

# Environmental Assessment

Foley Athletic Center  
(Indoor Training Facility)  
United States Military Academy  
West Point, Orange County, New York



United States Army Garrison West Point  
West Point, New York

November 2005

DO #W911SD-05-F-0053

UNITED STATES ARMY GARRISON WEST POINT  
ORANGE COUNTY, NEW YORK

FINDING OF NO SIGNIFICANT IMPACT (FNSI)

**FOLEY ATHLETIC CENTER  
UNITED STATES MILITARY ACADEMY  
WEST POINT, NEW YORK**

**I. NAME OF ACTION**

Construction of the Foley Athletic Center (Indoor Training Facility) at the U.S. Military Academy (USMA) West Point, Town of Highlands, Orange County, New York.

**II. DESCRIPTION OF ACTION**

a. The U.S. Army Garrison West Point (West Point) proposes to construct an indoor athletic training facility (IATF) on Howze Field to support the multiple athletic programs at the USMA. An IATF with a full field would include a wall-to-wall, in-fill type artificial turf field with inlaid markings for football. This configuration would allow for a full-sized (360 feet [110 meters] by 160 feet [49 meters]) football field with 15-foot (4.5-meter) buffer around the entire field, with its southern elevation parallel to, and 50 feet (15 meters) to the north of, the Truxton Lacrosse Center. The eastern elevation of the building would be aligned with the eastern elevation of Truxton Lacrosse Center. This alternative would include an attached storage/office space totaling 2,500 square feet (232 square meters) and an attached indoor conditioning area 5,400 square feet (502 square meters). Both of these additional areas would be single story and would have peaked roofs attached to the sides of the main facility. Total development under this alternative would cover approximately 85,000 square feet (7,897 square meters). Exterior finishes would be designed to be compatible with surrounding facilities in terms of color, texture, and materials. The ceiling height of the facility is yet to be determined, but would be high enough to practice football and soccer kicks (approximately 65 feet, clear peak height).

b. Alternatives: Alternatives to the Proposed Action that were considered include the No Action Alternative. Under the No Action Alternative, no IATF structure would be constructed at West Point. Indoor practice opportunities would continue to be limited and would occur in Gillis Field House or other locations as available. The ability for Army football, soccer, lacrosse, baseball, and other field teams to practice safely indoors during inclement weather conditions would not be possible. The Office of the Directorate of Intercollegiate Athletics stated athletic program mission and goals, as well as objectives stated in the Athletic Facilities Master Plan, would not be furthered.

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

The principal environmental issues related to the implementation of the Proposed Action are:

- (1) Potential for a slight increase in stormwater runoff as a result of the increase of impervious surfaces at the proposed IATF;
- (2) disturbance of over one acre (0.4 hectares) of land;
- (3) potential for a slight increase in sedimentation and as a result of ground disturbing activities;
- (4) impacts to the surrounding historic structures and important viewsheds, especially the Mills Road corridor, from the introduction of a new visual element; and
- (5) Temporary disturbance in traffic patterns from the possible closure of a lane of traffic on Howze Place during construction.

Several of these potential impacts would be mitigated by careful design of the facility and by selecting color palettes, building textures, and building materials sensitive to the historic nature of the area. Mitigation measures must be addressed to diminish any potential significant adverse effects.

### **IV. MITIGATION MEASURES**

Mitigation measures would be employed to address impacts from implementation of the Proposed Action including:

- (1) Erosion and sedimentation controls would be used in accordance with West Point and New York State Department of Environmental Conservation (NYSDEC) standards and specifications. West Point would require its contractor to prepare and implement an Erosion Control Plan in compliance with NYSDEC's current stormwater management regulations, as this project includes over one acre (0.40 hectares) of disturbance, and this plan would be approved by West Point before initiating construction activities.
- (2) Since the project area includes over one acre (0.40 hectares) of disturbance, West Point would obtain a NYSDEC Construction Activity State Pollution Discharge Elimination System permit.
- (3) BMPs would be implemented to mitigate the effects of any increase in stormwater runoff and would be consistent with the New York State Stormwater Design Manual.
- (4) The impacts of construction and operation on visual and cultural resources (including historic structures and on-site and off-site viewshed areas) would be minimized by ensuring that the design of the facility is sensitive to the surrounding historic structures and by selecting color palettes, building textures, and building materials that would reduce the visual presence of the building.

(5) Construction activities could potentially require the temporary closure of a lane of traffic on Howze Place.

## V. FACTS AND CONCLUSIONS

Implementation of the mitigation measures identified 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.

## VI. DOCUMENT AVAILABILITY AND POINT OF CONTACT

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No substantive comments were received on the draft document. Therefore, no changes were made in the final document. Additional information may be requested from:

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**ENVIRONMENTAL ASSESSMENT**

**FOLEY ATHLETIC CENTER  
(INDOOR TRAINING FACILITY)**

**UNITED STATES MILITARY ACADEMY  
WEST POINT, NEW YORK**

**Prepared by:**

**The Louis Berger Group, Inc.  
Washington, D.C.**

**November 2005**

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

**ENVIRONMENTAL ASSESSMENT**

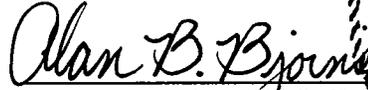
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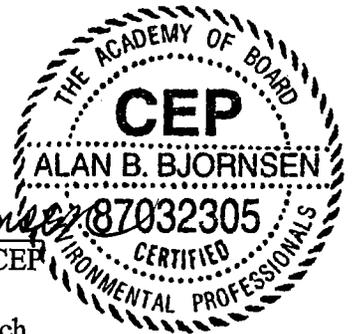
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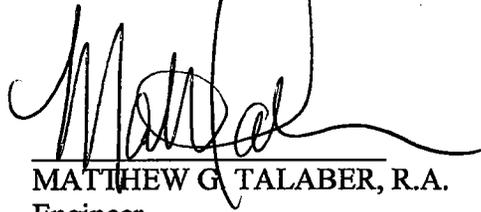
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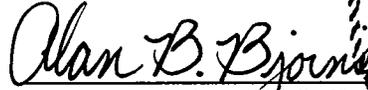
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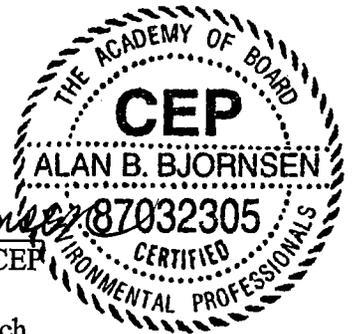
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## **EXECUTIVE SUMMARY**

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This Environmental Assessment (EA) has been prepared to address the effects of constructing the Foley Athletic Center (Indoor Training Facility), at the United States Army Garrison West Point (West Point), New York. The EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA, 40 CFR Parts 1500-1508, and 32 CFR 651, Environmental Analysis of Army Actions.

### **PURPOSE AND NEED OF THE PROPOSED ACTION**

The 2004 Athletic Facilities Master Plan for the United States Military Academy (USMA) states the need for a new synthetic-turf indoor practice facility near Michie Stadium, known as an Indoor Athletic Training Facility (IATF). This facility should be permanent and multi-use (i.e., able to be used by multiple sports) to address the need for West Point athletics to be able to practice in any weather conditions, including severe inclement weather (e.g., sub-freezing temperatures, lightning, high wind, and intense precipitation). While the primary use of the facility would be by the football team, other teams, such as soccer, lacrosse, and baseball, may also use the facility. In addition, the facility would be available for the West Point community to use, as well as for special occasions by the outside community. Constructing and operating the IATF would help the USMA meet the Office of the Directorate of Intercollegiate Athletics (ODIA) stated mission and goals for its intercollegiate athletic program, as well as meet the objectives stated in the 2004 Athletic Facilities Master Plan.

### **PROPOSED ACTION ALTERNATIVE**

West Point proposes to construct an IATF to support the multiple athletic programs at the USMA, which would be named the Foley Athletic Center. An IATF with a full field would include a wall-to-wall, in-fill type artificial turf field with inlaid markings for football. This configuration would allow for a full-sized (360 feet [110 meters] by 160 feet [49 meters]) football field with 15-foot (4.5-meter) buffers along each side of the field, with its southern elevation parallel to Truxton Lacrosse Center and 50 feet (15 meters) to the north of Truxton Lacrosse Center. The eastern elevation of the building would be aligned with the eastern elevation of Truxton Lacrosse Center. This alternative would include an attached storage/office space totaling 2,500 square feet (232 square meters) and an attached indoor conditioning area 5,400 square feet (502 square meters). Both of these additional areas would be single story and would have peaked roofs attached to the sides of the main facility. Total development under this alternative would cover approximately 85,000 square feet (7,897 square meters).

The field would be wide enough for soccer and lacrosse, and would be marked for these purposes as needed. The men's baseball and women's softball teams would also be able to use the facility (without appropriate markings). In addition, the facility could also be used for non-athletic events such as trade shows or select community events. Parking for such events could be accommodated using the existing A, B, and F Lots, and other lots that are currently used for football games or other large events.

Exterior finishes would be designed to be compatible with surrounding facilities in terms of color, texture, and materials. The ceiling height of the facility is yet to be determined, but would be high enough to practice football and soccer kicks. For purposes of analysis, the interior height at the center

of the building was assumed to be 65 feet (20 meters), with a 75-foot (23-meter) peak exterior elevation), with sufficient height along the sidelines to erect film towers. It was also assumed that the side height would be 35 feet (11 meters) at the building interior with 45-foot (14-meter) exterior peak side height. It would have vehicular and personnel entrances, and would include sports-compatible lighting. The facility would use electric lighting and heated using natural gas, propane, or electric supply. A ventilation/air handling system would be incorporated to remove air and prevent heat build-up on hot days. Roof and perimeter ground drainage systems would be designed to handle rain and snowmelt runoff.

The preferred site for the IATF is Howze Field, an outdoor athletic field located immediately south of Michie Stadium and the newly constructed Kimsey Athletic Center (Figure 1-3). This 2.3-acre (0.93-hectare) site is bordered by Kimsey Athletic Center on the north, a wooded area and Mills Road on the east, the Truxton Lacrosse Center and Howze Place/Fenton Road on the south, and Fenton Road and Hollender Center (venues for basketball and hockey) on the west. Howze Field is currently used by the football and lacrosse teams for outdoor practice. The field is flat, easily accessible, and located adjacent to existing West Point athletic facilities. The facility would be aligned north-south on the proposed site. The preferred building type at this site would be a pre-engineered metal building with pre-cast sides and a metal roof.

## **NO ACTION ALTERNATIVE**

Under the No Action Alternative, no IATF structure would be constructed at West Point. Indoor practice opportunities would continue to be limited and would occur in Gillis Field House or other locations as available. The ability for Army football, soccer, lacrosse, baseball, and other field teams to practice safely indoors during inclement weather conditions would not be possible. The ODIA stated athletic program mission and goals, as well as objectives stated in the Athletic Facilities Master Plan, would not be furthered.

## **ENVIRONMENTAL AND SOCIOECONOMIC CONSEQUENCES**

The proposed action would construct the IATF at Howze Field. Table ES-1 presents the Proposed Action Alternative and the No Action Alternative and their potential impacts to the natural and human environments. In summary, the construction and operation of the IATF under the proposed action would be consistent with the West Point Master Plan and Athletic Facilities Master Plan and fulfill the purpose and need for action. No significant impacts would be expected to the natural and human environment. Minor to moderate impacts would be expected, to include an increase in impervious surfaces, soil disturbance, increased stormwater runoff, traffic congestion during construction, visual impacts to historic structures and viewsheds, and increased noise during construction. Major impacts would occur by altering the view of the Kimsey Athletic Center and Michie Stadium area from the Mills Road corridor; however, these impacts are not expected to reach the level of significance and would not require the preparation of an Environmental Impact Statement.

Best management practices discussed in the document would be employed to minimize these and other potential impacts. The cumulative effects to West Point or the surrounding communities of the proposed action would also not be expected to be significant.

## **CONCLUSION**

The proposed action would not have any significant adverse effects on any environmental resources or socioeconomic condition at West Point or to areas surrounding the post.

**TABLE ES1: SUMMARY OF IMPACTS**

Resource Areas	Proposed Action Alternative	No Action Alternative
Water Resources	Creates approximately 2.0 acres (0.81 hectares) of impervious surfaces. State Pollution Discharge Elimination System (SPDES) permit required. Minor impacts from runoff with appropriate Best Management Practices (BMPs). Negligible impacts to floodplains, groundwater, and wetlands.	No impacts.
Geology, Topography, Soils	Minor short-term impacts to microtopography. Increase in impervious surfaces and stormwater runoff and erosion. BMPs would be implemented and impacts would be minor. Erosion and sediment control plan required.	No impacts.
Air Quality	Project emissions would be below the <i>de minimus</i> level. Impacts would be short-term and minor during construction. No operational emissions would occur.	No impacts.
Biological Resources	Proposed project area is currently disturbed and used for athletic fields, any existing habitat is marginal and vegetation is maintained lawn. Impacts to wildlife and vegetation would be negligible. There would be no effect to threatened and endangered species.	No impacts.
Cultural Resources	Prior to construction, Section 106 consultation with the New York State Historic Preservation Office would be completed. If there is a determination of Adverse Effect, appropriate mitigation measures would be taken so that impacts to cultural resources would be minor.	No impacts.
Visual Resources	Impacts to visual resources would range from minor to moderate for all views except that from the Mills Road corridor. The proposed IATF would have a major impact to the view from the Mills Road corridor, but this impact is not expected to reach the level of significance. Potential impacts would be mitigated through building placement and selection of the color palette, building textures, and building materials.	No impacts.
Health and Human Safety	Impacts from materials and wastes would be negligible. Anti-terrorism/force protection requirements would be incorporated into the	No impacts.

	design and no impacts for anti-terrorism/force protection would occur.	
Noise	Short-term minor noise impacts from construction activities would occur. All applicable regulations would be followed and construction activities scheduled to create the least noise disturbance.	No impacts.
Transportation	Impacts to transportation as a result of the proposed construction would be short-term and minor. Impacts could include a temporary lane closure along Howze Place during construction. Long-term impacts would be minor and only occur when special events are held at the facility.	No impacts.
Utilities and Infrastructure	Impacts to infrastructure during construction would be minor. Orientation of the facility would avoid many underground utilities and additional precautions would be taken to ensure that the raw water line under Howze Field would not be disturbed. Supply and infrastructure would be adequate to support facility requirements with only minor impacts.	No impacts.
Land Use	Proposed use is in compliance with West Point's master plan and located in an area already dedicated to athletic and recreational uses. Impacts to land use would be minor. Open space would be removed and replaced with indoor athletic uses.	No impacts.
Coastal Zone	Once the EA process is completed, West Point would provide a Federal Consistency Determination to the New York Department of State in conjunction with the NEPA process, and section 106 consultation.	No impacts.
Environmental Justice and the Protection of Children	There would not be disproportionately high and adverse human health or environmental effects to minority or low-income populations.	No impacts.

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# TABLE OF CONTENTS

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<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>TABLE OF CONTENTS.....</b>	<b>1</b>
<b>1.0 Description of Proposed Action and Alternatives .....</b>	<b>1-1</b>
1.1 Background .....	1-1
1.2 Need and Purpose .....	1-5
1.3 Proposed Action Alternative .....	1-5
1.4 No Action Alternative .....	1-6
1.5 Alternatives Considered But Not Carried Forward .....	1-6
<b>2.0 Affected Environment and Environmental Impacts .....</b>	<b>2-1</b>
2.1 Water Resources .....	2-1
2.2 Geology, Topography, and Soils .....	2-8
2.3 Air Quality .....	2-12
2.4 Biological Resources .....	2-15
2.5 Cultural Resources.....	2-22
2.6 Visual Resources .....	2-26
2.7 Human Health and Safety .....	2-33
2.8 Noise.....	2-35
2.9 Transportation .....	2-37
2.10 Utilities and Infrastructure.....	2-39
2.11 Land Use.....	2-42
2.12 Coastal Zone.....	2-44
2.13 Environmental Justice and Protection of Children .....	2-44
2.14 Cumulative Impacts.....	2-46
2.15 Unavoidable Adverse Impacts.....	2-48
<b>3.0 Summary of Conclusions .....</b>	<b>3-1</b>
<b>4.0 References .....</b>	<b>4-1</b>
<b>5.0 Agencies Contacted .....</b>	<b>5-1</b>
<b>6.0 List of Preparers .....</b>	<b>6-1</b>
<b>7.0 Distribution .....</b>	<b>7-1</b>
<b>8.0 Acronyms .....</b>	<b>8-1</b>

**APPENDIX A: ALTERNATIVE FACILITY EXAMPLES**

**APPENDIX B: AIR QUALITY APPLICABILITY ANALYSIS**

**APPENDIX C: AGENCY COORDINATION**

**FIGURES**

FIGURE 1-1: UNITED STATES ARMY GARRISON AT WEST POINT REGIONAL LOCATION .....1-2

FIGURE 1-2: UNITED STATES ARMY GARRISON AT WEST POINT .....1-3

FIGURE 1-3: IATF PROPOSED SITE ALIGNMENT - HOWZE FIELD.....1-7

FIGURE 1-4: IATF CONCEPTUAL RENDERING .....1-8

FIGURE 2-1: WEST POINT WATER RESOURCES – HOWZE FIELD.....2-3

FIGURE 2-2: WEST POINT SURFACE DRAINAGE.....2-6

FIGURE 2-3: TOPOGRAPHY – HOWZE FIELD SITE .....2-9

FIGURE 2-4: SOILS - HOWZE FIELD SITE.....2-10

FIGURE 2-5: VEGETATION - HOWZE FIELD SITE .....2-16

FIGURE 2-6: VIEW OF THE PROPOSED IATF FROM BOSCOBEL RESERVATION .....2-29

FIGURE 2-7: VIEW OF PROPOSED IATF FROM OSBOURNE CASTLE.....2-30

FIGURE 2-8: VIEW OF PROPOSED IATF FROM REDOUBT 4 .....2-30

FIGURE 2-9: VIEW OF PROPOSED IATF FROM FORT PUTNAM .....2-31

FIGURE 2-10: VIEW OF PROPOSED IATF FROM THAYER GATE .....2-32

FIGURE 2-11: VIEW FROM MILLS ROAD .....2-32

FIGURE 2-12: UTILITY INFRASTRUCTURE - HOWZE FIELD .....2-40

**TABLES**

TABLE ES1: SUMMARY OF IMPACTS ..... 3

TABLE 2-1: AMBIENT AIR QUALITY STANDARDS FOR OZONE.....2-12

TABLE 2-2: EXISTING ONE-HOUR OZONE MONITORING DATA WITHIN ORANGE COUNTY, NEW YORK.....2-13

TABLE 2-3: TOTAL PROJECT EMISSIONS .....2-14

TABLE 2-4: AVIAN FAMILIES REPRESENTED AT WEST POINT .....2-17

TABLE 2-5: FEDERAL AND STATE LISTED ENDANGERED AND THREATENED ANIMAL SPECIES FOUND ON WEST POINT .....2-19

TABLE 2-6: COMMON NOISE LEVELS.....2-36

TABLE 3-1: SUMMARY OF IMPACTS.....3-2

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## 1.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

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### 1.1 Background

The U.S. Military Academy (USMA) at West Point was established in 1802 and was the nation's first service academy. It is located on the oldest, continuously occupied United States military post, the U.S. Army Garrison West Point (West Point). The mission of the USMA is to "educate, train, and inspire the Corps of Cadets so that each graduate is a commissioned leader of character committed to the values of Duty, Honor, Country; professional growth throughout a career as an officer in the United States Army; and a lifetime of selfless service to the nation" (USMA, 2005). West Point is located on a 16,000-acre (6,475-hectare) reservation on the Hudson River, approximately 50 miles (80 kilometers) north of New York City. Figure 1-1 provides the regional location for West Point. The Main Post, consisting of approximately 2,500 acres (1,012 hectares), is where the majority of the academic, residential, and support facilities are located. It is the home to approximately 4,200 cadets, with 1,200 new cadets entering the Academy each year. In addition, West Point is also home to over 4,200 military personnel and family members, who live at West Point or in the immediate area, and a civilian workforce of approximately 4,100 personnel (A. Bjornsen, USMA, pers. comm., March 2005). Figure 1-2 shows the U.S. Army Garrison West Point, Main Post area.

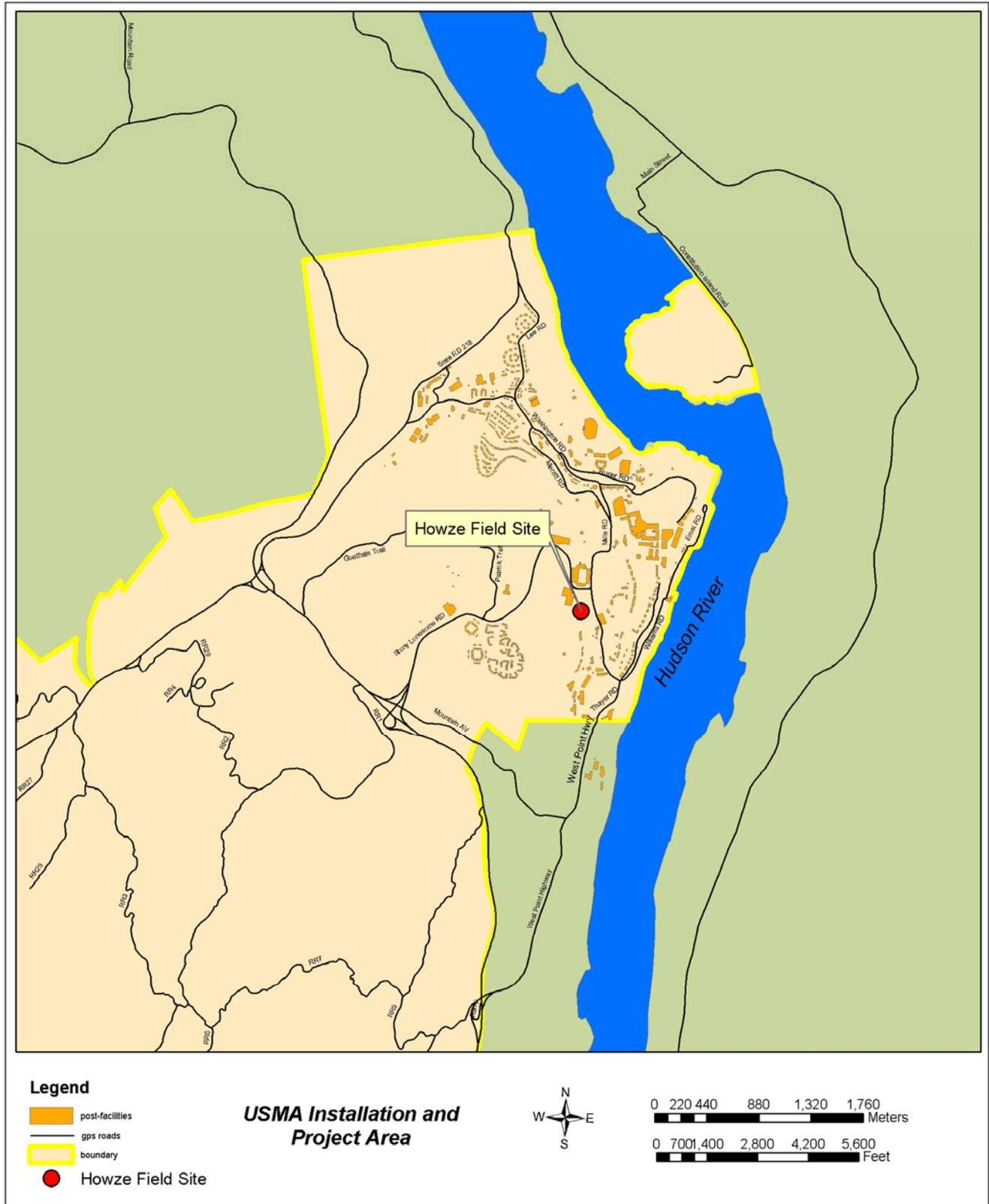
Athletics plays an integral part of the experience at West Point for many cadets, alumni, faculty, and civilian supporters. The Office of the Directorate of Intercollegiate Athletics (ODIA) is responsible for the operations, facilities, staffing, and finances related to West Point's 25 intercollegiate athletic teams. ODIA's stated mission is "to contribute to the achievement of the USMA physical program goals by providing cadets the opportunity to compete at their highest level of ability in an array of competitive intercollegiate athletic teams that emphasize 'winning championships,' leadership development, growth in character, ethical conduct and sportsmanship" (USMA, 2005). ODIA also identifies the following "Outcome Goals" that are designed to help achieve their mission:

- Field competitive teams for men and women at Division 1 (1A Football) that provide an appropriate balance of opportunities consistent with the size of the Corps of Cadets and resource constraints.
- Contribute to the development of character and leadership by emphasizing spirited competition, ethical conduct, and sportsmanship.
- Inspire all cadets to strive for excellence by fielding teams that set outstanding examples of thorough preparation, unity of effort, teamwork, and dedication.
- Field an array of teams (to include women and minorities) that will attract to West Point a national cross-section of fully qualified candidates who are interested in continued growth through challenging competition at the highest intercollegiate level.

