENSE

Defense Logistics Agency

Privacy Act of 1974; Systems of Records

AGENCY: Defense Logistics Agency.

ACTION: Notice to add a system of records.

SUMMARY: The Defense Logistics Agency proposes to add a system of records notice to its inventory of record systems subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended.

DATES: This action will be effective without further notice on December 23, 2005 unless comments are received that would result in a contrary determination.

ADDRESSES: Send comments to the Privacy Act Officer, Headquarters, Defense Logistics Agency, ATTN: DP, 8725 John J. Kingman Road, Stop 2533, Fort Belvoir, VA 22060–6221.

FOR FURTHER INFORMATION CONTACT: Ms. Susan Salus at (703) 767–6183.

SUPPLEMENTARY INFORMATION: The Defense Logistics Agency notices for systems of records subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended, have been published in the **Federal Register** and are available from the address above.

The proposed system report, as required by 5 U.S.C. 552a(r) of the Privacy Act of 1974, as amended, was submitted on October 5, 2005, to the House Committee on Government Reform, the Senate Committee on Homeland Security and Governmental Affairs, and the Office of Management and Budget (OMB) pursuant to paragraph 4c of Appendix I to OMB Circular No. A–130, 'Federal Agency Responsibilities for Maintaining Records About Individuals,' dated February 8, 1996 (February 20, 1996, 61 FR 6427).

Dated: November 17, 2005.

L.M. Bynum,

OSD Federal Register Liaison Officer, Department of Defense.

SYSTEM NAME:

Information Technology Access and Control Records.

SYSTEM LOCATION:

Director, Information Operations, Headquarters Defense Logistics Agency, ATTN: J–6, 8725 John J. Kingman Road, Stop 6226, Fort Belvoir, VA 22060–6221, and the Defense Logistics Agency field activities. Official mailing addresses are published as an appendix to DLA's compilation of systems of records notices.

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

Defense Logistics Agency (DLA) civilian and military personnel, contractor employees, and individuals requiring access to DLA-controlled networks, computer systems, and databases.

CATEGORIES OF RECORDS IN THE SYSTEM:

System contains documents relating to requests for and grants of access to DLA computer networks, systems, or databases. The records contain the individual's name; social security number; citizenship; physical and electronic addresses; work telephone numbers; office symbol; contractor/employee status; computer logon addresses, passwords, and user identification codes; type of access/permissions required; verification of need to know; dates of mandatory

Appendix H
Memorandum of Understanding for Preparation of an Environmental Impact Statement Fort Lee, Virginia and Crater Planning District Commission

Memorandum of Understanding for Preparation of an Environmental Impact Statement Fort Lee, Virginia and Crater Planning District Commission

I. Purpose

Pursuant to recommendations of the 2005 Defense Base Closure and Realignment Commission, Fort Lee, Virginia, will be realigned, resulting in the relocation of more than 11,000 personnel to the post. Fort Lee's accommodating the additional civilian and military personnel will require construction of substantial amounts of new facilities and infrastructure. In the 2005 BRAC round, DoD sought to reorganize its installation infrastructure to most efficiently support its forces, increase operational readiness, and facilitate new ways of doing business. Consistent with the National Environmental Policy Act, Fort Lee will prepare an environmental impact statement (EIS) to evaluate its proposals to implement actions associated with realignment of the base.

This memorandum of understanding (MOU) establishes Crater Planning District Commission as a cooperating agency in Fort Lee's preparation of the EIS and sets forth the responsibilities of the parties. The intent of this MOU is to create a means to foster consensus among the parties, as well as other agencies and the public; to identify key personnel to facilitate exchange of information; to assure expeditious review of the EIS during its preparation; and to aid in the timely completion of the EIS so that subsequent actions by Fort Lee and other agencies meet the statutory deadline of September 15, 2011, for completion of all realignment actions.

II. Authority

This MOU is entered into under the National Environmental Policy Act (NEPA) of 1969, as amended (Pub. L. 91-190, 42 USC. 4321, et seq.); 40 CFR 1501.6; and the Economy Act of 1932 (31 USC 1535).

III. Responsibilities

The parties to this MOU are Fort Lee in its role as lead agency for preparation of the EIS and Crater Planning District Commission in its role as a cooperating agency. The Crater Commission can make material and significant contributions to the required environmental analysis concerning the off post, community implications associated with the relocations into the region. These implications include the requirements and impacts on civilian housing, transportation infrastructure, school and dependent employment opportunities. The Crater Planning District Commission is uniquely qualified to assist the Army in this analysis as it is the umbrella planning organization for the affected communities.

The parties hereby agree to work together, and with other entities as appropriate, to ensure that timely decisions are made and that the responsibilities of each agency are met. The parties agree to commit to early involvement, share data, communicate informally, and resolve disputes.

The provisions of the MOU extend to all phases of developing the EIS. Major activities for mutual efforts shall include determining the scope of the environmental impacts analysis, gathering data, preparing analyses, reviewing the EIS, and providing for public participation in the NEPA process. The EIS will support the Army's decisions on its proposals concerning the implementation of base realignment.

The Department of the Army through the Army Corps of Engineers shall be in charge of and fund assembling the EIS, editing, document production, mailings, and press releases. The Army shall ensure that all necessary consultations and coordination is performed with other federal agencies and appropriate Commonwealth of Virginia agencies under applicable laws and regulations.

The parties shall provide essential information on applicable agency policies and plans and shall participate in document review for issues specific to their respective agencies. Toward this end, the parties shall identify technical staff to carry out the intent of this MOU and shall make every effort to ensure continuity of staff throughout the NEPA process, as well as participation in reviews and meetings. Each party shall fund its respective staff in preparation of the EIS.

Fort Lee shall provide Crater Planning District Commission a schedule for completion of the EIS. Participation by Crater Planning District Commission with respect to data submissions and document review shall adhere to the schedule to the same extent and in the manner applicable to Fort Lee and other Army components. In reviewing documents, Crater Planning District Commission shall abide by Army policies that provide that draft and internal documents shall not be disseminated to the public.

IV. Key Personnel

Work under this MOU shall be coordinated by and through key personnel. Technical staff of the parties shall perform their respective responsibilities only through the key personnel. The key person designated by Fort Lee is Carol Anderson. The key person designated by Crater Planning District Commission is Dennis Morris. Key personnel may be replaced upon reasonable advance notice of one party to the other.

V. Administration

Modifications to this MOU may be proposed by either party and shall become effective upon the written approval of both parties.

Either party may withdraw from this MOU upon 30 days written notice to the other of the intent to do so.

This MOU is not a fiscal or funds obligation instrument. Nothing in this MOU will be construed to affect the statutory or regulatory authorities of the parties to act or to bind the parties beyond their respective authorities. This MOU neither expands nor is in derogation of those powers and authorities vested in the parties by applicable law. Nothing in this MOU will be construed to require the parties to obligate or expend funds in excess of available appropriations.

This MOU is not intended to, nor does it, create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by any person or party against the United States, its agencies, its officers, or any other person or against Crater Planning District Commission, its agencies, its officers, or any other person.

Disputes shall be resolved at the technical working level by the key personnel. If a dispute cannot be resolved by the key personnel, it will be resolved by the signatories of the MOU. The parties contemplate no other elevation of dispute resolution.

VI. Effective Date

This MOU is effective when signed by both parties and will expire two years from that date unless extended or terminated earlier by mutual agreement.

Signature

6 Jul 06
Date

Gwen Bingham
Colonel, US Army
Garrison Commander

Signature

7/7/06
Date

Dennis K. Morris
Executive Director
Crater Planning District Commission

Appendix I
COMMENTS RECEIVED ON DRAFT EIS AND RESPONSES

AGENCY COMMENTS

Compliance and Enforcement Home

National Environmental Policy Act Home

Basic Information
Where You Live
Newsroom
Environmental Impact Statements - Notices of Availability
Submitting Environmental Impact Statements
Obtaining Environmental Impact Statements
EPA Comments on Environmental Impact Statements
EPA Compliance with NEPA

Environmental Impact Statement (EIS) Rating System Criteria

EPA has developed a set of criteria for rating draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft EIS.

- Rating the Environmental Impact of the Action
- Rating the Adequacy of the Draft Environmental Impact Statement (EIS)

RATING THE ENVIRONMENTAL IMPACT OF THE ACTION

- **LO (Lack of Objections)** The review has not identified any potential environmental impacts requiring substantive changes to the preferred alternative. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposed action.

- **EC (Environmental Concerns)** The review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.

- **EO (Environmental Objections)** The review has identified significant environmental impacts that should be avoided in order to adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). The basis for environmental Objections can include situations:

    1. *Where an action might violate or be inconsistent with achievement or maintenance of a national environmental standard;*
    2. *Where the Federal agency violates its own substantive environmental requirements that relate to EPA's areas of jurisdiction or expertise;*
    3. *Where there is a violation of an EPA policy declaration;*
    4. *Where there are no applicable standards or where applicable standards will not be violated but there is potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives; or*
    5. *Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts.*

- **EU (Environmentally Unsatisfactory)** The review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposec action must not proceed as proposed. The basis for an environmentally unsatisfactory determination consists of identification of environmentally objectionable impacts as defined above and one or more of the following conditions:

1. *The potential violation of or inconsistency with a national environmental standard is substantive and/or will occur on a long-term basis;*

2. *There are no applicable standards but the severity, duration, or geographical scope of the impacts associated with the proposed action warrant special attention; or*

3. *The potential environmental impacts resulting from the proposed action are of national importance because of the threat to national environmental resources or to environmental policies.*

Return to Top

RATING THE ADEQUACY OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)

- **1 (Adequate)** The draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

- **2 (Insufficient Information)** The draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the final EIS.

- **3 (Inadequate)** The draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

November 17, 2006

Ms. Carol Anderson
U.S. Department of the Army
IMNE-LEE-PWE
1816 Shop Road
Fort Lee, Virginia 23801-1604

Re: Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee, Virginia and Fort A.P. Hill, Virginia. CEQ No. 20060399

Dear Ms. Anderson:

In accordance with the National Environmental Policy Act of 1969 and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee, Virginia and Fort A.P. Hill, Virginia. As a result of this review, EPA has assigned this DEIS a rating of EC-2 (Environmental Concerns/Insufficient Information), which indicates that we have environmental concerns regarding the proposal and that there is insufficient information in the document to fully assess the environmental impacts of the project. A copy of EPA's ranking system is enclosed for your information.

The BRAC action at Fort Lee would result in the relocation of approximately 7,700 additional personnel, renovation of 226,100 square feet of existing facilities, construction of approximately 3.86 million square feet of new facilities, approximately 6.9 million square feet of roads and guest control (gate) facilities, and approximately 40 acres of parking area to accommodate the influx of personnel and activities. The BRAC action at Fort A.P. Hill would result in the creation of a Logistics Support Area (LSA), several Forward Operation Base (FOB) areas, and the establishment of an Explosive Ordnance Disposal (EOD) training site.

As a result of the actions proposed, EPA has provided the following comments specific to each facility. Primary concerns for Fort Lee are: wetlands; natural habitats, vegetation and wildlife; and water resources. Primary concerns for Fort A.P. Hill are: noise and loss of forested areas.

FORT LEE, VIRGINIA

Wetlands

As stated on page 4-62, "The greatest potential for wetland disturbance would occur from development in Training Area 5 and the Ammunition Supply Point (ASP) area adjacent to Training Area 5, which includes the wooded area between Temple Avenue and Oaklawn Boulevard." "Delineated wetlands in these two areas total 14.26 acres (Table 4.8-2)." Although Table 4.8-2 is referenced, it is not provided in the DEIS or it is not properly identified. As a

result, the delineated wetlands in these areas are not known to the reviewer. Thus, the FEIS should include a wetlands delineation using the Federal Manual for Identifying and Delineating Wetlands. In addition, the type and quality of wetland habitat and the wetland functions and values to be impacted should be clearly identified and associated with each proposed action/activity. It would be helpful to clearly depict Training Area 5 and the ASP areas on a map which indicates the wetlands in these areas. It would also be helpful to quantify the potential wetland impact. It is recommended that Figure 4.1-6, 2006 Wetland Inventory Sites, include a legend that associates and identifies the name of the BRAC site with the number provided on the map.

EPA commends the Army for its intent to avoid the two largest wetland systems on the installation, the Blackwater Swamp and Bailey Creek.

Natural Habitats, Vegetation and Wildlife

As stated on page 4-62, Cumulative Effects, the combined loss of wooded areas in Training Area 5 and the ASP site, combined with the loss of the only large contiguous forest block in the cantonment area to the Residential Communities Initiative (RCI) would be expected to result in significant adverse cumulative impacts on the local ecology. Impacts on proposed RCI areas are under evaluation in an Environmental Assessment being prepared by the Army. The preferred alternative would impact over 130 acres of mature forest that link the north post areas to the southern installation and the Blackwater Swamp. In addition, construction of temporary lodging facilities proposed in the southwest portion of the cantonment area would result in additional loss to wooded areas. The FEIS should describe, quantify, and specify the losses to be incurred. The cumulative effects resulting from all of these activities should be considered as there appears to be significant impacts to biological resources.

It is important to note that the purpose of a cumulative effects analysis is essential to the development of appropriate management strategies for the environmental consequences of human activities. Thus, the reason for this type of analysis is to ensure that federal decisions incorporate the full range of consequences of actions. Thus, the FEIS should provide a complete description of the impacted terrestrial habitat resources in the study area. Complete species lists for mammals, birds, amphibians, reptiles, and plants present in the study area should be provided. The composition and characteristics of each community type should be summarized and the functions and total acreage indicated. In addition, the species should be mapped relative to habitat locations and species density.

To determine the baseline value of the habitat and severity of the potential impacts from the proposed project, EPA recommends that a baseline Habitat Evaluation Procedure (HEP) be completed on the study area using the U.S. Fish and Wildlife Services' Habitat Evaluation Procedure. If the impacts of the wildlife and terrestrial habitat are unavoidable, the HEP will help to determine the type of mitigation measures which would be considered appropriate for the potential impacts.

Measures to avoid potential adverse impacts to these resources should be evaluated and implementation and mitigation plans to minimize impacts should be developed. Where such impacts cannot be avoided, adequate compensation developed through habitat assessment should be implemented.

Water Resources

The total amount of land converted from field training land to other uses would be approximately 470 acres. Adverse cumulative effects would be expected from family housing expansion and Master Plan projects on Fort Lee. In addition, a long-term increase in storm water runoff due to a combined increase in impervious surface area on the installation would be expected. As stated in the DEIS, some facilities and structures would be located in the Range Area on Fort Lee. This area is undeveloped compared to other areas of the installation; thus, the area would experience increased runoff into nearby streams due to an increase in impervious cover. The FEIS should provide specific detail as to the size and placement of the facilities and structures; the area to be impacted, and specific measures to minimize the impact on surface water quality. Page 4-51 states that "No mitigation would be necessary to protect surface water and groundwater quality." EPA suggests that the Army incorporate best management practices (BMP) and low impact development (LID) practices to lessen the impact resulting from increased impervious areas.

FORT A.P. HILL, VIRGINIA

Noise

The proposed EOD site is close to the installation border and the Port Royal settlement. As noted in the DEIS, use of the area for the explosion of large charges could create an incompatibility with the nearby residential area because transition between the land uses does not provide an adequate buffer for noise. In addition, the Army is proposing in an Environmental Assessment, the establishment of Asymmetrical Warfare Group (AWG) training ranges which are planned to be located near the EOD site. Both the AWG range and the EOD training area have the potential to exacerbate the noise nuisance in nearby residential land use. The proposed AWG range would be the dominant contributor to the overall noise environment in the Port Royal area even without the preferred alternative. The DEIS states then that implementation of the Preferred Alternative would have only minor cumulative effects on the noise environment.

As stated previously, a cumulative effects analysis is critical to ensuring that federal decisions incorporate the full range of consequences of actions. As a result, it would be prudent to address site location for the EOD project and if other locations for this action were assessed knowing that the combined operation of the two actions in close proximity would contribute greatly to the noise impacts affecting nearby residential communities. EPA suggests that the

Army evaluate more closely the location of the EOD training area to the AWG range and its proximity to the Port Royal community and incorporate design and mitigation into this action.

The FEIS should clearly depict on a map the location of the proposed AWG range in relationship to the EOD site.

Forested Areas

Although the DEIS states that the proposed EOD site occupies approximately 1,200 acres of predominantly forested land, it does not quantify the areas that will be cleared for the FOBs and the LSA, nor does it specify the kinds of vegetation to be impacted. Based on the proposed action, it appears that the deforestation would be significant. EPA is aware that Fort A.P. Hill has 57,000 acres of managed forest; however, it is suggested that the Army address ways to mitigate for the loss of forested areas. It is also recommended that the possibility of creating a vegetative buffer for the Port Royal community be addressed, if feasible.

Thank you for providing EPA with the opportunity to review this project. If you have questions regarding these comments, the staff contact for this project is Karen DelGrosso; she can be reached at 215-814-2765.

Sincerely,

William Arguto
NEPA Team Leader

Enclosure

RESPONSE TO COMMENTS FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY

FORT LEE, VIRGINIA

***Wetlands*:** USEPA states that Table 4.8-2 is referenced but not provided in the DEIS or not properly identified, making it difficult to identify the delineated wetlands in the referenced areas. USEPA recommends that the FEIS include data from a wetlands delineation that uses the *Federal Manual for Identifying and Delineating Wetlands*. In addition, USEPA suggests that the type and quality of wetland habitat and the wetland functions and values to be impacted be clearly identified and associated with each proposed action/activity. USEPA also recommends that Training Area 5 and the ASP areas be clearly depict on a map that indicates the wetlands in these areas, and that the potential wetland impact in the areas be quantified. USEPA states that Figure 4.1-6 (2006 Wetland Inventory Sites) include a legend that associates and identifies the name of the BR.AC site with the number provided on the map.

Table 4.1.7-2 was improperly labeled as Table 4.8-2 in the DEIS. Descriptions of the principle wetland types documented during the 2006 wetland delineation of specific portions of the cantonment area have been incorporated into Section 4.1.7.1.4. In addition, identification, quantification, and descriptions of anticipated wetland impacts have been incorporated into Section 4.1.7.2.1.

***Natural Habitats, Vegetation and Wildlife*:** USEPA states that the FEIS should describe, quantify, and specify the losses of natural habitats on Fort Lee, including those from the BRAC activities and the RCI program, and that the cumulative effects resulting from these activities be considered. USEPA recommends that the FEIS provide a complete description of the impacted terrestrial habitat resources in the study area, including complete species lists for mammals, birds, amphibians, reptiles, and plants present in the study area. USEPA suggests that the composition and characteristics of each community type be summarized and the functions and total acreage indicated. In addition, USEPA states that the species should be mapped relative to habitat locations and species density.

To determine the baseline value of the habitat and severity of the potential impacts from the proposed project, USEPA recommended that a baseline Habitat Evaluation Procedure (HEP) be completed on the study area using the U.S. Fish and Wildlife Services' Habitat Evaluation Procedure. If the impacts of the wildlife and terrestrial habitat are unavoidable, states USEPA, the HEP would help to determine the type of mitigation measures that would be considered appropriate for the potential impacts. USEPA recommends that measures to avoid potential adverse impacts to these resources be evaluated and implementation and mitigation plans to minimize impacts be developed. Where such impacts cannot be avoided, USEPA recommends that adequate compensation through habitat assessment be implemented.

Descriptions, including estimated quantities, of natural habitats, vegetation, and wildlife have been incorporated into Section 4.1.7.2.1. In addition, further descriptions of cumulative impacts have been added to the Cumulative Effects section. Comprehensive floral and faunal surveys were conducted throughout the installation between 2002 and 2004. Species lists developed from these surveys have been provided as Appendix J.

Loss of forested areas due to conversion of land in Training Area 5 would involve approximately 340 acres, and RCI development would involve approximately 130 acres. Combined, these losses would be less than one-sixth of the post's forested areas. As recognized in Section 4.1.15, these losses are unavoidable.

The Habitat Evaluation Procedure qualifies and quantifies available habitat for selected wildlife species. HEP provides information for two general types of wildlife habitat comparison: The relative value of different areas at the same point in time, and the relative value of the same area at future points in time. In applying HEP, habitat for selected species is described by a habitat suitability index. This index value is multiplied by the area of available habitat to obtain habitat units, which are used in the HEP comparisons. HEP is generally used in wildlife habitat assessment (for both baseline and future conditions), trade-off analyses, and compensation analyses.

The BRAC and RCI actions would be expected essentially to eliminate the habitats now present at the specific project sites. HEP would reveal no viable amounts of habitat amendable to further management. Given the present degree of Fort Lee's development, which limits the potential for trade-offs or compensation, HEP analyses would not be appropriate.

As noted in the discussion of mitigation in Section 4.1.7.2.1, the EIS recommends the creation of wildlife corridors to reduce effects of habitat fragmentation. Specifically, design and construction planning for Training Area 5 should support the creation of a wildlife corridor to link the North Range Area with the Petersburg National Battlefield and the Blackwater Swamp. A wildlife corridor would provide migratory routes or safe haven for some species, but it would not likely provide any meaningful habitat units as might be adduced from use of HEP.

***Water Resources*:** USEPA states that the FEIS should provide specific detail as to the size and placement of storm water facilities and structures, the area to be impacted, and specific measures to minimize the impact on surface water quality. USEPA points out that Page 4-51 states that "No mitigation would be necessary to protect surface water and groundwater quality," and suggests that the Army incorporate best management practices (BMP) and low impact development (LID) practices to lessen the impact resulting from increased impervious areas.

A planning meeting for the TA5/ASP area at Fort Lee occurred just after the DEIS was released. Appendix K of the FEIS contains information from that meeting on potential methods to handle storm water flow from the increased impervious area. Pertinent points from Appendix K are in section 4.1.6 of the FEIS. The precise locations and sizes of structures to be constructed on the installation were not known at the time the DEIS was made public.

FORT A.P. Hill, VIRGINIA

***Noise*:** USEPA recommends that it would be prudent to address site location for the EOD project, and whether other locations for this action were assessed—knowing that the combined operation of the EOD range and the AWG range in close proximity would contribute greatly to the noise impacts affecting nearby residential communities. USEPA suggests that the Army evaluate more closely the location of the EOD training area relative to the AWG range and the EOD range's proximity to the Port Royal community, and incorporate design and mitigation for noise effects into the action. USEPA recommends that the FEIS clearly depict on a map the location of the proposed AWG range in relationship to the EOD site.

Section 4.2.4.2.1 specifically addresses the combined effects of the AWG and EOD ranges on the noise environment. The combined effect was determined to be minor. Noise figures have been updated to depict the location of the proposed EOD and AWG ranges for the FEIS.

***Forested Areas*:** USEPA notes that the DEIS does not quantify the areas that will be cleared for the FOBs and the LSA, nor does it specify the kinds of vegetation to be impacted. USEPA suggests that the Army address ways to mitigate for the combined loss of forested areas in the FOBs, the LSA, and the EOD ranges, and recommends that the possibility of creating a vegetative buffer for the Port Royal community be addressed, if feasible.

Since publishing the DEIS, is has been determined that approximately 180 acres of forested areas would be used for training sites at the proposed EOD area, and the training sites will likely be dispersed throughout the 1,200-acre area. No mitigation, therefore, is necessary. This information has been added to the FEIS in section 4.1.7. Additional clearing for the FOBs and LSA is not expected add significant acreage to the total amount of land cleared.

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2904

IN REPLY REFER TO:

November 20, 2006

ER 06/951

Ms. Carol Anderson
Fort Lee
IMNE-LEE-PWE
1816 Shop Road
Fort Lee, VA 23801-1604

RE: Draft Environmental Impact Statement: Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions At Fort Lee, Virginia, and Fort A.P. Hill, Virginia

Dear Ms. Anderson:

This letter rescinds the Department of the Interior (Department) comments sent to you on November 14, 2006. The Department has undertaken additional review of the above-referenced DEIS and offers the following comments.

We have reviewed the DEIS for implementing the BRAC recommendations at Fort Lee and Fort A.P. Hill, Virginia. As you are aware, Fort Lee borders Petersburg National Battlefield Park (Petersburg NHB), a unit of the national park system. According to the DEIS, the Army's Preferred Alternative has potential for significant adverse impacts on Petersburg NHB.

We understand that the Army has been working with the National Park Service during the planning process and that Petersburg NHB is providing detailed comments on the DEIS. The Department encourages the Army to continue collaborating with the park to ensure that implementation of the BRAC recommendations will avoid and minimize adverse impacts to Petersburg NHB to the maximum extent possible.

Thank you for the opportunity to review the DEIS. If you have any questions, please contact Jacki Katzmire, NPS Northeast Regional Office, at 215-597-1903.

Sincerely,

Michael T. Chezik
Regional Environmental Officer

cc:
D. Shockley, NPS, Petersburg, VA
B. Kirby, NPS, Philadelphia, PA
J. Katzmire, NPS, Philadelphia, PA
L. Chapman, NPS, Philadelphia, PA

RESPONSE TO COMMENTS OF THE U.S. DEPARTMENT OF THE INTERIOR

The Army has been coordinating with the Petersburg NHB in planning for areas with the potential to affect the battlefield park and will continue to do so throughout the rest of the planning and implementation phases of the BRAC project.

United States Department of the Interior
NATIONAL PARK SERVICE

PETERSBURG NATIONAL BATTLEFIELD
1539 HICKORY HILL ROAD
PETERSBURG, VIRGINIA 23803-4721

In Reply Refer to:

A3823

November 17, 2006

Carol Anderson
IMNE-LEE-PWE
1816 Shop Road
Fort Lee, Virginia 23801-1604

Dear Ms. Anderson:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement, *Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee, Virginia, and Fort A.P. Hill, Virginia.*

Listed below are several concerns and comments that the Battlefield has regarding the Draft EIS. Also, attached to this correspondence are two letters that were previously sent concerning BRAC issues. One letter was sent to you on May 2, 2006 and the other to Colonel Gwen Bingham on June 20, 2006. These letters express the Battlefield's concerns regarding the impacts that BRAC will have on the park, especially the portion north of Route 36.

Petersburg National Battlefield shares a common boundary with Fort Lee of approximately two miles. Along this two mile boundary, a sufficient forest buffer exists to provide adequate screening of activities and structures at Fort Lee from fortifications and high visitor use areas in the park, except in the area north of Route 36. It is within this area that the park's main visitor center, site of the initial attack on Petersburg at Battery V, interpretive trails and the famous "Dictator" mortar are located. This is also the most visited site in the park where frequent educational and historic programs are conducted. The BRAC preferred alternative, outlined in the draft EIS, proposes to develop the land north of Route 36 adjacent to this site. Long-term adverse impacts to Petersburg National Battlefield will occur, if specific proposed BRAC development occurs, especially in the area known as TA5 (as noted on page 4-68 and 4-69).

The following are specific concerns the Battlefield has regarding BRAC development:

Cultural Landscape/Viewshed ("Aesthetics and Visual Resources" pg. ES-9 and 4-69-70; 4-116-117)

The view visitors to the park presently have from Battery V, the interpretive trail, and from the "Dictator" mortar is one of a quiet, esthetically pleasing natural forest setting with no visual impacts from modern intrusions. Between Battery V and Fort Lee property (TA5) is a deep ravine. Battery V is located on the 100 foot contour with the Fort Lee property boundary located on the 80 -100 foot contour. This ravine, due to the elevation change and with limited forest cover, will not provide adequate screening from buildings and structures if they are constructed near the Battlefield boundary. The National Park Service deems it imperative a 300-foot vegetative buffer be maintained to properly screen and minimize the impact of buildings or structures. This buffer should include current vegetation cover with additional coniferous plantings.

Structures taller than two stories near the boundary would not be compatible with the historic setting at this location. Planned buildings in TA5 are High Bays, Mid Bays and five story barracks. As noted on page 4-69, these tall buildings will be highly visible from the park if constructed near the western section of TA5. High water towers should also be carefully positioned on the site so that they will not be visible from the park.

A concern is also with exterior lighting on buildings, parking lots and training areas near the park boundary. This could add to significant night sky pollution to the park.

Page 4-6, para 2—Outside the Installation, Environmental Consequences, Preferred Alternative, recognizes a "minor adverse effect on land use at the adjacent Petersburg National Battlefield" as the result of new facilities at Training Area Five which will introduce noise and visual intrusion (these specific effects and their mitigation are also discussed later). Although reversible, these activities and facilities are likely to have a major effect on visitor enjoyment of the battlefield and seriously impair the historic landscape and viewshed. In keeping with the National Park Service mission of preservation and protection of resources these impacts would have a long-term significant adverse effect to the park, as noted on page 4-68.

Noise ("Noise", pg. 4-25; 4-69-70; 4-116-117)

The proposed High Bays and Mid Bays, if constructed in the western portion of TA5, would generate significant obtrusive noise levels from activities of heavy equipment and vehicles inside and outside the high bays. The EIS does not list noise levels generated by this activity. Placement of these structures near Battlefield boundaries would have a long-term significant impact on our visitor's experience.

Erosion/Runoff

Due to the contour of the western area of TA5, the Battlefield has some concerns of potential erosion and runoff. As mentioned above, a deep ravine exists between Battery V and TA5 with a small stream at the bottom. Will adequate measures be taken to prevent slope erosion during construction and short-term and long-term storm runoff into the park?

Traffic ("Transportation", pg. 4-88 and Fort Lee Transportation Traffic Study)

Fort Lee has identified Hickory Hill Road as one of their primary concerns regarding traffic flow in and off of the base. Suggestions have included widening the road into 3 or 4 lanes to accommodate additional traffic. NPS is concerned with; 1) how this will impact access in and out of park offices, the Battlefield equestrian parking, and employee housing and; 2) how will widening and construction affect park natural and cultural resources. Employees are already having difficulty with traffic, having been involved in two separate rear-end accidents within the last few months. With the proposed additional lanes, NPS would like to explore various options with Fort Lee and VDOT on the possible inclusion of turn lanes into some of the park facilities.

Another traffic option Fort Lee is reviewing is the reroute of Route 36 around the northern section of the base via Puddledock Rd. and Temple Ave. Although we understand the advantage this would have for Fort Lee, this option would have an impact on Battlefield visitors since a large portion of them exit onto Route 36 from I-295. Additional travel time, signage, and mapping would be a concern and issue.

Wildlife Resources/Forest Health ("Biological Resources, pg. 5-52)

The proposed alternative will result in the loss of significant mature forests and natural areas especially within TA5. We feel these loses will have a long-term significant adverse effect on resources, not a "minor" as noted in the EIS. This significant loss of habitat could also result in long-term effects on Battlefield wildlife including overpopulation of White-Tailed deer.

The Battlefield supports the option of maintaining a wildlife corridor in TA5 as long as the security fence is not counterproductive in allowing wildlife access into and out of the Battlefield or other natural areas.

Page 4-4 of the DEIS states that Petersburg National Battlefield is "the location of one of the Civil War's most significant campaigns" and page 4-65 states that "much of the land surrounding present day Fort Lee served as the field and front lines for the armies". Fort Lee itself was part of the field, located as it was between the front of the Union lines and the headquarters and supply depot at City Point. Better wording would recognize that Petersburg National Battlefield preserves and protects only a small portion of the lands involved in one of the Civil War's most significant campaigns, the siege of Petersburg in the final year of the war. Increasing urbanization in the surrounding cities and counties, which BRAC will accelerate, will have an adverse effect on the more broadly defined battlefield and preclude

additional preservation of the siege-line and its view-sheds, making it more imperative that the lands set aside by Congress in Petersburg National Battlefield remain protected.

Additionally, we appreciated the chance to work with Fort Lee, contractors, and partners in a charrette during the week of November 13, 2006 to address issues, concerns and possible mitigation measures. The Battlefield is a Nationally Historic Landmark. Much of the battlefield surrounding the park has been lost to other uses. Our mission is to protect Civil War resources and provide an optimum education setting for visitors to learn about the soldiers' sacrifice.

If you have any questions about these comments, please contact me at 804-732-0171, ext. 305.

Sincerely,

Dave Shockley
Chief, Resource Management

Attachments

United States Department of the Interior
NATIONAL PARK SERVICE
PETERSBURG NATIONAL BATTLEFIELD
1539 Hickory Hill Road
Petersburg, Virginia 23803-4721

A3823

June 20, 2006

Colonel Gwen Bingham
Garrison Commander
Headquarters, United States Army Garrison-Fort Lee
1100 Lee Avenue Suite 112
Fort Lee, Virginia 23801-1720

Dear Colonel Bingham:

Thank you for the opportunity to comment on the Base Realignment and Closure (BRAC) proposed actions at Fort Lee. Park staff attended the scoping meeting held on April 20th at Union Station, Old Town Petersburg and have been working with the Environmental Division at Fort Lee. Carol Anderson, Dana Bradshaw and Andy Mills have been very helpful in relaying information to us concerning the conceptual ideas about facility and operations changes that will occur in the near future.

The most recent information I have concerning construction plans for BRAC was on June 16, 2006. Based on this information, there appear to be four centers/schools that could have an impact on park resources or visitor experiences. These four are: 1- Transportation Center and School, 2- Ordnance Center and School, 3- Missile and Maintenance Center, and 4-Transportation Management Training.

It is my understanding that the Transportation Center and School would need numerous multi-story high bays for servicing and training on Abrams tanks, Bradley fighting vehicles and other types of army vehicles. The park's concerns are: will the "high bays" be visible from the park, will there be the potential for petroleum runoff into the park from this facility, and will there be additional noise affecting the park visitors?

The Ordnance Center and School is also slated to be located in the near vicinity of the park visitor center. Our concern is: will there be any visual or noise impacts coming from this training facility that could negatively affect the visitor experience?

The Missile and Munitions Center operation and location may have some impacts but I do not have any details on the center and its operations.

The Transportation Management Training Facility might have impacts to the park if it is located near or adjacent to the park.

I understand that the actual locations and footprints of the centers and schools have not been definitively determined. Therefore, it is possible that based on their actual locations, the facilities may be of concern to the park.

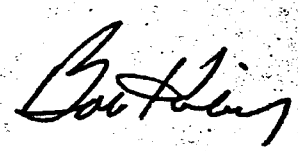
Traffic congestion is another issue that might impact the park. Impacts could come from additional traffic on RT 36, leading to greater noise levels and entry/exit to and from the park via Route 36.

We appreciate the opportunity to be a member of the planning process for the proposed development at Fort Lee. I understand that a planning cherette is proposed for the near future and we would very much like to attend that meeting.

We are confident that any possible impacts can be mitigated and look forward to the opportunity of working with you and others concerning the growth of operations at Fort Lee.

Should you have any questions, please call me at (804) 732-3571x105.

Sincerely,



Bob Kirby
Superintendent

Cc: Carol L. Anderson
Environmental Program Manager
Environmental Management Office
1816 Shop Road
Fort Lee, VA 23801-1604

United States Department of the Interior
NATIONAL PARK SERVICE

PETERSBURG NATIONAL BATTLEFIELD
1539 Hickory Hill Road
Petersburg, Virginia 23803-4721

In Reply Refer to:

A3823

May 2, 2006

Carol Anderson
Environment Management Office
1816 Shop Road
Fort Lee, VA 23801-1604

Dear Ms. Anderson,

Thank you for the opportunity to comment on the Base Realignment and Closure (BRAC) Commission's recommendation pertaining to Fort Lee. The scoping meeting held on April 20th at Union Station, Old Towne Petersburg was informative and revealed that Petersburg National Battlefield has the potential to be greatly affected by the proposed development at Fort Lee, especially in the area north of Route 36 and east of the Battlefield's visitor center. Due to the close proximity of the proposed development to the park in this area, a heightened sensitivity to the location of buildings and operations needs to be evaluated.

The Battlefield's property located north of Route 36 is the most visited area of the park and the first stop on the battlefield tour. Within this area are the park's main visitor center, library, museum, and Civil War fortifications. This is the site of General Grant's initial assault on Petersburg by Union troops on June 15, 1864. Many interpretive and school educational programs along with guided ranger tours take place in this area. Additionally, the "Dictator" mortar is a highly visited attraction accessed by a heavily used trail system that connects the visitor center with numerous historical sites.

We request to be an active member of the planning process so that the proposed development of the real estate adjacent to the park will have little or no impact on park resources (i.e. cultural and natural), visitation patterns (i.e. traffic), and the visitor experience (i.e. noise, view sheds, and air quality).

If you have any questions or concerns, please contact Dave Shockley at 732-0171, ext. 305 or 691-4781 (cell) OR me at 732-0171, ext. 105.

