



**Corporate Headquarters:**  
451 Presumpscot Street  
Portland, Maine 04103

**Great Lakes Office:**  
Village Square  
33 Church Street  
Fredonia, New York 14063

**Mid-Atlantic Office:**  
134 Broad Street  
Stroudsburg, Pennsylvania  
18360

**FINAL  
ENVIRONMENTAL ASSESSMENT**

**CONSTRUCTION OF THE ANDERSON RUGBY  
COMPLEX AND NATIONAL COLLEGIATE  
ATHLETIC ASSOCIATION (NCAA) SOCCER  
FACILITY AT TARGET HILL FIELD**

**UNITED STATES ARMY GARRISON  
WEST POINT, ORANGE COUNTY, NEW YORK**



**GSA Contract No.: GS-10F-0421N  
Order Number: W911SD-05-F-0017**

**Prepared for: U.S. Military Academy  
Directorate of Housing and Public Works  
Building 667, Ruger Road  
West Point, New York 10996**

**Prepared by: Northern Ecological Associates, Inc.  
Village Square  
33 Church Street  
Fredonia, New York 14063**

**SEPTEMBER 2, 2005**

DIRECTORATE OF PUBLIC WORKS  
UNITED STATES ARMY GARRISON  
WEST POINT, NEW YORK

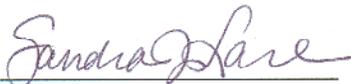
FINAL ENVIRONMENTAL ASSESSMENT

CONSTRUCTION OF RUGBY AND SOCCER FACILITIES  
AT TARGET HILL FIELD

AUGUST 2005

APPROVAL SHEET

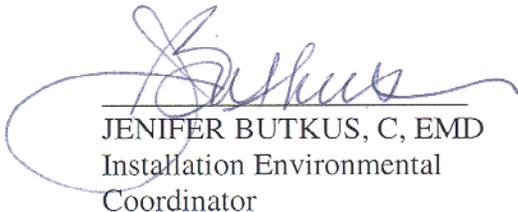




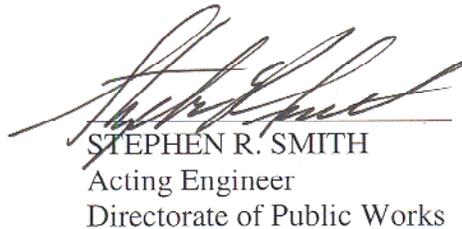
SANDRA J. LARE  
Managing Environmental Planner  
Northern Ecological Associates, Inc.



ALAN B. BJORNSEN, CEP  
NEPA Coordinator  
Installation Branch



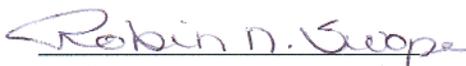
JENIFER BUTKUS, C, EMD  
Installation Environmental  
Coordinator

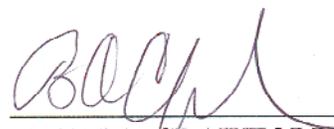


STEPHEN R. SMITH  
Acting Engineer  
Directorate of Public Works

LEGAL REVIEW:

APPROVED BY:

  
ROBIN N. SWOPE  
Colonel, JA  
Staff Judge Advocate

  
BRIAN A. CRAWFORD  
Colonel, FA  
Garrison Commander

**(This page intentionally left blank.)**

## FINDING OF NO SIGNIFICANT IMPACT

### Final Environmental Assessment

#### Anderson Rugby Complex and NCAA Soccer Facility at Target Hill Field U.S. Military Academy, West Point, New York

#### I. NAME OF ACTION

Anderson Rugby Complex and National Collegiate Athletic Association (NCAA) Soccer Facility at Target Hill Field, U.S. Military Academy, Town of Highlands, Orange County, New York.

#### II. DESCRIPTION OF ACTION

- a) **Proposed Action:** The Proposed Action consists of construction and use of a total of four (4) full-sized, synthetic turf athletic fields, including two (2) rugby fields and two (2) soccer fields in the area adjacent to the Hudson River at West Point that is known as Target Hill Field and presently occupied by athletic fields. Field lighting and scoreboards will be erected for each of the four fields. In addition, two multi-purpose buildings (one for each sport) will be constructed, each containing permanent spectator seating, team locker rooms with showers and bathroom facilities, public rest rooms, meeting rooms, coaches rooms, and other multi-purpose rooms.
- b) **Alternatives:** Alternatives to the Proposed Action considered include: the No Action Alternative, two alternative sites at West Point, and a series of alternative architectural designs and materials.

The No Action Alternative consists of not constructing the Proposed Action, resulting in West Point's continued use of the existing of natural grass sports fields at Target Hill Field for non-intercollegiate sports and general recreation, as well as occasional parking for spectators attending West Point football games and similar large events. With the No Action Alternative, West Point's intercollegiate rugby and soccer teams would continue to conduct practices and games on The Plain at West Point, which would be inconsistent with a key strategic initiative of West Point regarding its athletic venues – the removal of intercollegiate sports and reclamation of the athletic fields on The Plain so that The Plain would be used solely for intramural and sports club use. Therefore the No Action Alternative was not carried forward.

The two alternative sites that were considered at West Point included new development at the H-Lot site and upgrading Daly and Clinton fields (the existing intercollegiate rugby and soccer venues on The Plain). Based on consideration of logistical, land use compatibility, consistency with West Point's strategic initiatives for its athletic facilities and venues, and other similar issues, these alternative sites were not preferred over the Proposed Action.

Alternative architectural designs and materials also were considered during planning for the Proposed Action, and those that were judged to be the most

appropriate with regard to achieving compatibility with the existing architectural setting and minimizing adverse visual impacts at West Point were selected on an individual basis.

### **III. ANTICIPATED ENVIRONMENTAL EFFECTS**

The principal environmental impact issues related to the construction and operation of the Proposed Action include: soil stability at building construction sites and light pole locations; stormwater management in the vicinity of Crows Nest Brook in regard to its associated fish resources; visual impacts from new facilities and field lighting to several viewpoints along the Hudson River and river shore areas; and, the loss of parking space at the project site that is regularly used to accommodate guest parking for West Point's home football games and other large West Point Events.

Careful design, the use of good engineering and best management practices, and the implementation of certain operational procedures would mitigate these potential impacts.

### **IV. MITIGATION MEASURES**

Mitigation measures would be employed to address impacts from implementation of the Proposed Action, including, *but not limited to*:

- 1) Employ a geotechnical engineer during construction to inspect soil stability in certain areas of the site; implement erosion and sediment controls during construction;
- 2) Design the operational stormwater management system to comply with New York State requirements and avoid detrimental discharges to Crows Nest Brook;
- 3) Implement a variety of visual impact minimization measures; and,
- 4) Utilize alternative parking areas in more remote locations of West Point in conjunction with shuttle buses to accommodate guest parking for large public events at West Point.

Table 4 of the EA provides a comprehensive list of specific, detailed mitigation measures that West Point will employ to avoid, minimize, or mitigate each potential impact that would result from implementing the Proposed Action.

### **V. PUBLIC INVOLVEMENT**

West Point held a public information meeting to present and solicit public input on the Proposed Action on December 7, 2004 at 7 PM, at the West Point Visitors Center. The meeting was advertised in local newspaper publications one week in advance of the meeting.

The Draft EA and Draft Finding of No Significant Impact were made available for public review at the following locations:

Town Clerk's Office  
Town of Highlands  
254 Main Street  
Highland Falls, New York

Village Clerk's Office  
Village of Highland Falls  
303 Main Street  
Highland Falls, New York

Highland Falls Public Library  
298 Main Street  
Highland Falls, New York

West Point Community Library  
United States Military Academy, Building 622  
West Point, New York

Julia L. Butterfield Memorial Library  
Routes 301 & 9D  
Cold Spring, New York

The Alice Curtis Desmond and Hamilton Fish Library  
Routes 403 and 9D  
Garrison, New York

Village Clerk  
Village of Cold Spring  
85 Main Street  
Cold Spring, New York

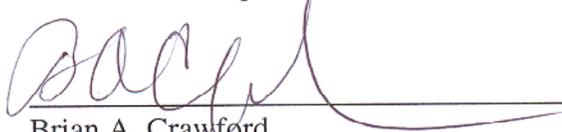
Supervisor's Office  
Town of Philipstown  
258 Main Street  
Cold Spring, New York

The public comment period on this proposed action lasted 30 days and ended on June 27, 2005. Comments and/or requests for individual copies of the Draft EA were directed to the following point of contact at West Point. Only two letters were received, and were incorporated into the Final EA.

Mr. Alan B. Bjornsen, CEP  
NEPA Coordinator  
Directorate of Housing and Public Works  
Building 667, Ruger Road  
West Point, NY 10996  
845-938-4129 (or fax 845-938-7046)  
alan.b.bjornsen@us.army.mil

## VI. FACTS AND CONCLUSIONS

Implementation of the mitigation measures identified in Table 4 of the Final EA would reduce the potential impacts of the Project, resulting in no significant adverse impacts to the environment. An Environmental Impact Statement is, therefore, not required.



Brian A. Crawford  
COL, FA  
Garrison Commander

**(This page intentionally left blank.)**

# TABLE OF CONTENTS

SECTION	PAGE
<b>1.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES .....</b>	<b>1</b>
<b>1.1 INTRODUCTION.....</b>	<b>1</b>
<b>1.2 BACKGROUND.....</b>	<b>3</b>
<b>1.3 PURPOSE AND NEED .....</b>	<b>5</b>
<b>1.4 PROPOSED ACTION.....</b>	<b>5</b>
1.4.1 Proposed Facilities .....	5
1.4.2 Construction Schedule .....	11
<b>1.5 ALTERNATIVES.....</b>	<b>12</b>
1.5.1 No Action Alternative.....	12
1.5.2 Alternative Sites.....	13
1.5.3 Alternative Designs.....	15
<b>2.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES .....</b>	<b>16</b>
<b>2.1 GEOLOGY AND SOILS .....</b>	<b>16</b>
2.1.1 Affected Environment.....	16
2.1.2 Environmental Consequences.....	17
<b>2.2 WATER RESOURCES .....</b>	<b>18</b>
2.2.1 Affected Environment.....	18
2.2.2 Environmental Consequences.....	21
<b>2.3 VEGETATION AND WILDLIFE .....</b>	<b>23</b>
2.3.1 Affected Environment.....	23
2.3.2 Environmental Consequences.....	26
<b>2.4 AIR RESOURCES .....</b>	<b>29</b>
2.4.1 Affected Environment.....	29
2.4.2 Environmental Consequences.....	29
<b>2.5 CULTURAL RESOURCES .....</b>	<b>30</b>
2.5.1 Affected Environment.....	30
2.5.2 Environmental Consequences.....	33
<b>2.6 LAND USE .....</b>	<b>34</b>
2.6.1 Affected Environment.....	34
2.6.2 Environmental Consequences.....	35
<b>2.7 RECREATION .....</b>	<b>35</b>
2.7.1 Affected Environment.....	35
2.7.2 Environmental Consequences.....	37
<b>2.8 VISUAL RESOURCES .....</b>	<b>37</b>
2.8.1 Affected Environment.....	37
2.8.2 Environmental Consequences.....	50
<b>2.9 COASTAL ZONE MANAGEMENT.....</b>	<b>59</b>
<b>2.10 TRAFFIC AND TRANSPORTATION.....</b>	<b>63</b>

## TABLE OF CONTENTS (CONTINUED)

SECTION	PAGE
2.10.1 Affected Environment.....	63
2.10.2 Environmental Consequences.....	63
<b>2.11 UTILITIES.....</b>	<b>66</b>
2.11.1 Affected Environment.....	66
2.11.2 Environmental Consequences.....	69
<b>2.12 MATERIALS AND WASTES .....</b>	<b>73</b>
2.12.1 Affected Environment.....	73
2.12.2 Environmental Consequences.....	73
<b>2.13 PUBLIC HEALTH AND SAFETY.....</b>	<b>75</b>
2.13.1 Affected Environment.....	75
2.13.2 Environmental Consequences.....	75
<b>2.14 NOISE .....</b>	<b>77</b>
2.14.1 Affected Environment.....	77
2.14.2 Environmental Consequences.....	77
<b>2.15 ADDITIONAL ENVIRONMENTAL CONSIDERATIONS.....</b>	<b>78</b>
2.15.1 Environmental Justice.....	78
2.15.2 Possible Conflicts Between the Proposed Action and Existing Land Use Plans, Policies, and Controls.....	79
2.15.3 Irreversible and Irrecoverable Commitments of Resources .....	79
2.15.4 Energy Requirements and Conservation Potential of Various Alternatives and Mitigation Measures .....	81
2.15.5 Urban Quality, Historic and Cultural Resources, and the Design of the Built Environment, Including Reuse and Conservation Potential of Various Alternatives and Mitigation Measures .....	82
2.15.6 Cumulative Effects of the Proposed Action in Light of Other Past, Present, or Reasonably Foreseeable Future Actions .....	82
2.15.7 Unavoidable Adverse Environmental Effects.....	88
<b>3.0 SUMMARY OF CONCLUSIONS .....</b>	<b>89</b>
<b>3.1 PROPOSED ACTION.....</b>	<b>89</b>
<b>3.2 ALTERNATIVES .....</b>	<b>89</b>
<b>3.3 ANTICIPATED ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES .....</b>	<b>90</b>
<b>4.0 REFERENCES.....</b>	<b>101</b>
<b>5.0 LIST OF PREPARERS.....</b>	<b>109</b>
<b>6.0 DISTRIBUTION.....</b>	<b>110</b>

## LIST OF FIGURES

FIGURE	PAGE
Figure 1. General Location of West Point, New York. ....	2
Figure 2. Aerial View of Target Hill Field, North Athletic Fields, and The Plain, at West Point, New York. ....	4
Figure 3. Conceptual Site Plans for the Proposed Rugby and Soccer Facilities, West Point, New York. ....	6
Figure 4. Preliminary “Birds Eye” View of the Proposed Rugby and Soccer Fields and Athletic Buildings. ....	7
Figure 5. Preliminary Plan View of Proposed Rugby Athletic Building, Ground and Second Floor Plans. ....	8
Figure 6. Preliminary Elevation and Perspective Renderings of the Rugby Athletic Building. ....	9
Figure 7. Subunits of the Hudson Highlands Scenic Area of Statewide Significance, West Point, New York. ....	43
Figure 8. Site Location Map for Recent Past, Present, and Reasonably Foreseeable Future Actions, West Point, New York. ....	85

## LIST OF TABLES

TABLE	PAGE
Table 1. Relevant Land and Airspace Use Plans, Policies, and Controls. ....	80
Table 2. Relevant Federal, Regional, and State Regulations and Permits. ....	81
Table 3. Recent Past, Present, or Reasonably Foreseeable Future Actions. ....	83
Table 4. Summary of Impacts and Mitigation Measures. ....	90
Table 5. Public and Agency Distribution List For Distribution of Environmental Assessment. ....	110

## APPENDICES

APPENDIX	CONTENTS
----------	----------

- |  |
|--|
| Appendix A. Visual Assessment of Proposed Project          |
| Appendix B. Copies of Public Comment Letters and Responses |

## LIST OF ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

ACHP	Advisory Council on Historic Preservation
A.D.	Anno Domini
ADA	Americans with Disabilities Act
AOG	Association of Graduates of the United States Military Academy at West Point
AR	Army Regulation
BMPs	Best Management Practices
B.P.	Before Present
°C	centigrade, degrees
ca.	circa
CFR	Code of Federal Regulations
CnA	Chenango gravelly silt loam, 0 to 3 percent slopes
CMP	Coastal Management Program
CRD	Community Recreation Division
dBA	Decibels, A-weighted
DHPW	Directorate of Housing and Public Works
DMI	Department of Military Instruction
DMWR	Directorate of Morale, Welfare and Recreation
DPE	Department of Physical Education
EA	Environmental Assessment
ESA	Endangered Species Act
ESRI	Environmental Systems Research Institute
°F	Farenheight
FEMA	Federal Emergency Management Agency
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HHSASS	Hudson Highlands Scenic Area of Statewide Significance
ICRMP	Integrated Cultural Resources Management Plan
Ldn	day-night noise level
mgd	Million gallons per day
MP	Military Police
NAAQS	National Ambient Air Quality Standards
NCAA	National Collegiate Athletic Association
NEPA	National Environmental Policy Act
NHLD	National Historic Landmark District
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NO <sub>x</sub>	nitrogen oxides
NPS	National Park Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation

## LIST OF ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

NYSDOS	New York State Department of State
NYSDOT	New York State Department of Transportation
NYSECL	New York State Environmental Conservation Law
NYSGS	New York State Geological Survey
NYSHPO	New York State Historic Preservation Officer
NYSOPRHP	New York State Office of Parks, Recreation, and Historic Preservation
ODIA	Office of the Directorate of Intercollegiate Sports
OVE	Otisville and Hoosic soils, 25 to 45 percent slope
psi	pounds per square inch
PVC	polyvinyl chloride
RFFA	Reasonably foreseeable future action
SASS	Scenic Area of Statewide Significance
SCS	Soil Conservation Service
SIP	State Implementation Plan
SOPs	Standard Operating Procedures
SPDES	State Pollutant Discharge Elimination System
USACE	United States Army Corps of Engineers
USCC	United States Corps of Cadets
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USEPA	United States Environmental Protection Agency
USFWS	USDI, Fish and Wildlife Service
USGS	United States Department of the Interior, Geological Survey
USMA	United States Military Academy
UXO	unexploded ordnance
VOC	volatile organic compound
West Point	United States Army Garrison West Point

**(This page intentionally left blank.)**

## 1.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

### 1.1 INTRODUCTION

The United States Army Garrison West Point (West Point) is planning to construct new athletic facilities for rugby and soccer at West Point, Orange County, New York. Specifically, West Point proposes to construct separate venues for rugby and soccer on its installation property, in the area called Target Hill Field, located on the western bank of the Hudson River, in the north end of the Main Post (Figure 1). The rugby facilities will be known as the Anderson Rugby Complex.

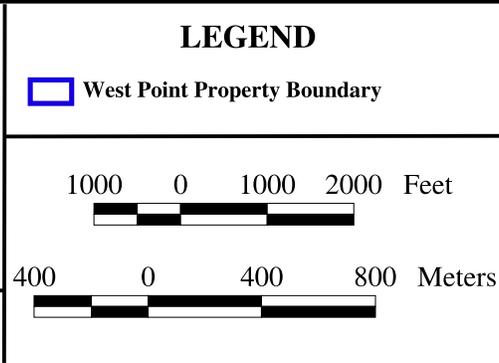
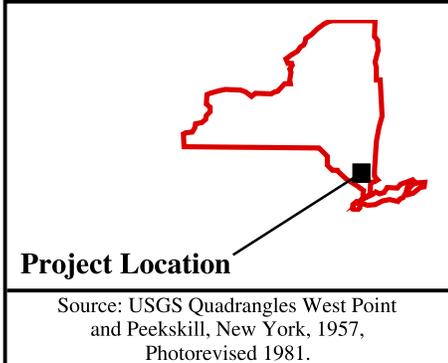
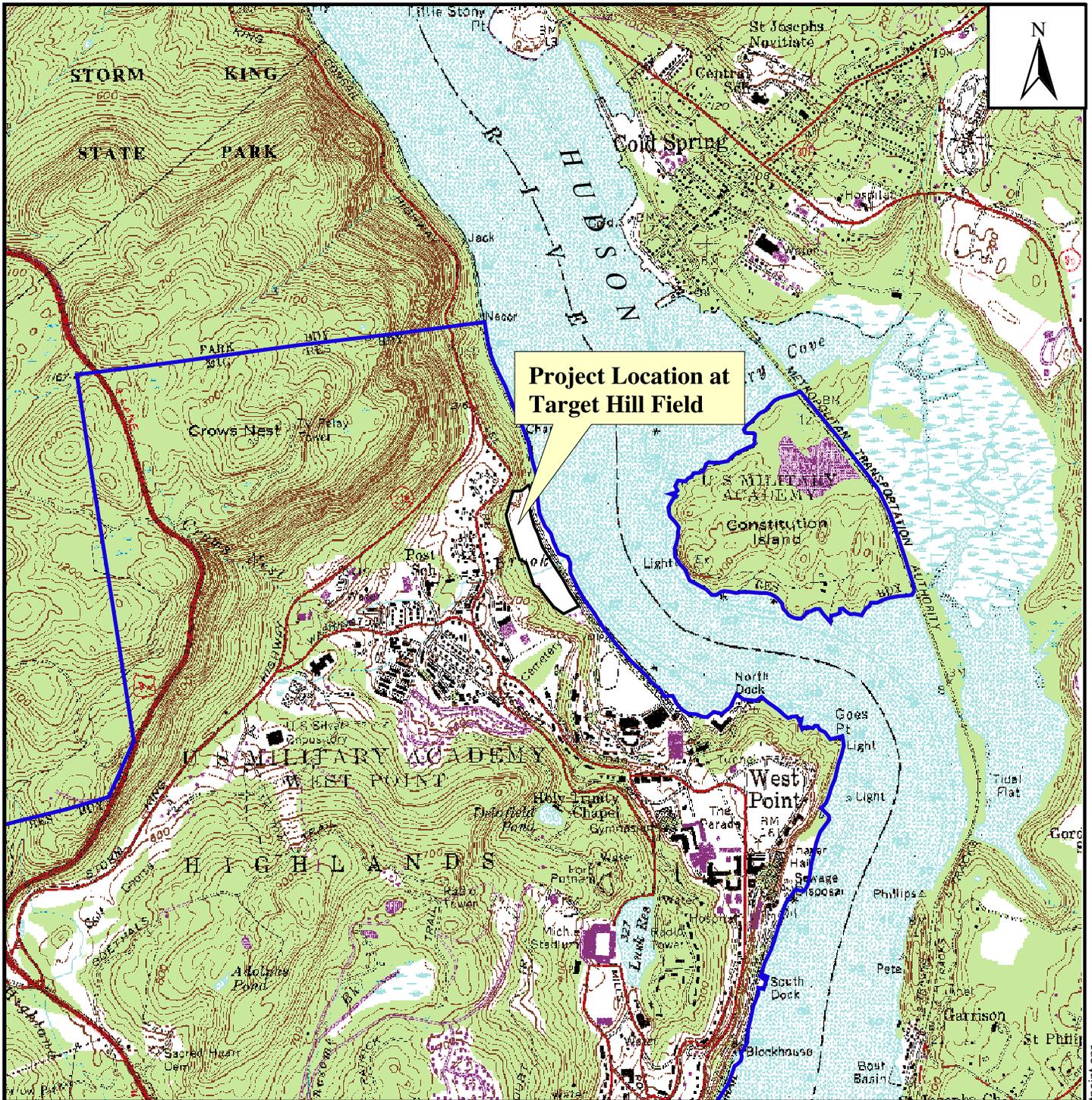
The proposed facilities consist of a total of four (4) full-sized, synthetic turf athletic fields, including two (2) rugby fields and two (2) soccer fields. In addition, field lighting and scoreboards would be erected for each of the four fields. Two multi-purpose buildings also would be constructed (one for each sport), each containing permanent spectator seating (grandstands), team locker rooms with showers and bathroom facilities, public rest rooms, meeting rooms, coaches rooms, and other multi-purpose rooms. These facilities are hereafter referred to as “the Project.”

This action is planned through West Point’s Directorate of Housing and Public Works (DHPW), and is intended for use primarily by West Point’s Intercollegiate Athletics program. Construction of the Project would likely occur in phases, allowing the construction of selected Project components at different times, depending on the availability of funding.

This environmental assessment (EA) was prepared to assess the potential environmental effects of implementing the proposed Project. This EA has been prepared in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and the regulations governing the U.S. Army’s policies and procedures for implementing NEPA (32 CFR Part 651, *Environmental Analysis of Army Actions*).

Our principal purposes in preparing this EA are to:

- identify and assess potential impact on the natural and human environment that would result from the implementation of the proposed action;
- assess reasonable alternatives to the proposed action that would avoid or minimize adverse effects on the environment; and,
- identify and recommend alternatives and specific mitigation measures as necessary to minimize environmental impact.



**Figure 1. General Location of West Point, New York.**

Client: U.S. Army Garrison at West Point

Prepared By: NEA

Date: 12/10/04

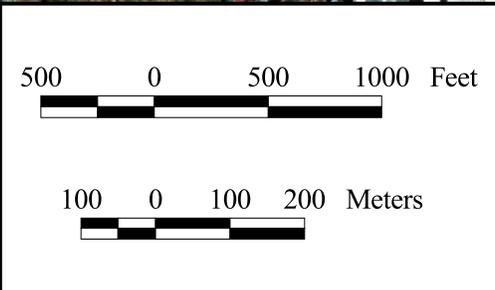
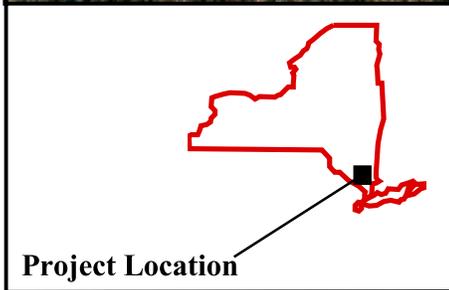
## 1.2 BACKGROUND

The proposed Project would be located in the area known as Target Hill Field, located on the western bank of the Hudson River, in the north end of the Main Post (Figure 2). Numerous natural grass multi-purpose athletic fields (e.g., used for rugby, soccer, lacrosse, and ultimate Frisbee) currently exist at this location on Target Hill Field. West Point currently uses this area for intramural sports, informal recreational use by Cadets and professors/instructors, and youth summer sports camps. In addition, Target Hill Field is occasionally used as a parking area for spectators attending large intercollegiate sports competitions, such as football games. Target Hill Field has the capacity to accommodate approximately 400 to 600 vehicles on the existing athletic fields.

The existing intercollegiate rugby team field, Daly Field, is located on The Plain (Figure 2). Daly Field consists of one natural grass field that currently is used for both home games and practices. Alternate practice fields are located over one mile away in the Stony Lonesome Area of the Main Post. There are no locker rooms or other team facilities available at either of these locations.

The existing intercollegiate soccer field, Clinton Field, also is located on The Plain (Figure 2). Clinton Field consists of a natural grass field that was upgraded with a complete underground drainage system in 1997. Home games currently are played on Clinton Field, and there is a practice field adjacent to the game field. However, most practice takes place on the North Athletic Field, situated between the softball and the track venues (Figure 2). Similar to rugby, currently there are no locker rooms or other team facilities at either the Clinton Field or the North Athletic Field locations. However, Building 609, located adjacent to Clinton Field (Figure 2), is currently being renovated to provide dedicated locker room facilities for use by the soccer team / Clinton Field users.

One of the "Key Strategic Initiatives" of the Office of the Directorate of Intercollegiate Athletics' (ODIA's) Sports Comprehensive Plan is to remove the intercollegiate team club sports venues (rugby, soccer, and tennis) from The Plain, with the exception of the baseball venue at Doubleday Field (West Point DHPW 2004). With the removal of the structures supporting these sports fields and courts, including associated seating, field lights, fencing, and other structures, The Plain would be available for the restoration and reclamation of the fields for intramural and sports club use. This area would be able to support approximately nine (9) fields, without field lighting. These unlit fields would be added to the domain of the United States Corps of Cadets (USCC) and/or the Department of Physical Education (DPE), and would essentially return The Plain to its historical use and appearance, when athletics first began at the West Point.



**Figure 2. Aerial View of Target Hill Field, North Athletic Fields, and The Plain, at West Point, New York**

Client:	 U.S. Army Garrison at West Point
Prepared By:	 NEA
Date:	12/10/04

Source: New York State Department of State Digital Ortho Imagery, 1994-1999.

### **1.3 PURPOSE AND NEED**

The purpose of the Project is to construct separate intercollegiate rugby and soccer athletic facilities at West Point. The rugby facilities will be known as the Anderson Rugby Complex. The ODIA's Sports Comprehensive Plan has several stated objectives that support the need for this Project.

One of the ODIA's Comprehensive Plan objectives involves consolidating team practice field and game field locations, as well as to consolidate team support facilities, such as lockers, strength training, equipment, and sports medicine (West Point DHPW 2004). A second ODIA objective includes improving men's and women's soccer practice and competition venues. The Project would contribute toward the ODIA's objectives, consolidating facilities at a single location where each team can both practice and compete; improving and expanding the rugby and soccer facilities; and overall, creating an identity and unique venue for each sport (West Point DHPW 2004).

A third ODIA objective is to offer and define sports activities and facilities at West Point that match or exceed comparable facilities at the other military academies and peer institutions (West Point DHPW 2004). This is considered to help attract and retain top-caliber Cadets, faculty, coaches, and staff. The proposed Project would be designed with the goal of developing a premier athletic venue, suitable for intercollegiate games and championship competitions.

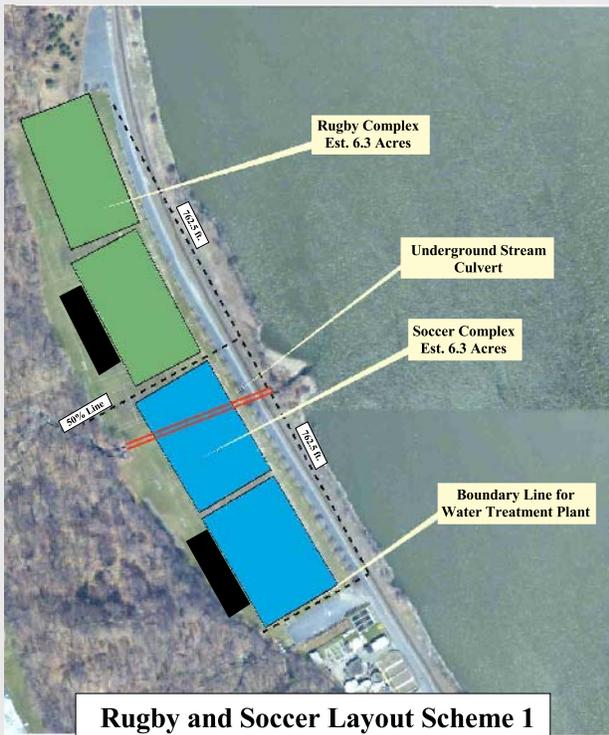
Finally, as noted in the previous section, a key strategic ODIA initiative is to remove the intercollegiate team game field facilities from The Plain (with the exception of Doubleday Field), and to restore and reclaim fields on The Plain for intramural and sports club use, similar to the historical uses of The Plain.

### **1.4 PROPOSED ACTION**

The following sections describe the Proposed Action and the planned phasing of the construction schedule.

#### **1.4.1 Proposed Facilities**

The Proposed Action consists of the construction and use of a total of four (4) full-sized, synthetic (artificial turf) athletic fields: two (2) fields for rugby (one for practice and one for competition/games), and two (2) fields for soccer (one for practice and one for competition/games). In addition, field lighting and scoreboards would be erected for each field, and two, 2-story, multi-purpose buildings would be constructed (one for each sport). Each building would be approximately 14,600 square feet (gross interior space), and would contain permanent seating (grandstands) for approximately 550 to 600 spectators, along with team locker rooms, showers, bathrooms, public rest rooms, meeting rooms, coaches rooms, and other multi-purpose rooms. The Project site at Target Hill Field encompasses approximately 12.8 acres. The "Proposed Action" and "the Project" will be referred to interchangeably in this EA. Figure 3 provides a set of



**Rugby and Soccer Layout Scheme 1**



**Rugby and Soccer Layout Scheme 1a**



**Rugby and Soccer Layout Scheme 1b**



**Rugby and Soccer Layout Scheme 2**

**LEGEND**

- Conceptual Soccer Field
- Conceptual Rugby Field
- Possible Location of Athletic Buildings & Granstands

**Scale: As Noted**

**Figure 3. Conceptual Site Plans for Rugby and Soccer Facilities at West Point, New York.**

**Client:** U.S. Army Garrison at West Point

**Prepared By:** NEA

**Date:** 4/19/05

Source: Images provided by U.S. Army Garrison at West Point

four conceptual site plans showing possible configurations of athletic fields and buildings for the Project.

Figure 4 provides an aerial “bird’s eye” view (conceptual illustration) of one possible configuration of the fields and buildings. Figure 5 provides a preliminary plan view of the rugby sports building, depicting the ground and second floor plans. Figure 6 provides preliminary elevation views of the rugby sports building.

**Figure 4. Preliminary “Birds Eye” View of the Proposed Rugby and Soccer Fields and Athletic Buildings.**



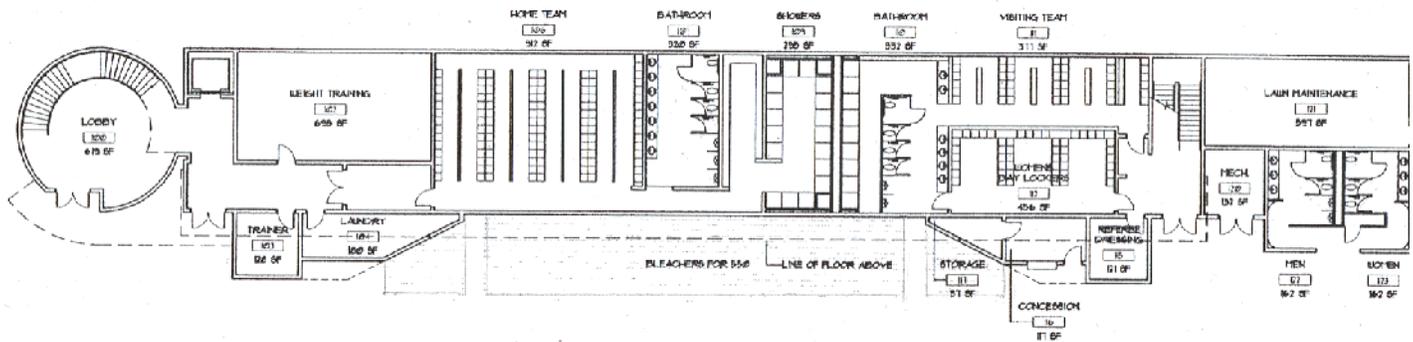
Source: West Point DHPW 2004.

Please note that all of the Project plans depicted in this EA represent conceptual, preliminary plans, as the planning process for this Project is still ongoing at this time. Therefore, these plans and figures are not yet final, and are subject to change based on refinements that may be suggested by West Point’s multi-disciplinary Project team, West Point’s architect and engineering consultant, and regulatory agency and public comments on this EA. It is the intent of this EA to address, to the extent possible, the environmental impacts associated with a range of reasonable possibilities, with regard to the position and configuration of the fields and buildings on the proposed Project site.

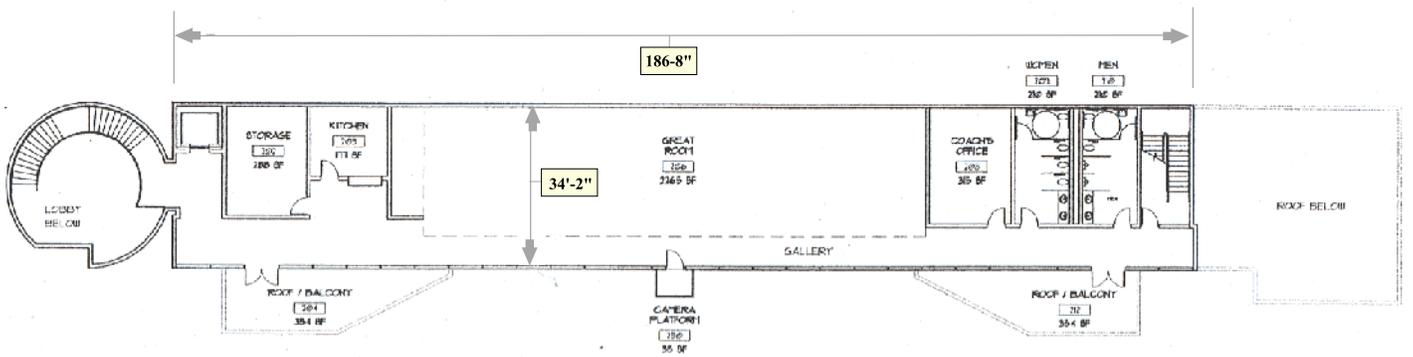
As shown on Figure 3, most (three of four) of the conceptual plans locate the rugby fields and facilities in the northern half of Target Hill Field and the soccer fields and facilities in the southern half of Target Hill Field. The positioning of the rugby fields within the northern half of the area could be either: both fields positioned end to end, aligned parallel to the Hudson River Shore (Layout Schemes 1 and 1a); or, one field aligned parallel to the shore and the other field aligned perpendicular to shore (Layout Scheme 1b). Similar alternative configurations for the soccer field in the southern portion of Target Hill Field also are being considered (Layout Schemes 1 and 1b versus Layout Scheme 1a) (Figure 3). In addition, one alternative field configuration (Layout Scheme 2) considers placing the soccer fields in the northern half of Target Hill Field and the rugby fields in the southern half (Figure 3).