FIGURE 1-1: UNITED STATES ARMY GARRISON AT WEST POINT REGIONAL LOCATION



**FIGURE 1-2: UNITED STATES ARMY GARRISON AT WEST POINT**



ODIA activities must also consider the recently completed Athletic Facilities Master Plan (2004). This plan calls for the following objectives:

- Create a near (seven-year) and long range (twenty-year) phased Master Plan vision.
- Define sports facilities that match or exceed comparable facilities at the other military academies and other peer institutions.
- Define sports facilities that help attract and retain top caliber cadets, coaches, and staff.
- Create a Master Plan that works within the guidelines of the current West Point Master Plan and USMAPS planning.
- Expand recreational opportunities for faculty, staff, and families on post.
- Consolidate youth activities near housing.
- Minimize cadet travel time.
- Allow athletes to change where they practice and practice where they compete.
- Create identity and ownership for the various sports.
- Consolidate ODIA support facilities.
- Create facilities comparable to the best of West Point construction and design.
- Address issues of normal-day and game-day traffic and parking.
- Work within the security requirements of West Point.
- Work within historic objectives and requirements.

Despite West Point's many excellent athletic facilities, there is currently no "true" indoor practice facility at West Point, other than Gillis Field House, which is used primarily for track and field. While the field house is often used by the soccer and baseball teams for basic practice, it does not have a playing surface that simulates game conditions. There is no such indoor facility for football or lacrosse. When indoor training is required, the football team currently uses Gillis Field House. While the Kimsey Athletic Center provides strength conditioning areas and other training rooms, locker rooms, meeting rooms, and offices, it is wholly inadequate for indoor football and other "field" team practices. West Point desires to have an indoor facility that can be used by the football, soccer, lacrosse, and other teams, especially in the event of inclement weather conditions, to help meet ODIA's stated athletic program mission and goals.

This Environmental Assessment (EA) analyzes the potential impacts related to constructing and operating an Indoor Athletic Training Facility (IATF), to be known as the Foley Athletic Center, at West Point, Orange County, New York. The EA has been prepared pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969 (NEPA), (42 USC 4331 *et seq.*), the regulations of the Council on Environmental Quality (CEQ) that implement NEPA procedures (40 CFR 1500 *et seq.*), and 32 CFR 651, Environmental Analysis of Army Actions. The information presented within this document will serve as the basis for deciding whether alternative ways of implementing the proposed action would result in a significant impact to the environment, requiring the preparation of an Environmental Impact Statement, or that no significant impacts would occur, and therefore a Finding of No Significant Impact (FNSI) would be appropriate.

## 1.2 Need and Purpose

The 2004 Athletic Facilities Master Plan states the need for a new synthetic-turf indoor practice facility near Michie Stadium. This facility should be permanent and multi-use (i.e., able to be used by multiple sports) to address the need for West Point athletics to be able to practice in any weather conditions, including severe inclement weather (e.g., sub-freezing temperatures, lightning, high wind, and intense precipitation). While the primary use of the facility would be by the football team, other teams, such as soccer, lacrosse, and baseball may also use the facility. In addition, the facility would be available for the West Point community to use, as well as for special occasions by the outside community. Constructing and operating the IATF would help West Point meet the ODIA's stated mission and goals for its intercollegiate athletic program, as well as meet the objectives stated in the 2004 Athletic Facilities Master Plan.

## 1.3 Proposed Action Alternative

West Point proposes to construct an IATF to support the multiple athletic programs of the USMA. This facility would be known as the Foley Athletic Center. An IATF with a full field would include a wall-to-wall, in-fill type artificial turf field with inlaid markings for football. This configuration would allow for a full-sized (360 feet [110 meters] by 160 feet [49 meters]) football field with 15-foot (4.5-meter) buffers along each side, with its southern elevation parallel to Truxton Lacrosse Center and 50 feet (15 meters) to the north of Truxton Lacrosse Center. The eastern elevation of the building would be aligned with the eastern elevation of Truxton Lacrosse Center. This alternative would include an attached storage/office space totaling 2,500 square feet (232 square meters) and an attached indoor conditioning area 5,400 square feet (502 square meters). Both of these additional areas would be single story and will have peaked roofs attached to the sides of the main facility. Total development under this alternative would cover approximately 85,000 square feet (7,897 square meters).

The field would be wide enough for soccer and lacrosse, and would be marked for these purposes as needed. The men's baseball and women's softball teams would also be able to use the facility (without appropriate markings). In addition, the facility would also be used for non-athletic events such as trade shows or select community events. Parking for such events could be accommodated using the existing A, B, and F Lots, and other lots that are currently used for football games or other large events.

Exterior finishes would be designed to be compatible with surrounding facilities in terms of color, texture, and materials. The ceiling height of the facility is yet to be determined, but would be high enough to practice football and soccer kicks. For purposes of analysis, the interior height at the center of the building was assumed to be 65 feet (20 meters), with a 75-foot (23-meter) peak exterior

elevation), with sufficient height along the sidelines to erect film towers. It was also assumed that the side height would be 35 feet (11 meters) at the building interior with 45-foot (14-meter) exterior peak side height. It would have vehicular and personnel entrances, and would include sports-compatible lighting. The facility would use electric lighting and would be heated using natural gas, propane, or electric supply. A ventilation/air handling system would be incorporated to remove air and prevent heat build-up on hot days. Roof and perimeter ground drainage systems would be designed to handle rain and snowmelt runoff.

The preferred site for the IATF is Howze Field, an outdoor athletic field located immediately south of Michie Stadium and the newly constructed Kimsey Athletic Center (Figure 1-3). This 2.3-acre (0.93-hectare) site is bordered by Kimsey Athletic Center on the north, a wooded area and Mills Road on the east, the Truxton Lacrosse Center and Howze Place/Fenton Road on the south, and Fenton Road and Hollender Center (venues for basketball and hockey) on the west. Howze Field is currently used by the football and lacrosse teams for outdoor practice. The field is flat, easily accessible, and located adjacent to existing West Point athletic facilities. The facility would be aligned north-south on the proposed site. Figure 1-3 shows the proposed site and alignment of the IATF under this alternative.

The preferred building type at this site would be a pre-engineered metal building with pre-cast sides and a metal roof. Construction of a pre-engineered, pre-cast metal structure on the Howze Field site would be expected to take approximately 6 months (excluding work on the interior field). During construction of the IATF, it is anticipated that teams that would normally use Howze or Blaik Fields for practice would be able to use some parts of the field that are not under construction. A conceptual rendering of the proposed facility as would be situated on Howze Field is shown in Figure 1-4.

## **1.4 No Action Alternative**

Under the No Action Alternative, no IATF structure would be constructed at West Point. Indoor practice opportunities would continue to be limited and would occur in Gillis Field House or other locations as available. The ability for Army football, soccer, lacrosse, baseball, and other field teams to practice safely indoors during inclement weather conditions would not be possible. The ODIA's stated athletic program mission and goals, as well as objectives stated in the Athletic Facilities Master Plan, would not be furthered.

## **1.5 Alternatives Considered But Not Carried Forward**

In addition to the Proposed Action Alternative, several other alternatives for the proposed IATF were considered, but not carried forward. These alternatives, and the reason for their dismissal, are discussed below. Appendix A provides maps, renderings, and views of representative facilities for the alternatives considered but not carried forward.

### **1.5.1 Howze Field – Full Field Fabric Structure or Air Support Bubble**

As described in Section 1.3, Howze Field is the preferred site for the IATF. Various site conditions and constraints for a different structure types would be the same as those for a pre-engineered metal facility, as described above.

A full-field fabric structure would be similar to the recently constructed baseball batting cage at West Point, shown in Appendix A, Figure 1. This type of facility would have a metal frame with a fabric covering.

**FIGURE 1-3: IATF PROPOSED SITE ALIGNMENT - HOWZE FIELD**



**FIGURE 1-4: IATF CONCEPTUAL RENDERING**



A full-sized or three-fourths-sized air supported “bubble” structure was also considered for the IATF on Howze Field. A representative air supported structure is shown in Appendix A, Figure 2. The type of air supported structure considered would be large enough to accommodate a full field configuration and held in place by a continuous perimeter grade beam/footing. Two air handling units and an emergency generator would be located on the east side of the structure to reduce noise. Interior lighting for the structure would be through pole-mounted indirect fixtures with protective covers. This lighting type is preferred for damage resistance and ease of maintenance. A skylight would also be installed to help reduce energy consumption during the day, thereby requiring less artificial lighting.

Both a full fabric structure and air supported structure on the Howze Field site were dismissed because they did not fully meet the purpose and need for the action in terms of providing a permanent structure. Both of these types of facilities are not meant to be permanent structures and require high maintenance and upkeep costs. Furthermore, from an aesthetics standpoint, a fabric structure and air supported structure do not fit in to the visual setting in that area of West Point, and would result in adverse visual impacts. For these reasons, both a fabric structure and air supported structure at the Howze Field site were dismissed from consideration.

### **1.5.2 Howze Field – East/West Configuration**

This alternative would involve constructing the IATF at Howze Field as described under the Proposed Action Alternative, but in an alternative alignment. Instead of a north-south configuration, the facility would be aligned east-west parallel to the Kimsey Athletic Center, placing it further from the Truxton Lacrosse facility. This alternative alignment is shown in Appendix A, Figure 3. This would not be the most efficient use of Howze Field as less area would remain after construction for outdoor practice fields, when compared to other alternatives considered. To position the facility in an east-west orientation, it would need to be located parallel and close to the Kimsey Center. In this location the facility would not be shielded by surrounding vegetation, as it is for the north-south orientation, and would be visible from the historic corridor of Mills Road and from Lusk Reservoir. This alignment on Howze Field would have a greater visual impact than other alignments as the facility would dominate the view from the historic Mills Road corridor and would block the view of the existing structures in the Athletic Complex. These impacts were further evaluated using photographic simulations and it was determined from this analysis that these visual impacts would not be acceptable and this alternative was not carried forward for further analysis.

### **1.5.3 Howze Place (Underground Water Tank Site) – Full Field Pre-Case Metal Structure**

This alternative would involve constructing the full-size pre-engineered, pre-cast metal structure on the site known as Howze Place, which is located immediately southeast and down-gradient of Howze Field. This site is shown in Appendix A, Figure 4. This 1.6-acre (0.65-hectare) site is bordered by Howze Place on the north, a storage yard and associated buildings on the south, and Fenton Road on the west. A portion of the site was originally used as a water treatment plant (constructed over 100 years ago) and still contains structures from the original plant. The site is currently occupied by an underground water tank, which is still used as a drinking water supply for West Point, and a parking lot used by the Engineering Platoon of the 1<sup>st</sup> Battalion, 1<sup>st</sup> Infantry. The USMA’s Athletic Facilities Master Plan identifies this site for future athletic uses. The Howze Place site is situated at a lower elevation than the Howze Field site and was considered because it may be less visible from the surrounding areas.

To construct the IATF on the Howze Place site, the water tank would need to be relocated or abandoned and the storage yard and associated structures would be demolished. The site would need to be filled and regraded substantially. A full-sized facility could potentially be constructed on the Howze Place site, but limited buffer space would be available. A vinyl fabric-covered facility could also be constructed on Howze Place. This alternative was dismissed because the site work and preparation involved would be extensive, as described above, and pose a considerable expense to the project not associated with the other alternatives. In addition, the structures on the site are considered historic and their removal would have adverse impacts to cultural resources. This site is still actively being used for water treatment, and use of this site for recreational uses would remove it from its current land use. This change in land use would also be expected to have a negative impact. For these reasons, the Howze Place site was dismissed from further consideration.

#### **1.5.4 J Lot (Fenton Road) – Half Field Pre-Cast Metal Structure**

This alternative would involve constructing a pre-engineered, pre-cast metal structure approximately one-half the size of the full-size IATF (i.e., approximately 37,500 square feet (3,484 square meters)) on the J Lot parking area, located south and further down-gradient of the Howze Place site. This 0.95-acre (0.38-hectare) site, shown in Appendix A, Figure 5, is bordered by the aforementioned storage yard and associated buildings, two residential structures, a walkway, and undeveloped land on the north; trees on the east; and Fenton Road on the south and west. Like the Howze Place site, just uphill, the J Lot site is located at a lower elevation than the Howze Field site. The site is substantially smaller than both Howze Field and Howze Place and could only accommodate an IATF that is substantially smaller than the preferred design. The site is relatively flat and minimal clearing (other than removal of paved parking surface) would be necessary for construction. This alternative was dismissed because it would only accommodate the half field option, which would not fully meet the purpose and need for this action.

#### **1.5.5 Air Supported Bubble Within Michie Stadium**

An air supported “bubble” structure, as described in Section 1.5.1, would be built within Michie Stadium. This structure would be temporary and in place on a seasonal basis. This alternative was not carried forward because it does not meet the purpose of constructing an indoor multi-use training facility for West Point athletic teams and community events that matches or exceeds comparable facilities at other military academies and other peer institutions; it would not attract and retain top-caliber cadets, faculty, coaches, and staff; and it would not expand recreational opportunities for faculty and staff. Also, since this structure would be in use on a seasonal basis only, the need to provide a place for training during inclement weather would only be met for a portion of the year. Because of these reasons, this alternative was considered, but dismissed from detailed evaluation

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## 2.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

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This chapter describes the existing condition of environmental resources potentially affected by the proposed construction of an IATF. The boundaries of the potentially affected environment vary according to the nature of the potential impact on the study area and the aspect of the environment under consideration. Certain potential impacts (*e.g.*, impacts on topography or drainage patterns) are site-specific and are likely to be contained entirely within the project boundaries. Other impacts (*e.g.*, potential impacts from air emissions or impacts to traffic patterns) may affect areas outside of the identified project area.

This chapter also evaluates the potential environmental consequences of the Proposed Action and No-Action alternatives. Implementation of the Proposed Action Alternative would involve construction of an IATF at West Point, in Orange County, New York.

Potential impacts of the Proposed Action Alternative are discussed in this chapter in terms of short- and long-term impacts. Short-term impacts are those of a limited duration, such as the impacts that would occur during construction of the facility. Long-term impacts are those of greater duration, including those that would endure for the life of the proposed project and beyond, including impacts associated with the operation of the proposed IATF. These terms are further qualified by being negligible, minor, moderate, major, or significant. In order for an impact to be considered significant, it must be a major impact; however, not every major impact is considered to reach the level of significance. In accordance with 32 CFR 651, Environmental Analysis of Army Actions, significance is determined by evaluating both the context and intensity of an action to the resource. Impact thresholds for each resource are established in the environmental consequences section for that resource.

Information in this chapter is derived from both primary and secondary sources, as noted. Primary sources of information involved site visits and analysis by project personnel, which are referenced as such. Secondary information includes documents such as the *Master Plan Report Plan for the Year 2007 United States Military Academy, West Point, New York* (USMA, 1999), the *Environmental Assessment for Michie Stadium Athletic Complex* (USMA, 2000), and the *Environmental Assessment for Michie Stadium Improvements* (USMA, 2001). In keeping with the CEQ NEPA regulations directive to avoid unnecessary paperwork, delay, and bulk in environmental documents, this EA uses the information from these environmental documents wherever appropriate and relevant (see 40 CFR 1500.4(j) and 1502.21). Other secondary sources of information are referenced as appropriate.

### 2.1 Water Resources

Due to its proximity to various water bodies, the proposed IATF construction at West Point could potentially affect the water resources of the region. Water resources potentially impacted by the alternatives include surface water, wetlands, floodplains, groundwater, and stormwater management features. Each topic is discussed below.

## 2.1.1 Affected Environment

### 2.1.1.1 Surface Water

The major surface water feature at West Point is the Hudson River, which creates the eastern border of the post. Numerous small tributaries on West Point drain into the Hudson River. The Hudson River originates at Lake Tear of the Clouds in the Adirondack Mountains and flows 314 miles (505 kilometers) to its mouth in the Upper New York Bay. Over 13,514 square miles (35,001 square kilometers) of watershed drain into the Hudson River. The portion of the river that flows between West Point and Constitution Island is an oligohaline estuarine reach. The water quality in this portion of the river is characterized by rapidly changing salinities from 1 to 5 parts per thousand (ppt) and moderate enrichment of nitrogen and phosphorus. The Hudson River meets the New York State Department of Environmental Conservation (NYS DEC) toxic and hazardous materials water quality standards and no contaminants attributable to West Point have been detected in the river. The Hudson River is important habitat for many fish species and is used by both resident brackish water species and as a migratory pathway for anadromous or catadromous species (USMA, 2003a).

In addition to the Hudson River, numerous lakes, ponds, and streams are located throughout West Point. Many of the lakes and ponds were formed from artificial dams that have raised water levels within former wetland areas. Surface water features on the Main Post in the vicinity of Howze Field, as shown in Figure 2-1, include:

- Kinsley Farm Brook : Located approximately 213 feet (65 meters) from Howze Field, Kinsley Farm Brook is classified as a Class B stream by New York State. Class B waters are those that are best used for swimming and other contact recreation, but not for drinking water.
- Lusk Reservoir: Lusk Reservoir is a Class A protected water body and is the source for Kinsley Farm Brook. The reservoir is located approximately 329 feet (100 meters) from Howze Field. Class A waters are those that are a suitable source for drinking water supply when appropriate treatment is provided. Lusk Reservoir serves as one of the major drinking water supply sources at West Point.

The surface water features around the proposed project area are subject to the Protection of Waters Regulatory Program under the NYS DEC. This program is designed to prevent undesirable activities on water bodies by establishing and enforcing regulations that: are compatible with the preservation, protection, and enhancement of the present and potential values of the water resources; protect the public health and welfare; and are consistent with the reasonable economic and social development of the state. A Protection of Waters Permit is required for disturbing the bed or banks of a stream with a classification and standard of C(T) or higher. The “C” classification indicates waters that are capable of supporting fisheries and other non-contact recreation activities, and the “(T)” indicates water bodies that may support a trout population. A project is considered minor by the state if there is disturbance of less than 50 linear feet (15 meters) along any 1,000 feet (304 meters) of watercourse. Projects that exceed this threshold are considered major by the state.

### 2.1.1.2 Wetlands

Executive Order (EO) 11990 requires federal agencies to minimize the loss or degradation of wetlands. The Army has also established a policy of no net loss of wetlands. The policy requires that impacts to wetlands be avoided if possible and if unavoidable, that impacts be minimized. If wetlands are impacted then mitigation may be required.

FIGURE 2-1: WEST POINT WATER RESOURCES – HOWZE FIELD



Determination of the presence of wetlands is based on procedures prescribed in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, 1987). Wetlands, as defined in the federal manual, are: those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Three criteria are used to determine the occurrence of jurisdictional wetlands including: 1) hydric soils, 2) wetland hydrology, and 3) hydrophytic vegetation.

Wetland resources at West Point include approximately 1,010 acres (409 hectares) of wetlands associated with streams, ponds, depressions, and seeps. In 1993, a wetland survey was conducted in accordance with the 1987 *Corps of Engineers Wetland Delineation Manual*, which mapped and characterized 146 distinct wetlands on West Point. Nine of these wetlands were characterized based on the 1987 *Corps of Engineers Wetland Delineation Manual*, and the remaining wetland boundaries were approximated in the field by observing indicators of hydrology, vegetation, and soils. The majority of these wetlands are small with an area of less than 5 acres (2 hectares), with only a few exceeding 15 acres (6 hectares) (USMA, 2003a). There are no wetland resources in the area of Howze Field.

#### *2.1.1.3 Floodplains*

Floodplains are described as areas likely to be inundated by a particular flood. For example, a flood that has a one-percent chance of occurring in any one year is the 100-year flood. The 100-year floodplain includes some land areas that are flooded by small and often dry watercourses. The review of Federal Emergency Management Agency (FEMA), National Flood Insurance Program (NFIP) map panel 36125110005C shows that Howze Field is in Zone X. This designation is for areas outside both the 100-year and 500-year floodplains (FEMA, 1987).

#### *2.1.1.4 Groundwater*

Groundwater at West Point occurs in an unconsolidated aquifer consisting of alluvial deposits and a consolidated bedrock aquifer. The water in this aquifer occurs primarily in the sands and gravels of the stratified drift deposits, which are thin and generally have fairly small well yields averaging 40 gallons per minute (gpm) (151 liters per minute (lpm)). Local precipitation is the primary source of recharge to the aquifer. Some groundwater flow occurs from the alluvial aquifer to the underlying bedrock aquifer. In low lying areas, upward seepage of groundwater from the bedrock aquifer to the overlying alluvial aquifer may occur. Another source of groundwater underlying West Point is in the upper weathered, jointed, and fractured section of the bedrock that underlies the post. Recharge to the bedrock aquifer occurs in upland areas by precipitation, and discharge occurs in lowland areas through springs and upward seepage. The limited extent of the joint and fracture systems in the bedrock aquifer result in extremely slow permeability and water movement, creating well yields that are generally sufficient for small demands such as domestic use. Potable water at West Point is supplied mainly from surface sources; however, 17 small-diameter, shallow wells that most likely draw water from the stratified alluvial sand and gravel deposits aquifer and the upper weathered bedrock aquifer are located on post. These wells have depths ranging from 25 to 40 feet (7.6 to 12 meters) and yield of 3.5 to 6.0 gpm (13 to 23 lpm) (USMA, 2003a).

At the Kimsey Athletic Center, which is adjacent to the Howze Field site, a geotechnical investigation was performed to explore the subsurface conditions. During this study, groundwater, or evidence of groundwater, was observed at depths ranging from 4 to 16.4 feet (1.2 to 5 meters) below the ground surface. In the area of Michie Stadium, and the adjacent Howze Field, groundwater is affected by the presence of Lusk Reservoir and the relatively high permeability of soils that overlay the bedrock.

Michie Stadium was built over a filled wetland, indicating that groundwater is close to the ground surface (USMA, 2001).

#### 2.1.1.5 Stormwater Management for Surface Water Features

The USEPA delegated stormwater responsibility for the National Pollutant Discharge Elimination System (NPDES) Permit to New York in October 1992. New York State issued its State Pollutant Discharge Elimination System (SPDES), General Permit GP-93-06, in August 1993. This was issued pursuant to Article 17, Titles 7, 8, and Article 70 of the Environmental Conservation Law. This permit was reissued in January 2003 to incorporate NPDES Phase II requirements. The permit requires, at a minimum, that an erosion and sediment control plan be prepared for any construction activity that disturbs one or more acres (0.4 hectares) of land.

A full Storm Water Pollution Prevention Program (SWPPP) would be required if the project is:

- located in a Total Maximum Daily Load (TMDL) watershed;
- discharging into an impaired 303(d) listed water;
- greater than one acre (0.4 hectares) of land disturbance;
- or is planned construction other than single family residences or not on agricultural property.

The SWPPP should be prepared in accordance with sound engineering practices and identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges. The SWPPP should also describe and ensure the implementation of practices that would be used to reduce the pollutants in stormwater discharges and to assure compliance with the terms and conditions of the permit. All SWPPP's should include erosion and sediment controls.

There is not currently a base-wide SWPPP for West Point. Conveyance systems for stormwater on the Main Post of West Point include open ditches, grassed channels, paved open channels, and pipes. Stormwater drainages at West Point are shown in Figure 2-2. The outfalls for the stormwater system discharge into the Hudson River (USMA, 1999). There are two main surface drainage areas near Howze Field. The first drainage follows from Lusk Reservoir to Kinsley Farm Brook. The second drainage area is located in the southwest corner of the proposed site and just south of Howze Place. Runoff from the proposed project would drain to Kinsley Farm Brook, a NYSDEC Class B Protected stream that drains directly to the Hudson River.

### 2.1.2 Water Resources Environmental Consequences

To assess the magnitude of water quality impacts to water resources in the area of the proposed IATF, the following impact thresholds were used:

*Negligible* - Impacts are chemical, physical, or biological effects that would not be detectable, would be well below water quality standards or criteria, and would be within historical or desired water quality conditions.

*Minor* - Impacts (chemical, physical, or biological effects) would be detectable, but would be well below water quality standards or criteria and within historical or desired water quality conditions.

