

Final
Environmental Assessment for the
Residential Communities Initiative
at the U.S. Army Garrison
West Point, New York



prepared for

Commander, U.S. Army Garrison

prepared by

U.S. Army Corps of Engineers, Mobile District

with Technical Assistance from

Tetra Tech, Inc.
Fairfax, Virginia 22030
December 2007

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Draft
Finding of No Significant Impact
Army Residential Communities Initiative
U.S. Army Garrison, West Point, New York

Pursuant to the Council on Environmental Quality (CEQ) Regulations (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508) for implementing the procedural provisions of the National Environmental Policy Act (Title 42 of the United States Code [U.S.C.] 4321 *et seq.*) and 32 CFR Part 651 (*Environmental Analysis of Army Actions*), the U.S. Army Garrison (USAG), West Point, New York, conducted an environmental assessment (EA) of the potential environmental and socioeconomic effects associated with implementing a Community Development and Management Plan (CDMP) at U.S. Army Garrison under the Army’s Residential Communities Initiative (RCI).

Proposed Action

The Army proposes to transfer responsibility for providing housing and ancillary supporting facilities to a private sector development company. Under the proposed action, USAG would direct the implementation of the CDMP negotiated with and approved by the Garrison Commander.

The installation would convey 963 of the 964 existing family housing units to GMH Military Housing LLC, a limited liability company composed of the Army and a development team (consisting of BMH Military Housing Management LLC, GMH Military Housing Development LLC, Niles Bolton Associates, and Balfour Beatty Construction) with a 50-year lease for 210.5 acres of the underlying land currently used for family housing and family housing support. USAG would also grant a 50-year lease to GMH Military Housing LLC for a parcel in other areas totaling approximately 40 acres for siting of a new community center and ancillary supporting facilities to be constructed, operated, and maintained by GMH Military Housing LLC, convey either Building 695, 901, 1236 or 1245 as a maintenance and support facility, and lease the field behind the old PX building for the purpose of constructing a community pool.

The plan for the inventory of 963 units conveyed to GMH Military Housing LLC is to renovate 206 existing historical homes, convert 174 existing historical homes into 87 expanded historical homes, construct a total of 158 state-of-the-art homes and demolish 196 homes. As a result of these actions, USAG’s end state inventory of family housing would stand at 831 units.

Implementation of the CDMP would decrease the on-post housing inventory to provide an end-state inventory of 831 housing units; renovate the family housing to better meet current Soldier family requirements; revise the mix of family housing to better meet the current requirements of Soldiers and their families; provide landscaping improvements; and provide amenities for the residents of the housing areas including a new Community Center of approximately 2,500 square feet and the conversion of approximately 4,500 square feet of the Old Hospital into a Community Center. Preliminary plans for the community centers include meeting rooms, an internet café, a lounge, game rooms, restrooms, and a kitchen and dining area. Other ancillary facilities will consist of common areas, a swimming pool, basketball courts, a trail system, playgrounds, and tot lots throughout the neighborhoods. The initial development plan would be implemented over a 6-year period beginning in 2008.

Purpose and Need

The purpose of the proposed action is to improve Army family housing and ancillary supporting facilities at USAG, West Point. The proposed action is needed to provide affordable, quality housing and ancillary facilities to Soldiers and their families through a combination new housing units and improvement to existing family housing units to ensure that they meet current Army standards.

Alternatives Considered

Alternatives to the proposed action considered were a partial privatization alternative, a private sector reliance alternative, and leasing alternatives. Those alternatives were considered unreasonable or unfeasible, and therefore, were not evaluated in detail. As prescribed by the CEQ Regulations, the EA also evaluated the No Action Alternative, which would consist of the Army's continuing to provide for the family housing needs of its personnel by using traditional military construction and maintenance funding obtained through the congressional authorization and appropriations process.

Factors Considered in Determining That No Environmental Impact Statement Is Required

The EA, which is attached hereto and incorporated by reference into this Finding of No Significant Impact (FNSI), examined the potential effects of the proposed action and the No Action Alternative on resource areas and areas of environmental and socioeconomic concern: land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic materials.

Implementation of the proposed action would result in a combination of short- and long-term minor adverse effects, as well as short- and long-term minor and moderate beneficial effects. Long-term minor beneficial effects on air quality, housing, quality of life, and recreation would be realized in the quality and energy efficiency of newly constructed and renovated housing and from cohesive neighborhood planning. There would be long-term moderate beneficial effects on aesthetics and visual resources, transportation, and utilities, such as potable water, wastewater, storm water, and energy. There would be short-term minor beneficial effects on the local economy from expenditures and employment associated with housing construction. There would be long-term minor adverse effects on visual and aesthetic resources and solid waste disposal associated with the loss of undeveloped land and construction activities. There would be short-term minor adverse effects on aesthetics and visual resources, air quality, noise, soils, surface water, groundwater, vegetation, wildlife, sensitive species, quality of life, protection of children, and transportation, mostly associated with construction and renovation activities. Cumulative effects would be minor and would reflect the cumulative addition of effects from the proposed action plus the implementation of other proposals on aesthetics and visual resources, geology and soils, and water resources. The EA does not identify the need for any mitigation measures.

Public Review

The EA and FNSI are available for review and comment for 30 days, beginning December 19, 2007 through January 19, 2008. Copies of the EA and Draft FNSI can be obtained by contacting George Markt, NEPA Coordinator, at the following address: U.S. Army Garrison, Directorate of Public Works, IMNE-MIL-PWF-I, Bldg. 667A Ruger Road, West Point, NY 10996, or by e-mail at george.markt@usma.edu. Copies have also been provided to the following local libraries: USMA Community Library, Highland Falls Public Library (Highland Falls, NY), Julia L. Butterfield Memorial Library (Cold Spring, NY), and The Alice Curtis Desmond and Hamilton Fish Library (Garrison, NY). In addition to the libraries, the document has also been made available at the Highlands Town Hall and Highland Falls Village Hall, and advertised in the following local newspapers: News of the Highlands, Cornwall Local, Putnam County News and Recorder, and the Times Herald Record. Comments on the EA and Draft FNSI should be submitted to USAG at the physical address or e-mail address given above by no later than January 19, 2008.

Conclusions

On the basis of the EA, which is herewith incorporated, it has been determined that implementation of the proposed action would have no significant effects on the quality of human life or the natural environment. Preparation of an environmental impact statement is not required prior to implementation of the proposed action.

Daniel V. Bruno
COL
Garrison Commander
U.S. Army Garrison, West Point

Date

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ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Environmental Assessment (EA) addresses the proposed action to implement the Residential Communities Initiative (RCI) at the U.S. Army Garrison, West Point, New York. As required by Army Regulation 200-2 and the National Environmental Policy Act, the potential environmental and socioeconomic impacts are analyzed.

An ***EXECUTIVE SUMMARY*** briefly describes the proposed action, environmental and socioeconomic consequences, and mitigation measures.

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SECTION 1.0: ***PURPOSE, NEED, AND SCOPE*** summarizes the purpose of and need for the proposed action and describes the scope of the environmental impact analysis process.

SECTION 2.0: ***PROPOSED ACTION*** describes the proposed action to implement the RCI at the U.S. Army Garrison, West Point, New York.

SECTION 3.0: ***ALTERNATIVES*** examines alternatives to implementing the proposed action.

SECTION 4.0: ***AFFECTED ENVIRONMENT AND CONSEQUENCES*** describes the existing environmental and socioeconomic setting at the U.S. Army Garrison, West Point and identifies potential effects of implementing the proposed action.

SECTION 5.0: ***FINDINGS AND CONCLUSIONS*** summarizes the environmental and socioeconomic effects of implementing the proposed action.

SECTION 6.0: ***REFERENCES*** provides bibliographical information for cited sources.

SECTION 7.0: ***LIST OF PREPARERS*** identifies the persons who prepared the document.

SECTION 8.0: ***PERSONS CONSULTED*** provides a listing of persons consulted during preparation of this EA.

SECTION 9.0: ***DISTRIBUTION LIST*** indicates recipients of this EA.

APPENDICES

- A*** Community Development and Management Plan (CDMP) Development Brief
- B*** Record of Non-Applicability (RONA)
- C*** Agency Correspondence
- D*** Programmatic Agreement: U.S. Army Garrison, West Point and NY SHPO
- E*** Economic Impact Forecast System
- F*** Potable Water, Sewer, and Energy Calculations for the Proposed Action

An ***ACRONYMS AND ABBREVIATIONS*** list is provided as a foldout.



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**ENVIRONMENTAL ASSESSMENT
IMPLEMENTATION OF THE ARMY RESIDENTIAL COMMUNITIES INITIATIVE
AT U.S. ARMY GARRISON, WEST POINT, NEW YORK**

Prepared by:

MOBILE DISTRICT
U.S. ARMY CORPS OF ENGINEERS

Byron G. Jorns
Colonel, Corps of Engineers
Commanding

Approved by:

U.S. ARMY GARRISON, WEST POINT, NEW YORK

Daniel V. Bruno
Colonel
Garrison Commander

December 2007

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ENVIRONMENTAL ASSESSMENT

LEAD AGENCY: U.S. Army Garrison, West Point, New York

TITLE OF PROPOSED ACTION: Implementation of the Army Residential Communities Initiative at U.S. Army Garrison, West Point, New York.

AFFECTED JURISDICTION: Orange County, New York.

PREPARED BY: Byron G. Jorns, Colonel, U.S. Army Corps of Engineers, Mobile District, Commander.

APPROVED BY: Daniel V. Bruno, Colonel, Garrison Commander, U.S. Army Garrison, West Point, New York.

ABSTRACT: This Environmental Assessment (EA) considers the proposed implementation of the Army's Residential Communities Initiative at the U.S. Army Garrison, West Point, New York. The EA identifies, evaluates, and documents the effects of obtaining private sector funding for construction, maintenance, management, renovation, replacement, rehabilitation, and development of family housing and ancillary supporting facilities. A no action alternative is also evaluated. Implementation of the proposed action is not expected to result in significant environmental impacts. Therefore, preparation of an Environmental Impact Statement is not required and a Finding of No Significant Impact (FNSI) will be published in accordance with 32 CFR 651, *Environmental Analysis of Army Actions*, and the National Environmental Policy Act.

REVIEW COMMENT DEADLINE: The EA and FNSI are available for review and comment for 30 days, beginning December 19, 2007 through January 19, 2008. Copies of the EA and Draft FNSI can be obtained by contacting George Markt, NEPA Coordinator, at the following address: U.S. Army Garrison, Directorate of Public Works, IMNE-MIL-PWF-I, Bldg. 667A Ruger Road, West Point, NY 10996, or by e-mail at george.markt@usma.edu. Copies have also been provided to the following local libraries: USMA Community Library, Highland Falls Public Library (Highland Falls, NY), Julia L. Butterfield Memorial Library (Cold Spring, NY), and The Alice Curtis Desmond and Hamilton Fish Library (Garrison, NY). In addition to the libraries, the document has also been made available at the Highlands Town Hall and Highland Falls Village Hall, and advertised in the following local newspapers: News of the Highlands, Cornwall Local, Putnam County News and Recorder, and the Times Herald Record. Comments on the EA and Draft FNSI should be submitted to USMA at the physical address or e-mail address given above by no later than January 19, 2008.

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EXECUTIVE SUMMARY

INTRODUCTION

The Army operates and maintains approximately 90,000 family housing units at its installations throughout the United States. More than 75 percent of the units do not meet current Army housing standards. Despite this, at most installations demand for adequate housing on-post exceeds supply. The lack of adequate on-post housing forces many Soldiers and their families to live in housing in need of repair or renovation or to live off-post where the cost and quality of housing vary considerably. Often, the costs to Soldiers and their families to live off-post are 15 to 20 percent greater than the costs to live on-post. The Army estimates that as much as \$6 billion would be needed to bring its housing up to current standards and to address the deficit of housing.

In recognition of these problems, Congress enacted section 2801 of the 1996 Defense Authorization Act (Public Law 104-106, codified at Title 10 of the United States Code [U.S.C.] sections 2871-85). Also known as the Military Housing Privatization Initiative (MHPI), this provision of law creates alternative authorities for improvement and construction of military family housing. The legislative intent of Congress in enacting these additional authorities is to enable the military to obtain private sector funding to satisfy family housing requirements. By leveraging scarce public funding, the Army can obtain private sector funds for construction, maintenance, management, renovation, replacement, rehabilitation, and development of Army family housing and ancillary supporting facilities.¹ The Army's implementation of the MHPI authorities is known as the Army Residential Communities Initiative (RCI).

BACKGROUND

The United States Army Garrison (USAG), West Point, New York, is located along the Hudson River approximately 50 miles north of New York City. The 16,000-acre installation, founded in 1802, is home of the United States Corps of Cadets, which graduates more than 900 new officers each year. Other occupants of USAG include the U.S. Military Academy, Dean of the Academic Board, the Directorate of Intercollegiate Athletics, the Association of Graduates, and other tenants. In 2009, the United States Military Academy Preparatory School will relocate from Fort Monmouth, New Jersey, to West Point. The installation has approximately 12,500 military and civilian personnel and an inventory of 964 family housing units (A. Bjornsen, USMA, pers. comm., 1 August, 2006).

The age and condition of USAG family housing units vary. The central portion of USAG was designated by Congress as a National Historic Landmark District (NHLD) in 1960. Of the post's 964 family housing units, 391 units are eligible for listing on the National Register of Historic Places. The sizes, configurations, safety, and condition of many of the USAG housing units are substantially below the Army's standards of acceptability. Of the post's housing inventory, 579 family housing units were built before 1963. Many older units lack amenities such as family rooms, laundry/utility space, adequate exterior storage, and auxiliary eating areas such as eat-in kitchens or breakfast nooks. Except for housing built after the 1970s, the housing units contain at least some lead-based paint, and there may still be some asbestos-containing materials within

¹ According to 10 U.S.C. 2871, the term *ancillary supporting facilities* means "facilities related to military housing units, including child care centers, day care centers, tot lots, community centers, housing offices, dining facilities, unit offices, and other similar facilities for the support of military housing."

walls, floors, crawl spaces, and utility chases of housing units. Funding shortfalls over the years have limited renovations, resulting in increased maintenance requirements. Without adequate funding to address the renovation backlog, housing units could become unsuitable for occupancy.

PROPOSED ACTION AND ALTERNATIVES

Consistent with the MHPI authorities, USMA proposes to transfer responsibility for providing housing and ancillary supporting facilities to GMH Military Housing LLC, a limited liability company (LLC) composed of the Army and a development team consisting of BMH Military Housing Management LLC, GMH Military Housing Development LLC, Niles Bolton Associates, and Balfour Beatty Construction. GMH Military Housing LLC has developed a CDMP to implement the MHPI at USAG.

GMH Military Housing LLC developed the CDMP in an iterative process during which they fine-tuned the plan to meet USAG's needs for attaining affordable, quality housing and other facilities while minimizing or avoiding any potential environmental impacts. An excerpt from the CDMP is provided in Appendix A. In accordance with the CDMP, USAG proposes the following:

- To convey 963 of the 964 existing family housing units to GMH Military Housing LLC, and provide GMH Military Housing LLC with a 50-year lease for 210.5 acres of the underlying land. Figures 2-1 through 2-6 show the locations of USAG's existing housing and proposed developable areas.
- To lease an additional 40 acres (Site F) to GMH Military Housing LLC for the siting of new housing. Originally, USAG had selected five sites consisting of a total of 175 acres from which the GMH Military Housing LLC could choose to develop. Site F is the only site chosen for development.
- To convey Building 695, 901, 1236 or 1245 as a maintenance and support facility, and to lease the field behind the old PX building for the purpose of constructing a community pool.

The purpose of the proposed action is to improve Army family housing and ancillary supporting facilities at USAG. The proposed action is needed to provide affordable, quality housing and ancillary supporting facilities to Soldiers and their families through a combination of replacing and improving existing family housing units to ensure that they meet current Army standards. USAG expects GMH Military Housing LLC to achieve the following goals:

- Ensure that eligible soldiers and their families have access to quality, attractive, and affordable housing by upgrading inadequate existing family housing and by building new housing to address housing conditions at USAG
- Improve the appearance and functions of the residential community, while meeting environmental stewardship responsibilities
- Provide ancillary supporting facilities, such as community centers, neighborhood playgrounds, that enhance USAG's residential community
- Maintain positive relations with the communities that surround USAG
- Provide for the effective management and operation of existing, renovated, and new housing units and ancillary supporting facilities on a long-term basis

The plan for the inventory of 963 units conveyed to GMH Military Housing LLC is to renovate 206 existing historical homes, convert 174 existing historical homes into 87 expanded historical

homes, construct a total of 158 state-of-the-art homes and demolish 196 homes. As a result of these actions, USAG's end state inventory of family housing would stand at 831 units.

In addition, the development plan includes a new Community Center of approximately 2,500 square feet in Site F and the conversion of approximately 4,500 square feet of the Old Hospital into a Community Center. Preliminary plans for the community centers include meeting rooms, an internet café, a lounge, game rooms, restrooms, and a kitchen and dining area. Other ancillary facilities will consist of common areas, a swimming pool, basketball courts, a trail system, playgrounds, and tot lots throughout the neighborhoods.

The initial development plan would be implemented over a 6-year period beginning in 2008. New housing units would be constructed before demolition or rehabilitation of existing housing units to provide a pool of housing to prevent a housing shortage during construction and renovation. Some families might have to move off-post or to another house on-post as a result of construction activities.

Alternatives to the proposed action that were considered include partial privatization, in which only a portion of family housing would fall under the RCI. Army housing in good condition could remain subject to Army management. This alternative, however, would delay actions to provide adequate housing for some Soldiers and their dependents, would not be cost-efficient, and thus would not fully meet the Army's purpose of and need for the proposed action. Under an alternative in which USAG would rely wholly on the private sector for family housing needs, USAG would terminate family housing programs, dispose of existing family housing units, and convert the land supporting housing areas to other uses. Reliance solely on the private sector would create conditions leading to poor morale, and abandonment of existing on-post family housing would not be fiscally responsible. Regarding the alternative of leasing property, two key statutory authorities come into play: *section 801 housing* (long-term leasing of housing) and *section 802 housing* (rental guarantees for housing). Although use of either or both of these authorities would be possible, their use would not be reasonable when compared with the far more flexible and economic advantages of the new authorities offered by the RCI to the Army and to Soldiers' families. Accordingly, these alternatives were considered unreasonable under the circumstances and were not further evaluated. As prescribed by Council on Environmental Quality regulations, the environmental assessment (EA) evaluates the no action alternative, which would consist of the Army's continuing to provide for the family housing needs of its personnel by means of traditional military construction and maintenance funded through the Congressional authorization and appropriations process.

The EA analyzes the proposed action (the Army's preferred alternative) and a no action alternative. The focus is on evaluating environmental effects that could occur in the first 6 years of implementation of the CDMP (through 2014). Prediction of potential environmental effects for the years beyond 2014 would be increasingly speculative, and therefore it is not attempted.

ENVIRONMENTAL CONSEQUENCES

The EA evaluates potential effects on land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic substances. For each resource, the predicted effects from both the proposed action, identified as the Army's preferred alternative, and the no action alternative are briefly described below.

Consequences of the Preferred Alternative

Land Use

No adverse effects on existing residential land use would be expected. However, 40 acres of undeveloped and forested areas would be converted to family housing areas, increasing impervious surfaces in the cantonment area. No increase in the number of overall housing units would occur under the proposed action, and no new land use incompatibilities would be expected to occur in the existing housing areas.

No land use incompatibilities have been identified in Site F.

No effects on surrounding land uses would be expected as a result of implementing the proposed action.

Aesthetic and Visual Resources

Short- and long-term minor adverse and long-term moderate beneficial effects would be expected. Construction activities are inherently aesthetically displeasing. Demolition and construction equipment and materials and staging areas used during housing renovation would diminish otherwise aesthetically pleasing views. These effects, however, would be short-term and localized. In the long term, renovations to existing housing would be expected to improve the aesthetic and visual appeal of the area. Long-term adverse effects on viewsheds—from vistas of open or forested areas to developed areas—would also occur if undeveloped areas were converted to housing areas.

Air Quality

Short-term minor adverse and long-term minor beneficial effects would be expected. Short-term effects would be due to the emissions generated during the demolition, construction, and renovation of the RCI housing. Long-term beneficial effects would be due to the net reduction in area and operational emissions associated with the overall decrease in the number of family housing units at the installation.

The CAA mandates the general conformity rule (GCR) to ensure that federal actions in nonattainment areas do not interfere with a state's timely attainment of the NAAQS. The general conformity rule specifies emission thresholds below which the GCR do not apply (40 CFR 93.153). Below these levels, an action is considered *de minimis* (of minimum importance) and would not interfere with the states timely attainment of the NAAQS. USAG is located in an AQCR designated as severe nonattainment for O₃. Therefore, the applicability thresholds are 25 tons per year for NO_x and VOCs. In addition, the general conformity rule applies if the emissions are *regionally significant*, even if they are *de minimis*.

The total of direct and indirect emissions of NO_x and VOCs are less than the applicability thresholds. In addition, NO_x and VOC emissions are less than 10 percent of the regional inventory; therefore are not *regionally significant*. The GCR does not apply and no conformity determination is required.

Fugitive dust emissions from land clearing and construction activities would be minimized by common construction practices such as periodic wetting of construction areas, covering of open equipment used to convey materials likely to create air pollution, and prompt removal of spilled or tracked dirt from streets.

Noise

Short-term minor adverse effects would be expected. The proposed action would result in additional noise from the use of heavy construction equipment. This noise would be temporary in nature and end after the completion of the demolition and construction phases.

Geology and Soils

Geology and Topography. Negligible effects on geology would be expected. Some blasting and ripping of rock could occur during the land clearing and grading and construction activities. Short-term adverse effects due to steep topography would be expected to result in increase soil erosion, as discussed below.

Soils. Short-term minor adverse effects would be expected from the proposed action. Demolition and construction activities would cause vegetation removal, soil exposure, and increased susceptibility to wind and water erosion, possibly resulting in increased runoff and erosion during site preparation. These effects would be minimized, however, by using appropriate BMPs for controlling runoff, erosion, and sedimentation during construction.

Prime Farmland. No effects on prime farmland would be expected.

Petroleum and Minerals. No effects on petroleum or minerals would be expected.

Seismicity. No effects on seismicity would be expected.

Water Resources

Surface Water. Short-term minor adverse effects would be expected. In the short term, construction and demolition activities would be expected to increase the possibility of soil erosion and resulting increases in total suspended solids in nearby waters. In addition, leakage from construction equipment could increase petroleum hydrocarbon pollution in surface waters.

All RCI construction would be conducted in accordance with the terms of a Storm Water Permit and accompanying SWPPP developed specifically for this site. Following BMPs specified in the storm water permits and common erosion control techniques would reduce the sedimentation of surface waterbodies.

Ground water. Short-term minor and long-term negligible adverse effects would be expected for groundwater resources. Waterborne contaminants contributed by construction activities could be transported into the ground water system. Following water-protection protocols, and implementing BMPs would reduce potential effects.

Floodplains. No effects on floodplains would be expected.

Biological Resources

Flora and Fauna. Short-term negligible adverse effects on flora or fauna would be expected. The area within the RCI footprint is largely developed and does not represent good wildlife habitat. Although 40 acres of forested area might be cleared in Site F, the acreage to be cleared is insignificant compared to the quantity of forested land on and surrounding USAG. Timber harvests are conducted routinely on the installation with no adverse effects on wildlife.

Sensitive Species. No effects on threatened or endangered species are expected. There are no state- or federally listed threatened or endangered species known to occur within the RCI footprint

Short-term minor adverse effects to the eastern box turtle are expected to occur. Clearing of forested areas in Site F and construction activities throughout the RCI footprint are likely to result in short-term habitat loss and disruption to daily activities.

The potential exists for short-term minor adverse effects on rare plants to occur. However, impacts could be minimized or avoided by implementing the management measures provided in the USMA Rare Plant Management Plan and the INRMP.

Short-term minor adverse effects are expected from the clearing of forested areas in Site F and construction activities. However, outside the breeding season, these species do not remain permanently in any one location; therefore, adverse effects on the species are expected to be limited.

Wetlands. Short-term negligible adverse effects would be expected. Sedimentation and runoff from nearby construction sites has the potential to adversely impact the wetland. However, the impacts could be minimized by implementing stream and wetland protection BMPs, and maintaining the 100-foot buffer between the wetland and development activities.

Habitats of Concern. These habitats do not occur within or adjacent to the RCI footprint; therefore, no effects on NYSDEC-listed significant habitats, special natural areas, coastal resources, or essential fish habitat would be expected.

Cultural Resources

Transfer of historic properties out of Federal control would be an adverse effect (36 CFR 800.5) and would constitute a significant impact to those properties. However, USAG is preparing a PA for the RCI Program to ensure that any transferred historic properties would continue to be protected by Section 106 of the NHPA. The RCI PA would ensure that the architectural historic properties within the NHLD are managed in accordance with Section 106 of the NHPA. The developer would manage, maintain, and renovate historic properties in accordance with the standards specified in the PA. Proposed alterations to historic properties would be coordinated with the New York SHPO by USAG. Any new properties constructed within the NHLD would be designed in a manner that is compatible with existing architecture. Any potential adverse effects to historic properties would be avoided, minimized, or mitigated through measures developed by USAG in consultation with the New York SHPO. As such, with the PA in place, no significant adverse impacts would occur to architectural historic properties.

Prior to any ground disturbing activities, USAG would complete archaeological surveys of the RCI footprint, all identified archaeological resources would be evaluated for NRHP-eligibility, and potential adverse effects would be identified prior to the proposed action going forward. The findings of the archaeological surveys, determinations of NRHP-eligibility for all identified sites, and determinations of potential adverse effect to eligible sites within the RCI footprint would be provided to the New York SHPO by USAG for consultation under Section 106 of the NHPA. NRHP-eligible and potentially eligible archeological sites within the RCI footprint would be avoided during new housing construction to the extent practical.

If it is determined that avoidance and/or protection of the archaeological historic properties is not feasible, then a Memorandum of Agreement would be developed between USAG and the New York SHPO to determine measures to be implemented to mitigate the adverse effect of physically disturbing these resources. Mitigation measures could include data recovery excavation of prehistoric deposits, archival research and recording of historic components, or development of public interpretation materials regarding cultural resources of the installation or region. Mitigation of the adverse impacts would reduce them to a less than significant level of impact.

During implementation of activities associated with the RCI proposed action, there is the potential that previously unknown archaeological resources would be discovered. If such resources are discovered, activities at the location of the discovery would cease until the USAG has assessed the discovery and determined the appropriate course of action, in compliance with the ICRMP and the PA currently in development. The USMA ICRMP has standard operating procedures that address the unexpected discovery of archaeological resources. Any intact archaeological resources discovered would be recorded and evaluated for eligibility to the NRHP, in consultation with the New York SHPO. Treatment of the discovery would be determined by USAG, again in consultation with the New York SHPO.

Socioeconomics

EIFS Model Results. Short-term minor beneficial effects would be expected. The expenditures associated with demolition, construction, and renovation of family housing and associated facilities at USAG would increase sales volume, employment, and income in the ROI, as determined by the EIFS model. The economic benefits would be short-term, lasting only for the duration of the construction period. These changes in sales volume, employment, and income would fall within historical fluctuations (i.e., within the RTV range) and be considered minor. No change in ROI population would be expected because the proposed RCI action would not change the number of soldiers assigned to USAG.

Housing. Long-term minor beneficial effects on on-post family housing would be expected. The availability of affordable, quality housing in family-oriented communities is a key issue for Army recruiting and retention. Overall quality of life for Soldiers and their families would be improved through implementation of the RCI program at USAG. The proposed action would improve the condition and aesthetic appeal of family housing through revitalization and construction of new units.

Quality of Life. Short-term minor adverse and long-term major beneficial effects on quality of life would be expected. In the short term, noise and traffic from construction of RCI housing could be disruptive to the current residents. In the long term, however, the overall quality of life for Soldiers and their families would be improved through implementation of the RCI program at USAG.

Law Enforcement, Fire Protection, and Medical Services. No effects would be expected. The proposed action would not increase the number of on-post housing units. Police and fire services in the family housing areas would continue to be provided in the same manner as they have in the past. Project revenues would be used to reimburse USAG for police and fire protection services.

No effects on medical services would be expected. Implementation of the proposed RCI action would not change the eligible population of active duty military, military dependents, or retirees within the ROI serviced by on-post military or off-post civilian facilities.

Schools. No effects would be expected. The proposed action would not increase the number of on-post housing units or the number of children living on-post, therefore there would be no adverse effects on schools or school enrollment.

Family Support, Shopping, and Other Services. No effects would be expected. The eligible population of active duty military, military dependents, and retirees within the ROI would not change as a result of the proposed action.

Recreation. Long-term minor beneficial effects would be expected from implementation of the proposed action. New and improved community amenities in the family housing areas would result in long-term minor beneficial effects for on-post family housing residents. The CDMP includes plans for a new neighborhood center in Site F and the Old Hospital would be renovated

to become a Community Center with game rooms, exercise facility, internet café, and meeting rooms. Other recreational facilities include a pool, basketball courts, playgrounds and tot lots throughout the neighborhoods, common areas, and a trail system for walking, jogging, or bike riding.

Environmental Justice. No effects would be expected. Implementation of the proposed action would not result in disproportionate adverse environmental or health effects on low-income or minority populations.

Protection of Children. Short-term minor adverse effects on the protection of children would be expected. In the short term, because construction sites can be enticing to children, construction activity could be an increased safety risk. During construction, safety measures stated at 29 CFR Part 1926, *Safety and Health Regulations for Construction*, and Army Regulation 385-10, *Army Safety Program*, would be followed to protect the health and safety of USMA residents, as well as construction workers.

Transportation

Short-term minor adverse and long-term moderate beneficial effects on transportation would be expected from construction associated with the proposed action. Construction vehicle traffic could increase wear and tear on installation roads and cause minor delays in traffic flow near construction areas. Traffic delays and detours could result from construction activities. Long-term improvements to installation traffic would be expected because of implementation of a CDMP that includes a community-centered plan that would decrease dependency on motor vehicles.

Long-term minor adverse effects on traffic at the Stoney Lonesome Gate would be expected from the addition of family housing units in Site F. Use of Site F would increase traffic primarily at the Stoney Lonesome Gate. The Stoney Lonesome Gate serves as a primary entry/exit point for residents of Housing Areas 38 and 40, which combined have approximately 300 family housing units. The Stoney Lonesome Gate receives approximately 105 vehicles per hour in the DoD lane (about half of its capacity of 206 vehicles per hour), and construction of housing units in Site F would increase off-peak traffic in the lane.

Utilities

Long-term minor beneficial effects would be expected by implementing the proposed action. Given that the number of on-post family housing units would decrease, demand for potable water and energy would decrease and wastewater production would decrease, and all existing utility systems should be more than adequate to handle current and future anticipated demands. In addition, under the Army policy for RCI projects, new, energy-efficient, and low-usage utility systems, appliances, and fixtures would be installed in new and renovated housing units. Army policy stipulates that RCI projects planned or under design must achieve the Gold rating of the SPiRiT System. As a result of the conservation measures and efficient management methods of utilities to be adopted under the SPiRiT rating system, with the goal of attaining the Gold rating, the end-state of 831 units would have a minimal effect on the utility systems.

Long-term minor beneficial effects would be expected from the installation of new distribution and collection lines for water, wastewater, storm water, electricity, natural gas, and communications. All homes would be converted to natural gas heating systems. New and renovated housing units would use Energy Star appliances and would have water-efficient plumbing fixtures such as low-flow showerheads, faucets, and toilets to reduce per capita water and energy consumption and be compliant with the Energy Policy Act of 2005. GMH Military Housing LLC would prepare a Storm Water Pollution Prevention Plan in coordination with the USAG Department of Public Works and the New York State Department of Environmental

Conservation. One-hundred percent of storm water runoff in new construction Site F would be retained with controlled exit and 25 percent of runoff in redeveloped Stony Lonesome I would be retained with controlled exit.

Communications. No effects on communication systems would be expected. Upon privatization of housing at USAG, local service providers would continue to offer phone and cable service to residents. The GMH Military Housing LLC partner would assume responsibility for repair and maintenance of telephone jacks and wiring inside all family housing units.

Solid Waste. Long-term minor adverse effects on landfills would be expected. Debris from the construction, demolition, and renovation of family housing units would increase during the construction period relative to the solid waste typically generated annually by the installation. The proposed action would be expected to generate approximately 26,000 tons of construction and demolition debris (CDD) over the 6-year development period of the RCI program. This would result in about 4,300 tons of CDD debris per year or about 360 tons of CDD debris per month during the 6-year development period. This additional CDD debris would increase the fill rate of existing local area landfills used by USAG.

Hazardous and Toxic Substances

No environmental or health effects resulting from the removal, handling, and disposal of hazardous materials would be expected during demolition, renovation, or construction activities. Before initiating renovation activities, the potential of environmental impacts of special hazards such as ACM and LBP would be evaluated and addressed as specified in the appropriate regulatory requirements. Demolition that involves LBP or ACM would be evaluated for compliance with the OSHA, EPA, and HUD standards; as well as state, federal, and Army regulations. Measures to control airborne asbestos and lead dust would be implemented.

Additional potentially hazardous materials that could be found on-site during RCI-related activities include paints, thinners, asphalt, and fuel and motor oils for vehicles and equipment. All materials would be handled in accordance with established procedures and guidelines.

No adverse environmental or health effects would be expected from potential munitions and explosives of concern (MEC). Potential new housing areas, Undeveloped Areas B and C, overlap former training ranges. If ordnance is found during construction, activities would temporarily cease until appropriate ordnance disposal personnel dispose of it. The installation would provide specific instructions and requirements regarding ordnance related procedures to site workers.

No effects from pesticide use would be expected. Pesticides from an approved-products list would continue to be used at the installation and would be applied in accordance with the Pesticides Management plan. Pesticide residues, including those from Chlordane, that are present in the soils of lawns and maintained areas are not considered a hazardous waste if used as a product at their current location for the intended use.

No effects would be expected from hazardous waste disposal. The current hazardous waste disposal procedures would continue with implementation of the proposed action.

New renovations on housing with elevated radon levels will be required to include radon mitigation systems causing a beneficial effect on radon levels. For all other housing no effects from radon and mold would be expected with implementation of the proposed action.

Cumulative Effects

In addition to the RCI, numerous construction activities on the installation are planned over the next several years. During this period of activity there could be long-term minor adverse cumulative effects to aesthetics and visual resources, geology and soils, and water resources.

Consequences of the No Action Alternative

Only those resources that would be affected are discussed below.

Aesthetic and Visual Resources

Long-term minor adverse effects would be expected. Under the no action alternative, the Army would continue to be responsible for maintenance and renovation of existing housing and new housing construction as necessary. Lack of sufficient funding for this work and the existence of an extensive backlog of work might result in deterioration of existing housing over time. Such deterioration would be expected to adversely affect aesthetic and visual resources.

Socioeconomics

Housing and Quality of Life. Long-term major adverse effects would be expected. Continuation of the present family housing programs would perpetuate deficiencies in quality of life for many soldiers and their dependents. The availability of affordable, quality family housing is a key function of quality of life and is often given high priority by soldiers and their families. The Army would continue to do regular maintenance on existing housing and some renovation and demolition, but these activities would be conducted on a constrained budget. Without adequate funding to address the renovation backlog, housing units could become unsuitable for occupancy.

Protection of Children. Long-term adverse effects on the protection of children would be expected. Under current conditions, hazardous and toxic substances identified in on-post housing units are not health hazards because they have been contained or removed. As homes deteriorate, however, the risk of children's exposure to hazardous and toxic substances (for example, chipping LBP or cracked asbestos tiles) would increase.

Cumulative Effects

The no action alternative would not be expected to result in any cumulative effects.

Table ES-1 summarizes the predicted effects on USMA for each resource area from both the proposed action, identified as the Army's preferred alternative, and the no action alternative.

BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

BMPs and mitigation measures for the proposed Army RCI project would be incorporated into the CDMP. A combination of BMPs and mitigation measures would be expected to reduce, avoid, or compensate for most adverse effects. Table ES-2 summarizes the proposed BMPs and mitigation measures to be implemented for each of the affected resources for USMA.

CONCLUSIONS

On the basis of the analysis performed in this EA, implementation of the preferred alternative would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. Preparation of an Environmental Impact Statement is not required. Issuance of a Finding of No Significant Impact would be appropriate.

**Table ES-1
Summary of Potential Environmental and Socioeconomic Consequences**

| Resource | Environmental and Socioeconomic Consequences | |
|---|--|---------------------------------|
| | Proposed Action | No Action Alternative |
| Land Use | No effects | No effects |
| Aesthetics and Visual Resources | Short- and long-term minor adverse and Long-term moderate beneficial effects | Long-term minor adverse effects |
| Air Quality | Short-term minor adverse and long-term minor beneficial effects | No effects |
| Noise | Short-term minor adverse effects | No effects |
| Geology and Soils | | |
| • Geology and topography | Negligible effects | No effects |
| • Soils | Short-term minor adverse effects | No effects |
| • Prime farmland | No effects | No effects |
| • Petroleum and minerals | No effects | No effects |
| • Seismicity | No effects | No effects |
| Water Resources | | |
| • Surface water | Short-term minor adverse effects | No effects |
| • Groundwater | Short-term minor and Long-term negligible adverse effects | No effects |
| • Floodplains | No effects | No effects |
| Biological Resources | | |
| • Flora and Fauna | Short-term negligible adverse effects | No effects |
| • Sensitive species | | |
| - Threatened and endangered species | No effects | No effects |
| - NY Species of Concern | Short-term minor adverse effects | No effects |
| - Rare plants | Short-term minor adverse effects | No effects |
| - Migratory birds | Short-term minor adverse effects | No effects |
| • Wetlands | Short-term negligible adverse effects | No effects |
| • Unique Ecological Areas | No effects | No effects |
| Cultural Resources | No effects, pending PA with NY SHPO | No effects |
| Socioeconomics | | |
| • Economic development and demographics | Short-term minor beneficial effects | No effects |
| • Housing | Long-term beneficial effects | Long-term major adverse effects |
| • Quality of life | Short-term minor adverse and Long-term major beneficial effects | Long-term major adverse effects |
| • Law enforcement and fire protection | No effects | No effects |
| • Schools | No effects | No effects |
| • Recreation | Long-term minor beneficial effects | No effects |
| • Environmental justice | No effects | No effects |
| • Protection of children | Short-term minor adverse effects | Long-term adverse effects |
| Transportation | Short-term minor adverse and Long-term moderate beneficial effects | No effects |
| Utilities | | |
| • Potable water | Long-term moderate beneficial effects | No effects |
| • Wastewater | Long-term moderate beneficial effects | No effects |
| • Storm water | Long-term moderate beneficial effects | No effects |
| • Energy | Long-term moderate beneficial effects | No effects |
| • Communications | No effects | No effects |
| • Solid waste and recycling | Long-term minor adverse effects | No effects |

Table ES-1
Summary of Potential Environmental and Socioeconomic Consequences

| Resource | Environmental and Socioeconomic Consequences | |
|--------------------------------|--|-----------------------|
| | Proposed Action | No Action Alternative |
| Hazardous and Toxic Substances | No effects | No effects |
| Cumulative | Long-term minor adverse effects to aesthetics and visual resources, geology and soils, and water resources | No effects |

Table ES-2
Summary of Best Management Practices and Mitigation Measures

| |
|---|
| Land Use |
| <ul style="list-style-type: none"> Adhere to optimal land use plans and guidelines outlined in the USMA <i>Real Property Master Plan</i> when siting housing developments. Include vegetative or other buffers, where appropriate, to minimize land use incompatibilities. |
| Aesthetics and Visual Resources |
| <ul style="list-style-type: none"> Design housing units in a regionally appropriate architectural style as outlined in the <i>USMA Installation Design Guide</i>. Revegetate housing areas with native vegetation. Maintain trees and native vegetation wherever possible. Preserve historic and cultural landscapes. |
| Air Quality |
| <ul style="list-style-type: none"> Implement BMPs (e.g., wetting the soil during and at the end of the construction day). Clean areas during and after workday of soil from roadways. Cover trucks transporting soil with a tarp. |
| Noise |
| <ul style="list-style-type: none"> Use earthen berms and tree buffers to separate noise-producing land uses from housing areas where appropriate. Limit construction activities to daylight hours. |
| Geology and Soils |
| <ul style="list-style-type: none"> Obtain Storm Water Permit with accompanying Storm Water Pollution Prevention Plan, if required. Use BMPs, such as silt fencing and hay bales, to control surface erosion and runoff. Follow protocols outlined in the storm water NPDES permit and state sediment and erosion control guidelines. Implement a Storm Water Pollution Prevention Plan, if required. Reseed and revegetate area following construction activities. |
| Water Resources |
| <ul style="list-style-type: none"> Implement BMPs, such as silt fencing, hay bales, to control surface erosion and runoff. Reseed and revegetate area following construction activities to minimize impacts. Encourage low-impact development designs. Install water-efficient appliances (e.g., low-flow showerheads, faucets, and toilets). |

Table ES-2
Summary of Best Management Practices and Mitigation Measures

Biological Resources*Vegetation*

- Limit disturbed areas to the current housing footprint and a minimal amount of the adjacent construction staging areas.
- Plant native trees near homes, in parks, in open spaces, and around storm water management structures.
- Employ erosion control practices and tree protection devices at all proposed sites to protect vegetation and habitat areas.

Wildlife

- Preserve associated roads, existing parks, and large blocks of existing native vegetation on each site to act as buffers and wildlife corridors.
 - Use tree protection BMPs during construction of new developments to maintain natural habitat areas.
-

Cultural Resources

- Avoid and protect sites in the project areas during construction activities.
 - If avoidance and/or protection of the sites are not feasible, then a Memorandum of Agreement would be developed between USAG and the New York SHPO to determine measures to be implemented to mitigate the adverse effect.
 - USAG must complete and sign a Programmatic Agreement with the NY SHPO. This PA shall include legally enforceable stipulations that ensure the long-term preservation of all historic resources IAW 36 CFR 800.
 - All historic properties shall be treated IAW the appropriate option as outlined in the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.
 - All new construction shall reflect the architectural traditions of West Point and be sympathetic to the Hudson River Valley National Heritage Area.
-

Socioeconomics and Protection of Children

- Place barriers and *No Trespassing* signs around construction sites where practicable.
 - Avoid the use of building products containing hazardous materials.
 - Secure construction vehicles and equipment when not in use.
-

Traffic and Transportation

- Optimally route and schedule all RCI construction vehicle traffic.
 - Locate construction material staging areas in locations that would minimize traffic impacts.
 - Expand government-operated shuttle bus routes to include new housing areas.
 - Incorporate traffic-calming measures into the housing areas.
 - Include overall design improvements, such as walkways and bicycle paths, to reduce reliance on vehicles and to create more connected, pedestrian-friendly communities.
-

Utilities*Potable Water*

- Install water-efficient devices, such as low-flow showerheads, faucets, and toilets, in all new facilities.

Energy

- Install energy-efficient interior and exterior lighting fixtures and controls in all new facilities to reduce electrical demands.
-

Table ES-2
Summary of Best Management Practices and Mitigation Measures

Hazardous and Toxic Substances

- Before initiating renovation activities, evaluate environmental impacts and address them in accordance with the appropriate regulatory requirements.
 - Implement measures to control airborne asbestos and lead dust.
 - Conduct lead-in-soil testing before construction activities begin, and address the presence of lead in accordance with regulatory requirements.
 - Evaluate and dispose of excavated soils contaminated with lead, pesticides, and hazardous materials in accordance with applicable regulations.
 - Evaluate and dispose of demolition materials in accordance with applicable regulations at the time of demolition.
 - Establish smoking areas and prohibit open flames near flammable material.
-

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SECTION 1.0

PURPOSE, NEED, AND SCOPE

1.1 BACKGROUND

1.1.1 General

The Army operates and maintains approximately 90,000 family housing units at its installations throughout the United States. More than 75 percent of the units do not meet current Army housing standards. Nevertheless, at most installations demand for adequate housing on-post exceeds supply. The lack of adequate on-post housing forces many Soldiers and their families to live in housing in need of repair or renovation or to live off-post where the cost and quality of housing vary considerably. Often, the costs to Soldiers and their families to live off-post are greater than their entitlement to Basic Allowance for Housing (BAH). The Army estimates that as much as \$6 billion would be needed to bring its housing up to current standards and to address the deficit of housing.

1.1.2 Regulatory

In recognition of these problems, Congress enacted section 2801 of the 1996 Defense Authorization Act (Public Law 104-106, codified at Title 10 of the *United States Code* [U.S.C.] sections 2871–2885). Also known as the Military Housing Privatization Initiative (MHPI), this provision of law creates alternative authorities for improvement and construction of military family housing. The legislative intent of Congress in enacting these additional authorities is to enable the military to obtain private sector funding to satisfy family housing requirements. By leveraging scarce public funding, the Army can obtain private sector funds for construction, maintenance, management, renovation, replacement, rehabilitation, and development of Army family housing and ancillary supporting facilities.¹ The Army's implementation of the MHPI authorities is known as the Army Residential Communities Initiative (RCI).

1.1.3 U.S. Military Academy

The United States Army Garrison (USAG), West Point, New York, is located along the Hudson River approximately 50 miles north of New York City. The 16,000-acre installation, founded in 1802, is home of the United States Corps of Cadets, which graduates more than 900 new officers each year. USMA is a National Historic Landmark District, the highest federal designation afforded to historic properties in the United States. It is also within the Hudson River Valley National Heritage Area. (T. Beckwith, pers. comm., 26 November 2007).

Other occupants of USAG include the Dean of the Academic Board, the Directorate of Intercollegiate Athletics, and the Association of Graduates. In 2009, the United States Military Academy Preparatory School will relocate from Fort Monmouth, New Jersey, to West Point. The installation has approximately 12,500 military and civilian personnel and an inventory of 964 family housing units (A. Bjornsen, USMA, pers. comm., 1 August, 2006). The location of West Point is shown in Figure 1-1.

¹ According to 10 U.S.C. section 2871, the term *ancillary supporting facilities* means “facilities related to military housing units, including child care centers, day care centers, tot lots, community centers, housing offices, dining facilities, unit offices, and other similar facilities for the support of military housing.”



LEGEND

- RCI Footprint
- Alternate RCI Area
- Potential Support Facility
- Installation Boundary
- State Boundary
- County Boundary
- Urban Area
- Interstate Highways

Installation Location

Source: USAG GIS, 2006.

Figure 1-1

1.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

Consistent with the MHPI authorities, USMA proposes to transfer responsibility for providing housing and ancillary supporting facilities to GMH Military Housing LLC, a limited liability company (LLC) composed of the Army and a development team consisting of BMH Military Housing Management LLC, GMH Military Housing Development LLC, Niles Bolton Associates, and Balfour Beatty Construction. USAG would convey all on-post military housing units and selected ancillary supporting facilities and grant a 50-year ground lease for the land on which the housing and facilities are located to GMH Military Housing LLC. USAG would also lease additional areas for GMH Military Housing LLC's use to construct new housing and to operate ancillary supporting facilities.

The purpose of the proposed action is to improve Army family housing and ancillary supporting facilities at USAG. The proposed action is needed to provide affordable, quality housing and ancillary supporting facilities to Soldiers and their families through a combination of replacing and improving existing family housing units to ensure that they meet current Army standards. USAG expects GMH Military Housing LLC to achieve the following goals:

- Ensure that eligible soldiers and their families have access to quality, attractive, and affordable housing by upgrading inadequate existing family housing and by building new housing to address housing conditions at USAG
- Improve the appearance and functions of the residential community, while meeting environmental stewardship responsibilities
- Provide ancillary supporting facilities, such as community centers, neighborhood playgrounds, that enhance USAG's residential community
- Maintain positive relations with the communities that surround USAG
- Provide for the effective management and operation of existing, renovated, and new housing units and ancillary supporting facilities on a long-term basis

The age and condition of USAG family housing units vary. USAG was designated a National Historic Landmark District in 1960. Of the post's 964 family housing units, 391 units are eligible for listing on the National Register of Historic Places. The sizes, configurations, safety, and condition of many of the USAG housing units are substantially below the Army's standards of acceptability. Of the post's housing inventory, 579 family housing units were built before 1963. Many older units lack amenities such as family rooms, laundry/utility space, adequate exterior storage, and auxiliary eating areas such as eat-in kitchens or breakfast nooks. Except for housing built after the 1970s, the housing units contain at least some lead-based paint, and there may still be some asbestos-containing materials within walls, floors, crawl spaces, and utility chases of housing units. Funding shortfalls over the years have limited renovations, resulting in increased maintenance requirements. Without adequate funding to address the renovation backlog, housing units could become unsuitable for occupancy.

1.3 SCOPE OF ANALYSIS

This environmental assessment (EA) has been developed in accordance with the National Environmental Policy Act (NEPA) and implementing regulations issued by the Council on Environmental Quality (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decision-makers and the public of the potential environmental consequences of the proposed action and alternatives.

The EA identifies, documents, and evaluates the potential environmental effects of implementing

the Army RCI at USAG. Section 2.0 describes the proposed action. Section 3.0 sets forth alternatives to the proposed action, including a no action alternative, and explains why certain alternatives are not evaluated in detail. Section 4.0 describes existing environmental conditions at USAG that could be affected by the proposed action and identifies potential environmental effects that could occur upon implementation of each of the alternatives evaluated. Section 5.0 presents conclusions regarding the potential environmental effects of the proposed action.

This EA evaluates the environmental and socioeconomic effects that would be expected to occur upon implementation of the proposed action as reflected in the Community Development and Management Plan (CDMP), the agreement ultimately negotiated by and between USAG and GMH Military Housing LLC. Because of financial, environmental, or other reasons, certain choices—such as alternative housing sites, housing densities, housing formats (high-rise vs. low-rise), types of ancillary supporting facilities, and timing of specific USAG actions—were eliminated from further consideration during CDMP negotiations.

An interdisciplinary team of environmental scientists, biologists, ecologists, geologists, planners, economists, engineers, archeologists, historians, lawyers, and military technicians reviewed the proposed action in light of existing conditions and has identified relevant beneficial and adverse effects associated with the action. The EA focuses on effects likely to occur within the project area, which generally consists of the present family housing areas and new parcels to be used for family housing. The document analyzes direct effects (those caused by the proposed action and occurring at the same time and place) and indirect effects (those caused by the proposed action and occurring later in time or farther removed in distance but still reasonably foreseeable). The EA also addresses potential for cumulative effects and identifies mitigation measures where appropriate.

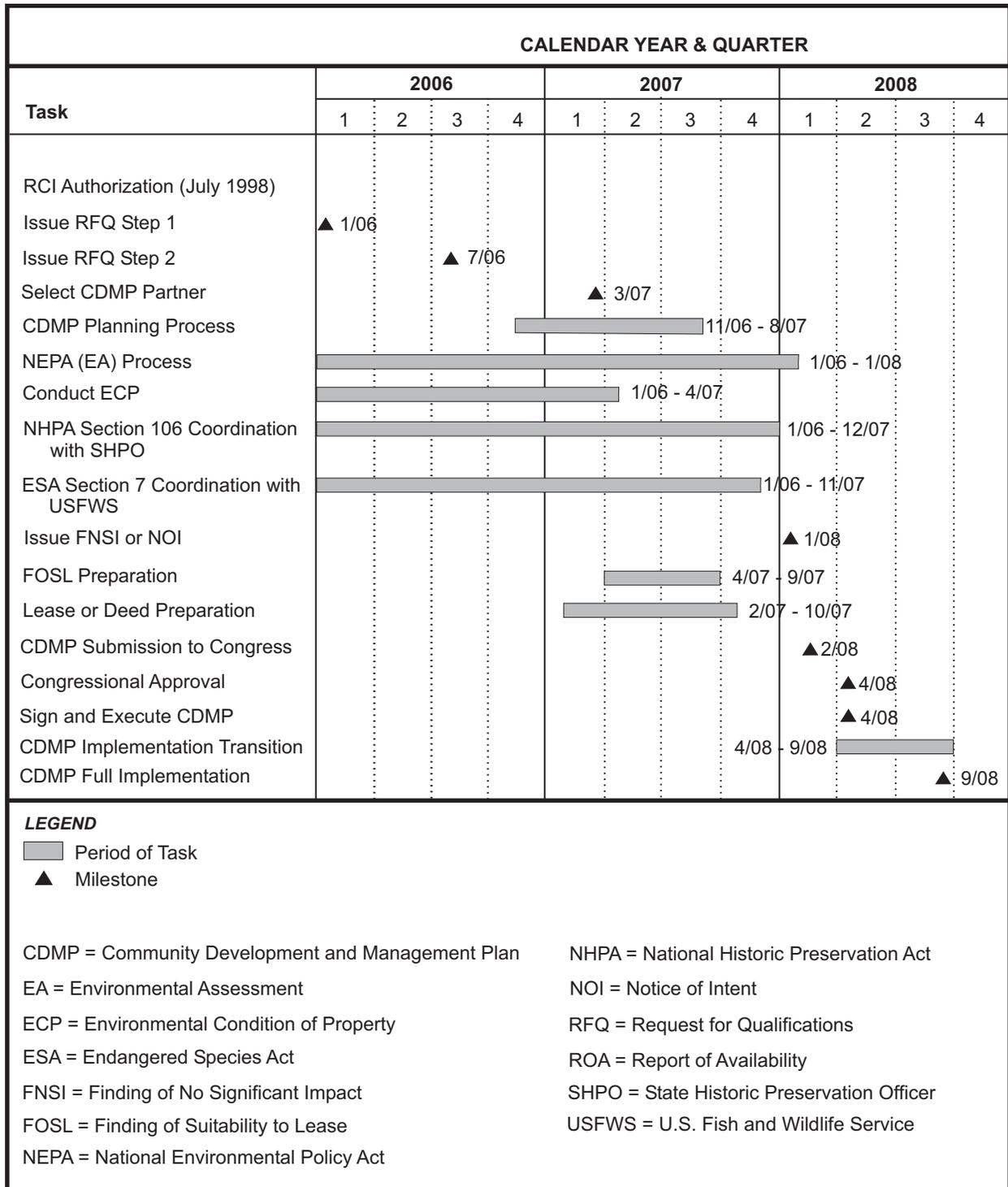
This EA focuses on evaluation of environmental effects that are reasonably foreseeable, approximately within the first 6 years of implementation of the CDMP (through 2014), as described in detail in Section 2.2.1. This is the period during which GMH Military Housing LLC would demolish and renovate existing housing units, construct new family housing, and operate and maintain the housing units and ancillary supporting facilities. Projecting potential environmental effects beyond 2014 would be speculative, and therefore they are not analyzed in this EA.

This EA identifies matters related to environmental considerations and supports decision-making on proposed RCI actions. Consistent with Army and other federal regulations and policies, the Army must undertake numerous other actions to achieve its objectives. Many of these other actions result in the availability of information for use in this EA. Figure 1-2 identifies the timeline for the EA process in relation to other actions that accompany the RCI effort.

1.4 PUBLIC INVOLVEMENT

USAG invites public participation in the NEPA process. By considering the views and information of all interested persons, USAG promotes open communication and enables better decision-making. USAG urges all agencies, organizations, and members of the public having a potential interest in the proposed action—including minority, low-income, disadvantaged, and Native American groups—to participate in the decision-making process.

The Army's NEPA guidance provides for public participation in the NEPA process. If the EA concludes that the proposed action would not result in significant environmental effects, USAG may issue a draft Finding of No Significant Impact (FNSI). USAG will then observe a 30-day period during which agencies and the public may submit comments on the proposed action, the EA, or the draft FNSI. After considering any comments received from the public or agencies, USAG may approve the FNSI and implement the proposed action. If, however, during



RCI Project Schedule

USAG, West Point, New York

Figure 1-2

development of the EA it is determined that significant effects would be likely, the Army will issue a Notice of Intent to prepare an Environmental Impact Statement.

