DRAFT

ENVIRONMENTAL ASSESSMENT FOR THE TARGET HILL WASTEWATER TREATMENT PLANT Contract No. W912DS-16-C-003

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

US Army Corps of Engineers

May 2017

ATKINS | O'BRIEN & GERE
JOINT VENTURE

DRAFT

ENVIRONMENTAL ASSESSMENT

FOR THE

TARGET HILL WASTEWATER TREATMENT PLANT PROJECT

UNITED STATES ARMY GARRISON WEST POINT

WEST POINT, ORANGE COUNTY, NEW YORK

GSA Contract No.: W912DS-16-C-003

Prepared for: United States Military Academy
Directorate of Public Works
Building 667, Ruger Road
West Point, New York 10996

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Syracuse, New York 13221

May 2017

DRAFT FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT
FOR THE
TARGET HILL WASTEWATER TREATMENT PLANT PROJECT
UNITED STATES ARMY GARRISON – WEST POINT
WEST POINT, ORANGE COUNTY, NEW YORK

I. NAME OF ACTION

The United States Army Garrison at West Point, NY (USAG-WP) proposes to replace its existing Target Hill Wastewater Treatment Plant (WWTP) with the objective of increasing treatment capacity from the current 2.06 million gallons per day (MGD) to 3.5 MGD maximum-month plant rating (2.8 MGD average daily flow) to meet current and projected future needs (the Proposed Action). The treatment of wastewater flow from West Point operations will not be disrupted during this project. Specifically, the existing WWTP would continue to be operated during the construction phase. Following successful start-up of the new WWTP, the existing WWTP would be demolished. Treated effluent from the new plant will be discharged to the Hudson River via a new outfall, which will replace the existing New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES)-permitted outfall; it is anticipated that existing effluent limits will be maintained.

II. DESCRIPTION OF ACTION

Proposed Action: The new WWTP will be located adjacent to the existing facility (Figure 2 of Draft Environmental Assessment [EA]); operations at the existing facility will be maintained through the construction phase, then demolished after the successful start-up of the new facility. The proposed area associated with the new WWTP is currently utilized as athletic fields. As part of the Proposed Action, the remaining existing fields to the north of the new WWTP will be reconfigured to maximize their continued use. The area which houses the existing WWTP and parking area to the south would be converted to green space for recreational use. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields.

The new facility will be designed to a minimum life of 50 years (structures and buildings) in accordance with Department of Defense (DoD) Unified Facilities Code (UFC) 1-200-02 including energy efficiencies, building envelope and integrated building system performance. USAG-WP is a Net-Zero Energy pilot installation; therefore, energy that is consumed in operating the WWTP is to be partially offset by the use of alternative energy systems (see below).

In addition to the construction of the new WWTP, demolition of the existing WWTP, and reconstruction of athletic fields, the Proposed Action includes the following elements:

- Installation of a perimeter security fencing. The majority of the new wastewater treatment plant is proposed to be enclosed in brick veneer masonry walls. Portions of the perimeter security fencing will be aligned with the face of the brick veneer masonry walls of the structures. This approach will minimize the plant footprint and allow the facility to be perceived as a unified compound rather a series of smaller structures.
- Land-based stabilization of the two existing box culverts, which discharge stormwater via existing outfalls to the Hudson River; no work in the Hudson River is proposed.

- Installation of, and SPDES-permitted discharges from, a replacement outfall, which will extend approximately 340 linear feet from the new WWTP to a discharge point in the Hudson River; the existing outfall will be abandoned in-place.
- Integration of alternative energy systems to support USAG-WP sustainability goals; potential systems under consideration consist of:
  - » WWTP-generated methane gas including anaerobic digestion of food waste generated on the USAG-WP site to improve gas production and energy value
  - » Geothermal facilities
- Future reuse of a portion of the treated effluent from the new WWTP (with additional filtration) as irrigation water for adjacent recreational fields (not included in existing construction project)
- Construction of accessory components (*i.e.*, site access/circulation, parking, utility connections and stormwater management)

Construction phase activities will include site clearing and grading, trenching, as well as rock removal. Construction and demolition (C&D) activities will require off-site management of C&D debris. Construction phase activities are anticipated to commence and end in Summer 2017 and Summer 2019, respectively.

Alternatives: The following alternatives to the proposed action were considered:

No Action

The existing WWTP is currently operating at or near capacity and is unable to consistently meet discharge requirements of the USAG-WP's SPDES Permit (NY 0023761).[1] Under the "No Action" alternative, the existing WWTP would continue to operate in its current condition and location, which does not fulfill the USAG-WP's goals to increase and upgrade wastewater treatment capacity to meet current and projected future operational demands and regulatory requirements, as well as the Site's Net-Zero energy usage goal. Given USAG-WP objectives, the "No Action" alternative was not evaluated further.

Alternate A – Repair/Upgrade Existing WWTP

Under this Alternative, significant repairs and upgrades to the existing WWTP would be implemented to meet USAG-WP's needs for efficient and effective wastewater treatment operations. However, given the age of the existing WWTP and its equipment, its antiquated state and failing structures, this alternative was not considered cost effective or reliable.

Alternate B – Construct New WWTP at Current WWTP Location

Under this alternative, the new WWTP would be located on the same site as the existing WWTP (see Appendix A of Draft EA). Portions of the athletic fields that adjoin the northern boundary of the existing WWTP would be utilized during construction for staging of temporary wastewater treatment facilities to maintain service while the existing plant is demolished and the new facility is constructed. Upon completion of construction of the new WWTP, the temporary WWTP would be dismantled and the athletic fields would be restored. This alternative would require additional time and money to implement including duplicative environmental permitting efforts to address both treatment plants. Additionally, forecasting regulatory requirements for the next 50 years suggests that a larger site is required for the new WWTP. Consequently, this alternative was not evaluated further.

Alternate C – Construct New WWTP North of Existing WWTP

Under this alternative, the new WWTP would be constructed north of the existing WWTP (see Figure 2 of Draft EA). The existing WWTP would continue to be operated during the construction phase. Following successful start-up of the new WWTP, the existing WWTP would be demolished. As part of the project, the existing athletic fields located north of the new WWTP would be reconfigured to maximize their continued use. The area which houses the existing WWTP and parking area to the south would be converted to green space for recreational use.

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[1] The existing facility has experienced effluent discharge excursions or violations, some associated with wet weather overflow events.

The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields. This alternative, which met the objectives of the USAG-WP, was selected for further consideration.

During the design process, an internal inspection of the existing WWTP's effluent pipelines revealed significant defects (structural cracking, crown erosion and sagging joints). Construction of a new, replacement outfall will mitigate the need for eventual repair/replacement of the existing outfall and lessen construction activities associated with connecting both the active existing plant and the future plant to the same active discharge system. The existing outfall will be abandoned-in-place.

III. ANTICIPATED ENVIRONMENTAL EFFECTS

Potential environmental impact issues related to the Proposed Action including mitigation measures that would be implemented to minimize or eliminate impacts are summarized below:

Air Quality

- Temporary or minor air pollutant emissions from construction-related activities and future operations. Contractors will be required to implement measures to minimize impacts including proper maintenance of vehicles and equipment, dust suppression, the use of low sulfur diesel fuel and best available technology to achieve the greatest reduction in particulate emissions.
- Modification of the facility's Title V air permit (DEC ID 3-3336-00022/00055) to accommodate both the construction of the proposed WWTP, as well as the demolition of the existing plant. The increase in the plant capacity (rating) and upgrade in liquid and solids treatment processes, along with peak-shaving to address incoming electric power limitations, may increase overall emissions as flows and loads approach the design capacity. Proposed processes may trigger additional permit requirements and/or emission controls to mitigate the increased emissions. The need for emission controls, including control of nitrogen oxides (NO_X) emissions, will be identified through the NYSDEC permitting process.
- Emission projections associated with the construction and operation of the WWTP are below the *de minimis* levels established in 40 CFR 93.153(b). Prior to construction activities, USAG-WP will formally evaluate general conformity and document non-applicability.

Geology

- Temporary exposure of bare soils to stormwater runoff. The potential for temporary impacts from exposure of bare soils during construction will be mitigated through the implementation and maintenance of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will be prepared in accordance with New York SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-15-002), as well as New York State guidance documents: *New York State Standards and Specifications for Erosion and Sediment Control* (2005) and *New York State Stormwater Management Design Manual* (2015). Preparation and implementation of the SWPPP may include stormwater management practices and components to control the rate and quality of runoff. Mitigation identified in the SWPPP will be maintained until the site is adequately stabilize as defined by the General Permit.

  Refer to discussion below (*Hazardous Materials and Waste*) in regards to potential to encounter impacted soil during construction and mitigation measures, if encountered.

- Blasting impacts (including ground vibrations) on adjacent uses and threatened/endangered species. Due to the shallow depth to bedrock, blasting may be necessary to prepare the site for construction. A qualified blasting engineer or consultant would oversee preparation of the blasting contractor's written Blasting Plan (including pre-blast survey/inspection). The written blasting plan, including schedule, will be prepared and implemented by a NYS-licensed blasting contractor and will be reviewed and approved by USAG-WP and its consultant prior to initiation of any blasting activity.

  To minimize impacts associated with construction activities, which may cause ground vibrations (*e.g.,* blasting, pile driving, compaction), vibration monitoring will be performed when performing these activities. The contractor will consult the American Society of Civil Engineers' (ASCE) *Vibration Criteria for Historic and Sensitive Older Buildings* to identify appropriate transient or steady peak particle velocity (PPV) limits, as

applicable, and monitoring locations. PPV limits associated with transient vibrations are limited to 0.25 inches per second (ips) up to 10 hertz (hz), vary between 10 hz and 40 hz, and 0.5 ips above 40 hz (ASCE, 1983).

Land Use

- Temporary disruption to the use of athletic fields during construction, as well as displacement of the fields due to the relocation of the WWTP. To implement the project, the remaining existing athletic fields located to the north of the new WWTP will be reconfigured to maximize their continued use. This area will include four athletic fields each approximately 120 feet by 240 feet in size. The area, which currently houses the existing WWTP and the parking area to the south, will be converted to green space for recreational use with an asphalt connector road to Upton Road along the base of the existing slope. The purpose of this green space is to provide equitable recreational space to counterbalance a post-construction reduction in the current number of athletic fields.

Water Resources

- Construction and operation phase impacts on stormwater runoff. During construction, stormwater runoff will be managed in accordance with the NYSDEC's SPDES General Permit (GP-0-15-002). As previously stated, the permit requires preparation, implementation and maintenance of a SWPPP. The SWPPP will include stormwater management practices and components to control the post-construction rate and quality of runoff, as well as measures to minimize sedimentation within the Hudson River during construction of the outfall. The SWPPP will also include Erosion and Sedimentation Controls (E&SCs), which will be maintained by the contractor through site restoration/stabilization activities.

  Refer to discussion below (*Hazardous Materials and Waste*) in regards to potential to encounter impacted groundwater during construction and mitigation measures if encountered.

  During operations, treated effluent from the existing WWTP will be discharged to the Hudson River via a new outfall, which will replace an existing SPDES-permitted outfall. The treatment of wastewater flow from the existing facility will not be disrupted during construction and start-up of the new facility. Discharges from the new operational facility will be conveyed in a landward pipeline to the Hudson River via the new, replacement outfall. It is anticipated that existing SPDES effluent limits will be maintained.

  In addition, stormwater runoff during operations will be managed via permanent stormwater management facilities designed and constructed to control the quantity and quality of the runoff discharged from the site. The stormwater management system will be designed to Energy Independence Security Act (EISA) 2007 Section 438 regulation using low impact development (LID) elements. Specifically, the stormwater management system will be designed to retain the 95th percentile rainfall event. Consistent with existing conditions, stormwater managed on the site will be conveyed to the existing southern and northern box culverts, which discharge to the Hudson River.

  The USAG-WP is also considering future reuse of a portion of the treated effluent from the new WWTP as irrigation water for the adjacent recreational fields. Treated effluent would be diverted away from the Hudson River outfall and conveyed to irrigation piping. The reuse of treated effluent for irrigation is not proposed as part of the existing construction phase.

Floodplains

- Potential flooding impacts due to the project's proximity to the Hudson River. Although no new buildings or surface structures are proposed within the 100-year flood elevation, it is anticipated that the finished floor elevation for the proposed WWTP will be raised above the 100-year flood elevation to provide additional flood protection and resiliency.

Threatened and Endangered Species

- Potential impacts on endangered and threatened species. The reviewed information indicates that, with the exception of the Atlantic and Shortnose Sturgeon, Timber Rattlesnake, Northern Long-Eared Bat, Bald Eagle, and other migratory birds, no other endangered or threatened species have been observed on or proximal to the project area. The potential to impact observed species or other listed species is considered low.

To minimize or eliminate construction-related impacts to the Atlantic and Shortnose Sturgeon, as well as to a designated National Oceanic and Atmospheric Administration (NOAA) Essential Fish Habitat (EFH), while completing the installation of the new replacement outfall, the following measures will be implemented:

» Temporary control measures to mitigate for upland erosion and sedimentation to the Hudson River.

» A cofferdam (or other means to provide for work in dry conditions) will be utilized to install the new replacement outfall in the Hudson River. Best management practices will be utilized to minimize temporary vibratory impacts relating to installation of cofferdam.

» An in-river work window between September through end of February.

» In-river sediment that is temporarily disturbed or removed as part of the installation of the pipelines in the Hudson River will be replaced in-kind.

USAG-WP will inspect areas prior to clearing and inform contractor(s) of appropriate measures in dealing with wildlife, including the timber rattlesnake, as part of a comprehensive environmental briefing. USAG-WP's Natural Resource Manager will meet with the construction project and safety managers to review rattlesnake protection measures including instructions on how to proceed in the presence of a snake and providing contact numbers and an information poster to be posted at the work site (Pray, 2017).

To minimize or eliminate impacts to Northern Long-Eared Bats, tree cutting will be restricted to November 1st – March 31st when the bat will be in hibernation at off-site hibernacula. Any tree removal associated with the project will be incidental. West Point will comply with the provisions of 50 CFR 17.40 (also referred to as the 4(d) Rule) prior to removing any trees.

To minimize or eliminate potential impacts to Bald Eagles and other migratory birds during construction, USAG-WP will not conduct blasting activities during the period of December 1st through March 31st. Fully shielded fixtures will be utilized to prevent glare and night-sky related light pollution. See also lighting mitigation (Aesthetics and Visual Resources).

- Potential impacts on common species and habitats. Impacts to common species are expected to be temporary and short-term lasting only during the length of the construction phase. Vegetative plantings will be restored following construction activities, and common wildlife species would be expected to return to the site. During construction, wildlife will continue to have travel corridors for movement around the project area.

Cultural Resources

- The Target Hill Athletic Fields are a contributing element to the West Point National Historic Landmark District (NHLD) as one of the historic landscapes identified throughout the installation. The proposed project will encroach on a portion of the existing fields resulting in an adverse effect to the NHLD. In accordance with the Programmatic Agreement (PA) executed in July 2016, USAG-WP will execute a letter agreement for the minimization and mitigation of the adverse effects (see Appendix F of Draft EA). Activities required by the PA include retaining the location of the existing wastewater treatment plant as open space after it has been demolished and the development of an historic context for the athletic fields, including Target Hill, as recommended by USAG-WP Historic Landscape Management Plan (ERDC/CERC, 2002).

Noise Effects

- Noise from construction activities. Construction phase noise sources are anticipated, but considered short-term and intermittent and mitigated through implementation of the following controls: use and maintenance of appropriate mufflers on vehicles and equipment; adherence to construction hours; implementation of a Blast Plan, which will include noise-related mitigation measures; and compliance with USAG-WP's *"Installation Operational Noise Management Plan"* (IONMP) (April 2013).

  No significant operational phase noise impacts were identified. Site operations will be conducted in accordance with the USAG-WP's IONMP. Aeration blowers will be housed in noise attenuating enclosures.

Socioeconomic Issues/Environmental Justice

- No special mitigation measures warranted.

Energy

- No significant adverse energy-related impacts were identified. Implementation of the Proposed Action will result in a net reduction in energy use in comparison to existing conditions. The new WWTP will incorporate DoD Unified Facilities Code (UFC) sustainability requirements. In addition, the new Operations/Maintenance Building is expected to be Leadership in Energy and Environmental Design (LEED) Silver certifiable. The new building systems are expected to incorporate the objectives of the USAG-WP's net zero energy installation initiative[2]. The initiative states that the USAG-WP will "implement Net Zero energy goals by calendar year 2020, while meeting energy mandates for renewable energy production and greenhouse gas (GHG) emissions reduction." Consistent with this goal, the project is expected to include enhanced digester gas utilization; specifically, the digestion of solids to generate methane gas, and the conversion of methane gas to electrical energy, which can be used at the new WWTP. In addition, the new WWTP will incorporate anaerobic digestion of food waste generated on the USAG-WP site, which will improve methane gas production and energy value. Additional improvements (under consideration) may include geothermal facilities to assist in the attainment of USAG-WP's sustainability goals.

Hazardous Materials and Wastes

- Potential to encounter impacted soils, groundwater and river sediments during construction and dewatering activities, as well as explosive hazards and risks from Munitions and Explosives of Concern (MEC) and Munitions Constituents (MC). If impacted soil, groundwater or river sediments are encountered, it will be managed in accordance with applicable federal, State, local and DoD AR 200-1 requirements. The policy requires the preparation and implementation of a CHASP to protect construction workers and the community from exposure to potential impacted materials. If impacted river sediments are encountered during construction and dewatering activities, they will be disposed of in accordance with applicable federal, State, local and DoD AR 200-1 requirements. Per discussions with NYSDEC, no soils will be removed from the site.

  With respect to MECs and MCs and as described in the USAG-WP's "Non-Time Critical Removal Action Land Use Control Plan" (October 2012), required dig permit(s) will be obtained through USAG-WP Directorate of Public Works (DPW), Environmental Management Division and work will be performed in accordance with the dig permit. This may include unexploded ordnance (UXO) awareness training and support from the Explosive Ordnance Disposal (EOD) unit.

  Management of C&D and Solid (non-hazardous) waste streams. The contractor will be required to dispose of these materials off-site at an appropriately permitted landfill, diverting as much as possible from landfills by reuse or recycling. A minimum target of 60% diversion for C&D wastes (Installation Management Command [IMCOM] Operations Order 14-067: Integrated [Non-Hazardous] Solid Waste Management; paragraph 3.C.2.I.1) will be included in project specifications. Consistent with USAG-WP requirements, the contractor will be required to develop and implement a C&D Waste Management Plan including the provision of records as to how much C&D (including rock) is removed from the project site.

  Solid waste generated at the new WWTP will be hauled by a contractor to an Army-owned, contractor-operated transfer facility on the installation and, ultimately, to a State-permitted landfill. Dewatered sludge from the sewage treatment facilities will continue to be composted in accordance with applicable regulations. Additional dewatering sludge waste may be generated based on the increased capacity of the proposed WWTP.

  Food wastes will be collected from various cafeterias at USAG-WP by DPW staff for transport to the new WWTP. The wastes will be accepted at the WWTP's solids dump station (SDS) for incorporation into the anaerobic digestion treatment system.

  Chemicals and other potentially hazardous materials utilized during construction and operation of the WWTP will be stored, handled and managed in accordance with USAG-WP's hazardous materials management system (HMMS) and applicable Federal, State and local laws and regulations. Use of herbicides and pesticides will be in accordance with USAG-WP's *Integrated Pest Management Plan* (March 2011).

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[2] **http://www.westpoint.army.mil/SiteAssets/Pages/EMD/wp-netzero-energyinst.pdf**

Traffic and Transportation Systems

- Temporary impacts to local traffic flow within the base and local community due to increase trips accessing and egressing the project site (construction workers and equipment, removal of spoils and waste materials). Construction-related impacts on traffic will be short-term; lasting only during the duration of construction phase activities. Worker and visitor related traffic, as well as material supply traffic during operations, is anticipated to be similar in magnitude and timing to existing conditions.

  Construction phase impacts will be mitigated through implementation of the following measures: adherence to specified access/egress routes; coordination with the Military Police and USAG-WP community to minimize of temporary traffic disruptions; advanced registration of construction vehicles and individual drivers; deployment of detour signs and flaggers, as necessary including the preparation, if necessary, of a "Maintenance and Protection of Traffic Plan;" use of construction vehicles equipped with backing alarms, two-way radios, and Slow Moving Vehicle signs; the postponement of construction activities, if necessary, during home games, and special events to minimize pedestrian traffic disruptions; and storage of heavy equipment at the temporary construction staging area, to the extent possible, to minimize the amount of slow-moving vehicles on Upton Road.

Coastal Resources

- No special mitigation measures are warranted. This project area was not identified within a State-approved Local Waterfront Revitalization Area. Since the project area is located in a coastal area, the project will be reviewed by New York State Department of State (NYSDOS) to evaluate whether the project is consistent with the State's Coastal Management Policies. Policy No. 2 of New York State's Coastal Management Policies is a development policy, which focuses on facilitating the siting of water-dependent uses and facilities on or adjacent to coastal waters. Consistent with that policy, the project represents the maintenance of a water-based use at its existing location. The continued siting of the WWTP proximal to the Hudson River is ideal given that treated effluent will continue to be discharged to the Hudson River via the new, replacement outfall. It is anticipated that existing effluent limits will be maintained.

  In addition, the USAG-WP is located within the Hudson Highlands Scenic Area of Statewide Significance, which is covered under Policy No. 24 of the State's Coastal Management Program. The Proposed Action was evaluated for its consistency with the State's policies and a "Negative Determination" drafted for submission to the NYSDOS. A copy of the assessment was included as Appendix I to the Draft EA.

Aesthetic and Visual Resources

- Potential impacts related to aesthetics, the existing viewshed and from proposed lighting. The proposed architectural design is consistent with the scale, materials and styles representative of existing buildings within the Target Hill and Shea Stadium Areas. In addition, the proposed WWTP does not sharply contrast with the existing viewshed and will not be overly obvious from various identified vantage points (including Constitution Island. Materials and lighting will conform to the *United States Military Academy Design Guide*, *United States Army Garrison Engineering Planning Standards* and the *Garrison Commander's Guidelines for Outdoor Lighting at West Point*.

Utilities

- Potential impacts on utility capacities. Existing utilities have sufficient capacity to support the Proposed Action. Natural gas and sanitary sewer infrastructure will be extended and rerouted to the site, respectively. The existing potable water line will be replaced and the water supply system will be designed to provide adequate pressure to support fire suppression needs.

- There is the potential for secondary impacts from the extension of water and natural gas utilities along existing roadways. The contractor will be required to maintain traffic flows during construction; mitigation identified under "Traffic and Transportation Systems" will be employed.

Odor

- Potential odors from WWTP operations. Operations at the new WWTP will replace operations at the existing facility. Potential odor impacts from WWTP operations will be mitigated by the installation of three carbon adsorption units. Two odor control unit will serve the influent liquid treatment area (*i.e.*, the headworks, influent pumping station (IPS), and primary treatment). The third unit will serve specific solids treatment

systems (*i.e.*, the sludge storage tanks, SDS, and potentially the sidestream treatment system. Besides hydrogen sulfide (H_2S) and ammonia, additional constituents can be polished including: carbonyl sulfide, methyl mercaptan, ethyl mercaptan, dimethyl sulfide, carbonyl disulfide, or dimethyl disulfide.

- Food related waste, used in the anaerobic digestion process to improve methane gas production and energy value, will be accepted at the SDS, which is part of the overall Solids Handling Building (SHB) odor control system.

IV. PUBLIC INVOLVEMENT

The Draft EA and this Finding of No Significant Impact are being made available for public review at the following locations, in addition to the being posted on the internet at **http://www.nan.usace.army.mil/**:

Town of Highlands
254 Main Street
Highland Falls, NY 10928

Village of Highland Falls
303 Main Street
Highland Falls, NY 10928

Highland Falls Public Library
298 Main Street
Highland Falls, NY 10928

Julia L. Butterfield Memorial Library
10 Morris Avenue
Cold Spring, NY 10516

The Alice Curtis Desmond & Hamilton Fish Library
472 Route 403
Garrison, NY 10524

Village of Cold Spring
85 Main Street
Cold Spring, NY 10516

Town of Philipstown
258 Main Street
Cold Spring, NY 10516

Additionally, the Draft EA and Finding of No Significant Impact have been sent directly to Federal, State, and County involved agencies and other interested parties.

The draft EA will be available for the 30-day public review period. During the time period of May 10th through May 19th, 2017, public notices were published in the Times Herald Record (Middletown, NY), Putnam County News, Cornwall Local (Cornwall, NY), News of the Highlands (Highland Falls, NY), and the United States Military Academy (USMA) Post Bulletin (USMA, West Point, NY) to notify interested persons and organizations of the availability of the Draft EA for public review and comment. Affidavits of publication will be provided in Appendix K of the Final EA. The deadline for public comment on this Proposed Action is June 20, 2017.

V. FACTS AND CONCLUSIONS

This EA was prepared to assess the potential environmental impacts of implementing the Project, or "Proposed Action". This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321-4347), and the Council on Environmental Quality (CEQ) regulations for implementing NEPA (Title 40 Code of Federal Regulations [CFR] 1500-1508). This EA and the Proposed Action are guided by Army's commitment to and specific policies for conserving natural and cultural resources, including Army Regulation (AR) 200-2 (*Environmental Analysis of Army Actions*, Title 32 CFR Part 651), which contains policy, responsibilities, and procedures for integrating environmental considerations in Army planning and decision making. In addition, West Point and this EA acknowledge and are consistent with the relevant portions of the IMCOM Circular 200-10-1, *NEPA Practices and Procedures* (22 November 2010), and the 14 January 2011 CEQ memorandum for heads of Federal departments and agencies, *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigation Findings of No Significant Impact*.

Based on the evaluation of environmental impacts discussed in this document, the Proposed Action is not a major federal action significantly affecting the quality of the human environment.

Implementation of the mitigation measures discussed above and in the respective sections of the EA would reduce the potential impacts of the Proposed Action, resulting in no significant adverse impacts to the environment. An Environmental Impact Statement is, therefore, not required.

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United States Army Garrison West Point

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ENVIRONMENTAL ASSESSMENT

FOR THE

TARGET HILL WASTEWATER TREATMENT PLANT PROJECT

CONTRACT NO. W912DS-16-C-003

UNITED STATES ARMY GARRISON WEST POINT

WEST POINT, ORANGE COUNTY, NEW YORK

MAY 2017

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Staff Judge Advocate

APPROVED BY:

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1.1 PURPOSE AND NEED FOR THE PROJECT

The United States Army Garrison at West Point, NY (USAG-WP) proposes to replace its existing Target Hill Wastewater Treatment Plant (WWTP) with the objective of increasing treatment capacity from the current 2.06 million gallons per day (MGD) to 3.5 MGD maximum-month plant rating (2.8 MGD average daily flow) to meet current and projected future needs (the Proposed Action).

The existing plant was constructed in 1956 and upgraded in 1972. The majority of the existing structural/architectural and mechanical/electrical systems are at or beyond their expected life (Atkins/OBG, November 2016). Additionally, there have been effluent discharge excursions or violations, some associated with wet weather overflow events.

Project objectives are to:

- Provide a new, state-of-the-art WWTP that complies with New York State Department of Environmental Conservation (NYSDEC) regulations and that increases the capacity from the existing WWTP to meet current and projected future needs;
- Achieve elements of the USAG's Net-Zero Energy program and goals; and
- Incorporate educational aspects into the operating facility.