FIGURE 2-2: WEST POINT SURFACE DRAINAGE



*Moderate* - Impacts (chemical, physical, or biological effects) would be detectable, but would be at or below water quality standards or criteria; however, historical baseline or desired water quality conditions would be altered on a short-term basis.

*Major* - Impacts (chemical, physical, or biological effects) would be detectable and would be frequently altered from the historical baseline or desired water quality conditions; and/or chemical, physical, or biological water quality standards or criteria would be locally, slightly and singularly, exceeded on a short-term and temporary basis.

### **Proposed Action Alternative**

Implementation of the Proposed Action Alternative would result in the construction of approximately 85,000 square feet (7,897 square meters) or approximately 2.0 acres (0.81 hectares) of impervious surfaces from roadway, parking, and building construction. The majority of this area is currently grassed field, and the new construction would replace existing pervious surfaces with impervious surfaces. This increase in impervious surface would create an increase in stormwater runoff that has the potential to impact surface water features. Stormwater management best management practices (BMPs) could be implemented to reduce these impacts. BMPs would be in compliance with NYS DEC guidelines and regulations.

BMPs for runoff control during construction, as recommended by the Environmental Protection Agency, could include the minimization of clearing by preserving natural vegetation, creating permanent diversions, or stabilizing drainage ways with check dams, filter berms, grass-lined channels, and riprap. Erosion and sediment control during construction could be accomplished with BMPs such as stabilizing exposed soils (chemical stabilization, mulching, permanent seeding, sodding, soil roughening), installing perimeter controls (temporary diversion dikes, silt fences, and sand fences), installing sediment trapping devices (sediment basins and rock dams, sediment filters and sediment chambers, sediment traps), and inlet protection (storm drain inlet protection) (EPA, 2003a). Post construction, either structural or non-structural BMPs could be implemented to reduce runoff. Structural BMPs could include ponds (dry extended detention ponds, wet ponds), infiltration practices (infiltration basins, infiltration trench, porous pavement), filtration practices (bioretention, sand and organic filters), vegetative practices (stormwater wetlands, grassed swales, grassed filter strips), or runoff pretreatment practices (catch basins/catch basin insert, in-line storage, manufactured products for stormwater inlets). Non-structural BMPs that could be implemented, as recommended by the Environmental Protection Agency, include on-lot treatment and better site design such as buffer zones, open space design, urban forestry, conservation easements, infrastructure planning, narrower residential streets, and eliminating curbs and gutters (EPA, 2003b).

The preliminary project design for this project exceeds one acre (0.40 hectares) of disturbance and would require a NYS DEC Construction Activity SPDES Permit as well as a SWPPP. Since no construction would occur in streambeds, a Protection of Waters permit would not be required. Construction activities at Howze Field would have minor impacts on the surrounding surface water features. Ground disturbance from construction of the facility, construction traffic to the site, and materials storage areas during the construction stage, could cause erosion, and create short-term impacts to surface water. Normal sediment and erosion control measures during construction would make impacts to surface water from runoff minor. There would be negligible impacts to floodplains, groundwater, and wetlands.

### **No Action Alternative**

No additional impacts to surface water, wetlands, floodplains, groundwater, or stormwater features would be expected to occur from implementation of the No Action Alternative.

## 2.2 Geology, Topography, and Soils

### 2.2.1 Affected Environment

This subsection describes the geological and topographical resources existing in the proposed project area.

#### 2.2.1.1 Geology

West Point is located in the Hudson Highlands, a subset of a larger physiographic region, which is a low, rugged mountain range that is part of the Upland Section of the New England Physiographic Province beginning in Reading, Pennsylvania, and running northeasterly through New Jersey and New York to Connecticut and Massachusetts. These hill formations form a zone of folded and faulted metamorphic and igneous rocks that are subjected to extensive weathering and erosion (USMA, 2003a). This area generally has shallow soils over bedrock and consists primarily of glacial deposits. Bedrock exposures are common and the bedrock geology consists of granite, gneisses, and schist. The geology at West Point has been influenced by thrust faulting, folding, dike injection, jointing, uplift, and erosion that has historically occurred. West Point is located on the crest of an antiform that plunges to the northeast and is an “open fold” because the limbs of the antiform dip away from each other (USMA, 2003a).

#### 2.2.1.2 Topography

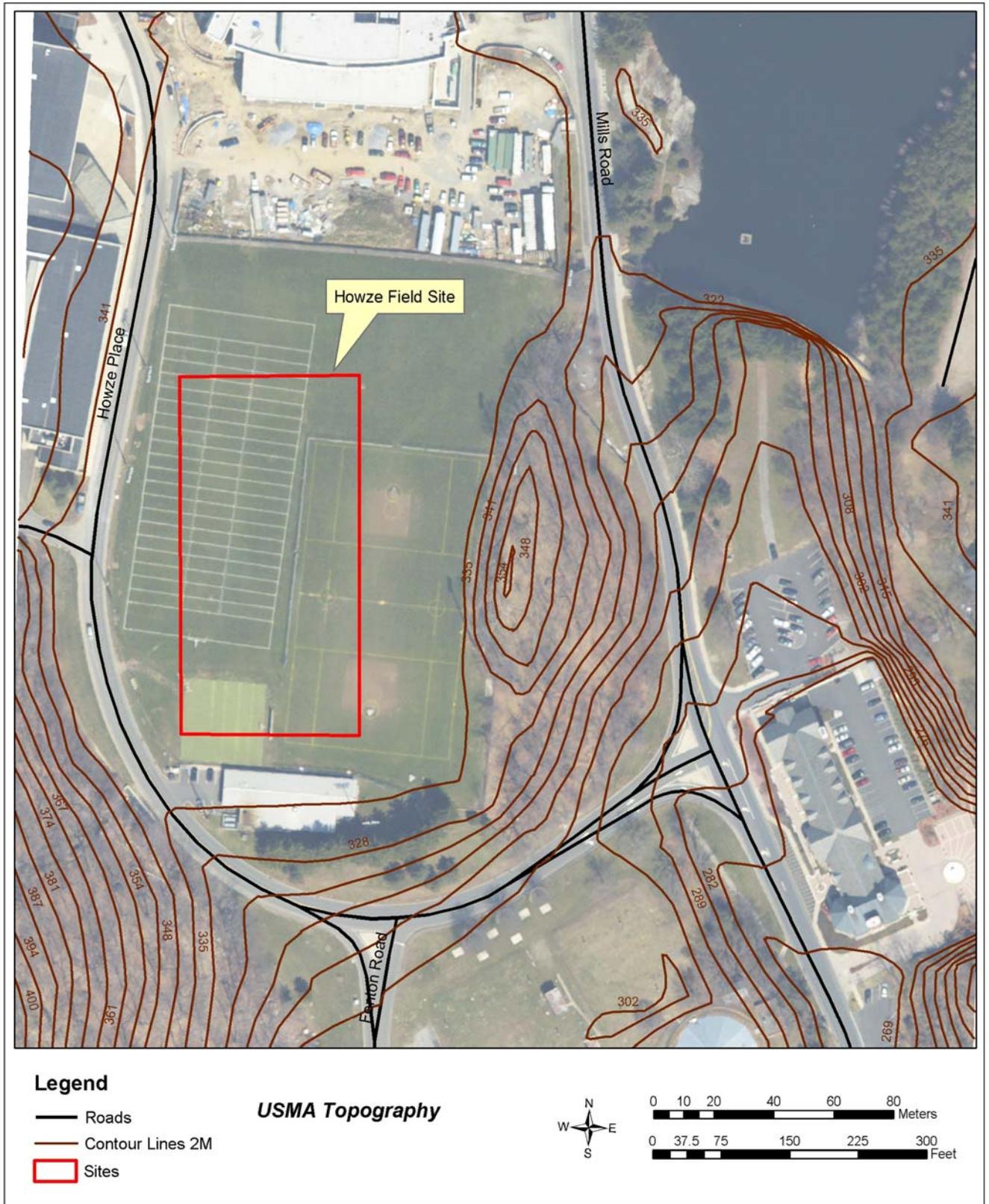
Topography at West Point has been shaped by the geologic history of glacial forces and differential weathering of ancient rock, which resulted in the formation of the Hudson Highlands. The general topography of the post is described as having moderately steep hills and numerous escarpments with slopes ranging from 10 to 60 percent. In between the hills are small plains, basins, and narrow valleys with slopes less than 3 percent (USMA, 2003a). The topography of the Main Post at West Point is shown in Figure 2-3. Because of past development, the topography of the proposed project area is relatively flat. Howze Field was developed as practice fields for soccer and football. This area has a slight crown for drainage, and lies at an elevation of approximately 320 feet (97 meters) above mean sea level (amsl).

#### 2.2.1.3 Soils

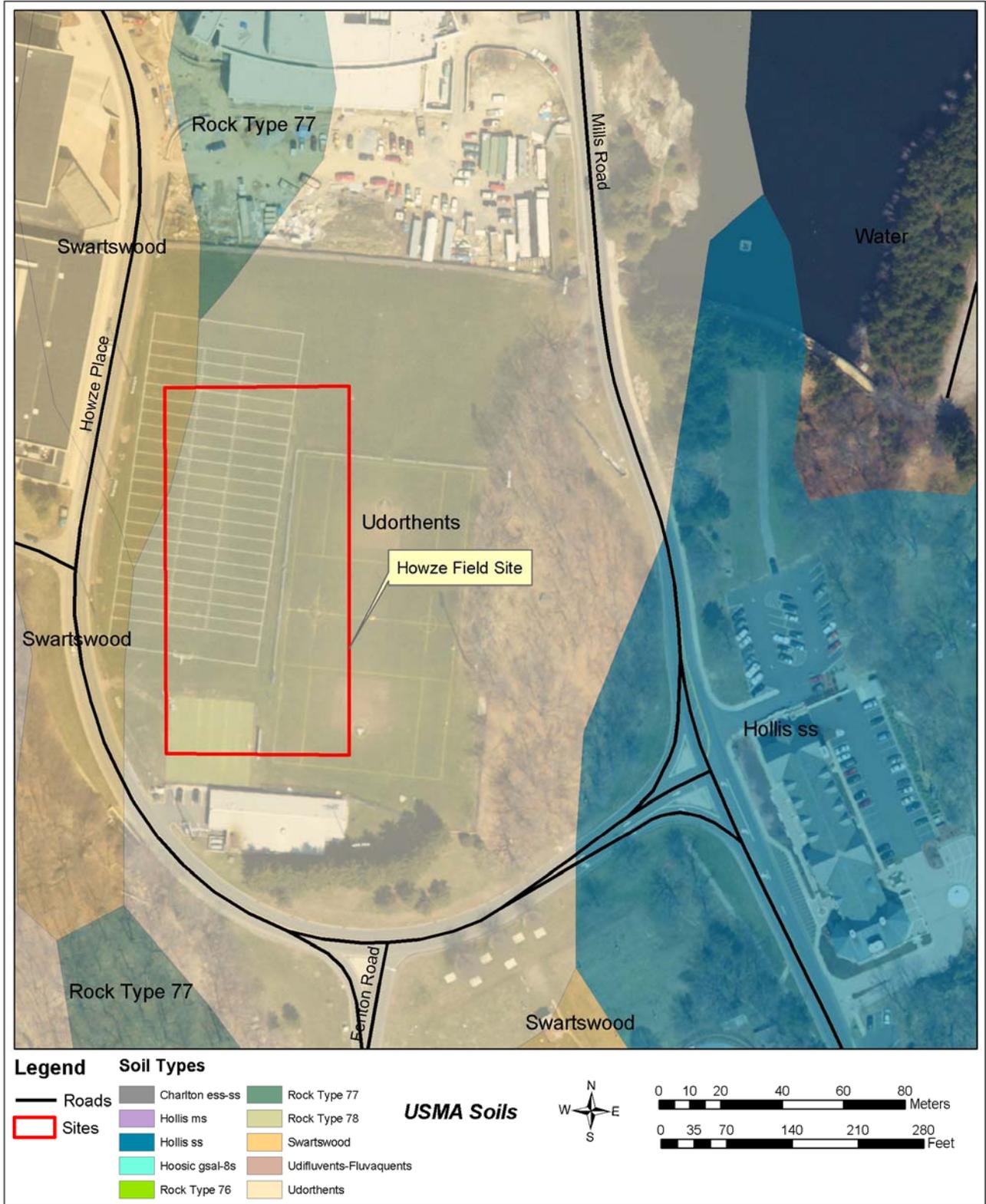
Soils at West Point can be characterized as shallow, stony, and boulder-strewn. The soils are less than 6 feet (1.8 meters) deep, and were formed from glacial till and alluvium derived from glacially transported sediment. Soils in the hilltops and hillsides are well drained and contain only shallow soils with frequent outcrops, while those in low-lying areas, such as depressions on hill summits and parts of the small floodplains in the valleys, are deeper and poorer draining soils. The dominant soil at West Point is the Hollis-Rock Outcrop Association. This association is characterized as steeply sloping, excessively-drained and well-drained, medium-textured soils overlying crystalline bedrock, on mountainous uplands. Other soil types on the post include sandy loams, gravelly loams, gravelly sandy loams, silt loams, gravelly silt loams, stony, and extremely stony (USMA, 2003a). In the Soil Survey of Orange County, the Hollis-Rock Outcrop map unit is described as, “mostly forested, good habitat for wildlife and unsuited to farming or community development.

The soils are shallow and are well-drained to excessively-drained. The rate of water movement is moderate or moderately rapid.” (USDA SCS, 1981). The Orange County Soil Survey shows 43 mapping units on West Point. Figure 2-4 shows the soils around the project area on the Main Post of West Point.

**FIGURE 2-3: TOPOGRAPHY – HOWZE FIELD SITE**



**FIGURE 2-4: SOILS - HOWZE FIELD SITE**



Because of past development, the soil type found at the proposed site is classified as Udorthents. Udorthents are formed in manmade cut and fill areas, which are generally near industrial sites, urban developments, or other construction sites.

This unit is excessively-drained to moderately well-drained, with considerable variation in the depth to the seasonal high water table and permeability that is dependent on topography, degree of compaction, soil texture, and other related factors. The texture, stone content, soil pH, and depth to bedrock varies considerably from one area to another, but in general, bedrock is at depths greater than 5 feet (1.5 meters). This unit is generally poorly suited for farming or recreation. Onsite investigation is needed to determine feasibility for any purpose.

As discussed under Section 2.1 (Water Resources), those projects exceeding an acre (0.40 hectares) require an Erosion and Sediment Control Plan.

### **2.2.2 Geology, Topography, and Soils Environmental Consequences**

To assess the magnitude of impacts to geology, topography, and soils in the proposed project area, the following impact thresholds were used:

*Negligible* – Geology, topography, or soils would not be impacted or the impact to these resources would be below or at the lower levels of detection. Any impacts would be slight.

*Minor* – Impacts to geology, topography, or soils would be detectable. Impacts to undisturbed areas would be small. Mitigation would be needed to offset adverse impacts and would be relatively simple to implement and would likely be successful.

*Moderate* – Impact on geology, topography, or soils would be readily apparent and result in a change to the character of the resource over a relatively wide area. Mitigation measures would be necessary to offset adverse impacts and would likely be successful.

*Major* – Impact on geology, topography, or soils would be readily apparent and substantially change the character of the resource over a large area both in and out of the park. Mitigation measures necessary to offset adverse impacts would be needed, extensive, and their success would not be guaranteed.

#### **Proposed Action Alternative**

Implementation of the Proposed Action Alternative would result in the land disturbance of approximately 85,000 square feet (7,897 square meters) or approximately 2.0 acres (0.81 hectares) from the construction of the IATF. Minor short-term impacts to microtopography and existing soil conditions would be expected to occur during any excavation and grading needed for the proposed construction. The development of the IATF would increase the amount of impervious surface occurring in the area, which in effect would increase the amount of stormwater runoff. Soils in the vicinity of the facility have moderate to moderately rapid permeability, which would assist in the absorption of runoff from building. Increased runoff could cause erosion and sedimentation problems in areas adjacent to the site. To minimize the amount and velocity of runoff, appropriate erosion, sedimentation, and stormwater BMPs would be implemented where appropriate. The BMPs would be consistent with the New York State Stormwater Design Manual.

In addition, because the proposed project design at this site has a footprint greater than one acre (0.40 hectares) a NYS DEC Erosion and Sediment Control Plan would be required. This plan must show appropriate vegetative and structural measures for reducing runoff velocity, stabilizing soil to prevent

erosion, and capturing eroded sediment before it leaves the site. All practices must be designed in accordance with the New York Standards and Specifications for Erosion and Sediment Control.

### **No Action Alternative**

Because no ground disturbing activity would occur, the No Action Alternative would not impact the current geologic, topographic, or soil conditions at West Point and/or the surrounding area.

## **2.3 Air Quality**

The EPA defines ambient air in 40 CFR Part 50 as “that portion of the atmosphere, external to buildings, to which the general public has access.” In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 Clean Air Act Amendments (CAAA), the EPA has promulgated ambient air quality standards and regulations. The National Ambient Air Quality Standards (NAAQS) were enacted for the protection of the public health and welfare, allowing for an adequate margin of safety. To date, the EPA has issued NAAQS for six criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particles with a diameter less than or equal to a nominal 10 micrometers (PM<sub>10</sub>), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead (Pb). USEPA promulgated a standard for fine particulates (PM<sub>2.5</sub>) in April 2005; however, PM<sub>2.5</sub> *de minimis* thresholds are not yet finalized and federal actions with conformity determinations prior to April 2006 will be grandfathered from these requirements. Areas that do not meet NAAQS are called non-attainment areas.

### **2.3.1 Air Quality Affected Environment**

The EPA has classified the New York – North New Jersey – Long Island area, including the area of the proposed project (Orange County, New York), as in severe non-attainment for the criteria pollutant ozone. The NAAQS for ozone is presented in Table 2-1.

To regulate the emission levels resulting from a project, federal actions located in non-attainment areas are required to demonstrate compliance with the general conformity guidelines established in 40 CFR Part 93 *Determining Conformity of Federal Actions to State or Federal Implementation Plans* (the Rule). The proposed IATF is located within an area designated by the EPA as a severe ozone non-attainment area; therefore, a General Conformity Rule applicability analysis is warranted.

**TABLE 2-1: AMBIENT AIR QUALITY STANDARDS FOR OZONE**

<b>Pollutant</b>	<b>Federal Standard</b>	<b>New York Standard</b>
Ozone (O <sub>3</sub> ) <sup>1</sup>		
1-Hour Average	0.12 ppm	0.12 ppm
8-Hour Average	0.08 ppm	0.08 ppm

<sup>1</sup> Federal primary and secondary standards for this pollutant are identical.  
Source: EPA, 2002; NYS DEC nd.

Section 93.153 of the Rule sets the applicability requirements for projects subject to the Rule through the establishment of *de minimis* levels for annual criteria pollutant emissions. These *de minimis* levels are set according to criteria pollutant non-attainment area designations. Projects below the *de minimis* levels are not subject to the Rule. Those at or above the levels are required to perform a conformity analysis as established in the Rule. The *de minimis* levels apply to direct and indirect sources of emissions that can occur during the construction and operational phases of the action.

To determine the applicability of the Rule to this action, emissions were estimated for the ozone precursor pollutants – oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC). Annual emissions for these compounds were estimated for each of the project actions (construction and operation) to determine if they would be below or above the *de minimis* levels established in the Rule. The *de minimis* for severe ozone areas is 25 tons per year (TPY) (22,680 kilograms per year (kgpy)) for each ozone precursor pollutant. Sources of NO<sub>x</sub> and VOC associated with the construction of the proposed project include emissions from construction equipment, construction crew commuting vehicles, and painting of parking spaces (VOC only). Operational emissions would result from building systems (space and water heating though natural gas).

In addition to evaluation of air emissions against *de minimis* levels, emissions are also evaluated for regional significance. A federal action that does not exceed the threshold emission rates of criteria pollutants may still be subject to a general conformity determination if the direct and indirect emissions from the action exceed ten percent of the total emissions inventory for a particular criteria pollutant in a non-attainment or maintenance area. If the emissions exceed this ten percent threshold, the federal action is considered to be a “regionally significant” activity, and thus, the general conformity rules apply.

### 2.3.1.1 Ambient Air Quality

Ambient air quality is monitored in Orange County by a network of stations meeting EPA’s design criteria for State and Local Air Monitoring Stations (SLAMS) and National Air Monitoring Stations (NAMS). There is one monitoring station for ozone located in Orange County that has been in operation since 1995. This monitor is located at 1175 Route 17k, in Montgomery, New York. On average, this monitor exceeded the standard for ozone one time in 2001, 2002, and 2003. This station did not exceed the standard for ozone in 2000 or 2004.

Table 2-2 shows the existing one-hour ozone monitoring data within Orange County, New York.

**TABLE 2-2: EXISTING ONE-HOUR OZONE MONITORING DATA WITHIN ORANGE COUNTY, NEW YORK**

Monitoring Station	Year				
	2000	2001	2002	2003	2004
#360715001-1 – 1275 Route 17k, Montgomery, New York	0.100/0.096	0.111/0.108	0.134/0.099	0.109/0.107	0.123/0.106

Values are in parts per million (ppm); 1<sup>st</sup>/2<sup>nd</sup> highest data

NAAQS: One-hour average = 0.12 ppm (a value >0.125 ppm is an exceedance)

Source: U.S. EPA, AIRS Data, November, 2003

### 2.3.1.2 Meteorology/Climate

Temperature is a parameter used in calculations of emissions for air quality applicability. Climate at West Point can be characterized as a humid, continental climate with a mean high temperature of 86°F (30 °C) in July and a mean low temperature of 27°F (-2.8 °C) in January. Summers are warm with periods of high humidity and winters are cold, with extended periods of snow cover and are influenced by the cold Hudson Bay air masses that are brought into the area. The climate at West Point is also influenced by an air mass that flows from the North Atlantic Ocean bringing cool, cloudy, and damp weather to the region (USMA, 2003a).

## 2.3.2 Air Quality Environmental Consequences

A project construction and operations-related General Conformity Applicability Analysis was performed for the proposed construction and operation activities under the Proposed Action

Alternative. The General Conformity applicability analysis estimated the level of potential air emissions (VOC and NO<sub>x</sub>) for the Proposed Action Alternative. It is assumed that the No Action Alternative would not impact air quality beyond existing conditions; therefore, it was not included in the analysis. Appendix B contains a detailed description of the assumptions and methodology used to estimate potential emissions for the construction and operation phases of the proposed IATF at West Point. Impact levels to determine impacts to air quality, based on the result of the applicability analysis, are as follows:

*Negligible* — There would be no net increase in emissions from current levels.

*Minor* — Emissions would be greater than 0 tons/year and below 10 tons/year (9,072 kgpy).

*Moderate* — Emissions would be greater than 10 tons/year (9,072 kgpy) and less than conformity *de minimis* levels (25 tons/year (22,680 kgpy)).

*Major* — Emissions would be equal to or greater than conformity *de minimis* levels (25 tons/year (22,680 kgpy)).

### **Proposed Action Alternative**

Table 2-3 summarizes the total emissions associated with the construction and operation phases for the proposed IATF. Under this alternative, construction-related emissions would be temporary and only occur during the 6-month construction period for the facility. Natural gas for space and water heating would be required for operations, resulting in operational emissions.

**TABLE 2-3: TOTAL PROJECT EMISSIONS**

Action	Total Annual Emissions –TPY (kgpy)		<i>De minimis</i> values –TPY (kgpy)	
	NO <sub>x</sub>	VOC	NO <sub>x</sub>	VOC
Use of Heavy Equipment (on –site construction)	2.097 (1,902)	0.126 (114)	<b>25 (22,680)</b>	<b>25 (22,680)</b>
Construction Crew Workers	0.30 (272)	0.470 (426)		
Painting	NA	0.001 (.907)		
Operational Emissions - Boiler	0.100 (91)	0.0055 (50)		
<b>Total</b>	<b>2.529 (2,294)</b>	<b>0.603 (547)</b>		

Table 2-3 shows that the emissions associated with constructing and operating the proposed IATF, when compared to the *de minimis* values for this ozone non-attainment area of 25 tpy (22,680 kgpy) for both NO<sub>x</sub> and VOC, fall below the *de minimis* values under the Proposed Action Alternative. The Proposed Action Alternative is not subject to the General Conformity Rule requirements. Impacts to air quality under the Proposed Action Alternative would be minor and not represent a significant impact.

Air emissions were also evaluated to determine regional significance. The *New York Metropolitan Area State Implementation Plan* sets forth 2005 daily emission targets for non-road construction vehicles of 18.36 tons per day (16,656 kilograms per day) of VOC and 100.26 tons per day (90,954 kilograms per day) of NO<sub>x</sub> for the New York Metropolitan ozone non-attainment area where West Point is located (Escarpeta, pers. comm., 20 November 2003). The increase in annual emissions from the construction activities would not make up ten percent or more of the available regional emission

target for VOC or NO<sub>x</sub> and would not be regionally significant. Air quality impacts are therefore considered minor under the Proposed Action Alternative.