Sincerely,

Bob Kirby
Superintendent

Attachment: Adjacent Lands Map

RESPONSE TO COMMENTS OF THE PETERSBURG NATIONAL BATTLEFIELD

Petersburg National Battlefield (PNB) noted that the view visitors to the park presently have from Battery V, the interpretive trail, and from the 'Dictator" mortar is one of a quiet, esthetically pleasing natural forest setting with no visual impacts from modern intrusions, and stated that the National Park Service deems it imperative that a 300-foot vegetative buffer be maintained to properly screen and minimize the impact of buildings or structures. Fort Lee is incorporating a vegetative buffer into the design for TA5. A 300-foot buffer is probably more than will be possible, given the severe demands on the land area for the proposed development. A 100-foot buffer is incorporated into the design, with the width of the buffer being shared by the Battlefield and Fort Lee. In addition, the installation is working with design firms to limit the height of buildings near the Battlefield.

PNB noted that structures taller than two stories near the boundary would not be compatible with the historic setting at the location. Fort Lee is currently consulting with Petersburg National Battlefield and the Virginia DHR on activities and developments proposed for TA5. Consultation with the PNB and VDHR is also occurring for development of a Programmatic Agreement that will address protection of historic properties and mitigation of potential adverse impacts, including any that could occur to the battlefield. The installation is working with design firms to limit the height of buildings near the Battlefield. No change to the text was necessary.

PNB also had a concern with exterior lighting on buildings, parking lots, and training areas near the park boundary, which could add to significant night sky pollution to the park. The potential for night sky light pollution has been added to the description of potential impacts to the battlefield that would result from the proposed BRAC activities and the issue is addressed in section 4.1.2.

PNB stated that new facilities in Training Area 5 would introduce noise and visual intrusion, and that the activities and facilities are likely to have a major effect on visitor enjoyment of the battlefield and seriously impair the historic landscape and viewshed. Fort Lee is working with design firms to ensure the placement of facilities that would generate the greatest amount of noise away from the Battlefield property. The Army will considering installing noise control devices on outdoor equipment. The installation is also working to ensure that a substantial vegetative buffer is maintained between the Battlefield and the installation to reduce the amount of visual effect the development will have on the park and its visitor. A noise analysis of the proposed action was prepared by USACHPPM at Aberdeen Proving Ground. Unfortunately, no noise data for the types of facilities that would be constructed in TA5 and the ASP area exists and the noise from the facilities could not be modeled.

PNB noted that due to the contour of the western area of TA5, the Battlefield has some concerns of potential erosion and runoff. The text addresses the potential for storm water runoff and erosion along the steep bank that occurs between the properties. All potential erosion issues will be addressed in concert with the Commonwealth of Virginia when determining appropriate BMPs for erosion and storm water control. The battlefield will be informed of plans developed.

PNB noted that Fort Lee identified Hickory Hill Road as one of their primary concerns regarding traffic flow in and off of the base. The battlefield was concerned with (1) how this will impact access in and out of park offices, the battlefield equestrian parking, and employee housing and (2) how will widening and construction affect park natural and cultural resources. The EIS text

directly addresses transportation impacts on Hickory Hill Road and potential solutions in section 4.1.10. VDOT's recommendations are the basis of the assessment of the traffic problem.

PNB commented that the losses of significant mature forests and natural areas will have a long-term significant adverse effect on resources, not a "minor" as noted in the EIS. Language in section 4.1.7.2.1 describes the natural wildlife corridor that would be preserved along the north side of TA-5 extending from TA-6 to the Petersburg National Battlefield and explains the rationale for the finding of a minor impact.

PNB commented that the EIS notes that the battlefield is "the location of one of the Civil War's most significant campaigns" and states that "much of the land surrounding present day Fort Lee served as the field and front lines for the armies." PNB noted that Fort Lee was part of the field, and that better wording would recognize that Petersburg National Battlefield preserves and protects only a small portion of the lands involved in one of the Civil War's most significant campaigns. Text in section 4.1.8.2.1 describes in detail the cumulative effect of the BRAC action on the larger battlefield.

REVIEW REPORT

REPORT ON	DIVISION
Draft EIS for BRAC Actions at Ft. Lee and A.P. Hill	VIRGINIA

DATE	REPORT MADE BY	PROJECT NO.
December 6, 2006	Ken Myers	*N/A*

REMARKS

An internal review was made in regard to the potential traffic impacts that would result with the implementation of the actions described in the subject DEIS.

Contacts with VDOT District Planners indicated that they had reviewed the information and for A.P. Hill the Fredericksburg District had no major comments, and I have no comments regarding that action. For the Ft. Lee site, VDOT's key recommendation was the coordination of the BRAC study with an ongoing consultant study in the Tri-Cities MPO area. I agree with that recommendation.

FHWA Division Comments - Fort Lee

The DEIS includes an extensive discussion of traffic including the traditional build/no-build scenarios. The document describes impacts to the human environment that would result as a result of the additional traffic and the resulting reduction in the level of service on adjacent roadways. For the various roads studied, traffic increases due to BRAC range from zero up to 9,900 ADT. Although the DEIS terminology describes the traffic impacts as "significantly adverse" the LOS's due to BRAC traffic are no more that one level lower than without BRAC.

Page ES-16 - In regard to the Transportation mitigation measures identified on page ES-16, coordination is needed not only with VDOT but also with the Metropolitan Planning Organization. Identification of funding sources is also critical to the mitigation of these identified impacts which were previously described as significantly adverse. (Also Page 4-104, 4-118). We recommend that this coordination continue towards the development of a FEIS that contains real commitments towards mitigating the traffic impacts that result from BRAC traffic. This list should be carried forward into the ROD for the project, which could be used as a more concise tool in the pursuit of funding to implement the recommendations.

Editorial comment:

Section - ES.6.1.1.10 Transportation - Current statement - "...it is important to note that although the implementation of the Preferred Alternative would *increase* traffic and LOS on all roadways..." should read: "...the Preferred would increase traffic and *decrease* LOS on all roadways..."

Kenneth R. Myers
Planning & Environmental
Program Manager
FHWA, VA Division Office
(804)775-3353
Kenneth.Myers@fhwa.dot.gov

RESPONSE TO COMMENTS FROM THE FEDERAL HIGHWAY ADMINISTRATION

The Federal Highway Administration noted that the characterization of the traffic impacts due to BRAC as "significantly adverse" were reviewed by the resource area specialist for that section of the EIS, in light of FHWA's recognition that the LOSs due to BRAC traffic would be no more that one level lower than without BRAC. The EIS text in section 4.1.10 addresses the traffic improvements recommended by VDOT's final traffic analysis and mentions the MPO as a point of coordination of the roadway upgrades. Fort Lee will coordinate with both VDOT and the MPO with respect to mitigation for any traffic impacts due to BRAC. Fort Lee has prioritized transportation projects identified as needed to mitigate the traffic impacts due to BRAC Implementation. The projects have been submitted by Fort Lee for funding from sources such as the Defense Access Roads Program, Tri-Cities Area MPO, and VDOT. A Commonwealth of Virginia grant has been approved for traffic improvements at Shop Road Gate and Hickory Hill Road/Mahone Avenue. Mitigation that the Army considers necessary will be carried forward into the ROD and funding for any mitigation the Army commits to will be pursued.

The incorrect statement in the Executive Summary and in section 4 ("…it is important to note that although the implementation of the Preferred Alternative would *increase* traffic and LOS on all roadways…") was corrected as suggested to read "the implementation of the Preferred Alternative would *increase* traffic and *decrease* LOS on all roadways…".

Email comment from Federal Bureau of Prisons (Robert Nannery)
Sent: Tuesday, October 10, 2006 10:58 AM
To: CRMLee@lee.army.mil
Subject: Draft Environmental Impact Statement

Ms. Anderson,

Thank you for the copy of the statement. I have reviewed it and cannot think of any concerns or impact that these projects will have on the Federal Correctional Complex. If anything comes to mind, I will forward the information to you.

Thank you,
Robert Nannery, Safety Manager

Response: Fort Lee appreciates the time taken to review the document and provide the installation with your comments.

CRATER PLANNING DISTRICT COMMISSION

Monument Professional Building • 1964 Wakefield Street • Post Office Box 1808 • Petersburg, Virginia 23805
PHONE: (804) 861-1666 • FAX: 804-732-8972 • E-MAIL: craterpd@cpd.state.va.us • WEBSITE: www.craterpdc.state.va.us
Dennis K. Morris, Executive Director

November 20, 2006

Mr. Charles H. Ellis III
Environmental Program Planner
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Dear Mr. Ellis:

Please allow this correspondence to serve as the Crater Planning District Commission's official position in regard to the Draft Environmental Impact Statement (DEIS) on Base Realignment Actions at Fort Lee and Fort A. P. Hill (DEQ-06-167F).

It should be pointed out that the Crater Commission is serving as a cooperating agency in the preparation of the EIS, as described in the CEQ regulations, with special emphasis on Fort Lee.

After a thorough review of the DEIS and attending the public meeting that was held on October 26, 2006, the Crater Commission is in general accord with the alternatives and analyses presented in the DEIS. Commission staff will be working with the BRAC local communities and Fort Lee to identify solutions to those challenges outlined in the DEIS.

On behalf of the Crater Planning District Commission, I appreciate the opportunity to comment on this most critical national defense-related activity.

Best wishes

Sincerely,

Denny K. Morris
Executive Director

DKM/js

Response to comments from the Crater Planning District Commission

No changes were made to the EIS based on the comments from the CPDC.

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR.CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

Charles H. Ellis III
CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Significant population increase at Fort Lee will create challenges for waterworks in the future. Contact the Southeast Virginia Field Office at 830 Southampton Ave., Room 2058, Norfolk VA 23510, (757)-683-2000 for further information on waterworks capacity and permitting requirements. Additional demands on utilities at Fort A.P. Hill should be coordinated with the Health Dept.' Culpeper Field Office at 400 South Main St., 2nd Floor, Culpeper, VA 22701 (540)-829-7340.

(signed) Susan E. Douglas (date) 10-16-06

(title) Field Services Engineer

(agency) Dept. of Environmental Quality

PROJECT # 06-167F 8/98

RESPONSE TO COMMENTS FROM THE VIRGINIA DEPARTMENT OF HEALTH, OFFICE OF DRINKING WATER

The Virginia Department of Health, Office of Drinking Water noted that significant population increases at Fort Lee would create challenges for waterworks in the future. Fort Lee recognizes the issues raised for utility capacity and delivery by the proposed action, and is addressing the issues as planning for the expansion continues.

Fort Lee and Fort A.P. Hill appreciate the contact information for permitting requirements and will contact the necessary offices as the need arises.

VIRGINIA DEPARTMENT OF
ENVIRONMENTAL QUALITY

RECEIVED

NOV 03 2006

DEQ-Office of Environmental
Impact Review

MEMORANDUM

TO: Charles H. Ellis, III, Environmental Program Planner

FROM: Paul Kohler, Waste Division Environmental Review Coordinator

DATE: November 3, 2006

COPIES: Sanjay Thirunagari, Waste Division Environmental Review Manager; file

SUBJECT: Environmental Impact Report: Environmental Impact report for the Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee, VA and Fort A. P. Hill, VA

The Waste Division has completed its review of the Environmental Impact report for the Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee, VA and Fort A. P. Hill near Hopewell and Bowling Green respectively in Virginia. We have the following comments concerning the waste issues associated with this project:

With respect to Fort A. P. Hill and Fort Lee, solid and hazardous waste issues were mentioned in the report. The report did not include a search of waste-related data bases. The Waste Division staff performed a cursory review of its data files and determined that Fort Lee is under DEQ's Federal Facilities Installation Restoration Program (VA7210020502), and is a RCRA large quantity generator of hazardous waste (US ARMY CASCOM AND FORT LEE, VA7210020502). James L. Cutler, Jr., of DEQ's Federal Facilities Program has been contacted for his review of this determination with respect to Fort Lee. His memo is attached.

With respect to Fort A. P. Hill (VA2210020416), this facility is on the EPA CERCLIS list but is not on the NPL. Fort A. P. Hill (VA2210020416) is also a LQG and a former TSD. The following solid waste facilities are located in the vicinity: Caroline County Landfill, permit GW 182 Sanitary LF; Caroline County Landfill, permit SWP 147, closed Sanitary LF; Caroline County Landfill, Permit SWP 182, closed Sanitary LF; US Army - Fort A P Hill, permit SWP 332 closed Sanitary LF; US Army - Fort A P Hill, permit SWP 393, closed CDD LF. Stephen Mihalko, of DEQ's Federal Facilities Program has been contacted for his review of this determination with respect to Fort A. P. Hill. His comments are attached.

Finally, there is a Formerly Used Defense Site (FUDS) in the vicinity. Eric Salopek has researched and commented on this in the past in the course of his review of the "Environmental Assessment for the Proposed Asymmetric Warfare Group Ranges" report. His comments regarding this FUDS site are attached.

The following websites may prove helpful in locating additional information for these identification numbers: http://www.epa.gov/echo/search_by_permit.html or http://www.epa.gov/enviro/html/rcris/rcris_query_java.html .

Any soil that is suspected of contamination or wastes that are generated during construction-related activities must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Part 107.

Also, all structures being demolished/renovated/ removed should be checked for asbestos-containing materials (ACM) and lead-based paint prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-80-640 for ACM and 9VAC 20-60-261 for LBP must be followed.

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Paul Kohler at (804) 698-4208.

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WASTE DIVISION
Federal Facilities Restoration Program
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Environmental Impact Statement – U.S. Army Combined Arms Support Command
Fort Lee – Implementation of BRAC Recommendations

TO: Paul Kohler

FROM: James L. Cutler Jr., FFR JLC

DATE: October 23, 2006

COPIES: File

The *Draft Environmental Impact Statement for Implementation of BRAC Recommendations* dated September 2006 has been reviewed as requested by Paul Kohler, Waste Division Environmental Review Manager. The document presents the proposed action and alternatives to the proposed action.

The proposed action, as presented in the subject report, involves the renovation of existing facilities and construction of new facilities across the installation. Fort Lee contains a number of active and closed sites as defined by the environmental restoration program (ERP). The report references the *Fort Lee Installation Action Plan* that is used to track ERP sites. Although the proposed construction activities do not appear to be located where they would impact remedies already in place, it would be helpful to reference a figure depicting the proposed action in relation to the ERP sites. The widespread and sporadic construction plans outlined in this document make it difficult to detail the extent of impact each project may have upon an ERP site. Therefore, if the implementation of the proposed action is selected, the Federal Facilities Restoration Program recommends the facility contact Mr. Hank Hennigar at (804) 734-5068, or the Base's designated remedial project manager for information concerning the CERCLA obligations at the active and closed ERP sites on Base. Mr. Hennigar or his designee should be advised prior to initiating any land, sediment, or ground water disturbing activities at or near ERP sites to ensure all remedies in place remain intact and long term monitoring wells are not disturbed.

Mihalko,Stephen

From: Mihalko,Stephen
Sent: Thursday, October 12, 2006 1:49 PM
To: Kohler,Paul
Cc: Willis,Durwood
Subject: Implementation of Base Closure and Realignment Recommendations and Other Army Actions at Fort Lee and Fort A.P. Hill

Fort A.P. Hill is not undergoing installation restoration under the CERCLA process (and we currently have no IR oversight responsibilities for our FFR staff). They are currently working with EPA Region III under the Hazardous Waste (RCRA/HSWA) Corrective Action Program. Wanda Martinez (215-814-3434) is the EPA RPM assigned to this facility. It would likely be beneficial if she reviewed this assessment to determine if it will affect any of the corrective action work they might be doing. That would likely be the only comment I would make to the facility. Please let me know if there are any questions.

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION OF WASTE PROGRAM COORDINATION

OFFICE OF REMEDIATION PROGRAMS

MEMORANDUM

TO: John Fisher, OEIR

FROM: Eric J. Salopek, ORP

DATE: September 20, 2006

COPY: Paul Kohler, OWP

SUBJECT: Fort A. P. Hill FUDS – CO3VA0026

The purpose of this memorandum is to provide comments to your office on the referenced Formerly Used Defense Site (FUDS), in relation to the review of "Environmental Assessment for the Proposed Asymmetric Warfare Group Ranges." According to our files, a total of five parcels from Fort A. P. Hill totaling 1,271.34 acres were disposed of by the DoD between 1953 and 1985. All of these parcels are located around the perimeter of the active installation.

The location of the nearest FUDS parcel to the nearest proposed Project Area exceeds 3 miles.

According to the DoD, there is no known/suspected ordnance and/or hazardous waste on these FUDS parcels. However, please be aware that our office has not conducted an investigation to either support or contradict this assertion.

Given the distances between the five FUDS parcels and the proposed ranges, it is highly unlikely that any historic practices of the FUDS impacted, or are likely to impact, the proposed range Project Areas.

RESPONSE TO COMMENTS OF THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, WASTE DIVISION

VDEQ's Waste Division noted that any soil suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations. It also noted that all structures to be demolished, renovated, or removed should be checked beforehand for asbestos-containing materials and lead-based paint. Furthermore, the division encouraged the Army to implement pollution prevention principles in all construction activities. Forts Lee and A.P. Hill will conduct all activities that involve contaminated soil and hazardous materials in accordance with applicable state and federal laws and regulations, will obtain any permits necessary to conduct the work, and will ensure that all contractors are properly licensed and maintain full compliance with applicable laws and regulations.

VDEQ's Division of Waste Program Coordination, Office of Remediation Programs, noted that five Formerly Used Defense Sites (FUDS) at Fort A.P. Hill were disposed of by DoD between 1953 and 1985. As noted, all of the parcels are located around the perimeter of the active installation and the nearest parcel is at least 3 miles away from the proposed project areas. Fort A.P. Hill does not anticipate any adverse environmental effects from the presence of the FUDS.

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Charles H. Ellis III **DEQ - OEIA PROJECT NUMBER: 06 – 167F**

RECEIVED
OCT 06 2006
DEQ-Office of Environmental Impact Review

PROJECT TYPE: ☐ STATE EA / EIR / FONSI **X FEDERAL EA / EIS** ☐ SCC

☐ CONSISTENCY DETERMINATION/CERTIFICATION

PROJECT TITLE: IMPLEMENTATION OF BASE CLOSURE AND REALIGNMENT (BRAC) RECOMMENDATIONS AND OTHER ARMY ACTIONS AT FORT LEE, VA AND FORT A. P. HILL, VA

PROJECT SPONSOR: DEPARTMENT OF DEFENSSE / DEPARTMENT OF THE ARMY

PROJECT LOCATION: **X OZONE NON ATTAINMENT AREA (PARTLY)**

REGULATORY REQUIREMENTSMAY BE APPLICABLE TO:
X CONSTRUCTION
X OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3. ☐ 9 VAC 5-40-5490 et seq. – Asphalt Paving operations
4. **X 9 VAC 5-40-5600 et seq. – Open Burning**
5. **X 9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
6. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to_____
7. ☐ 9 VAC 5-50-160 et seq. – Standards of Performance for Toxic Pollutants
8. ☐ 9 VAC 5-50-400 Subpart_____, Standards of Performance for New Stationary Sources, designates standards of performance for the_____
9. ☐ 9 VAC 5-80-10 et seq. of the regulations – Permits for Stationary Sources
10. ☐ 9 VAC 5-80-1700 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
11. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
12. ☐ 9 VAC 5-80-800 et seq. Of the regulations – Operating Permits and exemptions. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

All precautions are necessary to restrict the emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) during construction connected with activities in the area of ozone non-attainment (pertaining to Fort Lee).

For permitting needs of new installation of boilers, generators etc. our Piedmont Regional Office (Fort Lee) and Northern Virginia Office (A. P. Hill) may be contacted.

K. S. Narasimhan

(Kotur S. Narasimhan)
Office of Air Data Analysis

DATE: October 6, 2006

RESPONSE TO COMMENTS OF THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF AIR PROGRAM COORDINATION

VDEQ's Division of Air Program Coordination noted that during construction activities fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 et seq. of the Regulations for the Control and Abatement of Air Pollution; that if project activities include the burning of construction or demolition material or land-clearing debris, the activity must meet the requirements under 9 VAC 5-40-5600 et seq. of the regulations for open burning, and it may require a permit; and that if fuel-burning equipment is used in construction activities, and/or in heating and cooling the new facilities at either Fort, one or more air pollution control permits may be required. With respect to the need for air emissions controls, the EIS text was updated to reflect the VAC requirements for fugitive dust, open burning, and the use of fuel-burning equipment that may require air pollution control permits. (FEIS page 4-21 to 4-22)

Ellis,Charles

From: Hassell,Joseph

Sent: Monday, November 20, 2006 3:02 PM

To: Ellis,Charles

Subject: Implementation of Base Closure and REalignment (BRAC) Recommendations and other Army actions at Fort Lee and Fort A.P. Hill (DEQ-06-167F

The proposed realignment will increase the average daily population of Fort Lee from 12,953 to 20,703. Water is currently supplied to Fort Lee by both Virginia American Water Company, primarily and the Appomattox River Water Authority. These water authorities have sufficient capacity to accommodate the increased demands that will be brought by the additional student soldiers.

The creation of the Sustained Center for Excellence will bring about quite a lot of new construction to Fort A.P. Hill. It is not known how many additional personnel.

Ft A.P. Hill relies on ground water for its water supply. The EIS lists as a mitigation measure the installation of low flow plumbing fixtures at all newly constructed buildings. Care should be taken by the Army to make sure that they have an adequate supply of water in case the demand for water at AP Hill increases. Ground water development in this area is limited. High production wells are not common. The area is currently not a ground water management area and no permits are required for development of wells at the present time. However the northern coastal plain east of I 95 in Virginia has been under consideration to become a ground water management area. If such a regulatory action were to occur, new wells would require permits.

Thank you for the opportunity to comment.

Joe Hassell
Division of Water Resources - DEQ
P. O. Box 10009
Richmond, VA 23218 (804) 698-4072

RESPONSE TO COMMENTS OF THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES

VDEQ's Division of Water Resources noted that Fort A. P. Hill relies on groundwater for its water supply, that groundwater development in the area is limited, that the area is not a groundwater management area, and development of new wells does not require permits at this time. The agency noted, however, that the northern coastal plain, east of Interstate Route 95 is under consideration to be designated as a groundwater management area, in which case permits for new wells would be required. Fort A.P. Hill would coordinate with the Division of Water Resources in the event that new groundwater wells were needed.

MEMORANDUM
DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office

4949-A Cox Road **Glen Allen, VA 23060** **(804) 527-5020**

TO: Charles H. Ellis, III
Environmental Program Planner

FROM: Susan A. Ridout
Environmental Planner

DATE: November 15, 2006

SUBJECT: Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee and Fort A. P. Hill (06-167F)

I have reviewed the Environmental Impact Statement (EIS) for the above referenced project, which proposed the implementation of BRAC at Fort Lee, Virginia, and Fort A. P. Hill, Virginia. The activities recommended by the BRAC Commission include the relocation of 7,700 personnel to Fort Lee, and the renovation of existing facilities to accommodate the additional personnel at both Ft. Lee and Fort A. P. Hill for field training exercises and other activities. The implementation of the proposed plan will take place over the next 5-year period. Comments are as follows:

Water: The EIS mentioned that short- and long- term impacts to surface and ground water may be anticipated. The report acknowledged that Bailey Creek, Harrison Creek and Blackwater Swamp (Fort Lee), and Ware Creek (Fort A. P. Hill) are listed as impaired on the EPA 303(d) Impaired Waters List. Once a waterbody has been listed at impaired, a Total Maximum Daily Load (TMDL) must be developed to address and reduce the pollutant load(s) that are entering the stream or river. DEQ-PRO recommends all efforts should be taken to minimize any adverse impacts to all streams and adjacent natural resources. To ensure that nearby water resources are not adversely impacted by the proposed construction activities, it is recommended that erosion and sediment controls be properly maintained throughout all phases of construction. E & S controls should be inspected/repaired before and after rain events. Please follow all standards and specifications under the DCR Erosion & Sediment Controls Handbook (1992, 3rd Edition). DEQ recommends maximizing pervious surface areas and green spaces in the construction design to reduce runoff and the environmental impact associated with runoff.

As mentioned, a VPDES General Storm Water Permit will be required for this project due to the amount of land that will be disturbed from the construction activities. Please contact Lee Hill at the DCR - Storm Water Management Program, at (804) 786-3998 for more information regarding this.

Please be advised that any construction activity that may adversely impacts wetlands or streams may require permit review and approval by the DEQ Virginia Water Protection Permit Program

(VWP). For further questions concerning permit requirements, please contact Oula Shehab (804) 527-5069.

Air: DEQ recommends following all air quality standard and specifications to reduce or avoid the emissions of VOCs, especially during periods of high ozone. Fugitive dust should be kept to a minimum, (9 VAC 5-40-5630 *et seq*). Permits may be required for any boilers or fuel-burning equipment. For further questions, please contact James Kyle at (804) 527-5047.

Waste: The generation of any hazardous waste materials should be tested and removed in accordance with the Virginia Hazardous Waste Management Regulations (9 VAC 20-60) and/or the Virginia Solid Waste Management Regulations (9 VAC 20-80). Please understand that it is the generator's responsibility to determine if a solid waste meets the criteria of a hazardous waste and as a result be managed as such. In addition, asbestos waste, lead waste, or contaminated residues generated must be handled and disposed of in accordance with the VSWMR or VHWMR as applicable. DEQ recommends that pollution prevention principles be implemented to reduce the amount of wastes at the source, such as the re-use and recycling of waste materials. If you have any questions concerning hazardous/solid waste management, please contact Rob Timmins at (804)527-5161.

UST: Please be advised should petroleum contaminated soils/groundwater be encountered during the sub-surface phases of this project, please contact your Local Fire Marshall with any personal safety concerns and report any such contamination to DEQ-Piedmont Regional Office. The disposal of any contaminated soils and groundwater should be done in accordance with DEQ guidelines. If you have any further questions, you may contact Lisa Elizardo at (804) 527-5199.

Due to the various projects proposed for installations activities, it is difficult to adequately address all aspects of potential impacts for individual projects. Should the size or scope of this project change, additional review or permitting may be required.

RESPONSE TO COMMENTS OF THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, PIEDMONT REGIONAL OFFICE

VDEQ's Piedmont Regional Office noted that Bailey Creek, Harrison Creek, and Blackwater Swamp are listed as impaired waters pursuant to section 303(d) of the Clean Water Act, and that once a water body is listed as impaired, a Total Maximum Daily Load (TMDL) must be developed to address and reduce pollutant loads entering the stream or river. VDEQ recommended that the Army undertake efforts to minimize adverse impacts on streams, including proper maintenance of erosion and sediment controls and maximizing pervious surfaces and green spaces in the construction design. Both installations would ensure that impacts to surface waters were minimized and that Army guidelines for sustainable development are met.

VDEQ also noted that a VPDES storm water general permit for construction activities would be required and that any construction activity adversely affecting wetlands or water quality may require a Virginia Water Protection Permit. Furthermore, VDEQ noted that fugitive dust must be kept to a minimum, permits for fuel-burning equipment and boilers may be required, all hazardous wastes should be tested and removed in accordance with state requirements, and that if contaminated soil was encountered the incident should be reported to the Piedmont Regional Office. The installations will ensure full compliance with all state and federal regulations for environmental protection during all project activities.

Ellis,Charles

From: Bowden,John
Sent: Friday, November 03, 2006 10:51 AM
To: Ellis,Charles
Subject: EIS #06-167F

NVRO comments regarding the Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee, VA and Fort A.P. Hill, VA project sponsored by the Department of Defense/Department of the Army are as follows:

1. Wetlands-The Department of the Army proposes to use Fort A.P. Hill for field training exercises and explosive ordinance disposal training. The Environmental Impact Statement (EIS) indicates that surface waters are present on the project site. The EIS also indicates that impacts to surface waters are not anticipated in the preferred alternative. If impacts are not proposed to surface waters, then a Virginia Water Protection (VWP) permit will not be required from the Virginia Department of Environmental Quality. However, if the scope of the project changes or it becomes evident that the proposed project will impact surface waters, then a VWP permit will be required in accordance with 9 VAC 25-210-50 of the VWP Permit Program regulations.

2. Waste Compliance & Permitting- The Waste Compliance manager has reviewed the document and finds that their description of handling solid and hazardous waste is adequate as long as they follow the appropriate state and federal regulations. In addition, the facility should promote the beneficial reuse or recycling of construction and demolition debris by sending the material slated for offsite disposal to a material recovery facility.

John D. Bowden
Deputy Regional Director
Department of Environmental Quality
Northern Virginia Regional Office
(703) 583-3880
jdbowden@deq.virginia.gov

RESPONSE TO COMMENTS OF THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, NORTHERN VIRGINIA REGIONAL OFFICE

VDEQ's Northern Virginia Regional Office indicated that the description of the Army's handling of solid and hazardous waste in the EIS was adequate, provided all applicable state and federal regulations are followed. The office also noted that if impacts on surface waters will occur a VWP permit would be required. Finally, the office recommended that the Army promote the beneficial re-use or recycling of construction and demolition debris by sending material slated for off-site disposal to a material recovery facility. Fort Lee and Fort A.P. Hill will coordinate fully with VDEQ for any required permits. Army policies with respect to construction material reuse and recycling will be adhered to.

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

→ **MR.CHARLES H. ELLIS III**
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

We have been in direct consultation with Fort Lee regarding this DEIS and have previous expressed our serious concerns about the potential "long-term significant adverse" effects that these activities may have on cultural resources, specifically the Petersburg National Battlefield. Please request that Fort Lee continue to consult with us and the NPS on the effects of this action.

(signed) _____ (date) 11-3-06

(title) ARCHAEOLOGIST

(agency) DHR (FILE # 2005-0089)

PROJECT # 06-167F

8/98

COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221

Kathleen S. Kilpatrick
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
TDD: (804) 367-2386
www.dhr.virginia.gov

October 24, 2006

Mr. Sam Pett
Tetra Tech, Inc.
10306 Eaton Place, Suite 340
Fairfax, Virginia 22030

Re: Draft Environmental Impact Statement for Implementation of the
Base Realignment and Closure (BRAC) Commission Recommendation
Fort Lee, Virginia
DHR File No. 2005-0089

Dear Mr. Pett:

We have received your request for our review and comment on the draft Environmental Impact Statement (DEIS) for implementation of the Base Realignment and Closure (BRAC) Commission recommendation for Fort Lee and Fort A. P. Hill, Virginia. It is our understanding that the BRAC Commission recommended that Fort Lee will receive approximately 8,300 additional personnel to the installation. This influx of new soldiers will require an aggressive construction campaign at Fort Lee and Fort A. P. Hill in order to address mission, training, and housing needs.

The DEIS summarizes that the proposed action will have a "long-term significant adverse" affect to cultural resources at Fort Lee. These affects are primarily due to new construction of heavy vehicle maintenance facilities (known as highbays) at Training Area 5, which is adjacent to Petersburg National Battlefield Park (PNBP), a property managed by the National Park Service and listed in the National Register of Historic Places. The highbays will "introduce loud noise levels" and "buildings visible from the park would result in modern intrusions into the viewshed and setting of the park" (pages ES-10 and ES-11). Specifically, the new construction will be visible from the park's visitor's center and some significant earthwork fortifications.

It is imperative that Fort Lee work with PNBP and the Department of Historic Resources and make a good faith effort to limit, to the greatest extent possible, the effect that the BRAC actions will have to this irreplaceable historic resource. Such an effort to avoid or minimize adverse effects to historic properties listed in or eligible for the National Register is mandated by Section 106 of the National Historic Preservation Act, as amended, and its regulation 36 CFR Part 800.

In addition to PNMP, the BRAC undertaking has the potential to impact other historic and archaeological properties on post such as the extant World War I training trenches. The DEIS dos not mention the training trenches, therefore, we cannot comment on the effect that this undertaking may have to this unique historic property type. We request that Fort Lee continue to consult with DHR on this undertaking pursuant to Section 106.

If you have any questions about our comments, please call me at (804) 367-2323, Ext. 114.

Sincerely,

Marc Holma, Architectural Historian
Office of Review and Compliance

Cc: Superintendent Bob Kirby, Petersburg National Battlefield Park
Colonel Gwen Bingham, Fort Lee
Mr. Timothy Thompson, Army Corps of Engineers

RESPONSE TO COMMENTS OF THE VIRGINIA DEPARTMENT OF HISTORIC RESOURCES

The Virginia Department of Historic Resources (DHR) previously expressed its serious concerns about potential "long-term significant adverse effects" of proposed activities on cultural resources in the vicinity of Fort Lee, specifically the Petersburg National Battlefield. DHR recommended that the Army continue to consult with the Department and also the National Park Service in this regard. Fort Lee has been consulting with the Petersburg National Battlefield in planning for facility development on lands that adjoin that of the battlefield, and will continue to coordinate with the battlefield and the National Park Service, and DHR with respect to aspects of the BRAC implementation that might affect the battlefield.

COMMONWEALTH of VIRGINIA
DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219-2000

David S. Ekern, P.E.
COMMISSIONER

October 27, 2006

Mr. Charles H Ellis III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee and Fort A.P. Hill

Dear Mr. Ellis

The Virginia Department of Transportation has reviewed the information provided for the referenced project. Our review covers impacts to existing and proposed transportation facilities.

The EIS states that some field training activities will be transferred to Fort A.P. Hill to make room for new construction at Fort Lee associated with BRAC. The troops will be rotated into Fort A.P. Hill in buses for four days of training. Approximately 800 troops will be contained on base during the week. Since this would add only approximately 20-25 buses on the roadway network, it will not have an appreciable effect on our facilities in the Fort A.P. Hill area.

VDOT has completed a preliminary traffic study for the Fort Lee expansion project and has concluded that there will be major roadway and intersection improvements required as a result of traffic generated by this proposed expansion. The estimated cost of providing acceptable levels of service on the study area roadways affected by this project will be between $30 million and $40 million. The final EIS for the Fort Lee expansion should address the traffic improvements recommended by VDOT's final traffic analysis.

Thank you for the opportunity to comment on this project.

Sincerely,

Mary P. Stanley

Mary P. Stanley
Environmental Engineer
Virginia Department of Transportation
(804) 786-0868

RESPONSE TO COMMENTS OF THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, DEPARTMENT OF TRANSPORTATION

The Virginia Department of Transportation (VDOT) recommended that the Final EIS address the traffic improvements recommended by VDOT's final traffic analysis. The recommendations of the traffic analysis were added to the EIS text. (FEIS, page 4-109).

Ellis,Charles

From: Andrew Zadnik [Andrew.Zadnik@dgif.virginia.gov]
Sent: Friday, October 27, 2006 5:19 PM
To: Ellis,Charles
Cc: nhreview@dcr.virginia.gov; ProjectReview.Richmond_PO.DGIF@dgif.virginia.gov
Subject: 06-167F_ESS 23012_BRAC_Ft. Lee and Ft. A. P. Hill

This involves implementation of Base Closure and Realignment Recommendations and other Army actions at Ft. Lee and Ft. A. P. Hill. The projects at Ft. Lee will include the construction of new facilities and the relocation of approximately 7700 additional personnel. New training facilities will be constructed at Ft. A. P. Hill. To aid in DEQ's review, we have tried to differentiate our comments on Ft. Lee vs. Ft. A. P. Hill.

Ft. Lee:
The projects at Ft. Lee are not proposed to directly impact any wetlands or streams. However, large amounts of contiguous woodlands will be lost (Page 4-63). This will have a significant adverse impact upon forest-dependent wildlife species. The projects at Ft. Lee also will result in up to 100 acres of additional impervious surfaces. This could result in significant adverse impacts to aquatic resources due to increased erosion and stormwater runoff.

We understand that areas on Ft. Lee which once supported breeding loggerhead shrikes have been destroyed (Page 4-57). This is truly unfortunate for the conservation of this State Threatened species. We request Ft. Lee's cooperation to ensure that other rare species (e.g., American kestrel, black and white warbler [Species of Moderate Conservation Concern]; Page 4-61) do not suffer the same fate.

We understand there currently are no confirmed active bald eagle nests located on Ft. Lee. Therefore, we do not anticipate a significant adverse impact upon nesting bald eagles to occur. However, the army should be aware of the possibility to encounter a new eagle nest in close proximity to a project site. Should this occur, we recommend immediate coordination.