Throughout this process, the public may obtain information on the status and progress of the proposed action and the EA by contacting George Markt, NEPA Coordinator, by mail at U.S. Army Garrison, Directorate of Public Works, Bldg. 667 Ruger Road, West Point, NY 10996 or by e-mail at george.markt@usma.edu.

1.5 FRAMEWORK FOR ANALYSIS

Numerous factors determine the decision on whether to proceed with the proposed action, such as USAG's mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, USAG follows several relevant statutes (and implementing regulations) and Executive Orders that establish standards and provide guidance on environmental and natural resource management and planning. These include NEPA and the Clean Air Act, Clean Water Act, Noise Control Act, Endangered Species Act, Coastal Zone Management Act, National Historic Preservation Act, Archaeological Resources Protection Act, Resource Conservation and Recovery Act, Toxic Substances Control Act, Executive Order 11988 (*Floodplain Management*), Executive Order 11990 (*Protection of Wetlands*), Executive Order 12088 (*Federal Compliance with Pollution Control Standards*), Executive Order 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), and Executive Order 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*). Note that this list is not all-inclusive, and other federal, state and local regulations may apply. Where useful to enhance better understanding, key provisions of these statutes and Executive Orders are described in more detail in the text of the EA.

SECTION 2.0

PROPOSED ACTION

This section presents information on the Army's RCI program and USAG's proposed action under that initiative. Section 2.1 describes the Army's RCI program in general, and the legislative authorities in detail, while Section 2.2 describes more specifically how USAG would implement the CDMP. Implementation of the proposed action as described in Section 2.2 is USAG's preferred alternative for privatization of family housing. Section 3.0 presents other alternatives.

Consistent with authorities contained in the 1996 MHPI, USAG proposes to transfer responsibility for providing housing and ancillary supporting facilities to GMH Military Housing LLC, a partnership consisting of the Army and GMH Military Housing LLC, a private sector development company. GMH Military Housing LLC has developed a CDMP to implement the MHPI at USAG.

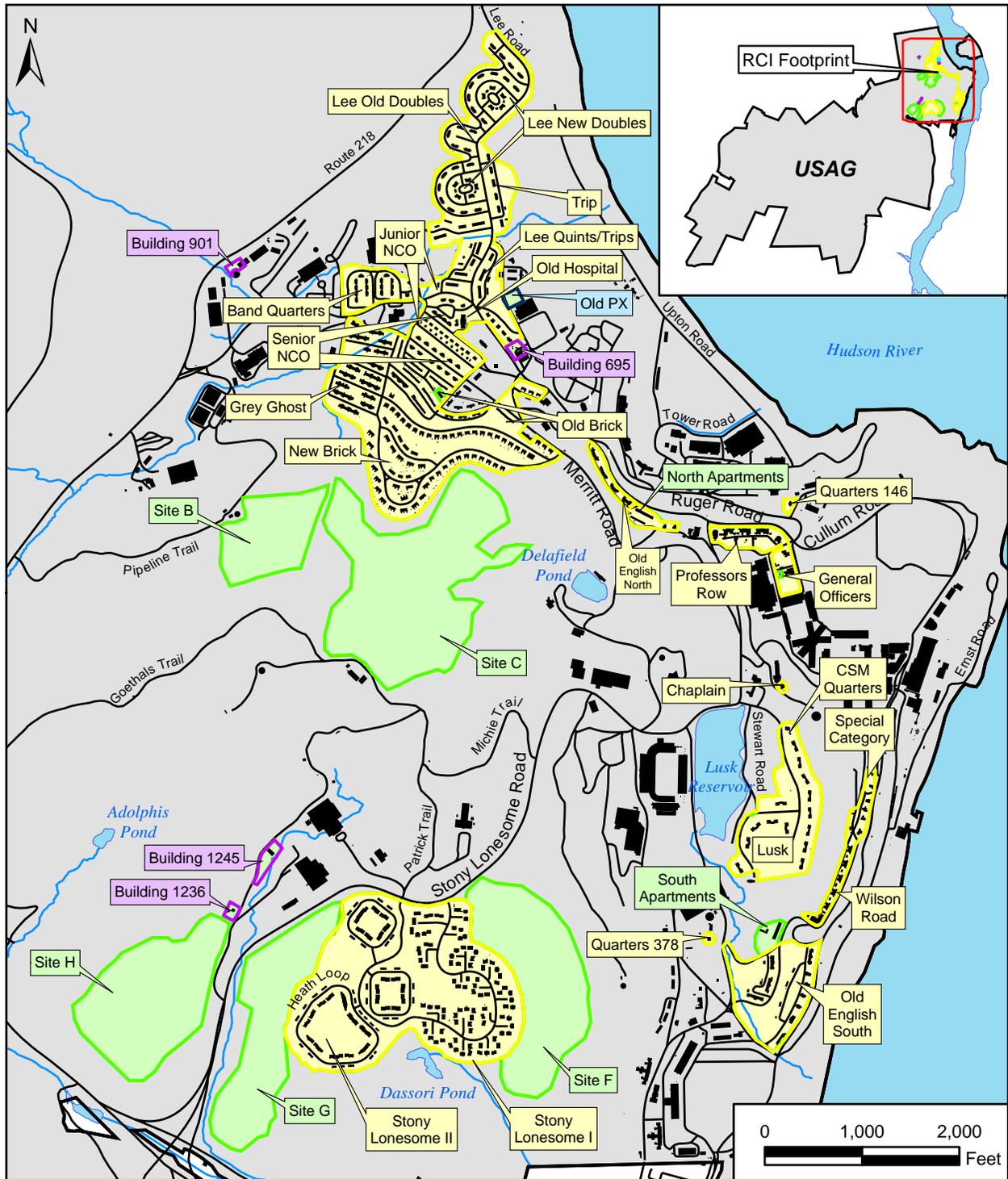
GMH Military Housing LLC developed the CDMP in an iterative process during which they fine-tuned the plan to meet USAG's needs for attaining affordable, quality housing and other facilities while minimizing or avoiding any potential environmental impacts. An excerpt from the CDMP is provided in Appendix A. In accordance with the CDMP, USAG proposes the following:

- To convey 963 of the 964 existing family housing units to GMH Military Housing LLC, and provide GMH Military Housing LLC with a 50-year lease for 210.5 acres of the underlying land. Figures 2-1 and 2-2 show the locations of USAG's existing housing and proposed developable areas.
- To lease an additional 40 acres (Site F) to GMH Military Housing LLC for the siting of new housing. Originally, USAG had selected five sites consisting of a total of 175 acres from which the GMH Military Housing LLC could choose to develop. Site F is the only site chosen for development.
- To convey Building 695, 901, 1236 or 1245 as a maintenance and support facility, and to lease the field behind the old PX building for the purpose of constructing a community pool.

The plan for the inventory of 963 units conveyed to GMH Military Housing LLC is to renovate 206 existing historical homes, convert 174 existing historical homes into 87 expanded historical homes, construct a total of 158 state-of-the-art homes and demolish 196 homes. As a result of these actions, USAG's end state inventory of family housing would stand at 831 units. Table 2-1 indicates the breakdown of units by housing area and Table 2-2 [Preparer's Note: awaiting this information from GMH Military Housing LLC] presents the phasing plan for the development.

In addition, the development plan includes a new Community Center of approximately 2,500 square feet in Site F and the conversion of approximately 4,500 square feet of the Old Hospital into a Community Center. Preliminary plans for the community centers include meeting rooms, an internet café, a lounge, game rooms, restrooms, and a kitchen and dining area. Other ancillary facilities will consist of common areas, a swimming pool, basketball courts, a trail system, playgrounds, and tot lots throughout the neighborhoods.

The initial development plan would be implemented over a 6-year period beginning in 2008. New housing units would be constructed before demolition or rehabilitation of existing housing units to provide a pool of housing to prevent a housing shortage during construction and renovation. Some families might have to move off-post or to another house on-post as a result of construction activities.



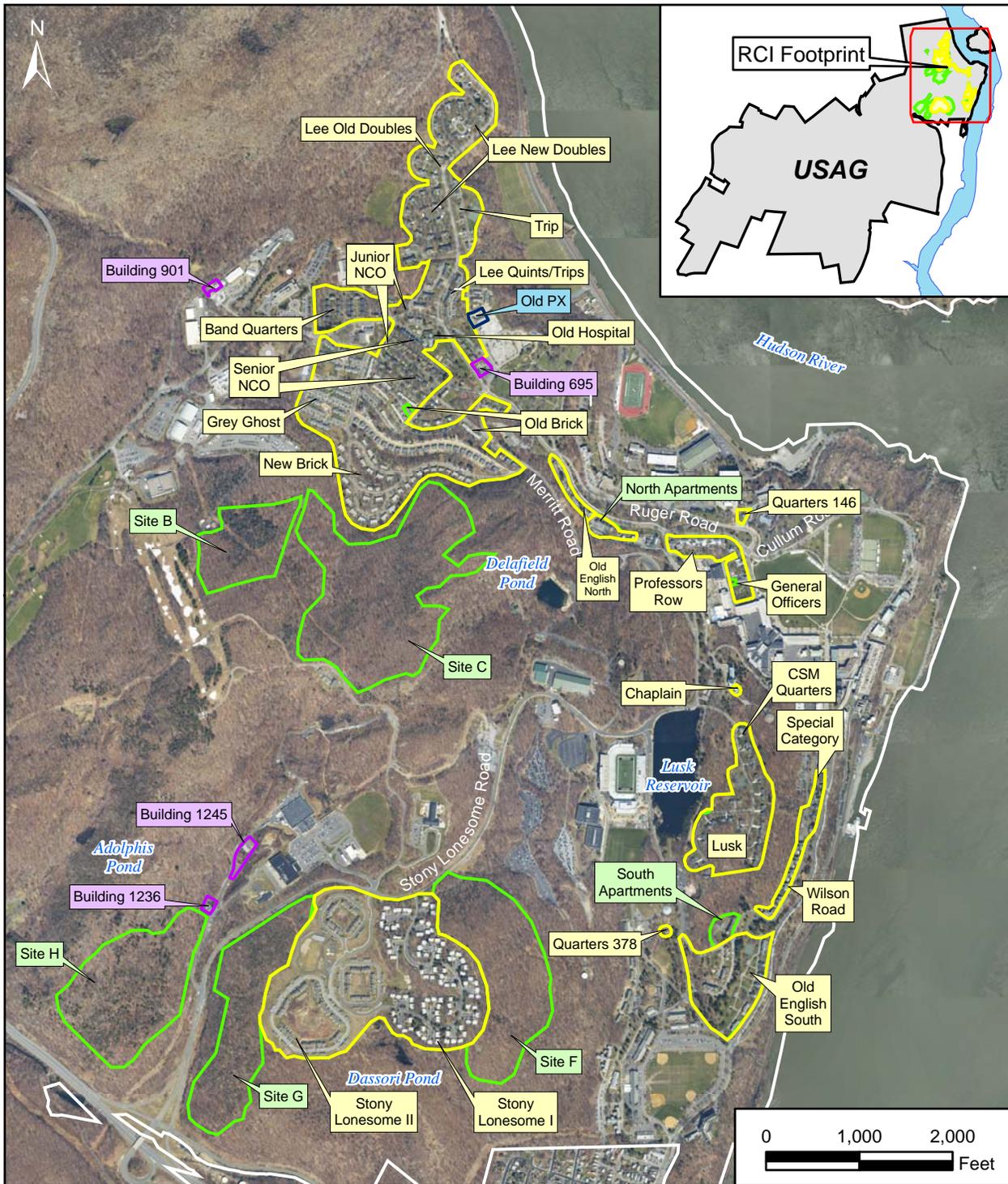
LEGEND

- RCI Footprint
- Alternate RCI Area
- Potential Support Facility
- Potential Community Facility
- Installation Boundary
- Building
- Road

Site Location

Source: USAG GIS, 2006.

Figure 2-1



LEGEND

- RCI Footprint
- Alternate RCI Area
- Potential Support Facility
- Potential Community Facility
- Installation Boundary

Site Photo

Source: USAG GIS, 2006.

Figure 2-2

**Table 2-1
Initial USAG Development Plan by Housing Area**

| Neighborhood | Existing | Proposed | | | | Final |
|-------------------|------------|------------|------------|---------------------|----------------|------------|
| | Inventory | Demolish | Construct | Renovate /Convert | No Work | Inventory |
| GOQ | 3 | - | - | 3 | - | 3 |
| Professor's Row | 6 | - | - | - | 6 | 6 |
| Lusk | 29 | - | - | 28 | 1 | 29 |
| Old English South | 23 | - | - | 5 | 18 | 23 |
| Chapel | 1 | - | - | 1 | - | 1 |
| Wilson Road | 10 | - | - | 10 | - | 10 |
| Old English North | 8 | - | - | 4 | 4 | 8 |
| Lee Area | 128 | - | - | 128 | - | 128 |
| Special Category | 28 | 6 | - | 6 / 12→6 | 4 to other use | 12 |
| Grey Ghost | 77 | - | - | - | 77 | 77 |
| New Brick | 156 | - | - | - | 156 | 156 |
| Old Brick | 56 | - | - | 56→28 | - | 28 |
| Biddle Loop | 32 | - | - | 32→16 | - | 16 |
| Merritt Road | 24 | - | - | 24→12 | - | 12 |
| Stony Lonesome I | 190 | 190 | 158 | - | - | 158 |
| Stony Lonesome II | 118 | - | - | - | 118 | 118 |
| JNCO | 21 | - | - | 1 / 20→10 | - | 11 |
| South Apartments | 12 | - | - | 10 | 2 to storage | 10 |
| North Apartments | 11 | - | - | 10 | 1 to storage | 10 |
| Band | 30 | - | - | 30→15 | - | 15 |
| Total | 963 | 196 | 158 | 206 / 174→87 | 380 | 831 |

2.1 THE ARMY RESIDENTIAL COMMUNITIES INITIATIVE

2.1.1 Army RCI Procedures

The MHPI grants the Department of Defense (DoD) and the Military Services new authorities for obtaining family housing and ancillary supporting facilities. The essence of the authorities is that they comprehensively allow access to private sector financial and management resources for the improvement, construction, operation, and maintenance of family housing. The Army RCI program implements the 1996 MHPI.

The goal of the Army RCI is to provide affordable, quality housing for Soldiers and their families. However, implementing RCI projects is complex. Projects typically involve large numbers of family housing units, and they represent sizable financial stakes for both the private sector developer and the Army. Moreover, project implementation is complex because of the considerable amount of planning, coordination, and oversight that must occur among diverse functions such as engineering, finance, real estate, housing management, law, and others including the local community.

An RCI project normally addresses an installation's entire inventory of family housing. It might also address required ancillary supporting facilities such as community centers, neighborhood playgrounds, housing offices, and maintenance facilities. An RCI project typically has seven major steps:

Deciding to participate in the Army RCI. The initial decision whether an installation will participate in the Army RCI rests with the Installation Commander. Many considerations can influence the Commander's decision, such as the general condition and availability of family housing for Soldiers assigned to the installation, the number of personnel on waiting lists for family housing, the length of time required to obtain family housing, and private sector housing costs near the installation. A Commander's decision to participate in the initiative does not necessarily mean that an RCI project will ultimately occur; rather, it means that planning for the project may proceed.

Determining the preliminary requirements. An RCI project has five very visible components: (1) constructing new housing, (2) demolishing existing housing that is obsolete or beyond economical repair or rehabilitation, (3) renovating housing, (4) providing ancillary supporting facilities, and (5) operating and maintaining the housing inventory. Upon an installation's entry into the Army RCI, the installation must gather and verify information to support decisions about requirements for each component. Also, they might need to identify suitable locations for siting new housing or ancillary supporting facilities.

To help reach these preliminary determinations, the Installation Commander initiates several studies and reports. Among these are a Report of Availability (identifying areas that might be leased to a developer/private sector entity, referred to as the *development entity*), an Environmental Baseline Survey (examining potential contamination at the proposed lease site), and DA Form 337 (identifying buildings and improvements that might be conveyed to the development entity as part of the CDMP). The Installation Commander may begin analysis of potential environmental effects at this early stage of the project's planning. Other studies that the Installation Commander might also initiate include a Housing Market Analysis and engineering studies pertaining to utility capacity, soil testing, and boundary delineation. For RCI projects involving housing eligible for listing in the National Register of Historic Places, the Installation Commander should initiate consultation under section 106 of the National Historic Preservation Act (NHPA). In all cases, the Installation Commander initiates coordination with local school districts to ensure local officials' ability to plan for and accommodate the educational needs of children.

Conducting a Two-step Request for Qualifications. The Army RCI Project Office, within Headquarters, Department of the Army, oversees a two-step Request for Qualifications (RFQ). Step 1 of the RFQ identifies potential development partners that are highly qualified with respect to experience, financial capability, organization (corporate level), past performance, and small business utilization (general history). Offerors meeting these requirements constitute an exclusive competitive range. In Step 2 of the RFQ process, the RCI Project Office awards a development entity a contract to partner with the Army and create a CDMP. The award is made on the basis of the firm's submittal, which addresses the preliminary concept, financial return, organizational capabilities, and small business plan.

Negotiating the CDMP. The installation and development entity identify and agree upon, through negotiation, requirements for new construction, demolition, renovation, and ancillary supporting facilities, as well as future operation and maintenance of family housing. It is during this planning and negotiating process that a variety of options or alternatives for family housing (e.g., housing sites and housing densities) and ancillary supporting facilities (e.g., types of facilities and possible locations) are considered and some dismissed for financial, or other

reasons. During this time, the NEPA analysis is conducted and coordinated with development of the CDMP. Through this coordination, some potential alternatives are dismissed because of environmental concerns, while any remaining environmental issues are considered and appropriate minimization and mitigation measures are identified.

Throughout development of the CDMP, the Army evaluates the development entity's approaches to various issues bearing on environmental stewardship. These include matters affecting potential savings with respect to energy conservation, recycling (both during demolition and construction and during later home ownership), natural landscaping and vegetative cover, and similar *smart* building and operational practices. The resulting CDMP contains all the details of the RCI project, including all work to be done, financing arrangements, and schedules.

Approving the CDMP. The Installation Commander submits the negotiated CDMP through command channels to Headquarters, Department of the Army, for concurrence. The CDMP is then submitted to DoD for approval and the congressional committees responsible for MHPI oversight are notified. The approval process authorizes the installation's access to the Family Housing Improvement Fund, a revolving fund established for the MHPI, as well as the installation's use of the MHPI's authorities as set forth in the negotiated CDMP.

Ratifying the CDMP. On the basis of DoD's approval of the use of statutory authorities and the revolving fund, West Point and the development entity sign the CDMP. Analysis of potential environmental effects in accordance with NEPA, as well as compliance with the Coastal Zone Management Act and section 106 of the NHPA, is completed before approving (signing) the CDMP.

Transferring Operation and Implementation of the CDMP. The CDMP is implemented in accordance with its terms.

2.1.2 Legislative Authorities

The Army determines the scope of an RCI project primarily by analyzing the condition of existing housing and considering additional housing requirements to address the installation's deficit of affordable, quality housing. These factors drive the amount of new construction, demolition, and renovation and the number of ancillary supporting facilities needed at an installation. Negotiation of the CDMP includes selecting the appropriate legislative authorities to support fulfillment of the installation's family housing needs. These provisions give the Army and its development entity exceptional flexibility to create successful business arrangements for the benefit of Soldiers and their families. The sections below summarize the authorities (with their U.S.C. citations).

Direct loans. The Army may make direct loans to an eligible entity to provide funds to the eligible entity for the acquisition or construction of housing units that are suitable for use as military family housing. (10 U.S.C. 2873(a)(1))

Loan guarantees. The Army may guarantee a loan to an eligible entity, if the eligible entity uses the proceeds of the loan to acquire or construct housing units that the Army determines are suitable for use as military family housing. (10 U.S.C. 2873(b))

Investment in nongovernmental entities. The Army may make investments in an eligible entity carrying out projects for the acquiring or constructing of housing units suitable for use as military family housing. An investment may take the form of an acquisition of a limited partnership interest, a purchase of stock or other equity instruments, a purchase of bonds or other debt instruments, or any combination of such forms of investment. (10 U.S.C. 2875(a), (b))

Differential lease payments. Pursuant to an agreement to lease military family housing, the Army may pay the lessor an amount in addition to the rental payments made by military occupants to encourage the lessor to make the housing available to military members. (10 U.S.C. 2877)

Conveyance or lease of existing property and facilities. The Army may convey or lease property or facilities, including ancillary supporting facilities, to eligible entities for purposes of using the proceeds of such conveyance or lease to carry out activities under the initiative. (10 U.S.C. 2878)

Conformity with similar local housing units. The Army will ensure that the room patterns and floor areas of military family housing units acquired or constructed under the initiative are generally comparable to the room patterns and floor areas of similar housing units in the locality. Space limitations by pay grade or military family housing units provided in other legislation will not apply to housing acquired under the initiative. (10 U.S.C. 2880(a), (b))

Ancillary supporting facilities. Any project for acquiring or constructing military family housing under the initiative may include acquiring or constructing ancillary supporting facilities. (10 U.S.C. 2881)

Lease payments through pay allotments. The Army may require Soldiers who lease housing acquired or constructed under the initiative to make lease payments by allotments from their pay. (10 U.S.C. 2882(c))

2.2 IMPLEMENTATION OF THE PROPOSED ACTION

The proposed CDMP would include a number of actions to be undertaken by USAG and GMH Military Housing LLC. This section provides an overview of the CDMP. An excerpt from the CDMP is provided in Appendix A. Under the CDMP, GMH Military Housing LLC would respect and respond to the existing natural and built environment to minimize impact and to capitalize on the value of existing conditions. GMH Military Housing LLC would reflect the following environmental principles in its planning:

- Design housing areas to respect the existing natural systems of topography, vegetation, and drainage.
- Maintain Historic Landscapes and Historic Neighborhoods, which are important considerations, and the historic and architectural appearance of West Point.
- Design developed areas to minimize ground works, aboveground utilities, and drainage.
- Preserve existing landscape in all possible situations.
- Populate the landscape largely with native plant materials.
- Design a water-management system to handle both the quantity and quality of storm water runoff.
- Design the community to reduce dependency on the car.
- Heighten the sense of community with improved and linked open spaces, strategic tree locations, trail systems, activity areas, and street layouts that enhance the quality of outdoor life.
- Integrate existing built and non-built landscapes with the new.
- Maximize the planned development water conservation and energy conservation, and incorporate sustainable design measures.

2.2.1 Community Development and Management Plan Provisions

2.2.1.1 Lease of land

USAG would grant GMH Military Housing LLC a lease of the approximately 210.5 acres currently used for family housing and family housing support. USAG would also grant a 50-year lease for a parcel in other areas totaling approximately 40 acres for siting of a new community center and ancillary supporting facilities to be constructed, operated, and maintained by GMH Military Housing LLC. Leasing of these parcels would be subject to several conditions imposed by the Army. The lease would be subject to all existing easements, or those subsequently granted, as well as established access routes for roadways and utilities located, or to be located, on the premises. The lease would include clauses

- Prohibiting GMH Military Housing LLC from storing hazardous wastes (above those quantities generated in routine operations and immediately disposed of) or taking any actions that would cause irreparable injury to the land. GMH Military Housing LLC would be required to comply with all applicable federal, state, interstate, and local laws, regulations, conditions, or instructions affecting its activities. The Army would also include clauses in the leases permitting the Army's periodic inspection of the property to ensure its safe condition and its proper use in accordance with the terms of the lease.
- Prohibiting the discharge of waste or effluent from the premises in such a manner that the discharge would contaminate soils, streams or other bodies of water or otherwise become a public nuisance. Requiring the prompt reporting of any leaking, blockage, or other malfunction of the sanitary sewer lateral leading to the sanitary system. RCI locations must comply with the Municipal Separate Storm Sewer System (MS4) General Permit No. NYR20A334. All discharges to the sanitary sewer system must be sanitary discharges only and not cause Target Hill sanitary sewer plant to violate its discharge permit limits.
- Prohibiting the removal or disturbance of, or causing or permitting to be removed or disturbed, any historical, archeological, architectural, or other cultural artifacts, relics, remains, or objects of antiquity. In the event such items would be discovered, GMH Military Housing LLC would be required to immediately notify the Installation Commander or his designated representative and protect the site and the material from further disturbance until the Installation Commander or designated representative gives clearance to proceed (see SOP DHPW 16-1).
- Requiring maintenance of all soil and water conservation structures and the taking of appropriate measures to prevent or control soil erosion on the premises. These measures would be addressed in permits (e.g., Clean Water Act section 404) and in a Storm Water Pollution Prevention Plan (SWPPP).
- Prohibiting cutting timber; mining operations; removing sand, gravel, or like substances from the ground; burying waste of any kind; or in any manner substantially changing the contour or condition of the premises except as authorized through permits or by the Installation Commander or his designated representative.
- Any operation or activity that produces air contaminants from industrial or commercial type operations such as maintenance shops, welding or brazing operations, spray painting operations, air conditioning repair and maintenance, must be approved by EEB and, if necessary, prepare the appropriate air permit applications for submittal to the regulatory agency by EEB.
- Requiring long-term preservation of historic housing units and landscapes, and conformity to

the provisions contained within the Programmatic Agreement. Historic housing units are to be treated in accordance with the Secretary of the Interior's *Standards for the Treatment of Historic Properties*.

2.2.1.2 Existing family housing areas

The cantonment area of USAG is the largely developed area that contains command and administrative offices, industrial facilities, warehousing, support facilities, and housing and billeting areas. USAG's family housing is in various housing areas in or near the installation's cantonment area.

Housing at USAG consists of properties that are considered historically significant and individually eligible for listing in the National Register of Historic Places (*Register*), as well as contemporary properties that are not eligible. These properties are in distinctly identifiable areas as follows:

- *General Officer Quarters*. Three general officer quarters constructed between 1820 and 1857. Quarters 100, which houses the Superintendent, is the oldest remaining residence at USMA. Quarters 101 houses the Commandant, and Quarters 102 houses the Dean. All are contributing elements to the National Historic Landmark District (*District*), and each is individually eligible for listing in the Register. All units are two-story buildings with basements.
- *Professors Row*. Six duplexes constructed between 1821 and 1828 are contributing elements to the District and individually eligible for listing in the Register. These units house the most senior professors and other senior staff at USMA. All units are three-story buildings with basements.
- *Old English South*. A mix of 23 single family, duplex and triplex brick buildings constructed between 1891 and 1910 in the English Gothic style. The neighborhood is in the southern portion of USMA and features dramatic views of the Hudson River. The six-bedroom multifamily units were constructed as the result of a design competition between 1908 and 1910. All units are contributing elements to the District and are individually eligible for listing in the Register. These six-bedroom units are allocated as senior officer and field grade officer quarters.
- *Old English North*. Eight brick duplex units constructed in 1909 in the English Gothic style. These buildings are architecturally similar to Old English South, but located in the heart of USAG, just north of the academic area. These properties are contributing elements to the District and are individually eligible for listing in the Register. These units are allocated as senior officer quarters.
- *Lusk*. Twenty-eight brick duplex homes built in 1932 in a Neo-Georgian architectural style. This neighborhood is carved out of a wooded landscape near the Lusk Reservoir and provides many scenic vistas. There is one additional wooden-frame, single-family home in the neighborhood that was built in 1885. All buildings are contributing elements to the District, and each is individually eligible for listing in the Register. These units are allocated as senior officer quarters except for the 1885 building, which is designated as the command sergeant major's home.
- *Wilson Road*. Ten brick duplex units constructed from a late-19th century quartermaster design in 1901. The neighborhood is in the southern portion of USAG with views of the Hudson River. All properties are contributing elements of the District and are individually

- eligible for listing in the Register. These five-bedroom units are allocated as senior officer quarters.
- *Lee*. A mix of 128 duplex, triplex and quintuplet units built between 1935 and 1937. The neighborhood is in the northern portion of USAG and projects the character of an English landscape. All buildings are contributing elements of the District and are individually eligible for listing in the Register. Sixty of these units are four bedroom and 68 are three bedroom. All are allocated as field grade officer quarters.
 - *Old Brick*. Fifty-six multifamily units constructed in 1949 and extensively renovated between 1996 and 2003. These are two-story, three-bedroom units with a basement. These buildings retain considerable historic integrity, and their architecture is appropriate and consistent with historic family housing at West Point. The neighborhoods also retain considerable historic integrity from their original concept. They are considered to be contributing elements to the USMA NHL and are individually eligible for the National Register of Historic Places. The units are allocated as a mix of company grade officer quarters and junior enlisted quarters.
 - *New Brick*. One hundred and fifty-six duplex and triplex units constructed in 1962 and extensively renovated in an architecturally sympathetic manner between 2002 and 2006. These are two-story, three-bedroom homes without a basement, allocated as field grade officer quarters. These units retain considerable integrity. Their architecture is appropriate and consistent with historic family housing at West Point. These buildings are located within the District.
 - *Band*. Thirty brick duplex units constructed in 1932 in a Neo-Georgian style similar to the architecture of Lusk, but on a smaller scale. The neighborhood features a central pedestrian courtyard. These are two-story, three-bedroom units with basements. They are allocated as enlisted quarters, and all 30 units are designated for selected members of the USMA Band. The neighborhood is a contributing element of the District, and the buildings are individually eligible for listing in the Register.
 - *Senior NCO*. Thirty-six colonial-style duplex units built in 1930 and 1935. These are two-story, three-bedroom buildings with basements. The neighborhood is a contributing element of the District, and the buildings are individually eligible for listing in the Register. The units are allocated as senior enlisted quarters.
 - *Junior NCO*. Forty brick duplex units built in 1892, notable as examples of late-19th century enlisted men's quarters. One additional brick cottage built was built in 1894. These are two-story, two-bedroom dwellings with basements. They are allocated as junior enlisted quarters. The neighborhood is a contributing element of the District, and the individual buildings are eligible for listing in the Register.
 - *Bartlett Loop*. Six duplex units built in 1948. These are two-story, frame-construction units with basements. They are within the District but not eligible for listing in the Register. These four-bedroom units are allocated as junior enlisted quarters.
 - *Stony Lonesome I*. One hundred and ninety multifamily, two-story units built in 1972. This is the largest single housing neighborhood at USAG. These units are allocated as junior enlisted, senior enlisted, and field grade officer quarters. These units are within the District but are not designated as historic properties.
 - *Stony Lonesome II*. One hundred and eighteen multifamily, two-story, brick-and-siding units built in 1998. These three- and four-bedroom units are allocated as senior enlisted and

company grade officer quarters. These units are within the District but are not designated as historic properties.

- *Grey Ghost.* Seventy-seven multifamily units constructed in 1999 are the newest housing community at USAG. These are two-story, brick-and-siding buildings without basements. They are allocated as field grade officer and senior enlisted quarters. These units are within the District but are not designated as historic properties.
- *Special Category.* There are 25 various single-family, duplex, and multifamily units throughout West Point representing several different architectural styles. These units were constructed between 1870 and 1943. All are within the District, and all are individually eligible for listing in the Register. The allocations for these units range from senior officer to company grade officer quarters.

Figure 2-1 shows the general locations of the family housing areas. Table 2-2 provides information concerning USAG's on-post family housing inventory. Table 2-3 shows the installation's housing stock by year of construction.

Table 2-2.
West Point Family Housing Inventory

| Grade | 1 BR | 2 BR | 3 BR | 4 BR | 5 BR | Total |
|--------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|
| General/Flag Officer | 0 | 0 | 0 | 1 | 2 | 3 |
| Senior Grade Officer | 0 | 0 | 0 | 0 | 67 | 67 |
| Field Grade Officer | 0 | 0 | 229 | 221 | 17 | 467 |
| Company Grade Officer | 10 | 25 | 73 | 32 | 1 | 141 |
| Senior Noncommissioned Officer | 0 | 0 | 72 | 75 | 9 | 156 |
| Junior Noncommissioned Officer | 0 | 57 | 51 | 22 | 0 | 130 |
| TOTAL | 10 | 82 | 425 | 351 | 96 | 964 |

2.2.1.3 Development strategy

When developing the CDMP, USAG and GMH Military Housing LLC considered several options for implementing the proposed action. Implementation of the CDMP would require that GMH Military Housing LLC operate and maintain all family housing for a period of 50 years (with an optional 25-year extension), as well as construct, operate, and maintain the ancillary supporting facilities. The development plan has a variety of options for family housing units, including the following:

- *Technical revitalization:* Replace or repair various housing components to upgrade units to standard (e.g., replace dishwasher, replace roof, replace light fixtures, repair driveway and sidewalk).
- *Functional replanning:* Add, modify, or improve the floor plan or structure to enhance livability (e.g., convert two 2-bedroom units into one 4-bedroom unit).
- *Redesignation:* Modify the number of bedrooms in a housing unit without construction (e.g., redesignate a 3-bedroom home as a 2-bedroom home with a family room).

**Table 2-3.
Construction Dates of Family Housing**

| Year Built | Grade | 1 BR | 2 BR | 3 BR | 4 BR | 5 BR+ | Total |
|-------------------|--------------------------------|-------------|-------------|-------------|-------------|--------------|--------------|
| 1820* | General/Flag Officer | | | | | 1 | 1 |
| 1821* | General/Flag Officer | | | | 1 | | 1 |
| 1821* | Senior Grade Officer | | | | | 2 | 2 |
| 1826* | Senior Grade Officer | | | | | 2 | 2 |
| 1828* | Senior Grade Officer | | | | | 2 | 2 |
| 1857* | General/Flag Officer | | | | | 1 | 1 |
| 1865* | Junior Noncommissioned Officer | | 2 | | | | 2 |
| 1870* | Field Grade Officer | | | | 3 | | 3 |
| 1870* | Company Grade Officer | 2 | 3 | 1 | | 1 | 7 |
| 1875* | Company Grade Officer | 1 | 1 | | 2 | | 4 |
| 1885* | Senior Noncommissioned Officer | | | | 1 | | 1 |
| 1890* | Junior Noncommissioned Officer | | 2 | | | | 2 |
| 1891* | Senior Grade Officer | | | | | 2 | 2 |
| 1891* | Company Grade Officer | | 5 | | | | 5 |
| 1892* | Junior Noncommissioned Officer | | 36 | | | | 36 |
| 1892* | Field Grade Officer | | | | 2 | | 2 |
| 1894* | Senior Grade Officer | | | | | 2 | 2 |
| 1894* | Junior Noncommissioned Officer | | 1 | | | | 1 |
| 1901* | Field Grade Officer | | | | 1 | | 1 |
| 1901* | Senior Grade Officer | | | | | 10 | 10 |
| 1908* | Senior Grade Officer | | | | | 4 | 4 |
| 1908* | Field Grade Officer | | | | | 9 | 9 |
| 1909* | Senior Grade Officer | | | | | 8 | 8 |
| 1910* | Senior Grade Officer | | | | | 7 | 7 |
| 1919* | Company Grade Officer | 7 | 16 | | | | 23 |
| 1931* | Senior Noncommissioned Officer | | | 24 | | | 24 |
| 1931* | Junior Noncommissioned Officer | | | 16 | | | 16 |
| 1932* | Senior Grade Officer | | | | | 28 | 28 |
| 1932* | Junior Noncommissioned Officer | | | 14 | | | 14 |
| 1935* | Field Grade Officer | | | | 58 | | 58 |
| 1935* | Senior Noncommissioned Officer | | | 12 | | | 12 |
| 1937* | Field Grade Officer | | | 68 | 2 | | 70 |
| 1943* | Junior Noncommissioned Officer | | | 1 | | | 1 |
| 1948 | Junior Noncommissioned Officer | | | | 6 | | 6 |
| 1949** | Company Grade Officer | | | 40 | | | 40 |
| 1949** | Junior Noncommissioned Officer | | | 16 | | | 16 |
| 1962** | Field Grade Officer | | | 156 | | | 156 |
| 1972 | Field Grade Officer | | | 4 | 126 | | 130 |
| 1972 | Junior Noncommissioned Officer | | 16 | 4 | 16 | | 36 |
| 1972 | Senior Noncommissioned Officer | | | | 24 | | 24 |
| 1997 | Company Grade Officer | | | 16 | 16 | | 32 |
| 1998 | Company Grade Officer | | | 16 | 14 | | 30 |
| 1998 | Senior Noncommissioned Officer | | | 34 | 22 | | 56 |
| 1999 | Field Grade Officer | | | 1 | 29 | 8 | 38 |
| 1999 | Senior Noncommissioned Officer | | | 2 | 28 | 9 | 39 |
| Total | | 10 | 82 | 425 | 351 | 96 | 964 |

Notes:

* Historic housing units

** Units that are part of historic neighborhoods but are not recognized as historic properties

- *Demolition/removal*: Completely remove a housing unit without replacing it.
- *Demolition/replacement*: Completely remove a housing unit and replace it with an alternative housing unit.
- *Replacement/undeveloped land*: Build a replacement housing unit on an unoccupied site. Appropriate NPDES permit requirements will be implemented during design and construction phase.
- *New construction*: New construction on Greenfield² sites. Appropriate NPDES permit requirements will be implemented during design and construction phase.

2.2.1.4 Conveyance

All existing on-post family housing units would be conveyed to GMH Military Housing LLC. The Army would convey this property with encumbrances, notices, and requirements obligating GMH Military Housing LLC to perform certain actions. As appropriate to each structure or group of structures, the deed would identify the presence of known asbestos-containing materials, lead-based paint, and radon. The Army would also identify any easements and rights-of-way that might affect use of the conveyed property. These encumbrances would be in the form of covenants in the deed and would be binding on the transferee and any subsequent successors or assigns. Negotiated terms of transfer or conveyance might result in requirements for GMH Military Housing LLC to maintain the status quo of historic buildings or archeological sites or might impose a requirement for consultation with the State Historic Preservation Office (SHPO) before any actions affecting such resources.

2.2.1.5 Barrier-free design

New family housing and ancillary supporting facilities must adhere to the *Uniform Federal Accessibility Standards* and the *Americans with Disabilities Act Accessibility Guidelines* promulgated by the Access Board (formerly known as the Architectural and Transportation Barriers Compliance Board) pursuant to the Architectural Barriers Act of 1968, Rehabilitation Act of 1973, and Americans with Disabilities Act of 1990. These standards require that at least 5 percent of new family housing be designed and built to be accessible, or easily modifiable for access, by persons with physical disabilities.

2.2.1.6 Construction standards

Construction standards to be applied to family housing reflect consideration of both military specifications and local community building codes. Construction of housing units would be based on sustainable design and development concepts. Army policy is that RCI projects, planned or under design, must achieve the Gold rating of the Sustainable Project Rating Tool (SPiRiT) process.³ The SPiRiT process, based on sustainable design and development concepts, assesses the degree to which the design of a building successfully incorporates consideration of matters such as sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Use of the SPiRiT process improves the environmental and economic performance of facilities through the use of established and advanced industry principles, practices, materials, and standards.

² Greenfield site refers to undeveloped, unsullied property.

³ The Sustainable Project Rating Tool is derived from the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Green Building Rating System and is based on the LEED *Green Building Reference Guide*.

2.2.1.7 Operation and maintenance

For 50 years, GMH Military Housing LLC would operate and maintain all existing and new family housing units and ancillary supporting facilities—including associated parking lots, sidewalks, existing and new tot lots, playgrounds, parks, walking trails, and other amenities—in accordance with the quality standards established in the CDMP. At USAG's option, the installation may extend the period of operation and maintenance and the leases of land supporting family housing for an additional 25 years.

2.2.1.8 Rental rates and payments

The rental rate to be paid by any Soldier would not exceed his or her BAH. USAG would continue to categorize family housing by grade group (e.g., Junior Noncommissioned Officer [NCO], senior NCO, company grade officer).

2.2.1.9 Occupancy guarantee

USAG would not guarantee for GMH Military Housing LLC the level of occupancy of the housing units. Under special circumstances such as large-scale, long-term deployments, GMH Military Housing LLC could rent vacant family housing units to tenants other than service members with dependents in accordance with the CDMP, Family Housing Management Plan, at rental rates that are no less than what a Soldier of the appropriate grade would be charged for the dwelling unit. In such a case the Installation Commander must approve GMH Military Housing LLC basic lease agreement.

2.2.1.10 Regulatory controls

It is the intent of developer plans to adopt the current edition of the International Residential Code *One- and Two-Family Dwellings* by the International Code Council, Inc., with standardized building, plumbing, mechanical, and electrical requirements from the following national model codes: Uniform Building Code, Standard Building Code, Building Officials and Code Administrators (BOCA) National Building Code, Standard Plumbing Code, International Building Code, BOCA National Plumbing Code, Uniform Mechanical Code, Standard Mechanical Code, Standard Gas Code, BOCA National Mechanical Code, Code for the Installation of Heat-Producing Appliances, National Electrical Code, applicable New York state codes and regulations, and applicable federal codes and regulations.

2.2.1.11 Utilities

The Army and GMH Military Housing LLC have developed a utility program that promotes energy conservation and reduced utility consumption. Under this program, GMH Military Housing LLC will be responsible for all costs of utilities provided to common areas of the project and all vacant units during the entire project period. Furthermore, GMH Military Housing LLC will be responsible for all utilities in occupied housing units covered by the project until the units have been renovated or replaced, utility meters (electricity, gas, or oil) have been installed, and a 12-month consumption record has been established. When these three conditions are met in an entire housing area and appropriate notice is provided to each service member occupant, the service member will become responsible for the cost of utilities (electric, gas, and oil) for his or her residence.

2.2.1.12 Police and fire protection

Project revenues will be used to reimburse USAG for police and fire protection services.

2.2.1.13 Jurisdiction

The legislative jurisdiction at USAG's housing areas is exclusive. The term *exclusive legislative*

jurisdiction is applied when the federal government possesses, by whatever method acquired, all the authority of the state, and the state concerned has not reserved to itself the right to exercise any of the authority concurrently with the United States except the right to serve civil or criminal process in the area relative to activities that occurred outside the area.⁴ One family housing unit on-post but near the James I. O'Neill High School in neighboring Highland Falls, New York, is not under exclusive legislative jurisdiction. Implementation of the RCI program would not change existing legislative jurisdiction.

2.2.1.14 Implementation commencement

Assuming execution of the CDMP by USAG and GMH Military Housing LLC before the end of April 2008, the CDMP implementation would begin in September 2008.

2.2.2 Siting of New Housing

The following siting criteria have been considered in establishing the footprint for the RCI family housing.

2.2.2.1 Proximity to existing housing

New family housing and ancillary supporting facilities would be located near existing family housing. From a land use pattern perspective, this approach allows for maintaining consistency in adjacent land uses in larger general areas. It also allows residents to live close to existing supporting facilities such as community clubs, the post exchange, the commissary, and auto service stations. Such proximity helps create a sense of small-town neighborhoods where principal shopping destinations are nearby. Locating new neighborhoods close to existing ones helps to reduce development costs by enabling use of existing utility corridors and other infrastructure. Finally, keeping family housing in or near a generally developed portion of the installation avoids opening newer, more distant areas. This practice, therefore, decreases risks of potential effects on ecological systems (e.g., wildlife disturbance, habitat fragmentation).

2.2.2.2 Sufficient size

Lack of adequate acreage for proposed housing could adversely affect an otherwise pleasing atmosphere by creating too high a building density. Allocating an adequate amount of property would result in a density that strikes an appropriate balance between the residents' desire for space and an appropriate use of land resources. Density for new and redeveloped family housing areas/neighborhoods will meet RCI program guidance standards.

2.2.2.3 Physical features

Any site for family housing must not be located on steep terrain; in areas heavily incised by watercourses; or within any stream buffers, wetland buffers, or floodplains.

2.2.2.4 Compatible land uses

Siting of family housing parcels must not result in the creation of incompatible land uses (e.g., on contaminated properties or adjacent to off-post industrial property).

2.2.2.5 Minimal loss of natural, ecological, and cultural resources

Siting of family housing must avoid loss of natural, ecological, and cultural resources such as wetlands, listed or sensitive species or their habitat, wildlife species' travel corridors, archeological sites, and structures eligible for the National Register of Historic Places.

⁴ Definitions and characteristics of jurisdiction are provided in AR 405-20, *Federal Legislative Jurisdiction*.

2.2.2.6 Military security

Family housing parcels must be located so as not to enable or encourage residents to interfere with military security requirements or to pose a risk of breach of military security. Housing areas should not be located near sites supporting activities to which access is controlled for security reasons.

2.2.2.7 Operational safety

Family housing parcels should be located away from operational areas to avoid potential safety risks to residents. In addition, family housing should not be located so that residents would be required to travel past or through training areas while transiting to off-base locations.

SECTION 3.0

ALTERNATIVES

USAG has identified four alternatives under its proposed action, as well as a no action alternative. These alternatives are described below.

3.1 THE PREFERRED ALTERNATIVE

Implementing the proposed action, as described in Section 2.2, is USAG's preferred alternative. Use of various MHPI authorities, proposed for and identified in the CDMP put forth by GMH Military Housing LLC and negotiated by USAG, would achieve the purpose of and need for the proposed action as described in Section 1.2. Accordingly, Section 4.0 of this document evaluates this alternative in detail.

3.2 THE PARTIAL-PRIVATIZATION ALTERNATIVE

Under the partial-privatization alternative, USAG would subject only a portion of the installation's family housing to the RCI. Family housing in good condition (not needing demolition or renovation) would remain subject to Army management for maintenance and operational control.

Privatization of only a portion of USAG's family housing inventory would have three substantial drawbacks. First, the condition of the family housing retained by the Army would change over time, eventually requiring renovation or replacement. Failure to include the entire inventory of housing in the RCI would only delay action to provide adequate housing for Soldiers and their dependents. Second, two management regimes (the Army's and the development entity's) would not be as cost-efficient as one. From a development entity's perspective, maximum potential cash flow is important to support development and operation of ancillary supporting facilities desired by an installation, activities that traditionally do not provide independent sources of revenue for their sustainment. Finally, partial privatization would not fully meet the Army's purpose of and need for the proposed action. Together, these factors render partial privatization at USAG not feasible, and therefore such an alternative is not evaluated in detail in this EA.

3.3 THE PRIVATE-SECTOR-RELIANCE ALTERNATIVE

Under this alternative, USAG would rely solely on the private sector to meet the housing needs of personnel assigned to the installation. The installation would terminate family housing programs, dispose of existing family housing units, and convert the land now supporting housing areas to other uses.

The alternative is premised, in part, on the view that competitive marketplace forces would lead to the creation of sufficient affordable, quality family housing. Moreover, there are several intangible benefits to Soldiers and their families living on-post. These include camaraderie and esprit de corps among the military personnel, a sense of family among dependents (especially during Soldiers' deployments), proximity to the workplace (thereby avoiding lengthy commutes), and Soldiers' comfort level in knowing that their dependents are residing in a safe community while they are deployed or serving on temporary duty at a distant location.

As a practical matter, terminating USAG family housing would prove difficult. If on-post housing were to be terminated over a period of years, in the absence of maintenance funding, the existing housing would become unsuitable because of age or disrepair. Residents could then find themselves living in blighted and partially abandoned neighborhoods. If on-post housing were to be terminated at once, it is unlikely the private sector could provide enough affordable, quality housing, as well as schools, shopping, roads, and other support amenities, on short notice.

Renovating many of the family housing units at USAG is economically sound. Terminating family housing programs would involve abandonment of immense investments in those facilities. The various consequences of reliance on the private sector and the management difficulties of effecting termination of family housing on-post would prove challenging. In light of the aggregate value of family housing units amenable to renovation, terminating a family housing construction and maintenance program would gravely contravene the fiscal responsibilities Congress expects of the Army. For these reasons, this alternative is not reasonable and is not further evaluated in this EA.

3.4 THE LEASING ALTERNATIVE

Statutory authorities exist for USAG to ensure the availability of adequate, affordable housing through use of long-term leases of housing for military family use. Key aspects of the two laws providing these authorities are summarized below.

- *Long-term leasing of military family housing to be constructed.* Family housing obtained through use of this authority, which appears at 10 U.S.C. 2835, is often referred to as *section 801 housing*. Under this authority, the Army may, through competitive contract procedures, have a developer build or renovate (to residential use) family housing units near an installation. Housing units under this authority must meet DoD specifications. The Army may then lease the units for use as family housing for a period of not more than 20 years. Upon termination of the lease period, the Army has the right of first refusal to acquire all rights, title, and interest in the housing facilities constructed and leased under the contract.
- *Military housing rental guarantee program.* Family housing obtained through use of this authority, which appears at 10 U.S.C. 2836, is often referred to as *section 802 housing*. Under this authority, the Army may award a competitive contract to a private developer or a state or local housing authority to build or renovate housing on or near an installation having a shortage of housing for personnel with or without accompanying dependents. Under the contract, the Army guarantees the occupancy levels of the housing units at rental rates comparable to those for similar units in the same general market. Housing units under this authority must comply with DoD specifications or, at the discretion of the Service secretary, local building codes. A rental guarantee agreement may not exceed 25 years in duration; it may be renewed only for housing on government-owned land. The agreement may provide that utilities, trash collection, snow removal, and pest control services will be furnished by the Army at no cost to the occupant to the same extent such services are provided to occupants of base housing.

Army-wide, there has been only limited experience with either of these authorities. An important drawback affecting the section 801 and section 802 housing programs is related to what is known as budget *scoring*, the method of accounting for federal government obligations required by the Budget Enforcement Act of 1990. Scoring ensures that all government obligations are accounted for when long-term liability is incurred (during the first year of a project). Scoring guidelines issued by the Office of Management and Budget require that a project be fully funded with sufficient budget authority in its first year to cover the government's long-term commitment. In other words, all potential costs associated with long-term leasing or rental guarantee programs must be recognized in the first year, and they must be considered as part of the Army's total obligational authority (the total monies appropriated by Congress for use by the Army in a given year). For some privatization projects, such as military leased housing, the Army's obligations for scoring purposes amount to the net present value of the total rent under the lease. These amounts can be nearly as great as the sums required under traditional military construction financing for Army-initiated construction of similar facilities.

The section 801 housing program and section 802 rental guarantee program only partially address the purpose of and need for the proposed action. Because of the scoring guidelines, the Army would obtain either very little or no leverage benefit.

Enacting new authorities in the MHPI suggests Congress's recognition that the drawbacks of section 801 and section 802 outweigh the potential benefits to the Army. Although use of either or both of the authorities at USAG would be possible, their use would not be reasonable when compared with the greater flexibility and economic advantages of the new authorities offered by the RCI to the Army and to the Soldiers' families. Accordingly, the off-post leasing alternative is not further evaluated in this EA.

3.5 THE NO ACTION ALTERNATIVE

Council on Environmental Quality regulations prescribe that an EA include the no action alternative. The no action alternative serves as a baseline against which the impacts of the proposed action and alternatives can be evaluated.

Under the no action alternative, USAG would not implement the proposed action but would continue to provide for the family housing needs of its personnel by using traditional military maintenance and construction procedures. USAG would continue to obtain funding for family housing through the congressional authorization and appropriations process. On the basis of historical trends, USAG assumes that the amount of congressional funding for family housing would not change and that the housing maintenance backlog would continue to increase. Any major changes to existing housing or construction of new housing would require that USAG would conduct the appropriate NEPA analyses before implementing such actions.

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SECTION 4.0

AFFECTED ENVIRONMENT AND CONSEQUENCES

4.1 LAND USE

4.1.1 Affected Environment

4.1.1.1 Regional Setting

USAG occupies about 16,000 acres in Orange and Putnam Counties on the Hudson River in lower New York State, about 50 miles north of New York City. U.S. Highway 9W runs north-south through the eastern portion of the installation and New York State Route 293 runs southwest-northeast across the installation (USAG West Point, 2005). The climate of the region including USAG is characterized as a humid, continental climate. Summers are warm and have periods of high humidity. Winters are cold with extended periods of snow cover (USMA, 2003).

4.1.1.2 Installation Land Use

USAG's primary functions are education and training, and its mission is to "educate, train, and inspire the Corps of Cadets so that each graduate is a commissioned leader of character committed to the values of Duty, Honor, Country; professional growth throughout a career as an officer in the United States Army; and a lifetime of selfless service to the nation." USAG supports a population of more than 4,200 cadets, with over 1,200 new cadets entering each year. In addition, USAG has about 4,200 military personnel and family members who live on or near the installation, and 4,100 civilian employees (USAG West Point, 2005). The Main Post of USAG is the developed 2,500 acre cantonment area of the installation and contains the majority of buildings and structures as well as all of the RCI footprint. It generally encompasses the area bounded by the Hudson River on the east, Route 218 on the north, Route 9W on the west and the Village of Highland Falls on the south.

Installation-Wide Land Use. For planning purposes, USAG has categorized land use on the installation into four zones that radiate out from a core centered on Washington Hall. The first (core) zone is the Cadet Zone, which consists primarily of administrative and education functions in support of the Academy, as well as intramural athletic facilities, billeting, and parade grounds. Radiating out to the west, the second zone is the Cadet Support Zone, which contains support functions for the Academy such as cadet quarters and residential housing areas, as well as intramural, club, and intercollegiate athletic facilities. The third zone is the Community Support Zone, which includes administrative, limited military field training, recreation, medical facilities, the commissary and post exchange, and residential areas. The fourth zone, which consists of the remainder of the installation west of the Main Post, is the 13,500 acre Industrial/Field Training/Recreation Zone, which has maintenance, supply and storage, and industrial areas; recreation areas; training areas; and ranges (NEA, 2003; USMA, 2003; USAG West Point, 2006).

Existing Housing Areas. As shown in Figure 2-1 and listed in Table 4-1, the housing areas on USAG are on the Main Post on the western end of the installation. These housing areas contain 964 housing units and occupy approximately 239 acres. USAG has an overall housing density ranging from medium to high for residential development.

Other Housing Areas. The housing areas labeled “Alternate RCI Area” on Figure 2-1 consist of the North Apartments and South Apartments listed in Table 4-1. These housing areas have 23 units on 2.4 acres for a residential density of 9.6 units per acre. USAG is considering these areas for inclusion in the RCI footprint.

**Table 4-1.
Existing USAG Housing Areas in the RCI Footprint**

| Housing Area Name | Housing Area Number | # Housing Units | Acres (ac) | Density (units/ac) |
|--------------------------|----------------------------|------------------------|-------------------|---------------------------|
| Grey Ghost | 1 | 77 | 12.4 | 6.2 |
| Old Brick | 2, 18 | 62 | 7.7 | 8.1 |
| Band | 4 | 30 | 5.5 | 5.5 |
| Junior NCO | 5 | 41 | 9.5 | 4.3 |
| Lee Old Doubles | 6, 9 | 58 | 24.3 | 2.4 |
| Senior NCO | 7 | 36 | 7.4 | 4.9 |
| Trip | 8 | 3 | 0.4 | 8.1 |
| Lee New Doubles | 10 | 20 | 5.6 | 3.6 |
| Lee Quints/Trips | 12 | 47 | 10.5 | 4.5 |
| Old Hospital Quarters | 14 | 5 | 1.3 | 4.0 |
| New Brick | 16 | 156 | 30.4 | 5.1 |
| Old English North | 20 | 8 | 2.4 | 3.3 |
| North Apartments* | 21 | 11 | 0.8 | 13.8 |
| Special Category | 23 | 6 | 0.7 | 8.6 |
| Professors Row | 24 | 6 | 2.7 | 2.2 |
| Quarters 146 | 25 | 1 | 0.3 | 2.9 |
| General Officers | 26 | 3 | 2.9 | 1.0 |
| Chaplain | 28 | 1 | 0.2 | 5.3 |
| CSM Quarters | 29 | 1 | 0.6 | 1.6 |
| Special Category | 31 | 9 | 2.4 | 3.7 |
| Wilson Road | 32 | 10 | 2.2 | 4.5 |
| Old English South | 33 | 23 | 16.2 | 1.4 |
| South Apartments* | 34 | 12 | 1.6 | 7.5 |
| Quarters 378 | 36 | 1 | 0.3 | 3.8 |
| Lusk | 37 | 28 | 18.9 | 0.4 |
| Stony Lonesome I | 38 | 190 | 34.0 | 5.6 |
| Stony Lonesome II | 40 | 118 | 39.7 | 3.0 |
| TOTAL | | 943 | 241.0 | 3.9 |

Notes:

Housing area numbers not listed are not in the RCI footprint.