### **No Action Alternative**

Implementation of the No Action Alternative would not change current conditions and is not expected to impact the current air quality conditions in the region.

## **2.4 Biological Resources**

### **2.4.1 Vegetation and Wildlife Affected Environment**

This section describes the biological resources located on the project site at West Point. Vegetation types and wildlife habitats were characterized on the basis of both records and field observations. A reconnaissance of the project area was conducted in February 2005 to verify the results of previous biological reports and gather additional information on vegetative communities, wildlife habitats, and habitat use adjacent to the project area. West Point is home to migratory species that may not have been detected during the site reconnaissance. Additionally, seasonal vegetation known to occur on West Point, such as some herbaceous plants that are spring bloomers, were not observed during this time period.

#### *2.4.1.1 Vegetation*

West Point is classified by 28 terrestrial community types under the categories open upland, barrens and woodlands, forested uplands, and cultural. Howze Field is a highly developed area with the primary vegetation being mowed grass, with the site being classified in the cultural category. Howze Field is surrounded by paved roads (Mills Road, Howze Place, Fenton Road, and Fenton Road) to the east, south, and west. Michie Stadium is to the north, and Holleder Sports Center is to the northwest. Scattered trees and ornamental shrubs are found adjacent to Holleder Sports Center. Wooded areas exist immediately to the east, and on the opposite side of Fenton Road to the southwest. Vegetation within the wooded area consists primarily of mature trees, including red maple, northern red oak, chestnut oak, flowering dogwood, black cherry, white pine, and pignut hickory (USMA, 2000). Vegetation types on and around Howze Field are shown in Figure 2-5.

#### *2.4.1.2 Wildlife*

West Point is home to a variety of wildlife including 41 species of mammals, 249 species of birds, 19 species of reptiles, 18 species of amphibians, and several species of fish and invertebrates.

A wide range of mammals have been observed and/or documented on West Point including large and medium-sized species such as the coyote, black bear, white-tailed deer, opossum, raccoon, river otter, mink, striped skunk, red fox, gray fox, bobcat, and beaver. Small mammals include the masked shrew, smoky shrew, pigmy shrew, short-tailed shrew, star-nosed mole, hairy-tailed mole, little brown myotis, northern long-eared myotis, Indiana bat, eastern pipistrelle, big brown bat, long-tailed weasel, woodchuck, eastern chipmunk, gray squirrel, red squirrel, southern flying squirrel, northern flying squirrel, deer mouse, white-footed mouse, red-backed vole, meadow vole, pine vole, muskrat, Norway rat, house mouse, meadow jumping mouse, woodland jumping mouse, and eastern cottontail. In addition, the fisher population has been growing and it is likely that the population would eventually establish in the Hudson Highlands ecozone (USMA, 2003a).

FIGURE 2-5: VEGETATION - HOWZE FIELD SITE



Of the 249 bird species observed on or near West Point, 110 species have been identified as breeding on the installation. Another 10 non-breeders are considered winter residents. Avian families present on the installation are illustrated in Table 2-4.

Reptiles found on the installation include various species of turtles, snakes, and lizards such as the snapping turtle, stinkpot turtle, spotted turtle, wood turtle, eastern painted turtle, eastern box turtle, five-lined skink, northern water snake, northern brown snake, red-bellied snake, eastern garter snake, eastern ribbon snake, eastern hognose snake, ringneck snake, racer, black rat snake, milk snake, northern copperhead, and timber rattlesnake. Amphibians identified at West Point include salamanders, frogs, and toads such as the spotted salamander, marbled salamander, red-spotted newt, redback salamander, northern slimy salamander, four-toed salamander, red salamander, two-lined salamander, American toad, Fowler's toad, spring peeper, northern gray tree frog, green frog, wood frog, pickerel frog, bullfrog, and eastern spadefoot toad (USMA, 2003a).

**TABLE 2-4: AVIAN FAMILIES REPRESENTED AT WEST POINT**

Avian Family	Members
Gaviidae	Loons
Podicipedidae	Grebes
Phalacrocoraciidae	cormorants
Ardeidae	Hérons
Threskiornithidae	ibises, spoonbills
Anatidae	swans, geese, ducks
Cathartidae	American vultures
Accipitridae	kites, hawks, eagles
Falconidae	falcons, caracara
Phasianidae	grouse, ptarmigans
Rallidae	rails, gallinules, coots
Charadriidae	Plovers
Scolopacidae	Sandpipers
Laridae	skuas, jaegers, gulls, terns
Columbidae	pigeons, doves
Cuculidae	cuckoos, anis
Tytonidae	barn owls
Strigidae	typical owls
Caprimulgidae	Nightjars
Apodidae	Swifts
Trochillidae	Hummingbirds
Alcedinidae	Kingfishers
Picidae	Woodpeckers
Tyrannidae	tyrant flycatchers
Alaudidae	Larks

Avian Family	Members
Hirundinidae	Swallows
Corvidae	jays, crows, magpies
Paridae	titmice, chickadees
Sittidea	Nuthatches
Certhiidae	Creepers
Troglodytidae	Wrens
Musicapidae	Thrushes
Mimidae	mimic thrushes
Bombycillidae	Waxwings
Laniidae	Shrikes
Sturnidae	Starlings
Vireonidae	Vireos
Emberizidae	warblers, sparrows
Fringillidae	Finches
Passeridae	Weavers

Source: USMA, 2003a

Howze Field provides limited wildlife habitat. The scattered trees surrounding the sites provide limited habitat for some birds and small mammals, such as the eastern cottontail. Primary wildlife habitat within the project area occurs in the wooded area north of Howze Field and Michie Stadium. Wildlife species likely to be found in the wooded area are typical of species found in urban forest habitats, including white-tailed deer, gray fox, opossum, gray squirrel, eastern cottontail, raccoon, skunk, white-footed mouse, sparrows, mourning dove, woodpeckers, and various amphibian and reptile species.

#### 2.4.1.3 Special Natural Areas

Twelve sites have been identified on West Point that are to be specially managed because of their ecological or geological significance, unique geological structure, and/or aesthetic and educational value to the post. There are no special natural areas located in the vicinity of the Howze Field.

#### 2.4.1.4 Rare, Threatened, and Endangered Species

The Endangered Species Act (ESA) (16 USC 1531 et seq.) mandates that all federal agencies consider the potential effects of their actions on species listed as threatened or endangered. Section 7 of the Endangered Species Act requires federal agencies that fund, authorize, or carry out an action to ensure that their action is not likely to jeopardize the continued existence of any threatened or endangered species (including plant species) or result in the destruction or adverse modification of designated critical habitats. If West Point determines that an action may affect a federally listed species, consultation with the USFWS is required to ensure minimization of potential adverse impacts to the species or its designated critical habitat (USMA, 2003a).

In 1990 and 1993, a vegetation survey was conducted for West Point by the New York State Biological Survey and Brooklyn Botanical Garden. An additional survey for threatened and

endangered flora and fauna was conducted in 1991 and 1992 by the New York State Biological Survey. The results of this survey indicated that no federal species listed as threatened or endangered were found to be permanent residents of or to breed on West Point. The bald eagle, a federally threatened species, was found to be a frequent winter visitor. It was also found that suitable habitat exists for the Indiana bat (federally endangered) and the then threatened peregrine falcon (the peregrine falcon is no longer federally listed). Species listed by the state at that time which were observed, but not considered to be residents, included the golden eagle, red-shouldered hawks, and osprey. These species are no longer state listed. One state-listed species that is considered a permanent resident of West Point, the timber rattlesnake, was found (USMA, 2003a). Since this initial survey, some species have been downgraded from the endangered species list, while some have become rarer and are now listed. Table 2-5 provides the list of federal and state listed endangered and threatened species found on West Point.

In addition to the special concern species listed in Table 2-5, surveys for rare species have been conducted at West Point including surveys of rare Odonata (dragonflies and damselflies), butterflies, and plants. Although not protected formally under federal or state law, the Army affords special consideration and protection to rare species as a matter of responsible land stewardship. The Odonata survey, which began in 1994, was conducted over four years. Preliminary results, presented after the second field season, detailed the presence of 101 species from 53 survey sites. Fourteen of the species documented were considered rare or otherwise noteworthy. The butterfly survey conducted at West Point was initiated in 1995 and lasted into 1997. This survey identified eight species designated as rare in New York State, six species designated as regionally rare in southeastern New York State, and two species designated as rare at West Point (USMA, 2003a).

**TABLE 2-5: FEDERAL AND STATE LISTED ENDANGERED AND THREATENED ANIMAL SPECIES FOUND ON WEST POINT**

Scientific Name	Common Name	Federal and State Status	West Point Status
Mammals			
<i>Myotis leibii</i>	small-footed bat	Federal species of concern (C), State species of special concern (SC)	Resident
<i>Myotis sodalis</i>	Indiana bat	Federal endangered (FE), State endangered (SE)	Possible resident, Visitor, Migrant
<i>Neotoma magister</i>	Allegheny Wood Rat	SE, Extinct/Extirpated (X)	Locally extinct (?), Historic Resident
Birds			
<i>Accipiter cooperii</i>	Cooper's Hawk	SC	Resident
<i>Accipiter gentilis</i>	northern goshawk	C, SC	Possible resident, Visitor, Migrant
<i>Accipiter straiatus</i>	sharp-shinned hawk	SC	Resident
<i>Aquila chryseatos</i>	golden eagle	SE	Visitor, Migrant, Historic Resident (?)
<i>Botaurus lentiginosus</i>	American bittern	SC	Resident
<i>Buteo lineatus</i>	red-shouldered hawk	SC	Resident (?), Visitor, Migrant
<i>Caprimulgus vociferous</i>	whip-poor-will	SC	Resident
<i>Chordeiles minor</i>	common nighthawk	SC	Possible resident
<i>Dendroica cerulean</i>	cerulean warbler	SC	Resident, Visitor, Migrant
<i>Falco peregrinus anatum</i>	peregrine falcon	SE	Visitor, Migrant, Historical resident

Scientific Name	Common Name	Federal and State Status	West Point Status
<i>Gavia immer</i>	common loon	SC	Visitor, Migrant
<i>Haliaeetus leucocephalus</i>	bald eagle	Federal Threatened (FT), State Threatened (ST)	Visitor, Migrant, Historical resident
<i>Icteria virens</i>	yellow-breasted chat	SC	Visitor, Migrant, Possible resident
<i>Ixobrychus exilis</i>	least bittern	ST	Resident
<i>Melanerpes erythrocephalus</i>	red-headed woodpecker	SC	Visitor, Migrant
<i>Pandion haliaeetus</i>	Osprey	SC	Visitor, Migrant, Resident (?)
<i>Podilymbus podiceps</i>	pied-billed grebe	ST	Resident
<i>Poocetes gramineus</i>	vesper sparrow	SC	Visitor, Possible resident
<i>Vermivora chrysoptera</i>	golden-winged warbler	SC	Resident
Reptiles			
<i>Carphophis amoenus</i>	eastern wormsnake	SC	Resident
<i>Clemmys guttata</i>	spotted turtle	SC	Resident
<i>Clemmys insculpta</i>	wood turtle	SC	Resident
<i>Crotalus horridus</i>	timber rattlesnake	ST	Resident
<i>Heterodon platyrinos</i>	eastern hognose	SC	Resident
<i>Terrapene caroliniana</i>	eastern box turtle	SC	Resident
Amphibians			
<i>Ambystoma jeffersonianum</i>	Jefferson salamander	SC	Resident
<i>Ambystoma laterale</i>	blue-spotted salamander	SC	Resident (?)
<i>Ambystoma opacum</i>	marbled salamander	SC	Resident
<i>Scaphiopus holbrookii</i>	Eastern spadefoot toad	SC	Resident (?)
Fish			
<i>Acipenser brevirostrum</i>	shortnose sturgeon	FE, SE	Resident
<i>Acipenser oxyrinchus</i>	Atlantic sturgeon	C	Resident
Insects			
<i>Enallagma laterale</i>	Lateral bluet	C	Resident
Notes: (?) = Status Unknown			
Source: USMA, 2003a			

Rare plant surveys were conducted at West Point in 1994/1995, with a follow-up survey during the 2000 growing season. These surveys resulted in 75 plant species on the West Point rare plant list, 62 of which have been state-rare, or New York National Heritage Program (NYNHP) listed, and 18 that have been species rare in the Hudson Highlands region or rare for West Point lands. The 62 state-listed species consist of 13 species on the NYNHP watch list, 7 dropped from all NYNHP lists, and 22 on the NYNHP active list. There are also six possibly extirpated species that West Point maintains information on in the case they reappear (USMA, 2003a).

## 2.4.2 Vegetation and Wildlife Environmental Consequences

The following thresholds were used to determine the magnitude of effects on wildlife and wildlife habitat, with separate criteria being used to evaluate impacts to threatened and endangered species.

*Negligible* — There would be no observable or measurable impacts to native species, their habitats, or the natural processes sustaining them. Impacts would be short in duration and within natural fluctuations.

*Minor* — Impacts would be detectable, but would not be expected to be outside the natural range of variability and would not have any long-term effects on native species, their habitats, or the natural processes sustaining them. Occasional responses to disturbance by some individuals could be expected, but without interference to feeding, reproduction, or other factors affecting population levels. Key ecosystem processes might have short-term disruptions that would be within natural variation. Sufficient habitat would remain functional to maintain viability of all species. Impacts would be outside critical reproduction periods for sensitive native species.

*Moderate* — Breeding animals of concern are present; animals are present during particularly vulnerable life-stages, such as migration or juvenile stages; mortality or interference with activities necessary for survival can be expected on an occasional basis, but is not expected to threaten the continued existence of the species at West Point. Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they could be outside the natural range of variability for short periods of time. Population numbers, population structure, genetic variability, and other demographic factors for species might have short-term changes, but would be expected to rebound to pre-impact numbers and to remain stable and viable in the long term. Frequent responses to disturbance by some individuals could be expected, with some negative impacts to feeding, reproduction, or other factors affecting short-term population levels. Key ecosystem processes might have short-term disruptions that would be outside natural variation (but would soon return to natural conditions). Sufficient habitat would remain functional to maintain viability of all native species. Some impacts might occur during critical periods of reproduction or in key habitat for sensitive native species.

*Major* — Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be outside the natural range of variability for long periods of time or be permanent. Population numbers, population structure, genetic variability, and other demographic factors for species might have large, short-term declines, with long-term population numbers significantly depressed. Frequent responses to disturbance by some individuals would be expected, with negative impacts to feeding, reproduction, or other factors resulting in a long-term decrease in population levels. Breeding colonies of native species might relocate to other areas of West Point. Key ecosystem processes might be disrupted in the long term or permanently. Loss of habitat might affect the viability of at least some native species.

Impacts to threatened and endangered species were classified using the following terminology, as defined under the Endangered Species Act:

*No effect:* When a proposed action would not affect a listed species or designated critical habitat.

*May affect / not likely to adversely affect:* Effects on special status species are discountable (i.e., extremely unlikely to occur and not able to be meaningfully measured, detected, or evaluated) or completely beneficial.

*May affect / likely to adversely affect:* When an adverse effect to a listed species may occur as a direct or indirect result of proposed actions and the effect is either not discountable or completely beneficial.

*Likely to jeopardize proposed species/adversely modify proposed critical habitat:* The appropriate conclusion when West Point or the U.S. Fish and Wildlife Service identifies situations in which actions use could jeopardize the continued existence of a proposed species or adversely modify critical habitat to a species within and/or outside West Point boundaries.

### **Proposed Action Alternative**

In general, negligible short- and long-term effects to vegetation and wildlife would be expected under this alternative. The construction of the IATF would occur on land currently used for recreational purposes that has minimal available habitat. Construction activities under the Proposed Action Alternative would avoid endangered species. Construction activities would likely result in mortality of some less mobile fauna such as reptiles, amphibians, and small mammals. Mobility of wildlife species in the area of the proposed facility would be affected as a result of habitat fragmentation, due to human disturbance, during construction activities. In particular, smaller less mobile species would be restricted in movement during construction.

The Bald Eagle is a winter resident at West Point, requiring construction activities to be in compliance with West Point's Bald Eagle Management Plan. During the EA for the Michie Stadium Athletic Complex, adjacent to the proposed IATF site, consultation was conducted with the New York State Department of Environmental Conservation to determine the presence of state-listed species. During this consultation, the State did not identify any potential impacts to endangered, threatened, or special concern wildlife species, to rare plant, animal, or natural community occurrences, or to other significant habitats (USMA, 2000). During this same time, the USFWS was also contacted and stated that, except for occasional transient individuals, no federally-listed or proposed endangered or threatened species are known to exist in the area. Because construction activities would occur in an already disturbed area, impacts to vegetation and wildlife would be negligible and there would be no effect to threatened and endangered species.

### **No Action Alternative**

No impacts to vegetation, wildlife, special natural areas, or threatened or endangered species at West Point are expected with implementation of the No Action Alternative.

## **2.5 Cultural Resources**

Section 106 of the National Historic Preservation Act of 1966, as amended, and as implemented in 36 CFR 800, requires federal agencies to: (1) consider the effects of federally funded, regulated, or licensed undertakings on cultural resources listed on or eligible for inclusion in the National Register of Historic Places; (2) consult with the State Historic Preservation Office (SHPO) and other interested parties; and (3) afford the Advisory Council on Historic Preservation (ACHP) the opportunity to comment. For the purposes of this EA, cultural resources are defined as either recorded or potential historic archaeological sites, prehistoric sites, and standing architectural structures or historic districts.

## 2.5.1 Cultural Resources Affected Environment

### 2.5.1.1 History

The national historic significance of West Point comes from numerous reasons including: it was the site of a key fortress in the Revolutionary War; the site is the oldest continuously occupied Army post in the nation; the Military Academy, founded in 1802, is the oldest professional military service academy in the nation and among the oldest in the world; and its graduates include two of the nation's presidents (Dwight D. Eisenhower and Ulysses S. Grant) and dozens of generals that have led America's armies in its wars (USMA, 1999).

### 2.5.1.2 Known and Potential Cultural Resources

West Point was listed as a National Historic Landmark in 1960 and approximately 15 years later, the USMA Historic District was formed, covering over 227 buildings, including the area of the proposed IATF. Approximately 2,500 acres (1,011 hectares), encompassing about 550 buildings, of West Point have been designated as a National Historic Landmark District (NHLD). Various historic resources are located in the NHLD, ranging from 18<sup>th</sup> century redoubts (defensive positions from the Revolutionary War era) to early 20<sup>th</sup> century barracks, classroom buildings, chapels, monuments, and landscape design (USMA, 2001).

Construction on West Point began in the spring of 1778 and included the erection of Fort Putnam on a hill above the Plain. Locating West Point on the narrow width of the Hudson River, where there were sharp bends and swift currents, made it an ideal spot for fortifications. Construction included a series of redoubts built on the hills to the northwest, west, and southwest of Fort Putnam to protect the fort from attack. Further fortifications built in this time period included Fort Clinton (originally named Fort Arnold), Fort Wyllys, Fort Webb, Fort Meigs, Sherburne's Redoubt, and the Great Chain, which spanned the river from West Point to Constitution Island to prevent British ships from sailing up river. By 1780, the defensive system that had been built at West Point consisted of a series of concentric circles, with each system designed to defend itself as well as assist in the defense of nearby elements. At the end of the Revolutionary War, many of the fortifications at West Point were either dismantled, sold, or left to deteriorate with only a small military presence maintained at Fort Putnam by the end of the 18<sup>th</sup> century. Fort Putnam underwent various levels of renovation/alteration in 1794, 1805, 1814, 1906-1910, and 1976. Despite these reconstruction activities, the fort has maintained the same general configuration since 1794 (USMA, 2001).

In 1802, the United States government established a formal military academy at West Point for the purpose of training a corps of engineers and military leaders. When established, activities were clustered around the Plain, but as the needs of the academy and number of cadets grew, the government purchased tracts of land around the initial military reservation for expansion. Expansion of the Academy brought the need to ensure adequate water supply, prompting the construction of Lusk Reservoir between 1894 and 1896 in a naturally wet area to the southeast of Fort Putnam. Construction of the reservoir utilized cadets as labor, which forced completion of the project to extend to 1901 and the end of the Spanish-American war. The reservoir was initially filled by a water line from Round Pond and Crow's Nest in the early 20<sup>th</sup> century. Since then, the reservoir has been filled by a gravity-fed 20 inch (51 cm) underground water line from the Queensboro Furnace intake at Popolopen Creek. Features at the reservoir include a granite intake house and dam with a pedestrian bridge on its south end with a bluestone-capped rubble wall along its west side. The area is maintained as a park and is surrounded by a number of monuments, benches, and drinking fountains donated by previous West Point classes (USMA, 2001).

In 1902, driven by an increasing number of cadets and a desire to develop a cohesive architectural plan, ten architectural firms were invited by West Point to participate in a design competition for the improvement of the Academy's buildings and grounds. The firm of Cram, Goodhue, and Ferguson, working in association with the Olmstead Brothers, of Brookline, Massachusetts, won the competition. As part of the overall architectural plan for West Point, the Olmstead Brothers provided a general plan for building location and landscape improvement that included details on planning, creating vistas, as well as designing roads that followed the contours of the hills and emphasized the views as seen from the roads. The upper portion of Mills Road, which runs between Michie Stadium and Lusk Reservoir, and is adjacent to the Howze Field, was originally included in the Olmstead's plan (USMA, 2001).

Development of Michie Stadium, adjacent to the Howze Field site, dates from the period when college football began as one of America's great spectator sports and USMA teams were among the best in the country. Before Michie Stadium, USMA football games were played on the main parade ground, the Plain. The games were viewed from demountable steel bleachers that annually required 1,600 man-hours to erect and an equal amount of time to take down and store. Because of the set-up time required and the inability to use the Plain for any other use during football season, the Superintendent formed a committee in 1922 to look into the issue of creating a new and permanent football stadium within the Academy's reservation. The site selected for the stadium was adjacent to Lusk Reservoir and had space for the facility, vehicular access, and proximity to the gymnasium. This area, to the west of the reservoir, was wet and marsh and was often described as a frog pond. Field preparation began in 1923 and included the removal of massive amounts of bedrock from the southern edge of the Fort Putnam ridge and extensive filling to stabilize the low-lying seasonally inundated area (USMA, 2001).

When completed in December 1924, the U-shaped stadium's gothic towers (north and south) with gothic arches formed in concrete and crenellations were in complete design harmony with the rest of the Academy. Shortly after the completion of the main stadium, the Gothicized gates, panels, and ticket booths were installed between 1925 and 1928. The stadium went on to serve the Academy during the glory years of West Point football. In 1928, the facility was named Michie Stadium after Dennis Michie, the captain of the Academy's first football team, who was later killed in Cuba during the Spanish-American War. Over time, certain portions of the stadium have been changed or altered, but the structure still possesses sufficient integrity to be considered a contributing structure to the historic district (USMA, 2001).

### **2.5.2 Cultural Resources Environmental Consequences**

Potential impacts to cultural resources have been evaluated based on the extent of known cultural resources in the area. Per section 106 of the National Historic Preservation Act, only those cultural resources that are eligible or are listed on the National Register of Historic Places are considered federally protected resources and are the subject of this impact analysis. An impact, or effect, to a cultural property occurs if an action would alter in any way the characteristics that qualify the property for inclusion or potential listing on the national register. If the action would diminish the integrity of any of these characteristics, it is considered to be an adverse effect.

In order to evaluate the alternatives, the following criteria have been established to define the level of impact to cultural resources:

*Negligible:* There would be no direct or indirect impacts to any property potentially eligible for or listed on the National Register of Historic Places.

*Minor:* Direct or indirect impacts to a property potentially eligible for or listed on the National Register of Historic Places are anticipated; however, these effects would be minor in number, extent, and/or duration. Minor impacts, for example, could include temporary disturbances (such as indirect noise from construction activities) that would not alter the character for which the property has been listed, and the site would be returned to its original state following the action.

*Moderate:* Direct or indirect impacts to a property potentially eligible for or listed on the National Register of Historic Places are anticipated, and these effects would be greater in number, extent, and/or duration than minor impacts. Moderate impacts, for example, could include disturbances (such as the long-term physical alteration of a site that would require mitigation through data recovery techniques) that could alter the character for which the property has been listed, and the site might not resume its original state following the action.