1.2 PROJECT LOCATION

The USAG-WP installation is considered to consist generally of three parts: Main Post (also referred to as cantonment area), which is located on the west side of the Hudson River, the West Point Military Reservation (WPMR), and Constitution Island. WPMR is located west of the Main Post and Constitution Island is located along the east side of the Hudson River. As identified in Figure 1, the project area is located within the Main Post of USAG-WP.

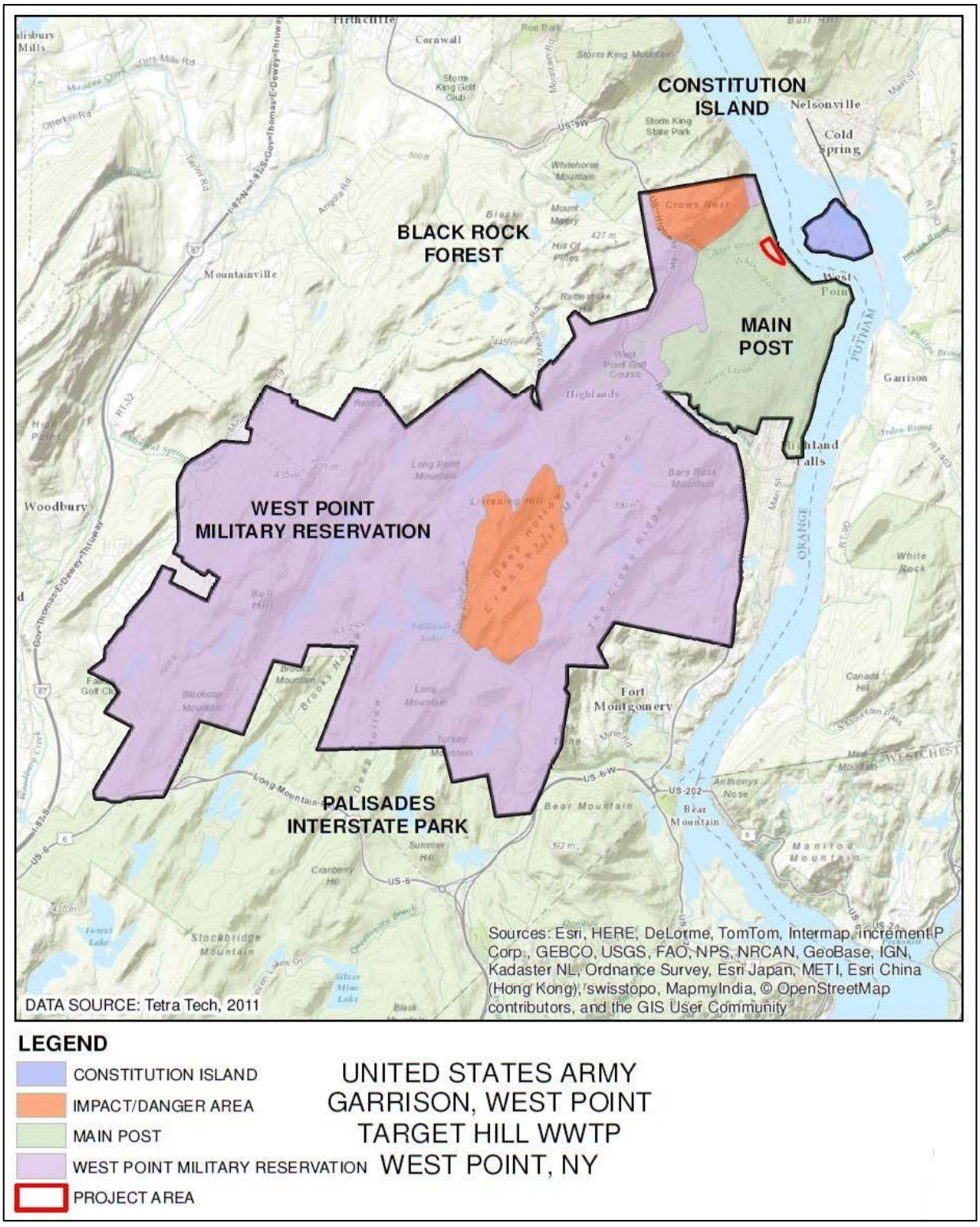

Figure 1. Installation Map

The new WWTP will be located adjacent to the existing facility (Figure 2) within an area currently occupied by athletic fields, which will be reconfigured as part of the project (see below).

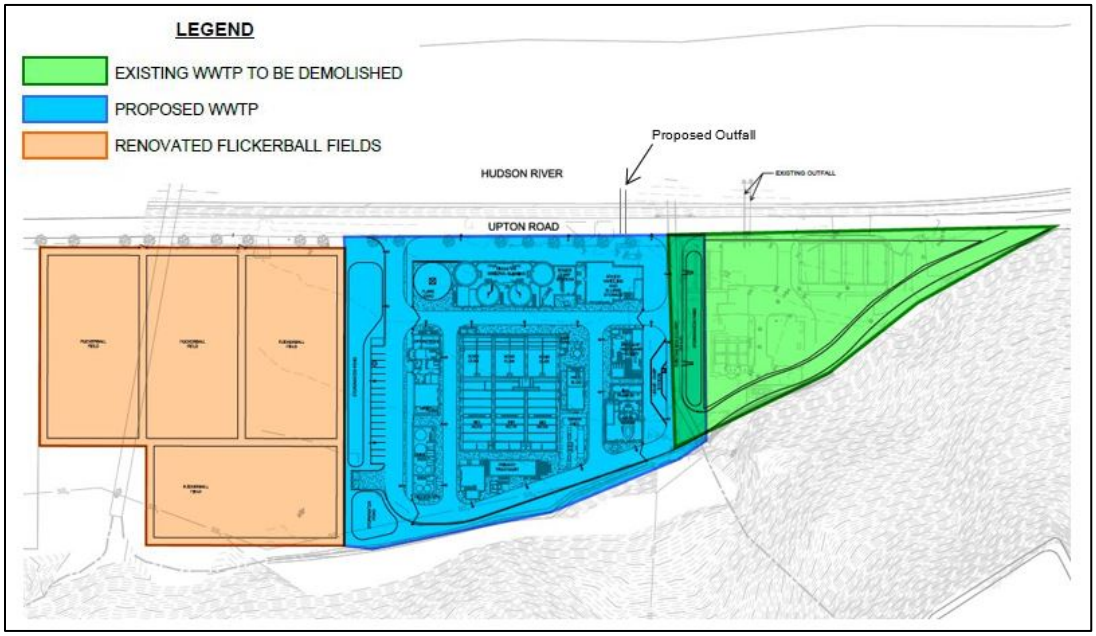

Figure 2. Proposed Site Plan

1.3 PROPOSED ACTION

The new facility will be designed to a minimum life of 50 years[3] in accordance with Department of Defense (DoD) Unified Facilities Code (UFC) 1-200-02 including energy efficiencies, building envelope and integrated building systems performance. USAG-WP is a Net-Zero Energy pilot installation; therefore, energy that is consumed in operating the WWTP is to be partially offset by the use of alternative energy systems (see below).

In addition to the construction of the new WWTP (Figure 4) and demolition of the existing WWTP, the Proposed Action includes the following elements:

- Installation of a perimeter security fencing. As illustrated on Figure 3, the majority of the new wastewater treatment plant is proposed to be enclosed in brick veneer masonry walls. Portions of the perimeter security fencing will be aligned with the face of the brick veneer masonry walls of the structures. This approach will minimize the plant footprint and allow the facility to be perceived as a unified compound rather a series of smaller structures. See Section 3.14.2 for additional information.
- Land-based stabilization of the two existing box culverts, which discharge stormwater via existing outfalls to the Hudson River; no work in the Hudson River is proposed.
- Installation of, and SPDES-permitted discharges from, a replacement outfall, which will extend approximately 340 linear feet from the new WWTP to a discharge point in the Hudson River; the existing outfall will be abandoned in-place
- Integration of alternative energy systems to support USAG-WP sustainability goals; systems under consideration consist of:

[3] 50 years – Structural / Architectural & Civil; 20 years – Process, Mechanical, Electrical, Instrumentation & Control

  - » WWTP-generated methane gas including anaerobic digestion of food waste generated on the USAG-WP site to improve gas production and energy value
  - » Geothermal facilities
- Future reuse of a portion of the treated effluent from the new WWTP (with additional filtration) as irrigation water for adjacent recreational fields (not included in existing construction project)
- Construction of accessory components (*i.e.*, site access/circulation, parking, utility connections and stormwater management):
  - » Site Access – The new WWTP site will have two access points off of Upton Road that form a looped access road around the site. The access road will extend around the site allowing for traffic circulation to access the treatment plant from four gated entrances. The new site roadways will vary between 18-feet and 24-feet wide (minimum 18-feet for the inner roadways and 20-feet to 24-feet for the outer circulation path) and allow adequate emergency vehicle access.
  - » Parking – New site parking will consist of 16 spaces to be located adjacent to the new athletic fields (old WWTP footprint). The new spaces will replace the existing 16 to 18 spaces, which will be encroached upon to construct the new WWTP. A buffer of approximately 45-feet is proposed between the fields and parking area.
  - » Natural Gas – A new gas line will extend from the existing main located at Washington Road along a southeast alignment towards Tower Road, then along Tower and Townsley Roads to the middle of Upton Road. The gas line will be located in the middle of Upton Road and run to the north side of the new WWTP site, resulting in approximately 3,000 linear feet of new main. The main will be sized for possible future connections, such as the Anderson Rugby Complex. With the exception of the gas line extension from the existing main to Tower Road, this work will be conducted within existing USAG-WP road rights-of-way. The majority of the section of the natural gas line from the existing main to Tower Road is located in an area previously disturbed for the installation of sanitary sewer line. The remaining portion of piping (less than 100 linear feet) will extend from Washington Road to Ruger Road.
  - » Water – A new 8-inch diameter waterline is proposed along Townsley and Upton Roads to increase the supply of water along Upton Road and to the proposed WWTP. The new water line is proposed to loop around the new WWTP with two connections to the new main along Upton Road (one near the north entrance to the site and one near the south entrance). Three new hydrants are proposed along this alignment.
  - » Sanitary Sewer – A portion of the existing 21-inch diameter gravity sanitary sewer line under Upton Road will be upsized to a 24-inch diameter pipeline. The new sewer will extend along Upton Road (adjacent to the new gas line described above) and connect to the existing sanitary sewer west of the existing WWTP.
  - » Stormwater Management – Drainage from the recreational fields will sheet flow east to Upton Road. New catch basins and stormwater piping will be installed to manage runoff from the new WWTP; runoff from rooftops and impervious areas will be routed to new retention/detention ponds located to the north of the new plant. Stormwater runoff from remaining areas of the site will sheet flow into a new retention/detention pond located south of the facility or to raingardens proposed on the eastern and southern portions of the new WWTP. A 10,000-gallon rainwater cistern and/or a green roof may be added to the new WWTP in the future.
- Reconfiguration of the remaining existing recreational fields located north of the new WWTP to maximize their continued use. The area that is currently occupied by the existing WWTP and southern parking area would be converted to green space for recreational use. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields.

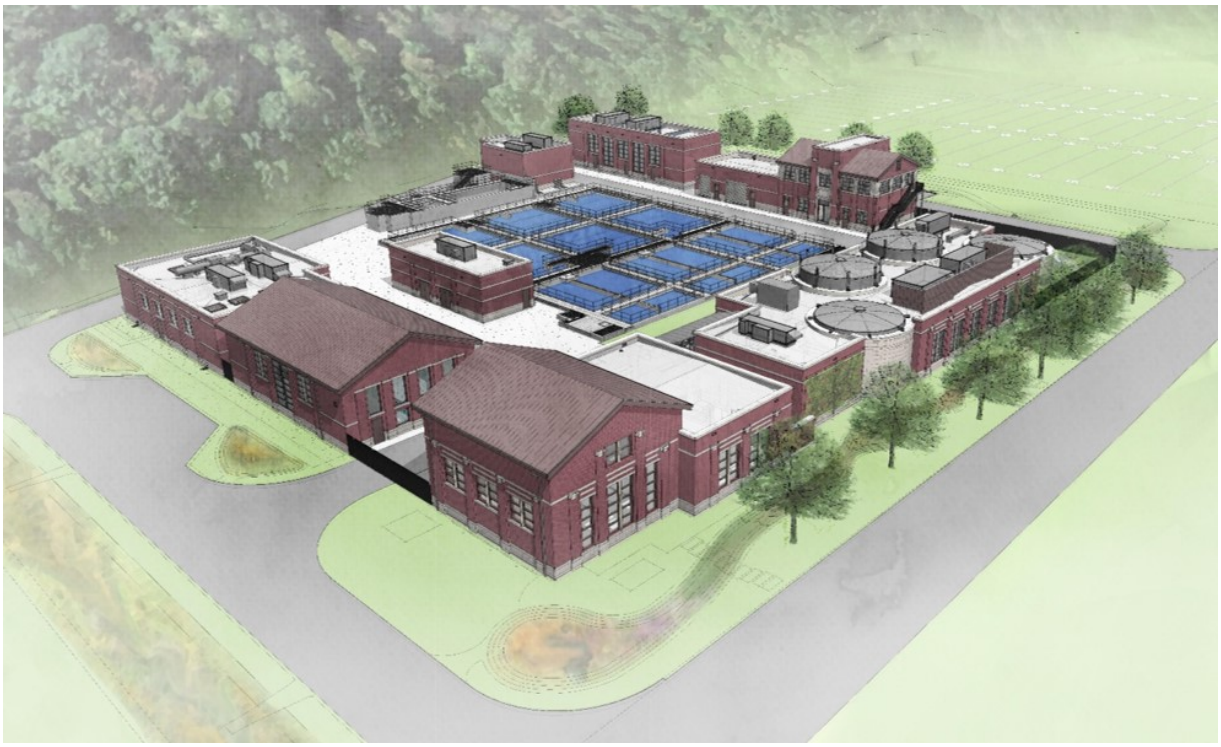

Figure 3. Rendering of New WWTP

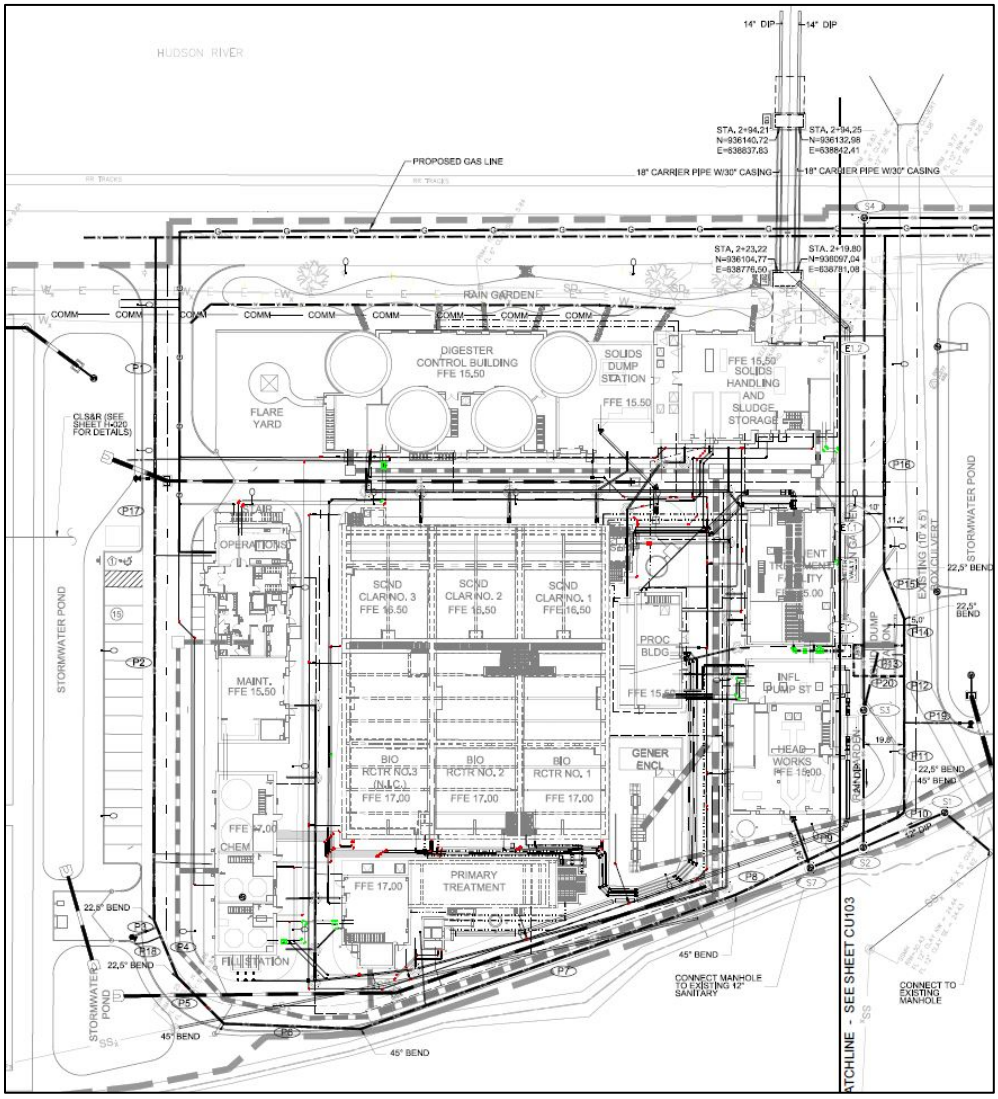

Figure 4. Preliminary WWTP Concept Plan

Construction phase activities will include site clearing and grading, trenching, as well as rock removal. Construction and demolition (C&D) activities will require off-site management of C&D debris. Construction phase activities are anticipated to commence and end in Summer 2017 and Summer 2019, respectively.

The treatment of wastewater flow from West Point operations will not be disrupted during this project. The existing WWTP would continue to be operated during the construction phase. Following successful start-up of the new WWTP, the existing WWTP would be demolished. Treated effluent from the new plant will continue to

be discharged to the Hudson River via a new outfall, which will replace the existing NYSDEC SPDES-permitted outfall[4]; it is anticipated that existing effluent limits will be maintained.[5]

1.4 SCOPE OF ANALYSIS

To comply with the National Environmental Policy Act (NEPA), this document represents an Environmental Assessment (EA), which has been prepared to summarize potential environmental impacts that could result from construction and operation of the Proposed Action, as well as mitigation to reduce or eliminate those impacts. The EA has been prepared in accordance with the requirements of NEPA (42 United States Code [USC] 4321-4347) and the Council on Environmental Quality (CEQ) regulations for implementing NEPA (Title 40 Code of Federal Regulations [CFR] 1500-1508). This EA and the Proposed Action are guided by the Army's commitment to conserving natural and cultural resources including specific policies and procedures for integrating environmental considerations into Army planning and decision making:

- Army Regulation (AR) 200-2, *Environmental Analysis of Army Actions* (Title 32 CFR Part 651)
- Installation Management Command (IMCOM) Circular 200-10-1, *NEPA Practices and Procedures* (November 22, 2010)
- CEQ memorandum (January 14, 2011) for heads of Federal departments and agencies, Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigation Findings of No Significant Impact.
- *NEPA Analysis Guidance Manual (Final)* published by the United States (U.S.) Army Environmental Command (May 2007)

The completion of this EA is required under Title 32 CFR Part 651.33 *Actions Normally Requiring an EA*.

In accordance with 40 CFR 1508.27 (*Significantly*), an assessment of the significance of a proposed action requires considerations of both context and intensity,

Context (40 CFR 1508.27(a)) – This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action such as the replacement of the WWTP, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

Intensity (40 CFR 1508.27(b)) – This refers to the severity of the impact. The following should be considered in evaluating intensity:

- Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
- The degree to which the proposed action affects public health or safety.
- Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
- The degree to which the effects on the quality of the human environment are likely to be highly controversial.

[4] During the design process, an internal inspection of the existing WWTP's effluent pipelines revealed significant defects. Remaining service life of the existing outfall has been estimated at five to ten years due to structural cracking, crown erosion and sagging joints. Construction of a new, replacement outfall will mitigate the need for eventual repair/replacement of the existing outfall and lessen construction activities associated with connecting both the active existing plant and the future plant to the same active discharge system. The existing outfall will be abandoned-in-place.

[5] The SPDES permit modification process has been initiated and is expected to be completed in 2017.

- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
- The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) or may cause loss or destruction of significant scientific, cultural, or historical resources.
- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
- Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The principal purposes in preparing this EA are to:

- Identify and assess potential impact on the natural and human environment that will result from the implementation of the Proposed Action;
- Identify and recommend alternatives and specific mitigation measures as necessary to minimize environmental impact upon the natural and human environment; and
- Assess reasonable alternatives to the Proposed Action that will avoid or minimize adverse impacts upon the natural and human environment.

The No Action Alternative, described in Section 2, serves as the baseline to which all of the alternatives, including the Proposed Action, are being compared as part of the environmental analysis conducted in this document.

Section 3 (Affected Environment & Consequences) provides a summary of the baseline environmental conditions, the context and intensity of potential environmental and socio-economic impacts, and proposed mitigation and/or project modifications to eliminate or minimize impacts.

2. ALTERNATIVES CONSIDERED

NEPA advances an interdisciplinary approach to Federal project planning and decision-making through an environmental impact assessment process. This approach requires USAG-WP to consider environmental issues alongside project objectives and the technical and economic considerations that are inherent factors in decision making. An assessment of reasonable alternatives, including the "No Action" alternative, are integral to the process. Alternatives that were deemed unacceptable due to economic or technical criteria or their inability to meet project objectives, were not considered further.

2.1 NO ACTION

The existing WWTP is currently operating at or near capacity and is unable to consistently meet discharge requirements of its SPDES Permit (NY 0023761).[6] Under the "No Action" alternative, the existing WWTP would continue to operate in its current condition and location, which does not fulfill the USAG-WP's goals to increase and upgrade wastewater treatment capacity to meet current and projected future operational demands and regulatory requirements, as well as the Site's Net-Zero energy usage goal. Given USAG-WP objectives, the "No Action" alternative was not evaluated further.

2.2 ALTERNATE A – REPAIR/UPGRADE EXISTING WWTP

Under this Alternative, significant repairs and upgrades to the existing WWTP would be implemented to meet USAG-WP's needs for efficient and effective wastewater treatment operations. However, given the age of the existing WWTP and its equipment, its antiquated state and failing structures, this alternative was not considered cost effective or reliable.

2.3 ALTERNATE B – CONSTRUCT NEW WWTP AT CURRENT WWTP LOCATION

Under this alternative, the new WWTP would be located on the same site as the existing WWTP (see Appendix A). Portions of the athletic fields that adjoin the northern boundary of the existing WWTP would be utilized during construction for staging of temporary wastewater treatment facilities to maintain service while the existing plant is demolished and the new facility is constructed. Upon completion of construction of the new WWTP, the temporary WWTP would be dismantled and the athletic fields would be restored. This alternative would require additional time and money to implement including duplicative environmental permitting efforts to address both treatment plants. Additionally, forecasting regulatory requirements for the next 50 years suggests that a larger site is required for the new WWTP. Consequently, this alternative was not evaluated further.

2.4 ALTERNATE C – CONSTRUCT NEW WWTP NORTH OF EXISTING WWTP (PREFERRED ALTERNATIVE)

Under this alternative, the new WWTP would be constructed north of the existing WWTP (see Figure 2). The existing WWTP would continue to be operated during the construction phase. Following successful start-up of the new WWTP, the existing WWTP would be demolished. As part of the project, the existing athletic fields located north of the new WWTP would be reconfigured to maximize their continued use. The area that is currently occupied by the existing WWTP and southern parking area would be converted to green space for recreational use. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields. This alternative, which met the objectives of the USAG-WP, was selected for further consideration.

[6] The existing facility has experienced effluent discharge excursions or violations, some associated with wet weather overflow events.

3. AFFECTED ENVIRONMENT AND CONSEQUENCES

3.1 AIR QUALITY

3.1.1 Affected Environment

In New York State, air quality is regulated by the NYSDEC. Pursuant to the1970 Clean Air Act (CAA) and the 1977 and 1990 Clean Air Act Amendments (CAAA), the United States Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. Currently, NAAQS exist for six criteria pollutants: particulate matter (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), sulfur oxides (SO_x), nitrogen dioxide (NO_2), ozone (O_3) and lead (Pb). Primary standards were established to protect more "sensitive" groups (*e.g.,* children), while secondary standards were developed to protect public welfare (*e.g.,* crops, vegetation).

A summary of NAAQS is provided below:

Table 1. NAAQS Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide		Primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead		Primary and Secondary	Rolling 3-month average	0.15 μg/m^3	Not to be exceeded
Nitrogen Dioxide		Primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		Primary and Secondary	Annual	53 ppb	Annual Mean
Ozone		Primary and Secondary	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particulate Matter	**$PM_{2.5}$**	Primary	Annual	12 μg/m^3	annual mean, averaged over 3 years
		Secondary	Annual	15 μg/m^3	annual mean, averaged over 3 years
		Primary and Secondary	24-hour	35 μg/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary and Secondary	24-hour	150 μg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide		Primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

ppm - parts per million
ppb - parts per billion
μg/m^3 - micrograms per cubic meter

Areas that do not meet one or more of the NAAQS are called non-attainment areas. The NYSDEC has classified Orange County, in which the Proposed Action is located, as in "severe nonattainment" for ozone. Lower Orange County is in attainment or considered unclassifiable (and, therefore, considered in attainment) for other criteria pollutants. As precursors to ozone, nitrogen oxides (NO_X) and volatile organic compound (VOC) thresholds apply.

The General Conformity Rule (40 CFR Part 93) ensures that federal actions in nonattainment and attainment/maintenance areas do not interfere with the state's ability to maintain NAAQS. The general conformity rule is divided into two distinct parts: applicability analysis and conformity determination. If a given action is exempt from the general conformity rule, a conformity determination is not required. Emissions from proposed actions are exempt if they are *de minimis* and are not regionally significant. *De minimis* emissions are emissions in a nonattainment area that are less than specified applicability thresholds. Regionally significant emissions are emissions of a criteria pollutant that represent 10 percent or more of the total for the area.

The nearest ozone monitoring sites are located at Mt. Ninham (Kent, NY) (AQS Site ID 36-079-0005) and Rockland City, NY (AQS site ID 36-087-0005). The ozone annual arithmetic mean at each station for the years 2012 through 2015 ranged from 82.25 to 94.64 µg/m^3 (1-hour period) and 92.02 to 100.46 µg/m^3 (1-hour period), respectively (data retrieved December 18, 2015[7]).

Radon

As illustrated on the United States Environmental Protection Agency's Map of Radon Zones (EPA 402-R-92-071), West Point is located in a Priority No. 1 radon zone (predicted average radon level is greater than 4/pCi/L)[8].

3.1.2 Environmental Consequences

Implementation of the Proposed Action could result in temporary and/or minor air pollutant emissions from construction-related activities and future operations.

Construction

Orange County is in the ozone transport region; therefore, NO_X and VOC thresholds apply. NOx and VOC emissions during construction will be maintained below the *de minimis*. To estimate temporary construction phase emissions, equipment use was projected for the anticipated construction schedule (Summer 2017 to Summer 2019). A summary of the construction inventory is provided as Appendix B. The highest total indirect (construction phase) emissions has been estimated at 32.1 tons (29.2 metric tons) of NOx and 5.0 tons (4.5 metric tons) of VOCs.