* These alternate RCI housing areas are being considered for inclusion in the RCI footprint.

Potential Housing Areas. Approximately 175 acres of undeveloped lands are within the RCI footprint and include areas that USMA has proposed as sites for future housing development under RCI. These areas of potential development are largely undeveloped and generally are also adjacent to areas of compatible land use, mainly family housing, open space, and outdoor recreation. A brief description of each potential site shown on Figure 2-1 is provided below.

Site B. This 17-acre site is southwest of the New Brick housing area and east of the USAG golf course. The site is undeveloped, forested, and exhibits moderate north-facing slopes.

Site C. This 58-acre site is south of and adjacent to the New Brick housing area and is used for Junior Reserve Officer Training Corps (JROTC). The site is undeveloped, forested, and exhibits moderate north-facing slopes.

Site F. This 34-acre site is on a plateau west of Site G and the Stony Lonesome housing area. The site is undeveloped and forested.

Site G. This 30-acre site is on a plateau west of and adjacent to the Stony Lonesome housing area. The site is undeveloped and forested.

Site H. This 36-acre site is east of and adjacent to the Stony Lonesome housing area. The site is undeveloped, forested, and exhibits moderate east-facing slopes.

GMH Military Housing LLC has chosen to develop Site F only. The other sites will not be utilized at this time.

Land Use Compatibility. Existing family housing areas at USAG are generally surrounded by lands designated for administration, community facilities, medical, open space, or outdoor recreation uses. These areas are compatible for residential land use. No land use incompatibilities have been identified with respect to existing family housing areas.

Site B, one of the undeveloped potential housing areas, is adjacent to the proposed site for the U.S. Military Academy Preparation School, being relocated from Fort Monmouth, New Jersey under BRAC 2005. Portions of Sites B and C are also within a machine gun firing range.

Easements. No school leases or easements have been identified in the RCI footprint. Easements for infrastructure, such as water mains and electrical power lines, are likely to be present in the RCI footprint. These easements are primarily for utility service providers to supply utilities to the housing areas. These leases would be considered and respected in planning and development under the proposed action.

Future Development. Planned future development projects on-post are discussed in Section 4.13, Cumulative Effects.

4.1.1.3 Surrounding Land Use

The off-post area surrounding USAG consists mainly of residential, agricultural, and light industry land uses. Off-post features in the vicinity of the RCI footprint and the USAG Main Post are Storm King State Park and Black Rock Forest to the north and the Town of Highland Falls to the south. Constitution Island, part of USAG, is to the east on the east bank of the Hudson River (USMA, 2003).

Future Development in the Region. Off-post commercial and residential development is expected to be in line with projected population growth in the region. On the basis of available census data, the region experienced a period of moderate population growth during the 1990s. The 1990 and 2000 Census data shows the percent change in population of Orange County was 11 percent (USMA, 2003). The population continued to increase in Orange County between 2000 and 2004 at a rate of 8.5 percent (US DOC Census, 2006).

4.1.2 Consequences

4.1.2.1 Proposed Action

No adverse effects on installation land use would be expected. However, 40 acres of undeveloped and forested areas in Site F would be converted to family housing areas, increasing impervious surfaces in the cantonment area. No increase in the number of housing units would occur under the proposed action, and no new land use incompatibilities would be expected to occur in the existing housing areas.

No land use incompatibilities have been identified in Site F.

No effects on surrounding land uses would be expected as a result of implementing the proposed action.

4.1.2.2 No Action Alternative

No adverse effects on land use would be expected if the proposed action were not implemented.

4.2 AESTHETICS AND VISUAL RESOURCES

4.2.1 Affected Environment

Aesthetics and visual resources are the natural and man-made features on an installation landscape. They include cultural and historic landmarks, landforms of particular beauty or significance, water surfaces, and vegetation. Together these features form the overall impression that a viewer receives of the area or its landscape.

The RCI footprint at USAG is in the Hudson Highlands Scenic Area of Statewide Significance, a highly scenic and valued region of the Hudson River Valley, with southwest-northeast trending, moderately steep hills and numerous escarpments. Areas in between the hills are interspersed with small plains, basins, and narrow valleys. The natural resources in the RCI footprint viewshed greatly enhance the aesthetic value of the footprint. The layout of USAG's cantonment area reflects the natural constraints imposed by the Hudson River and hillslopes. The overall visual impression of the cantonment area is one of functional efficiency, order, and focused activity. The eastern portions of the RCI footprint provide vantage points for the Hudson River and Constitution Island on its eastern bank. The southern portions of the footprint are near the commercial area of Highland Falls.

Standards for the design of the Main Post are described in the *United States Military Academy Installation Design Guide*, *Historic Landscape Management Plan for the United States Military Academy at West Point*, and *Identification and Analysis of the Historic Built Environment and Viewsheds, Cadet Zone*. These standards and management plans have been established to provide a "visually cohesive, attractive installation" with an "attractive well designed environment." The guide also includes restrictions on building materials and architecture, transportation, lighting,

landscaping, parks, playgrounds, and playing fields, signage, fences, access, maintenance, and utilities (NEA, 2005; USMA, 2003).

Apart from expansive views, USAG's retention of the historic character of the Main Post is the primary contributing factor to the high aesthetic quality in the housing areas in the Main Post historic district. There are 423 historic housing units on the Main Post that of which were constructed between 1820 and 1949 and are contributing features to the National Historic Landmark District (NHLD) at USAG.

Within the RCI footprint is a mixture of open and treed vistas. Mowed common areas, fenced yards, and some landscaping around homes generally characterize the housing areas. Groves of mature hardwoods are scattered throughout some of the housing areas, such as the Main Post housing areas. Because USAG usually provides a high level of maintenance, the installation has an overall appearance of cleanliness.

Site F can be viewed from the Hudson River, and Sites B, C, and H are within view of the U.S. Route 9W scenic byway and Hudson Highlands Scenic Area of Statewide Significance.

4.2.2 Consequences

4.2.2.1 Proposed Action

Short- and long-term minor adverse and long-term moderate beneficial effects would be expected. Construction activities are inherently aesthetically displeasing. Demolition and construction equipment and materials and staging areas used during housing renovation would diminish otherwise aesthetically pleasing views. These effects, however, would be short-term and localized. In the long term, renovations to existing housing would be expected to improve the aesthetic and visual appeal of the area. Long-term changes in viewsheds—from open or forested to developed—would occur where undeveloped areas are converted to housing areas.

One of the goals of the Army's RCI program is to bring in a development entity that will design communities that complement the natural surroundings and take design cues from the regional style of architecture. GMH Military Housing LLC will work to achieve an aesthetically harmonious community through using cohesive and regionally appropriate architectural design characteristics, landscape plants, screening visually intrusive structures and activities, and including green space. Only minor revisions to the exterior of housing units would occur, and they would not impact the viewshed from the housing units. Mature trees and native vegetation would be maintained wherever possible. As a result of the RCI project, the overall aesthetic appeal of the housing areas would be greatly improved.

4.2.2.2 No Action Alternative

Long-term minor adverse effects would be expected. Under the no action alternative, the Army would continue to be responsible for maintenance and renovation of existing housing and new housing construction as necessary. Lack of sufficient funding for this work and the existence of an extensive backlog of work might result in deterioration of existing housing over time. Such deterioration would be expected to adversely affect aesthetic and visual resources.

4.3 AIR QUALITY

4.3.1 Affected Environment

4.3.1.1 Regulatory Framework and Attainment Status

Air quality for stationary sources is regulated at the national level through regulations promulgated under the Clean Air Act (CAA) of 1970 and its subsequent amendments. The act directed the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for air pollutants that endanger public health and the environment. EPA subsequently adopted air quality standards for six criteria pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), airborne particulate matter (PM), and lead (Pb) particles. The CAA requires state or local governments to monitor ambient levels of these pollutants and to develop air quality management plans to ensure compliance with the NAAQS. Areas that violate these standards are designated *nonattainment* areas for the relevant pollutants. Table 4-2 shows the NAAQS and state of New York Standards for the six criteria pollutants.

Table 4-2.
National Ambient Air Quality Standards

| Criteria Pollutant | Averaging Time | Federal Primary NAAQS ^{a,b,c} | Federal Secondary NAAQS ^{a,b,d} | New York State Standards ^e |
|--|----------------------|--|--|---------------------------------------|
| Carbon monoxide (CO) | 8-hour | 9 ppm (10 mg/m ³) | -- | 9 ppm (10 µg/m ³) |
| | 1-hour | 35 ppm (40 mg/m ³) | -- | 35 ppm (40 µg/m ³) |
| Lead (Pb) | Quarterly | 1.5 µg/m ³ | 1.5 µg/m ³ | -- |
| Nitrogen dioxide (NO ₂) | Annual | 0.053 ppm (100 µg/m ³) | 0.053 ppm (100 µg/m ³) | 0.053 ppm (100 µg/m ³) |
| Ozone (O ₃) | 8-hour | 0.08ppm(157 µg/m ³) | 0.08ppm(157 µg/m ³) | 0.08ppm(157 µg/m ³) |
| Particulate matter ≤10 microns (PM ₁₀) | Annual | 50 µg/m ³ | 50 µg/m ³ | -- |
| | 24-hour ^f | 150 µg/m ³ | 150 µg/m ³ | -- |
| Particulate matter ≤2.5 microns (PM _{2.5}) | Annual | 15.0 µg/m ³ | 15.0 µg/m ³ | -- |
| | 24-hour | 65 µg/m ³ | 65 µg/m ³ | -- |
| Sulfur dioxide (SO ₂) | Annual | 0.03 ppm (80 µg/m ³) | -- | 0.03 ppm (80 µg/m ³) |
| | 24-hour | 0.14 ppm (365 µg/m ³) | -- | 0.14 ppm (365 µg/m ³) |
| | 3-hour | No standard | 0.50 ppm (1300 µg/m ³) | 0.50 ppm (1300 µg/m ³) |

Source: USEPA, OAR, 2005; NYSDEC, DAR, 2006b.

Notes: mg/m³ = milligrams/cubic meter, µg/m³ = micrograms/cubic meter, ppm = parts per million

- National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than 1.
- Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 °C and a reference pressure of 760 mm of mercury; ppm refers to parts per million by volume.
- National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- New York has not officially adopted the federal standards for lead and PM, but uses the federal standards to determine compliance.
- The PM₁₀ 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

The New York State Department of Environmental Conservation (NYDEC), Division of Air Resources, enforces air quality regulations in the state. USMA is in Lower Orange County, which is designated as a severe nonattainment area for O₃. Orange County is in attainment for the remaining criteria pollutants.

4.3.1.2 USAG Air Emissions

USAG regulates air emissions through a Class I Air Emission Source Operating (Title V) Permit issued by NYDEC on February 06, 2007. The permit number is 3-3336-00022/00055, and it expires on February 05, 2012 (NYDEC, 2007a). USAG maintains an inventory of air pollutants emitted each year on the installation and submits this inventory to NYDEC. Primary stationary sources include boilers, generators, and fuel storage and dispensing areas (NYDEC, 2007b). Total 2006 annual criteria pollutant emissions at USMA are listed in Table 4-3.

Table 4-3.
USAG Stationary Source Emissions Summary (2006) (tons/year)

| | VOCs | NO _x | CO | SO _x | PM2.5 |
|-------------|------|-----------------|------|-----------------|-------|
| All sources | 5.3 | 36.3 | 24.1 | 1.0 | 2.1 |

Source: NYDEC, 2007b

Notes: VOCs = volatile organic compounds; NO_x = nitrous oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM10 = particulate matter less than 10 microns in diameter.

4.3.2 Consequences

4.3.2.1 Proposed Action

Short-term minor adverse and long-term minor beneficial effects would be expected. Short-term effects would be due to the emissions generated during the demolition, construction, and renovation of the RCI housing. Long-term beneficial effects would be due to the net reduction in area and operational emissions associated with the overall decrease in the number of family housing units at the installation.

The CAA mandates the general conformity rule (GCR) to ensure that federal actions in nonattainment areas do not interfere with a state's timely attainment of the NAAQS. The general conformity rule specifies emission thresholds below which the GCR do not apply (40 CFR 93.153). Below these levels, an action is considered *de minimis* (of minimum importance) and would not interfere with the states timely attainment of the NAAQS. USMA is located in an AQCR designated as severe nonattainment for O₃. Therefore, the applicability thresholds are 25 tons per year for NO_x and VOCs. In addition, the general conformity rule applies if the emissions are *regionally significant*, even if they are *de minimis*. Regionally significant emissions are defined as the total direct and indirect emissions of a federal action that represents 10 percent or more of an area's total emissions for a criteria pollutant. The projected 2009 regional inventory for the region is 281.5 tons per day (tpd) for VOC and 76.6 tpd for NO_x (NYDEC 2007c).

URBEMIS 2007v9.2 emissions model was use to estimate the total direct and indirect emissions from the following activities:

- Site preparation and grading
- Construction 158 new units
- Renovation of 206 units
- Conversion of 174 existing units to 87 single-family units
- Demolition of 196 units

The reductions in area and operational emission include:

- Personal operating vehicles
- Heating emissions
- Domestic use of consumer products
- Domestic use of architectural coatings
- Landscaping activities.

To determine the applicability of the GCR, estimated air emissions from proposed action were compared to the applicability thresholds and the regional emission inventory. The total of direct and indirect emissions of NO_x and VOCs are less than the applicability thresholds (Table 4-4). In addition, NO_x and VOC emissions are less than 10 percent of the regional inventory; therefore are not *regionally significant* (Table 4-5). The GCR does not apply and no conformity determination is required. Detailed air emission estimations and a Draft Record of Non-Applicability (RONA) are located in Appendix B and C, respectively.

Table 4-4
Annual emissions compared to *de minimis* thresholds

| Construction Year | VOC [tpy] | NO _x [tpy] | <i>De minimis</i> threshold [tpy] | Would emissions exceed <i>de minimis</i> levels? [Yes/No] |
|------------------------------------|-----------|-----------------------|-----------------------------------|---|
| 2008 | 1.2 | 6.7 | 25 | No |
| 2009 | 3.1 | 11.7 | 25 | No |
| 2010 | 1.9 | 6.1 | 25 | No |
| 2011 | 0.9 | 2.5 | 25 | No |
| 2012 | 0.8 | 2.3 | 25 | No |
| 2013 | 0.9 | 3.2 | 25 | No |
| 2014 | 0.5 | 1.9 | 25 | No |
| Operational Emissions ¹ | (4.2) | (2.7) | 25 | No |

Notes:

tpy = tons per year

¹ Operational emissions constitute the net reduction in emissions due to the decrease in housing units and associated residential area and stationary sources.

Table 4-5
Project emissions compared to regional emissions

| Year | Project VOC Emissions [tpd] | Percent Regional Emissions | Project NO _x Emissions [tpd] | Percent Regional Emissions | Regionally Significant [Yes/No] |
|------|-----------------------------|----------------------------|---|----------------------------|---------------------------------|
| 2008 | 0.0053 | 0.0019% | 0.0290 | 0.0379% | No |
| 2009 | 0.0135 | 0.0048% | 0.0510 | 0.0666% | No |
| 2010 | 0.0081 | 0.0029% | 0.0266 | 0.0347% | No |
| 2011 | 0.0038 | 0.0013% | 0.0108 | 0.0141% | No |
| 2012 | 0.0036 | 0.0013% | 0.0102 | 0.0133% | No |
| 2013 | 0.0039 | 0.0014% | 0.0141 | 0.0184% | No |
| 2014 | 0.0020 | 0.0007% | 0.0084 | 0.0109% | No |

Notes:

Base on projected 2009 regional inventory of 281.5 tpd VOC and 76.6 tpd NO_x (NYDEC 2007c)

tpd = tons per summer weekday

The new housing would be equipped with individual furnaces for heating and cooling. These stationary sources of air emissions would not likely be subject to federal and state air permitting regulations, including new source review (NSR), prevention of significant deterioration (PSD), or New Source Performance Standards (NSPS). Although not anticipated, heating unit above 10 million BTUs would have a construction permit application submitted to NYDEC at least 90 days

prior to construction. Because of their limited size and end-use, it is not anticipated that the household furnaces would be added to USAG's Title V permit. However, the use of smaller natural gas or #2 fuel oil heating units would be reviewed to insure compliance.

Fugitive dust emissions from land clearing and construction activities would be minimized by common construction practices such as periodic wetting of construction areas, covering of open equipment used to convey materials likely to create air pollution, and prompt removal of spilled or tracked dirt from streets.

4.3.2.2 No Action Alternative

Under the no action alternative, no new housing would be constructed, and no existing housing units would be demolished or renovated. Therefore, there would be no effects on air quality.

4.4 NOISE

4.4.1 Affected Environment

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. Sound quality criteria promulgated by EPA, the U.S. Department of Housing and Urban Development (HUD), and DoD have specified noise levels to protect public health and welfare with an adequate margin of safety.

These levels are considered acceptable guidelines for assessing noise conditions in an environmental setting. Noise levels below 65 decibels (dB) are considered normally acceptable in suitable living environments. Noise levels should not exceed 80 dB during day time construction activities and 65 dB during nighttime construction activities.

Responses to noise vary, depending on the type and characteristics of the noise, the expected level of noise, the distance between the noise source and the receptor, the receptor's sensitivity, and the time of day. One significant response to noise is annoyance. The receptor's expectation of a sound level associated with an activity has a direct bearing on the level of annoyance. The annoyance can be experienced individually or as a group. The five factors identified by EPA, HUD, and DoD as indicators for estimating negative community reaction to noise are type of noise, amount of repetition, type of neighborhood, time of day, and amount of previous exposure. For the Army, high sound levels are both part of the job of operating weapon systems and a necessary training condition because Soldiers must learn to function in an environment similar to what they will encounter on the battlefield.

In the training areas of military reservations, the noises generated by weapons and equipment are exempted from noise compliance requirements under the Noise Control Act of 1972. To address the issue of compatibility of noise from training with on-post land uses such as family housing or other noise-sensitive, off-post land uses, the Army has developed four noise descriptor zones (Noise Zones I, II, and III and a Land Use Planning Zone). The Land Use Planning Zone (LUPZ) provides the installation with a better means to predict possible noise complaints and meet the public demand for a better description of the noise that will occur during a period of increased operations. Each zone corresponds to a population annoyance level that is dependent on day-night noise level (L_{dn}) measured in A-weighted decibels (dBA) for sounds perceived by the human ear, C-weighted decibels (dBC) for low-frequency sounds from impulse or blast noises that can be felt, and linear (unweighted) decibels (dB) that take into account the entire spectrum of noise. The noise zone descriptors are shown in Table 4-6. All the family housing areas are in Zone I.

**Table 4-6.
U.S. Army Noise Guidelines for Noise Zones I, II, and III**

| Noise Zone | Noise-Sensitive Land Use | Population Annoyed | Transportation ADNL (dBA) | Impulsive CDNL (dBC) | Small Arms ADNL |
|-------------------|---------------------------------|---------------------------|----------------------------------|-----------------------------|------------------------|
| LUPZ | Compatible | 9%–15% | 60–65 dBA | 57–62 dBC | 60–65 dBA |
| I | Normally compatible | < 15% | < 65 | < 62 | < 87 |
| II | Normally incompatible | 15%–39% | 65–75 | 62–70 | 87–104 |
| III | Incompatible | > 39% | > 75 | > 70 | > 104 |

Notes: ADNL = A-weighted decibels; CDNL = C-weighted decibels.

Helicopter missions and training activities are the primary sources of noise at USAG. These activities include helicopter activities at the helipad and drop zones, small arms firing, large caliber (heavy) weapons firing, and demolition (USMA, 1986). These activities do not take place in the vicinity of the housing areas in the RCI footprint. The existing housing area and proposed housing project areas are within Zone I.

4.4.2 Consequences

4.4.2.1 Proposed Action

Short-term minor adverse effects would be expected. The proposed action would result in additional noise from the use of heavy construction equipment. This noise would be temporary in nature and end after the completion of the demolition and construction phases.

Individual pieces of construction equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet. With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high construction noise typically extends to distances of 400 to 800 feet from the site of major equipment operations. Locations more than 1,000 feet from construction sites seldom experience noteworthy levels of construction noise. Table 4-7 presents typical noise levels (dBA at 50 feet) that EPA has estimated for the main phases of outdoor construction. The receptors closest to the construction activities include persons occupying the existing housing nearest to the construction sites. Given the temporary nature of proposed construction activities, the limited amount of noise that construction equipment would generate, and the distance to the nearest noise sensitive area - this effect would be considered minor. No blasting is expected as part of the construction or demolition activities.

Although construction-related noise effects would be small, the following best management practices would be used to reduce these already-limited noise effects:

- Construction would predominately occur during normal weekday business hours; and
- Construction equipment mufflers would be properly maintained and in good working order.

Table 4-7
Noise levels associated with outdoor construction

| Construction phase | Leq (dBA) |
|---------------------------|------------------|
| Ground clearing | 84 |
| Excavation, grading | 89 |
| Foundations | 78 |
| Structural | 85 |
| Finishing | 89 |

Source: USEPA 1971

No long-term increases in the overall noise environment can be expected with the implementation of the proposed action. No military training activities, use of weaponry, demolitions, or aircraft operations would occur. Therefore, no changes in the existing noise environment associated with these sources would be expected. There would be no long term adverse effects on the RCI housing residents from USAG training range small arms or large caliber weapons firing because the proposed RCI housing areas are within noise Zone I and not near the training areas.

4.4.2.2 No Action Alternative

No effects would be expected under the no action alternative.

4.5 GEOLOGY AND SOILS

4.5.1 Affected Environment

4.5.1.1 Geology and Topography

Geology. USAG is in the New England Upland Section of the New England Physiographic Province. The installation has steep, rocky hillsides with exposed bedrock throughout the installation and along the Hudson River (NEA, 2005). The bedrock consists primarily of Precambrian metamorphic rock and some igneous from the Middle Proterozoic (Helikian) Age (Fisher et al, 1970; NEA, 2004).

Topography. The topography across the installation is variable, with steep ridges trending from southwest to northeast across the installation. Elevations range from about 0 to 1,000 feet above mean sea level across main post, and the highest elevation in the residential areas, 810 feet, occurs at Stony Lonesome II. Slopes are also variable across the installation, ranging from flat to more than 70 percent in some areas. In the RCI footprint, slopes range from flat to 15 percent in most areas but reach as high as 45 percent in some areas (USMA GIS, 2006).

4.5.1.2 Soils

There are a total of six soil series within the USAG RCI footprint. The two predominant soil series, Hollis and Rock Outcrop-Hollis, are described in Table 4-8. These soils cover 98 percent of the footprint. Hollis soils are shallow and well-drained soils formed in a thin mantle of till derived mainly from gneiss, schist, and granite (USDA NRCS, 2002). Of soils within the footprint, two soils are potentially highly erodible, covering 106 acres, or 44 percent of the RCI footprint. Less than one acre of hydric soils (Histic Humaquepts) is within the RCI footprint (Cadwell, 1989; USDA NRCS, 2005).

**Table 4-8.
Soils on USAG**

| Soil Name | Percent Slope | Acres | Percent of Footprint | Hydric | Erodible | Prime Farmland |
|----------------------------|----------------------|--------------|-----------------------------|---------------|-----------------|-----------------------|
| Hollis, sloping | 8 to 15 | 129.2 | 53.6 | No | No | No |
| Rock Outcrop-Hollis | 8 to 45 | 97.3 | 40.4 | No | Potentially | No |
| Hollis, moderately sloping | 15 to 25 | 9.0 | 3.7 | No | Potentially | No |
| Swartswood | 3 to 8 | 3.9 | 1.6 | No | No | No |
| Swartswood-Mardin | 8 to 15 | <1 | <1 | No | No | Yes |
| Histic Humaquepts | 0 to 1 | <1 | <1 | Yes | No | No |

Sources: USAG, 2006; USDA NRCS, 2005.

4.5.1.3 Prime Farmland

Less than one acre of soil within the RCI footprint is considered prime farmlands (Table 4-8) and that land within the RCI are considered prime farmland soils (where drained), the land in the RCI footprint is not used for agriculture. In addition, much of the footprint is in a built-up condition. Therefore, a Farmland Conversion Impact Rating (Form AD-1006) of the project area is not needed, and no further action is required under the Farmland Protection Policy Act (FPPA).

4.5.1.4 Petroleum and Minerals

There are no known petroleum or mineral resources within the RCI footprint on USAG.

4.5.1.5 Seismicity

There are several faults located in the vicinity of the RCI footprint, including the Long Pond fault, Highland Brook Fault, and Crown Ridge Fault (USGS, 1958; Fisher et al, 1970). The latter two faults run to the south of Sites F, G, and H in the RCI footprint. Despite the presence of these faults, the likelihood for significant seismic activity is very low. Recent seismic activity has not originated from these faults, and glacial deposits show that no displacement has occurred during the late Quaternary period (Geomatrix, 1997). Seismic events, mostly light earthquakes with magnitudes under 4.0, have been recorded in the region. Between 1973 and 2006, 69 seismic events were recorded within 125 miles of USAG, ranging from 0.6 to 4.1 in magnitude (USGS, 2004).

4.5.2 Consequences

4.5.2.1 Proposed Action

Geology and Topography. Negligible effects on geology would be expected. Some blasting and ripping of rock could occur during the land clearing and grading and construction activities. Short-term adverse effects due to steep topography would be expected to result in increase soil erosion, as discussed below.

Soils. Short-term minor adverse effects would be expected from the proposed action. Demolition and construction activities would cause vegetation removal, soil exposure, and increased

susceptibility to wind and water erosion, possibly resulting in increased runoff and erosion during site preparation. These effects would be minimized, however, by the use of appropriate best management practices (BMPs) for controlling runoff, erosion, and sedimentation during construction. Example BMPs include using silt fencing, straw bale dikes, diversion ditches, riprap channels, water bars, terracing, seeding and mulching, sediment traps and basins, cover vegetation, and natural or man-made fibrous mats or other stabilizing materials to control soil erosion. A Storm Water Pollution Prevention Plan (SWPPP) would be developed specifically for this site to reduce impacts to soils. In addition, all the runoff created from new construction will be retained with a controlled exit. A portion of the runoff from redevelopment activities in the Stony Lonesome I housing area will also be retained with controlled exit.

Prime Farmland. No effects on prime farmland would be expected.

Petroleum and Minerals. No effects on petroleum or minerals would be expected.

Seismicity. No effects on seismicity would be expected.

4.5.2.2 No Action Alternative

No effects on geology, topography, soils, or prime farmland would be expected.

4.6 WATER RESOURCES

4.6.1 Affected Environment

4.6.1.1 Surface Water

Surface Water Features. The surface water systems of USAG are composed of many streams totaling approximately 75 stream miles and lakes covering approximately 625 acres. The western shore of the Hudson River forms the eastern boundary of the cantonment area and divides the installation from Constitution Island on the eastern side of the river. The largest stream on the installation is the Popolopen Brook, which flows through the largest lake on the installation, Popolopen Lake, as well as through two other lakes (Mine Lake and Stillwell Lake) before emptying into the Hudson River at Fort Montgomery (USMA GIS, 2006; A. Bjornsen, USMA, pers. comm., 1 August 2006).

Surface water features within the RCI footprint include 1.8 stream miles of Sinclair Pond Brook, 1.3 stream miles of Crow's Nest Brook, and 0.7 stream miles of Kinsley Farm Brook. All three are considered perennial streams and are considered waters of the U.S. (NEA, 2004). The Sinclair Pond Brook flows in an easterly direction through the Grey Ghost housing area and then empties into the Crow's Nest Brook. Crow's Nest Brook forms part of the northern boundary of the RCI footprint near the Band Quarters housing area and then flows adjacent to the Lee Community housing areas before it empties into the Hudson River east of Buffalo Soldiers Field after passing through a large culvert under Target Hill Field. The Kinsley Farm Brook flows south from the Lusk Reservoir through the Old English South housing area and empties into the Hudson River east of Buffalo Soldiers Field (USMA GIS, 2006).

There are no ponds or other surface water features within the RCI footprint. Delafield Pond outlet, a Class B body of water under 6 NYCRR part 862, flows beneath Old English North Housing area. Dassori Pond and its outlet stream are just south of the Stony Lonesome housing area. This pond and stream are associated with an emergent palustrine wetland, which is

discussed in Section 4.7, Biological Resources. Lusk Reservoir is west of the Lusk housing area (USMA GIS, 2006). The surface water features within and near the RCI Footprint are presented in Figure 4-1.

Surface Water Quality. NYDEC has characterized the water quality of Lusk Reservoir as a Class A waterbody (suitable for water supply), Kinsley Farm Brook, Delafield Pond, and Delafield Pond Outlet as Class B (suitable for public bathing and fish consumption), and Crows Nest Brook, Dassori Pond and Sinclair Pond Brook as Class C (suitable for primary and secondary contact recreation, and fish propagation and survival) (NEA, 2004). EPA placed the nearby section of the Hudson River on the section 303(d) Impaired Waterbody list in 2002 for cadmium concentrations and in 1998 for PCB concentrations. There are no impaired waters within the RCI footprint (USEPA, 2002).

Sources of potential water quality concerns in the cantonment area include storm water runoff from impervious surfaces, such as vehicle parking lots; chemicals used for lawn maintenance; and highly erodible soils. Vehicle parking contributes small, unquantified amounts of fuel, oils, grease, antifreeze, and other contaminants from leakage and routine activities. Because of the presence of potentially erodible soils in the RCI footprint, turbidity in runoff can be a problem in the absence of adequate vegetative cover.

4.6.1.2 Groundwater

The potable water supply at USAG is primarily derived from surface water sources. The potable water supply is discussed in more detail in Section 4.11.1.1. Productive groundwater sources on USAG are alluvial aquifers associated with the Hudson River and Popolopen Brook. The only identified wells that pull water from these sources are small diameter wells in the training areas west of the RCI footprint (NEA, 2004).

4.6.1.3 Floodplains

Floodplain areas for 100-year floods occur along the Hudson River at the eastern border of the installation and near Stillwell Lake, Popolopen Lake, and Popolopen Brook in the western training areas of the installation. There are no 100-year floodplains within the RCI footprint. The entire RCI footprint is categorized as an area protected by levees from 1 percent annual chance flooding or that is determined to be outside the 100-year and 500-year annual chance floodplains (FEMA, 1996).

4.6.2 Consequences

4.6.2.1 Proposed Action

Surface Water. Short-term minor adverse effects would be expected. In the short term, construction and demolition activities would be expected to increase the possibility of soil erosion and resulting increases in total suspended solids in nearby waters. In addition, leakage from construction equipment could increase petroleum hydrocarbon pollution in surface waters.

The NYDEC Storm Water Program requires permit coverage for storm water discharges from construction activities disturbing more than 1 acre of land. All RCI construction would be conducted in accordance with the terms of a Storm Water Permit and accompanying SWPPP developed specifically for this site. BMPs specified in the storm water permits and common erosion control techniques would reduce the sedimentation into surface waterbodies. Examples of

BMPs include silt fencing and straw bales to trap waterborne sediments and minimize erosion, and the reseeding and revegetating of affected areas following construction to minimize waterborne sediment.

Groundwater. Short-term minor and long-term negligible adverse effects would be expected for groundwater resources. Waterborne contaminants contributed by construction activities could be transported into the groundwater system. Following water-protection protocols and implementing BMPs would reduce potential effects.

Floodplains. No effects on floodplains would be expected.

4.6.2.2 No Action Alternative

No effects on surface water, groundwater, or floodplains would be expected.

4.7 BIOLOGICAL RESOURCES

4.7.1 Affected Environment

On the basis of a classification system developed for the state of New York, USAG is within an area of the Hudson Valley known as the Hudson Highlands, an ecozone consisting of Appalachian ridges and valleys that is in the New England Upland physiographic province (Reschke, 1990). Regionally, the Highlands have been recognized as important terrestrial wildlife habitat. Hundreds of species of flora and 32 vertebrate species listed by New York as endangered, threatened, or special concern are found in the Highlands. Ten of the plant species also have some kind of federal status.

4.7.1.1 Flora

An inventory of vegetative communities at USAG conducted in 1993-1994, and updated in 1995 (Kakerbeck, 1995), indicated that the presence of 28 terrestrial community types according to the New York Natural Heritage Program's (NYNHP) *Ecological Communities of New York State* (Reschke, 1990). Of these 28 community types, five are found within and bordering the RCI footprint. A brief description of each is provided below.

Appalachian Oak-Hickory Forest. This hardwood forest occurs in various forms on a wide range of sites and conditions. On well-drained bottomlands, benches, or coves and this community often gives rise to high-quality stands of northern red oak (*Quercus rubra* var. *borealis*) and black oak (*Q. veluntia*). There is typically a subcanopy stratum of small trees and tall shrubs, including flowering dogwood (*Cornus florida*), witch hazel (*Hamamelis virginiana*), shadbush, and choke cherry (*Prunus virginiana*). Hickory (*Carya* sp.), the other signature species of this community, is rarely abundant, and sometimes absent, but contributes to the mast crop.

In areas that USMA has cleared, burned, or otherwise disturbed within the past 60 years, young stands of regenerational oak are now widespread. Scarlet (*Quercus coccinea*) or black oak are usually dominant with little or no hickory. Red oak, white oak (*Q. alba*), chestnut oak, and red maple (*Acer rubrum*) are common associates; the ground cover typically consists of black huckleberry, sweetfern (*Comptonia peregrina*), wintergreen, and the sedge *Carex albicans* var. *albicans*.

Chestnut Oak Forest. This locally common hardwood forest occurs on dry ridgetops and slopes in glaciated portions of the Appalachians. It thrives on the well-drained, thin soil of the poorest quality sites and is characterized by a few canopy dominants and minimal diversity in the understory. Dominant trees are typically chestnut oak (*Quercus montana*) and red oak (*Q. rubra*). Common associates are white oak (*Q. alba*), black oak (*Q. velutina*), and red maple (*Acer rubrum*). American chestnut (*Castanea dentata*) was a common associate in these forests before the chestnut blight, though chestnut sprouts are still found in some stands. Common sub and ground layer plants are huckleberry, mountain laurel, blueberry, *Carex albicans* var. *albicans*, wintergreen (*Gaultheria procumbens*), and cushions of the moss *Leucobryum glaucum*.

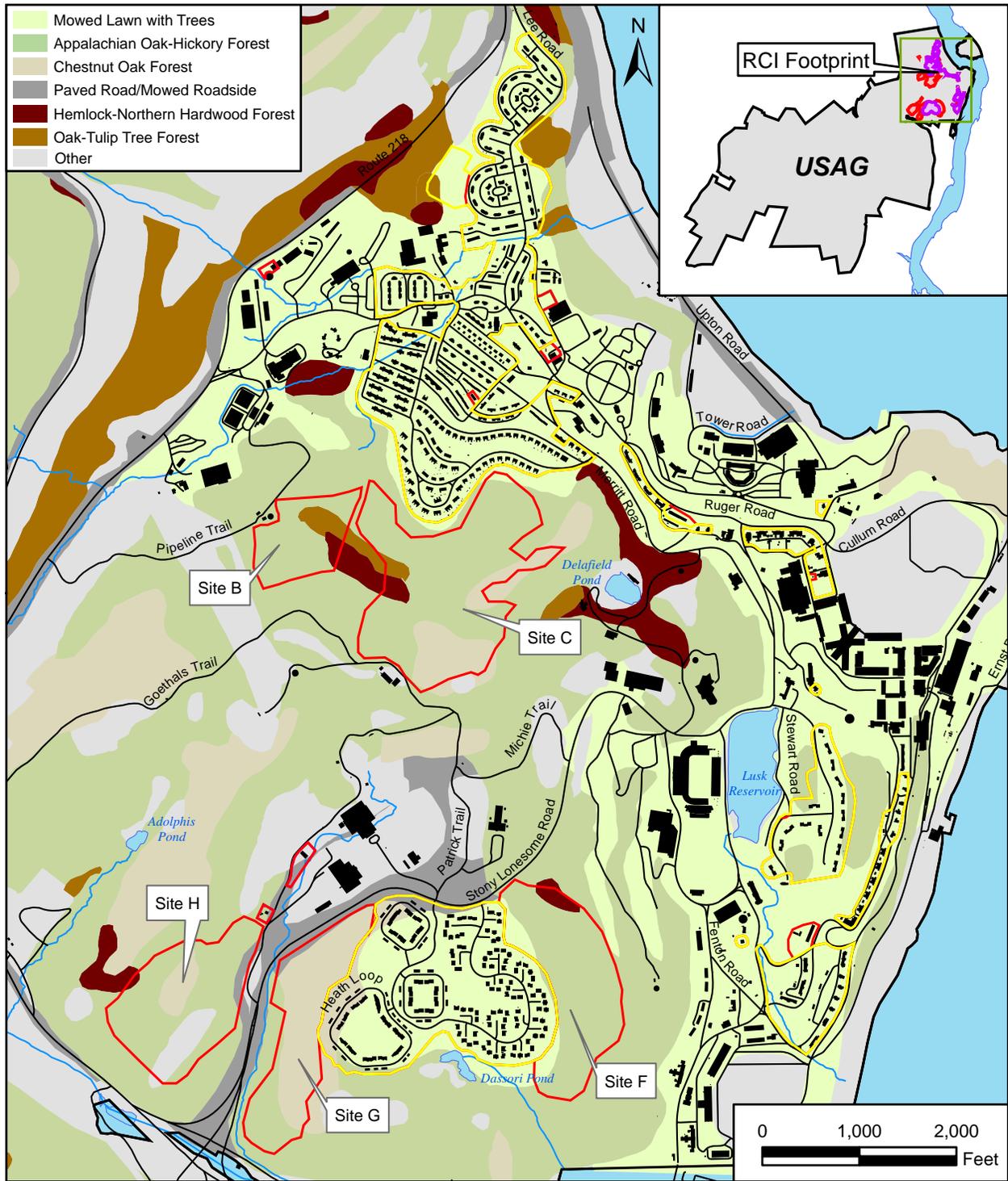
Oak-Tuliptree Forest. This mesophytic hardwood forest occurs on moist, well-drained sites in southeastern New York. The dominant trees include a mixture of five or more of the following: red oak, tulip tree (*Liriodendron tulipifera*), beech (*Fagus grandifolia*), black birch (*Betula lenta*), red maple, scarlet oak, black oak, and white oak. There is typically a subcanopy stratum of small trees and tall shrubs, and the shrub layer and ground layer flora may be diverse. Characteristic ground layer herbs are white wood aster (*Aster divaricatus*), New York fern (*Thelypteris noveboracensis*), wild geranium (*Geranium maculatum*), Solomon's-seal (*Polygonatum biflorum*), and Jack-in-the-pulpit (*Arisema triphyllum*). This community commonly intergrades with beech-maple mesic and oak-hickory forests.

Hemlock-Northern Hardwood Forest. This mixed forest typically occurs on middle to lower slopes of ravines; on cool, mid-elevation slopes; and on moist, well-drained sites at the margins of swamps. In any one stand, hemlock is codominant with any one to three of the following: beech, sugar maple, red maple, chestnut oak, white pine, yellow birch (*Betula lutea*), black birch, red oak, and basswood. Striped maple is often predominant as a mid-story tree. Characteristic ground layer plants include partridgeberry (*Mitchella repens*), Leucobryum moss, and Christmas fern.

Successional Hardwoods. This community is a loosely defined hardwood type that can be a composite of both northern and southern successional species and can vary in growth stages from saplings to mature trees. On USMA it is found on some reservation old fields and disturbed lands such as construction sites and burns.

Drainage, soil, slope, and aspect determine the dominant tree species, which can be any of the following: aspen, black birch, gray birch (*Betula populifolia*), cottonwood (*Populus deltoides*), sassafras (*Sassafras*), red maple, hawthorn (*Crataegus* sp.), and black cherry. Multiflora rose (*Rosa multiflora*), Japanese barberry, grape (*Vitis* sp.), greenbriar (*Smilax* sp.), and poison ivy (*Rhus radicans*) are sometimes present in the understory, especially in young stands.

As seen in Figure 4-2 and Table 4-9, more than 55 percent (224 acres) of the RCI footprint is landscaped and consists of mowed lawns, some trees, and ornamental shrubbery. The remaining 180 acres consist primarily of oak-hickory forest (127 acres or 31.4 percent), and chestnut oak forest (45 acres or 11 percent). Proposed sites B, C, H, and F are primarily Appalachian oak-hickory with some chestnut oak forest, and site G is primarily chestnut oak with some Appalachian oak-hickory. In addition, small areas of hemlock-northern hardwood forest, rich rocky woodland, and oak-tulip forest occur in the undeveloped areas.



Vegetation Cover

Source: USAG GIS, 2006.

Figure 4-2

**Table 4-9.
Ecological Communities within the USAG RCI Footprint**

| Community Type | Number of Acres | Percentage of Footprint |
|----------------------------------|------------------------|--------------------------------|
| Mowed lawn with trees | 224 | 55.4% |
| Appalachian oak-hickory | 127 | 31.4% |
| Chestnut oak forest | 45 | 11.1% |
| Paved road/mowed roadside | 4 | 0.1% |
| Oak-tulip tree forest | 4 | 0.1% |
| Successional hardwoods | 0.03 | Less than 1% |
| Hemlock-northern hardwood forest | 0.03 | Less than 1% |
| TOTAL | 404.06 | 100% |

4.7.1.2 Fauna

Long-term census and survey data indicate that on USAG there are 48 species of mammals, 249 bird species, including 110 species that breed on the installation, and another 10 nonbreeding winter residents, 22 species of reptiles, including the state-listed timber rattlesnake (*Crotalus horridus*), 18 species of amphibians, with 5 more believed to be present but not confirmed, and 45 common fish species (USMA, 2003).

The landscaped cantonment area does not, by nature, provide good habitat for wildlife. Development and human activity have forced native animal populations to less disturbed and less active areas of the installation, such as the training areas. Wildlife species common within the RCI footprint include white-tailed deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), eastern cottontail rabbit (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), groundhog (*Marmota monax*), and mourning dove (*Zenaidura macroura*). In addition, the occasional black bear (*Ursus americanus*) has been observed moving through, or in close proximity to, the cantonment area.

Detailed listings of faunal species on USAG are provided in the USMA Integrated Natural Resources Management Plan (INRMP) (USMA, 2003).

4.7.1.3 Species of Special Concern

4.7.1.3.1 Threatened and Endangered Species

In 1991 and 1992, in accordance with the requirements of AR 200-3 and the Endangered Species Act (ESA), the Biological Survey Unit of the New York State Museum conducted a survey of threatened and endangered fauna and flora on USAG properties (New York State Museum, 1994). The survey did not include the USAG section of the Hudson River. Results of the survey indicated that no species listed under ESA as endangered or threatened were found to be permanent residents of or to breed on USAG. The survey did find, however, that the bald eagle, a state and federally threatened species, is a frequent winter visitor to both the reservation and Constitution Island and that suitable habitat existed for the state- and federally endangered Indiana bat and the then federally threatened peregrine falcon (the peregrine falcon is no longer federally listed). Three bird species—golden eagle, red-shouldered hawk, and osprey (which at the time were state-listed)—were observed in forested areas on the reservation during the survey, but were not considered residents. The only state-listed terrestrial animal species found to be a permanent resident of West Point was the timber rattlesnake.

Since that initial survey, much work has been done to better understand the rare animal species found at USAG, in New York, and in the United States. Some species—the peregrine falcon, osprey, and red-shouldered hawk—have recovered enough to be downgraded from endangered species lists. Other species have gone the other way, becoming rarer and eventually requiring inclusion on the protected species lists. New resident and visitor species have been discovered at West Point, and those previously identified have been more intensively studied. Table 4-10 lists those federal and state-listed species documented at USAG, as well as species listed as *special concern* by the state and candidates for possible future inclusion on the federal endangered species list.

Table 4-10.
Federal and State Listed Endangered and Threatened Animal Species Found on West Point and Constitution Island

| Scientific Name | Common Name | Location | Federal and State Status | USAG Status |
|-----------------------------------|-----------------------|------------------------------|--------------------------|-------------|
| <u>Mammals:</u> | | | | |
| <i>Myotis leibii</i> | small-footed bat | West Point (WP) | C, SC | R |
| <i>Myotis sodalis</i> | Indiana bat | WP | FE, SE | P, V |
| <i>Neotoma magister</i> | Allegheny wood rat | WP | SE, X | X (?), H |
| <u>Birds:</u> | | | | |
| <i>Accipiter cooper cooperii</i> | Cooper's hawk | WP | SC | R |
| <i>Accipiter gentilis</i> | northern goshawk | WP | C, SC | V, P |
| <i>Accipiter striatus</i> | sharp-shinned hawk | WP | SC | R |
| <i>Aquila chryseatos</i> | golden eagle | WP | SE | V, H (?) |
| <i>Botaurus lentiginosus</i> | American bittern | WP, Constitution Island (CI) | SC | R |
| <i>Buteo lineatus</i> | red-shouldered hawk | WP | SC | R(?), V |
| <i>Caprimulgus vociferus</i> | whip-poor-will | WP | SC | R |
| <i>Chordeiles minor</i> | common nighthawk | WP | SC | P |
| <i>Dendroica cerulea</i> | cerulean warbler | WP | C, SC | R |
| <i>Falco peregrinus anatum</i> | peregrine falcon | WP | SE | V, H |
| <i>Gavia immer</i> | common loon | WP, CI | SC | V |
| <i>Haliaeetus leucocephalus</i> | bald eagle | WP, CI | FT, ST | V, W, H |
| <i>Icteria virens</i> | yellow-breasted chat | WP | SC | V, P |
| <i>Ixobrychus exilis</i> | least bittern | WP, CI | ST | R |
| <i>Melanerpes erythrocephalus</i> | red-headed woodpecker | WP | SC | V |
| <i>Pandion haliaeatus</i> | osprey | WP, CI | SC | V, R(?) |
| <i>Podilymbus podiceps</i> | pieb-billed grebe | WP, CI | ST | P, V |
| <i>Pooecetes gramineus</i> | vesper sparrow | WP | SC | V, P |
| <i>Vermivora chrysoptera</i> | golden-winged warbler | WP | SC | R |
| <u>Reptiles:</u> | | | | |
| <i>Carphophis amoenus</i> | eastern wormsneak | WP | SC | R |
| <i>Clemmys guttata</i> | spotted turtle | WP, CI | SC | R |
| <i>Clemmys insculpta</i> | wood turtle | WP | SC | R |
| <i>Crotalus horridus</i> | timber rattlesnake | WP | ST | R |

**Table 4-10.
Federal and State Listed Endangered and Threatened Animal Species Found on
West Point and Constitution Island (continued)**

| Scientific Name | Common Name | Location | Federal and State Status | USAG Status |
|---------------------------------|-------------------------|------------------------|--------------------------|-------------------------|
| <i>Heterodon platyrinos</i> | eastern hognose | WP | SC | R |
| <i>Terrapene carolina</i> | eastern box turtle | WP, CI | SC | R |
| <u>Amphibians:</u> | | | | |
| <i>Ambystoma jeffersonianum</i> | Jefferson salamander | WP | SC | R |
| <i>Ambystoma laterale</i> | blue-spotted salamander | WP | SC | R(?) |
| <i>Ambystoma opacum</i> | marbled salamander | WP | SC | R |
| <i>Scaphiopus Holbrook</i> | eastern spadefoot toad | WP (?) | SC | R (?) |
| <u>Fish:</u> | | | | |
| <i>Acipenser brevirostrum</i> | shortnose sturgeon | WP, Hudson River | FE, SE | R, Hudson River |
| <i>Acipenser oxyrinchus</i> | Atlantic sturgeon | Hudson River | CD | R |
| <u>Insects:</u> | | | | |
| <i>Enallagma laterale</i> | Lateral Bluet | WP | C | R |
| <u>Federal Status:</u> | | <u>State Status:</u> | | <u>USAG Status:</u> |
| FE = Federal Endangered | | SE = State Endangered | | R = Resident |
| FT = Federal Threatened | | ST = State Threatened | | V = Visitor, Migrant |
| C = Federal Species of Concern | | SC = Special Concern | | P = Possible Resident |
| F = Federal Protected; | | X = Extinct/Extirpated | | H = Historical Resident |
| listed under CITES | | | | ? = Status Unknown |
| | | | | X = Locally Extinct |

Source: USMA, 2003.

^a Federal status.

E = Endangered. Species that is in danger of extinction throughout all or a significant portion of its range.

T = Threatened. Species that is likely to become endangered within the foreseeable future.

C = Candidate. Species is ready for proposed listing.

PS = Indicates "partial status"—status in only a portion of the species' range. Typically indicated in a "full" species record where an infraspecific taxon or population has U.S. ESA status but the entire species does not.

S/A = Listed as endangered or threatened because of similarity of appearance.

^b State Status.

E = Endangered. Species listed in the Wildlife code under 3CSR 10-4.11 are protected by State Endangered Species Law 252.240.

^c Srank.

S1 = Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state (typically five or fewer occurrences or very few remaining individuals).

S2 = Imperiled in the state because of rarity or because of some factor(s) making it vulnerable to extirpation from the state (6 to 20 occurrences or few remaining individuals or acres).

S3 = Rare and uncommon in the state (21 to 100 occurrences).

S4 = Widespread, abundant, and apparently secure in the state, with many occurrences, but the species is of long-term concern (usually more than 100 occurrences).

Shortnose Sturgeon (*Acipenser brevirostrum*). This federally and state endangered fish occurs at USMA in the Hudson River adjacent to the cantonment area and Constitution Island. USAG is located between river mile 51 and river mile 54, and owns three miles of the western shore, and 1.5 miles of shoreline at Constitution Island on the east bank. This includes the river bottom from the shore out to the river's midpoint.

While the shortnose sturgeon does occur offshore of the Reservation, recent studies by the New York Cooperative Fish and Wildlife Research Unit at Cornell University and other researchers suggests that the species could be limited in its usage of this part of the Hudson River. Juvenile shortnose sturgeon showed a preference for water depths greater than 2 meters and were more common in depths exceeding 6 meters (Haley et al., 1996). Further, juveniles were not sampled below river mile 64 (Haley et al., 1996). In the Hudson River, the shortnose sturgeon's spawning area is north of Catskill, NY up to the Troy Dam. Little is known about the distribution of nonbreeding adults, but pre-spawn adults overwinter in the section of the river near Kingston before heading toward Troy in the spring when water temperatures are right. The species is a deepwater benthic feeder, feeding on mollusks and other macroinvertebrates.

USAG's Natural Resources Branch prepared an *Endangered Species Management Plan for the Shortnose Sturgeon* (USMA, 2003).

Bald Eagle (*Haliaeetus leucocephalus*). The bald eagle was delisted by the federal government on June 28, 2007, however it is listed as *threatened* by the state of New York. At USAG, the bald eagle is a commonly sighted wintertime resident, often observed near the installation's larger waterbodies. This is one of the most intensively studied species at USAG, and the Natural Resources Branch performs or contracts for a variety of surveys to document day and nighttime use of the USAG properties by these birds.

Eagles may be seen anywhere on the West Point Military Reservation (WPMR) where they scavenge fish and bait left behind by ice fishermen when the lakes are frozen, scavenge deer carcasses, hunt ducks, and catch fish after ice-out. They are even known to occasionally land in trees in the populated cantonment area.

Eagles are most consistently viewed resting in the tall trees on the shoreline of Constitution Island or foraging among the icefloes on the Hudson River. This part of the Hudson River is an important wintering area for eagles because tidal movement, strong currents, and Coast Guard ice-cutters keep open water available for the birds long after other, smaller, less turbulent waterbodies have frozen solid. Indeed, during harsh winters, birds wintering in the Delaware River/Mongaup River wintering area sometimes shift to the Hudson River during particularly cold, snowy winters. Other locations favored by bald eagles at USAG are Stilwell and Popolopen Lakes.

In addition to resting and foraging activities, bald eagles have been documented using parts of West Point for communal winter night roosts. Satellite telemetry data from 1997 to 2000 showed a variety of locations where single eagles roosted overnight, and up to eight eagles have been observed roosting in trees at another location.

Although eagles have been seen on USAG properties every month of the year, it has been more than 100 years since an eagle nest has been documented for the West Point area (Bull, 1985). Apparent nest-building and pair-bonding activities by a pair of bald eagles observed near Stilwell Lake in February and March 2002 were followed with much interest, but did not result in active nesting.

Indiana Bat (*Myotis sodalis*). Indiana bats have been observed three times on the reservation, and there is evidence to suggest that the species might use some parts of USAG for foraging and resting.

In September 1992, a single Indiana bat was observed perched on a wall in an abandoned mine near the main impact area. In January 1993, a return visit to the mine found eight or nine bats huddled in a bore hole at the back of the mine. These two sightings seem to be an anomaly, and have never been repeated in subsequent surveys. In the winter of 1999–2000, the reason became clear. The Indiana bat has a very narrow range of acceptable temperatures in which it can hibernate. If conditions are too warm, the bat's metabolism never slows sufficiently, and the bats starve before spring; if it is too low, the sleeping bats freeze. A thermograph placed in the mine in 1999 recorded temperatures that were too warm to support sleeping bats (Gannon and Sherwin, 2001).

The likely explanation for the sightings in 1992–1993 is that bats are aware of the mine and may use it as a stopover during migration. This is supported by the sighting of the single bat in September. The winter of 1992–1993 arrived early with freezing temperatures below normal. It is theorized that the bats seen in January 1993 were short-stopped before they could reach their normal hibernaculum and spent the winter in what is normally a temporary shelter.

In 1999 and 2000, a survey to document the bat communities on USAG properties was conducted (Gannon and Sherwin, 2001). During the survey, one male Indiana bat was captured in a mist net, and 39 call sequences attributed to the species were recorded with ANABAT detectors.

These findings prompted a second survey in 2002 following U.S. Fish and Wildlife Service (USFWS) Indiana bat survey protocols to further document the population of Indiana bats using the WPMR (NYNHP, 2003). In 96 trap-nights, no Indiana bats were caught. The conclusion that was drawn from this was that, while Indiana bats may use the WPMR, it could be that only transient males or non-breeding females use the property for foraging. Breeding females, which are closely tied to their communal nurseries, would have certainly been caught had there been a nursery in the vicinity of the mist nets used. The greater concentrations of feeding bats around a nursery tree would have increased the probability of their capture. Males and non-breeding females wander during the summer and are much more dispersed, using a wider variety of habitats. This would make them less likely to be captured, and would explain both the single bat caught in the 1999–2000 survey, as well as the 39 recorded bat calls purportedly identified as Indiana bats.

Timber Rattlesnake (*Crotalus horridus*). This snake is a sensitive and retiring species, unable to persist in the face of too much human disturbance. The timber rattlesnake is listed as *threatened* by New York, and the species and its hibernacula are of special interest for protection. Five extant timber rattlesnake dens have been identified within, or very near, the West Point Reservation boundary, with one extinct population also known from USAG lands.

Since 1993, USAG has contracted with a local rattlesnake expert to track and monitor timber rattlesnake populations at West Point. Using radio telemetry equipment and field surveys, hibernacula and high-use summer areas have been identified. Two areas with hibernacula have been placed off limits to training to prevent negative troop/rattlesnake interactions.

There are occasional conflicts between humans and snakes at USAG. Most commonly, snakes are accidentally killed when crossing or basking on roadways. During the summer of 2002, seven snakes were killed on NY Route 218 adjacent to USMA. During summer months, military and

civilian personnel occasionally encounter rattlesnakes on the Reservation, and while regulations prohibit harming or harassing the snakes, negative results sometimes happen. Snakes sometimes find their way into housing areas in the cantonment area, and these snakes are promptly relocated by the Natural Resources Branch.