*Major:* Direct or indirect impacts to a property potentially eligible for or listed on the National Register of Historic Places are anticipated, and these effects would be more substantial in number, extent, and/or duration than moderate impacts. Major impacts could result in the alteration of the character for which the property has been listed, thus potentially disqualifying the property from being listed on the national register. Examples of major impacts include isolation of a property from or alteration of the character of a property's setting, including removal from its historic location; the introduction of visual, audible, or atmospheric elements that are out of character with the property or that alter its setting; and neglect of a property resulting in its deterioration or destruction (36 CFR 800.5).

### **Proposed Action Alternative**

The proposed construction of the IATF would occur adjacent to the Holleder Sports Center, Kimsey Athletic Center, and Michie Stadium and Athletic Complex. The proposed project site is located within the West Point NHLD and adjacent to Michie Stadium, a historic structure. Past concerns with development in this area, including the development of the Michie Stadium Athletic Complex, include:

- Defining boundaries between new design and historic structures;
- Maintaining the Military Gothic/Academic theme prevalent on many parts of the campus; and
- Incorporating design elements consistent with the architecture on campus.

Concerns identified for past projects in this area would be similar to those for the proposed IATF. Prior to construction, the New York State SHPO would be consulted to determine the potential for an Adverse Effect, as defined under Section 106 of the National Historic Preservation Act.

If it is determined there is potential for impacts to cultural resources listed on or eligible for listing on the National Register of Historic Places, or a determination of Adverse Effect, West Point would coordinate with the SHPO to determine the level of effect to the property and any appropriate mitigation measures that need to be taken. An official determination of effect would be issued by the state officer that documents the level of impact to the resource, including any potential for impairment to cultural resources, and the course of action that West Point would be required to perform to mitigate these effects.

Negligible impact to archeological resources would be expected under the Proposed Action Alternative. The Howze Field site consists mainly of cut and fill material and was heavily disturbed both during the creation of the playing fields and the excavation to install the 20 inch (51 cm) gravity-fed underground water line to Lusk Reservoir. Because of this past disturbance, it is unlikely that archeological resources exist within the boundaries of Howze Field and ground disturbance within these boundaries would be expected to have negligible alternatives. If excavation or ground disturbing activities would occur outside the boundaries of Howze Field, a Phase I Cultural Resources Survey would be necessary to insure that no archaeological resources would be affected.

Through this consultation with the SHPO and mitigation, as well as keeping construction activities within the existing boundary of Howze Field, impacts to cultural and historic resources as a result of constructing and operating the IATF would be minor.

### **No Action Alternative**

The No Action Alternative would not be expected to create any impacts to the West Point's cultural and historic resources.

## **2.6 Visual Resources**

The unique geography of West Point made it an ideal location for surveillance up and down the river during the Revolutionary War. To this day, the geography of the area provides these views both to and from West Point. The views at West Point have continued to be a defining characteristic through the installations evolution, providing the ever-present backdrop of the Hudson Highland landscape that attracts millions of visitors a year.

### **2.6.1 Visual Resources Affected Environment**

The visual resources affected environment for Howze Field dependant on both the topography and surrounding land uses in the area. Howze Field is located in the Hudson River Coastal Management Zone. The visual resources affected environment for the site from both on and off post is described below.

#### *2.6.1.1 On-Post*

Howze Field is located in the area of Michie Stadium, which has been subject to viewshed studies in relation to past projects. Based on these past studies, it was determined that the Michie Stadium area is clearly visible to those who traverse Stony Lonesome Road, Howze Place, and Mills Road. These roads make-up the traffic circulation system around the stadium area. The stadium and adjacent lands are visible from above as viewed from the parapet walls of Fort Putnam and from Redoubt No. 4. Views of the stadium and adjacent lands from these vantages are partially screened by existing vegetation, depending on the season. The stadium is a focal point at West Point that provides directional bearings for many visitors. The 1924 stadium and Lusk Reservoir are contributing elements to the NLHD (USMA, 2000).

The historic landscape of Buffalo Soldier Field and the view from Thayer Gate were also considered in relation to the Proposed Action. Buffalo Soldier Field has been identified in the USMA Historic Landscape Management Plan as an important historic landscape. This area is dominated by turn-of-the-century brick buildings with slate roofs, crenellation, and other architectural detailing. Examples of such detailing include the hand-carved eagle hay beams on the historic stables, the prominent architectural ornamentation on the historic barracks and stables, and the traditional high-pitched roof

angles. The USMA makes specific efforts to maintain the visual and architectural integrity of Buffalo Soldier Field including maintaining the historic cavalry and artillery drill fields as open space/athletic fields.

In the immediate vicinity of Buffalo Soldier Field is the Thayer Gate entrance to West Point. Thayer Gate is the primary entrance for visitors to West Point and serves as the first impression of the post. The views of West Point from the adjacent community of the Village of Highland Falls at this gate have remained largely unchanged over the past 100 years. The Thayer Gatehouse, located at this entrance, was constructed in 1983 specifically designed in the traditional Military Gothic style to create a sense and feeling that West Point was being entered from the adjacent civilian community. The gatehouse is considered to be individually eligible for the National Register of Historic Places and a contributing element to the USMA National Historic Landmark District. This small building contains a prominent tower and includes traditional military gothic architectural details such as crenellation, ornamental windows, and heavily profiled granite as its materials. This entrance is also used by many high profile visitors staying at the Thayer Hotel. Views from the Thayer Hotel are also extremely important to West Point.

Together, the Thayer Gatehouse and Buffalo Soldier Field are an important historic and architectural component of West Point. Maintaining the sense of place and feeling in these important areas would be considered in evaluating the Proposed Action.

#### 2.6.1.2 Off-Post

In addition to views on-post, views off-post are also considered when determining visual quality at West Point. In past studies of Michie Stadium, located adjacent to Howze Field, it was determined that this area is visible from numerous places off-post including the Castle Rock Unique Area of the Hudson Highlands State Park on the eastern side of the Hudson River in the undeveloped section south of Cold Spring. However, portions of the existing stadium and Holleder Sports Center are shielded by the terrain and vegetation, with just the tops of these structures being visible.

West and North of the existing sports complex, adjacent to Howze Field, there are no off-post views of concern. Storm King State Park is north of West Point, but the terrain and elevation differences make the complex not visible from this area. U.S. Route 9W is recessed against the western hills from West Point such that terrain and vegetation obscure views of the proposed project area. (USMA, 2000). To the south of West Point, the view from the town of Highland Falls to the post is also an area of concern.

### 2.6.2 Visual Resources Environmental Consequences

In order to evaluate the alternatives, the following criteria have been established to define the level of impacts to visual resources:

*Negligible:* There would be no direct or indirect impacts to the Hudson River and viewsheds both on- and off-post from the proposed project.

*Minor:* Direct or indirect impacts to the Hudson River and viewsheds both on- and off-post are anticipated; however, these effects would be minor in number, extent, and/or duration. Minor impacts, for example, could include temporary visual disturbances that would not alter the character of the viewshed, and the viewshed would be returned to its original state following the action.

*Moderate:* Direct or indirect impacts to the Hudson River and viewsheds both on- and off-post are anticipated, and these effects would be greater in number, extent, and/or duration than minor impacts. Moderate impacts, for example, could include disturbances (such as the long-term alteration of the viewshed that would require mitigation) that could alter the character of the viewshed, and the viewshed might not resume its original state following the action.

*Major:* Direct or indirect impacts to the Hudson River and viewsheds both on- and off-post are anticipated, and these effects would be more substantial in number, extent, and/or duration than moderate impacts. Major impacts could result in the alteration of the character of the viewshed.

### **Proposed Action Alternative**

#### **Methodology**

In order to determine impacts to visual resources, a visual assessment of the proposed facility was conducted. This assessment evaluated the visual impact that the IATF would have from the following five representative viewpoints:

- Boscobel Reservation and Osborne Castle: These two viewpoints are representative of the view from the east bank of the Hudson River. Boscobel bounds the northern point of where the IATF could be visible from and is an example of a relatively low elevation area on the eastern bank. Osborne Castle bounds the southern point of where the IATF could be visible from and represents the highest elevation on the eastern bank of the Hudson River. Both of these locations are areas of heavy public visitation.
- Redoubt 4 and Fort Putnam: These two viewpoints represent historic viewpoints on-post that are areas of high public visitation.
- Thayer Gate Entrance: The view from Thayer Gate was evaluated to represent the impact to the Village of Highland Falls as well as impacts to historic Buffalo Soldier Field.

From Boscobel Reservation, Osborne Castle, Redoubt 4, and Fort Putnam, the visual analysis assumed that all vegetation would be 25 feet (8 meters) high. While some higher areas of vegetation exist, they are not continuous.

Because of the sensitive nature of the views from and to Buffalo Soldier Field and Thayer Gate, a more detailed methodology was used to determine impacts from these viewpoints. The view from Thayer Gate and Buffalo Soldier Field was represented by a position at USMA Building 616. This point was chosen to represent the view because it provided a safe place to perform the analysis out of the way of traffic and is located between the two viewpoints of concern (Thayer Gate and Buffalo Soldier Field). Thayer Gate is approximately 100 feet (31 meters) further south of this point and is 3 feet (1 meter) lower in elevation. The center of Buffalo Soldier Field is approximately 400 feet (122 meters) north of the site of analysis and at 3 feet (1 meter) higher elevation. At the tree line between the area where the analysis was performed and the proposed site the ground elevation was approximately 334 feet (102 meters) amsl and Howze Field is approximately 337 feet (103 meters) amsl. The tree line would be located about 120 feet (37 meters) from the south end of the proposed facility. The shortest tree was determined to be 56 feet (17 meters) tall with the average tree height being 65 feet (20 meters). The analysis assumed that the tree line was 56 feet (17 meter) high and the tops of the trees would be at 390 feet (119 meters) amsl. It was further assumed that all the trees are

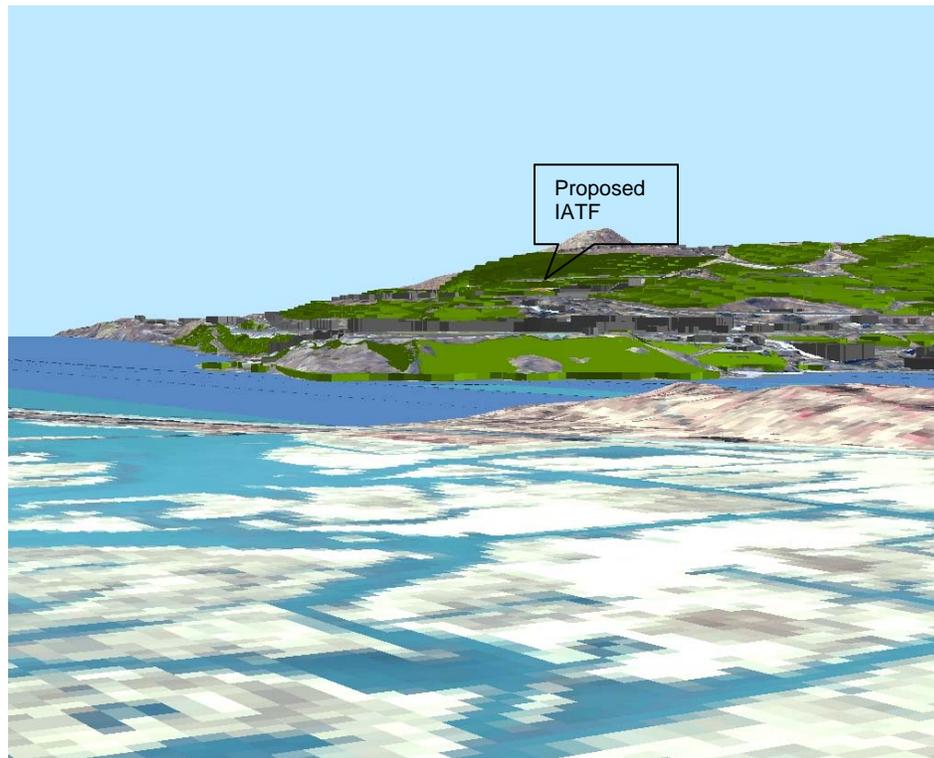
Norway spruce and would provide a year-round permanent screen from Buffalo Soldier Field, Thayer Gate, and the Thayer Hotel to the proposed facility.

### Analysis

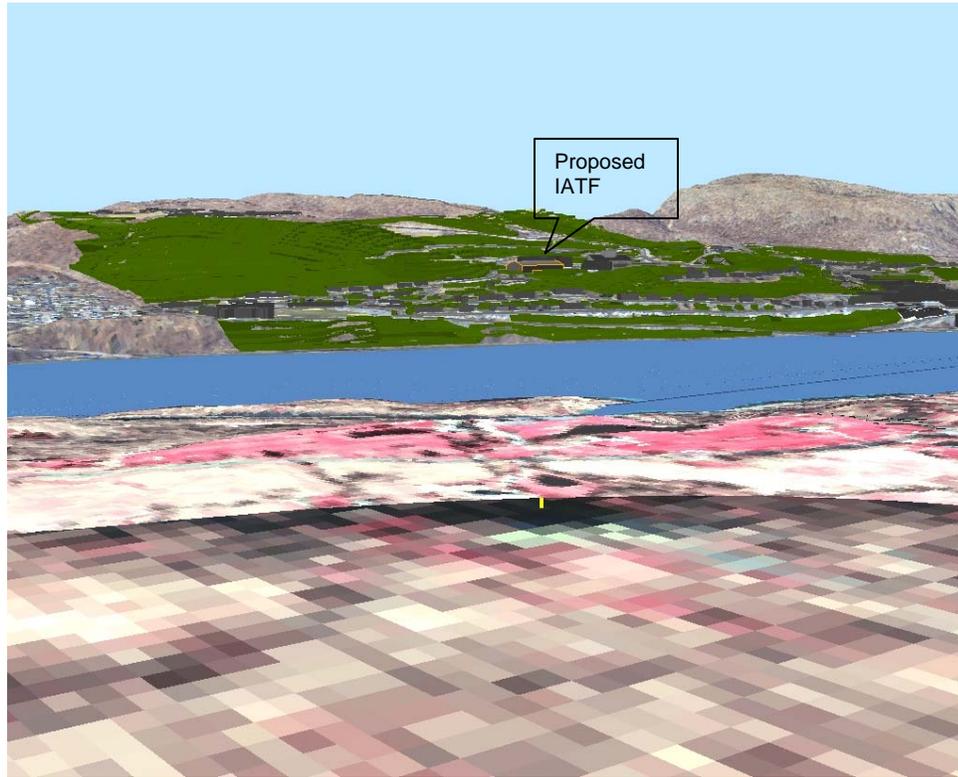
When looking at the visual impacts of the IATF from the eastern bank of the Hudson River, the visual analysis showed that the IATF would have negligible impacts on the viewshed from these points. As seen in Figure 2-6 and Figure 2-7, the distance from these locations to the proposed IATF (outlined in orange), along with the background terrain, reduces the visibility of the proposed structure from these sites. Color palette selection would also assist in minimizing the visibility of the structure from the east bank of the Hudson River and would minimize impacts.

Visual impacts from Redoubt 4 (see Figure 2-8) were found to be minor while those from Fort Putnam were major. From Redoubt 4 only a small portion of the proposed IATF would be visible. As seen in Figure 2-9, when viewing the proposed IATF from Fort Putnam, a large portion of the peaked roof, outlined in orange, would be visible and the IATF structure would be considered a discordant component of the view from Fort Putnam. Mitigation would occur to address this and would include selection of color palette, texture, and material types for the proposed building. While the mitigation would not eliminate the dominance of the building within this view, it would minimize it, reducing the viewshed impacts from major to moderate.

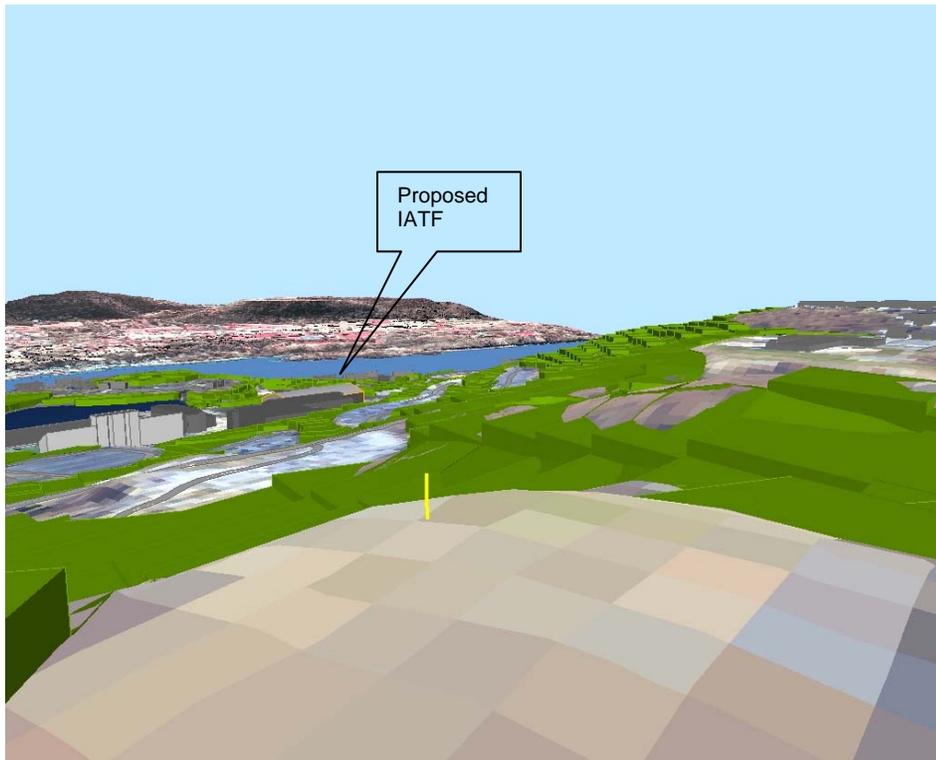
**FIGURE 2-6: VIEW OF THE PROPOSED IATF FROM BOSCOBEL RESERVATION**

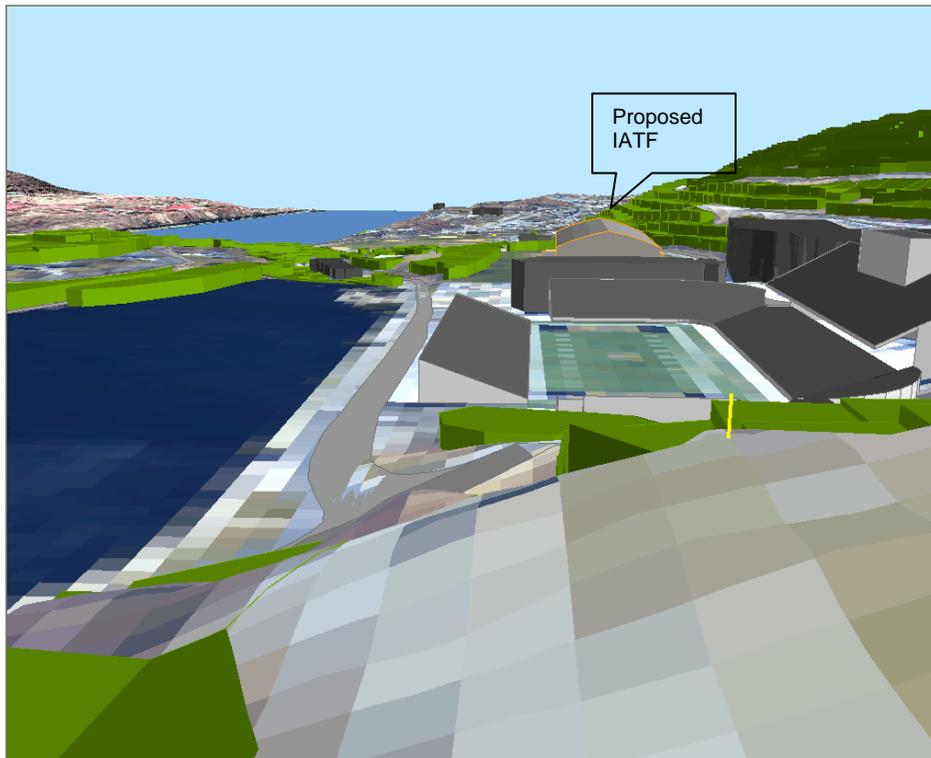


**FIGURE 2-7: VIEW OF PROPOSED IATF FROM OSBOURNE CASTLE**



**FIGURE 2-8: VIEW OF PROPOSED IATF FROM REDOUBT 4**



**FIGURE 2-9: VIEW OF PROPOSED IATF FROM FORT PUTNAM**

The view from the Thayer Gate, taken from West Point Building 616, to the proposed IATF facility represents the viewpoints from the border of the Village of Highland Falls; at the Thayer Gate entrance to West Point; along Thayer Road entering West Point; from the Thayer Hotel; and from Buffalo Soldier Field. As shown in Figure 2-10, the peaked roof of the proposed facility would be slightly visible from above the tree line. Although the facility would not be a major visual intrusion from this view, due to the significance of this view the slight visibility of the structure would be a moderate impact. The proposed alignment of the IATF minimizes, to the extent possible, viewshed impacts from southern viewpoints. Furthermore, mitigation measures would be employed in the design and construction to further reduce visual impacts. Such mitigation measures could include the orientation of the building, color pallet, textures, and building materials used. With the implementation of these mitigation measures, the impacts would not rise above moderate for these views.

The visual analysis took into consideration additional areas including viewpoints from the Mills Road Corridor and Herbert Hall, as well as viewpoints from the Fenton Road entrance to the Athletic Complex. The analysis determined that for these two viewpoints, under the Proposed Action Alternative, the Holleder Center, Kimsey Hall, and Randall Hall would maintain their present dominance of the Athletic Complex and that the architectural elements of these facilities would remain visible. Additionally, the proposed IATF would shield the exposed concrete wall on the southern portion of the Holleder Center from Mills Road. However, from the Mills Road corridor, the proposed IATF would be a dominant element of the visual landscape and would be a major impact to the aesthetics of that area. The existing view from Mills Road to the Howze Field and Kimsey Center areas is shown in Figure 2-11. However, even though it would be a major impact, it would not rise to the level of significance to warrant and Environmental Impact Statement.

Under the Proposed Action Alternative, impacts to visual resources would range from minor to major, with the major impacts being mitigated to moderate through building placement and selection of the color palette, building textures, and building materials.

**FIGURE 2-10: VIEW OF PROPOSED IATF FROM THAYER GATE**



**FIGURE 2-11: VIEW FROM MILLS ROAD**



*View of Kimsey Center from Mills Road*

*View of Tate Rink from Mills Road*

### **No Action Alternative**

Under the No Action Alternative, a new facility would not be built and there would be no impacts to the viewshed.

## **2.7 Human Health and Safety**

This section describes the human health and safety issues within the affected environment associated with workers as well as the general public. Possible human health and safety concerns at West Point include materials and wastes during construction and antiterrorism/force protection issues. The presence of unexploded ordnance (UXO), asbestos-containing materials (ACM), and lead-based paint (LBP) are other human health and safety issues often discussed as part of West Point construction and demolition projects. However, no demolition is proposed on Howze Field, so ACM and LBP are not expected to be a concern. Similarly, Howze Field is not located in an area known or suspected to contain UXO.

### **2.7.1 Materials and Wastes**

Howze Field is constructed on Udorthents (fill) soils (see Section 2.2). The source of the fill is unknown, but it is suspected that at least part of the fill and soils on Howze Field may have come from excavated soils from the 1923 construction of Michie Stadium (Bjornsen, 2005 personal communication). Soil borings made around the perimeter of Howze Field in 2001 for the proposed expansion of the lacrosse facilities revealed predominantly sand, gravel, cobbles, and boulders beneath the western side of Howze Field, with some silt and sand along the south side of the field near the Truxton Lacrosse Center (Parratt-Wolff, 2001).

No underground storage tanks (USTs) are known to exist or have previously existed on Howze Field. The EA conducted in support of the Michie Stadium improvements (USMA, 2001) indicated two USTs of interest were previously located in the vicinity of Howze Field near the western side of the Michie Stadium Annex and the northeast side of the Holleder Center. These tanks were replaced in 1997 and 1998. Petroleum contamination was encountered during the removal of the northernmost tank (near the Michie Stadium Annex). Approximately 100 gallons ( 379 liters) of contaminated groundwater were pumped from the excavation and disposed of off-site. In addition, approximately 21 cubic yards of petroleum-contaminated soil were removed and disposed of off site. The NYS DEC issued a No Further Action letter on December 21, 1998 confirming the closure of the tank.

In addition, several closed solid waste landfills are located northwest of Michie Stadium. The landfills have been covered and capped with bituminous pavement and are currently used as parking lots for Michie Stadium. A Resource Conservation and Recovery Act (RCRA) Facility Assessment report prepared in 1995 identified minor environmental impacts associated with these landfills, but also recommended that no further action was required (USMA, 2001).