To mitigate adverse impacts upon fish and wildlife resources due to this project, we support the actions proposed on Page 4-63 (limiting land disturbance, revegetating disturbed areas, etc.). We also recommend the following:

1) Currently landscaped areas (e.g., lawn) throughout the base should be evaluated for the potential to revegetate using native trees, shrubs, and herbaceous plants. Even small patches or strips of woodland or meadow may provide habitat features for a diversity of wildlife species. These patches could then be linked to create wildlife corridors.

2) Stormwater controls should be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas and pervious pavers, and minimizing the use of curb and gutter in favor of engineered grass swales. These and other Low Impact Development components are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. This benefits natural resources by filtering pollutants and decreasing downstream runoff volumes.

3) Any unavoidable wetland/stream impacts should be compensated based on ratios of at least 2:1 for PFO, 1.5:1 for PSS, and 1:1 for PEM and wetland conversion. Any stream impacts should be compensated at a ratio of 1:1 based on full restoration of a similarly functioning stream.

4) To the fullest extent possible, undisturbed riparian buffer zones of at least 100-300 ft in width should be preserved.

Given strict erosion and sediment control measures, adequate stormwater controls, and adequate riparian buffers (see above), we find this project consistent with the Fisheries Section of the VA Coastal Resources Management Program.

Ft. A. P. Hill:
The projects at Ft. A. P. Hill are not proposed to directly impact any wetlands. However, large areas of land will be disturbed. Although the proposed logistics support area is currently disturbed, the proposed explosive ordnance disposal training site is approximately 1200 acres of predominantly undisturbed forested land (Page 4-121). That project in particular has the potential to result in adverse impacts upon wildlife.

Our records indicate that Ware Creek, in the vicinity of the proposed logistics support area, is a Confirmed Anadromous Fish Use Area. Therefore, we recommend appropriate measures to minimize potential adverse impacts upon this critical resource (see below)

Given avoidance of the bald eagle nest protection zones currently in place around the nest near the proposed logistics support area (Page 4-167), we do not anticipate a significant adverse impact upon the eagles using that nest. However, the army should be aware of the possibility to encounter a new eagle nest in closer proximity to a project site. Should this occur, we recommend immediate coordination.

To mitigate potential impacts upon fish and wildlife resources, we recommend the following, similar to what was proposed for Ft. Lee (Page 4-63):

1) Limiting land disturbance on each parcel to no more than what is necessary for the desired use.

2) Preserving an undisturbed riparian buffer zone of at least 100-300 ft in width on both sides of all streams and around all wetlands.

3) Revegetating disturbed areas with native, indigenous vegetation.

4) Placing contractor staging and mobilization areas inside construction footprints.

5) Placing protective fencing or signage around environmentally sensitive areas (e.g., wetlands, streams, steep slopes).

6) Strict adherence to erosion and sediment control measures.

7) Any unavoidable wetland/stream impacts should be compensated based on ratios of at least 2:1 for PFO, 1.5:1 for PSS, and 1:1 for PEM and wetland conversion. Any stream impacts should be compensated at a ratio of 1:1 based on full restoration of a similarly functioning stream.

On Page 4-160, 2nd. full paragraph, the wood turtle is listed as expected to occur at Ft. A. P. Hill. According to our records, this is incorrect. Wood turtles are not currently known in any eastern Virginia counties south of Fairfax.

On Page 4-167 of the EA, it states that Ft. A. P. Hill will continue to consult with DCR-DNH for state and federally listed endangered, threatened, and rare species. We request that this wording be changed to also include consultation with DGIF. DGIF has legal and regulatory jurisdiction over all fish and wildlife resources in Virginia, excluding listed insects.

Given strict erosion and sediment control measures, and preservation of adequate riparian buffers (see above), we find this project consistent with the Fisheries Section of the VA Coastal Resources Management Program.

Thank you,

Andrew K. Zadnik
Environmental Services Section Biologist
Department of Game and Inland Fisheries
4010 West Broad Street
Richmond, VA 23230

(804) 367-2733
(804) 367-2427 (fax)

RESPONSE TO COMMENTS FROM THE VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES

The Virginia Department of Game and Inland Fisheries (DFIG) raised a number of concerns with respect to the BRAC action at both installations. Concerning Fort Lee, DGIF noted that a loss of contiguous woodland would have a significant adverse impact on forest-dependent species and that the increase in impervious surface would have significant adverse impacts on aquatic resources from runoff and erosion. Fort Lee has carefully considered the alternatives available for accommodating the functions moving to the installation as a result of BRAC and found that using Training Area 5 and the existing ASP area best met the requirements of the mission. Fort Lee finds it unfortunate that much of the forest in those areas would be lost to development and is working with design firms to ensure that a wildlife corridor between the Range Area north of Route 144 and the Petersburg National Battlefield is maintained, that riparian areas and wetlands are minimally disturbed, that as much natural area as possible is maintained, and that the impacts of the increased imperviousness are minimized. A planning meeting was held in December 2006 to determine the limits that Fort Lee could place on resource disturbance in the area, and the results of that meeting have been incorporated into the text of the EIS and in Appendix K.

DGIF also noted that Fort Lee should do what it can to prevent the loss of two nesting bird species (the American kestrel and the black and white warbler) from the installation. Fort Lee will avoid the loss of nesting habitat on the installation if at all practicable, but accommodating the increased mission at the installation will ultimately determine whether the specific nesting habitats that these species rely upon can be maintained.

DGIF requested that Fort Lee coordinate immediately with the agency if a new bald eagle nest were encountered on the installation. Fort Lee will coordinate with the U.S. Fish and Wildlife Service and DGIF in the event that a previously unknown bald eagle nest is discovered on the installation.

DGIF recommended a number of means to reduce the impacts of the BRAC action, including revegetating landscaped areas, designing storm water controls to replicate the hydrographic condition of the site before construction, replacing wetlands at an appropriate ratio, and maintaining riparian buffers of 100–300 feet. Fort Lee has incorporated many of the recommended measures into its natural resources management program and policies and will ensure strict adherence to its policies.

Concerning Fort A.P. Hill, DGIF noted that the loss of 1,200 acres of forest at the proposed EOD site could have an adverse impact on wildlife. The text of section 4.1.7 was revised to better explain that of the 1,200 acres designated to support EOD training, probably less than 200 acres will be actively used for training sites, and to the extent practicable previously disturbed or cleared areas will be used to develop the ranges at the site. Fort A.P. Hill believes that the impact on wildlife will be substantially minimized in this way.

DFIG noted that the Ware Creek in the vicinity of the Pender Camp is a Confirmed Anadromous Fish Use Area and recommended that measures be taken to minimize potential adverse effects to the resource. The portion of the Pender Camp where Ware Creek is located is a floodplain area that supports wetlands, and Fort A.P. Hill will avoid and protect these resources to the maximum extent practicable, in accordance with Army and installation policies.

DGIF noted that no significant adverse impacts to existing bald eagle nest would be anticipated, and requested that Fort A.P. Hill coordinate immediately with the agency if a new bald eagle nest was encountered near the BRAC project areas. Fort A.P. Hill will coordinate with the U.S. Fish and Wildlife Service and DGIF in the event that a previously unknown bald eagle nest is discovered on the installation.

DGIF recommended a number of measures to minimize impacts on natural resources, including limiting land disturbance on each project parcel, revegetating disturbed areas with native species, preserving riparian buffer zones, placing staging areas inside construction footprints, placing protective fencing and signage around sensitive areas, strict adherence to erosion and sediment control measures, and mitigating wetland losses at appropriate ratios. Fort A.P. Hill has incorporated the measures mentioned by DGIF into its natural resources management program and policies and will ensure strict adherence to those policies. In addition, the installation will ensure that all construction activity is conducted in strict accordance with applicable permits.

DGIF noted that the wood turtle is not recorded from any Virginia county south of Fairfax. Mention of the wood turtle was removed from the text.

DGIF requested that the text be corrected to state that Fort A.P. Hill will coordinate with DGIF on matters concerning listed species. The correction was made in the text.

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR.CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

RECEIVED

OCT 12 2006

DEQ-Office of Environmental Impact Review

Charles H. Ellis III

CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

No significant impacts to the forests of the Commonwealth.

(signed) J M Forenza (date) 10-8-06

(title) Forest Mgt.

(agency) DOF

PROJECT # 06-167F 8/98

RESPONSE TO COMMENTS OF THE VIRGINIA DEPARTMENT OF FORESTRY

According to the Department of Forestry, the proposed activities will not give rise to significant impacts upon the forests of the Commonwealth. VDEQ recommended that trees and forests be protected through a number of forestry best management practices (BMPs), including protecting trees in the project area from the effects of construction activities associated with this project by marking and fencing them at least to the drip line, not parking and stacking heavy equipment and construction materials near trees, use temporary crossing bridges or mats to minimize soil compaction and mechanical injury to plants, and stockpiling soil away from trees. The installations have incorporated these or similar forestry BMPs into their Integrated Natural Resources Management Plans and all relevant forest and tree protection measures will be taken in accordance with the plans during the BRAC implementation.

L. Preston Bryant, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-6124

MEMORANDUM

DATE: November 6, 2006

TO: Charles Ellis, DEQ

FROM: Robert Munson, DCR-DPRR Robert S Munson

SUBJECT: DEQ-06-167F: DOD/DOA Fort Lee and AP Hill

The Department of Conservation and Recreation (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Fort Lee:

According to the information in our files, the southern section (Ammunition Supply Point) of project site may support appropriate habitat for Virginia thistle (*Cirsium virginianum*, G3/S2/NL/NL). Virginia thistle, a rare biennial herb, inhabits open pine barrens, sandy, wet swales and savannas (Weakley, in prep.). This species has also been documented in such disturbed areas as roadside ditches, and powerline and railroad rights-of-way (TNC, 1996). This plant produces purple flower from August to October (Radford et al., 1968). Virginia thistle is currently known from 24 locations in Virginia's coastal plain and piedmont regions, 15 of which are historic.

Additionally, Bald Eagle nest sites (*Haliaeetus leucocephalus*, G5/S2S3B,S3N/LT/LT) have been documented within the vicinity of the Fort Lee project sites. Bald Eagle nest sites are often found in the midst of large wooded areas near marshes or other bodies of water (Byrd, 1991). Bald Eagles feed on fish, waterfowl, seabirds (Campbell et. al., 1990), various mammals and carrion (Terres, 1980). Threats to this species include human disturbance of nest sites (Byrd, 1991), habitat loss, biocide contamination, decreasing food supply and illegal shooting (Herkert, 1992). Please note that this species is currently classified as threatened by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Game and Inland Fisheries (VDGIF).

However, DCR is aware that the nests are currently abandoned and that coordination with USFWS has resulted in an agreement to exempt Fort Lee from the third year of protection (see p. 4-57). DCR recommends that coordination with USFWS and VDGIF continue as needed.

Fort AP Hill:

All sites:

All project site locations may have appropriate habitat to support Small whorled pogonia (*Isotria medeoloides*, G2/S2/LT/LE).

Small whorled pogonia grows in a variety of woodland habitats in Virginia, but tends to favor mid-aged woodland habitats on gently north or northeast facing slopes often within small draws. It is quite natural for plants of this species to remain dormant in the soil for long periods of time. Direct destruction, as well as habitat loss and alteration, are principle reasons for the species' decline (Ware, 1991). Please note that this species is currently classified as threatened by the United States Fish and Wildlife Service (USFWS) and as endangered by the Virginia Department of Agriculture and Consumer Services (VDACS).

Additionally, a study of reptiles and amphibians present at AP Hill was conducted by Steve Roble and Joseph C. Mitchell in 1998, "Annotated checklist of the Amphibians and Reptiles for Fort A.P. Hill, Virginia and Vicinity." The following rare species were found:

Farancia erytrogramma erytrogramma	Rainbow snake	G5/S3/NL/NL
Rana virgatipes	Carpenter frog	G5/S3/NL/SC
Siren intermedia intermedia	Lesser siren	G5/S2/NL/NL

Regarding information needed on reptiles and amphibians (see p. 4-159), DCR recommends reviewing the aforementioned article.

According to the information in our files, Pender Camp FOB's 1-6 and 8 have been documented within the Mount Creek Slopes Conservation Site (also see p. 4-158). Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Mount Creek Slopes Conservation Site has been given a biodiversity significance ranking of B4, which represents a site of general significance. The natural heritage resources of concern at this site are the basic mesic forest and the mixed mesic hardwood forest.

Basic mesic forest communities occur on deep, well-drained, basic or circumneutral soils on lower slopes, north-facing slopes, and ravines in the Piedmont and Coastal Plain regions (Schafale and Weakley, 1990). In the Coastal Plain, this basic soil may be produced by outcrops of marl or deposits of basic alluvium (Schafale and Weakley, 1990). The canopy tends to be a mixture of mesophytic trees such as American beech (*Fagus grandifolia*), southern sugar maple (*Acer barbartum*), white ash (*Fraxinus americana*), tulip tree (*Liriodendron tulipifera*), and oak (*Quercus* spp.). Understory trees may include hop hornbeam (*Ostrya virginiana*), eastern redbud (*Cercis candensis*), and paw-paw (*Abimina triloba*). The shrub layer is typically well developed. The herb layer is dense and very diverse with black bugbane (*Cimicifuga racemosa*), beggar lice (*Desmodium pauciflorum*), horse-blam (*Collinsonia canadensis*), common eastern brome grass (*Bromus pubescens*), and many other species often represented (Van Alstine et al, 1999). Basic mesic forest communities are threatened by logging, invasion by exotic species, and infestations of the gypsy moth.

Mesic mixed hardwood forest communities occur on deep, well-drained, acidic soils on lower slopes, steep north-facing slopes, ravines, and occasionally well-drained small stream bottoms throughout the Piedmont and Coastal Plain regions (Schafale and Weakley, 1990). The canopy layer is dominated by mesophytic trees such as white oak (*Quercus alba*), red oak (*Quercus rubra*), red maple (*Acer rubrum*),

beech (*Fagus grandifolia*), and tulip tree (*Liriodendron tulipifera*. The understory often consists of flowering dogwood (*Cornus florida*), hop hornbeam (*Ostrya virginiana*), and holly (*Ilex opaca*). The shrub and herb layers also tend to be moderately dense and diverse, though they can be sparse in heavily shaded areas (Schafale and Weakley, 1990). Mesic mixed hardwood forest communities are threatened by logging, livestock grazing, and infestation by the gypsy moth.

DCR recommends avoidance of project areas with steep slopes and ravines due to potential for these sites to support the basic mesic forest and the mixed hardwood forest, two significant natural communities.

EOD Site:

All EOD project sites may have appropriate habitat to support the treetop emerald (*Somatochlora provocans*, G3G4/S2/NL/NL) and Southern sprite (*Nehalennia integricollis,* G5/S1S2/NL/NL).

The treetop emerald (*Somatochlora provocans*, G3G4/S2/NL/NL), a rare state dragonfly, measures 53-56 mm in length. This brilliantly colored (Needham and Westfall, 1975) species inhabits forest or boggy seepages with a lot of herbaceous vegetation and breeds in the headwaters of small streams (TNC, 1996).

Southern sprite, a small damselfly species with a mainly southern distribution, occurs throughout the coastal plain. Usually found at the edges of grassy ponds, lakes, marshes, and bogs (Lam, Ed, 2004). Seen mostly perching down among grass and sedge stems, often near shore of a lake. Collections have indicated the Southern sprite has two generations a year, with peaks in abundance in April-May, and August-September (Dunkle, Sidney W., 1990).

Adult Odonata (dragonflies and damselflies), commonly seen flitting and hovering along the shores of most freshwater habitats, are accomplished predators. Adults typically forage in clearings with scattered trees and shrubs near the parent river. They feed on mosquitoes and other smaller flying insects, and are thus considered highly beneficial. Odonates lay their eggs on emergent vegetation or debris at the water's edge. Unlike the adults, the larvae have an aquatic larval stage where they typically inhabit the sand and gravel of riffle areas. Wingless and possessing gills, they crawl about the submerged leaf litter and debris stalking their insect prey. The larvae seize unsuspecting prey with a long, hinged "grasper" that folds neatly under their chin. When larval development is complete, the aquatic larvae crawl from the water to the bank, climb up the stalk of the shoreline vegetation, and the winged adult emerges (Terwilliger 1991, Thorpe and Covich 1991). Because of their aquatic lifestyle and limited mobility, the larvae are particularly vulnerable to shoreline disturbances that cause the loss of shoreline vegetation and siltation. They are also sensitive to alterations that result in poor water quality, aquatic substrate changes, and thermal fluctuations.

FOB Sites:

FOB sites 4, 6, and 7 may have appropriate habitat to support the Rappahannock spring amphipod, (*Stygobromus sp. 21,* G1G2/S1S2/NL/NL). The Rappahannock spring amphipod, a small shrimp-like freshwater crustacean, has a segmented and laterally flattened body that contains the head, the thorax, and the abdomen. The amphipod breeds from March through November. They live in permanent tubes constructed from sand grains and debris. Their tubes can be deeper than two inches. Amphipods live in both shallow and deep water as long as there is good water flow.

Due to the potential for this site to support small whorled pogonia, treetop emerald, Rappahannock spring amphipod, and Southern sprite, DCR recommends an inventory for the resources in the study area. With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

VDACS, which has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act, has established a Memorandum of Agreement with the Virginia Department of Conservation and Recreation (DCR). Under this Agreement DCR's Division of Natural Heritage, in consultation with VDACS, represents VDACS in its comments and recommendations regarding the potential impact of reviewed projects or activities on state-listed plant and insect species. Since it has been determined that this project or activity may impact small whorled pogonia, a state-protected plant, VDACS will respond directly to ensure compliance with Virginia's Endangered Plant and Insect Species Act. Further correspondence regarding the potential impacts of this project or activity on state-listed plant and insect species should be directed to VDACS.
In addition, our files do not indicate the presence of any State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters, which may contain information not documented in this letter. Their database may be accessed from http://www.dgif.virginia.gov/wildlife/info_map/index.html , or contact Shirl Dressler at (804) 367-6913.

Thank you for the opportunity to comment on this project.

cc: Eric Davis, USFWS
Andy Zadnik, VDGIF
Keith Tignor, VDACS

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Department of Conservation and Recreation, Division of Natural Heritage, Richmond, Virginia, and North Carolina Department of Environment, Health, and Natural Resources, North Carolina Natural Heritage Program, Raleigh, NC. 406 pp. plus appendices.

RESPONSE TO COMMENTS FROM THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION

FORT LEE

The Department of Conservation and Recreation (DCR) noted that the southern section of the project area (the Ammunition Supply Point) may support appropriate habitat for Virginia thistle, and bald eagle nesting sites have been documented in the vicinity of the proposed Fort Lee project sites. DCR commented that it is aware that the nests are currently abandoned and that coordination with USFWS has resulted in an agreement to exempt Fort Lee from the third year of protection, and DCR recommended that Fort Lee continue to coordinate with USFWS and DGIF as needed. Fort Lee will coordinate with USFWS and DGIF concerning all known and any newly discovered bald eagle nests.

FORT A.P. HILL

DCR indicated that project activities at any of the sites at Fort A. P. Hill may affect the small whorled pogonia, a state-listed protected plant. Fort A.P. Hill conducted surveys specifically for the small whorled pogonia and the results of the survey are reported in the EIS. No specimens were found during the surveys.

DCR indicated that a study of reptiles and amphibians at Fort A.P. Hill indicated that the following rare species were found: rainbow snake, carpenter frog, and lesser siren. DCR recommended that Fort A.P. Hill review the study. Fort A.P. Hill is aware of the study, provided it to the technical experts who prepared the EIS, and will continue to manage its land and natural resources to preserve and protect rare and sensitive species in accordance with its Integrated Natural Resources Management Plan and Army policies.

According to the information in DCR files, Pender Camp Forward Operating Bases (FOBs) # 1-6 and 8 have been documented within the Mount Creek Slopes Conservation Site, and area with steep slopes and ravines that supports basic mesic forest and mixed hardwood forest. Fort A.P. Hill notes that FOBs 4, 7 (the proposed LSA), and 8 are within the Mount Creek Slopes Conservation Site. As with other natural resources concerns, Fort A.P. Hill will locate facilities necessary to accommodate the incoming BRAC missions to avoid sensitive areas to the maximum extent practicable.

DCR noted that all EOD project sites may have appropriate habitat to support the treetop emerald and Southern sprite. The agency also noted that FOB sites 4, 6, and 7 may have appropriate habitat to support the Rappahannock spring amphipod, a small, shrimp-like freshwater crustacean that lives in both shallow and deep water as long as there is good water flow. Fort A.P. Hill did not conduct surveys specifically for these species, and when siting new facilities, wetlands and surface waters would be avoided to the maximum extent practicable. Not being federally listed species, surveys for the species DCR mentioned would depend on the availability of funding.

L. Preston Bryant, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

DIVISION OF CHESAPEAKE BAY LOCAL ASSISTANCE
101 N. 14th Street, 17th Floor
Richmond, VA 23219
1-800-243-7229
FAX (804) 225-3447

MEMORANDUM

TO: Charles Ellis, Environmental Program Planner DEQ

FROM: Alli Baird, Chesapeake Bay Local Assistance
Robert Suydam, Chesapeake Bay Local Assistance

DATE: October 19, 2006

SUBJECT: DEQ-06-167F Fort Lee – Fort AP Hill
DCR-DCBLA Project # FSPR-ARMY-10-06

The Chesapeake Bay Preservation Act (Bay Act) along with the Chesapeake Bay Preservation Area Designation and Management Regulations (Regulations) (§9 VAC 10-20-110), as locally implemented by Prince George County (Ft. Lee) and Caroline County (Ft. AP Hill) strictly controls land disturbance in the Resource Protection Area (RPA). This area includes tidal wetlands, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or perennial water bodies, tidal shores, highly erodible soils, and within a 100-foot vegetated buffer area located adjacent to and landward of the aforementioned features and along both sides of any water body with perennial flow that are within the Chesapeake Bay watershed. The Resource Management Area (RMA), the area (150 feet in Prince George, and 300 feet in Caroline) landward of those RPAs, is subject to the County's performance criteria including minimizing land disturbance, preserving indigenous vegetation, minimizing impervious surfaces, controlling stormwater runoff quality and developing erosion and sediment control plans for land disturbances greater than 2,500 square feet.

Pursuant to the Coastal Zone Management Act of 1972, as amended, Federal activities affecting Virginia's coastal resources or coastal uses must be consistent with the Virginia Coastal Resources Management Program (VCRMP)(see section 307(c)(1) of the Act and the *Federal Consistency Regulations*, 15 CFR Part 930, sub-part C). The 1998 Federal Agencies' Chesapeake Ecosystem Unified Plan requires the signatories, including the Department of the Army, to fully cooperate with local and state governments in carrying out voluntary and mandatory actions to comply with the management of stormwater. The agencies also committed to encouraging construction design that a) minimizes natural area loss on new and rehabilitated federal facilities; b) adopts low impact development and best management technologies for storm water, sediment and erosion control, and

reduces impervious surfaces; and c) considers the Conservation Landscaping and Bay-Scapes Guide for Federal Land Managers. In addition, the Chesapeake 2000 Agreement committed the government agencies to a number of sound land use and stormwater quality controls. The signatories additionally committed the agencies to lead by example with respect to controlling nutrient, sediment and chemical contaminant runoff from government properties. In December 2001, the Executive Council of the Chesapeake Bay Program issued Directive No. 01-1, Managing Storm Water on State, Federal and District-owned Lands and Facilities, which includes specific commitments for agencies to lead by example with respect to stormwater control.

Provided that the project adheres to the General Performance Criteria of the Bay Act (§9 VAC 10-20-120), the Stormwater management criteria consistent with water quality protection provisions (§4 VAC 3-20-71 et seq.) of the *Virginia Stormwater Management Regulations* (§ 4 VAC 3-20) and with the requirements of the *Virginia Erosion & Sediment Control Handbook*, Third Edition, 1992, we concur that the project has no significant environmental impact.

RESPONSE TO COMMENTS FROM THE DEPARTMENT OF CONSERVATION AND RECREATION, DIVISION OF CHESAPEAKE BAY LOCAL ASSISTANCE

The Division of Chesapeake Bay Local Assistance noted that BRAC implementation would not have a significant impact provided that both Fort Lee and Fort A.P. Hill adhere to the following, if project elements are proposed in resource management areas (RMAs):

- The General Performance Criteria of the Bay Act (9 VAC 10-20-120)
- The Stormwater Management Criteria consistent with water quality protection provisions (4 VAC 3-20-71) of the Virginia Stormwater Management Regulations (4 VAC 3-20 et seq.)
- The requirements of the *Virginia Erosion and Sediment Control Handbook* (DCR, Third Edition, 1992).

With respect to development affecting RMAs and the Chesapeake Bay, in all design matters concerning storm water runoff, soil erosion, and wetland impacts, both installations would specify criteria that would have to be met in designs for all conditions to satisfy the requirements of DoD and state policies and regulations, and would encourage exceeding minimal regulatory requirements.

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR.CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Based on information in our database, no T/E plant and insect species are documented to occur in the vicinity of the project area at Fort Lee in Petersburg, VA. We do not anticipate this project will have significant adverse affect as it relates to VDACS' responsibilities for the preservation of agricultural lands and the protection of listed endangered and threatened plant and insect species.

Suitable habitat, predominately forested, for protected species should be surveyed prior to construction activity at A.P. Hill to identify potential impact to these species.

(signed) (Keith R. Tignor) (date) October 30, 2006

(title) Endangered Species Coordinator
VDACS, Office of Plant and Pest Services

(agency)

PROJECT # 06-167F 8/98

RESPONSE TO COMMENTS FROM THE VIRGINIA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, OFFICE OF PLANT AND PEST SERVICES

Fort Lee noted the comment that no significant effects would likely occur to resources of interest to VDACS. Fort A.P. Hill would conduct additional surveys for protected species based on the availability of funding.

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

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Please return your comments to:

MR. CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Review of the documentation provided in the Draft Environmental Impact Statement has been completed. Should any of the proposed alternatives encroach upon any State-owned subaqueous land authorization may be required from VMRC and the submission of a Joint Permit Application will be required. Thank you for the opportunity to comment on this project.

(signed) _____ (date) 11-1-06

(title) Environmental Engineer

(agency) VMRC

PROJECT # 06-167F

8/98

RESPONSE TO COMMENTS OF THE VIRGINIA MARINE RESOURCES COMMISSION

The Virginia Marine Resources Commission noted that if any of the project activities were to encroach on state-owned subaqueous lands, a permit may be required from the Marine Resources Commission. In such a case, the Army would have to submit a Joint Federal-State Permit Application (JPA) with the Commission. If state-owned subaqueous lands are encroached upon by any project activities at either installation, the Army will coordinate with the Commission.

Email comment from the Virginia Department of Labor and Industry (James Kiser)
Sent: Thursday, October 26, 2006 7:13 AM
To: CRMLee@lee.army.mil
Subject: Expansion at Ft. Lee

Entrance and exit ramps are needed between Interstate Route 295 and Courthouse Road near Prince George Courthouse. Please mention this to the Virginia Department of Transportation (VDOT).

James E. Kiser
Compliance Safety & Health Officer

Response: VDOT will consider the totality of the transportation network surrounding Fort Lee when determining what improvements and changes are necessary to accommodate any increase in traffic and transporation needs because of the BRAC action.

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR.CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

RECEIVED
NOV 03 2006
Office of Environmental Impact Review

CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

No impact to mineral resources.

(signed) _____ (date) 11/2/06

(title) Geologist Manager

(agency) DMME

PROJECT # 06-167F

8/98

RESPONSE TO COMMENTS OF THE VIRGINIA DEPARTMENT OF MINES, MINERALS, AND ENERGY

The Virginia Department of Mines, Minerals, and Energy noted that the proposed activities at Fort Lee and Fort A.P. Hill will not give rise to impacts upon mineral resources. The installations appreciate the time taken to review and comment on the EIS.

Ellis,Charles

From: Beacham, Deanna [Deanna.Beacham@governor.virginia.gov]

Sent: Friday, November 17, 2006 2:15 PM

To: Ellis,Charles

Cc: Marc Holma (E-mail)

Subject: RE: comments on Army Corps Draft EIS, "Implementation of Base Closure and REalignment (BRAC) Recommendations and other Army actions at Fort Lee and Fort A.P. Hill (DEQ-06-167F)

The Draft EIS sections on Cultural Resources (the sections of concern to the Virginia Council on Indians) show commendable recommendations. However, not all the pertinent information is included. I have left voice mail for Carol Anderson, asking for further information on the NRHP-eligible prehistoric archaeological sites 44PG160, 44PG195, 44PG196 and 44PG197, as I can't find any of these listed in the Department of Historic Resources database. I agree with the recommendation to fence off these areas and monitor them during construction, but it would still be helpful to have the archaeological reports.

For Fort AP Hill, the Virginia Council on Indians would like to have a copy of the Phase 1 survey and recommendations of Louis Berger done on the acreage deemed to be the most likely for previous habitation, when it is available, as well as any additional information obtained from further evaluation of archaeological sites. We also recommend that the Rappahannock Tribe, in whose aborginal territory Fort A.P. Hill lies, be kept apprised of the findings of any prehistoric archaeological sites.

Thanks for the opportunity to comment on the Draft EIS. We look forward to working with you on the remainder of this project.

Deanna Beacham
Program Specialist
Virginia Council on Indians
P.O. Box 1475
Richmond, VA 23218
804-225-2084
deanna@governor.virginia.gov
http://indians.vipnet.org

-----Original Message-----
From: Ellis,Charles [mailto:chellis@deq.virginia.gov]
Sent: Wednesday, November 15, 2006 4:05 PM
To: Hassell,Joseph; Alexander,Susan; Beacham, Deanna; dkerns@co.kinggeorge.state.va.us
Cc: Ellis,Charles
Subject: comments on Army Corps Draft EIS, "Implementation of Base Closure and REalignment (BRAC) Recommendations and other Army actions at Fort Lee and Fort A.P. Hill (DEQ-06-167F)

Everybody – I need your comments on this Draft EIS when you get a chance. Thanks very much.

Charlie Ellis
DEQ, Office of Environmental Impact Review
November 15, 2006

RESPONSE TO COMMENTS FROM THE VIRGINIA COUNCIL ON INDIANS

The Virginia Council on Indians (VCI) requested information on archaeological sites that was not provided in the draft EIS. Fort Lee provided site recording forms for each of the archaeological sites to Deanna Beacham of the Virginia Council on Indians on November 21, 2006. No change to the text was necessary.

The VCI also requested a copy of a Phase I survey and recommendation of Louis Berger. Fort A.P. Hill is aware of the request for the Phase I survey report. When the full Phase I survey is completed and the report prepared, Fort A.P. Hill will consult with the Virginia Council on Indians, in compliance with Section 106 of the NHPA. No change to the text was necessary.

Fort A.P. Hill will keep the Rappahannock Tribe apprised of findings of any pre-historic archaeological sites. No change to the text was necessary.

COUNTY OF PRINCE GEORGE, VIRGINIA

Brenda G. Garton
County Administrator
bgarton@princegeorgeva.org

Pamela K. Thompson
Deputy County Administrator
pthompson@princegeorgeva.org

County Administration Building
6602 Courts Drive – Third Floor
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Prince George, VA 23875-0068

Phone: (804) 722-8600
Facsimile: (804) 732-3604

Mr. Charles H. Ellis III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

RE: Comments on Federal Project #06-167F

Dear Mr. Ellis:

Thank you for allowing Prince George County to comment on the Draft Environmental Impact Statement (DIES) that analyzes the potential environmental and socioeconomic impacts of changes at Fort Lee, Virginia, and Fort A.P. Hill, Virginia, pursuant to implementation of the Base Closure and Realignment (BRAC) Commission's recommendations for Fort Lee, Virginia.

Please consider the following comments from Prince George County:

Section 4.1.1.1.1 REGIONAL GEOGRAPHIC SETTING AND LOCATION
The EIS states that Ft. Lee is adjacent to Prince George County, although it is located entirely within Prince George County. Addressed correctly on page 4-71, Section 4.1.9.1.

Section 4.1.1.1.3 SURROUNDING LAND USE
The discussion regarding land use and the increase in urbanization should elaborate on the potential conflicts of between base operations and lands adjacent to the base.

Section 4.1.1.2.1 PREFERRED ALTERNATIVE
This discussion should be expanded with more detail regarding what methods may be used to mitigate the impacts from the ASP for both noise and traffic.

Section 4.1.2.2 NO ACTION ALTERNATIVE
Does not address visual impacts outside the installation along Jefferson Park Road/ Rt. 630.

Given the fact the most of the drainage area for the base is at the headwaters for the Backwater Swamp more than minimum steps should be used to protect the water quality of the Swamp and Baileys Creek.

Table 4.1.9-2 FORT LEE ROI PER CAPITA PERSONAL INCOME
Why are the Prince George and Hopewell per capita numbers combined? This seems to under estimate the per capita income for Prince George County.

Table 4.1.9-3 FORT LEE ROI POPULATION TRENDS
What is the rationale for a loss of population as indicated in table 4.1.9-3, when Prince George County shows an 11.5 percent growth rate between 2000-2005 (Weldon Cooper)?

Page 4-77 SCHOOLS
How many students are projected? The EIS should make a distinction of which school districts are using portable classrooms and which are not.

Page 4-81 and 4-82
What is the annual rate of increase in population in the ROI (Region of Influence)?

Page 4-83- 4-86
The EIS should provide more data and make specific recommendations on how to mitigate the impacts on Police, Fire, Schools and Social Services. The EIS should also look at each jurisdiction in the ROI for impacts specific to each jurisdiction.

Section 4.1.10 TRANSPORTATION
The transportation section of the EIS uses the Baker 2006 study as the source. There are questions regarding the methodology used in the Baker study, which call into question the accuracy of the study. If the Baker study is not accurate then the conclusions of the EIS will not be accurate. The methodology for the traffic section of the EIS should be reviewed and an alternative source be considered for making conclusions regarding the impacts of traffic on the ROI.

Section 4.1.6.1.3 STORMWATER MANAGEMENT
The impact study addresses the fact that by paving and building on an additional 287 acres of the Fort property the drainage to Bailey's Creek is going to increase tremendously. The study indicates that Best Management Plans will be utilized to control erosion and runoff; however, the study is vague on the details of just what will be done. The Fort is the headwaters of Bailey's Creek; therefore, an increase in the amount of runoff coming off of the Fort property could and will greatly impact Bailey's Creek probably to the point where erosion of the banks and flooding will be further exacerbated by the development on the Fort. Recommendations are made (i.e. high density housing, permeable pavement for parking areas, and the use of Best Management Practices); however, the report does not state where they will be installing ponds to slow down the water and release at the preconstruction rate. It seems that several large ponds could be constructed that would not only help control the downstream flooding and erosion but could also act as recreation facilities.

The impact study does not state where the current condition of Bailey's Creek is examined at all to see if it is adequate for what is currently coming off of the Fort property. At a minimum this should be performed to see if this increased runoff is going to effect downstream properties.

Section 4.1.9.1.2 SOCIOLOGICAL ENVIRONMENT
This section seems to address housing data for the area in terms of the 2000 Census. The ranges of median value of owner-occupied housing units as stated are very low. The announcement of the BRAC Decision for the Fort Lee expansion itself sent home prices in this County skyward. This trend continues today with seemingly no end in sight. By the time the students start arriving at the expanded Fort Lee, living costs are going to be so high that they will not be able to live off post in Prince George County. The rental prices quoted do not appear to be indicative of what actually exists at this point in time, never mind what they will be in 2008.

Section 4.1.11.1.2 SEWER AND WASTEWATER

The Fort apparently uses approximately 1.0 million gallons per day of water and wastewater services. The water system is owned by Virginia American, which is the private water company in the City of Hopewell. The indication is that there is plenty of water available for the expansion. Since domestic water usage is a very small percentage of the overall water production at the Virginia American Water Treatment Plant, this is probably an accurate statement.

This section indicates that there is adequate capacity in the City of Hopewell system for the proposed Fort Lee expansion to handle the increased wastewater treatment requirements. The City indicates that the Fort has an agreement to handle 2.5 million gallons per day. A doubling of the population, keeping in mind the water saving devices that will be installed, should not be a problem. However, what is not addressed is the actual wet weather flows that is coming off of Fort Lee through the Bailey's Creek interceptor. The Fort has a flow meter that measures the amount of wastewater as it leaves the Fort Lee collection system. Wet weather flows should have been included in this report to indicate what kind of effect this increase is actually going to have on the treatment facility in Hopewell. The Fort was built mostly in the 1950's and the pipeline that was used for sanitary sewers at that time are known to leak and allow infiltration.