**Ground Floor Plan**



**Second Floor Plan**



Gross Ground Floor	SF:	8,288	SF
Gross 2nd Floor	SF:	6,293	SF
Gross Bldg. Interior	SF:	14,581	SF
Gross Balcony / Platform 743 SF			
(Not Included in Gross Floor / Conditioned SF)			

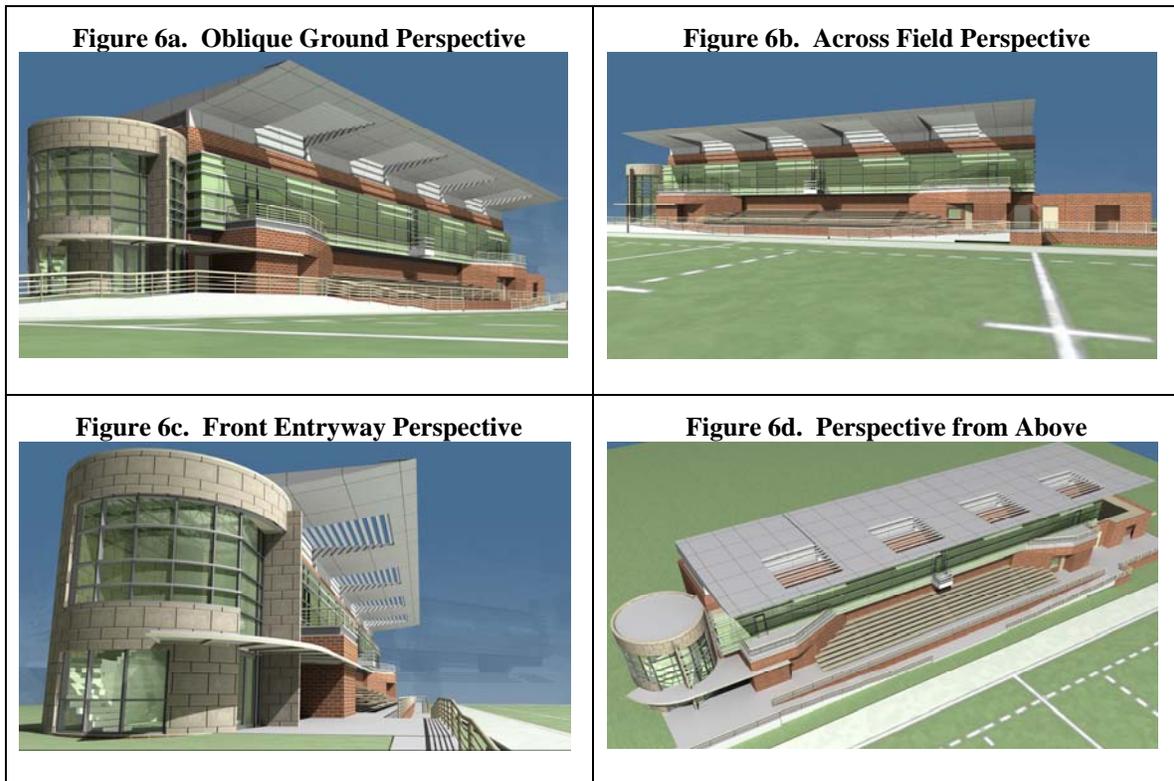
\*\*Subject to Change or Modification by Developer or Architect\*\*

Source: Farmer Baker Barrios Architects 2004.

Client:	 U.S. Army Garrison at West Point
Prepared By:	 NEA NORTHWEST ENVIRONMENTAL ASSOCIATES, INC.
Date:	4/5/05

**Figure 5. Preliminary Plan View of Proposed Rugby Athletic Building, Ground and Second Floor Plans.**

**Figure 6. Preliminary Elevation and Perspective Renderings of the Rugby Athletic Building.**



Source: Farmer Baker Barrios Architects 2004.

The artificial turf field playing surfaces would be constructed of a synthetic “grass” fiber (typically made of polyethylene and/or polypropylene) with a ground-up rubber (or rubber and sand) infill material. This synthetic turf playing surface would be installed over a new field drainage system, which generally would include layers of stone and gravel over plastic drainage pipes, which would direct field drainage into existing storm drainage systems in this area of West Point. Although the rugby fields would be synthetic turf fields, West Point may elect to retain the existing natural grass fields (instead of installing synthetic fields) for the new soccer fields, depending on financial constraints and other considerations at the time of decision.

The location, orientation, and design of the rugby and soccer sports buildings also are under ongoing consideration and subject to change. The current plans situate the buildings on the west side of the rugby and soccer fields that are aligned parallel to the Hudson River shore, taking advantage of the opportunity to not only provide spectators with a view of the game, but also provide a view of the Hudson River to the east. As presented in the four possible field and facility configurations in Figure 3, in the final plans the location of the buildings could shift from one field to another, or from one side of the field to another. In addition, the orientation of the buildings could be flipped to appear as a mirror image, with the entry lobby portion of the buildings facing north

instead of south. This building orientation could be altered to enable flexibility in routing an access driveway to the building, to approach from either the south or the north. Finally, the architectural design of the buildings is under review and could be altered; however, the final design selection would be architecturally compatible with (i.e., of similar architectural styles, materials, and designs) the historic structures at West Point.

Sports field lighting would be installed at each of the four fields. In general, the sports lighting would consist of lights (or luminaires) mounted on poles (or masts), around the perimeter of each field, aimed at the playing surfaces to illuminate the athletic fields. The field lighting would enable the extension of periods of field use into the evening hours, for practice and for competitions/games. Although the details and design of the field lighting system (including the mast height, location, and design; illumination level; lighting uniformity; and, luminaire type) are currently being developed, certain goals have been incorporated into the planning process to reduce the potential for negative visual effects from the field lighting system. In addition to planning for optimal field lighting for the players and spectators, West Point would ensure that techniques are incorporated into the field lighting design to control and reduce glare and obtrusive light effects on areas outside of the Target Hill Field.

Future parking for the new rugby and soccer facilities would be provided as parallel parking along Upton Road. However, this aspect would probably be delayed to a later phase of Project development, after construction of both the rugby and soccer facilities. In the approximately 1,800 feet of roadway between the water treatment plant and the northern end of Upton Road, approximately 100 parallel parking spaces would be available. This generally would be accessible and adequate for players when attending practices. Because of the limited amount of level terrain outside of the proposed athletic fields, no large surface parking areas are currently being considered or planned. However, a small area adjacent to the facilities would be reserved for handicap parking. The primary means of parking for spectators during games would be through the use of remote parking areas at West Point, with shuttle transportation to transfer spectators from the remote parking areas to Target Hill Field. In particular, remote parking lots include existing surface parking lots in the West Point Main Post/Academic Area, or alternative parking at the West Point range areas located west of the Main Post/Academic Area. These remote parking lots are already routinely used for spectator parking for other West Point intercollegiate sports competitions (such as football). The West Point Master Planner and ODIA are currently studying options for parking for the proposed Project, as well as planning for additional parking facilities on an installation-wide basis.

Upton Road, the existing dead-end access road leading into and out of Target Hill Field, may be widened as part of the proposed Project to accommodate heavier traffic and shuttle buses, along with the planned parallel parking. However, this aspect would probably be delayed to a later phase of Project development, after construction of both the rugby and soccer facilities. An existing turn-around area at the northern terminus of the road may be expanded into a larger traffic circle or cul-de-sac to better accommodate buses and vehicles with large turning radii. Finally, an access driveway with an adequately sized loop (for turnaround) would be constructed leading to each sports

building to enable vehicles and buses to drop off passengers. The locations of these driveways has not been finalized, but it is expected that they would extend from Upton Road to each of the buildings, routed between certain of the fields, or around the northern or southern ends and along the west side of the field area.

Although the specific details of the Project design have not yet been determined with regard to utility service, the Project would require the extension of utility lines and connections to serve the new facilities, due to the absence of most of the required utility lines at the Project site. In particular, the Project would require the extension of electric lines, potable water lines, sewage/wastewater lines, telecommunications cables/lines, and appropriate service for the selected heating/cooling systems (i.e., natural gas, oil, or electric). See Section 2.11 for a more specific discussion of utilities for the Project.

Depending on the final Project design, it may be necessary to clear and grade a small amount of forested hillside area adjacent to the west or north of Target Hill Field, to provide additional level space to accommodate the rugby athletic building, an edge of the athletic field (northwest end), and/or to expand the Upton Road turnaround area. Because of the prevalence of hard rock in these hillside areas, blasting of rock may be necessary to enable grading.

#### **1.4.2 Construction Schedule**

Construction of the Project would likely occur in phases, allowing the construction of selected Project components at different times, depending on the availability of funding. Funding for the Project is being contributed by both West Point and donations made through the Association of Graduates of the United States Military Academy at West Point (AOG). In particular, the rugby fields and rugby athletic building are being funded through the AOG, and the remainder of the Project would be funded by West Point, including the soccer fields and building, utility extensions (up to their entry points into all buildings and fields), and the access road(s) and parking for the Project.

It is currently anticipated that the Project components involving rugby would be developed first, and would be located in the northern half of Target Hill Field. Currently, construction of the rugby field and facilities is planned for construction in Fiscal Year 2005, and for purposes of organizing construction logistics, each separate component of the rugby facilities has been grouped by phase. Phase 1 would consist of the construction of two full-sized synthetic rugby athletic fields (one practice, one game). Phase 2 would consist of the installation of field lighting and scoreboards. Phase 3 would consist of the construction of the rugby building with permanent spectator seating (grandstands), team locker rooms, showers, bathrooms, public rest rooms, meeting rooms, coaches rooms, and other multi-purpose rooms. It is currently anticipated that construction of all three phases would occur in 2005. Or, if the availability of funding or other Project-controlling condition changes, it is possible that these phases could be constructed at separate times, or even subdivided into reasonable portions such that only a portion of a phase would be constructed at one time, and the remaining portion of that phase would be constructed at a later time.

It is currently anticipated that construction of the project components involving soccer would begin after construction of the rugby facilities. At this time, the plans for the soccer facilities are not as advanced or detailed as the plans for the rugby facilities. However, it is likely that the development of the new soccer facilities would take a similar track (i.e., Phase 1 – fields, Phase 2 – lights/scoreboard, and Phase 3 – building/grandstand).

## **1.5 ALTERNATIVES**

The following section describes the alternatives to the Proposed Action that were considered.

### **1.5.1 No Action Alternative**

The No Action Alternative consists of not implementing the Proposed Action or any alternative to the Proposed Action. West Point's existing natural grass sports facilities at Target Hill Field would remain as is, and would continue to be used by West Point for intramurals, sports clubs, and general recreation use, as well as occasional parking for spectators attending football games and other large intercollegiate sports competitions.

With the No Action Alternative, West Point's intercollegiate rugby team would continue to conduct practices and play games on a single field on The Plain, and the intercollegiate soccer team would continue to play games on The Plain and conduct practices on either the adjacent practice field or the North Athletic Fields.

Although the No Action Alternative would avoid Project-related environmental impacts, the soccer and rugby intercollegiate venues would continue to be located on The Plain, preventing the reclamation of the athletic fields on The Plain for intramural and sports club use. This would preclude the return of The Plain to the more spartan sports field character and use (i.e., without field lighting and large spectator grandstands) of historic times at West Point.

Therefore, the No Action Alternative would not satisfy the purpose and need for the Project.

## 1.5.2 Alternative Sites

### Rugby Facilities at H-Lot

West Point seriously and extensively considered an alternative site for new rugby facilities, located adjacent to its H-Lot (parking lot “H”), which is located adjacent to the current Post Exchange (Building 1204) in the Stony Lonesome area of the Main Post. This site is located approximately 1.1 mile southwest of the Target Hill Field Project area. As a result of adjacent features and development (including parking lot, buildings, and steep rocky hillsides leading both uphill and downhill from the site), the available area for development at H-Lot is limited to between 4 and 6.5 acres. Due to space constraints, only two rugby fields and an associated athletic building with spectator seating was considered for this site (i.e., the soccer facilities that are part of the proposed Project were not included in this alternative site design).

The primary advantages associated with the H-Lot alternative site include the on-site availability of existing utilities, which could result in reduced costs for utility extension/connection compared to the Target Hill Field site. In addition, access to existing parking facilities in the adjacent H-Lot and in the nearby parking lot for West Point Child Development Center could be used for rugby-associated parking. The parking could be shared, taking advantage of the vacancy timeframes that currently exist (vacancy during evenings and weekends), to accommodate peak times associated with rugby activities (peak occurs during late afternoon and evening on weekdays for practices, and during weekends for games). Finally, the H-Lot site is easily accessible from U.S. Route 9W being near the Stony Lonesome Gate, and is located outside of the more congested and traffic-sensitive areas of the Main Post/Academic Area, in contrast to the Target Hill Field site which is remote from major roadways and access is through the more congested and traffic sensitive areas of the Main Post/Academic Area.

Certain issues associated with the H-Lot alternative site are neutral issues in comparison with the proposed Project site at Target Hill Field (i.e., each site has similar issues), including: potential visual impact issues regarding field lighting, the need for compliance with cultural resources investigation and protection requirements (archaeology, architectural compatibility), the need for geotechnical investigation and possible requirement for special engineering design to address site fill constraints, and the loss of 21 paved parking spaces and an approximately 4- to 6-acre grass area that is currently used for spectator tailgating and parking during football games.

The disadvantages of the H-Lot alternative site are primarily a result of space constraints at the site that could not be mitigated, due to encroachment on all sides by existing development, parking areas that could not be removed (due to need for the effective function of adjacent existing uses), wetlands, and/or steep rocky hillsides. The site is too small for two regulation-sized rugby fields; one of the fields would have to be a reduced-size field. The site is also too small to accommodate an athletic building/grandstands of the desired size, so the building would have to be narrow and rock blasting a portion of the adjacent hillside would be required to accommodate the building on-site. In addition,

the development of rugby facilities at the H-Lot alternative location would limit the expansion potential of the adjacent uses, which were developed with uses dedicated to Community Support in the Stony Lonesome area, such as the current Post Exchange, the Commissary, the Class IV Store, and the Child Development Center. The H-Lot site would place athletics in an area not currently used for any other intercollegiate outdoor athletic facilities, and this location is quite distant and remote from the Cadet Zone, where the majority of rugby players reside. In particular, Cadets would need to travel (usually on foot) approximately 2 road miles, much of which are steep slopes uphill, from the Cadet Zone to the H-Lot site. Finally, as previously mentioned, the H-Lot alternative would not accommodate the soccer fields and building that are a component of the proposed Project at Target Hill Field, and therefore, an alternative venue for soccer (or continuation of use of the existing soccer venue at Clinton Field on the Plain) would be necessary.

The major considerations that factored into West Point's elimination of the H-Lot site as a viable alternative were associated with the distance and remoteness of the H-Lot site from the Cadet Zone, its lack of geographic association with other Cadet athletic facilities and activities, and its relatively small size that precluded combination of the proposed rugby and soccer facilities. In addition, the density and type of existing Community Support land uses surrounding the H-Lot were considered to be not directly compatible with intercollegiate rugby facilities, and would not be directly consistent with West Point's intent to develop this part of West Point with community support land uses serving the Stony Lonesome family housing area. Based on the disadvantages of the H-Lot location alternative, with due consideration of the advantages and neutralities, and combined with the consideration of the greater economy of scale that Target Hill Field offers for the combination of both rugby and soccer venues at a single and dedicated location, West Point eliminated H-Lot from detailed consideration as a preferred alternative.

#### Daly and Clinton Field Upgrade

An alternative to the creation of new sites for the Project was to upgrade the existing Daly Field (rugby) and Clinton Field (soccer) on The Plain. The existing rugby facilities at Daly Field consist of one natural grass field that is used for both home games and practices. There are no locker rooms or other team facilities at this location. The existing soccer facilities at Clinton Field consist of two natural grass fields (one for practice, one for games). Building 609, adjacent to Clinton Field (Figure 2), is currently being renovated to provide dedicated locker room facilities for use by the soccer team / Clinton Field users.

The Daly and Clinton Field Upgrade would involve: constructing one athletic building (with locker rooms, training facilities, and stadium grandstands), constructing an additional athletic (practice) field, and constructing and/or upgrading athletic field lighting at Daly Field; and, constructing one athletic building at Clinton Field (containing training facilities, stadium grandstands, and possibly locker rooms).

However, one of the “Key Strategic Initiatives” of the ODIA’s Sports Comprehensive Plan is to remove the intercollegiate and team club sports venues (rugby, soccer, and tennis) from The Plain, with the exception of the baseball venue at Doubleday Field (West Point DHPW 2004). The objective of this key initiative is to remove the structures supporting these sports fields and courts from The Plain, (including associated seating, field lights, fencing, and other structures) making this area available for smaller-scale intramural and sports club use, essentially returning The Plain to its historical use and appearance.

Because upgrading Daly Field and Clinton Field would be inconsistent with this key strategic initiative, this alternative was not selected as the preferred site location for the Project and was not favored over the Proposed Action.

### **1.5.3 Alternative Designs**

#### Currently Proposed Site, With Parking Lot Underneath the Fields and Buildings

The West Point Master Planner suggested a conceptual design alternative for the Project at the proposed Project site, in an attempt to address or mitigate for the loss of parking space that is currently used for football games. West Point considered constructing a covered parking lot on the entire Target Hill Field, and elevating the proposed rugby and soccer fields and buildings onto the roof of the parking facility an elevated platform. This alternative design was considered briefly but detailed study was not rigorously pursued because of the significant increased costs involved with such a design, in comparison to the proposed design.

#### Alternative Architectural Styles and Materials

As the architect/engineer contracted for the rugby portion of this Project proceeds with the planning and design process, West Point staff has been, and would continue to be, closely involved in reviewing and commenting on the architectural design and materials. Design elements and materials that are compatible with the existing setting (both natural and built environments) have been considered and incorporated into versions of the plans represented in this EA. All new construction would reflect careful attention to, and appropriate concern for, the architectural styles, materials, colors, designs, and finishes that are found at West Point, and the Hudson Valley scenic corridor in general. Alternative architectural styles and materials have been considered, to the extent that those styles and materials that were part of earlier draft plans, and considered not to be compatible with West Point’s standards in this regard, have been modified in current versions of the plans to be consistent with West Point’s standards. West Point has guided this aspect of the Project design by ensuring that its Cultural Resources Manager, who is an Architectural Historian, has conducted a thorough review of every revision of the Project plans. See Section 2.8.2.2 for more details regarding this aspect of planning the architectural styles and materials for the Project.

## **2.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

### **2.1 GEOLOGY AND SOILS**

#### **2.1.1 Affected Environment**

The Project is located in eastern Orange County, New York, in the New England Upland Section of the New England Physiographic Province (United States Department of the Interior, Geological Survey [USGS] 1995). The general landscape consists of steep, rocky hillsides typically created through the physical and chemical alteration of metamorphic rocks. The bedrock is exposed in many areas at West Point, such as the steep rock faces and cliffs fronting the Hudson River. Portions of the terrace slope bordering the Project are very steep, on the order of 25 to 45 percent, and faced with exposed bedrock (United States Department of Agriculture [USDA], Soil Conservation Service [SCS] 1981).

The surficial material present in the Project area is composed of man-made fill deposited in the 1940s and 1950s in the location referred to as the North Fill or Target Hill Field area. These sediments are characterized as having medium to coarse texture. The substratum is coarse-textured, stratified sand and gravel with moderate water movement ability (USDA SCS 1981).

The Project would be constructed on two soil types: Chenango gravelly silt loam (CnA), 0 to 3 percent slope and Otisville and Hoosic soils (OVE), 25 to 45 percent slope (USDA SCS 1981). Chenango gravelly silt loam soils are defined as deep, well-drained, gently sloping soil with a high gravel content (USDA SCS 1981). The soil is typically present on terraces along valley floors and on broad lowland plains, and is generally well suited for recreational uses (USDA SCS 1981). Otisville and Hoosic soils are defined as excessively drained, severely sloping soil, typically present along the front of terraces and on the sides of low hills (USDA SCS 1981). Otisville and Hoosic soils have very high erosion potential where soils are exposed, and are poorly suited for timber (USDA SCS 1981). Surface water drainage from the Lee Housing area, Buckner Hill, and the vicinity of the former Post Exchange flows down the slopes of the terrace to the north and west of the Project. The high erosion rates of the soils on the terrace slopes overlooking the Project, coupled with surface water runoff from multiple sources, has resulted in periodic blockage of the culverts beneath Target Hill Field directing flow to the Hudson River (Beemer 2005) (see Section 2.2 Water Resources and Section 2.11 Utilities, Storm Water Drainage, for a detailed discussion of Project surface water runoff and storm water drainage issues).

In 1961, a large fill area located at West Point along the west bank of the Hudson River suddenly subsided into the river, resulting in considerable property damage and loss, due to soil liquefaction (Taylor *et al.* 1980). Soil liquefaction is a phenomenon in which saturated, cohesionless soils temporarily lose their strength and liquefy when subjected to forces such as intense and prolonged ground shaking, such as earthquakes. Earthquakes

that may cause soil liquefaction occur in the Project area, as evidenced by a seismic event just west of Bull Hill on the West Point Military Reservation that registered 2.7 on the Richter scale in 2004 (Beemer 2005).

To address concerns regarding the soil's ability to support the proposed rugby and soccer buildings, a detailed geotechnical investigation was conducted at the Project in December 2004 (Tectonic Engineering and Surveying Consultants 2004). This investigation determined that the soils underlying the topsoil at the Project consist of native sand soils or an approximately 2 to 5 foot thick layer of fill overlying native sand soils. Groundwater was measured as shallow at approximately 10 feet below existing grade (Tectonic Engineering and Surveying Consultants 2004). Although borings were not performed at proposed light pole locations, it is anticipated, on the basis of the geotechnical investigation, that subsurface conditions at the light pole locations would consist of native sand soils, possibly overlain with a minor amount of fill (Tectonic Engineering and Surveying Consultants 2004).

### **2.1.2 Environmental Consequences**

Construction of any of the Project field configurations currently under consideration, utility extensions, and paved walkways and service access are only expected to impact surficial fill material, and excavations would not impact geological formations. The encountered soils would provide a suitable base for the construction of the proposed Project athletic fields (Tectonic Engineering and Surveying Consultants 2004).

The geotechnical survey concluded that construction of the rugby and soccer buildings and bleachers may be supported on conventional spread footing and continuous wall foundations bearing on undisturbed native sand soils or on compacted structural fill placed after removing existing fill soils that may locally extend to depths up to 5 feet below existing grade (Tectonic Engineering and Surveying Consultants 2004). Existing soil conditions allow shallow foundation building and bleacher support and are not subject to liquefaction (Tectonic Engineering and Surveying Consultants 2004). Construction of the rugby and soccer buildings and bleachers would not impact geological formations.

Construction of the light pole foundations would not impact geological formations. The geotechnical survey concluded that the proposed light poles for the Project can be supported on the proposed prefabricated direct burial foundations or on drilled shaft foundations (Tectonic Engineering and Surveying Consultants 2004). However, because the geotechnical borings were not performed at the exact locations of the light poles, the geotechnical survey report recommended that all foundation upgrades and excavation sidewalls at future light pole sites be inspected by a geotechnical engineer during construction to verify that conditions are consistent with those documented during the geotechnical investigation, verifying that proper support would be provided.

Construction of either of the proposed athletic field configurations or modifications to Upton Road would potentially result in the need to blast portions of the exposed bedrock

slope adjacent to the existing Target Hill Field. If blasting is required, West Point would require its construction contractor to obtain blasting permits, if required, and to comply with all associated blasting safety provisions.

In addition, earth moving and excavation would be required in the construction work area due to equipment movement and material storage. Disposal of unusable excavated materials (gravel and soil) would likely be in approved areas at West Point's Range 4 or H-Lot for repairs to grassed areas, or would be transported to an acceptable offsite location. Existing soil would be covered and compacted by the field systems and athletic buildings/grandstand facility foundations and walkways proposed in the various Project field configurations. Although the proposed Project would be located on soils that are classified as Prime Farmland, no actively cultivated farmland would be lost as a result of the Project.

Best management practices (BMPs) for erosion and sedimentation control would be implemented to mitigate the potential for soil erosion during earthmoving and excavation activities. Specifically, West Point would require the contractor to prepare an Erosion Control Plan, specifying BMPs for erosion and sedimentation control and stormwater management during construction. This plan would be reviewed and approved by West Point prior to the initiation of construction activities. The Erosion Control Plan would ensure compliance with the New York State Department of Environmental Conservation's (NYSDEC's) current stormwater management regulations for construction activities pursuant to the State Pollutant Discharge Elimination System (SPDES) that became effective March 10, 2003. As a result, no significant soil erosion or sedimentation would result from implementation of the Project.

## **2.2 WATER RESOURCES**

### **2.2.1 Affected Environment**

Water resources discussed in this section consist of groundwater, surface water, wetlands, and floodplains.

#### Groundwater

No Federally designated Sole Source Aquifers exist within or near the Project area (Olcott 1995, United States Environmental Protection Agency [USEPA] 2003a). Additionally, no state-designated Primary or Principal Aquifers exist within the Project area (Stegville 1999).

West Point relies on surface water sources, rather than groundwater, for most of its potable water supply. The only productive alluvial aquifers at West Point are associated with the Hudson River and Popolopen Brook, and these generally are shallow, water table aquifers (United States Military Academy [USMA] 2003). There are no private water wells located at the proposed Project area.

A geotechnical investigation conducted in December 2004 in the rugby portion (northern half) of the Project site indicated that groundwater depths ranged between 9.7 feet and 15.3 feet in 12 (of 16 total) soil boring locations in which groundwater was encountered (Tectonic Engineering and Surveying Consultants 2004 ).

### Surface Water

Surface waters in the vicinity of the Project include Crows Nest Brook and the Hudson River. In addition, surface runoff from areas uphill from the Project site (including the Lee Housing Area) runs down Target Hill in concentrated patterns adjacent to the Project area. Finally, two buried stormwater drainage pipes also are present in the Project area.

Crows Nest Brook, a perennial stream, flows from west to east through Target Hill Field. Currently, this stream is conveyed through a box culvert buried beneath the ground surface located at the approximate mid-point of Target Hill Field. Crows Nest Brook originates from several small tributaries draining Crows Nest Mountain, and the Crows Nest Watershed drains the northeastern portion of the West Point property. Crows Nest Brook discharges into the Hudson River adjacent to the east of the Project area. Crows Nest Brook is classified as Class C, designated as having a level of water quality that is suitable for primary and secondary contact recreation, and fish propagation and survival (NYSDEC 1996a). Despite the buried nature of the stream in the Project area, brown trout have been known to spawn in Crows Nest Brook near Target Hill Field. Accordingly, under West Point's "good stewardship" program, West Point conducts all activities located in the vicinity of this stream east of Lee Road with higher sensitivity than the state classification mandates (i.e., as if the stream classification was C(ts) [trout spawning]).

The Hudson River is located within 300 feet east of the Project area. The Hudson River is a major river system that originates in the Adirondack Mountains, flows generally southward approximately 304 miles to its mouth in Upper New York Bay, and drains approximately 13,500 square miles (USMA 2003). This river's flow characteristics in the vicinity of West Point are predominantly tidal, with tidal variations averaging 2.6 feet, and average flood and ebb currents of 1.0 knot and 1.1 knots, respectively (USMA 2003). The river is relatively narrow and deep in the vicinity of West Point, approximately 1,700 feet wide with a center channel depth of approximately 150 feet adjacent the Project area. The Hudson River is classified as Class B in the vicinity of West Point, designated as being best suited for primary and secondary contact recreation and fishing. These waters also are suitable for fish propagation and survival. The Hudson River estuary is an important habitat for many fish species, including brackish water species, anadromous and catadromous migratory species, and as a nursery for spawning estuarine and marine species.

Although it does not meet the criteria for designation as a stream, surface water runoff flows in concentrated patterns down the hillside in the northwest corner of the Project area. This hillside drainage is currently collected and conveyed through a buried drainage pipe at the north end of Target Hill Field and discharges into the Hudson River.

West Point recently has experienced flooding problems in the north end of Target Hill Field, associated with the collapse or blockage of this buried drainage pipe. However, this blockage would be repaired as part of West Point's routine grounds maintenance before construction of this Project.

A second buried stormwater drainage pipe is located at the south end of the Project area. This buried pipe is generally aligned east to west, and conveys water from the west and uphill of Target Hill Field, past and adjacent to the Target Hill Waste Water Treatment Plant, and eventually discharges to the Hudson River (Vollmer Associates 1999). The permitted discharge outfall for the wastewater treatment plant also is aligned with this stormwater drainage pipe.

Target Hill Field is drained via infiltration and sheet flow, without any associated structural drainage system installed under the fields.

### Wetlands

Based on an inventory and mapping of West Point wetlands conducted by the United States Army Corps of Engineers (USACE), New York District in 1993 (USMA 2003), National Wetland Inventory (NWI) maps (United States Department of the Interior [USDI], Fish and Wildlife Service [USFWS] 1990), and New York State Freshwater Wetlands maps (NYSDEC 1987), no state- or Federally-mapped wetlands are located within or immediately adjacent to the Project area.

### Floodplains

Based on review of the Federal Emergency Management Agency (FEMA) floodplain map showing the Project location at Target Hill Field, which depicts approximately 7 acres in the Project area as an open waterbody (Environmental Systems Research Institute [ESRI] and FEMA 2004), the base for the floodplain map apparently was derived from outdated maps depicting historical conditions (i.e., before earth fill was placed in the area). The currently accepted 100-year floodplain of the Hudson River in this area is characterized by a base flood elevation of 8 feet (Butkus 2004). The elevations at Target Hill Field were surveyed during a detailed topographic survey conducted for this Project, and determined to range between 13.0 and 19.8 feet (Tectonic Engineering and Surveying Consultants 2004). In addition, the elevated CSX Railroad embankment that parallels the Hudson River, located between the Hudson River and the Project area, is situated higher than the base flood elevation, and essentially functions as a flood barrier, of sorts, for Target Hill Field. Nevertheless, Target Hill Field occasionally has been subject to flooding from high river levels in the past 15 years (Beemer 2005). Therefore, although the Project area is not located in the mapped 100-year floodplain, situated within the accepted 100-year floodplain elevation, or directly open to receive floodwaters of the Hudson River, it has experienced flooding in the past 15 years.

## 2.2.2 Environmental Consequences

### Groundwater

Because no wells or primary, principal, or important aquifers occur at, or near, the proposed Project area, there would be no impact on groundwater supply sources.

Groundwater exists as shallow as 9.7 feet from the ground surface in some areas of the rugby (northern portion of the) Project area (Tectonic Engineering and Surveying Consultants 2004). Excavation and construction of the building footings and (slab) foundations would not be expected to reach, or encounter groundwater at, these depths. However, excavation and/or drilling for erection of light pole foundations may reach 15 feet deep or more, and encounter groundwater (Tectonic Engineering and Surveying Consultants 2004). In the event groundwater is encountered during construction, the contractor would need to dewater the excavated area to maintain the groundwater levels at least 2 feet below the lowest excavation depth, to help ensure the strength of the concrete during the curing process and the stability of the light pole foundations. Dewatering the excavation area would only be conducted temporarily, until the construction of the light poles are determined to be successfully installed. Following completion, pumping and/or well points would cease and be dismantled, and no permanent impacts to groundwater would likely result.

### Surface Water

The only surface water resources in the vicinity of the Project area are Crows Nest Brook (adjacent to and within/buried under the Project site) and the Hudson River (within 300 feet east of the Project site). No excavation or construction would take place in either of these waterbodies. Although excavation of Target Hill Field would be required to construct the synthetic fields, drainage system, and buildings, care would be taken to avoid disturbance of the buried box culvert that conveys Crows Nest Brook under the Project site. Similarly, care would be taken to ensure Project construction does not block or interfere with drainage systems that are currently in place to accommodate hillside drainage and stormwater at the northwest corner of the Project area, where flooding has been a problem in the past due to collapse or blockage of the drainage pipe.

During construction of the Project, any hazardous materials required for construction activities would be identified and managed in accordance with the *United States Military Academy Installation Spill Contingency Plan* (USMA 1996a). BMPs for erosion and sedimentation control also would be performed during construction. Accordingly, Project construction would not result in sedimentation, turbidity, or hazardous waste runoff into the Hudson River.

The new athletic field drainage system that would be installed under the synthetic fields would be tied into West Point's existing stormwater drainage system in this area, which discharges to the Hudson River. Although stormwater from the field area would likely drain faster with the proposed synthetic fields and field drainage system than it had with

the natural grass fields (which currently drain via infiltration and sheet flow), sediments should be effectively filtered by the layers of gravel that would underlie the fields. In addition, a layer of filter fabric may be placed between the subgrade and porous gravel material, and/or drainage piping may include a filter fabric wrapping, to further filter sediments or other particulate pollutants that may be present in the athletic field areas. All appropriate stormwater design and BMPs for operation would be incorporated into the Project drainage system; therefore, no significant increase in stormwater pollution to the Hudson River is expected to result from operation of the Project.

Although the details of the Project design have not yet been determined with regard to stormwater drainage, it is anticipated that the Project stormwater and field drainage system would connect with/discharge into one of the existing stormwater conveyances (e.g., the existing stormwater drain pipe at the north end of Target Hill Field, the buried culvert that conveys Crows Nest Brook across the center of Target Hill Field, or the drain pipe at the southern end of Target Hill Field), or a combination of these three existing structures. If stormwater from the synthetic field surface is discharged into the Crows Nest Brook box culvert, there is potential for increased temperatures of stormwater from the synthetic fields to warm the water temperature of Crows Nest Brook and adversely affect the conditions that support trout spawning and survival. Temperatures in this brook sustaining or supporting spawning trout have been measured at 20 to 21 degrees centigrade (°C), and it is estimated that increases in water temperatures of as little as 2 or 3 °C could be lethal to trout (Beemer 2005). This issue is under consideration as the design for the stormwater management systems for the athletic fields progresses. Efforts would be made to divert most of the Project stormwater discharge to either or both existing drainage pipes at the north and south ends of the fields, and to avoid discharging into the box culvert that conveys Crows Nest Brook (in the center of the Project area). Alternatively, if it is not feasible to avoid discharging to Crows Nest Brook, special stormwater system designs enabling the cooling of stormwater to acceptable temperatures before discharge into Crows Nest Brook would be implemented.

Finally, there is the potential for existing soil and drainage conditions adjacent to Target Hill Field to affect the drainage systems (or the effectiveness of such systems) that would be constructed for the Project. The soils on these slopes, and associated hillside surface water drainages at the north end of the fields (near the Lee Housing Area) and the west/southwest side of the fields (near the old Post Exchange) have combined to produce erosive conditions during large rain events. Over time, this erosion has resulted in periodic blockage of the buried drainage culverts under the north and south ends of Target Hill Field, which direct flow to the Hudson River (Beemer 2005). Periodic monitoring of these slopes, surface drainages, and associated buried culverts, and maintenance when required, would help to ensure the proper function of the existing and proposed surface water drainage structures.

## Wetlands

Because no state- or Federally-mapped wetlands are located within or immediately adjacent to the Project area, there would be no impacts on wetlands as a result of this Project.

## Floodplains

The Project area is not located in the mapped 100-year floodplain, situated within the accepted 100-year floodplain elevation (8 feet base flood elevation), or directly open to receive floodwaters of the Hudson River. Therefore, no adverse impacts on floodplains, floodways, or 100-year flood holding capacity of any stream or river would be anticipated to occur as a result of the Project. However, the Project area has experienced flooding from the Hudson River in the past 15 years. Currently, the building design does not include (and is not required to include) special floodproofing measures or specifications to prevent or minimize potential future flood damages. However, as a result of the proposed placement of the athletic buildings on the western, most landward (and highest elevation), side of Target Hill Field, the potential for future flood damages to the athletic facilities has been minimized.

## **2.3 VEGETATION AND WILDLIFE**

### **2.3.1 Affected Environment**

#### Common Vegetation and Wildlife

Vegetation in the Project area consists primarily of open, maintained grass athletic fields located adjacent to the Hudson River. The vegetation on the athletic fields is intensively maintained for recreational field use by mowing and the periodic application of seed, fertilizer, and herbicides. Although this lawn area is likely used by Canada geese (*Branta canadensis*) and common bird species such as American robins (*Turdus migratorius*) for foraging, most of the Project area can be characterized as an open, maintained monoculture that does not provide a significant source of food, cover, or other habitat to wildlife species.

Depending on the final Project design, it may be necessary to clear and grade a small amount of forested hillside area adjacent to the west or north of Target Hill Field to provide additional level space to accommodate either the rugby athletic building, an edge of the athletic field (northwest end), and/or to expand the Upton Road turnaround area. The vegetative cover on the hillside adjacent to Target Hill Field is characterized as forested uplands consisting of both Appalachian oak-hickory and oak-tulip tree forest community types. Typical species in Appalachian oak-hickory forested communities include: northern red oak (*Quercus rubra*), black oak (*Q. velutina*), and scarlet oak (*Q. coccinea*), with minor amounts of hickory (*Carya* spp.). White oak (*Q. alba*), chestnut oak (*Q. prinus*), and red maple (*Acer rubrum*) are also commonly associated with the oak-hickory community. The understory typically includes flowering dogwood (*Cornus*

*florida*), witch hazel (*Hamamelis virginiana*), shadbush (*Amelanchier canadensis*), and choke cherry (*Prunus virginiana*). Typical overstory species in oak-tulip tree forested communities include a mixture of five or more species, including all of those mentioned for the oak-hickory community type except hickory, and tulip tree (*Liriodendron tulipifera*), beech (*Fagus grandifolia*), and black birch (*Betula lenta*). The subcanopy and shrub layer species are typically diverse, and characteristic ground cover species include white wood aster (*Aster divarcatum*), New York fern (*Thelypteris noveboracensis*), wild geranium (*Geranium maculatum*), Solomon's seal (*Polygonatum biflorum*), and Jack-in-the-pulpit (*Arisema triphyllum*).