Eastern Box Turtle (*Terrapene c. Carolina*). The Eastern box turtle is a New York listed Species of Special Concern. This species is known to occur within the RCI footprint.

Pied-billed Grebe (*Podilymbus podiceps*). The state threatened pied-billed grebe can occasionally be found in West Point's ponds and sloughs. The grebe has been seen in Mine Lake, Brooks Hollow, Cranberry Pond, and Weyants Pond during the breeding and brood rearing seasons, but has never been observed paired or in the company of young. The pied-billed grebe is a secretive species, and it is possible that this species is a resident breeder that has not been confirmed to date.

Least Bittern (*Ixobrychus exilis*). The state threatened least bittern is known to occur at a variety of locations on West Point Military Reservation (WPMR), as well as in the Constitution Island marsh. Breeding for this species has been confirmed on the WPMR and in Constitution Marsh Sanctuary, which is managed by the National Audubon Society. This species does not occur within the RCI footprint.

Cerulean Warbler (*Dendroica cerulea*). In 1997 and 1998, a survey was conducted by the U.S. Geological Survey Biological Resources Division to document the distribution, abundance, and habitat associations of the cerulean warbler (*Dendroica cerulea*) and other forest-nesting birds on the reservation, including within the cantonment area and the RCI footprint. Bird counts were conducted at 411 points, divided between two basic survey designs, a systematic sample (205 points) and a habitat-based sample (206 points). Cerulean warblers were detected at 20 points (8 systematic points, 12 community points). Breeding was confirmed at four of these points and was probable at the other 16, according to recorded bird behavior. On October 23, 2002, the USFWS announced a petition to list cerulean warbler presented substantial information indicating that listing the species may be warranted. The USFWS also initiated a 12-month status review for the species.

Small-Footed Bat (*Myotis leibii*). During the 1999–2000 bat survey, two lactating female small-footed bats (*Myotis leibii*) were captured on the WPMR (Gannon and Sherwin, 2001). In the 2002 survey, the New York Natural Heritage Program captured two lactating female small-footed bats—one in the Cat Hollow Special Natural Area (SNA), and the other in the Constitution Island SNA. This species is listed by New York State as a species of special concern. The USFWS is evaluating this bat's status for possible listing under the ESA. As with the cerulean warbler (*Dendroica cerulea*), an upgrade in this species' status will warrant special attention.

Peregrine Falcon (*Falco peregrinus anatum*) and Golden Eagle (*Aquila chryseatos*). The peregrine falcon and the golden eagle, both state endangered birds, are sometimes seen on USAG. Golden eagles are most often seen in the winter, usually near Stilwell Lake or the Popolopen Brook valley. These are usually immature birds, but adults are seen at times, most often corresponding with migration. The peregrine falcon was a historic resident of West Point, and its preferred nesting habitat is available on the reservation. However, no recent data suggests that this species has nested on USMA in recent history. Nevertheless, this is a rebounding species, and active nests have been found both north and south of West Point at Breakneck Ridge and the Bear Mountain Bridge. This could mean a return of this bird as a resident to USMA.

Allegheny Woodrat (*Neotoma magister*). The Allegheny woodrat (*Neotoma magister*), a federal candidate species and a New York endangered species, was historically found at USMA. This animal's preferred habitat in New York is large talus caves near its preferred food—red oak acorns. USAG has both in abundance. A survey by the NYDEC Endangered Species Unit in 1981 identified only one possible USAG site that might have still possessed an extant woodrat population, but no woodrat was ever captured. Following tests conducted on woodrat carcasses collected at the Mohonk Preserve in upstate New York in 1987, the NYDEC concluded that an extreme susceptibility to the nearly ubiquitous raccoon roundworm (*Baylisascaris procyonis*) had doomed the species, and consequently listed the Allegheny woodrat as officially extirpated in the wild (NYDEC, 1994).

However, because of the relatively recent nature of the apparent extirpation of the woodrat in New York, surveys are still carried out for this species. Because woodrats are known to still exist in remnant populations in the northeast, and because the habitat for this species is still available at West Point, it is conceivable that there could be a hidden population of woodrats somewhere on West Point. As of yet, there has been no data to suggest this. In 1994, a follow-up survey at USAG by the NYDEC Endangered Species Unit could not locate any extant population of woodrats at USAG.

With the possible exception of the timber rattlesnake, no threatened and endangered species is expected to occur within the RCI footprint.

4.7.1.3.2 Rare Plants

Inventories of rare plants on USAG (Barbour, 1996 and 2001) indicated the presence of 63 special status plant species, 22 of which are on the New York Natural Heritage Program Watch List. There are 14 occurrences of rare plants within 200 meters of the RCI footprint. Rare plants and the number of occurrences are provided in Table 4-11.

Table 4-11.
**Rare Plants Occurring Within or in Close Proximity
to the USAG RCI Footprint**

| Common Name | Scientific Name | Number of Occurrences |
|-------------------------|------------------------------|-----------------------|
| Dittany | <i>Cunila origanoides</i> | 3 |
| Racemed pinweed | <i>Lechea racemulosa</i> | 1 |
| Scheber's aster | <i>Aster schreberi</i> | 1 |
| Small-flowered crowfoot | <i>Ranunculus micranthus</i> | 2 |
| Straw sedge | <i>Carex straminea</i> | 1 |
| Violet bush clover | <i>Lespedeza violacea</i> | 2 |
| Yellow harlequin | <i>Corydalis flavula</i> | 4 |

Source: USMA, 2006

4.7.1.3.3 Migratory Birds

Except for some resident game birds such as wild turkey, most of the birds on USAG are protected under the Migratory Bird Treaty Act (MBTA). This act implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. All military installations must comply with the

provisions of the MBTA. The MBTA does not allow intentional or unintentional *take* of migratory birds. *Take* means to pursue, hunt, shoot, kill, trap, capture, or collect.

For the almost 75 species of neotropical migrants that nest in the Highlands—such as the red-eyed vireo (*Vireo olivaceus*), American redstart (*Setophaga ruticilla*), Canada warbler (*Wilsonia canadensis*), and eastern wood-peewee (*Contopus virens*)—the large tracts of forest at USAG provide interior habitat necessary for reproductive success and long-term survival of the species.

Numerous species of migratory birds can be expected to frequent the forested areas within the RCI footprint.

4.7.1.4 Wetlands

A 1993 inventory of wetlands on USAG found approximately 1,010 acres of wetlands throughout West Point in association with streams, ponds, depressions, and seeps. Most of the wetlands on USAG are small with areas of less than 5 acres, and only a few of the wetlands on the installation exceed 15 acres.

There is one small wetland within the RCI footprint. It is a palustrine emergent wetland that is associated with the outlet stream for Dassori Pond in the very southern tip of the RCI footprint. The portion of the wetland within the footprint is less than 0.1 acre in size. The entire wetland, including the area outside of the footprint, is 1.7 acres and surrounds Dassori Pond and the outlet stream.

4.7.1.5 Habitats of Concern

4.7.1.5.1 NYDEC-listed Significant Habitats

NYDEC has listed several areas on or adjacent to USAG as significant habitats. Three aquatic habitats of significance are Popolopen Brook, Hudson River (between miles 44 and 56) and Constitution Marsh, the latter of which provides a number of wetland habitats that are considered significant and are listed as Hudson River significant tidal habitats (NYSDES and The Nature Conservancy, 1990). None of these areas are located within or immediately adjacent to the RCI footprint.

4.7.1.5.2 Special Natural Areas

USAG has 12 sites that are specially managed because of their ecological or geological significance, unique geological structure, or aesthetic and educational value to the installation. None of these designated special natural areas are within or immediately adjacent to the RCI footprint.

4.7.1.5.3 Coastal Resources

USAG lies within the New York State coastal zone associated with the Hudson River, and within the Hudson Highlands, which has been designated a Scenic Area of Statewide Significance (SASS). The designation of an area as an SASS depends on the quality of its design in relationship to the coastal landscape, its uniqueness in the region, its accessibility to the public, and its recognition in terms of the public's appreciation for the resource. The *Coastal Policies of the State of New York* require the avoidance of significant impacts to sites with a SASS designation.

Pursuant to CFR 930.33(a), USAG is required to make a determination regarding the effects, if any, of the proposed activities on the land and water uses and natural resources of New York's coastal zone. In addition, pursuant to CFR 930.34(b), if USAG determines that the proposed activities will have no effect on the land and water uses and natural resources of New York's coastal zone, USAG is required to notify the NYSDOS at least 90 days before final project approval.

4.7.1.5.4 Essential Fish Habitat

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, the Secretary of the U.S. Department of Commerce has approved Essential Fish Habitat (EFH) for a variety of commercially harvested species that have federal Fishery Management Plans. Specifically, the West Point reach of the Hudson River, in the vicinity of the RCI footprint, lies within the river's estuary mixing zone. This reach of the Hudson River potentially provides habitat for a range of life stages of fish that have Fishery Management Plans within the Mid-Atlantic Unit, including red hake (*Urophycis chuss*), winter flounder (*Pseudopleuronectes americanus*), windowpane (*Scopthalmus aquosus*), Atlantic sea herring (*Clupea harengus*), bluefish (*Pomatomus saltatrix*), Atlantic butterfish (*Peprilus triacanthus*), summer flounder (*Paralichthys dentatus*), and black sea bass (*Centropristus striata*) (Kurkul, 2000). However, the bluefish is the only species that has been documented in this reach of the Hudson River by the NYDEC (Beemer, 2002c).

Under the Magnuson-Stevens Act, USAG has the authority, as a federal agency, to make determinations about EFH and the likely effects to such from agency actions. USAG is required to consult with NOAA Fisheries only when a significant adverse impact is likely to occur. USAG has determined that the proposed action will have no effect on EFH (pers. comm., James Beemer, USAG Natural Resources Manager, 13 September, 2007).

4.7.2 Consequences

4.7.2.1 Proposed Action

Flora and Fauna. Short-term negligible adverse on flora or fauna would be expected. The area within the RCI footprint is largely developed, for the most part is not populated with native vegetation, and does not represent good wildlife habitat. Although as much as 40 acres of forested area might be cleared in Site F, the acreage to be cleared is insignificant compared to the quantity of forested land on and surrounding USAG. In fact, timber harvests are routinely conducted on the installation with no adverse effects on wildlife.

Sensitive Species. No effects on threatened or endangered species are expected and no concerns have been expressed by the USFWS regarding threatened and endangered species for this project. Copies of coordination letters for this action between USAG and the USFWS are provided in Appendix D.

Short-term minor adverse effects to the eastern box turtle are expected to occur. Clearing of forested areas in Site F and construction activities throughout the RCI footprint are likely to result in short-term habitat loss and disruption to daily activities.

The potential exists for short-term minor adverse effects on rare plants to occur. However, impacts could be minimized or avoided by implementing the management measures provided in the *USMA Rare Plant Management Plan* and the INRMP. These measures include establishing

protective buffers and passive barriers to protect these species during construction and development activities.

It is likely that migratory bird species occasionally frequent the open and forested areas within the RCI footprint. Short-term minor adverse effects are expected from the clearing of forested areas in Site F and construction activities. However, outside the breeding season, these species do not remain permanently in any one location; therefore, adverse effects on the species are expected to be limited.

Wetlands. Short-term negligible adverse effects would be expected. Sedimentation and runoff from nearby construction sites has the potential to adversely impact the wetland. However, the impacts could be minimized by implementing stream and wetland protection BMPs, and maintaining the 100-foot buffer between the wetland and development activities.

Habitats of Concern. These habitats do not occur within or adjacent to the RCI footprint, therefore no effects on NYSDEC-listed significant habitats, special natural areas, coastal resources, or essential fish habitat would be expected.

4.7.2.2 No Action Alternative

No effects on biological resources on USAG would be expected under the no action alternative. Any future renovation or new construction of housing would be subject to USAG's BMPs for minimizing impacts on biological resources.

4.8 CULTURAL RESOURCES

4.8.1 Affected Environment

4.8.1.1 Prehistoric and Historic Background

The *United States Military Academy, West Point Integrated Cultural Resources Management Plan* (ICRMP) (USMA, 2001) contains a detailed description of the prehistoric and historic background for the project area and is incorporated here by reference.

4.8.1.2 Status of Cultural Resource Inventories and Section 106 Consultations

USMA's cultural resource management program operates under the guidance of the ICRMP prepared for the military reservation. The ICRMP (USMA, 2001) underwent revision in November 2001. The ICRMP sets forth the cultural resources inventory and management issues facing the installation, and presents standard operating procedures to ensure installation-wide compliance with historic preservation legislation and policies and protection of cultural resources. The ICRMP revision was completed in February 2007. USMA currently has one programmatic agreement (PA) with the New York State Historic Preservation Officer (SHPO). This PA addresses the general operation, maintenance, and development of USMA, cultural resource management studies to be completed at USMA, and exemptions from compliance with Section 106 of the *National Historic Preservation Act* (NHPA). A PA is currently under development for the proposed RCI program at USMA. This PA, which will be provided in Appendix E, will address the roles and responsibilities to be fulfilled by USMA, the SHPO, and the Development Entity under the RCI program to ensure protection of properties listed, eligible, or potentially eligible for listing on the National Register of Historic Places (NRHP). Such properties are termed *historic properties*.

The central portion of USMA was designated by Congress as a NHLD in 1960. At the time, the nomination of the NHLD did not include detailed documentation of the architectural resources within the District. The NHLD's boundaries have changed over the years due to re-assessments, and with the changing boundaries the number of contributing and noncontributing buildings and structures within those boundaries have also changed (USMA, 2001). The District encompasses 2,500 acres and more than 700 buildings and structures. An architectural survey is currently underway and approximately 29 percent of the surveyable acreage has been inventoried (T. Beckwith, pers.comm., 26 November 2007). Also, the NHLD nomination is being revised. The PA for the RCI program will include an appendix that lists the contributing and noncontributing housing properties for the NHLD. When the RCI PA is signed and fully executed, it will become the official listing of the NHLD's contributing and noncontributing housing architecture.

In addition to buildings, 34 monuments and 18 bridges have been recommended as eligible or potentially eligible for listing on the NRHP. Also, 17 NRHP-eligible historic landscapes have been identified at USMA, some of which may contribute to the NHLD. Finally, all historic stone walls at USMA are treated as potentially eligible. (USMA, 2001)

Approximately 13 percent of USMA has been systematically inventoried for archaeological resources and has resulted in the identification of 150 archaeological sites. Prehistoric site types include rock shelters, camps, lithic scatters, and isolated finds. Historic sites encompass periods relating to the Revolutionary War, early settlement, early iron industry, and the development of the academy. Of the known archaeological sites, 65 have been determined NRHP-eligible and 23 have been determined ineligible. The remaining 62 sites have not been formally evaluated and thus are considered potentially eligible for the NRHP. A high potential exists for additional archaeological resources to be discovered in undeveloped areas of the core area of the academy. (USMA, 2001)

The Area of Potential Effect for the proposed RCI Program includes the buildings and structures that would be transferred, areas of any potential ground disturbance, historic landscape areas in the vicinity of the project area, and portions of the NHLD in the vicinity. The RCI footprint includes existing housing developments and one 40-acre lease parcel for new housing. The existing developments have little possibility for intact archaeological resources due to the extensive disturbance from construction. However, there is one site, the Wyllis Redoubt, located within one existing housing development. The entire RCI footprint is within the NHLD. Much of the existing housing in the RCI footprint is contributing to the NHLD. Thirty-one housing buildings are major contributing elements to the NHLD, and are also individually eligible for listing on the NRHP. There are 108 housing buildings that are contributing elements and many of these are also individually eligible for the NRHP. There are 198 housing buildings that are neither NHLD contributing elements, nor are individually eligible for the NRHP.

The new 40-acre parcel has a high potential for archaeological sites due to its undeveloped nature and location on uplands above a major river (USMA, 2001). Area F has had no archaeological survey conducted. There are currently no known archaeological sites located within this new parcel.

Consultation with the New York SHPO is underway. A letter regarding the proposed action was sent to the SHPO; a copy is provided in Appendix D. USMA is also developing a PA among the Department of the Army, the Development Entity, Advisory Council on Historic Preservation (ACHP), and the New York SHPO for the RCI program at USMA.

4.8.1.3 Federally Recognized Native American Groups and Traditional Cultural Properties (TCPs)

USMA has a Memorandum of Understanding (MOU) with the Stockbridge-Munsee Band of Mohican Indians of Wisconsin. USMA has initiated consultation with this group and the St. Regis Band of Mohawk Indians regarding the proposed RCI project. A letter regarding the proposed action was sent to both tribes; copies are provided in Appendix D. No responses have been received from either tribe. Currently, no Native American or non-Indian TCPs are currently known to exist within USMA (USMA 2001).

4.8.2 Consequences

4.8.2.1 Proposed Action

Transfer of historic properties out of Federal control would be an adverse effect (36 CFR 800.5) and would constitute a significant impact to those properties. However, USMA is preparing a PA for the RCI Program to ensure that any transferred historic properties would continue to be protected by Section 106 of the NHPA. The RCI PA would ensure that the architectural historic properties within the NHLD are managed in accordance with Section 106 of the NHPA. The developer would manage, maintain, and renovate historic properties in accordance with the standards specified in the PA. Proposed alterations to historic properties would be coordinated with the New York SHPO by USMA. Any new properties constructed within the NHLD would be designed in a manner that is compatible with existing architecture. Any potential adverse effects to historic properties would be avoided, minimized, or mitigated through measures developed by USMA in consultation with the New York SHPO. As such, with the PA in place, no significant adverse impacts would occur to architectural historic properties.

Prior to any ground disturbing activities, USMA would complete archaeological surveys of the RCI footprint, all identified archaeological resources would be evaluated for NRHP-eligibility, and potential adverse effects would be identified prior to the proposed action going forward. The findings of the archaeological surveys, determinations of NRHP-eligibility for all identified sites, and determinations of potential adverse effect to eligible sites within the RCI footprint would be provided to the New York SHPO by USMA for consultation under Section 106 of the NHPA. NRHP-eligible and potentially eligible archeological sites within the RCI footprint would be avoided during new housing construction to the extent practical.

If it is determined that avoidance and/or protection of the archaeological historic properties is not feasible, then a Memorandum of Agreement would be developed between USMA and the New York SHPO to determine measures to be implemented to mitigate the adverse effect of physically disturbing these resources. Mitigation measures could include data recovery excavation of prehistoric deposits, archival research and recording of historic components, or development of public interpretation materials regarding cultural resources of the installation or region. Mitigation of the adverse impacts would reduce them to a less than significant level of impact.

During implementation of activities associated with the RCI proposed action, there is the potential that previously unknown archaeological resources would be discovered. If such resources are discovered, activities at the location of the discovery would cease until the USMA has assessed the discovery and determined the appropriate course of action, in compliance with the ICRMP and the PA currently in development. The USMA ICRMP has standard operating procedures that address the unexpected discovery of archaeological resources. Any intact archaeological resources discovered would be recorded and evaluated for eligibility to the NRHP,

in consultation with the New York SHPO. Treatment of the discovery would be determined by USMA, again in consultation with the New York SHPO.

4.8.2.2 No Action Alternative

No effects to cultural resources would be expected. Under the no action alternative, all cultural resources would be maintained and any unexpected archeological discoveries would be handled in accordance with all applicable federal laws and regulations and the standard operating procedures outlined in the USMA ICRMP.

4.9 SOCIOECONOMICS

4.9.1 Affected Environment

4.9.1.1 Introduction

This section describes the economy and the sociological environment of the region surrounding USAG. The socioeconomic indicators used for this study include regional economic activity, population, housing, and schools. In addition, it discusses recreational and community facilities, as well as public and social services. These indicators characterize the region of influence (ROI).

An ROI is a geographic area selected as a basis on which the social and economic impacts of project alternatives are analyzed. The criteria used to determine the ROI are the geographic location of the USAG; the residency distribution of the USAG military and civilian personnel; commuting distances and times; and the location of businesses providing goods and services to the USAG, its personnel, and their dependents. On the basis of these criteria, the ROI for the social and economic environment is defined as Orange County, New York.

The baseline year for socioeconomic data is 2004, the most recent year for which most of the socioeconomic indicators (e.g., population, employment, and housing data) are reasonably available. Where 2004 data are not available, the most recent data available are presented.

4.9.1.2 Regional Economic Activity and Demographics

Employment. Government and government enterprises, retail trade, and health care and social assistance industries are the primary sources of employment in the ROI. Together these industry sectors account for almost 50 percent of regional employment. The largest source of jobs in the ROI is the government and government enterprises sector, which account for 20 percent of total employment (BEA, 2005a).

West Point is home to about 4,000 Cadets, more than 1,300 military personnel, and about 4,300 civilian employees (USAG, West Point 2005a). Military payroll entitlements for West Point Cadets, staff and faculty, Garrison, and the USMA Band are about \$176 million and civilian pay is about \$120 million, for a total annual local economic impact of \$296 million (USAG, West Point 2005a).

Unemployment. The ROI's 2004 annual average unemployment rate was 4.6 percent, up from the 2000 rate of 3.4 percent (NYDOL, 2005). For comparison, the national unemployment rate in 2004 was 5.5 percent, up from 4.0 percent in 2000 (BLS, 2005).

Income. The per capita personal income (PCPI) of the ROI was \$28,903. For comparison, the PCPI of New York was \$36,112, and the PCPI for the United States was \$31,472 (BEA, 2005b).

The per capita personal income for West Point was \$13,158 as of 1999 (the most recent year for which data was available) (U.S. Census Bureau 2000).

Population. The ROI population was 341,367 in 2000 and grew to 370,352 by 2004, an 8.5 percent increase. For comparison, the population of New York increased by 1.3 percent, and the population of the United States increased by 4.3 percent during the same time period (U.S. Census Bureau, 2006).

4.9.1.3 On- and Off-Post Housing

USAG has 964 family housing units. The housing inventory and neighborhoods are described in Section 2.2.1.2. The average annual family housing occupancy rate was about 89 percent (JLL, 2005a). There can be a waiting list for specific types of housing units, depending on rank and number of bedrooms required. The waiting time for on-post family housing ranges from no wait to 2 to 3 months (USMA, 2005b).

Uniformed personnel are given a BAH. BAH is listed on a Soldier's Leave and Earnings Statement as an entitlement and is nontaxable income for paying rent or a mortgage. The average BAH rate for USAG in 2005 was \$2,297 per month (USMA, 2005c). Table 4-12 lists BAH by pay grade for USAG. Current DoD policy does not mandate that BAH meet all housing costs for military families. Each Soldier is expected to pay out-of-pocket expenses to meet additional housing costs, such as utilities.

For Soldiers who must live off-post because suitable on-post housing is not available, or for those who choose to live off-post, the Community Homefinding, Referral, and Relocation Services Office can help them find off-post housing. The majority of off-post families reside in the three communities nearest the post: Highland Falls/Fort Montgomery, Cornwall/Cornwall-on-Hudson, and New Windsor (Niehaus, 2003). Table 4-13 shows the cost of typical off-post housing in the area.

Table 4-12.
2005 BAH for USAG

| Pay Grade | BAH with Dependents |
|------------------|----------------------------|
| E1 through E9 | \$1,469–\$2,274 |
| W1 through W5 | \$1,828–\$2,472 |
| O1 through O7+ | \$1,762–\$2,856 |

Source: USMA, 2005c.

Table 4-13.
USAG Market Housing Rental Information

| Type of Housing | Median Monthly Rent (including utilities) |
|------------------------|--|
| Two bedrooms | \$1,322 |
| Three bedrooms | \$1,784 |
| Four+ bedrooms | \$2,093 |

Source: Niehaus, 2003.

A Family Housing Market Analysis (FHMA) was conducted for USAG in 2002.¹ On the basis of the projected off-post housing market conditions, the on-post family housing conditions, and estimated military and civilian population growth analyzed by the study, the FHMA determined that in 5 years the requirement for government-provided, on-post family housing would total 786 units (Niehaus, 2003). This number would meet the Army's projected minimum on-post housing requirement, plus provide a sufficient number of on-post housing units to compensate for the community housing shortfall (i.e., the projected shortage of off-post housing units because of housing that does not meet the Army's criteria of affordability, quality, location, or size [number of bedrooms]).

4.9.1.4 Quality of Life

Law Enforcement, Fire Protection Services, and Medical Services. The USAG Provost Marshal's Office (PMO) is responsible for law enforcement operations on the USAG. Services include patrols, desk operations, general security, crime prevention, maintaining discipline, enforcing laws and regulations, and conducting traffic accident and criminal investigations (USMA, PMO, 2005). The military police (MP) respond to emergencies in the on-post housing areas.

The USAG fire department operates three fire stations: the West Point Fire Station on Washington Road; the Stony Lonesome Fire Station on the Stony Lonesome Access Road; and the Academy Fire Station at Range Control on NYS Route 293 (NEA, 2004). The fire department responds to all fire and hazardous materials emergencies on the installation, including emergencies in the housing areas. The fire department also directs fire prevention activities and public education programs.

The Keller Army Community Hospital on USAG provides a comprehensive range of services, including primary care (family/internal medicine), 24-hour emergency care, a surgical unit, an obstetric unit, an intensive care unit, outpatient clinics, and a helipad for emergency helicopter services. Originally built in 1977 as a 65-bed facility, the hospital uses its space to provide 35 inpatient beds and the remainder for outpatient services. A proposed action to construct a three-story expansion of the hospital is under consideration (NEA, 2005).

Schools. The U.S. Department of Education provides federal impact aid to local school districts that have federal lands within their jurisdiction. This federal impact aid is authorized under Public Law 103-382 as payment in lieu of taxes that would have been paid if the land were not held by the federal government. Local school districts receive federal impact aid for each student whose parent or parents live on or work on federal property. The amount of federal impact aid a school district receives is dependent on the number of *federal* students the district supports in relation to the total district student population. Schools receive more funding for those students whose parents both live on and work on federal property. Total funding varies year by year according to congressional appropriations for the program, but in general, funding has ranged from \$200 to \$2,000 per pupil.

The West Point School Complex (WPSC) on USAG serves as a primary education facility for children of West Point military personnel residing on-post. About 700 children are enrolled in the

¹ The Army uses an FHMA to evaluate the availability of housing for accompanied military personnel stationed at an installation. The study projects housing needs for 5 years from the date of the study. In the case of USMA, the study was conducted in 2002, and housing needs were projected for the year 2007. Housing that is deemed acceptable must meet Army standards of affordability, location, quality, and number of bedrooms (Niehaus, 2003).

WPSC, which consists of the West Point Elementary School and the West Point Middle School. The West Point Schools, part of the New York – Virginia District of the Department of Defense Domestic Dependent Elementary and Secondary School System, are tenant activities of USAG. Operation, construction, maintenance, and repair of the WPSC are funded by the DoDEA. WPSC is in the NHLD of the USAG main cantonment area, just east of the Keller Army Community Hospital. Children living on-post attend the James I. O’Neill Public High School, part of the Highland Falls–Fort Montgomery Central School District, in the Town of Highlands, New York, about 1.5 miles south of the USAG Thayer (Main) Gate.

Family Support, Shops and Services, and Recreation. USAG provides community services for those who reside on-post or are employed by USAG. These services include childcare facilities, a chapel, a community club, a commissary, a post exchange, and recreation facilities, which include a ski area and an 18-hole golf course. USAG also provides athletic and physical recreational opportunities for cadets, many of which are also available to the on-post and surrounding community, such as football, baseball, track and field, gymnastics, soccer, volleyball, tennis, swimming, cycling, golf, hockey, basketball, lacrosse, wrestling, boxing, rugby, crew, and sailing (USACE, New York District, 2005).

Homeless and Other Special Programs. The region has a number of shelters and assistance programs for individuals and families in need of temporary placement due to the lack of a fixed, regular, or an adequate residence. A mix of government and private funding supports these programs.

4.9.1.5 Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. The Executive Order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. Environmental justice analyses are performed to identify potential disproportionately high- and adverse-impacts from proposed actions and to identify alternatives that might mitigate these impacts. Data from the U.S. Department of Commerce *2000 Census of Population and Housing* were used for the environmental justice analysis. Minority populations included in the census are identified as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, Hispanic, of two or more races, and other race. Poverty status, used in this EA to define low-income status, is reported as the number of persons with income below poverty level. The 2000 Census defines the poverty level as \$8,794 of annual income, or less, for an individual and \$17,603 of annual income, or less, for a family of four.

As of the 2000 Census, 84 percent of the ROI population was white and 14 percent was of a minority race or ethnicity. The ROI has a much lower percentage of minority residents when compared to the state of New York, which had a population that was 68 percent white and 32 percent minority (U.S. Census Bureau, 2006).

The Census Bureau bases the poverty status of families and individuals on 48 threshold variables, including income, family size, number of family members under the age of 18 and over 65 years of age, and amount spent on food. In 1999, about 11 percent of the ROI residents were classified as living in poverty, lower than the state of New York’s poverty rate of about 15 percent (U.S. Census Bureau, 2006).

4.9.1.6 Protection of Children

Executive Order 13045, *Protection of Children from Environmental Health and Safety Risks*, requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children. Historically, children have been present at USAG as residents and visitors. On such occasions, the Army has taken precautions for their safety by a number of means, including limiting access to certain areas and providing adult supervision.

As stated in Section 4.12 (Hazardous and Toxic Substances), previous investigations identified hazardous substances (ACM, LBP) present in some of the housing units on West Point. These materials were widely used in the building products industry and for housing maintenance for many years. It has been determined that their presence in the housing units does not constitute a health hazard under normal circumstances, however, and the materials are being removed or encapsulated as units are renovated.

4.9.2 Consequences

4.9.2.1 Proposed Action

EIFS Model Methodology. The economic effects of implementing the proposed action are estimated using the Economic Impact Forecast System (EIFS) model, a computer-based economic tool that calculates multipliers to estimate the direct and indirect effects resulting from a given action. Changes in spending and employment caused by the construction, renovation, and demolition of on-post family housing represent the direct effects of the action. On the basis of the input data and calculated multipliers, the model estimates ROI changes in sales volume, income, employment, and population, accounting for the direct and indirect economic effects of the action.

For purposes of this analysis, a change is considered significant if it falls outside the historical range of ROI economic variation. To determine the historical range of economic variation, the EIFS model calculates a rational threshold value (RTV) profile for the ROI. This analytical process uses historical data for the ROI and calculates fluctuations in sales volume, income, employment, and population patterns. The historical extremes for the ROI become the thresholds of significance (i.e., the RTVs) for social and economic change. If the estimated effect of an action falls above the positive RTV or below the negative RTV, the effect is considered to be significant. Appendix F discusses this methodology in more detail and presents the model input and output tables developed for this analysis.

EIFS Model Results. Short-term minor beneficial effects would be expected. The expenditures associated with demolition, construction, and renovation of family housing and associated facilities at USAG would increase sales volume, employment, and income in the ROI, as determined by the EIFS model (Table 4-14 and Appendix F). The economic benefits would be short-term, lasting only for the duration of the construction period. These changes in sales volume, employment, and income would fall within historical fluctuations (i.e., within the RTV range) and be considered minor. No change in ROI population would be expected because the proposed RCI action would not change the number of soldiers assigned to USAG.

Table 4-14
EIFS Model Output for the Proposed RCI Action at USAG, West Point

| Indicator | Projected Change | Percentage Change | RTV Range |
|----------------------|------------------|-------------------|------------------|
| Direct sales volume | \$27,000,000 | | |
| Induced sales volume | \$58,050,000 | | |
| Total sales volume | \$85,050,000 | 1.07% | -6.02% to 13.14% |
| Direct income | \$5,453,698 | | |
| Induced income | \$11,725,450 | | |
| Total income | \$17,179,150 | 0.22% | -4.58% to 11.40% |
| Direct employment | 142 | | |
| Induced employment | 304 | | |
| Total employment | 446 | 0.30% | -3.64% to 2.97% |
| Local population | 0 | 0 | -0.69% to 1.01% |

Housing. Long-term minor beneficial effects on on-post family housing would be expected. The availability of affordable, quality housing in family-oriented communities is a key issue for Army recruiting and retention. Overall quality of life for Soldiers and their families would be improved through implementation of the RCI program at USAG. The RCI program would improve the condition and aesthetic appeal of family housing through construction of new units, converting existing homes into larger homes with improved floor plans, or renovation of existing units. All housing units would meet or exceed RCI construction and renovation standards by the end of the initial development period. The rent for the new and revitalized family housing units would not exceed a Soldier's BAH. GMH Military Housing LLC would provide continuous maintenance and revitalization off all homes and amenities. Future housing renovations would focus on revitalizing kitchens, bathrooms, lighting fixtures and exterior components of the homes.

Quality of Life. Short-term minor adverse and long-term major beneficial effects on quality of life would be expected. In the short term, noise and traffic from construction of RCI housing could be disruptive to the current residents. In the long term, however, the overall quality of life for Soldiers and their families would be improved through implementation of the RCI program at the USAG because of the improved condition of on-post family housing, as well as the overall residential community. The following paragraphs identify the anticipated effects for each of the key components of quality of life.

Law Enforcement, Fire Protection, and Medical Services. No effects would be expected. The proposed action would not increase the number of on-post housing units. Police and fire services in the family housing areas would continue to be provided in the same manner as they have in the past. Project revenues would be used to reimburse USAG for police and fire protection services.

No effects on medical services would be expected. Implementation of the proposed RCI action would not change the eligible population of active duty military, military dependents, or retirees within the ROI serviced by on-post military or off-post civilian facilities.

Schools. No effects would be expected. The proposed action would not increase the number of on-post housing units or the number of children living on-post, therefore there would be no adverse effects on schools or school enrollment.

Family Support, Shopping, and Other Services. No effects would be expected. The eligible population of active duty military, military dependents, and retirees within the ROI would not change as a result of the proposed action.

Recreation. Long-term minor beneficial effects would be expected from implementation of the proposed action. New and improved community amenities in the family housing areas would result in long-term minor beneficial effects for on-post family housing residents. The CDMP includes plans for a new neighborhood center in Site F and the Old Hospital would be renovated to become a Community Center with game rooms, exercise facility, internet café, and meeting rooms. Other recreational facilities include a pool, basketball courts, playgrounds and tot lots throughout the neighborhoods, common areas, and a trail system for walking, jogging, or bike riding.

Environmental Justice. No effects would be expected. Implementation of the proposed action would not result in disproportionate adverse environmental or health effects on low-income or minority populations.

Protection of Children. Short-term minor adverse effects on the protection of children would be expected. In the short term, because construction sites can be enticing to children, construction activity could be an increased safety risk. During construction, safety measures stated in 29 CFR Part 1926, *Safety and Health Regulations for Construction*, and Army Regulation 385-10, *Army Safety Program*, would be followed to protect the health and safety of USAG residents and construction workers. It is recommended that barriers and *No Trespassing* signs be placed around construction sites to deter children from playing in these areas and that construction vehicles and equipment be secured when not in use.

4.9.2.2 No Action Alternative

Regional Economic Activity and Demographics. No effects would be expected. There would be no change in sales volume, income, employment, or population as a result of implementing the no action alternative.

Housing and Quality of Life. Long-term major adverse effects would be expected. Continuation of the present family housing programs would perpetuate deficiencies in quality of life for many Soldiers and their dependents. The availability of affordable, quality family housing is a key function of quality of life and is often given high priority by Soldiers and their families. The Army would continue to do regular maintenance on existing housing and some renovation and demolition, but these activities would be conducted on a constrained budget. Without adequate funding to address the renovation backlog, housing units could become unsuitable for occupancy.

No effects on law enforcement, fire protection services, medical services, schools, family support services, shopping, or recreation facilities would be expected to result from implementation of the no action alternative.

Environmental Justice. No effects would be expected. Implementation of the no action alternative would not result in disproportionate adverse environmental or health effects on low-income or minority populations.

Protection of Children. Long-term adverse effects on the protection of children would be expected. Under current conditions, hazardous and toxic substances identified in on-post housing units are not health hazards because they have been contained or removed. As homes deteriorated however, the risk of children's exposure to hazardous and toxic substances (for example, chipping LBP or cracked asbestos tiles) would increase. Section 4.12 (Hazardous and Toxic Substances) provides further information on the types of hazardous materials identified in USAG housing units.

4.10 TRANSPORTATION

4.10.1 Affected Environment

Housing areas on West Point are generally in the northern, east-central, east-southern, and the southern post (Figure 2-1). Table 4-15 provides details about the general locations of the housing areas and the primary and secondary roads in those locations. The major on-post roads for traffic circulation among the housing areas and other parts of the cantonment area are Mills Road, Merritt Road, and Washington Road. These primary roads and the secondary roads listed in Table 4-15 provide for an adequate onpost transportation system. In all, there are approximately 16 miles of paved roads on the installation for general circulation (USAG, 2005b).

Three gates provide transportation connectivity between the installation and off-post areas: the Washington Gate, Stony Lonesome Gate, and Thayer Gate. A fourth gate, the Lee Gate on Lee Road in the northern section of the installation, was permanently closed after September 11, 2001. The Washington Gate is at the intersection of NY Route 218 and Washington Road, southwest of the northern housing areas. It receives approximately half of the peak morning traffic (between 7:00 AM and 8:00 AM) entering the post, and its use is restricted to vehicles with authorized DoD access permits and drivers with government identification. The Stony Lonesome Gate is south of the southern housing areas on U.S. Route 9W. Most trucks and West Point shuttle buses entering the post use the Stony Lonesome Gate. The gate is open to visitors, and it receives approximately one-third of the AM peak traffic. The Thayer Gate is south of the eastern housing areas at the West Point Highway on Thayer Road. It has a DoD lane and a visitor lane and is used by West Point shuttle buses, some trucks, pedestrians, and bicyclists. Gate capacities, usages, and traffic concerns associated with the gates are provided in Table 4-16 (USAG, 2005b).

Primary roads that connect the installation to the off-post region are NY Route 218 and NY Route 293, which run northeast to southwest across the installation, and U.S. Route 9W, a major, divided, north-south highway that crosses the installation south of the cantonment area.

4.10.2 Consequences

4.10.2.1 Proposed Action

Short-term minor adverse and long-term moderate beneficial effects on transportation would be expected from construction associated with the proposed action. Construction vehicle traffic could increase wear and tear on installation roads and cause minor delays in traffic flow near construction areas. Traffic delays and detours could result from construction activities. Long-term improvements to installation traffic would be expected because of implementation of a CDMP that includes a community-centered plan that would decrease dependency on motor vehicles.

Table 4-15
Housing Area Locations and Roads

| General Location | Housing Areas | Primary Roads | Secondary Roads | |
|-------------------------|--|----------------------------------|------------------------|------------------|
| Northern Post | Grey Ghost (HA 1) | Lee Road | Alexander Place | |
| | Old Brick (HAs 2, 18) | Washington Road | Bailey Loop | |
| | Band (HA 3) | Merritt Road | Barnard Loop | |
| | Junior NCO (HA 5) | | Barry Road | |
| | Lee Old Doubles (HA 6) | | Beauregard Place | |
| | Senior NCO (HA 7) | | Benedict Road | |
| | Trip (HA 8) | | Biddle Loop | |
| | Old Doubles (HA 9) | | Bowman Loop | |
| | Lee New Doubles (HA 10) | | Conner Loop | |
| | Lee Quints/Trips (HA 12) | | Conner Road | |
| | Special Category (Old Hospital Quarters) (HA 14) | | Gardner Loop | |
| | New Brick (HA 16) | | | East Moore Loop |
| | | | | South Moore Loop |
| East-central Post | Old English North (HA 20) | Washington Road, Merritt Road | Sladen Place | |
| | North Apartments (HA 21) | | Tillman Place | |
| | Special Category (HA 23) | | Wilby Place | |
| | Professor's Row (HA 24) | | Winans Road | |
| | Quarters 146 (HA 25) | | DeRussey Loop | |
| | General Officers (HA 26) | | Howard Road | |
| | Chaplain (HA 28) | | Jefferson Road | |
| East-southern Post | CSM Quarters (HA 29) | Mills Road | Howze Place | |
| | Special Category (HA 31) | Thayer Road | Partridge Place | |
| | Wilson Road (HA 32) | | Schofield Place | |
| | Old English South (HA 33) | | Wilson Road | |
| | Quarters 378 (HA 36) | | | |
| Lusk (HA 37) | | | | |
| | | | | |
| Southern Post | Stony Lonesome I (HA 38) | Stony Lonesome Access Road | East Continental Road | |
| | Stony Lonesome II (HA 40) | | West Continental Road | |
| | | | Greene Place | |
| | | | Heath Loop | |
| | | | Knox Place | |
| | | | Kosciuszko Place | |
| | | | Machin Place | |
| | | | Meigs Place | |
| | | | Parsons Place | |
| | | | Patterson Loop | |
| | | | Radiere Loop | |
| | | | Sherburne Place | |
| | Wyllys Place | | | |

**Table 4-16
Installation Access Gates**

| Gate | Capacity | AM Peak Usage | Peak Usage Concerns |
|----------------|---|--|---|
| Washington | One lane (DoD): 206 vehicles per hour | 499 vehicles per hour | Long queues at peak usage; traffic backs up onto Rt 218 |
| Stony Lonesome | DoD lane: 206 vehicles per hour Visitor lane: 58 vehicles per hour | DoD lane: 105 vehicles per hour Visitor lane: 270 vehicles per hour | Visitor lane is far above capacity, with significant delays |
| Thayer | DoD lane: 206 vehicles per hour Visitor lane: 58 vehicles per hour | DoD lane: 100 vehicles per hour Visitor lane: 126 vehicles per hour | Visitor lane is far above capacity, with significant delays |

Long-term minor adverse effects on traffic at the Stony Lonesome Gate would be expected from the addition of family housing units in Site F. Use of Site F would increase traffic primarily at the Stony Lonesome Gate. The Stony Lonesome Gate serves as a primary entry/exit point for residents of Housing Areas 38 and 40, which combined have approximately 300 family housing units. The Stony Lonesome Gate receives approximately 105 vehicles per hour in the DoD lane (about half of its capacity of 206 vehicles per hour), and construction of housing units in Site F would increase off-peak traffic in the lane.

4.10.2.2 No Action Alternative

No effects on transportation resources would be expected.

4.11 UTILITIES

4.11.1 Affected Environment

Utilities available at USAG include potable water treatment, storage, and distribution; wastewater collection and treatment; storm water management; energy; communications; and solid waste disposal and recycling. The following is a discussion of the location, availability, capabilities, and limitations of the utility infrastructure.

4.11.1.1 Potable Water Supply

Potable water supply for the USAG Main Post is obtained from the Popolopen watershed and through an agreement with the Palisades Interstate Park Commission for additional supply during the high-demand period between October 16 and May 31 each year (NEA, 2005). The Main Post of USAG has two treatment plants for raw water: the Stony Lonesome Treatment Plant and the Lusk Treatment Plant. The treatment capacity of the Stony Lonesome plant is 2.0 million gallons per day (mgd), and the capacity of the Lusk plant is 2.8 mgd. Average annual post demand is 2.5 mgd; during the summer months, usage approaches 3.5 mgd and in other months averages 2.0 mgd (Driver, personal communication, 2006). After treatment, water is distributed throughout the Main Post through a network of 4- to 24-inch-diameter buried water mains and lines (NEA, 2005).

4.11.1.2 Wastewater System

Sanitary sewer lines are separate from the storm water drainage system on USAG Main Post. The wastewater system consists of buried sewer collection and main lines, pumping stations, and treatment plants (NEA, 2004). Two wastewater treatment plants serve USMA: Target Field Wastewater Treatment Plant and the Camp Buckner Wastewater Treatment Plant. The Target Field Wastewater Treatment Plant serves the USAG Main Post and has a design limit of 2.06 mgd. The plant operates year round, and its average daily dry weather flow is about 1.5 mgd. It has a New York State Pollutant Discharge Elimination System Permit (SPDES) Number NY-0023761 to discharge into the Hudson River. The plant relies on an auxiliary generator for power during power outages. The Camp Buckner Wastewater Treatment Plant services both Camp Buckner and Camp Natural Bridge on a seasonal basis, about 8 months a year. It is a 0.25 mgd extended aeration activated sludge plant (USACE, New York District, 2005).

4.11.1.3 Storm Water System

The conveyance system for storm water on USAG Main Post includes open ditches, grass channels, paved open channels, and pipe. The storm water drainage is directed via gravity flow to discharge into the Hudson River. EPA delegated storm water responsibility for the National Pollution Discharge Elimination System (NPDES) permit to New York in October 1992. New York State issued its General Permit Number GP-93-06 in August 1993 for storm water discharges from construction activities. The permit was reissued as General Permit Number GP-02-01 in January 2003 to incorporate NPDES Phase II requirements (NYDEC, 2004). The permit requires, at a minimum, that an erosion and sediment control plan be prepared for any construction activity that disturbs one or more acres (0.4 hectares) of land (Berger, 2005).

4.11.1.4 Energy Sources

Electricity. Electricity is provided to the Main Post of USAG by Orange and Rockland Utilities, Incorporated (O&R). Electricity is distributed through the Main Post via the main power plant and several substations via a combination of buried lines and overhead pole lines. Distribution is accomplished using 4.16 and 13.2 kilovolt lines. Electric lines serving the majority of the Main Post are primarily buried underground. Overhead electric power lines are present only in the Pershing Center, the Stony Lonesome area, and other rugged terrain areas (NEA, 2004).

Heat. Heat for most of the buildings in the Main Post is provided through a central plant in Building 604. This plant consists of three natural gas boilers and three steam-turbine-driven generators. Another plant is in the Post Laundry (Building 845), which consists of a natural gas-fired steam plant that serves the Post Laundry, Keller Army Community Hospital, and several other surrounding buildings. Steam for centrally heated buildings is distributed under pressure through piping in a combination of underground tunnels and directly buried piping throughout the Main Post. The following family housing areas are heated by the central steam plant: General Officers Quarters (Housing Area 26), Professors Row (Housing Area 24), Old English South (Housing Area 33), the South Apartments (Housing Area 34), and several of the Special Category housing units—Building 109 (Housing Area 23), Building 146 (Housing Area 25), and Building 60 (Housing Area 28) (JLL, 2005b). Where buildings are out of the range of the central steam distribution system, they are heated by individual steam, hot water, or air systems (NEA, 2004).

Natural Gas. Central Hudson Gas & Electric Company supplies natural gas to USAG. Natural gas is distributed through USMA's distribution system. The gas is used for boilers, cooking,

domestic hot water generation, residential heating, and the laundry plant (USACE, New York District, 2005).

4.11.1.5 Communications

Telephone infrastructure is owned and maintained by the Army in all of the housing areas except Stony Lonesome I and II. Verizon installed, owns, and maintains the Stony Lonesome I and II exterior telephone cables and wiring (Thorton, personal communication, 2006). The Army provides repair and maintenance of telephone wiring and jacks inside all of the housing units on the installation (Thorton, personal communication, 2006). Residents can choose their local and long distance providers. Fiber optic cables connect many of the Main Post buildings and provide telephone, fire alarm, and security services. Cable television is provided by a local cable company. A microwave tower for cellular telephone communication is now at the top of the ski slope on the installation (USMA, 2003).

4.11.1.6 Solid Waste

Solid waste generated at USAG is hauled by a contractor to the USAG-owned, contractor-operated transfer station on the installation. Dewatered sludge from the sewage treatment facilities is transported directly to a permitted landfill of the solid waste contractor's choice. Remaining solid waste is hauled to an approved state-permitted landfill facility. About 6,500 tons of solid waste is generated annually for the entire installation (USACE, New York District, 2005).

4.11.2 Consequences

4.11.2.1 Proposed Action

Long-term minor beneficial and adverse effects on utilities would be expected. Effects on specific systems are discussed in more detail below.

Long-term minor beneficial effects would be expected by implementing the proposed action. Given that the number of on-post family housing units would decrease, demand for potable water and energy would decrease and wastewater production would decrease, and all existing utility systems should be more than adequate to handle current and future anticipated demands. In addition, under the Army policy for RCI projects, new, energy-efficient, and low-usage utility systems, appliances, and fixtures would be installed in new and renovated housing units. Army policy stipulates that RCI projects planned or under design must achieve the Gold rating of the SPiRiT System. The SPiRiT System, based on sustainable design and development concepts, assesses the degree to which the design of a building successfully incorporates consideration of matters such as sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. As a result of the conservation measures and efficient management methods of utilities to be adopted under the SPiRiT rating system, with the goal of attaining the Gold rating, the end-state of 831 units would have a minimal effect on the utility systems.

Long-term minor beneficial effects would be expected from the installation of new distribution and collection lines for water, wastewater, storm water, electricity, natural gas, and communications. All homes would be converted to natural gas heating systems. New and renovated housing units would use Energy Star appliances and would have water-efficient plumbing fixtures such as low-flow showerheads, faucets, and toilets to reduce per capita water

and energy consumption and be compliant with the Energy Policy Act of 2005. GMH Military Housing LLC would prepare a Storm Water Pollution Prevention Plan in coordination with the USAG Department of Public Works and the New York State Department of Environmental Conservation. One-hundred percent of storm water runoff in new construction Site F would be retained with controlled exit and 25 percent of runoff in redeveloped Stony Lonesome I would be retained with controlled exit.

Communications. No effects on communication systems would be expected. Upon privatization of housing at USAG, local service providers would continue to offer phone and cable service to residents. The GMH Military Housing LLC partner would assume responsibility for repair and maintenance of telephone jacks and wiring inside all family housing units.

Solid Waste. Long-term minor adverse effects on landfills would be expected. Debris from the construction, demolition, and renovation of family housing units would increase during the construction period relative to the solid waste typically generated annually by the installation. The proposed action would be expected to generate approximately 26,000 tons of construction and demolition debris (CDD) over the 6-year development period of the RCI program. This would result in about 4,300 tons of CDD debris per year or about 360 tons of CDD debris per month during the 6-year development period. This additional CDD debris would increase the fill rate of existing local area landfills used by USMA. Details of the CDD debris generated by the construction, demolition, and renovation activities of the RCI program are presented in Appendix G.

4.11.2.2 No Action Alternative

No effects to the utility supply or demand would be expected. Repair and maintenance of utility systems would continue to occur as needed.

4.12 HAZARDOUS AND TOXIC SUBSTANCES

4.12.1 Affected Environment

Specific environmental statutes and regulations govern hazardous material and hazardous waste management activities at USAG. For the purpose of this analysis, the terms *hazardous waste*, *hazardous materials*, and *toxic substances* include those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), or the Toxic Substances Control Act (TSCA). In general, they include substances that, because of their quantity, concentration, or physical, chemical, or toxic characteristics, might present substantial danger to public health or welfare or to the environment when released into the environment.

4.12.1.1 Storage and Handling Areas

Storage Tanks. The Department of Public Works (DPW) Environmental Division of USAG maintains current records of all active and former underground storage tanks (USTs) and aboveground storage tanks (ASTs) within the installation boundary. West Point has 144 ASTs and 21 USTs across the installation that are used to store #2 fuel oil, gasoline, diesel, kerosene, and waste used oil. The USTs range in size from 100 gallons to 10,000 gallons. The ASTs range in size from 100 gallons to 20,000 gallons. These tanks are constructed of primarily of stainless/carbon steel or fiberglass coated steel and were installed between 1983 and 2004.

Fifteen fuel oil ASTs are in the RCI footprint, of which 14 are in the Old Brick community, and one is in the North Apartments community (USMA, 2006).

4.12.1.2 Hazardous Waste Disposal

USAG is a RCRA Large Quantity Generator of hazardous wastes. Several waste storage facilities, including less-than-90-day and satellite accumulation points (SAP), are throughout the installation. The SAP manager coordinates with the Solid Waste Management Branch (SWMB) to arrange for waste pickup and transport to the 90-day accumulation site. The SWMB coordinates with the Defense Reutilization and Marketing Office (DRMO) for hazardous waste removal and transport to a permitted Treatment, Storage and Disposal Facility (TSDF). All hazardous waste is manifested (USMA, 2005d). Hazardous wastes generated by the installation include dry-cleaning fluids, cleaning fluids from parts washers, debris from shooting ranges, lead-contaminated debris from building renovations, waste paints, waste PCB fluids, chemicals from chemistry, and laboratory, waste X-ray developer (USMA, 2004). In accordance with state and federal waste regulations, hazardous waste is transported off-site for proper disposal within 90 days. No hazardous waste is disposed of within the installation itself. All hazardous waste is managed in accordance with the USAG Hazardous Waste Management Plan.

4.12.1.3 Site Contamination and Cleanup

USAG has 29 Installation Restoration Program (IRP) sites, of which 20 are landfills that were used from the 1940s to the 1980s for disposal of municipal solid waste, construction and demolition debris, and land-clearing debris. Studies have shown that these sites are contaminated with heavy metals. Fourteen of the sites are listed under the Army Environmental Database-Restoration (AEDB-R) as not active. Thirteen of the AEDB-R sites have Response Complete dates that range from 1984 to 1998 and are listed as no further action (NFA) sites. The 15 active IRP sites include 14 landfills and an organic compost lot. Studies have shown that groundwater results from around several of these landfills have indicated elevated heavy metal results. These sites have undergone various remedial activities, which are documented in the IAP including remedial investigations, feasibility studies, remedial design, and remedial action. Long-term monitoring is being conducted at these sites (USMA, 2005e).

None of the contaminated sites are in the RCI footprint. Two former landfill sites are adjacent to the RCI footprint. The Post School Landfill is on the western border of the Doubles portion of Lee Area. The PX Landfill is on the southeast side of Lee Area adjacent to the Old PX. The landfill is located under the parking lot.

4.12.1.4 Special Hazards

Asbestos. Two categories are used to describe asbestos containing material (ACM). *Friable ACM* is defined as any material containing more than 1 percent asbestos (as determined by polarized light microscopy) that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. *Non-friable ACM* is material that contains more than 1 percent asbestos and does not meet the criteria for friable ACM.

Asbestos surveys are generally done during renovation activities. Asbestos surveys were conducted in 1994 in Building 101, in 2001 in Buildings 501, 502, 503, 504, 509, 510, 511, 112, 113, 126 and 127; and in 2002 in Buildings 126 and 127. ACM was identified in Buildings 101, 113, 126 and 501. Asbestos was determined to be present primarily in window caulking, door

caulking, and wall plaster. (Environmental Management Solutions of NY, Inc., 2001a, 2001b; USMA, 2002).

Polychlorinated Biphenyls. Polychlorinated Biphenyls (PCBs) are industrial compounds used in electrical equipment, primarily capacitors and transformers, because they are electrically nonconductive and remain stable at high temperatures. Because of their chemical stability, PCBs persist in the environment, bioaccumulate in organisms, and become concentrated in the food chain. The disposal of PCBs is regulated by TSCA, which regulates the removal and disposal of contaminated equipment containing PCBs at concentrations greater than 50 parts per million (ppm).

There are no known PCB transformers on the installation. All former PCB transformers have been converted to non-PCB transformers (Kirkpatrick, personal communication, 2006). Materials containing PCBs that were removed from transformers were managed in accordance with EPA regulations (USMA, 2003).

Lead-Based Paint. Current Army policy calls for controlling lead-based paint (LBP) by using in-place management rather than mandated removal procedures. In-place management is used to prevent deterioration over time of those surfaces likely to contain LBP, followed by replacement as necessary. Maintenance staff are given instructions on routine cleaning procedures to capture LBP fragments from suspected locations. Under U.S. Army Engineering and Housing Support Center Technical Note 420-70-2 (*Lead-Based Paint: Hazard Identification and Abatement*), the demolition and removal of architectural components would require that LBP be characterized and disposed of in accordance with applicable federal, state, and local solid waste management regulations. LBP would be encapsulated and removed in accordance with Army, HUD, and Occupational Safety and Health Administration (OSHA) guidelines, which cover contractor training, notification requirements, use of personal protective equipment, and approved disposal methods.