Also, there is no mention of the actual capacity in the Bailey's Creek Interceptor that takes the wastewater flow from the Fort to the Cities Primary Treatment Plant. This should be investigated and examined for the effect that it will have on others that use the same interceptor.

Thank you again for the opportunity to comment on this plan. If you would like any clarification of the points listed above, please do not hesitate to contact me. We look forward to working with you on this very important project.

Sincerely,

Brenda G. Garton
County Administrator

RESPONSE TO COMMENTS OF PRINCE GEORGE COUNTY

Prince George County noted that the EIS states that Fort Lee is adjacent to Prince George County, although it is located entirely within Prince George County. The statement was corrected.

Prince George County noted that the discussion of land use should elaborate on potential conflicts between base operations and adjacent lands. Land use impacts are fully analyzed in section 4.1.1. Most development under BRAC that would affect offpost land uses would occur in the TA5 and ASP areas between Route 144 and Route 36. To the north this area is bounded primarily by the installation's Range Area. To the southwest the area is bounded by the Petersburg National Battlefield. To the west the area is primarily agricultural. The greatest potential for a conflict between the BRAC development and surrounding land uses, therefore, would be on the battlefield, and the potential effects of noise and visual changes are discussed in the Noise and Cultural Resources sections of the FEIS.

Prince George County noted that the discussion of methods to mitigate impacts from the ASP for both traffic and noise should be expanded. All applicable traffic data from the VDOT traffic analysis was used in the analysis and all noise information from studies conducted by the Army Environmental Center to support the BRAC implementation were incorporated into the EIS analysis. The available options for minimizing noise from the development in the TA5 and ASP areas are discussed in the FEIS. The traffic study is being conducted by the VDOT and is the most applicable information available during the preparation of this EIS. Recommendations from the report, which were not available when the DEIS was released for public review, have been incorporated into the FEIS.

Prince George County noted that visual impacts outside the installation along Route 630 should be analyzed. Fort Lee does not anticipate any visual impacts on the area referenced. Under the Preferred Alternative, very little development would occur on the area of the installation near Route 630, and the development would not affect offpost areas. The Residential Communities Initiative, under which new family housing will be constructed on Fort Lee, would have an impact near Route 630. The environmental impacts of that action are being addressed separately in an environmental assessment being prepared by Fort Lee.

The County indicated that because Fort Lee is the headwaters of Bailey's Creek, an increase in runoff from the Fort could exacerbate bank erosion and flooding. The county noted that the Draft EIS was not specific on where storm water ponds and related facilities would be placed, and suggested that several large ponds could be constructed to control downstream flooding and erosion and provide recreation opportunities as well. The location of storm water management facilities (including ponds, BMPs, and LID practices) will be determined during construction planning. The EIS describes the general storm water requirements that will be necessary to control runoff and improve water quality. A preliminary analysis was conducted for the TA5/ASP area due to the number of facilities that are planned for the area. Information on storm water impacts in the Bailey Creek watershed are provided in the text. No changes were necessary, but information from the preliminary planning meetings was incorporated. (FEIS, page 4-51 and Appendix K)

Prince George County noted that the draft EIS combined per capita numbers for the county and the City of Hopewell. Data was obtained from the United States Bureau of Economic Analysis (BEA) because they had the most recent data available. BEA compiled the data and presented Dinwiddie County, Colonial Heights City, and Petersburg City as one jurisdiction, and Prince George County and Hopewell City as another. BEA did not provide separate data for each of these cities and counties.

The Prince George County expressed concern that local school systems must accommodate increased student populations attributable to the growth in personnel at Fort Lee, and that estimates of student numbers, time frames for provision of additional facilities, and other information did not appear in the Draft EIS. Estimates of student numbers were requested and Fort Lee provided the estimates of the numbers of school-aged children that would be moving to the Fort Lee area as a result of BRAC to all affected school districts.

The county questioned the rationale for a loss of population (as indicated in table 4.1.9-3) when Prince George County shows an 11.5 percent growth rate between 2000-2005. Two different sources were used for the population data: The U.S. Census Bureau and the Virginia Economic Development Partnership (VEDP). At the time the draft EIS was prepared, the Census had population data through 2005, but not projections to 2010; the VEDP had population projections for 2010, but did not list population data for 2005. Using two data sources could have caused some discrepancy. VEDP has since updated their population data to include 2005. Table 4.1.9-3, page 4-74, was revised and now only includes data from the VEDP. VEDP, however, still projects a decline in population in 2010 for Prince George County. A possible rationale is that VEDP has not yet revised their 2010 projections to include the Fort Lee BRAC action.

Prince George County inquired as to how many students are projected and noted that the EIS should make a distinction of which school districts are using portable classrooms and which are not. Student projections are in the consequences section 4.1.9.2.1, page 4-85. The EIS was revised in section 4.1.9.1.2, page 4-77, to list which school districts are using portable classrooms.

The county inquired as to the annual rate of increase in population in the ROI. The EIFS model, used to calculate change in population, is a static model and does not project an annual rate of increase in population. No change was made to the text.

The county stated that the EIS should provide more data and make specific recommendations on how to mitigate the impacts on police, fire, schools and social services, and that the EIS should look at each jurisdiction in the ROI for impacts specific to each jurisdiction. The U.S. Army cannot mitigate for impacts on local police, fire, schools, and social services. It is outside the U.S. Army's jurisdiction. The EIS looks at regional impacts (within the defined ROI) as opposed to each jurisdiction within the ROI because it is not known where incoming people will choose to live within the ROI. No change was made to the text.

Prince George County recommended additional review of the traffic study methodology used in the Draft EIS, so that conclusions regarding traffic impacts on the surrounding region would have a better basis. The traffic study was conducted by VDOT and was the most applicable information available during the preparation of the EIS. The EIS text was updated to address the traffic improvements recommended by VDOT's final traffic analysis. Fort Lee has confidence in the methodology of the traffic study.

The County recommended that examination of the current condition of Bailey's Creek be undertaken to determine the extent to which increased runoff will affect downstream properties. Fort Lee previously conducted an watershed analysis of the Bailey Creek watershed and refers to the document when assessing impacts on surface waters in the Bailey Creek drainage.

Prince George County noted that the socioeconomic section seemed to address housing data for the area in terms of the 2000 Census, and specifically pointed out that the ranges of median value of owner-occupied housing units as stated are very low. The county claimed that the announcement of the BRAC decision for Fort Lee sent home prices in the county very high and that the trend continues. The county

expressed concern that by the time the students start arriving at the expanded Fort Lee, living costs could be so high that Soldiers and their families will not be able to live off post in Prince George County. The rental prices quoted in the draft EIS, the county noted, did not appear to be indicative of actually prices, let alone what they could be in 2008. It is acknowledged that the housing data is from the 2000 Census. One reliable source for consistent 2005 housing data, the U.S. Census Bureau American Community Survey (2005), is not available at this time. The census is only conducted every 10 years. The Census Bureau has updated housing cost information for Chesterfield County and Richmond, but not for the other jurisdictions comprising the ROI. A number of other sources also were researched for housing cost data (county and city Web sites, VEDP, CPDC, BEA, FedStats, NAHB). The EIS was revised in section 4.1.9.1.2, page 4-74, noting that based on anecdotal evidence and available Census data, housing prices have risen since the 2000 Census.

Prince George County indicated that the Draft EIS did not address actual wet weather flows from Fort Lee through the Bailey's Creek interceptor. According to the county, the Draft EIS should have included wet weather flows to indicate the effect of the increased flow on the treatment facility in Hopewell. In addition, the Draft EIS did not mention the capacity in the Bailey's Creek interceptor that takes the wastewater from the Fort to the City's primary treatment plant. Fort Lee conducted an infiltration and inflow study of its wastewater system in 1998. The City of Hopewell provides the installation with a capacity allowance, and the installation is currently within that allowance. Fort Lee will coordinate with the city regarding any extra capacity it needs to accommodate the BRAC expansion.

Additionally, Prince George County pointed out a number of corrections and information deficiencies in the Draft EIS as it related to Fort Lee. The text corrections provided by Prince George County were made in the text.

John M. Altman, Jr.
Assistant City Manager

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300 North Main Street
Hopewell, VA 23860

November 13, 2006

Charles Ellis, DEQ-OEIR
Department of Environmental Quality
P.O. Box 1105
Richmond, Virginia 23218

RE: Fort Lee – Draft Environmental Impact Statement on Base Realignment Actions

Dear Mr. Ellis:

Thank you for the opportunity to review the Draft Environmental Statement on Base Realignment Actions at Fort Lee and Fort A.P. Hill. Having reviewed the document, we agree with a majority of the assessments made on the future impacts, both negative and positive, to our community. There are several areas of concern that we would like to address.

The first issue is the transportation impacts listed in the Summary of Potential Environmental Impacts (page ES-7) as having a "Short- and long-term significant adverse" impact on the community. This is possibly one of the most significant adverse impacts on our City and, therefore, we would like to stress the need for the implementation of the mitigation measures listed on page 4-104. The City would encourage the representatives of Fort Lee to continue to work with the Tri-Cities Metropolitan Planning Organization (MPO), which is staffed by the Crater Planning District Commission, to prioritize the transportation off post needs caused by the expansion of Fort Lee.

Secondly, we would like to site the findings on page 4-105 in relation to wastewater treatment. As stated in that section, we do anticipate the need to move treatment activities from the primary plant to the regional facility as demand increases. However, we feel that this report has fallen short by not providing a timeline that outlines the progression of the additional wastewater treatment demand, thereby allowing the City adequate time for the necessary planning and implementation of a move to the regional facility. We also support the plan to help mitigate these effects by the use of water-conserving devises as stated on page 4-107.

Finally, the assessment of the impact on the school systems is also inadequate. As with the discussion of wastewater treatment above, there is no adequate timeline provided to allow for the surrounding systems to make adequate improvements to accommodate the increased student population that will result from the base expansion. The report simply states that "Fort Lee will be conferring with the potentially affected school districts on potential increases" (page 4-85). In the absence of this information in the formal statement, it is

imperative that this discussion between Fort Lee and the schools take place in a timely manner to give the City adequate time for planning.

The City understands that many of the concerns expressed in this response will be addressed by the Regional Growth Management Strategy that will be developed by Crater Planning District Commission in conjunction with Fort Lee and the surrounding communities, but we felt it necessary to have our concerns entered into the public record.

On behalf of the City of Hopewell, I would like to thank you for the opportunity to comment on the Draft Environment Impact Statement. Should you have any questions regarding this letter, please do not hesitate to contact me.

Sincerely,

John M. Altman, Jr.
Assistant City Manager

JMAjr/br/dp

cc: Robert S. Herbert, Interim City Manager
Benjamin Ruppert, Emergency Services Coordinator

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RESPONSE TO COMMENTS FROM THE CITY OF HOPEWELL

The City of Hopewell noted that transportation impacts could be the most significant on the community and stressed the need to implement the mitigation measures mentioned in the draft EIS. The city also recommended working closely with the Tri-Cities MPO to prioritize transportation improvement needs off the installation. The EIS incorporated the deficiencies analysis from the VDOT traffic analysis and Fort Lee has prioritized transportation projects identified as needed to mitigate the traffic impacts due to BRAC Implementation. The projects have been submitted for possible funding from sources such as the Defense Access Roads Program, Tri-Cities Area MPO, and VDOT. A Commonwealth of Virginia grant has been approved for traffic improvements at Shop Road Gate and Hickory Hill Road/Mahone Avenue.

The City of Hopewell expressed concern that local school systems must accommodate increased student populations attributable to the growth in personnel at Fort Lee, and that estimates of student numbers, time frames for provision of additional facilities, and other information did not appear in the Draft EIS. The city also noted that wastewater treatment improvements require that the Army provide time lines for anticipated changes. Fort Lee provided population data broken out by military and civilian workforce and by family members (spouses and children) directly to every school district and government in the area (Hopewell, Colonial Heights, Petersburg, Dinwiddie, Chesterfield, Prince George). Text was revised in section 4.1.9 to reflect the new numbers, and a table was added to show the projections by year.

P.O. Box 969
Hopewell, VA 23860

Regional Wastewater Treatment Facility

November 16, 2006

Ms. Carol Anderson
1816 Shop Road
Fort Lee, VA 23801-1604

Re: Draft Environmental Impact Statement: Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee, Virginia and Fort A.P. Hill, Virginia, September 2006

Dear Ms. Anderson:

The purpose of this letter is to provide comments on the above cited Draft Environmental Impact Statement.

As you know, the City of Hopewell Regional Wastewater Treatment Facility is under contract with Fort Lee to provide 2.5 million gallons/day (MGD) of wastewater treatment services to Fort Lee. Currently, Fort Lee is discharging approximately 1 million gallons/day of wastewater to the City of Hopewell. The Hopewell Regional Wastewater Treatment Facility has more than enough hydraulic capacity to treat Fort Lee's increase in flow. However, while we believe that the contract provides enough contracted capacity to accommodate the BRAC expansion, the City of Hopewell domestic treatment facility does not have enough capacity.

We understand that the realignment will be complete in September 2011. Currently, as a component of the Chesapeake Bay clean-up initiatives, the Hopewell Regional Wastewater Treatment Facility (HRWTF) is in the process of evaluating treatment alternatives to remove various forms of nitrogen from its wastewaters. At the present time, the completion of the upgrade which would include additional hydraulic treatment capacity for the domestic waste is scheduled for 2013 or 2014. Depending on the alternative chosen, it is possible that HRWTF's construction timeline may not be perfectly synchronized with the anticipated flow increases from Fort Lee. It would be very helpful in the City's planning efforts if Fort Lee can provide the City with dates, numbers of personnel expected, and estimated gallons/day of wastewater generated as each phase of the realignment is completed. This will allow us to phase our construction to accommodate the growth and flow increases from Fort Lee.

In my letter dated July 25, 2006, I explained that the proposed upgrade to meet the Chesapeake Bay initiatives is very expensive for the City with preliminary cost estimates ranging from $50 to $75 million. Our rate payers including Fort

Lee will have to share a significant portion of the costs. In the initial contract with Fort Lee, the treatment of nitrogen was not anticipated and therefore, not included in the costs of services determined by the contract. At some point, Fort Lee may be asked to contribute its proportionate share of the costs to install nitrogen treatment at the Hopewell Regional Wastewater Treatment Facility (HRWTF). Until a treatment alternative is chosen, the exact costs and funding needs are uncertain. The HRWTF Commission is in the process of evaluating the alternatives with a final decision anticipated in January 2007. At that time, Fort Lee may be contacted to negotiate an addendum to the contract to cover costs of nitrogen treatment for Fort Lee.

We appreciate the opportunity to comment on the EIS for the Fort Lee expansion.

Sincerely,

Mark A. Haley
Director

cc: Steve Herbert, City Manager
March Altman, Assistant City Manager
Joe Sicuranza, Fort Lee Operations Div.
Gregory White, Director of Public Works and Logistics

RESPONSE TO COMMENTS OF THE CITY OF HOPEWELL, REGIONAL WASTEWATER TREATMENT PLANT

Fort Lee provided the city with information on the anticipated number of personnel that BRAC would bring to the installation on an annual basis until the full expansion of the installation is complete.

COMMENTS FROM THE PETERSBURG PUBLIC MEETING

SPOKEN COMMENTS FROM PETERSBURG PUBLIC MEETING

Spoken comments of Dr. Joseph Leming

Fort Lee is in the land mass within Prince George County and we're pleased as the Board of Supervisors to host the Base. I have often said that if Fort Lee had received a negative BRAC recommendation, the land mass in the County may have been devalued by 30 percent at the end of the sentence when the period ended the sentence.

Fortunately that did not happen, and we are elated with the outcome of the Base Realignment and Closure Commission Act of 2005, specifically with the largest of the projects that will occur over the course of the Federal Act.

However, with those wonderful enhancements and developments come challenges and stressors that we as a Board of Supervisors must meet as the host county. And I stand before you tonight to read onto the written record some of our concerns regarding those impacts.

First, transportation. All of the gates that feed into and out of, all the ingress and egress from U.S. Army Base Fort Lee are contained within the land mass and the transportation area of Prince George County. We are genuinely concerned that we do not have the resources today to develop the infrastructure to support those gates sufficient to support the U.S. Army Base in its mission to support troops across the globe fighting for liberty for the United States of America. All of the gates are impacted. All of the roads feeding into those gates will be impacted.

Today we have no resources with which to affect or address those issues. Recently a Michael Baker study was performed. I am in receipt of the final draft dated October, 2006. I would like to incorporate by reference the entire Michael Baker study into the Environmental Impact document tonight.

Second, public safety. We are concerned about the need for expanded services for our police and our fire and our rescue services. While we are cognizant that security for the Base, federal security starts at the gate when identification is made, really and truly security starts as people pass through Prince George County's jurisdiction on the way to the Base, and we believe there will be an increased need for police interdiction as well as fire services and rescue services.

Social services. Currently at the U.S. Army Base Fort Lee, if my memory is correct, we are responsible statutorily as a jurisdiction for domestic violence interdiction on the Base. The increased size of the population of the Base will result in more increased services.

Schools. There's a direct impact in Prince George County on the schools. We have no funding to provide for the increase in schools. More specifically, Prince George County provides a large amount of special needs services to children from the Base and imposes a special stress on our budget to meet those children's needs. Last of all, Prince George County is currently in a non-attainment zone. We believe that the increased activity at U.S. Army Base Fort Lee principally driven by the discharge from diesel-fired vehicles will adversely impact the opportunity for Prince George County and for that matter for the region to become an attainment zone. We would encourage the use of bio-diesel products on the Base.

Response to Dr. Leming

Transportation is addressed in Section 4.1.10 of the EIS. The EIS addresses Public Safety in Section 4.1.9.2.1, Sociological Environment. The EIS states that there would be significant adverse effects to law enforcement and fire services, that additional personnel and facilities would be required, and make estimates on the number of additional personnel that could be needed for Fort Lee and the ROI. Impacts to Social Services and Schools are also addressed in Section 4.1.9.2.1, Sociological Environment, noting that significant adverse impact to social services and schools would be expected, that additional personnel and facilities would be required. The U.S. Army cannot mitigate for impacts on local police, fire, schools, and social services. It is outside the U.S. Army's jurisdiction. Fort Lee has provided and will continue to provide updates to the local jurisdictions on BRAC planning information (e.g., population projections).

Spoken comments of Dr. Charles Maranzano from Dinwiddie County

I'm Dr. Charles Maranzano, Superintendent of the Schools in Dinwiddie County. I have cut my remarks in half you will be happy, because they won't make the five-minute limit, but I will enter into the record the pertinent background information that we're concerned with on a national level.

Regarding the United States Army Corps of Engineers Mobile District study which was commissioned Tetra Tech, a review of the report yields much evidence that the upsurge in population in the region of influence between 2007 and 2011 will have both positive economic effects and negative social effects, particularly in the area of the delivery of quality educational services to military children of school age.

As outlined in the draft DEIS study, the average daily population of Fort Lee will increase from 12,953 to 20,000 as a result of the relocation of over 7,000 additional personnel. This important shift in personnel includes 4.1 million square feet of additional building renovated space beyond the 7.5 million already utilized.

On the positive side of this equation the report sites an estimated 9,800 direct jobs and 15,000 jobs with indirect impact for the region of influence. However, what concerns educators in the region is the potential for long-term significant adverse effects on schools that are identified in the DEIS and the fact that the Federal Impact Aide Program will do little, if anything, to alleviate the challenges facing the areas affected.

It's disappointing to know that in the Draft Environmental Impact Study and process for gathering information pertinent to the BRAC implementation, a cross-section of community representation outlined in Section 8.0 indicated that not one educational professional from any of the counties or cities surrounding Fort Lee were included.

Given the fact of the long-term, significant adverse effects the schools in the region are expecting, the report lacks sufficient expert opinion on matters concerning schools and additional educational facilities. Dinwiddie County is one of three areas the report identifies for the potential growth in size. We have reason to believe that Dinwiddie County will be the epicenter for development between 2007 and 2011 as the county prepares for rapid growth and development. With close to two thousand existing projects for residential development underway and significant economic inquiries under consideration, the attractive land prices, low taxes, development opportunities and excellent schools form a basis for rapid growth.

The DEIS reports the fact that Dinwiddie County is currently building two new schools. This is true. The report also indicates that 4,700 students associated with military growth will have the following impact, I quote "Twenty to thirty students in school can mean a new classroom. Two hundred students could mean a new school." This equates to the following: 188 new classrooms, 16 new schools.

Dinwiddie appreciates the formal recognition that the school facilities will be needed in the southside. Depending on how the students distribute themselves, the number of classrooms needed could double, triple or quadruple. For example, if 24 new students enter an elementary school and they're all fourth graders, then only one new teacher will be needed.

However, if 24 new students enter an elementary school and they distribute themselves this way, four kindergarten, four first-grade, four second-grad, four fourth-grade and four fifth-grade, then six new teachers and six classrooms will be needed. Theoretically 16 new schools will be needed if all the new school-aged students distribute themselves without taxing school facilities. The number of schools, however, according to my example could double, triple, or quadruple. The associated costs of these new facilities could range from an estimated $480 million to $960 million or beyond, and in fact the cost of new school facilities in Southside Virginia could exceed a billion dollars.

There's no funding stream associated with the long-term significant adverse effects on public schools as a result of the BRAC implementation initiated by the federal government. Note that federal impact aide associated with federal employees will only pay a portion of the cost to educate children, not

the bricks and mortar. Thus we are left with an enormous challenge between the years of 2007 and 2011, and an ever increasing price tag not only for schools but for salaries, special education services, administrative costs and resources that must be borne by the local tax payer.

The Seven Rivers Coalition therefore will continue to pursue a federal solution the BRAC dilemma, but we will need the full support of any agency or person who is willing to acknowledge the size and scope of the implications that BRAC would place on school facilities and the infrastructure in this surrounding area.

Response to Dr. Charles Maranzano

The educational professionals consulted were added to the EIS Section 8.0: Persons Consulted.

The revised text in section 4.1.9 regards how the student-aged population would be distributed and how this would impact classroom space. The text was changed to read that the estimated number of additional classrooms and schools that would be needed represents a *minimum* estimate. The explanation of Federal Impact Aid was corrected, noting that it does *not* cover construction costs or the full cost to educate a child. Information about the Seven Rivers Coalition was added.

Fort Lee has provided and will continue to provide updates to the school systems on BRAC planning information (e.g., population projections). The Final EIS will be available for a minimum of 30 days before the ROD is signed.

Spoken comments of Mr. Joseph Ivy

I was hoping that more people from the government agencies would have been here before I speak. My age, my experience, my education says that in addition to the cost to the multi-jurisdictions there are going to be some economic benefits. And thinking this through I was thinking that perhaps Prince George should not bear the entire cost for the additional traffic or the law enforcement that's needed for traffic coming in and out of the gates. Perhaps this is should be a multi-jurisdictional thing.

I would certainly recommend that Fort Lee meet with the different jurisdictions rather than one at a time. You are going to benefit from it. As a taxpayer from Hopewell I would like to see the time and energy put into a multi-jurisdictional task force, not just a committee. Because when you say well, this has been referred to the committee, that means nothing's being done. But a committee of industry, of educators, of police officers, of whatever services they think is going to be effected should have a voice. They should know what's coming from Fort Lee. They should know the volume of children. They should know the ages.

I would also like to recommend to Fort Lee that perhaps I know that it's going to be a major impact on the health care facilities, and perhaps Kenner could be revamped to become a hospital again rather than a clinic.

I could go on and on but it would be meaningless, but the idea is to perhaps work from a multi-jurisdiction rather than a single. I think they can afford it.

Response to Mr. Ivy

Fort Lee has provided and will continue to provide updates to the school systems on BRAC planning information (e.g., population projections, including volume of school-age children). The Final EIS will be available for public review and comment, and will include information on volume of school age children. In regards to KAHC, the U.S. Army North Atlantic Regional Medical Center (NARMC) conducted an in-depth analysis on the requirement for health care services at Fort Lee after the BRAC

announcement was made in 2005. Due to the quality and quantity of Network providers and hospitals in the local area, the increased workload associated with the population growth did not warrant re-establishing an inpatient facility at Fort Lee. In order to support the population growth, KAHC would expand the services currently available. Specifically, a new Consolidated Medical and Dental Clinic would be constructed to support the growing training population. Additional staff would be hired to support the expansion of current services. The U.S. Army Health Facilities Planning Agency is working with the staff at KAHC to identify alterations and additions to the current facility that would improve the utilization and efficiency of all the medical buildings at Fort Lee. Currently, there are no plans for additional services within KAHC. KAHC will continue to refer patients requiring continued care within the Military Health System to MacDonald Army Health Center, Fort Eustis; Naval Medical Center, Portsmouth; and Walter Reed Army Medical Center, Washington, D.C. HealthNet Federal Services, the local TRICARE partner, is actively engaged with KAHC and the local medical community to ensure all services are available within the local network (Kenner Army Health Clinic Deputy Director 2006).

Spoken comments of Mr. Porcher Taylor

I have two comments which was brought up partially before, but I want to reinforce it. The question is does Fort Lee plan to increase its medical facilities and support for the anticipated influx of soldiers, dependents and particularly retired personnel which are coming more and more to this area?

Right now all our local hospitals are over-stressed, every last one of them. But I understand that the Army has a plan to utilize the civilian hospitals in the area to take care of the overflow, and that's going to hurt. So I guess my question is we need to build something at Fort Lee medically.

Second question, I know that the military is not responsible for USOs. How many of you know what a USO is? United Services Organization. I spent my time in three wars. Every city I ever went to as a soldier and as a sailor the first place I would look for was a USO. If you went to the USO you got fed, you were put up for the night, you had socials, you were received by the public in a gracious manner, you had an opportunity to meet the people and feel that kind of relationship with the military. It's good. It's good.

I'm sad that -- I don't know how the military is going to do it because you don't sponsor USOs, it's a private fair. But get a USO and you will see the relationship between cities and the military increase.

Response to Mr. Taylor

The U.S. Army North Atlantic Regional Medical Center (NARMC) conducted an in-depth analysis on the requirement for health care services at Fort Lee after the BRAC announcement was made in 2005. Due to the quality and quantity of Network providers and hospitals in the local area, the increased workload associated with the population growth did not warrant re-establishing an inpatient facility at Fort Lee. In order to support the population growth, KAHC would expand the services currently available. Specifically, a new Consolidated Medical and Dental Clinic would be constructed to support the growing training population. Additional staff would be hired to support the expansion of current services. The U.S. Army Health Facilities Planning Agency is working with the staff at KAHC to identify alterations and additions to the current facility that would improve the utilization and efficiency of all the medical buildings at Fort Lee. Currently, there are no plans for additional services within KAHC. KAHC will continue to refer patients requiring continued care within the Military Health System to MacDonald Army Health Center, Fort Eustis; Naval Medical Center, Portsmouth; and Walter Reed Army Medical Center, Washington, D.C. HealthNet Federal Services, the local TRICARE partner, is actively engaged with KAHC and the local medical community to ensure all services are available within the local network (Kenner Army Health Clinic Deputy Director 2006).

Written comments of Mr. William F. Gandel

I'm William F. Gandel, director of Social Services of Prince George County. In February I'll have been there 29 years. I have been there 29 years in February as the director of Social Services. Very involved in all aspects of human services. Before that, I was in Petersburg for six years, starting there June the 1st, 1972. So I have some experience dealing with Fort Lee. And I am very disturbed, even beyond disturbed, that no human service official was contacted regarding some of the impacts on child protection.

The consultants or consultant that I was referred to had very little information about how the information was gleaned. And another consultant, when I asked about the less-than-significant impact on things such as child protective services, where that information was gleaned, he replied, well, that came from a professional that was on our staff. And so, apparently, the consultants just asked each other about the impacts such as protection of children.

And so I asked him what does long-term --I can't make out the third word -- minimal impact; what does that mean. Well, he said, well, long term means over a year; minimal means less than significant. And he really didn't have an explanation of what adverse meant. And he was one of the many consultants that I asked about, what local input did you get.

So as far as I'm concerned, that has to do with the credibility of any impact study asking the people that have to deal day-to-day with the current impact, which I continue to do. We have a significant rise in our benefit program services. And I'll be as brief as I can. That's our food stamp case load. The folks that are there at Fort Lee, in addition to the ones that are coming -- my information comes from the Greater Planning Commission -- will be junior grade NCOs. And if they have a significant number of children, possibly four or more, they possibly could qualify for food stamps.

We have had at least 21 new cases of food stamps due to Fort Lee in the last few months and that's without any troops strength build-up. We have a significant increase in domestic violence cases and also child protection. And the cases come bundled. And I use the term that cell phone companies are trying to market their product, they're bundling the services. For example, you get your cell phone service, you get your long-distance phone service, you get your cable TV and you get DSL. Well, that's the way the cases we see at Fort Lee are; they're bundled. They're bundled with child protection. There are financial issues. There's child protection. And it's not just the case of domestic violence. Rarely do we see a case just of domestic violence. There's usually a child involved. There's financial issues.

And one of the things that disturbs me most of all is that I am on their Army Community Services FAC Team, which stands for Family Advocacy Counsel. And I have talked to chaplains, I have talked to mental health professions, I have talked to medical professionals out there, in addition to ACS and the child advocates of which they just now hired two more. I think they have three in all.

And it's my understanding that when the combat troops return to Fort Lee they're not debriefed. And I understand that the Army and Navy has, like, a 30-day decompression program. And so today pretty much you're in Iraq, tomorrow you'll probably be debriefed out in Germany, very soon you're back at Fort Lee. You might have been gone six, eight months or a year, right back into a family situation where the spouse may have had to max out the credit card because the car broke down, one or two children may have been expelled from school either because of substance abuse or alcohol or carrying a weapon to school. So immediately from having to look over your shoulder 24/7 because somebody with an individual explosive device is going to do harm to you, you come back right into a family situation and have to resume a leadership role. And that's a big -- that's a big responsibility.

And so there absolutely should be some kind of decompression for the folks that are in the combat zone, females too, before they're thrust back into family life. Because if that's done too soon, it's very likely that we're going to have situations that happened at Fort Bragg with the four spousal murders.

And there's a study sponsored by the Pentagon, which I have, and that indicated, not just the Army, but military families have twice the fatalities of the children than the general population. And

that's public information. And I have my e-mail on several documents tonight, but if anybody would like that, if they want to contact me, I will be glad to forward it to them, make available the contact. It's available from the Pentagon.

And there was also some regular activities that we deal with in Fort Lee and they really don't have any services. They have domestic violence advocates. But mostly those people just refer to civilian resources. And I know also that the mental health facility out there is greatly inundated with substance abuse problems.

And so anything that could shed light or shed attention on the growing problem of domestic violence, child protection, substance abuse and alcoholism and the other -- the financial problems would be a big benefit to me.

We only have 21 people, including me. And I know that 9,600 military folks are coming. I already know that 68 percent will be married. I know that they'll have 2.33 children a piece. I got my information from Greater Planning Commission. I didn't make it up. And so that's means our total population is going to increase somewhere between 30 and 55,000 between 2011. Now, 30 percent of those people will be able to be housed on Fort Lee. And so our population -- our service population and our benefit programs, child protection, domestic violence, is going to grow exponentially. And I have used the term, if you have a tsunami in Asia, if you have an earthquake in Hawaii, as we had a couple weeks ago, people get very concerned. We have a tsunami at our door and I'm afraid people are not interested. And you can't ratchet up the infrastructure overnight. So the more information that people will digest and see the real need to shed some service and some federal money into ratcheting up our infrastructure, the better off we'll be.

Response to Mr. Gandel

Revised text in Section 4.1.9.2.1: Impacts on Social Services from “minor” to “significant,” and added information from Mr. Gandel on the impact on the Prince George County Department of Social Services.

Written comments of Ms. Brenda S. Pelham

Basically, as the Vice Mayor of Hopewell, one of my concerns would involve the fact that John Randolph Hospital is presently closing down their OB-Gyn clinic, I mean the whole floor. Therefore, those military persons who are coming in, many times there are young mothers who would be impregnated and have children, would not be afforded that opportunity if they live in Hopewell. Just as a general, I mean that might be something that the military would like to pursue, open up Kinter. Being I was born there, of course I would highly recommend that. As the City, I guess that's my comment. The services, of course, will increase. I understand that we only house now seven percent of the persons that are assigned to Fort Lee. If that, in fact, is true, seven percent of all those thousands of people that are coming is quite a big number. Services, of course, will have to increase; police, fire, social services. And we do need to just talk more and make sure that -- everyone thinks that we have a lot of time. I was in the military 12 years. You don't have a lot of time. So effective planning and communication, open communication with the local localities is very much essential to make this thing work.

Transportation, of course, is another issue, and housing. And, hopefully, the Commanders in Chief will listen. As a grandparent and a mother, I'm really concerned about the overall environmental impact. I want my children to come back and live in Hopewell. I want my grandchildren to stay here. In order to do that, we need to conserve the natural environment, the historical outlook of the land, and so that in all of the decisions that are made, don't forget the environment, the natural resources that help us stay here for a long time.

Response to Ms. Pelham

Impacts on medical and social services are addressed in Section 4.1.9.2.1 of the EIS. Impacts on Transportation are addressed in Section 4.1.10.2.1 of the EIS.

Charles Maranzano, Jr. Superintendent of Schools, Dinwiddie County, VA

On September 15, 2005, President Bush approved the Base Realignment and Closure Act (BRAC), which became law three weeks later on November 9. As a result of this Congressional action, it is now known that seven identifiable areas of the country in the proximity of United States military bases will receive significant population increases by 2011. Several additional military areas of the country will also experience similar but less significant regional influxes, while many others will loose established populations. Compounding and exacerbating this expected shift in military and civilian support movements is a "perfect storm" attributable to a trio of actions: the planned BRAC implementation; the transformation of the Army; and global repositioning of our troops.

Members of Congress and the Department of Defense undertook a prolonged planning process to consider the implications of closing military bases and did so with an eye on the economic side of this equation. Conventional wisdom led Congress to provide necessary economic relief for areas of the country loosing a military presence, with little prior effort dedicated to acknowledging the potential downside of areas of the country that would experience sudden growth.

While it may be true that over time military growth and the associated increased civilian presence will bring huge economic gains to bases upsizing as a result of BRAC, the *tsunami effect* of sudden population increases to these regions could be devastating. One example is the predicted impact on public school infrastructures in seven specific areas of the country. At least fifty school divisions in the proximity of Fort Benning, Little Rock Air Force Base, Fort Carson, Fort Riley, Fort Sill, Fort Bliss and Fort Lee will be adversely affected.

In the fall of 2005 a coalition of school superintendents from across the country recognized and identified the threat to the fifty school divisions directly affected by BRAC. A summit in Atlanta, Georgia was organized in the late fall of 2005 and born from that meeting was the Seven Rivers Coalition for Military Growth. (The river was a geographical feature associated with each of the seven identified military bases.)

The Seven Rivers Coalition led by school divisions in Georgia and Alabama adjacent to Fort Benning recognized that unless new schools were planned and built prior to the BRAC implementation, a problem of crisis proportions would fall upon them. These divisions studied the impact 11,400 new school-aged children would bring as a result of BRAC and constructed a detailed analysis of school facilities needed in the Chattahoochee Valley region.

The conclusion reached by the Chattahoochee Valley school divisions was an astonishing $325 million need in construction funds for schools. Extending this need to the additional six regions of the country included in the Seven Rivers Coalition, a total of over $2 billion in new school construction was identified in 2005 as a direct result of the nationwide BRAC implementation.

According to the population projections provided by the United States Army and applied to the seven military bases impacted by BRAC, over 71,000 children associated with these expected changes would become displaced. Not unlike the Hurricane Katrina disaster that dispersed tens of thousands of Gulf Coast children over a wide area of the southern United States, BRAC is scheduled to relocate more than 71,000 children to seven very specific and constricted areas of the country. The results may be as devastating.

The majority of existing school facilities in the Seven Rivers regions are stretched thin. Many school divisions anticipate a crisis of immense proportions. Absent any federal assistance for the construction of new facilities school divisions are left without a remedy.

With military families already experiencing extreme stress and military personnel risking life and limb over the global war on terrorism, the relocation of military children to areas of the country without additional school capacities could be overwhelming.

The "no room at the inn" theme will play very badly in military circles across this country, and neither the superintendents of schools nor the localities affected are in a position to solve this looming crisis. Simply stated, without significant new school construction, there will have no place to put these new children of military families.