Common mammal species that are likely to occur in the forested areas adjacent to Target Hill Field include: eastern chipmunk (*Tamias striatus*), gray squirrel (*Sciurus carolinensis*), white-footed mouse (*Peromyscus leucopus*), opossum (*Didelphis virginianus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and white-tailed deer (*Odocoileus virginianus*). Black bear (*Ursus americanus*) also are known to forage adjacent to the Project site (Beemer 2005). In addition, many species of birds occur in forested and edge habitat areas at West Point, including red-tailed hawk (*Buteo jamaicensis*), which is known to nest and forage near the Project area (Beemer 2005).

The banks and adjacent shallows in the Hudson River provide migratory and foraging habitat for shorebirds and waterfowl, including mallards (*Anas platyrhynchos*), ring-necked ducks (*Aythya collaris*), spotted sandpipers (*Actitis macularia*), and great blue herons (*Ardea herodias*).

Although Crows Nest Brook is currently confined to flow through a buried concrete box culvert beneath Target Hill Field, this brook is known to support a variety of aquatic species in the immediate vicinity of Target Hill Field. Species documented in this brook in the vicinity the Project area include brown trout (*Salmo trutta*) (spawning adults, eggs, fry, and fingerlings have been observed), wild rainbow trout (*Onchorynchus mykiss*) (two adults have been observed), and stocked brook trout (*Salvelinus fontinalis*) (Beemer 2005). In addition, eastern blacknose dace (*Rhinichthys atratulus*), American eels (*Anguilla rostrata*), Appalachian brook crayfish (*Cambarus bartonii*), and northern two-lined salamanders (*Eurycea bislineata*) are also known to occur in Crows Nest Brook (Beemer 2005).

### Threatened and Endangered Species

Based on surveys and work described in West Point's Integrated Natural Resources Management Plan, 128 plant and wildlife species with special protection status (including Federal- or state-listed threatened or endangered species, or species of special concern for either the Federal or state level) have been documented on the West Point installation property (USMA 2003). These include three (3) mammal species, 19 bird species, six (6) reptile species, four (4) amphibian species, two (2) fish species, one (1) insect species, 14 rare or otherwise noteworthy odonates (dragonflies and damselflies), 14 rare butterflies, two (2) moth species, and 63 rare plants (USMA 2003).

Of these species with special protection status, only the bald eagle (*Haliaeetus leucocephalus*), the shortnose sturgeon (*Acipenser brevirostrum*), and the Atlantic sturgeon (*Acipenser oxyrinchus*) are pertinent for discussion in relation to the proposed Project and Project area.

The bald eagle is a Federal- and state-listed threatened species that is known to occur in the vicinity of West Point, particularly during the winter season. Bald eagle activity around the Hudson River adjacent to the Project site and Constitution Island (across the river) is among some of the highest levels for the lower Hudson River Valley wintering bald eagle population (Beemer 2005). Bald eagles have been observed flying over the Project area and sitting in trees along the western side of Target Hill Field. The West Point Natural Resources Branch has intensively studied and surveyed this species, and bald eagles have been sighted at West Point during every month of the year (USMA 2003). To ensure compliance with applicable endangered species regulations, West Point has coordinated with the NYSDEC and USFWS and developed a programmatic *Endangered Species Management Plan for the Bald Eagle* (Beemer 2002). The programmatic management plan requires that West Point consult informally and formally with the USFWS pursuant to Section 7 of the Endangered Species Act (ESA), and the NYSDEC pursuant to the New York State Environmental Conservation Law (NYSECL), regarding any West Point construction activity that may disrupt bald eagle activity at West Point.

The shortnose sturgeon, a Federal- and state-listed endangered fish species, is known to occur in the Hudson River immediately adjacent to West Point and the Project area (USMA 2003). Although the Project would not involve any construction activities in the Hudson River, the new under-field drainage system for the new athletic fields would discharge eventually to the Hudson River. Shortnose sturgeon is a long-lived, deepwater fish that feeds on mollusks and other benthic macroinvertebrates. Shortnose sturgeon use of the area adjacent to West Point is believed to be limited, as this portion of the Hudson River is not a known spawning location or an important wintering area (Beemer 1998). The only likely sturgeon activity in the section of river near West Point is believed to be individuals moving to and from the Haverstraw Bay wintering area in the southern part of its range, in response to changing water temperatures. Activity occurs near West Point during April through May, and October through November, and individuals also have been captured near West Point outside of these timeframes (Beemer 1998, Beemer 2005). West Point has coordinated with the USFWS, NYSDEC, and the National Oceanic and Atmospheric Administration (NOAA)/National Marine Fisheries Service (NMFS) to develop a programmatic *Endangered Species Management Plan for the Shortnose Sturgeon* (Beemer 1998). The goals of this plan are to prevent any adverse impacts to the shortnose sturgeon from any of West Point's construction activities along the Hudson River, and to ensure that West Point's construction projects and operational activities do not pollute the Hudson River and harm the sturgeon. One part of this programmatic management plan requires that West Point consult, if necessary, with NMFS pursuant to Section 7 of the ESA, and the NYSDEC pursuant to the NYSECL, regarding any West Point activities in the Hudson River.

Similar to the shortnose sturgeon, the Atlantic sturgeon is a long-lived, anadromous fish that feeds on small, bottom-dwelling fish, mollusks, and other benthic macroinvertebrates. With a range consisting of the entire Atlantic coast of the United States, Atlantic sturgeon tend to make more extensive coastal migrations than the shortnose sturgeon (Van Den Avyle 1984). Atlantic sturgeon is not currently listed as an endangered, threatened, or candidate species on either the Federal (USFWS 2005a, USFWS 2005b) or state lists (NYSDEC 2003a, NYSDEC 2003b). However, because of declining stocks nationwide, this species has been proposed as a candidate species for Federal listing, and also is a species of special concern to the NOAA – Fisheries (Beemer 2005). This species' habitat ranges from rivers and estuaries to nearshore coastal waters, as Atlantic sturgeon spawn in rivers and the young remain in freshwater for several years before emigrating to the ocean. Atlantic sturgeon uses the section of the Hudson River adjacent to the Project area heavily (Beemer 2005). Although the Project would not involve any construction activities in the Hudson River, the new under-field drainage system for the new athletic fields would discharge to the Hudson River.

### **2.3.2 Environmental Consequences**

#### Common Vegetation and Wildlife

No significant adverse impacts to common vegetation or wildlife are expected to result from construction or operation of the Project. Minimal to no tree clearing would be required to construct the synthetic athletic fields and buildings because the Project site is already maintained and used as open athletic fields. Approximately 12.8 acres of natural maintained grass would be converted to synthetic turf, buildings, and paved areas associated with the Project. However, this loss is not deemed significant because the open athletic fields currently provide little in the way of suitable habitat for wildlife, and this covertype is present in many other nearby areas.

Depending on the field configuration selected and the final design plans, a minor amount of clearing of forested area on the lower portion of the hillside adjacent to Target Hill Field may be required to accommodate either a portion of a rugby or soccer building, the northwest corner of a rugby field, or an expansion of the Upton Road turnaround area. If necessary in all of these potential areas, the clearing would total an estimated maximum of approximately 0.51 acre<sup>1</sup>. If clearing and grading are required, the amount would be limited to the minimum area necessary and likely would be less than 0.51 acre. The amount cleared would be located along the edges of the large forested hillside and insignificant compared to the remainder of the forested areas that would be retained. Impacts to wildlife from this amount clearing, if required, would be negligible.

Although the details of the Project design have not yet been determined with regard to stormwater drainage, it is anticipated that the Project stormwater and field drainage system would connect with/discharge into either the existing stormwater drain pipe at the

---

<sup>1</sup> 0.51 acre of potential clearing consists of: clearing for soccer building in Scheme 2 = 0.06 acre, clearing for southern rugby field in Scheme 1b = 0.11 acre, clearing for northern end of rugby field in scheme 1 = 0.11 acre, and clearing for expanded turnaround at the end of Upton Road = 0.23 acre.

north end of Target Hill Field, the buried culvert that conveys Crows Nest Brook across the center of Target Hill Field, the drain pipe at the southern end of Target Hill Field, or a combination of these structures. As a result of the planned design of the stormwater drainage systems at the athletic fields (described in Section 2.2.2), significant discharge of sedimentation into Crows Nest Brook is not anticipated. However, if stormwater from the synthetic field surface is discharged into the Crows Nest Brook box culvert, there is potential for increased temperatures of stormwater from the synthetic fields to warm the water temperature of Crows Nest Brook and adversely affect the conditions that support trout spawning and survival. Temperatures in this brook sustaining or supporting spawning trout have been measured at 20 to 21 °C, and it is estimated that an increase in water temperatures of as little as 2 or 3 °C could be lethal to trout (Beemer 2005). This issue is under consideration as the design for the stormwater management systems for the athletic fields progresses. Efforts would be made to divert most of the Project stormwater discharge to either or both existing drainage pipes at the north and south ends of the fields, and to avoid discharging into the box culvert that conveys Crows Nest Brook (in the center of the Project area). Alternatively, if it is not feasible to avoid discharging to Crows Nest Brook, special stormwater system designs enabling the cooling of stormwater to acceptable temperatures before discharge into Crows Nest Brook would be implemented.

#### Threatened and Endangered Species

Although the bald eagle, shortnose sturgeon, and Atlantic sturgeon are known to occur in the vicinity of the Project area, no significant adverse effects are anticipated to result from construction or operation of the proposed Project, provided that appropriate mitigation measures are implemented, if required by the USFWS, NOAA – Fisheries, and/or the NYSDEC. Because the details of the Project plans are still being formalized, West Point has not yet introduced or discussed this Project with the USFWS, NOAA – Fisheries, or the NYSDEC’s Endangered Species Unit and Hudson River Fisheries Unit. However, West Point would determine the consultation requirements and consult to obtain these agencies’ input, as warranted and required, prior to construction.

Minimal to no tree clearing would be required to construct the synthetic athletic fields, as the Project site is already maintained and used as open athletic fields. Although the Project area is located in a bald eagle wintering area and adjacent to bald eagle foraging areas along the Hudson River, the Project site itself does not currently serve as bald eagle foraging habitat (being maintained as grassy athletic fields). Aside from the minor amount of tree clearing that may be required to accommodate the northwestern corner of a rugby field, the western edge of a rugby or soccer building, or an expanded turnaround area on Upton Road, the development of these facilities would not result in a loss of bald eagle wintering or foraging habitats. However, human activity, such as from certain construction activities and the use of the completed fields, could be of sufficient intensity to disrupt bald eagle foraging or resting use of areas in the immediate vicinity of the Project site, if the timing of these (eagle and human) activities is coincidental and the individual eagles using these areas are sensitive to these disturbances. However, given the levels of noise and human activity that regularly occur in the vicinity of the Project

area, the eagles that use the bald eagle wintering area are likely to have an increased degree of tolerance to human disturbances. For example, three to four freight trains per hour travel past the Target Hill Field area on the western shore of the Hudson River, totaling approximately 30 trains per day; numerous passenger trains (Amtrak and Metro North trains) travel along the eastern shore of the Hudson River; and ships regularly travel along the Hudson River waterway. Accordingly, this regular human activity, noise, and traffic in this river corridor have not prevented it from being utilized by wintering bald eagles. Although the planned construction period for the initial phases of construction (fall 2005) would avoid the bald eagle wintering season, a typical impact minimization measure restricting construction activities to the period between April 1 and November 30 may be applied (i.e., for subsequent phases) if deemed warranted by West Point, the USFWS, and/or the NYSDEC. Therefore, in accordance with the provisions of its *Endangered Species Management Plan for the Bald Eagle*, West Point would determine whether consultation with these agencies is necessary pursuant to this Project, and if so, would work with the applicable agencies to ensure that Project implementation would not adversely affect the bald eagle. In addition, if construction activities were necessary during the bald eagle wintering season, West Point's Natural Resources Branch would monitor the activities in relation to bald eagle activities and would have the authority and discretion to stop any activities that may cause undue adverse effects to wintering bald eagles.

Similarly, the Project would not involve any activities in the Hudson River, and therefore, direct impacts to the shortnose sturgeon and Atlantic sturgeon are not expected from construction of the Project. BMPs for soil erosion and sedimentation control would be implemented during Project construction to ensure that stormwater runoff is properly managed during construction and sturgeon habitat (and other aquatic habitat) in the Hudson River would not be adversely affected by stormwater pollution. The new drainage system that would be installed under the new athletic fields would discharge stormwater from the field area to West Point's existing stormwater drainage system, which discharges to the Hudson River. Although stormwater from the athletic fields would likely drain faster with the proposed synthetic fields and field drainage system than it has with the natural grass fields (which currently drain via infiltration and sheet flow), sediments would be effectively filtered by the layers of gravel that would underlie the fields. In addition, a layer of filter fabric may be placed between the sub grade and porous gravel material, and/or drainage piping may include a filter fabric wrapping, to further filter sediments or other particulate pollutants that may be present in the athletic field areas. In addition, all appropriate stormwater design and BMPs for operation would be incorporated into the Project drainage system; therefore, no significant increase in stormwater pollution to the Hudson River is expected to result from the Project. Accordingly, West Point does not anticipate that Project implementation would adversely affect the shortnose sturgeon or Atlantic sturgeon.

## **2.4 AIR RESOURCES**

### **2.4.1 Affected Environment**

West Point, including the Project area, is located in the southern portion of the Hudson Valley Air Quality Control Region, in the Lower Orange County Metropolitan Area (USMA 2003). Southern Orange County is currently classified as an attainment area for all National Ambient Air Quality Standards (NAAQS) criteria pollutants (carbon monoxide, nitrogen dioxide, particulate matter, lead, and sulfur dioxide), except ozone (NYSDEC 1996b, NYSDEC 1996c). Southern Orange County is classified as a severe non-attainment area for ozone (NYSDEC 1996b).

There are several major stationary and mobile sources of air pollutant emissions present in the greater West Point property. Stationary sources include ten gas-fired boilers, two incinerators, a restricted burn site, and nuclear, biological, and chemical training activities. Mobile sources include vehicular traffic, such as light-duty, gasoline-powered trucks and automobiles, heavy-duty diesel-powered vehicles, and aircraft (USMA 2003). All major stationary and mobile sources of air pollutant emissions are in compliance with air quality standards (USMA 2003).

### **2.4.2 Environmental Consequences**

The Clean Air Act Amendments of 1990 (40 CFR 93.158) require that emissions associated with Federal Actions do not interfere with the State Implementation Plan (SIP) for achieving National Ambient Air Quality Standards of criteria pollutants that currently are in non-attainment. Because the Project would be implemented in the Hudson Valley Air Quality Control Region, which is classified as a severe non-attainment area for ozone, West Point must evaluate the direct and indirect emissions associated with any proposed actions and ensure these emissions conform to the SIP.

Direct emissions, defined as emissions that are directly associated with the Federal Action, would include long-term emissions generated by any new stationary emission source (such as a new power generating facility). Proposed stationary emissions sources such as building heating facilities and emergency generators would be constructed as part of this Project and may require an air permit prior to installation. In addition, direct emissions include temporary emissions, such as those that would be generated by Project construction equipment and contractor vehicles; particulate matter (PM) generated by bedrock, soil, and pavement disturbance during soil excavation or blasting; and volatile organic compound (VOC) emissions associated with paving and/or patching asphalt roads and staining. Direct emissions also include the occasional temporary increase in emissions that would be generated by construction worker vehicles, resulting from travel to and from the construction site.

Indirect emissions, defined as emissions that occur in support of the Federal Action, would include any additional emissions generated by new or existing stationary emission

sources such as power plants that would serve the action. No increase in indirect emissions would occur as a result of the Project.

Before construction of the Project, West Point would conduct an air quality conformity review to identify all temporary and long-term air emissions that would result from the Project. As part of this review, West Point would estimate the types and quantities of priority pollutants generated by the Project, based on certain information about the size, quantity, and other relevant aspects of the construction equipment, as provided by West Point's architectural/engineering firm. West Point would evaluate the results of this review in relation to SIP emission thresholds. The priority pollutants considered would include VOCs and nitrogen oxides (NO<sub>x</sub>) – which combine in the atmosphere to produce ozone – and any other pertinent emissions.

The predicted temporary and long-term emissions generated by the Project would be compared with specific SIP emission thresholds for severe ozone non-attainment areas, and West Point would determine whether this threshold would be exceeded as a result of implementing the Project. If thresholds would be exceeded, then West Point would propose and implement air emissions control measures during construction, and/or curtail certain activities, as necessary, to ensure that implementation of the Project would have no significant adverse impact on air quality.

## **2.5 CULTURAL RESOURCES**

### **2.5.1 Affected Environment**

A wide variety of cultural resources have been identified at West Point, including buildings, structures, districts, objects, and sites. These cultural resources can be divided into three broad, inter-related categories: architectural resources, archaeological sites, and cultural landscapes. Architectural and archaeological resources are discussed below. Cultural landscapes are discussed in Section 2.8 (Visual Resources).

Architectural resources at West Point have undergone extensive investigation, including, but not limited to, the initial nomination of the West Point National Historic Landmark District (NHLD) in 1960; a comprehensive Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) architectural inventory and assessment of West Point's built environment in 1984, with subsequent revision and amendments in 1998; and a revised NHLD nomination submission in the year 2003 to update the number of properties within the NHLD and determine contributing and noncontributing properties to the NHLD (Tompkins et al. 1984, Nolte and Cinquino 2000, and Prior et al. 2000, as cited in Geo-Marine, Inc. 2001).

The boundaries of the NHLD are particularly important to understanding the nature of architectural resources within West Point. The NHLD boundaries enclose an area of approximately 2,500 acres, including the Project area (Target Hill Field) (Geo-Marine, Inc. 2001). More than 600 buildings or structures are located within the NHLD at West Point. Although each of these buildings or structures have not yet undergone conclusive

evaluations to determine whether they are individually eligible for listing on the National Register of Historic Places, additional investigations (as part of the revised nomination of the NHLD at West Point) have indicated that 328 of these 600 buildings and structures may be contributing elements to the NHLD (NRHP) (Geo-Marine, Inc. 2001). In addition, 227 buildings or structures were identified as possessing preservation significance and designated Category I or II structures on the basis of a HABS/HAER conducted by the National Park Service (NPS) (1984).

A number of archaeological excavations and surveys have been conducted within the boundaries of West Point, including, but not limited to, early investigations in the 1920s, 1930s, 1960s, and 1970s by both avocational and academic individuals and institutions (Geo-Marine, Inc. 2001). From the 1980s through the present, a series of formal cultural resource investigations were completed at various project-specific locations within West Point, including investigations for the Stony Lonesome II Housing Facility, the Queensboro ironworks, the West Point Timber Harvesting program, and various other construction projects, as well as predictive model testing at a variety of locations within West Point by the State University of New York at Albany (Geo-Marine, Inc. 2001). As a result of these archeological investigations, 150 archaeological sites have been identified within West Point (Geo-Marine, Inc. 2001). Prehistoric site types span the range of prehistoric time periods from the Archaic (ca. 9,000 before present [B.P.] to 3,700 B.P.) to the Woodland Period (terminating ca. 1600 Anno Domini [A.D.]). Historic site types include 18<sup>th</sup> and 19<sup>th</sup> century historic residential, military, and industrial sites.

Several cultural resource management plans have been completed for West Point. These include the comprehensive HABS/HAER survey (NPS 1984); a survey of family housing quarters which includes preservation standards and guidelines (Mariani and Associates, Architects 1987); and a historic resources management plan, which includes locations of prehistoric and historic properties, drawings, and preservation and maintenance guidelines for maintaining significant properties, and was completed in association with the Advisory Council of Historic Preservation (ACHP) (USMA 1988). A preservation plan for Revolutionary War period sites located near the Stony Lonesome II Housing Facility also included preservation plans for maintaining Redoubts 1 and 2 (Benton 1995), and a historic building survey for the Queensboro Ironworks also included a management plan for maintenance (Benton 1995). A management plan for cultural resources, including prehistoric and historic resources within West Point's boundaries, was completed in 1995 (The Research Foundation at State University of New York-Albany 1995) and included a predictive model identifying areas of high, medium, and low archaeological sensitivity for West Point.

West Point has developed an Integrated Cultural Resources Management Plan (ICRMP) (Geo-Marine, Inc. 2001). The ICRMP establishes an installation-specific cultural resources management program to allow West Point to integrate the management of its cultural resources within mission activities, including processes for the ongoing identification and protection of archaeological and architectural resources and historic landscapes, for external consultation and coordination with non-installation regulatory

agencies and other interested parties, and for implementation of standard operating procedures (SOPs) for cultural resource actions (Geo-Marine, Inc. 2001). The ICRMP is also designed for use with West Point's Installation Design Guide, Historic Landscape Management Plan, and zone management system to further protect West Point's cultural resources (Design Collaborative, Inc. et al. undated, Geo-Marine, Inc. 2001, Loechl et al. 2002).

Based on a review of the available documentation summarizing known architectural and archaeological resources for West Point, the Project is located adjacent to areas that are known to contain previously identified cultural resources or that have the potential to contain previously unidentified cultural resources. The north waterfront area (which includes the North Athletic Field, site of the Shea Stadium complex to the south of the Project, as well as Target Hill Field) was subjected to cut and fill processes dating back to the latter part of the 19<sup>th</sup> century and continuing to the mid-20<sup>th</sup> century (Loechl et al. 2002). Changes to the Hudson River waterfront in the Project area, including the fill sites at Target Hill Field, North Athletic Field, and large landscape features such as water towers, stadium complexes, parking areas, and utilities, have removed archaeological resources and have significantly altered views to the waterfront from other parts of West Point (see Section 2.8 Visual Resources). The waterfront is not eligible as a historic landscape in its own right because of the lack of integrity, but it is an important component of the larger NHLD landscape due to its significance and contribution to the history of West Point (Loechl et al. 2002). Although Target Hill Field does not contain traditional historic properties, its historic viewshed is intact (looking north up the Hudson River corridor) and may be considered significant due to historic and scenic considerations.

A Phase I Cultural Resources Investigation was conducted in May 2005 within the Project area at Target Hill Field and any areas on the steep terrace slopes to the west and north of the proposed Project that would potentially be disturbed by the Project. Possible cultural resources in these areas could have included small scale, prehistoric Native American archaeological sites on isolated level benches overlooking the Project, historic period 18<sup>th</sup> and 19<sup>th</sup> century stone walls or remnant foundations, and historic period 18<sup>th</sup> and 19<sup>th</sup> century unexploded ordnance (UXO), projectile fragments, and solid shot as a result of military ordnance test firings conducted by the West Point Foundry (Cold Spring Foundry) located on Foundry Cove at Cold Spring and firing from Seacoast and Siege Batteries located at West Point on the west bank of the Hudson River. There was a possibility of some military projectiles or projectile fragments to be located on the terrace slopes west and north of the Project and considered experimental or uniquely designed ordnance, and thus, considered cultural resources. However, the results of the Phase I Cultural Resources Investigation concluded that no historic properties would be affected by the proposed Project, either at Target Hill Field or on the adjacent hillside area that might be affected by the construction of athletic fields, buildings, roads, or utilities (Cubbison 2005b).

Target Hill Field is the site of a former Revolutionary War Period "Moore House and Farm," also known as "Moore's Folly" during the Revolutionary War, which was used by

George Washington as headquarters. Foundational remnants of the Moore House were removed during Target Hill Field cut and fill episodes during the 19<sup>th</sup> and 20<sup>th</sup> centuries and the building's former presence is commemorated with a small granite monument set flush to the ground surface at a location between Upton Road and the Target Hill Field.

The Lee Housing Area, located on the level terrace above and overlooking the Project, consists of officers' family quarters arranged on curvilinear loop roads and cul de sacs off of Lee Road, on a slightly wooded plateau overlooking the Hudson River (Loechl et al. 2002). The Lee Housing Area quarters were designed in the 1930s, and the visual resources associated with this area are representative of the ideals of suburban design and town planning from this time period. The buildings are Neo-Georgian in style, and are constructed of brick with stone detailing. The lower portion of the Lee Housing Area contains six sets of housing quarters with detached garages, and the upper portion of the Lee Housing Area contains 40 duplexes with detached garages (Loechl et al. 2002). The Lee Housing Area is considered to have high architectural and landscape integrity, particularly with regard to its design, which combined visually pleasing architecture, partially wooded settings, and tree-lined, curvilinear roads to create a pastoral feeling (Loechl et al. 2002). Features that contribute to the high architectural and landscape integrity of this historic feature landscape include Neo-Georgian style architecture expressed in brick and stone buildings, views of the Hudson River, streets lined with mature trees, and the location, layout, and arrangement of the neighborhood of the Lee Housing Area (Loechl et al. 2002). The Lee Housing Area is considered a NRHP Eligible Historic Landscape (Geo-Marine, Inc. 2001).

### **2.5.2 Environmental Consequences**

The Project is positioned in the vicinity of a number of structures within the NHLD that have been designated as Category I and II structures in the HABS/HAER inventory for West Point (NPS 1984), identified as individually eligible for the NRHP, and/or identified as contributing elements to the NHLD West Point (Geo-Marine, Inc. 2001). These buildings or areas have been designated and/or identified as contributing significantly to the national cultural heritage and serve as major focal points related to the history of West Point.

West Point would continue to evaluate the design plans for the Project in consultation with the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) as necessary, to ensure the continued incorporation of existing architectural cues from the larger NHLD at West Point and compatibility with extant architecture in the immediate vicinity of the Project (the Shea Stadium facilities to the south of the Project area and the Lee Housing Area to the west and north overlooking the Project area). As part of this evaluation process, West Point would perform site visits as necessary to review the proposed Project, to ensure that the Project would have no adverse effects on historic structures or NRHP Eligible Historic Landscapes at West Point.

Archaeologically, the Project is located in an area with low to moderate sensitivity for the presence of archaeological resources (steep terrain and exposed bedrock with greater than 25 percent slope overlooking the present Target Hill Fields that are situated on fill) and no disturbance of additional prehistoric cultural resources would be anticipated. West Point completed a Phase I cultural resource investigation for the Project in May 2005 and no previously unidentified prehistoric or historic cultural resources were identified in the Project area or potentially affected portions of the terrace slope overlooking the Project area (Cubbison 2005b).

Project construction activity potentially may disturb and/or change the location of the commemorative monument to Moore House and Farm erected at Target Hill Field. However, West Point would retain this monument at Target Hill Field, incorporate it in the final athletic field design, and ensure that it is replaced in a prominent location among the new facilities (Cubbison 2005a).

West Point would continue to coordinate with the New York State Historic Preservation Officer (NYSHPO) as design plans advance and implement pertinent recommendations from the NYSHPO to reduce and/or avoid adverse effects on cultural resources, such that implementation of the Proposed Action would result in less than significant impacts on any historic and archaeological resources identified within the proposed Project area.

## **2.6 LAND USE**

### **2.6.1 Affected Environment**

The current land use in the Project area consists chiefly of recreational and athletic activities. The Project site at Target Hill Field currently consists of approximately eight natural grass multi-purpose rugby/soccer/lacrosse fields. These fields are used by West Point Cadets for intramural and club sports; by West Point professors, instructors, and employees for general recreation use (e.g., ultimate Frisbee and informal “pick-up” games of various kinds); and by youth attendees at Department of Military Instruction (DMI) and the DPE-sponsored summer sports camps (e.g., soccer, lacrosse) and similar activities. These fields also are used on an occasional basis as satellite parking for spectators attending home football and other intercollegiate sports games.

Land uses adjacent to the Project area include the steep, rocky hillside adjacent to the north and west side; the Lee Housing Area (family housing) at the top of the hill to the north and northwest; the West Point Sewage Treatment Facility to the south, and the Hudson River to the east. South of the West Point Sewage Treatment Facility, the North Athletic Fields include the Women’s Softball Field, the track and field venue, and Shea Stadium. The CSX railroad and Upton Road, a West Point-maintained road with no outlet, are aligned parallel to the Hudson River between the Project area and the river shore.

With regard to designated land use areas within the Main Post/Academic Area of West Point, the majority of the Project is located in what is designated as the Community

Support Zone. Although West Point does not have specific zoning regulations or guidelines, existing land uses within each zone tend to be closely aligned with the zone's function. The functions of the Community Support Zone are associated with housing for on-post military personnel and their families; services for support personnel, military personnel living in the vicinity of West Point, and the retired military population of the surrounding region; and, West Point administration (Vollmer Associates, LLP undated). Land use patterns within the Community Support Zone include medical, post education, and residential areas along the northern edge; athletic and recreation areas along the northeastern edge; and athletic and recreation, residential, and unclassified areas along the southern edge (Vollmer Associates, LLP 1999).

## **2.6.2 Environmental Consequences**

The Project would result in the continued use of Target Hill Field for athletic team practices and competitions. Therefore, there would be no significant change in the overall land use at the Project site, and the Project would be consistent with existing and designated land uses in this area. See section 2.10.2 (Traffic and Transportation) for a discussion of Project effects associated with the elimination of parking space normally used during home football games at West Point.

## **2.7 RECREATION**

### **2.7.1 Affected Environment**

Physical development is an integral part of Cadet development at West Point, and is highly valued for providing leaders with physical skills, self-confidence, determination, perseverance, the will to win, respect for fair play, and the ability to think and act purposefully under physical and mental stress. Cadets are challenged to achieve high standards of physical development to meet the physical demands encountered in military service through involvement in a rigorous athletic and physical education program at West Point. Every Cadet is required to participate in a competitive sport at a level that challenges his or her ability.

Athletic activities at West Point are divided into four main categories: intercollegiate (administered by the ODIA); intramural (administered by the DPE); physical education, which includes club sports (also administered by DPE); and community recreation (administered by the Directorate of Morale, Welfare, and Recreation [DMWR], Community Recreation Division [CRD]), which includes services accessible to the youth and families of West Point Cadets and employees.

West Point currently has 25 intercollegiate athletic teams that compete at the Division IA level, as well as many other sports and athletic opportunities. West Point maintains numerous athletic facilities supporting the various sports and levels of competition available at West Point. Some of the West Point athletic facilities that are pertinent for discussion in relation to the Project include (locations of each are shown on Figure 2):

- Target Hill Field – Currently used for intramural soccer, rugby, and lacrosse; informal recreational use (such as for ultimate Frisbee) by Cadets and professors/instructors; and youth summer sports camps (soccer, lacrosse). Target Hill Field is generally used for DPE- and CRD-administered activities.
- Daly Field – Currently used as the intercollegiate rugby team field, this field is used for both games and practices. Alternate practice fields are located over a mile away in the Stony Lonesome Area of the Post. There are no locker rooms or other team facilities available at either of these locations.
- Clinton Field – Currently used as the intercollegiate soccer field. Home games are played on Clinton Field, and there is a practice field adjacent to the game field. However, most practice takes place on the North Athletic Field, situated between the softball and the track venues. Similar to rugby, there are no lockers or team facilities at the Clinton Field or the North Athletic Field locations. However, Building 609, located adjacent to Clinton Field, is currently being renovated to provide dedicated locker room facilities for use by the soccer team / Clinton Field users.
- Shea Stadium – Currently used for intercollegiate football (practice only), as well as intercollegiate track, lacrosse, and soccer. In addition, it is used for community football and other club sports for users not affiliated with West Point. Shea Stadium features an all-weather track, synthetic athletic field, and seven masts supporting television-quality field lighting that is used often for evening practice and games in the spring and the fall. The stadium also has two functional locker rooms, an athletic training facility, and seating for approximately 1,100 spectators.
- North Athletic Field/Soccer Field – Currently used as a practice field for intercollegiate soccer, light weight football, and lacrosse.
- Women’s Softball Field – Currently used for women’s intercollegiate softball, this field features six masts with field lighting for evening field use, and seating for approximately 500 spectators.
- Doubleday Field – Currently used for intercollegiate baseball. Constructed in 1909, renovated in 1996 with locker rooms for both home and visiting teams, fully equipped training rooms, clubhouse facilities, and seating for 880 spectators.
- Clinton Tennis Courts – Nine outdoor tennis courts currently used for tennis at the intercollegiate, intramural, physical education, youth, and community levels.

As noted in Section 1.2, one of the “Key Strategic Initiatives” of the ODIA’s Sports Comprehensive Plan is to remove the intercollegiate team venues (rugby, soccer, and tennis) from The Plain, with the exception of the baseball venue at Doubleday Field (West Point DHPW 2004). With the removal of these sports fields and courts and their associated seating, field lights, and other structures, The Plain would be available for the restoration and reclamation of the fields for intramural and sports club use, and would

allow The Plain to return to its historical use and appearance, when athletics first began at the West Point.

### **2.7.2 Environmental Consequences**

The proposed Project would provide improved recreational facilities for the West Point intercollegiate rugby and soccer teams, and provide an opportunity for increased alumni, visitor, and public attendance at rugby and soccer competition events. This Project is consistent with the existing recreational land uses in the vicinity of Target Hill Field at West Point, and with the athletic and physical development missions of West Point.

Construction of the proposed rugby and soccer venues would replace, or displace, eight (8) existing athletic fields that are currently used for DPE- and CRD-administered activities, with four athletic fields that would be used primarily for ODIA-sponsored intercollegiate sports activities. However, this loss of field space for DPE- and CRD-administered activities would be partly or entirely mitigated by the likely possibility that the synthetic fields could support and be made available for uses other than ODIA-sponsored uses, including intramurals, youth soccer and lacrosse, and other community and outside club uses (Cubberley 2004). In addition, through construction of the Project and the eventual removal of the rugby, soccer, and tennis venues (including lighting, spectator seating, and parking) from The Plain in accordance with the ODIA Master Plan, these areas of The Plain would be able to support approximately nine (9) DPE- and CRD-administered athletic fields, for a net gain of one (1) natural grass field for DPE and CRD activities.

## **2.8 VISUAL RESOURCES**

### **2.8.1 Affected Environment**

The various visual resources associated with West Point have been identified for their contributions to landscapes of historical, architectural, aesthetic, and natural significance. These visual resources consist of historic landscapes associated with the NHLD at West Point, including historic feature landscapes associated with a variety of individual historic structures that are either nominated individually for the NRHP or have been identified as contributing elements to the NHLD; aesthetic landscapes associated with a variety of communities within the Main Post/Academic Area of West Point; and natural landscapes associated with the Hudson Highlands Scenic Area of Statewide Significance (HHSASS).

West Point has developed a number of management plans that identify and protect the visual resources associated with these landscapes, including the *Historic Landscape Management Plan for the U.S. Military Academy at West Point*, the *United States Military Academy Installation Design Guide*, the *Identification and Analysis of the Historic Built Environment and Viewsheds, Cadet Zone*, and the *Draft U.S. Military Academy Perimeter Fence Line Views Analysis, West Point, New York* (Design Collaborative, Inc. et al. undated, Loechl et al. 2002, Halin et al. 2003, Loechl and Tooker 2003).

### ***2.8.1.1 Historic Landscapes Associated with the NHLD at West Point***

Historic landscapes within the NHLD at West Point are divided into four categories: roads and roadways, views, athletic fields, and the waterfront. The proposed Project would be located within two of these four categories: within historic landscapes that are associated with the athletic fields and the waterfront (Loechl et al. 2002). The proposed Project would also be visible from historic views towards the Hudson River from various locations adjacent to the NHLD at West Point (Loechl et al. 2002)

#### **Athletic Field Landscapes**

The proposed Project is located within Target Hill Field, an open area within the NHLD at West Point that contains a variety of athletic fields and facilities. Target Hill Field is located adjacent to the western side of the Hudson River, and the open areas of this athletic field are part of the visual resources within the NHLD at West Point. Visual resources associated with this historic landscape include wide, open views of the Hudson River and its eastern shore. In addition, the open areas of Target Hill Field are also part of the visual resources of West Point and the western shore of the Hudson River that are visible from both the river and its eastern shore.

Target Hill Field is one of a number of historic athletic field landscapes within the NHLD at West Point. This particular type of historic landscape reflects the increasing relevance of recreation and athletics to Cadet training over time, and level open areas such as Target Hill Field, which have been developed for recreation and athletics, have become an important contributing element to the historic integrity of the NHLD at West Point. Although The Plain has historically supported the earliest and most sustained use for athletic fields and facilities over time, Target Hill Field has also contributed to the continuous land use of open level areas within the NHLD at West Point for athletics, with the leveling of Target Hill and infilling of land between the bluff line and the railroad bed along the west side of the Hudson River between 1930 and 1960 to create the North Fill area which contains both Target Hill Field and North Athletic Field (Loechl et al. 2002).