Operations

Air emissions from the existing WWTP will cease upon the start-up of the new facility. Emissions from the new WWTP will be authorized pursuant to a new permit issued by the NYSDEC, which will specify controls necessary to control anticipated emissions. It is expected that the facility's Title V air permit (DEC ID 3-3336-00022/00055) will need to be modified to accommodate both the construction of the proposed WWTP, as well as the demolition of the existing plant. It is noted that emissions associated with the proposed WWTP's operations at startup may be similar to emissions associated with current WWTP operations. The increase in plant rating and upgrade in liquid and solids treatment processes, along with allowance for the cogeneration operation, will increase overall emissions as flows and loads approach the design capacity.

Consistent with Executive Order (EO) 13693[9] *("Planning for Federal Sustainability in the Next Decade"*) issued on March 19, 2015, greenhouse gas (GHG) emissions from the proposed WWTP are expected to be minimized since a large portion of the methane that is created as a byproduct of the larger WWTP will be utilized in the hybrid cogeneration plant as fuel.

[7] **http://www.epa.gov/airquality/airdata/index.html**
[8] **https://www.epa.gov/radon/find-information-about-local-radon-zones-and-state-contact-information#radonmap**
[9] EO 13693 replaced revoked EO 13514 (*"Federal Leadership in Environmental, Energy, and Economic Performance").*

An estimate of air emissions associated with the WWTP operations was based on USEPA's AP-42 emission factors utilizing low NO_x burners, federal New Source Performance Standard requirements and representative vendor information.

The highest total direct (operation phase) emissions has been estimated at 5.7 tons (5.2 metric tons) of NOx and 2.2 tons (2.0 metric tons) of VOCs.

General Conformity

As previously described, NYSDEC has classified Orange County, in which the Proposed Action is located, as in "severe nonattainment" for ozone. Emission projections associated with the construction and operation of the WWTP are below the *de minimis* levels established in 40 CFR 93.153(b).

Specifically, the highest total (operation and construction phase) emissions has been estimated at 37.8 tons (34.4 metric tons) of NOx and 7.2 tons (6.6 metric tons) of VOCs, which, are well below the applicability (*de minimis*) threshold values of 100 tons (90.7 metric tons) for NOx and 50 tons (45.4 metric tons) for VOCs.[10]

Given that actual and potential emissions associated with the operation of the WWTP will be further refined during the permitting process, USAG-WP will formally evaluate general conformity and document non-applicability prior to construction activities.

Radon

The *United States Military Academy Design Guide*, *United States Army Garrison Engineering Planning Standards*, issued February 2016, specifies that "*New construction at the West Point Facility consisting of slabs at grade or subsurface foundations will require design that eliminates the potential for radon gas to enter the facility*." Based on the USEPA's Priority No. 1 radon zone classification, radon mitigation systems will be incorporated into the design of the new WWTP (see below).

3.1.3 Mitigation

Based on implementation of construction and operation phase work practices described below, including the use of best available technology, no significant adverse impacts to air quality associated with construction activities or operations are anticipated.

The contractor will be required to implement measures to minimize impacts including proper maintenance of vehicles and equipment, dust suppression, the use of low sulfur diesel fuel and best available technology to achieve the greatest reduction in particulate emissions.

Proposed treatment processes may trigger additional permit requirements and/or emission controls. The need for emission controls, including control of NO_X emissions, will be identified through the NYSDEC permitting process.

Structures associated with the new WWTP will be equipped with a radon mitigation system. The type of system utilized at each structure will be based on the type of facility and occupancy in accordance with the design criteria described in the *UFC 3-490-04A Indoor Radon Prevention and Mitigation* guidance document.

[10] 40 CFR 93, Subpart B – Determining Conformity of General Federal Actions to State or Federal Implementation Plans

3.2 GEOLOGY

3.2.1 Affected Environment

Soils and Bedrock

Based on a review of the National Resource Conservation Service's (NRCS) online Web Soil Survey[11], the project area consists of three soil units: Chenango gravelly silt loam (CnA), Rock outcrop-Hollis complex (ROD) and Otisville and Hoosic soils, steep (OVE) (Figure 5). CnA soils cover approximately 70% of the project area and are classified as Chenango soils with a slope of 0-3%. Chenango soils consist of very deep, well and somewhat excessively well-drained soils formed in water-sorted material on outwash plains, kames, eskers, terraces, and alluvial fans (Tetra Tech, 2011). OVE soils cover approximately 5% of the project area and consist of very deep, excessively drained soils, which formed in outwash on terraces, kames, eskers, and beaches. OVE soils are typical of steep-sloped areas (60%), with a very high erosion potential (Tetra Tech, 2011). ROD, which is the dominant soil on the overall USAG-WP installation, overlays approximately 25% of the project area, and consists of steep, somewhat excessively well to well-drained soils overlying crystalline bedrock, located on mountainous uplands (Tetra Tech, 2011). ROD is present within the steep-sloped, southwestern boundary of the project area, which will be largely unaffected by the Proposed Action.

Granite is the most prevalent rock type in the bedrock underlying the USAG-WP installation and is typically medium-grained and composed of quartz, feldspar, and mica (Tetra Tech, 2011). Subsurface conditions have been investigated previously with borings throughout the existing WWTP site. Previous borings show that the majority of the fill in the area consists of sand and gravel with trace amounts of silt and clay (Tetra Tech, 2011). On average, bedrock was discovered around 30 feet below existing surface elevations. The new WWTP site will be located north of the existing plant site, therefore additional borings will be completed at new structure locations.

A geotechnical investigation was recently conducted at the Project Site, which consisted of seventeen borings. The investigation concluded that the uppermost soil stratum encountered in all the boreholes is sandy fill ranging in thickness from 2 to 56 feet, averaging 27 feet thick (Mueser Rutledge, 2016). The stratum probably originated with development of the area by placement of excavated natural materials from upland areas (Mueser Rutledge, 2016).

Refer to Section 3.11 for a discussion on potential impacted subsurface soil including environmental consequences and mitigation.

[11] **http://websoilsurvey.nrcs.usda.gov/**

Figure 5. Soil Survey

Seismicity

Faults mapped at the surface near and within the habitation area at USAG-WP include the Long Pond, the Crown Ridge and the Highland Brook faults. No damage at the USAG-WP installation as a result of any historic earthquake has been reported (Tetra Tech, 2011). Based on the results of a geotechnical investigation, the majority of the structures associated with the new WWTP site are located in areas with soils classified as Seismic Site Class E. The bioreactor and the primary treatment filter and clarifier are located in areas with soils classified as Seismic Site Class Seismic D and the inflow pump station and headworks is located in an area with soils classified as Seismic Site Class B (Mueser Rutledge, 2016). Seismic Site Class B, D and E are defined as rock, stiff soil and soft clay soil, respectively (ICC, 2011). These seismic site classifications will be accounted for in the facility's design and construction.

3.2.2 Environmental Consequences

Construction of the new WWTP and replacement athletic fields, as well as the demolition and site restoration activities associated with the existing WWTP, will result in:

- Temporary disruptions of the soil profile including temporary exposure of bare soils to stormwater runoff.
- Potential vibration-related impacts from the use of blasting, pile driving and compaction (including impacts on historical structures and CSX operations).

3.2.3 Mitigation

Erosion & Sedimentation

The area of disturbance will exceed 1-acre and require coverage under the NYSDEC's SPDES General Permit (General Permit) for Stormwater Discharges from Construction Activity (GP-0-15-002). Coverage under the General Permit will require preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will include erosion and sedimentation controls (E&SCs), which will be maintained by the Contractor through site restoration/ stabilization activities.

The potential for temporary impacts from exposure of bare soils during construction will be mitigated through the implementation and maintenance of the SWPPP. The SWPPP will be prepared in accordance with the General Permit, as well as New York State guidance documents: New York State Standards and Specifications for Erosion and Sediment Control (2005) and New York State Stormwater Management Design Manual (2015). Preparation and implementation of the SWPPP may include stormwater management practices and components to control the rate and quality of runoff. In addition, the SWPPP will require the following activities until the site is adequately stabilize as defined by the General Permit:

- Installation and maintenance of E&SC facilities
- Dust control measures
- Weekly inspections of E&SCs and the Contractor's adherence to SWPPP requirements
- Appropriate management of chemicals (*e.g.*, herbicides) and petroleum products with spill potential (*i.e.*, secondary containment or storage indoors in sealed, non-leaking containers which have appropriate secondary containment); application of herbicides/pesticides in accordance with USAG-WP's *Integrated Pest Management Plan* (March 2011)
- Cleaning and/or sweeping of affected roadways daily, or more frequently if otherwise required based on periodic inspections.

Adherence to the requirements of the General Permit should provide sufficient mitigation to eliminate potential significant adverse impacts related to stormwater and erosion during construction.

Blasting/Ground Vibrations

Construction phase activities will require the use of blasting to prepare an adequate footprint for construction of the WWTP. As indicated above, a geotechnical investigation was performed. Results of the investigation have been incorporated into the design of the new WWTP. Prior to any blasting activities, a pre-blast survey (inspection) will be performed. The pre-blast survey, which will also rely on the geotechnical data, will identify potential blast-related noise and vibration impacts at sensitive receptors. Recommendations from the geotechnical engineering investigation and pre-blast survey will be incorporated into the proposed blasting strategy. A written blasting plan, including schedule, will be prepared and implemented by the NYS-licensed blasting contractor.

A qualified blasting engineer or consultant would oversee the preparation of the Contractor's Blasting Plan, which would include blasting procedures and an engineering report showing recommended blasting charges and methods to be used at specific locations. The plan would be approved by USAG-WP and its consultant prior to any blasting activity. The plan would include procedures for:

- Storage, handling, transportation, loading, and firing of explosives
- Communication with authorities and landowners
- Pre- and post-blast inspections
- Mitigation controls for flyrock, noise reduction, and misfires
- Safety procedures (*e.g.*, fire prevention, signs and flagmen, and warning signals)
- Mitigation of environmental impacts (*i.e.*, impacts on sensitive receptors including bald eagle nesting sites [see Section 3.6])
- Disposal of waste blast material.

In addition to implementation of the Contractor's Blasting Plan, the following additional mitigation would be implemented:

- Adherence to vibration specifications identified for the project. For past projects located proximal to the project site, performance of vibration monitoring has been consistent with the American Society of Civil Engineers' (ASCE) *Vibration Criteria for Historic and Sensitive Older Buildings* (October 1983). The ASCE guidelines will be used to identify appropriate transient or steady peak particle velocity (PPV) limits, as applicable, as well as monitoring locations. For past projects, PPV limits associated with transient vibrations have been limited to 0.25 inches per second (ips) up to 10 hertz (hz), vary between 10 hz and 40 hz, and 0.5 ips above 40 hz (ASCE, 1983).

3.3 LAND USE

3.3.1 Affected Environment

USAG-WP lands have been divided into the following four land use zones, which are based on functional categories in support of the military mission: Cadet; Cadet Support; Post Support; and Recreational, Industrial, Field Training (Tetra Tech, 2011). The project area is generally situated within the Recreational, Industrial, Field Training land use zone. Athletic fields are currently situated on the northern portion of the project area and the southern portion of project area is occupied by the existing WWTP. These areas are considered recreational and industrial, respectively. The western edge of the project area is currently undeveloped.

3.3.2 Environmental Consequences

In the long-term, existing land uses will be maintained (*i.e.,* recreational and WWTP operations). The Proposed Action will, however, result in the following land use impacts:

- Temporary disruption of the existing athletic fields during construction phase activities (anticipated to occur from Summer 2017 to Summer 2019).
- Permanent, minimal reduction in the area currently used for recreational purposes.

3.3.3 Mitigation

To implement the project, the remaining existing athletic fields, located to the north of the new WWTP, will be reconfigured to maximize their continued use. This area will include four athletic fields each approximately 120 feet by 240 feet in size. The area, which is currently occupied by the existing WWTP and the southern parking area, will be converted to green space for recreational use with an asphalt connector road to Upton Road along the base of the existing steep slope. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields. The proposed site layout is provided on Figure 2

3.4 WATER RESOURCES

3.4.1 Affected Environment

Water resources at USAG-WP are divided into four main categories: groundwater, surface water, wetlands and vernal pools (Tetra Tech, 2011). An assessment on each of these resources is provided below.

Groundwater

Groundwater at USAG-WP occurs in an unconsolidated aquifer consisting of alluvial deposits and a consolidated bedrock aquifer. Recharge to the aquifer is primarily from infiltration of local precipitation (Tetra Tech, 2011). A geotechnical investigation was conducted at the Project Site, which consisted of seventeen borings, including two observation well piezometers (Mueser Rutledge, 2016). Based on the findings of the investigation, groundwater was encountered at depths between 14 and 15 feet below grade and dewatering of excavations during construction is anticipated (Mueser Rutledge, 2016).

No Federally-designated Sole Source Aquifers[12] or NYSDEC Primary or Principal Aquifers[13] were identified within or near the project area.

The majority of potable water at USAG-WP is supplied by surface water resources; however, there are twenty-two small-diameter, shallow wells which supply potable water to outlying range, bivouac, and recreational facilities (Tetra Tech, 2011). Based on water well information collected by NYSDEC[14], no water wells were identified in the immediate vicinity of the project area.

The Army maintains an inventory of its Military Munition Response Program (MMRP) sites. Based on review of the Fiscal Year (FY) 2015 West Point Military Reservation Army Defense Environmental Restoration Program Installation Action Plan (Installation Action Plan)[15] and the remedial investigation (RI) report prepared by Weston Solutions (June 2014), the existing Target Hill athletic fields are located within the Target Hill Munitions Response Site (MRS) (Appendix C). The portion of the project area north of the existing WWTP is located within the Target Hill MRS. The Installation Action Plan identifies groundwater and soil as media of concern at the Target Hill MRS. However, a site-specific groundwater investigation was not performed as part of the RI. The area which is currently occupied by the existing WWTP is included in the Siege Battery MRS (URS/ARCADIS, October 2012) (see Appendix C).

Surface Waters

There are many surface water features on the overall USAG-WP site. The major surface drainage system, as well as the major source of potable water at USAG-WP, is the Popolopen Brook system (Tetra Tech, 2011). This system is located approximately three miles southwest of the project area.

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[12] **http://www.state.nj.us/dca/divisions/sandyrecovery/pdf/SBL60697_SoleSourceAquiferMap_SBLTO1006.pdf**

[13] **http://www.dec.ny.gov/lands/36119.html**

[14] **https://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1203**

[15] **http://www.aec.army.mil/Portals/3/IAP/NY-WestPoint.pdf**

Only two natural surface water features are located proximal to the project area; specifically, Crows Nest Brook and the Hudson River. A discussion on these two water bodies in relation to the Proposed Action is provided below. Existing stormwater drainage features within the project area are also identified.

Crows Nest Brook

Crows Nest Brook originates in various small streams, which flow downgradient from Crows Nest Peak, located west of the project area (Tetra Tech, 2011). The brook ultimately discharges into the Hudson River near the project area. Based on NYSDEC mapping and as indicated on Figure 6, Crows Nest Brook is located on the northern portion of the project area. As illustrated on Figure 6, this waterbody enters the northern box culvert on the northwest portion of the project area and is culverted under the northern portion of the existing athletic fields prior to discharging to the Hudson River.

Figure 6. Surface Water Resources

The brook is classified by the NYSDEC as a Class C waterbody (*i.e.,* waters supporting fisheries and suitable for non - contact activities)[16]. It is also not a navigable waterbody (as defined by the State). Based on this information, the brook is not identified by the State as a jurisdictional (regulated) waterbody as defined under Article 15 of New York State's Environmental Conservation Law ("Protection of Waters Program"). In correspondence dated June 21, 2016, the NYSDEC confirmed that, with the exception of the Hudson River, no State-protected waterbodies are located within the Project Site (NYSDEC, 2016a).

Although classified by the NYSDEC as a Class C, non-navigable, non-jurisdictional waterbody, United States Fish & Wildlife Service (USFWS) personnel reportedly observed evidence of spawning brown trout within a segment of the brook near the project area (Tetra Tech, 2011). Based on this information, the USAG-WP treats portions of Crows Nest Brook as a Class C(ts) waterbody ("ts" indicating that the waterbody may support trout spawning); implementing appropriate mitigation measures to reduce the potential for adverse impacts.

Based on this information, work within the bed or banks or discharges to the brook may require permits from the United States Army Corps of Engineers (USACE). However, no work within the bed or banks is currently proposed and discharges to the brook are not anticipated.

Hudson River

The Hudson River is located adjacent (east) of the project area (see Figure 6). This portion of the Hudson River is designated as a NYSDEC Class B waterbody (*i.e.,* best usage for swimming and other contact recreation, but not for drinking water)[17]. Due to its scenic, natural, and cultural significance, the USAG-WP identifies the Hudson River as the most important waterway associated with the site (Tetra Tech, 2011).

Stormwater Management Features

In addition to the northern and southern box culverts (see Figure 6), which convey stormwater runoff to the Hudson River, three additional drainage ditches were observed within or proximal to the project area. Two of these drainage ditches are located along the western boundary of the project area adjacent to the area where removal of bedrock outcropping is proposed. These two drainage ditches appear to discharge to the third drainage ditch, which enters the southern box culvert near the southwest corner of the athletic fields, just north of the existing WWTP.

The three drainage ditches were not identified on current NYSDEC[18] or USEPA[19] mapping. However, an 1892 USGS 15-minute topographic map depicts a stream entering the southern portion of the project area from the west. This stream appears to be located in the same location as the drainage ditch, which enters the southern box culvert along the southwest portion of the athletic fields. Project-related encroachments on these drainage ditches may require permits from the NYSDEC and/or USACE, although no encroachments are currently proposed.

Wetlands & Vernal Pools

Federal Wetlands

The National Wetland Inventory (NWI) was established by the USFWS to provide a nationwide inventory of the nation's wetland habitats. The NWI data is used as a potential indicator for the presence of federal jurisdictional wetlands, which are regulated by the USACE under Section 404 of the Clean Water Act. NWI mapping is not a substitute for field delineations, which are required in the USACE's permit process. Based on a review of the NWI

[16] **http://www.dec.ny.gov/imsmaps/ERM/viewer.htm**
[17] **http://www.dec.ny.gov/imsmaps/ERM/viewer.htm**
[18] **http://www.dec.ny.gov/imsmaps/ERM/viewer.htm**
[19] **http://watersgeo.epa.gov/mwm/**

mapping[20], no NWI wetland habitats were identified within or immediately adjacent to the project area (Figure 7).

In 1993, the USACE prepared an inventory of wetlands on the overall USAG-WP. Field delineations were performed in accordance with the 1987 *Corps of Engineers Wetland Delineation Manual*, which included identification of wetland boundaries and USFWS classifications. The 1993 field inventory resulted in the mapping and characterization of 146 distinct wetlands on the USAG-WP site (Integrated Natural Resource Management Plan [INRMP]; Tetra Tech, 2011). No federal wetlands were identified (delineated) within or proximal to the project area (Appendix D).

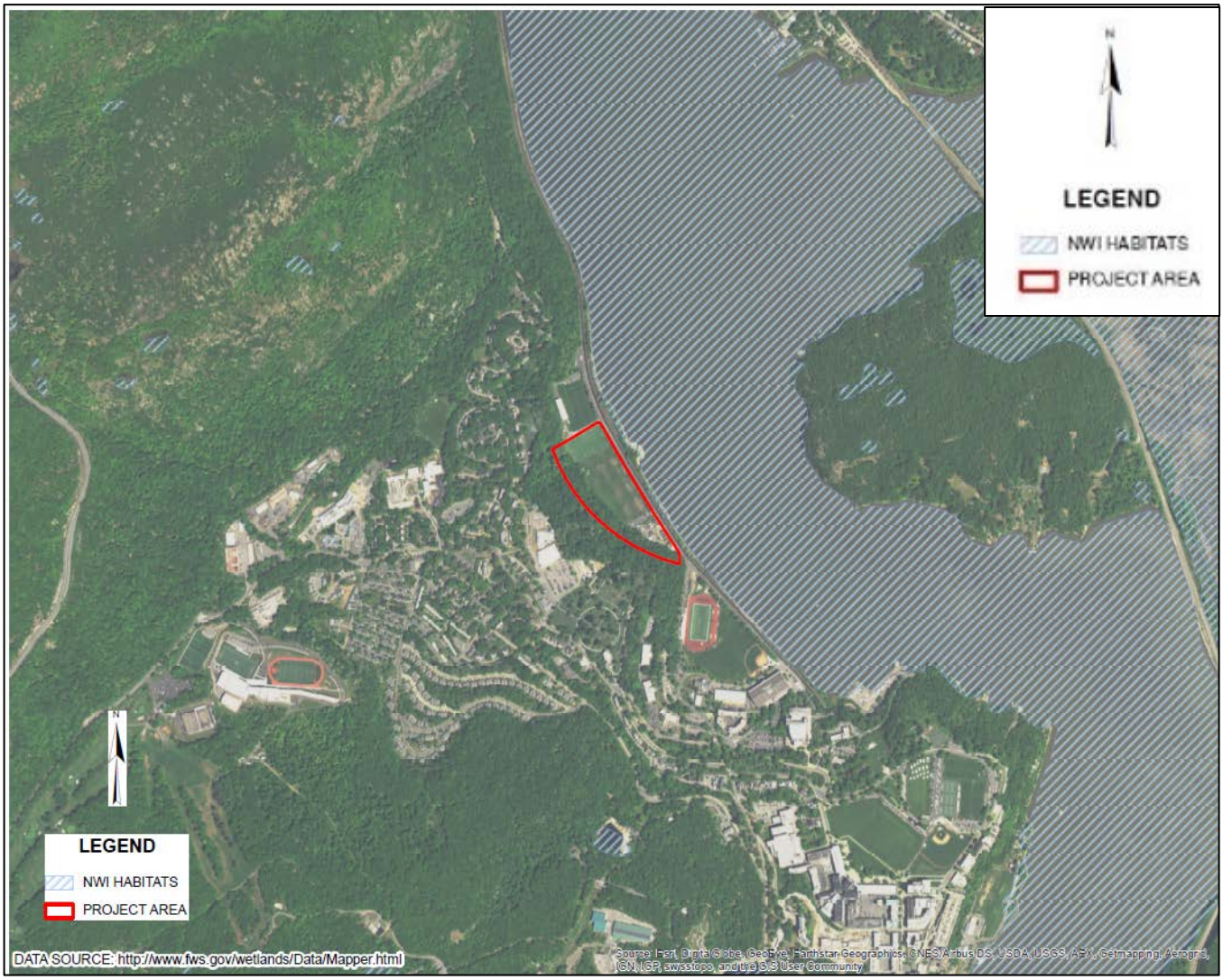

Figure 7. National Wetland Inventory

[20] **http://www.fws.gov/wetlands/Data/Mapper.html**

NYS Freshwater Wetlands

Based on a review of the NYSDEC-published freshwater wetlands mapping (Figure 8), no New York State (NYS)-jurisdictional freshwater wetlands (and associated checkzones/buffers) were identified within or immediately adjacent to (*i.e.,* 100 feet) the project area.

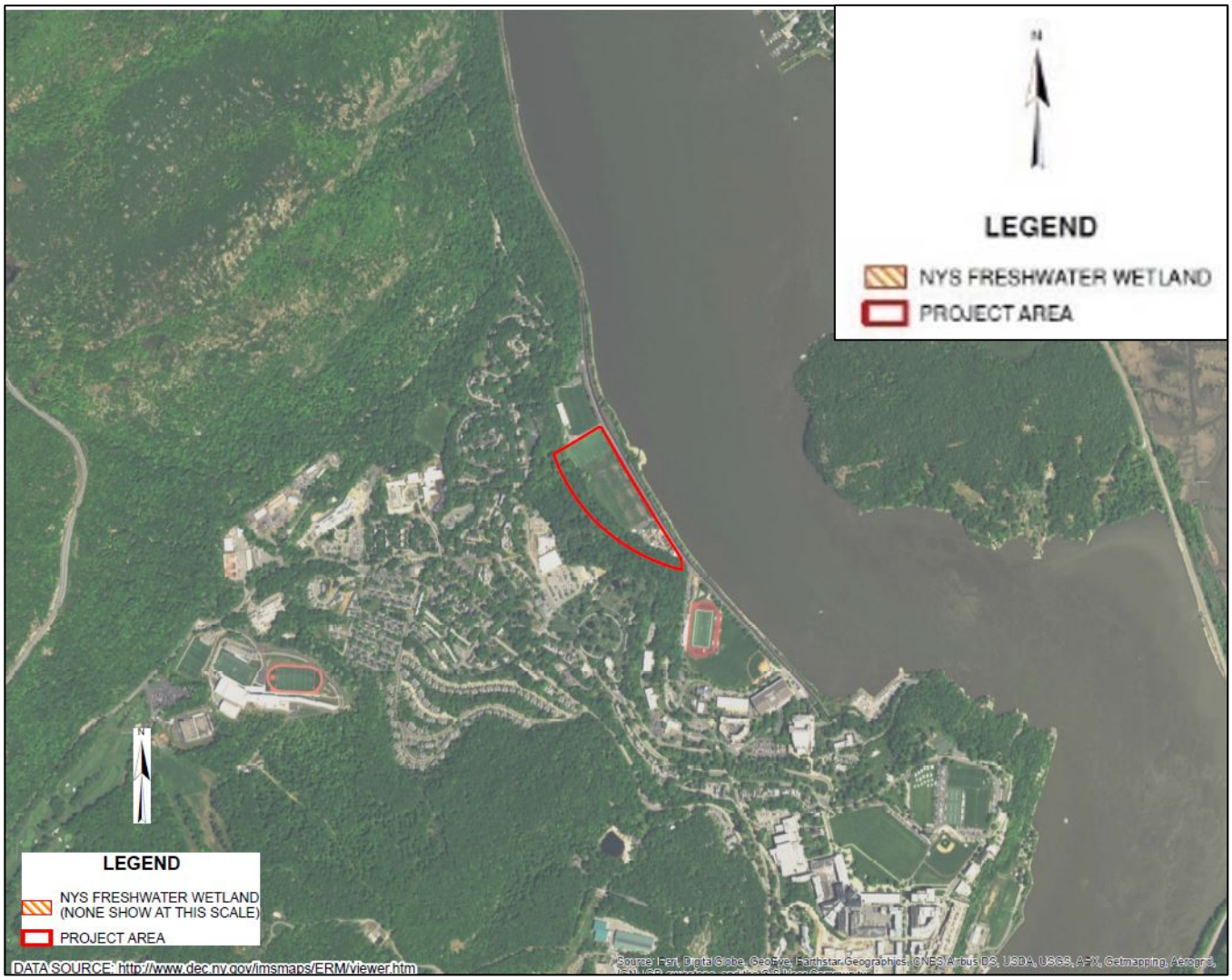

Figure 8. NYS Freshwater Wetlands

NYS Tidal Wetlands

Based on a review of NYSDEC-published tidal wetlands mapping (Figure 9), no NYS-jurisdictional tidal wetlands were identified within or adjacent to the project area. Hudson River Estuary tidal wetlands were identified on Constitution Island located on the western side of the Hudson River across from the project area.

Vernal Pools

Vernal pools are temporary bodies of freshwater that provide habitat for many vertebrate and invertebrate wildlife species. The USAG-WP has identified forty-one vernal pools on the USAG-WP site; however, as indicated in Appendix E, none of these vernal pools are located on or adjacent to the project area (Tetra Tech, 2011).