School construction has traditionally been a local function, with expansion of public school facilities absorbed by local taxpayers, primarily homeowners according to most common state funding formulas. Building new schools typically require local bond efforts with some degree of state support. In some areas of the country, the land acquisition process alone is time consuming and cumbersome.

Under the design-build process, an average school may take up to three years to construct. Localities must also fund the teaching, resource and administrative staff for these buildings. Consider also the bussing, cafeteria, electrical, heating and cooling, and maintenance costs associated with schools. Compounding this problem is a nationwide double-digit inflation for construction costs. Federal impact aid could help pay the way for teaching staff and some limited resources, but not for bricks and mortar.

If school projects are not planned and implemented immediately, what will happen when military families begin relocating? They already are. According to the school divisions in the Chattahoochee Valley, hundreds of the more than the 11,438 expected children are already signing up for school. Children may be forced to attend classes in every available space including the cafeteria, auditorium, media center, hallways, closets and storerooms according to state officials from the region.

Portable trailers may become the norm at each school site, as administrators will need to scramble to provide additional space. But adding classrooms creates another problem, as the fixed size of the school cafeteria, gymnasium, administration and auditorium are not easily expanded. Schools may have to consider split sessions for the increase in children.

There are no easy answers, but Seven Rivers superintendents have made one fact clear: Localities should not be expected to bear the cost of new school construction. In fact, the federal government has accomplished this in times of crisis-notably during World War II. The Seven Rivers Coalition has been a persistent presence on Capital Hill this past year, meeting with key Senators and Congressmen to articulate the impending situation.

Meetings at the Department of Defense and United States Department of Education have yielded limited results. Everyone concerned acknowledges the issue but no funding source to remedy the problem has been identified. In fact, according to Seven Rivers estimates, the price tag for military related school construction will easily top over $2 billion in eight states.

Secretary of Education Margaret Spellings, in a January 26, 2006, letter to Secretary of Defense Donald Rumsfeld requested specific plans for realigning troops among United States bases in order to develop a joint report to the Congress. Since that correspondence, the FY07 Defense Authorization Bill Section 574 included a request for information relating to local educational agencies that experience growth in the enrollment of military dependant students.

These efforts have put the issue on the table for members of the Departments of Defense and Education, and Congress has been put on notice. But the federal government is slow to act in a preventative manner, and since the problem has yet to materialize, reluctant to commit federal dollars toward any solution. Thus the epicenter of the impending *tsunami* has been identified, but the destructive wave has yet to compete its journey to shore. Failure to act will have serious consequences for the morale of our military families, and major implications for localities across the country in need of school facilities.

The Seven Rivers Coalition will continue to pursue all necessary avenues in Washington, D.C. this winter in order to convince congress to act. The problem is that the clock is already ticking, and in spite of the federal administration's efforts to fully implement No Child Left Behind, it may be doing just that to 71,000 military children.

Impact of BRAC implementation on Area Surrounding Fort Lee, Virginia

A review of the report prepared by the US Army Corps of Engineers Mobile District yields much evidence that the upsurge in population in the Region of Influence (ROI) between FY 2007-2011 will have both positive economic benefits and negative social implications, particularly in the area of the delivery of quality educational services to military children of school age.

As outlined in the Draft Environmental Impact Study (DEIS) the average daily population at Fort Lee will increase from 12,953 to 20,703, a result of the relocation of over 7,700 additional personnel to Fort Lee by 14 September, 2011. This important shift in personnel includes 4.1 million sq. ft. of additional building and renovated space beyond the 7.5 million sq. ft. utilized today. On the positive side of this equation, the report cites an estimate of 9,800 direct jobs expected to materialize in the region with a combined total of 15,000 jobs when indirect effects are factored in. All total more than $558 million dollars in income generation and sales of more than 1.5 billion are expected in the region.

However, what concerns educators in the region is the potential of the "long-term significant adverse effects" on schools that are identified in the DEIS, and the fact that the Federal Impact Aid Program will do little if anything to alleviate the challenges facing the 1,296 sq. miles in Southeast Virginia identified as the ROI.

It is disappointing to note that in the Draft Environmental Impact Statement (DEIS) process for gathering information pertaining to the BRAC implementation, a cross section of community representation outlined in Section 8.0 does not include one educational professional from any of the counties or cities surrounding Fort Lee. Given the fact that "long term significant adverse effects" on schools in the Region of Influence (ROI) are expected, the DEIS report lacks sufficient expert opinion on matters concerning schools and additional educational facilities.

Dinwiddie County is one of the three areas the report identifies as potentially growing in size and scope and as noted in the report, "most new development in the area is occurring along major highway corridors I-85, I –95 in Chesterfield, Dinwiddie and Prince George." The report acknowledges that most schools in the ROI are at or above capacity, and that trailers are in place in most localities to alleviate the burden at the public schools.

We have reason to believe that Dinwiddie County will become the epicenter for new development between 2007-2011, as the county prepares for rapid growth along the I-85, I-95, and 460 corridors. With close to 2,000 existing projects for residential development underway, a new commerce park due to open in the Rohoic District, and significant economic inquiries under consideration, the attractive land prices, low taxes, development opportunities, and excellent schools form a basis for rapid growth.

The DEIS report cites the fact that Dinwiddie County is currently building two new schools: one high school and one elementary school. The report also indicates that the 4,700 students associated with military growth (4.1.9.6) will have the following impact:

- "20 to 30 students in school can mean a new classroom"
- "200 students could mean a new school (DoD 2005b)"

This equates to the following:

- "188 new classrooms"
- "16 new schools"

Dinwiddie appreciates the formal recognition that these school facilities will be needed in Southside Virginia.

Depending on how the student-aged population distributes itself, the number of classrooms needed could double, triple, or quadruple. (Example: if 24 new students enter an elementary school and they all are 4th graders, then only one new teacher and one classroom will be needed. However, if 24 new students enter an elementary school, and that school is at student capacity, and the children are distributed 4-K, 4-1, 4-2, 4-3, 4-4, and 4-5th graders, then six new teachers and six classrooms will be needed.)

Theoretically, 16 new schools will be needed if all of the new school-age students distribute themselves without taxing school facilities at capacity in any of the school divisions. The number of new schools could also double, triple or quadruple. The associated costs for the new school facilities could range from (assuming an average $30 million price per school) from $480 million to $960 million or beyond and in fact the cost for new school facilities in Southside Virginia could exceed $ 1 billion.

There is no funding stream associated with the "long term significant adverse effects" on public schools as a result of the BRAC implementation initiated by the federal government to date. Note that Federal Impact Aid associated with federal employees or the military will only pay a portion of the costs to educate children in our schools, and does not provide funds for school construction. Thus we are left with an enormous challenge between the years 2007-2011 and an ever-increasing price tag not only for schools but for salaries, special education services, administrative costs, and resources that must presently be borne by the local taxpayer.

A survey recently commissioned by personnel at Fort Lee of the existing military and civilian workforce indicates clearly that the average number of children per military family exceeds national norms. This survey data leads a reasonable person to conclude that the number of military children may possibly be considerably higher than previously predicted at Fort Lee. In fact, Seven Rivers projections place the number of students expected in the ROI to be as high as 6,500 children.

For example:

According to the Military Child Education Coalition (MCEC) School Transitions worksheet:

(MCEC worksheet)		(According to Ft. Lee Survey)	
Married Military:	58%	Fort Lee:	67%
Number of Children	48%	Fort Lee:	73%
Ratio per household	1.6	Fort Lee:	1.74
School-aged	63%	Fort Lee:	70%

The Seven Rivers Coalition superintendents will continue to pursue a federal solution to the BRAC dilemma, but will need the full support of any agency or person who is willing to acknowledge the size and scope of the implications BRAC will place upon school facilities and infrastructure like ours in the ROI surrounding Fort Lee.

To ignore this important part of the equation is out of the question. This problem should be fully explored in depth by the Project team associated with Tetra Tech, Inc., and by the administrative staff at Fort Lee.

Please include school superintendents in the ensuing discussion of educational facilities and resources for Southside Virginia. We want to do everything possible to ensure that the quality of educational services will not be compromised for our children nor the families of the United States Military personnel and federally associated contractors.

Thank you for the opportunity to address this critical issue in response to the Draft Environmental Impact Statement for Fort Lee, Virginia.

For the Public Comment on the Fort Lee, Virginia, Draft Environmental Impact Statement

Charles Maranzano, Ed.D.
Superintendent of Schools for Dinwiddie County
PO Box 7
14016 Boydton Plank Road
Dinwiddie, VA 23841
804-469-4190 office
804-898-5626 cell

Response to Mr. Maranzano

The educational professionals consulted were added to the EIS Section 8.0: Persons Consulted.

The revised text in section 4.1.9 regards how the student-aged population would be distributed and how this would impact classroom space. The text was changed to read that the estimated number of additional classrooms and schools that would be needed represents a *minimum* estimate. The explanation of Federal Impact Aid was corrected, noting that it does *not* cover construction costs or the full cost to educate a child. Information about the Seven Rivers Coalition was added.

Fort Lee has provided and will continue to provide updates to the school systems on BRAC planning (e.g., population projections). The Final EIS will be available for a minimum of 30 days before a ROD is signed.

Comment Form

Draft Environmental Impact Statement
for the Implementation of Base Closure and Realignment (BRAC) Recommendations
and Other Army Actions at Fort Lee and Fort A.P. Hill, Virginia

NOTE: All information submitted will become public record.

1. **Your information:**

Name: WILLIAM F. GANDEL
Title: DIRECTOR, SOCIAL SERVICES
Agency/Organization: PRINCE GEORGE COUNTY, VA.
Address: P.O. BOX 68
City, State, Zip: PRINCE GEORGE, VA. 23875-0068
Phone: (804) 733-2650 EXT 110
E-mail: wgandel@princegeorgeva.org (NO SPACES / ALL LOWER CASE LETTERS)

□ **Please send a CD copy of the Final EIS to me.**

2. **Please check the one affiliation that best represents your role or interest in the EIS:**

□ Fort Lee Resident
□ Fort A.P. Hill Resident
□ State Government
□ Civic Organization
□ Federally Recognized Tribe
□ County EMPLOYEE AND RESIDENT (PRINCE GEORGE)
□ School/University
□ Recreational Organization
□ Private Citizen
□ Federal Government
□ Business/Commercial Organization
□ Environmental Organization
□ Other: _____

3. **EIS Areas of Concern. Please check the appropriate boxes and write your specific comments about the area of concern in # 4 below. More Comment Forms are provided at the Comment station if you need additional space.**

□ Construction
□ Traffic and Transportation
□ Cultural Resources/Historic Properties
□ ~~Socioeconomics~~ ✓
□ Wetlands, Wildlife, Endangered Species
□ Noise
□ Native American Resources
□ Air Quality
□ Water Quality
□ Other: _____

Over Please

(More comment sheets are available if you need additional space.)

4. **Please write your comments in the space provided below.**

I am very concerned since I have not found that any human service professional or public safety or educational professional had been consulted for input on this impact study!

If anyone reads this please phone (804) 733-2650 EXT 110 and let me know.

Thanks

Comments may be sent to:

Carol Anderson
Environmental Management Office
1816 Shop Road
Fort Lee, Virginia 23801-1604
E-mail: CRMLee@lee.army.mil
Fax 804-734-3762

or

Terry Banks
19952 North Range Road
Fort A.P. Hill, VA 22427
E-mail: Terry.Banks1@us.army.mil
Fax: (804) 633-8443

All comments must be received or postmarked no later than November 20, 2006 to be considered in preparation of the Final EIS.

(More comment sheets are available if you need additional space.)

Response to written comments of Mr. William Gandel

Mr. Gandel raised his concerns at the Petersburg public meeting and he was contacted after the public meeting with respect to his concerns. School districts surrounding Fort Lee were contacted with respect to the potential for impact of the BRAC action on school districts and information on the incoming BRAC population was provided to surrounding districts.

Comment Form

Draft Environmental Impact Statement
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NOTE: All information submitted will become public record.

1. **Your information:**

Name: DENNIS MULL

Title: _____

Agency/Organization: _____

Address: 2123 ARMISTEAD AVE

City, State, Zip: PETERSBURG, VA

Phone: 804 733-1131

E-mail: LEESRT6@YAHOO.COM

□ **Please send a CD copy of the Final EIS to me.**

2. **Please check the one affiliation that best represents your role or interest in the EIS:**

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□ Fort A.P. Hill Resident
□ State Government
□ Civic Organization
□ Federally Recognized Tribe
□ County
□ School/University
□ Recreational Organization
☒ Private Citizen
□ Federal Government
□ Business/Commercial Organization
□ Environmental Organization
□ Other: MILITARY RETIREE

3. **EIS Areas of Concern. Please check the appropriate boxes and write your specific comments about the area of concern in # 4 below. More Comment Forms are provided at the Comment station if you need additional space.**

□ Construction
☒ Traffic and Transportation
□ Cultural Resources/Historic Properties
□ Socioeconomics
□ Wetlands, Wildlife, Endangered Species
□ Noise
□ Native American Resources
□ Air Quality
□ Water Quality
□ Other: MEDICAL

(More comment sheets are available if you need additional space.)

4. **Please write your comments in the space provided below.**

MILITARY RETIREES AND FAMILY CAN NOT GET A MEDICAL APPOINTMENT AT KENNER NOW. SO HOW AFTER A 100% INCREASE OF PERSONNEL WILL WE GET ANY MORE TIMELY CARE?

Comments may be sent to:

Carol Anderson
Environmental Management Office
1816 Shop Road
Fort Lee, Virginia 23801-1604
E-mail: CRMLee@lee.army.mil
Fax 804-734-3762

or

Terry Banks
19952 North Range Road
Fort A.P. Hill, VA 22427
E-mail: Terry.Banks1@us.army.mil
Fax: (804) 633-8443

All comments must be received or postmarked no later than November 20, 2006 to be considered in preparation of the Final EIS.

(More comment sheets are available if you need additional space.)

Response to written comments of Mr. Dennis Mull

The EIS and Fort Lee recognize the impact that the BRAC action at Fort Lee could have on social services, and that potential impact is analyzed in section 4.1.9.

Comment Form

Draft Environmental Impact Statement
for the Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee and Fort A.P. Hill, Virginia

NOTE: All information submitted will become public record.

1. **Your information:**

Name: Brian A. Moore

Title: Councilman

Agency/Organization: 4th Ward, City of Petersburg

Address: 328 Claremont St

City, State, Zip: Pt VA 23805

Phone: _____

E-mail: _____

☑ **Please send a CD copy of the Final EIS to me.**

2. **Please check the one affiliation that best represents your role or interest in the EIS:**

- □ Fort Lee Resident
- □ Fort A.P. Hill Resident
- □ State Government
- □ Civic Organization
- □ Federally Recognized Tribe
- □ County
- □ School/University
- □ Recreational Organization
- □ Private Citizen
- □ Federal Government
- □ Business/Commercial Organization
- □ Environmental Organization
- ☑ Other: Elected official

3. **EIS Areas of Concern. Please check the appropriate boxes and write your specific comments about the area of concern in # 4 below. More Comment Forms are provided at the Comment station if you need additional space.**

- □ Construction
- □ Traffic and Transportation
- □ Cultural Resources/Historic Properties
- ☑ Socioeconomics
- □ Wetlands, Wildlife, Endangered Species
- □ Noise
- □ Native American Resources
- □ Air Quality
- □ Water Quality
- □ Other: _____

(More comment sheets are available if you need additional space.)

4. **Please write your comments in the space provided below.**

Many of the localities have stated their schools are exceeding capacity or that there may not be sufficient affordable housing available in the time frame for the expansion

Will any federal dollars be available to help reconstruct the I-95/I-85/460 interchange? Are there any other road changes or modifications that can be done to improve traffic to and from the base?

Will the Federal government provide assistance to localities that would like to setup high-tech enterprise zone to attract contractors that may be working on Fort Lee?

Comments may be sent to:

Carol Anderson
Environmental Management Office
1816 Shop Road
Fort Lee, Virginia 23801-1604
E-mail: CRMLee@lee.army.mil
Fax 804-734-3762

or

Terry Banks
19952 North Range Road
Fort A.P. Hill, VA 22427
E-mail: Terry.Banks1@us.army.mil
Fax: (804) 633-8443

All comments must be received or postmarked no later than November 20, 2006 to be considered in preparation of the Final EIS.

(More comment sheets are available if you need additional space.)

Response to written comments of Mr. Brian Moore

Fort Lee is aware of the issues of school capacity and affordable housing. The installation has provided information on the projected incoming school-aged children population to all surrounding school districts and county and city governments to help them with their planning. Fort Lee will assist the incoming military population with finding housing in the area.

The I-85/I-95/460 interchange was not included in the traffic analysis as it is too far removed from the installation to analyze the direct impact of the BRAC action on traffic at the interchange. If federal funding is provided for improvements to the interchange, they would not be associated with the BRAC action. An analysis of road improvements in the vicinity of the installation, a result of the traffic analysis conducted by VDOT, was added to the EIS in section 4.1.10.

The potential for federal assistance to help develop a high-tech enterprise zone is not a BRAC-associated action and is not analyzed in the EIS.

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NOTE: All information submitted will become public record.

1. **Your information:**

Name: _____

Title: _____

Agency/Organization: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

□ **Please send a CD copy of the Final EIS to me.**

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□ Fort Lee Resident
□ Fort A.P. Hill Resident
□ State Government
□ Civic Organization
□ Federally Recognized Tribe
□ County
□ School/University
□ Recreational Organization
□ Private Citizen
□ Federal Government
□ Business/Commercial Organization
□ Environmental Organization
□ Other: _____

3. **EIS Areas of Concern. Please check the appropriate boxes and write your specific comments about the area of concern in # 4 below. More Comment Forms are provided at the Comment station if you need additional space.**

□ Construction
□ Traffic and Transportation
□ Cultural Resources/Historic Properties
□ Socioeconomics
□ Wetlands, Wildlife, Endangered Species
□ Noise
□ Native American Resources
□ Air Quality
□ Water Quality
□ Other: _____

(More comment sheets are available if you need additional space.)

4. **Please write your comments in the space provided below.**

~~For this~~ For future meetings:
Need Better Facilitator
Ft Lee Only at Head Table!
More would participate if seen as multi-jurisdictional
Ft Lee should be in Back "listening"
Not leading & Controlling meeting

Need New Ideas from citizens

Comments may be sent to:

Carol Anderson
Environmental Management Office
1816 Shop Road
Fort Lee, Virginia 23801-1604
E-mail: CRMLee@lee.army.mil
Fax 804-734-3762

or

Terry Banks
19952 North Range Road
Fort A.P. Hill, VA 22427
E-mail: Terry.Banks1@us.army.mil
Fax: (804) 633-8443

All comments must be received or postmarked no later than November 20, 2006 to be considered in preparation of the Final EIS.

(More comment sheets are available if you need additional space.)

Response to anonymous written comments

Fort Lee appreciates the comments and will take them into consideration for future public meetings.

Comments of Ms. Kathleen Steele, Colonial Heights Presbyterian Church

Ms. Steele noted that her church would like to assist with the incoming BRAC personnel in a "welcome wagon" type of capacity.

Response: Fort Lee would welcome all assistance from the community in making the transition for the incoming personnel as easy as possible.

COMMENTS FROM THE PORT ROYAL PUBLIC MEETING

PUBLIC COMMENTS FROM PORT ROYAL PUBLIC MEETING

Spoken comments of Mr. Stephen Manster (Town Manager of the Town of Bowling Green [speaking on behalf of himself and not on that of the Town Council])

My first comment relates to something that is not new to A.P. Hill. That is my comment dealing with fiscal impact, and that has been completely overlooked in this study. With the expansion of activities at A.P. Hill, the base is going to expect certain things of the localities that surround the base. And if we are to comply with the wishes of A.P. Hill in order to maintain the integrity of the mission, the impact on the community -- especially the town of Bowling Green -- will be devastating. And the fiscal impact on the Town of Bowling Green and surrounding localities has not been looked at in the study. I would suggest that we do take a look at that.

I also note that we have statements like there will be short-term minimal impact due to the use of hazardous materials or something like that. And then the item of hazardous materials is somewhat dismissed. I just wonder if there's any need for further investigation of that, especially when we see that wells that are dug by the Town of Bowling Green and developers in our area are always rejected by the Health Department the closer they are to Fort A.P. Hill. And I'm wondering if activities in the past and present activities and maybe activities in the future have something to do with that. I think there might be a little greater need for higher level of an investigation when we deal with pollution of aquifers or water systems.

The other thing I wanted to note was we have a lot of information about the economic impact on the region, and we talked about millions of dollars, hundreds of jobs, so on and so on, both direct and indirect impacts. And I guess that this is the result of feeding numbers into a model. That's all well and good, but unless there are some other very costly adjustments in how we do business and how people on base can get to places off base, I would suggest that those numbers are rather useless. For people who are coming onto A.P. Hill and staying there for training sessions and then going some place else, just feeding numbers into a model doesn't do any economy any good. We need to look at additional investment in transportation and other types of activities to bring people who are stationed at A.P. Hill either temporarily or permanently into the community, and I think that's something that has been overlooked.

Response to Mr. Manster

Comment noted.

Spoken comments of Mrs. Cleopatra Coleman (Officer in several civic and -- organizations and agencies in Caroline County, speaking in a non-official capacity as a taxpaying citizen and a resident of the Town of Port Royal)

I have some concerns about this proposed merger or however you would want to make it. I do want to make it clear that I have certainly not had an opportunity to read the materials before; nevertheless, I do have some concerns. They go along the same lines much of which Mr. Manster has already mentioned. The concern of noise and pollution, for instance. At different times of the year we are bombarded rather heavily here in the Town of Port Royal -- and I happen to live in an 18th Century home, and those homes can suffer some great deal of damage as a result of that bombardment. Now, if this base is going to be enlarged further, I have a concern about our historic properties here in Port Royal. According to my rights, the most significantly historic property in the Town of Port Royal home, that is, presently -- as far as I'm aware -- still has 18th Century bricks down in the dining room on the floor from a bombardment several years ago. And I happen to know that that owner really complained bitterly to

A.P. Hill, and nothing has been done about it. So owning an old home here, I have a concern about the noise.

I have a concern, too. I understand now that you're allowed to fly over the Town of Port Royal with the helicopters, and I assume that will continue, but we've recently had a couple of planes down in this area. And just as a matter of safety, I have a concern as well about that.

The business of pollutants, for instance. My husband is currently dying now from lung cancer, asbestosis. And I just noticed over there, asbestos and lead paint and so forth, no affect. I want to challenge that statement. It has a devastating affect. You can't possibly put up asbestos and lead producing things, and say it has no affect.

I have a concern, too, about a company/town partnership. Here in Caroline County we are struggling now to keep the school buildings -- put the school buildings up that are needed. I noticed again you're saying that that's, you know, way down the road and so forth, but we have a lot of elderly people in Caroline County, like myself, and we are already behind in terms of school building. So if you are going to expand this base and bring in more children, as I'm certain you're going to do, then it is going to have more than a low impact on this community. So I'm concerned about the partnership. And I'm certainly aware that A.P. Hill has been -- A.P. Hill has been a good partner, but I'm concerned about the enlargement of the base and what it will do to our schools, to our roads. Here in the Town of Port Royal we have devastating problems with flooding here. Now, I notice signs going up along 301 telling you to stay off the road. Perhaps those signs were put up at the cost of doing work here in Port Royal. I can't say that for a fact, but in my simplistic way of thinking, you know, the civic kinds of enhancements that we need so desperately here, just may be challenged and may be overtaken by the needs of a larger player in the game. So I have that concern as well. So I'm not -- as I indicated, I'm not well-versed on what you have here, but I want to say that I do have some concerns. And I'm heavily invested in the area. My family has lived in this county for four or five generations. And, indeed, my home from both sides of my family are now on A.P. Hill. Members of my family, including my son, uncles and so forth, have died in defense of this country, and so we've given. I've paid my dues, so let none challenge my patriotism, but I do have some grave concerns about the magnification of what is going to happen here.

Response to Mrs. Coleman

The proposed BRAC action would station a small permanent party at Fort A.P. Hill, and only unaccompanied Soldiers would travel weekly to train at Fort A.P. Hill; those Soldiers would stay on the post during their week of training. Noise impacts are addressed in Section 4.2.4 of the EIS, and hazardous material issues are addressed in Section 4.2.12 of the EIS.

Spoken comments of Mr. Lloyd Skinner, Jr.

I live off of 681, off of 17 down next to the river. And it looks like that's going to be an area where we're going to really get some noise down there, and I'm really concerned about that. I mean, we get it now, but it looks like we're in an area down there where we're really going to get it down there. Can anybody tell me how much more we're going to get than what we're getting now? Because it looks like that's the area where they're going to do the demolitions and explosions and stuff, and training in that area. And everybody down there is concerned about it.

Response to Mr. Skinner

Noise impacts are addressed in Section 4.2.4 of the EIS. Noise effects would primarily be due to heavy equipment noise during construction and the operation of the proposed EOD range, and the noise contours would extend approximately 300 meters beyond the southern boundary and approximately 600 meters

beyond both the northern and eastern boundaries of the installation. Individuals within these areas will be exposed to a louder acoustical environment and more frequent noise, when compared to existing conditions. There would be little or no off-installation noise from the training in the proposed LSA. Structures off the installation would not be exposed to damaging noise levels.

Spoken comments of Mr. David Jenkins

Some of you may know I am in the fire department here, but I do not speak for them. I am representing myself. My major concern is with the increased training at A.P. Hill that's coming, are the resources where the training is being discontinued going to be moved to the Hill to help support the training? Because we've had instances where ranges at Fort Meade have been closed, et cetera, and increased training has happened here, and there has not been enough support for it on the Hill itself.

Response to Mr. Jenkins

Details of the movement of training resources will be determined by the upper levels of the Department of the Defense, and will not be determined by Fort A.P. Hill or Fort Lee.

Spoken comments of Mr. Alexander Long

I live at 201 Frederick Street, Port Royal, Virginia. And my wife is the mayor. She cannot be here tonight, because she had surgery this afternoon, so she is home recuperating. And I'm Chairman of the Planning Commission, but I'm speaking on my own behalf. Personally, I think Fort A.P. Hill is a great asset. It's a positive resource for the nation and this community. But, for the record, would like to make note of the fact that the Town of Port Royal -- all 78 acres of it -- is on the State and the National Register of historic places. Also, the fact that we're located in the coastal plain geophysical region, and, as such, we do have soils in clays -- soils are pretty much dominated by clays now. It facilitates the movement of vibration, which is to say if you let loose with a really big explosion, it could shake the houses here.

So if you could not only try to berm the areas where you have explosions, to berm them to, you know, try to get the noise away from this area, but I don't know if you can figure out a way that you don't make the ground shake.

Response to Mr. Long

Noise impacts are addressed in Section 4.2.4 of the EIS.

Spoken comments of Ms. Della Mills

I'm the Vice Mayor of the Port Royal Town Council, and I'm a resident here in Port Royal, and I'm speaking as a private resident. Like everyone else here, I have concerns over the noise, because we do suffer with some of it. I can tell you I've had a couple of broken windows in the past. But a lot of people -- I've lived in the county all of my life, but for the first 18 years it was up on Route 2 directly across from A.P. Hill, and the rest -- and except for two years, the rest of it I spent in Port Royal. And I believe that the noise volume has actually decreased from what I remember growing up with. It is actually -- there has been a decrease in the noise volume that we're getting from the exploding ordnance and the big guns

firing and all, and we appreciate it. We do. And, you know, I did notice that we're going to have a demolition or ordnance disposal closer down to this end.

Will you actually be exploding ordnance there, or is that the disposal for what's already been exploded? You know, I don't know what the answer to that is, but I'm also a member -- I'm also a member of the installation community committee, and we went over this, and they will be installing more noise meters and things like that down here to keep, you know, the level down, but I did want to make -- I do believe that we probably will get some more noise, and I'm concerned about that, but I'm going to trust it to y'all to deep it at a lower level or as low as possible. And we do appreciate the changes that's been made over the years.

Response to Ms. Mills

Noise impacts are addressed in Section 4.2.4 of the EIS.

Comment Form

Draft Environmental Impact Statement
for the Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Lee and Fort A.P. Hill, Virginia

NOTE: All information submitted will become public record.

1. **Your information:**

Name: Nancy Myers
Title: Citizen - Private
Agency/Organization: _____
Address: 2353 Tidewater Trail
City, State, Zip: Rappahannock Academy VA 22538
Phone: 804 742 5228
E-mail: _____

☐ **Please send a CD copy of the Final EIS to me.**

2. **Please check the one affiliation that best represents your role or interest in the EIS:**

☐ Fort Lee Resident
☐ Fort A.P. Hill Resident
☐ State Government
☐ Civic Organization
☐ Federally Recognized Tribe
☐ County
☐ School/University
☐ Recreational Organization
☑ Private Citizen
☐ Federal Government
☐ Business/Commercial Organization
☐ Environmental Organization
☐ Other: _____

3. **EIS Areas of Concern. Please check the appropriate boxes and write your specific comments about the area of concern in # 4 below. More Comment Forms are provided at the Comment station if you need additional space.**

☐ Construction
☑ Traffic and Transportation
☐ Cultural Resources/Historic Properties
☐ Socioeconomics
☐ Wetlands, Wildlife, Endangered Species
☑ Noise
☐ Native American Resources
☑ Air Quality
☑ Water Quality
☐ Other: _____

(More comment sheets are available if you need additional space.)

4. **Please write your comments in the space provided below.**

I live on Rt 17 across from A.P. Hill, and I am very much concern about the Noise, as I now I believe the foundation of my home has been shaken loose. And more will be even worst.
Also the traffic, on a 2 lane highway, it hard to get out of my gate, with ease.
Also I know very little about the Change, but I hope I can be inform. On the future.

Comments may be sent to:

Carol Anderson
Environmental Management Office
1816 Shop Road
Fort Lee, Virginia 23801-1604
E-mail: CRMLee@lee.army.mil
Fax 804-734-3762

or

Terry Banks
19952 North Range Road
Fort A.P. Hill, VA 22427
E-mail: Terry.Banks1@us.army.mil
Fax: (804) 633-8443

All comments must be received or postmarked no later than November 20, 2006 to be considered in preparation of the Final EIS.

(More comment sheets are available if you need additional space.)

Response to written comments of Ms. Nancy Myers

Fort A.P. Hill and the Army Environmental Center conducted numerous studies concerning the potential noise impacts of the BRAC action at Fort A.P. Hill. In addition and in response to concerns raised at the Port Royal public meeting, an analysis of the potential for structural damage caused by noise from the activities at Fort A.P. Hill was added to the EIS (section 4.2.4, page 4-148). The analysis concluded that while residents outside the installation and within earshot of the activities conducted at the installation may perceive that structural damage can be caused by the installation's activities, the evidence shows this to not be the case.

The Virginia Department of Transportation provided comments on the potential for the BRAC action to affect traffic at Fort A.P. Hill and concluded that the minimal traffic that would be created by the action would be more than adequately handled by the existing infrastructure.

Email comment from Tom James (private citizen)
Sent: Wednesday, November 01, 2006 8:30 AM
To: Kenneth Perrotte
Subject: Comment/Request Fort A.P. Hill
Date: 11/1/2006
Subject: Re: transfer of exercises from Fort Lee.

I support the transfer. I also support limiting the number of rooftops around the base and in Caroline County.

Caroline is the last rural area between Petersburg and Maine on I-95 and should remain so. A.P. Hill allows our troops and the Pentagon quick and easy access to an established training facility. This eliminates the expense, time, and trouble of moving it to another area and taking even more public land.

Please count on me for support in this matter and any matter regarding limiting development in Caroline.

Sincerely,
Tom James

Response: Fort Lee appreciates the support of the surrounding community.

Email comment from Douglas L. Austin (1LT NGVA, Fort Pickett)
Sent: Monday, November 20, 2006 11:51 AM
To: crmlee@lee.army.mil
Subject: Comments on Draft Environmental Impact Statement

To Whom it May Concern,

I have read portions of the Draft Environmental Impact Statement of interest to me, as an Army employee at nearby Fort Pickett, and as a citizen residing in Chester, VA which is within earshot of FT Lee and it's training activities, and below are my comments.

In numerous sections of the document, (sections ES.3.7 Field Training Exercises and Warrior Training FTX, Fort A.P. Hill, and 1.1 Introduction, as examples) it is noted, and I quote "...Fort Pickett does not have suitable training areas or facilities...", "...lacks schedule availability to support Warrior Training for SCOE students...", and again "...Fort Pickett does not have suitable training areas or facilities and lacks schedule availability to support FTX for Sustainment Center of Excellence (SCOE) students...". These statements could not be further from the truth, and are in fact false. Fort Pickett has over 30,000 acres of land available for training use, and could easily absorb the Warrior and FTX Training requirements of SCOE students in terms of both land area, and scheduling availability. In addition to this, Fort Pickett has a Dedicated Impact Area easily capable of supporting any live weapons firing exercises for the SCOE students Warrior training. In addition to this, in section 1.1 Introduction it was noted that "...the Army proposes use of Fort A.P. Hill to conduct combat or field and technical training, on the basis of its proximity to Fort Lee...". Proximity to Fort Lee? This is ludicrous. Sure Fort A.P.Hill is in close proximity to Fort Lee, if you consider traveling approximately 63 miles north, through urban rush hour traffic more favorable to traveling approximately 46 miles west, through less traffic and less populated south central Virginia to Fort Pickett. This seems like a no brainer money and troop safety issue to me. On top of this, in section 4.1.1.1.3 Surrounding Land Use, the document contradicts itself when it is noted

" There is a direct connection between Fort Lee and Fort Pickett using Route 460 through Dinwiddie County...". So I'm confused, which is it? So the Army determined that Pickett doesn't have adequate facilities, scheduling availability, and was not of the correct proximity, but in section ES.3.7 Field Training Exercises and Warrior Training FTX, Fort A.P. Hill notes that "The BRAC Commission found that Fort Lee had insufficient land and space to conduct Warrior Training. The Commission determined that the shortfall could be mitigated by using nearby training sites at Fort Pickett..." Again, I'm very confused. Is Pickett capable or not. Sounds like to me that the Active Duty Army wants to keep all the BRAC money on Active Duty installations, but funnel all the training to nearby National Guard installations, (without adequate funding to support by the way) and expect us to just "mitigate" their "shortfall". Or am I again just confused?

I look forward to any responses to my comments,

Sincerely,

1LT Douglas L. Austin
Operations Officer
Division of Plans, Training, and Security
Army National Guard Maneuver Training Center

Response: The EIS mentions the BRAC Commission's observation on the possible use of Fort Pickett as mitigation for the lack of training land at Fort Lee to ensure a complete discussion of the options. The Army, however, will not use Fort Pickett for this purpose. A legal review provided by the Office of the Judge Advocate General at Headquarters, Department of the Army, approved the use of Fort A.P. Hill, stating that Fort Picket appeared to have been suggested by the BRAC Commission as merely one example of a location where the training could be conducted, not that the training must be conducted there. In addition, the range requirements for Warrior training were extensively examined by TRADOC and ATSC, which determined that Fort A.P. Hill was the better choice because of greater scheduling flexibility and the ability to tailor facilities specifically to Warrior training requirements.

Email comment from Paul L. Sweeney (PAO, Fort Lee)
Sent: Thursday, October 05, 2006 5:43 PM
To: Carol Anderson
Subject: Draft BRAC Media Comment

Today during his visit, Mike Felberbaum said he had scanned the draft EIS this morning before coming out. He said he found it very vague on some issues.

I stressed the vital role the public needed to play in order to add clarity to it. "We really need their comments and questions."

Also that if he had questions about the technical side of the information gathering for it, please let us know and we'd pass them to the contractor that prepared it.

But it might take a day or two if so.

He didn't seem interested in pursuing that particular train of thought.

Response: No change to text required.