LBP surveys are generally done during renovation activities. A LBP survey was conducted for the residential areas of West Point in 1994 by Dewberry & Davis. The survey tested 89 housing units, 44 of which are in the RCI footprint. LBP was detected above HUD action levels for floors, window sills, and/or window wells in Buildings 13, 42, 45, 114, 126, 356, 365, 405, 421, 503, 509, 515, 558, and 567. Lead was detected in the soil above HUD action levels surrounding Buildings 13, 45, 356, 365, 369, 405, 509, and 3082 (Dewberry & Davis 1995).

Further, LBP surveys were conducted in 1994 in Building 101 and in 2001 in Buildings 501, 502, 503, 504, 509, 510, 511, 112, 113, 126 and 127. LBP was identified in Buildings 101, 112, 113, 126, 127, 501, 502, 503, 504, 509, 510 and 511. LBP was determined to be present primarily on window components, door casings, porch columns, porch ceilings, porch floors, porch skirt boards, upper and lower clap board siding, and wall paint (Environmental Management Solutions of NY, Inc., 2001a, 2001b).

Pesticides. Cantonment area pest management at West Point is primarily accomplished by the DPW Pest Management Section. West Point employees who apply or oversee the application of pesticides are DoD-certified. Integrated pest management (IPM) is used at West Point. This method of pest management involves four primary control strategies—mechanical and physical control (physical removal or exclusion of pests), cultural control (altering the environment to make it less suitable or attractive to the pest), biological control (use of other organisms that control the pest), and chemical control (use of pesticides). Pesticides include insecticides, herbicides, fungicides, and rodenticides. Pesticides used in the housing areas over the past 5 years

include Bat Scat, Snake-a-Way, Borid, Contract Bait, Ditrac, Drione, Delta Dust, Demand CS, Fast Track, PT-565, Poison Free Wasp Killer, Talstar One, Tim Bor, Tempo WP, Wasp Freeze, Prelude, various ant bait, moth traps, and roach gel and disks. Pesticides are handled and stored in accordance with AR 420-76, AR 200-5 and USMA's Pest Management Plan (USMA, 2003).

Chlordane was used at the installation before EPA's ban on its use. Chlordane is generally not considered to be a hazardous waste if it was applied for its intended use as a pesticide, as opposed to storage, disposal as waste material, or migration to its current location from the application site. Although this pesticide is not considered a hazardous waste as defined by the Solid Waste Disposal Act, materials leaching chlordane at concentrations greater than 0.03 milligram per liter upon excavation are defined as hazardous by the Toxic Characteristic under RCRA and must be dealt with accordingly.

Radon. Radon gas is a naturally occurring, colorless, and odorless radioactive gas that is produced by the decay of naturally occurring radioactive material (e.g., uranium). Atmospheric radon is diluted to insignificant levels; however, when concentrated in enclosed areas, radon can present considerable human health risks such as lung cancer. Radon testing in installation housing determined that 58 housing units exceeded the action level of 4pCi/L for all units tested.

Radon testing was conducted from 1989 thru 1999 in all West Point buildings. A total of 61 quarters had radon levels above 4 pCi/L. Radon testing in 1994 indicated radon levels above 4 Pico curies per liter (pCi/L) at two locations in Building 101 (ATEC Associates 1994). Radon testing in 2005 in other residential buildings indicated radon levels above 4 pCi/L in Buildings 6, 19, 21, 40, 42, 45, 48, 60, 64, 66, 76, 78, 86, 103, 107, 112, 114, 120, 229, 249, 254, 268, 278, 282, 290, 296, 329, 357, 501, 502, 536, 555, 556, 582, 652, 740, 745, 3014, 3029, 3030, 3031, 3032, 3083, and 3088. During this survey, additional readings were performed on Buildings 19, 45, 86, and 120. Readings in 45 and 114 were grossly above the 4 pCi/L limit at 191.2 pCi/L and 67.9 pCi/L, respectively. The second reading for Building 45 was 11.6 pCi/L (Louis Berger Group 2005). The 1994 survey of Building 101 indicated a radon level of 45.4 pCi/L at one location (ATEC Associates 1994). The results for radon testing are presented in Table 4-17. Radon mitigation systems have been installed in several of the housing units.

Radioactive Materials. Radiological substances are stored and handled by the USMA's Department of Physics and chemistry laboratory. These substances are monitored on a regular basis (USMA, 2003). Small amounts of low-level radioactive wastes are generated during cadet training exercises. These wastes are stored in an old bunker until enough is accumulated for disposal (Ciabotti, personal communication, 2006). Radiological materials used by the installation are managed in accordance with all applicable regulations. No radioactive materials or waste are conducted on RCI footprint property.

Ordnance. There are no firing ranges within the RCI footprint. Former range fan areas appear to extend over the Lee Doubles, Old Lee Doubles, Lee Quints, Lee Trips, Band Quarters, New Brick, Old Brick, Senior NCO and portions of Grey Ghost housing communities into the northern surrounding areas. Development within these areas may require UXO support during or clearance prior to any construction.

Medical/Biohazardous Waste and Silver Recovery. Medical and biohazardous wastes are generated at the installation from medical services. Medical wastes are stored and disposed of in accordance with all applicable regulations.

**Table 4-17
Radon Levels Detected in AFH**

| Unit | pCi/L | Unit | pCi/L |
|-------------|--------------|-------------|--------------|
| 6 | 4.8 | 114F-K | 4.1 |
| 19A | 4.2 | 114 | 12.6 |
| 19B | 4.5 | 120A | 8.1 |
| 21B | 7.2 | 120A | 6.9 |
| 40A | 4.9 | 208C | 5 |
| 42B | 4.1 | 229A | 4.5 |
| 42C | 5.7 | 249B | 4.4 |
| 42C | 191.2 | 254B | 5.1 |
| 45A | 5.9 | 268B | 4.2 |
| 45C | 11.6 | 278B | 6.9 |
| 48A | 5.6 | 282B | 6.1 |
| 48B | 4.8 | 290B | 4.3 |
| 48C | 4.5 | 296A | 4.5 |
| 60 | 4.9 | 357A | 5 |
| 64A | 4.5 | 501A | 4.7 |
| 66A | 4.2 | 502G | 4.3 |
| 76B | 4.1 | 536A | 4.3 |
| 78B | 4.1 | 555B | 5.6 |
| 86A | 11.9 | 556A | 6.2 |
| 86A | 7.6 | 582B | 4.4 |
| 101 | 7.6 | 3014A | 4.7 |
| 101 | 45.4 | 3029B | 8.6 |
| 103A | 11.2 | 3030A | 4.2 |
| 107B | 5.6 | 3031B | 5.7 |
| 112 | 5.6 | 3032A | 6.7 |
| 114A-E | 5 | 3083 | 9.9 |
| 114A | 67.9 | 3088 | 7 |

Mold. Fungi are present almost everywhere in indoor and outdoor environments. Molds or fungi typically grow on common building components (e.g., walls, ventilation systems, support beams) that are chronically moist or water damaged. Elevated fungal exposure in humans can result in flu-like symptoms, including runny nose, eye irritation, cough, congestion, and aggravation of asthma. Inhalation of fungal spores, fragments, or metabolites (e.g., mycotoxins and volatile organic compounds) from a wide variety of fungi may lead to or exacerbate allergic reactions, cause toxic effects, or cause infections.

Mold is suspected to exist in some of the housing areas, however there are no reported incidents of health problems related to mold growth.

4.12.2 Consequences

4.12.2.1 Proposed Action

No environmental or health effects resulting from the removal, handling, and disposal of hazardous materials would be expected during demolition, renovation, or construction activities. Before initiating renovation activities, the potential of environmental impacts of special hazards such as ACM and LBP would be evaluated and addressed as specified in the appropriate regulatory requirements. Demolition that involves LBP or ACM would be evaluated for compliance with the OSHA, EPA, and HUD standards; as well as state, federal, and Army regulations. Measures to control airborne asbestos and lead dust would be implemented.

Additional potentially hazardous materials that could be found on-site during RCI-related activities include paints, thinners, asphalt, and fuel and motor oils for vehicles and equipment. All materials would be handled in accordance with established procedures and guidelines.

No adverse environmental or health effects would be expected from potential munitions and explosives of concern (MEC). Potential new housing areas, Undeveloped Areas B and C, overlap former training ranges. If ordnance is found during construction, activities would temporarily cease until appropriate ordnance disposal personnel dispose of it. The installation would provide specific instructions and requirements regarding ordnance related procedures to site workers.

No effects from pesticide use would be expected. Pesticides from an approved-products list would continue to be used at the installation and would be applied in accordance with the Pesticides Management plan. Pesticide residues, including those from Chlordane, that are present in the soils of lawns and maintained areas are not considered a hazardous waste if used as a product at their current location for the intended use.

No effects would be expected from hazardous waste disposal. The current hazardous waste disposal procedures would continue with implementation of the proposed action.

New renovations on housing with elevated radon levels will be required to include radon mitigation systems causing a beneficial effect on radon levels. For all other housing no effects from radon and mold would be expected with implementation of the proposed action.

4.12.2.2 No Action Alternative

No effects would be expected from this alternative. Current procedures would continue to be implemented in accordance with applicable laws.

4.13 CUMULATIVE EFFECTS SUMMARY

The Council on Environmental Quality defines cumulative effects at 40 CFR 1508.7 as the “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions.”

The summary presented in this section recognizes the effects of the proposed action on the various resources and conditions discussed above. Consideration of effects of other past, present, and reasonably foreseeable actions on resource areas are discussed below. Only those resources in which greater than negligible effects would be expected are presented.

In general, as a result of this analysis, the anticipated effects of the proposed action on specific environmental and socioeconomic resources and conditions have been found to be so minor, and their area of effect to be so localized, that their incremental effect on the resource would also be minor. Similarly, impacts on resources and conditions of activities attributable to other actions within the ROI would not so augment the direct and indirect effects of RCI activities at USAG that they would significantly increase their effect. Proposed construction activities at USAG include construction and modernization of facilities to support the USAG mission, modernize the Cadet Zone, and demolish structures that no longer contribute to the USAG mission. These actions include relocation of the U.S. Military Academy Preparation School (USMAPS) from Fort Monmouth, New Jersey to USMA as a result of BRAC 2005 actions, relocation of the West Point Directorate of Logistics Motor Pool to accommodate the USMAPS relocation, a new Cadet Library Learning Center, West Point School Complex upgrade, and additional perimeter security fencing (NEA, 2005; USAG West Point, 2005). Increased construction and military training activities associated with these actions, in addition to the proposed RCI action, would be expected to result in cumulative effects, both beneficial and adverse.

Although some cumulative effects, however minimal, could be identified for virtually any resource or condition, the effects described below are believed to be most pertinent to and representative of those associated with the proposed action.

Aesthetics and Visual Resources

Section 4.2.2.1 identifies adverse visual effects from construction activities; however, these effects would be short-term and localized. In the long term, renovations to existing housing would be expected to improve the aesthetic and visual appeal of the area. However, long-term adverse effects would also occur if undeveloped areas were to be converted to housing areas because these open or forested areas would lose their natural value, particularly undeveloped potential housing area Site F, which is within the Route 9W scenic byway. As identified in Section 4.2.2.1, GMH Military Housing LLC would work to achieve an aesthetically harmonious community by using cohesive and regionally appropriate architectural design characteristics, landscape planning that focuses on the use of native plant species and screening of visually intrusive structures and activities, and including of green space. Mature trees and native vegetation would be maintained wherever possible.

Geology and Soils

Section 4.5.2.1 identifies that negligible effects on geology would be expected from potential blasting and ripping of rock that could occur during land clearing and grading and construction activities. Soil loss may also occur due to proposed demolition, construction, and renovation

activities. Potential impacts to soil due to these activities can be limited through the use of BMPs and proper design. The long term impact of the proposed action is minor, as the number of housing units, and consequently the amount of impervious surface will not change significantly from existing conditions. Erosion from RCI construction activities would be compounded with potential soil erosion from other planned construction and training associated with the Master Plan for USMA (see Section 4.13.1) in the same subwatershed. Application of BMPs to control soil disturbance and erosion during construction, as described in Section 4.5.2.1, would minimize cumulative as well as direct and indirect effects on soils from implementation of the RCI program.

Water Resources

Similar to the cumulative effects on soils, effects on surface waters within the affected area could be expected because of sedimentation from soil disturbance and erosion associated with the proposed housing renovation and construction in combination with the effects from other planned construction and training. Application of BMPs to reduce soil loss would also serve to minimize cumulative effects on surface waters. Impervious surface amounts in areas of renovations are expected to remain unchanged as building sizes would not be expected to change. An increase in impervious surfaces would be expected with housing areas built on undeveloped land. Required stormwater management practices would be used to mitigate this increase. The cumulative effects of RCI-related construction on water resources is expected to be minimal.

4.14 SUMMARY OF BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

The implementation of BMPs and mitigation measures could include avoidance of effect; minimization of effect; repair, rehabilitation, or restoration of effect; reduction of effect; compensation for effect; or a combination. BMPs and mitigation measures for the proposed Army RCI project at USMA would be incorporated into the CDMP and RCI documents. Such measures would be expected to reduce, avoid, or compensate for most adverse effects. Table 4-18 summarizes the proposed BMPs and mitigation measures to be implemented for each of the affected resources.

Table 4-18
Summary of Best Management Practices and Mitigation Measures

| |
|--|
| <p><i>Land Use</i></p> <ul style="list-style-type: none"> • Adhere to optimal land use plans and guidelines outlined in the USMA <i>Real Property Master Plan</i> when siting housing developments. • Include vegetative or other buffers, where appropriate, to minimize land use incompatibilities. |
| <p><i>Aesthetics and Visual Resources</i></p> <ul style="list-style-type: none"> • Design housing units in a regionally appropriate architectural style as outlined in the <i>USMA Installation Design Guide</i>. • Revegetate housing areas with native vegetation. • Maintain trees and native vegetation wherever possible. • Preserve historic and cultural landscapes. |

Table 4-18
Summary of Best Management Practices and Mitigation Measures

| |
|--|
| <p>Air Quality</p> <ul style="list-style-type: none"> • Implement BMPs (e.g., wetting the soil during and at the end of the construction day). • Clean areas during and after workday of soil from roadways. • Cover trucks transporting soil with a tarp. |
| <p>Noise</p> <ul style="list-style-type: none"> • Use earthen berms and tree buffers to separate noise-producing land uses from housing areas where appropriate. • Limit construction activities to daylight hours. |
| <p>Geology and Soils</p> <ul style="list-style-type: none"> • Obtain Storm Water Permit with accompanying Storm Water Pollution Prevention Plan, if required. • Use BMPs, such as silt fencing and hay bales, to control surface erosion and runoff. • Follow protocols outlined in the storm water NPDES permit and state sediment and erosion control guidelines. • Implement a Storm Water Pollution Prevention Plan, if required. • Reseed and revegetate area following construction activities. • Prepare construction sequencing plan to limit amount of disturbed areas to bullets. |
| <p>Water Resources</p> <ul style="list-style-type: none"> • Implement BMPs, such as silt fencing, hay bales, to control surface erosion and runoff. • Reseed and revegetate area following construction activities to minimize impacts. • Encourage low-impact development designs. • Install water-efficient appliances (e.g., low-flow showerheads, faucets, and toilets). |
| <p>Biological Resources</p> <p><i>Vegetation</i></p> <ul style="list-style-type: none"> • Limit disturbed areas to the current housing footprint and a minimal amount of the adjacent construction staging areas. • Plant native trees near homes, in parks, in open spaces, and around storm water management structures. • Employ erosion control practices and tree protection devices at all proposed sites to protect vegetation and habitat areas. <p><i>Wildlife</i></p> <ul style="list-style-type: none"> • Preserve associated roads, existing parks, and large blocks of existing native vegetation on each site to act as buffers and wildlife corridors. • Use tree protection BMPs during construction of new developments to maintain natural habitat areas. |
| <p>Cultural Resources</p> <ul style="list-style-type: none"> • Avoidance and protection of sites in the project areas during construction activities • If avoidance and/or protection of the sites are not feasible, then a Memorandum of Agreement would be developed between USAG and the New York SHPO to determine measures to be implemented to mitigate the adverse effect. • USMA must complete and sign a Programmatic Agreement with the NY SHPO. This PA shall include legally enforceable stipulations that ensure the long-term preservation of all historic resources IAW 36 CFR 800. • All historic properties shall be treated IAW the appropriate option as outlined in the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i>. • All new construction shall reflect the architectural traditions of West Point and be sympathetic to the Hudson River Valley National Heritage Area. |

Table 4-18
Summary of Best Management Practices and Mitigation Measures

Socioeconomics and Protection of Children

- Place barriers and *No Trespassing* signs around construction sites where practicable.
- Avoid the use of building products containing hazardous materials.
- Secure construction vehicles and equipment when not in use.

Traffic and Transportation

- Optimally route and schedule all RCI construction vehicle traffic.
- Locate construction material staging areas in locations that would minimize traffic impacts.
- Expand government-operated shuttle bus routes to include new housing areas.
- Incorporate traffic-calming measures into the housing areas.
- Include overall design improvements, such as walkways and bicycle paths, to reduce reliance on vehicles and to create more connected, pedestrian-friendly communities.

Utilities

Potable Water

- Install water-efficient devices, such as low-flow showerheads, faucets, and toilets, in all new facilities.

Energy

- Install energy-efficient interior and exterior lighting fixtures and controls in all new facilities to reduce electrical demands.

Hazardous and Toxic Substances

- Before initiating renovation activities, evaluate environmental impacts and address them in accordance with the appropriate regulatory requirements.
 - Implement measures to control airborne asbestos and lead dust.
 - Conduct lead-in-soil testing before construction activities begin, and address the presence of lead in accordance with regulatory requirements.
 - Evaluate and dispose of excavated soils contaminated with lead, pesticides, and hazardous materials in accordance with applicable regulations.
 - Evaluate and dispose of demolition materials in accordance with applicable regulations at the time of demolition.
 - Establish smoking areas and prohibit open flames near flammable material.
-

SECTION 5.0

FINDINGS AND CONCLUSIONS

This EA has been prepared to evaluate the potential effects on the natural and human environment from activities associated with implementation of the Army RCI at the U.S. Army Garrison, West Point, New York. The EA has examined the Army's preferred alternative—implementation of the CDMP negotiated with GMH Military Housing LLC—and the no action alternative.

The EA has evaluated potential effects on land use, aesthetic and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic substances.

5.1 FINDINGS

The evaluation of the proposed action, identified as the Army's preferred alternative, indicates that the physical and socioeconomic environments at USAG and in the ROI would not be significantly affected if proper mitigation is implemented as identified in Table 4-20. Although the footprint at USAG presents a variety of physical and environmental constraints to developing the RCI property, in preparing the CDMP the Army and GMH Military Housing LLC would work around these constraints to avoid, minimize, or mitigate potential adverse effects whenever possible, resulting in minor to moderate effects on the human and natural environment. The predicted consequences on resource areas are briefly described below. Table 5-1 provides a summary and comparison of potential direct and indirect consequences of the proposed action versus the no action alternative.

5.1.1 Consequences of the Proposed Action

5.1.1.1 Land Use

No adverse effects on existing residential land use would be expected. However, 40 acres of undeveloped and forested areas would be converted to family housing areas, increasing impervious surfaces in the cantonment area. No increase in the number of overall housing units would occur under the proposed action, and no new land use incompatibilities would be expected to occur in the existing housing areas.

No land use incompatibilities have been identified in Site F.

No effects on surrounding land uses would be expected as a result of implementing the proposed action.

5.1.1.2 Aesthetic and Visual Resources

Short- and long-term minor adverse and long-term moderate beneficial effects would be expected. Construction activities are inherently aesthetically displeasing. Demolition and construction equipment and materials and staging areas used during housing renovation would diminish otherwise aesthetically pleasing views. These effects, however, would be short-term and localized. In the long term, renovations to existing housing would be expected to improve the aesthetic and

**Table 5-1
Summary of Potential Environmental and Socioeconomic Consequences**

| Resource | Environmental and Socioeconomic Consequences | |
|--|--|---------------------------------|
| | Proposed Action | No Action Alternative |
| Land Use | No effects | No effects |
| Aesthetics and Visual Resources | Short- and long-term minor adverse and Long-term moderate beneficial effects | Long-term minor adverse effects |
| Air Quality | Short-term minor adverse and Long-term minor beneficial effects | No effects |
| Noise | Short-term minor adverse effects | No effects |
| Geology and Soils | | |
| • Geology and topography | Negligible effects | No effects |
| • Soils | Short-term minor adverse effects | No effects |
| • Prime farmland | No effects | No effects |
| • Petroleum and minerals | No effects | No effects |
| • Seismicity | No effects | No effects |
| Water Resources | | |
| • Surface water | Short-term minor adverse effects | No effects |
| • Groundwater | Short-term minor and Long-term negligible adverse effects | No effects |
| • Floodplains | No effects | No effects |
| Biological Resources | | |
| • Flora and Fauna | Short-term negligible adverse effects | No effects |
| • Sensitive species | | No effects |
| - Threatened and endangered species | No effects | No effects |
| - NY Species of Concern | Short-term minor adverse effects | No effects |
| - Rare plants | Short-term minor adverse effects | No effects |
| - Migratory birds | Short-term minor adverse effects | No effects |
| • Wetlands | Short-term negligible adverse effects | No effects |
| • Unique Ecological Areas | No effects | No effects |
| Cultural Resources | No effects, pending PA with NY SHPO | No effects |
| Socioeconomics | | |
| • Economic development and demographics | Short-term minor beneficial effects | No effects |
| • Housing | Long-term beneficial effects | Long-term major adverse effects |
| • Quality of life | Short-term minor adverse and Long-term major beneficial effects | Long-term major adverse effects |
| • Law enforcement, fire protection, and medical services | No effects | No effects |
| • Schools | No effects | No effects |
| • Recreation | Long-term minor beneficial effects | No effects |
| • Environmental justice | No effects | No effects |
| • Protection of children | Short-term minor adverse effects | Long-term adverse effects |
| Transportation | Short-term minor adverse and Long-term moderate beneficial effects | No effects |
| Utilities | | |
| • Potable water | Long-term minor beneficial effects | No effects |
| • Wastewater | Long-term minor beneficial effects | No effects |
| • Storm water | Long-term minor beneficial effects | No effects |
| • Energy | Long-term minor beneficial effects | No effects |
| • Communications | No effects | No effects |

**Table 5-1
Summary of Potential Environmental and Socioeconomic Consequences**

| Resource | Environmental and Socioeconomic Consequences | |
|--------------------------------|--|-----------------------|
| | Proposed Action | No Action Alternative |
| • Solid waste and recycling | Long-term minor adverse effects | No effects |
| Hazardous and Toxic Substances | No effects | No effects |
| Cumulative | Long-term minor adverse effects to aesthetics and visual resources, geology and soils, and water resources | No effects |

visual appeal of the area. Long-term adverse effects on viewsheds—from vistas of open or forested areas to developed areas—would also occur if undeveloped areas were converted to housing areas.

5.1.1.3 Air Quality

Short-term minor adverse and long-term minor beneficial effects would be expected. Short-term effects would be due to the emissions generated during the demolition, construction, and renovation of the RCI housing. Long-term beneficial effects would be due to the net reduction in area and operational emissions associated with the overall decrease in the number of family housing units at the installation.

The CAA mandates the general conformity rule (GCR) to ensure that federal actions in nonattainment areas do not interfere with a state's timely attainment of the NAAQS. The general conformity rule specifies emission thresholds below which the GCR do not apply (40 CFR 93.153). Below these levels, an action is considered *de minimis* (of minimum importance) and would not interfere with the states timely attainment of the NAAQS. USAG is located in an AQCR designated as severe nonattainment for O₃. Therefore, the applicability thresholds are 25 tons per year for NO_x and VOCs. In addition, the general conformity rule applies if the emissions are *regionally significant*, even if they are *de minimis*.

The total of direct and indirect emissions of NO_x and VOCs are less than the applicability thresholds. In addition, NO_x and VOC emissions are less than 10 percent of the regional inventory; therefore are not *regionally significant*. The GCR does not apply and no conformity determination is required.

Fugitive dust emissions from land clearing and construction activities would be minimized by common construction practices such as periodic wetting of construction areas, covering of open equipment used to convey materials likely to create air pollution, and prompt removal of spilled or tracked dirt from streets.

5.1.1.4 Noise

Short-term minor adverse effects would be expected. The proposed action would result in additional noise from the use of heavy construction equipment. This noise would be temporary in nature and end after the completion of the demolition and construction phases.

5.1.1.5 Geology and Soils

Geology and Topography. Negligible effects on geology would be expected. Some blasting and ripping of rock could occur during the land clearing and grading and construction activities.

Short-term adverse effects due to steep topography would be expected to result in increase soil erosion, as discussed below.

Soils. Short-term minor adverse effects would be expected from the proposed action. Demolition and construction activities would cause vegetation removal, soil exposure, and increased susceptibility to wind and water erosion, possibly resulting in increased runoff and erosion during site preparation. These effects would be minimized, however, by using appropriate BMPs for controlling runoff, erosion, and sedimentation during construction.

Prime Farmland. No effects on prime farmland would be expected.

Petroleum and Minerals. No effects on petroleum or minerals would be expected.

Seismicity. No effects on seismicity would be expected.

5.1.1.6 Water Resources

Surface Water. Short-term minor adverse effects would be expected. In the short term, construction and demolition activities would be expected to increase the possibility of soil erosion and resulting increases in total suspended solids in nearby waters. In addition, leakage from construction equipment could increase petroleum hydrocarbon pollution in surface waters.

All RCI construction would be conducted in accordance with the terms of a Storm Water Permit and accompanying SWPPP developed specifically for this site. Following BMPs specified in the storm water permits and common erosion control techniques would reduce the sedimentation of surface waterbodies.

Ground water. Short-term minor and long-term negligible adverse effects would be expected for groundwater resources. Waterborne contaminants contributed by construction activities could be transported into the ground water system. Following water-protection protocols, and implementing BMPs would reduce potential effects.

Floodplains. No effects on floodplains would be expected.

5.1.1.7 Biological Resources

Flora and Fauna. Short-term negligible adverse effects on flora or fauna would be expected. The area within the RCI footprint is largely developed and does not represent good wildlife habitat. Although 40 acres of forested area might be cleared in Site F, the acreage to be cleared is insignificant compared to the quantity of forested land on and surrounding USAG. Timber harvests are conducted routinely on the installation with no adverse effects on wildlife.

Sensitive Species. No effects on threatened or endangered species are expected. There are no state- or federally listed threatened or endangered species known to occur within the RCI footprint

Short-term minor adverse effects to the eastern box turtle are expected to occur. Clearing of forested areas in Site F and construction activities throughout the RCI footprint are likely to result in short-term habitat loss and disruption to daily activities.

The potential exists for short-term minor adverse effects on rare plants to occur. However, impacts could be minimized or avoided by implementing the management measures provided in the USMA Rare Plant Management Plan and the INRMP.

Short-term minor adverse effects are expected from the clearing of forested areas in Site F and construction activities. However, outside the breeding season, these species do not remain permanently in any one location; therefore, adverse effects on the species are expected to be limited.

Wetlands. Short-term negligible adverse effects would be expected. Sedimentation and runoff from nearby construction sites has the potential to adversely impact the wetland. However, the impacts could be minimized by implementing stream and wetland protection BMPs, and maintaining the 100-foot buffer between the wetland and development activities.

Habitats of Concern. These habitats do not occur within or adjacent to the RCI footprint; therefore, no effects on NYSDEC-listed significant habitats, special natural areas, coastal resources, or essential fish habitat would be expected.

5.1.1.8 Cultural Resources

Transfer of historic properties out of Federal control would be an adverse effect (36 CFR 800.5) and would constitute a significant impact to those properties. However, USAG is preparing a PA for the RCI Program to ensure that any transferred historic properties would continue to be protected by Section 106 of the NHPA. The RCI PA would ensure that the architectural historic properties within the NHLD are managed in accordance with Section 106 of the NHPA. The developer would manage, maintain, and renovate historic properties in accordance with the standards specified in the PA. Proposed alterations to historic properties would be coordinated with the New York SHPO by USAG. Any new properties constructed within the NHLD would be designed in a manner that is compatible with existing architecture. Any potential adverse effects to historic properties would be avoided, minimized, or mitigated through measures developed by USAG in consultation with the New York SHPO. As such, with the PA in place, no significant adverse impacts would occur to architectural historic properties.

Prior to any ground disturbing activities, USAG would complete archaeological surveys of the RCI footprint, all identified archaeological resources would be evaluated for NRHP-eligibility, and potential adverse effects would be identified prior to the proposed action going forward. The findings of the archaeological surveys, determinations of NRHP-eligibility for all identified sites, and determinations of potential adverse effect to eligible sites within the RCI footprint would be provided to the New York SHPO by USAG for consultation under Section 106 of the NHPA. NRHP-eligible and potentially eligible archeological sites within the RCI footprint would be avoided during new housing construction to the extent practical.

If it is determined that avoidance and/or protection of the archaeological historic properties is not feasible, then a Memorandum of Agreement would be developed between USAG and the New York SHPO to determine measures to be implemented to mitigate the adverse effect of physically disturbing these resources. Mitigation measures could include data recovery excavation of prehistoric deposits, archival research and recording of historic components, or development of public interpretation materials regarding cultural resources of the installation or region. Mitigation of the adverse impacts would reduce them to a less than significant level of impact.

During implementation of activities associated with the RCI proposed action, there is the potential that previously unknown archaeological resources would be discovered. If such resources are discovered, activities at the location of the discovery would cease until the USAG has assessed the discovery and determined the appropriate course of action, in compliance with the ICRMP and the PA currently in development. The USMA ICRMP has standard operating procedures that address the unexpected discovery of archaeological resources. Any intact archaeological resources discovered would be recorded and evaluated for eligibility to the NRHP, in consultation with the New York SHPO. Treatment of the discovery would be determined by USAG, again in consultation with the New York SHPO.

5.1.1.9 Socioeconomics

EIFS Model Results. Short-term minor beneficial effects would be expected. The expenditures associated with demolition, construction, and renovation of family housing and associated facilities at USAG would increase sales volume, employment, and income in the ROI, as determined by the EIFS model. The economic benefits would be short-term, lasting only for the duration of the construction period. These changes in sales volume, employment, and income would fall within historical fluctuations (i.e., within the RTV range) and be considered minor. No change in ROI population would be expected because the proposed RCI action would not change the number of soldiers assigned to USAG.

Housing. Long-term minor beneficial effects on on-post family housing would be expected. The availability of affordable, quality housing in family-oriented communities is a key issue for Army recruiting and retention. Overall quality of life for Soldiers and their families would be improved through implementation of the RCI program at USAG. The proposed action would improve the condition and aesthetic appeal of family housing through revitalization and construction of new units.

Quality of Life. Short-term minor adverse and long-term major beneficial effects on quality of life would be expected. In the short term, noise and traffic from construction of RCI housing could be disruptive to the current residents. In the long term, however, the overall quality of life for Soldiers and their families would be improved through implementation of the RCI program at USAG.

Law Enforcement, Fire Protection, and Medical Services. No effects would be expected. The proposed action would not increase the number of on-post housing units. Police and fire services in the family housing areas would continue to be provided in the same manner as they have in the past. Project revenues would be used to reimburse USAG for police and fire protection services.

No effects on medical services would be expected. Implementation of the proposed RCI action would not change the eligible population of active duty military, military dependents, or retirees within the ROI serviced by on-post military or off-post civilian facilities.

Schools. No effects would be expected. The proposed action would not increase the number of on-post housing units or the number of children living on-post, therefore there would be no adverse effects on schools or school enrollment.

Family Support, Shopping, and Other Services. No effects would be expected. The eligible population of active duty military, military dependents, and retirees within the ROI would not change as a result of the proposed action.

Recreation. Long-term minor beneficial effects would be expected from implementation of the proposed action. New and improved community amenities in the family housing areas would result in long-term minor beneficial effects for on-post family housing residents. The CDMP includes plans for a new neighborhood center in Site F and the Old Hospital would be renovated to become a Community Center with game rooms, exercise facility, internet café, and meeting rooms. Other recreational facilities include a pool, basketball courts, playgrounds and tot lots throughout the neighborhoods, common areas, and a trail system for walking, jogging, or bike riding.

Environmental Justice. No effects would be expected. Implementation of the proposed action would not result in disproportionate adverse environmental or health effects on low-income or minority populations.

Protection of Children. Short-term minor adverse effects on the protection of children would be expected. In the short term, because construction sites can be enticing to children, construction activity could be an increased safety risk. During construction, safety measures stated at 29 CFR Part 1926, *Safety and Health Regulations for Construction*, and Army Regulation 385-10, *Army Safety Program*, would be followed to protect the health and safety of USAG residents, as well as construction workers.

5.1.1.10 Transportation

Short-term minor adverse and long-term moderate beneficial effects on transportation would be expected from construction associated with the proposed action. Construction vehicle traffic could increase wear and tear on installation roads and cause minor delays in traffic flow near construction areas. Traffic delays and detours could result from construction activities. Long-term improvements to installation traffic would be expected because of implementation of a CDMP that includes a community-centered plan that would decrease dependency on motor vehicles. Long-term minor adverse effects on traffic at the Stoney Lonesome Gate would be expected from the addition of family housing units in Site F. Use of Site F would increase traffic primarily at the Stoney Lonesome Gate. The Stoney Lonesome Gate serves as a primary entry/exit point for residents of Housing Areas 38 and 40, which combined have approximately 300 family housing units. The Stoney Lonesome Gate receives approximately 105 vehicles per hour in the DoD lane (about half of its capacity of 206 vehicles per hour), and construction of housing units in Site F would increase off-peak traffic in the lane.

5.1.1.11 Utilities

Long-term minor beneficial effects would be expected by implementing the proposed action. Given that the number of on-post family housing units would decrease, demand for potable water and energy would decrease and wastewater production would decrease, and all existing utility systems should be more than adequate to handle current and future anticipated demands. In addition, under the Army policy for RCI projects, new, energy-efficient, and low-usage utility systems, appliances, and fixtures would be installed in new and renovated housing units. Army policy stipulates that RCI projects planned or under design must achieve the Gold rating of the SPiRiT System. As a result of the conservation measures and efficient management methods of utilities to be adopted under the SPiRiT rating system, with the goal of attaining the Gold rating, the end-state of 831 units would have a minimal effect on the utility systems.

Long-term minor beneficial effects would be expected from the installation of new distribution and collection lines for water, wastewater, storm water, electricity, natural gas, and communications. All homes would be converted to natural gas heating systems. New and

renovated housing units would use Energy Star appliances and would have water-efficient plumbing fixtures such as low-flow showerheads, faucets, and toilets to reduce per capita water and energy consumption and be compliant with the Energy Policy Act of 2005. GMH Military Housing LLC would prepare a Storm Water Pollution Prevention Plan in coordination with the USAG Department of Public Works and the New York State Department of Environmental Conservation. One-hundred percent of storm water runoff in new construction Site F would be retained with controlled exit and 25 percent of runoff in redeveloped Stony Lonesome I would be retained with controlled exit.

Communications. No effects on communication systems would be expected. Upon privatization of housing at USAG, local service providers would continue to offer phone and cable service to residents. The GMH Military Housing LLC partner would assume responsibility for repair and maintenance of telephone jacks and wiring inside all family housing units.

Solid Waste. Long-term minor adverse effects on landfills would be expected. Debris from the construction, demolition, and renovation of family housing units would increase during the construction period relative to the solid waste typically generated annually by the installation. The proposed action would be expected to generate approximately 26,000 tons of construction and demolition debris (CDD) over the 6-year development period of the RCI program. This would result in about 4,300 tons of CDD debris per year or about 360 tons of CDD debris per month during the 6-year development period. This additional CDD debris would increase the fill rate of existing local area landfills used by USAG.

5.1.1.12 Hazardous and Toxic Substances

No environmental or health effects resulting from the removal, handling, and disposal of hazardous materials would be expected during demolition, renovation, or construction activities. Before initiating renovation activities, the potential of environmental impacts of special hazards such as ACM and LBP would be evaluated and addressed as specified in the appropriate regulatory requirements. Demolition that involves LBP or ACM would be evaluated for compliance with the OSHA, EPA, and HUD standards; as well as state, federal, and Army regulations. Measures to control airborne asbestos and lead dust would be implemented.

Additional potentially hazardous materials that could be found on-site during RCI-related activities include paints, thinners, asphalt, and fuel and motor oils for vehicles and equipment. All materials would be handled in accordance with established procedures and guidelines.

No adverse environmental or health effects would be expected from potential munitions and explosives of concern (MEC). Potential new housing areas, Undeveloped Areas B and C, overlap former training ranges. If ordnance is found during construction, activities would temporarily cease until appropriate ordnance disposal personnel dispose of it. The installation would provide specific instructions and requirements regarding ordnance related procedures to site workers.

No effects from pesticide use would be expected. Pesticides from an approved-products list would continue to be used at the installation and would be applied in accordance with the Pesticides Management plan. Pesticide residues, including those from Chlordane, that are present in the soils of lawns and maintained areas are not considered a hazardous waste if used as a product at their current location for the intended use.

No effects would be expected from hazardous waste disposal. The current hazardous waste disposal procedures would continue with implementation of the proposed action.

New renovations on housing with elevated radon levels will be required to include radon mitigation systems causing a beneficial effect on radon levels. For all other housing no effects from radon and mold would be expected with implementation of the proposed action.

5.1.1.13 Cumulative Effects

In addition to the RCI, numerous construction activities on the installation are planned over the next several years. During this period of activity there could be long-term minor adverse cumulative effects to aesthetics and visual resources, geology and soils, and water resources.

5.1.1.14 Best Management Practices and Mitigation Measures

A combination of BMPs and mitigation measures would be expected to reduce, avoid, or compensate for most adverse effects. For a summary of proposed BMPs and mitigation measures see Table 4-20 in Section 4.14.

5.1.2 Consequences of the No Action Alternative

Only those resources that would be affected by the no action alternative are discussed below (see Table 5-1).

5.1.2.1 Aesthetic and Visual Resources

Long-term minor adverse effects would be expected. Under the no action alternative, the Army would continue to be responsible for maintenance and renovation of existing housing and new housing construction as necessary. Lack of sufficient funding for this work and the existence of an extensive backlog of work might result in deterioration of existing housing over time. Such deterioration would be expected to adversely affect aesthetic and visual resources.

5.1.2.2 Socioeconomics

Housing and Quality of Life. Long-term major adverse effects would be expected. Continuation of the present family housing programs would perpetuate deficiencies in quality of life for many soldiers and their dependents. The availability of affordable, quality family housing is a key function of quality of life and is often given high priority by soldiers and their families. The Army would continue to do regular maintenance on existing housing and some renovation and demolition, but these activities would be conducted on a constrained budget. Without adequate funding to address the renovation backlog, housing units could become unsuitable for occupancy.

Protection of Children. Long-term adverse effects on the protection of children would be expected. Under current conditions, hazardous and toxic substances identified in on-post housing units are not health hazards because they have been contained or removed. As homes deteriorate, however, the risk of children's exposure to hazardous and toxic substances (for example, chipping LBP or cracked asbestos tiles) would increase.

5.1.2.3 Cumulative Effects

The no action alternative would not be expected to result in any cumulative effects.

5.2 CONCLUSIONS

On the basis of the analysis performed in this EA, implementation of the preferred alternative would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. Preparation of an Environmental Impact Statement is not required. Issuance of a Finding of No Significant Impact would be appropriate.

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SECTION 7.0

LIST OF PREPARERS

Michelle Cannella

Graduate Studies, Mineral Economics, Pennsylvania State University
B.S., Mineral Economics, Pennsylvania State University
Years of Experience: 10

Eric Dohner

M.S., Marine Science, University of South Florida
B.S., Marine Biology, Millersville State College
Years of Experience: 21

Jeff Dorman

B.S., Biology and Environmental Studies, St. Lawrence University
Years of Experience: 3

Jennifer Jarvis

B.S., Environmental Resource Management, Virginia Polytechnic Institute and State University
Years of Experience: 7

Timothy Lavalley, P.E. (LPES, Inc. Engineering and Planning)

M.S., Environmental Health, Tufts University, Medford, Massachusetts, 1997.
B.S., Mechanical Engineering, Northeastern University, Boston, Massachusetts, 1992.
15 Years of Experience

Jeff Moran

BS Civil Engineering, Pennsylvania State University
Years of Experience: 19

Catherine Price

B.S. Chemical Engineering, Georgia Tech
B.S. Chemistry, Albany State University
Years of Experience: 28

Katherine Roxlau, RPA

M.A., Anthropology, Northern Arizona University
B.A., Anthropology, Colorado College
Years of Experience: 16

Patrick Solomon

M.S., Geography, University of Tennessee
B.A., Geography, Geneseo State University
Years of Experience: 7

Paul Wilbur, J.D.

J.D., Wayne State University Law School
B.A., English, University of Michigan
Years of Experience: 29

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SECTION 8.0

PERSONS CONSULTED

Anderson, Michael, USMA, DPW, EP&S.

Beckwith, Travis, USMA, DPW EMD, Cultural Resources Manager

Beemer, James, USMA, DPW EMD, Natural Resources Manager

Butkus, Jennifer, USMA, DPW EMD.

Bjornsen, Alan, USMA, DPW EMD, Former NEPA Coordinator

Brown, Kris, USMA, DPW, EP&S, GIS.

Burns, Thomas, USMA, DPW, Master Planning.

Ciabotti, John Ciabotti, Safety Manager, USMA West Point.

Cubbison, Douglas R., USMA, DPW, Former Cultural Resources Manager.

Dopler, John, USMA, DPW EMD, Solid Waste and Recycling.

Driver, Steve, USMA West Point Department of Public Works, Utilities and Energy.

Gromoski, William, USMA, DPW, Pest Management COR.

Kennedy, Jim, U.S. Army Garrison, West Point, Housing Div./RCI.

Kirkpatrick, Kevin, DPW EMD, USMA West Point.

LeBland, Paul, USMA, OEM, Utilities and Energy.

Mack, Joe, U.S. Army Garrison, West Point, Housing Div. /RCI.

Markt, George, USMA, DPW EMD, NEPA Coordinator

McGinnis, Elizabeth, USMA, Realty Specialist.

Meyer, Carl, USMA, Master Planner.

Merritt, Paul, USMA, RCI Office

Roman, Laura Lizzi, USMA, SJA, Environ. Law.

Sanborn, Jeff, USMA, DPW EMD, Lead and Asbestos.

Shandling, Joseph, USMA, DPW EMD, Env. Eng. Br.

Thorton, Rick, USMA, Directorate of Information Management, Telecommunications Branch

Wagner, Rich, GMH Military Housing LLC

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SECTION 9.0

DISTRIBUTION LIST

| LOCAL AGENCIES | |
|---|--|
| Edward Diana Orange County Executive Orange County Government Center Goshen, NY 10924 | Robert Bondi Putnam County Executive Putnam County Office Building 40 Gleneida Avenue, 3 rd Floor Carmel, NY 10512 |
| INTERESTED PARTIES | |
| Ned Sullivan, Director Scenic Hudson, Inc. 1 Civic Center Plaza #200 Poughkeepsie, NY 12601-3157 | Carmello Mantello, Executive Director Hudson River Valley Greenway Communities Council Capitol Building, Capitol Station, Room 254 Albany, NY 12224 |
| Hudson Highlands Land Trust P.O. Box 226 Garrison, NY 10524 | Daniel Mackey Director of Public Policy Preservation League of New York State 44 Central Avenue Albany, NY 12206 |
| Marilyn Fenollosa National Trust for Historic Preservation Northeast Regional Office 7 Faneuil Hall Marketplace, 4 th Floor Boston, MA 02109 | Richard de Koster, Executive Director Constitution Island Association Box 41 West Point, NY 10096 |
| Martha Waters, Executive Director Putnam County Historical Society 63 Chestnut Cold Spring, NY 10516 | Andy Schmar Hudson Islands Land Trust P.O. Box 226 Garrison, NY 10524 |
| PUBLIC VENUES | |
| Town Clerk Town of Highlands 254 Main Street Highland Falls, NY 10928 | Village Clerk Village of Highland Falls 303 Main Street Highland Falls, NY 10928 |
| Director Highland Falls Public Library 298 Main Street Highland Falls, NY 10928 | Suzanne Moskala Community Library Building 622 United States Military Academy West Point, NY 10996 |

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APPENDIX A

Community Development and Management Plan Brief

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EXECUTIVE OVERVIEW

The West Point Housing Privatization project reflects the power of a combined public-private effort to dramatically improve the communities at this important Army installation in a six-year Initial Development Period (IDP). Proposed in this Community Development and Management Plan (CDMP) is an IDP end-state where all families will live in a larger, new or renovated home. Our plan postures West Point to meet the current and anticipated housing requirement through our joint assessment of the strengths and weaknesses of the current housing inventory and taking action to offer all families of every grade an improved place to live by either constructing new homes, converting existing homes into larger homes with improved floor plans, expanding existing homes, or renovation of larger homes. Our master plan within this CDMP incorporates principles that promote our joint vision of "Community", which creates housing areas that are superior to most private sector developments. The partnership between West Point and the GMH team will bring together the best commercial community management practices, including responsive maintenance, community programs and amenities. This CDMP provides a blueprint for a fifty-year voyage into the future of exceptional Army community living.

HISTORICAL PERSPECTIVE

The Military Housing Privatization Initiative (MHPI) legislation enacted by Congress in 1996 authorizes the privatization of family housing at military installations throughout the nation. This legislation allows the military services to leverage available appropriated funds and existing assets (land and improvements) to obtain private-sector expertise, capital, and market-based incentives to improve the quality of life for service members and their families.

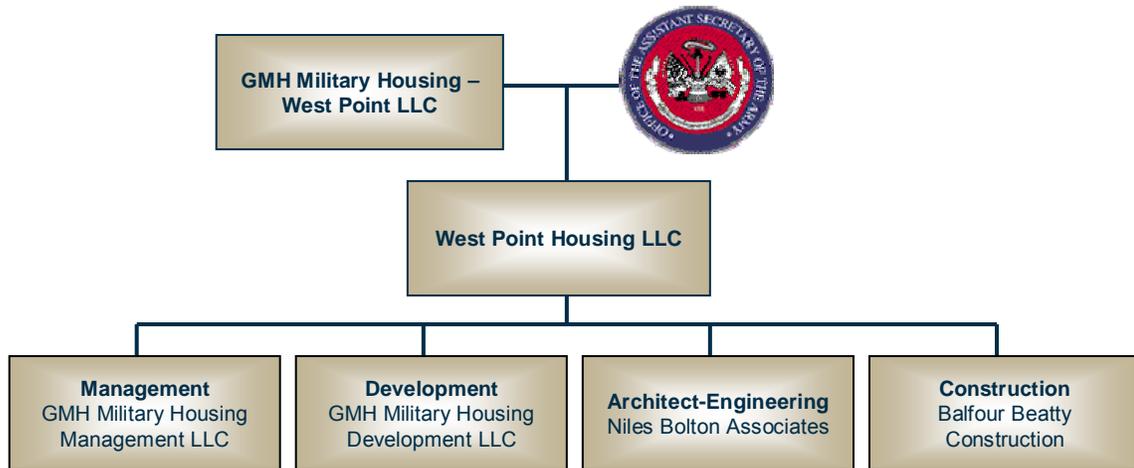
The Residential Communities Initiative (RCI) is the program developed and managed under the oversight and direction of the Office of the Assistant Secretary of the Army (Installations and Environment), OASA (I&E), on behalf of the Secretary of the Army to pursue the privatization of Army family housing.

West Point is proposing to partner with the private sector for the purpose of improving the military family housing community, utilizing applicable legislative authorities and the provision of the Army's RCI Program.

DEVELOPMENT TEAM

GMH Military Housing LLC offers West Point an exclusive group of teamed companies with the highest credentials who possess the commitment to the mission of providing service members and their families with homes and communities comparable with the best in the private market. As illustrated in Figure EO-1, this dynamic team includes **Niles Bolton Associates**, a comprehensive architecture, engineering and design/build firm, **John Cullinane Associates**, a respected historical architecture firm and **Balfour Beatty Construction** (formerly Centex Construction). The Army is a member of the Limited Partnership, overseeing the project and a part of the team developing and planning the effort. It is in this teaming/partnership spirit that this CDMP uses the terms "we" and "our" to describe the results of this joint effort.

Figure EO-1, Project Organization



Add JCA to figure

OVERVIEW OF THE INSTALLATION

West Point is **not** a typical Army installation. **It is much more.** It represents an historical place in the life of the United States Army. The motto of “Duty – Honor – Country” represents a standard of excellence that is fundamental to the Army and those who are assigned to West Point. **West Point represents the heart and soul of the Army.**

West Point is the oldest continuously occupied military post in America. It is designated a National Historic Landmark and contains a National Register of Historic Places historic district. With a strategically commanding plateau on the west bank of the Hudson River in New York, General George Washington considered West Point to be the most important strategic position in America and had the fortifications designed **to prevent the British from splitting the Colonies in two.** Continental soldiers built the forts, batteries and redoubts **and the British never attempted to breach them.**

In 1802, West Point became an institution devoted to the arts and sciences of warfare and the United States Military Academy was established. Civil engineering **eventually** became the foundation of the curriculum and for the first half century, USMA graduates were largely responsible for the construction of the bulk of the nation's initial railway lines, bridges, harbors and roads.

In the post-Civil War years, the development of other technical schools broadened USMA’s curriculum beyond a strict civil engineering program. Continuing Army education became possible when Army post-graduate command and staff schools were created.

As a result of World War I, the academic curriculum was diversified and major changes in the physical fitness and intramural athletic programs occurred. The goal that became important was "Every cadet an athlete". In addition, the Cadet Honor **Code and its attending Honor** Committee was created.

Following World War II, extensive changes to the West Point curriculum **occurred due to** the dramatic developments in science and technology, the increasing need to understand other cultures and the rising level of general education in the Army.

In 1964, legislation was passed increasing the strength of the Corps of Cadets from 2,529 to 4,417. A major expansion of facilities began in order to keep up with the growth of the Corps.

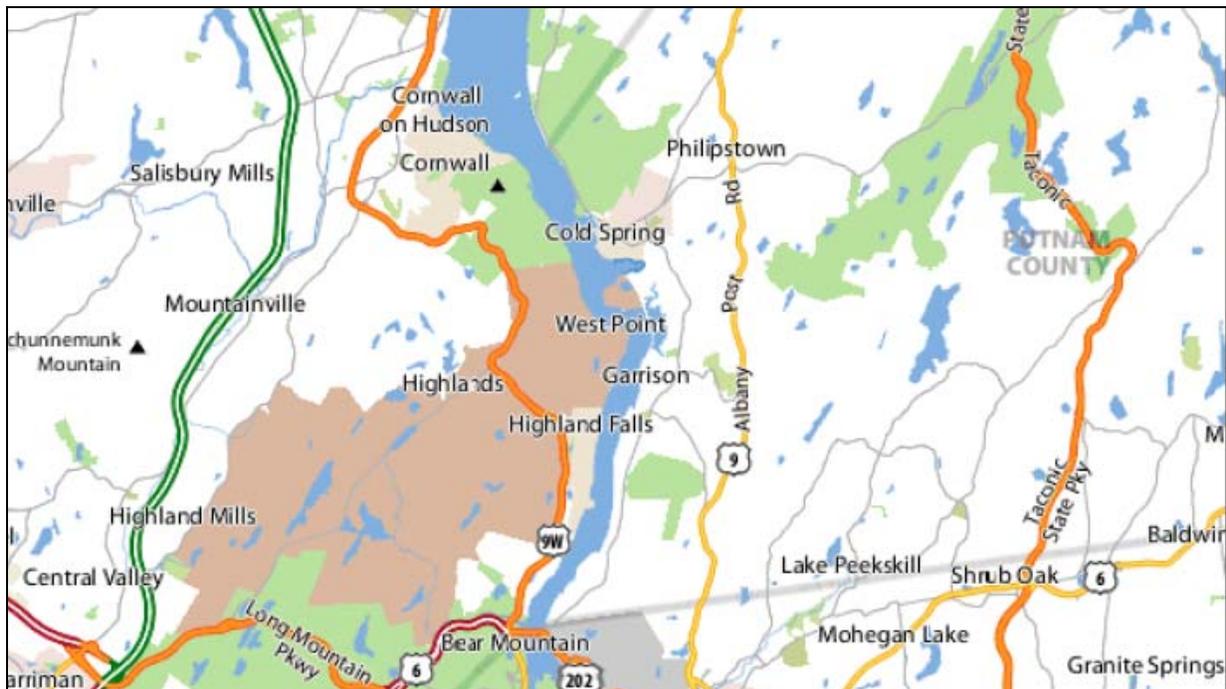
In recent decades, the Academy's curricular structure was changed to permit cadets to major in any one of more than a dozen fields, including a wide range of subjects from the sciences to the humanities. Academy graduates are awarded a Bachelor of Science degree and a commission as a **Second Lieutenant** in the U.S. Army, serving a minimum of five years on active duty. The Academy graduates more than 900 new officers annually, which represents approximately 25 percent of the new **Lieutenants** required by the Army each year. The Corps of Cadets **currently** numbers 4,000.

The U.S. Army Garrison at West Point conducts base operations in support of the United States Military Academy and tenant activities. The Garrison provides civilian and military personnel, quality of life programs, legal services, housing management, security, fire and emergency services, building and grounds maintenance and logistical support for tenants and tenant activities.

The largest organizational occupants of West Point include the United States Corps of Cadets, the Dean of the Academic Board **and his staff and faculty**, the Directorate of Intercollegiate Athletics, Keller Army Community Hospital, the Association of Graduates, **the USMA Band** and, **in the near future**, the United States Military Academy Preparatory School. Most military personnel are members of the Academy's staff and faculty.

The Academy is located approximately 50 miles north of New York City on the Hudson River. The campus and central post area comprise only a small portion of the nearly 16,000 acre reservation.

Figure EO-2, Area Map of West Point



The GMH Team recognizes and understands the mission, values and goals of West Point.



Mission of USMA: To educate, train, and inspire the Corps of Cadets so that each graduate is a commissioned leader of character committed to the values of Duty, Honor, Country and prepared for a career of professional excellence and service to the Nation as an officer in the United States Army.

Mission of the West Point Garrison: Provide base operations, community support programs and facilities while maintaining a safe and secure environment to enhance the well-being of the West Point Community.

Values: Loyalty, Duty, Respect, Selfless Service, Honor, Integrity and Personal Courage

Goals of Garrison West Point:

- Establish a culture focused on health, safety and security
- Develop and retain valued workforce focused on excellence and professionalism
- Communicate effectively in all directions to ensure organizational and community success
- Exceed customer expectations in all areas
- Obtain and innovatively manage all resources to provide premier facilities and quality services

RCI PROJECT VISION, GOALS AND OVERALL STRATEGY

Vision of the West Point RCI Project: We will provide superior homes in a quality community in which West Point Families choose to live.

Goals of the West Point RCI Project

- Soldiers and their Families will desire to live in communities on post as evidenced by an occupancy rate of 95% or higher.
- All homes and community amenities are well maintained, market competitive and supportive of a campus and historic environment.
- Communities are safe and environmentally friendly.
- Residents are satisfied with their community experience as measured by regular resident surveys.
- Community amenities are improved and are being utilized in concert with AAFES and MWR.
- The unique aspects of the West Point culture are supported such as the Cadet Sponsorship Program, Officer Representatives and other mentoring programs.
- The partnership is successful and the reinvestment fund ensures future improvements to the community.

RCI PROJECT STRATEGY

West Point proposes to convey 963 family housing units (including 391 historic homes) and lease the underlying land of approximately 250.5 acres. This conveyance will be for a fifty-year period with a twenty-five year renewal clause.