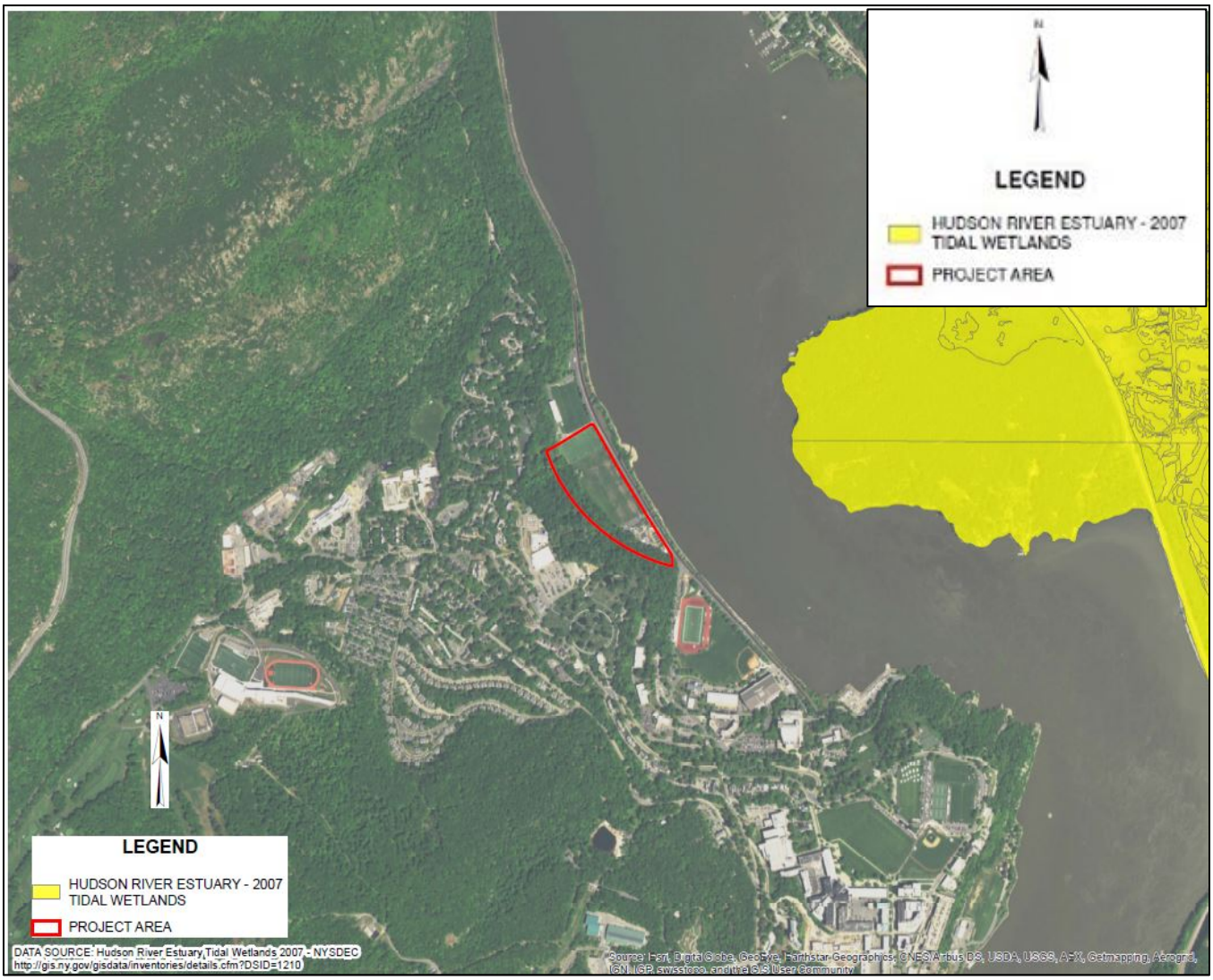

Figure 9. NYS Tidal Wetlands

3.4.2 Environmental Consequences

Groundwater

The following potential project-related impacts on or from groundwater were identified:

- Proposed below-grade construction may extend approximately 16.5 feet below the anticipated groundwater level (Mueser Rutledge, 2016). It is likely that groundwater will be encountered during excavations, trenching, and other intrusive construction phase activities. Although temporary dewatering activities for the purposes of construction, where the volume withdrawn is less that an average of 100,000 gallons per day (GPD) in any consecutive thirty-day period (*i.e.,* 3 million gallons during a 30-day period) are exempt from NYSDEC water withdrawal permitting, management of ground water will still be required.
- Potential to encounter impacted groundwater during construction.

Surface Waters/Wetlands/Vernal Pools

Construction

Crows Nest Brook

Project activities in this portion of the project area will be limited to the reconfiguration of the athletic fields. Project activities will not encroach upon or disturb Crows Nest Brook. E&SCs will be implemented during the construction phase to provide additional protection.

Hudson River

Installation of the new replacement outfall will require work to be performed in the Hudson River. This outfall will be located in an area of the Hudson River that is within Federal Jurisdiction per an agreement with New York State (Vaeth, 2017). Unmitigated, work within the river could result in sedimentation-related impacts, as well as temporary impacts to aquatic species. Work will be performed in accordance with permits obtained from agencies having jurisdiction. A Joint Application for Permit/Pre-Construction Notification (PCN) is being submitted to the NYSDEC and USACE to obtain authorization to perform the work within the River. Permits/approvals associated with the work within the river include:

- NYSDEC
  - » Article 15 Permit (Excavation and Fill in Navigable Waters, Stream Disturbance)
  - » 401 Water Quality Certification
- USACE
  - » Section 404 of the Clean Water Act (Nationwide Permit [NWP] No. 7)
  - » Section 10 of the Rivers & Harbors Act of 1899 (NWP No. 7)
- NYSDOS
  - » Federal Coastal Assessment

Potential temporary, construction phase impacts to surface water will be mitigated through the implementation of the SWPPP (discussed below), which will include measures to minimize sedimentation within the Hudson River during construction of the outfall.

Stormwater Management Features

During construction, stormwater runoff will be managed in accordance with the NYSDEC's SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002). The permit requires preparation, implementation and maintenance of a SWPPP. As previously stated, the SWPPP will include E&SCs, which will be maintained by the Contractor through site restoration/stabilization activities.

Federal/State Wetlands & Vernal Pools

No project-related impacts on federal or State (including checkzones/buffers) wetlands or vernal pools were identified.

Operations

Hudson River

Treated effluent from the existing WWTP is currently discharged to the Hudson River via an existing SPDES-permitted outfall. The treatment of wastewater flow from the existing facility will not be disrupted during construction and start-up of the new facility. Discharges from the new operational facility will be conveyed in a landward pipeline to the Hudson River via a new replacement outfall. It is anticipated that existing SPDES effluent limits will be maintained. The SPDES permit renewal modification process has been initiated and is expected to be completed in 2017; no long-term adverse impacts from SPDES-permitted discharges are anticipated.

Stormwater Management Features

During operations, stormwater runoff will be managed via permanent stormwater management facilities designed and constructed to control the quantity and quality of the runoff discharged from the site. The stormwater management system will be designed to Energy Independence Security Act (EISA) 2007 Section 438 regulation using low impact development (LID) elements. Specifically, the stormwater management system will be designed to retain the 95th percentile rainfall event. Consistent with existing conditions, stormwater managed on the site will be conveyed to the existing southern and northern box culverts, which discharge to the Hudson River. As previously indicated, the landward portion of the two existing box culverts will be repaired/stabilized.

3.4.3 Mitigation

Groundwater

Construction activities involving excavations will be conducted in accordance with applicable Occupational Safety and Health Administration (OSHA) requirements.

Groundwater encountered during construction activities will be characterized to identify an appropriate method of management. If impacted groundwater is encountered during construction activities, it will be managed and disposed in accordance with applicable Federal, State, local and DoD requirements. If groundwater is not impacted, discharges of dewatering activities will be managed by appropriate control measures in accordance with the General Permit (GP-0-15-002) and associated SWPPP. See Section 3.11 for an additional discussion on the potential to encounter impacted groundwater.

If applicable, a water withdrawal permit will be obtained from NYSDEC.

Surface Waters/Wetlands/Vernal Pools

Construction activities associated with the Proposed Action may result in temporary surface water impacts from stormwater runoff. However, standard construction industry stabilization practices will be implemented to minimize potential short-term impacts.

As previously described, it is anticipated that coverage under the General Permit will be required. Therefore, a SWPPP (and E&SC Plan) will also be prepared and implemented in accordance with the General Permit as well as New York State guidance documents. Preparation and implementation of the SWPPP will include stormwater management practices and components to control the post-construction rate and quality of runoff, as well as measures to minimize sedimentation within the Hudson River during construction of the outfall. Adherence to the requirements of the General Permit should provide sufficient mitigation to eliminate potential significant adverse impacts related to stormwater and adjacent surface waters.

The USAG-WP is also considering the future reuse of a portion of the treated effluent from the new WWTP as irrigation water for the adjacent recreational fields. Treated effluent would be diverted away from the Hudson

River outfall and conveyed to irrigation piping. The reuse of treated effluent for irrigation is not proposed as part of the existing construction phase.

3.5 FLOODPLAINS

3.5.1 Affected Environment

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the project area (Community Panel No. 36071C0364E effective August 3, 2009, Panel 364 of 630, Suffix E) was reviewed to evaluate flood potential (Figure 10). Based on the current map, the project area is located adjacent to, but not within, the 100-year flood hazard area. As indicated on Figure 10, a small portion of the project area is located within the 500-year flood area.

3.5.2 Environmental Consequences

Based on a review of the current map and project footprint (see Figure 2), no new buildings or surface structures are proposed within the 100-year or 500-year floodplain; therefore, no significant adverse impacts were identified.

3.5.3 Mitigation

Due to the proximity of the WWTP to the Hudson River, it is anticipated that the finished floor elevation for the proposed WWTP will be raised above the 100-year flood elevation to provide additional flood protection and resiliency.

Figure 10. Floodplains

3.6 THREATENED AND ENDANGERED SPECIES

3.6.1 Affected Environment

This section identifies the affected environment as it relates to the potential presence of State and federally-listed threatened or endangered species. A summary of common species is also provided. Four sources were consulted to identify the potential presence of endangered and threatened species within or proximal to the project area:

- New York Natural Heritage Program[21]

[21] **http://www.dec.ny.gov/animals/29338.html**

- United States Fish & Wildlife Service[22]
- National Oceanic and Atmospheric Administration[23]
- "Integrated Natural Resource Management Plan" (Tetra Tech, 2011)
- Environmental Assessment (DRAFT) – Construction of Rugby & Soccer Facilities at Target Hill Field (NEA, 2005)

Information provided from these sources is summarized below.

New York Natural Heritage Program (NYNHP)

The NYNHP compiles and maintains information on New York State rare native plants and animals; including native rare, threatened, and endangered (RTE) species, as well as species of special concern. The NYNHP data is accessible on the NYSDEC's Environmental Resource Mapper website[24].

Information provided on the website indicates that the project area is located within or near an area with the following rare animals and rare plants:

- Rare Animals/Insects
  - » Allegheny Woodrat (*Neotoma magister*), Endangered
  - » Gray Petaltail (*Tachopteryx thoreyi*), Special Concern
- Rare Plants
  - » Large Twayblade (*Liparis liliifolia*), Endangered
  - » Rattlebox (*Crotalaria sagittalis*), Endangered

With the exception of the Gray Petaltail, each of the species listed above is not known to be present at the USAG-WP site. The Gray Petaltail is present at the USAG-WP site but not on or proximal to the project area (Vaeth, 2016).

A consultation document was submitted to the NYNHP to review their database and identify rare, threatened, and endangered (RTE) species, as well as species of special concern within a half mile of the project area. In addition, a consultation letter was submitted to NYSDEC's Region 3 Division of Environmental Permits requesting a review of potential environmental impacts associated with the Proposed Action. A copy of the response letters received by NYNHP and NYSDEC's Region 3 Division of Environmental Permits are included in Appendix F.

The following state-listed species were identified by NYNHP (NYSDEC, 2016b):

- Mammals
  - » Eastern Small-footed Myotis (*Myotis leibii*), Special Concern, documented within a ½ mile of the project site
  - » Northern Long-eared Bat (*Myotis septentrionalis*), Threatened, documented within 3.5 miles of the project site

[22] **https://ecos.fws.gov/ipac/**
[23] **http://www.habitat.noaa.gov/protection/efh/habitatmapper.html**
[24] **http://www.dec.ny.gov/imsmaps/ERM/viewer.htm**

- »
- Birds
  - » Bald Eagle (*Haliaeetus leucocephalus*),Threatened, documented within a ½ mile of the project site
- Fish
  - » Atlantic Sturgeon (*Acipenser sturio*), Endangered, documented within a ½ mile of the project site
  - » Shortnose Sturgeon (*Acipenser brevirostrum*), Endangered, documented within a ½ mile of the project site
- Reptiles
  - » Timber Rattlesnake (*Crotalus horridus*), Threatened, documented within one mile of the project site

In addition to several of the species noted above, NYSDEC's Region 3 Division of Environmental Permits identified the Least Bittern (*Ixobrychus exilis),* a state-listed threatened bird species, as within or near the project site (NYSDEC, 2016a).

United States Fish & Wildlife Service (USFWS)

The USFWS has primary responsibility for terrestrial and freshwater species protected under the Endangered Species Act. USFWS data on federally-listed endangered and threatened species is accessible on the Service's Information for Planning and Conservation (IPaC) website. Based on a review of the website data, the following federally-listed species are reported to exist in the vicinity of the project area (Orange County):

- Clams
  - » Dwarf Wedgemussel (*Alasmidonta heterodon*), Endangered
- Flowering Plants
  - » Small Whorled Pogonia (*Isotria medeoloides*), Threatened
- Mammals
  - » Indiana Bat (*Myotis sodalis*), Endangered
  - » Northern Long-eared Bat (*Myotis septentrionalis*), Threatened
- Fish
  - » Atlantic Sturgeon (*Acipenser sturio*), Endangered
  - » Shortnose Sturgeon (*Acipenser brevirostrum*), Endangered

The Dwarf Wedegemussel, Small Whorled Pogonia or Indiana Bat species are not known to be present at the USAG-WP site (Vaeth, 2016).

The USFWS's IPaC planning report also identified 22 migratory birds that are known to exist in Orange County including the Bald and Golden Eagles.

National Oceanic and Atmospheric Administration (NOAA)

Based on the Magnuson Stevens Act, NOAA regulates and protects habitats that are essential to maintaining healthy fish stocks and the jobs that depend on them. The construction of the new replacement outfall will occur within a NOAA-designated Essential Fish Habitat (EFH) for the following fisheries[25]:

- Atlantic Butterfish
- Summer Flounder
- Bluefish

[25] http://www.habitat.noaa.gov/protection/efh/habitatmapper.html

Correspondence to and from NOAA regarding the Proposed Action including an EFH assessment has been submitted to NOAA to obtain concurrence that there will be no significant adverse impacts on EFHs or endangered species. Copies of these documents are included in Appendix F.

Integrated Natural Resource Management Plan (INRMP)

The INRMP (Tetra Tech, 2011) was reviewed to identify data specific to the project area. The plan includes an inventory of endangered and threatened species on the overall USAG-WP site. The survey was conducted in 1992 and 1993 in accordance with AR 200-3 (Natural Resources – Land, Forest and Wildlife Management).

Results of the survey indicated that no species listed under the federal Endangered Species Act as endangered or threatened were found to be permanent residents of, or to breed on, the USAG-WP site. The survey did find, however, that the Bald Eagle, a State threatened species, is a frequent winter visitor to both the reservation and Constitution Island and that suitable habitat existed for the State and federally endangered Indiana Bat and the then federally threatened Peregrine Falcon (the Peregrine Falcon is no longer federally-listed). Three bird species: Golden Eagle, Red-shouldered Hawk, and Osprey (which at the time were state-listed) were observed in forested areas on the reservation during the survey, but were not considered residents. Golden Eagles do not occur on or near the project area (Vaeth, 2016).

The only State-listed terrestrial animal species found to be a permanent resident of the West Point reservation was the Timber Rattlesnake. The nearest known den is approximately one mile from the proposed project site (Vaeth, 2016). In addition, since the publication of the INRMP, the Northern Long-Eared Bat has been listed as a federally- and state-listed threatened species.

In addition to the species noted above, several plant and wildlife species with special protection status (including federal or State-listed threatened or endangered species, or state-listed species of special concern) and rare species have been documented on the USAG-WP site (Tetra Tech, 2011). Although rare species are not formally protected under federal or state law, they are offered special consideration and protection by the Army as a matter of responsible land stewardship. These include three mammal species, twenty bird species, seven reptile species, three amphibian species, two fish species, one insect species, fourteen rare odonates (dragonflies and damselflies), fourteen rare butterflies, and seventy-five rare plants.

In regards to riverine communities, the Shortnose Sturgeon (*Acipenser brevirostrum*) and Atlantic Sturgeon (*Acipenser sturio*) are each a federally-listed endangered species and have been documented in the Hudson River proximal to the USAG-WP site (Tetra Tech, 2011).

The following table summarizes state and federal endangered and threatened species, as well as state-listed species of special concern with potential to occur on the overall USAG-WP site or in the adjacent Hudson River.

Table 2. Summary of Endangered or Threatened Species

Common Name	Scientific Name	Federal or State Status	Source
Mammals			
Northern Long-eared Bat	*Myotis septentrionalis*	FT, ST	USFWS
Eastern Small-footed Myotis	*Myotis leibeii*	SSC	NYNHP
BIRDS			
Bald Eagle	*Haliaeatus leucocephalus*	ST	INRMP/NYNHP
Golden Eagle	*Aquila chryseatos*	SE	INRMP
Northern Harrier	*Circus cyaneus*	ST	INRMP
Peregrine Falcon	*Falco peregrinus anatum*	SE	INRMP
Least Bittern	*Ixobrychus exilis*	ST	INRMP
Pied-billed Grebe	*Podilymbus podiceps*	ST	INRMP

Common Name	Scientific Name	Federal or State Status	Source
Migratory Birds	*NA*	FMB	USFWS, INRMP
REPTILES			
Timber Rattlesnake	*Crotalus horridus*	ST	INRMP
INSECTS			
Gray Petaltail	*Tachopteryx thoreyi*	SSC	NYNHP
RIVERINE			
Shortnose Sturgeon	*Acipenser brevirostrum*	FE, SE	INRMP/NYNHP
Atlantic Sturgeon	*Acipenser sturio*	FE, SE	INRMP/NYNHP

FE – Federally Endangered
FT – Federally Threatened
FMB – Federal Migratory Bird
SE – State Endangered
SSC – State Special Concern
ST – State Threatened

The NYNHP lists and ranks rare plant species, many of which are protected by State law due to their potential for extinction. West Point currently maintains a rare plant management plan, which provides management measures for each rare plant with a NYNHP ranking of S1, S2, or S3, or plant species that are determined regionally rare for the Hudson Valley (Tetra Tech, 2011). This plan is updated annually to reflect new species rankings. USAG-WP also maintains a geographic information system (GIS) shape file with known locations of rare plants (Tetra Tech, 2011).

Draft Environmental Assessment (Construction of Rugby & Soccer Facilities at Target Hill Field)

In 2005, the USAG-WP prepared an EA to evaluate potential impacts associated with the construction and use of additional athletic fields at the Target Hill Field complex. The site is located adjacent to the existing WWTP and encompasses a large portion of the current project area.

Information from the 2005 EA was reviewed to maintain consistency with information contained in this current evaluation. A summary of common species with expected occurrences within the project area was excerpted from the 2005 EA and is provided below. Based on observations during site reconnaissance, common species on the adjacent WWTP site are anticipated to be similar.

Common Species (Flora & Fauna)

In regards to comment flora (plant) and fauna (wildlife) species within the project area, the 2005 EA (NEA, 2005) states that,

> *Vegetation in the project area consists primarily of open, maintained grass athletic fields located adjacent to the Hudson River. The vegetation on the athletic fields is intensively maintained for recreational field use by mowing and the periodic application of seed, fertilizer, and herbicides. Although this lawn area is likely used by Canada geese (Branta canadensis) and common bird species such as American robins (Turdus migratorius) for foraging, most of the project area can be characterized as an open, maintained monoculture that does not provide a significant source of food, cover, or other habitat to wildlife species.* (NEA, 2005)

The 2005 EA also characterizes the types of common species with potential occurrences on the adjacent southern hillside:

> *The vegetated cover on the hillside adjacent to Target Hill Field is characterized as forested uplands consisting of both Appalachian oak-hickory and oak-tulip tree forest community types. Typical species in Appalachian oak-hickory forested communities include: northern red oak (Quercus rubra), black oak (Q. velutina), and scarlet oak (Q. coccinea), with minor amounts of hickory (Carya spp.). White oak (Q. alba), chestnut oak (Q. prinus), and red maple (Acer rubrum)*

> *are also commonly associated with the oak-hickory community. The understory typically includes flowering dogwood (Cornus florida), witch hazel (Hamamelis virginiana), shadbush (Amelanchier canadensis), and choke cherry (Prunus virginiana). Typical overstory species in oak-tulip tree forested communities include a mixture of five or more species, including all of those mentioned for the oak-hickory community type except hickory, and tulip tree (Liriodendron tulipifera), beech (Fagus grandifolia), and black birch (Betula lenta). The subcanopy and shrub layer species are typically diverse, and characteristic ground cover species include white wood aster (Aster divarcatus), New York fern (Thelypteris noveboracensis), wild geranium (Geranium maculatum), Solomon's seal (Polygonatum biflorum), and Jack-in the-pulpit (Arisema triphyllum).* (NEA, 2005)

In regards to common faunal species, the 2005 EA states:

> *Common mammal species that are likely to occur in the forested areas adjacent to Target Hill Field include: eastern chipmunk (Tamias striatus), gray squirrel (Sciurus carolinensis), white-footed mouse (Peromyscus leucopus), opossum (Didelphis virginianus), raccoon (Procyon lotor), striped skunk (Mephitis mephitis), and white-tailed deer (Odocoileus virginianus). Black bear (Ursus americanus) also are known to forage adjacent to the Project site (Beemer 2005). In addition, many species of birds occur in forested and edge habitat areas at West Point, including red-tailed hawk (Buteo jamaicensis), which is known to nest and forage near the Project area (Beemer 2005). The banks and adjacent shallows in the Hudson River provide migratory and foraging habitat for shorebirds and waterfowl, including mallards (Anas platyrhynchos), ringnecked ducks (Aythya collaris), spotted sandpipers (Actitis macularia), and great blue herons (Ardea herodias).* (NEA, 2005)

3.6.2 Environmental Consequences

The reviewed information indicates that, with the exception of the Atlantic and Shortnose Sturgeon, Timber Rattlesnake, Northern Long-Eared Bat, Bald Eagle, and other migratory birds, no other endangered or threatened species have been observed on or proximal to the project area. The potential for the project to result in significant or long-term adverse impacts on observed or other listed species is considered low for the following reasons:

- Adherence to the requirements of the General Permit (GP-0-15-002) should provide sufficient mitigation to eliminate potential significant adverse impacts related to stormwater and adjacent surface waters.
- Outfall-related work within the river will be completed in accordance with applicable permits (including time-of-year in-water restrictions). In addition, proposed work will be completed in dry conditions using a coffer dam or comparable means and other contractor-identified mitigation to reduce potential for incidental taking (including harassment) of endangered/threatened species and disruptions to EFH. Table 3.3 identifies mitigation measures to be taken while performing work within the Hudson River.
- NOAA is unaware of studies linking impacts to sturgeon due to construction noise occurring near, but not in water bodies (Pray, 2016). Therefore, significant adverse impacts associated with on-land construction activities to rare, threatened, or endangered aquatic species (*i.e.*, Shortnose Sturgeon and Atlantic Sturgeon) are not anticipated.
- Treated effluent from the new WWTP will continue to be discharged to the Hudson River via a new outfall, which will replace the existing SPDES-permitted outfall; it is anticipated that existing effluent limits will be maintained.
- The project area characterized by the existing WWTP and athletic fields does not contain sustainable habitat for many of the listed species. Except for the potential for occasional, transient individuals (including migratory birds), this area does not contain any rare, threatened, or endangered species. Common species are more likely to habitat this area.

- To minimize potential short-term, construction phase impacts on the seasonal (winter) Bald Eagle population, which are known to use the reservation and Constitution Island for foraging and loafing habitat (Tetra Tech, 2011; Vaeth, 2016), blasting activities and mitigation will account for potential impacts (see below).
- No significant trees (potential seasonal bat roosting sites) are located within the project area; clusters of trees are limited to the embankment along the western portion of the site.

In addition, no significant, long-term, adverse impacts to common species are anticipated. Impacts to common species are expected to be temporary and short-term lasting only during the length of the construction phase. Vegetative plantings will be restored following construction activities, and common wildlife species would be expected to return to the site. During construction, wildlife will continue to have travel corridors for movement around the project area.

3.6.3 Mitigation

A tabular summary of mitigation measures is provided below.

Table 3. Summary of Threatened and Endangered Species Mitigation Measures

Common Name	Mitigation
Northern Long-Eared Bats	The INRMP indicates that northern long-eared bats were captured while performing netting surveys in 2002 and 2008 (Tetra Tech, 2011). The most recent survey for Northern Long-Eared Bat occurred in the summer of 2015 when the Crows Nest Brook at Target Hill was sampled with mist nests and acoustically. This species was not encountered (PWE, 2015). To minimize or eliminate impacts to this species, tree cutting will be restricted to November 1st – March 31st when the bat will be in hibernation at off-site hibernacula. Any tree removal associated with the project will be incidental. West Point will comply with the provisions of 50 CFR 17.40 (also referred to as the 4(d) Rule) prior to removing any trees.
Bald Eagle	Constitution Island, located on the east side of the Hudson River, is used for foraging and loafing habitat. Night roost habitat is miles from site. The nearest nest is on Saint Basil's Academy, located on the southeast shore of Constitution Marsh, and is not visible from the project area (Vaeth, 2016). Construction activities may require blasting. The blasting plan will include measures to reduce impacts to eagles and other migratory birds. To minimize or eliminate potential impacts to these species during construction, USAG-WP will not conduct blasting activities during the period of Dec 1st through March 31st.
Timber Rattlesnake	Review of USAG-WP's INRMP indicates that five dens have been identified within or very near the USAG-WP installation boundary and that this species is known to inhabit heavily wooded terrain and hibernate in dens located on wooded rocky hillsides with southern exposure. The nearest den is located approximately ¾ of a mile from the project area (Pray, 2017). USAG-WP will inspect areas prior to any clearing and inform contractor(s) of appropriate measures in dealing with wildlife as part of a comprehensive environmental briefing (Vaeth, 2016). USAG-WP's Natural Resource Manager will meet with the construction project and safety managers to review rattlesnake protection measures including instructions on how to proceed in the presence of a snake and providing contact numbers and an information poster to be posted in at the work site (Pray, 2017).