Appendix J
BIOLOGICAL RESOURCES REFERENCE INFORMATION

CHECKLIST OF PLANT SPECIES ENCOUNTERED
DURING FLORAL INVENTORY OF FORT LEE, VIRGINIA
(2002 & 2003 Field Seasons)

Scientific Name:	Common Name:	Habitat:**	Collection #:
Acalypha rhomboidea Raf.	Virginia threeseed mercury	1, 2	R020180
Acer rubrum L.	red maple	2, 3, 4, 5, 7, 9, 10	
Acer rubrum L. var. drummondii	Drummond's maple	2, 7	R030006
Achillea millefolium L.	common yarrow	2	R020085
Agalinis purpurea (L.) Pennell	purple false foxglove	6, 8	R030103
Agrostis perennans (Walt.) Tuckerman	upland bentgrass	2	R020129
Ailanthus altissima (P. Mill.) Swingle	tree of heaven	2	R020094
Allium vineale L.	wild garlic	1, 2	R030043
Alnus serrulata (Ait.) Willd.	hazel alder	5, 7, 8, 10	R020188
Ambrosia artemisiifolia L.	annual ragweed	1, 2	R020167
Amelanchier arborea (Michx. f.) Fern.	common serviceberry	2, 3, 4, 10	R030038
Andropogon glomeratus (Walt.) B.S.P.	bushy bluestem	2, 8, 9	R030108
Andropogon ternarius Michx.	splitbeard bluestem	1, 2	R030105
Antennaria plantaginifolia (L.) Richards.	woman's tobacco	1, 2	R030002
Anthoxanthum odoratum L.	sweet vernalgrass	2, 3	R020026
Apios americana Medik.	groundnut	8	R020139
Apocynum cannabinum L.	Indianhemp	2	R020092
Arabidopsis thaliana (L.) Heynh.	mouseear cress	1, 2	R020006
Aristida oligantha Michx.	prairie threeawn	1, 2	R020162
Arundinaria gigantea (Walt.) Muhl. ssp. tecta	switchcane	5, 7, 8	R030054
Asclepias incarnata L. ssp. pulchra	swamp milkweed	8	R020138
Asplenium platyneuron (L.) B.S.P.	ebony spleenwort	3	R020190
Athyrium filix-femina (L.) Roth	common ladyfern	4	R030091
* *Barbarea vulgaris Ait. f.*	garden yellowrocket	1	R020038
Betula nigra L.	river birch	4, 7	R030035
Bidens aristosa (Michx.) Britt.	bearded beggarticks	2, 8	R020152
Bidens frondosa L.	devil's beggartick	2, 8	R020153
Bidens laevis (L.) B.S.P.	smooth beggartick	8, 11	R020187
Bignonia capreolata L.	crossvine	2, 3, 4	
Boehmeria cylindrica (L.) Sw.	smallspike false nettle	5, 6, 7, 8, 11	R030090
Brasenia schreberi J.F. Gmel.	watershield	12	R030101

CHECKLIST OF PLANT SPECIES ENCOUNTERED
DURING FLORAL INVENTORY OF FORT LEE, VIRGINIA
(Continued)

Scientific Name:	Common Name:	Habitat:**	Collection #:
Calamagrostis coarctata (Torr.) Eat.	arctic reedgrass	1, 2	R030075
Campsis radicans (L.) Seem. ex Bureau	trumpet creeper	2, 3, 10	R020086
Cardamine hirsuta L.	hairy bittercress	1, 2	R020005
Carex albicans Willd. ex Spreng.	whitetinge sedge	4	R030014
Carex albolutescens Schwein.	greenwhite sedge	8	R030050
Carex annectens (Bickn.) Bickn.	yellowfruit sedge	8	R030048
Carex blanda Dewey	eastern woodland sedge	4	R030015
Carex bullata Schkuhr ex Willd.	button sedge	8	R020071
* *Carex complanata Torr. & Hook.*	hirsute sedge	2, 8	R020075
* *Carex debilis Michx. var. debilis*	white edge sedge	4	R020047
Carex folliculata L.	northern long sedge	5, 6	R030013
Carex gigantea Rudge	giant sedge	7	R030051
Carex glaucescens Ell.	southern waxy sedge	8, 9	R020126
Carex intumescens Rudge	greater bladder sedge	5, 6, 7, 8	R020049
Carex laevivaginata (Kükenth.) Mackenzie	smoothsheath sedge	7, 8	R020046
Carex lurida Wahlenb.	shallow sedge	5, 6, 7, 8	R020059
Carex rosea Schkuhr ex Willd.	rosy sedge	4, 5, 7	R020045
Carex seorsa Howe	weak stellate sedge	4, 7	R020035
Carpinus caroliniana Walt.	American hornbeam	4, 7, 10	R030036
Celtis occidentalis L.	common hackberry	2, 4	R030047
Cephalanthus occidentalis L.	common buttonbush	8, 9	R030100
Cerastium glomeratum Thuill.	sticky chickweed	1, 2	R020025
Chamaecrista fasciculata (Michx.) Greene	sleepingplant	2, 3	R020141
Chamaesyce maculata (L.) Small	spotted sandmat	1	R020151
Chasmanthium latifolium (Michx.) Yates	Indian woodoats	7, 10	R020192
Chasmanthium laxum (L.) Yates	slender woodoats	3, 7, 9	R020114
Chrysopsis mariana (L.) Ell.	Maryland goldenaster	2, 3	R030092
Cinna arundinacea L.	sweet woodreed	7	R030088
Clematis terniflora DC.	sweet autumn virginsbower	2, 11	R020185
Clethra alnifolia L.	coastal sweetpepperbush	5, 6, 7, 8	R020107
Conoclinium coelestinum (L.) DC.	blue mistflower	2, 3	R020193
Cornus amomum P. Mill.	silky dogwood	7, 8, 10	R030069

CHECKLIST OF PLANT SPECIES ENCOUNTERED DURING FLORAL INVENTORY OF FORT LEE, VIRGINIA (Continued)

Scientific Name:	Common Name:	Habitat:**	Collection #:
Cornus florida L.	flowering dogwood	2, 3	R020020
* *Cruciata pedemontana (Bellardi) Ehrend.*	piedmont bedstraw	1, 2	R030044
Cynodon dactylon (L.) Pers.	Bermudagrass	1	R020087
Cyperus compressus L.	poorland flatsedge	8, 11	R020176
Cyperus echinatus (L.) Wood	globe flatsedge	1, 8	R030077
Cyperus pseudovegetus Steud.	marsh flatsedge	8	R030071
Cyperus strigosus L.	strawcolored flatsedge	7, 8, 11	R020182
Danthonia sericea Nutt.	downy danthonia	2, 3	R020080
Danthonia spicata (L.) Beauv.	poverty oatgrass	2, 3	R020079
Daucus carota L.	Queen Anne's lace	2	R020090
Desmodium paniculatum (L.) DC.	panicledleaf ticktrefoil	2, 3	R030086
Desmodium perplexum Schub.	perplexed ticktrefoil	2, 3	R030083
Dianthus armeria L.	Deptford pink	2	R030040
Dichanthelium acuminatum Gould & Clark	tapered rosette grass	2, 8	R020081
Dichanthelium commutatum Gould	variable panicgrass	4	R030034
Dichanthelium laxiflorum (Lam.) Gould	openflower rosette grass	1, 2, 3	R030060
Digitaria sanguinalis (L.) Scop.	hairy crabgrass	1, 2	R030074
Diodia teres Walt.	poorjoe	1, 2	R020142
Diodia virginiana L.	Virginia buttonweed	1, 2, 8	R020084
Diospyros virginiana L.	common persimmon	3	R020140
#* *Drosera brevifolia Pursh*	dwarf sundew	6	R020055a
# *Drosera capillaris Poir.*	pink sundew	6	R020055b
Dulichium arundinaceum (L.) Britt.	threeway sedge	7, 8	R020127
Eleocharis tenuis (Willd.) J.A. Schultes	slender spikerush	6, 8	R020077
Eleocharis tuberculosa Roemer & Schultes	cone-cup spikerush	8	R020122
Elephantopus tomentosus L.	devil's grandmother	2, 3	R030080
Elymus virginicus L.	Virginia wildrye	4, 7, 8	R020106
Erechtites hieraciifolia (L.) Raf. ex DC.	American burnweed	2	R020165
Erigeron annuus (L.) Pers.	eastern daisy fleabane	1, 2	R020066
Eupatorium capillifolium (Lam.) Small	dogfennel	2, 9	R020173
Eupatorium dubium Willd. ex Poir.	coastalplain joepyeweed	8	R020146
Eupatorium hyssopifolium L.	hyssopleaf thoroughwort	2, 3	R020156

CHECKLIST OF PLANT SPECIES ENCOUNTERED DURING FLORAL INVENTORY OF FORT LEE, VIRGINIA (Continued)

	Scientific Name:	Common Name:	Habitat:**	Collection #:
	Eupatorium perfoliatum L.	common boneset	8	R020145
	Eupatorium pilosum Walt.	rough boneset	8	R020131
	Eupatorium rotundifolium L.	roundleaf thoroughwort	8	R020101a
	Eupatorium serotinum Michx.	lateflowering thoroughwort	2, 3	R030079
	Euphorbia corollata L.	flowering spurge	2, 3	R020143
	Euthamia graminifolia (L.) Nutt. var. nuttallii	flat-top goldentop	2, 8	R020174
	Fagus grandifolia Ehrh.	American beech	4	R030057
	Fimbristylis autumnalis (L.) Roemer & Schult.	slender fimbry	1, 8	R030078
	Fragaria virginiana Duchesne	Virginia strawberry	1, 2	R020017
	Fraxinus americana L.	white ash	4	R030037
	Fraxinus pennsylvanica Marsh.	green ash	7, 10	
	Fuirena squarrosa Michx.	hairy umbrella-sedge	6, 8	R030097
	Galium aparine L.	stickywilly	4	R020036
	Galium pilosum Ait.	hairy bedstraw	2, 3	R030062
	Galium tinctorium L.	stiff marsh bedstraw	7, 8	R030053
	Gamochaeta purpurea (L.) Cabrera	spoonleaf purple everlasting	1, 2	R020040
	Gaylussacia baccata (Wangenh.) K. Koch	black huckleberry	3	R030022
	Gaylussacia frondosa (L.) Torr. & Gray	blue huckleberry	3, 9	R020061
	Gelsemium sempervirens (L.) St. Hil.	evening trumpetflower	2, 3	R020024
	Gentiana saponaria L.	harvestbells	10	R020191
	Geranium carolinianum L.	Carolina geranium	2	R030017
	Glechoma hederacea L.	ground ivy	2, 4	R020037
	Glyceria obtusa (Muhl.) Trin.	Atlantic mannagrass	8	R020105
	Gratiola virginiana L.	roundfruit hedgehyssop	6, 8	R020060
	Helenium amarum (Raf.) H. Rock	yellowdicks	2	R020089
	Helenium flexuosum Raf.	purplehead sneezeweed	2	R020101b
*	*Hexastylis minor (Ashe) Blomquist*	little heartleaf	3	R030032
	Houstonia caerulea L.	azure bluet	2, 3	R020021
*	*Houstonia pusilla Schoepf*	tiny bluet	1, 2	R020010
	Hypericum canadense L.	lesser Canadian St. Johnswort	6, 8	R020130
	Hypericum crux-andreae (L.) Crantz	St. Peterswort	8	R020119
	Hypericum hypericoides (L.) Crantz	St. Andrew's cross	2, 3, 9	R020154

CHECKLIST OF PLANT SPECIES ENCOUNTERED DURING FLORAL INVENTORY OF FORT LEE, VIRGINIA (Continued)

Scientific Name:	Common Name:	Habitat:**	Collection #:
Hypochaeris radicata L.	hairy catsear	1, 2	R020044
Ilex opaca Ait.	American holly	3, 4	R030058
Iris virginica L.	Virginia iris	8	R020069
Itea virginica L.	Virginia sweetspire	7, 10	R030070
Juncus biflorus Ell.	bog rush	6, 8	R020137
Juncus canadensis J. Gay ex Laharpe	Canadian rush	6, 8	R020136
Juncus coriaceus Mackenzie	leathery rush	6, 8	R020115
Juncus debilis Gray	weak rush	6, 8	R020124
Juncus dichotomus Ell.	forked rush	7, 8	R020078
Juncus diffusissimus Buckl.	slimpod rush	6, 8	R030049
Juncus effusus L.	common rush	5, 6, 7, 8, 11	R020109
Juncus repens Michx.	lesser creeping rush	8, 9	R020125
Juncus scirpoides Lam.	needlepod rush	2, 8	R030073
Juniperus virginiana L.	eastern redcedar	2, 3	R030045
Kalmia latifolia L.	mountain laurel	3	R030030
Krigia virginica (L.) Willd.	Virginia dwarfdandelion	1	R020016
* *Kyllinga gracillima Miq.*	pasture spikesedge	1, 11	R020177
Lamium amplexicaule L.	henbit deadnettle	1	R020004
Leersia oryzoides (L.) Sw.	rice cutgrass	6, 8, 10, 11	R020181
Leersia virginica Willd.	whitegrass	7	R030089
Lepidium virginicum L.	Virginia pepperweed	1, 2	R030016
Lespedeza bicolor Turcz.	shrubby lespedeza	2	R020155
Lespedeza cuneata (Dum.-Cours.) G. Don	Chinese lespedeza	2	R020160
Lespedeza repens (L.) W. Bart.	creeping lespedeza	2, 3	R030063
Lespedeza virginica (L.) Britt.	slender lespedeza	2	R020159
Leucanthemum vulgare Lam.	oxeye daisy	1, 2	R030042
Leucothoe racemosa (L.) Gray	swamp doghobble	5, 7, 9	R020062
Lilium superbum L.	turk's-cap lily	6, 8	R020112
Lindernia dubia (L.) Pennell	yellowseed false pimpernel	6, 8	R020148
Linum medium (Planch.) Britt.	stiff yellow flax	2	R020074
Liquidambar styraciflua L.	sweetgum	2, 3, 4, 7, 9, 10	R020082
Liriodendron tulipifera L.	tuliptree	2, 4	R020042

CHECKLIST OF PLANT SPECIES ENCOUNTERED DURING FLORAL INVENTORY OF FORT LEE, VIRGINIA (Continued)

	Scientific Name:	Common Name:	Habitat:**	Collection #:
	Lobelia nuttallii J.A. Schultes	Nuttall's lobelia	6, 8	R020073
	Lobelia puberula Michx.	downy lobelia	5, 6	R030096
	Lonicera japonica Thunb.	Japanese honeysuckle	2, 3, 4	R020052
	Lonicera sempervirens L.	trumpet honeysuckle	2, 3	R020032
	Ludwigia alternifolia L.	seedbox	6, 8, 9	R030072
	Ludwigia decurrens Walt.	wingleaf primrose-willow	8, 11	R020186
	Ludwigia linearis Walt.	narrowleaf primrose-willow	8, 9	R020120
	Ludwigia palustris (L.) Ell.	marsh seedbox	8, 9	R020149
	Luzula echinata (Small) F.J. Herm.	hedgehog woodrush	2, 4	R020011
	Lycopodiella alopecuroides (L.) Cranfill	foxtail clubmoss	6	R020057
#	*Lycopodium dendroideum Michx.*	tree groundpine	3	R020015
*	*Lycopus europaeus L.*	gypsywort	2, 8	R020183
	Lycopus virginicus L.	Virginia water horehound	6, 8	R020164
	Lyonia ligustrina (L.) DC.	maleberry	2, 3, 6, 8, 9	R020113
	Magnolia virginiana L.	sweetbay	5, 6	R020110
	Mecardonia acuminata (Walt.) Small	axilflower	8	R030076
	Medeola virginiana L.	Indian cucumber	4	
*	*Melilotus officinalis (L.) Lam.*	yellow sweetclover	2	R020065
	Microstegium vimineum (Trin.) A. Camus	Nepalese browntop	2, 4	
	Mikania scandens (L.) Willd.	climbing hempvine	6, 8, 11	R020117
	Mitchella repens L.	partridgeberry	3, 4, 7	R020003
	Morella cerifera (L.) Small	wax myrtle	3, 9, 10	R030003
	Myosotis verna Nutt.	spring forget-me-not	1, 2	R020030
*	*Myriophyllum aquaticum (Vell.) Verdc.*	parrot feather watermilfoil	8, 12	R030052
	Nuttallanthus canadensis (L.) D.A. Sutton	Canada toadflax	1, 2	R020039
	Nyssa biflora Walt.	swamp tupelo	7, 9	R020158
	Nyssa sylvatica Marsh.	blackgum	4, 7	
	Onoclea sensibilis L.	sensitive fern	7, 8	R030104
	Ophioglossum vulgatum L.	southern adderstongue	3, 4	R030018
	Osmunda cinnamomea L.	cinnamon fern	5, 6, 7, 8	R030012
	Osmunda regalis L.	royal fern	5, 6, 7, 8	
	Oxalis stricta L.	common yellow oxalis	1, 2	R020031

CHECKLIST OF PLANT SPECIES ENCOUNTERED DURING FLORAL INVENTORY OF FORT LEE, VIRGINIA (Continued)

	Scientific Name:	Common Name:	Habitat:**	Collection #:
	Packera anonyma (Wood) Weber & Löve	Small's ragwort	1, 2	R030020
	Packera tomentosa (Michx.) C. Jeffrey	woolly ragwort	1, 2	R020018
	Panicum dichotomiflorum Michx.	fall panicgrass	1, 2	R020169
	Panicum rigidulum Bosc var. rigidulum	redtop panicgrass	6, 8	R020135
	Panicum verrucosum Muhl.	warty panicgrass	9	R020163
	Panicum virgatum L.	switchgrass	2, 8	R020093
	Parthenocissus quinquefolia (L.) Planch.	Virginia creeper	2, 3, 4, 10	R030064
	Paspalum dilatatum Poir.	dallisgrass	1, 2, 8, 11	R020179
	Paspalum laeve Michx.	field paspalum	1, 2	R020161
	Peltandra virginica (L.) Schott	green arrow arum	7, 8, 11	R030068
	Photinia pyrifolia (Lam.) Robertson & Phipps	red chokeberry	2, 6, 8	R020009
	Phytolacca americana L.	American pokeweed	2	R020170
	Pinus taeda L.	loblolly pine	2, 3, 4, 9	R030004
	Pinus virginiana P. Mill.	Virginia pine	2, 3	R030065
	Pityopsis graminifolia (Michx.) Nutt.	narrowleaf silkgrass	2, 3	R030093
	Plantago aristata Michx.	largebracted plantain	1, 2	R020088
	Plantago lanceolata L.	narrowleaf plantain	1, 2	R020083
	Plantago virginica L.	Virginia plantain	1, 2	R030024
	Platanus occidentalis L.	American sycamore	4, 7	R030033
	Poa annua L.	annual bluegrass	1, 2	R020027
	Poa autumnalis Muhl. ex Ell.	autumn bluegrass	4, 7, 8	R020048
	Polygala curtissii Gray	Curtiss' milkwort	2, 6, 8	R020097
	Polygala lutea L.	orange milkwort	6, 8	
	Polygala mariana P. Mill.	Maryland milkwort	2, 6, 8	R020098
	Polygonum caespitosum Blume	oriental ladysthumb	8, 11	R020175
*	*Polygonum hydropiperoides Michx.*	swamp smartweed	7, 8, 11	R020133
	Polygonum lapathifolium L.	curlytop knotweed	8	R030102
	Polygonum sagittatum L.	arrowleaf tearthumb	6, 8, 11	R030109
	Polypremum procumbens L.	juniper leaf	2, 3	R020100
	Polystichum acrostichoides (Michx.) Schott	Christmas fern	3, 4	R030019
	Potentilla canadensis L.	dwarf cinquefoil	2, 3	R020013, R020019
	Potentilla recta L.	sulphur cinquefoil	2	R020067

CHECKLIST OF PLANT SPECIES ENCOUNTERED DURING FLORAL INVENTORY OF FORT LEE, VIRGINIA (Continued)

	Scientific Name:	Common Name:	Habitat:**	Collection #:
	Proserpinaca palustris L.	marsh mermaidweed	8, 12	R020134
	Prunus serotina Ehrh.	black cherry	2, 3, 4	R020029
	Pseudognaphalium obtusifolium Hill.&Burtt	rabbittobacco	2	R030098
	Pteridium aquilinum (L.) Kuhn	western brackenfern	2, 3, 8	R020111
	Pycnanthemum tenuifolium Schrad.	narrowleaf mountainmint	2	R030059
	Pyrrhopappus carolinianus (Walt.) DC.	Carolina desert-chicory	2, 11	R020189
	Quercus alba L.	white oak	3, 4	R020054
	Quercus coccinea Muenchh.	scarlet oak	3	
	Quercus falcata Michx.	southern red oak	2, 3	R020053
	Quercus lyrata Walt.	overcup oak	4, 7, 9	
	Quercus nigra L.	water oak	3, 9	R030061
	Quercus pagoda Raf.	cherrybark oak	4, 7	
	Quercus phellos L.	willow oak	3, 4, 7, 9	
	Quercus prinus L.	chestnut oak	3	R030031
	Quercus stellata Wangenh.	post oak	3	R030087
	Ranunculus bulbosus L.	St. Anthony's turnip	1, 8	R030008
	Rhexia mariana L.	Maryland meadowbeauty	6, 8	R020096
	Rhexia virginica L.	handsome Harry	6, 8	R020123
	Rhus copallinum L.	flameleaf sumac	2	R030066
	Rhynchospora capitellata (Michx.) Vahl	brownish beaksedge	6, 8	R020103
	Rhynchospora corniculata (Lam.) Gray	shortbristle horned beaksedge	8	R020104
	Rhynchospora globularis (Chapman) Small	globe beaksedge	6, 8	R020076
	Rhynchospora inexpansa (Michx.) Vahl	nodding beaksedge	6, 8	R020102
	Robinia pseudoacacia L.	black locust	2, 3	R030067
	Rosa multiflora Thunb. ex Murr.	multiflora rose	2, 3	R020051
	Rubus argutus Link	sawtooth blackberry	2, 3	R020033
	Rubus flagellaris Willd.	northern dewberry	2, 3	R020028
*	*Rubus hispidus L.*	bristly dewberry	6	R020064
	Rudbeckia laciniata L.	cutleaf coneflower	2, 4	R030094
	Rumex acetosella L.	common sheep sorrel	2	
	Rumex crispus L.	curly dock	2, 8	R030041
	Sabatia quadrangula Wilbur	fourangle rose gentian	6, 8	R020099

CHECKLIST OF PLANT SPECIES ENCOUNTERED DURING FLORAL INVENTORY OF FORT LEE, VIRGINIA (Continued)

	Scientific Name:	Common Name:	Habitat:**	Collection #:
	Saccharum baldwinii Spreng.	narrow plumegrass	9	R020172
	Saccharum giganteum (Walt.) Pers.	sugarcane plumegrass	9	R020157
	Sagittaria latifolia Willd.	broadleaf arrowhead	8, 11	R020128
	Salvia lyrata L.	lyreleaf sage	1, 2	R020041
	Sassafras albidum (Nutt.) Nees	sassafras	2, 3	R020001
	Saururus cernuus L.	lizard's tail	5, 7, 8	R020108
	Schizachyrium scoparium (Michx.) Nash	little bluestem	2, 3	R030106
	Scirpus cyperinus (L.) Kunth	woolgrass	6, 8	R020121
	Scutellaria lateriflora L.	blue skullcap	7, 8	R020150
	Sericocarpus linifolius (L.) B.S.P.	narrowleaf whitetop aster	2, 8	R020072
	Setaria parviflora (Poir.) Kerguélen	marsh bristlegrass	1, 2, 8	R020168
*	*Sherardia arvensis L.*	blue fieldmadder	1, 2	R030009
	Silphium compositum Michx.	kidneyleaf rosinweed	2, 3	R030084
	Sisyrinchium atlanticum Bickn.	eastern blue-eyed grass	6, 8	R020058, R030025
	Smilax glauca Walt.	cat greenbrier	3, 7	R030056
	Smilax laurifolia L.	laurel greenbrier	7	R020063
	Smilax rotundifolia L.	roundleaf greenbrier	2, 3, 4, 5, 7	
	Smilax walteri Pursh	coral greenbrier	2, 7	R030001
	Solanum carolinense L.	Carolina horsenettle	1, 2	R020171
	Solidago nemoralis Ait.	gray goldenrod	2, 3	R030110
	Solidago odora Ait.	anisescented goldenrod	2, 3	R030081
	Solidago pinetorum Small	Small's goldenrod	2, 3, 8	R020147
	Solidago rugosa P. Mill.	wrinkleleaf goldenrod	2, 6, 8	R020166
	Sorghastrum nutans (L.) Nash	Indiangrass	2, 9	R030107
	Sparganium americanum Nutt.	American bur-reed	8	R020132
	Stellaria media (L.) Vill.	common chickweed	1, 2	R020007
	Stylosanthes biflora (L.) B.S.P.	sidebeak pencilflower	3	R030085
*	*Symphyotrichum lateriflorum (L.) A.& D. Löve*	calico aster	8, 11	R020184
	Taraxacum officinale G.H. Weber	common dandelion	1, 2	R020012, R030005
*	*Teesdalia nudicaulis (L.) Ait. f.*	barestem teesdalia	2, 3	R030007
	Toxicodendron radicans (L.) Kuntze	eastern poison ivy	3, 4, 10	R020050
	Triadenum virginicum (L.) Raf.	Virginia marsh St. Johnswort	6, 7, 8	R020118

CHECKLIST OF PLANT SPECIES ENCOUNTERED DURING FLORAL INVENTORY OF FORT LEE, VIRGINIA (Continued)

	Scientific Name:	Common Name:	Habitat:**	Collection #:
	Trichostema dichotomum L.	forked bluecurls	2, 3	R030095
	Tridens flavus (L.) A.S. Hitchc.	purpletop tridens	2	R030082
	Trifolium dubium Sibthorp	suckling clover	1, 2	R030011
	Trifolium repens L.	white clover	1, 2	R030010
*	*Triodanis perfoliata (L.) Nieuwl. var. biflora*	clasping Venus' looking-glass	2	R030039
	Tripsacum dactyloides (L.) L.	eastern gamagrass	2	R020091
	Typha latifolia L.	broadleaf cattail	8, 11	
	Ulmus alata Michx.	winged elm	2, 3	R030046
	Urochloa ramosa (L.) Nguyen	dixie signalgrass	1, 2, 11	R020178
*#	*Utricularia radiata Small*	little floating bladderwort	8, 12	R020070
*	*Utricularia subulata L.*	zigzag bladderwort	6	R020056
	Vaccinium formosum Andr.	southern blueberry	5, 7	R020023
	Vaccinium fuscatum Ait.	black highbush blueberry	3, 9	R020002, R030055
	Vaccinium pallidum Ait.	Blue Ridge blueberry	3	R030023
	Vaccinium stamineum L.	deerberry	3	R030021
	Valerianella radiata (L.) Dufr.	beaked cornsalad	1, 2	R020068
	Verbascum thapsus L.	common mullein	2	
	Verbesina occidentalis (L.) Walt.	yellow crownbeard	2, 8	R030099
	Vernonia noveboracensis (L.) Michx.	New York ironweed	8	R020144
	Veronica hederifolia L.	ivyleaf speedwell	1, 2	
	Viola bicolor Pursh	field pansy	1	R020008
	Viola lanceolata L.	bog white violet	6, 8	R020043
	Viola primulifolia L.	primrose-leaf violet	6, 7, 8	R020034
	Viola sagittata Ait.	arrowleaf violet	2, 3	R020022
	Viola sororia Willd.	common blue violet	2, 4	R020014
	Vitis rotundifolia Michx.	muscadine	2, 3, 4	R020095
	Woodwardia areolata (L.) T. Moore	netted chainfern	5, 6, 8, 9	R020116

* Denotes species which represent new records for Prince George County, Virginia.

# Denotes species on Virginia Division of Natural Heritage “Watchlist”.

** Key to Habitats:

1. Open Fields, Lawns and Grassed Shoulders of Roadways
2. Early Successional Forest, Old Fields and Forest Edge
3. Oligotrophic Upland Forest (Pine and Mixed Hardwoods)
4. Submesotrophic Upland Forest (Bottomland Hardwoods)
5. Oligotrophic Saturated Forest (Seepage Swamps)
6. Oligotrophic Saturated Emergent Wetlands (Bogs, Fens, etc.)
7. Seasonally Flooded Forest (Swamp)
8. Seasonally Flooded Emergent Wetlands (Marshes, Swales, etc.)
9. Seasonally Flooded Depressional Woodlands
10. Riverine, Freshwater Tidal Shoreline - Forested
11. Riverine, Freshwater Tidal Shoreline - Open
12. Open Water Habitats (Lakes, Beaver Ponds, etc.)

Table 3-1
Amphibians and Reptiles Observed on Fort Lee, Virginia, in 2002 and 2003

Scientific Name	Common Name	Total No. Captures 2002	Total No. Captures 2003
Amphibians			
Frogs			
Acris crepitans	Northern cricket frog	12	17 (7)*
Bufo americanus	American toad	8(E,206)*	13 (E,4)
Bufo fowleri	Fowler's toad	26	52 (E,3)
Gastrophryne carolinensis	Eastern narrow-mouthed toad	3	6 (35)
Hyla chrysoscelis	Cope's gray treefrog	9	20 (E,29)
Hyla cinerea	Green treefrog	0	2
Hyla femoralis	Pine woods treefrog	5	9 (2)
Pseudacris crucifer	Spring peeper	6	4 (E,1)
Pseudacris feriarum	Upland chorus frog	4	0
Rana catesbeiana	American bullfrog	25 (45)	8 (10)
Rana clamitans	Northern green frog	15 (12)	20 (45)
Rana palustris	Pickerel frog	0	1
Rana sphenocephala	Southern leopard frog	15 (23)	24 (E, 57)
Salamanders			
Ambystoma maculatum	Spotted salamander	(E)	9 (E, 2)
Ambystoma opacum	Marbled salamander	2 (7)	12 (10)
Amphiuma means	Two-toed amphiuma	3	0
Eurycea cirrigera	Southern two-lined salamander	1	7 (2)
Eurycea guttolineata	Three-lined salamander	1	0
Notophthalmus viridescens	Red-spotted newt	5	2 (3)
Plethodon chlorobryonis	Atlantic Coast slimy salamander	5	2
Siren intermedia	Lesser Siren	1	0
Reptiles			
Turtles			
Chelydra serpentina	Common snapping turtle	6	2
Chrysemys picta	Painted turtle	43	8
Clemmys guttata	Spotted turtle	24	12
Kinosternon baurii	Striped mud turtle	1	0
Kinosternon subrubrum	Eastern mud turtle	10	10
Sternotherus odoratus	Stinkpot	1	1
Terrapene carolina	Eastern box turtle	18	18

Table 3-1
Amphibians and Reptiles Observed on Fort Lee, Virginia
in 2002 and 2003 (continued)

Scientific Name	Common Name	Total No. Captures 2002	Total No. Captures 2003
Trachemys scripta elegans	Red-eared slider (introduced)	8	0
Trachemys scripta scripta	Yellow-bellied slider	7	5
Lizards			
Eumeces fasciatus	Five-lined skink	8	1
Sceloporus undulatus	Northern fence lizard	5	3
Scincella lateralis	Ground skink	2	0
Snakes			
Agkistrodon contortrix	Northern copperhead	1	0
Carphophis amoenus	Worm snake	3	7
Coluber constrictor	Northern black racer	3	2
Diadophis punctatus	Northern ring-necked snake	2	1
Elaphe obsolete	Black rat snake	3	0
Lampropeltis calligaster	Mole King snake	0	1
Lampropeltis getula	Eastern King snake	1	0
Nerodia sipedon	Northern water snake	6	5
Storeria occipitomaculata	Red-bellied snake	0	1

* Whole counts are for adults and juveniles. Eggs (E) and individual frog tadpoles and salamander larvae are included in parentheses.

Table 3-5
Mammalian Species Observed on Fort Lee, Virginia in 2002 and 2003

Species	Common name	Number Encountered
Marsupialia		
Didelphis virginiana	Virginia opossum	1/1
Insectivora		
Blarina carolinensis	Southern short-tailed shrew	18/3
Cryptotis parva	Least shrew	1/0
Sorex longirostris	Southeastern shrew	3/0
Chiroptera		
Eptesicus fuscus	Big-brown bat	97/14
Lasiurus borealis	Red bat	28/17
Nycticeius humeralis	Evening bat	22/1
Pipistrellus subflavus	Eastern pipistrelle	7/0
Lagomorpha		
Sylvilagus floridanus	Eastern cottontail	2/2
Rodentia		
Castor canadensis	American beaver	3/1
Glacomys volans	Southern flying squirrel	2/0
Marmota monax	Woodchuck	1/1
Microtus pinetorum	Woodland vole	1/1
Mus musculus	House mouse	1/0
Ondatra zibethicus	Muskrat	1/0
Peromyscus leucopus	White-footed mouse	40/8
Sciurus carolinensis	Gray squirrel	1/2
Sigmodon hispidus	Hispid cotton rat	1/9
Carnivora		
Mephitis mephitis	Stripped skunk	1/0
Mustela frenata	Long-tailed weasel	1/0
Procyon lotor	Raccoon	3/1
Urocyon cinereoargenteus	Gray fox	1/0
Artiodactyla		
Odocoileus virginianus	White-tailed deer	4/6

Note: Numbers on the left hand side of the slash are for 2002 and those on the right of the slash are for 2003.