All outdoor athletic fields at West Point, including Howze Field, are treated with fertilizers, pesticides, herbicides, and fungicides on an as-needed basis. Fertilizers are generally applied every eight weeks during the growing season. There have been no pesticide applications made on Howze field in 2005. Applications of the herbicide 2,4-D to control post-emergent broadleaf weeds have been made in the past; the last application on Howze Field was reportedly made prior to the Michie Stadium renovation project in 2002 (Grohowski; Rabino, 2005 personal communication).

### 2.7.2 Force Protection

The design and construction of the IATF would be guided by the United Facilities Criteria (UFC) DoD Minimum Antiterrorism Standards for Buildings (UFC-4-010-01), which seek to find effective ways to minimize the likelihood of mass casualties from terrorist attacks against DoD personnel. By incorporating these standards into the planning process, the DoD can be proactive in preventing, and reacting to, terrorist incidents as well as other emergencies. UFC construction standards attempt to improve safety through maximizing standoff distances, preventing building collapse, minimizing hazardous flying debris, providing effective building layout, limiting airborne contamination, providing mass notification, and facilitating future installation upgrades. UFC requirements apply to new construction including all MILCON projects starting with the Fiscal Year 2004 program and all projects funded by sources other than MILCON for the Fiscal Year 2004 program. Existing structures must also apply UFC standards when a major investment is made, the building use is converted, window or door glazing replacement projects, building additions are constructed, or buildings are leased. MILCON projects starting after FY2004 must comply with these standards, which are based on both site planning and structural design.

Site planning regulations center around minimum standoff distances from surrounding structures and roadways. Under these regulations, the proposed project would be considered a primary gathering building, which is defined as inhabited buildings, or portions thereof, where 50 or more DoD personnel routinely gather.

### 2.7.3 Human Health and Safety Environmental Consequences

The following criteria were used to evaluate impacts to human health and safety:

*Negligible* — The impact to West Point personnel and visitor safety would not be measurable or perceptible.

*Minor* — The impact to West Point personnel or visitor safety would be measurable or perceptible, but it would be limited to a relatively small number of people at localized areas. Impacts to human health and safety might be realized through a minor increase in the potential for exposure to hazardous materials or force protection issues where these issues already exist.

*Moderate* — The impact to West Point personnel or visitor safety would be sufficient to cause a change in exposure to hazardous materials or force protection issues or to create the potential for exposure to hazardous materials or force protection issues in areas that currently do not exhibit these issues.

*Major* — The impact to West Point personnel or visitor safety would be substantial. Exposure to hazardous materials or force protection issues in areas with usually exposure to these issues are expected to substantially increase in the short- and long-term.

#### **Proposed Action Alternative**

Potential impacts on human health and safety from any materials and wastes encountered during project construction and operation are expected to be negligible. The proposed IATF would be constructed on an open field with no existing structures. Other than possibly some minor amounts of concrete, asphalt, or other roadway material that may be removed during curb cuts onto Fenton Road for construction staging and parking lot construction, no building materials or wastes are expected to be encountered. Although the source of fill materials and soils underlying Howze Field are unknown,

contaminated soils or materials are not expected to be encountered during construction. In addition, the environmental issues associated with the former USTs and landfills located north and west of Howze Field have reportedly been resolved and are not expected to have affected Howze Field. The potential exists to encounter soils or groundwater containing some amounts of toxic chemicals such as the herbicide 2,4-D, during ground disturbance. Although not used on a regular basis, 2,4-D and similar chemicals that are known or may have been applied to Howze Field in the past may be present in amounts that could cause skin or eye irritation to workers who come in contact with such chemicals. If any suspect soil, groundwater (if encountered), or fill material is discovered during project construction, contractors would cease surface and subsurface disturbance activities and notify West Point project management for inspection and sampling if necessary.

As discussed above, the proposed IATF would be considered a primary gathering building under the UFC DoD Minimum Antiterrorism Standards for Buildings (UFC-4-010-01). The proposed facility and associated parking area would follow the established standoff distances as follows to comply with these standards:

- Parking and roadways within a controlled perimeter (i.e., West Point) should be 82 feet (25 meters) away from primary gathering buildings.
- Inhabited structures (buildings or portions of buildings routinely occupied by five or more DoD personnel with a population density of greater than one person per 430 feet (40 meters), e.g., the Truxton Lacrosse Center and Holleder Center) must be at least 33 feet (10 meters) from primary gathering buildings.
- Adjacent primary gathering buildings (e.g., the Truxton Lacrosse Center) must be at least 33 feet (10 meters) apart.
- Unobstructed space of at least 33 feet (10 meters) must surround a primary gathering building.

In addition to site planning requirements, UFC guidelines also include construction requirements. While compliance with standoff distances should minimize the impacts of potential attacks, some additional structural issues would be incorporated into building design to ensure that buildings do not experience progressive collapse. The proposed IATF would comply with these construction requirements as well. Given these design and construction standards, and the secured perimeter of the U.S. Army Garrison West Point, impacts related to antiterrorism/force protection from construction and operation of the proposed IATF would be considered negligible.

### **No Action Alternative**

There would be no human health and safety impacts related to materials and wastes, LBP, ACM, or UXO under the No Action Alternative. Similarly, West Point's ability to protect its resident population and respond to terrorist activities would not be affected under the No Action Alternative.

## **2.8 Noise**

Noise is any unwanted sound that can interfere with hearing, concentration, or sleep. The major sources of noise include transportation vehicles, heavy equipment, machinery, and appliances. The Noise Control Act of 1972, 42 USC 4901 et seq. was enacted to establish noise control standards and to regulate noise emissions from commercial products such as transportation and construction equipment. The Noise Control Act exempts noise from military weapons or equipment designated for combat use.

The standard measurement unit of noise is the decibel (dB), which represents the acoustical energy present and is an indication of the loudness or intensity of the noise. Noise levels are measured in A-weighted decibels (dBA), a logarithmic scale which approaches the sensitivity of the human ear across the frequency spectrum and accounts for the varying sensitivity of the human ear by measuring sounds the way a human ear would perceive it. Table 2-6 illustrates common noise levels.

### 2.8.1 Noise Affected Environment

Two major sources of loud noise at West Point are helicopter missions and firing exercises. While there are no aviation facilities at West Point, helicopters land on the property to transport military personnel. At the Lake Frederick Drop Zone, located in an area remote from the Main Post, helicopter noise levels of 67.7 dB have been recorded. Sound exposure contours developed for artillery training have shown that sound exposure contours from training lie almost entirely within the boundaries of West Point (USMA, 2003a).

In the project area, ambient noise levels are affected by daily ongoing activities such as traffic or practice activities on Howze Field and the surrounding Athletic Complex. Outdoor athletic competition results in increased noise levels for temporary periods of time. The only sensitive receptor in the area is Lusk Housing, located on the east side of Lusk Reservoir, which has co-existed with the athletic facilities for decades (USMA, 2001).

**TABLE 2-6: COMMON NOISE LEVELS**

Source	Decibel Level	Exposure Concern
Soft Whisper	30	Normal safe levels
Quiet Office	40	Normal safe levels
Average Home	50	Normal safe levels
Conversational Speech	65	Normal safe levels
Highway Traffic	75	May affect hearing in some individuals depending. on sensitivity, exposure length, etc.
Noisy Restaurant	80	May affect hearing in some individuals depending. on sensitivity, exposure length, etc.
Average Factory	80-90	May affect hearing in some individuals depending. on sensitivity, exposure length, etc.
Pneumatic Drill	100	May affect hearing in some individuals depending. on sensitivity, exposure length, etc.
Automobile Horn	120	May affect hearing in some individuals depending. on sensitivity, exposure length, etc.
Jet Plane	140	Noises at or over 140 dB may cause pain
Gunshot Blast	140	Noises at or over 140 dB may cause pain

Source: EPA Pamphlet, "Noise and Your Hearing," 1986.

### 2.8.2 Noise Environmental Consequences

The following criteria have been developed to assess the noise impacts for each of the alternatives:

*Negligible* — Natural sounds would prevail; noise generated by the construction or operation of the IATF would be infrequent or absent, mostly immeasurable.

*Minor* — Noise levels would exceed natural sounds, as described under negligible impacts, but would not exceed applicable noise standards.

*Moderate* — Noise levels would exceed applicable noise standards on a short-term and temporary basis, and these exceedances would not occur on a permanent basis or for prolonged periods of time.

*Major* — Noise levels would exceed applicable noise standards on a permanent basis or for a prolonged period of time.

### **Proposed Action Alternative**

Under the Proposed Action Alternative, for the duration of construction of the IATF, short-term minor noise impacts associated with normal construction activities would be expected to occur. The nearest sensitive noise receptor is Lusk Housing, located across Mills Road from the proposed IATF site. Since a doubling in distance from the source, Howze Field, results in a 6-dB decrease in the noise level, it is assumed that noise levels at the nearest sensitive receptor would be below applicable noise standards. Furthermore, the proposed site is occurring in an area already used for recreational activities, and a detectable change from the existing noise at the site would not be expected. Under this alternative, no new employment or uses would be created from the proposed improvements. Any increase due to special event traffic would be short-term in nature, lasting only for the duration of a particular event. Because there would be no increase in the intensity of vehicular traffic or land uses or any increase would be temporary in nature, there would be minor impacts due to noise after construction from daily operations under the Proposed Action Alternative.

### **No Action Alternative**

The No Action Alternative would not create additional impacts to current noise levels at West Point or the surrounding area.

## **2.9 Transportation**

### **2.9.1 Transportation Affected Environment**

#### *2.9.1.1 Roadway Network and Access*

The roadway network immediately surrounding the project areas is comprised of local access roads. No major thoroughfares, highways, or main arterial roads exist within or adjacent to the proposed project area. Howze Field is accessed from Howze Place and Fenton Road Roads. The site is bordered on the north by Stony Lonesome Road, on the east by Mills Road, on the south and west by Howze Place. With the exception of Stony Lonesome Road, all of these roads are two-lane local access roads. The roadway network surrounding the site is illustrated in Figure 1-3.

Stony Lonesome Road is one of three main access points onto the West Point Main Post. Stony Lonesome Road provides access to both US Route 9W and New York State Route 218 just west of Stony Lonesome Gate, which has become the sole access point for truck traffic since September 11, 2001. In addition, it serves as an internal-circulation roadway on the post. Several of the parking lots serving the Michie Stadium/Holleder Center area, to the north of Howze Field, are accessed from Stony Lonesome Road. Stony Lonesome Road includes two 12-foot lanes (4-meter), with 4-foot

(1.2-meter) shoulders in some locations. The posted speed limit on Stony Lonesome Road from the gate to the west of Michie Stadium is 25 miles per hour (mph) (40 kilometers per hour [kph]). To the northwest of Michie Stadium, the speed limit is reduced to 15 mph (24 kph).

Howze Place is a one-way (westbound) road connecting Mills Road and Fenton Road. The road is approximately 24 feet wide (7.3 meters) with a 15 mph (24 kph) speed limit and no shoulders.

Fenton Road connects to Howze Place at the southern end of Howze Field. This lightly used road is 23-foot (7.0 meters) wide and serves miscellaneous administrative and service buildings south of Michie Stadium. The speed limit on Fenton Road is 15 mph (24 kph).

## 2.9.2 Transportation Environmental Consequences

The following criteria have been developed to assess the transportation impacts for each of the alternatives:

*Negligible* — Current traffic patterns and trends prevail. There is no change to the traffic operations as a result of the action.

*Minor* — Short-term alteration of traffic patterns and trends would result from the action. Queuing may occur, but the area roadways would not reach capacity.

*Moderate* — Short or long-term changes to the traffic patterns and trends would result from the action. The area roadways may reach capacity but this change would be temporary or managed through improvements.

*Major* — Traffic patterns would be permanently altered from the action. The area roadways would reach capacity and extensive queues would develop.

### Proposed Action Alternative

The proposed construction of the IATF could temporarily affect local traffic. Site work would generate greater volumes of localized traffic due to workers arriving and departing the site, movement of materials and equipment, and removal of construction waste. Interruptions in local traffic patterns would be expected during the construction periods and, at some locations, worker and delivery trips for this project could exacerbate congested conditions. These adverse impacts to local traffic would be minor and only last as long as the construction took place, approximately six months for the building and utility relocation. The impacts would be noticeable, but would result in little inconvenience to local commuters.

While the local need for parking would increase with the increase of workers' personal vehicles, trucks, and other construction equipment during the proposed renovation, there would be negligible adverse impacts on base-wide parking as construction working parking would likely be accommodated at the construction site.

Howze Field is currently used for athletic uses. The proposed construction would not be expected to generate new athletic uses and would not generate new trips to the proposed site. On occasion, the building may be used for special events that would temporarily add volume to the West Point roadway network and increase parking demand. The extra requirements to the transportation system from these events would be accommodated with the current special event parking, as is provided for football games. These special events would have only minor impacts to the transportation network.

Howze Place has been closed to thru traffic for approximately four years as a result of the construction of the Kimsey Center and Randall Hall. It is expected that disruption to traffic at Howze Place would also occur as a result of constructing the IATF, but this would most likely be limited to the temporary closure of one lane of traffic and would be expected to have short-term, minor impacts.

Impacts to transportation as a result of the proposed construction of the IATF would be short-term and minor. Long-term impacts to transportation would be minor.

### **No Action Alternative**

Under the No Action Alternative, current traffic patterns would continue and there would be no impact to the transportation network at West Point.

## **2.10 Utilities and Infrastructure**

This section identifies the current utility service providers at West Point and the locations of utility infrastructure on or in the vicinity of Howze Field. Utilities include water, sanitary sewer, electric, natural gas, and telecommunications. Approximate locations of utility pipes, conduits, and other infrastructure on or in the near vicinity of Howze Field are shown in Figure 2-12.

### **2.10.1 Utilities and Infrastructure Affected Environment**

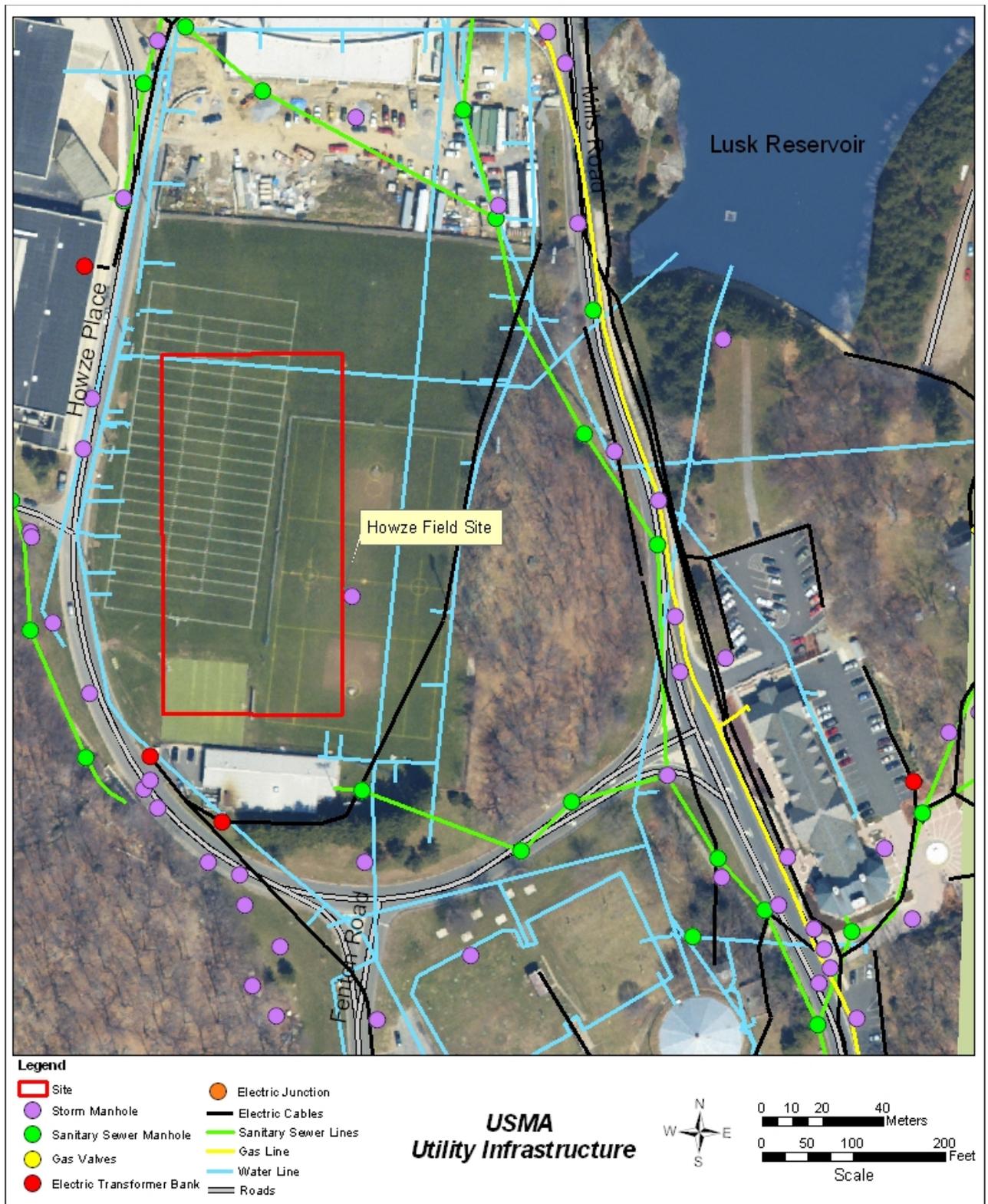
#### *2.10.1.1 Water*

West Point provides its own potable water supply via Lusk Reservoir, located northeast of Howze Field, and other water storage tanks located throughout the installation. A 20-inch (51 cm) gravity-flow raw water line runs in a north-south direction beneath the eastern portion of Howze Field. This line (the West Point Pipeline, ca. 1917), which draws water from Popolopen Brook, located south of Highland Falls, New York, is the main supply line for Lusk Reservoir. In addition, one of the two water supply lines with intakes at the southern end of Lusk Reservoir crosses Mills Road and cuts east-west across Howze Field to the east side of Fenton Road, where it heads south, cutting across the southwestern corner of Howze Field near the Truxton Lacrosse Center. Howze Field also contains a subsurface sprinkler system to irrigate the athletic fields, fed by lines located along both the eastern and western edges of the field. A water line also feeds Truxton Lacrosse Center, located at the southern end of Howze Field. Several other smaller water service lines are located in the general area.

#### *2.10.1.2 Sanitary Sewer*

A 12-inch (31 cm) sanitary sewer line serves Michie Stadium, the new Kimsey Athletic Center, and other facilities north of Howze Field. This line, which includes two spurs, runs northwest-southeast across the northeastern-most corner of Howze Field, through the wooded area between the field and Mills Road, and generally along the western side of Mills Road. This spur is joined in the northeastern corner of Howze Field by a 12-inch (31 cm) spur that runs northwest-southeast between the north end of Howze Field and the Kimsey Athletic Center. A 6-inch (15 cm) connector serving the Truxton Lacrosse Center cuts across the southern end of Howze Field and joins the main line near Mills Road via Howze Place.

**FIGURE 2-12: UTILITY INFRASTRUCTURE - HOWZE FIELD**



### 2.10.1.3 Electric

Orange and Rockland Utilities provide electrical service to West Point. Electric transmission and distribution lines and appurtenant infrastructure are present throughout the installation. Two electric transformer banks are located along Fenton Road near the Truxton Lacrosse Center at the south end of Howze Field. These banks provide service to the center and the light standards on Howze Field used for practices after dark or during other times of poor natural lighting. Underground lines serving the Truxton building and connecting the light standards are also present beneath Howze Field. The transformers on Howze Field are fed from the south by a distribution line that runs beneath Fenton Road and along the east side of Eichelberger Road.

### 2.10.1.4 Natural Gas

Central Hudson Gas & Electric provides natural gas service to West Point. A natural gas line serving this area of the installation runs along the eastern side of Mills Road east of Howze Field.

### 2.10.1.5 Telecommunications

Verizon provides telephone service and Time Warner Cable provides cable service to West Point. Cellular phone service is provided via two cellular towers located on the installation. Underground coaxial and fiberoptic lines serving the athletic facilities in the vicinity of Howze Field (including Truxton Lacrosse Center) run generally north-south across the southwestern-most part of Howze Field.

## 2.11.2 Utilities and Infrastructure Environmental Consequences

### Proposed Action Alternative

Impacts on utility infrastructure during construction of the proposed facility, including potable water, wastewater, electric, natural gas, and telecommunications, would be minor. The north-south layout of the facility would or could avoid many of the potential impacts to underground utility infrastructure on or near Howze Field, including the 20-inch (51 cm) West Point Pipeline. As currently designed, the northern end of the structure may interfere with the water line from Lusk Reservoir that traverses east-west across Howze Field, in which case the line would likely be relocated slightly to the north. It is also possible that the southwestern corner of the structure could interfere with the easternmost of the fiberoptic cables that run generally north-south along the southwest part of Howze Field near Truxton Lacrosse Center. With some slight layout adjustments, it is possible that conflicts with these utilities could be avoided. However, curb cuts/access from Howze Place and parking lot construction on the west side of facility could affect this fiberoptic cable, as well as a second underground fiberoptic cable and a coaxial cable in this area, depending on final design and construction. These curb cuts could also potentially conflict with the water line located on the east side of Fenton Road. At least part of the existing Howze Field sprinkler system would be affected, likely requiring relocation or abandonment. The four existing light stands on the west side of the field may need to be relocated or possibly removed altogether.

Electrical, water, and natural gas supply requirements for the proposed facility have not yet been determined. A considerable amount of electricity would be required for indoor and outdoor lighting. The facility would be heated using natural gas. Water use is expected to be minimal as football and lacrosse teams and other users of the new facility are more likely to use the existing facilities in the Kimsey Athletic Center and Truxton Lacrosse Center. New water, sewer, electrical, natural gas, and, possibly, telecommunications connections would be required, and at least one additional transformer and auxiliary generator would need to be installed. Supply lines for all these services are located in

the near vicinity of Howze Field. Although utility requirements are uncertain at this point, recent experience with West Point projects in the area (e.g., the Michie Stadium improvements and Kimsey Athletic Center construction) indicate that both supply and infrastructure should be adequate to support the proposed facility requirements. Impacts on utility service providers are therefore expected to be minor.

Close coordination between West Point's Operations and Maintenance Division and the various other service providers during design and construction of the proposed facility would minimize any potential impacts on utilities, particularly on infrastructure located on and in the vicinity of Howze Field. If deemed appropriate, utility tunneling could be used instead of open-cut installation during construction (e.g. across Fenton Road or Mills Road), as well as pipe support systems, trench sheeting and shoring, and temporary traffic bypasses to minimize impacts on the local roadway system. Through coordination, utilities would be accurately located and protected to ensure that sufficient capacity is provided during facility operation and that potential service interruptions, if any, are minimized. In addition, water conservation and other energy efficiency measures would be employed to the maximum extent practicable in accordance with federal (including West Point), state, and industry rules and standards. Under the Proposed Action Alternative, impacts to infrastructure would be minor.

### **No Action Alternative**

No impacts on utility service or infrastructure would occur under the No Action Alternative. Additional electrical, water, sewer, and telecommunications services would not be required and existing utility infrastructure on and in the vicinity of Howze Field would not be affected.

## **2.11 Land Use**

This section describes the current land use on and around Howze Field. Land uses referred to in the following section are shown in the aerial photograph of Howze Field in Figure 1-3.

### **2.12.1 Land Use Affected Environment**

West Point's Master Plan (USMA, 1999) establishes four general categories of land uses in support of the USMA's mission: Cadet, including academic, intramural athletic, billeting, and parading; Cadet Support, including intercollegiate athletic fields and other support facilities; Post Support, including housing, commercial, and service support; and Recreational, Industrial, and Field Training, including building and storage area support for industrial operations, field training areas, recreation areas, and open space. The land use zone map contained within the Master Plan identifies Howze Field lying within the Cadet Support Zone. General land uses on and in the near vicinity of Howze Field are described briefly below.

Howze Field is bounded on the north by the newly constructed Kimsey Athletic Center; on the east by a wooded area and Mills Road; on the south by Howze Place, the Truxton Lacrosse Center (Building 717), and Fenton Road; and on the west by Fenton Road and the Holleder Center. Howze Field is currently used for athletics, including outdoor practice fields for soccer, football, and lacrosse. The indoor Truxton Lacrosse Center is located at the southern end of the site. The majority of the land uses adjacent to Howze Field involve athletics and recreation as well, including the Kimsey Athletic Center (indoor football training, strength development, and athletic offices); Michie Stadium (football), located just to the north of the Kimsey facility; and Holleder Center (hockey and basketball). Lusk Reservoir, West Point's primary potable drinking water source, is located northwest of the site, east of Mills Road.