Common Name	Mitigation
Shortnose and Atlantic Sturgeon	Temporary control measures to mitigate for upland erosion and sedimentation to the Hudson River, which may impact Sturgeon foraging habitat through increased sediment loading, will be implemented. These control measures may include silt barrier fencing, sediment filter bags, erosion control mulch blanket(s), rock filters, temporary sandbag diversion dam, and pumping to divert ground- and stormwater. Additionally, implemented erosion and sedimentation measures will be maintained and inspected following each runoff event and on a weekly interval to ensure compliance. A cofferdam (or other means to provide for work in dry conditions) will be utilized to install the new replacement outfall in the Hudson River. Under dry conditions, direct mortality from construction activity will be avoided, as Sturgeon will be excluded from the Site during in-water pipeline installation. In addition, it is estimated that the in-river outfall work will be brief (days to weeks) after the cofferdam is installed. Installation of the cofferdam will utilize best management practices to minimize vibration impacts; temporary vibratory impacts from the cofferdam installation to Sturgeon will be minimized. To avoid potential impacts to migratory Sturgeon moving upstream to spawning grounds, and juveniles associated with the salt from near the Site in late spring (and moving upstream during summer months), an in-river work window between September through end of February will be implemented (also accounts for EFH; see below). In-river sediment that is temporarily disturbed or removed as part of the installation of the pipelines in the Hudson River will be replaced in-kind to support current benthic communities for Sturgeon forage.
NOAA-designated EFH	Work within the river will be completed between September and the end of February.
Migratory Birds	No appreciable loss of habitat is anticipated. As described in Section 3.14, fully shielded fixtures will be utilized to prevent glare and night-sky related light pollution. This will minimize distraction to nocturnal migratory birds.

It is also noted that the USAG-WP conducts frequent monitoring and maintains an up-to-date GIS database with known locations of animal and plant species that have been classified as endangered, threatened, proposed, or of special concern (Tetra Tech, 2011). Coordination with USAG-WP personnel will be maintained during the construction phase to promote avoidance of, and minimize disturbances to, these species.

3.7 CULTURAL RESOURCES

3.7.1 Affected Environment

WWTP and Athletic Fields

The USAG-WP site is a National Historic Landmark. Site activities are assessed as to their potential impacts on cultural, historic and archaeological resources (cultural resources). To manage cultural resources, the USAG-WP prepared an "Integrated Cultural Resources Management Plan" (ICRMP). The ICRMP is intended to guide West Point in complying with the related Cultural Resource Management (CRM) federal preservation requirements and Army regulations.

Assessment of potential project-related impacts on cultural resources is also guided by the "*Programmatic Agreement among the United States Army Garrison West Point, the New York State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Operations, Maintenance, and Development Activities,*

United States Army Garrison, West Point, West Point, New York" (PA) executed in July 2016, which outlines the consultation process with key cultural resource decision-makers and stakeholders. The PA also lists key and contributing elements of the National Historic Landmark District, as well as other historic properties.

Based on a review of New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) Field Services Bureau's[26] online Cultural Resource Information System (CRIS), the USAG-WP site (including the project area) is listed in the National Register Building Sites inventory (NY Number 90NR02302) and within an area identified by SHPO as "archaeologically sensitive." The USAG-WP site is also identified within the National Park Service's (NPS's) Hudson River Valley National Heritage Area.[27]

Included in the ICRMP is a cultural resource inventory for the USAG-WP installation, which includes a listing of known cultural resources including buildings, structures, archaeological sites, landscape features and objects, which contribute to the cultural significance of the site. The ICRMP includes the following information regarding the cultural significance of the existing WWTP and Target Hill athletic fields:

- The existing WWTP is identified in the inventory as a non-contributing building cultural resource.
- The Target Hill athletic fields are identified in the inventory as a contributing element (historic landscape) to the National Historic Landmark District.

The area to the west of the existing WWTP consists of a forested embankment with exposed bedrock outcroppings. A portion of this area may be excavated (via blasting) to provide adequate space for the Proposed Action. As previously described, soils in this area are steeply sloped and shallow. Based on a review of the "NYS Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State" (The New York Archaeological Council, 1994), this area has a low probability of archaeological significance due to its steep slopes (greater than 12-15%).

In support of the 2005 EA conducted for the adjacent rugby and soccer facilities, a Phase I Cultural Resource Investigation was completed within the area located to the west of the project area. During the investigation, a flush-mounted marker commemorating the former Stephen Moore House was observed adjacent to the athletic fields along the northeast border of the project area (AAC, 2006) (see Appendix G). The monument is located outside of the area of potential effect (construction limits).

Utility Extensions

In addition to the area of potential effect associated with the proposed WWTP and reconfigured athletic fields (Figure 2), additional utility extensions within the WPMR will be required to service the new WWTP (see Figure 11). The alignments are summarized in Section 1.3 and illustrated in Appendix H.

[26] Also known as the State Historic Preservation Office or SHPO.

[27] **http://www.nps.gov/maps/full.html?mapId=01a03739-ab0c-40eb-bc3d-6791d3bb67fa**

Figure 11. Utility Extensions

3.7.2 Environmental Consequences

The area of potential effect consists of the area currently occupied by the existing WWTP, the Target Hill athletic fields (site of proposed WWTP), and within the limits of disturbance associated with the utility extensions.

Demolition of WWTP

As stated in the ICRMP, the existing WWTP is identified as a non-contributing cultural resource. Consequently, the demolition and replacement of the existing facility is not considered a significant adverse cultural resource impact.

Target Hill Athletic Fields

The proposed project will encroach upon a portion of these existing fields, while the existing WWTP will be demolished and reclaimed as replacement green space. To minimize impacts on green space, the proposed WWTP footprint (8.6 acres) maximizes the use of existing impervious areas including a portion of the existing parking lot. Overall, the project will result in a net decrease in green space of approximately 1 acre (6.8 acres [80% of the overall site] to 5.8 acres [67% of the overall site]), which is necessary to provide for the expansion in treatment capacity.[28]

The North Athletic Field (located south of the project area) was expanded beginning in 1937 by removing a portion of Target Hill and using the excavated dirt as fill to create a level area for athletic fields. The existing Target Hill athletic fields were constructed in the previously excavated area.[29] The presence of fill material was confirmed by the recent geotechnical investigation, which indicated that the uppermost soil stratum is sandy fill ranging in thickness from 2 to 56 feet, averaging 27 feet thick (Mueser Rutledge, 2016).

In support of the 2005 EA prepared for the rugby and soccer facilities, a Phase I Cultural Resource Investigation was conducted, which encompasses a significant portion of the current project area. The investigation also included steep terrace slopes to the west and north of the fields (NEA, 2005). The document stated that "archaeologically, the project is located in an area with low to moderate sensitivity for the presence of archaeological resources (steep terrain and exposed bedrock with greater than 25 percent slope overlooking the present Target Hill Fields that are situated on fill)." (NEA, 2005).

The construction of the new Target Hill WWTP will have an adverse effect on the Target Hill Athletic Fields, a historic landscape that is a contributing element to the National Historic Landmark (see discussion on mitigation below).

Moore Monument

The Proposed Action will not impact the location of the Moore Monument; no construction activities are proposed in that area.

Utility Extensions

No short- or long-term impacts on cultural resources are anticipated from the proposed utility extensions. With the exception of the natural gas line extension from the existing natural gas main on Washington Road to Tower Road, the utility extensions will be installed in existing road rights-of-way, which were previously disturbed during the installation of the road and existing utilities. The majority of the section of the natural gas line from the existing main to Tower Road is located in an area previously disturbed for the installation of a sanitary sewer line. The remaining portion of piping (less than 100 linear feet) will extend from Washington Road to Ruger Road.

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[28] The existing WWTP encompasses approximately 1.78 acres, while the proposed WWTP will encompass approximately 3.91 acres.

[29] **http://www.aec.army.mil/Portals/3/IAP/NY-WestPoint.pdf**

A discussion on aesthetics and visual resources impacts, including landscaping, is provided in Section 3.14.

3.7.3 Mitigation

In accordance with the PA, the USAG-WP will execute a letter agreement for the minimization and mitigation of the adverse effects (Appendix F). Activities required by the PA include retaining the location of the existing wastewater treatment plant as open space after it has been demolished and the development of an historic context for the athletic fields, including Target Hill, as recommended by the USAG-WP Historic Landscape Management Plan (ERDC/CERC, 2002).

3.8 NOISE EFFECTS

3.8.1 Affected Environment

The Noise Control Act of 1972 (Public Law 92-574) and Quiet Communities Act of 1978 directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. USEPA, the U.S. Department of Housing and Urban Development, and DoD have identified noise levels to protect public health and welfare with an adequate margin of safety. These levels are considered acceptable guidelines for assessing noise conditions in an environmental setting. Noise levels below 65 decibels (dB) are considered to be acceptable in suitable living environments.

The USAG-WP's "Installation Operational Noise Management Plan" (IONMP) (April 2013), which was prepared in accordance with the Noise Control Act of 1972 and the Quiet Communities Act of 1978, provides a strategy for noise management to ensure that noise disturbances are properly managed on USAG-WP projects and activities.

Helicopter missions and training activities are the primary sources of noise at the USAG–WP installation. (Tetra Tech, 2011). Existing noise within the project area is minimal; existing sources include WWTP operations (*i.e.*, aeration blowers) and vehicular traffic accessing and egressing the site. Vehicular traffic generates a level of noise typical for a residential or academic setting (NEA, 2005). Noise level measurements have not been obtained specifically in the project area. In lieu of field measurements, the noise levels can be approximated based on existing land uses. The typical day-night noise level (L_{dn}) in residential areas ranges from 39 to 59 dBA (A-weighted decibel) (NEA, 2005). It can be assumed that the existing sound levels in the project area are roughly within this range. Sensitive receptors in the vicinity include Bald Eagle nesting sites on Constitution Island (Tetra Tech, 2011) (see Section 3.6) and the adjacent athletic fields.

3.8.2 Environmental Consequences

Construction

The following project-related, construction phase noise sources are anticipated:

- Equipment necessary to prepare the project area and construct the new WWTP, demolish the existing WWTP, and reestablish the athletic fields.
- Vehicles and equipment accessing and egressing the site including trucks hauling C&D debris for off-site management.
- Temporary power generators.
- Blasting to remove bedrock.

Impacts will be short-term and intermittent and mitigated through implementation of controls identified in the mitigation section below.

Operations

No new noise sources are proposed. Operations at the new WWTP will replace operations at the existing WWTP. New operations will integrate designs and equipment with improved noise attenuation in comparison to

operations at the existing, aging facility. In addition, the re-established athletic fields are expected to have similar noise levels to the existing athletic fields.

3.8.3 Mitigation

Construction

Construction phase noise impacts will be mitigated as follows:

- Use and maintenance of appropriate mufflers on vehicles and equipment.
- Adherence to construction hours. The NYSDEC Program Policy "Assessing and Mitigating Noise Impacts" suggests that limiting activity to normal workday hours is an effective mitigation measure[30].
- Implementation of a blast plan (see Section 3.2), which will include noise-related mitigation measures.
- Compliance with the IONMP.

Operations

No significant operational phase noise impacts were identified. Site operations will be conducted in accordance with the USAG-WP's IONMP. Aeration blowers will be housed in noise attenuating enclosures.

3.9 SOCIOECONOMIC ISSUES/ENVIRONMENTAL JUSTICE

3.9.1 Affected Environment

On February 11, 1994, President Clinton issued EO 12898, "*Federal Actions to Address Environmental Justice (EJ) in Minority and Low-Income Populations*." The purpose of the EO was to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities. The EO requires the identification of alternatives that could mitigate these impacts.

On March 24, 1995, the DoD issue its EJ strategy.[31] The strategy document indicates that the DoD will use NEPA as the primary mechanism to implement the provisions of the EO. When appropriate, environmental assessments will evaluate the potential environmental effects (including human health, economic, and social) of its actions on minority and low-income populations.

In addition to EO 12898, EO 13045, "*Protection of Children from Environmental Health and Safety Risks*," requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children.

3.9.2 Environmental Consequences

The Proposed Action is located on the USAG-WP site and not within a potential EJ area[32] or in an area utilized or substantially contiguous to an area utilized by children; no impacts on minority or low-income populations, or children are anticipated.

Consistent with Form DD 1391, the Proposed Action is necessary, in part, to provide adequate facilities to support on-site populations including cadets, faculty and support personnel. Future projects (see Section 3.17) were considered in regards to potential wastewater flow increases. The new WWTP will be designed to meet future wastewater treatment needs based on review and evaluation of a 50-year planning horizon[33] including

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[30] **http://www.dec.ny.gov/docs/permits_ej_operations_pdf/noise2000.pdf**
[31] **http://www.denix.osd.mil/references/upload/DoD-Environmental-Justice-Strategy-24-Mar-1995.pdf**
[32] **http://ejscreen.epa.gov/mapper/**
[33] In accordance with DoD Unified Facilities Criteria (UFC 1-200-02).

the potential future centralization of waste water treatment at USAG-WP (*i.e.,* sending Camp Buckner WWTP flow to Target Hill WWTP) and increases in population based on the proposed projects reviewed[34] (Atkins/OBG, February 2016).

No significant adverse impacts were identified.

3.9.3 Mitigation

No issue-specific mitigation is required.

3.10 ENERGY

3.10.1 Affected Environment

The existing WWTP is serviced by existing USAG-WP energy infrastructure, which includes electricity, natural gas, and diesel and digester gas-fueled power generators.

3.10.2 Environmental Consequences

The new WWTP will connect to existing electric and natural gas services, which are in place to power the existing facility. Diesel and/or digester gas-fueled power generators (*i.e.,* cogeneration operations and emergency diesel generator) will also be used at the new WWTP.

The new WWTP will incorporate DoD UFC sustainability requirements. In addition, the new Operations/Maintenance Building is expected to be Leadership in Energy and Environmental Design (LEED) Silver certifiable. The new building systems are expected to incorporate the objectives of the USAG-WP's net zero energy installation initiative (Army Directive 2014-02)[35]. The initiative states that the USAG-WP will "implement Net Zero energy goals by calendar year 2020, while meeting energy mandates for renewable energy production and GHG emissions reduction." Consistent with this goal, the project is expected to include enhanced digester gas utilization; specifically, the digestion of solids to generate methane gas, and the conversion of methane gas to electrical energy, which can be used at the new WWTP. In addition, to improve gas production and energy value, the new WWTP (unlike the existing WWTP) will incorporate anaerobic digestion of food waste generated in cafeterias on the overall USAG-WP site. Additional improvements (under consideration) may include geothermal facilities to assist in the attainment of USAG-WP's sustainability goals.

3.10.3 Mitigation

No significant adverse energy-related impacts were identified. As discussed above, implementation of the project will result in a net reduction in energy use in comparison to existing conditions.

3.11 HAZARDOUS MATERIALS AND WASTES

3.11.1 Affected Environment

USAG-WP Policies

Various hazardous materials are currently used and/or present on the USAG-WP site. In addition, the USAG-WP is classified as a large quantity generator (LQG) of hazardous waste.

USAG-WP's hazardous materials policy requires compliance with all Federal, State and local laws and regulations governing the use and control of hazardous materials to minimize hazards to public health and damage to the environment, including AR 200-1 ("Environmental Protection and Enhancement"). In compliance with AR 200-1, the USAG-WP developed a hazardous materials management system (HMMS) establishing

[34] The Facility Report (Atkins/OBG, February 2016) utilized planned future wastewater loads from planned new construction as of the 2012 Infrastructure Capacity Analysis (ICA) Report.

[35] **http://www.westpoint.army.mil/SiteAssets/Pages/EMD/wp-netzero-energyinst.pdf**

procedures, which allow for cradle-to-grave tracking of hazardous materials (Tetra Tech, 2011), as well as an Integrated (Non-Hazardous) Solid Waste Management.

USAG-WP Policy #26[36] (dated October 3, 2014), which supplements AR 200-1, addresses the management and disposal of hazardous wastes, universal wastes, used oil, waste munitions and waste tritium exit signs. The policy is based on applicable regulatory requirements, as well as USAG waste management requirements.

Existing Project Area Conditions

Existing WWTP

Due to the age of the existing WWTP, a hazardous building materials survey was conducted to identify the potential presence of hazardous materials such as asbestos-containing materials (ACMs) and lead-based paint (LBP), which would need to be managed prior to initiation of demolition activities. Based on the survey findings, the presence of hazardous materials was confirmed.

Impacted Soils and Groundwater including Munition-impacted Materials/Waste

As previously described (see Section 3.4), the portion of the project area north of the existing WWTP is located within the Target Hill MRS (see Appendix C). The Target Hill MRS is comprised of 14 acres of land located within the USAG-WP campus, near the western bank of the Hudson River. It is bounded on the east by the West Shore Railroad and the Hudson River. An RI was performed at the Target Hill MRS to identify munitions and explosives of concern (MEC), including unexploded ordnance (UXO), discarded military munitions (DMM), and munitions constituents (MC). Munitions debris (MD) was recovered during intrusive investigations but the items were found to pose no explosive safety hazards and no MEC was found during the RI field activities (Weston Solutions, 2014). The area which is currently occupied by the existing WWTP is included in the Siege Battery MRS (URS/ARCADIS, October 2012) (see Appendix C).

To address the explosive hazards and risks from MEC and MC, the USAG-WP prepared a "Non-Time Critical Removal Action Land Use Control Plan" (October 2012) as part of a Military Munitions Response Program. The plan identifies interim Land Use Controls (LUCs) for the on-post MRSs. The LUCs are established as an interim action while the MRSs progress to final remedy.

The 2012 plan evaluated the Target Hill MRS (WSTPT-017-R-01) and the Siege Battery MRS (WSTPT-015-R-01). The evaluation concluded that the initial Munitions Response Site Prioritization Protocol (MRSPP) priority for the Target Hill MRS and Siege Battery MRS is 5 and 3, respectively, based on a priority range of 1-8 with 1 being the highest priority (*i.e.*, most dangerous). In addition, the evaluation concluded that there are no MRS-specific LUCs (engineering or institutional controls) in place at the installation; however, an installation-wide dig safe is in place (URS/ARCADIS, October 2012; pages 2-5 through 2-7).

An additional environmental subsurface investigation was conducted on the project area in April and September 2016 and included soil and groundwater sampling to evaluate potential impacts, if any, that would require special handling and disposal during construction activities. In April 2016, six soil samples and two groundwater samples were collected and submitted for analysis. Samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) metals and total petroleum hydrocarbons (TPH). Two filtered and two unfiltered groundwater samples were collected and submitted for analysis in September 2016. These samples were analyzed for TAL Metals.

Soil sampling results were compared to NYSDEC Part 375 Soil Cleanup Objectives (SCOs) for Unrestricted Use and for Restricted Commercial Use and groundwater sampling results were compared to NYSDEC Division of Water Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values for Class GA waters. Various TAL metals were detected in the both soil and groundwater samples at levels exceeding the applicable unrestricted and commercial SCOs (for soil) and TOGs guidance value (for

[36] **http://www.westpoint.army.mil/documents/policy_letters/USAGWPPolicy_26.pdf**

groundwater). In addition, toluene was detected in one groundwater sample above the applicable TOGs guidance value and one soil sample was noted as having indicators of the presence of petroleum based on the TPH analysis (ATL, 2016).

Impacted River Sediments

Based on previous projects conducted by USAG-WP, impacted river sediments may be encountered within the Hudson River.

Petroleum and Chemical Bulk Storage

Existing WWTP operations rely on petroleum and chemical bulk storage tanks (PBS and CBS, respectively), as well as small quantities of chemicals. An emergency diesel generator is also located at the existing site.

Solid Waste

Solid waste generated at USAG-WP is hauled by a contractor to an Army-owned, contractor-operated transfer facility on the installation. Dewatered sludge from the sewage treatment facilities is currently composted in accordance with applicable regulations (Vaeth, 2016). The remaining solid waste is hauled to a State-permitted landfill facility (Tetra Tech, 2011).

3.11.2 Environmental Consequences

Implementation of the project could result in the following impacts:

Existing WWTP

- Potential to encounter hazardous materials such as ACMs and LBP during demolition of the existing WWTP. The potential for impacts to occur are considered short-term; due diligence activities including worker and environmental safety considerations, as well as appropriate management of materials will be required during the construction phase.

Impacted Soils and Groundwater including Munition-impacted Materials/Waste

- Potential to encounter impacted soils and groundwater during construction activities, as well as explosive hazards and risks from MEC and MC. The presence of MC on or adjacent to the project area increases the potential for encountering impacted soils and groundwater during construction activities.

Impacted River Sediments

- Potential to encounter impacted river sediments while performing work within the Hudson River.

PBS and CBS Bulk Storage

- Removal and proper management of existing PBS and CBS tanks prior to demolition of the existing WWTP. The Proposed Action will involve the removal of PBS and CBS tanks and other smaller quantities of chemicals prior to demolition of the existing WWTP. PBS and CBS tanks are regulated by the NYSDEC in accordance with 6 New York Codes, Rules and Regulations (NYCRR) 613 and 6 NYCRR 596-599, respectively.

Other Hazardous Materials

- Use of chemicals and other potentially hazardous materials during construction and operation phases.

C&D Waste

- Generation of C&D waste during demolition and construction phase activities. Demolition and construction activities will generate C&D waste including rock and overburden spoils requiring management off-site.

Solid Waste

- Generation of solid waste requiring management off-site.
- Collection, transport and storage of food wastes to be used in the WWTP's anaerobic digestion process to improve methane gas production and energy value.

3.11.3 Mitigation

The following mitigation measures will be implemented and maintained:

Existing WWTP

Due to the findings of the hazardous building materials survey, a hazardous materials mitigation plan will be prepared and implemented prior to initiation of demolition activities. Prior to disposal, waste streams associated with these materials will be characterized and wastes will be handled and disposed in accordance with applicable federal, state and local laws and regulations including AR 200-1 and USAG-WP Policy #26.

Impacted Soils and Groundwater including Munition-impacted Materials/Waste

If impacted soil or groundwater is encountered during construction and dewatering activities, it will be managed in accordance with applicable federal, State, local and DoD AR 200-1 requirements. Per discussions with NYSDEC, no soils will be removed from the site.

The policy requires the preparation and implementation of a Construction Health and Safety Plan (CHASP) to protect construction workers and the community from exposure to potential impacted materials.

As described in the 2012 Plan, required dig permit(s) will be obtained through USAG-WP Directorate of Public Works (DPW), Environmental Management Division and work will be performed in accordance with the dig permit. This may include UXO awareness training and support from the Explosive Ordnance Disposal (EOD) unit.

Impacted River Sediments

As previously described, a cofferdam (or other means to provide for work in dry conditions) will be utilized to install the new replacement outfall in the Hudson River. Dewatering of the cofferdam typically requires the removal of sediments. Collected river sediments will be analyzed to properly characterize this waste stream for proper management, handling and disposal. If impacted river sediments are encountered during construction and dewatering activities, it will be managed and disposed of in accordance with applicable federal, State, local and DoD AR 200-1 requirements.

PBS and CBS Bulk Storage

Removal of PBS and CBS tanks may be necessary prior to demolition of the existing WWTP. Storage tanks and other bulk materials may be reused at the new WWTP. Additional petroleum bulk storage may be temporarily used on-site by construction contractors. Removal and addition of regulated containers will be conducted in accordance with applicable NYSDEC and USEPA regulations, including closure requirements, design requirements including secondary containment, modifications to USAG-WP's existing spill prevention plans (*e.g.*, Spill Prevention, Control and Countermeasure Plan, Spill Prevention Report), PBS and CBS registration certificates, operation and maintenance requirements, as well as waste characterization, management, handling and disposal.

Other Hazardous Materials

Construction and operation of the WWTP will require the use of chemicals and other potentially hazardous materials. These materials will be stored, handled and managed in accordance with USAG-WP's HMMS and applicable Federal, State and local laws and regulations. Use of herbicides and pesticides will be in accordance with USAG-WP's *Integrated Pest Management Plan* (March 2011).

C&D Waste

C&D waste will be generated as a result of the demolition and construction of the existing and new WWTPs, respectively. The contractor will be required to dispose of these materials off-site at an appropriately permitted landfill, diverting as much as possible from landfills by reuse or recycling. A minimum target of 60% diversion (IMCOM Operations Order 14-067: Integrated [Non-Hazardous] Solid Waste Management; paragraph 3.C.2.I.1) will be included in project specifications. Consistent with USAG-WP requirements, the contractor will be

required to develop and implement a C&D Waste Management Plan including the provision of records as to how much C&D (including rock) is removed from the project site.

Solid Waste

Solid waste generated at the new WWTP will be hauled by a contractor to an Army-owned, contractor-operated transfer facility on the installation and, ultimately, to a State-permitted landfill. Dewatered sludge from the sewage treatment facilities will continue to be composted. Additional dewatering sludge waste may be generated based on the increased capacity of the proposed WWTP.

Food wastes will be source-separated and collected from various cafeterias at USAG-WP by DPW staff for transport to the new WWTP. This is a new procedure; food wastes are currently management with other co-mingled solid wastes for transport off-site. As previously indicated, the new WWTP will incorporate anaerobic digestion of food waste generated on the USAG-WP site, which will improve methane gas production and energy value. Food wastes collected at the point of origin will be managed in accordance with USAG-WP's Integrated Solid Waste Management Plan (Policy #54, 4 June 2015), which prescribes responsibilities and standards for the efficient and economical removal of solid waste in an environmentally and legally acceptable manner.

To mitigate for odors and nuisance animals, the wastes will not be stored in dumpsters, but processed as it is delivered to the WWTP. Food wastes collected at the cafeterias will be accepted at the WWTP's solids dump station (SDS) (see Figure 4), which will consist of three separate food acceptance methods. The solids will be placed onto a conveyor belt and sent through a grinder, then to a below-grade solids waste slurry tank.[37] Liquid waste will be conveyed into a below-grade liquid waste slurry tank. Fat, oil and grease (FOG) will be sent through a FOG acceptance station, where it will be ground and mixed with water to create a slurry that will then be sent by gravity to the below-grade liquid waste slurry tank. Inorganic solids are removed from the FOG by a rock trap and an auger system and stored in a 2 cubic yard dumpster for hauling off-site. Food waste from both the solids waste slurry tank and liquid waste slurry tank will be mixed by submersible recirculating chopper pumps installed within each tank, and subsequently pumped to the influent of the anaerobic digesters (see also Section 3.16, Odor).

3.12 TRAFFIC AND TRANSPORTATION SYSTEMS

3.12.1 Affected Environment

USAG-WP has an extensive transportation network that links the base internally by roadways and externally by roadways, water bodies, and rail lines.

Internal and Surrounding Roadways

Traffic at the USAG-WP installation is comprised of everyday work, living, and recreational trips. Roads on the USAG-WP installation are maintained by the Directorate of Housing and Public Works (DHPW). Each of the roads on the USAG-WP installation are hard-surfaced with designed drainage. Traffic circulates throughout the USAG-WP installation via a continuous curving roadway consisting of Mills Road and Washington Road. This roadway extends from Thayer Gate on the southeast portion of the Main Post to Washington Gate in the northwest portion of the Main Post (see Figure 12). Public access to the USAG-WP installation is available via Thayer Gate via NY Route 218 or Stony Lonesome Gate located in the southwest portion of the Main Post via US Route 9W (Tetra Tech, 2011). Within the installation, vehicles and trucks access the existing WWTP from Upton Road.

Interstate 87 (I-87) is located approximately 9 miles to the west and Interstate 84 (I-84) is located approximately 15 miles north of the Main Post. US Route 6, located south of the installation, provides an east to

[37]The use of a vortex chopper pump system is being investigated that could potentially reduce the solids to a liquid slurry, which could be conveyed directly to the liquid waste tank, thereby eliminating the need for the solids waste tank.

west connection between I-87 and US Route 9W, as well as the Palisades Interstate Parkway (PIP) located to the east. The PIP provides access to and from New York City via Interstate 287 (I-287) (Tetra Tech, 2011). I-84 can be accessed via US Route 9W. Figure 13 identifies the locations of these surrounding roadways.