Table 3-10
Avian Checklist for Fort Lee, Virginia

Common Name	Scientific Name	Status
Acadian flycatcher	*Empidonax virescens*	NM, B
American crow	*Corvus brachyrhynchos*	R, B
American goldfinch	*Carduelis tristis*	TM, B
American kestrel	*Falco sparverius*	TM, B
American pipit	*Anthus rubescens*	TM
American redstart	*Setophaga ruticilla*	NM, B*
American robin	*Turdus migratorius*	TM, B
American woodcock	*Scolopax minor*	TM
Bald eagle (threatened)	*Haliaeetus leucocephalus*	R, B*
Baltimore oriole	*Icterus galbula*	NM
Barn swallow	*Hirundo rustica*	NM, B
Barred Owl	*Strix varia*	R, B
Bay-breasted warbler	*Dendroica castanea*	NM
Belted Kingfisher	*Ceryle alcyon*	R, B
Black vulture	*Coragypus atratus*	TM, B
Black-and-white warbler	*Mniotilta varia*	R, B*
Blackburnian warbler	*Dendroica fusca*	NM
Blackpoll warbler	*Dendroica striata*	NM
Black-throated blue warbler	*Dendroica caerulescens*	NM
Black-throated green warbler	*Dendroica virens*	NM
Blue gray gnatcatcher	*Polioptila caerulea*	NM, B
Blue grosbeak	*Passerina caerulea*	NM, B
Blue jay	*Cyanocitta cristata*	TM, B
Blue-headed vireo	*Vireo solitarius*	NM
Bobolink	*Dolichonyx oryzivorus*	NM
Brown creeper	*Certhia americana*	TM

Table 3-10
Avian Checklist for Fort Lee, Virginia (continued)

Common Name	Scientific Name	Residence Status
Brown thrasher	*Toxostoma rufum*	TM, B
Brown-headed cowbird	*Molothrus ater*	R, B
Brown-headed nuthatch	*Sitta pusilla*	R, B
Canada goose	*Branta canadensis*	TM, B
Cape May warbler	*Dendroica tigrina*	NM
Carolina chickadee	*Poecile carolinensis*	R, B
Carolina wren	*Thryothorus ludovicianus*	R, B
Cedar waxwing	*Bombycilla cedrorum*	TM, B
Chestnut-sided warbler	*Dendroica pensylvanica*	NM
Chimney swift	*Chaetura pelagica*	NM, B
Chipping sparrow	*Spizella passerina*	TM, B
Chuck-will's-widow	*Caprimulgus carolinensis*	NM
Clapper rail	*Rallus longirostris*	TM
Common grackle	*Quiscalus quiscula*	TM, B
Common yellowthroat	*Geothlypis trichas*	NM, B
Cooper's hawk	*Accipiter cooperii*	NM, B*
Dark-eyed (Slate-colored) junco	*Junco hyemalis*	TM
Double-crested cormorant	*Phalacrocorax auritus*	TM, B
Downy woodpecker	*Picoides pubescens*	R, B
Eastern bluebird	*Sialia sialia*	TM, B
Eastern kingbird	*Tyrannus tyrannus*	NM, B
Eastern meadowlark	*Sturnella magna*	TM, B
Eastern phoebe	*Sayornis phoebe*	TM, B
Eastern screech owl	*Otus asio*	R, B
Eastern towhee	*Pipilo erythrophthalmus*	TM, B
Eastern wood-pewee	*Contopus virens*	NM, B

Table 3-10
Avian Checklist for Fort Lee, Virginia (continued)

Common Name	Scientific Name	Residence Status
European starling	*Sturnus vulgaris*	R, B
Field sparrow	*Spizella pusilla*	TM, B
Fish crow	*Corvus ossifragus*	R, B
Fox sparrow	*Passerella iliaca*	TM
Golden crowned kinglet	*Regulus satrapa*	TM
Grasshopper sparrow	*Ammodramus savannarum*	TM, B
Gray catbird	*Dumetella carolinensis*	NM, B
Great blue heron	*Ardea herodius*	TM, B
Great Crested flycatcher	*Myiarchus crinitus*	NM, B
Great egret	*Ardea alba*	TM, B
Great Horned Owl	*Bubo virginianus*	R, B
Greater yellowlegs	*Tringa melanoleuca*	TM
Greater scaup	*Aythya marila*	TM
Green heron	*Butorides virescens*	NM, B
Hairy woodpecker	*Picoides villosus*	R, B
Hermit Thrush	*Catharus guttatus*	TM
Hooded warbler	*Wilsonia citrina*	NM, B
House finch	*Carpodacus mexicanus*	R, B
Horned Lark	*Eremophila alpestris*	TM
House sparrow	*Passer domesticus*	R, B
House wren	*Troglodytes aedon*	NM, B
Indigo bunting	*Passerina cyanea*	NM, B
Kentucky warbler	*Oporornis formosus*	NM, B
Killdeer	*Charadrius vociferus*	TM, B
Lesser yellowlegs	*Tringa flavipes*	TM
Loggerhead shrike	*Lanius ludovicianus*	TM, B*

Table 3-10
Avian Checklist for Fort Lee, Virginia (continued)

Common Name	Scientific Name	Residence Status
Louisiana waterthrush	*Seiurus motacilla*	NM, B
Magnolia warbler	*Dendroica magnolia*	NM
Mallard	*Anas platyrhynchos*	R, B
Mourning dove	*Zenaida macroura*	TM, B
Nashville warbler	*Vermivora ruficapilla*	NM
Northern bobwhite	*Colinus virginianus*	R, B
Northern cardinal	*Cardinalis cardinalis*	R, B
Northern flicker	*Colaptes auratus*	TM, B
Northern mockingbird	*Mimus polyglottos*	R, B
Northern parula	*Parula americana*	NM, B
Northern rough-winged swallow	*Stelgidopteryx serripennis*	NM, B
Orchard oriole	*Icterus spurius*	NM, B
Ovenbird	*Seiurus aurocapillus*	NM, B
Palm warbler	*Dendroica palmarum*	NM
Pileated woodpecker	*Dryocopus pileatus*	R, B
Pine warbler	*Dendroica pinus*	NM, B
Prairie warbler	*Dendroica discolor*	NM, B
Prothonotary warbler	*Protonotaria citrea*	NM, B
Purple martin	*Progne subis*	NM, B
Red-bellied woodpecker	*Melanerpes carolinus*	R, B
Red-eyed vireo	*Vireo olivaceus*	NM, B
Red-headed woodpecker	*Melanerpes erythrocephalus*	R, B
Red-shouldered hawk	*Buteo lineatus*	R, B
Red-tailed hawk	*Buteo jamaicensis*	TM, R
Red-winged blackbird	*Agelaius phoeniceus*	TM, B
Rock dove	*Columba livia*	R, B

Table 3-10
Avian Checklist for Fort Lee, Virginia (continued)

Common Name	Scientific Name	Residence Status
Rose-breasted grosbeak	*Pheucticus ludovicianus*	NM
Ruby-crowned kinglet	*Regulus calendula*	TM
Ruby-throated hummingbird	*Archilochus colubris*	NM, B
Ruddy duck	*Oxyura jamaicensis*	TM
Rufous-sided (eastern) towhee	*Pipilo erythrophthalmus*	TM, B
Savannah sparrow	*Passerculus sandwichensis*	TM
Scarlet tanager	*Piranga olivacea*	NM, B
Sharp-shinned hawk	*Accipiter striatus*	NM
Short-eared owl	*Asio flammeus*	TM
Solitary sandpiper	*Tringa solitaria*	NM
Song sparrow	*Melospiza melodia*	TM, B
Spotted sandpiper	*Actitis macularia*	NM
Summer tanager	*Piranga rubra*	NM, B
Swamp sparrow	*Melospiza georgiana*	TM
Tree swallow	*Tachycineta bicolor*	TM, B
Tufted titmouse	*Baeolophus bicolor*	R, B
Turkey vulture	*Cathartes aura*	TM, B
Whip-poor-will	*Caprimulgus vociferus*	NM
White-breasted nuthatch	*Sitta carolinensis*	R, B
White-eyed vireo	*Vireo griseus*	NM, B
White-throated sparrow	*Zonotrichia albicollis*	TM
Wild turkey	*Meleagris gallopavo*	R, B
Wilson's snipe	*Gallinago delicata*	TM
Winter Wren	*Troglodytes troglodytes*	TM
Wood duck	*Aix sponsa*	TM, B
Wood thrush	*Hylocichla mustelina*	NM, B

Table 3-10
Avian Checklist for Fort Lee, Virginia (continued)

Common Name	Scientific Name	Residence Status
Worm-eating warbler	*Helmitheros vermivorus*	NM, B
Yellow warbler	*Dendroica petechia*	NM, B
Yellow-bellied Sapsucker	*Sphyrapicus varius*	TM
Yellow-billed cuckoo	*Coccyzus americanus*	NM, B
Yellow-breasted chat	*Icteria virens*	NM, B
Yellow-rumped (Myrtle) warbler	*Dendroica coronata*	TM
Yellow-throated vireo	*Vireo flavifrons*	NM, B
Yellow-throated warbler	*Dendroica dominica*	NM, B

Notes: Residence status refers to whether the species was recorded as Neotropical Migrant (NM), Temperate (Neoarctic) Migrant (TM), Resident (R) or recorded as breeding (B) on Fort Lee.
* Species was reported breeding during 1997-98 season, not found during the 2002 survey.

Table 3-16
List of Aquatic Macroinvertebrates Identified on Fort Lee and Collected During 2002 and 2003 Surveys, Fort Lee, Virginia

CLASS	ORDER	FAMILY	GENUS & SPECIES	SOURCE[1]		
				Smock & Garmon (1997)	2002 Survey	2003 Survey
Insecta	Ephemeroptera	Ameletidae	Ameletus			*
Insecta	Ephemeroptera	Baetidae	Baetis	✓		*
Insecta	Ephemeroptera	Baetidae	Callibaetis			*
Insecta	Ephemeroptera	Baetidae	Centroptilum			*
Insecta	Ephemeroptera	Caenidae	Caenis			
Insecta	Ephemeroptera	Ephemerellidae	Dannella		X	
Insecta	Ephemeroptera	Heptageniidae	Stenonena	✓		*
Insecta	Ephemeroptera	Heptageniidae	Stenonena *nodestum*	✓		
Insecta	Ephemeroptera	Lepophlebiidae	Paraleptophlebia			*
Insecta	Ephemeroptera	Metretopodidae	Metretopus			*
Insecta	Ephemeroptera	Polymitarcyidae	Ephoron		X	
Insecta	Odonata	Aesnidae	Anax			*
Insecta	Odonata	Calopterygidae	Calopteryx	✓		*
Insecta	Odonata	Corduliidae	Neurocordulia		X	
Insecta	Odonata	Corduliidae	Tetragoneuria		X	
Insecta	Odonata	Gomphidae	Gomphus	✓		
Insecta	Odonata	Gomphidae	Progomphus	✓		
Insecta	Odonata	Gomphidae	Progomphus *obscurus*	✓		
Insecta	Odonata	Libellulidae	Nannothemis		X	
Insecta	Odonata	Libellulidae	Paltothemis		X	
Insecta	Odonata	Libellulidae	Perithemis			*
Insecta	Odonata	Coenagrionidae	Argia	✓		*
Insecta	Odonata	Coenagrionidae	Amphiagrion		X	
Insecta	Odonata	Coenagrionidae	Chromagrion			*

Table 3-16
List of Aquatic Macroinvertebrates Identified on Fort Lee and Collected During 2002 and 2003 Surveys, Fort Lee, Virginia (continued)

CLASS	ORDER	FAMILY	GENUS & SPECIES	SOURCE[1]		
				Smock & Garmon (1997)	2002 Survey	2003 Survey
Insecta	Odonata	Coenagrionidae	Enallagma		X	*
Insecta	Odonata	Coenagrionidae	Ischnura		X	*
Insecta	Odonata	Coenagrionidae	Nehalennia			*
Insecta	Odonata	Macromiidae	Macromia	✓		
Insecta	Hemiptera	Belastomatidae	Belastoma		X	*
Insecta	Hemiptera	Corixidae	Arcotocorisa		X	
Insecta	Hemiptera	Corixidae	Dasycorixa		X	
Insecta	Hemiptera	Corixidae	Palmacorixa		X	
Insecta	Hemiptera	Corixidae	Ramphocorixa		X	
Insecta	Hemiptera	Corixidae	Sigara		X	
Insecta	Hemiptera	Corixidae	Trichocorixa		X	
Insecta	Hemiptera	Nepidae	Ranatra	✓		
Insecta	Hemiptera	Notonectidae	Buenoa		X	
Insecta	Hemiptera	Notonectidae			X	
Insecta	Hydrachnidia	Oxidae	Oxus			*
Insecta	Trichoptera	Hydropsychidae	Arctopsyche		X	*
Insecta	Trichoptera	Hydropsychidae	Ceratopsyche			*
Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	✓		*
Insecta	Trichoptera	Hydropsychidae	Hydropsyche	✓		
Insecta	Trichoptera	Hydropsychidae	Macrostemum		X	*
Insecta	Trichoptera	Hydropsychidae	Parapsyche			*
Insecta	Trichoptera	Phryganeidae	Oligostomis		X	
Insecta	Trichoptera	Hydroptilidae	Hydroptila	✓		
Insecta	Trichoptera	Hydroptilidae	Neotrichia		X	
Insecta	Trichoptera	Hydroptilidae	Orthotrichia		X	*

Table 3-16
List of Aquatic Macroinvertebrates Identified on Fort Lee and Collected During 2002 and 2003 Surveys , Fort Lee, Virginia (continued)

CLASS	ORDER	FAMILY	GENUS & SPECIES	SOURCE[1]		
				Smock & Garmon (1997)	2002 Survey	2003 Survey
Insecta	Trichoptera	Polycentropodidae	Polycentropus	✓		
Insecta	Trichoptera	Polycentropodidae	Cyrnellus			*
Insecta	Trichoptera	Sericostomatidae	Agarodes	✓		
Insecta	Trichoptera	Ueonidae				*
Insecta	Plecoptera	Capniidae	Paracapnia			*
Insecta	Plecoptera	Chloroperlidae				*
Insecta	Plecoptera	Leucridae	Leuctra			*
Insecta	Plecoptera	Nemouridae				*
Insecta	Plecoptera	Peltoperlidae	Tallaperla			*
Insecta	Plecoptera	Leuctridae	Leuctra	✓		
Insecta	Plecoptera	Perlodidae	Clioperla *clio*	✓		
Insecta	Lepidoptera	Pyralidae	Crambus		X	*
Insecta	Coleoptera	Dytiscidae	Celinini *celina*			*
Insecta	Coleoptera	Dytiscidae	Hydroporus	✓		
Insecta	Coleoptera	Dytiscidae	Uvarus	✓		
Insecta	Coleoptera	Gyrinidae	Dineutus		X	
Insecta	Coleoptera	Haliplidae	Peltodytes		X	
Insecta	Coleoptera	Noteridae	Hydrocanthus		X	
Insecta	Coleoptera	Noteridae	Suphisellus		X	
Insecta	Coleoptera	Curculionidae	Lixus		X	
Insecta	Coleoptera	Elmidae	Ancyronyx	✓	X	*
Insecta	Coleoptera	Elmidae	Dubiraphia	✓	X	
Insecta	Coleoptera	Elmidae	Macronychus	✓	X	
Insecta	Coleoptera	Elmidae	Macronychus *glabratus*	✓	X	
Insecta	Coleoptera	Hydrophilidae	Hydrobiomorpha		X	

Table 3-16
List of Aquatic Macroinvertebrates Identified on Fort Lee and Collected During 2002 and 2003 Surveys , Fort Lee, Virginia (continued)

CLASS	ORDER	FAMILY	GENUS & SPECIES	SOURCE[1]		
				Smock & Garmon (1997)	2002 Survey	2003 Survey
Insecta	Coleoptera	Hydrophilidae	Hydrochus		X	
Insecta	Coleoptera	Hydrophilidae	Tropisternus		X	*
Insecta	Coleoptera	Psephenidae				*
Insecta	Coleoptera	Isotomidae	Isotomurus			*
Insecta	Megaloptera	Corydalidae	Chauliodes		X	
Insecta	Megaloptera	Sialidae	Sialis	✓	X	*
Insecta	Diptera	Pelecorhynchidae	Glutops		X	
Insecta	Diptera	Tabanidae	Hybomitra		X	
Insecta	Diptera	Tabanidae	Merycomyia		X	
Insecta	Diptera	Ceratopogonidae	Atrichopogon		X	
Insecta	Diptera	Ceratopogonidae	Bezzia sp.		X	
Insecta	Diptera	Ceratopogonidae	Dasyhelea		X	
Insecta	Diptera	Ceratopogonidae	Leptoconops		X	
Insecta	Diptera	Ceratopogonidae	Mallochohelea		X	
Insecta	Diptera	Ceratopogonidae	Palpomyia	✓		
Insecta	Diptera	Ceratopogonidae	Serromyia		X	
Insecta	Diptera	Ceratopogonidae	Serromyia *meigen*		X	
Insecta	Diptera	Chironomidae	Brillia	✓		
Insecta	Diptera	Chironomidae	Chironomini		X	*
Insecta	Diptera	Chironomidae	Chironomus	✓	X	*
Insecta	Diptera	Chironomidae	Cricotopus	✓		
Insecta	Diptera	Chironomidae	Corynoneura	✓		
Insecta	Diptera	Chironomidae	Cryptochironomus	✓		
Insecta	Diptera	Chironomidae	Dicrotendipes	✓		
Insecta	Diptera	Chironomidae	Eukieferiella	✓		

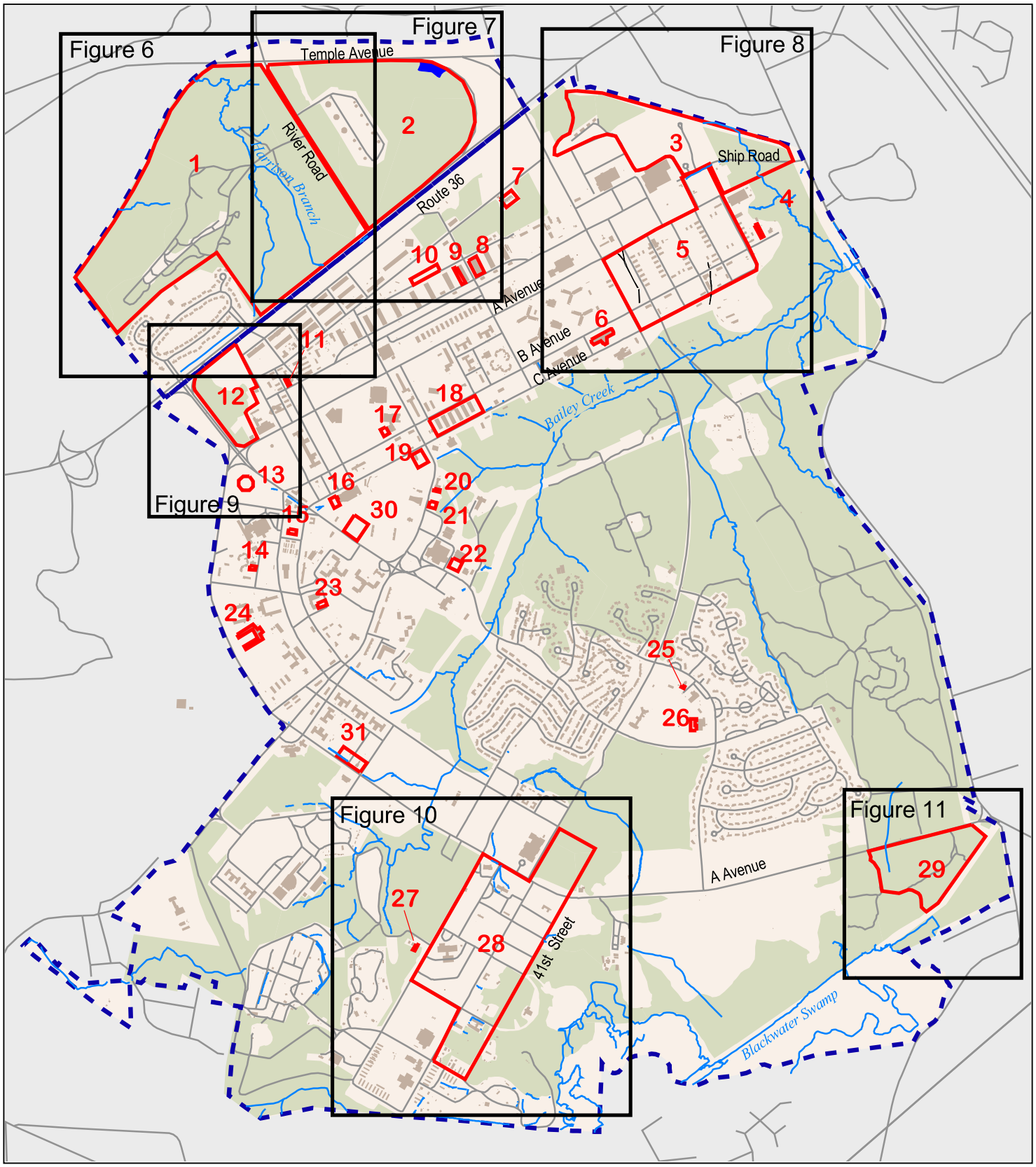
Table 3-16
List of Aquatic Macroinvertebrates Identified on Fort Lee and Collected During 2002 and 2003 Surveys, Fort Lee, Virginia (continued)

CLASS	ORDER	FAMILY	GENUS & SPECIES	SOURCE[1]		
				Smock & Garmon (1997)	2002 Survey	2003 Survey
Insecta	Diptera	Chironomidae	Orthocladius	✓		
Insecta	Diptera	Chironomidae	Parachironomus	✓		
Insecta	Diptera	Chironomidae	Paracladopelna	✓		
Insecta	Diptera	Chironomidae	Paratendipes	✓		
Insecta	Diptera	Chironomidae	Parametriocnemus	✓		
Insecta	Diptera	Chironomidae	Polypedilum	✓		
Insecta	Diptera	Chironomidae	Procladius	✓		
Insecta	Diptera	Chironomidae	Rheotanytarsus	✓		
Insecta	Diptera	Chironomidae	Rheosmittia	✓		
Insecta	Diptera	Chironomidae	Symposiocladius	✓		
Insecta	Diptera	Chironomidae	Tanytarsus	✓		
Insecta	Diptera	Chironomidae	Thienenanniella	✓		
Insecta	Diptera	Chironomidae	Thienenanninyia	✓		
Insecta	Diptera	Chironomidae	Xylotopus	✓		
Insecta	Diptera	Chironomidae	Zavrelimyia	✓		
Insecta	Diptera	Chaoboridae	Chaoborus			*
Insecta	Diptera	Chaoboridae	Mochlonyx		X	
Insecta	Diptera	Culicidae	Aedes			*
Insecta	Diptera	Culicidae	Anopheles			*
Insecta	Diptera	Culicidae	Culex	✓	X	
Insecta	Diptera	Empididae		✓		
Insecta	Diptera	Psychodidae	Pericoma	✓		*
Insecta	Diptera	Simuliidae	Toxorhynchites		X	
Insecta	Diptera	Simuliidae	Prosimulium		X	
Insecta	Diptera	Simuliidae	Simulium	✓		

Table 3-16
List of Aquatic Macroinvertebrates Identified on Fort Lee and Collected During 2002 and 2003 Surveys , Fort Lee, Virginia (continued)

CLASS	ORDER	FAMILY	GENUS & SPECIES	SOURCE[1]		
				Smock & Garmon (1997)	2002 Survey	2003 Survey
Insecta	Diptera	Statiomyidae				*
Insecta	Diptera	Tanyderidae	Twinnia		X	
Insecta	Diptera	Tipulidae	Protoplasa		X	
Insecta	Diptera	Tipulidae	Antocha	✓	X	
Insecta	Diptera	Tipulidae	Phalacrocera		X	
Insecta	Diptera	Tipulidae	Tipula	✓	X	
Insecta	Diptera	Tipulidae	Tipula *abdominalis*	✓		
Insecta	Diptera	Tipulidae	Holorusia		X	
Crustacea	Amphipoda	Crangonycidae	Stygonectes			*
Crustacea	Amphipoda	Gammaridae	Gammarus			*
Crustacea	Amphipoda	Haustoriidae	Pontoporeia *affinis*		X	*
Crustacea	Amphipoda	Talitridae	Hyalella			*
Oligochaeta	Annelida	Oligochaetae		✓	X	
Oligochaeta	Tubificida	Tubificidae	Branchiura *sowerbyia*			*
Gastropoda	Basommatophora	Ancylidae	Ferrissia	✓		
Gastropoda	Basommatophora	Lymnaeidae	Fossaria		X	
Gastropoda	Basommatophora	Lymnaeidae	Pseudosuccinea *columella*		X	
Gastropoda	Basommatophora	Physidae	Aplexa *elongata*		X	
Gastropoda	Basommatophora	Physidae	Physella	✓		
Gastropoda	Basommatophora	Planorbidae	P. *trivolvis*		X	
Bivalvia	Veneroida	Sphaeriidae	Psidium	✓		
Bivalvia	Veneroida	Sphaeriidae	Sphaerium		X	
Crustacea	Isopoda	Asellidae	Caecidotea	✓		*
Crustacea	Isopoda	Asellidae	Lirceus			*
Hirudinea	Arhynchobdellida	Erpobdellidae	E. *punctata*		X	

*Notes: [1] ✓, X, * indicates species identified during these surveys.



N

0 2000 Feet

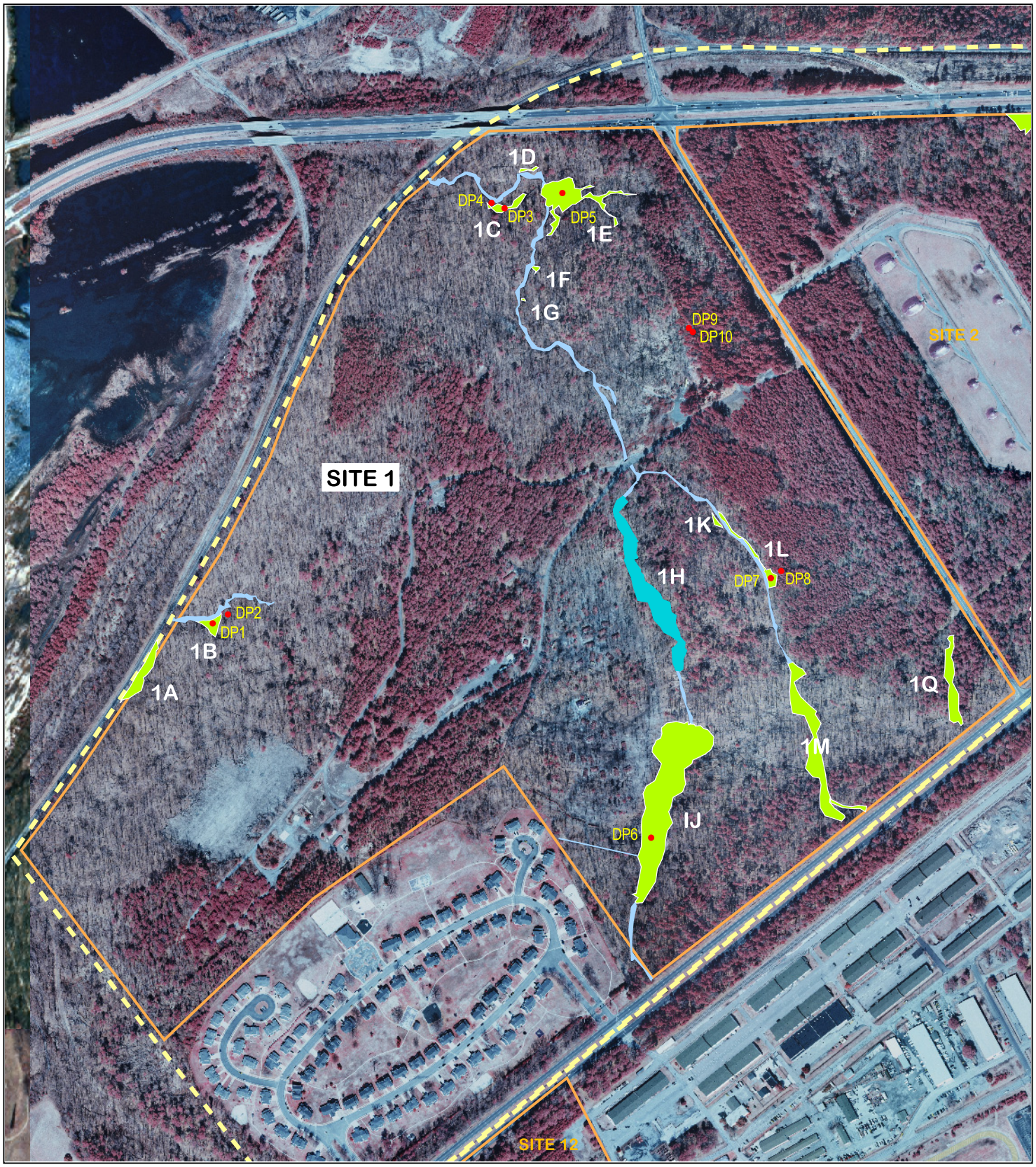
Fort Lee Project Boundary
BRAC Site Boundaries - VHB Work Areas
25 Individual Site Number
Streams
Road Centerline
Buildings/Structures
Forest Cover

Fort Lee Wetland Inventory
Prince George County, Virginia

Engineering & Environment, Inc.

VHB Vanasse Hangen Brustlin, Inc.

Figure 5
Figure Index



N

0 600 Feet

Fort Lee Project Boundary
BRAC Site Boundaries - VHB Work Areas
PEM
PFO
Waters of the U.S.
Data Sheet Data Points

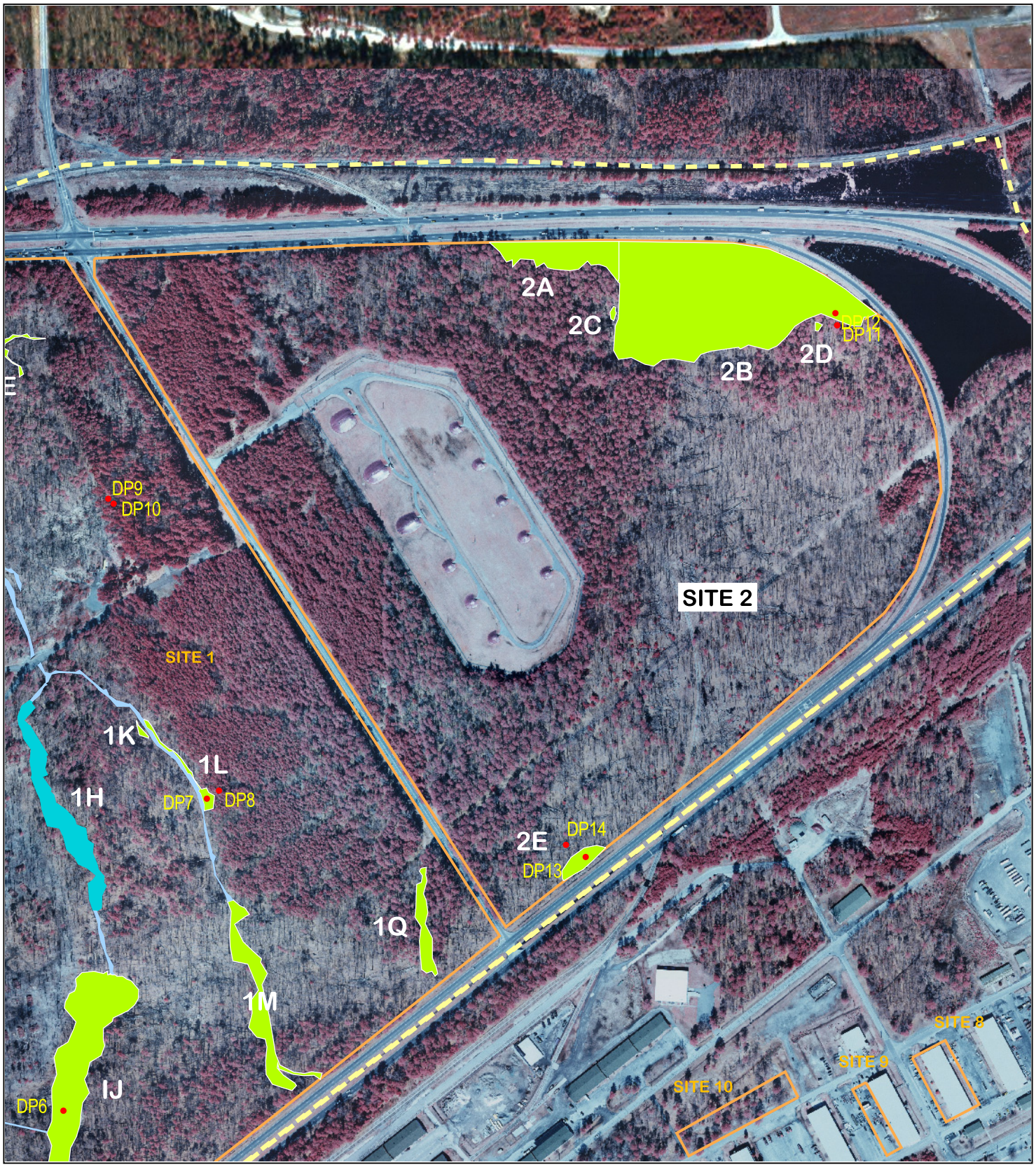
Source: 2005 Aerial Photography provided by EEI.

Engineering & Environment, Inc.

VHB Vanasse Hangen Brustlin, Inc.

Fort Lee Wetland Inventory
Prince George County, Virginia

Figure 6
Site 1 - Wetland Mapping

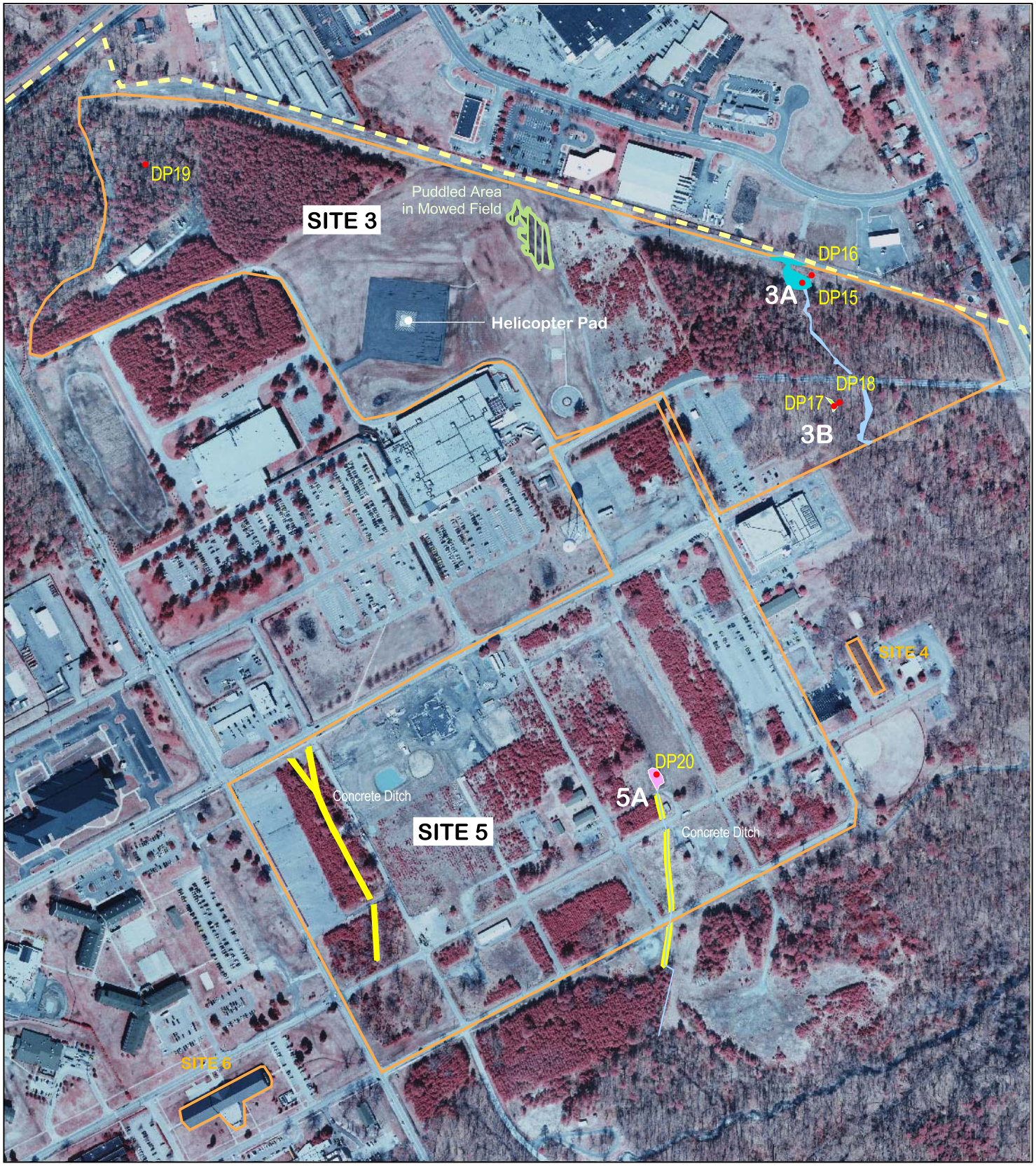


Fort Lee Wetland Inventory
Prince George County, Virginia

Engineering & Environment, Inc.

VHB Vanasse Hangen Brustlin, Inc.

Figure 7
Site 2 - Wetland Mapping



N

0 500 Feet

Fort Lee Project Boundary
BRAC Site Boundaries - VHB Work Areas
PEM
PSS
PFO
Waters of the U.S.
Data Sheet Data Points
Concrete Ditch
Puddled Area in Mowed Field

Source: 2005 Aerial Photography provided by EEI.

Engineering & Environment, Inc.

VHB Vanasse Hangen Brustlin, Inc.

Fort Lee Wetland Inventory
Prince George County, Virginia

Figure 8
Sites 3 and 5 - Wetland Mapping

N

0 300 Feet

Source: 2005 Aerial Photography provided by EEI.

Engineering & Environment, Inc.

VHB Vanasse Hangen Brustlin, Inc.

Fort Lee Project Boundary
BRAC Site Boundaries - VHB Workareas
PEM
PFO
Waters of the U.S.
Data Sheet Data Points

Fort Lee Wetland Inventory
Prince George County, Virginia

Figure 9
Site 12 and 13 - Wetland Mapping

N

0 500 Feet

Fort Lee Project Boundary
BRAC Site Boundaries - VHB Work Areas
PEM
PFO
Waters of the U.S.
Data Sheet Data Points

Source: 2005 Aerial Photography provided by EEI.

Engineering & Environment, Inc.

VHB Vanasse Hangen Brustlin, Inc.

Fort Lee Wetland Inventory
Prince George County, Virginia

Figure 10
Site 28 - Wetland Mapping

N

0 300 Feet

Fort Lee Project Boundary
BRAC Site Boundaries - VHB Work Areas
PEM
PFO
Waters of the U.S.
Data Sheet Data Points

Source: 2005 Aerial Photography provided by EEI.

Engineering & Environment, Inc.

VHB Vanasse Hangen Brustlin, Inc.

Fort Lee Wetland Inventory
Prince George County, Virginia

Figure 11
Sites 29 - Wetland Mapping

Appendix K
FORT LEE BRAC – TRAINING AREA 5 STORMWATER MANAGEMENT ADDENDUM TO ENVIRONMENTAL IMPACT STATEMENT

Ft. Lee BRAC – Training Area 5
Stormwater Management Addendum to
Environmental Impact Statement

Introduction

The Draft Environmental Impact Statement (EIS) addresses the preferred alternative to implement Base Realignment and Closure (BRAC) action in Training Area 5 (TA-5) at Ft. Lee, Virginia. The EIS Section 4.1.6.2.1 Preferred Alternative states:

> "Construction of facilities and infrastructure as a result of the proposed action could increase runoff due to increase in impervious surface area, increased soil erosion, and increases in sediment and pollutant loads. Proposed facilities would be sited to avoid sensitive environmental areas, including Resource Protection Areas (RPAs), to the maximum extent practicable. Any development in wetlands and surface waters would be required to meet federal and state requirements for avoidance, minimization, and mitigation under the Clean Water Act (CWA) (Sections 401 and 404) and the Virginia Water Protection Program."