### 2.12.2 Land Use Environmental Consequences

Impacts to land uses were determined by the following criteria:

*Negligible* — The impact to land use would not be measurable or perceptible, proposed actions would be consistent with the surrounding land uses.

*Minor* — The impact to land use would be measurable or perceptible, but would be limited to a relatively small change in land use that is still consistent with the surrounding land uses.

*Moderate* — The impact to land use would be sufficient to cause a significant change in surrounding land uses. Actions may not be consistent with surrounding land uses, but these actions would be temporary.

*Major* — The impact to land use would be substantial. Surrounding land uses are expected to substantially change in the short- and long-term. The action would not be consistent with the surrounding land use.

#### **Proposed Action Alternative**

The proposed IATF would result in only minor land use impacts. The proposed facility would be in compliance with West Point's Master Plan, including uses specified for the Cadet Support land use category in which Howze Field is located and with the USMA Athletic Facilities Master Plan. The facility would be physically located in an area of West Point that is dedicated to both indoor and outdoor athletic uses, including Howze Field itself, Truxton Lacrosse Center, Kimsey Athletic Center, Michie Stadium, and Holleder Center. The basic use of Howze Field (i.e., athletic team practices and training) would remain the same. The primary change would be moving these uses from outdoors to indoors. Although the purpose and use of the area would remain the same, the proposed action would result in the loss of open field area. The proposed facility would generally replace approximately 72,200 square feet (1.66 acres) of open, outdoor use with covered, indoor use. Outdoor practice facilities would also remain on the site, but would be moved and reconfigured from their current location pending final design and location of the indoor athletic training facility.

The parking area proposed for the facility along the western portion of Howze Field would represent a new use for Howze Field, and would convert an open field use to paved, impervious surface. However, part of the proposed parking area is currently dedicated to outdoor lighting standards and is not the primary field area. In addition, other parking areas are located in the vicinity (e.g., a small parking area for the Truxton Lacrosse Center, larger lots for the Holleder Center and Herbert Alumni Center, etc.), and this use would not be inconsistent or incompatible with the training facility itself. While land use of the site would not change, the appearance of the site would change substantially. These changes are discussed in Section 2.6, Visual Resources.

#### **No Action Alternative**

Under the No Action Alternative, the IATF would not be constructed on Howze Field. No impacts to land use are expected under the No Action Alternative.

## 2.12 Coastal Zone

### 2.12.1 Coastal Zone Affected Environment

The Coastal Zone Management Act of 1972 (11 USC 1451 et seq), as amended through the Coastal Zone Protection Act of 1996, requires West Point to review its actions for impacts on coastal resources and for consistency with the New York State Coastal Management Plan (CMP). The CMP is guided by 44 development policies covering development, fish and wildlife, flooding and erosion hazards, general policy, public access, recreation, historic and scenic resources, agricultural lands, energy and ice management, and water and air resources. The West Point Main Post, which includes the proposed project area, is located within the Hudson River Coastal Management Zone. The designated Coastal Zone extends from the Hudson River, as far west as Route 9W.

### 2.12.2 Coastal Zone Environmental Consequences

Impacts were considered to occur to the coastal zone if it was determined by the New York State Department of State that the proposed actions are not consistent with the New York State CMP.

#### Proposed Action Alternative

Once the EA process is completed, West Point would provide a Federal Consistency Determination in accordance with the Coastal Zone Management Act to the New York Department of State in conjunction with the NEPA process and Section 106 consultation with the New York SHPO for the proposed project. Any mitigation specified by the Coastal Zone Management process would be incorporated into the project. Following this consultation and incorporation of mitigation, impacts to the coastal zone would be expected to be negligible.

#### No Action Alternative

There would be no impacts to the coastal zone under the No Action Alternative.

## 2.13 Environmental Justice and Protection of Children

This section describes issues related to environmental justice and protection of children as related to EO 12898 and EO 13045.

### 2.13.1 Environmental Justice and Protection of Children Affected Environment

#### *2.13.1.1 Environmental Justice*

On 11 February 1994, President Clinton issued EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. EO 12898 directs agencies to address environmental and human health conditions in minority and low-income communities so as to avoid the disproportionate placement of any adverse effects from federal policies and actions on these populations. The general purposes of this EO are as follows:

- To focus the attention of federal agencies on human health and environmental conditions in minority communities and low-income communities with the goal of achieving environmental justice.
- To foster nondiscrimination in federal programs that substantially affect human health or the environment.

- To give minority communities and low-income communities greater opportunities for public participation in, and access to, public information on matters relating to human health and the environment.

As defined by the “Environmental Justice Guidance Under NEPA” (CEQ, 1997), “minority populations” includes persons who identify themselves as Asian or Pacific Islander, Native American or Alaskan Native, black (not of Hispanic origin), or Hispanic. Race refers to Census respondents’ self-identification of racial background. Hispanic origin refers to ethnicity and language, not race, and may include persons whose heritage is Puerto Rican, Cuban, Mexican, and Central or South American.

A minority population exists where the percentage of minorities in an affected area either exceed 50 percent or is meaningfully greater than in the general population. Low-income populations are identified using the Census Bureau’s statistical poverty threshold, which is based on income and family size. The Census Bureau defines a “poverty area” as a census tract with 20 percent or more of its residents below the poverty threshold and an “extreme poverty area” as one with 40 percent or more below the poverty level.

Census Tract 136 is the location of West Point. Boarding Census Tracts include: 131, 138, and 139. Approximately 18 percent of the residents in Census Tract 136, the location of West Point, are classified as minorities according the CEQ’s Environmental Justice guidance. Tracts 131, 138, and 139 are comprised of 6 percent, 7 percent, and 6 percent minority residents, respectively. When considering income levels with respect to Environmental Justice, two percent of the residents in Tract 136 are below the poverty level. Tracts 131, 138, and 139 are comprised of 5 percent, 3 percent, and 4 percent of the population living below the poverty level, respectively.

#### *2.13.1.2 Protection of Children*

EO 13045, Protection of Children from Environmental Health and Safety Risk, requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children. This EO, dated 21 April 1997, further requires federal agencies to ensure that their policies, programs, activities, and standards address these disproportionate risks. EO 13045 defines environmental health and safety risks as “risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink and use for recreation, the soil we live on and the products we use or are exposed to).” There are 2,570 family members of West Point personnel living on-post, which includes children under the age of 18 (USMA, 2003b). According to the 2000 U.S. Census, there are 1,562 people living in Tract 136, the location of West Point, that are under the age of 18, comprising approximately 22 percent of the tract’s population (U.S. Census, 2000).

#### **2.13.2 Environmental Justice and Protection of Children Environmental Consequences**

Impacts to environmental justice and the protection of children were determined using the following criteria:

*Negligible* — The impact to environmental justice and the protection of children would not be measurable or perceptible.

*Minor* — The impact to socioeconomics would be measurable or perceptible, but would be limited to a relatively small change in socioeconomic factors. Standards set forth by the CEQ

Environmental Justice Guidance would not be exceeded and the Protection of Children EO would not be violated.

*Moderate* — The action would occur in an area that exceeds the standards set forth by the CEQ Environmental Justice Guidance or would impact the protection of children, but the impacts would be short-term in nature.

*Major* — The action would occur in an area that exceeds the standards set forth by the CEQ Environmental Justice Guidance or would impact the protection of children, and the action would occur on a permanent or otherwise long-term basis.

### **Proposed Action Alternative**

The implementation of the Proposed Action Alternative would not significantly impact the socioeconomic factors or create disproportionately high and adverse human health or environmental effects to minority or low-income populations at West Point or in the surrounding area. Both the percent of minority population and population below the poverty level are below the standards set forth in the CEQ Environmental Justice Guidance. Furthermore, the Proposed Action Alternative would not be expected to significantly impact environmental health and safety in a way that might disproportionately affect children at West Point or in the surrounding area. The restricted access at West Point would ensure that children living off post would not be able to access construction areas or any other activities that might pose a health and safety risk. Although there are residents under the age of 18 living on-post at West Point, all applicable local jurisdictional safety requirements during construction would be implemented to ensure the protection of the public, including children.

Impacts to environmental justice and the protection of children under the Proposed Action Alternative would be negligible.

### **No Action Alternative**

The No Action Alternative would not be expected to create significant impacts or changes to the socioeconomic characteristics, including environmental justice and the protection of children, at or surrounding West Point.

## **2.14 Cumulative Impacts**

A cumulative impact is defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). This section goes on to note “such impacts can result from individually minor but collectively significant actions taking place over a period of time.” Cumulative impacts associated with implementation of the proposed IATF would include any impacts from other “actions” that would be incremental to the impacts implementing the security upgrades. Such impacts would include additional traffic, air emissions, noise, addition of new visual elements at West Point, and soil disturbance for construction and operation of the proposed project.

The following projects are Reasonably Foreseeable Future Activities (RFFAs) expected to occur in the vicinity of the proposed IATF:

- **Randall Hall and Pedestrian Bridge** – The Randall Hall project is planned to be constructed in the current location of the existing stadium annex and would include a visitor’s locker room

and agility/stretching area on the first level, an auditorium on the second level, and sky box and athletic offices on the third level. The pedestrian bridge connecting Randall Hall to the Hollender Sports Center would be built on the third level, and is currently under construction.

- **Howze Field Turf Upgrade** – West Point is currently in the design process to upgrade the turf at Howze Field. This turf upgrade includes the installation of perforated pipe under the field to direct water runoff to a newly added catch basin drainage pipe.
- **Howze Field Light Replacement**– Outdoor lights will be replaced at Howze Field as some of the current ones are in poor condition or are not operating.
- **Fiber Optics Upgrade** – This project involves the installation of an upgraded fiber optics upgrade throughout the main cantonment area, and running to Camp Buckner. The majority of this project occurs within the West Point NHLD boundaries. This project involves the following components: installation of fiber optics upgrades into 40 buildings (nearly all historic properties within the West Point NHLD), 43,000 lineal feet of new ground disturbance (trenching), 65,000 square feet of cut and resurface of existing asphalt, 700 square feet of cut and resurface of existing concrete, 1,600 square feet of cut and resurface of existing cobblestone, 121 total road cuts, and construction of 31 new manholes.

In addition to the RFFAs mentioned above, the proposed IATF would be adding to impacts from recent development in the area. Projects which have been implemented in the past 10 years include Michie Stadium Lighting (2001), Tate Rink Dehumidification (2001), Lichtenberg Tennis Center (2001), Stony Lonesome Road Bypass (2002), gas line at Lusk Reservoir (2002), Gross Olympic Center (2002), Hoffman Press Box (2002), the Arvin Cadet Physical Development Center (200-2005), Michie Stadium Seismic Upgrade (2003-2005), and the Kimsey Athletic Center construction (2004). On-going projects at West Point with the potential for cumulative impacts include installation of lighting at various locations.

### **Proposed Action Alternative**

Should the proposed construction of the IATF under this alternative occur simultaneously with other RFFAs, cumulative impacts from air quality, noise, water resources, soils, cultural resources and viewsheds, and traffic are possible. Specific projects that have the potential to add cumulative effects to this alternative are stated above.

Construction vehicles to implement these projects would occur in the same area, potentially with overlapping timeframes, as the IATF construction. These vehicles would not only have cumulative impacts to air emissions, but would also impact traffic and transportation at West Point, as staff and visitor vehicle circulation would be impeded to some extent by the presence of the construction vehicles and construction crew vehicles. With numerous large construction projects occurring simultaneously in areas where traffic is already constrained, such as the intersection of Stony Lonesome Road and Washington Road by the Catholic Chapel (Building 669) and the intersection of five roads in the old PX/Cemetery/Washington Road vicinity, these potential impacts would be of even greater concern. West Point would minimize these potential impacts by coordinating construction activities with the Directorate of Public Works (DPW) to minimize traffic congestion, ensuring that community members are kept apprised of any potential traffic issues and construction projects by DPW, and continuously maintaining traffic at all West Point roads and gates during all construction projects.

Additional cumulative impacts to water quality, soils, noise, and air quality would be expected to occur if these projects occur in the same area at the same time. In combination with other RFFAs, the proposed action would contribute to an increase in impervious surfaces post-wide, which would increase stormwater runoff and contribute to increased erosion and sedimentation in post waters. Coordination should occur and BMPs during construction, as described in the Water Resources Section, would be implemented to ensure that cumulative impacts from other construction projects occurring in the same area during the same time period are managed, if required.

RFFAs include many new construction projects, including other athletic and recreational facilities. As these projects are planned and constructed, the historic nature and viewsheds of West Point should be taken into consideration. If not taken into consideration, the potential exists for the degradation of historic resources and viewsheds. By ensuring that all projects contain architectural elements consistent with the existing architecture at West Point and by managing the lighting at these facilities to minimize impacts to viewsheds, any potential cumulative impacts would be minor.

There are many recent, past, and currently occurring projects in the area of the proposed IATF. Although cumulative impacts are possible, the incorporation of BMPs and the special consideration of the cultural resource and viewshed needs during design and construction would be expected to limit the overall cumulative effects of the proposed action to the surrounding environment.

### **No Action Alternative**

Implementation of the No Action Alternative would avoid new impacts that could interact with the impacts of other past, present, or reasonably foreseeable future actions. Therefore, there would be no cumulative impacts associated with the No Action Alternative.

## **2.15 Unavoidable Adverse Impacts**

Unavoidable impacts are those impacts that West Point would experience if the proposed IATF were constructed and operated under the Proposed Action Alternative. These impacts would include effects to soils, water quality, and cultural and visual resources. The BMPs discussed below would be employed to minimize these and other potential adverse impacts.

Activities undertaken by West Point to construct the IATF would include appropriate BMPs prescribed in applicable regulations, where applicable. These would include:

- Construction operations utilization of Erosion and Sediment Control Law BMPs, as described in the EA, to prevent erosion and sedimentation from harming nearby water bodies.
- Implementing stormwater management measures to control runoff from the increase in impervious surfaces during the operational phase.
- Coordination with the New York SHPO throughout the project to ensure that any determination of Adverse Effect are properly mitigated.
- Implementing design features that are consistent with the surrounding architectural character of West Point as well as selecting color palettes, building textures, and building materials that would reduce the visual presence of the building

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## 3.0 SUMMARY OF CONCLUSIONS

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This section provides an overview of the potential environmental consequences of the proposed action and their significance. The primary issues related to the construction and operation of the IATF are: 1) ground disturbance of over one acre (0.40 hectares) would occur at the proposed project site; 2) the site is located in the West Point NHL, and there are historic structures adjacent to the site; and 3) the new facility would be visible in important viewsheds.

The proposed project site is located in the West Point NHL. Any construction at this site would need to be sensitive to the surrounding historic structures, such as Michie Stadium, all new construction would be architecturally compatible with extant architecture, and lighting at the new facility would be managed to minimize impacts to the viewshed. Coordination with the New York SHPO would be conducted during the design, and would continue throughout the project.

Potential impacts range from negligible to moderate for the Proposed Action Alternative. Mitigation measures that would be employed to address impacts from implementation of the Proposed Action Alternative include:

- (1) Erosion and sedimentation controls would be used in accordance with West Point and NYSDEC standards and specifications. West Point would require its contractor to prepare and implement an Erosion Control Plan in compliance with NYSDEC's current stormwater management regulations, as this project includes over one acre (0.40 hectares) of disturbance, and this plan would be approved by West Point before initiating construction activities.
- (2) Since the project area includes over one acre (0.40 hectares) of disturbance, West Point would obtain a NY DEC Construction Activity State Pollution Discharge Elimination System permit.
- (3) BMPs would be implemented to mitigate the effects of any increase in stormwater runoff and would be consistent with the New York State Stormwater Design Manual.
- (4) The impacts of construction and operation on visual and cultural resources (including historic structures and on-site and off-site viewshed areas) would be minimized by ensuring that the design of the facility is sensitive to the surrounding historic structures and by selecting color palettes, building textures, and building materials that would reduce the visual presence of the building.
- (5) Construction activities could potentially require the temporary closure of a lane of traffic on Howze Place.

The implementation of the IATF facility, as proposed, is not expected to result in significant adverse impacts on the environment; therefore, an environmental impact statement is not required. Table 3-1 provides a brief comparison of the environmental consequences (*i.e.*, impacts) associated with the Proposed Action Alternative and No Action Alternative.

**TABLE 3-1: SUMMARY OF IMPACTS**

Resource Areas	Proposed Action Alternative	No Action Alternative
Water Resources	Creates approximately 2.0 acres (0.81 hectares) of impervious surfaces. SPDES permit required. Minor impacts from runoff with BMPs. Negligible impacts to floodplains, groundwater, and wetlands.	No impacts.
Geology, Topography, Soils	Minor short-term impacts to microtopography. Increase in impervious surfaces and stormwater runoff and erosion. BMPs would be implemented and impacts would be minor. Erosion and sediment control plan required.	No impacts.
Air Quality	Project emissions would be below the <i>de minimus</i> level. Impacts would be short-term and minor during construction. No operational emissions would occur.	No impacts.
Biological Resources	Proposed project area is currently disturbed and used for athletic fields, any existing habitat is marginal and vegetation is maintained lawn. Impacts to wildlife and vegetation would be negligible. There would be no effect to threatened and endangered species.	No impacts.
Cultural Resources	Prior to construction, Section 106 consultation with the New York State Historic Preservation Office would be completed. If there is a determination of Adverse Effect, appropriate mitigation measures would be taken so that impacts to cultural resources would be minor.	No impacts.
Visual Resources	Impacts to visual resources would range from minor to moderate for all views except that from the Mills Road corridor. The proposed IATF would have a major impact to the view from the Mills Road corridor, but this impact is not expected to reach the level of significance. Potential impacts would be mitigated through building placement and selection of the color palette, building textures, and building materials.	No impacts.
Health and Human Safety	Impacts from materials and wastes would be negligible. Anti-terrorism/force protection requirements would be incorporated into the	No impacts.

	design and no impacts for anti-terrorism/force protection would occur.	
Noise	Short-term minor noise impacts from construction activities would occur. All applicable regulations would be followed and construction activities scheduled to create the least noise disturbance.	No impacts.
Transportation	Impacts to transportation as a result of the proposed construction would be short-term and minor. Impacts could include a temporary lane closure along Howze Place during construction. Long-term impacts would be minor and only occur when special events are held at the facility.	No impacts.
Utilities and Infrastructure	Impacts to infrastructure during construction would be minor. Orientation of the facility would avoid many underground utilities and additional precautions would be taken to ensure that the raw water line under Howze Field would not be disturbed. Supply and infrastructure would be adequate to support facility requirements with only minor impacts.	No impacts.
Land Use	Proposed use is in compliance with West Point's master plan and located in an area already dedicated to athletic and recreational uses. Impacts to land use would be minor. Land current in open space would be converted to indoor athletic uses.	No impacts.
Coastal Zone	Once the EA process is completed, West Point would provide a Federal Consistency Determination to the New York Department of State in conjunction with the NEPA process, and section 106 consultation.	No impacts.
Environmental Justice and the Protection of Children	There would not be disproportionately high and adverse human health or environmental effects to minority or low-income populations.	No impacts.

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## 8.0 ACRONYMS

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ACHP	Advisory Council on Historic Preservation
ACM	Asbestos Containing Materials
AMSL	Above Mean Sea Level
ATFP	Anti-terrorism/Force Protection
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CMP	Coastal Management Program
CO	Carbon Monoxide
dB	Decibel
dba	A-weighted decibel
DPW	Directorate of Public Works
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
FEMA	Federal Energy Management Agency
FNSI	Finding of No Significant Impact
IATF	Indoor Athletic Training Facility
kgpy	kilograms per year
LBP	Lead Based Paint
NAAQS	National Ambient Air Quality Standards
NAMS	National Air Monitoring Stations

NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHLD	National Historic Landmark District
NPDES	National Pollution Discharge Elimination System
NO <sub>x</sub>	Nitrogen Oxides
NYNHP	New York National Heritage Program
NYS DEC	New York State Department of Environmental Conservation
03	Ozone
ODIA	Office of the Directorate of Intercollegiate Athletics
Pb	Lead
PM <sub>10</sub>	Particulate Matter <10 microns in diameter
PM <sub>2.5</sub>	Particulate Matter <2.5 microns diameter
ppt	Parts Per Thousand
RFFA	Reasonably Foreseeable Future Action
SHPO	State Historic Preservation Officer
SLAMS	State and Local Air Monitoring Stations
SO <sub>2</sub>	Sulfur Dioxide
SPDES	State Pollution Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
TPY	tons per year
UFC	United Facility Criteria
USACE	United States Army Corps of Engineers
USMA	United States Military Academy

VOC            Volatile Organic Compounds

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## **APPENDIX A: ALTERNATIVE FACILITY EXAMPLES**

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**Figure 1: Representative Fabric Structure - Existing Baseball Batting Cage**