A comparison with current Army standards suggests that 570 existing housing units will need major work as a historical renovation, conversion or replacement within the Initial Development Period (IDP), currently planned for the first six years of the project. An additional 380 housing units will receive minor renovations such as installation of central air conditioning and bedroom carpeting. At the end of the IDP all will meet or exceed RCI standards. In addition, to improved maintenance operations and increased efforts during change of occupancy maintenance, a life-cycle renovation or replacement of the inventory will take place during the course of the project in accordance with the development schedule agreed upon by the Army and the GMH Team.

The plan for family housing at West Point is to renovate 206 existing historical homes, convert 174 existing historical homes into 87 expanded historical homes, construct a total of 158 new state-of-the-art homes and demolish 196 existing homes.



Our intent for West Point is to improve the overall quality of living and preserve the historic nature by conducting a major renovation/upgrade of selected inadequate historical homes and converting other existing historical homes into larger historical homes and establishing new neighborhoods on undeveloped available land, over a six-year period while maximizing our ability to leverage the net operating income from the project. All housing will meet or exceed RCI construction/renovation standards by the end of the IDP.

Renovating and converting existing historic homes and building new homes to current standards is only the first step in transforming family housing into quality residential neighborhoods. Creating the ideal community not only entails meeting the correct housing needs but the proper amount of ancillary facilities and neighborhood amenities is a critical second step. The Development Plan includes a new Neighborhood Center of approximately 2,500 square feet in Site F and a conversion into a Community Center of approximately 4500 square feet of the Old Hospital. The preliminary plans for the centers include meeting rooms, internet cafe, lounge, exercise room, game rooms, restrooms, kitchen and dining area. Other ancillary facilities will consist of common areas, swimming pool, basketball courts, trail system, playgrounds, and tot lots throughout the neighborhoods.



Table EO-2, Overall West Point Plan, describes the original state and the proposed future state of the residential neighborhoods.

Table EO-2, Overall USMA, West Point Plan

| INITIAL DEVELOPMENT SCOPE | | | | | | | | |
|---------------------------|----------------|------------|------------|------------|---------------------|----------------|---------------|----------------|
| Neighborhood | Existing | | Proposed | | | | Final Summary | |
| | Rank | Inventory | Demolish | Construct | Renovate /Convert | No Work | Inventory | Rank |
| GOQ | O7-O9 | 3 | - | - | 3 | - | 3 | O7-O9 |
| Professor's Row | O6 | 6 | - | - | - | 6 | 6 | O6 |
| Lusk | O6 E9 | 29 | - | - | 28 | 1 | 29 | O6 E9 |
| Old English South | O5-O6 | 23 | - | - | 5 | 18 | 23 | O5-O6 |
| Chapel | O6 | 1 | - | - | 1 | - | 1 | O5 |
| Wilson Road | O6 | 10 | - | - | 10 | - | 10 | O5-O6 |
| Old English North | O6 | 8 | - | - | 4 | 4 | 8 | O5-O6 |
| Lee Area | O5 | 128 | - | - | 128 | - | 128 | O4-O5 |
| Special Category | O3-O5 | 28 | 6 | - | 6 / 12→6 | 4 to other use | 12 | O4-O5 |
| Grey Ghost | E7-E9 O4-O5 | 77 | - | - | - | 77 | 77 | O4-O5 |
| New Brick | O3-O4 | 156 | - | - | - | 156 | 156 | E1-E6 O1-O3 |
| Old Brick | O1-O3 E1-E6 | 56 | - | - | 56→28 | - | 28 | E1-E6 |
| Biddle Loop | E1-E9 | 32 | - | - | 32→16 | - | 16 | E7-E9 O4-O5 |
| Merritt Road | E7-E9 | 24 | - | - | 24→12 | - | 12 | E7-E9 |
| Stony Lonesome I | E1-E9 O4 | 190 | 190 | 158 | - | - | 158 | E7-E9 O4-O5 |
| Stony Lonesome II | O1-O3 E7-E9 | 118 | - | - | - | 118 | 118 | E1-E9 O1-O3 |
| JNCO | E1-E6 | 21 | - | - | 1 / 20→10 | - | 11 | O4-O5 |
| South Apartments | O1-O3 | 12 | - | - | 10 | 2 to storage | 10 | O1-O3 |
| North Apartments | O1-O3 | 11 | - | - | 10 | 1 to storage | 10 | O4-O5 |
| Band | E6-E9 | 30 | - | - | 30→15 | - | 15 | E7-E9 |
| Total | | 963 | 196 | 158 | 206 / 174→87 | 380 | 831 | |

VOLUME I: DEVELOPMENT PLANS

The plans for the installation are uniquely customized to meet the needs of the military families of West Point, especially to preserve the historic structures. Our development plans deliver the maximum amount of historical renovations and conversions as well as new construction over the six-year IDP. In preparing our plans, we conducted extensive research by evaluating existing housing and site locations, visiting competitive, off-post housing communities, conducting focus group meetings and conducting a comprehensive survey of all existing historic units at West Point. To turn our vision into reality, we have outlined below the following strategy:

- The construction of 158 new homes targeting grades more likely to seek off post homes
- Extensive renovation and expansion of historically significant homes
- Conversion of historical duplexes and multi-family units to larger modern homes at lower densities
- Completing the renovation, conversion, and maintenance of historical homes through the continuous efforts of our large in-house workforce
- Rapid improvement of existing homes and neighborhoods by a funded Rapid Enhancement Fund
- Reduction of existing degraded conditions through a funded BMAR account
- Demolition of the homes with the greatest need of repair at West Point
- Development of a host of community amenities
- Continuous maintenance and revitalization of all homes and amenities
- Establishing a LifeWorks @ GMH Program to augment existing resident programs
- Maximize reinvestment in the communities

In response to these requirements, new homes have been conceived with traditional historical design and timeless style that is consistent with existing architectural themes and standards, responsive to the climate, and include visual interest with the use of varying basic house designs, colors, and materials. New homes will maintain proper balance of bedroom type availability (by grade level), in accordance with the Housing Market Analyses and OASA (I&E) policies. Our designs meet or exceed the January 2005 RCI Minimum Construction Standards, which were in place during the CDMP development period, the Installation Design Guide, and are Energy Star® compliant.

Our designs, techniques and systems included within the plans will meet the “Gold” status of the Sustainable Project Rating Tool (SPiRiT) policy by achieving an estimated 56 point level. The scoring summary is shown below in Table EO-3.

Table EO-3, SPiRiT Scoring Summary

| Description | Total Points Available | Total Points Anticipated |
|------------------------------|------------------------|--------------------------|
| Sustainable Sites | 20 | 11 |
| Water Efficiency | 5 | 2 |
| Energy and Atmosphere | 28 | 12 |
| Materials and Resources | 13 | 3 |
| Indoor Environmental Quality | 17 | 11 |
| Facility Delivery Process | 7 | 7 |
| Current Mission | 6 | 6 |
| Future Missions | 4 | 4 |
| TOTAL | 100 | 56 |

The overall plan for West Point is shown in Table EO-4.

Table EO-4, Overall West Point Plan

| | West Point |
|--|------------|
| Homes Conveyed at Closing | 963 |
| New Construction | 158 |
| Historically Renovated Homes | 206 |
| Historically Converted Homes (174 homes into 87 homes) | 87 |
| Home with No Work Needed | 380 |
| Demolished Homes | 196 |
| End State | 831 |

COMMUNITY PLANS

The plan for West Point involves **demolition**, new construction, historical renovations and conversions and general community upgrades. The project will **expand one neighborhood** with new homes, renovate existing historic homes and convert existing historical homes into larger historic homes in various existing neighborhoods.

The 158 junior enlisted (E1-E6) home requirement will be met by converting the interior of 48 existing homes to 24 larger, modern homes in Old Brick. There are also 104 existing homes in New Brick and 30 existing homes in Stony Lonesome II which require no work during the IDP.

The 101 senior enlisted (E7-E9) home requirement will be met by building 35 new single family homes on an expanded Stony Lonesome I site, and converting 33 existing homes in Band, Merritt Road and Biddle Loop. There is also 1 home in Lusk and 32 homes in Stony Lonesome II in which no work is required during the IDP.



The 122 company grade officer (W1-O3) homes requirement will be met by renovating and converting 14 existing homes in South Apartments and Old Brick. There are also 52 existing homes in New Brick and 56 existing homes in Stony Lonesome II which require no work during the IDP.

The 383 field grade officer (W4-O5) homes requirement will be met by constructing 123 new single family homes on the expanded Stony Lonesome I site, and renovating and converting 174 existing homes in Lee, Special Category, North Apartments, Washington Road, Wilson Road and Biddle Loop. There are also 9 existing homes in Old English South and 77 existing homes in Grey Ghost which requires no work during IDP.

The 64 senior officer (O6) home requirement will be met by renovating 45 existing homes in Old English South, Old English North, Lusk, and Wilson Road. There are also 19 existing homes in Professors Row, Old English South and Old English North which will require not work during the IDP.

The three general officer homes requirement will be met by renovating Quarters 100, 101 and 102.

West Point is designated a National Historic Landmark (NHL) and contains a National Register of Historic Places (NRHP) historic district. The GMH Team understands the importance of these designations as they relate to the history of West Point. The Team has developed a project concept that will respect the historical significance and integrity of the Campus while aiming to enhance the quality of life of the residents who call West Point their home. Maintaining historical characteristics and features while accommodating current and future uses, striking the balance between old and new, historic and state-of-the-art, are all goals that will be achieved by the GMH Team through the RCI Project at West Point.

We have adopted the design requirements of the RCI; however, exceeding minimum requirements to either a) meet local market rate standards or b) provide pay grade differentiation is fundamental to our designs. Level of comfort, materials of construction and finishes in comparison to similar types of homes currently offered in the private sector were fundamental in developing our design concepts.

Floor plans for each unit type are designed for the rank and lifestyle of each family. Maintaining pay grade consistency in square footage and layout is important. Conversely, a tailored architectural theme for exterior treatments has been developed for the new neighborhood (Stony I), while keeping common linkages to help harmonize the transition from neighborhood to neighborhood. This neighborhood specific exterior design theme considers climatic conditions, local architecture and the expected lifestyles.

Parking is a major issue in the design of a community. Cars often clutter the streets of neighborhoods where homes were not designed to accommodate them. In our community design, we provide adequate off-street parking where possible in well-designed and landscaped parking areas strategically located throughout the neighborhood.

Our new construction will harmonize with the existing housing and the overall plan will respect the historic associations and natural beauties of the site.

Figure EO-3, Proposed West Point Site Layout (This is a better graphic but still needs updating)



Samples of our new construction and historical renovations can be found on the following pages.

Figure EO-4, New Three Bedroom (1,802 GSF), Four Bedroom (2,002 GSF) Senior Enlisted (All elevations and floor plans need updating)



Figure EO-5, New Three Bedroom (1,998 GSF) and Four Bedroom (2,211 GSF), Company Grade Officer



Conversions and renovations are designed to enhance the quality of the homes and upgrade existing homes to adequate RCI standards during the IDP. The targeted conversions and renovations will also help to preserve the homes until replacements can be programmed, beginning in year 7 of the project (approximately year 2015). It is our intent to provide the quality of life for the families residing in these older homes comparable to those generated in new and replacement homes.

Figure EO-6, Existing and Renovated Plans for Wilson Road



Existing Conditions - 19 Wilson Road First Floor Plan
No Scale
5 Bedroom 2049 sqft



New Conditions - 19 Wilson Road First Floor Plan
No Scale
5 Bedroom 2600 sqft



Existing Conditions - 19 Wilson Road Second Floor Plan
No Scale



New Conditions - 19 Wilson Road Second Floor Plan
No Scale

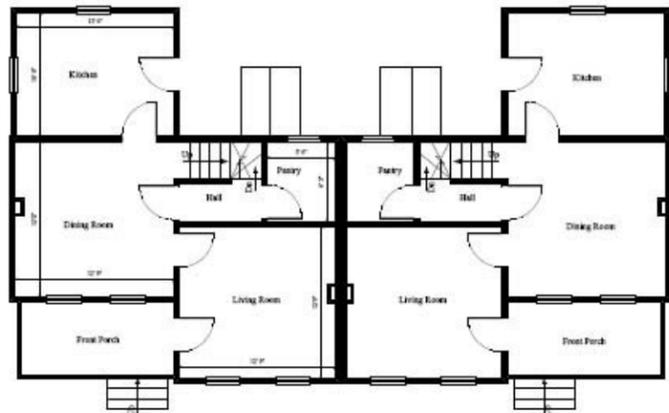


Existing Conditions - 19 Wilson Road Third Floor Plan
No Scale



New Conditions - 19 Wilson Road Third Floor Plan
No Scale

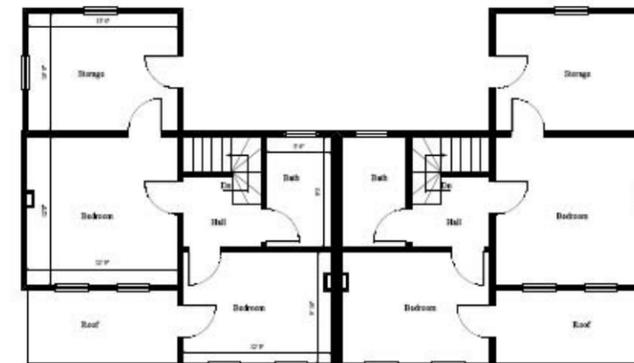
Figure EO-7, Existing and Conversion Plans for Quarters 332 A & B



Existing Conditions - Quarters 332 A&B First Floor Plan
No Scale
2 Bedroom 1134 sqft Each



New Conditions - Quarters 332 First Floor Plan
No Scale
3 Bedroom 1748 sqft

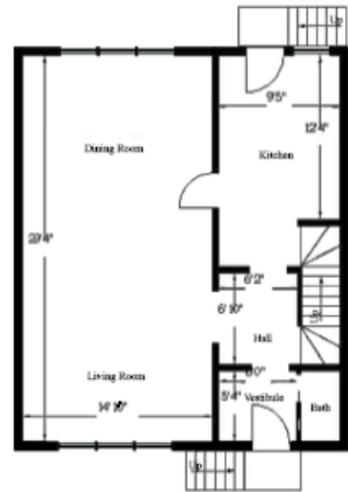


Existing Conditions - Quarters 332 Second Floor Plan
No Scale



New Conditions - Quarters 332 Second Floor Plan
No Scale

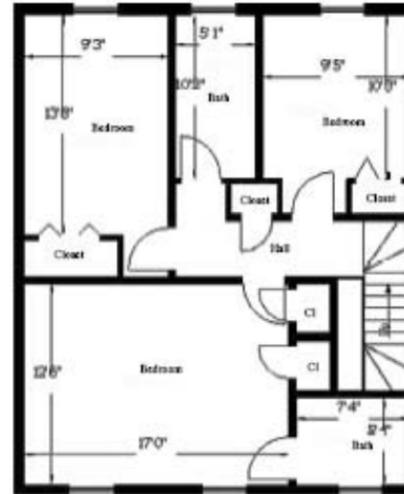
Figure EO-8, Existing and Conversion Plans for Lee Road



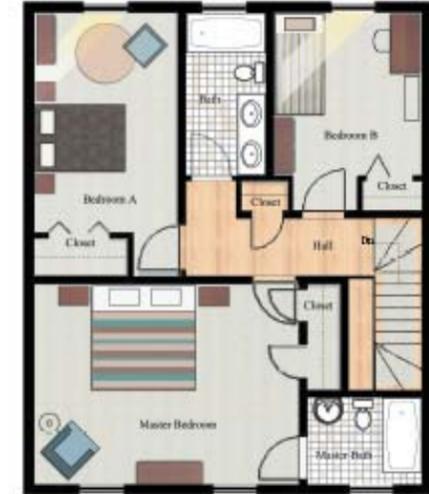
Existing Conditions - 170 Lee Road First Floor Plan
No Scale
3 Bedroom 1400 sqft



New Conditions - 170 Lee Road First Floor Plan
No Scale
3 Bedroom 1700 sqft



Existing Conditions - 170 Lee Road Second Floor Plan
No Scale



New Conditions - 170 Lee Road Second Floor Plan
No Scale



SCHEDULING

The GMH Team has examined the time required to complete the Initial Development Period, based upon installation requirement construction schedule and availability of resources, and determined that six years is appropriate. The six-year timeline takes into account the generally favorable year-long weather conditions in the region, the construction sites, and the workforce capacity of the project area. We have scheduled new construction, renovation and conversion for the project over this six-year IDP, as shown in Table EO-5. The schedule maximizes use of normal attrition to provide vacant homes for renovation and conversion, minimizes cost escalation risk and provides a balanced addition of new homes across the rank structure.



SCHOOLS

On-post Schools will not be significantly impacted by the RCI project as we are decreasing the number of homes at West Point and are improving distribution of housing.

ENVIRONMENTAL CONSIDERATIONS

Specialists from the installation's environmental offices, environmental contractors and the development partner analyzed the baseline conditions and conducted the necessary National Environmental Policy Act (NEPA) analyses to ensure any potential environmental impacts were considered in developing this plan. These analyses are found as attachments to the Development Plan, along with the signed Finding of No Significant Impact (FNSI) for each analysis. The analyses concluded that there were no significant impacts and that the development partner will take necessary mitigation actions to further reduce any impacts resulting from the project.

UTILITIES

The project will incorporate the Department of Defense and RCI guidance regarding utilities. The project will ensure homes are metered, allowing a baseline to be determined so that service members and families can be rewarded for utility conservation. Residents will bear additional utility costs if they have excessive consumption above the baseline. All utility costs are included within the project budget.

OUTYEAR DEVELOPMENT PERIOD

The intent of the Outyear Development Period (ODP) is to sustain improvement of the communities within the project. Each year, the Executive Committee will be briefed on the status of the Reinvestment Account and will receive recommendations for Outyear actions. To this end, homes not replaced during the IDP will receive priority for replacement during the ODP. Additionally, all homes and amenities will be included in the ODP for continued renovation or replacement as finances permit. Details of this plan are included in our Finance Volume and Section 1.4.5 of the Development Volume. Our plan is to continue sustaining the communities at the very best possible level through renovations and replacements during ODP.

Figure E0-9, Development Plan

West Point SDP Plan

| West Point | | Year Built | # Units | Year 6-10 | Year 11-20 | Year 21-30 | Year 31-40 | Year 41-50 | End State | |
|------------|---------------------------|------------------|---------|-----------|------------|------------|------------|------------|-----------|-----|
| | Expanded Stony Lonesome I | 2008 | 158 | | 79 | 79 | | 158 | 158 | 158 |
| | Historic Renovations | Historic | 206 | | 50 | 50 | 50 | 50 | 206 | |
| | Historic Conversions | Historic | 87 | | 22 | 22 | 22 | 22 | 87 | |
| | Non-Historic | 1962, 1998, 1999 | 380 | | | 156 | 156 | 224 | 224 | 380 |
| | TOTAL | | 831 | | | | | | | 831 |

- New-Replacement
- Demolition
- Renovation-New
- Renovation-Historic

Outyear development will be performed as sufficient funds accumulate in the reinvestment accounts and that we will replace neighborhoods.

As replacement of the existing units is underway, renovation of the homes built during the Initial Development Period will also begin in accordance with the reinvestment account schedule. The joint team will continually assess housing needs and determine the appropriate scope of work for each Outyear renovation effort. It is anticipated that future renovations will focus on revitalizing kitchens, bathrooms, lighting fixtures and exterior components of the non-historic homes and, potentially, infrastructure upgrades.

VOLUME II: FINANCE PLAN AND TRANSACTIONAL INSTRUMENTS

GMH Military Housing and the Army will form a Limited Liability Company (LLC) to own and oversee the project, all accounts, and operational requirements. GMH Military Housing will be the General Manager of the LLC with the Army as a partner of the LLC. Major decisions will be presented to the LLC board consisting of these two members, GMH and the Army. Army decisions will be voted by a consensus of the Garrison Commander under terms of a Memorandum of Agreement (MOA) between the Garrison Commander of West Point that was drafted by the Office of General Counsel, approved by DA-RCI and the garrison legal office, and executed by the Garrison Commander. An Executive Committee with key leaders will serve as an advisory council for making recommendations to the Project Executives for their guidance and decisions. We thoroughly understand the importance of working together to ensure all organizations have a complete understanding of the project's status and are routinely involved in major decisions. The legal documents are structured to implement this strategy.

The financial plan was developed by experienced, financial specialists from GMH Military Housing and the selected lender for this project, [redacted]. These specialists carefully estimated income expectations, operational costs and project costs to ensure that the development plan was optimized. The focus was to generate the maximum amount of private capital financing possible commensurate with reasonably conservative planning parameters. Figure EO-10, Table EO-8 and Table EO-9 show the resulting project financial overview.

Upon settlement, the Army will contribute the existing housing areas with improvements, a fifty-year ground lease, and scoring dollars (direct cash contribution) in the amount of \$20M. GMH Military Housing will contribute \$3.3M, initially secured by a bank guarantee provided loan obligation as its portion of equity and maintain this amount for the entire lease period.

Figure EO-10, Sources and Uses Analysis (IDP)

UPDATE

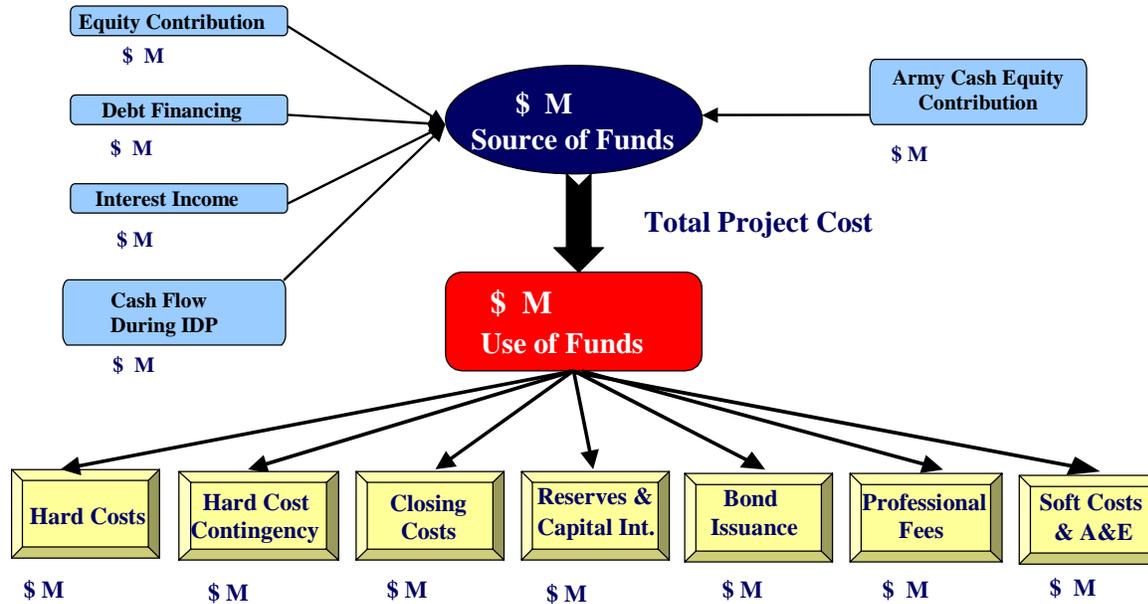


Table EO-8, Annual Net Cash Flow – Summary

UPDATE

| Cash Flow – West Point Operations | | IDP 2008 | Steady State 2014 |
|-----------------------------------|--|----------|-------------------|
| Revenue | Net Revenue | | |
| Expenses | Operating Expenses | | |
| | Insurance | | |
| | Utilities | | |
| | Fire and Police | | |
| | Capital Reserves | | |
| | Management Fee | | |
| | Subtotal Property Operations | | |
| Debt | IDP Interest Only Payments | | |
| | Steady State Principal and Interest Payments | | |
| | Annual Net Cash Flow After Debt Service | | |

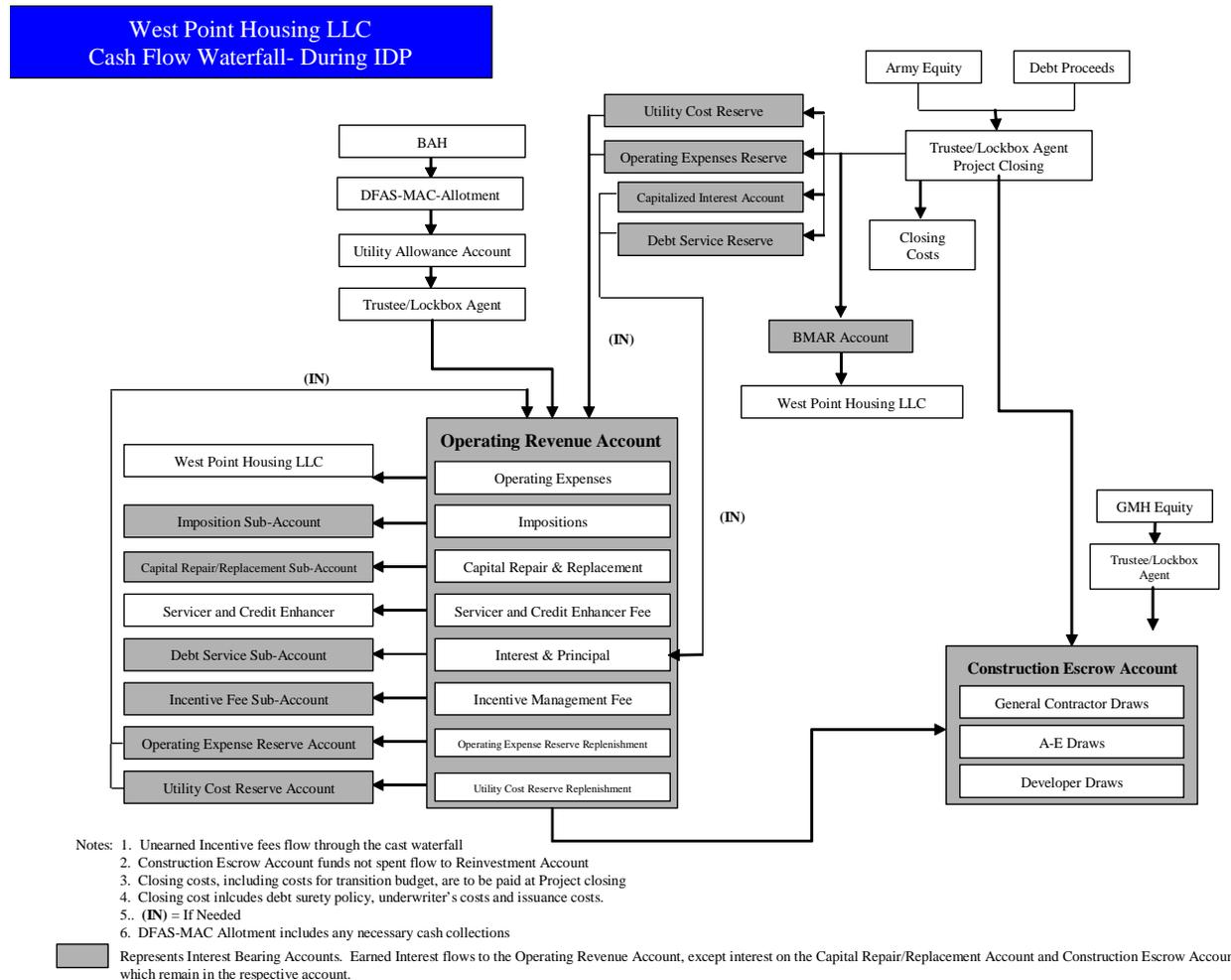
Table EO-9, Summary of Typical Year Cash Flow from Operations per unit

[UPDATE]

| Annual Net Cash Flow | Initially (2008) | Steady State (2014) |
|----------------------------------|------------------|---------------------|
| Income (Effective Gross Revenue) | | |
| Expenses | | |

The flow of these funds will be in accordance with the project's operating agreement which requires joint and mutual review and agreement on all payments from either the project or operational funds as shown in Figure EO-11.

Figure EO-11, Flow of Funds



The Project has been structured to provide a sufficient return on equity to GMH. The return on equity contributed by the GMH Team will have a preferred return of % that will be capped at % annually. During the IDP, all funds (100%) will be allocated to the Army's Reinvestment Account. During the out-year period, however, remaining excess cash flow will be distributed 90% to the Project's Reinvestment Account and 10% to the GMH Team, until the 15% cap is reached. At that point all excess cash will flow to the Reinvestment Account.



FEE SUMMARY

Table EO-10, Fee Summary

UPDATE – ARE % CORRECT?

| FEE | DESCRIPTION | LEVEL |
|---|--|--------------|
| Developer Base Fee | Based on total development costs, including general contractor costs and A&E costs, but excluding debt placement costs, operating costs, ongoing debt payments and the Developer Base Fee and the Developer Incentive Fee. | 2.5% |
| Developer Incentive Fee | Based upon achievement of incentive criteria: <ul style="list-style-type: none"> • 20% based on timeliness of the delivery of new homes, renovation and amenities • 20% on quality of work including new construction, renovation and amenities • 30% for managing to plan • 10% for command satisfaction • 20% for asset management - timeliness and accuracy of reporting | 1.5% |
| General Contractor Base Fee | Based on building construction costs, including general conditions | 3.0% |
| General Contractor Incentive Fee (New Construction) | Based upon achievement of incentive criteria: <ul style="list-style-type: none"> • 35% based on percentage of homes delivered on schedule • 35% for construction quality • 10% for job site management • 10% for command satisfaction • 10% for small business subcontracting | 1.0% |
| General Contractor Base Fee (Renovation) | Based on building construction costs (renovation), including general conditions. | 3.0% |
| General Contractor Incentive Fee (Renovation) | Based upon achievement of incentive criteria: <ul style="list-style-type: none"> • 35% based on renovation quality • 35% for the adherence to schedule • 10% for job site management • 10% for command satisfaction • 10% for small business utilization | 1.0% |
| Management Base Fee | Effective Gross Revenue as defined as Gross Potential Rent less vacancy loss and utility allowance | 0.5% |
| Management Incentive Fee | Based upon achievement of incentive criteria: <ul style="list-style-type: none"> • 25% for resident satisfaction surveys • 20% for timeliness of service order response • 30% for managing to plan • 10% for command satisfaction • 15% for Quality of Change of Occupancy Maintenance | 2.5% |

The team plans to use legal documents from existing and approved RCI projects to the maximum extent possible. Some additional documents will need to be incorporated where necessary to provide sufficient detail regarding the relationship between the Army and the development partner.

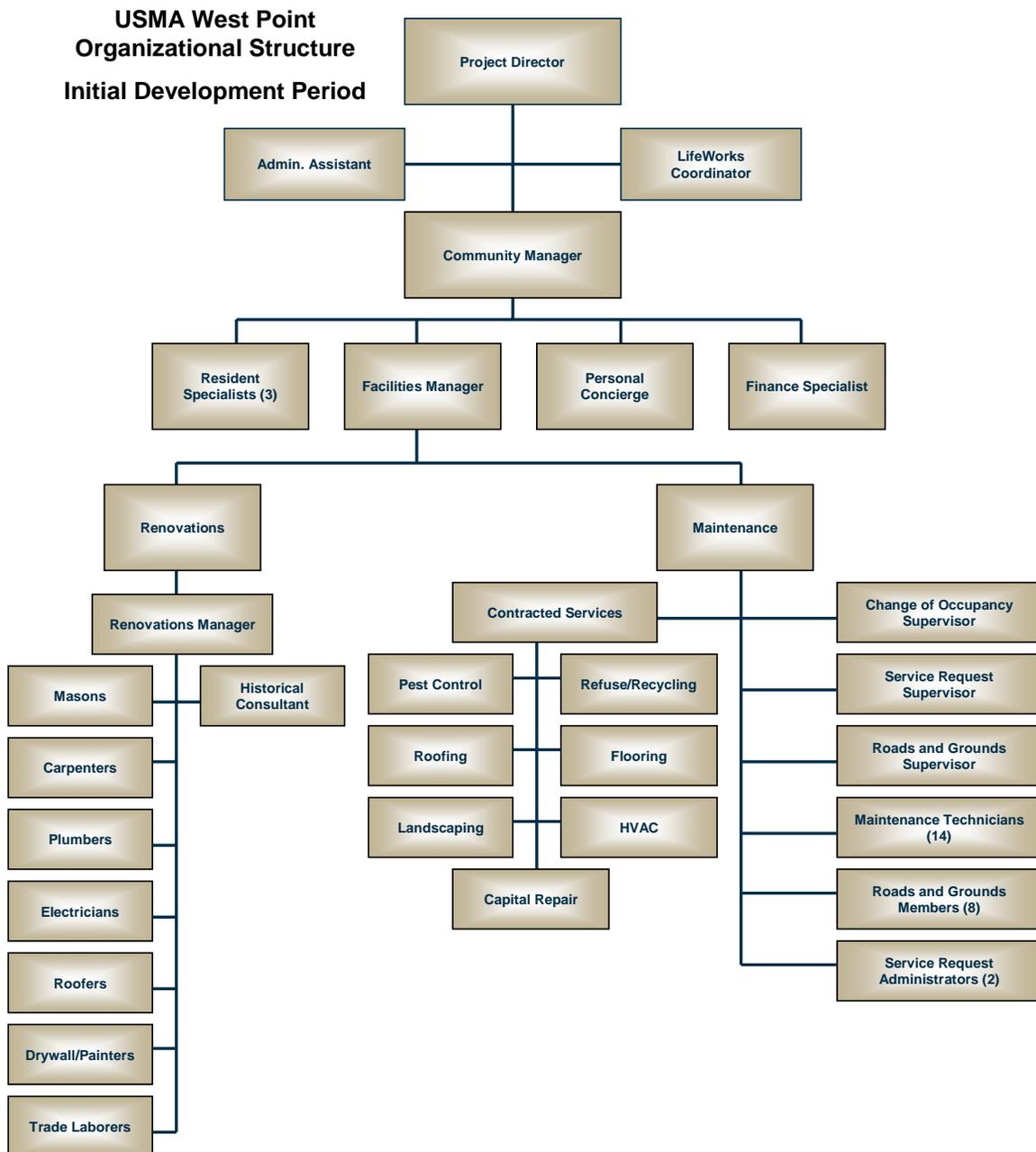
Reporting will be conducted by automated property management and accounting software capable of meeting all Portfolio and Asset Management (PAM) requirements.

VOLUME III: COMMUNITY MANAGEMENT AND OPERATIONS PLAN

We believe that as a company and as individuals, we have a duty to provide a secure, quality, and well-managed living environment for every resident of every community we own and/or manage. We will

respond to every resident's needs and manage each neighborhood and home as if it were our own. We will be the single source to fully manage and care for each family's home and neighborhood. Our in-house professionals, augmented at times by subcontractors consisting primarily of small and local businesses, will provide superior service. Our personnel will be professionally trained to meet the needs of a culturally diverse group of residents. We look to build long-term relationships and establish a sense of trust with our residents. We place great emphasis on quality products, quality services, and quality staff. The organization responsible for operating and maintaining the communities is shown on the following page as Figure EO-12. Staffing will be adjusted as the number of homes change during the IDP and following joint partnership annual staffing and budget reviews.

Figure EO-12, Organizational Chart for Operating and Maintaining Communities at West Point
(Change Title by deleting USMA. Renovations Manger should report to Project Director)





The GMH team fully supports the existing service member/family programs and will enhance the installations' ability to meet the requirements of families with exceptional needs and other programs designed to support the Army family. To this end, GMH will implement its dynamic and successful **LifeWorks@GMH** program designed to encourage resident health and social interaction in GMH communities, as we have done at other RCI locations, such as Fort Carson, Fort Stewart/Hunter AAF, Fort Gordon, Fort Hamilton, Fort Detrick, Walter Reed Army Medical Center, Fort Eustis, Fort Story, Fort Bliss and White Sands Missile Range. Periodic discussions with the installation's Director of Community Activities will foster synergistic activities for the benefit of assigned service members and families. The Family Services Program is fully developed and contained in Volume III.

We will provide quality community management and responsive service knowing that these efforts have a profound impact on the quality of resident relations and the long-term financial condition of our communities.

The Project, the on-site staff and the Army are judged, in large part, by the physical appearance of the communities. The overall appearance will either welcome or discourage prospective families. Furthermore, it plays a role in the decision of families to remain in the military or not. We will provide superior levels of responsive service and programs to each of these families to make their stay an enjoyable one.

TRANSITION

GMH Transition: GMH has hired the Project Director for this project, West Point graduate and instructor, Richard Wagner. His office is located in close proximity to the RCI Office to continue coordination efforts associated with this privatization project at GMH's expense. Upon receipt of the Notice to Transition, assumed **1 July** 2008, we will begin transition activities by relocating qualified GMH management/supervisory personnel and/or hiring qualified local personnel. We will phase in additional staffing over the transition period with the entire workforce slated to be on board by **2008**. This will provide sufficient time to conduct administrative actions and be prepared for work on **2008**, the assumed transfer date. We will complete all necessary access paperwork and work orientation in a timely manner. All these efforts will be thoroughly coordinated with the installation RCI Office. We have made initial coordination efforts for the necessary contracting actions with the staff to ensure that when GMH assumes its responsibilities, the installation terminates contracts, or adjusts housing services provided by the installation. Routine services such as refuse removal have been coordinated directly with vendors or the responsible installation organization.

RCI Government Transition: At West Point, government employees and contract workforces provide housing operation and maintenance support. **Government employees will be affected by this RCI action. Approximately ?? housing office personnel will lose their jobs while GMH will in turn hire 30-40 full time personnel.**

CONCLUSION

The West Point-GMH Team is pleased to submit this CDMP which captures the unique requirements of the installation. This plan will transform the housing areas into communities that will significantly enhance military family lifestyles in a thoughtful and consistent manner. The communities will be attractive with exceptional curb appeal and will offer opportunities for families to enjoy time together. We are certain that these communities will increase the sense of well-being and pride for the residents of West Point and be an important element in the recruitment and retention of career service members and families.

We are proud to forward this Community Development and Management Plan for review and approval. If, in consideration of these plans, there appear to be lessons learned from other installations that could improve our strategies and performance for the service members' benefit, please call them to our

attention. It is our sincere interest to have this Partnership be the top RCI performer and a model for others to emulate.

Figure EO-11, Artist Rendering of Typical Streetscape at West Point



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APPENDIX B
Air Emission Estimations

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**Table B-1
Summary Report for Annual Emissions (Tons/Year)**

Project Name: USMA West Point RCI
 On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006
 Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ROLL-UP

| | VOC | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|--------------------------------|-----|------|-----|-----|------|-------|--------|
| 2008 TOTALS (tons/year) | 1.2 | 6.7 | 4.0 | 0.0 | 2.6 | 0.8 | 673.5 |
| 2009 TOTALS (tons/year) | 3.1 | 11.7 | 9.0 | 0.0 | 0.6 | 0.5 | 1508.5 |
| 2010 TOTALS (tons/year) | 1.9 | 6.1 | 5.5 | 0.0 | 0.3 | 0.3 | 878.2 |
| 2011 TOTALS (tons/year) | 0.9 | 2.5 | 3.2 | 0.0 | 0.2 | 0.2 | 438.4 |
| 2012 TOTALS (tons/year) | 0.8 | 2.3 | 3.1 | 0.0 | 0.2 | 0.1 | 440.1 |
| 2013 TOTALS (tons/year) | 0.9 | 3.2 | 3.5 | 0.0 | 1.1 | 0.4 | 617.3 |
| 2014 TOTALS (tons/year) | 0.5 | 1.9 | 1.9 | 0.0 | 1.0 | 0.3 | 390.7 |

AREA SOURCE EMISSION ROLL-UP (LONG-TERM NET REDUCTIONS)

| | VOC | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---------------------------|-----|-----|-----|-----|------|-------|-------|
| TOTALS (tons/year) | 2.5 | 0.3 | 6.0 | 0.0 | 0.9 | 0.9 | 383.0 |

OPERATIONAL EMISSION ROLL-UP (LONG-TERM NET REDUCTIONS)

| | VOC | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---------------------------|-----|-----|------|-----|------|-------|--------|
| TOTALS (tons/year) | 1.8 | 2.4 | 20.5 | 0.0 | 2.5 | 0.5 | 1373.4 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ROLL-UP (NET REDUCTIONS)

| | VOC | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---------------------------|-----|-----|------|-----|------|-------|--------|
| TOTALS (tons/year) | 4.2 | 2.7 | 26.4 | 0.0 | 3.4 | 1.4 | 1756.4 |

Source: URBEMIS 2007v9.2

**Table B-2
CONSTRUCTION EMISSION ESTIMATES (Tons Per Year)**

| | VOC | NOx | CO | SO ₂ | PM10 Dust | PM10 Exhaust | PM10 Total | PM2.5 | | CO ₂ | |
|------------------------------------|-------------|--------------|-------------|-----------------|--------------|-----------------|---------------|------------------|----------------|-----------------|-----------------|
| | | | | | | | | PM2.5 Exhaust | PM2.5 Total | | |
| 2008 | 1.23 | 6.67 | 4.00 | 0.00 | 2.27 | 0.36 | 2.63 | 0.48 | 0.33 | 0.80 | 673.53 |
| Asphalt 04/01/2008-09/30/2008 | 0.21 | 1.19 | 0.79 | 0.00 | 0.00 | 0.10 | 0.10 | 0.00 | 0.09 | 0.09 | 98.17 |
| Paving Off-Gas | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 0.20 | 1.16 | 0.62 | 0.00 | 0.00 | 0.10 | 0.10 | 0.00 | 0.09 | 0.09 | 83.32 |
| Paving On Road Diesel | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.47 |
| Paving Worker Trips | 0.01 | 0.01 | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.38 |
| Fine Grading 07/01/2008-12/01/2008 | 0.18 | 1.54 | 0.82 | 0.00 | 2.27 | 0.08 | 2.34 | 0.47 | 0.07 | 0.54 | 129.22 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 2.27 | 0.00 | 2.27 | 0.47 | 0.00 | 0.47 | 0.00 |
| Fine Grading Off Road Diesel | 0.18 | 1.54 | 0.75 | 0.00 | 0.00 | 0.08 | 0.08 | 0.00 | 0.07 | 0.07 | 123.60 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.62 |
| Building 08/01/2008-05/31/2010 | 0.48 | 3.94 | 2.39 | 0.00 | 0.00 | 0.18 | 0.18 | 0.00 | 0.16 | 0.16 | 445.71 |
| Building Off Road Diesel | 0.44 | 3.70 | 1.46 | 0.00 | 0.00 | 0.17 | 0.17 | 0.00 | 0.15 | 0.15 | 350.52 |
| Building Vendor Trips | 0.01 | 0.20 | 0.15 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 31.89 |
| Building Worker Trips | 0.03 | 0.04 | 0.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 63.31 |
| Coating 09/01/2008-06/30/2010 | 0.36 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.43 |
| Architectural Coating | 0.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.43 |
| 2009 | 3.10 | 11.74 | 9.01 | 0.00 | 0.02 | 0.59 | 0.61 | 0.01 | 0.54 | 0.55 | 1,508.52 |
| Building 01/01/2009-06/30/2014 | 0.60 | 2.81 | 3.59 | 0.00 | 0.01 | 0.19 | 0.20 | 0.00 | 0.17 | 0.18 | 439.54 |
| Building Off Road Diesel | 0.51 | 2.26 | 1.50 | 0.00 | 0.00 | 0.17 | 0.17 | 0.00 | 0.15 | 0.15 | 211.57 |
| Building Vendor Trips | 0.03 | 0.45 | 0.34 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.02 | 0.02 | 76.36 |
| Building Worker Trips | 0.06 | 0.10 | 1.75 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 151.62 |
| Building 08/01/2008-05/31/2010 | 1.09 | 8.93 | 5.39 | 0.00 | 0.01 | 0.40 | 0.41 | 0.00 | 0.37 | 0.37 | 1,067.29 |
| Building Off Road Diesel | 1.00 | 8.39 | 3.30 | 0.00 | 0.00 | 0.38 | 0.38 | 0.00 | 0.35 | 0.35 | 839.31 |
| Building Vendor Trips | 0.03 | 0.45 | 0.34 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.02 | 0.02 | 76.36 |
| Building Worker Trips | 0.06 | 0.10 | 1.75 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 151.62 |
| Coating 01/01/2009-06/30/2014 | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.42 |
| Architectural Coating | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.42 |
| Coating 09/01/2008-06/30/2010 | 1.06 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.26 |
| Architectural Coating | 1.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.26 |
| 2010 | 1.86 | 6.11 | 5.50 | 0.00 | 0.01 | 0.33 | 0.35 | 0.01 | 0.30 | 0.31 | 878.20 |
| Building 01/01/2009-06/30/2014 | 0.56 | 2.66 | 3.41 | 0.00 | 0.01 | 0.18 | 0.19 | 0.00 | 0.16 | 0.16 | 439.59 |
| Building Off Road Diesel | 0.48 | 2.16 | 1.46 | 0.00 | 0.00 | 0.16 | 0.16 | 0.00 | 0.14 | 0.14 | 211.57 |
| Building Vendor Trips | 0.03 | 0.41 | 0.32 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 | 0.02 | 76.36 |
| Building Worker Trips | 0.05 | 0.09 | 1.63 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 151.66 |
| Building 08/01/2008-05/31/2010 | 0.42 | 3.46 | 2.08 | 0.00 | 0.00 | 0.16 | 0.16 | 0.00 | 0.14 | 0.14 | 437.56 |
| Building Off Road Diesel | 0.38 | 3.25 | 1.28 | 0.00 | 0.00 | 0.15 | 0.15 | 0.00 | 0.14 | 0.14 | 344.08 |
| Building Vendor Trips | 0.01 | 0.17 | 0.13 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 31.31 |
| Building Worker Trips | 0.02 | 0.04 | 0.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 62.18 |
| Coating 01/01/2009-06/30/2014 | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.42 |
| Architectural Coating | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.42 |
| Coating 09/01/2008-06/30/2010 | 0.52 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.62 |
| Architectural Coating | 0.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.62 |
| 2011 | 0.87 | 2.48 | 3.22 | 0.00 | 0.01 | 0.17 | 0.18 | 0.00 | 0.15 | 0.16 | 438.38 |
| Building 01/01/2009-06/30/2014 | 0.52 | 2.48 | 3.21 | 0.00 | 0.01 | 0.17 | 0.18 | 0.00 | 0.15 | 0.16 | 437.96 |
| Building Off Road Diesel | 0.44 | 2.04 | 1.41 | 0.00 | 0.00 | 0.15 | 0.15 | 0.00 | 0.14 | 0.14 | 210.76 |
| Building Vendor Trips | 0.03 | 0.37 | 0.29 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.01 | 0.01 | 76.07 |
| Building Worker Trips | 0.05 | 0.08 | 1.51 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 151.13 |
| Coating 01/01/2009-06/30/2014 | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.42 |

**Table B-2
CONSTRUCTION EMISSION ESTIMATES (Tons Per Year)**

| | VOC | NOx | CO | SO ₂ | PM10 Dust | PM10 Exhaust | PM10 Total | PM2.5 | | CO ₂ |
|----------------------------------|-------------|-------------|-------------|-----------------|--------------|-----------------|---------------|-------------|-------------|--------------------|
| | | | | | | | | Dust | Exhaust | |
| Architectural Coating | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.42 |
| 2012 | 0.83 | 2.34 | 3.05 | 0.00 | 0.01 | 0.15 | 0.16 | 0.00 | 0.14 | 0.14 440.12 |
| Building 01/01/2009-06/30/2014 | 0.48 | 2.34 | 3.05 | 0.00 | 0.01 | 0.15 | 0.16 | 0.00 | 0.14 | 0.14 439.70 |
| Building Off Road Diesel | 0.41 | 1.93 | 1.37 | 0.00 | 0.00 | 0.14 | 0.14 | 0.00 | 0.12 | 0.12 211.57 |
| Building Vendor Trips | 0.03 | 0.33 | 0.28 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.01 | 0.01 76.37 |
| Building Worker Trips | 0.04 | 0.07 | 1.40 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 151.76 |
| Coating 01/01/2009-06/30/2014 | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 0.42 |
| Architectural Coating | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 0.42 |
| 2013 | 0.90 | 3.23 | 3.46 | 0.00 | 0.95 | 0.19 | 1.14 | 0.20 | 0.17 | 0.37 617.29 |
| Building 01/01/2009-06/30/2014 | 0.44 | 2.17 | 2.88 | 0.00 | 0.01 | 0.14 | 0.15 | 0.00 | 0.13 | 0.13 439.75 |
| Building Off Road Diesel | 0.38 | 1.81 | 1.33 | 0.00 | 0.00 | 0.12 | 0.12 | 0.00 | 0.11 | 0.11 211.57 |
| Building Vendor Trips | 0.02 | 0.29 | 0.26 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 76.38 |
| Building Worker Trips | 0.04 | 0.07 | 1.30 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 151.81 |
| Coating 01/01/2009-06/30/2014 | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 0.42 |
| Architectural Coating | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 0.42 |
| Demolition 06/30/2013-06/30/2014 | 0.11 | 1.06 | 0.57 | 0.00 | 0.94 | 0.05 | 0.99 | 0.20 | 0.05 | 0.24 177.12 |
| Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.41 | 0.00 | 0.41 | 0.09 | 0.00 | 0.09 0.00 |
| Demo Off Road Diesel | 0.06 | 0.42 | 0.29 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.03 | 0.03 46.22 |
| Demo On Road Diesel | 0.05 | 0.64 | 0.22 | 0.00 | 0.00 | 0.02 | 0.03 | 0.00 | 0.02 | 0.02 124.15 |
| Demo Worker Trips | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 6.75 |
| 2014 | 0.47 | 1.93 | 1.88 | 0.00 | 0.92 | 0.11 | 1.03 | 0.19 | 0.10 | 0.29 390.68 |
| Building 01/01/2009-06/30/2014 | 0.20 | 0.99 | 1.35 | 0.00 | 0.01 | 0.06 | 0.07 | 0.00 | 0.06 | 0.06 217.38 |
| Building Off Road Diesel | 0.17 | 0.84 | 0.64 | 0.00 | 0.00 | 0.05 | 0.05 | 0.00 | 0.05 | 0.05 104.57 |
| Building Vendor Trips | 0.01 | 0.13 | 0.12 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 37.75 |
| Building Worker Trips | 0.02 | 0.03 | 0.59 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 75.06 |
| Coating 01/01/2009-06/30/2014 | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 0.21 |
| Architectural Coating | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 0.00 |
| Coating Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 0.21 |
| Demolition 06/30/2013-06/30/2014 | 0.10 | 0.93 | 0.53 | 0.00 | 0.92 | 0.05 | 0.96 | 0.19 | 0.04 | 0.23 173.09 |
| Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.41 | 0.00 | 0.41 | 0.08 | 0.00 | 0.08 0.00 |
| Demo Off Road Diesel | 0.05 | 0.38 | 0.28 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.02 | 0.02 45.17 |
| Demo On Road Diesel | 0.04 | 0.55 | 0.20 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.02 | 0.02 121.33 |
| Demo Worker Trips | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 6.60 |

Source: URBEMIS 2007v9.2

Phase Assumptions**Phase: Demolition 06/30/13 - 06/30/14 - Demolition of Existing Housing (196 Units)**

Building Volume Total (cubic feet): 3918760

Building Volume Daily (cubic feet): 33640

On Road Truck Travel (VMT): 467.22

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 07/01/08 - 12/01/08 - Grading for New RCI Housing

Total Acres Disturbed: 40

Maximum Daily Acreage Disturbed: 2.06

Fugitive Dust Level of Detail: Default

20 lbs per acre-day
 On Road Truck Travel (VMT): 0
 Off-Road Equipment:
 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 04/01/08 - 09/30/08 - New Roadways for RCI Housing

Acres to be Paved: 2.47

Off-Road Equipment:
 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
 1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 08/01/08 - 05/31/10 - New Home Construction (158 Units)

Off-Road Equipment:

1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day
 1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
 1 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
 1 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day
 1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Building Construction 01/01/09 - 06/30/14 - Renovation of Old RCI Housing (380 Units)

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

**Table B-3
 AREA SOURCE EMISSION ESTIMATES (Tons Per Year)**

| Source | VOC | NOx | CO | SO2 | PM10 | PM2.5 |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Natural Gas | 0.01 | 0.18 | 0.08 | 0.00 | 0.00 | 0.00 |
| Hearth | 1.09 | 0.11 | 5.73 | 0.02 | 0.92 | 0.88 |
| Landscape | 0.01 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 1.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Architectural Coatings | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTALS (tons/year) | 2.45 | 0.29 | 5.95 | 0.02 | 0.92 | 0.88 |

Source: URBEMIS 2007v9.2

**Table B-4
 OPERATIONAL EMISSION ESTIMATES (Tons Per Year)**

| Source | VOC | NOX | CO | SO2 | PM10 | PM25 |
|---------------------------|-------------|-------------|--------------|-------------|-------------|-------------|
| Apartments low rise | 1.75 | 2.42 | 20.48 | 0.01 | 2.46 | 0.48 |
| TOTALS (tons/year) | 1.75 | 2.42 | 20.48 | 0.01 | 2.46 | 0.48 |

Source: URBEMIS 2007v9.2

**Table B-5
Summary of Land Uses**

| Land Use Type | Acres | Trip Rate | Unit Type | No. Units | Total Trips | Total VMT |
|---------------------|-------|-----------|----------------|-----------|-------------|-----------|
| Apartments low rise | 8.25 | 6.90 | dwelling units | 132.00 | 910.80 | 7,787.07 |
| | | | | | 910.80 | 7,787.07 |

Source: URBEMIS 2007v9.2

**Table B-6
Vehicle Fleet Mix**

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|-------------------------------------|--------------|--------------|----------|--------|
| Light Auto | 49.0 | 2.0 | 97.6 | 0.4 |
| Light Truck < 3750 lbs | 10.9 | 3.7 | 90.8 | 5.5 |
| Light Truck 3751-5750 lbs | 21.7 | 0.9 | 98.6 | 0.5 |
| Med Truck 5751-8500 lbs | 9.5 | 1.1 | 98.9 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 1.6 | 0.0 | 75.0 | 25.0 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.6 | 0.0 | 50.0 | 50.0 |
| Med-Heavy Truck 14,001-33,000 lbs | 1.0 | 0.0 | 20.0 | 80.0 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 0.9 | 0.0 | 0.0 | 100.0 |
| Other Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Urban Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motorcycle | 3.5 | 77.1 | 22.9 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 1.0 | 10.0 | 80.0 | 10.0 |

Source: URBEMIS 2007v9.2

**Table B-7
Travel Conditions**

| | Residential | | | Commercial | | |
|---------------------------|-------------|-----------|------------|------------|----------|----------|
| | Home-Work | Home-Shop | Home-Other | Commuter | Non-Work | Customer |
| Urban Trip Length (miles) | 10.8 | 7.3 | 7.5 | 9.5 | 7.4 | 7.4 |
| Rural Trip Length (miles) | 16.8 | 7.1 | 7.9 | 14.7 | 6.6 | 6.6 |
| Trip speeds (mph) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |
| % of Trips - Residential | 32.9 | 18.0 | 49.1 | | | |

Source: URBEMIS 2007v9.2

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APPENDIX C
Draft Record of Non-Applicability (RONA)

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RECORD OF NON-APPLICABILITY
In Accordance with the Clean Air Act - General Conformity Rule For
The Proposed Residential Communities Initiatives
at U.S. Army Garrison, West Point, New York

5 December 2007

U.S. Army Garrison (USAG) West Point proposes to convey the 963 existing family housing units to GMH Military Housing LLC and to provide it with a 50-year lease of the underlying land. GMH Military Housing LLC would take the following actions with respect to the 963 units conveyed:

- Demolish 196 units
- Construct 158 new units
- Renovate 206 units
- Convert 174 existing units to 87 single-family units

Because of GMH Military Housing LLC's actions, USAG would have a family housing inventory of 831 units. The initial development plan would be implemented over a 6-year period beginning in 2008. GMH Military Housing LLC would construct new housing units before the demolition or rehabilitation of existing housing units to provide a pool of housing to prevent a housing shortage during construction and rehabilitation.