Railways

Freight service is provided to the base via the CSX River Subdivision, which is a single track running north-south along the Hudson River. This track is located between the proposed project area and the Hudson River. Passenger rail service does not run directly to the base, but the Metro North Hudson Line and the Metro North Port Jervis Line have a number of stops in the surrounding towns, such as Garrison and Peekskill (Tetra Tech, 2011).

Waterways

The Hudson River provides access to the USAG-WP installation via barges, cargo ships and passenger boats (Tetra Tech, 2011).

3.12.2 Environmental Consequences

Internal and Surrounding Roadways

Access to the new WWTP will be similar to access to the existing WWTP (*i.e.*, from Upton Road). The new WWTP site will have two access points off of Upton Road that form a looped access road around the site. The access road will extend around the site allowing for traffic circulation to access the treatment plant from four gated entrances. The ability for trucks to navigate interior roadways and turns to the new WWTP was confirmed with AutoTURN.[38] The new site roadways will vary between 18-feet and 24-feet wide (minimum 18-feet for the inner roadways and 20-feet to 24-feet for the outer circulation path) and allow adequate emergency vehicle access.

The Proposed Action may result in temporary impacts to local traffic within the base and local community. Construction activities will generate increased traffic due to workers arriving and departing the USAG-WP installation, movement of materials and equipment, and removal of waste generated during demolition and construction activities. Temporary disruption of traffic and traffic flows will also occur during extension of the natural gas line, rerouting of the sanitary sewer, as well as replacement of the existing water line to the WWTP site. Construction phase impacts will be intermittent and short-term; lasting only during the duration of the construction phase. Long-term, operations-related adverse impacts are not anticipated. Worker and visitor related traffic, as well as materials supply traffic, is anticipated to be similar in magnitude and timing to existing conditions.

New site parking will consist of 16 spaces to be located adjacent to the new athletic fields (old WWTP footprint). The new spaces will replace the existing 16 to 18 spaces, which will be encroached upon to construct the new WWTP. A buffer of approximately 45-feet is proposed between the fields and parking area.

Railways

A portion of the effluent pipe will be installed beneath the existing CSX track. This portion of piping will be installed via jack-and-bore techniques to eliminate disruption to CSX operations. USAG-WP will coordinate with CSX for work performed within the CSX easement. It is not anticipated that the railroad will be used to transport supplies and waste materials on and off the site, respectively. No significant adverse impacts to railway transportation systems were identified.

Waterways

Equipment associated with the installation of the new, replacement outfall will be located on barges in the Hudson River. Excavated sediments will also be stored and transported on the barges for off-site disposal as described in Section 3.11.3. Prior to initiation of barge-related work, a "Notice to Mariners" will be submitted to the applicable jurisdictions. No significant adverse impacts to waterway transportation systems were identified.

[38] AutoTURN® is a computer modeling program that simulates vehicle maneuvers.

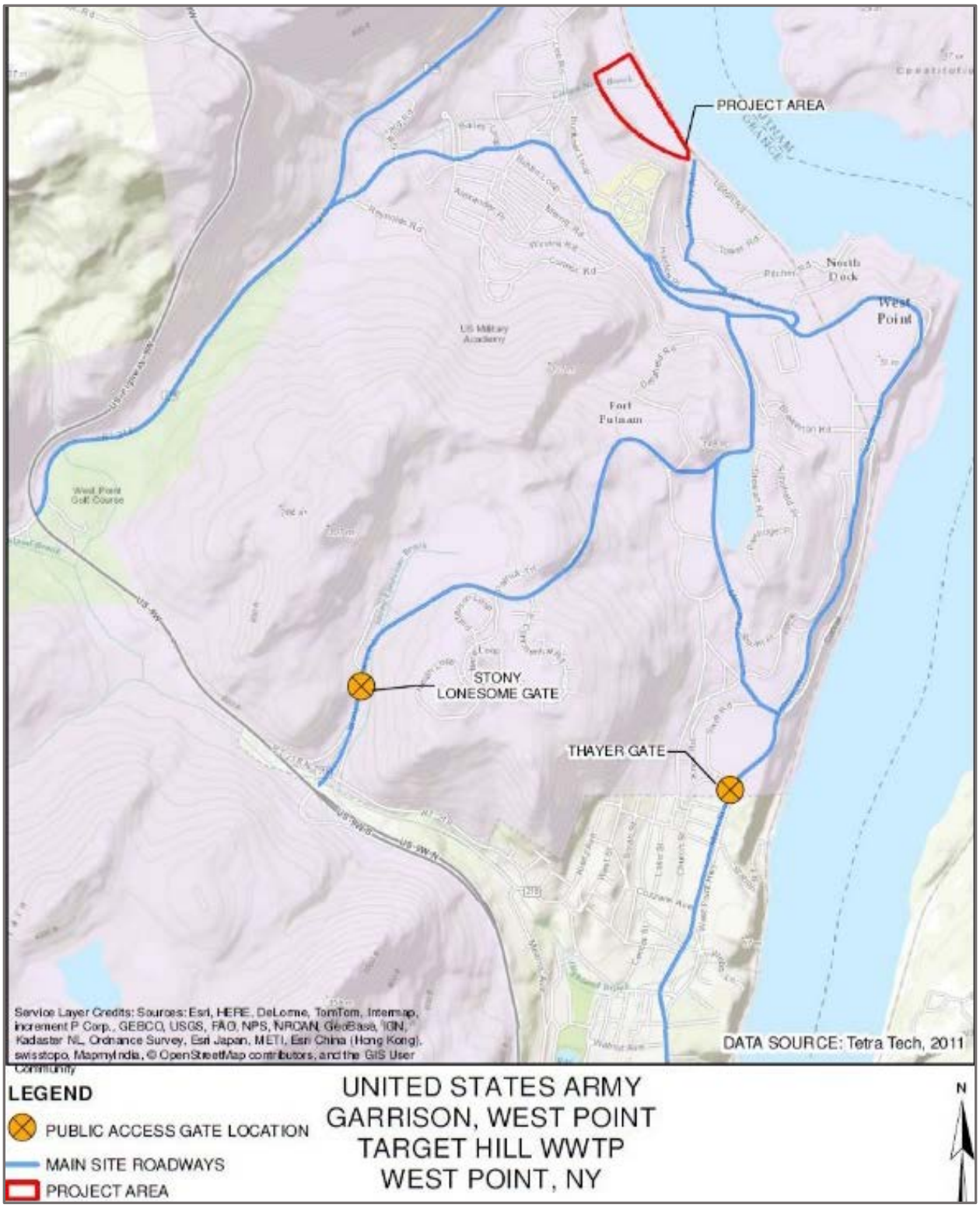

Figure 12. Internal Roadways

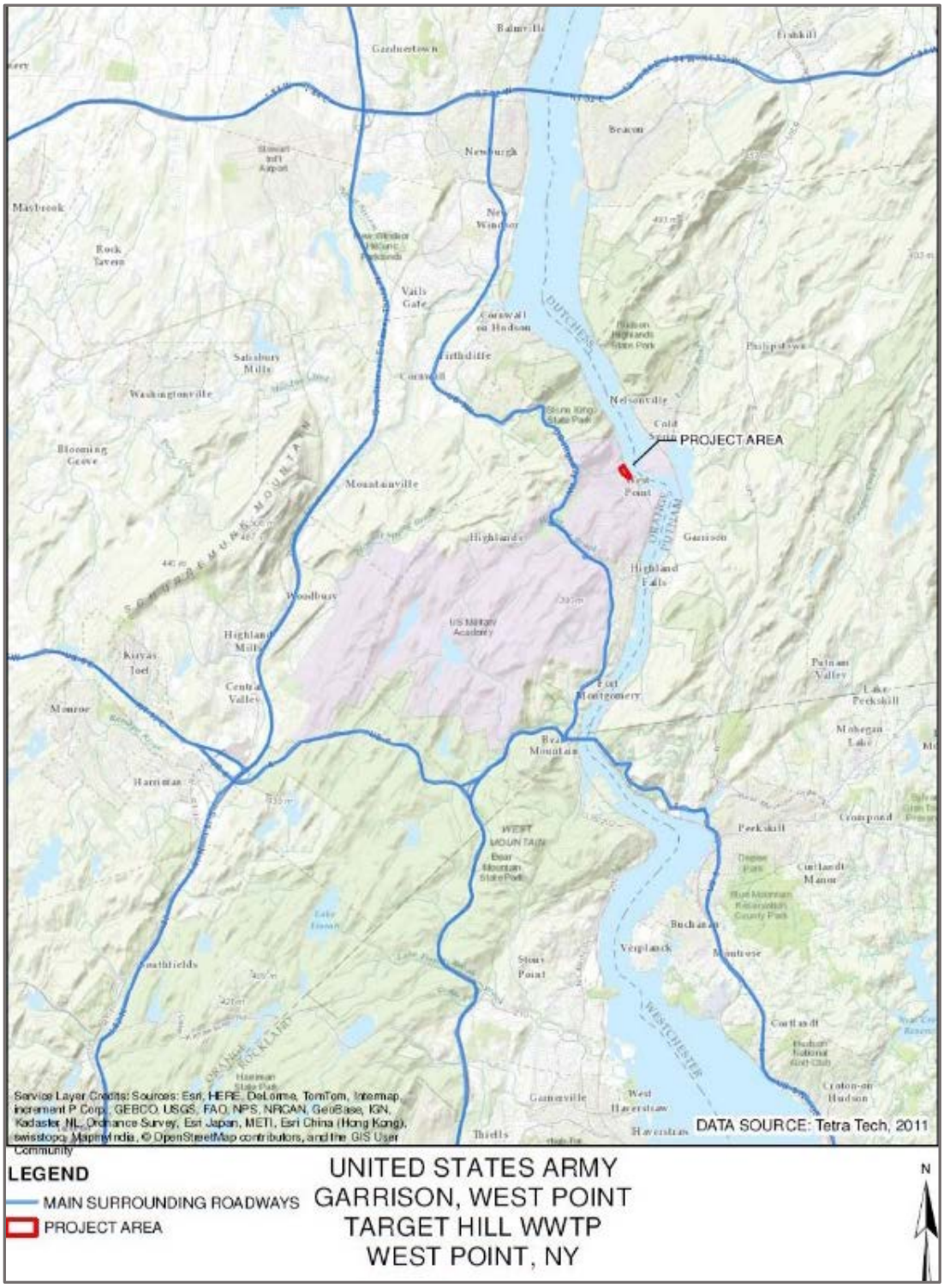

Figure 13. Surrounding Roadways

3.12.3 Mitigation

Internal and Surrounding Roadways

Temporary impacts to internal and surrounding roadways are anticipated during the construction phase of the Proposed Action. However, the following mitigation measures will be taken to minimize or prevent impacts:

- Adherence to specified access/egress routes. Construction contractors and equipment and waste haulers will enter and exit USAG-WP via the Stony Lonesome Gate which is controlled by Military Police. Consistent with access to the existing WWTP, the following route (Gate to WWTP) will be adhered to: Stony Lonesome Road to Washington Road, to Ruger Road, to Tower Road, to Townsley Road, to Upton Road. The same roads will be used to egress the site.
- Coordinating with the Military Police and USAG-WP community to minimize of temporary traffic disruptions.
- Advanced registration of construction vehicles and individual drivers.
- Deployment of detour signs and flaggers, as necessary including the preparation, if necessary, of a "Maintenance and Protection of Traffic Plan."
- Construction vehicles will be equipped with backing alarms, two-way radios, and Slow Moving Vehicle signs.
- The postponement of construction activities, if necessary, during home games, and special events to minimize pedestrian traffic disruptions.
- Heavy equipment will be stored at the temporary construction staging area to the extent possible to minimize the amount of slow-moving vehicles on Upton Road.

Utility improvements including extension of the natural gas line, replacement and rerouting of the sanitary sewer, as well as replacement of the existing water main will occur within existing road rights-of-way (Upton Road, Townsley Road, Tower Road, Ruger Road and Washington Road). Measures noted above will be employed as necessary to maintain traffic flow.

Railways

No significant adverse impacts were identified. As such, no specific mitigation is proposed.

Waterways

No significant adverse impacts were identified. As such, no specific mitigation is proposed.

3.13 COASTAL RESOURCES

3.13.1 Affected Environment

Based on review of New York State's Coastal Boundary Map[39], the project area is located within the State's coastal management area. This project area was not identified within a State-approved Local Waterfront Revitalization Area. Since the project area is located in a coastal area, the project will be reviewed by New York State Department of State (NYSDOS) to evaluate whether the project is consistent with the State's Coastal Management Policies.

In addition, USAG-WP is located within the Hudson Highlands Scenic Area of Statewide Significance (SASS), which consists of combined aesthetic values of landscape character, uniqueness, public accessibility, and public recognition.

[39] **https://appext20.dos.ny.gov/coastal_map_public/map.aspx**

3.13.2 Environmental Consequences

In accordance with 15 CFR 930.35, Federal agencies must determine the consistency of their actions with approved coastal management programs, which in the proposed project area is the State's Coastal Management Program (CMP).[40] If a Federal agency determines that there will not be coastal effects, then the Federal agency shall provide the State agencies with a negative determination for a Federal agency activity. The negative determination consists of: a brief description of the activity, the activity's location, and the basis for the Federal agency's determination that the activity will not affect any coastal use or resource. In determining effects, Federal agencies shall follow 15 CFR §930.33(a)(1), including an evaluation of the relevant enforceable policies of the approved coastal management program. Due to the Proposed Action's proximity to the Hudson River and work within the Hudson River, as well as the overall USAG-WP's location within the Hudson Highlands SASS, the following relevant policies from the State's management program were identified:

- Policy No. 2 – Facilitate Water Dependent Uses. Policy No. 2 focuses on facilitating the siting of water-dependent uses and facilities on or adjacent to coastal waters. Consistent with that policy, the project represents the maintenance of a water-based use (the WWTP) at its existing location. The proposed WWTP (3.5 MGD treatment capacity; 3.91-acre site footprint) will replace the existing WWTP (2.06 MGD; 1.78-acre site footprint) at contiguous locations. The continued siting of the WWTP proximal to the Hudson River is ideal given that treated effluent will continue to be discharged to the Hudson River via the new, replacement outfall.
- Policy No. 24 – Exceptional Scenic Areas. Policy No. 24 requires an assessment of whether the action could affect a scenic resource (*e.g.*, Hudson Highlands SASS) and whether the action would be likely to impair the scenic beauty of the scenic resource. Policy 24 provides that when considering a proposed action, agencies shall first determine whether the action could affect a scenic resource of statewide significance. The determination would involve:
  - » a review of the coastal area map to ascertain if it shows an identified scenic resource, which could be affected by the proposed action, and
  - » a review of the types of activities proposed to determine if they would be likely to impair the scenic beauty of an identified resource. Impairment includes:
    - › the irreversible modification of geologic forms; the destruction or removal of vegetation; the modification, destruction, or removal of structures, whenever the geologic forms, vegetation or structures are significant to the scenic quality of an identified resource;
    - › the addition of structures which because of siting or scale will reduce identified views or which because of scale, form, or materials will diminish the scenic quality of an identified resource.

The negative determination, which will be submitted to the NYSDOS, concluded that the Proposed Action (including identified mitigation measures) will conform to the applicable policies within the CMP. Significant adverse effects on coastal resources are not anticipated. The negative determination, which includes an assessment of additional State Coastal Management Policies, is included as Appendix I.

3.13.3 Mitigation

No significant adverse impacts were identified. As such, no specific mitigation is proposed.

[40] **http://www.dos.ny.gov/opd/programs/pdfs/CoastalPolicies.pdf**

3.14 AESTHETICS AND VISUAL RESOURCES

3.14.1 Affected Environment

Existing WWTP, Athletic Fields and Adjacent Land Uses

As previously described, the project area is developed by land uses (WWTP and recreational use), which will be maintained as part of the project. The site is buffered from adjacent uses by the Hudson River to the east and an undeveloped, forested embankment to the west. The Target Hill Rugby Stadium and athletic fields are located to the north of the site and Shea Stadium and North Athletic Fields, Gillis Field House, Tronsrue Marksmanship Center and Eisenhower Hall are located to the south.

The athletic fields are currently situated on the northern portion of the project area and the southern portion is occupied by the existing WWTP. These areas are considered recreational and industrial, respectively.

As previously described, the existing WWTP is identified in the USAG-WP's cultural resource inventory as a non-contributing building. The Target Hill athletic fields are identified as a contributing element (historic landscape) of the National Historic Landmark District.

This project and surrounding areas along the riverfront are dominated by the playing fields and a number of large brick masonry buildings (Figure 14). With the exception of Eisenhower Hall, the natural geography of the site hides the Post Services and Target Hill buildings when viewed from the Plain. When viewed from across the River, the brick buildings are discernable, but they do not detract from the historic landscape. They are also partially hidden by a row of trees lining the street at the edge of the river bank.

Figure 14. Aerial View of Local Site Area

Architectural Cues

The proposed WWTP is located within the Target Hill Area, which is adjacent to (north of) the Shea Stadium Area (Post Services), and adjacent to the Hudson River Waterfront. Another adjacent area is the Lee Housing Area, which is located to the west at the top of Target Hill. The buildings within each of these areas are represented by specific architectural styles and contributing features. These "architectural cues" are summarized below.

Lee Housing Area

The Lee Housing Area is a partially wooded, housing area located west and up-gradient of the project area. The elevated location provides for views of the Hudson River. Contributing features include neo-Georgian style architecture utilizing brick and stone buildings. The Lee Housing Area is "visually-separated" from the proposed WWTP site.

Target Hill, Shea Stadium and Hudson River Waterfront Areas

Many of these existing buildings house sports and utility functions that require expansive walls with few windows. This includes Gillis Field House, Tronsrue Marksmanship Center, Shea Stadium maintenance facility and the existing WWTP. The Rugby Stadium, at the north end of Target Hill, is a relatively new structure that incorporates a large glass-enclosed viewing area (Figure 15 through Figure 18). Although located at similar elevations and along the Hudson River waterfront, views between the areas are partially obstructed by buildings and existing wooded areas.

Figure 15. Gillis Field House

Figure 16. Rugby Stadium

Figure 17. Tronsrue Marksmanship Center

Figure 18. Shea Stadium Maintenance Building

Building aesthetics within the Shea Stadium and Target Hill Areas are architecturally connected. The predominant exterior building material is red brick with cast stone, or precast concrete, accents at entrances, openings, cornices, copings and water tables. For the older buildings, the Gothic style of the academic core is emulated through the use of brick masonry piers that modulate the long expanses of masonry wall. The Marksmanship Center also includes false window openings in the masonry to provide additional detail and character. Both steep-slope and low-slope roofs are utilized in the local buildings, therefore there are no predominating roof characteristics (Atkins/OBG, November 2016).

The existing WWTP buildings are enclosed in grey concrete masonry walls with stone copings and the roofs are low-slope flat roofs. Due to its coloration and low profile, the existing plant is not as architecturally evident as other structures in the Target Hill and Shea Stadium Areas.

Figure 19. Existing WWTP

3.14.2 Environmental Consequences

Aesthetics

The existing viewshed is not anticipated to change significantly. The proposed location of the new WWTP is currently utilized as athletic fields. To construct the new WWTP, the remaining existing athletic fields will be reconfigured to maximize their continued use. The area, currently occupied by the existing WWTP and southern parking area, would be converted to green space for recreational use. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields.

To maintain the historic landscape integrity of the Target Hill athletics fields (*i.e.*, contributing element to the National Historic Landscape District), the design of the reconfigured athletic fields will take into account features which may impact overall aesthetics such as lighting, bleachers, fencing, and parking areas as described in USAG-WP's Historic Landscape Management Plan. In addition, the *United States Military Academy Design Guide*, *United States Army Garrison Engineering Planning Standards* and the *Garrison Commander's Guidelines for Outdoor Lighting at West Point* will be consulted along with West Point Cultural Resources Program staff to establish an attractive well designed environment.

The new WWTP will be architecturally designed to align with the existing buildings located within the Target Hill and Shea Stadium Areas. Although visually disconnected from the Lee Housing Area, the new WWTP also includes features and styles consistent with that upland area.

Based on the character of the immediate surroundings, the majority of the new wastewater treatment plant is proposed to be enclosed in brick veneer masonry walls. Cast stone, or precast concrete, is proposed to accent the entrance, openings, copings, and cornices. Masonry piers and false windows will be considered to provide additional visual interest along the large expanses of brick masonry wall (Figure 3). This approach is similar to the existing Ordnance Compound located at West Point (Figure 20).

Figure 20. Ordnance Compound

Portions of the new wastewater treatment plant not enclosed in brick veneer masonry walls, will be enclosed by perimeter security fencing. Portions of the perimeter security fencing will be aligned with the face of the brick veneer masonry walls of the structures. To maintain an open character and allow for views through the plant,

portions of proposed fencing on the south, east and north sides will be an ornamental security fence. Around the flare yard at the northeast corner of the plant, ornamental fencing will be supplemented with masonry piers and a short knee wall. A chain link security fence with barbed wire will extend along the western side of the plant along the adjacent hillside. This approach will minimize the plant footprint and allow the facility to be perceived as a unified compound rather than a series of smaller structures.

Fences proposed for the athletic fields will be comprised of a 6-foot tall chain link fence along the eastern side of the fields (along Upton Road), and a 4-foot tall chain link fence along the southern side of the fields. Both types of fence and their alignment are based on the existing fencing that surrounds the Anderson Rugby complex.

Perimeter landscaping will include an area of buffer planting between the parking lot and the sports field fence along the north. Along Upton Road, existing mature sycamore trees will remain and additional trees of the same species may be added along Upton Road in selected locations to improve the visual screening within the Hudson River Valley viewshed.

As illustrated in Figure 21, three rain gardens (*i.e.,* planted detention areas) will be situated along the eastern and southern portions of the new WWTP. In addition, three retention-detention ponds will be situated on the northern and southern portions of the new WWTP.

Additional landscape features include landscaping around the flare stack, ground cover plantings and visual buffer planting.

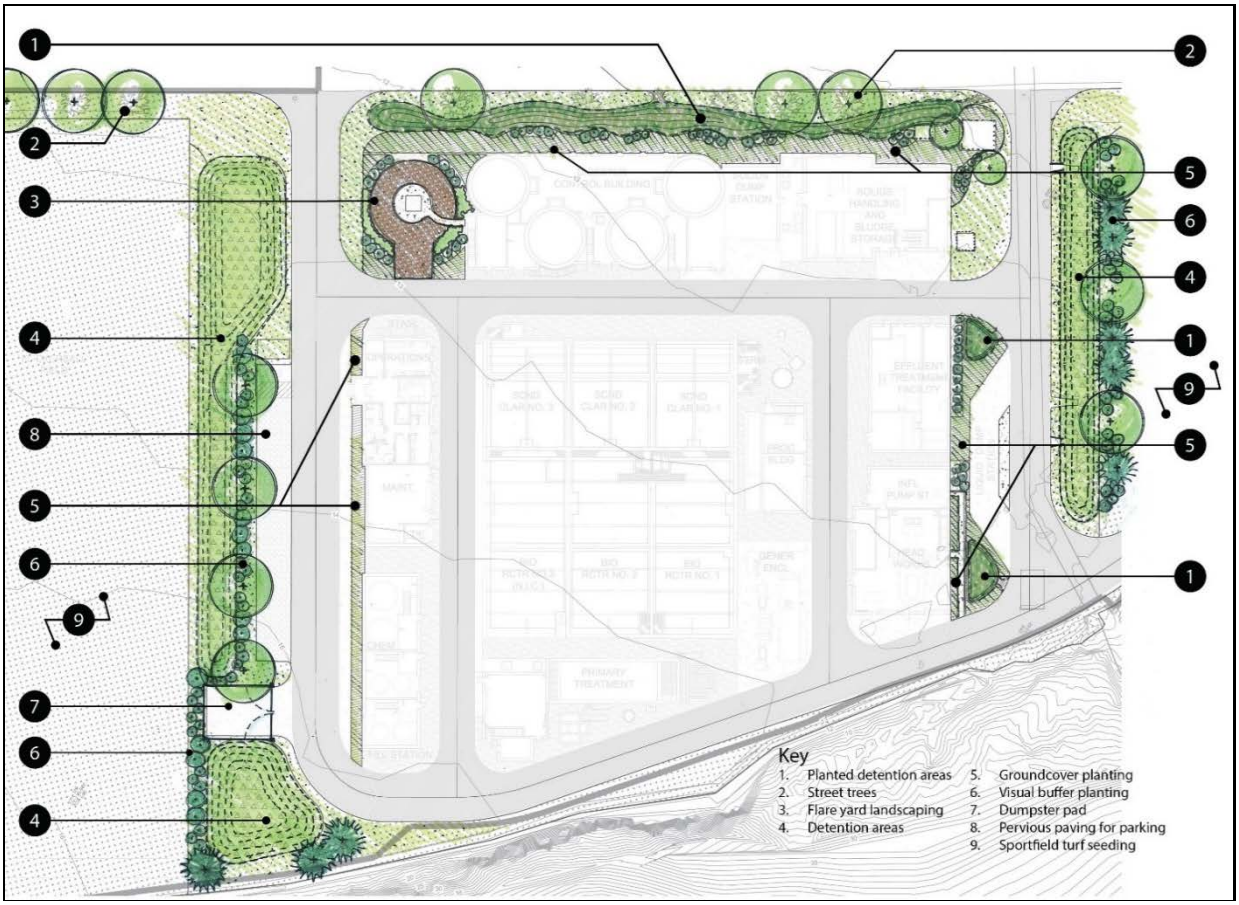

Figure 21. Landscape Concept Design Plan

The roofs of the plant buildings are proposed as a mix of low sloped and steep sloped roofs to allow for sustainable and operational features to be included in the plant design. This includes the following:

- Low slope roofs with skylight openings to minimize the use of electric lights in the process buildings and allow for the removal of pumps, motors or other heavy equipment that may require periodic replacement or repair
- Steep sloped roofs where appropriate.

Viewshed Analysis

Relevant views of the new WWTP are from the following vantage points:

- Constitution Island (Figure 23)
- Trophy Point (Figure 24)
- Athletic fields to the north of the new WWTP (Figure 25 and Figure 26)
- Portion of Upton Rd south of the new WWTP (Figure 27 and Figure 28)
- View from Garrison (Figure 29)
- View from Redoubt (Figure 30)
- View from 9W Overlook (Figure 31)
- View from Cold Spring (Figure 32)
- View from Fort Putnam (Figure 33)

Figure 22 illustrates the locations of the views.