This Stormwater Management Addendum to the EIS is developed to provide additional detail regarding implementation of the preferred alternative in TA-5 and its implications related to stormwater management and associated wetlands.

Preferred Alternative Site Development Plan

Figure 1 presents the overall TA-5 area. The TA-5 area encompasses approximately 352 acres, of which approximately 96 acres are comprised of wetlands, streams, ponds, and cultural sites which are not available for development. Figure 1 shows the locations of four major land use planning areas that are available for development. Due to site physical features and security constraints, the buildable area within TA-5 encompasses approximately 190 acres of land.

The TA-5 site is generally forested and includes a section of Harrison Branch, a perennial stream. A Wetlands Inventory conducted in 2006 at Ft. Lee, and validated by the U.S. Army Corps of Engineers, identified predominantly forested wetlands and also some emergent wetlands on TA-5. The Inventory identified 25 individual wetland areas comprising a total of approximately 14 acres. All the wetlands were forested wetlands, except for approximately 1 acre of emergent wetlands located along the lower west fork of Harrison Branch. The site-specific wetland inventory added significant wetland acreage to that previously identified by the U.S. Fish & Wildlife Service (See Figure 2).

Construction of BRAC facilities and associated infrastructure within the buildable areas of TA-5 will result in approximately 42% of the land surface being covered with impervious structures, roads and parking lots. The exact extent of impervious areas can only be determined after contractor proposals are received during the BRAC construction phase. However, based on site planning charrettes held in November and December 2006, the estimated extent of impervious areas by land use zone, including contiguous areas, are as follows:

- Zone A – 16.7% impervious
- Zone B – 20.1 % impervious
- Zone C – 66.1% impervious
- Zone D – 29.2% impervious

Approximately 107 acres of impervious surfaces will be created on TA-5. Therefore, proper management of precipitation runoff during storm events is essential to the operation of the BRAC facilities to be constructed and for the protection of the surrounding environment.

Stormwater Management Conceptual Approach

The conceptual approach for managing stormwater runoff on TA-5 involves:

- Maximizing the use of the natural site topography and water features, due to the limited amount of land available for Best Management Practices (BMPs) facilities;
- Including the use of BMPs such as vegetated swales where feasible, to reduce the loads on Harrison Branch and other receiving waters downstream of TA-5; and
- Optimizing the use of structural stormwater handling facilities.

The stormwater management plan, therefore, focuses primarily on the use of constructed wetlands, in combination with enhanced extended detention as well as infiltration, bioretention and biofiltration to treat runoff for both quantity and quality. The conceptual plan also includes management of storm runoff inputs from a portion of the Cantonment Area immediately to the south and adjacent to Route 36 not currently receiving stormwater treatment. A portion of this area's runoff currently contributes flow to the Harrison Branch section on TA-5. This management approach provides for a net gain in site wetlands, in addition to efficient use of available land surface.

Stormwater Management Design Considerations

The preferred site development alternative for TA-5 will require stormwater management for both quantity and quality. Typically, constructed wetlands have been shown to be effective at providing peak flow reduction as well as water quality benefits. In addition to constructed stormwater wetlands, other, non-traditional management options are potentially applicable. These other non-traditional management options include infiltration methods, bio-retention basins and filters, manufactured filters, and underground storage. Due to the land availability, the density of structures, constraints mentioned earlier, and the overall size of the area to be developed, constructed wetlands, employed as a component of enhanced extended detention basins, and various infiltration practices will most effectively and efficiently meet the stormwater quality and quantity requirements of the site.

<u>Water Quantity</u>

Management of the quantity of water being released into receiving streams is needed to minimize downstream erosion and to protect developed land adjacent to the stream from flooding. A traditional approach to protecting the receiving stream from excessive erosion is to reduce the post-development peak runoff flow from the 2-year storm to the pre-development rate, or by

providing 24-hour extended detention for runoff generated by the 1-year, 24-hour storm. To protect the downstream areas from flooding, the post-development peak runoff rate from the 10-year rainfall event cannot exceed the pre-development peak runoff rate from the 10-year event.

The following table presents a summary of the results of preliminary calculations using the Rational and TR-55 Methods. The resulting runoff is expressed in cubic feet per second (cfs) for each zone. Values presented are for a 10 year, 24-hour rainfall event for the Prince George County area.

Table 1 - Estimated Post-Development Peak Run-Off by Land Use Zone

Land Use Zone	Total Area	Impervious Area	Calculated Peak Run-Off (CFS)*
A	26.3	6.5	34
B	44.6	11.9	184
C	95.2	75.9	232
D	23.3	12.6	114

* Results from Rational Method

Water Quality

The preferred site development alternative must also comply with water quality requirements. Approximately 107 acres of impervious area will be created on a 352-acre site at Fort Lee. Thus, the final impervious area will be approximately 30% percent of the entire TA-5 site.

Based on regulations promulgated under the authority of the Chesapeake Bay Act water quality is achieved by imposing restrictions on the release of phosphorus in runoff from developed areas. For the situation at Ft. Lee, the amount of phosphorus released in the post-development runoff cannot exceed the amount of phosphorus assumed to be released from an area having an 'average' amount of impervious cover. According to Virginia stormwater regulations the average impervious cover is assumed to be 16 percent, unless a local government has established an alternative average condition. Assuming a post-development impervious area of 30 percent and an existing average impervious cover of 16 percent, a phosphorus reduction of approximately 39 percent would be required.

Table 2, taken from the Virginia Stormwater Management Handbook (DCR, 1999), provides phosphorus removal efficiencies for various BMPs. This table shows that, in general, constructed wetlands and extended detention basins provide insufficient phosphorus removal to meet the overall site phosphorus reduction requirement. Adequate management of stormwater quality will require bioretention BMPs, enhanced extended-detention basins, infiltration BMPs or larger retention basins.

Table 2 - Target Phosphorous Removal Efficiency (DCR, 1999)

Water Quality Measure	Target Phosphorous Removal Efficiency	Percent Impervious Cover
Vegetated filter strip Grassed swale	10% 15%	16-21%
Constructed wetlands Extended detention (2 x WQV) Retention basin I (3 x WQV)	30% 35% 40%	22-37%
Bioretention basin Bioretention filter Extended detention-enhanced Retention basin II (4 x WQV) Infiltration (1 x WQV)	50% 50% 50% 50% 50%	38-66%
Sand filter Infiltration (2 x WQV) Retention basin III (4 x WQV with aquatic bench)	65% 65% 65%	67-100%

WQV - Water Quality Volume

Table 3 presents the information needed to develop stormwater management approaches that meet Virginia requirements for the management of stormwater quality. Table 4 shows that when considered separately with respect to receiving streams, the various development areas have the following requirements for phosphorus removal.

It is clear that constructed wetlands alone provide insufficient phosphorus removal to meet the requirements of the Virginia stormwater program for all areas except Areas A+B2 and B1, which discharge into proposed Wetlands V and IV, respectively. It can be seen from Table 3 that a phosphorus removal shortfall of 60.7 lbs/year will result if constructed wetlands alone are used to manage stormwater quality.

In general, bioretention basins, bioretention filters, extended detention-enhanced retention basins (Type II), and infiltration of the water quality volume (WQv) are BMPs with sufficient phosphorus removal efficiencies to meet the requirements of Areas A+B2, B1, and D. It can be calculated from the information provided in Table 3 that the removal shortfall is reduced to 11 lbs/year will if enhanced extended-detention basins are used to manage stormwater quality. Still more efficient BMPs are needed to meet the phosphorus removal requirements for Areas C1 and C2 if only a single BMP is to be used.

Table 3 - WATER QUALITY BACKGROUND INFORMATION FOR TA-5

Discharge to:	WETLAND V				WETLAND IV		WETLAND I		WETLAND II		WETLAND III	
Area No.	A		B2		B1		C1		C2		D	
Impervious Area Information												
Total Area												
S.F.	1,681,416		829,613		1,757,851		3,908,100		1,092,587		1,886,148	
Ac.	38.6		19.0		40.4		89.7		25.1		43.3	
Total Imp.	283,140	16.8%	166,202	20.0%	352,162	20.0%	2,583,332	66.1%	722,872	66.2%	548,856	29.1%
Phosphorus Loading Information												
'Base' Imp.		16%	Note: Areas A and B2 are combined to discharge into Wetland Area V. Information for the combined area is given to the right.			16%		16%		16%		16%
P-load (pre) [Lbs/ac/yr]	0.442				0.442		0.442		0.442		0.442	
Post – Imp.		17.9%				20.0%		66.1%		66.2%		29.1%
P-load (post) [Lbs/ac/yr]	0.481				0.525		1.47		1.47		0.711	
RR [Lbs/ac/yr]	0.039				0.083		1.03		1.03		0.269	
EFF		8%				16%		70%		70%		38%
P-load (pre) [Lbs/yr]	25.50				17.85		39.68		11.09		19.15	
P-load (post) [Lbs/yr]	27.74				21.19		131.92		36.91		30.79	
RR [lbs/yr]	2.24				3.34		92.24		25.82		11.64	
Wetland Treatment Information												
Wetland removal [lbs/yr]	8.32				6.36		39.58		11.07		9.24	
Surplus P removal [lbs/yr]	6.08				3.02		(52.66)		(14.74)		(2.40)	
Enh, Ext-Detention [lbs/yr]	13.87				10.59		65.96		18.46		15.40	
Surplus P removal [lbs/yr]	11.63				7.25		(26.28)		(7.36)		3.76	

Table 4 – Phosphorus Removal Requirements		
Development Area	**Required Removal Efficiency**	**Required Poundage to be Removed**
A + B2	8%	2.24 lbs/yr
B1	16%	3.34 lbs/yr
C1	70%	92.24 lbs/yr
C2	70%	25.82 lbs/yr
D	38%	11.64 lbs/yr

Several BMPs can be used in the same area to achieve the required phosphorus reduction. Further, since each of the receiving streams exiting the TA-5 area flow to the same larger receiving water (i.e., the Appomattox River) the surplus phosphorus removal achieved in one development area can be used to offset the phosphorus removal shortfall in other development areas. Therefore, the proposed approach to managing stormwater in TA-5 will be to use both infiltration BMPs (including bioretention), and constructed wetlands as a component of enhanced extended detention.

Constructed Stormwater Wetlands

Constructed stormwater wetlands can provide excellent pollutant removal and reduction of peak flow. Five constructed wetland areas are proposed to be developed in the TA-5 area. Their pollutant removal rates can vary due to a number of factors, which is why they are assigned a pollutant removal rate by Virginia DEQ of only 30%. In order to increase the effectiveness of constructed wetlands, each of the wetland areas will be implemented as a component of an enhanced extended-detention basin. The enhanced extended-detention areas are discussed in a following section.

The constructed wetlands proposed for TA-5 would involve the planting of select emergent species of wetlands vegetation on graded land. Currently, a 1.09-acre natural emergent wetland exists on TA-5, located at the lower section of the west fork of Harrison Branch. Constructed stormwater wetlands have several advantages over simple retention ponds and detention basins. In addition to providing some peak flow reduction, the advantages include:

- Reduction in sedimentation of downstream surface water channels;
- Increased removal of nutrients and other non-point source pollutants from stormwater; and,
- Enhanced wildlife habitat.

Five areas for stormwater management utilizing constructed stormwater wetlands have been identified on TA-5. A preliminary estimate of required storage volume in acre-feet was calculated for each area utilizing the SCS Method. These areas are illustrated on Figure 3 and include:

- Constructed Wetlands I – Required storage volume of approximately 16.5 acre-feet between the east and west forks of Harrison Branch, to manage the majority of runoff

from Zone C. Depending on the selected depth, a 10 to 14 acre emergent wetland could be created at this location.

- Constructed Wetlands II - Required storage volume of approximately 4.9 acre-feet north (downstream) of the confluence of the east and west forks of Harrison Branch, to manage the majority of runoff from the northern part of Zone C. Depending on the selected depth, a 2 to 3 acre emergent wetland could be created on this location. The positioning of this wetland on the downstream section of Harrison Branch would also provide a treatment benefit to stormwater derived from the Cantonment Area south of TA-5 above that which currently exists.
- Constructed Wetlands III - Required storage volume of approximately 5 acre-feet to manage runoff from Zone D; depending on the selected depth, a 2 to 3 acre emergent wetland could be created at this location, near the headwaters of Cabin Creek.
- Constructed Wetlands IV – Required storage volume of approximately 5.8 acre-feet to manage runoff from the eastern portion of Zone B. Depending on the selected depth, a 2 to 4 acre emergent wetland could be created at this location.
- Constructed Wetlands V - Required storage volume of approximately 6.9 acre-feet to manage runoff from Zone A and the western portion of Zone B. Depending on the selected depth, a 3 to 5 acre emergent wetland could be created at this location.

The final footprint of each constructed wetland area will depend on the exact layout of the basins and the distribution of flows from the individual land use zones.

Infiltration Practices

Infiltration practices consist of several BMPs, including infiltration basins, infiltration trenches, roof downspout systems (dry wells), underground infiltration galleries, porous pavement, bioretention units (‘rain gardens’) and green alleys. These BMPs are best located in low- to medium-density development (38% to 66% impervious cover) where the subsoil is sufficiently permeable to provide a reasonable rate of infiltration. In general, soils having an infiltration rate greater than 0.52” per hour and less than 8.27” per hour are best suited for infiltration.

Percent imperviousness in the four stormwater management areas within TA-5 that will require infiltration ranges from 25.6 to 45.4. Thus, TA-5 is well-suited for infiltration practices considering the density of planned development.

Figure 4 shows a soil map of the TA-5 area and indicates the suitability of soils for infiltration. Areas with subsoils having an infiltration rate of 0.57” per hour or greater are shown in green. Areas with intermingled types of subsoils, but having at least one type of soil with an infiltration rate of at least 0.57” per hour are shown in yellow. Areas with subsoils having an infiltration rate of less than 0.52” per hour are shown in red. It should be noted that the developed areas shown in red at the bottom of Figure 4 consist of ‘urban’ soils. These soils are generally compacted by use, and may not have the required permeability. However, the characteristics of these soils vary greatly, and a site-by-site evaluation is needed to determine whether soils at any particular location can be used for infiltration.

All other areas have soils in the "C" hydrologic soil group. These soils, predominantly Emporia (shown as 11B) and Slagle (shown as 25A), have upper soils with infiltration rates greater than 0.57" per hour, but have deeper soils (generally greater than 50" below grade) with lesser infiltration rates. These areas, like the areas shown in yellow, and the 'urban' soils will require a site-by-site evaluation to determine the suitability for infiltration. These areas may be more suited to 'shallow' BMPs, such as permeable pavers and porous pavement, than to 'deep' BMPs, such as bioretention areas and infiltration trenches.

Enhanced Extended-Detention

An extended-detention basin is an impoundment that temporarily stores runoff for a specified period and discharges it through a hydraulic outlet structure to a downstream conveyance system. An extended-detention basin is usually dry during non-rainfall periods. An enhanced extended-detention basin has a higher efficiency for pollutant removal than an extended-detention basin because it incorporates a shallow marsh in its bottom. The shallow marsh provides additional pollutant removal through wetland plant uptake, absorption, physical filtration, and decomposition. The shallow marsh vegetation also helps to reduce the resuspension of settled pollutants. Thus, the enhanced extended-detention basin can provide one, or all of the following: a) water quality enhancement, b) downstream flood control, and c) channel erosion control.

The enhanced extended-detention basin is designed to provide a permanent shallow-marsh system with a storage volume equal to the WQv (1/2" of runoff from impervious surfaces draining to the basin). The enhanced extended-detention basin also provides the capability of capturing and releasing an additional WQv into the receiving stream over 30 hours. With these design elements, the enhanced extended-detention basin is assumed to achieve a 50% reduction in phosphorus.

Stormwater management areas C1 and D each will discharge a portion of their runoff into enhanced extended-detention basins.

Stormwater Management Strategy for Water Quality

Meeting phosphorus removal requirements will require the implementation of several systems of BMPs throughout the TA-5 area. It has been shown in Table 3 that the use of constructed wetlands alone will result in a phosphorus removal shortfall of nearly 61 lbs/year. Further, the use of enhanced extended-detention basins alone will also result in a phosphorus removal shortfall of 11 lbs/year. Thus, additional phosphorus removal measures are needed to meet water quality requirements.

It can be shown that the infiltration or biofiltration of 2 times the Water Quality Volume (WQv) from 680,610 square feet of impervious surfaces across the TA-5 area will result in the entire TA-5 area meeting the phosphorus removal goals. Since the infiltration (or biofiltration) of runoff is 'upstream' of the enhanced extended-detention basins in each of the development areas, the required infiltration or biofiltration areas can be distributed throughout TA-5 as feasible. Figure 4 has shown that soils potentially most applicable for infiltration are located outside of the

current PSA area. Therefore, it is likely that most of the infiltration (and biofiltration) BMPs will be located in development areas A, B and D.

Stormwater Management Strategy for Water Quantity

In addition to water quality considerations, stormwater runoff must be managed so that downstream receiving waters are not eroded and downstream areas are not flooded. Further, infiltration of post-development stormwater should be managed so that adverse affects on groundwater resources and the base flows of receiving streams are minimized.

Erosion and Flood Control

Runoff from each of the developed areas at TA-5 will be managed by an enhanced extended detention basin. An extended-detention basin is an impoundment that temporarily stores runoff for a specified period of time and discharges it through a hydraulic outlet structure to a downstream receiving stream. The extended-detention basin can be designed to provide for one or all of the following: a) water quality enhancement, b) downstream flood control, and c) channel erosion control.

Water quality aspects of the proposed stormwater management strategy are discussed above. With respect to channel erosion and flood control, the enhanced extended-detention basin will be designed to store the volume of runoff generated by the 1-year storm above the extended-detention pool (and shallow marsh wetland area) and release that volume over a 24-hour period. Flood control will be achieved by designing the extended-detention basin outlet structures so that the post-development peak discharge for the 2-year and 10-year storms is no greater than the peak discharge rate of the pre-development condition.

Infiltration

Development of the TA-5 area will result in a significant increase in impervious surfaces. In general, rain falling on the impervious surfaces will be collected in a stormwater sewer pipe and transmitted to a surface water impoundment. Thus, the hydrologic regime of the area is modified so that rainfall that would ordinarily infiltrate to replenish groundwater, which forms the source of stream base flows in the area, would no longer do so. This adverse affect on the groundwater resources and surface water regime can be reduced or eliminated by promoting infiltration of stormwater at the TA-5 area.

The techniques used to meet water quality requirements involve the infiltration of two times the water quality volume from approximately 680,610 square feet of impervious surfaces throughout the TA-5 area. Thus, approximately 56,717 cubic feet of runoff is proposed to be infiltrated following rainfall events sufficiently large to generate that amount of runoff.

Virginia has not developed a procedure to determine an infiltration goal for stormwater management. However, Maryland has developed such a procedure. According to the Maryland procedure, the site recharge volume (Re_v) is determined by:

$Re_v = [(S)(Rv)(A)]/12$

Where: S = soil-specific recharge factor (0.119 – based on an average annual rainfall at Ft. Lee of 45.26 inches, and soils predominantly in HSG C)
Rv = 0.05 + (0.009 * I) where I is the percent impervious cover
A = site area in acres

Using the above technique to determine the Re_v results in the following:

Area	A+B1	B2	C1	C2	D
Rev (ft^3)	3,844	4,014	24,994	6,993	5,834

The above shows that approximately 41,836 cubic feet of infiltration is required to meet the recharge goal to protect groundwater resources. This volume goal is exceeded by the proposed infiltration volume needed to meet water quality requirements. Thus, the adverse effects of additional impervious surfaces on groundwater resources and stream base flow are minimized by the proposed stormwater management strategy.

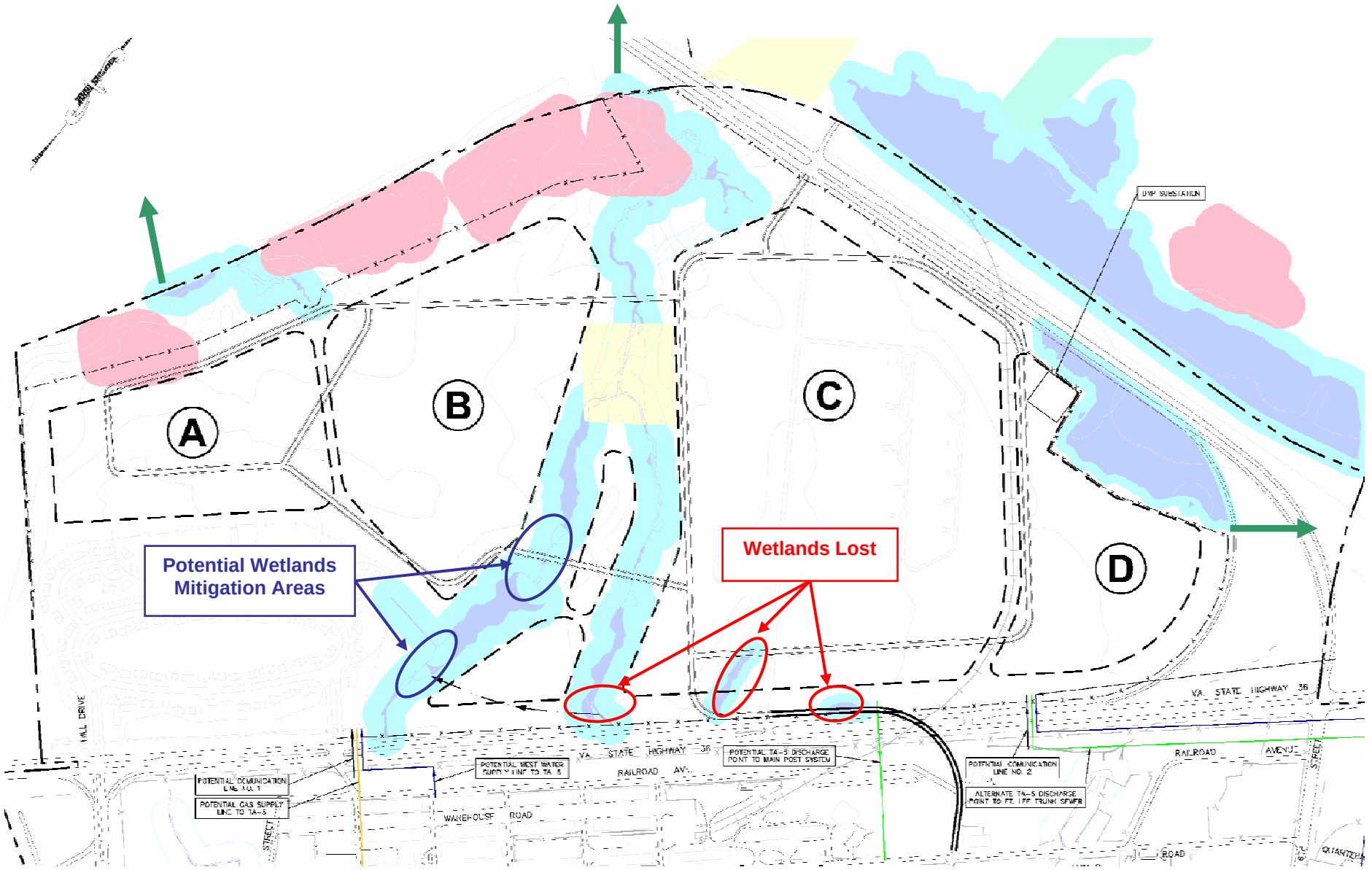
Wetlands Impacts and Mitigation Strategy

Construction of site facilities, associated infrastructure and the stormwater wetlands will result in the loss of a total of 1.75 acres of currently existing forested wetlands on TA-5 (see Figure 1). The following summarizes wetlands losses due to construction:

- As a result of construction of the road section from the bridging of Route 36 from the Cantonment Area onto TA-5 and of facility/infrastructure development at the southwest portion of Zone C, two small forested wetlands totaling 0.54 acres and located on either side of River Road at Route 36, would be lost.
- As a result of construction of the stormwater wetlands between the east and west forks of Harrison Branch, one large (0.89 acres) and six smaller forested wetlands (total 0.32 acres) would be replaced by the constructed emergent wetlands.

The 1.75 acres of forested wetlands lost as a result of facilities/infrastructure and stormwater wetlands construction will be mitigated at a 2:1 ratio by the construction of new wetlands on-site, along the western fork of Harrison Branch (see Figure 1). In addition, approximately 19 to 29 acres (Wetlands I – V) of emergent wetlands would be constructed on TA-5 to manage stormwater runoff.

A Mitigation Plan and associated permitting requirements will be coordinated with the Army Corps of Engineers and the Virginia Department of Environmental Quality. A Plan of Development will be submitted to Prince George County to meet the requirements of the Chesapeake Preservation Act.



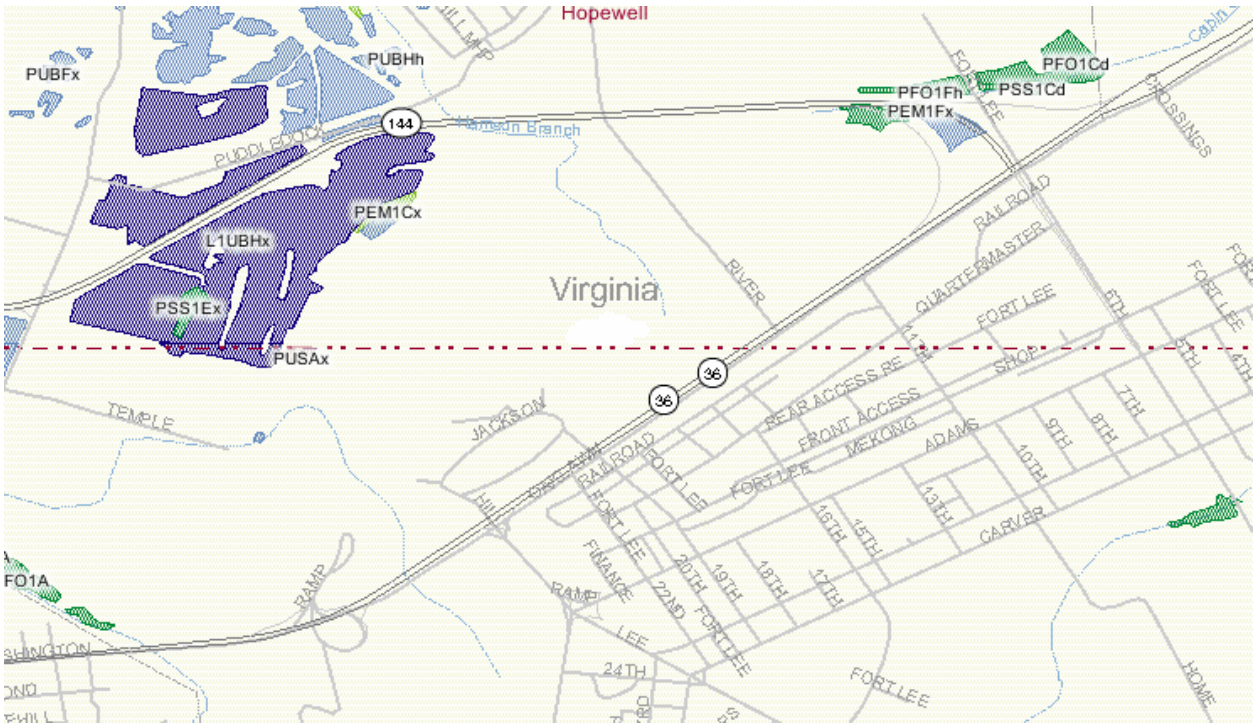
LEGEND

- © Land Use Planning Zone
- Main Site Road
- Existing Wetlands
- Resource Protection Buffer
- Cultural Site
- Offsite Drainage Channel

Figure 1

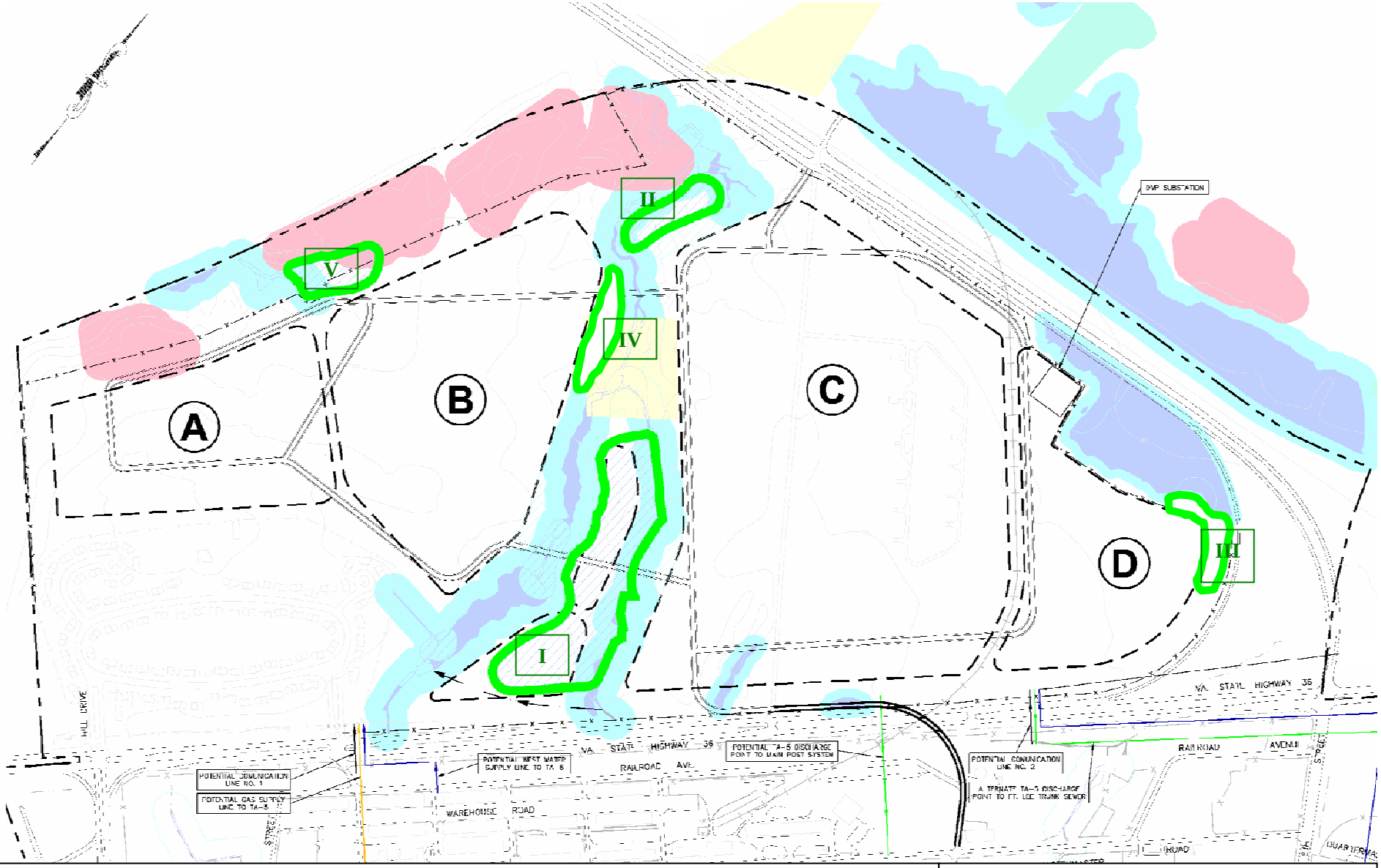
FT. LEE BRAC – TA-5 SITE
Site Land Use Zones, Key Features and Proposed Wetlands Mitigation

Figure 2. US Fish & Wildlife National Wetlands Inventory Map of the TA-5 Area



NOTE: Only one wetland is shown in the TA-5 area – the PEM1Fx area in the eastern portion of the site. See below for definition of the Code.

PEMF1x	
[P] Palustrine - The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5 ppt. Wetlands lacking such vegetation are also included if they exhibit all of the following characteristics: 1. are less than 8 hectares (20 acres); 2. do not have an active wave-formed or bedrock shoreline feature; 3. have at low water a depth less than 2 meters (6.6 feet) in the deepest part of the basin; 4. have a salinity due to ocean-derived salts of less than 0.5 ppt. [EM] Emergent - Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.	(1) Persistent - Dominated by species that normally remain standing at least until the beginning of the next growing season. [f] Farmed - The soil surface has been mechanically or physically altered for production of crops, but hydrophytes will become reestablished if farming is discontinued. The National Wetlands Inventory has operational instructions in place regarding the mapping of farmed wetlands. Farmed wetlands are limited to the following: - farmed prairie potholes and pothole type depressions - farmed intermittent lake bottoms (playa lakes) - cranberry bogs - diked former tidelands in California [x] Excavated - Lies within a basin or channel excavated by man.



LEGEND

© Land Use Planning Zone

Main Site Road

Existing Wetlands

Resource Protection Buffer

Cultural Site

I Constructed Wetlands

Figure 3

FT. LEE BRAC – TA-5 SITE
Storm Water Management
Conceptual Design

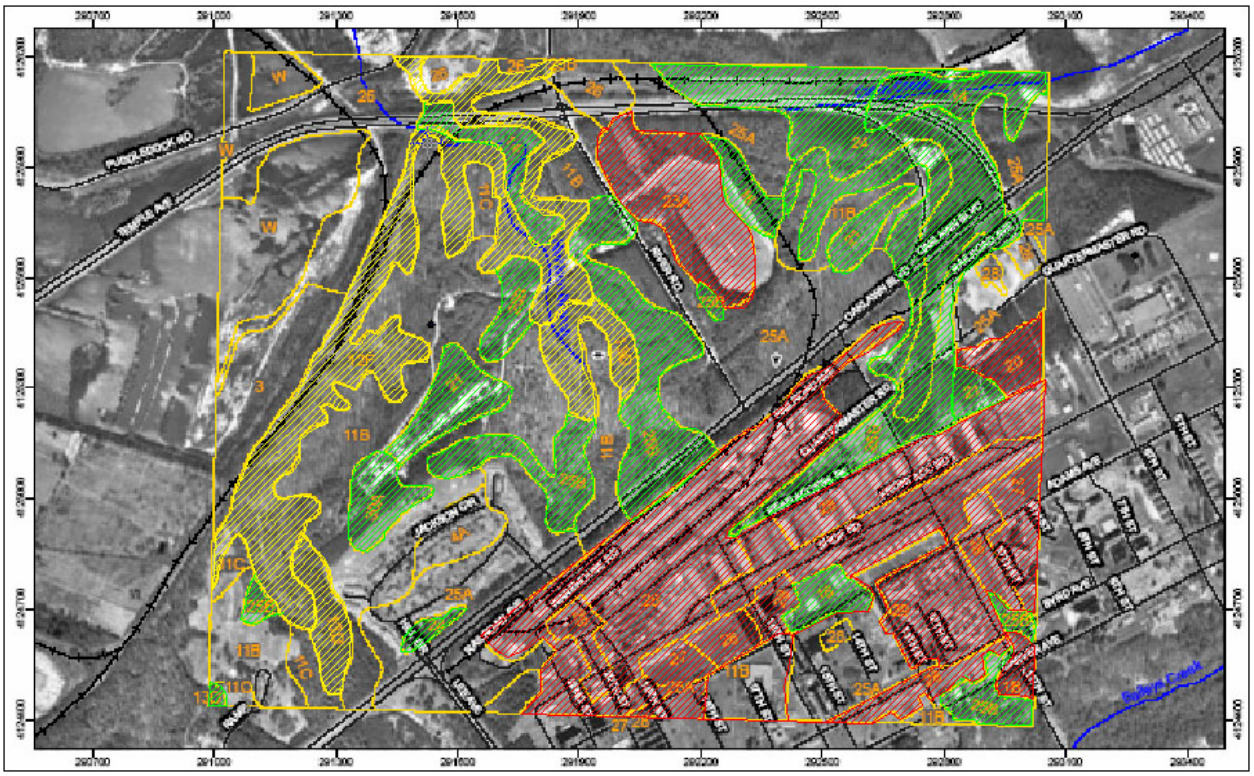


Figure 4. Soils of TA-5 showing suitability for infiltration.