General Conformity under the Clean Air Act, Section 176, has been evaluated according to the requirements of 40 CFR Part 93, Subpart B. The requirements of this rule are not applicable to the Proposed Action because:

The highest total annual direct and indirect emissions from this proposed action have been estimated at 3.1 tons VOCs and 11.7 tons NO_x per year, which would be below the applicability threshold values established at 40 CFR 93.153 (b) of 25 tons NO_x, and VOCs, and would not be regionally significant.

Supported documentation and emission estimates:

- Are Attached
- Appear in the NEPA Documentation
- Other (Not Necessary)

Signature

Title

Date

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APPENDIX D
Agency Correspondence

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**DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT AGENCY
HEADQUARTERS, UNITED STATES ARMY GARRISON, WEST POINT
667A RUGER ROAD
WEST POINT, NY 10996-1592**

REPLY TO
ATTENTION OF: IMNE-MIL-PW

**U.S. Fish and Wildlife Service
3817 Luker Road
Cortland, NY 13045**

Dear Sir/Madam:

The U.S. Army is preparing an Environmental Assessment for the implementation of the Residential Communities Initiative (RCI) Program at the U.S. Military Academy, West Point, New York. The U.S. Military Academy (USMA) is located along the Hudson River approximately 50 miles north of New York City.

The purpose of the EA is to discuss the potential effects on environmental resources associated with the RCI program, which will privatize the renovation, construction and management of housing facilities at USMA. The sizes, configurations, safety, and condition of existing installation housing units are substantially below the Army's standards of acceptability. Under the proposed action, family housing would be brought up to acceptable standards through renovation or demolition of old units and construction of new units. To exercise ownership and control over the housing, the Army will convey present family housing and execute a land lease to the Development Partner for a period of 50 years.

Family housing currently consists of 964 housing units occupying approximately 239 acres. The initial development will be implemented over a 10-year period beginning in 2008. For quick reference, the project areas can be found on the attached location map of the USMA.

The Natural Resources Branch at the USMA has only documented transient visits to the RCI footprint by bald eagles (*Haliaeetus leucocephalus*) during winter months. USMA recognizes that shortnose sturgeon (*Acipenser brevirostrum*) use that stretch of the Hudson River adjacent to USMA as a corridor between wintering and spawning locations. No wetlands are present within the RCI footprint that are suitable as bog turtle (*Glyptemmys muhlenbergii*) habitat nor is suitable habitat present for the Indiana bat (*Myotis sodalis*). The USMA Natural Resources Manager, Mr. James Beemer, is available to discuss this information at (845) 938-3857.

In accordance with the National Environmental Policy Act (NEPA) of 1969, the EA will evaluate the potential environmental impacts (both positive and negative) associated with implementing this action. To assist in the evaluation, USMA requests your input concerning this action with regard to your organization's area of expertise and specific areas of concern under your cognizance. Please submit any comments or concerns about the project by August 25, 2006. Address them to Alan Bjornsen, NEPA Coordinator, U.S. Army Garrison, Directorate of Public Works, Bldg. 667 Ruger Road, West Point, NY

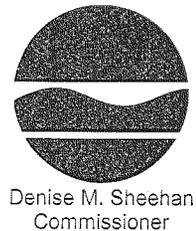
10996. Your comments/concerns will be addressed in the Environmental Assessment, scheduled to be available for public comment in late spring 2007.

Your prompt consideration and response is greatly appreciated. If you need additional information, please contact Mr. Alan Bjornsen, (845) 938-4129.

**Matthew G. Talaber
Director of Public Works
U.S. Army Garrison – West Point, NY**

1 Encl
Overall RCI Footprint Map

New York State Department of Environmental Conservation
Division of Fish, Wildlife and Marine Resources, Region 3
Bureau of Wildlife
21 South Putt Corners Road, New Paltz, New York 12561-1696
Phone: (845) 256-3089 • FAX: (845) 255-4659
Website: www.dec.state.ny.us



September 22, 2006

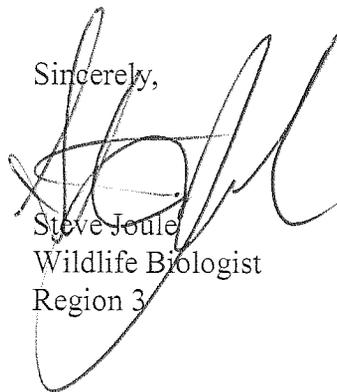
Alan Bjornsen
NEPA Coordinator
US Army Garrison, IMNE-MIL-PWF
667 Ruger Road
West Point, New York 10996

RE: Environmental Assessment for Residential Communities Initiative Program

Dear Mr. Bjornsen:

Based on the information provided by West Point's Director of Public Works, Matthew Talaber in his letter dated August 11, 2006, as well as communications with West Point's Fish and Wildlife Biologist, Jim Beemer, I have determined that the above action should not significantly impact any threatened or endangered wildlife species. Please let me know if I can be of any further assistance.

Sincerely,



Steve Joule
Wildlife Biologist
Region 3

cc: J. Beemer, USMA via e-mail



**DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT AGENCY
HEADQUARTERS, UNITED STATES ARMY GARRISON, WEST POINT
667A RUGER ROAD
WEST POINT, NY 10996-1592**

REPLY TO
ATTENTION OF: IMNE-MIL-PW

**New York Department of Environmental Conservation
Attn: Mr. Steve Joule
Bureau of Wildlife, Region 3
21 South Putt Corners Road
New Paltz, NY 12561**

Dear Sir:

The U.S. Army is preparing an Environmental Assessment for the implementation of the Residential Communities Initiative (RCI) Program at the U.S. Military Academy, West Point, New York. The U.S. Military Academy (USMA) is located along the Hudson River approximately 50 miles north of New York City.

The purpose of the EA is to discuss the potential effects on environmental resources associated with the RCI program, which will privatize the renovation, construction and management of housing facilities at USMA. The sizes, configurations, safety, and condition of existing installation housing units are substantially below the Army's standards of acceptability. Under the proposed action, family housing would be brought up to acceptable standards through renovation or demolition of old units and construction of new units. To exercise ownership and control over the housing, the Army will convey present family housing and execute a land lease to the Development Partner for a period of 50 years.

Family housing currently consists of 964 housing units occupying approximately 239 acres. The initial development will be implemented over a 10-year period beginning in 2008. For quick reference, the project areas can be found on the attached location map of the USMA.

In accordance with the National Environmental Policy Act (NEPA) of 1969, the EA will evaluate the potential environmental impacts (both positive and negative) associated with implementing this action. To assist in the evaluation, USMA requests your input concerning this action with regard to your organization's area of expertise and specific areas of concern under your cognizance. Please submit any comments or concerns about the project by August 25, 2006. Address them to Alan Bjornsen, NEPA Coordinator, U.S. Army Garrison, Directorate of Public Works, Bldg. 667 Ruger Road, West Point, NY 10996. Your comments/concerns will be addressed in the Environmental Assessment, scheduled to be available for public comment in late spring 2007.

Your prompt consideration and response is greatly appreciated. If you need additional information, please contact Mr. Alan Bjornsen, (845) 938-4129.

**Matthew G. Talaber
Director of Public Works
U.S. Army Garrison – West Point, NY**

**1 Encl
Overall RCI Footprint Map**



DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT AGENCY
HEADQUARTERS, UNITED STATES ARMY GARRISON, WEST POINT
681 HARDEE PLACE
WEST POINT, NY 10996-1554

REPLY TO
ATTENTION OF:

June 7, 2006

Directorate of Public Works

SUBJECT: Residential Communities Initiative

Mr. Jeffrey Zappieri, Supervisor
Consistency Review and Analysis
Division of Coastal Resources
Department of State
41 State Street
Albany, NY 12231-0001

Dear Mr. Zappieri:

West Point has been scheduled by the Department of the Army to participate in the Residential Communities Initiative (RCI) program. The RCI program was established by the Department of Defense in response to the Military Housing Privatization Initiative Act (1996), providing the military services with alternative authorities for construction and improvement of military housing. Currently, family housing at West Point is managed by the Housing Division, Directorate of Public Works, US Army Garrison. Under RCI, responsibility for management of family housing is assumed by a contractor, rather than DPW. Integral parts of RCI include:

- Out-lease of land to RCI contractor
- Transfer of title housing/improvements to RCI contractor
- RCI contractor assumes responsibilities for operation, management, repair, and construction (replacement and renovation) of housing
- Collections of rent by RCI contractor
- Partnerships with RCI contractor
- Sustainment of dwelling units

Objectives of RCI include:

- Eliminate of revitalization and maintenance backlogs
- Sustain adequate housing for soldiers and their families
- Leverage assets and scarce resources
- Attract quality development partners (RCI contractors)
- Obtain private sector expertise, creativity, innovation, and capital
- Ensure reasonable profits
- Establish incentive-based fees
- Develop partnerships with local businesses
- Protect Army and soldier interests
- Construct new community resources, including community centers, playgrounds, and walking/jogging trails

It should be noted that the RCI addresses the total housing community, not just individual housing units. Taken within this context, neighborhoods are also an important component of RCI. Comprehensive information on the RCI process is available at <http://rci.army.mil/>.

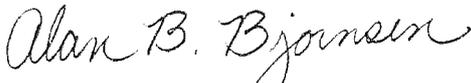
West Point is still in the early stages of the RCI process, and is currently conducting inspections of the housing units that are to be turned over in the process. The NEPA process has also been started, and an environmental baseline study is also underway. Approximately 40 percent of the family housing at West Point is historic properties that are either contributing elements to the West Point National Historic Landmark District (NHL), are individually eligible for inclusion in the National Register of Historic Places, or both. In addition, RCI has the potential to address historic districts, such as historic family housing neighborhoods, West Point historic landscapes, and scenic/historic corridors, such as Washington Road. Much of West Point's family housing is also highly visible from the Hudson River Valley corridor and adjacent communities, and indirect effects extend to numerous adjacent historic properties. The potential affected area includes the family housing units and their neighborhoods, the West Point NHL, and other historic properties in Orange and Putnam Counties.

The schedule for RCI at West Point (as of June 7, 2006) is:

- Select a Partner (RCI Contractor) – November 2006
- Complete NEPA process – May 2007
- Complete Finding of Suitability to Lease – September 2007
- Complete Community Development Management Plan – October 2007
- Assume Operations – March 2008

West Point will coordinate with your office to ensure that this undertaking is in compliance with the enforceable policies of the New York State Coastal Management Program. At this time, West Point simply wishes to introduce the RCI program to your office, and to formally identify it as a federal agency activity. If further information is required, or there are any questions, please call me at 845-938-4129 or e-mail me at al.bjornsen@usma.edu.

Respectfully submitted,



Alan B. Bjornsen, CEP
NEPA Coordinator



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

October 18, 2006

Travis A. Beckwith
Cultural Resources Manager (acting)
United States Military Academy
Bldg. 667A Ruger Road
West Point, NY 10996

Re: **ARMY/DOD**
RCI Property Transfer-lease
(programmatic agreement)
Highlands, Orange County
06PR00699

Dear Mr. Beckwith:

Thank you for requesting the comment of the State Historic Preservation Office (SHPO). We have had an opportunity to review the proposed Programmatic Agreement in accordance with Section 106 of the National Historic Preservation Act of 1966 and relevant implementing regulations.

Based upon our review of the submitted information, the SHPO's finds the submitted document suitable for the purposes of protecting historic resources during the period the subject properties will be transferred to a private entity. It is our understanding that the lessee will be a signatory to the agreement. The following remarks should be incorporated into the document to ensure the protection of archeological resources that may be disturbed during the term of the lease:

Page 2 **I. STIPULATIONS** **A. APPLICABILITY** line 3

"This PA applies to those elements *and all ground disturbing activities* that contribute..."

Page 4-5 **I. STIPULATIONS** **E. HISTORIC PROPERTY MANAGEMENT** c) line 5

"Any treatment to these buildings, including demolition, is not subject to review by the NY SHPO *except as it may result in ground disturbance.*"

Page 6 **I. STIPULATIONS** **G. GROUND DISTURBANCE** line 1

"All areas of ground disturbance and/or excavation of soils not previously disturbed by recent activity (75 years-anything older may be significant itself) would require review in accordance...."

Deleted: new

ARMY/DOD
RCI Property Transfer-lease
(programmatic agreement)
Highlands, Orange County
06PR00699

APPENDIX C: ACTIONS NOT REQUIRING NYSHPO CONSULTATION bullet 14 & 15

- "Road repaving, sidewalk repair, and utility replacement where features currently exist *and no new ground disturbance takes place.*"
- "Annual pruning of vegetation, lawn maintenance, and tree removal (*root pulling that results in ground disturbance shall not be undertaken*) for control..."

Please have the above edits incorporated into the document. Once all parties have agreed to the contents of the agreement, final copies should be prepared and forwarded for our signature. If you have any questions about the contents of this letter, please feel free to contact me at your convenience. Ext. 3273.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kenneth Markunas".

Kenneth Markunas
Historic Sites
Restoration Coordinator



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
WEST POINT AREA OFFICE
BUILDING 667-A, U.S. MILITARY ACADEMY
WEST POINT, NEW YORK 10996-1591

REPLY TO:
ATTENTION OF:

26 Jul 06

CENAN-CO-WP

MEMORANDUM FOR: Directorate of Housing & Public Works
ATTN: George Markt

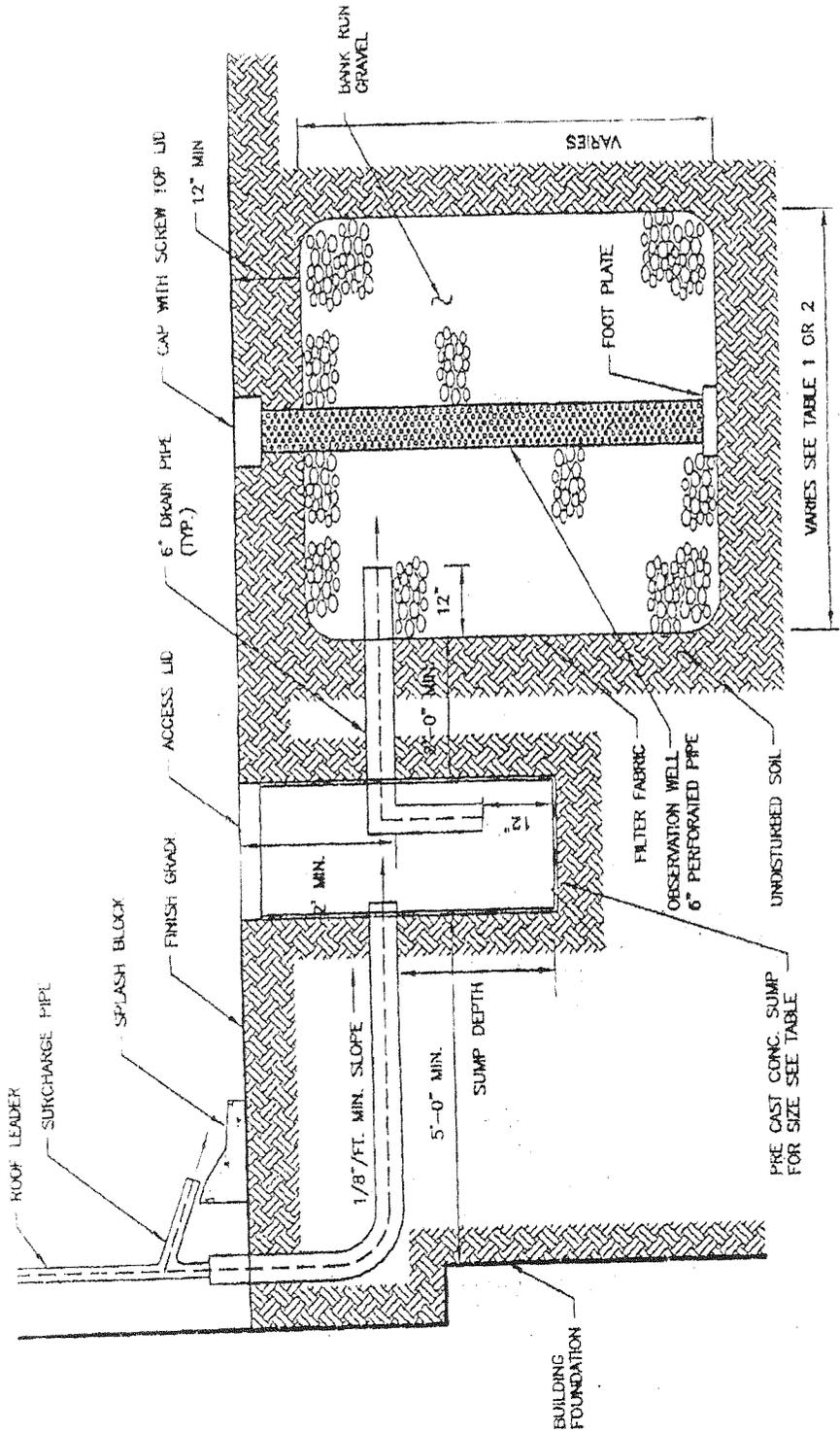
SUBJECT: Revitalize Field Grade Officers Quarters, "New Brick", DACA65-01-C-0057,

1. Attached please find the Notice of Termination for the above referenced contract.
2. Also enclosed is the Post Development Stormwater Management System Maintenance requirements, as included in the project specific SWP3, as well as maintenance information for the permanent concrete sump pits and drywells.
3. Concrete sump pits and drywells have been installed in the rear yards of the following Buildings:

Phase II: #574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584

W. Sum
Phase II: #560, 561, 562, 563, 564, 565, 567, 568, 569, 570, 571, 572, 573, 574, 585, 586, 587, 588, 589

Nicholas M. Multari
Nicholas M. Multari, P.E.
Resident Engineer
Authorized Representative
of the Contracting Officer



DRY WELL W/SPLASH BLOCK

6
SMP-2

SCALE: NTS

- The sump pits in the rear yards will require cleaning out when the accumulation of sediments impedes discharge to the drainage piping to the drywell (silt accumulates to within 6" of the drain pipe)
- The concrete sump pit structures should be examined on an annual basis to ensure there is no evidence of structural deterioration.
- The observation well in each of the drywells should also be periodically evaluated to ensure that this filtration facility is clean of debris.



New York State Department of Environmental Conservation
 Division of Water
 625 Broadway, 4th Floor
 Albany, New York 12233-3505

NOTICE OF TERMINATION for Storm Water Discharges Associated with
 Construction Activity UNDER SPDES GENERAL PERMIT: #GP-93-06 or #GP-02-01

Please indicate your permit identification number: NYR 1 0 H 0 3 3

I. Permittee Information

1. Owner/Operator Name: United States Military Academy
 2a. Mailing Address: MAEN-EV, 667A Ruger Road 2b. City/State/Zip: 10996
 3a. Contact Person: Catherine J Scott 3b. Phone: (845) 938-3070 3c. E-mail: catherine.j.scott@usace.ar

II. Site/Activity Information

4. Facility/Project Site Name: New Brick Housing Area Revitalization
 5a. Street Address: Connor/Benedict Roads 5b. City/State/Zip: West Point, NY 10996
 6. County: Orange

III. Reason for Termination

7a. Site has been finally stabilized in accordance with permit and SWPPP. Date site stabilization completed: 07/06
 month/year
 7b. Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR _____
 (Note: Permit coverage can not be terminated by permittee identified in I.1. above until new owner/operator obtains coverage under GP-02-01)

IV. Final Site Information

8a. Are there permanent stormwater management practices remaining on the site? yes no
 If the answer to question 8a. is no, go to question 8e.
 If the answer to question 8a. is yes, answer the following questions 8b., 8c., and 8d.:
 8b. Is the design and function of each permanent practice described in the final SWPPP? yes no
 8c. Who will be responsible for long-term operation and maintenance of practice(s)? DPW (Directorate of Public Works)
 8d. Has the individual(s) responsible for long-term operation and maintenance been given a copy of the operation and maintenance requirements? yes no
 8e. Provide the total acreage of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? 11

V. Certification

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: Catherine Scott Title/Position: Project Engineer
 Signature: *Catherine Scott* Date: 26 July 2006

Reset Button

POST DEVELOPMENT STORMWATER MANAGEMENT SYSTEM MAINTENANCE

1. SITE COVER

a. Inspections

Site cover and associated structures and embankments should be inspected periodically for the first few months following construction and then on a biannual basis. Site inspections should also be performed following all major (i.e., intense storms, thunder storms, cloud burst, etc.) storm events. Items to check for include (but are not limited to):

- i. Differential settlement of embankments, cracking or erosion.
- ii. Lack of vigor and density of grass turf.
- iii. Accumulation of sediments or litter on lawn areas, paved areas, or within catch basin sumps.
- iv. Accumulation of pollutants, including oils or grease, in catch basin sumps.
- v. Damage or fatigue of storm sewer structures or associated components.

b. Mowing and Sweeping

Vegetated areas and landscaping should be maintained to promote vigorous and dense growth. Lawn areas should be mowed at least three times a year (more frequent mowing may be desired for aesthetic reasons). Resultant yard waste shall be collected and disposed of off-site.

Paved areas should be swept at least twice a year. Additional sweeping may be appropriate in the early spring for removal of deicing materials

c. Debris and Litter Removal

Accumulation of litter and debris should be removed during each mowing or sweep operation.

d. Structural Repair or Replacement

Components of the system which require repair or replacement should be addressed immediately following identification.

e. Catch Basins

The frequency for cleanout of catch basin sumps will depend on the efficiency of mowing, sweeping and debris and litter removal. Sumps should be cleaned when accumulation of sediments are within six inches of the catch basin outlet pipe.

f. Swales

Swale maintenance will include periodic mowing, occasional spot reseeding and weed control to keep grass cover dense and vigorous. Resultant yard waste shall be collected and disposed of off-site. Application of fertilizers and pesticides should be restricted or limited.

g. Winter Maintenance

To prevent impacts to stormwater management facilities, the following winter maintenance limitations, restrictions or requirements are recommended:

- h. Remove snow and ice from inlet structures, basin inlet and outlet structures and away from culvert end sections.
- ii. Snow removed from paved areas should not be piled at inlets/outlets of the stormwater management basin.
- iii. Use of deicing materials should be limited to sand and "environmentally friendly" chemical products. Use of salt mixtures should be kept to a minimum.
- iv. Sand used for deicing should be clean, coarse material free of fines, silt, and clay.
- v. Materials used for deicing should be removed during the early spring by sweeping and/ or vacuuming.

Markt, G. MR DPW

From: Markt, G. MR DPW
Sent: Friday, November 30, 2007 11:20 AM
To: 'Steven.Resler@dos.state.ny.us'
Subject: FW: USMA BRAC Action
Attachments: RCI Email to Jeff Zappieri 7 June 2006.pdf; USMA RCI EA _Check Copy Draft.pdf; West Point RCI PA DRAFT- ACHP rev 11-2-07.doc; Appendices.RCI.PA.pdf

Steve:

In addition to the Draft EA I sent you earlier I have attached for your review the Programmatic Agreement between USMA and NYS SHPO regarding the RCI project we are getting ready to move forward with here at West Point. Please let me know if you'd like to discuss this project further.

Thank you,

George Markt
NEPA Coordinator
United States Military Academy
DPW EPSD
Bldg. 667A Ruger Road
West Point, NY 10996-1592
(845) 938-4459

From: Markt, G. MR DPW
Sent: Tuesday, November 20, 2007 4:29 PM
To: 'Resler, Steven (DOS)'
Cc: Meyer, C. MR DPW
Subject: RE: USMA BRAC Action

Steve:

I would appreciate it if you would contact me at your convenience regarding another project that Mr. Alan Bjornsen previously coordinated with Mr. Zappieri of your office in 2006. The project involves the Privatization of Military Housing here at West Point. I have taken the liberty of providing you with a digital advance copy of the Draft Environmental Assessment for the project (attached) in hopes that you may be able to complete a cursory review of the document and let me know where it may fall short in regards to its analysis of effects it may have on the Coastal Zone.

Thank you,

George Markt
NEPA Coordinator
United States Military Academy
DPW EPSD
Bldg. 667A Ruger Road
West Point, NY 10996-1592
(845) 938-4459

From: Resler, Steven (DOS) [mailto:Steven.Resler@dos.state.ny.us]
Sent: Tuesday, November 06, 2007 9:57 AM
To: Markt, G. MR DPW
Subject: RE: USMA BRAC Action

George:

Sorry I didn't respond last week. I was out of state until today.

For all activities being considered by the USMA or any other federal agency, I am NY's listed federal agency contact for all directly undertaken federal CZMA consistency matters (see www.coastalmanagement.gov/consistency/media/statePMFContatcs09_26_07.pdf for national list of state CMP federal consistency contacts). Our formal reviews and processing of activities statewide are assigned to specific individuals in our Consistency Unit primarily on a rotating basis, as well as other workload and related considerations. So send the materials to me. They will be assigned to an individual after we receive them, and that person should remain the contact for that specific review and decision until our review and decision regarding that specific activity is completed.

When I get the chance I'll scan the document you sent and give you my thoughts.

Best,

Steve

Steven C. Resler
Deputy Bureau Chief, Resources Management Bureau
Section Chief, Consistency Review, Analysis, GIS & Special Projects
New York Coastal Management Program
Department of State
41 State Street
Albany, New York 12231-0001
Phone: (518) 474-5290
FAX: (518) 473-2464
e-mail: Steven.Resler@dos.state.ny.us
www.nyswaterfronts.com
www.dos.state.ny.us

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APPENDIX E

Programmatic Agreement: USMA and NY SHPO

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**PROGRAMMATIC AGREEMENT
AMONG
GMH MILITARY HOUSING,
THE
UNITED STATES ARMY GARRISON
WEST POINT, NEW YORK
AND THE
NEW YORK STATE HISTORIC PRESERVATION OFFICE
REGARDING
THE RESIDENTIAL COMMUNITY INITIATIVE IMPLEMENTATION
AT THE
UNITED STATES MILITARY ACADEMY
WEST POINT, ORANGE COUNTY, NEW YORK**

WHEREAS, the Residential Community Initiative (RCI) Program was established by the Department of Defense in response to the Military Housing Privatization Initiative Act, passed into law in 1996 and codified in 10 US Code 2871, which provided the military services with alternative authorities for construction and improvement of military housing for both family and unaccompanied personnel;

WHEREAS, The United States Government conferred upon the United States Military Academy (USMA) the status of National Historic Landmark District (NHLD), the highest designation afforded historic properties in the United States. NHLD status is reserved for those historic resources that possess exceptional value in American History; and

WHEREAS, Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470) requires that all Federal agencies, prior to approval of an undertaking, consider the effects of undertakings on historic properties; and

WHEREAS, Section 110(f) of the NHPA requires Federal agencies to undertake such planning and actions as may be necessary to minimize harm to NHL's when undertakings may adversely and directly affect said landmarks; and

WHEREAS, the U.S. Army Garrison at West Point (West Point) will be leasing historic housing units to a private contractor/lessee; and

WHEREAS, the lease of the historic housing units to contractor/lessee constitutes an undertaking in accordance with 36 CFR § 800 *Protection of Historic Properties*, and that the privatization of these military housing units will result in the transfer of a long-term interest in the rehabilitation, maintenance, and operation of cultural resources that are contributing elements to the United States Military Academy (USMA) National Historic Landmark District (NHLD), are listed in National Register of Historic Places (NRHP) or are eligible for listing in the NRHP;

WHEREAS, the transfer, lease, or sale of a historic property under Federal control without adequate and legally enforceable restrictions or conditions that ensure the continued preservation of a property's historic significance constitutes an adverse effect in accordance with 36 CFR § 800.5 *Assessment of Adverse Effects*;

WHEREAS, West Point has determined that this undertaking has the potential to adversely effect properties included in, or eligible for, inclusion in the NRHP, and has consulted with the New York State Historic Preservation Officer (NY SHPO) pursuant to Section 800.6 of the regulations (36 CFR part 800)

implementing Section 106 of the National Historic Preservation Act (NHPA, 16 U.S. C. 470f), and Section 110(f) of the same Act (16 U.S.C. 470h-2(f)); and

WHEREAS, West Point has identified the Area for Potential Effects (APE) for this undertaking as the USMA NHLD, the Hudson River Valley National Heritage Area, and Hudson River Valley Coastal Management Zone within the immediate vicinity of the U.S. Army Garrison at West Point; and

WHEREAS, West Point developed and evaluated alternatives or modifications to the undertaking that could avoid, minimize or mitigate adverse effects on historic properties in accordance with 36 CFR 800.6; and

WHEREAS, the general public has been afforded the opportunity to review and comment on the RCI Environmental Assessment; and

NOW, THEREFORE, West Point and the NY SHPO, agree that RCI at the U.S. Army Garrison at West Point shall be administered in accordance with the following stipulations to satisfy West Point's responsibilities under Section 106 of the NHPA for this undertaking.

D) STIPULATIONS

The Garrison Commander, on behalf of the U.S. Army Garrison at West Point (West Point), shall ensure that the terms of this Programmatic Agreement (PA) following stipulations are implemented:

A) APPLICABILITY

This PA applies to all undertakings within the USMA NHLD under the direct or indirect jurisdiction of the contractor/lessee. This includes undertakings proposed by the contractor/lessees, permittees, contractors, subcontractors, and tenants. This PA applies to those elements that contribute to the USMA NHLD and to all properties listed in or eligible for listing in the NRHP. This includes all manner of cultural resources at West Point including but not limited to historic buildings, historic structures, historic objects, archaeological sites, historic districts, archaeological districts, and historic landscapes. These stipulations shall apply to all employees, sub-contractors, agents, or designees of the contractor/lessee.

B) POLICY

The contractor/lessee in coordination with West Point shall manage and preserve the historic integrity of the USMA NHLD. The administration of these historic housing units shall be consistent with sound historic preservation management principles, the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, and the U.S. Army Garrison's Integrated Cultural Resources Management Plan (ICRMP). The contractor/lessee shall also administer these historic properties in accordance with the provisions of the NHPA of 1966 (as amended), the National Environmental Policy Act of 1969 (NEPA), and all other applicable state and federal requirements.

C) REQUEST FOR PROPOSAL (RFP) AND CONTRACT DOCUMENTS

- 1) The Request for Proposal (RFP) and contract for RCI shall provide information to the contractor/lessee on USMA historic properties. This information will include a list of properties that contribute to the USMA NHL, and a list of properties that are listed in or individually eligible for listing in the NRHP. This list of historic properties shall include structures, monuments, inscriptions, plaques, landscapes, view sheds, and other historic properties as identified by the NHPA and implementing regulations, including AR 200-4, *Cultural Resources Management*.
- 2) West Point shall ensure that the RFP and proposal evaluation shall include evaluation factors that focus on the treatment of historic properties, and compliance with historic preservation considerations by the contractor/lessee. The U.S. Army Garrison shall ensure that their Cultural Resources Manager (CRM) is available to review all proposal documents on matters related to historic properties, and that such considerations are integrated in any contract or lease negotiations and/or award.
- 3) The Contract, lease and conveyance documents shall contain written, verifiable, sustainable, legal and contractually enforceable compliance requirements that obligate the contractor/lessee to conform to the following for all historic properties:
 - (a) NHPA and its implementing regulations.
 - (b) The USMA Integrated Cultural Resource Management Plan (ICRMP).
 - (c) *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings* (1992).
 - (d) Programmatic Agreements between the NY SHPO and West Point.
 - (e) Native American Graves Protection and Repatriation Act (NAGPRA).
 - (f) National Environmental Policy Act (NEPA).
 - (g) Archaeological Resources Protection Act (ARPA).
- 4) The Contract/Lease shall contain written, verifiable, sustainable, legally and contractually enforceable requirements for compliance with the stipulations of this Programmatic Agreement. The U.S. Army Garrison's Cultural Resources Manager (CRM) shall assist the U.S. Army Garrison's Contracting Officer with monitoring the contractor/lessee performance under the contract. The Contracting Officer will assess these needs pursuant to the Federal Acquisition Regulations. The contract shall specify conditions under which the contractor/lessee would forfeit money for non-compliance with contract provisions.
- 5) The RCI contract shall require the contractor/lessee to restore any building to its historic appearance if the contractor/lessee undertakes any work on, or alters any historic building before satisfactorily completing its Federal obligations under the NHPA or its implementing regulations. This shall also apply if the contractor/lessee completes any work that is not in accordance with the appropriate *Secretary's Standards*. All costs to restore the building to its historic appearance shall be borne by the contractor/lessee. The contractor/lessee shall submit documentation to the CRM that clearly demonstrate that the property has been restored to its historic appearance. The CRM shall forward this information to the NY SHPO.
- 6) The RCI lease agreement shall include stipulations that provide for project review by West Point's CRM as outlined in Appendix E: Project Review. The RCI lease agreement shall also include provisions in the contract that require CRM approval of any successor, sub-contractors, agent or designee, to insure that the stipulations of this PA are met or exceeded. The CRM and the contractor/lessee shall meet yearly to amend the internal project review

process. Any amendment of the internal project review process shall not require approval by the NY SHPO or any other signatory to this document.

- 7) The U.S. Army Garrison shall retain in the ground lease the right of entry and access to all historic properties for the purposes of enforcing compliance with the NHPA and any existing agreements between the U.S. Army Garrison and the NY SHPO.

D) QUALIFICATIONS AND PROFESSIONAL STANDARDS

- 1) The Contractor shall be required to maintain a professionally qualified Architectural Historian or Historic Architect on their staff. This person shall be responsible for identifying all undertakings to the USMA Cultural Resources Manager. The contractor shall be required to provide a Section 106 submission for all identified undertakings to facilitate project review in accordance with Section 106 of the National Historic Preservation Act (as amended) and implementing regulations. This Architectural Historian or Historic Architect must be professionally qualified in accordance with the *Secretary of the Interior's 1983 Professional Qualifications Standards* (as published in 36 CFR Part 61) and have five years or more documented experience in the field of historic preservation. Documentation of this experience shall be forwarded onto the USMA CRM for review and concurrence. This experience shall consist of the following:
 - 2) Documented experience applying the principles of the Secretary of the Interior's Standards for the Treatment of Historic Properties.
 - 3) Documented experience working with the NHPA, NEPA and other Cultural Resources authorities.
 - 4) Documented experience of successfully working with the Federal Historic Preservation Tax Incentives Program.
 - 5) All work pursuant to this PA regarding archaeological resources shall be carried out by, or under the supervision of, a Registered Professional Archaeologist that meets the professional qualifications for Archaeologist as detailed in *Secretary of the Interior's 1983 Professional Qualifications Standards* (as published in 36 CFR Part 61).

E) HISTORIC PROPERTY MANAGEMENT

- 1) Historic Structures and their Treatment Options

- (a) Structures that are major contributing elements to the USMA NHLD will be specifically designated in the contract, lease and conveyance documents, and said documents will require that the operation, maintenance and repairs of these structures will be performed in a manner that is sensitive and attentive to their historic significance. All work on these structures shall be done in accordance with the *Secretary of the Interior's Standards for Preservation and Guidelines for Preserving Historic Buildings*. Buildings that are considered major contributing elements include but are not limited to Quarters 100, Quarters 101, Quarters 102, Quarters 109, Quarters 146, Professor's Row, Old English North Units, Old English South Units, and the Wilson Road Quarters (See Appendix D, Table 1: Major Contributing Elements to the USMA NHLD for a complete listing).
- (b) All other structures that are contributing elements to the USMA NHLD or are individually eligible for listing in the NRHP shall be treated in accordance with the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*. Buildings that are contributing elements include but are not limited to Quarters 8, Quarters 112, Quarters 113, 1865 Wooden Duplexes, Lee Housing, Lusk Housing, North Apartments, South Apartments, Old Brick, Band Quarters, the 1931 NCO Quarters, and the 1935 NCO Quarters (See Appendix D, Table 2: Contributing elements to the USMA NHLD for a complete listing).
- (c) Properties that are neither contributing elements to the USMA NHLD nor individually eligible for listing in the NRHP are not required to adhere to the treatment options outlined in the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Any treatment to these buildings, including demolition, is not subject to review by the NY SHPO except as it may relate to ground disturbance. However, any exterior changes must not cause any adverse effects on the USMA NHL or any historic landscape listed in or eligible for listing in the NRHP. Buildings that do not contribute elements to the USMA NHLD or individually eligible for listing in the NRHP include Grey Ghost, Stony Lonesome I, Stony Lonesome II, and Bartlett Loop (See Appendix D, Table 3 Non-Contributing Elements to the USMA NHLD for a detailed listing).
- (d) Historic landscapes shall be protected. The contractor/lessee shall not initiate any undertaking that would have any effect on any historic landscapes that are listed in or eligible for listing in the NRHP. This includes, but is not limited to, the maintenance of historic neighborhood features (i.e. light posts, sidewalks, etc) and natural features (i.e. landscaping, trees, shrubs, etc). Appendix D, Table 4 contains a listing of the historic landscapes that are present at West Point.

2) Project Review

- (a) Any proposed alteration, modification, changes, or similar treatment for all historic properties included in the lease shall require project review in accordance with Section 106 of the NHPA; NEPA; and applicable laws and regulations governing the Hudson River Valley Heritage Area; Hudson River Coastal Management Zone; and the U.S. Army Garrison's Integrated Cultural Resource Management Plan. The contractor/lessee is responsible for notifying the CRM that such activities are planned or proposed. The contract and lease documents shall provide for a systematic review of all undertakings by the CRM as outlined in Appendix E: U.S. Army Garrison Project Review Process.
- (b) Certain activities shall be exempt from NY SHPO Review. These activities are listed in Appendix C: Actions not Requiring NY SHPO Consultation. The contractor/lessee shall

meet with the CRM on a monthly basis to determine which upcoming projects shall be subject to NY SHPO review. The CRM shall determine if projects meet the criteria outlined in the ICRMP. If the contractor/lessee disagrees with the determination of the CRM, then the provisions of VII)C): Dispute Resolution shall apply.

3) Historic Preservation Tax Incentives

- (a) West Point shall encourage the contractor/lessee to pursue Historic Preservation Tax Incentives at the Federal level. The CRM shall review and comment on applications for Historic Preservation Tax Credits. All NPS processing fees shall be borne by the contractor/lessee
- (b) For Tax Credit projects, the contractor/lessee, in coordination with the CRM shall develop and submit to the NY SHPO *Part II: Description of Rehabilitation of the Historic Preservation Certification Application*. Approval of Part II of the application by NY SHPO and the NPS shall satisfy all Section 106 requirements for consultation with the NY SHPO.
- (c) If the NY SHPO and the NPS disapprove Part II of the application, the requirements of the NHPA shall apply and Section 106 consultation must be completed.

F) NEW CONSTRUCTION

All new construction shall be sympathetic to the USMA NHL and any Historic Landscapes that are present in the Area of Potential Effect. Designs shall be submitted to the USMA Cultural Resource Manager who will review and comment on all proposed designs. The USMA Cultural Resource Manager shall consult with the NY SHPO on any proposed new construction. No new construction shall proceed until Section 106 consultation, including any necessary archaeological investigations, is completed. The contractor/lessee is responsible for notifying the USMA in a timely manner that such activities are planned or proposed. The USMA is responsible for the performance of all regulatory reviews for such an undertaking. New construction shall be undertaken in accordance with the USMA *Installation Design Guide*.

G) GROUND DISTURBANCE

All areas of ground disturbance and/or excavation of soils not previously disturbed by recent activity (within the past 75 years) would require review in accordance with Section 106 of the National Historic Preservation Act (as amended) and implementing regulations; the National Environmental Policy Act (as amended) and implementing regulations; and applicable laws and regulations governing the Hudson Valley and Hudson River Coastal Management Zone. The contractor/lessee is responsible for notifying the U.S. Army Garrison in a timely manner that such activities are planned or proposed. The CRM is responsible for the performance of all regulatory reviews for such an undertaking. All archaeological investigation costs shall be borne by the contractor/lessee.

H) EMERGENCY RESPONSE

- 1) The contractor/lessee shall prepare an Emergency Response Plan in accordance with 36 CFR 800.12, which must be reviewed and approved by the USMA Cultural Resources Manager

and NEPA Coordinator, and reviewed by the NY SHPO, to address emergency responses in the event of tree or wind damage, catastrophic equipment failure, accidents, natural or manmade incidents or disasters, fire, flood, etc. The Emergency Response Plan will provide for the treatment of historic properties in the event of a designated emergency. The Emergency Response Plan would also provide for the timely notification of the NY SHPO that the provisions of this plan have been implemented.

- 2) The contractor/lessee shall be required to comply with the provisions of DPW SOP 16-1 in the event of the unexpected discovery of archaeological or historic artifacts or resources.

II) PROJECT MODIFICATION

Should additional components of this project develop, the USMA shall consult with the NY SHPO in accordance with 36 CFR 800.5 (Revised 1999).

III) PUBLIC INVOLVEMENT

- A) The USMA shall use the National Environmental Policy Act (NEPA) process to inform the public of the existence of this Programmatic Agreement. The RCI initiative as implemented at the USMA shall receive separate environmental analysis and documentation to the appropriate level in accordance with NEPA. The Programmatic Agreement and ensuing NEPA document(s) shall be disclosed publicly, and shall be made available for review for a thirty-day period at local libraries and other public places.
- B) The USMA shall review and resolve timely and substantive comments by consulting parties. The USMA shall consult with the NY SHPO to resolve objections. Project actions, which are not the subject of the objections, may proceed while the consultation is conducted.

IV) AMENDMENTS AND TERMINATION

- A) Any party to this Memorandum of Agreement may request that other parties consider amendments to the Agreement. Amendments shall be made in accordance with 36 CFR § 800.6 (c) (7).
- B) Should the parties to this Agreement disagree on an amendment, or in the event of West Point's failure to comply with the Stipulations of the Agreement; West Point, or the NY SHPO may seek the termination of the Agreement. Termination of the Agreement does not absolve the U.S. Army Garrison or the contractor/lessee of the legal requirement to comply with the terms of the NHPA, NEPA, the ICRMP or any other applicable Federal law.
- C) Should the contractor/lessee transfer its interest in the contract to another party, the party to which it was transferred shall comply with all of the terms of this PA. An addendum to this agreement shall be made, and the new contractor/lessee shall sign the document and abide by all of its terms. Failure to agree to the terms and sign the addendum shall necessitate the completion of an Environmental Impact Statement (EIS) in accordance with 32 CFR §651.41 ("An EIS is required when a proponent, preparer, or approving authority determines that the proposed action has the potential to . . . (b) Significantly affect historic, or cultural, archaeological resources" . The cost of preparing the EIS shall be borne entirely by the contractor/lessee. Until the EIS is completed,

the contractor/lessee shall not engage in any maintenance, rehabilitation, or any other construction activities at West Point.

V) FAILURE TO CARRY OUT TERMS OF THE AGREEMENT

In the event the U.S. Army Garrison Commander at West Point does not carry out the terms of this PA, then activities related to the component that is the subject of the violation shall cease until the parties to the Agreement have consulted to determine a corrected course of action. Activities related to all components not the subject of the violation shall continue uninterrupted. Failure to comply with the terms of this agreement does not absolve West Point or the contractor/lessee of their obligation to fulfill the requirements of the NHPA, NEPA, the ICRMP or any other applicable cultural resources laws or requirements.

VI) DURATION

This Programmatic Agreement shall continue in force so long as the RCI lease remains in effect at West Point.

VII) ADMINISTRATIVE TERMS OF THE AGREEMENT

A) ANTI-DEFICIENCY ACT. All requirements set forth in this PA requiring expenditure of USMA funds are expressly subject to the availability of appropriations and the requirements of the Anti-Deficiency Act (31 U.S.C. § 1341). No obligation undertaken by USMA under the terms of this PA shall require or be interpreted to require a commitment to expend funds not appropriated for a particular purpose. If USMA cannot perform any obligation set forth in this PA because of unavailability of funds, that obligation must be renegotiated among USMA, the NY SHPO, the Council, and the NPS as necessary.

B) REPORTING AND ANNUAL REVIEW.

- 1) The contractor/lessee shall provide an annual written report documenting maintenance, repair, alteration, upgrades, or changes to any historic properties that has been performed over the previous year. This report shall document the contractor/lessee's compliance with the requirements and procedures outlined in West Point's ICRMP. This report shall include the location of the work, a written description of the work completed, and the manner in which the work complies with the terms of this PA. If work includes removal of historic fabric, the condition of the fabric removed shall be documented. When appropriate the report shall include photographs, construction drawings or any other documentation that supports the undertaking's exclusion from NY SHPO review (as outlined in Appendix C of this PA). USMA will archive all cultural resources reports at the USMA library. Reports containing sensitive cultural resources information (such as archaeological site locations) shall be archived in the Office of the Cultural Resources Manager, Directorate of Public Works, U.S. Army Garrison, West Point, NY and at the NY SHPO. Three copies of this report shall be furnished to the CRM by the last business day of August. The USMA shall provide a copy of this report to the NY SHPO by the last business day of September. These reports shall also be furnished to the ACHP and the NPS upon request. Failure to provide this documentation shall negate the terms of the PA which will subject the contractor/lessee to standard Section 106 review procedures for all undertakings.
 - 2) The contractor/lessee shall prepare and implement an annual work plan providing for the appropriate maintenance, repair, and upkeep of all historic properties that is scheduled to be performed over the subsequent year. This plan shall be furnished to the CRM and to the U.S. Army Garrison Commander by 15 August of each year. The CRM shall provide a copy of this plan to the NY SHPO for their review and comment by 15 September. The CRM shall also furnish copies of this report to the ACHP and the NPS upon request.
 - 3) The West Point Cultural Resources Manager shall meet with representatives from the NY SHPO annually to review implementation of the terms of this agreement and determine whether revisions are needed. If revisions are needed, the parties to this agreement will consult in accordance with 36 CFR Part 800 to make such revisions.
- C) DISPUTE RESOLUTION. Should the NY SHPO, Council, or NPS object within 30 days to any plans provided for review/specifications provided/actions proposed, West Point shall consult with the objecting party to resolve the objection. If West Point determines that the objection cannot be resolved, West Point shall forward all documentation relevant to the dispute to Headquarters, U.S. Army, and request further comments of the Council pursuant to 36 CFR § 800.6(b).
- 1) At any time during implementation of the measures stipulated in this PA should an objection to any such measure or its manner of implementation be raised by a member of the public, West Point shall take the objection into account and consult as needed with the objecting party, the NY SHPO, the NPS, as needed, or the Council to resolve the objection.
 - 2) Any Council comment provided in response to such a request will be taken into account by West Point in accordance with 36 CFR § 800.6(c)(2) with reference only to the subject of the dispute; West Point's responsibility to carry out all actions under this PA that are not the subjects of the dispute will remain unchanged.
- D) COMPLIANCE WITH THE PA. If West Point or the contractor/lessee can not carry out the terms of this PA, West Point shall comply with the 36 CFR §800 *Protection of Historic Properties* on each individual undertaking.

Execution of this PA and adherence to its terms evidences that West Point has satisfied its Section 106 responsibilities for all individual actions or programs within the area of potential effects. Execution and implementation of this PA also evidences that West Point has taken into account the effects of the project on historic properties, and provided the NY SHPO with a reasonable opportunity to comment.

DRAFT

**PROGRAMMATIC AGREEMENT
RESIDENTIAL COMMUNITIES INITIATIVE
UNITED STATES MILITARY ACADEMY, WEST POINT, NEW YORK
MARCH 2007**

UNITED STATES DEPARTMENT OF THE ARMY, U.S. ARMY GARRISON AT WEST POINT

By: _____ Date: _____
Brian A. Crawford, Colonel, U. S. Army, Garrison Commander

NEW YORK STATE HISTORIC PRESERVATION OFFICE

By: _____ Date: _____
Carol Ash, New York State Historic Preservation Officer

GMH MILITARY HOUSING, INCORPORATED

By: _____ Date: _____

DIRECTORATE OF PUBLIC WORKS, ENGINEERING PLANS & SERVICES DIVISION

By: _____ Date: _____
Travis A. Beckwith, Cultural Resources Manager

LEGAL REVIEW

By: _____ Date: _____
Robin Swope, Colonel, Staff Judge Advocate, United States Military Academy

APPENDIX A: ACRONYMS

| | |
|--|---------|
| Advisory Council on Historic Preservation | ACHP |
| Archaeological Resources Protection Act..... | ARPA |
| Army Regulation..... | AR |
| Code of Federal Regulations..... | CFR |
| Cultural Resource Manager | CRM |
| Garrison Commander..... | GC |
| Integrated Cultural Resource Management Plan..... | ICRMP |
| Memorandum for Record..... | MFR |
| Memorandum of Agreement..... | MOA |
| Native American Graves Protection and Repatriation Act | NAGPRA |
| National Environmental Policy Act..... | NEPA |
| National Historic Landmark District..... | NHL |
| National Historic Preservation Act of 1966..... | NHPA |
| National Park Service | NPS |
| New York State Historic Preservation Office..... | NY SHPO |
| Programmatic Agreement | PA |
| Residential Communities Initiative..... | RCI |
| Request for Proposal..... | RFP |
| Standard Operating Procedures..... | SOP |
| United States Military Academy..... | USMA |

APPENDIX B: DEFINITIONS

Adverse Effect: Any effect that directly or indirectly alters those characteristic of any historic property that diminishes its integrity of location, design, setting, materials, workmanship, feeling or association.

Area of Potential Effects: Area in which an undertaking may directly or indirectly alter the characteristics or use of a historic property.

Cultural Resources: Any district, building, structure, object, archaeological site, or monument that contributes to a National Historic Landmark District, is listed in the National Register of Historic Places, or is eligible for listing in the National Register of Historic Places.

Cultural Resources Manager: In this document, the CRM refers to West Point's manager of historic properties at West Point. The Cultural Resource Manager is a position that is defined fully by the existing ICRMP.

Effect: Any alteration to any characteristics that qualify a historic property for listing in the National Register of Historic Places.

Historic Property: Any district, building, structure, object, archaeological site, or monument that contributes to a National Historic Landmark District, is listed in the National Register of Historic Places, or is eligible for listing in the National Register of Historic Places.

Integrated Cultural Resources Management Plan (ICRMP): Document produced by the U.S. Army Garrison at West Point that details the management processes for all Cultural Resources located at USMA.

National Historic Landmark: A historic property that the Secretary of the Interior has designated as having exceptional significance in the history of the United States.

New York State Historic Preservation Office (NY SHPO): Official designee of the Federal Government that is tasked with enforcing the provisions of the National Historic Preservation Act of 1966 (as amended).

Secretary's Standards: *The Secretary of the Interior's Standards for the Treatment of Historic Properties.*

Undertaking: Any project, program or activity that occurs under the jurisdiction of the Federal Government. This includes those activities carried out by or on behalf of a Federal agency, those carried out with Federal financial assistance, or those requiring Federal permitting or approval.

U.S. Army Garrison: For purposes of this agreement, the U.S. Army Garrison at West Point.

West Point: For the purposes of this agreement, the U.S. Army Garrison at West Point.

APPENDIX C: ACTIONS NOT REQUIRING NY SHPO CONSULTATION

The following actions shall not require consultation with the NY SHPO provided that the terms of the U.S. Army Garrison's ICRMP are being met.