#### **Waterfront Landscapes**

Because Target Hill Field is located in an open area along the western shore of the Hudson River, the proposed Project location also contains visual resources associated with the waterfront of the NHLD at West Point. Historic waterfront landscapes along the western shoreline of the Hudson River are primarily associated with waterfront areas to the immediate north of The Plain and Cadet Zone, from approximately Tower Road to Howard Road, and the immediate south of The Plain and Cadet Zone, from approximately Fort Clinton to South Dock. These two waterfront areas contain visual resources associated with viewsheds from the Academic Area and The Plain looking out over the Hudson River and its eastern shore, as well as visual resources associated with viewsheds of the Academic Area and The Plain against the backdrop of the Hudson Highlands, which are visible from the Hudson River and its eastern shore.

The open, level area of Target Hill Field is also considered a part of the historic waterfront landscape of the NHLD at West Point. However, all of the historic waterfront landscapes within the NHLD at West Point, including the proposed Project's location at Target Hill Field, reflect a historic landscape that has changed over the years, affected by episodes of fill and construction that have significantly altered the appearance of the waterfront within the NHLD at West Point. Because of these changes over time, the waterfront landscape of West Point is not eligible as a historic landscape in its own right because of a lack of historic integrity. However, the waterfront is still important to operations at West Point, and the waterfront landscape is an important component of the NHLD landscape due to the waterfront's significance and contribution to West Point's story (Loechl et al. 2002).

### Views

The proposed Project, located at Target Hill Field, is not directly within those historically significant views of the NHLD at West Point that have been identified in the *Historic Landscape Management Plan for the U.S. Military Academy at West Point*. However, scenic overlooks associated with Crows Nest Mountain and U.S. Route 9W, a designated New York State Scenic Highway, contain external views of West Point that include the proposed Project location (New York State Department of Transportation [NYSDOT] 2003, Loechl and Tooker 2003). These scenic overlooks are used regularly by individuals for appreciation of the scenic views of West Point and the Hudson River Valley. The external views from these scenic overlooks, which are considered historic views dating from the installation's Revolutionary War period, include the cultural landscape of West Point as it has evolved over the years, as well the natural landscape containing forests, mountains, and the Hudson River (Halin et al. 2003).

#### ***2.8.1.2 Historic Feature Landscapes***

Historic feature landscapes contain visual resources that are related to select component landscapes within the NHLD at West Point. These historic feature landscapes are part of the NHLD at West Point, but are also individually eligible for the NRHP. Six historic feature landscapes have been identified for West Point: The Plain, the Academic Area, Kosciuszko's Garden, Flirtation Walk, the Superintendent's Garden, and the West Point Cemetery (Loechl et al. 2002). However, the proposed Project is not located within any of these six historic feature landscapes, and would have no effect on any of these historic feature landscapes

#### ***2.8.1.3 Historic Housing Areas***

In addition to the visual resources that are related to select historic landscapes within the NHLD at West Point, West Point contains four historic housing areas that are also considered historic feature landscapes. These four historic housing areas include the Professor's Row Housing Area, the Thayer/Wilson Housing Area, the Lusk Housing

Area, and the Lee Housing Area (Loechl et al. 2002). The proposed Project is located within the viewshed of one of these historic housing areas, the Lee Housing Area.

### Lee Housing Area

The Lee Housing Area, which is located west and north of the proposed Project, consists of officers' family quarters arranged on curvilinear loop roads and cul de sacs off of Lee Road, on a slightly wooded plateau overlooking the Hudson River (Loechl et al. 2002). The Lee Housing Area quarters were designed in the 1930s, and the visual resources associated with this area are representative of the ideals of suburban design and town planning from this time period. The buildings are Neo-Georgian in style, and are constructed of brick with stone detailing. The lower or southern portion of the Lee Housing Area contains six sets of housing quarters with detached garages, and the upper or northern portion of the Lee Housing Area contains 40 duplexes with detached garages (Loechl et al. 2002). The Lee Housing Area is considered to have high architectural and landscape integrity, particularly with regard to its design that combined visually pleasing architecture, partially wooded settings, and tree-lined, curvilinear roads to create a pastoral feeling (Loechl et al. 2002). Features that contribute to the high architectural and landscape integrity of this historic feature landscape include Neo-Georgian style architecture expressed in brick and stone buildings, views of the Hudson River, streets lined with mature trees, and the location, layout, and arrangement of the neighborhood of the Lee Housing Area (Loechl et al. 2002).

#### ***2.8.1.4 Aesthetic Landscapes***

Visual resources within the NHLD at West Point are also related to aesthetic landscapes associated with 22 small, compact communities, which have been established or defined over time based on use, architecture, or topography, resulting in individualized visual characteristics or features that contribute to the unique aesthetic landscapes of each community (Design Collaborative, Inc., et al. undated). The proposed Project is located within one of these 22 communities, the Central Support Community, and within the viewsheds from one additional community, the Lee Community. The visual resources of these two communities are discussed in greater detail below.

### Central Support Community

The proposed Project is located within the Central Support Community. The Central Support Community includes portions of the Cadet Zone and the Cadet Support Zone, abutting The Plain to the south and extending north along the western side of the Hudson River to the northern edge of the NHLD at West Point. The Central Support Community is the major utility support area of West Point, with a highly diverse number of facilities, including barracks, a field house, an auditorium, and huge playing fields, including the Target Hill Field (Design Collaborative, Inc., et al. undated). Visual resources associated with this community include spectacular views that vary from high eye-level vistas to low, river-level perspectives, and are characterized by brick buildings that are unified by material, and sited to take advantage of the horseshoe shape of the cliffs along the

western shore of the Hudson River, and by varying topographic features that incorporate the flat, grassed playing fields that separate the buildings from the cliffs leading down to the river (Design Collaborative, Inc., et al. undated). Other features that contribute to the visual resources of the Central Support Community include the diverse topography, beautiful river-level views from playing field and dock locations, terraces at Eisenhower Hall that provide an area with longer and nicer views, the historic architecture of the community, the huge playing fields that serve as a buffer between the buildings and the river, and the setbacks of the buildings, which are sufficient to permit wide views of both the buildings and the river (Design Collaborative, Inc., et al. undated).

### Lee Community

The proposed Project is located within viewsheds from the Lee Community. The Lee Community is located entirely within the Community Support Zone, at the northern end of the NHLD at West Point, between Washington Road to the south and Lee Gate to the north. The Lee Community consists of residential family housing, characterized by a site layout that suggests an English landscape, with strong, formal spatial shapes and enclosures, and architecture that is consistent in style, colors, materials, and scale (Design Collaborative, Inc., et al. undated). Visual resources associated with this community include the dense, naturally wooded terrain and diverse changes in elevation and topography that function as both backdrops and buffer zones within and adjacent to the community; the use of a consistent architectural style that serves to clearly define the image and boundaries of the almost exclusively residential community; and the layout of roads within the community that establishes Lee Road as an attractive main thoroughfare through the community, using secondary roads to emphasize clusters of residential buildings, and placing service roads at the rear of residential areas. Other features that contribute to the visual resources of the Lee Community include the quiet, tranquil, naturalistic setting emphasizing the wooded terrain; consistently spaced trees lining the streets of the community; consistent setbacks of housing that provides regular and generous front and side yards; the clear separation of service roads from main roads, which eliminates visual clutter from main roads; the use of naturally arranged indigenous plantings and shrubs for residential landscaping; very strong and well defined edges between natural and manmade landscapes; striking images associated with site elements such as Lee Gate, the bridge, paths, and Crows Nest Brook; and very selective locations within the community that contain beautiful vistas and views of the Hudson River (Design Collaborative, Inc., et al. undated).

#### ***2.8.1.5 Natural Landscapes***

Visual resources within the NHLD at West Point are also related to natural landscapes associated with the HHSASS, which is included in the state-designated Hudson River Coastal Zone as determined by the New York State Department of State (NYSDOS) Coastal Management Program (CMP) (NYSDOS 1993). The HHSASS includes a 20-mile stretch of the Hudson River, and varies between one and six miles in width, including the Hudson River and portions of its eastern and western shores. The HHSASS is comprised of 28 subunits, which have been determined based on the

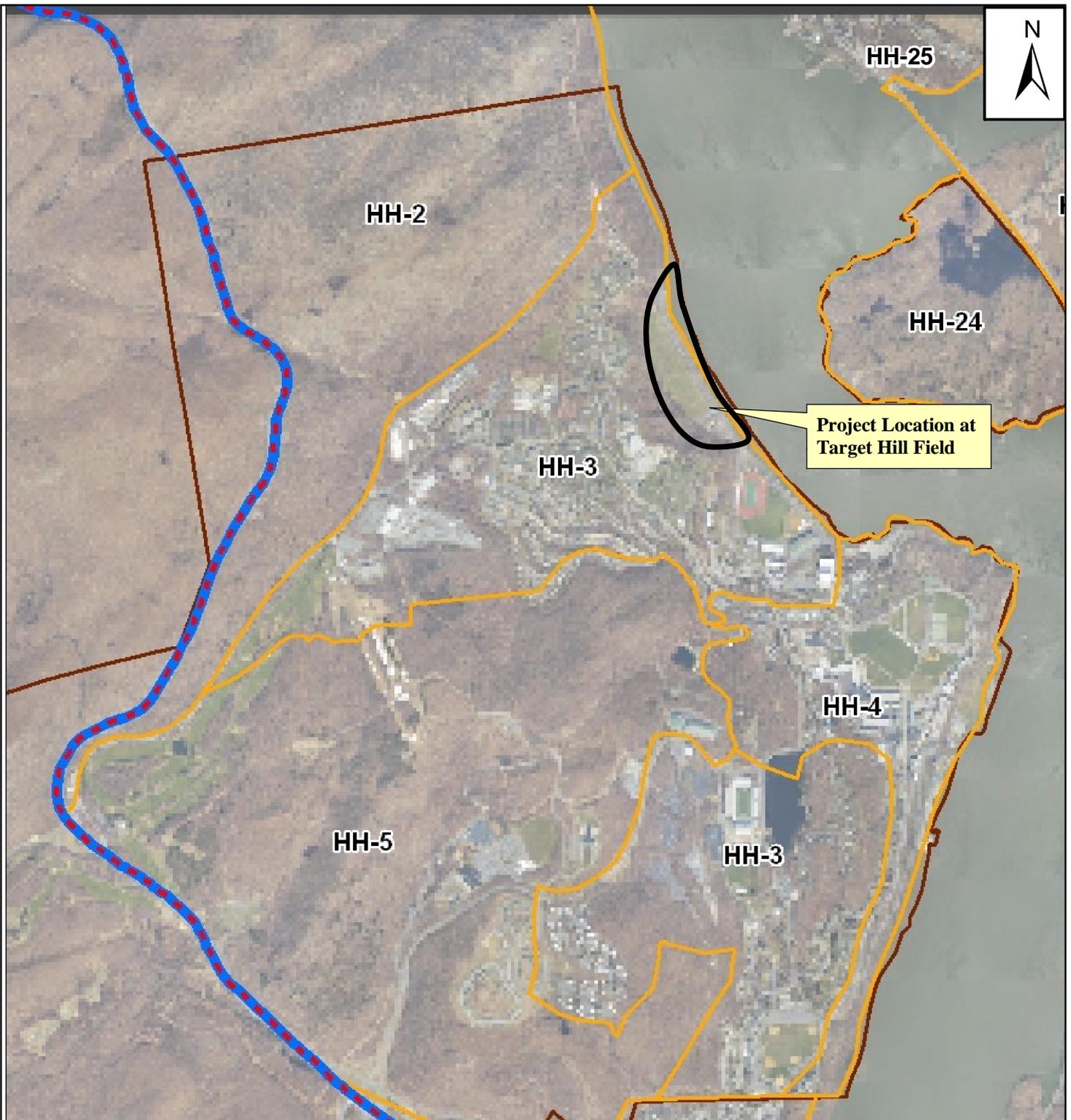
combined aesthetic values of landscape character, uniqueness, public accessibility, and public recognition (NYSDOS 1993). The proposed Project is located within one of these 28 subunits of the HHSASS, the Contemporary West Point Military Academy Subunit. The proposed Project would also be visible from five additional subunits, the West Point Military Academy, Storm King, Highlands, Constitution Island, and Cold Spring subunits (Figure 7). The visual resources associated with these six subunits of the HHSASS are discussed in greater detail below.

#### The Contemporary West Point Military Academy Subunit

The Contemporary West Point Military Academy Subunit is divided into two sections. The proposed Project is located within the northern section of the Contemporary West Point Military Academy Subunit, which includes the western shore of the Hudson River and extends across the Hudson River, is approximately 1.5 miles long and 0.75 miles wide, and contains contemporary development at West Point that is north of the “historic core” (NYSDOS 1993). An evaluation of the location, scenic components, uniqueness, public accessibility, and public recognition of the landscape associated with the Contemporary West Point Military Academy Subunit indicated that this subunit makes an important contribution to the HHSASS because it serves as a link between surrounding subunits with distinctive scenic qualities, including the West Point Military Academy and Storm King subunits on the western side of the Hudson River, which are visible from the Constitution Island and Cold Springs subunits on the eastern side of the Hudson River (NYSDOS 1993). Although the residential layout and setting within the subunit are not considered distinctive because of the “limited variety of features, common style of buildings, and repetitive, ordered landscape,” the subunit contains a “residential layout and setting that is unique,” and is set “within the mountains of the Hudson Highlands, which offer a dramatic backdrop in all directions” (NYSDOS 1993). The unique residential layout and setting, the dramatic setting within the Hudson Highlands that complements adjacent subunits, and its position between the Storm King and West Point Military Academy subunits, combine to give the Contemporary West Point Military Academy Subunit “a significant place in the context of the HHSASS” (NYSDOS 1993).

#### The West Point Military Academy Subunit

The proposed Project is visible from northern portions of the West Point Military Academy Subunit, which is located on the western shore of the Hudson River, is approximately 1.5 miles long and 1 mile wide, and contains the “historic core” of West Point (NYSDOS 1993). An evaluation of the location, scenic components, uniqueness, public accessibility, and public recognition of the landscape associated with the West Point Military Academy Subunit indicated that this subunit makes an important contribution to the HHSASS because of its very high scenic quality (NYSDOS 1993). The subunit consists of “a highly ordered landscape of great historic importance,” which is “composed of a highly unified and ordered institutional complex of dramatic scale and siting” (NYSDOS 1993). The subunit contains “a large variety of scenic components, including the varied topography and shoreline form, and many architectural styles” that



**LEGEND**

- |  |                                    |
|--|------------------------------------|
| HH-2: Storm King Subunit                               | HH-5: Highlands Subunit            |
| HH-3: Contemporary West Point Military Academy Subunit | HH-24: Constitution Island Subunit |
| HH-4: West Point Military Academy Subunit              | HH-25: Cold Spring Subunit         |

**Figure 7. Subunits of the Hudson Highlands Scenic Area of Statewide Significance West Point, New York.**

**Client:**  **U.S. Army Garrison at West Point**



Source: United States Army Garrison West Point, New York.

**Prepared By:**  **NEA**  
NORTHWOOD CONSULTANTS, INC.

Date: 5/23/05

are visible from vantage points inside and outside of the subunit, including views from the many historic structures within West Point, from Constitution Island, the Hudson River and its eastern shore, and a number of surrounding Highland peaks (NYSDOS 1993). These scenic components, which are “free from significant discordant features,” exhibit both marked contrasts between open spaces and enclosures in the built environment of West Point, as well as great unity between the architectural massing, style, and scale of the built environment, and the massing and scale of the Hudson River and the Hudson Highlands within the surrounding natural environment (NYSDOS 1993).

### The Storm King Subunit

The proposed Project is visible from southern portions of the Storm King Subunit, which is located north of West Point. The Storm King Subunit is approximately 3 miles long and approximately 1.75 miles wide, includes Crows Nest and Storm King mountains, and extends east to include the Hudson River (NYSDOS 1993). An evaluation of the location, scenic components, uniqueness, public accessibility, and public recognition of the landscape associated with the Storm King Subunit indicated that this subunit makes an important contribution to the HHSASS because it is a unique landscape which has “an extraordinarily dramatic landform and has high scenic quality” (NYSDOS 1993). The subunit consists of a landscape that “exhibits a high topographic variability, with steep cliffs and rolling uplands” (NYSDOS 1993). This landscape is free from discordant features, and is unified by a wilderness theme that is marked by mature woodland coverage, although bare rock faces visible throughout the subunit provide moderate contrasts in form, texture, and color (NYSDOS 1993). The visual resources included in this landscape consist of local roadways such as Old Storm King Highway (a state-designated Scenic Byway), Storm King State Park, and the Hudson River, all of which contain views of both the proposed Project location, and the historic core of West Point, including The Plain.

### The Highlands Subunit

The proposed Project is visible from eastern portions of the Highlands Subunit, which is located west of the main developed areas of West Point, and is roughly circular in shape, with a diameter of 1.5 miles (NYSDOS 1993). An evaluation of the location, scenic components, uniqueness, public accessibility, and public recognition of the landscape associated with the Highlands Subunit indicated that this subunit makes an important contribution to the HHSASS because of its high scenic quality (NYSDOS 1993). The subunit consists of a landscape that is unified by shape, but which contains “steep and rolling hillsides and several flat areas [that] provide variety within the topography of the subunit” (NYSDOS 1993). The subunit’s scenic quality is enhanced by the mature, wooded, primarily deciduous, vegetation cover that provides background changes in colors, tones, and textures for the built environment of the contemporary and historic portions of West Point throughout the year (NYSDOS 1993). Although this subunit does contain some discordant features, they are screened from various internal and external viewsheds of the subunit by topography and vegetation and do not detract significantly

from the subunit's overall contribution to the scenic quality of the HHSASS (NYSDOS 1993). Although this subunit is typically considered a backdrop element for many views within the HHSASS, the Highlands Subunit does contain some extended views of the Hudson River and the historic core of West Point, including The Plain, from eastern hillside locations.

#### The Constitution Island Subunit

The proposed Project is visible from the Constitution Island Subunit, which is located east of the main developed areas of West Point, across the Hudson River, and is roughly circular in shape, with a diameter of 0.75 miles (NYSDOS 1993). An evaluation of the location, scenic components, uniqueness, public accessibility, and public recognition of the landscape associated with the Constitution Island Subunit indicated that this subunit makes an important contribution to the HHSASS because of its high scenic quality (NYSDOS 1993). The subunit features a large wooded island adjacent to the eastern shore of the Hudson River, which is characterized by low rolling upland topography, and a shoreline configuration that contains small points and coves. The landscape associated with this subunit is unified by predominantly woodland vegetation, is free from visible discordant elements, and is marked by strong contrasts between the sharp break of the wooded landscape of Constitution Island at the river's edge (NYSDOS 1993). The subunit's scenic qualities are visible from the Hudson River, the historic core of West Point, and from vantage points on Storm King Mountain, the Village of Cold Spring, and the eastern shore of the Hudson River (NYSDOS 1993). In addition, the Constitution Island Subunit contains views of the western shore of the Hudson River that include both the proposed Project location at Target Hill Field and the historic core of West Point, including The Plain.

#### The Cold Spring Subunit

The proposed Project is visible from the Cold Spring Subunit, which is also located east of the main developed areas of West Point, across the Hudson River. The Cold Spring Subunit extends approximately 2 miles northeast from the Hudson River and is between 0.75 and 1 mile wide, including the villages of Cold Spring, on the lowlands adjacent to the Hudson River, and Nelsonville, on the southern flanks of Bull Hill (NYSDOS 1993). An evaluation of the location, scenic components, uniqueness, public accessibility, and public recognition of the landscape associated with the Cold Spring Subunit indicated that this subunit makes an important contribution to the HHSASS because of its high scenic quality (NYSDOS 1993). The subunit is characterized by variety in both its natural and cultural landscape features. Natural landscape features include the waterfront of the Hudson River, the lowlands adjacent to the Hudson River containing the Village of Cold Spring, and the uplands associated with Bull Hill and the valley of Foundry Brook. Cultural landscape features include the built environment of the Village of Cold Spring, which contains a number of structures listed individually on the State and National Registers of Historic Places and included in the Cold Spring Historic District Hill, and the wide variety of cultural resources that comprise the Hudson Highland Multiple Resource Area, including architectural and archaeological resources (NYSDOS 1993).

The combined natural and cultural landscape associated with this subunit is unified by the “tight, historic pattern of development in the two villages” that stands in marked contrast with “the rugged Hudson Highlands [natural] landscape that surrounds the villages” (NYSDOS 1993). The Cold Spring Subunit is visible within views from the Hudson River, West Point, and the peaks of Storm King and Crows Nest mountains (NYSDOS 1993). In addition, the Cold Spring Subunit contains views of West Point against the backdrop of the Hudson Highlands peaks on the western side of the Hudson River, including views of the proposed Project location at Target Hill Field as well as the historic core of West Point, including The Plain. These views are especially apparent from the historic waterfront of the Village of Cold Spring, including the docks, wharf, structures, and streetscapes located on or rising from the lowland areas along the eastern shore of the Hudson River (NYSDOS 1993).

### ***2.8.1.6 Recreational Areas and Transportation Routes***

In addition to the visual resources located within West Point, the proposed Project would be visible from adjacent public recreational areas and transportation routes that have been recognized for their aesthetic qualities and/or scenic resources, including various locations within Storm King State Park, and from various vantage points traveling along the U.S. Route 9W highway.

#### Storm King State Park

The proposed Project is within views from vantage points along trails and roads and at scenic overlooks in the southern portion of Storm King State Park, which is an approximately 1,900-acre state park that is considered to be “one of the Hudson River Valley’s best known landmarks,” as well as “the northern gateway to the Hudson Highlands” (Scenic Hudson 2003). Storm King State Park is a popular state park that “offers unsurpassed views of the Catskills and the Hudson Valley” and is “a favorite for hikers” (USACE 2002, Wildernet 2003). The park is considered to be undeveloped, with limited parking and no restroom facilities, although an approximately 8-mile network of trails, roads, and scenic overlooks is used for hiking and hunting, the only two recreational activities permitted within the park (Wildernet 2003). Although the park appears relatively pristine today, evidence of previous military activities is present within the park boundaries, including areas that contain historic UXO from artillery testing and practice activities at the West Point Foundry in Cold Spring and at West Point between the early 19<sup>th</sup> century and the mid 20<sup>th</sup> century (USACE 2002).

#### New York State-Designated Scenic Roads

The proposed Project is within views from various vantage points traveling along a 5.42-mile portion of U.S. Route 9W, which is designated a New York State (NYS) Scenic Road, under the NYS Scenic Byways Program (NYSDOT 2003, Woods 2003). However, these views of West Point are considered fleeting due to traveling speed along

this highway, and are separate from views of West Point that are visible from the scenic overlooks located along U.S. Route 9W, as previously discussed in Section 2.8.1.1.

### ***2.8.1.7 West Point-Identified Historic Views***

In recognition of the wide variety of visual resources associated with the Project area, West Point undertook a visual assessment of the proposed Project (USMA 2004b). Results of this Project-specific visual assessment identified five representative historic views of or within West Point that would contain the proposed Project (see the visual assessment provided in Appendix A). Specifically, the proposed Project would be located within external views of West Point from the Village of Cold Spring, Constitution Island, and the Hudson River, and within internal views of West Point from the Lee Housing Area and Trophy Point (Loechl and Tooker 2003, USMA 2004b). These five representative historic views are discussed in greater detail below.

#### Views from the Village of Cold Spring

The Village of Cold Spring is located approximately 3,500 feet (0.7 mile) northeast of the proposed Project site, on the eastern shore of the Hudson River. The Village of Cold Spring contains a variety of visually sensitive areas, including the Cold Spring Historic District, numerous structures listed individually on the State and National Registers of Historic Places, the Hudson Highlands Multiple Resource Area, and the Cold Spring Subunit of the HHSASS (NYSDOS 1993). These visually sensitive areas contain views up and down the Hudson River Valley, including views of Storm King Mountain to the north, and West Point to the south. In addition to these formally designated visually sensitive areas, numerous other structures and locations within the Village of Cold Spring, including residences, businesses, and public gathering locations, also have a significant visual relationship to the Hudson River (NYSDOS 1993, Hudson Valley Gateway 2004). This significant visual relationship to the Hudson River includes external views of West Point against the backdrop of the western Hudson Highlands, within which the proposed Project location at the Target Hill Field would be visible. Because of the large number of external views of West Point that are associated with the Village of Cold Spring, the public pier along the riverfront of the Village of Cold Spring has been identified as a representative vantage point for the Village of Cold Spring, from which the proposed Project would be visible (USMA 2004b, Cubbison 2005) (Appendix A). This representative vantage point was selected because it is a viewing point that is frequently utilized by members of the community and general public within the Village of Cold Spring (Cubbison 2005c).

#### Views from Constitution Island

Constitution Island is located approximately 1,500 feet (0.3 mile) east of the proposed Project site, on the eastern side of the Hudson River, and is included in the boundaries of West Point. In general, Constitution Island, which was historically a strategic site for controlling access along the Hudson River during the Revolutionary War, contains a variety of visually sensitive areas associated with its inclusion in the West Point NHL, D,

its listing on the State and National Registers of Historic Places, and its designation as the Constitution Island Subunit of the HHSASS (NYSDOS 1993). These visually sensitive areas contain a number of vantage points with views of the Hudson River Valley to the north and south, as well as views to the west containing the Hudson River and West Point, including the proposed Project location at Target Hill Field, against the backdrop of the western Hudson Highlands. These views also contain visually sensitive areas associated with the NHLD at West Point, and the West Point Military Academy and Contemporary West Point Military Academy subunits of the HHSASS (NYSDOS 1993, USMA 2004b) (Appendix A). In addition, West Point considers views from Constitution Island to have high historical significance, due to their association with the Revolutionary War period, and to have retained a high historical integrity (Halin et al 2003). Because of the number of external views of West Point from various vantage points on Constitution Island, Redoubt 7, a Revolutionary War period defensive structure located on a prominent hilltop on the western side of Constitution Island, has been identified as a representative vantage point for Constitution Island, from which the proposed Project would be visible (USMA 2004b, Cubbison 2005c) (Appendix A). This representative vantage point was selected because it is a viewing point that is frequently visited by members of the West Point community and the general public, particularly between approximately May and October, when Constitution Island is open for public tours (Constitution Island Association 2004, The Putnam County News and Recorder 2004, Cubbison 2005c).

#### Views from the Hudson River Traveling by Boat

The Hudson River contains external views of West Point that would include the proposed Project location at the Target Hill Field (USMA 2004b). These external views would be highly visible from the Hudson River, including leisure boats, barges, and tourist boats, which would pass immediately adjacent to the proposed Project area (Loechl and Tooker 2003). The Hudson River corridor is an extremely well preserved area, and the external view of West Point from the river has an extremely high historic significance, due in part to the historical use of the river as a primary transportation route until roads were constructed (Loechl and Tooker 2003). Views from various vantage points along the Hudson River and its eastern shoreline are historically very important to the region, and are valued by both transient users of the Hudson River and by neighboring communities and residents (Loechl and Tooker 2003). The external views from the eastern shoreline of the Hudson River are also considered historic views of West Point, dating back to the installation's Revolutionary War period, and are dominated by the Hudson Highlands in the background, the architecture of West Point in the middle ground, and the Hudson River in the foreground (Halin et al. 2003).

#### Views from the Lee Housing Area

The Lee Housing Area would contain internal views of the proposed Project at the Target Hill Field (USMA 2004b) (Appendix A). The Lee Housing Area was designed and constructed in the 1930s, reflecting the ideals of suburban design and town planning in the early 20<sup>th</sup> century, which combined visually pleasing architecture, partially wooded

settings, and tree-lined, curvilinear roads to create a pastoral feeling (Loechl et al. 2002). Buildings were constructed in the Neo-Georgian architectural style using brick with stone detailing, with six sets of officer's family quarters with detached garages in the lower portion of the Lee Housing Area, and 40 duplexes with detached garages in the upper portion of the Lee Housing Area (Loechl et al. 2002). All of these buildings have been included in the HABS/HAER inventory at West Point, and are also considered eligible for the NRHP and contributing elements of the NHLD at West Point (NPS 1984, Geo-Marine, Inc. 2001).

Due to selective clearing of wooded vegetation along Lee Road to access views of the Hudson River Valley to the south, the proposed Project would be particularly visible from the vicinity of Building 290, including immediately adjacent buildings (Family Housing for Lieutenants, Colonels, and Majors posted at West Point) (NPS 1984, USMA 2004b) (Appendix A). Areas of Lee Housing in the vicinity of Building 290 and immediately adjacent buildings, including front and side yard areas, have views south along the Hudson River that include the Target Hill Field in the foreground, and the Hudson River and buildings and activity areas associated with the Cadet Zone of West Point. Evidence for the significance of this view to the residents of the Lee Housing Area in the vicinity of Building 290 and immediately adjacent buildings, can be found in the arrangement of furniture and landscape features to take advantage of these views.

#### Views from Trophy Point

Trophy Point, an area within West Point that contains what are considered the most significant views at West Point, would contain internal views of the proposed Project at Target Hill Field (Halin et al 2003, USMA 2004b) (Appendix A). Views from Trophy Point are dominated by the Hudson River in the center, with the shorelines of the Hudson River and the Hudson Highlands in the middle ground and background, respectively. In particular, the vantage points from Trophy Point looking north along the Hudson River Valley are historically significant as the most far-reaching views of the Hudson River to the north, which were critical to defense during the Revolutionary War period (Halin et al 2003). These same views of the Hudson River to the north are also historically significant as commonly painted scenes associated with the Hudson River School of Landscape Painting in the earth 19<sup>th</sup> century, during the Thayer and Delafield periods of development at West Point (Halin et al. 2003). Finally, these views are considered to have high historical integrity because the landscape setting within the views of the Hudson River to the north from Trophy Point have undergone very little change over the centuries (Halin et al. 2003). Because of the number of internal views of the proposed Project from various vantage points at Trophy Point, the Amphitheatre at Trophy Point, also known as the Outdoor Theater or Band Shell, has been identified as a representative vantage point for Trophy Point, from which the proposed Project would be visible (USMA 2004b, Cubbison 2005c) (Appendix A). This representative vantage point was selected because it is a viewing point that is frequently utilized for outdoor entertainment and sightseeing by the West Point community and by the general public when visiting West Point (Cubbison 2005c).

## **2.8.2 Environmental Consequences**

A visual assessment of the proposed Project has been conducted to formally identify areas of potential effect (USMA 2004b) (Appendix A). The results of this visual assessment were used in conjunction with existing viewshed analyses for West Point to determine the impacts of the proposed Project on visual resources (Halin et al. 2003, Loechl and Tooker 2003, USMA 2004b).

### ***2.8.2.1 Impacts to Visual Resources on Target Hill Field***

Implementation of the proposed Project would result in impacts to visual resources at Target Hill Field, which is the proposed new location for rugby and soccer fields and their associated facilities (stands, field lights, scoreboards, and parking areas). However, these impacts to visual resources and visually sensitive areas would vary, depending on the season and the time of day. For example, intercollegiate outdoor rugby and soccer competition is generally in session from late summer through late fall (mid-August through late November) and in the spring (mid-February through early May), with indoor competition during the winter months (late November through mid-February). The outdoor practices and game events for intercollegiate rugby and soccer during the fall and spring sessions, and activities associated with the Summer Sports Camps, are restricted by limited daylight hours, and thus typically require additional lighting of outdoor athletic fields during evening hours. Although the proposed Project would also be utilized in July during West Point's Summer Sports Camps, no evening practices or game events are typically scheduled during the Summer Sports Camps.

Impacts to visual resources and visually sensitive areas that are associated with views of Target Hill Field would also be mitigated by two pre-existing characteristics of the proposed Project location, reducing the severity of potential impacts. First, the majority of the proposed Project location has been heavily modified by various episodes of cutting and filling in the 19<sup>th</sup> and 20<sup>th</sup> centuries (Cubbison 2005c). Initial cutting and filling of the proposed Project location was performed as part of construction of the railroad bed that runs along the western shore of the Project location. Later cutting and filling, including the leveling of Target Hill and infilling of land between the bluff line and the railroad bed along the west side of the Hudson River, was performed to develop the North Fill area, which contains both Target Hill Field and North Athletic Field (Loechl et al. 2002). This process of filling and construction of the North Fill area in the 19<sup>th</sup> and 20<sup>th</sup> centuries has resulted in significant changes to the original riverbanks and waterfront area of West Point, such that the existing visual resources associated with the Target Hill Field are relatively recent to the history of West Point. Despite that fact, viewsheds from various visually sensitive areas, including views north along the Hudson River Valley that contain Target Hill Field, are considered to retain their historic and scenic significance (Cubbison 2005c).

Second, the proposed Project location contains existing permanent facilities associated with current athletic uses, consisting of eight intramural rugby fields with natural turf surfaces, and associated structures such as chain-link fencing and goalposts. The existing

layout of the fields, and their associated structures, has resulted in an open, recreational space along the western shoreline of the Hudson River, and activities associated with the proposed Project would be consistent with existing land uses, which are currently seasonal, daytime intramural rugby games and practices. In addition, implementation of the proposed Project would result in a modern, well-equipped athletic facility that would serve as a visual demonstration of West Point's continued commitment to innovation and growth for its Cadet corps and support community.

Although the seasonal aspects of athletic uses associated with the proposed Project and the above two pre-existing characteristics of the proposed Project location would serve to reduce the severity of impacts on visual resources, implementation of the proposed Project would result in permanent changes to the appearance of Target Hill Field, which currently contains relatively unobtrusive landscape features. These changes would result from construction of permanent structures for the proposed new athletic facilities, which would eventually consist of four synthetic athletic fields (two for intercollegiate rugby and two for intercollegiate soccer); two athletic buildings with grandstands; field lighting; a permanent scoreboard; and other miscellaneous features including utility and driveway access points and improvements to the existing access road (Upton Road) adjacent to Target Hill Field. These new permanent structures would be more visually prominent within the landscape of Target Hill Field and would affect visual resources included in views from a variety of visually sensitive areas. The effects of the proposed Project on visual resources would vary seasonally and daily, but are expected to include the addition of new, permanent structures to the Target Hill Field; the visual prominence of the color of the artificial athletic fields during late fall, winter, and early spring, when the ground is bare; and the visual intrusion of night-time lighting and associated glare in the skyline and on the surface of the Hudson River during late fall and early spring evenings when rugby and soccer practices and game events are held.

Therefore, implementation of the proposed Project would affect views from visually sensitive areas that contain Target Hill Field. These various viewsheds include external views of Target Hill Field from a distance, such as the representative views from the Village of Cold Springs and Constitution Island along the eastern shore of the Hudson River, and the Hudson River itself, and views from recreational areas and scenic overlooks adjacent to West Point on the western shore of the Hudson River (NYSDOT 2003, Scenic Hudson 2003); external and internal views of Target Hill Field from various vantage points (distant and nearby) within natural landscapes that comprise the Contemporary West Point Military Academy, Storm King, Constitution Island, and Cold Spring subunits of the HHSASS; and from various vantage points located within or immediately adjacent to the Target Hill Field, including historic views from the Cadet and Cadet Support zones of West Point, and the historic Lee Housing and Trophy Point areas within the NHLD at West Point; and aesthetic landscapes within the Central Support and Lee communities (Design Collaborative, Inc., et al, undated USMA 2004b, NYSDOS 1993, Loechl et al. 2002, Halin et al. 2003, NYSDOT 2003, Scenic Hudson 2003) (Appendix A).

### ***2.8.2.2 Measures to Avoid, Reduce, or Mitigate Adverse Effects***

West Point has developed a number of measures to avoid, reduce, or mitigate the effects of the Project on views from visually sensitive areas that contain Target Hill Field. These measures, which are discussed in greater detail below, would be implemented in accordance with West Point's management plans for the visual resources associated with these landscapes, including the *Historic Landscape Management Plan for the U.S. Military Academy at West Point*, the *United States Military Academy Installation Design Guide*, and the *Identification and Analysis of the Historic Built Environment and Viewsheds, Cadet Zone* (Design Collaborative, Inc. et al. undated, Loechl et al. 2002, Halin et al. 2003).

To avoid adverse effects of the proposed Project on visual resources at Target Hill Field due to installation of four artificial athletic fields, the artificial surfaces of these fields would be designed to be visually compatible with the natural turf on the existing ground surface to the maximum extent practicable, particularly through the selection of artificial materials that mimic the texture of grass and result in the appearance of a natural grassy surface, and through the selection of a muted green color to avoid visual impacts during the late fall, winter, and early spring months, when the ground is bare and natural grass is dormant.

To reduce adverse effects of the proposed Project on visual resources at Target Hill Field due to construction and/or installation of new permanent structures, all new construction would reflect careful attention to, and appropriate concern for, the architectural styles, materials, and designs that are found within the NHLD at West Point, and the Hudson Valley scenic corridor in general. Furthermore, all new construction would be designed to be architecturally compatible with existing historic and/or athletic structures that are located at the nearby North Athletic Field, including the Gillis Field House, the Old Guardhouse, the Markmanship Center, and the Old Pontoon Building, through the utilization of similar or identical materials, designs, colors, and finishes for new permanent structures associated with the proposed Project. Therefore, the predominant materials for proposed new permanent structures such as the grandstands would be brick, matched to the brick colors of the historic structures at the nearby North Athletic Field. Architectural detailing such as crenellation and concrete capstones atop the facades, where brick is exposed along the tops of the facades, would also be a component of the architectural design. Other materials would be selected to integrate any new construction into the vegetated bluffs to the rear of these structures. Additionally, building roofs would be either more traditional pitched roof, or a flat roof with crenellated parapets with concrete capstones. Finally, all new construction, including outdoor athletic field lighting, would be designed so that no structures would protrude above the natural contours of the bluffs adjacent to the western and northern edges of the Target Hill Field, further ensuring that no new visual intrusions would be introduced into views of the Hudson River Valley from this bluff line. These design measures would ensure that proposed new permanent structures would be visually compatible with existing architectural elements located within and behind the waterfront of West Point, and would not become obtrusive landscape features.