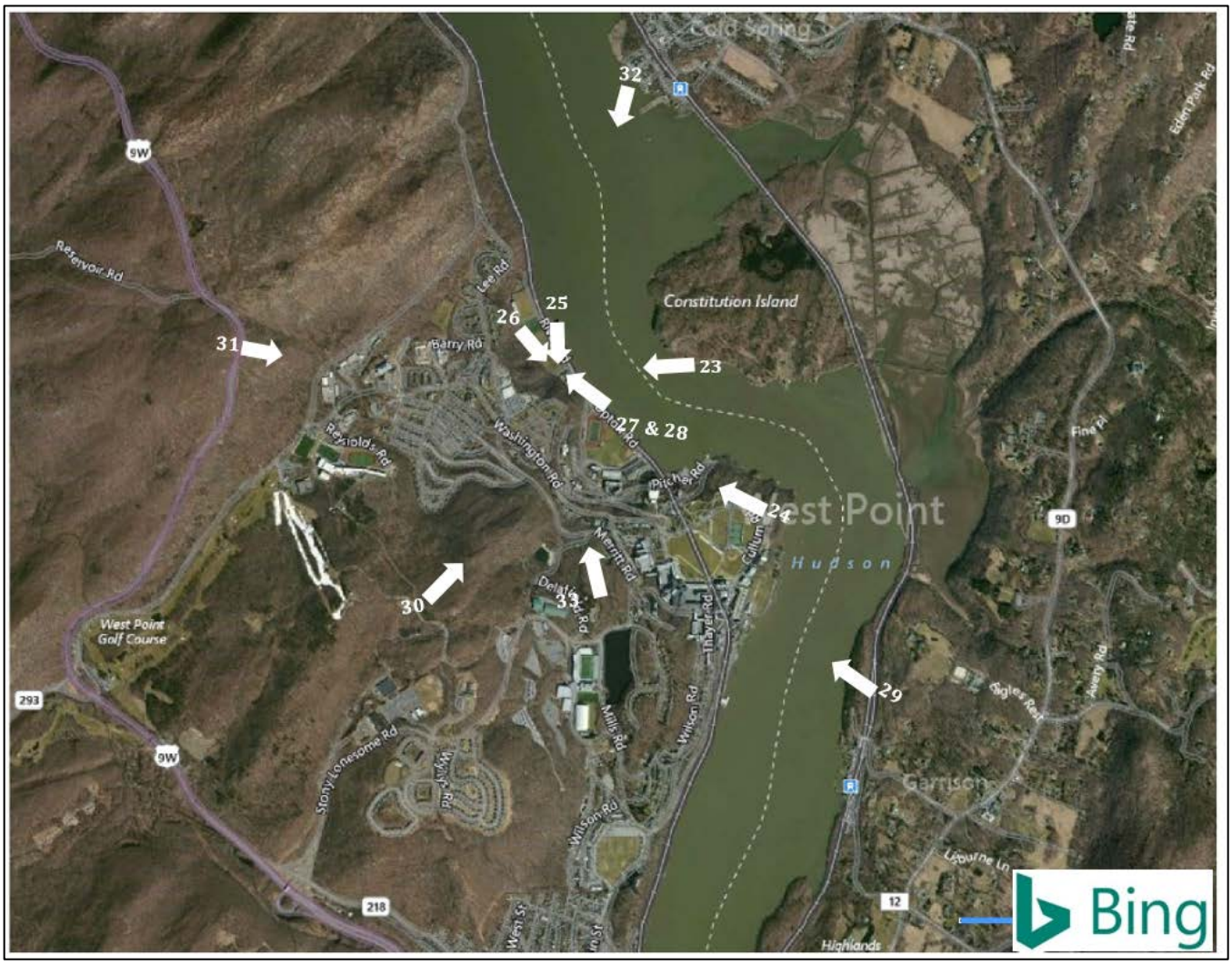

Figure 22. Viewshed Locations

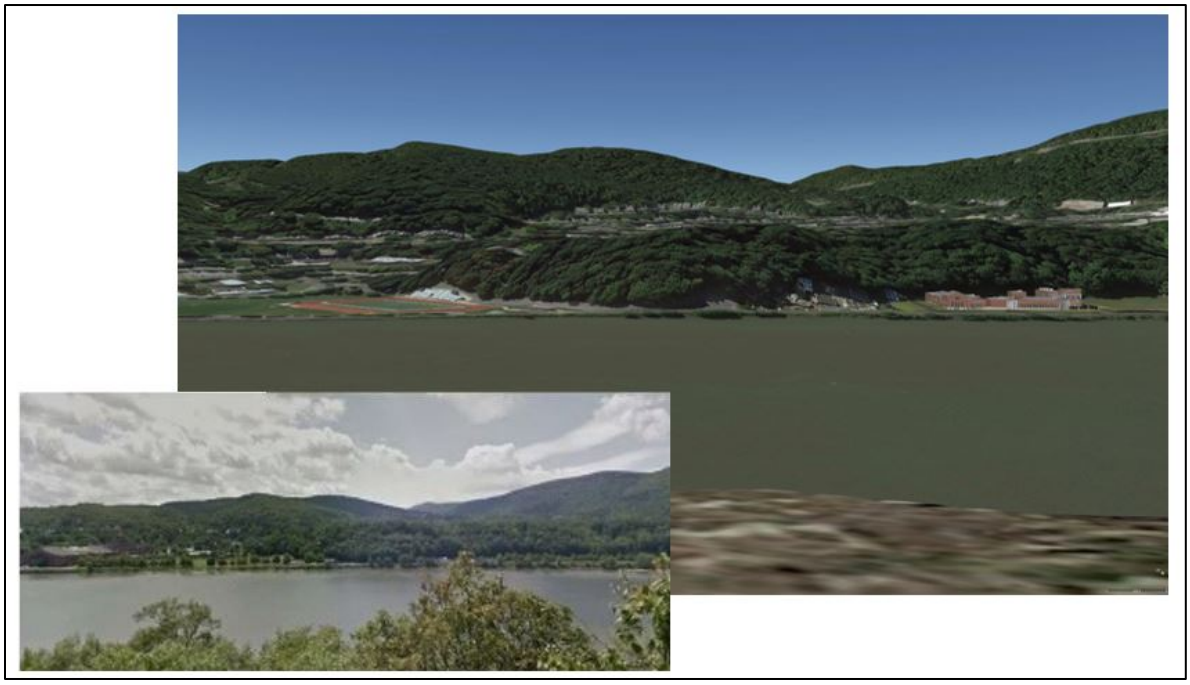

Figure 23. View from Constitution Island

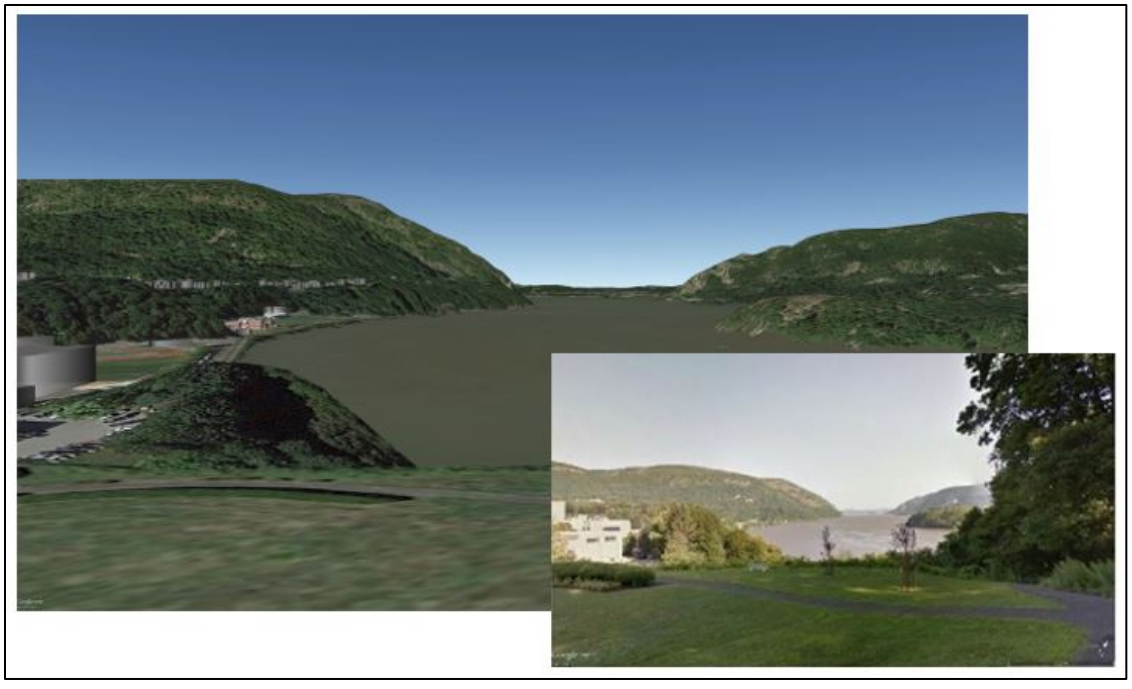

Figure 24. View from Trophy Point

Figure 25. View from Athletic Fields/Upton Road

Figure 26. View from Athletic Fields

Figure 27. View from Southern Portion of Upton Road

Figure 28. Additional View from Southern Portion of Upton Road

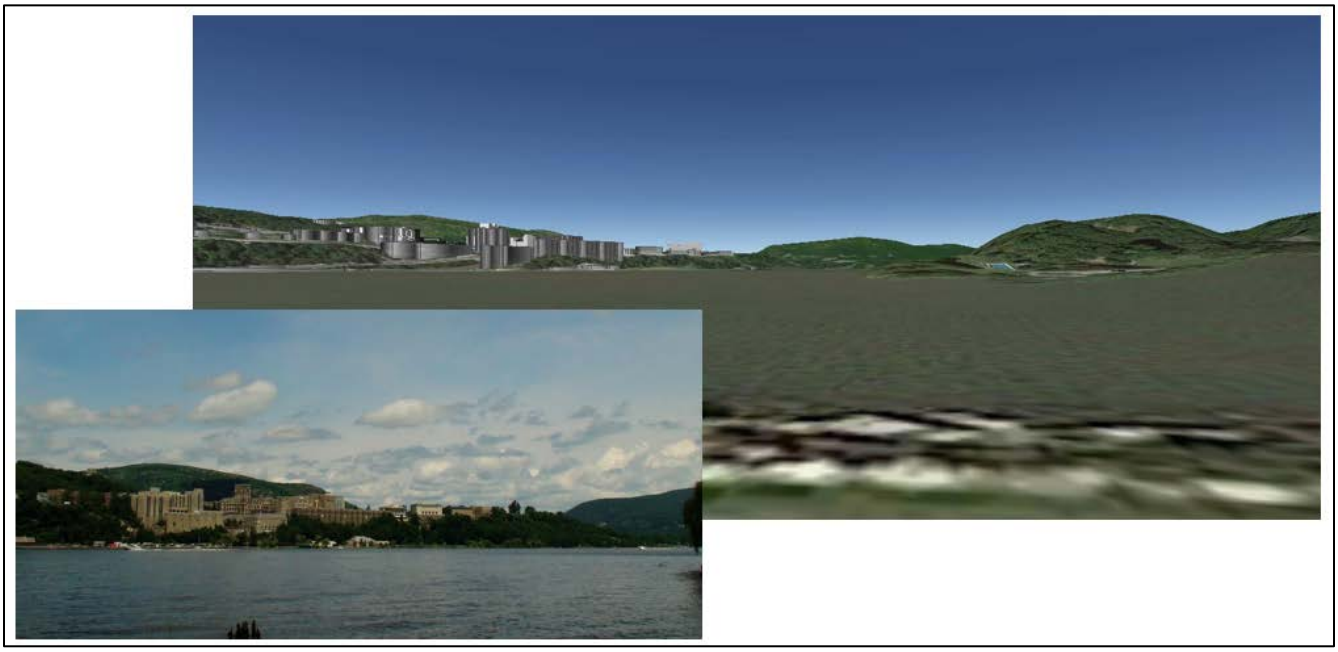

Figure 29. View from Garrison

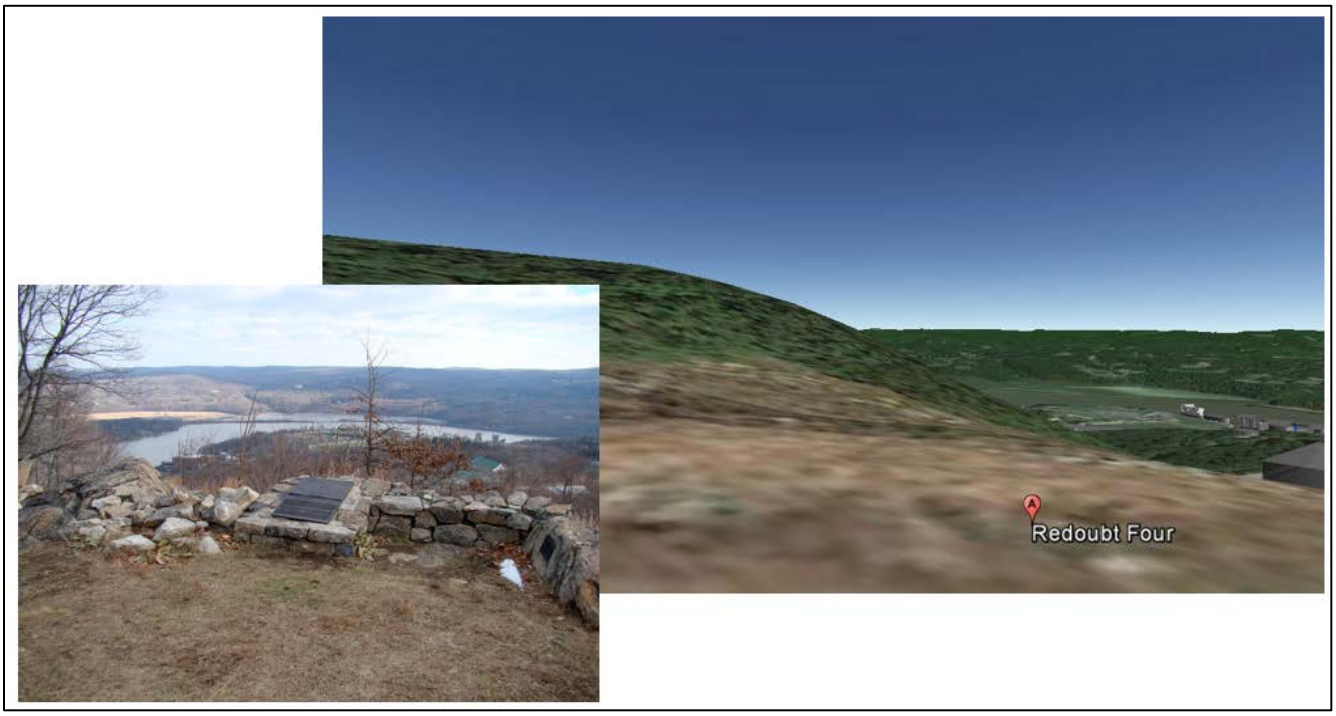

Figure 30. View from Redoubt

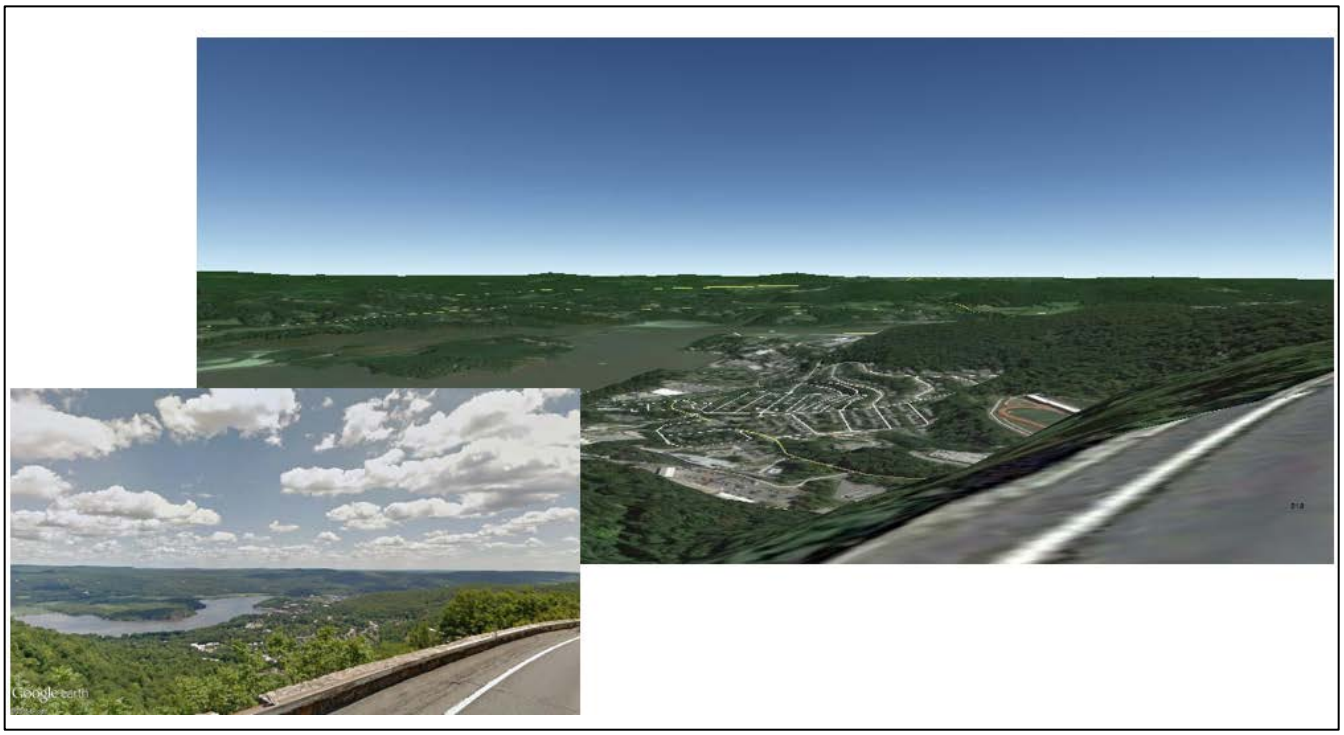

Figure 31. View from 9W Overlook

Figure 32. View from Cold Spring

Figure 33. View from Fort Putnam

Although the view of the project area will be altered and the configuration will change, the new WWTP, as illustrated in the viewshed figures, will be designed to align with the architectural cues of the surrounding area; no significant adverse impacts to aesthetics and visual resources are anticipated.

Lighting

As stated in the 90% Design Analysis (Atkins/OBG, November 2016), minimal use of exterior and site lighting is anticipated at the new WWTP, fully shielded fixtures will be utilized to prevent glare and night-sky related light pollution. Fixture and lamp types shall be selected to match existing where possible. Stanchion light fixtures and wall-mounted exterior light fixtures shall be utilized to the greatest extent possible. Lighting control shall be accomplished via a photocell tied into a lighting contactor. Light pollution shall be minimized to conform to LEED requirements. No lighting is proposed at the athletic fields and multi-use green space. A preliminary lighting plan and photometric plan (Atkins/OBG, November 2016), which illustrate proposed lighting locations and predicted maintained lighting levels of the proposed lighting fixtures, are included as Appendix J. Taking into account existing and proposed site lighting for safety and security along existing roads, the photometric plan indicates near zero-foot candle (FC) illumination (spillover) at the WWTP project boundary.

3.14.3 Mitigation

Scale/Sizing

The new WWTP will be a low-rise building so that it will not obstruct existing views.

Materials and Style

The new WWTP will be constructed of red brick with buff-colored, trim to match the architectural context and style of the Post Services and Target Hill Areas. The WWTP will integrate a simplified version of the Military Gothic style developed in the Academic Area, including design elements such as buttresses along the walls, crenelated parapets, and arched openings.

Landscape and Hardscape

Landscaping within the WWTP site will be limited due to site size constraints. Perimeter landscaping will include an area of buffer planting between the parking lot and the recreational field fence along the north. Along Upton Road, existing sycamore trees will remain and additional trees of the same species may be added in selected locations to improve the visual screening within the Hudson River Valley viewshed.

Three rain gardens (*i.e.,* planted detention areas) will be situated along the eastern and southern portions of the new WWTP. In addition, three retention-detention ponds will be situated on the northern and southern portions of the new WWTP. Additional landscape features include landscaping around the flare stack, ground cover plantings and visual buffer planting.

Due to site constraints, there will be no additional landscaping along the west side of the site.

The majority of the interior surfaces will be hardscape in the form of asphalt roads, concrete loading areas and sidewalks, and gravel areas where applicable. Pervious pavers will be used for the parking area located on the north perimeter of the new WWTP.

The existing WWTP site will be converted to an open space grass area with additional street trees along Upton Road to continue the existing street tree line along the site and to aid in screening the new plant from view from Trophy Point to the south.

Lighting

Proposed lighting will comply with the *United States Military Academy Design Guide*, *United States Army Garrison Engineering Planning Standards*, and the *Garrison Commander's Guidelines for Outdoor Lighting at West Point*. The USAG-WP Engineering Planning Standards, issued in February 2016, require the use of high efficiency light emitting diode (LED) luminaires, which are more energy efficient with less impact on the environment than older compact fluorescent lamps (CFLs) likely utilized in the original construction of the existing WWTP. Fully shielded fixtures will be utilized to prevent glare and night-sky related light pollution. Fixture and lamp types shall be selected to match existing where possible. Stanchion light fixtures and wall-mounted exterior light fixtures shall be utilized to the greatest extent possible. Lighting control shall be accomplished via a photocell tied into a lighting contactor. USAG-WP Engineering Planning Standards (2016) target the following illumination levels for exterior spaces: exterior secured spaces (1 – 2 FC), parking (20 FC), and Roadways (30 FC). No lighting is proposed at the athletic fields and multi-use green space.

3.15 UTILITIES

3.15.1 Affected Environment

Electricity/Natural Gas

Electricity and natural gas is provided to the USAG-WP site including the existing WWTP by Orange and Rockland Utilities and Central Hudson Gas & Electric Co., respectively (Tetra Tech, 2011).

The existing WWTP is electrically served from a substation located on the West Point Campus, Substation "D". An underground feeder extends from the substation to serve the existing WWTP, as well as other campus facilities such as Wash Road Underpass, Buildings 667B, 665, 673, and 517 (Shea Stadium).

Sanitary Sewer

A 21-inch diameter gravity sanitary sewer line located under Upton Road is currently routed to the existing WWTP.

Potable Water

Potable water is supplied to the USAG-WP site including the existing WWTP from three water treatment plants: the Lusk Water Plant, the Stony Lonesome Plant, and the Camp Buckner Plant. As previously described, raw water is supplied by surface water resources located on the USAG-WP installation including Stilwell Lake, Mine

Lake, Long Pond, and Lusk Reservoir (Tetra Tech, 2011). There is an existing 8-inch diameter waterline in the grass utility corridor that parallels Upton Road and serves the existing WWTP and the Anderson Rugby Complex. There is one existing fire hydrant inside the existing plant site and two existing fire hydrants surrounding the rugby complex. The 8-inch main dead-ends at the rugby complex, so pressure is low. A pressure test of the main at the WWTP site was completed in March 2016 and showed static pressure was good for potable water needs at the new WWTP.

3.15.2 Environmental Consequences

Utility requirements to support the Proposed Action will be extended, rerouted or improved, both overhead (electric) and underground (potable water, sanitary sewer, natural gas, electrical) from existing service adjacent to or near the site. In some cases, existing utilities are adequate for any expansion required for this facility.

Electricity

The existing electrical feeder, which currently serves the existing WWTP will also serve the new plant. The demand for electricity is not expected to change significantly, and the existing infrastructure has available capacity to serve the Proposed Action. As indicated in the 90% Design Analysis, there is sufficient capacity on Substation D for nominal additional loads with the understanding that substantial improvements in equipment and process efficiency (vs. the aged, existing WWTP) and the potential of digester gas production for electrical cogeneration at the new plant should result in a modest overall increase in peak demand (Atkins/OBG, November 2016). Power distribution lines will be installed underground within the proposed project area (Figure 2).

A diesel-fired standby generator for back-up power will also be installed at the new WWTP. It is estimated that the generator will be sized to provide 1,250 kilowatts (kW) (approximately 1,500 kilovolt-amps [kVA]) with a minimum fuel capacity of 48 hours. It is expected that this generator will operate 200 hours or less per year based upon this classification. The generator will be sized to sufficiently carry the full load of the entire facility and automatically start and be on-line within 60 seconds of a utility power failure.

Natural Gas

Assessing fuel demands of the new plant and what propane fuel storage would otherwise be needed, a new gas line is proposed to connect to the new WWTP. There are no natural gas mains in the immediate area, so the Proposed Action will include the extension of an existing gas main. A new gas line will extend from the existing main located at Washington Road along a southeast alignment towards Tower Road, then along Tower and Townsley Roads to the middle of Upton Road. The gas line will be located in the middle of Upton Road and run to the north side of the new WWTP site. The main will be sized for possible future connections, such as the Anderson Rugby Complex. No significant adverse impacts on natural gas capacity is anticipated; construction-phase impacts are summarized in Section 3.12.

Sanitary Sewer

A portion of the existing 21-inch diameter gravity sanitary sewer line under Upton Road will be upsized to a 24-inch diameter pipeline. The new sewer will extend along Upton Road and connect to the existing sanitary sewer west of the existing WWTP. There are two separate existing gravity sanitary sewer lines that will be intercepted and rerouted to the new plant; one from the north and one from the west. One new sanitary sewer effluent pipe will leave the Effluent Treatment Facility, continue to the Effluent Meter Vault. Effluent piping extends to the east to a manhole and continues through two junction boxes. Dual 14-inch diameter pipelines will extend from the last junction box into the Hudson River via the new, replacement outfall. A portion of this piping will be installed beneath the CSX railroad track using jack-and-bore techniques.

Where not already bolted down, effluent sewer manhole covers will be bolted down as part of this project. No significant adverse impacts on sanitary sewer capacity are anticipated; construction-phase impacts are summarized in Section 3.12.

Potable Water

A new 8-inch diameter waterline is proposed along Townsley and Upton Roads to increase the supply of water along Upton Road and to the proposed WWTP. To improve water conditions at the new WWTP, a new 8-inch water main is proposed to loop around the new WWTP with two connections to the new main along Upton Road (one near the north entrance to the site and one near the south entrance).

Fire hydrant coverage has been analyzed for the new plant and three new hydrants are required for building coverage and spacing requirements with the proposed Fire Department Connection (FDC). Hydrants are shown between 3-feet and 7-feet from the roadway edge, and protected from vehicles by bollards. The proposed fire hydrant in the northwest corner of the site will be located within 150-feet of the proposed FDC per requirements. The proposed FDC will be located on the northeast corner of the WWTP's Chemical Building (see Figure 2).

The system will be designed to provide adequate pressure to support fire suppression needs.

Proposed improvements will not adversely affect water supply capacities at USAG-WP; construction-phase impacts are summarized in Section 3.12.

3.15.3 Mitigation

No significant adverse impacts to utilities were identified; no specific mitigation is proposed. Work within the Hudson River associated with the installation of the new outfall is discussed in Section 3.4. The diesel fuel tank associated with the power generator will be designed with secondary containment and spill prevention mechanisms in accordance with state and federal requirements (see Section 3.11).

3.16 ODOR

3.16.1 Affected Environment

Assuming that odors at the influent of the existing WWTP are typical of domestic sewage, hydrogen sulfide (H_2S) would be the main odor constituent in the liquid treatment area. Ammonia and H_2S would be the main odor constituents in the solids treatment area. The concentration of odors is typically higher in the solids treatment area than in the headworks area.

The existing WWTP has no existing odor control. In addition, there has been no odor characterization or sampling for odor concentrations or dilutions-to-threshold odor paneling, and some of the new treatment processes are significantly different than existing.

3.16.2 Environmental Consequences

No construction-related odor impacts are anticipated. Operations at the new WWTP will replace operations at the existing WWTP. New operations will be approximately 1.5 times the existing operations and will utilize processes that are significantly different than the existing processes. The potential for odors from the new WWTP are expected to be similar in nature to those from the existing WWTP. Potential odor sources during operations consist of:

- Treatment process-related odors related to sewage.
- Odors related to the storage of food processing wastes, which will be used in the anaerobic digestion process to improve methane gas production and energy value.