- Maintenance and repair of slate roofs in accordance with USMA SOP No. 1: *Replacement and Repair Procedures for Slate Roofs*.
- Repointing of mortar and repairing brick on historic buildings, as long as repair work follows the *Secretary's Standards* and the USMA Cultural Resources Standard Operating Procedure No. 4: *Masonry Re-pointing and Repair Procedures*.
- Maintenance and repair of historic wooden doors undertaken in accordance with USMA SOP No. 5: *Maintenance and Repair Procedures for Historic Wood Doors*.
- Maintenance and repair of ornamental metal and hardware in accordance with USMA SOP No. 6: *Ornamental Metal/Hardware Inspection and Repair Procedures*
- Maintenance and repair of historic plaster wall finishes in accordance with USMA SOP No. 8: *Plaster Walls and Ceilings Inspection and Repair Procedures*.
- Routine maintenance of historic interior spaces within historic buildings, as long as maintenance activities follows the appropriate *Secretary's Standards*. This includes routine painting of interior and exterior elements so long as the painting follows USMA Cultural Resources SOP No. 7: *Interior Paint Inspection and Repainting Procedures* and SOP No. 9: *Exterior Paint Inspection and Repainting Procedures*
- Routine maintenance and repair of historic plaster so long as it is in accordance with SOP No. 8: *Plaster Walls and Ceilings Inspection and Repair Procedures*.
- Replacement in-kind of extremely deteriorated historic features (i.e. replacing deteriorated wooden trim with new trim that matches the existing both physically and visually)
- Re-finishing in kind of historic surfaces (i.e. screening of historic wood floors and refinishing).
- Energy conservation measures that are not visible or that do not alter or detract from the qualities that make the property eligible (i.e. the installation of energy efficient hot-water heaters)
- Maintenance work on existing features such as roads, fire lanes, mowed areas, disposal areas, and ditches so long as the activity involves no new soil disturbance.
- Exterior maintenance of non-historic building within the NHLD including replacement of roofing and other features, as long as replacement is in-kind (i.e. same roof material, color, profile, etc.) and the original/replacement element is not obtrusive in the NHLD.
- Interior maintenance and rehabilitation of non-historic buildings within the NHLD.
- Road repaving, sidewalk repair, and utility replacement where features currently exist and no new ground disturbance takes place.
- Annual pruning of vegetation, lawn maintenance, and tree removal (root pulling that results in ground disturbance shall not be undertaken) for control of invasive species and maintenance of historic vistas.
- Rehabilitation and repair of existing HVAC systems provide that no historic fabric is disturbed.
- Repair of existing elements that are not visible or that do not contribute to the historic or architectural significance of a property (this includes changes to non-historic spaces in historic buildings)

APPENDIX D: HISTORIC HOUSING RESOURCES WITHIN THE USMA NHLD

Table 1: Major Contributing Elements to the USMA NHLD

These buildings are major contributing elements to the USMA NHLD. In addition, all of these buildings are individually eligible for listing in the NRHP. These buildings shall be treated in accordance with *The Secretary of the Interior's Standards for Preservation and Guidelines for Preserving Historic Buildings*.

| | Building | Construction Date(s) | Architect or Builder | Address |
|-----|--|-----------------------------|-------------------------------|----------------------|
| 1. | Superintendent's Quarters (Quarters 100) | 1820 | Unknown | 100 Jefferson Road |
| 2. | Commandant's Quarters (Quarters 101) | 1821 | Unknown | 101 Jefferson Road |
| 3. | Dean's Quarters (Quarters 102) | 1856-1857 | Q.A. Gillmore | 102 Washington Road |
| 4. | Professor's Row (Quarters 103) | 1826-1828 | Daniel Corwin | 103 Washington Road |
| 5. | Professor's Row (Quarters 105) | 1826-1828 | Daniel Corwin | 105 Washington Road |
| 6. | Professor's Row (Quarters 107) | 1821 | Unknown | 107 Washington Road |
| 7. | Professor's Row (Quarters 109) | 1875 | Unknown | 109 Washington Road |
| 8. | Enlisted Men's Hospital (Quarters 126) | 1892 | Office of the QM General | 126 Washington Road |
| 9. | Quarters 146 | 1858-1859 | Unknown | 146 Howard Road |
| 10. | Hospital Steward's Quarters (Quarters 374) | 1894 | Standard Quartermaster Plan | 374 Washington Road |
| 11. | Old English South, Quarters 21 | 1905-1910 | Cram, Goodhue & Ferguson | 21 Wilson Road |
| 12. | Old English South, Quarters 25 | 1905-1910 | Cram, Goodhue & Ferguson | 25 Kinsley Hill Road |
| 13. | Old English South, Quarters 32 | 1905-1910 | Cram, Goodhue & Ferguson | 32 Kinsley Hill Road |
| 14. | Old English South, Quarters 34 | 1905-1910 | Cram, Goodhue & Ferguson | 34 Kinsley Hill Road |
| 15. | Old English South, Quarters 42 | 1905-1910 | Cram, Goodhue & Ferguson | 42 Smith Place |
| 16. | Old English South, Quarters 45 | 1905-1910 | Cram, Goodhue & Ferguson | 45 Smith Place |
| 17. | Old English South, Quarters 48 | 1905-1910 | Cram, Goodhue & Ferguson | 48 Smith Place |
| 18. | Quarters 28 | 1891 | Col. Frank F. Scowden, QM | 28 Kinsley Hill Road |
| 19. | Quarters 29 | 1891 | Col. Frank F. Scowden, QM | 29 Kinsley Hill Road |
| 20. | Quarters 30 | 1891 | Col. Frank F. Scowden, QM | 30 Kinsley Hill Road |
| 21. | Quarters 31 | 1891 | Col. Frank F. Scowden, QM | 31 Kinsley Hill Road |
| 22. | Cadet Chaplains Quarters (Quarters 60) | 1910 | Cram, Goodhue & Ferguson | 60 DeRussy Loop |
| 23. | Old English North, Quarters 116 | 1908 | Cram, Goodhue & Ferguson | 116 Washington Road |
| 24. | Old English North, Quarters 118 | 1908 | Cram, Goodhue & Ferguson | 118 Washington Road |
| 25. | Old English North, Quarters 120 | 1908 | Cram, Goodhue & Ferguson | 120 Washington Road |
| 26. | Old English North Quarters 122 | 1908 | Cram, Goodhue & Ferguson | 122 Washington Road |
| 27. | Wilson Road, Quarters 11 | 1901 | J.B. Bellinger, Quartermaster | 11 Wilson Road |
| 28. | Wilson Road, Quarters 13 | 1901 | J.B. Bellinger, Quartermaster | 13 Wilson Road |

Table 1: Major Contributing Elements to the USMA NHL

These buildings are major contributing elements to the USMA NHL. In addition, all of these buildings are individually eligible for listing in the NRHP. These buildings shall be treated in accordance with *The Secretary of the Interior's Standards for Preservation and Guidelines for Preserving Historic Buildings*.

| | Building | Construction Date(s) | Architect or Builder | Address |
|-----|--------------------------|-----------------------------|-------------------------------|----------------|
| 29. | Wilson Road, Quarters 15 | 1901 | J.B. Bellinger, Quartermaster | 15 Wilson Road |
| 30. | Wilson Road, Quarters 17 | 1901 | J.B. Bellinger, Quartermaster | 17 Wilson Road |
| 31. | Wilson Road, Quarters 19 | 1901 | J.B. Bellinger, Quartermaster | 19 Wilson Road |

Table 2: Contributing Elements to the USMA NHLD

These buildings are contributing elements to the USMA NHLD and many are individually eligible for listing in the NRHP. These buildings shall be treated in accordance with *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.

| | Building | Construction Date(s) | Architect or Builder (if known) | Address |
|-----|--------------------------------|-----------------------------|--|---------------------|
| 1. | Quarters 5 | 1870 | | 5 Thayer Road |
| 2. | Quarters 6 | 1870 | | 6 Thayer Road |
| 3. | Quarters 7 | 1870 | | 7 Thayer Road |
| 4. | Quarters 8 | 1888 | Capt. William Taylor, QM | 8 Thayer Road |
| 5. | Quarters 9 | 1870 | | 9 Thayer Road |
| 6. | Quarters 10 | 1870 | | 10 Thayer Road |
| 7. | South Apartments, Quarters 40 | 1919 | Sam R. Jones, Quartermaster | 40 Smith Place |
| 8. | CSM Quarters (Quarters 61) | 1885 | | 61 Schofield Place |
| 9. | Lusk Housing, Quarters 62 | 1932 | Edward V. Dunstan, Quartermaster | 62 Schofield Place |
| 10. | Lusk Housing, Quarters 64 | 1932 | Edward V. Dunstan, Quartermaster | 64 Schofield Place |
| 11. | Lusk Housing, Quarters 66 | 1932 | Edward V. Dunstan, Quartermaster | 66 Schofield Place |
| 12. | Lusk Housing, Quarters 68 | 1932 | Edward V. Dunstan, Quartermaster | 68 Schofield Place |
| 13. | Lusk Housing, Quarters 70 | 1932 | Edward V. Dunstan, Quartermaster | 70 Schofield Place |
| 14. | Lusk Housing, Quarters 72 | 1932 | Edward V. Dunstan, Quartermaster | 72 Schofield Place |
| 15. | Lusk Housing, Quarters 74 | 1932 | Edward V. Dunstan, Quartermaster | 74 Schofield Place |
| 16. | Lusk Housing, Quarters 76 | 1932 | Edward V. Dunstan, Quartermaster | 76 Schofield Place |
| 17. | Lusk Housing, Quarters 78 | 1932 | Edward V. Dunstan, Quartermaster | 78 Schofield Place |
| 18. | Lusk Housing, Quarters 80 | 1932 | Edward V. Dunstan, Quartermaster | 80 Schofield Place |
| 19. | Lusk Housing, Quarters 82 | 1932 | Edward V. Dunstan, Quartermaster | 82 Schofield Place |
| 20. | Lusk Housing, Quarters 84 | 1932 | Edward V. Dunstan, Quartermaster | 84 Schofield Place |
| 21. | Quarters 112 | 1888-1892 | Capt. William Taylor, QM | 112 Washington Road |
| 22. | Quarters 113 | 1888-1892 | Capt. William Taylor, QM | 113 Washington Road |
| 23. | North Apartments, Quarters 114 | 1919 | Sam R. Jones, Quartermaster | 114 Washington Road |
| 24. | Nurses Quarters, Quarters 127 | 1914 | | 127 Washington Road |
| 25. | Lee Housing, Quarters 150 | 1937 | D. Esitz, Quartermaster | 150 Lee Road |
| 26. | Lee Housing, Quarters 155 | 1937 | D. Esitz, Quartermaster | 155 Gardner Loop |
| 27. | Lee Housing, Quarters 160 | 1937 | D. Esitz, Quartermaster | 160 Gardner Loop |
| 28. | Lee Housing, Quarters 165 | 1937 | D. Esitz, Quartermaster | 165 Lee Road |
| 29. | Lee Housing, Quarters 170 | 1937 | D. Esitz, Quartermaster | 170 Lee Road |

Table 2: Contributing Elements to the USMA NHLD

These buildings are contributing elements to the USMA NHLD and many are individually eligible for listing in the NRHP. These buildings shall be treated in accordance with *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.

| | Building | Construction Date(s) | Architect or Builder (if known) | Address |
|-----|---------------------------|-----------------------------|--|----------------------|
| 30. | Lee Housing, Quarters 173 | 1937 | D. Esitz, Quartermaster | 173 Lee Road |
| 31. | Lee Housing, Quarters 176 | 1937 | D. Esitz, Quartermaster | 176 Lee Road |
| 32. | Lee Housing, Quarters 181 | 1939 | D. Esitz, Quartermaster | 181 Barry Road |
| 33. | Lee Housing, Quarters 208 | 1937 | D. Esitz, Quartermaster | 208 Lee Road |
| 34. | Lee Housing, Quarters 211 | 1937 | D. Esitz, Quartermaster | 211 Barry Road |
| 35. | Lee Housing, Quarters 216 | 1937 | D. Esitz, Quartermaster | 216 Barry Road |
| 36. | Lee Housing, Quarters 219 | 1935 | | 219 Lee Road |
| 37. | Lee Housing, Quarters 221 | 1935 | | 221 Lee Road |
| 38. | Lee Housing, Quarters 223 | 1937 | | 223 Barnard Loop |
| 39. | Lee Housing, Quarters 225 | 1935 | | 225 Barnard Loop |
| 40. | Lee Housing, Quarters 227 | 1935 | | 227 Barnard Loop |
| 41. | Lee Housing, Quarters 229 | 1937 | | 229 Barnard Loop |
| 42. | Lee Housing, Quarters 231 | 1935 | | 231 Barnard Loop |
| 43. | Lee Housing, Quarters 233 | 1935 | | 233 Barnard Loop |
| 44. | Lee Housing, Quarters 235 | 1935 | | 235 Barnard Loop |
| 45. | Lee Housing, Quarters 237 | 1935 | | 237 Barnard Loop |
| 46. | Lee Housing, Quarters 239 | 1935 | | 239 Barnard Loop |
| 47. | Lee Housing, Quarters 241 | 1935 | | 241 Barnard Loop |
| 48. | Lee Housing, Quarters 243 | 1935 | | 243 Barnard Loop |
| 49. | Lee Housing, Quarters 245 | 1937 | | 245 Barnard Loop |
| 50. | Lee Housing, Quarters 247 | 1937 | | 247 Barnard Loop |
| 51. | Lee Housing, Quarters 249 | 1937 | D. Esitz, Quartermaster | 249 Lee Road |
| 52. | Lee Housing, Quarters 252 | 1935 | | 252 Lee Road |
| 53. | Lee Housing, Quarters 254 | 1935 | | 254 Lee Road |
| 54. | Lee Housing, Quarters 256 | 1935 | | 256 Beauregard Place |
| 55. | Lee Housing, Quarters 258 | 1935 | | 258 Beauregard Place |
| 56. | Lee Housing, Quarters 260 | 1935 | | 260 Beauregard Place |
| 57. | Lee Housing, Quarters 262 | 1935 | | 262 Beauregard Place |
| 58. | Lee Housing, Quarters 264 | 1935 | | 264 Beauregard Place |
| 59. | Lee Housing, Quarters 266 | 1935 | | 266 Bowman Loop |

Table 2: Contributing Elements to the USMA NHLD

These buildings are contributing elements to the USMA NHLD and many are individually eligible for listing in the NRHP. These buildings shall be treated in accordance with *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.

| | Building | Construction Date(s) | Architect or Builder (if known) | Address |
|-----|---------------------------------|-----------------------------|--|---------------------|
| 60. | Lee Housing, Quarters 268 | 1937 | | 268 Bowman Loop |
| 61. | Lee Housing, Quarters 270 | 1935 | | 270 Bowman Loop |
| 62. | Lee Housing, Quarters 272 | 1937 | | 272 Bowman Loop |
| 63. | Lee Housing, Quarters 274 | 1935 | | 274 Bowman Loop |
| 64. | Lee Housing, Quarters 276 | 1935 | | 276 Bowman Loop |
| 65. | Lee Housing, Quarters 278 | 1935 | | 278 Bowman Loop |
| 66. | Lee Housing, Quarters 280 | 1935 | | 280 Bowman Loop |
| 67. | Lee Housing, Quarters 282 | 1935 | | 282 Bowman Loop |
| 68. | Lee Housing, Quarters 284 | 1935 | | 284 Bowman Loop |
| 69. | Lee Housing, Quarters 286 | 1935 | Capt. Edwin V. Dunstan, Quartermaster | 286 Bowman Loop |
| 70. | Lee Housing, Quarters 288 | 1937 | Arthur Parker, Quartermaster | 288 Bowman Loop |
| 71. | Lee Housing, Quarters 290 | 1937 | | 290 Bowman Loop |
| 72. | Lee Housing, Quarters 292 | 1935 | | 292 Lee Road |
| 73. | Lee Housing, Quarters 294 | 1935 | | 294 Lee Road |
| 74. | Lee Housing, Quarters 296 | 1935 | | 296 Lee Road |
| 75. | Lee Housing, Quarters 298 | 1935 | | 298 Lee Road |
| 76. | Wooden Duplexes, Quarters 352 | 1865 | | 352 Buckner Loop |
| 77. | Wooden Duplexes, Quarters 356 | 1865 | | 356 Washington Road |
| 78. | Wooden Duplexes, Quarters 360 | 1865 | | 360 Washington Road |
| 79. | Wooden Duplexes, Quarters 364 | 1865 | | 364 Biddle Loop |
| 80. | Wooden Duplexes, Quarters 368 | 1865 | | 368 Biddle Loop |
| 81. | Quarters 378 | 1907 | | 378 Howze Place |
| 82. | 1931 NCO Quarters, Quarters 397 | 1931 | Constructing Quartermaster, West Point | 397 Merritt Road |
| 83. | 1931 NCO Quarters, Quarters 399 | 1931 | Constructing Quartermaster, West Point | 399 Merritt Road |
| 84. | 1931 NCO Quarters, Quarters 401 | 1931 | Constructing Quartermaster, West Point | 401 Merritt Road |
| 85. | 1931 NCO Quarters, Quarters 403 | 1931 | Constructing Quartermaster, West Point | 403 Merritt Road |
| 86. | 1931 NCO Quarters, Quarters 405 | 1931 | Constructing Quartermaster, West Point | 405 Merritt Road |
| 87. | 1931 NCO Quarters, Quarters 407 | 1931 | Constructing Quartermaster, West Point | 407 Merritt Road |
| 88. | 1931 NCO Quarters, Quarters 409 | 1931 | Constructing Quartermaster, West Point | 409 Merritt Road |
| 89. | 1931 NCO Quarters, Quarters 411 | 1931 | Constructing Quartermaster, West Point | 411 Merritt Road |

Table 2: Contributing Elements to the USMA NHLD

These buildings are contributing elements to the USMA NHLD and many are individually eligible for listing in the NRHP. These buildings shall be treated in accordance with *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.

| Building | | Construction Date(s) | Architect or Builder (if known) | Address |
|-----------------|---------------------------------|-----------------------------|--|---------------------|
| 90. | 1931 NCO Quarters, Quarters 413 | 1931 | Constructing Quartermaster, West Point | 413 Merritt Road |
| 91. | 1931 NCO Quarters, Quarters 415 | 1931 | Constructing Quartermaster, West Point | 415 Merritt Road |
| 92. | 1931 NCO Quarters, Quarters 417 | 1931 | Constructing Quartermaster, West Point | 417 Merritt Road |
| 93. | 1931 NCO Quarters, Quarters 419 | 1931 | Constructing Quartermaster, West Point | 419 Merritt Road |
| 94. | Band NCO Quarters, Quarters 421 | 1932 | | 421 Bailey Loop |
| 95. | Band NCO Quarters, Quarters 422 | 1932 | | 422 Bailey Loop |
| 96. | 1935 NCO Quarters, Quarters 423 | 1935 | Capt. Edwin V. Dunstan, Quartermaster | 423 Washington Road |
| 97. | 1935 NCO Quarters, Quarters 425 | 1935 | Capt. Edwin V. Dunstan, Quartermaster | 425 Washington Road |
| 98. | 1935 NCO Quarters, Quarters 427 | 1935 | Capt. Edwin V. Dunstan, Quartermaster | 427 Biddle Loop |
| 99. | 1935 NCO Quarters, Quarters 429 | 1935 | Capt. Edwin V. Dunstan, Quartermaster | 429 Biddle Loop |
| 100. | 1935 NCO Quarters, Quarters 431 | 1935 | Capt. Edwin V. Dunstan, Quartermaster | 431 Biddle Loop |
| 101. | 1935 NCO Quarters, Quarters 433 | 1935 | Capt. Edwin V. Dunstan, Quartermaster | 433 Biddle Loop |
| 102. | Old Brick, Quarters 501 | 1949 | | 501 Merritt Road |
| 103. | Old Brick, Quarters 502 | 1949 | | 502 Sladen Place |
| 104. | Old Brick, Quarters 503 | 1949 | | 503 Sladen Place |
| 105. | Old Brick, Quarters 504 | 1949 | | 504 East Moore Loop |
| 106. | Old Brick, Quarters 509 | 1949 | | 509 Tillman Place |
| 107. | Old Brick, Quarters 510 | 1949 | | 510 Tillman Place |
| 108. | Old Brick, Quarters 511 | 1949 | | 511 Alexander Place |

Table 3: Non-Contributing Elements to the USMA NHLD

The following list presents those buildings that do not contribute to the USMA NHLD or meet the basic criteria for listing in the NRHP. Proposed work on these buildings does not require SHPO consultation so long as any project does not involve major exterior changes that may result in an effect on the USMA NHLD or any other Historic Landscape that is listed in or eligible for listing in the NRHP.

| | Address | Construction Date(s) | Subdivision Name/Address |
|-----|-------------------------|-----------------------------|---------------------------------|
| 1. | 300 Merritt Road | 1999 | Grey Ghost |
| 2. | 301 Merritt Rd | 1999 | Grey Ghost |
| 3. | 302 Wilby Place | 1999 | Grey Ghost |
| 4. | 303 Wilby Place | 1999 | Grey Ghost |
| 5. | 304 Wilby Place | 1999 | Grey Ghost |
| 6. | 304 Wilby Place | 1999 | Grey Ghost |
| 7. | 305 Wilby Place | 1999 | Grey Ghost |
| 8. | 306 Alexander Place | 1999 | Grey Ghost |
| 9. | 307 Alexander Place | 1999 | Grey Ghost |
| 10. | 308 Alexander Place | 1999 | Grey Ghost |
| 11. | 309 Alexander Place | 1999 | Grey Ghost |
| 12. | 310 Winans Place | 1999 | Grey Ghost |
| 13. | 311 Winans Place | 1999 | Grey Ghost |
| 14. | 312 Winans Place | 1999 | Grey Ghost |
| 15. | 313 Winans Place | 1999 | Grey Ghost |
| 16. | 314 So Moore Loop | 1999 | Grey Ghost |
| 17. | 315 So Moore Loop | 1999 | Grey Ghost |
| 18. | 316 So Moore Loop | 1999 | Grey Ghost |
| 19. | 515 Alexander Place | 1999 | Grey Ghost |
| 20. | New Brick, Quarters 525 | 1962 | 525 Merritt Road |
| 21. | New Brick, Quarters 526 | 1962 | 526 Merritt Road |
| 22. | New Brick, Quarters 527 | 1962 | 527 Merritt Road |
| 23. | New Brick, Quarters 528 | 1962 | 528 Winans Road |
| 24. | New Brick, Quarters 529 | 1962 | 529 Winans Road |
| 25. | New Brick, Quarters 530 | 1962 | 530 Winans Rd |
| 26. | New Brick, Quarters 531 | 1962 | 531 Winans Rd |
| 27. | New Brick, Quarters 532 | 1962 | 532 Winans Road |
| 28. | New Brick, Quarters 533 | 1962 | 533 Winans Road |
| 29. | New Brick, Quarters 534 | 1962 | 534 Winans Road |
| 30. | New Brick, Quarters 535 | 1962 | 535 Winans Road |
| 31. | New Brick, Quarters 536 | 1962 | 536 Winans Road |
| 32. | New Brick, Quarters 537 | 1962 | 537 Winans Road |
| 33. | New Brick, Quarters 538 | 1962 | 538 Winans Road |
| 34. | New Brick, Quarters 539 | 1962 | 539 Winans Road |
| 35. | New Brick, Quarters 540 | 1962 | 540 Winans Road |
| 36. | New Brick, Quarters 541 | 1962 | 541 Winans Road |
| 37. | New Brick, Quarters 542 | 1962 | 542 Winans Road |
| 38. | New Brick, Quarters 543 | 1962 | 543 Winans Road |
| 39. | New Brick, Quarters 544 | 1962 | 544 Winans Road |
| 40. | New Brick, Quarters 545 | 1962 | 545 Winans Road |
| 41. | New Brick, Quarters 546 | 1962 | 546 Winans Road |

Table 3: Non-Contributing Elements to the USMA NHLD

The following list presents those buildings that do not contribute to the USMA NHLD or meet the basic criteria for listing in the NRHP. Proposed work on these buildings does not require SHPO consultation so long as any project does not involve major exterior changes that may result in an effect on the USMA NHLD or any other Historic Landscape that is listed in or eligible for listing in the NRHP.

| | Address | Construction Date(s) | Subdivision Name/Address |
|-----|-------------------------|-----------------------------|---------------------------------|
| 42. | New Brick, Quarters 547 | 1962 | 547 Winans Road |
| 43. | New Brick, Quarters 548 | 1962 | 548 Winans Road |
| 44. | New Brick, Quarters 549 | 1962 | 549 Winans Road |
| 45. | New Brick, Quarters 550 | 1962 | 550 Winans Road |
| 46. | New Brick, Quarters 551 | 1962 | 551 Connor Road |
| 47. | New Brick, Quarters 552 | 1962 | 552 Connor Road |
| 48. | New Brick, Quarters 553 | 1962 | 553 Connor Road |
| 49. | New Brick, Quarters 554 | 1962 | 554 Connor Road |
| 50. | New Brick, Quarters 555 | 1962 | 555 Connor Road |
| 51. | New Brick, Quarters 556 | 1962 | 556 Connor Road |
| 52. | New Brick, Quarters 557 | 1962 | 557 Connor Road |
| 53. | New Brick, Quarters 558 | 1962 | 558 Connor Road |
| 54. | New Brick, Quarters 559 | 1962 | 559 Connor Road |
| 55. | New Brick, Quarters 560 | 1962 | 560 Connor Road |
| 56. | New Brick, Quarters 561 | 1962 | 561 Connor Road |
| 57. | New Brick, Quarters 562 | 1962 | 562 Connor Loop |
| 58. | New Brick, Quarters 563 | 1962 | 563 Connor Loop |
| 59. | New Brick, Quarters 564 | 1962 | 564 Connor Loop |
| 60. | New Brick, Quarters 565 | 1962 | 565 Connor Loop |
| 61. | New Brick, Quarters 566 | 1962 | 566 Connor Loop |
| 62. | New Brick, Quarters 567 | 1962 | 567 Connor Loop |
| 63. | New Brick, Quarters 568 | 1962 | 568 Connor Loop |
| 64. | New Brick, Quarters 569 | 1962 | 569 Connor Loop |
| 65. | New Brick, Quarters 570 | 1962 | 570 Connor Loop |
| 66. | New Brick, Quarters 571 | 1962 | 571 Connor Loop |
| 67. | New Brick, Quarters 572 | 1962 | 572 Connor Loop |
| 68. | New Brick, Quarters 573 | 1962 | 573 Connor Loop |
| 69. | New Brick, Quarters 574 | 1962 | 574 Connor Loop |
| 70. | New Brick, Quarters 575 | 1962 | 575 Benedict Road |
| 71. | New Brick, Quarters 576 | 1962 | 576 Benedict Road |
| 72. | New Brick, Quarters 577 | 1962 | 577 Benedict Road |
| 73. | New Brick, Quarters 578 | 1962 | 578 Benedict Road |
| 74. | New Brick, Quarters 579 | 1962 | 579 Benedict Road |
| 75. | New Brick, Quarters 580 | 1962 | 580 Benedict Road |
| 76. | New Brick, Quarters 581 | 1962 | 581 Benedict Road |
| 77. | New Brick, Quarters 582 | 1962 | 582 Benedict Road |
| 78. | New Brick, Quarters 583 | 1962 | 583 Benedict Road |
| 79. | New Brick, Quarters 584 | 1962 | 584 Benedict Road |
| 80. | New Brick, Quarters 585 | 1962 | 585 Connor Road |
| 81. | New Brick, Quarters 586 | 1962 | 586 Connor Road |
| 82. | New Brick, Quarters 587 | 1962 | 587 Connor Road |
| 83. | New Brick, Quarters 588 | 1962 | 588 Connor Road |

Table 3: Non-Contributing Elements to the USMA NHLD

The following list presents those buildings that do not contribute to the USMA NHLD or meet the basic criteria for listing in the NRHP. Proposed work on these buildings does not require SHPO consultation so long as any project does not involve major exterior changes that may result in an effect on the USMA NHLD or any other Historic Landscape that is listed in or eligible for listing in the NRHP.

| | Address | Construction Date(s) | Subdivision Name/Address |
|------|-------------------------|-----------------------------|---------------------------------|
| 84. | New Brick, Quarters 589 | 1962 | 589 Connor Road |
| 85. | 3001 Duportal Place | 1972 | Stony Lonesome I |
| 86. | 3002 Duportal Place | 1972 | Stony Lonesome I |
| 87. | 3004 Greene Place | 1972 | Stony Lonesome I |
| 88. | 3005 Greene Place | 1972 | Stony Lonesome I |
| 89. | 3006 Greene Place | 1972 | Stony Lonesome I |
| 90. | 3007 Greene Place | 1972 | Stony Lonesome I |
| 91. | 3008 Greene Place | 1972 | Stony Lonesome I |
| 92. | 3009 Greene Place | 1972 | Stony Lonesome I |
| 93. | 3010 Greene Place | 1972 | Stony Lonesome I |
| 94. | 3011 Knox Place | 1972 | Stony Lonesome I |
| 95. | 3012 Knox Place | 1972 | Stony Lonesome I |
| 96. | 3013 Knox Place | 1972 | Stony Lonesome I |
| 97. | 3015 Kosciuszko Pl | 1972 | Stony Lonesome I |
| 98. | 3016 Kosciuszko Pl | 1972 | Stony Lonesome I |
| 99. | 3017 Kosciuszko Pl | 1972 | Stony Lonesome I |
| 100. | 3019 Lamb Place | 1972 | Stony Lonesome I |
| 101. | 3020 Lamb Place | 1972 | Stony Lonesome I |
| 102. | 3021 Lamb Place | 1972 | Stony Lonesome I |
| 103. | 3022 Lamb Place | 1972 | Stony Lonesome I |
| 104. | 3023 MacHin Place | 1972 | Stony Lonesome I |
| 105. | 3024 MacHin Place | 1972 | Stony Lonesome I |
| 106. | 3025 MacHin Place | 1972 | Stony Lonesome I |
| 107. | 3026 MacHin Place | 1972 | Stony Lonesome I |
| 108. | 3027 MacHin Place | 1972 | Stony Lonesome I |
| 109. | 3028 MacHin Place | 1972 | Stony Lonesome I |
| 110. | 3029 MacHin Place | 1972 | Stony Lonesome I |
| 111. | 3030 MacHin Place | 1972 | Stony Lonesome I |
| 112. | 3031 MacHin Place | 1972 | Stony Lonesome I |
| 113. | 3032 McDougall Place | 1972 | Stony Lonesome I |
| 114. | 3033 McDougall Place | 1972 | Stony Lonesome I |
| 115. | 3034 McDougall Place | 1972 | Stony Lonesome I |
| 116. | 3035 McDougall Place | 1972 | Stony Lonesome I |
| 117. | 3036 McDougall Place | 1972 | Stony Lonesome I |
| 118. | 3037 McDougall Place | 1972 | Stony Lonesome I |
| 119. | 3038 Meigs Place | 1972 | Stony Lonesome I |
| 120. | 3039 Meigs Place | 1972 | Stony Lonesome I |
| 121. | 3040 Meigs Place | 1972 | Stony Lonesome I |
| 122. | 3041 Meigs Place | 1972 | Stony Lonesome I |
| 123. | 3042 Meigs Place | 1972 | Stony Lonesome I |
| 124. | 3043 Parson Place | 1972 | Stony Lonesome I |
| 125. | 3044 Parson Place | 1972 | Stony Lonesome I |

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| | Address | Construction Date(s) | Subdivision Name/Address |
|------|--------------------------|-----------------------------|---------------------------------|
| 126. | 3045 Parson Place | 1972 | Stony Lonesome I |
| 127. | 3046 Parson Place | 1972 | Stony Lonesome I |
| 128. | 3047 Parson Place | 1972 | Stony Lonesome I |
| 129. | 3048 Parson Place | 1972 | Stony Lonesome I |
| 130. | 3049 Putnam Place | 1972 | Stony Lonesome I |
| 131. | 3050 Putnam Place | 1972 | Stony Lonesome I |
| 132. | 3051 Putnam Place | 1972 | Stony Lonesome I |
| 133. | 3052 Sherburne Place | 1972 | Stony Lonesome I |
| 134. | 3053 Sherburne Place | 1972 | Stony Lonesome I |
| 135. | 3054 Sherburne Place | 1972 | Stony Lonesome I |
| 136. | 3055 Sherburne Place | 1972 | Stony Lonesome I |
| 137. | 3056 Sherburne Place | 1972 | Stony Lonesome I |
| 138. | 3057 Von Steuben Place | 1972 | Stony Lonesome I |
| 139. | 3058 Von Steuben Place | 1972 | Stony Lonesome I |
| 140. | 3059 Von Steuben Place | 1972 | Stony Lonesome I |
| 141. | 3060 Von Steuben Place | 1972 | Stony Lonesome I |
| 142. | 3061 Von Steuben Place | 1972 | Stony Lonesome I |
| 143. | 3062 Von Steuben Place | 1972 | Stony Lonesome I |
| 144. | 3063 Lord Sterling Place | 1972 | Stony Lonesome I |
| 145. | 3064 Lord Sterling Place | 1972 | Stony Lonesome I |
| 146. | 3065 Lord Sterling Place | 1972 | Stony Lonesome I |
| 147. | 3066 Lord Sterling Place | 1972 | Stony Lonesome I |
| 148. | 3067 Lord Sterling Place | 1972 | Stony Lonesome I |
| 149. | 3068 Lord Sterling Place | 1972 | Stony Lonesome I |
| 150. | 3069 Lord Sterling Place | 1972 | Stony Lonesome I |
| 151. | 3070 Lord Sterling Place | 1972 | Stony Lonesome I |
| 152. | 3071 Wayne Place | 1972 | Stony Lonesome I |
| 153. | 3072 Wayne Place | 1972 | Stony Lonesome I |
| 154. | 3073 Wayne Place | 1972 | Stony Lonesome I |
| 155. | 3074 Wayne Place | 1972 | Stony Lonesome I |
| 156. | 3075 Wayne Place | 1972 | Stony Lonesome I |
| 157. | 3076 Wayne Place | 1972 | Stony Lonesome I |
| 158. | 3077 Webb Place | 1972 | Stony Lonesome I |
| 159. | 3078 Webb Place | 1972 | Stony Lonesome I |
| 160. | 3079 Webb Place | 1972 | Stony Lonesome I |
| 161. | 3080 Webb Place | 1972 | Stony Lonesome I |
| 162. | 3081 Webb Place | 1972 | Stony Lonesome I |
| 163. | 3083 Wyllys Place | 1972 | Stony Lonesome I |
| 164. | 3084 Wyllys Place | 1972 | Stony Lonesome I |
| 165. | 3085 Wyllys Place | 1972 | Stony Lonesome I |
| 166. | 3086 Wyllys Place | 1972 | Stony Lonesome I |
| 167. | 3087 Wyllys Place | 1972 | Stony Lonesome I |

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The following list presents those buildings that do not contribute to the USMA NHLD or meet the basic criteria for listing in the NRHP. Proposed work on these buildings does not require SHPO consultation so long as any project does not involve major exterior changes that may result in an effect on the USMA NHLD or any other Historic Landscape that is listed in or eligible for listing in the NRHP.

| | Address | Construction Date(s) | Subdivision Name/Address |
|------|--------------------|-----------------------------|---------------------------------|
| 168. | 3088 Wyllys Place | 1972 | Stony Lonesome I |
| 169. | 3102 Paterson Loop | 1997-1998 | Stony Lonesome II |
| 170. | 3104 Paterson Loop | 1997-1998 | Stony Lonesome II |
| 171. | 3106 Paterson Loop | 1997-1998 | Stony Lonesome II |
| 172. | 3108 Paterson Loop | 1997-1998 | Stony Lonesome II |
| 173. | 3110 Paterson Loop | 1997-1998 | Stony Lonesome II |
| 174. | 3112 Paterson Loop | 1997-1998 | Stony Lonesome II |
| 175. | 3114 Paterson Loop | 1997-1998 | Stony Lonesome II |
| 176. | 3120 Radiere Loop | 1997-1998 | Stony Lonesome II |
| 177. | 3122 Radiere Loop | 1997-1998 | Stony Lonesome II |
| 178. | 3124 Radiere Loop | 1997-1998 | Stony Lonesome II |
| 179. | 3126 Radiere Loop | 1997-1998 | Stony Lonesome II |
| 180. | 3128 Radiere Loop | 1997-1998 | Stony Lonesome II |
| 181. | 3130 Radiere Loop | 1997-1998 | Stony Lonesome II |
| 182. | 3132 Radiere Loop | 1997-1998 | Stony Lonesome II |
| 183. | 3134 Radiere Loop | 1997-1998 | Stony Lonesome II |
| 184. | 3140 Heath Loop | 1997-1998 | Stony Lonesome II |
| 185. | 3142 Heath Loop | 1997-1998 | Stony Lonesome II |
| 186. | 3144 Heath Loop | 1997-1998 | Stony Lonesome II |
| 187. | 3146 Heath Loop | 1997-1998 | Stony Lonesome II |
| 188. | 3148 Heath Loop | 1997-1998 | Stony Lonesome II |
| 189. | 3150 Heath Loop | 1997-1998 | Stony Lonesome II |
| 190. | 3152 Heath Loop | 1997-1998 | Stony Lonesome II |
| 191. | 3154 Heath Loop | 1997-1998 | Stony Lonesome II |
| 192. | 3156 Heath Loop | 1997-1998 | Stony Lonesome II |
| 193. | 3158 Heath Loop | 1997-1998 | Stony Lonesome II |
| 194. | 3160 Heath Loop | 1997-1998 | Stony Lonesome II |
| 195. | 3162 Heath Loop | 1997-1998 | Stony Lonesome II |
| 196. | 128 Bartlett Loop | 1948 | Bartlett Loop |
| 197. | 130 Bartlett Loop | 1948 | Bartlett Loop |
| 198. | 132 Bartlett Loop | 1948 | Bartlett Loop |

Table 4: Historic Landscapes & Views (For a complete discussion of these please refer to the *Historic Landscape Management Plan for the U.S. Military Academy at West Point, New York, 2001.*). These landscapes shall be preserved in accordance with the

- Hudson River Valley Heritage National Heritage Area
- The Plain
- Academic Area
- Flirtation Walk
- Kosciuszko's Garden
- Superintendent's Garden
- West Point Cemetery
- Professor's Row
- Thayer/Wilson Housing Area
- Lee Housing Area
- Lusk Housing Area
- The Waterfront
- Views & Vegetation, this includes views:
 - to and from Constitution Island
 - from Redoubts 1, 2, 3 & 4
 - From batteries and redoubts along Flirtation Walk
 - From Forts Putnam & Fort Clinton
 - From the Academic Area across the Plain and to the Hudson River
 - To the Academy from the river
 - From Historic Roadways
 - From the West Point Cemetery
- Historic Roads & Circulation Patterns including:
 - Cullum Road
 - Washington Road
 - Stony Lonesome Road
 - Thayer Road
 - Mills Road
- Athletic Fields including:
 - Buffalo Soldier's Field
 - Howse Field
 - South Fill
 - Clinton Field
 - Daly Field
 - Doubleday Field
 - North Field
 - Target Hill Athletic Fields

APPENDIX E: U.S. ARMY GARRISON PROJECT REVIEW PROCESS

The following outlines the process through which projects shall be reviewed by the CRM. The contractor/lessee shall afford the CRM the opportunity to participate in all scoping meetings and comment on all proposed design documents. Every effort will be made by the CRM and contractor/lessee to identify Cultural Resources issues early in the planning process.

- I.** The contractor/lessee shall submit documentation to the CRM including but not limited to:
- A. A detailed Scope of Work (SOW) that details the proposed action taken.
 - B. A set of construction drawings that clearly illustrate the proposed action.
 - C. Clear photographs of the project area

- II.** The CRM shall have 14 calendar days to review and provide comment to the contractor/lessee on the appropriateness of the proposed action. At the conclusion of 14 days the CRM shall:
- A. Make suggestions that will mitigate the proposed action or to bring it into compliance with the ICRMP, or;
 - B. Request more information from the contractor/lessee or schedule a site visit to gather more detailed information, or;
 - C. Submit the documentation to the NY SHPO with a “No Adverse Effect” finding if appropriate.

Suggestions, mitigation options or request for more options shall be submitted to the contractor/lessee in the format of a Memorandum for Record (MFR).

- III.** If more information is required or if changes to the proposed action are requested, the contractor/lessee shall review the comments of the CRM and make any appropriate changes to the proposed action. Once the appropriate changes are made contractor/lessee shall submit the modified project documents to the CRM.

- IV.** The CRM shall have 14 calendar days to review the modified project. The CRM shall forward the documentation to the NY SHPO along with a determination of effect for the proposed undertaking.

- V.** The NY SHPO shall review the material in accordance with 36 CFR § 800 *Protection of Historic Properties*, Subpart B-The Section 106 Process.

- VI.** If the contractor/lessee disagrees with the determination of the CRM, the terms of *Section VII) C): Dispute Resolution* shall apply.

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APPENDIX F
Economic Impact Forecast System

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ECONOMIC IMPACT FORECAST SYSTEM (EIFS) MODEL

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, demolition, construction, and renovation of family housing at USAG would have a multiplier effect on the local and regional economy. With the proposed action, direct jobs would be created (e.g., construction jobs), 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 many 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 on-line 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 is 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 based

on the concentration of industries within the region relative to the industrial concentrations for the nation.

The user inputs into the model the data elements which describe the Army action: the change in expenditures, or dollar volume of the construction project(s); change in civilian or military employment; average annual income of affected civilian or military employees; the percent of civilians expected to relocate due to the Army's action; and the percent of military living on-post. Once these are entered into the EIFS model, a projection of changes in the local economy is provided. These are projected changes in sales volume, income, employment, and population. These 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 RCI initiative at USAG would require renovation of some existing housing, demolition of some existing housing, construction of new housing, and construction of supporting facilities such as roads, community center, playgrounds and tot-lots, sports courts, and swimming pools. The current working estimate for the cost of demolition, renovation, and construction of these facilities (\$162,000,000) was divided over the projected 6-year initial development period and entered in the EIFS model as the change in expenditures (\$27,000,000 per year).

THE SIGNIFICANCE OF SOCIOECONOMIC IMPACTS

Once model projections are obtained, the Rational Threshold Value (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 a particular 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 input and output data for construction and the RTV values for the ROI. These data form the basis for the socioeconomic impact analysis presented in Section 4.9.2.1.

EIFS REPORT

PROJECT NAME

USAG RCI EA

STUDY AREA

36071 Orange County, NY

FORECAST INPUT

| | |
|-------------------------------------|--------------|
| Change In Local Expenditures | \$27,000,000 |
| Change In Civilian Employment | 0 |
| Average Income of Affected Civilian | \$0 |
| 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 | 3.15 | |
| Income Multiplier | 3.15 | |
| Sales Volume – Direct | \$27,000,000 | |
| Sales Volume – Induced | \$58,050,000 | |
| Sales Volume – Total | \$85,050,000 | 1.07% |
| Income – Direct | \$5,453,698 | |
| Income - Induced | \$11,725,450 | |
| Income – Total (place of work) | \$17,179,150 | 0.22% |
| Employment – Direct | 142 | |
| Employment – Induced | 304 | |
| Employment – Total | 446 | 0.30% |
| Local Population | 0 | |
| Local Off-base Population | 0 | 0.00% |

RTV SUMMARY

| | Sales Volume | Income | Employment | Population |
|--------------|--------------|--------|------------|------------|
| Positive RTV | 13.14% | 11.40% | 2.97% | 1.01% |
| Negative RTV | -6.02% | -4.58% | -3.64% | -0.69% |

RTV DETAILED**SALES VOLUME**

| Year | Value | Adj_Value | Change | Deviation | %Deviation |
|------|---------|-----------|---------|-----------|------------|
| 1969 | 555303 | 2426674 | 0 | 0 | 0 |
| 1970 | 593252 | 2450131 | 23457 | -41061 | -1.68 |
| 1971 | 662185 | 2622253 | 172122 | 107604 | 4.1 |
| 1972 | 753789 | 2887012 | 264759 | 200241 | 6.94 |
| 1973 | 809283 | 2921512 | 34500 | -30018 | -1.03 |
| 1974 | 852264 | 2769858 | -151654 | -216172 | -7.8 |
| 1975 | 882893 | 2631021 | -138837 | -203355 | -7.73 |
| 1976 | 954692 | 2692231 | 61210 | -3308 | -0.12 |
| 1977 | 1036503 | 2736368 | 44137 | -20381 | -0.74 |
| 1978 | 1143329 | 2812589 | 76221 | 11703 | 0.42 |
| 1979 | 1276875 | 2821894 | 9304 | -55214 | -1.96 |
| 1980 | 1377279 | 2671921 | -149972 | -214490 | -8.03 |
| 1981 | 1507561 | 2653307 | -18614 | -83132 | -3.13 |
| 1982 | 1612674 | 2677039 | 23731 | -40787 | -1.52 |
| 1983 | 1754948 | 2825466 | 148428 | 83910 | 2.97 |
| 1984 | 2008538 | 3093148 | 267682 | 203164 | 6.57 |
| 1985 | 2206799 | 3288131 | 194982 | 130464 | 3.97 |
| 1986 | 2407999 | 3515679 | 227548 | 163030 | 4.64 |
| 1987 | 2659195 | 4121752 | 606073 | 541555 | 13.14 |
| 1988 | 2925166 | 3978226 | -143526 | -208044 | -5.23 |
| 1989 | 3085984 | 3980919 | 2693 | -61825 | -1.55 |
| 1990 | 3257670 | 4006934 | 26015 | -38503 | -0.96 |
| 1991 | 3383286 | 3992277 | -14657 | -79175 | -1.98 |
| 1992 | 3603136 | 4107575 | 115298 | 50780 | 1.24 |
| 1993 | 3632853 | 4032467 | -75108 | -139626 | -3.46 |
| 1994 | 3726303 | 4024407 | -8059 | -72577 | -1.8 |
| 1995 | 3799435 | 3989407 | -35001 | -99519 | -2.49 |
| 1996 | 3952253 | 4031298 | 41891 | -22627 | -0.56 |
| 1997 | 4025515 | 4025515 | -5783 | -70301 | -1.75 |
| 1998 | 4295180 | 4209276 | 183761 | 119243 | 2.83 |
| 1999 | 4547765 | 4365854 | 156578 | 92060 | 2.11 |
| 2000 | 4829314 | 4491262 | 125408 | 60890 | 1.36 |

INCOME

| Year | Value | Adj_Value | Change | Deviation | %Deviation |
|------|---------|-----------|---------|-----------|------------|
| 1969 | 844810 | 3691820 | 0 | 0 | 0 |
| 1970 | 910624 | 3760877 | 69058 | -84090 | -2.24 |
| 1971 | 1024735 | 4057951 | 297073 | 143925 | 3.55 |
| 1972 | 1154156 | 4420417 | 362467 | 209319 | 4.74 |
| 1973 | 1272422 | 4593443 | 173026 | 19878 | 0.43 |
| 1974 | 1389862 | 4517052 | -76392 | -229540 | -5.08 |
| 1975 | 1516827 | 4520144 | 3093 | -150055 | -3.32 |
| 1976 | 1663681 | 4691580 | 171436 | 18288 | 0.39 |
| 1977 | 1829684 | 4830366 | 138786 | -14362 | -0.3 |
| 1978 | 2034580 | 5005067 | 174701 | 21553 | 0.43 |
| 1979 | 2296492 | 5075247 | 70181 | -82967 | -1.63 |
| 1980 | 2588540 | 5021768 | -53480 | -206628 | -4.11 |
| 1981 | 2921493 | 5141828 | 120060 | -33088 | -0.64 |
| 1982 | 3198951 | 5310259 | 168431 | 15283 | 0.29 |
| 1983 | 3434100 | 5528901 | 218642 | 65494 | 1.18 |
| 1984 | 3863000 | 5949020 | 420119 | 266971 | 4.49 |
| 1985 | 4173887 | 6219092 | 270072 | 116924 | 1.88 |
| 1986 | 4530966 | 6615211 | 396119 | 242971 | 3.67 |
| 1987 | 4928270 | 7638818 | 1023608 | 870460 | 11.4 |
| 1988 | 5362344 | 7292788 | -346030 | -499178 | -6.84 |
| 1989 | 5772365 | 7446351 | 153563 | 415 | 0.01 |
| 1990 | 6034896 | 7422922 | -23428 | -176576 | -2.38 |
| 1991 | 6303256 | 7437842 | 14920 | -138228 | -1.86 |
| 1992 | 6614439 | 7540460 | 102619 | -50529 | -0.67 |
| 1993 | 6719014 | 7458106 | -82355 | -235503 | -3.16 |
| 1994 | 6929858 | 7484247 | 26141 | -127007 | -1.7 |
| 1995 | 7182839 | 7541981 | 57734 | -95414 | -1.27 |
| 1996 | 7477746 | 7627301 | 85320 | -67828 | -0.89 |
| 1997 | 7749238 | 7749238 | 121937 | -31211 | -0.4 |
| 1998 | 8313767 | 8147492 | 398254 | 245106 | 3.01 |
| 1999 | 8692902 | 8345186 | 197694 | 44546 | 0.53 |
| 2000 | 9239299 | 8592548 | 247362 | 94214 | 1.1 |

EMPLOYMENT

| Year | Value | Change | Deviation | %Deviation |
|------|--------|--------|-----------|------------|
| 1969 | 92013 | 0 | 0 | 0 |
| 1970 | 90010 | -2003 | -4153 | -4.61 |
| 1971 | 92547 | 2537 | 387 | 0.42 |
| 1972 | 96208 | 3661 | 1511 | 1.57 |
| 1973 | 99367 | 3159 | 1009 | 1.02 |
| 1974 | 98225 | -1142 | -3292 | -3.35 |
| 1975 | 95200 | -3025 | -5175 | -5.44 |
| 1976 | 95738 | 538 | -1612 | -1.68 |
| 1977 | 97801 | 2063 | -87 | -0.09 |
| 1978 | 101212 | 3411 | 1261 | 1.25 |
| 1979 | 106053 | 4841 | 2691 | 2.54 |
| 1980 | 106617 | 564 | -1586 | -1.49 |
| 1981 | 107521 | 904 | -1246 | -1.16 |
| 1982 | 108499 | 978 | -1172 | -1.08 |
| 1983 | 110690 | 2191 | 41 | 0.04 |
| 1984 | 115799 | 5109 | 2959 | 2.56 |
| 1985 | 121561 | 5762 | 3612 | 2.97 |
| 1986 | 126608 | 5047 | 2897 | 2.29 |
| 1987 | 129957 | 3349 | 1199 | 0.92 |
| 1988 | 134852 | 4895 | 2745 | 2.04 |
| 1989 | 138415 | 3563 | 1413 | 1.02 |
| 1990 | 138975 | 560 | -1590 | -1.14 |
| 1991 | 138162 | -813 | -2963 | -2.14 |
| 1992 | 140905 | 2743 | 593 | 0.42 |
| 1993 | 141523 | 618 | -1532 | -1.08 |
| 1994 | 144572 | 3049 | 899 | 0.62 |
| 1995 | 143266 | -1306 | -3456 | -2.41 |
| 1996 | 145816 | 2550 | 400 | 0.27 |
| 1997 | 147759 | 1943 | -207 | -0.14 |
| 1998 | 152688 | 4929 | 2779 | 1.82 |
| 1999 | 157675 | 4987 | 2837 | 1.8 |
| 2000 | 160806 | 3131 | 981 | 0.61 |

POPULATION

| Year | Value | Change | Deviation | %Deviation |
|------|--------|--------|-----------|------------|
| 1969 | 218367 | 0 | 0 | 0 |
| 1970 | 222914 | 4547 | 654 | 0.29 |
| 1971 | 228094 | 5180 | 1287 | 0.56 |
| 1972 | 232020 | 3926 | 33 | 0.01 |
| 1973 | 236188 | 4168 | 275 | 0.12 |
| 1974 | 240618 | 4430 | 537 | 0.22 |
| 1975 | 245270 | 4652 | 759 | 0.31 |
| 1976 | 245803 | 533 | -3360 | -1.37 |
| 1977 | 250945 | 5142 | 1249 | 0.5 |
| 1978 | 255581 | 4636 | 743 | 0.29 |
| 1979 | 259883 | 4302 | 409 | 0.16 |
| 1980 | 260512 | 629 | -3264 | -1.25 |
| 1981 | 263659 | 3147 | -746 | -0.28 |
| 1982 | 267075 | 3416 | -477 | -0.18 |
| 1983 | 270563 | 3488 | -405 | -0.15 |
| 1984 | 275470 | 4907 | 1014 | 0.37 |
| 1985 | 279432 | 3962 | 69 | 0.02 |
| 1986 | 285092 | 5660 | 1767 | 0.62 |
| 1987 | 291920 | 6828 | 2935 | 1.01 |
| 1988 | 298403 | 6483 | 2590 | 0.87 |
| 1989 | 303688 | 5285 | 1392 | 0.46 |
| 1990 | 308803 | 5115 | 1222 | 0.4 |
| 1991 | 312038 | 3235 | -658 | -0.21 |
| 1992 | 315957 | 3919 | 26 | 0.01 |
| 1993 | 318999 | 3042 | -851 | -0.27 |
| 1994 | 320744 | 1745 | -2148 | -0.67 |
| 1995 | 323451 | 2707 | -1186 | -0.37 |
| 1996 | 326000 | 2549 | -1344 | -0.41 |
| 1997 | 328860 | 2860 | -1033 | -0.31 |
| 1998 | 332199 | 3339 | -554 | -0.17 |
| 1999 | 336630 | 4431 | 538 | 0.16 |
| 2000 | 342955 | 6325 | 2432 | 0.71 |

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

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APPENDIX G
Solid Waste Calculations

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Table G-1
Estimates of construction and demolition debris (CDD) generated as a result of implementing the RCI program at USAG

| Construction type | Debris (lbs/sf) | Subtotal (square feet) | Subtotal pounds CDD | Subtotal tons CDD |
|--------------------------|------------------------|-------------------------------|----------------------------|--------------------------|
| Renovation | 20.0 | 800,000 | 16,000,000 | 8,000 |
| Demolition | 115.0 | 300,000 | 34,500,000 | 17,250 |
| Construction | 4.4 | 300,000 | 1,320,000 | 660 |
| Gross Total | N/A | 1,400,000 | 51,820,000 | 25,910 |

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ACRONYMS and ABBREVIATIONS

| | | | |
|--------|---|-----------------|--|
| AAFES | Army and Air Force Exchange Service | EBS | Environmental Baseline Survey |
| ACHP | Advisory Council on Historic Preservation | EIFS | Economic Impact Forecast System |
| ACM | asbestos-containing materials | EMD | Environmental Management Division |
| ACP | access control point | EPA | U.S. Environmental Protection Agency |
| ACS | Army Community Service | EPD | Environmental Protection Division |
| ADNL | A-weighted decibels | ESA | Endangered Species Act |
| AEDBR | Army Environmental Database Restoration | ESMP | Endangered Species Management Plan |
| AR | Army Regulation | ES&PC | erosion, sedimentation, and pollution control |
| AST | aboveground storage tank | ESPCP | Erosion, Sedimentation, and Pollution Control Plan |
| BAH | Basic Allowance for Housing | °F | degrees Fahrenheit |
| BCTB | Basic Combat Training Brigade | FAR | Floor Area Ratio |
| Bldg | building | FEMA | Federal Emergency Management Agency |
| BMP | best management practice | FHMA | Family Housing Market Analysis |
| BO | Biological Opinion | FNSI | Finding of No Significant Impact |
| BOCA | Building Officials and Code Administrators | FOSL | Finding of Suitability to Lease |
| BR | bedroom | FOST | Finding of Suitability to Transfer |
| CAA | Clean Air Act | FPPA | Farmland Protection Policy Act (of 1981) |
| CAP | central accumulation point | ft ² | square feet |
| C&D | construction and demolition | FY | fiscal year |
| CCF | hundred cubic feet | GCR | general conformity rule |
| CDC | Child Development Center | HUD | U.S. Department of Housing and Urban Development |
| CDMP | Community Development and Management Plan | HWMP | Hazardous Waste Management Plan |
| CDNL | C-weighted decibels | IAP | Installation Action Plan |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act | ICRMP | Integrated Cultural Resources Management Plan |
| CEQ | Council of Environmental Quality | ID | Infantry Division |
| CFR | Code of Federal Regulations | IONMP | Installation Operational Noise Management Plan |
| cfs | cubic feet per second | INRMP | Integrated Natural Resources Management Plan |
| CHMCC | Central Hazardous Material Control Center | IRP | Installation Restoration Program |
| CO | carbon monoxide | JBO | Jeopardy Biological Opinion |
| CWA | Clean Water Act | kV | kilovolt |
| dB | decibels | kWh | kilo-watt-hour |
| dba | A-weighted decibels | LBP | lead-based paint |
| dbc | C-weighted decibels | LDN | day-night noise level |
| dBp | linear decibels | LEED | Leadership in Energy & Environmental Design |
| DDESS | Domestic Dependent Elementary and Secondary Schools | LLC | limited liability company |
| DoD | Department of Defense | LOS | Level of Service |
| DODEA | Department of Defense Education Activity | LUPZ | Land Use Planning Zone |
| DPW | Department of Public Works | MAHC | Maximum Acceptable Housing Cost |
| DRMO | Defense Reutilization and Marketing Office | MBTA | Migratory Bird Treaty Act |
| EA | Environmental Assessment | MCL | maximum contaminant level |
| | | MEC | munitions and explosives of concern |

| | | | |
|-----------------|--|--------|---|
| MGD | million gallons per day | PPM | parts per million |
| MHPI | Military Housing Privatization Initiative | PX | Post Exchange |
| MOA | Memorandum of Agreement | RCI | Residential Communities Initiative |
| MOU | Memorandum of Understanding | RCRA | Resource Conservation and Recovery Act |
| MP | Military Police | RD | Residential Density |
| MSA | Metropolitan Statistical Area | RFQ | Request for Qualifications |
| msl | mean sea level | RFI | RCRA Facility Investigation |
| MVA | megavolt-ampere | ROI | Region of Influence |
| NAAQS | National Ambient Air Quality Standards | RONA | Record of Nonapplicability |
| NAF | Non-Appropriated Fund | RTV | rationale threshold values |
| NCO | noncommissioned officer | SASC | School Age Service Center |
| NEPA | National Environmental Policy Act | SAPs | Satellite Accumulation Points |
| NESHAPS | National Emission Standards for Hazardous Air Pollutants | SHPO | State Historic Preservation Officer |
| NFA | no further action | SOP | Standard Operating Procedure |
| NHLD | National Historic Landmark District | SOX | sulphur oxides |
| NHPA | National Historic Preservation Act | SPDES | State Pollutant Discharge Elimination System Permit |
| NOI | Notice of Intent | SPiRiT | Sustainable Project Rating Tool |
| NO _x | nitrous oxides | SWMP | Storm Water Management Plan |
| NOV | notice of violation | SWPPP | Storm Water Pollution Prevention Plan |
| NPDES | National Pollutant Discharge Elimination System | TBD | to be determined |
| NPL | National Priorities List | TCE | trichloroethylene |
| NRCS | Natural Resources Conservation Service | TCP | Traditional Cultural Property |
| NRHP | National Register of Historic Places | TMDL | Total Maximum Daily Load |
| NWI | National Wetland Inventory | TSCA | Toxic Substances Control Act |
| OMA | Operations and Maintenance | USAG | U.S. Army Garrison |
| OOP | out-of-pocket | U.S.C. | United States Code |
| OSHA | Occupational Safety and Health Administration | USFWS | U.S. Fish and Wildlife Service |
| PA | Programmatic Agreement | USGS | U.S. Geological Service |
| PCBs | polychlorinated biphenyls | USMA | U.S. Military Academy |
| PCi/L | picocuries per liter | UST | underground storage tank |
| PCPI | per capita personal income | UXO | unexploded ordnance |
| PM | particulate matter | VOC | volatile organic compounds |
| PM 2.5 | particulate matter 2.5 | VSI | visual site inspection |
| PM 10 | particulate matter 10 | WLA | waste load allocation |
| PMO | Provost Marshall's Office | WPSC | West Point School Complex |
| POL | Petroleum oil and lubricants | WTP | water treatment plant |
| | | WWTP | wastewater treatment plant |