The currently proposed locations for other permanent structures, the scoreboards for the new rugby fields, would be at the southern end of each rugby field, approximately perpendicular to the Hudson River, and facing northward. Both of the rugby scoreboards would be largely screened from the Hudson River and eastern/northeastern vantage points by the existing tree line along Upton Road. Additionally, the scoreboards would be internally illuminated only during sporting events; would be equipped with a manual switch to turn the scoreboards on; would be equipped with an automated timer to turn the scoreboards off at the end of sporting events; and would not be externally illuminated (*i.e.*, no lights would be installed in areas adjacent to the scoreboards to provide illumination of the scoreboards).

To further reduce adverse effects of the proposed Project on visual resources at Target Hill Field due to construction and/or installation of new permanent structures, all new construction would be located as far north and west within Target Hill Field as economically feasible. This would assist with minimizing potential adverse effects on visual resources from such visually sensitive areas located south and east of the proposed Project area, such as Trophy Point and Constitution Island, by ensuring that new construction is located as far in the background of views that include Target Hill Field as possible. This would also assist with minimizing potential adverse effects on visual resources from visually sensitive areas north and east of the proposed Project area, such as the Lee Community, the Village of Cold Spring, and recreational areas and scenic overlooks on Storm King State Park and along U.S. Route 9W, by ensuring that new construction is screened by the bluff line and forested vegetation along the northern edge of Target Hill Field. Miscellaneous features such as utility access points and improvements to the existing access road along Target Hill Field, are expected to be located immediately adjacent to the existing access road and are not expected to result in significant changes to the existing landscape at the proposed Project location.

To mitigate for adverse effects of the proposed Project on visual resources at Target Hill Field due to installation of permanent outdoor athletic field lighting, West Point has developed the following measures to reduce visual impacts from athletic lighting. Specifically, West Point would install the minimum necessary lighting for use of the rugby and soccer fields for practices and game events during the evening. All light poles and fixtures would be anodized or of materials and finishes that are not shiny or reflective, and the height of light poles would be limited to that absolutely necessary for the type of sporting venue. Additionally, outdoor athletic field lighting would be designed so that no lighting structures or fixtures would protrude above the natural contours of the bluffs adjacent to the western and northern edges of Target Hill Field, and no visual obstructions would be introduced into views of the Hudson River from this bluff line. In particular, additional line-of-sight analysis would be performed to ensure that no lighting structures or fixtures would interfere with the natural lines of sight from the Lee Housing Area south along the Hudson River Valley. Furthermore, West Point would ensure that directional lighting is installed, such that lighting is directed down onto the athletic playing fields, and would install full shields on all of the athletic lighting to reduce off-field illumination and reflection (light trespass). In addition, all outdoor

athletic field lighting systems would be equipped with switches that require them to be manually turned on, and equipped with automatic timers to automatically turn them off, to ensure that visual impacts from lighting and associated glare would be limited to only those evening hours during which practices and game events are routinely held, generally between the hours of 4:30 pm and 10:00 pm on weeknights and weekend evenings. Finally, illumination of outdoor athletic fields would only occur when outdoor practices or game events were scheduled.

### ***2.8.2.3 Visual Impacts to Five Historic Views***

In recognition of the wide variety of visual resources and/or views of the proposed Project from visually sensitive areas, West Point's visual assessment determined that the proposed Project would potentially have adverse effects on five representative historic views that contain the proposed Project at Target Hill Field, as discussed above in Section 2.8.1.7 (USMA 2004b). These five representative historic views comprise the wide variety of visual resources present at or surrounding West Point, including internal and external views that contain portions of the NHLD at West Point, internal views from several small communities within West Point with unique aesthetic landscapes, external views that contain natural and cultural landscapes associated with the HHSASS, and external views that are significant to the aesthetic qualities of public recreational areas or transportation routes adjacent to West Point. The measures identified above in Section 2.8.2.2 to avoid, reduce, or mitigate the adverse effects of the proposed Project on visual resources within internal and external viewsheds of West Point have been applied to these five historic views to identify the significance of the visual impacts of the Project on the historic, architectural, aesthetic, and natural landscapes contained within these five historic views.

#### **Views from the Village of Cold Spring**

Implementation of the proposed Project at Target Hill Field would result in limited seasonal impacts on the visual resources within external views of the proposed Project location from the Village of Cold Springs.

Due to the distance of the Village of Cold Spring from the proposed Project location at Target Hill Field (approximately 3,500 feet or 0.7 mile northeast of the proposed Project), the proposed Project would not visually impact these views during daylight hours of any season, as proposed permanent structures would not be obtrusive landscape features and athletic activities associated with the proposed Project would be consistent with current use of the proposed Project location. Furthermore, the proposed Project would not result in visual impacts on these external views during the day or during the evening throughout summer months, when the majority of outdoor activities occur and when waterfront areas of these visually sensitive areas are used most heavily. However, the proposed Project would visually impact these views on selected evenings during the fall and spring seasons only, when the intercollegiate outdoor rugby and soccer seasons are in session. Visual impacts to these views would primarily result from proposed outdoor athletic lighting,

which would be used to illuminate the rugby and soccer fields for both practices and game events on weeknights and weekend evenings throughout the spring and fall.

As a result of implementation of measures for the design and/or location of proposed permanent structures and outdoor athletic field lighting to reduce limited seasonal impacts to visual resources, the proposed Project would have no significant adverse effects on visual resources associated with external views of West Point from the various residences, businesses, and public gathering locations within the Village of Cold Spring, the Cold Spring Historic District, numerous structures listed individually on the State and National Registers of Historic Places, the Hudson Highlands Multiple Resource Area, and/or the Cold Spring Subunit of the HHSASS.

#### Views from Constitution Island

Implementation of the proposed Project at Target Hill Field would result in limited seasonal impacts on the visual resources within external views of the proposed Project location from Constitution Island, from which West Point and the backdrop of the western Hudson Highlands can be viewed.

Despite the proximity of Constitution Island to the proposed Project location at the Target Hill Field (approximately 1,500 feet or 0.3 mile southeast of the proposed Project), the proposed Project would not visually impact these views during daylight hours of any season, as athletic activities associated with the proposed Project would be consistent with current use of the proposed Project location, and permanent structures such as the grandstands would be designed to be architecturally compatible with existing buildings and structures within this viewshed, and located as far in the background of these views as is economically feasible. Furthermore, the proposed Project would not visually impact these views on selected evenings during the fall and spring seasons, when the intercollegiate outdoor rugby and soccer seasons are in session, because public access to Constitution Island is limited to seasonal daytime hours during the typical tourist season (typically tours on Wednesday and Thursday afternoons between approximately May through October) (Constitution Island Association 2004, The Putnam County News and Recorder 2004).

As a result of implementation of measures to avoid or reduce impacts to visual resources from proposed new permanent structures such as the grandstands, the proposed Project would have no significant adverse effects on visual resources associated with external views of West Point from Constitution Island, the Hudson Highlands Multiple Resource Area, and the Constitution Island Subunit of the HHSASS.

#### Views from the Hudson River Traveling by Boat

Implementation of the proposed Project at Target Hill Field would result in moderate impacts on the visual resources within external views of the proposed Project location from recreational and commercial boat traffic moving up- and downstream along an approximately 9,000-foot (1.7-mile) length of the Hudson River, between approximately

Gees Point on the eastern shoreline at West Point and the Village of Cold Spring on the western shoreline. This approximately 9,000-foot (1.7-mile) length of the Hudson River contains close-up, river-level views of the proposed Project within the historic athletic field and waterfront landscapes within the NHLD at West Point, the aesthetic landscapes associated with the Central Support Community, and the natural landscapes associated the Contemporary West Point Subunit of the HHSASS, against the backdrop of the western shoreline and bluffs of the Hudson River Valley.

Due to the proximity of this stretch of the Hudson River to the proposed Project location at Target Hill Field (e.g., immediately adjacent to the proposed Project location), the proposed Project would have low to moderate impacts on these moving views during daylight hours of the extended summer season (approximately May through October), primarily because athletic activities associated with the proposed Project would be consistent with current use of the proposed Project location, and because existing deciduous trees along the edge of the shoreline at Target Hill Field partially screen the open landscape of the proposed Project location from the Hudson River. Furthermore, proposed new permanent structures such as the grandstands, which would result in permanent landscape features, would be designed to be architecturally compatible with existing buildings and structures within this viewshed, and the grandstands would be located as far west and north against the backdrop of the steep slopes and thick forest vegetation surrounding the Target Hill Field as is economically feasible, to further ensure that this structure would not become obtrusive landscape features.

However, low to moderate impacts to these same moving views would result from operation of outdoor athletic lighting proposed to illuminate the rugby and soccer fields during evening practices and game events. Specifically, moving views would be affected by reflected light trespass from outdoor athletic field lighting on the water surface of the Hudson River, and the intensity of reflected light would vary within the lines of sight from moving boat traffic along this stretch of the Hudson River. No or low adverse effects on these external moving views would occur during daylight hours, whereas low to moderate, temporary adverse effects would occur on selected weekday and weekend evenings when practices or games are in session. This impact would be limited during longer summer days (between approximately May through October) and most pronounced during the fall and spring when intercollegiate outdoor rugby and soccer seasons are in session.

As a result of implementation of measures to avoid or reduce impacts from the design and/or location of proposed permanent structures and athletic lighting, the proposed Project would have no significant, permanent, adverse effects on visual resources associated with external views of West Point from recreational and commercial boat traffic moving up- and downstream along the approximately 9,000-foot (1.7-mile) length of the Hudson River.

## Views from the Lee Housing Area

Implementation of the proposed Project at Target Hill Field would result in moderate impacts on the visual resources within external views of the proposed Project location from the Lee Housing Area, particularly within the open viewshed to the south in the vicinity of Building 290 and immediately adjacent buildings, from which portions of the historic athletic field and waterfront landscapes within the NHLD at West Point, the aesthetic landscapes associated with the Cadet and Central Support communities, and the natural landscapes associated with the Contemporary West Point, West Point Military Academy, and Constitution Island subunits of the HHSASS can be viewed.

Although the Lee Housing Area is located immediately adjacent to the proposed Project location at the Target Hill Field (approximately 500 feet or 0.1 mile west and north of the proposed Project), the Lee Housing Area is located approximately 100 feet above the proposed Project location, at the top of the bluffs along the western edge of the Hudson River Valley, and only a portion of the proposed Project would be located within this viewshed. Due to variation in topographic elevations included in this line of sight, the proposed Project would not visually impact these views during the day of any season, because athletic activities associated with the proposed Project would be consistent with current use of the proposed Project location; and because the new grandstands would be placed at the north end of the proposed Project location, as far west and north against the backdrop of the bluffs and forested vegetation as economically feasible, and would be designed so that no permanent structures (including outdoor athletic field lighting) would protrude above the natural contours of the bluffs or result in visual intrusions within these views or within the natural lines of sight from the Lee Housing Area south along the Hudson River Valley.

The proposed Project also would not result in visual impacts on these same external views during the day and during the evening throughout summer months, when the majority of outdoor residential activities occur and when this open viewshed to the south along the Hudson River Valley would be most often viewed from the Lee Housing Area.

However, the proposed Project would result in limited visual impacts to this view on selected evenings during the fall and spring seasons, when the intercollegiate outdoor rugby and soccer seasons are in session. Visual impacts to this view would result from proposed outdoor athletic field lighting, which would be used to illuminate the rugby and soccer fields for both practices and game events on weeknight and weekend evenings. These impacts would be primarily limited to evenings during the fall and spring seasons, when intercollegiate outdoor rugby and soccer practices and game events are scheduled, which is typically a time of limited residential outdoor activities due to decreased availability of natural light, as well as decreased outdoor temperatures.

As a result of implementation of measures to reduce visual impacts from the design and/or location of proposed new permanent structures such as the outdoor athletic field lighting, the proposed Project would have no significant adverse effects on visual resources associated with external views of West Point from the Lee Housing

Area, especially within the open views to the south along the Hudson River from the vicinity of Building 290 and immediately adjacent buildings.

### Views from Trophy Point

Implementation of the proposed Project at Target Hill Field would result in moderate impacts on the visual resources within external views of the proposed Project location to the north from Trophy Point, from which the athletic field and waterfront landscapes within the NHLD at West Point, the aesthetic landscapes associated with the Central Support Community, and the natural landscapes associated the Contemporary West Point, Constitution Island, and Cold Spring subunits of the HHSASS can be viewed.

Although Trophy Point is located approximately 3,500 feet (0.7 mile) south of the proposed Project, Trophy Point is located approximately 160 feet above the proposed Project location, at the top of the bluffs along the western edge of the Hudson River Valley, and the wide open viewshed from this vantage point contains the entire proposed Project against the backdrop of the Hudson River Valley. Despite the relatively high visibility of the proposed Project within lines of sight from Trophy Point, the proposed Project would not visually impact these views during daylight hours of any season, because athletic activities associated with the proposed Project would be consistent with current use of the proposed Project location, and because proposed new permanent structures such as the grandstands would be designed to be architecturally compatible with existing buildings and structures within this viewshed and would be placed at the north end of the proposed Project location, as far west and north against the backdrop of the bluffs and forested vegetation as economically feasible.

The proposed Project would visually impact these views on selected evenings during the fall and spring seasons, when the intercollegiate outdoor rugby and soccer seasons are in session, primarily as a result of proposed outdoor athletic field lighting, which would be used to illuminate the rugby and soccer fields for both practices and game events on weeknight and weekend evenings throughout the spring and fall. However, this is typically a time of limited outdoor activities at Trophy Point due to decreased availability of natural light, as well as decreased outdoor temperatures. Furthermore, the proposed Project would not result in visual impacts on these external views during daytime or evening hours throughout summer months (approximately between June and August), when Trophy Point is most heavily used for outdoor cultural events such as band and orchestra concerts, and when views to the north along the Hudson River Valley would be most often viewed by spectator audiences.

As a result of implementation of measures to reduce impacts from the construction and/or operation of permanent structures and outdoor athletic field lighting, the proposed Project would have no significant adverse effects on visual resources associated with external views of West Point from Trophy Point.

## 2.9 COASTAL ZONE MANAGEMENT

West Point is located within a state-designated coastal zone management area that is associated with the Hudson River (NYS DOS 1981). Therefore, development projects must be evaluated for consistency with the 44 NYSDOS CMP State Coastal Policies, which are grouped together to address issues related to development, fish and wildlife resources, flooding and erosion hazards, general issues, public access, recreation, historic and scenic resources, agricultural lands, energy and ice management, and water and air resources in state-designated coastal zone areas (NYS DOS 2002). Furthermore, pursuant to 15 CFR Part 930.34(b), West Point must notify the NYSDOS CMP of Project consistency with State Coastal Policies at least 90 days prior to project implementation, and coordinate and consult with the NYSDOS CMP and other agencies to ensure that the proposed Project would be consistent with NYSDOS' State Coastal Policies, and would have no undue adverse effects on New York State coastal zone resources.

To facilitate the coastal zone consistency determination process, West Point has determined that, of the 44 State Coastal Policies, five (5) policies may be applicable to the proposed Project, as identified below. Determinations for the consistency of the Project with these five policies are also presented below.

***Policy 11 – Buildings and other structures will be sited in the coastal areas so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.*** Policy 11 is a flooding and erosion hazards policy that is designed to minimize property damage from flooding events and natural and storm-related erosion (NYS DOS 2002). Consistency with Policy 11 would be determined by ensuring the proper siting of structures in state-designated coastal areas, particularly when a proposed structure is located within a coastal erosion hazard area, a coastal high hazard area, and or a floodway (NYS DOS 2002).

***Determination*** – Based on the preceding analyses in sections 2.1 (Geology and Soils) and 2.2 (Water Resources), the proposed Project would be consistent with Policy 11 by following siting recommendations for state-designated coastal lands. Specifically, the proposed Project location is at elevations ranging between 13 and 19 feet above mean sea level, placing the proposed Project location above, and outside of, the currently accepted 100-year floodplain (8 feet base flood elevation) of the Hudson River in this area. In addition, the elevated railroad bed that parallels the Hudson River, between the river and the proposed Project location, is also situated higher than the base flood elevation, and functions as a flood barrier for Target Hill Field. However, Target Hill Field has occasionally been subject to flooding in the past 15 years (Beemer 2005). Currently, the building design does not include (and is not required to include) special floodproofing measures or specifications to prevent or minimize potential future flood damages. However, as a result of the proposed siting and placement of the athletic buildings on the western, most landward (and highest elevation), side of Target Hill Field, the potential for future flood damages to the athletic facilities has been minimized.

**Policy 17 – Non-structural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible.** Policy 17 is a flooding and erosion hazards policy that is designed to ensure that a proposed project would include non-structural measures where practicable to minimize the potential for flooding and erosion (NYS DOS 2002). Consistency with Policy 17 would be determined by ensuring that a proposed project is properly designed and sited, such that the proposed project would include “measures to protect existing activities and development” from potential damage from flooding and erosion (NYS DOS 2002).

**Determination** – Based on the preceding analyses in sections 2.2 (Water Resources) and 2.6 (Land Use), the proposed Project would be consistent with Policy 17 through the proper design and siting of permanent structures and a drainage system (Policy 11), as well as the implementation of an erosion control plan during construction activities (Policy 14).

**Policy 23 – Protect, enhance and restore structures, districts, areas or sites that are of significance in the history, architecture, archaeology or culture of the state, its communities or the nation.** Policy 23 is a historic and scenic resources policy that provides for the protection of historic and scenic resources that are both within the state-designated coastal zone area, as well as historic and scenic resources that have a coastal relationship (NYS DOS 2002). Such historic and scenic resources include resources “on, or nominated to be on, or determined eligible to be on the NRHP” (NYS DOS 2002). Consistency of a proposed action with this policy would include measures to “prevent a significant adverse change to such significant structures, districts, areas or sites,” including measures to prevent the implementation of proposed actions “within 500 feet of the perimeter of the property boundary of [a] historic, architectural, cultural, or archaeological resource and all actions within an historic district that would be incompatible with the objective of preserving the quality and integrity of the resource,” particularly in a manner that would make the visual and locational relationship of the proposed action incompatible with the “special character of the historic, cultural, or archaeological resource” (NYS DOS 2002). Measures to ensure consistency with this policy include ensuring the compatibility of the visual and locational relationship of the proposed action with historic and scenic resources by designing the general appearance of the proposed action to reflect such qualities as the architectural style, design material, scale, proportion, composition, mass, color, setback, landscaping, and lighting of the historic and scenic resources to the maximum extent possible (NYS DOS 2002).

**Determination** – Based on the preceding analyses in sections 2.5 (Cultural Resources) and 2.8 (Visual Resources), and the results of West Point’s Project-specific Visual Assessment, the proposed Project would be consistent with Policy 23, through the implementation of design and siting measures in conjunction with recommendations from the NYSOPRHP and the NYSDOS that would avoid, reduce, or mitigate significant adverse effects on historic and scenic resources within the proposed Project location. Specific measures to avoid, reduce, or mitigate significant adverse effects on historic resources could include a Phase I Cultural Resource Investigation of any previously undisturbed portions of the proposed Project location within the Target Hill Field.

Specific measures to avoid, reduce, or mitigate significant adverse effects on scenic resources would be identical to those identified below, for Policy 24.

**Policy 24 – Prevent impairment of scenic resources of statewide significance.** Policy 24 is also a historic and scenic resources policy that evaluates the impacts of a proposed action in areas that have been identified as scenic areas of statewide significance within a state-designated coastal zone area. These evaluations consider whether the proposed action would impair a Scenic Area of Statewide Significance (SASS), through activities such as the destruction or removal of vegetation in areas where vegetation is considered “significant to the scenic quality of an identified resource,” and or the addition of structures to a scenic area “which because of scale, form or materials, would diminish the scenic quality of an identified resource” (NYSDOS 2002). Consistency of a proposed action with this policy would incorporate guidelines identified in this policy, including “siting structures...back from shorelines, or in other inconspicuous locations to maintain the attractive quality of the shoreline and to retain views to and from the shore,” “orienting structures to retain views, [and] save open space,” “adding vegetation to...blend structures into the site, and obscure unattractive elements,” “using appropriate materials, in addition to vegetation, to screen unattractive elements,” and “using appropriate scales, forms and materials to ensure that...structures are compatible with...the landscape.”

Consistency of a proposed action with this policy would be particularly important because West Point is located within the HHSASS, a 20-mile stretch of the Hudson River and its associated shoreline that lies within the New York State coastal zone, and that has been designated as a SASS because of its “unique, highly scenic landscapes which are accessible to the general public, and recognized for their scenic quality” (NYSDOS 1993). Because West Point and adjacent municipalities have not established a Local Waterfront Revitalization Program for the Project area, the NYSDOS’s CMP administers policies for development within the HHSASS (Millington 1998, NYDOS 2002).

The HHSASS is comprised of 28 subunits, which have distinct, but related scenic components that contribute to the larger HHSASS. The proposed Project is located within one of the 28 subunits of the HHSASS, the Contemporary West Point Military Academy Subunit. The proposed Project also may be visible from locations within five adjacent subunits of the HHSASS: the West Point Military Academy Subunit, the Storm King Subunit, the Highland Falls Subunit, the Constitution Island Subunit, and the Cold Spring Subunit.

**Determination** – Based on the preceding analysis in Section 2.8 (Visual Resources), and the results of West Point’s Project-specific Visual Assessment, the proposed Project would be consistent with Policy 24, through the implementation of design and siting measures that prevent impairment of scenic resources of statewide significance within the proposed Project location. Specifically, implementation of design measures would avoid impairment by ensuring that proposed permanent structures, such as the synthetic athletic fields, the grandstands, the scoreboards, and outdoor athletic field lighting, are designed to be consistent with the architectural styles, materials, scales, and forms of existing

recreational athletic structures within the proposed Project location and for similar outdoor athletic facilities at West Point. Furthermore, permanent structures such as the grandstands would be located along the hillside on the western and northern edges of Target Hill Field so that the edge of the bluff line and the thick forest vegetation that surrounds Target Hill Field would act as a backdrop to this permanent structure and reduce its visual intrusion into the scenic resources of statewide significance that are located within, or within views of, the proposed Project location. In addition, potentially obtrusive elements of the proposed Project, such as the light poles for outdoor athletic field lighting, would be minimized by using materials that are non-reflective and colors that would allow these permanent fixtures to blend with the natural background of the proposed Project location. Finally, potentially obtrusive elements of the proposed Project caused by evening illumination from outdoor athletic field lighting would be minimized by installing directional lighting with full shields to prevent off-field illumination and reflection (light trespass), and by installing timers to ensure that evening illumination from outdoor athletic field lighting would be restricted to those specific evenings outdoor athletic events were scheduled.

***Policy 33 – Best management practices will be used to ensure the control of stormwater runoff and combined sewer overflows draining into coastal waters.***

Policy 33 is a water and air resources policy that encourages the use of “best management practices” to avoid “pollution [of coastal waters] caused by the discharge of stormwater runoff and combined sewer overflows” (NYS DOS 2002). Consistency with this policy is encouraged through the development of both structural methods, where economically feasible, and non-structural methods to avoid any adverse water quality impacts that may result from a proposed action (NYS DOS 2002).

***Determination*** – Based on the analyses in sections 2.2 (Water Resources) and 2.11 (Utilities), the proposed Project would be consistent with Policy 33. Specifically, West Point maintains existing separate, not combined, stormwater drainage and sanitary sewer systems, with which the proposed Project would be connected.

To address stormwater drainage collection and discharge, West Point would implement soil erosion and sedimentation control BMPs during construction (Section 2.2.2), and a Project-specific stormwater management plan for the appropriate collection, treatment, and or discharge of stormwater runoff during operation (Section 2.11.2) of the Project. Furthermore, the proposed Project would be designed to avoid the physical alteration of existing streams or drainages within the proposed Project’s footprint. All plans and facilities would be designed, constructed, and maintained in accordance with the New York State Stormwater Design Manual (Center for Watershed Protection 2001) and all applicable stormwater management regulations and permits.

To address sanitary sewer systems, it is anticipated that the Project’s wastewater lines would tie into the West Point’s existing sanitary sewer system and undergo secondary treatment at West Point’s Target Hill Wastewater Treatment Plant, before the secondary treated water is discharged to the Hudson River. This wastewater treatment plant is currently being upgraded.

## **2.10 TRAFFIC AND TRANSPORTATION**

### **2.10.1 Affected Environment**

Direct access to the Main Post at West Point is by U.S. Route 9W and NYS Route 218 (USMA 1989). The DHPW maintains roadways at West Point, and traffic is controlled by the Military Police (MP) (USMA 1996b). The roads on the Main Post/Academic Area were developed in response to the topography of the land as well as the historic and scenic nature of the area (USMA 1989, USMA 1996b). Traffic circulates throughout the Main Post/Academic Area by means of a curving, continuous roadway running from Thayer Gate on the southwest edge of the Main Post to Washington Gate (USMA 1989). The most heavily used portion of the West Point roadway system is along Thayer and Washington roads (USMA 2003). Access to the Project area is confined to Upton Road, a hard surfaced, relatively narrow, dead end access road that is located on West Point's property for its entire length. All roads at West Point are hard-surfaced with designed drainage. There are also approximately 60 miles of unimproved roads that provide access to all of the training areas and ranges (2003).

Passenger rail service in the vicinity of West Point is provided by Metro North, which operates out of Grand Central Station in New York City and makes three stops on the east side of the Hudson River. Passenger rail service to West Point was terminated in the late 1950s, when the west shore (Hudson River) line was converted to freight only (USMA 2003). This single-track freight service is provided along CSX's West Shore line, and traverses West Point within approximately 100 feet east of the Project area, and is situated parallel and east of Upton Road.

The Hudson River at West Point is navigable to barges, cargo ships, and passenger boats. Metro North operates the Peekskill Ferry, a tour boat service ferrying passengers from the east shore Peekskill rail stop to West Point (USMA 2003).

Employees of West Point, both permanent staff and contractors, routinely enter the West Point property via the access roadways and park in existing parking lots. Shuttle bus service currently runs along main roadways through the West Point installation. Students enrolled at the West Point Elementary and Middle Schools are shuttled to and from school via a local private school bus system. Public transportation, in the form of the Short Line Bus Company, regularly services the West Point community (USMA 2001).

### **2.10.2 Environmental Consequences**

The primary transportation impact concerns are associated with a predicted Project displacement of 400-600 vehicle parking spaces that Target Hill Field currently provides for West Point home varsity football games, the potential need for parallel parking and/or shuttle drop-off and pick-up points along Upton Road, potential improvements to the Upton Road turnaround area, and service vehicle access to Project athletic buildings/grandstands.

With development of new athletic fields and facilities on the Project site, West Point would lose approximately 400-600 vehicle parking spaces currently used at Target Hill Field during home intercollegiate/varsity football games. As a result, alternate parking facilities for approximately 400-600 vehicles would be required during home football games. Parking demands would potentially be exacerbated, particularly in the event of simultaneous scheduling of football, rugby, and soccer matches.

As part of an ongoing assessment of parking facilities and use at West Point, aerial photographs were taken to depict the parking patterns during a recent home football game between the Army and the Air Force during Fall 2004. This home game was considered to represent the “worst case” scenario for high-volume parking associated with football games at West Point (the only other team combination that could generate more spectators, the Army-Navy game, is traditionally held at a “neutral” location away from both teams’ home fields). Based on West Point’s review of these photographs, it was determined that one half of the area at Target Hill Field (in combination with other parking areas presently used at West Point) would adequately support the number of vehicles that parked at Target Hill Field (Meyer 2005). Therefore, during the early phases of the Project when only the rugby facilities have been developed at Target Hill Field, it is assumed that the undeveloped half of the field (reserved but not yet developed for the soccer component of the Project) would provide adequate parking for any such events requiring high-volume parking accommodations at West Point. Following the development of the soccer facilities, Target Hill Field would not be available for this occasional high-volume parking. However, when this occurs West Point assumes that the current practice of using numerous temporary remote parking facilities on West Point property (e.g., Range Areas), in conjunction with shuttle buses to transport spectators to various athletic venues, would be an acceptable solution for the loss of occasional high-volume parking areas that would occur as a result of this Project. Therefore, the impact of the loss of parking space would not be significantly adverse.

Approximately 1,800 feet of Upton Road fronts the Project area, including the existing moderately sized turn around area at the north end of Upton Road. Implementation of the Project would include creation of up to approximately 100 parallel parking spaces along Upton Road within the Project area. Upton Road presently has no markings denoting parking spaces, and due to its limited width, parking currently occurs on the grass margin of Upton Road. Upton Road is relatively narrow and the creation of formal parallel parking spaces along its length within the Project area would require widening of Upton Road, as well as providing a series of turnouts for spectator shuttle drop-off and pick-up points and compliance with the Americans with Disabilities Act (ADA), to accommodate spectator transportation to and from the Project area. In addition, the moderately sized turnout at the north end of Upton Road may require expansion in dimensions to more easily accommodate added parking space and an adequate turnaround radius for shuttle buses. Consequently, a portion of the rocky terrace slope adjacent to the north edge of the existing Upton Road turnaround may require removal through excavation/blasting to allow expansion of the existing turnaround.

Construction staging for the Project would have a moderate impact on traffic and transportation and only temporarily hinder the smooth flow of traffic at West Point. Upton Road presently is the sole access to the Project area and is a dead-end, hard surfaced road with a moderately sized turnaround near the north end of the Project. The reconfiguration and widening of Upton Road may be necessary for adequate equipment/material staging and construction vehicle flow during the construction period, and may be combined with measures to expand parallel parking and shuttle bus access along the length of Upton Road within the Project area.

Workspace for construction equipment, such as trenching machines and/or backhoes, dump trucks, and paving equipment, would be required either on or adjacent to Upton Road, depending on available space. Upton Road closure would be required for the duration of Project construction periods. As a result, potential temporary impacts to traffic flow could occur during Project construction periods.

In order to minimize traffic-related impacts associated with excavation and construction throughout the Main Post/Academic Area, West Point would develop and implement a detailed construction logistics plan that specifically addresses traffic control and circulation issues for this Project. Prior to commencement of construction, Project planners would coordinate with and solicit input from the various departments at West Point, including military police, fire department, medical emergency response groups, DHPW, 1/1 Infantry, and transportation and safety departments to develop as comprehensive a plan as possible.

In addition, Project planners would coordinate with appropriate groups and individuals to avoid scheduling potentially disruptive construction activities when large events, such as West Point graduation week (end of May), home football games or other intercollegiate athletic events requiring overflow parking and peak traffic flow, are scheduled.

Constructing the new Project synthetic fields and athletic buildings/grandstands would likely occur during the fall, during the first college term when cadets and staff will be present in the vicinity of the Project. Impact minimization measures include the use of temporary traffic control devices such as signs, traffic cones, high visibility ribbons, flags, lighted barricades, steel plates, temporary asphalt pavements, and temporary fencing also would be used where necessary to maintain traffic safety during construction. In addition, West Point would post daily traffic updates regarding the construction locations on its website, which has a section specifically devoted to traffic reporting on the installation. West Point would closely monitor construction progress and plans to ensure that critical roadways are not obstructed during rush hours or other scheduled high-traffic periods.

In summary, traffic impacts have the potential to be moderate during the Project construction period at certain locations. These impacts would be short-term and localized, limited to the period of construction in the specific areas of active construction. West Point would develop a detailed construction logistics plan and would implement a number of measures, as described in this section, to minimize traffic impacts. With the

implementation of these measures, the impacts resulting from construction should not be undue or significantly adverse. Following construction, operation of the Project would have a minor impact on parking and transportation facilities at West Point, dependent upon West Point establishing adequate alternative parking venues and increased shuttle bus service during major athletic events and competitions.

## **2.11 UTILITIES**

### **2.11.1 Affected Environment**

The types of utilities and utility infrastructure addressed in this section consist of potable water, sanitary sewer, stormwater drainage, electricity, heating and cooling, and telecommunications systems at West Point. The proposed Project would require service from each of these utility systems.

#### Potable Water

Potable water for supplying the Main Post/Academic Area of West Point consists of surface water 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 (USMA 2003). The Main Post /Academic Area of West Point has two treatment plants for raw water: the Stony Lonesome Treatment Plant and the Lusk Treatment Plant (which is associated with Lusk Reservoir). After treatment, water is distributed throughout the Main Post/Academic Area through a network of 4- to 24-inch-diameter buried water mains and lines (USMA 1998). Two high-pressure and three low-pressure water service areas encompass the Main Post/Academic Area. In 1996, the average daily treated water demand in the Main Post/Academic Area was approximately 2.3 million gallons per day (mgd), and the average daily treated water demand at Camp Buckner and Camp Natural Bridge was 0.97 mgd (USMA 2003).

Although the Project area is currently served with water service for the purpose of watering the grass on Target Hill Field, this service is limited due to the shallow burial depth of the water line and the associated seasonality of supply (i.e., the water is turned off during the winter to avoid freezing pipes). Therefore, an extension of water lines would be necessary to provide adequate service for the Project, to satisfy both fire service and potable water needs. The nearest existing water line to the Project area is a 6-inch-diameter line that currently terminates at the entrance to the Target Hill Wastewater Treatment Plant, located adjacent to the south of the Project area. West Point anticipates that it would extend this line to serve the Project facilities.

#### Sanitary Sewer

Sanitary sewer lines are separate from the storm water drainage system in the Main Post/Academic Area at West Point. The sanitary sewer system consists of buried sewer collection and main lines, pumping stations, and the Target Hill Wastewater Treatment

Plant located adjacent to the Project site at Target Hill Field. Secondary treated wastewater is discharged from this 2 mgd-capacity facility to the Hudson River (USMA 2003). West Point plans to upgrade of the Target Hill Wastewater Treatment Plant to increase its capacity, and the plans for the proposed rugby/soccer facilities are being coordinated with the plans for this wastewater treatment facility expansion.

A sanitary sewer line at the Project site generally is aligned in a north-south direction along the western edge of Target Hill Field, and terminates at the Target Hill Wastewater Treatment Plant. Although this line is broken and no longer actively used, it is anticipated that the sanitary sewer needs for the Project would be met by constructing a sewer line to connect the Project facilities to the adjacent wastewater treatment facility.

### Stormwater Drainage

Stormwater drainage for the Main Post/Academic Area is accommodated through open ditches, vegetated swales, paved open channels, and buried stormwater pipes (USMA 2003). Stormwater drainage is generally directed via gravity flow to discharge to the Hudson River.

A buried stormwater drainage pipe is located at the northwest end of Target Hill Field at the base of the adjacent hill. This pipe collects surface water runoff from the Lee Housing Area that flows in a concentrated pattern down the hillside, and directs it through underground piping to discharge into the Hudson River. West Point recently has experienced flooding problems in the north end of Target Hill Field, associated with the collapse or blockage of this buried drainage pipe. However, this blockage would be repaired as part of West Point's routine grounds maintenance before construction of this Project.

A second buried stormwater drainage pipe is located at the south end of the Project area. This buried pipe is generally aligned east to west, and conveys water from the west and uphill of Target Hill Field, past and adjacent to the Target Hill Wastewater Treatment Plant, and eventually discharges to the Hudson River (Vollmer Associates, LLP 1999). The permitted discharge outfall for the wastewater treatment plant also is aligned with this stormwater drainage pipe.

In addition, Crows Nest Brook flows from west to east through the Project site, buried under the ground surface in a box culvert. This brook is located at the approximate mid-point of Target Hill Field, and discharges into the Hudson River. Section 2.2 provides more details on the fisheries and water quality aspects of Crows Nest Brook.

Although the details of the Project design have not yet been determined with regard to stormwater drainage, it is anticipated that the stormwater and field drainage system for the Project would tie into either one or all three of these onsite drainage structures.

## Electricity

Electricity at the West Point Main Post/Academic Area is supplied by Orange and Rockland Utilities, Inc (USMA 2003). Electricity is distributed through the Main Post/Academic Area via the Main Power Plant and several substations, primarily through buried lines in most of the Main Post/Academic Area and in the vicinity of the Project area.

Although the details of the Project design have not yet been determined with regard to electric service, it is anticipated that either an extension of existing electric lines or pad-mounted transformers, or a combination of both, would be required to serve the Project.

The nearest existing electric lines to the Project site are located at the Target Hill Wastewater Treatment Plant (adjacent to the south of the Project site), and in the Lee Housing Area (located approximately 400 feet north of, and approximately 100 feet higher in elevation than, the Project area). Because the existing electric lines at the wastewater treatment plant do not have sufficient capacity to serve the proposed rugby and soccer facilities, it is anticipated that electric service would be extended from the Lee Housing Area down the hill to supply the proposed facilities at Target Hill Field. West Point anticipates that the feeder cables would be extended in two, 4-inch-diameter plastic (polyvinyl chloride [PVC]) conduits encased in concrete. Alternatively, the construction of onsite pad-mounted transformers at Target Hill Field would be required for both the rugby and soccer fields/facilities.