**Figure 2: Representative Air Support Bubble Structure**



Figure 3: Howze Field- East/West Configuration



**Figure 4: Howze Place (Underground Water Tank Site)**

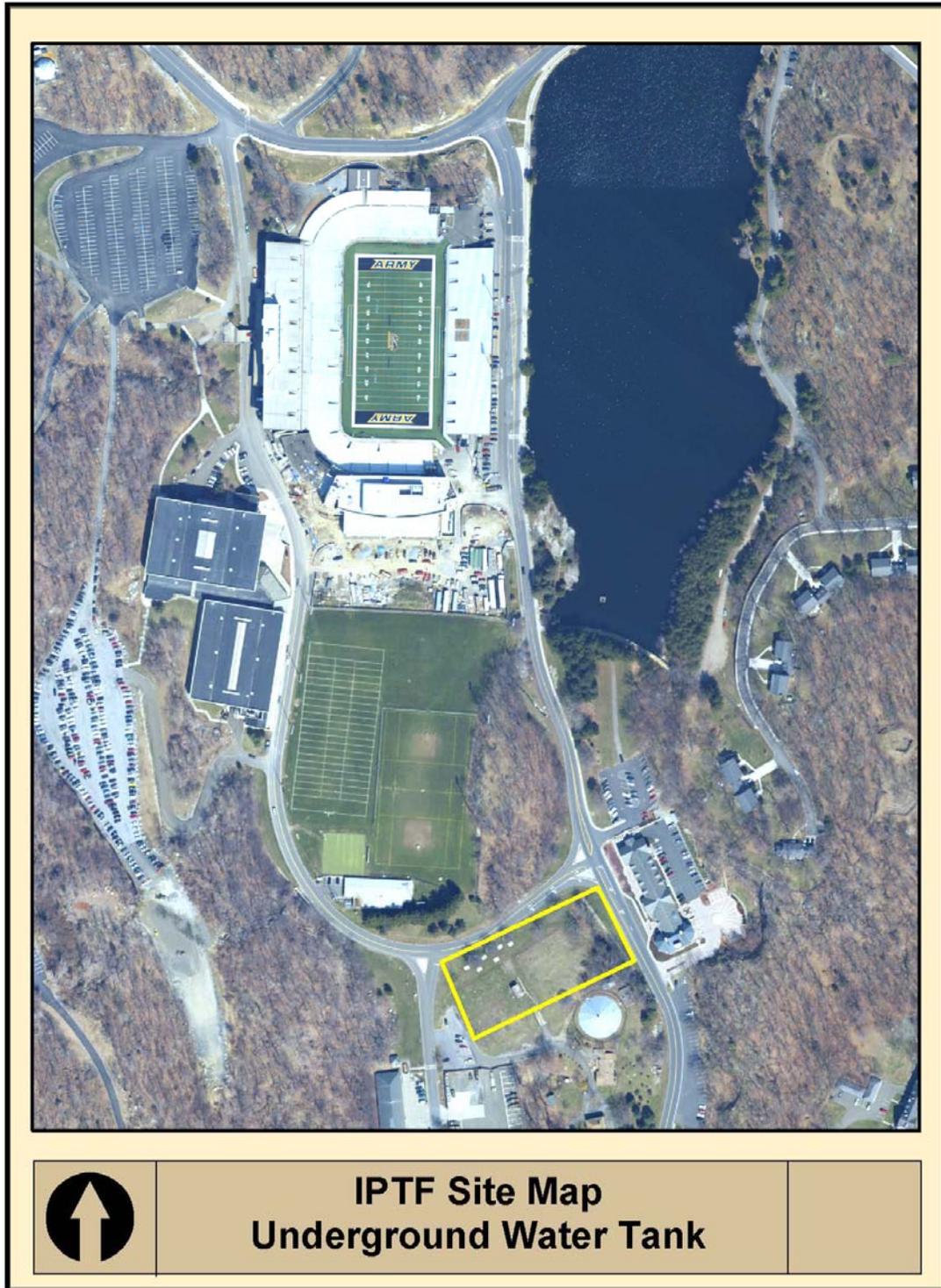
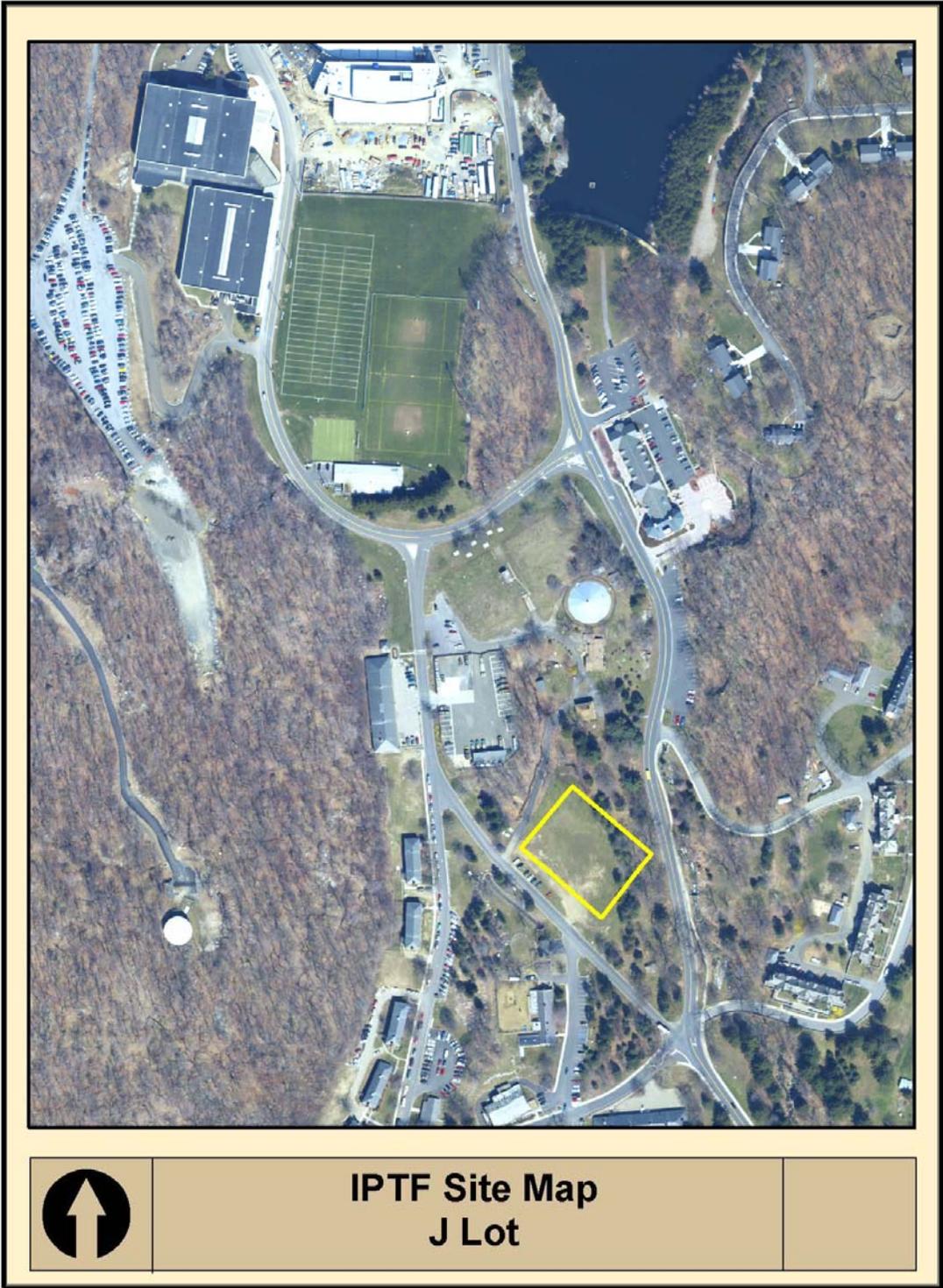


Figure 5: J Lot (Fenton Road) Site



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## **APPENDIX B: AIR QUALITY APPLICABILITY ANALYSIS**

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## AIR QUALITY APPLICABILITY ANALYSIS

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This air quality applicability analysis was conducted to identify potential increases or decreases in criteria air pollutant emissions associated with the proposed construction of the Indoor Athletic Training Facility (IATF) at the U.S. Army Garrison at West Point (West Point), New York. Since the project will occur within a U.S. EPA designated ozone non-attainment area, it is subject to the federal conformity requirements. The purpose of the analysis is to further determine the applicability of the Federal General Conformity Rule established in 40 CFR, Part 93 entitled: *Determining Conformity of Federal Actions to State or Federal Implementation Plans* to the action.

The federal conformity rules were established to ensure that federal activities do not hamper local efforts to control air pollution. In particular, Section 176(c) of the Clean Air Act (CAA) prohibits federal agencies, departments or instrumentalities from engaging in, supporting, licensing, or approving any action, in an area that is in non-attainment of the National Ambient Air Quality Standards (NAAQS), which does not conform to an approved state or federal implementation plan. Therefore, the agency must determine whether or not the project would interfere with the clean air goals in the State Implementation Plan (SIP).

### 1.0 Project Description

West Point proposes to construct an IATF to support the multiple athletic programs at West Point. An IATF with a full field would include a wall-to-wall, in-fill artificial turf field with inlaid markings for football. This configuration would allow for a full-sized (380 feet [116 meters] by 190 feet [58 meters]) football field with a 10-foot (3-meter) buffer at each end, and 15 feet (5 meters) along each sideline, with its southern elevation parallel to Truxton Lacrosse Center and 50 feet (15 meters) to the north of Truxton Lacrosse Center. The eastern elevation of the building would be aligned with the eastern elevation of Truxton Lacrosse Center. This alternative would include an attached storage/office space totaling 2,500 square feet (232 square meters) and an attached indoor conditioning area 5,400 square feet (502 square meters). Both of these additional areas would be single story and will have peaked roofs attached to the sides of the main facility. Total development under this alternative would cover approximately 85,000 square feet (7,897 square meters).

The field would be wide enough for, and would also be marked out, in different colors, for, soccer and lacrosse. The men's baseball and women's softball teams would also be able to use the facility (without appropriate markings). In addition, the facility could also be used for non-athletic events such as trade shows or select community events. Parking for such events could be accommodated using the existing A, B, and F Lots, and other lots that are currently used for football games or other large events.

Exterior finishes would be designed to be compatible with surrounding facilities in terms of color, texture, and materials. The ceiling height of the facility is yet to be determined but would be high enough to practice football and soccer kicks. For purposes of analysis, the interior height at the center of the building was assumed to be 65 feet [20 meters], with a 75-foot (23-meter) peak exterior elevation), with sufficient height along the sidelines to erect film towers. It was also assumed that the side height would be 35 feet (11 meters) at the building interior with 45-foot (14-meter) exterior peak side height. It will have vehicular and personnel entrances, and will include sports-compatible lighting. The facility will use electric lighting and would be heated using natural gas, propane, or electric supply. A ventilation/air handling system would be incorporated to remove air and prevent heat build-up on hot days. Roof and perimeter ground drainage systems would be designed to handle rain and snowmelt runoff.

The preferred site for the IATF is Howze Field, an outdoor athletic field located immediately south of Michie Stadium and the newly constructed Kimsey Athletic Center. This 2.3-acre (0.93-hectare) site is

bordered by Kimsey Athletic Center on the north, a wooded area and Mills Road on the east, the Truxton Lacrosse Center and Howze Place/Fenton Place on the south, and Fenton Place and Holleder Center (venues for basketball and hockey) on the west. Howze Field is currently used by the football and lacrosse teams for outdoor practice. The field is flat, easily accessible, and located adjacent to existing West Point athletic facilities. The facility would be aligned north-south on the proposed site.

The preferred building type at this site would be a pre-engineered metal building with pre-cast sides and a metal roof. Construction of a pre-engineered, pre-cast metal structure on the Howze Field site would be expected to take approximately 6 months (excluding work on the interior field). During construction of the IATF, it is anticipated that teams that would normally use Howze or Blaik Fields for practice would be able to use some parts of the field that are not under construction.

## 2.0 Meteorology/Climate

Temperature is a parameter used in calculations of emissions for air quality applicability. Climate at West Point can be characterized as a humid, continental climate with a mean high temperature of 86°F (30°C) in July and a mean low temperature of 27°F (-2.7°C) in January. Summers are warm with periods of high humidity and winters are cold, with extended periods of snow cover and are influenced by the cold Hudson Bay air masses that are brought into the area. The climate at West Point is also influenced by an air mass that flows from the North Atlantic Ocean bringing cool, cloudy, and damp weather to the region (USMA, 1998).

## 3.0 Current Ambient Air Quality Conditions

The EPA has classified the New York – North New Jersey – Long Island area, including the area of the proposed project (Orange County, New York), as in severe non-attainment for the criteria pollutant ozone.

## 4.0 Air Quality Regulatory Requirements

The EPA defines ambient air in 40 CFR Part 50 as “that portion of the atmosphere, external to buildings, to which the general public has access.” In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 Clean Air Act Amendments (CAAA), the EPA has promulgated NAAQS. The NAAQS were enacted for the protection of the public health and welfare, allowing for an adequate margin of safety. To date, the EPA has issued NAAQS for six criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particles with a diameter less than or equal to a nominal 10 micrometers (PM<sub>10</sub>), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead (Pb). USEPA promulgated a standard for fine particulates (PM<sub>2.5</sub>) in April 2005; however, PM<sub>2.5</sub> *de minimis* thresholds are not yet finalized and federal actions with conformity determinations prior to April 2006 will be grandfathered from these requirements. Areas that do not meet NAAQS are called non-attainment areas.

The EPA classified the New York – North New Jersey – Long Island area, including the project area, as in severe non-attainment for ozone. The NAAQS for ozone is presented in Table 1.

**Table 1. Ambient Air Quality Standards For Ozone**

Pollutant	Federal Standard	New York Standard
Ozone (O <sub>3</sub> ) <sup>1</sup>		
1-Hour Average	0.12 ppm	0.12 ppm
8-Hour Average	0.08 ppm	0.08 ppm

<sup>1</sup> Federal primary and secondary standards for this pollutant are identical.

Source: EPA 2003, NYS DEC, *nd*.

To regulate the emission levels resulting from a project, federal actions located in non-attainment areas are required to demonstrate compliance with the general conformity guidelines established in 40 CFR Part 93 *Determining Conformity of Federal Actions to State or Federal Implementation Plans* (the Rule). The project area is located within a severe ozone non-attainment area; therefore, a General Conformity Rule applicability analysis is warranted.

Section 93.153 of the Rule sets applicability requirements for projects subject to the Rule through establishment of *de minimis* levels for annual criteria pollutant emissions. These *de minimis* levels are set according to criteria pollutant non-attainment area designations. Projects below the *de minimis* levels are not subject to the Rule. Those at or above the levels are required to perform a conformity analysis as established in the Rule. The *de minimis* levels apply to direct and indirect sources of emissions that can occur during the construction and operational phases of the action.

Direct emissions are those caused by, or initiated by, the federal action that occur at the same time and place as the action. Indirect emissions are those caused by the action, but which occur later in time and/or at a distance removed from the action itself, yet are reasonably foreseeable and the federal agency responsible for the action can maintain control as part of the actions program responsibility. To determine the applicability of the Rule to this action, emissions must be estimated for the ozone precursor pollutants nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC). Annual emissions for these compounds were estimated for the project to determine if it would be below or above the *de minimis* levels established in the Rule. The *de minimis* for severe ozone areas is 25 tons per year (tpy) (22,680 kilograms per year (kgpy)) for both NO<sub>x</sub> and VOC.

In addition to evaluation of air emissions against *de minimis* levels, emissions are also evaluated for regional significance. A federal action that does not exceed the threshold emission rates of criteria pollutants may still be subject to a general conformity determination if the direct and indirect emissions from the action exceed ten percent of the total emissions inventory for a particular criteria pollutant in a non-attainment or maintenance area. If the emissions exceed this ten percent threshold, the federal action is considered to be a “regionally significant” activity, and thus, the general conformity rules apply.

## **5.0 Conformity Applicability Analysis**

This project construction- and operations-related General Conformity analysis needs to be performed for the proposed construction of the IATF at West Point. This conformity analysis and air emissions evaluation will follow the criteria regulated in *40 CFR Parts 6, 51, and 93, Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule* (November 30, 1993).

### **5.1 Construction Phase Emissions**

Construction emissions would result from the operation of heavy equipment, the commuter vehicle traffic from the construction crew, and the painting of parking spaces. The project would utilize a mix of heavy equipment for construction, mainly associated with preparing the site for the building and utility relocation.

#### **5.1.1 Emissions from Heavy Equipment**

Annual emissions were calculated for various types of diesel construction vehicles using EPA’s document *Exhaust Emission Factors for Nonroad Engine Modeling—Compression-Ignition* (Report No. NR-009A, 1998). Truck emission levels were calculated using EPA’s *MOBILE6* model for an average temperature of 56° F (13.3° C). The total annual emissions, in tons per year, were determined for each vehicle based on the number of vehicles used and the number of operating hours per year. It was assumed that construction activities for the building would last approximately 6 months (120 workdays) and utility relocation activities would last approximately 3 months (60 workdays). Construction personnel were

assumed to commute an average of 60 miles (97 km) per day over the 18 months. Emissions factors used for construction vehicles, under all alternatives, are shown in Table 2.

**Table 2. Emissions Factors for Construction Vehicles**

Construction Vehicle Type	Emissions Factors lbs/hr-vehicle (kg/hr-vehicle)	
	NO <sub>x</sub>	VOC
<b>Construction of Building</b>		
Grader	2.43 (1.10)	0.149 (0.68)
Concrete Truck	3.04 (1.38)	0.186 (0.84)
Curb & Gutter Former	1.98 (0.90)	0.121 (0.55)
Paver	1.98 (0.90)	0.121 (0.55)
Vibratory Roller	2.21 (1.00)	0.135 (0.61)
Pneumatic Tire Roller	1.29 (0.59)	0.138 (0.63)
Steel Wheel Roller	1.29 (0.59)	0.138 (0.63)
Concrete Pumper Truck	3.04 (1.38)	0.186 (0.84)
Backhoe	1.52 (0.69)	0.09 (0.40)
Crane	1.52 (0.69)	0.09 (0.40)
Pick-up Truck	1.30 (0.002)*	1.78 (0.002)*
Delivery Truck (heavy duty)	11.94 (0.016)*	0.56 (0.001)*
<b>Trenching Activities</b>		
Backhoe	1.52 (0.69)	0.09 (0.40)
Dump Truck	11.94 (0.016)*	0.56 (0.001)*

\*units are in grams/mile/vehicle (lb/km/vehicle)

For this project, it was assumed that pick-up trucks, delivery trucks, and dump trucks would be utilized. It was assumed that pick-up trucks would travel 20 miles (32 km) per trip, making three trips a day, for a total of 60 miles (97 km) a day traveled by pick-up truck. Delivery trucks and dump trucks would both travel 30 miles (48 km) per trip, with delivery trucks making two trips a day when used during trenching activities and dump trucks making four trips a day for a total of 60 miles (97 km) and 120 miles (193 km) traveled, respectively.

#### 5.1.1.1 Calculations for Construction Emissions

Using the emissions factors in Table 2, annual construction emissions were calculated for the proposed construction of the IATF. Using the assumptions described above, the annual emissions in tons per year of NO<sub>x</sub> and VOC for construction emissions were calculated for each vehicle type using the appropriate equations displayed in Table 3.

Table 4 summarizes the total annual emissions for the heavy equipment used during construction of the IATF, based upon hours of usage, for each alternative.

**Table 3: Equations for Construction Emissions Calculations**

Emission Source	Equation	Sample Calculation
<b>Heavy Equipment Emissions, On-Site Activities</b>	(# of vehicle type) (Emission factor) (Total # of days in operation) (percent usage) (hours/day) (1 ton/2000 lbs) = TPY of air emissions	(1 grader) (2,434 lbs/hr/vehicle) (20 days in operation) (100% usage) (8 hours/day) (1 ton/2000 lbs) = <b>0.195 TPY of NO<sub>x</sub> emissions (177 kgpy)</b>
<b>Construction Crew, Commuting</b>	(# of vehicles) (#miles/day) (#days) (emissions factor grams/mile) (1 lb/453.59 grams) (1ton/2000 lb) = TPY of Vehicle Emissions	(40 vehicles) (60 miles/day) (120 days) (0.946 grams/mile/vehicle) (1 lb/453.59 grams) (1ton/2000 lb) = <b>0.30 TPY (272 kgpy) NO<sub>x</sub> of Vehicle Emissions</b>

**Table 4. Total Emissions from On-Site Construction Activity –Proposed Action Alternative**

Construction Vehicle Type	Number	Length of Operation (days)	Total Annual Emissions –TPY (kgpy)	
			NO <sub>x</sub>	VOC
Grader	1	20	0.195 (177)	0.012 (11)
Backhoe	1	80	0.045 (41)	0.030 (27)
Concrete Truck	1	20	0.243 (220)	0.015 (14)
Curb and Gutter Former	1	20	0.158 (143)	0.010 (9)
Paver	1	20	0.158 (143)	0.010 (9)
Vibratory Roller	1	20	0.176 (160)	0.011 (10)
Pneumatic Tire Roller	1	20	0.103 (93)	0.011 (10)
Steel Wheel Roller	1	20	0.103 (93)	0.011 (10)
Pick-up Truck	1	120	0.010 (9)	0.014 (13)
Delivery Truck	1	100	0.079 (72)	0.004 (4)
Dump Truck	1	60	0.095 (86)	0.004 (4)
Crane	1	120	0.730 (662)	0.045 (41)
<b>Total Emissions</b>			<b>2.097 (1,902)</b>	<b>0.126 (114)</b>

### 5.1.2 Emissions from Construction Crew Workers

Emissions from construction personnel traffic were calculated using the EPA's *MOBILE6*. It is assumed that the construction crew would consist of approximately 40 workers over a 6 month (120 workdays) time period. For a conservative analysis, it was assumed each person will drive to the site. It is assumed that the average number of workers (40) will drive approximately 60 miles each day. Based on *MOBILE6*, the emission factor for NO<sub>x</sub> is 0.95 grams/mile/vehicle (0.001 pounds/kilometer/vehicle) and VOC is 1.48 grams/mile/vehicle (0.002 pounds/kilometer/vehicle) for the average fleet in Orange County, New York. It was found that the total emissions associated with the commuter vehicles from the construction crew are approximately 0.30 tpy (272 kgpy) of NO<sub>x</sub> and 0.470 tpy (426 kgpy) of VOC.

### 5.1.3 Emissions from Painting Activities

It was assumed that the building would be prefabricated, and no interior painting would be required. Emissions from painting parking spaces were based on four-inch (0.10 meter) wide stripes. It was assumed that the average parking space is 9 feet (2.7 meters) wide by 19 feet (5.8 meters) long and every two parking spaces share a common line. Approximately 20 square feet (1.86 square meters) would be painted for every two parking spaces. For parking spaces, it was assumed that alkyd paint would be used with a VOC content of three pounds (1.36 kg) per gallon and one gallon of paint covers approximately 200 square feet (18.58 square meters). One coat of paint would be applied to the parking surfaces. Based

on the construction of 10 parking spaces at the facility, the amount of area to be painted, gallons required, and approximate VOC emission for painting parking spaces would be 0.001 tpy (.907 kgpy).

#### 5.1.4 Summary of Construction Emissions

After emissions analysis was performed for all aspects of construction, the totals were added to determine the combined construction emissions. Table 5 displays a summary of the findings compared to the *de minimis* values for each alternative.

**Table 5. Total Emissions from Construction Related Activities –Proposed Action Alternative**

Construction Activity	Total Annual Emissions –TPY (kgpy)		<i>De minimis</i> values –TPY (kgpy)	
	NO <sub>x</sub>	VOC	NO <sub>x</sub>	VOC
Use of Heavy Equipment (on –site construction)	2.097 (1,902)	0.126 (114)	25 (22,680)	25 (22,680)
Construction Crew Workers	0.30 (272)	0.470 (426)		
Painting	NA	0.001 (.907)		
<b>Total Emissions from Construction</b>	<b>2.398 (2,175)</b>	<b>0.597 (542)</b>		

## 5.2 Operational Emissions

It is assumed that the IATF facility would use natural gas for space and water heating. Since the project is in the early stages of design, the type of system to be used has not yet been determined. For purposes of this analysis, the boiler requirements for a similar size facility were used to estimate the potential operational emissions from the IATF. The IATF would be located in an area of existing athletic uses and would not be expected to create an increase in traffic entering the base, therefore operational emissions would not include an increase in commuter traffic.

Using EPA's *AP-42 Fifth Edition, Compilation of Air Pollutant Emission Factors Volume I, Chapter 1: Stationary Sources, Supplement D (1998)* the emissions for both NO<sub>x</sub> and VOC were determined for the facility boiler. It was found that the NO<sub>x</sub> emissions from a small uncontrolled boiler was approximately 100 lb/10<sup>6</sup> standard cubic feet of natural gas and for VOCs the emissions rate was found to be 5.5 lb/10<sup>6</sup> standard cubic feet of natural gas. It was assumed that the generator would need 2 x 10<sup>6</sup> standard cubic feet of natural gas each year. Therefore, the emissions of NO<sub>x</sub> and VOC are 0.100 tpy (91 kgpy) and 0.0055 tpy (50 kgpy) respectively.

## 5.3 Regional Significance

In addition to *de minimis* values, actions are also evaluated for regional significance. An action is considered to be regionally significant if the annual increase in emissions would make up 10 percent or more of the available regional emission inventory. The *New York Metropolitan Area State Implementation Plan* sets forth 2005 daily emission targets for non-road construction vehicles of 18.36 tons per day (16,656 kilograms per day) of VOC and 100.26 tons per day (90,954 kilograms per day) of NO<sub>x</sub> for the New York Metropolitan ozone non-attainment area where West Point is located (Escarpeta, pers. comm., 20 November 2003). The increase in annual emissions from the construction activities would not make up ten percent or more of the available regional emission target for VOC or NO<sub>x</sub> and would not be regionally significant.

## 6.0 Overall Results

The table below summarizes the total emissions associated with the construction of the IATF at West Point. Construction related emissions would be temporary and only occur during the 6 months construction period for the facility. Operational emissions associated with the operation of boilers for heating the facility would be long-term and occur throughout the life of the facility. When compared to the *de minimis* values for this non-attainment area of 25 tpy (22,680 kgpy) each for NO<sub>x</sub> and VOC, the emissions associated with implementation of the proposed IATF fall below the *de minimis* values for all alternatives evaluated. As a result the proposed IATF project, under the Proposed Action Alternative, is not subject to the General Conformity Rule requirements.

**Table 6. Total Emissions from the Proposed IATF**

Action	Total Annual Emissions –TPY (kgpy)		<i>De minimis</i> values –TPY (kgpy)	
	NO <sub>x</sub>	VOC	NO <sub>x</sub>	VOC
Use of Heavy Equipment (on –site construction)	2.097 (1,902)	0.126 (114)	<b>25 (22,680)</b>	<b>25 (22,680)</b>
Construction Crew Workers	0.30 (272)	0.470 (426)		
Painting	NA	0.001 (.907)		
Operational Emissions - Boiler	0.100 (91)	0.0055 (50)		
<b>Total</b>	<b>2.529 (2,294)</b>	<b>0.603 (547)</b>		

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### Appendix References

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- U.S. Environmental Protection Agency. *Designation of Areas for Air Quality Planning Purposes, Subpart C: Section 107 Attainment Status Designations*. 40 CFR Part 81.
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## **APPENDIX C: AGENCY COORDINATION**

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MEMORANDUM FOR Mr. Alan Bjornsen, NEPA Coordinator

SUBJECT: Review of Final Environmental Assessment (EA) for the Foley Athletic Center Indoor Training Facility

1. This memorandum responds to your request for a legal review of the Final EA. I have no legal objection to the documents. The NEPA analysis was completed in accordance with 32 CFR 651.
2. If you have any questions about this opinion, please call me at extension 6792.

FOR THE STAFF JUDGE ADVOCATE:

A handwritten signature in black ink, appearing to read 'LZR', with a long horizontal flourish extending to the right.

LAURA LIZZI ROMAN  
CPT, JA  
Environmental Law Attorney