## Heating and Cooling

As part of West Point's initiatives to comply with Executive Orders 13123 and 13212 (to reduce the use of petroleum fuel, utilize more efficient sources of energy, and utilize energy more efficiently), West Point has converted most of its fuel oil boilers to natural gas boilers. Consequently, West Point's use of fuel oil for heating and cooling is limited and is being phased out.

Heat for most of the buildings in the Main Post/Academic Area is provided by a Central Plant (Building 604) that consists of three natural gas boilers and three steam turbine-driven generators. Another plant is located in the Post Laundry (Building 845), which consists of a natural gas-fired steam plant that serves the needs of the Post Laundry, Keller Army Community Hospital, the Post School, 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/Academic Area (USMA 1998). Where buildings are out of the range of the steam distribution system, they are heated by individual steam, hot water, or forced hot air systems.

Natural gas from Central Hudson Gas & Electric Company serves the central and individual building needs at West Point, through buried natural gas lines (USMA 2003). Natural gas is used for cooking, domestic hot water generation, and residential comfort heating, and to supply the Post Laundry plant.

There is no centralized cooling system at West Point. Air conditioned buildings utilize local electric or steam absorption cooling systems (USMA 2003).

The details of the Project design have not yet been determined with regard to heating and cooling for the proposed athletic buildings. The nearest natural gas lines to the Project site are located in the Lee Housing Area, where the closest lines are approximately 600 feet to the north and northwest of, and uphill approximately 100 feet in elevation from, the Project site. If natural gas is the selected source of heating and cooling for the new facilities, then West Point would extend buried gas lines from the Lee Housing Area down the hill to the new facilities at Target Hill Field.

### Telecommunications

Telecommunication services at West Point include telephone, fire alarm, security, and cable television services, and these services connect to the various buildings via copper line and multi-mode fiber optic cable. Currently, West Point is engaged in an ongoing construction effort to upgrade the telecommunications systems in various areas of the installation, replacing the copper line and multi-mode fiber optic cable with a single-mode fiber optic cable system.

Although the details of the Project design have not yet been determined with regard to telecommunications service and infrastructure, it is anticipated that the Project would be able to extend and utilize the type, quality, and level of service of the telecommunications systems currently used for Shea Stadium, located approximately 1,200 feet (0.2 mile) south of the Project site.

## **2.11.2 Environmental Consequences**

### Potable Water

The Project would require potable water for operating its locker rooms with showers, bathrooms, public rest rooms, and general water usage needs. Although the details of the Project design have not yet been determined with regard to potable water service, it is anticipated that it would be feasible to extend the nearest water line, a 6-inch diameter (110 pounds per square inch [psi]) line located at Target Hill Wastewater Treatment Plant, to serve the Project. It is anticipated that West Point's water supply system has adequate capacity to supply the Project without the need for water system upgrades.

## Sanitary Sewer

The proposed Project would require sanitary sewer service to handle wastewater generated by the Project facilities. Although the details of the Project design have not yet been determined with regard to sanitary sewer service, it is anticipated that it would be feasible for the Project wastewater lines to tie into the sanitary sewer system that is located along the western edge of Target Hill Field. After completion of West Point's current and ongoing wastewater treatment system expansion project, it is anticipated that West Point's Target Hill Wastewater Treatment Plant would have adequate capacity to treat the wastewater generated by the Project.

## Stormwater Drainage

Although the details of the Project design have not yet been determined with regard to stormwater drainage, it is anticipated that it would be feasible to connect the Project stormwater and field drainage system with either the existing stormwater drain pipe at the northwest end of Target Hill Field, the buried culvert that conveys Crows Nest Brook across Target Hill Field, or the drain pipe at the southern end of Target Hill Field, or a combination of these structures.

There is potential for increased temperatures of stormwater runoff from the synthetic fields to warm the water temperature of Crows Nest Brook and adversely affect the conditions present that support trout spawning and survival. See Section 2.2.2 for more discussion on this potential thermal impact issue. This issue is under consideration as the design for the stormwater management systems for the athletic fields progresses. Efforts would be made to divert most of the Project stormwater discharge to either or both existing drainage pipes at the north and south ends of the fields, and to avoid discharging into the box culvert that conveys Crows Nest Brook (in the center of the Project area). Alternatively, if it is not feasible to avoid discharging to Crows Nest Brook, special stormwater system designs enabling the cooling of stormwater to acceptable temperatures before discharge into Crows Nest Brook would be implemented.

Finally, there is the potential for existing soil and drainage conditions adjacent to Target Hill Field to affect the drainage systems (or the effectiveness of such systems) that would be constructed for the Project. The soils on these slopes, and associated hillside surface water drainages at the north end of the fields (near the Lee Housing Area) and the west/southwest side of the fields (near the old Post Exchange) have combined to produce erosive conditions during large rain events. Over time, this erosion has resulted in periodic blockage of the buried drainage culverts at the north and south ends of Target Hill Field, which direct flow to the Hudson River (Beemer 2005). Periodic monitoring of these slopes, surface drainages, and associated buried culverts, and maintenance when required, would help to ensure the proper function of the existing and proposed surface water drainage structures.

All plans and facilities would be designed, constructed, and maintained in accordance with the New York State Stormwater Design Manual (Center for Watershed Protection 2001) and all applicable stormwater management regulations and permits.

### Electricity

Although the details of the Project design have not yet been determined with regard to electric service, it is anticipated that the rugby and soccer facilities would be adequately served by extending electric lines from where they currently terminate at the Lee Housing Area to the Project site, and/or also by increasing the available electric capacity through the construction of pad-mounted transformers at both the rugby and soccer facilities, to provide adequate power for the facilities.

It is not anticipated that it would be feasible to extend the existing electric line from where it presently terminates at the Target Hill Wastewater Treatment Plant to serve the adjacent Project facilities. Therefore, electric lines from the Lee Housing Area would be extended down the hillside to serve the Project. Burial of electric lines is a common practice for electric lines throughout West Point for preservation of aesthetics. If the electric line must be buried, then clearing of trees along a new right-of-way, blasting, and excavation of a trench down the rocky hillside of Target Hill would be required to accommodate electric line burial. In addition, the potential for encountering UXO in Target Hill (see Section 2.12) along the selected path of the electric line would necessitate the completion of a detailed UXO survey and clearance before construction to ensure the safety of construction workers.

If the extension of electric lines from the Lee Housing Area to the Project site (down the hillside area of Target Hill) is selected as part of the Project design, then West Point would conduct a UXO survey as described in Section 2.12.2 (Materials and Wastes, Environmental Consequences) before commencing construction of the electric line extension, would assess visual/aesthetic impacts of clearing a right-of-way down the hillside before commencing construction, and would conduct any required blasting as described in Section 2.1.2 (Soils and Geology, Environmental Consequences).

To minimize the visual effects of a newly cleared corridor and reduce the costs of UXO survey and clearance and potential blasting, any other utilities (such as natural gas) that would be extended from the Lee Housing Area to serve the Project facilities would be located in the same right-of-way down the hillside to the extent possible.

### Heating and Cooling

The details of the Project design have not yet been determined with regard to heating and cooling for the proposed athletic buildings. The nearest natural gas lines to the Project site are located in the Lee Housing Area, where the closest lines are approximately 600 feet to the north and northwest, and uphill approximately 100 feet in elevation from, the Project site. If natural gas is selected as the heating and cooling source for the Project, it

is anticipated that a 4-inch-diameter natural gas pipeline would be extended to the Project area to serve the needs of the facilities.

If the extension of natural gas lines from the Lee Housing Area to the Project site (down the hillside area of Target Hill) is selected as part of the Project design, then West Point would conduct a UXO survey as described in Section 2.12.2 (Materials and Wastes, Environmental Consequences) before commencing construction of the gas line extension, would assess visual/aesthetic impacts of clearing a right-of-way down the hillside before commencing construction, and would conduct any required blasting as described in Section 2.1.2 (Soils and Geology, Environmental Consequences).

To minimize the visual effects of a newly cleared corridor and reduce the costs of UXO survey and clearance and potential blasting, any other utilities (such as electric lines) that would be extended from the Lee Housing Area to serve the Project facilities would be located in the same right-of-way down the hillside to the extent possible.

In the event that it is not feasible to extend natural gas lines to the Project site, oil could be selected as the heating source for the Project, although it is not the preferred heating source. In this event, the placement (both location and elevation) of the oil tank(s) would be selected with due consideration to reinforce the goal of containment and prevention of contamination of the Hudson River in the possible event of oil tank leaks, oil spills, and potential flooding of the Hudson River. Such containment measures would include the use of secondary containment berms surrounding the oil tank(s), location of oil tanks outside of 100-year floodplain areas as much as possible, and ensuring that West Point's *Installation Spill Contingency Plan* (USMA 1996a) is implemented to prevent spills, and contain and clean up any spills that may occur.

### Telecommunications

Although the details of the Project design have not yet been determined with regard to telecommunications service and infrastructure, it is anticipated that the Project would be able to extend and utilize the type, quality, and level of service of the telecommunications systems currently used for Shea Stadium, located approximately 1,200 feet (0.2 mile) south of the Project site. It is currently anticipated that two buried 4-inch-diameter PVC conduits would be adequate to contain the twisted copper and fiber optic lines required to serve the new facilities. Burial of the telecommunications line(s) adjacent to Upton Road is expected to be feasible for most of the distance between Shea Stadium and the Project sites, based on the presence of other buried utilities in this area.

## **2.12 MATERIALS AND WASTES**

### **2.12.1 Affected Environment**

Academic, military, and athletic activities at West Point generate ordinary, non-hazardous solid waste in the amount of approximately 26 tons per day. Collected waste is either recycled or brought to the West Point Transfer Station at Range 3, prior to being disposed of off-site at an approved waste disposal site.

West Point also generates approximately 1.8 to 1.9 mgd of wastewater and sewage. The sewage and wastewater is treated at the Target Hill Wastewater Treatment Facility, located immediately adjacent to the south of the Project area at Target Hill Field. Secondary treated wastewater is discharged from this facility to the Hudson River.

Various hazardous materials are currently present, used, and managed at West Point. Although there are no known hazardous waste sites within the Project area (USEPA 2003b, USEPA 2003c, USEPA 2003d) two types of hazardous materials are potentially present in the proposed Project location.

First, UXO may be present, either buried under the existing athletic fields at the Target Hill Field Project area, or present on the ground or buried in the steep adjacent slopes to the west and north of the Project. This area was appropriately named Target Hill because it was used during the 1700s through the 1800s as a target area for test firing artillery. As a result, excavation of the level playing field areas or blasting of portions of the rocky hillsides, if required to accommodate the Project athletic buildings and/or an expansion of the Upton Road turnaround area, has the potential to encounter UXO and thereby presents a safety hazard for construction workers.

Second, the existing athletic fields at Target Hill Field have likely been treated with chemical herbicides and fertilizers on a routine basis, to maintain the natural grass playing field surface. Traces of these chemicals may remain in the soils, and these soils would be disturbed during construction of the synthetic turf fields, drainage systems, buildings, and any associated new paved areas.

### **2.12.2 Environmental Consequences**

Construction of the Project would temporarily generate various typical solid construction and demolition debris. The volume of this solid construction/demolition debris generated during construction would be minor compared to the total amount of solid waste generated per year at West Point. Prior to construction, West Point would develop a Construction and Demolition Waste Management Plan for the management and proper disposal of solid waste during construction. Construction would therefore have a minor, temporary impact on the generation and disposal of waste material.

Construction also would involve the transport, temporary storage, and use of typical hazardous construction materials, such as solvents, lubricants, sealants, adhesives,

petroleum products, and paints. Implementation of construction activities, including the transport, use, and temporary storage of potentially hazardous materials, would comply with proper handling and reporting procedures identified in West Point's *Installation Spill Contingency Plan* (USMA 1996a).

Operation and routine maintenance activities associated with the Project would not generate a significant increase in the amount of ordinary, non-hazardous solid waste at West Point. The generation of any such waste would be managed by the placement, maintenance, and periodic collection of adequate trash receptacles, and would be either recycled or taken to the West Point's transfer station located at Range 3, prior to being transported off-site to an approved waste disposal site in accordance with West Point refuse management plans. Routine everyday use of the Project is not expected to generate a significant increase in the amount of wastewater and sewage at West Point, because the daily users of the proposed facilities are generally already being accommodated by West Point's wastewater and sewage treatment systems. Spectators attending rugby and soccer games (projected to be as many as 600 per rugby game and as many as 1,000 per soccer game) would generate an occasional, short-term increase in water use and sewage generation, but this increase would be within the capacity of West Point's existing treatment facilities.

Portions of the proposed Project may require excavation or blasting within areas suspected of containing UXO, presenting a safety hazard for construction workers. In particular, UXO may exist under the existing athletic fields or in the adjacent rocky slopes. West Point DHPW staff have speculated that if any UXO was present (buried) at one time under the level Target Hill Field, it is likely to have been corroded, disintegrated, and rendered inactive through years of natural interface with the high, saline water table present in this area. No UXO was encountered during the performance of the soil borings taken to complete the geotechnical survey in the level areas of Target Hill Field (proposed rugby field area) for this Project. However, potentially active UXO is possibly present on the steep slopes of the hill adjacent to the Target Hill Fields. In general, subsurface disturbance is prohibited in areas that have the potential for containing UXO. If any activities that involve subsurface disturbance, such as clearing, digging, post-holing, pile-driving, blasting, or grading, would be conducted in areas that have the potential for containing UXO, these areas must be cleared of UXO presence before the start of such activities. In general, for all excavations required in areas suspected of containing UXO, West Point would contract with a qualified ordnance and explosives waste remediation company to remediate the site prior to construction (Sanborn 2005).

Replacing the existing natural grass athletic fields at Target Hill Field with the proposed synthetic athletic fields would eliminate the need to treat the fields with chemical herbicides and fertilizers, as has been done in the past to maintain the natural grass athletic field surface. In the possible event that it is decided that the new soccer facilities would keep the existing natural grass athletic fields such that synthetic turf is not installed (such as for budget control considerations), treatments to maintain the natural grass would continue to be similar to those currently conducted at Target Hill Field. The

currently used grass maintenance procedures are not likely to cause, or have caused in the past, any deleterious effects to the environment, including the aquatic habitat of the adjacent Hudson River.

The average expected usable life of a typical synthetic turf field is between 8 and 10 years. When replacement of the synthetic turf and rubber infill material of the athletic fields becomes necessary due to age and wear, the synthetic material would likely be disposed of in a landfill, or the material would be recycled, if technologically feasible at that time. Similarly, the crumb rubber infill would either be landfilled, or, if feasible, separated from the synthetic carpet, cleaned, and re-used for another synthetic turf field.

## **2.13 PUBLIC HEALTH AND SAFETY**

### **2.13.1 Affected Environment**

West Point operates and maintains complete public health, emergency response, and security services that serve the West Point community. These services include a hospital, emergency medical response teams, helicopter medical evacuation service, three fire stations, and military police.

Certain public health and safety hazards, some common and some unusual, are present at West Point. Common natural hazards include bee stings and tick-borne Lyme Disease, as well as individual physical injuries sustained during athletics training and recreational activities. In addition, UXO may be found wherever military training has occurred within West Point, in addition to portions of West Point that contain areas of known UXO (Sanborn 2003a). In the Project area, Target Hill Field and the former Target Hill (i.e., before it was leveled to create the Target Hill Field area) were historically used as a target area for test firing artillery manufactured at the military ordnance foundry that was formerly located on Foundry Cove in the Village of Cold Spring, across the Hudson River. Target Hill Field also was historically used as an artillery target area by West Point cadets during training exercises. As a result of this historic use, West Point has identified the Project area, and especially the adjacent hillside area, as likely to contain UXO, presenting a safety risk to construction workers. Finally, an active, single-track freight service is provided along Conrail's West Shore line, and traverses West Point within approximately 100 feet east of the Project area, and is situated parallel and east of Upton Road.

### **2.13.2 Environmental Consequences**

Implementation of the Project would not change or affect the level of service for the public health and safety services that West Point currently provides. West Point would continue to maintain the existing public health and emergency response services that have been adequate in the past to address the needs of the West Point population. In addition, the average frequency and severity of the typical physical injuries or accidents that occur to individuals at West Point is expected to remain essentially the same as under current conditions after the Project is completed.

Implementation of the Project would increase seasonal or periodic public use and pedestrian traffic in the vicinity of an active rail line, particularly during athletic events. Routine crowd control and public safety measures would be taken by West Point to ensure public safety and access restriction to this active rail line.

As discussed in Section 2.12.2 (Materials and Wastes, Environmental Consequences), portions of the proposed Project may require excavation or blasting within areas suspected of containing UXO, presenting a safety hazard for construction workers. In particular, UXO may exist under the existing athletic fields or in the adjacent rocky slopes. West Point DHPW staff have speculated that if any UXO was present (buried) at one time under the level athletic field area of Target Hill Field, it is likely to have been corroded, disintegrated, and rendered inactive through years of natural interface with the high, saline water table present in this area. No UXO was encountered during the performance of the subsurface geotechnical borings in the level areas of Target Hill Field (proposed rugby field area) for this Project. However, potentially active UXO may be present on the steep slopes adjacent to Target Hill Field. In general, subsurface disturbance is prohibited in areas that have the potential for containing UXO. If any activities that involve subsurface disturbance, such as clearing, digging, post-holing, pile-driving, blasting, or grading, would be conducted in areas that have the potential for containing UXO, these areas must be cleared of UXO presence before the start of such activities. In general, for all excavations required in areas suspected of containing UXO, West Point would contract with a qualified ordinance and explosives waste remediation company to remediate the site prior to construction (Sanborn 2005).

Some health and safety considerations are associated with the use of synthetic athletic fields. First, on hot days the increased heat on synthetic fields (compared to natural grass fields) can be dangerous to athletes because it can increase heat stress, and cause skin burns or blisters, discomfort, and/or dehydration. Surface temperatures of an infill have been measured up to 200 degrees Fahrenheit (°F) when air temperature reached 98 °F. Surface temperatures of 160 °F have been measured when the air temperature was 92 °F, and contrasted with an adjoining grass field surface that measured 89 °F (Powell and Andresen 2004). Another study measured surface temperatures of 180 °F on synthetic infill when the air temperature was 86 °F, compared to an adjacent grass field that measured 80 °F (Powell and Andresen 2004). The increased heat is most severe when black crumb rubber is exposed to sunlight and not shaded by the synthetic grass. At West Point, this heating effect would only be expected when games or practices occur during bright sunny days, and would not be expected during cloudy days or evenings. On hot days when field overheating is a concern, irrigating the field with water can be used to lower the temperature and/or add humidity to the dry air. Repeated irrigation within short timeframes may be required to prevent rebounding of the temperatures on extremely hot days.

Second, crumb rubber infill, the material that is typically spread between the synthetic blades of grass, often becomes loose during play and can become an eye irritant, contaminate skin abrasions, and cause infections (Powell and Andresen 2004). In

addition, athletes would inhale dust associated with the infill material and breathe the odor of the rubber, especially on hot days. Finally, there may be a temporary increase in athlete joint and muscle injuries as athletes become adjusted to the modified playing surface, as a result of the reduction of the natural grass “shear” effect (that absorbs the energy of quick stops and turns), or the presence of soft infill spots that can cause the foot to shift sideways. These possible health/safety considerations for the athletes are considered typical and are commonly encountered at other synthetic fields, including those at West Point (including Shea Stadium and Michie Stadium). West Point would ensure that first aid kits, including eyewash equipment, are always available when the fields are being used. Furthermore, as a routine matter of course, any athletic injuries that do occur would benefit from excellent access to West Point’s staff of athletic trainers, medical facilities, and emergency response services.

The proposed athletic buildings would comply with all fire safety and security requirements established for West Point facilities, including fire alarms, emergency exits, exit signs, and emergency lighting. West Point’s military police would provide support including routine security patrols and crowd and traffic control on game days.

## **2.14 NOISE**

### **2.14.1 Affected Environment**

Noise is generally defined as unwanted sound. The day-night noise level ( $L_{dn}$ ) is the most widely used descriptor of community noise levels. The unit of measure of the  $L_{dn}$  is the A-weighted decibel (dbA), which closely approximates the frequency responses of human hearing (USEPA 1974). Noise levels below 65 decibels are considered to be normally acceptable in suitable living environments (USMA 2003).

The primary source of noise in the vicinity of the Project is vehicular traffic on local roadways. Vehicular traffic generates a level of noise typical for a residential or academic setting. Noise level measurements have not been obtained specifically in the Project area. In lieu of field measurements, the noise levels can be approximated based on existing land uses. The typical  $L_{dn}$  in residential areas ranges from 39 to 59 dbA (USEPA 1978). It can be assumed that the existing sound levels in the Project area are roughly within this range.

### **2.14.2 Environmental Consequences**

The Project would not involve the construction and operation of permanent noise-generating facilities. However, there would be a short-term, minor increase in noise in the immediate vicinity of the Project during construction, due to an increase in contractor vehicles and traffic and operation of construction equipment.

Following completion of construction, rugby and soccer team practices, as well as games that would include spectators and amplified announcing, would create short-term, periodic elevations in noise levels in the immediate vicinity of the Project area. The

periodic increases in noise levels resulting from team practices conducted during the daytime would be in the range of existing sound levels already present in the Project area, since these fields are currently used for various team sports during the daytime. Intercollegiate daytime games or tournaments with spectators and amplified announcing would result in increased noise during daytime hours. The new extension of playing times into the evening (as a result of the addition of field lighting at the new fields) would result in increased noise during the new evening hours, whenever practices and games are being held.

However, the land uses in the immediate vicinity of the Project area consist of the Target Hill Wastewater Treatment Facility (industrial use), undeveloped forestland, a dead-end roadway, and a railroad – uses that are not considered sensitive with regard to noise issues. The nearest residential area, the Lee Housing Area, is located approximately 400 feet north of, and approximately 100 feet higher in elevation than, the Project area. The forested buffer that is situated between the Project area and the Lee Housing Area would serve to attenuate noise emanating from the Project area. The Village of Cold Spring residential area may be subject to short term, periodic elevations in noise levels due to the extension of playing times into the evening hours, and daytime intercollegiate events, although this noise elevation may be ameliorated by the distance (approximately 0.5 mile) between the Project and the Village of Cold Spring). The West Point Cemetery is located approximately 500 feet south of, and approximately 100 feet higher in elevation than, the Project area. The forested buffer and difference in elevation between the Project area and the West Point Cemetery should serve to attenuate noise emanating from the Project area and reduce disturbance to Cemetery visitors.

The effect of construction noise on adjacent uses would be mitigated by limiting construction activities to daylight hours on weekdays. Additionally, equipment operation noise would be minimized by requiring construction contractors to use equipment that meets specific standards in terms of noise (e.g., use of mufflers and similar measures).

## **2.15 ADDITIONAL ENVIRONMENTAL CONSIDERATIONS**

### **2.15.1 Environmental Justice**

In accordance with Executive Order 12898 (dated February 11, 1994), Federal agencies are required to identify and address the potential for disproportionately high and adverse environmental and human health effects on minority and low-income populations, resulting from the agencies' programs, policies, and activities.

Only military housing exists within West Point. However, low-income housing is scattered throughout the Village of Highland Falls, which is located immediately adjacent to, and south of, West Point. The nearest low-income housing community, Weyant Green, is located off West Point Highway on Webb Lane. Weyant Green, owned by Quaker Hill Housing, consists of six buildings with a total of 51 housing units built in 1983 with funding from the U.S. Department of Housing and Urban Development.

Based on the information presented in this EA (in the Environmental Consequences subsections of Section 2.0), no significant or unacceptable adverse environmental or human health effects are expected to result from implementation of the Proposed Action. It is anticipated that implementation of the Proposed Action would not negatively affect the Weyant Green community as a result of potential changes to visual quality, increased traffic, or noise or air pollution, because of its remote location relative to the Project area. Because implementation of the Project would not negatively impact this community, no disproportionately high and adverse impact to minority or low-income populations would occur.

### **2.15.2 Possible Conflicts Between the Proposed Action and Existing Land Use Plans, Policies, and Controls**

In accordance with 32 CFR Part 651, Environmental Analysis of Army Actions, this section of the EA addresses possible conflicts between the Proposed Action and Federal, regional, state, and local (including Indian tribe) land and airspace use plans, policies, and controls for the area concerned. No specific conflicts have been identified for the Project to date.

Implementation of the Project would be located entirely within the West Point installation boundary, and therefore primarily would require compliance with West Point land and airspace use plans, policies, and controls. Accordingly, design, implementation, restoration, and monitoring of the Proposed Action would be performed in accordance with all applicable West Point plans, policies, and controls, identified in Table 1, as specified in the relevant sections of this EA noted in the table.

Additionally, West Point policy requires compliance with applicable Federal, regional, and state regulations and permit requirements. Accordingly, if necessary, West Point would obtain and comply with applicable permits identified in Table 2, as specified in the relevant sections of this EA noted in the table. Therefore, implementation of the Project would not result in conflicts with applicable Federal, regional, state, and local (including Indian tribe) land and airspace use plans, policies, and controls for the area concerned.

### **2.15.3 Irreversible and Irretrievable Commitments of Resources**

In accordance with 32 CFR Part 651, Environmental Analysis of Army Actions, this section of the EA addresses the irreversible or irretrievable commitment of materials and natural or depletable resources required as a result of implementation of the Proposed Action, and the potential to conserve such resources using various mitigation measures.

Irreversible and irretrievable resources would be committed during construction of the Proposed Action. Resources committed pursuant to construction include labor costs for the planning phase; construction materials and costs for the proposed synthetic athletic fields and athletic buildings; natural resources such as soil, water, and air; energy resources such as fossil fuels (gasoline, petroleum products, and lubricants) and electricity; and, land to accommodate the Project facilities.

Consumption of these resources would be minimized or conserved to the extent practicable through efficient planning processes, careful analysis and selection of the most cost effective materials and construction techniques, and efficient construction equipment to the extent practicable, and use of best management practices and site-specific construction techniques to avoid or minimize direct and indirect impacts on natural and cultural resources. This planning effort in turn would result in avoidance or minimization of irreversible or irretrievable consumption of materials and depletable natural or cultural resources during implementation and operation of the Proposed Action.

**Table 1. Relevant Land and Airspace Use Plans, Policies, and Controls.**

<b>EA Section</b>	<b>Affected Resource</b>	<b>Plan, Policy, or Control</b>	<b>Regulatory Specification</b>
2.1, 2.2	Soils, Surface Waters, Wetlands	Erosion Control Plan	West Point requires contractor to prepare and submit for approval prior to construction, and to implement during construction, a site-specific Erosion Control Plan to minimize potential soil erosion and subsequent sedimentation of surface waters and wetlands.
2.2	Wetlands	Executive Order 11990, Protection of Wetlands	Avoid, minimize impacts to wetlands. Mitigate for wetland loss. (Note: no loss of wetlands would result from Project).
2.3	Federal Threatened/ Endangered Species	Endangered Species Management Plan for the Bald Eagle on the Properties of the United States Military Academy	West Point would consult with the USFWS and the NYSDEC if activities would affect the bald eagle or its habitat. (Note: the Project is not likely to adversely affect the bald eagle or its habitat, provided that appropriate mitigation measures are employed, if warranted. The Project is not likely to adversely affect the shortnose sturgeon or Atlantic sturgeon or its habitat.)
2.5	Cultural Resources	Integrated Cultural Resources Management Plan, United States Military Academy, West Point, New York	Provides guidelines for the implementation of surveys to identify archaeological resources.
2.5 and 2.8	Cultural and Visual Resources	Historic Landscape Management Plan for the U.S. Military Academy at West Point, New York	Identifies specific historic landscapes associated with the development of West Point, and includes recommendations for preserving, restoring, improving, and maintaining these specific landscapes.
2.12 and 2.13	Wastes and Hazardous Materials	West Point's Installation Spill Contingency Plan	Identifies proper handling and reporting procedures for the transport, use, and temporary storage of potentially hazardous materials at West Point.
2.9	Coastal Zone	NYSDOS Coastal Management Program State Coastal Policies	Identifies NYSDOS State Coastal Policies applicable to Federal projects in the designated Coastal Zone of New York.

Source: Compiled by Northern Ecological Associates, Inc. 2004.

**Table 2. Relevant Federal, Regional, and State Regulations and Permits.**

<b>EA Section</b>	<b>Affected Resource</b>	<b>Regulatory Authority</b>	<b>Permit Required</b>
2.1, 2.2	Soils, Surface Water	NYSDEC	Construction Activity SPDES Permit (disturbance of >1 acre of soils)
2.4	Air Quality	(Internal Documentation, West Point)	Air Conformity Analysis, Consistency with SIP in accordance with Clean Air Act Amendments of 1990 (temporary construction-phase air emissions)
2.5	Historic Architectural Resources	NYSOPRHP	Cultural Resources Effects Determination
2.5	Archaeological Resources	NYSOPRHP	Cultural Resources Effects Determination
2.8	Historic Landscapes	NYSOPRHP	Cultural Resources Effects Determination
2.11	Utilities and Infrastructure	West Point DHPW, U&FD	Dig-Safe Permit (On-Post Areas)
2.9	Coastal Zone	NYSDOS	Coastal Zone Management Program Consistency Determination/Concurrence

Source: Compiled by Northern Ecological Associates, Inc. 2004.

#### **2.15.4 Energy Requirements and Conservation Potential of Various Alternatives and Mitigation Measures**

In accordance with 32 CFR Part 651, Environmental Analysis of Army Actions, this section of the EA addresses renewable and nonrenewable energy requirements associated with implementation of the Proposed Action and the potential to conserve energy resources through design and use of alternatives and mitigation measures.

Nonrenewable energy resources would be committed to construct and operate the Project. Nonrenewable energy resources that would be committed during construction include fossil fuels (gasoline, petroleum products, and lubricants) consumed by construction equipment, and electricity consumed by power tools and equipment to construct the athletic fields and buildings. During operation of the facility, nonrenewable resources would be committed for electricity to operate and maintain the field, lights, and athletic buildings, and for the heating and cooling of the athletic buildings. Although the type of energy that would be used for heating/cooling the proposed athletic buildings is still being determined, it is anticipated that nonrenewable resources would be used as fuel for heating and cooling systems.

Consumption of these nonrenewable energy resources would be minimized or conserved to the extent practicable during construction through the appropriate use of efficient construction equipment where practicable. Consumption of nonrenewable energy sources would be minimized during operation of the Project by careful selection of electrical appliances and heating/cooling systems with reduced energy usage where practicable.

### **2.15.5 Urban Quality, Historic and Cultural Resources, and the Design of the Built Environment, Including Reuse and Conservation Potential of Various Alternatives and Mitigation Measures**

In accordance with 32 CFR Part 651, Environmental Analysis of Army Actions, this section of the EA addresses the effects of implementation of the Proposed Action on adjacent neighborhoods and the community at large, and reviews the reuse potential of existing building space and its time-use allocation of the built environment.

Implementation of the Proposed Action would not result in significant permanent adverse impacts to the community surrounding West Point. Potential visual impacts to areas outside of West Point constitute the primary impact of the Project on communities outside of West Point. However, with the implementation of measures to avoid or reduce impacts to visual resources, described in Section 2.8.2, the proposed Project would have no significant adverse effects on visual resources to these communities.

None of the alternatives to the Project that involved the possible reuse of existing athletic fields and facilities were considered viable to serve the purpose of the Project (see Section 1.5, Alternatives).

### **2.15.6 Cumulative Effects of the Proposed Action in Light of Other Past, Present, or Reasonably Foreseeable Future Actions**

Cumulative environmental effects are the result of a proposed action being added to effects of other past, present, and reasonably foreseeable future actions (RFFAs), regardless of the agency or person responsible for such actions. This section provides a summary of cumulative effects associated with the Project in relation to other RFFAs and recently completed projects at West Point. This section addresses only those resources subject to cumulative effects, whereas “no effect” issues are not addressed.

Table 3 lists the recent past, present, and RFFAs that relate to the proposed Project. These projects were selected from a large list of West Point’s projects because they relate to the proposed Project in some way, either in terms of construction timeframe, or proximity to the Project, and/or similarity with regard to the nature of project or its principal environmental impacts. The locations of these related projects are shown on Figure 7.

#### Cultural Resources

The implementation of the Project and recent past, present, and RFFAs is not likely to result in adverse impacts on significant cultural resources at West Point. In accordance with the West Point’s *Integrated Cultural Resources Management Plan*, West Point would complete all applicable aspects, evaluations, and action items prescribed in this

**Table 3. Recent Past, Present, and Reasonably Foreseeable Future Actions**

	<b>Project</b>	<b>Date Completed or Planned</b>	<b>Type of Project</b>	<b>Location</b>	<b>Principal Environmental Resources Affected</b>
1	North Athletic Field Lighting	1999	New construction of field lighting at Shea Stadium	North Athletic Field	Visual, Coastal Zone Management
2	Lichtenberg Tennis Center	2000	New construction of indoor tennis center with team facilities and spectator seating	G-Lot (off Stony Lonesome Road, up hill and west of Michie Stadium)	Visual, Stormwater, Parking, Coast Zone Management
3	Crew and Sailing Center	2001	New construction of two-story 10,000 square-foot (sf) boat house and a two-story 5,000 sf indoor rowing and team facility	South Dock/South Fill Area	Visual, Stormwater, Cultural Resources, Coastal Zone Management
4	Ski Slope Lighting Upgrade	2001	Addition of supplemental lights	Ski Slope	Visual, Coast Zone Management
5	Women's Softball Field	2002	New construction of lighted softball field, team facility, and spectator seating	North Athletic Field	Visual Resources, Coastal Zone Management
6	Gross Olympic Center	2002	New construction of 23,000-sf facility for men's gymnastics team, and men's/women's basketball teams	G-Lot (off Stony Lonesome Road, up hill and west of Michie Stadium)	Visual, Stormwater, Parking, Coast Zone Management
7	Michie Stadium Lighting	2001, 2002	Replacement and upgrade of Michie Stadium Lighting and Complex	Michie Stadium Complex	Visual, Coastal Zone Management
8	Hoffman Press Box	2003	Demolition and new construction of full-service media operations center with state-of-the-art radio and television broadcast booths	Michie Stadium Complex	Visual, Coastal Zone Management, Cultural Resources ("Historic Fabric")
9	Kimsey Athletic Center	2003	New construction of state-of-the-art football team facilities and Army athletics museum	Michie Stadium Complex	Visual, Stormwater, Cultural Resources ("Historic Fabric")
10	Target Hill Wastewater Treatment Plant Upgrade	Present/ongoing	Facility upgrade and expansion	Adjacent to Target Hill Field	Visual, Wastewater, Coastal Zone Management
11	Stony Lonesome Water Tank	Present/ongoing	New construction of 500,000 gallon water supply tank	Top of Ski Slope	Visual, Potable Water, Stormwater, Coastal Zone Management
12	Howze Field Lights	Partially completed in 1998	Replacement of field lighting	Howze Field, adjacent to Michie Stadium	Visual, Coastal Zone Management
13	Arvin Cadet Physical Development Center	Future (2005)	Demolition and new construction of athletic center	Arvin Gymnasium	Visual, Parking
14	Jefferson Memorial Library	Future	New construction of 141,000-sf library and learning center	The Plain	Visual, Coastal Zone Management, Cultural Resources (Archaeology)

**Table 3. Recent Past, Present, and Reasonably Foreseeable Future Actions**

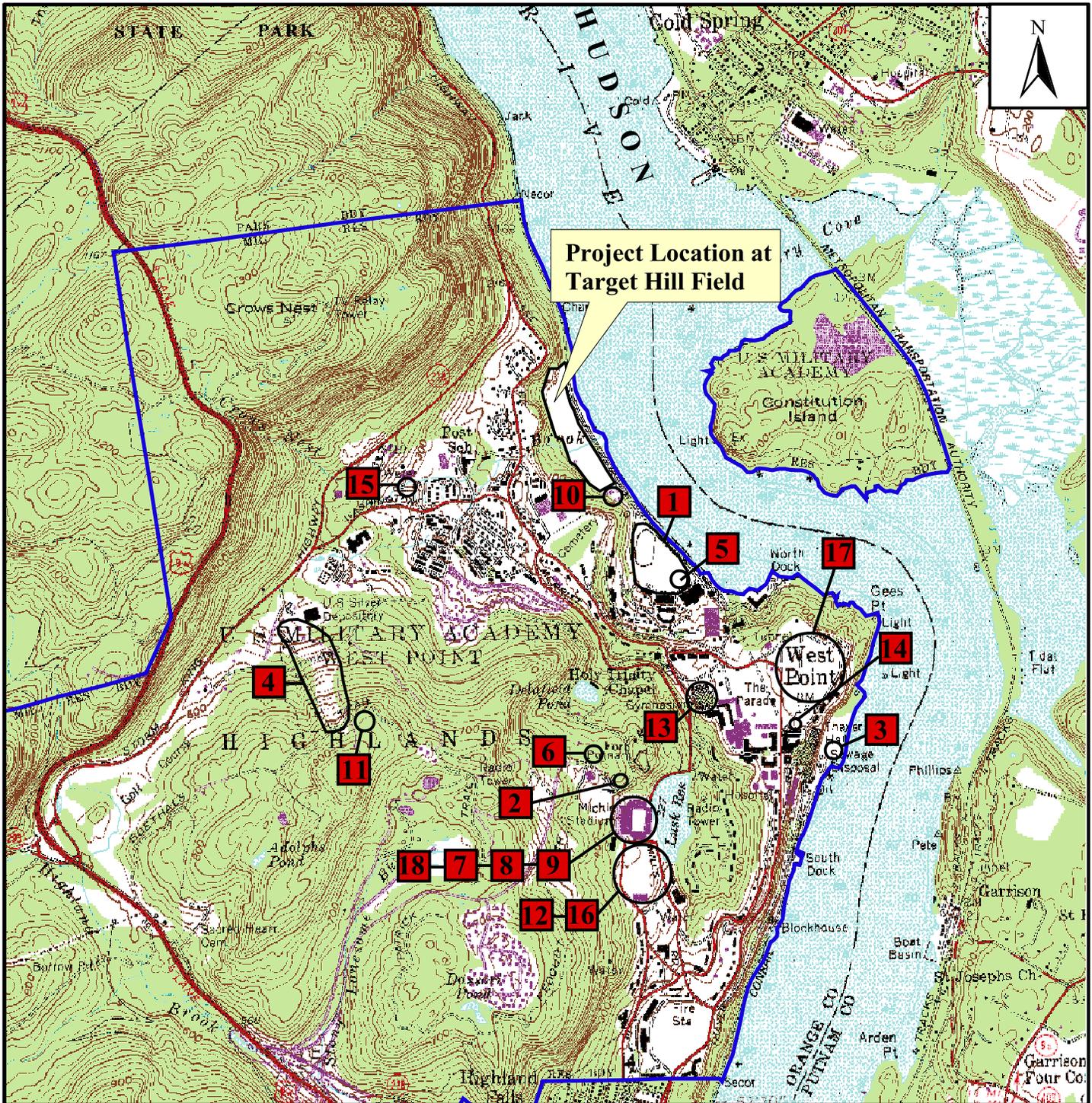
	<b>Project</b>	<b>Date Completed or Planned</b>	<b>Type of Project</b>	<b>Location</b>	<b>Principal Environmental Resources Affected</b>
15	Keller Army Community Hospital Expansion	Future	New construction/ expansion of hospital	Keller Army Community Hospital	Visual, Coastal Zone Management, Parking, Cultural Resources, Stormwater
16	Indoor Athletic Training Facility	Future	New construction of athletic training facility	Howze Field, adjacent to Michie Stadium	Visual, Coastal Zone Management, Cultural Resources, Stormwater
17	Removal of certain athletic facilities from The Plain	Future (after the proposed Rugby / Soccer Facilities completed)	Removal of athletic field lighting, fencing, and other (visually/historically) inappropriate features from Daly and Clinton fields on The Plain	The Plain	Visual, Coastal Zone, Cultural Resources (primarily beneficial impacts)
18	Randall Hall	Present/ ongoing	Athletic Operations	Michie Stadium	Visual, Stormwater, Cultural Resources (“Historic Fabric”)

plan before implementing each major project. By definition, this plan requires the integration of cultural resources assessment and management into the routine activities, processes, and planning of activities at West Point. Therefore, implementation of the *Integrated Cultural Resources Management Plan* would ensure that cultural resources are protected and properly managed for this Project and all West Point projects.

Visual Impacts

As summarized in Table 3, West Point has an ambitious plan for renovation and construction of athletic facilities at West Point, and various athletic facility projects recently have been completed, are currently under construction, or are being planned for future construction in the future. In addition, construction and expansion of various other facilities in close proximity to the Project recently has been completed, is ongoing, or is being planned.

Because many of these projects are located within various important viewsheds, and involve the addition of lighting in various forms, the cumulative impact to visual resources warrants discussion. First, West Point is a striking presence on the landscape due to its location in an area with dramatic natural topographic relief and a large and beautiful waterway (Hudson River), its proximity to various designated and undesignated scenic areas, its inspiring architecture and built environments, and its accessibility (through viewing it from outside, as well as within the installation property). Accordingly, West Point values and attempts to maintain a high aesthetic quality throughout all of its installation activities, especially in areas of high visibility such as within the Main Post/Academic Area, as well as the various views from this area.



**Project Location at Target Hill Field**

**LEGEND**

- |   |                                  |  |  |
|---|----------------------------------|--|--|
| <b>1</b> North Athletic Field Lighting                          | <b>5</b> Women's Softball Field  | <b>9</b> Kimsey Center                                   | <b>13</b> Arvin Cadet Physical Development Center  |
| <b>2</b> Lichtenberg Tennis Center                              | <b>6</b> Gross Olympic Center    | <b>10</b> Target Hill Wastewater Treatment Plant Upgrade | <b>14</b> Jefferson Memorial Library               |
| <b>3</b> Crew and Sailing Center                                | <b>7</b> Michie Stadium Lighting | <b>11</b> Stony Lonesome Water Tank                      | <b>15</b> Keller Army Community Hospital Expansion |
| <b>4</b> Ski Slope Lighting Upgrade                             | <b>8</b> Hoffman Press Box       | <b>12</b> Howze Field Lights                             | <b>16</b> Indoor Practice Facility                 |
| <b>17</b> Removal of Certain Athletic Facilities From the Plain | <b>18</b> Randall Hall           |  |  |

**Figure 7. Site Location Map for Recent Past, Present, and Reasonably Foreseeable Future Actions, West Point, New York.**

Client:  **U.S. Army Garrison at West Point**

1000 0 1000 2000 Feet



Source: USGS Quadrangles West Point and Peekskill, New York, 1957, Photorevised 1981.

Prepared By:



Date: 12/14/04

Nevertheless, due to the intensity of use and associated development at West Point, the implementation of past, present, and RFFAs at West Point would result in long-term direct impacts on visual resources. Implementation of the Project and its field lighting, combined with projects such as the North Athletic Field Lighting, Women's Softball Field (and field lighting), Michie Stadium Lighting, Ski Slope Lighting Upgrade, and Howze Field Lights would each result in long-term, adverse impacts on visual resources by the inclusion of artificial sources of light that potentially create obtrusive light effects, including glare and sky glow, to areas outside of West Point. Certain other projects listed in Table 3 would cumulatively affect visual resources by converting natural landscapes to landscapes that include paved surfaces, buildings, and/or permanent rights-of-way (Lichtenberg Tennis Center, Crew and Sailing Center, Gross Olympic Center, Kimsey Center, Stony Lonesome Water Tank, Arvin Cadet Physical Development Center, Jefferson Memorial Library, Keller Army Community Hospital Expansion, and Indoor Practice Facility).

However, design measures would be incorporated into the Project to reduce the visual impact during both the daytime and the nighttime. These measures include special attention to architectural and building design to utilize designs and materials that are appropriate and compatible with the West Point surroundings (built and natural environments). In addition, West Point would ensure that special attention is paid to field lighting design and function. In particular, field lighting design goals include using technologies to minimize obtrusive light effects to areas outside of West Point.

West Point is committed to maintaining the visual integrity of visual resources associated with historic, cultural, and natural landscapes at West Point. Accordingly, West Point's *Integrated Cultural Resources Management Plan* and *Historic Landscape Management Plan for the United States Military Academy at West Point, New York*, are integral to evaluating and planning projects and activities that have the potential to adversely affect visual resources. West Point routinely conducts project-specific visual impact assessments for its activities when warranted, and incorporates measures into project designs to minimize negative visual impacts when warranted. Therefore, from a cumulative perspective, implementation of past, present, and RFFAs would result in long-term, but minor, adverse impacts on visual landscapes.

### Stormwater

The implementation of past, present, and RFFAs in the vicinity of the Project area would involve earth disturbances associated with soil excavation and construction activities in numerous locations at West Point. Minor erosion and sedimentation from each of these projects, when added together, could result in potentially greater cumulative soil erosion/sedimentation impacts to waterbodies and wetlands. Cumulatively, these effects could adversely impact users of these waterbodies and wetlands, because the watersheds surrounding West Point serve both as sources of public potable water supplies and habitat for fish and wildlife (including rare, threatened, and endangered species). However, the use of site-specific erosion control measures and BMPs during construction, and the restoration of all areas of disturbed soils immediately following earth disturbances for all

projects, would minimize the potential for cumulative effects of erosion and sedimentation to a level that would not be undue or significant.

The use and transportation of hazardous materials used by construction equipment involved in the Project and other past, present, and RFFAs could increase the cumulative potential for inadvertent spills to occur. Hazardous material spills could pollute groundwater or surface waters, and also could adversely affect human health. Cumulatively, however, these potential impacts would be reduced to a level that is not undue or significant by handling all such hazardous materials in accordance with the applicable health and safety plans and West Point's *Installation Spill Contingency Plan* (USMA 1996a).

### Traffic and Parking

Implementation of the Project and past, present, and RFFAs has the potential to contribute to an already challenging traffic circulation and parking situation at West Point. Traffic during construction of the Project would represent a localized, short-term, moderate impact on traffic, and would only temporarily add to existing circumstances that hinder the smooth flow of traffic at West Point.

The Project would result in permanent displacement of 400-600 vehicle parking spaces at Target Hill Field, which are currently used for West Point home varsity football games. Combined with the other past, present, and RFFAs involving the construction of expansion of new, state-of-the-art intercollegiate athletic facilities for several sports (Table 3), West Point's future may include hosting more large regional, national, and even international tournaments and competitions. The combined effect of these projects would put even more pressure on available parking facilities, especially if different large events were scheduled to occur at the same time.

The present concept of using West Point's remote range areas for visitor parking and shuttle bus service to transport visitors to their respective venues would be effective for the immediate future. However, to develop longer-term solutions, West Point is currently undertaking a detailed study of the existing parking situation, and is identifying opportunities and developing plans to more effectively address the demand for parking throughout West Point.

### Coastal Zone Management

If required for each of West Point's projects, West Point would consult with the NYSDOS, prepare appropriate documentation of the project's consistency with the New York State Coastal Management Program's State Coastal Policies, and submit this documentation to the NYSDOS for review and concurrence, in accordance with 15 CFR Part 930.34(b). West Point would coordinate with the NYSDOS during its review of the submitted documentation to ensure that construction and operation of its various projects would not have undue adverse impact on the HHSASS or New York State coastal zone resources.

### **2.15.7 Unavoidable Adverse Environmental Effects**

In accordance with 32 CFR Part 651, Environmental Analysis of Army Actions, this section of the EA addresses adverse environmental effects that cannot be avoided should the Proposed Action be implemented.

Implementation of the Proposed Action would result in certain unavoidable adverse impacts on the environmental resources located within the Project area. Initial construction activities would primarily involve ground disturbance to install the synthetic fields, field drainage systems, athletic buildings, and associated utilities. Adverse effects that may occur include: an increase in sedimentation into surface water resources during construction, air pollutant emissions generated by construction equipment and contractor vehicles, loss of parking areas used for West Point football games, aesthetic and visual effects, and increase in noise levels due to construction equipment and use by teams and spectators. Implementation of best management practices and compliance with environmental permit conditions would avoid or minimize temporary and long-term adverse environmental impacts to a level that is not undue or significant.

### **3.0 SUMMARY OF CONCLUSIONS**

#### **3.1 PROPOSED ACTION**

The Proposed Action consists of the construction and operation of the Anderson Rugby Complex and NCAA soccer venues in the Target Hill Field area at West Point. The venues would principally serve West Point's intercollegiate rugby and soccer teams. The Project consists of a total of four (4) full-sized, synthetic turf athletic fields, including two (2) rugby fields and two (2) soccer fields, field lighting and scoreboards, and two multi-purpose buildings containing permanent spectator seating (grandstands), team locker rooms with showers and bathroom facilities, public rest rooms, meeting rooms, coaches rooms, and other multi-purpose rooms.

#### **3.2 ALTERNATIVES**

Alternatives to the Proposed Action that were considered include: the No Action Alternative, two site alternatives, and several design alternatives.

The No Action alternative was discounted because it does not satisfy the purpose and need for the Project, which is to create separate venues with dedicated facilities for West Point's intercollegiate rugby and soccer teams. In addition, the No Action alternative would prevent the removal of intercollegiate rugby facilities from The Plain, thereby delaying the implementation of a strategic objective of the ODIA Master Plan, which is the return of The Plain to the more spartan sports field character and use of historic times at West Point.

The H-Lot alternative had several disadvantages that were generally a result of geographic location and space constraints that could not be mitigated. The site is geographically isolated from the central Cadet zone and locations of other Cadet athletic facilities. In addition, due to encroachment on all sides by existing development and steep rocky hillsides, the H-Lot site could accommodate only a portion of the rugby half of the proposed Project, whereas an additional, separate venue for soccer would still be needed. In addition, the development of rugby facilities at the alternative H-Lot location would limit the expansion potential of the adjacent uses, which have been intensively developed with uses and services that are integral to this area of the Main Post. For these reasons, H-Lot was eliminated from consideration.

The alternative of upgrading Daly Field and Clinton Field on The Plain was discounted from serious consideration because a "Key Strategic Initiative" of the ODIA's Sports Comprehensive Plan is to remove most of the intercollegiate team club sports venues (rugby, soccer, and tennis) from The Plain, with the exception of the baseball venue at Doubleday Field (West Point DHPW 2004). Because upgrading Daly Field and Clinton Field would be inconsistent with this key strategic initiative, this alternative was not selected as the preferred site location for the Project and was eliminated from consideration.

### 3.3 ANTICIPATED ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Table 4 provides a comprehensive summary of the anticipated environmental effects of construction and operation of the proposed Project. Mitigation measures would be employed to reduce adverse impacts to a level that is not undue or significant, as detailed in Table 4.

**Table 4. Summary of Impacts and Mitigation Measures**

<b>Summary of Impacts</b>	<b>Mitigation Measures and Results</b>
<b>2.1 – Geology and Soils</b>	
No significant impacts on soils or geology are anticipated. No concerns were identified by geotechnical survey conducted in the rugby portion of the Project area. However, geotechnical borings were not performed at the exact locations of the light poles.	As recommended in the geotechnical survey report, all foundation upgrades and excavation sidewalls at future light pole sites would be inspected by a geotechnical engineer during construction to verify that conditions at the light pole locations are consistent with those documented during the geotechnical investigation, to verify that proper support would be provided by the underlying materials.
Construction of certain aspects of Project (corner of athletic field, portion of athletic building, and/or modifications to the turnaround area at the end of Upton Road) would potentially require rock removal or blasting portions of the exposed bedrock slope adjacent to Target Hill Field.	If blasting is necessary, West Point would require its construction contractor to obtain blasting permits, if required, and to comply with all associated blasting safety provisions.
<b>2.2 – Water Quality</b>	
Project construction has potential to result in soil erosion / sedimentation into Crows Nest Brook or Hudson River.	West Point would implement measures to prevent significant soil erosion or sedimentation from the Project. West Point would require the contractor to prepare and implement a West Point-approved Erosion Control Plan, specifying BMPs for erosion and sedimentation control and stormwater management during construction. The Erosion Control Plan would ensure compliance with the NYSDEC’s current stormwater management regulations for construction activities pursuant to the State Pollutant Discharge Elimination System (SPDES).
Excavation and/or drilling for erection of light pole foundations may reach 15 feet deep or more, and this activity is likely to encounter groundwater in some or several light pole locations. In the event groundwater is encountered, the contractor would need to temporarily dewater the excavated area to maintain groundwater levels at least 2 feet below the lowest excavation depth during construction, to help ensure the strength of the concrete during the curing process for stability of the light pole foundations.	Dewatering the excavation area would be conducted only temporarily, until the construction of the light poles are determined to be successfully installed. Following completion, pumping and/or well points would cease and be dismantled, and no permanent impacts to groundwater would likely result.
Potential spills of hazardous materials used by equipment during construction.	During construction, any hazardous materials required for construction activities would be identified and managed in accordance with the <i>United States Military Academy Installation Spill Contingency Plan</i> . No significant adverse effects anticipated.
Depending on the design of the operational drainage system there is potential for stormwater pollution to Hudson River.	All appropriate stormwater design and BMPs for operation would be incorporated into the Project drainage system; therefore, no significant increase in stormwater pollution to the Hudson River is

**Table 4. Summary of Impacts and Mitigation Measures**

<b>Summary of Impacts</b>	<b>Mitigation Measures and Results</b>
<p>If stormwater from the synthetic field surface is discharged into the Crows Nest Brook box culvert, there is potential for increased temperatures of stormwater from the synthetic fields to warm the water temperature of Crows Nest Brook and adversely affect the conditions that support trout spawning and survival.</p>	<p>expected to result from operation of the Project.</p> <p>This issue would remain under West Point’s consideration as the design for the stormwater management systems for the athletic fields progresses. Efforts would be made to divert most of the Project stormwater discharge to either or both existing drainage pipes at the north and south ends of the fields, and to avoid discharging into the box culvert that conveys Crows Nest Brook (in the center of the Project area). Alternatively, if it is not feasible to avoid discharging to Crows Nest Brook, special stormwater system designs enabling the cooling of stormwater to acceptable temperatures before discharge into Crows Nest Brook would be implemented.</p>
<p>There is potential for existing soil and drainage conditions adjacent to Target Hill Field to affect the drainage systems (or the effectiveness of such systems) that would be constructed for the Project. The soils on these slopes, and associated hillside surface water drainages at the north end of the fields (near the Lee Housing Area) and the west/southwest side of the fields (near the old Post Exchange) have combined to produce erosive conditions during large rain events. Over time, this erosion has resulted in periodic blockage of the buried drainage culverts under the north and south ends of Target Hill Field, which direct flow to the Hudson River.</p>	<p>West Point would periodically monitor these slopes, surface drainages, and associated buried culverts, and would perform maintenance when required, to help ensure the proper functioning of the existing and proposed surface water drainage structures.</p>
<p><b>2.3 – Vegetation and Wildlife (Vegetation and Terrestrial Wildlife)</b></p>	
<p>Minimal (max. 0.51 acre) to no tree clearing, and approximately 12.8 acres of natural maintained grass would be converted to synthetic turf, buildings, and paved areas associated with the Project.</p>	<p>No significant adverse impact on vegetation. Impacts to wildlife would be negligible.</p>
<p><b>2.3 – Vegetation and Wildlife (Fisheries)</b></p>	
<p>If stormwater from the synthetic field surface is discharged into the Crows Nest Brook box culvert, there is potential for increased temperatures of stormwater from the synthetic fields to warm the water temperature of Crows Nest Brook and adversely affect the conditions that support trout spawning and survival.</p>	<p>This issue would remain under West Point’s consideration as the design for the stormwater management systems for the athletic fields progresses. Efforts would be made to divert most of the Project stormwater discharge to either or both existing drainage pipes at the north and south ends of the fields, and to avoid discharging into the box culvert that conveys Crows Nest Brook (in the center of the Project area). Alternatively, if it is not feasible to avoid discharging to Crows Nest Brook, special stormwater system designs enabling the cooling of stormwater to acceptable temperatures before discharge into Crows Nest Brook would be implemented.</p>
<p><b>2.3 – Vegetation and Wildlife (T&amp;E Species)</b></p>	
<p>Although the bald eagle, shortnose sturgeon, and Atlantic sturgeon are known to occur in the vicinity of the Project area, no significant adverse effects are anticipated, provided that appropriate mitigation measures are implemented, if required by the USFWS, NOAA – Fisheries, and/or the NYSDEC. Because the details of the Project plans are still being</p>	<p>West Point would determine the consultation requirements and consult to obtain the input of USFWS, NOAA – Fisheries, and the NYSDEC’s Endangered Species Unit and Hudson River Fisheries Unit, as warranted and required, prior to construction. No significant adverse effects are anticipated.</p>

**Table 4. Summary of Impacts and Mitigation Measures**

<b>Summary of Impacts</b>	<b>Mitigation Measures and Results</b>
formalized, West Point has not yet introduced or discussed this Project with the USFWS, NOAA – Fisheries, or the NYSDEC’s Endangered Species Unit and Hudson River Fisheries Unit.	
<p>The Project would not result in a loss of bald eagle wintering or foraging habitats. However, human activity, such as from certain construction activities and the use of the completed fields, could be of sufficient intensity to disrupt bald eagle foraging or resting use of areas in the immediate vicinity of the Project site, if the timing of these (eagle and human) activities is coincidental and the eagles are sensitive to these disturbances. However, given the levels of noise and human activity that regularly occur in the vicinity of the Project area, the individuals that use the bald eagle wintering area are likely to have an increased degree of tolerance to human disturbances.</p>	<p>Although the planned construction period for the initial phases of construction (fall 2005) would avoid the bald eagle wintering season, a typical impact minimization measure restricting the construction to the period between April 1 and November 30 may be applied (i.e., for subsequent construction phases) if deemed warranted by West Point, the USFWS, and/or the NYSDEC.</p> <p>In accordance with the provisions of its <i>Endangered Species Management Plan for the Bald Eagle</i>, West Point would determine whether consultation with these agencies is necessary pursuant to this Project, and if so, would work with the applicable agencies to ensure that Project implementation would not adversely affect the bald eagle.</p> <p>In addition, if construction activities were necessary during the bald eagle wintering season, West Point’s Natural Resources Branch would monitor the activities in relation to bald eagle activities and would have the authority and discretion to stop any activities that may cause undue adverse effects to wintering bald eagles.</p>
<b>2.4 – Air Resources</b>	
<p>Depending on design decisions, stationary emissions sources such as building heating facilities and emergency generators may be constructed as part of this Project. In addition, temporary emissions would be generated by Project construction equipment and contractor vehicles; particulate matter (PM) generated by bedrock, soil, and pavement disturbance during soil excavation or blasting; and volatile organic compound (VOC) emissions associated with repaving and/or patching asphalt roads. Also, occasional temporary increase in emissions would be generated by spectator vehicles during operation of the Project (games and tournaments).</p>	<p>Before construction of the Project, West Point would conduct an air quality conformity review to identify the types and quantities of all temporary and long-term air emissions that would result from the Project. The predicted temporary and long-term emissions generated by the Project would be compared with specific SIP emission thresholds for severe ozone non-attainment areas, and West Point would determine whether this threshold would be exceeded as a result of implementing the Project. If thresholds would be exceeded, then West Point would propose and implement air emissions control measures during construction, and/or curtail certain activities, as necessary, to ensure that implementation of the Project would have no significant adverse impact on air quality.</p>
<b>2.5 – Cultural Resources</b>	
<p>New building facilities’ architectural design is important to maintaining architectural style compatibility with NHL, NRHP Eligible Historic Landscapes, and historic structures at West Point.</p>	<p>West Point would continue to evaluate the design plans for the Project in consultation with the NYSOPRHP as necessary, to ensure the continued incorporation of existing architectural cues from the larger NHL at West Point and compatibility with extant architecture in the immediate vicinity of the Project (i.e., the Shea Stadium facilities and the Lee Housing Area). As part of this evaluation process, West Point would perform onsite review as necessary to ensure that the Project would have no adverse effects on historic structures or NRHP Eligible Historic Landscapes at West Point.</p>
Project construction activity potentially may disturb	West Point would retain this monument at Target Hill Field,

**Table 4. Summary of Impacts and Mitigation Measures**

<b>Summary of Impacts</b>	<b>Mitigation Measures and Results</b>
and/or change the location of the commemorative monument to the Revolutionary War Period “Moore House and Farm” erected at Target Hill Field.	incorporate it in the final athletic field design, and ensure that it is replaced in a prominent location among the new athletic facilities.
The Lee Housing Area, located adjacent to the Project area, is considered to have high architectural and landscape integrity, and is considered a NRHP Eligible Historic Landscape.	West Point would continue to coordinate with the NYSHPO as design plans advance and implement pertinent recommendations from the NYSHPO to reduce and/or avoid adverse effects on cultural resources, such that implementation of the Proposed Action would result in less than significant impacts on any historic and archaeological resources identified within the proposed Project area.
<b>2.6 – Land Use</b>	
There would be no significant change in the overall land use at the Project site, and the Project would be consistent with designated land uses in this area. (See Section 2.10 for impacts on loss of occasional parking at Target Hill Field.)	No adverse effect.
<b>2.7 – Recreation</b>	
Construction of the proposed rugby and soccer venues at Target Hill Field would replace or displace eight (8) existing athletic fields that are currently used for DPE- and CRD-administered activities, replacing them with four (4) athletic fields that would be used primarily for ODIA-sponsored intercollegiate sports activities.	This loss of field space for DPE- and CRD-administered activities would be partly or entirely mitigated by the likely possibility that the proposed synthetic fields could support and be made available for uses other than ODIA-sponsored uses, including intramurals, youth soccer and lacrosse, and other community and outside club uses. In addition, through construction of the Project and the eventual removal of the rugby, soccer, and tennis venues (including lighting, spectator seating, and parking) from The Plain in accordance with the ODIA Master Plan, these areas of The Plain would be able to support approximately nine (9) DPE- and CRD-administered athletic fields, for a net gain of one (1) natural grass field for DPE and CRD activities.
<b>2.8 – Visual Resources</b>	
The Project would result in permanent changes to the appearance of the Target Hill Field. The proposed new permanent structures would be visually prominent when viewed within the landscape of Target Hill Field and would affect views from a variety of visually sensitive areas. The effects on visual resources would vary seasonally and daily, but are expected to include the addition of new, permanent structures to the Target Hill Field; the visual prominence of the color of the artificial athletic fields during late fall, winter, and early spring, when the ground is bare; and the visual intrusion of nighttime lighting and associated glare in the skyline and on the surface of the Hudson River during late fall and early spring evenings when rugby and soccer practices and game events are held.	The artificial turf materials selected would be visually compatible with the natural turf on the existing ground surface to the maximum extent practicable. Selection would favor materials that mimic the texture of grass and result in the appearance of a natural grassy surface, and through the selection of a muted green color to avoid visual impacts during the late fall, winter, and early spring months, when the ground is bare and natural grass is dormant.

**Table 4. Summary of Impacts and Mitigation Measures**

<b>Summary of Impacts</b>	<b>Mitigation Measures and Results</b>
<p>The Project would result in visual impacts to various viewsheds that include external views of the Target Hill Field from a distance, such as representative views from:</p> <ul style="list-style-type: none"> <li>• Village of Cold Springs;</li> <li>• Constitution Island;</li> <li>• Boats on the Hudson River;</li> <li>• Recreational areas and scenic overlooks adjacent to West Point on the western shore of the Hudson River;</li> <li>• External and internal views of Target Hill Field from various vantage points within natural landscapes that comprise the Contemporary West Point Military Academy, Storm King, Constitution Island, and Cold Spring subunits of the HHSASS; and,</li> <li>• Various vantage points located within or immediately adjacent to the Target Hill Field in West Point’s Main Post area.</li> </ul> <p>Design of new facilities (including architectural design as well as other material and color features) is important to limiting the visual impacts of the Project.</p>	<p>All new construction would reflect careful attention to, and appropriate concern for, the architectural styles, materials, and designs that are found within the NHLD at West Point, and the Hudson Valley scenic corridor in general.</p> <p>All new construction would also be designed to be architecturally compatible with existing historic and/or athletic structures that are located at the nearby North Athletic Field, including the Gillis Field House, the Old Guardhouse, the Markmanship Center, and the Old Pontoon Building, through the utilization of similar or identical materials, designs, colors, and finishes for new permanent structures associated with the proposed Project.</p> <p>Therefore, the predominant materials for proposed new permanent structures such as the grandstands would be brick, matched to the brick colors of the historic structures at the nearby North Athletic Field. Architectural detailing such as crenellation and concrete capstones atop the facades, where brick is exposed along the tops of the facades, would also be a component of the architectural design. Other materials would be selected to integrate new construction into the vegetated bluffs to the rear of these structures. Additionally, building roofs would be either a traditional pitched roof, or a flat roof with crenellated parapets with concrete capstones.</p> <p>Finally, all new construction, including outdoor athletic field lighting, would be designed so that no structures would protrude above the natural contours of the bluffs adjacent to the western and northern edges of the Target Hill Field, further ensuring that no new visual intrusions would be introduced into views of the Hudson River Valley from this bluff line.</p> <p>These design measures would ensure that proposed new permanent structures would be visually compatible with existing architectural elements located within and behind the waterfront of West Point, and would not become obtrusive landscape features.</p>
	<p>The location of the scoreboards for the new rugby fields would be at the southern end of each field, approximately perpendicular to the Hudson River, and facing northward. Both of the rugby scoreboards would be largely screened from the Hudson River and eastern/northeastern vantage points by the existing tree line along Upton Road. Additionally, the scoreboards would be internally illuminated only during sporting events; would be equipped with a manual switch to turn the scoreboards on; would be equipped with an automated timer to turn the scoreboards off at the end of sporting events; and would not be externally illuminated (<i>i.e.</i>, no lights would be installed in areas adjacent to the scoreboards to provide illumination of the scoreboards).</p>

**Table 4. Summary of Impacts and Mitigation Measures**

Summary of Impacts	Mitigation Measures and Results
	<p>All new construction would be located as far north and west within the Target Hill Field as economically feasible. This would assist with minimizing potential adverse effects on visual resources from such visually sensitive areas located south and east of the proposed Project area, such as Trophy Point and Constitution Island, by ensuring that new construction is located as far in the background of views that include the Target Hill Field as possible. This would also reduce visual impacts on sensitive areas north and east of the proposed Project area, such as the Lee Housing Area, the Village of Cold Spring, recreational areas and scenic overlooks in Storm King State Park and along U.S. Route 9W, by ensuring that new construction is screened by the bluff line and forested vegetation along the northern edge of Target Hill Field.</p>
<p>There is potential for limited to moderate obtrusive light effects on all visually sensitive areas identified in the EA, resulting from the use of outdoor athletic field lighting used to illuminate the rugby and soccer fields on weeknights and weekend evenings throughout the spring and fall. However, these effects would only occur on selected evenings during the fall and spring seasons, when the intercollegiate outdoor rugby and soccer seasons are in session. However, the proposed Project would not result in visual impacts on these external views during the day or during the evening throughout summer months, when the majority of outdoor activities occur and when waterfront areas of these visually sensitive areas are used most heavily.</p>	<p>West Point would install the minimum necessary lighting for use of the rugby and soccer fields for practices and game events during the evening. All light poles and fixtures would be anodized or of materials and finishes that are not shiny or reflective, and the height of light poles would be limited to that absolutely necessary for the type of sporting venue. Outdoor athletic field lighting would be designed so that no lighting structures or fixtures would protrude above the natural contours of the bluffs adjacent to the western and northern edges of Target Hill Field, and no visual obstructions would be introduced into views of the Hudson River from this bluff line. Additional line-of-sight analysis would be performed to ensure that no lighting structures or fixtures would interfere with the natural lines of sight from identified representative or sensitive vantage points. Furthermore, West Point would ensure that directional lighting is installed, such that lighting is directed down onto the athletic playing fields, and would install full shields on all of the athletic lighting to reduce off-field illumination and reflection (light trespass). All outdoor athletic field lighting systems would be equipped with switches that require them to be manually turned on, and equipped with automated timers to automatically turn them off, to ensure that visual impacts from lighting and associated glare would be limited to only those evening hours during which practices and game events are routinely held, generally between the hours of 4:30 pm and 10:00 pm on weeknights and weekend evenings. Finally, illumination of outdoor athletic fields would only occur when outdoor practices or game events were scheduled.</p>
	<p>As a result of implementation of all of these measures to avoid or reduce impacts to visual resources, adverse effects on visual resources resulting from the proposed Project would be reduced to a level that is not significant.</p>

**Table 4. Summary of Impacts and Mitigation Measures**

<b>Summary of Impacts</b>	<b>Mitigation Measures and Results</b>
<b>2.9 – Coastal Zone</b>	
Project is located in designated coastal zone management area that is associated with the Hudson River.	West Point would notify the NYSDOS CMP of Project consistency with State Coastal Policies at least 90 days prior to Project implementation, and coordinate and consult with the NYSDOS CMP and other agencies to ensure that the proposed Project would be consistent with NYSDOS' State Coastal Policies. The Project is not likely to have undue adverse effects on New York State coastal zone resources.
<b>2.10 – Traffic and Transportation</b>	
The new athletic fields and facilities at Target Hill Field would displace approximately 400-600 vehicle parking spaces that are occasionally used at Target Hill Field during home intercollegiate/ varsity football games. Alternate parking facilities for approximately 400-600 vehicles during home football games would be required. Parking demands would potentially be exacerbated depending on the simultaneous scheduling of football, rugby, and soccer matches.	During the early phases of the Project when only the rugby facilities have been developed at Target Hill Field, the undeveloped half of the field (reserved but not yet developed for the soccer component of the Project) would provide adequate parking for any such events requiring high-volume parking accommodations at West Point. Following the development of the soccer facilities and elimination of parking in this area, West Point will use numerous temporary remote parking facilities on West Point property (e.g., Range Areas) in conjunction with shuttle buses to transport spectators to various athletic venues. Therefore, the impact of the loss of parking space would not be a significantly adverse impact.
The moderately sized turnaround at the north end of Upton Road may require expansion in dimensions to more easily accommodate added parking space and an adequate turnaround radius for shuttle buses. Consequently, a portion of the rocky terrace slope adjacent to the north edge of the existing Upton Road turnaround may require removal through excavation/blasting to allow expansion of the existing turnaround.	(Same as noted for Section 2.1) If blasting is necessary, West Point would require its construction contractor to obtain blasting permits, if required, and to comply with all associated blasting safety provisions.
Traffic impacts have the potential to be moderate during the Project construction period at certain locations. These impacts would be short-term and localized, limited to the period of construction in the specific areas of active construction. Construction staging for the Project would temporarily hinder the smooth flow of traffic at West Point. Upton Road closure would be required for the duration of Project construction periods. Upton Road reconfiguration and widening may be necessary for adequate staging and construction vehicle flow during the construction period, and may be combined with measures to expand parallel parking and shuttle bus access along the length of Upton Road within the Project area.	To minimize traffic-related impacts associated with excavation and construction throughout the Main Post/Academic Area, West Point would develop and implement a detailed construction logistics plan that specifically addresses traffic control and circulation issues for this Project. Before construction, Project planners would coordinate with and solicit input from the various departments at West Point, including military police, fire department, medical emergency response groups, DHPW, 1/1 Infantry, and transportation and safety departments, to develop as comprehensive a plan as possible. In addition, Project planners would coordinate with appropriate groups and individuals to avoid scheduling potentially disruptive construction activities when large events, such as West Point graduation week (end of May), or home football games or other intercollegiate athletic events requiring overflow parking and peak traffic flow, are scheduled.
	Impact minimization measures would include constructing the new Project synthetic fields and athletic buildings/grandstands during the summer months (i.e., from June to August) when Cadets are not present in the Main Post/Academic Area. Temporary traffic control devices such as signs, traffic cones, high

**Table 4. Summary of Impacts and Mitigation Measures**

<b>Summary of Impacts</b>	<b>Mitigation Measures and Results</b>
	visibility ribbons, flags, lighted barricades, steel plates, temporary asphalt pavements, and temporary fencing also would be used where necessary to maintain traffic safety during construction. In addition, West Point would post daily traffic updates regarding the construction locations on its website, which has a section specifically devoted to traffic reporting on the installation. West Point would closely monitor construction progress and plans to ensure that critical roadways are not obstructed during rush hours or other scheduled high-traffic periods.
	With the implementation of these measures, the impacts resulting from construction or operation should not be undue or significantly adverse.
<b>2.11 – Utilities</b>	
<b>Stormwater</b> – (Same as noted for Section 2.2) If stormwater from the synthetic field surface is discharged into the Crows Nest Brook box culvert, there is potential for increased temperatures of stormwater from the synthetic fields to warm the water temperature of Crows Nest Brook and adversely affect the conditions that support trout spawning and survival.	This issue would remain under West Point’s consideration as the design for the stormwater management systems for the athletic fields progresses. Efforts would be made to divert most of the Project stormwater discharge to either or both existing drainage pipes at the north and south ends of the fields, and to avoid discharging into the box culvert that conveys Crows Nest Brook (in the center of the Project area). Alternatively, if it is not feasible to avoid discharging to Crows Nest Brook, special stormwater system designs enabling the cooling of stormwater to acceptable temperatures before discharge into Crows Nest Brook would be implemented.
<b>Stormwater</b> – (Same as noted for Section 2.2) There is a potential for existing soil and drainage conditions adjacent to Target Hill Field to affect the drainage systems (or the effectiveness of such systems) that would be constructed for the Project. The soils on these slopes, and associated hillside surface water drainages at the north end of the fields (near the Lee Housing Area) and the west/southwest side of the fields (near the old Post Exchange) have combined to produce erosive conditions during large rain events. Over time, this erosion has resulted in periodic blockage of the buried drainage culverts under the north and south ends of Target Hill Field, which direct flow to the Hudson River.	West Point would periodically monitor these slopes, surface drainages, and associated buried culverts, and would perform maintenance when required, to help ensure the proper functioning of the existing and proposed surface water drainage structures.
<b>Electric</b> – If the extension of electric lines from the Lee Housing Area to the Project site (down the hillside area of Target Hill) is selected as part of the Project design, then blasting the hillside may be required and UXO may potentially be encountered in construction work areas.	If blasting or excavation of hillside areas is required, West Point would conduct a UXO survey, assess visual/aesthetic impacts of clearing a right-of-way down the hillside before commencing construction, and require its construction contractor to obtain blasting permits, if required, and to comply with all associated blasting safety provisions.

**Table 4. Summary of Impacts and Mitigation Measures**

<b>Summary of Impacts</b>	<b>Mitigation Measures and Results</b>
<b>Natural Gas</b> – If the extension of natural gas lines from the Lee Housing Area to the Project site (down the hillside area of Target Hill) is selected as part of the Project design, then blasting the hillside may be required and UXO may potentially be encountered in construction work areas.	(Same as described for Electric, above) If blasting or excavation of hillside areas is required, West Point would conduct a UXO survey, assess visual/aesthetic impacts of clearing a right-of-way down the hillside before commencing construction, and require its construction contractor to obtain blasting permits, if required, and to comply with all associated blasting safety provisions.
<b>Oil</b> – In the event that it is not feasible to extend natural gas lines to the Project site, oil could be selected as the heating source for the Project, although it is not the preferred heating source	In this event, the placement (both location and elevation) of the oil tank(s) would be selected with due consideration to reinforce the goal of containment and prevention of contamination of the Hudson River in the possible event of oil tank leaks, oil spills, and potential flooding of the Hudson River. Such containment measures would include the use of secondary containment berms surrounding the oil tank(s), location of oil tanks outside of 100-year floodplain areas as much as possible, and ensuring that West Point’s <i>Installation Spill Contingency Plan</i> (USMA 1996a) is implemented to prevent spills, and contain and clean up any spills that may occur.
<b>2.12 – Materials and Wastes</b>	
Construction would temporarily generate various typical solid construction and demolition debris. The volume of this solid construction/demolition debris would be minor compared to the total amount of solid waste generated per year at West Point.	Prior to construction, West Point would develop a Construction and Demolition Waste Management Plan for the management and proper disposal of solid waste during construction. Construction would therefore have a minor, temporary impact on the generation and disposal of waste material.
Construction would involve the transport, temporary storage, and use of typical hazardous construction materials, such as solvents, lubricants, sealants, adhesives, petroleum products, and paints.	Implementation of construction activities, including the transport, use, and temporary storage of potentially hazardous materials, would comply with proper handling and reporting procedures identified in West Point’s <i>Installation Spill Contingency Plan</i> .
Portions of the proposed Project may require excavation or blasting within areas suspected of containing UXO, presenting a safety hazard for construction workers. In particular, potentially active UXO is possibly present on the steep slopes of the hill adjacent to Target Hill Field.	If any activities that involve subsurface disturbance, such as clearing, digging, post-holing, pile-driving, blasting, or grading, would be conducted in areas that have the potential for containing UXO, these areas must be cleared of UXO presence before the start of such activities. In general, for all excavations required in areas suspected of containing UXO, West Point would contract with a qualified ordnance and explosives waste remediation company to remediate the site prior to construction.
<b>2.13 – Public Health and Safety</b>	
(Same as noted in Section 2.12 above) Portions of the proposed Project may require excavation or blasting within areas suspected of containing UXO, presenting a safety hazard for construction workers. In particular, potentially active UXO is possibly present on the steep slopes of the hill adjacent to the Target Hill Fields.	If any activities that involve subsurface disturbance, such as clearing, digging, post-holing, pile-driving, blasting, or grading, would be conducted in areas that have the potential for containing UXO, these areas must be cleared of UXO presence before the start of such activities. In general, for all excavations required in areas suspected of containing UXO, West Point would contract with a qualified ordnance and explosives waste remediation company to remediate the site prior to construction.

**Table 4. Summary of Impacts and Mitigation Measures**

<b>Summary of Impacts</b>	<b>Mitigation Measures and Results</b>
Implementation of the Project would increase seasonal or periodic public use and pedestrian traffic in the vicinity of the active CSX rail line adjacent to the Project area, particularly during athletic events.	Routine crowd control and public safety measures would be taken by West Point to ensure public safety and access restriction to the active CSX rail line. West Point’s military police would provide support including routine security patrols and crowd and traffic control on game days.
	The proposed athletic buildings would comply with all fire safety and security requirements established for West Point facilities, including fire alarms, emergency exits, exit signs, and emergency lighting.
<b>2.14 – Noise</b>	
There would be a short term overall minor increase in noise during construction from contractor vehicles and operation of construction equipment.	The effect of construction noise on adjacent uses would be mitigated by limiting construction activities to daylight hours on weekdays. Additionally, equipment operation noise would be minimized by requiring construction contractors to use equipment that meets specific standards in terms of noise.
Rugby and soccer games that would include spectators and amplified announcing, would create short-term, periodic elevations in noise levels in the immediate vicinity of the Project area. Due to amplification and spectator attendance, there would be increased noise during daytime hours on days of games. In addition, the new extension of playing times into the evening (as a result of the addition of field lighting at the new fields) would result in increased noise during the new evening hours, whenever practices and games are being held.	There are no noise sensitive receptors in the immediate vicinity of the Project. Increased noise levels in noise sensitive areas generally would be attenuated by the greater distance (both linear and elevational) between the Project site and these areas and the existing forested vegetation present between the Project and the noise sensitive areas.

**(This page intentionally left blank.)**

#### 4.0 REFERENCES

- Beemer, J.A. 1998. Endangered Species Management Plan for the Shortnose Sturgeon (*Acipenser brevirostrum*). United States Military Academy at West Point, West Point, New York. 6 pp.
- Beemer, J.A. 2002. Endangered Species Management Plan for the Bald Eagle (*Haliaeetus leucocephalus*) on the Properties at the United States Military Academy. United States Military Academy at West Point, West Point, New York.
- Beemer. 2005. E-mail communication dated January 4, 2005, from Jim Beemer, West Point Natural Resources Branch, to Alan Bjornsen, West Point National Environmental Policy Act Coordinator, West Point, New York and follow-up telephone conversation on January 25, 2005, between Jim Beemer and Sandra Lare, Managing Environmental Planner, Northern Ecological Associates, Inc., Fredonia, New York.
- Benton, Peter C. 1995. Queensboro Ironworks Site, United States Military Academy. West Point, Orange County, N.Y. Legacy Resource Management Project, John Milner Associates, Inc.
- Butkus, Jennifer. 2004. Personal communication (meeting) on November 12, 2004 from Jennifer Butkus, Chief, West Point Environmental Management Division, West Point, New York, to Sandra Lare, Managing Environmental Planner, Northern Ecological Associates, Inc., Fredonia, New York.
- Center for Watershed Protection. 2001. New York State Stormwater Design Manual. October 2001. Prepared for New York State Department of Environmental Conservation, Albany New York. Elicott City, Maryland. 191 pp + Appendices.
- Constitution Island Association. 2004. Tours. <http://www.constitutionisland.org/trous.htm> (Accessed December 3, 2004).
- Cubberley, S. 2004. E-mail communication on December 9, from Major Sam Cubberly, Intercollegiate Soccer Team Coach, Office of the Directorate of Intercollegiate Sports, United States Army Garrison West Point, New York, to Alan Bjornsen, National Environmental Policy Act Coordinator, Department of Housing and Public Works, United States Army Garrison West Point, New York.
- Cubbison, D. 2005a. Written communication dated May 5 from Doug Cubbison, Environmental Planner and Architectural Historian, Installation Support Branch, Directorate of Housing and Public Works, United States Army Garrison West Point, New York, to Northern Ecological Associates, Inc., Fredonia, New York.

- Cubbison, D. 2005b. Written communication dated May 6 from Doug Cubbison, Environmental Planner and Architectural Historian, Installation Support Branch, Directorate of Housing and Public Works, United States Army Garrison West Point, New York, to Northern Ecological Associates, Inc., Fredonia, New York.
- Cubbison, D. 2005c. Written communication dated December 15 from Doug Cubbison, Environmental Planner and Architectural Historian, Installation Support Branch, Directorate of Housing and Public Works, United States Army Garrison West Point, New York, to Northern Ecological Associates, Inc., Fredonia, New York.
- Design Collaborative, Inc., Landgarden, and United States Military Academy, Directorate of Engineering and Housing. Undated. United States Military Academy Installation Design Guide.
- Environmental Systems Research Institute (ESRI) and Federal Emergency Management Agency (FEMA). 2004. Online Hazard Maps, Flood Hazard Areas, West Point, New York. <http://mapserver2.esri.com/cgi-bin/hazard.adol?z=&cgd=&c=West+Point&st=New+York&cd=g&s=0>. Last Updated Wednesday, October 27, 2004 (Accessed January 19, 2005).
- Farmer Baker Barrios Architects. 2004. Preliminary conceptual plans for the rugby component of the proposed Rugby Facilities at Target Hill Field at the U.S. Military Academy at West Point, including Ground and Second Floor Plans (dated October 18, 2004), and various elevation and view/perspective renderings (undated, provided on December 6, 2004). Orlando, Florida and West Point, New York.
- Geo-Marine, Inc. 2001. United States Military Academy Integrated Cultural Resources Management Plan, Final. Prepared for the United States Military Academy at West Point by Geo-Marine, Inc.
- Halin, P.A., N.J. Brighton, S.K. Loechl, M.W. Tooker, S. Enscoe, and J. Webster. 2003. Identification and Analysis of the Historic Built Environment and Viewsheds, Cadet Zone, United States Military Academy at West Point, New York. Prepared by the ERDC/CERL.
- Hudson Valley Gateway. 2004. Cold Spring Historic District. <http://www.hvgateway.com>. (Accessed November 23, 2004).
- Loechl, S. K., M. Weaver, S. I. Enscoe, and G. B. Kesler. 2002. Historic Landscape Management Plan for the United States Military Academy at West Point, New York. Engineer Research and Design Center, Construction Engineering Research Laboratory, Champaign, Illinois. ERDC/CERL SR-02-1.

- Loechl, S.K., and M.W. Tooker. 2003. U.S. Military Academy Perimeter Fence Line Views Analysis, West Point, New York. Engineer Research and Development Center, Construction Engineering Research Laboratory, Champaign, Illinois.
- Mariani and Associates, Architects. 1987. Department of the Army Study/Survey of Historically Significant Army Family Housing Quarters. Installation Report. United States Military Academy, West Point.
- Meyer, C. 2005. Written communication on May 17 between Carl Meyer, Master Planner, Directorate of Housing and Public Works, United States Army Garrison West Point, New York, to Northern Ecological Associates, Inc., Fredonia, New York.
- Kevin Millington, Coastal Resources Specialist, Albany, New York and L. Malone, Northern Ecological Associates, Inc., Canton, New York
- Millington, K. 1998. Telephone communication on March 5 between Kevin Millington, Coastal Resources Specialist, Albany, New York and L. Malone, Northern Ecological Associates, Inc., Canton, New York.
- National Park Service. 1984. Historic Structures Inventory, United States Military Academy, West Point, NY. Historic American Buildings Survey/Historic American Engineering Record, National Park Service, United States Department of the Interior, Washington, D.C.
- New York State Department of Environmental Conservation. 1987. New York State Freshwater Wetlands Map, Orange County, Map 15 of 26, West Point Quadrangle, Second Edition. New York State Department of Environmental Conservation, Albany, New York.
- New York State Department of Environmental Conservation. 1996a. Waterbody Classifications. New York State Department of Environmental Conservation, Division of Water Resources, New York State Codes, Rules, and Regulations, Title 6, Chapter X, Part 862, Albany, New York.
- New York State Department of Environmental Conservation. 1996b. 1995 Annual New York State Air Quality Report, Ambient Air Monitoring System, Executive Summary. July 1996. New York State Department of Conservation, Division of Air Resources, Albany, New York. 39 pp.
- New York State Department of Environmental Conservation. 1996c. New York State Air Quality Report Ambient Air Monitoring System, 1995 Annual DAR 96-1. November 1996. New York State Department of Conservation, Division of Air Resources, Albany, New York. 181 pp.

- New York State Department of Environmental Conservation. 2003a. New York Natural Heritage Program List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State.  
<http://www.dec.state.ny.us/website/dfwmr/wildlife/endspec/etsclist.html>. Last updated on October 10, 2003. Accessed January 24, 2005.
- New York State Department of Environmental Conservation. 2003b. New York Natural Heritage Program Rare Animal List.  
[http://www.dec.state.ny.us/website/dfwmr/heritage/ranks\\_codes.htm](http://www.dec.state.ny.us/website/dfwmr/heritage/ranks_codes.htm). Last updated in July 2003. Accessed January 24, 2005.
- New York State Department of State (NYSDOS). 1981. Coastal Area Maps. New York State Department of State, Coastal Management Program. 59 pp.
- NYSDOS. 1993. Scenic Areas of Statewide Significance. New York State Department of State, Division of Coastal Resources and Waterfront Revitalization. July, 2003.
- NYSDOS. 2002. Coastal Management Program, State Coastal Policies. April, 2002. 47 pp.
- New York State Department of Transportation (NYSDOT). 2003. New York's Scenic Roads. <http://www.dot.state.ny.us/scenic/scroad.html>. Accessed November 25, 2003.
- Nolte, K., and M.A. Cinquino. 2000. National Register of Historic Places Evaluation of 34 Bridges at the U.S. Military Academy, West Point, Orange County, New York. Panamerican Consultants, Inc.
- Olcott, P.G. 1995. Groundwater Atlas of the United States, Segment 12, Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Hydrologic Investigation Atlas 730-M. United States Geological Survey, Reston, VA, 28 pp.
- Powell, A.J., Jr. and M. Andresen. 2004. Green Science: Managing Rubber Infill Fields. [http://www.greenmediaonline.com/uploads/ST/features/0411\\_gs.asp](http://www.greenmediaonline.com/uploads/ST/features/0411_gs.asp). Accessed December 11, 2004.
- Prior, M., V. Clow, E. Salo, D. Peter, and N. Parrish. 2000. National Historic Landmark District Nominations (Revised): United States Military Academy (draft). Geo-Marine, Inc., Plano, Texas.
- Sanborn, J. 2003a. Personal communication on February 10 between Jeff Sanborn, Environmental Engineer, Environmental Management Branch, Directorate of Housing and Public Works, United States Military Academy, West Point, New York, and Doug Cubbison, Acting National Environmental Policy Act

- Coordinator, Installation Support Branch, Directorate of Housing and Public Works, United States Military Academy, West Point, New York.
- Sanborn, J. 2005. Written communication on January 7, from Jeff Sanborn, Environmental Engineer, Environmental Management Branch, Directorate of Housing and Public Works, United States Military Academy, West Point, New York, to Northern Ecological Associates, Inc., Fredonia, New York.
- Scenic Hudson. 2003. Parks and Preserves: Other Special Places: Storm King State Park. <http://www.scenichudson.org>. Accessed June 4, 2003.
- Stegville, J.V. 1999. Letter communication on November 8 from J. Stegville, Engineering Geologist II, New York State Department of Environmental Conservation, Albany, New York to J. Csekitz, Northern Ecological Associates, Inc., Canton, New York.
- Taylor, H.M., Jr., J.K. Poplin, and G. B. Mitchell. 1980. Investigation for South Fill Area, United States Military Academy, West Point, New York. Miscellaneous Paper GL-80-7.
- Tectonic Engineering and Surveying Consultants. 2004. Geotechnical Investigation, Proposed Rugby Training Center and Athletic Fields, West Point, New York. Letter Report dated December 23, 2004, prepared for Farmer Baker Barrios Architects, PC, Orlando, Florida. Mountainville, New York. 13 pp + figures and appendices.
- The Putnam County News and Recorder. 2004. Constitution Island Association. <http://www.pcnr.com/culture/ConstitutionIslandAssociation.html>. Accessed December 3, 2004.
- The Research Foundation at State University of New York at Albany. 1995. United States Military Academy Cultural Resource Management Project. The United States Army Environmental Center Legacy Resource Management Program, Washington, D.C. Report on file, USMA, West Point, New York.
- Tompkins, J.H.S., S. Kress, R.S. Lange, B.C. Grashof, T.C. McDonald, K. Grandine, E. Baylies, A.D. Stamm, and J.T. Lowe. 1984. Historic Structures Inventory, United States Military Academy, West Point, New York, Vols. 1-4. HABS/HAER Record, HABS/HAER, National Park Service.
- United States Army Corps of Engineers. 2002. Storm King Mountain Removal Project Update, Formerly Used Defense Site Program, Volume 3 (July). United States Army Corps of Engineers, New York District.

- United States Army Garrison West Point, Department of Housing and Public Works. 2004. Master Plan Intro, Information Brief (Presentation). June 16, 2004. West Point, New York.
- United States Department of Agriculture, Soil Conservation Service. 1981. Soil Survey of Orange County, New York. USDA, Soil Conservation Service in cooperation with Cornell University Agricultural Experiment Station.
- United States Department of the Interior, Fish and Wildlife Service. 1990. National Wetlands Inventory, West Point, New York.
- United States Department of the Interior, Geological Survey. 1995. Groundwater Atlas of the United States Segment 12. Hydrologic Investigations Atlas 730-M.
- United States Environmental Protection Agency (USEPA). 1974. Protective Noise Levels. A Supplement to the USEPA Report: Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, EPA/ONAC 550/9-74-004, March, 1974, Office of Noise Abatement and Control, Washington, D.C.
- United States Environmental Protection Agency. 2003a. USEPA Region II Sole Source Aquifers. <http://www.epa.gov/region02/water/aquifer/>. Last updated May 14, 2003. Accessed October 24, 2003.
- United States Environmental Protection Agency. 2003b. EPA National Priorities List Sites, Enviromapper for Superfund (Interactive Mapping). <http://www.epa.gov/superfund/resources/ciconf99/map1.htm>. Accessed August 7, 2003.
- United States Environmental Protection Agency. 2003c. Superfund Information Systems, Search of CERCLIS and Archived Sites Databases. <http://cfpub.epa.gov/supercpad/cursites/srchrslt.cfm> and <http://cfpub.epa.gov/supercpad/arcsites/srchrslt.cfm>. Last updated July 16, 2003. Accessed August 7, 2003.
- United States Environmental Protection Agency. 2003d. Facility Location Information Facts Sheet, Envirofacts Data Warehouse Website. <http://www.epa.gov/enviro/>. Accessed August 7, 2003.
- United States Fish and Wildlife Service. 2005a. Threatened and Endangered Species System (TESS), U.S. Listed Vertebrate Animal Species Report by Taxonomic Group (Fishes). [http://ecos.fws.gov/tess\\_public/TESSWebpageVipListed?code=V&listings=0#E](http://ecos.fws.gov/tess_public/TESSWebpageVipListed?code=V&listings=0#E). Last updated January 23, 2004. Accessed January 23, 2005.

- United States Fish and Wildlife Service. 2005b. Threatened and Endangered Species System (TESS), Candidate Species (Fishes). [http://ecos.fws.gov/tess\\_public/TESSWebpageNonlisted?listings=0&type=C#E](http://ecos.fws.gov/tess_public/TESSWebpageNonlisted?listings=0&type=C#E) Last updated January 23, 2004. Accessed January 23, 2005.
- United States Military Academy. 1988. Historic Resource Management Plan, United States Military Academy, West Point, NY. Prepared in conjunction with the Advisory Council on Historic Preservation, Washington, D.C. and the United States Army-Construction Engineering Research Laboratory, Champaign, Illinois. Report on file, USMA, West Point, New York.
- United States Military Academy. 1989. Master Plan Update. West Point, New York.
- United States Military Academy. 1996a. United States Military Academy Installation Spill Contingency Plan. West Point, New York. 11 pp. + appendices.
- United States Military Academy. 1996b. Final Environmental Assessment for the Expansion and Development of the Stony Lonesome Community Center, USMA, West Point, New York. United States Military Academy, Directorate of Housing and Public Works, West Point, New York.
- United States Military Academy. 1998. United States Military Academy Master Plan for the Year 2007. West Point, New York.
- United States Military Academy. 2001. United States Military Academy, West Point Directory. West Point, New York.
- United States Military Academy. 2003. Integrated Natural Resources Management Plan: 2003 through 2007 (Final). West Point, New York.
- United States Military Academy. 2004a. Presentation: Master Plan Intro - Decision Brief (16 June 2004). Illustration in slides 63 and 64. Prepared by the Directorate of Housing and Public Works.
- United States Military Academy. 2004b. Visual Assessment (Poster Images) for Proposed Rugby/Soccer Facilities at Target Hill Athletic Field. Prepared by the Department of Housing and Public Works, West Point, New York.
- Van Den Avyle, M.J. 1984. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (South Atlantic) - Atlantic sturgeon. Abstract of Technical Report, Georgia University School of Forest Resources, Athens (USA). July 1, 1984. Technical report is 26 pp.; only the abstract was available online. Energy Citations Database 1948 to Present. [http://www.osti.gov/energycitations/product.biblio.jsp?osti\\_id=6101973](http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=6101973). Accessed January 21, 2005.

Vollmer Associates, LLP. Undated. Plan for the Year 2007, United States Military Academy, West Point, New York.

Vollmer Associates, LLP. 1999. Master Plan Report, Plan for the Year 2007, United States Military Academy, West Point, New York.

Wildernet. 2003. Storm King State Park. <http://areas.wildernet.com>. Accessed June 4, 2003.

Woods, M. 2003. Personal communication on November 26 between M. Woods, New York Scenic Byways Program Coordinator, New York State Department of Transportation, Albany, New York, and N. Snyder, Northern Ecological Associates, Inc., Fredonia, New York.

## **5.0 LIST OF PREPARERS**

**Mr. Alan Bjornsen (NEPA Coordinator, United States Army Garrison West Point)  
– EA Document Review and NEPA Compliance QA/QC**

**Compton, Stephen A. (Project Director) - Principal Review of all EA sections**

M.S., Forest Ecology, 1992, Utah State University

B.S., Environmental Science, 1986, Cornell University

**Eldridge, Stuart – Geology and Soils, Air Resources, Cultural Resources, Land Use,  
Traffic and Transportation, Materials and Wastes, Public Health and Safety,  
Noise, Possible Conflicts Between the Proposed Actions and Existing Land Use  
Plans, Policies, and Controls**

Ph.D., Anthropology, 1990, University of Pennsylvania

M.A., Anthropology, 1980, University of Pennsylvania

B.A., Honors in Anthropology, 1976, Bates College

**Lare, Sandra (Project Manager) – Description of Proposed Action and Alternatives,  
Water Resources, Vegetation and Wildlife, Recreation, Utilities, Additional  
Environmental Considerations, Summary of Impacts and Mitigation Measures,  
PM Review of all EA draft sections**

B.S., Environmental Studies, 1990, State University of New York (SUNY) at  
Binghamton

**Snyder, Natasha – Visual Resources, Coastal Zone, Environmental Justice**

PhD. Candidate, 2004, Anthropology, SUNY at Buffalo

B.A., Environmental Science and Anthropology, 1996, SUNY at Buffalo

A.A., Liberal Arts, 1985, Bucks Community College, Pennsylvania

## 6.0 DISTRIBUTION

A comprehensive listing of agencies and persons consulted for information supporting this EA is provided in Table 5.

**Table 5. Public and Agency Distribution List For Distribution of Environmental Assessment.**

<b>FEDERAL AGENCIES</b>	
Ms. Grace Musumeci, Chief Environmental Review Section Strategic Planning and Multi-Media Programs Branch USEPA-Region II 290 Broadway New York, New York 10007-1866 (212) 637-7343	Installations Management Agency Northeast Regional Office ATTN: SFIM-NE-ER (Potter) 5A North Gate Road Ft. Monroe, VA 23651
Mr. Larry Mango U.S. Army Environmental Center Bldg. E4435 SFIM-AEC-EQ 5179 Hoadley Road Aberdeen Proving Ground, MD 21010	
<b>STATE AGENCIES</b>	
Mr. Kenneth Markunas Office of Parks, Recreation and Historic Preservation New York State Office of Historic Preservation Field Services Bureau Peebles Island P.O. Box 189 Waterford, New York 12188-0189 (518) 237-8643	Ms. Margaret Duke New York State Department of Environmental Conservation, Region III 21 South Putt Corners Road New Paltz, New York 12561 (914) 256-3050
New York State Department of State Division of Coastal Resources Attn: Consistency Review 41 State Street Albany, New York 12231-0001 (518) 474-6000	Mr. Nicholas B. Conrad Information Services New York Natural Heritage Program 625 Broadway, 5th Floor Albany, NY 12233-4757 (518) 402-8935

**Table 5. Public and Agency Distribution List For Distribution of Environmental Assessment (continued).**

<b>LOCAL AGENCIES</b>	
Mr. Edward Diana Orange County Executive Orange County Government Center 255-275 Main Street Goshen, New York 10924 (914) 291-2318	Mr. Robert Bondi Putnam County Executive Putnam County Office Building 40 Gleneida Avenue, 3rd Floor Carmel, New York 10512
<b>INTERESTED PARTIES</b>	
Mr. Ned Sullivan, Director Scenic Hudson, Inc. 1 Civic Center Plaza #200 Poughkeepsie, New York 12601-3157 (845) 473-4440	Ms. Carmella Mantello, Executive Director Hudson River Valley Greenway Communities Council Capitol Building, Capitol Station, Room 254 Albany, New York 12224 (518) 473-3835
Hudson Highlands Land Trust P.O. Box 226 Garrison, New York 10524	Mr. Daniel Mackey Director of Public Policy Preservation League of New York State 44 Central Avenue Albany, NY 12206
Ms. Marilyn Fenollosa National Trust for Historic Preservation Northeast Regional Office 7 Faneuil Hall Marketplace, 4 <sup>th</sup> Floor Boston, MA 02109	Mr. Richard de Koster Executive Director Constitution Island Association Box 41 West Point, New York 10996
Ms. Martha Waters Executive Director Putnam County Historical Society 63 Chestnut Street Cold Spring, New York 10516	
<b>PUBLIC VENUES</b>	
Town Clerk Town of Highlands 254 Main Street Highland Falls, New York 10928 (845) 446-3398	Village Clerk Village of Highland Falls 303 Main Street Highland Falls, New York 10928 (845) 446-3400
Director Highland Falls Public Library 298 Main Street Highland Falls, New York 10928 (845) 446-3113	Mrs. Suzanne Moskala Community Library Building 622 United States Military Academy West Point, New York 10996 (845) 938-2974

**Table 5. Public and Agency Distribution List For Distribution of Environmental Assessment (continued).**

<p>Julia L. Butterfield Memorial Library          Routes 301 &amp; 9D          Cold Spring, New York 10516</p>	<p>Mr. William Mazzuca          Supervisor          Town of Philipstown          258 Main Street          Cold Spring, New York 10516</p>
<p>Ms. Mary Saari          Village Clerk          Village of Cold Spring          85 Main Street          Cold Spring, New York 10516</p>	<p>Ms. Carol Donick          The Alice Curtis Desmond and Hamilton Fish          Library          Routes 403 and 9D          Garrison, NY 10524</p>

## **APPENDIX A**

### **Visual Assessment of Proposed Project**

## **APPENDIX B**

### **Copies of Public Comment Letters and Responses**

**Scenic Hudson, Inc.**

One Civic Center Plaza, Suite 200  
Poughkeepsie, NY 12601-3156  
Tel: 845 473 4440  
Fax: 845 473 2648  
email: info@scenichudson.org  
www.scenichudson.org



June 24, 2005

Mr. Alan Bjornsen, NEPA Coordinator  
US Army Garrison West Point  
Directorate of Housing and Public Works  
Building 667  
Ruger Road  
West Point, NY 10996

RE: Draft Environmental Assessment, Construction of Rugby and Soccer Facilities at Target Hill Field, U.S. Military Academy, West Point, Orange County, New York

Dear Mr. Bjornsen:

Scenic Hudson is writing to submit comments on the above referenced Draft Environmental Assessment (EA). The Rugby and Soccer Facilities proposed for Target Hill Field would be constructed in the Hudson Highlands Scenic Area of Statewide Significance (SASS), would be visible from five separate SASS subunits and located in the West Point's National Historic Landmark District (NHLD). As a result, the utmost care and attention must be paid to ensuring that the visual impacts of the facility are avoided, minimized or mitigated in order to uphold the integrity of the scenic and historic character of the area.

Scenic Hudson appreciates that you, Doug Cubbison and Jennifer Butkus came to our office this morning to discuss this project. Likewise, we appreciate the attention to detail provided in the above referenced EA, which addresses the environmental and visual impacts likely as a result of the construction of grandstands, masts and luminaries, and four soccer and rugby fields at Target Hill Field.

For context, Scenic Hudson is owner of Foundry Dock Park, a recreation facility offering public access to the Hudson River, immediately across the river from the proposed rugby and soccer fields. The close proximity of the park is 4,500 feet (.85 mile) to the proposed fields and presents the likelihood that the construction of the preferred alternative with two (2), two-story grandstands, seating for a combined 1,200 spectators, lighting at four athletic fields and potential grading and clearing of a portion of the hillside could potentially result in negative visual impacts. Our concern is based on the fact that, at present, views from Foundry Dock Park, which has been purchased with charitable funds with the intent of providing public views of the Hudson Highlands' natural state, are limited to a forested hillside without human activity.

**Visual Impacts**

- 1) The EA describes the architectural features incorporated into the grandstands' design in order to minimize visual impact. We realize that the brickwork, crenellation and concrete capstones will add to construction costs. However, we trust you'll agree that the athletes and spectators using these facilities, as well as the general public that may view the site from the Hudson River or other offsite locations, will appreciate that these enhancements help the grandstands fit better within the context of the NHLD and SASS.

- 2) Scenic Hudson urges you to ensure that as many existing trees as possible are incorporated into the site's design. In particular, it is critical that the trees along the Hudson River are spared in order to buffer the site from view from the River, Foundry Dock Park and Redoubt 7.
- 3) The lighting at the proposed rugby and soccer fields could create negative visual nighttime impacts. The EA discusses the prospect of lighting impacts and proposes to mitigate these impacts by keeping anodized (or non-reflective) masts (light standards) to the minimum height needed to light the fields, use shields on the luminaries (light fixtures), and aim the lights downward. Again, we appreciate this additional consideration and hope that the proposed mitigation works in concert to avoid nighttime lighting impacts.

#### **Impact on Bald Eagles**

- 4) The EA indicates (page 25) that the "Bald eagle activity around the Hudson River adjacent to the project site and Constitution Island (across the river) is among some of the highest levels in the lower Hudson River Valley wintering bald eagle population." The EA also states that "bald eagles have been sighted at West Point during every month of the year" and that "bald eagles have been observed flying over the project area and sitting in trees along the western side of Target Hill Field." The EA indicates that the applicant has coordinated with the New York State Department of Environmental Conservation and the US Fish and Wildlife Service to ensure that construction does not disrupt the bald eagle activity at the site. We hope that these agencies have concurred and will continue to work closely with the academy to ensure the long-term viability of our National symbol on the Hudson River and at West Point.

#### **Consistency Review**

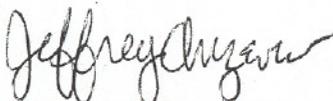
- 5) Since this project is in the Coastal Zone, thus requiring a consistency determination from the New York State Department of State (DOS) in accordance with 15 CFR Part 930.34(b), we urge you to request this determination at the earliest possible opportunity.

#### **Conclusion**

Scenic Hudson appreciates the US Military Academy at West Point's efforts to mitigate the environmental and visual impacts of this project, which is located in an area of significant historic and visual importance. We understand that the preferred alternative would relocate existing athletic facilities away from The Plain and provide an opportunity to return The Plain to its historic use and appearance – an objective we support.

We hope that the proposed mitigation will result in a project that will be a source of pride amongst not only the Academy, but residents of neighboring Cold Spring as well.

Sincerely,



Jeffrey Anzevino, AICP  
Senior Regional Planner

JA/kb



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:

July 12, 2005

Directorate of Public Works

Jeffrey Anzevino, AICP  
Senior Regional Planner  
Scenic Hudson, Inc.  
One Civic Center Plaza  
Suite 200  
Poughkeepsie, NY 12601-3156

Re: Draft Environmental Assessment  
Rugby and Soccer Facilities  
U.S. Military Academy  
West Point, New York

Dear Mr. Anzevino:

The U. S. Army Garrison, West Point (West Point), wishes to acknowledge receipt of your letter of 24 June 2005 regarding the proposed Rugby and Soccer Facilities Complex at Target Hill Field, on the grounds of the U.S. Military Academy (USMA), West Point, New York. West Point is keenly aware of the potential environmental impacts that could occur as a result of the development of these facilities, and appreciates the concern Scenic Hudson has in preserving the scenic and historic resources of the Hudson Highlands.

West Point is sensitive to the residents of the Hudson River Valley, the commuters that use the Metro North Railroad, and the people that use the river for recreation. As stated in the Draft Environmental Assessment (EA), lighting, materials, and architecture will all blend as carefully as possible into the natural setting of the site. Outdoor construction will be limited in time frame so as not to interfere with the wintering habits of the bald eagle.

A Federal Consistency review package was sent to the New York State, Department of State, Coastal Management Program on 07 June 2005, in accordance with 15 CFR 930.34(b). The proposed rugby and soccer facilities are located in the Contemporary West Point Military Academy Subunit of the Hudson Highlands Scenic Area of Statewide Significance, but has the potential to affect six additional subunits.

In conclusion, West Point plans to mitigate all potential environmental impacts, as specified in the EA. While the design of the facilities is continually changing (details), the basic concepts are being carried through.

Respectfully submitted,

A handwritten signature in cursive script that reads "Alan B. Bjornsen".

Alan B. Bjornsen, CEP  
NEPA Coordinator

HUDSON HIGHLANDS  
LAND TRUST

27 June 2005

Mr. Alan Bjornsen, NEPA Coordinator  
U.S. Army Garrison West Point  
DHPW, Building 667, Ruger Road  
West Point, NY 10996

RE: Draft Environmental Assessment, Construction of Rugby and Soccer Facilities at  
Target Hill Field, USMA, West Point, New York

Dear Mr. Bjornsen:

The Hudson Highlands Land Trust is responding to your solicitation for comments regarding the above referenced Draft Environmental Assessment (EA). Our comments will be brief, as we feel the comments/ideas/suggestions provided by Scenic Hudson, Inc. in their letter of June 24, 2005 are in concert with those of this Land Trust.

The Hudson Highlands Land Trust is headquartered in Garrison, New York, and our area of interest extends the length of the Hudson River from New Windsor and Beacon in the north to Peekskill and Bear Mountain State Park in the south. Our simple mission is to work to preserve the rural character, natural resources and scenic beauty of the Hudson Highlands.

It is obvious from the EA that West Point is undertaking significant effort to mitigate the environment impacts of the proposed facility at Target Hill Field, with many aspects of the design serving to limit the visual impacts. And it is laudable that the Academy continues its decades long work to return The Plain to its historical use and appearance. The eventual removal of the lighting, fencing and other athletic infrastructure from Daly and Clinton fields, associated with this and other projects, can only result in a visual improvement and serve to reduce the incidence of light pollution emanating from the Academy.

We fully concur with Scenic Hudson's recommendation that every effort be made to retain the trees along the east side of Target Hill Field and the west bank of the river. In fact, additional plantings to further buffer the views from the scenic and historic points on both sides of the river, would ensure that future visitors to West Point and nearby areas are afforded with the same dramatic landscapes enjoyed by visitors today.

As light pollution is a growing problem across the nation, as well as within the Highlands region, your proposed mitigation measures for the athletic fields are an important aspect

for overall success from an environmental perspective, and for the quality of life for residents at West Point and the surrounding area. In order to reduce the incident of light pollution (glare, sky glow, trespass) during periods of nighttime use, we strongly encourage the Academy and its engineers to investigate and incorporate the latest lighting technologies within these facilities. The Land Trust will be happy to provide its extensive expertise in this area, if it will help ensure that the impact of the proposed lighting (including masts and luminaries) is minimized, to the benefit of all, without sacrificing appropriate use of the facilities.

We appreciate the Academy's ongoing efforts to mitigate the environmental impacts of its facilities' expansions/upgrades, and continue to encourage USMA's actions to serve as a standard for all residents in the Hudson Highlands.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Chmar', written in a cursive style.

**Andrew T. Chmar**  
Executive Director



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:

July 12, 2005

Directorate of Public Works

Mr. Andrew T. Chmar  
Executive Director  
Hudson Highlands Land Trust  
P.O. Box 226  
Garrison, NY 10524

Re: Draft Environmental Assessment  
Rugby and Soccer Facilities  
U.S. Military Academy  
West Point, New York

Dear Mr. Chmar:

The U. S. Army Garrison, West Point (West Point), wishes to acknowledge receipt of your letter of 27 June 2005 regarding the proposed Rugby and Soccer Facilities Complex at Target Hill Field, on the grounds of the U.S. Military Academy (USMA), West Point, New York. West Point is keenly aware of the potential environmental impacts that could occur as a result of the development of these facilities, and appreciates the concern that the Hudson Highlands Land Trust has in preserving the scenic and historic resources of the region.

West Point is sensitive to the homeowners that live on the east bank of the Hudson River, the commuters that use the Metro North Railroad, and the people that use the river for recreation. As stated in the Draft Environmental Assessment (EA), lighting, construction materials, and architecture will all blend as carefully as possible into the natural setting of the site. West Point will endeavor to maintain as much of the natural landscape as possible and, while the design of the facilities is continually being modified with respect to details, the basic concepts that were presented in the EA remain unchanged.

Respectfully submitted,

Alan B. Bjornsen, CEP  
NEPA Coordinator