3.16.3 Mitigation

Odor impacts from the new WWTP will be mitigated by the installation of three carbon adsorption units. Two odor control units will serve the influent liquid treatment area including the headworks, influent pumping station (IPS), and primary treatment (building, wet well, and/or clarifier influent / effluent distribution boxes). The third unit is for certain solids treatment systems including the sludge storage tanks and SDS, and possibly the sidestream treatment system.

In regards to food waste transported to the WWTP, odor control is planned for the entire SDS space within which the waste will be accepted. Food waste will be added to the underground storage tank as it is delivered to the facility. The SDS space will be designed with general room ventilation, which will be part of the Solids Handling Building (SHB) odor control system.

3.17 REASONABLY FORESEEABLE FUTURE ACTIONS AND CUMULATIVE IMPACTS

It is anticipated that the design for the Proposed Action will be completed by March 2017, with construction to begin in the Summer 2017. As stated in Section 3.9, the new WWTP has been designed to a minimum life of 50 years in accordance with DoD UFC 1-200-02.

Consistent with Form DD 1391, the Proposed Action is necessary, in part, to provide adequate facilities to support on-site populations including cadets, faculty and support personnel. Future projects were considered in regards to potential wastewater flow increases. The new WWTP will be designed to meet future wastewater treatment needs based on review and evaluation of a 50-year planning horizon including the potential future centralization of waste water treatment at USAG-WP (*i.e.,* sending Camp Buckner WWTP flow to Target Hill WWTP) and increases in population based on the proposed projects reviewed[41] (Atkins/OBG, February 2016).

Cumulative impacts result when the effects of the Proposed Action are added to or interact with other effects in a particular place and within a particular time. It is this combined effect, along with any resulting environmental degradation, that is the focus of cumulative impact analyses. The cumulative environmental effect analysis conducted for the project evaluates the impacts associated with the Proposed Action combined with the effects of other past, present, and reasonably foreseeable future actions (RFFAs), regardless of the agency or person responsible for such actions. This section provides a summary of cumulative effects associated with the project in relation to other RFFAs and recently completed projects at USAG-WP.

3.17.1 Recently Completed Projects in the Vicinity

The table below consists of projects that have been completed within the past five years (Figure 34).

Table 4. Projects Completed Within Past Five Years

Project Name	Year Completed	Figure ID
Michie Stadium Repairs/Upgrades	On-going	1
New Child Development Center	2010	2
Malek Tennis Courts	2011	3
South Switch House	2011	4
Satellite Refueling Facility for U.S. Military Academy Preparatory School	2012	5
Stony Lonesome Housing Reconstruction	2012	6
Arvin Annex	2012	7
Doubleday Field Press Box	2012	8
Most Holy Trinity Church Repairs	2012	9
Giant Voice (throughout the Main Post)	2012	N/A
Anderson Rugby Complex	2012	10
Michie Stadium East Stands Renovation	2012	1

[41] The Facility Report (Atkins/OBG, February 2016) utilized planned future wastewater loads from planned new construction as of the 2012 Infrastructure Capacity Analysis (ICA) Report.

3.17.2 Ongoing and Reasonably Foreseeable Future Actions

The table below consists of projects that are on-going or are RFFAs at USAG-WP (see Figure 34).

Table 5. Projects On-Going or RFFAs at USAG-WP

Project Name	Environmental Resources Affected	Figure ID
New West Point Elementary School	Materials and Waste, Soil/Groundwater	11
Access Gate Security Upgrades	Visual, Cultural Resources	12
Walkaway Improvements at Gate 3 Michie Stadium	Water, Geology and Soils, Visual, Noise, Traffic, Utilities, Wastes	1
Multi-Year Steam Heat Distribution (throughout Main Post)	Utilities	N/A
Major Renovations to Science Facility	Visual	13
Thayer Hotel Annex Renovation	Potable Water, Visual, Aesthetics, Noise, Utilities, Waste Disposal, Energy Conservation, and Real Property Accountability	14
Thayer Hotel Paintball Facility	Geology and Soils, Vegetation, Visual, Aesthetics, Noise, Cultural Resources, and Utilities	15
Coaches Village	Stormwater, Visual	16
Keller Army Hospital Expansion	Stormwater, Visual	17
North/South Dock Upgrades	Visual, Coastal Zone Management	18/19
Cadet Chapel Repairs	Cultural Resources	20
Privatization of Army Lodging	Stormwater, Air, Visual, Noise, Utilities and Infrastructure, Materials and Wastes, Coastal Zone Management	21
Visitors Center and Museum	Stormwater, Air, Cultural Resources, Visual, Health and Safety, Noise, Utilities and Infrastructure, Materials and Wastes, Coastal Zone Management	22
North Post Access Road	Visual, Cultural Resources, Natural Resources, Stormwater	23
West Point Cemetery Expansion	Visual and Cultural Resources	24
Multi-Purpose Academic Center	Water, Coastal Zone Management, Geology and Soils, Air, Cultural Resources, Visual, Health and Safety, Noise, Traffic and Transportation, Materials and Wastes, Utilities	25
Elementary School Expansion	Stormwater	11
Cadet Barracks Upgrades	Stormwater, Cultural Resources, Visual, Wastes	26
Headquarters Fire Station	Visual, Cultural Resources, Stormwater	27
Lacrosse Center and Gate 3 Entrance	Noise, Traffic and Transportation, Materials and Wastes, Utilities	28
Lacrosse Competition Field	Visual, Cultural Resources, Stormwater	29
New Golf Clubhouse Building	Visual, Cultural Resources, Stormwater	30
Delafield and Wilson Gate Substation Upgrades	Utilities	31/32
Net Zero throughout Post	Water, Utilities, Materials and Waste	N/A
New Cadet Barracks	Visual, Cultural Resources, Water, Geology and Soils, Air, Noise, Utilities, Traffic and Transportation, Materials and Waste	33
Ike Hall Renovation Phase III	Utilities, Materials and Waste, Visual	34
HVAC Replacement PX	Utilities	35
Cadet Barracks Chiller Plant	Water, Utilities	26
New Fitness Center Building	Utilities	36

Figure 34. Current and Reasonably Foreseeable Future Actions

Cultural Resources

The implementation of the Proposed Action and recent past, present, and RFFAs is not likely to result in adverse impacts on significant cultural resources at West Point. In accordance with the West Point's ICRMP, USAG-WP completes applicable consultations, evaluations, and action items prescribed in this plan before implementing each major project. The ICRMP requires the integration of cultural resources assessment and management into the routine activities, processes, and planning of activities at USAG-WP. Therefore, implementation of the plan would ensure that cultural resources are protected and properly managed for the Proposed Action and all USAG-WP projects.

Visual Impacts

Because many of these projects on-going and RFFA projects are located within various important viewsheds, the cumulative impact to visual resources warrants discussion. USAG-WP values and attempts to maintain a high aesthetic quality throughout all of its installation activities, especially in areas of high visibility within the Main Post/Academic Area, as well as the various views from this area.

Due to the intensity of use and associated development at USAG-WP, the implementation of past, present, and RFFAs at West Point would result in long-term direct impacts on visual resources. Implementation of the Proposed Action, combined with other projects, could result in long-term impacts on visual resources and important viewsheds.

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

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

Stormwater

The implementation of past, present, and RFFAs in the vicinity of the project area would involve earth disturbances associated with soil excavation and construction activities in numerous locations at USAG-WP. Minor erosion and sedimentation from each of these projects, when added together, could result in potentially greater cumulative soil erosion/sedimentation impacts to waterbodies and wetlands. Cumulatively, these effects could adversely impact users of these waterbodies and wetlands, because the watersheds surrounding West Point serve both as sources of public potable water supplies and habitat for fish and wildlife (including rare, threatened, and endangered species). However, the use of site-specific erosion control measures and best management practices (BMPs) during construction, and the restoration of all areas of disturbed soils immediately following earth disturbances for all projects, would minimize the potential for cumulative effects of erosion and sedimentation to a level that would not be non-significant.

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

Traffic

Implementation of the Proposed Action and past, present, and RFFAs has the potential to contribute to an already challenging traffic circulation situation at USAG-WP. Traffic during construction of the Project, as well as utility extensions within road ROWs, would represent a localized, short-term, moderate impact on traffic and traffic flow, and would only temporarily add to existing circumstances that hinder the smooth flow of traffic at West Point.

Coastal Zone Management

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

4. SUMMARY OF IMPACTS AND MITIGATION

The following table summarizes impacts and mitigation for this project:

Table 6. Summary of Impacts and Mitigation

Category	Impacts	Mitigation
Air Quality	■ No significant adverse impacts were identified	■ The contractor will be required to implement measures to minimize impacts including proper maintenance of vehicles and equipment, dust suppression, the use of low sulfur diesel fuel and best available technology to achieve the greatest reduction in particulate emissions ■ Air emission controls (including control of NO_X emissions), if necessary, will be identified during the NYSDEC permitting process.
Geology and Soils	■ Temporary exposure of bare soils to stormwater runoff ■ Potential vibration-related impacts from the use of blasting, pile driving and compaction (including impacts on historical structures and CSX operations). ■ Potential to encounter impacted soil during excavations, trenching, and other intrusive construction phase activities	■ Implementation and maintenance of the SWPPP (including E&SCs) ■ Prior to any blasting activities, a pre-blast survey (inspection) will be performed. A written blasting plan, including schedule, will be prepared and implemented by the NYS-licensed blasting contractor based on the recommendations from the recent geotechnical engineering investigation and pre-blast survey. ■ Adherence to vibration specifications identified for the project. ■ If impacted soil is encountered during construction activities, it will be managed and disposed in accordance with applicable Federal, State, local and DoD requirements. See also subsurface impacts mitigation (Hazardous Materials and Waste).
Land Use	■ Use of the athletic fields will be temporary disrupted during the construction phase ■ Permanent, minimal reduction in the area currently used for recreational purposes.	■ The remaining existing athletic fields, located to the north of the new WWTP, will be reconfigured to maximize their continued use. ■ The area, which is currently occupied by the existing WWTP and the southern parking area, will be converted to green space for recreational use with an asphalt connector road to Upton Road along the base of the existing steep slope. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields.

Category	Impacts	Mitigation
Water Resources	■ Potential to encounter groundwater (potentially impacted) during excavations, trenching, and other intrusive construction phase activities ■ Temporary surface water impacts from stormwater runoff	■ Groundwater encountered during construction activities will be characterized to identify an appropriate method of disposal ■ If impacted groundwater is encountered during construction activities, it will be managed and disposed in accordance with applicable Federal, State, local and DoD requirements. See also subsurface impacts mitigation (Hazardous Materials and Waste). ■ If groundwater is not impacted, discharges of dewatering activities will be managed by appropriate control measures in accordance with the General Permit (GP-0-15-002) and associated SWPPP ■ Standard construction industry stabilization practices will be implemented to minimize potential short-term impacts to surface water ■ A SWPPP (and E&SC Plan) will be prepared and implemented in accordance with the General Permit as well as New York State guidance documents. The SWPPP will also identify measures to minimize sedimentation within the Hudson River during construction of the replacement outfall. ■ Discharges (including future use of treated effluent for irrigation water) will be appropriately permitted
Floodplains	■ No significant adverse impacts were identified	■ Due to the proximity of the WWTP to the Hudson River, it is anticipated that the finished floor elevation for the proposed WWTP will be raised above the 100-year flood elevation to provide additional flood protection and resiliency

Threatened and Endangered Species	Potential impacts to the following species were identified: ■ Northern Long-Eared Bats ■ Bald Eagles ■ Migratory Birds ■ Timber Rattlesnake ■ Atlantic and Shortnose Sturgeon ■ Designated NOAA EFH	■ To minimize or eliminate impacts to Northern Long-Eared Bats, tree cutting will be restricted to November 1st – March 31st when the bat will be in hibernation at off-site hibernacula. ■ Any tree removal associated with the project will be incidental. West Point will comply with the provisions of 50 CFR 17.40 (also referred to as the 4(d) Rule) prior to removing any trees. ■ To minimize or eliminate potential impacts to Bald Eagles and other migratory birds during construction, USAG-WP will not conduct blasting activities during the period of December 1st through March 31st ■ Fully shielded fixtures will be utilized to prevent glare and night-sky related light pollution. See also lighting mitigation (Aesthetics and Visual Resources). ■ USAG-WP will inspect areas prior to clearing and inform contractor(s) of appropriate measures in dealing with wildlife as part of a comprehensive environmental briefing. USAG-WP's Natural Resource Manager will meet with the construction project and safety managers to review rattlesnake protection measures including instructions on how to proceed in the presence of a snake and providing contact numbers and an information poster to be posted in at the work site (Pray, 2017). ■ Temporary control measures to limit upland erosion and sedimentation to the Hudson River. ■ A cofferdam (or other means to provide for work in dry conditions) will be utilized to install the new replacement outfall in the Hudson River. Best management practices will be utilized to minimize temporary vibratory impacts relating to installation of cofferdam. ■ An in-river work window between September through end of February will be implemented. ■ In-river sediment that is temporarily disturbed or removed as part of the installation of the

Category	Impacts	Mitigation
		pipelines in the Hudson River will be replaced in-kind.
Cultural Resources	■ Adverse effects to historic properties	■ The project design team will consult with West Point Cultural Resources Program staff to ensure compliance with procedures outlined in the ICRMP and PA including the use of appropriate architectural materials for the new WWTP ■ Letter Agreement will be executed in accordance with the PA dated July 2016; a historic context of the athletic fields. The site of the current wastewater treatment plant will be turned into open space after the existing plant is demolished.
Noise Effects	The following temporary, short-term construction-related noise impacts were identified: ■ Equipment necessary to prepare the project area and construct the new WWTP, demolish the existing WWTP, and reestablish the athletic fields ■ Vehicles and equipment accessing and egressing the site including trucks hauling C&D debris for off-site management ■ Temporary power generators ■ Blasting to remove bedrock	Construction phase noise impacts will be mitigated as follows: ■ Use and maintenance of appropriate mufflers on vehicles and equipment ■ Adherence to construction hours. The NYSDEC Program Policy "Assessing and Mitigating Noise Impacts" suggests that limiting activity to normal workday hours is an effective mitigation measure ■ Implementation of a blast plan (see Section 3.2), which will include noise-related mitigation measures ■ Compliance with the IONMP
	■ No significant adverse impacts were identified from the WWTP operations	Operations phase noise impacts will be mitigated as follows: ■ Site operations will be conducted in accordance with the USAG-WP's IONMP. ■ Aeration blowers will be housed in noise attenuating enclosures.
Socioeconomic Issues/Environmental Justice	■ No significant adverse impacts were identified	■ No specific mitigation is proposed

Category	Impacts	Mitigation
Energy	■ No significant adverse impacts were identified	■ Implementation of the project will result in a net reduction in energy use in comparison to existing conditions
Hazardous Materials and Hazardous Wastes	■ The potential exists for encountering hazardous materials during demolition activities ■ The potential exists for encountering impacted soils and groundwater during construction activities ■ The potential exists for encountering impacted river sediments during installation of the outfall ■ Removal of PBS and CBS tanks may be necessary prior to demolition of the existing WWTP ■ Construction and operation of the WWTP will require the use of chemicals and other potentially hazardous materials ■ C&D waste will be generated as a result of the demolition and construction of the existing and new WWTPs, respectively ■ Additional solid waste and dewatering sludge waste may be generated based on the increased capacity of the proposed WWTP	■ A hazardous materials mitigation plan will be prepared and implemented prior to initiation of activities. Prior to disposal, waste streams associated with these materials will be characterized and wastes will be managed and disposed in accordance with applicable federal, State and local laws and regulations including AR 200-1 and USAG-WP Policy # 26 ■ If impacted soil or groundwater is encountered, it will be managed in accordance with applicable federal, State, local and DoD (AR 200-1) requirements ■ If impacted river sediments are encountered, they will be managed and disposed of in accordance with applicable federal, State, local and DoD (AR 200-1) requirements ■ Preparation and implementation of a CHASP to protect construction workers and the community from exposure to potential impacted materials ■ Removal and addition of regulated containers will be conducted in accordance with applicable NYSDEC and USEPA regulations; including closure requirements, design requirements (*i.e.*, secondary containment), modifications to USAG-WP's existing spill prevention plans (*e.g.,* Spill Prevention, Control and Countermeasure Plan, Spill Prevention Report), PBS and CBS registration certificates, operation and maintenance requirements, as well as waste characterization, management, handling and disposal ■ Chemicals and other potentially hazardous materials will be stored, handled and managed in accordance with USAG-WP's HMMS and applicable federal, State and local laws and regulations ■ Use of herbicides and pesticides will be in accordance with USAG-WP's *Integrated Pest Management Plan*

Category	Impacts	Mitigation
		■ The contractor will be required to dispose of C&D waste off-site at an appropriately permitted landfill, diverting as much as possible from landfills by reuse or recycling. A minimum target of 60% diversion will be included in project specifications. The contractor shall also develop and implement a C&D Waste Management Plan. ■ Solid waste generated at the new WWTP will be hauled by a contractor to an Army-owned, contractor-operated transfer facility on the installation and, ultimately, to a State-permitted landfill ■ Dewatered sludge from the sewage treatment facilities will continue to be composted in accordance with applicable regulations.
Traffic and Transportation Systems	■ Temporary impacts to internal and surrounding roadways are anticipated during the construction phase ■ Long-term, operations-related adverse impacts are not anticipated ■ No significant adverse impacts to railway or waterway transportation were identified	■ Adherence to specified access/egress routes ■ Coordinating with the Military Police and USAG-WP community to minimize temporary traffic disruptions ■ Advanced registration of construction vehicles and individual drivers ■ Deployment of detour signs and flaggers, as necessary including the preparation, if necessary, of a "Maintenance and Protection of Traffic Plan" ■ Construction vehicles will be equipped with backing alarms, two-way radios, and Slow Moving Vehicle signs ■ The postponement of construction activities, if necessary, during home games, and special events to minimize pedestrian traffic disruptions ■ Heavy equipment will be stored at the temporary construction staging area to the extent possible to minimize the amount of slow-moving vehicles on Upton Road
Coastal Resources	■ The project area is located within NYS's coastal management area	■ A "Negative Determination" has been completed and submitted to NYSDOS to document the project's consistency with State Coastal Management Policies

Category	Impacts	Mitigation
Aesthetics and Visual Resources	■ Changes to the viewshed ■ The Target Hill athletic fields are identified in the cultural resource inventory as a contributing landscape feature cultural resource ■ Minimal use of exterior & site lighting is anticipated at the new WWTP	■ Scaling and use of materials consistent with the architectural cues of surrounding land uses and viewsheds. ■ Conformance with the *United States Military Academy Design Guide*, *United States Army Garrison Engineering Planning Standards* and the *Garrison Commander's Guidelines for Outdoor Lighting at West Point*. Fully shielded fixtures will be utilized to prevent glare and night-sky related light pollution. Fixture and lamp types shall be selected to match existing where possible. Stanchion light fixtures and wall-mounted exterior light fixtures shall be utilized to the greatest extent possible. Lighting control shall be accomplished via a photocell tied into a lighting contactor. No lighting is proposed at the athletic fields and multi-use green space.
Utilities	■ No significant adverse impacts were identified	■ No specific mitigation is proposed
Odor	■ No construction-related odor impacts are anticipated ■ Treatment process-related odors related to sewage ■ Odors related to the storage of food processing wastes, which will be used in the anaerobic digestion process to improve methane gas production and energy value	■ Odors associated with the new WWTP will be controlled via three carbon absorption units ■ Odor control is planned for the entire SDS space within which food waste will be accepted. The SDS space will be designed with general room ventilation, which will be part of the SHB odor control system.

5. LISTING OF PREPARERS, AGENCIES AND PERSONS CONSULTED

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Agencies:

Various agencies that oversee environmental categories required to be evaluated offer web-based tools that provide data and information regarding adverse environmental impacts. A list including the environmental issue, the agency in charge, and the web-based tool relied upon, is provided below:

- Soil Survey, United States Department of Agriculture (USDA) – Web Soil Survey (Figure 5)
- Surface Water Resources, USEPA – MyWaters Mapper (Figure 6)
- Federal Wetlands, USFWS – National Wetland Inventory (Figure 7)
- NYS Freshwater Wetlands, NYSDEC – Environmental Resource Mapper (Figure 8)
- New York State Tidal Wetlands, NYSDEC - GIS (Figure 9)
- Floodplains, FEMA – Flood Map Service Center (Figure 10)
- Cultural Resources, SHPO – CRIS Project Planning Tool
- NYS Biological Resources, NYSDEC - Environmental Resource Mapper
- Water Quality Issues, USEPA – Sole Source Aquifer Map
- Threatened or Endangered Species, USFWS – IPaC
- Essential Fish Habitats, NOAA - Essential Fish Habitat Mapper v3.0
- Regulatory Consultation Correspondence (Appendix F)
- Coastal Resources, NYSDOS Correspondence (Appendix I)

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7. ABBREVIATIONS AND ACRONYMS

ACMs	Asbestos-containing Materials
AR	Army Regulation
ASCE	American Society of Civil Engineers
BMP	Best Management Practice
C&D	Construction and Demolition
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CBS	Chemical (Hazardous Substance) Bulk Storage
CCTV	Closed-Circuit Television
CEQ	Council on Environmental Quality
CFL	Compact Fluorescent
CFR	Code of Federal Regulations
CHASP	Construction Health and Safety Plan
CMP	Coastal Management Program
CnA	Chenango gravelly silt loam
CO	Carbon Monoxide
CRIS	Cultural Resource Information System
CRM	Cultural Resource Management
dB	Decibels
dBA	A-weighted Decibel
DER	NYSDEC Division of Environmental Remediation
DHPW	Directorate of Housing and Public Works
DMM	Discarded Military Munitions
DoD	Department of Defense
DPW	Directorate of Public Works
E&SC	Erosion & Sedimentation Control
EA	Environmental Assessment
EFH	Essential Fish Habitat
EISA	Energy Independence Security Act
EJ	Environmental Justice

EMCS	Energy Monitoring and Control Systems
EO	Executive Order
EOD	Explosive Ordnance Disposal
FC	Foot Candle
FDC	Fire Department Connection
FE	Federally Endangered
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMB	Federal Migratory Bird
FOG	Fat, Oil and Grease
FT	Federally Threatened
FY	Fiscal Year
General Permit	NYSDEC's SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002)
GHG	Greenhouse Gas
GIS	Geographic Information System
GPD	Gallons per Day
H_2S	Hydrogen Sulfide
HMMS	Hazardous Materials Management System
hz	Hertz
I-287	Interstate 287
I-84	Interstate 84
I-87	Interstate 87
ICA	Infrastructure Capacity Analysis
ICRMP	Integrated Cultural Resources Management Plan
IMCOM	Installation Management Command
INRMP	Integrated Natural Resource Management Plan
Installation Action Plan	Fiscal Year (FY) 2015 West Point Military Reservation Army Defense Environmental Restoration Program Installation Action Plan
IONMP	Installation Operational Noise Management Plan
IPaC	Information for Planning and Conservation
ips	inches per second

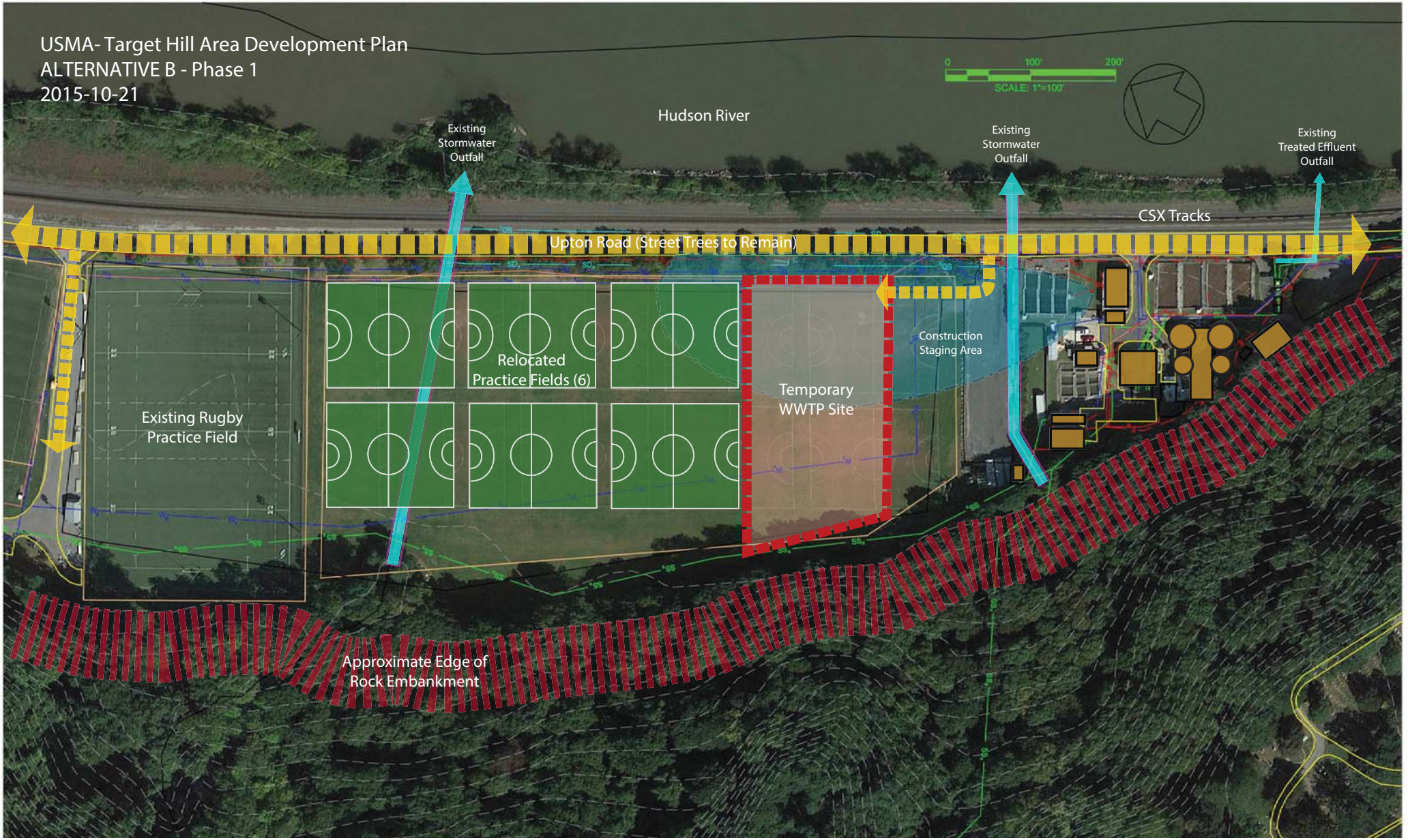
IPS	Influent Pumping Station
kVA	kilovolt-amps
kW	kilowatts
LBP	Lead-based Paint
L_{dn}	Day-Night Noise Level
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
LQG	Large Quantity Generator
LUC	Land Use Controls
MC	Munitions Constituents
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
MGD	Million Gallons per Day
MMRP	Military Munition Response Program
MRS	Munitions Response Site
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NOx	Nitrogen Oxides
NPS	National Park Service
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWP	Nationwide Permit
NYCRR	New York Codes, Rules and Regulations
NYNHP	New York Natural Heritage Program
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOS	New York State Department of State
NYSOPRHP	New York State Office of Parks, Recreation and Historic Preservation

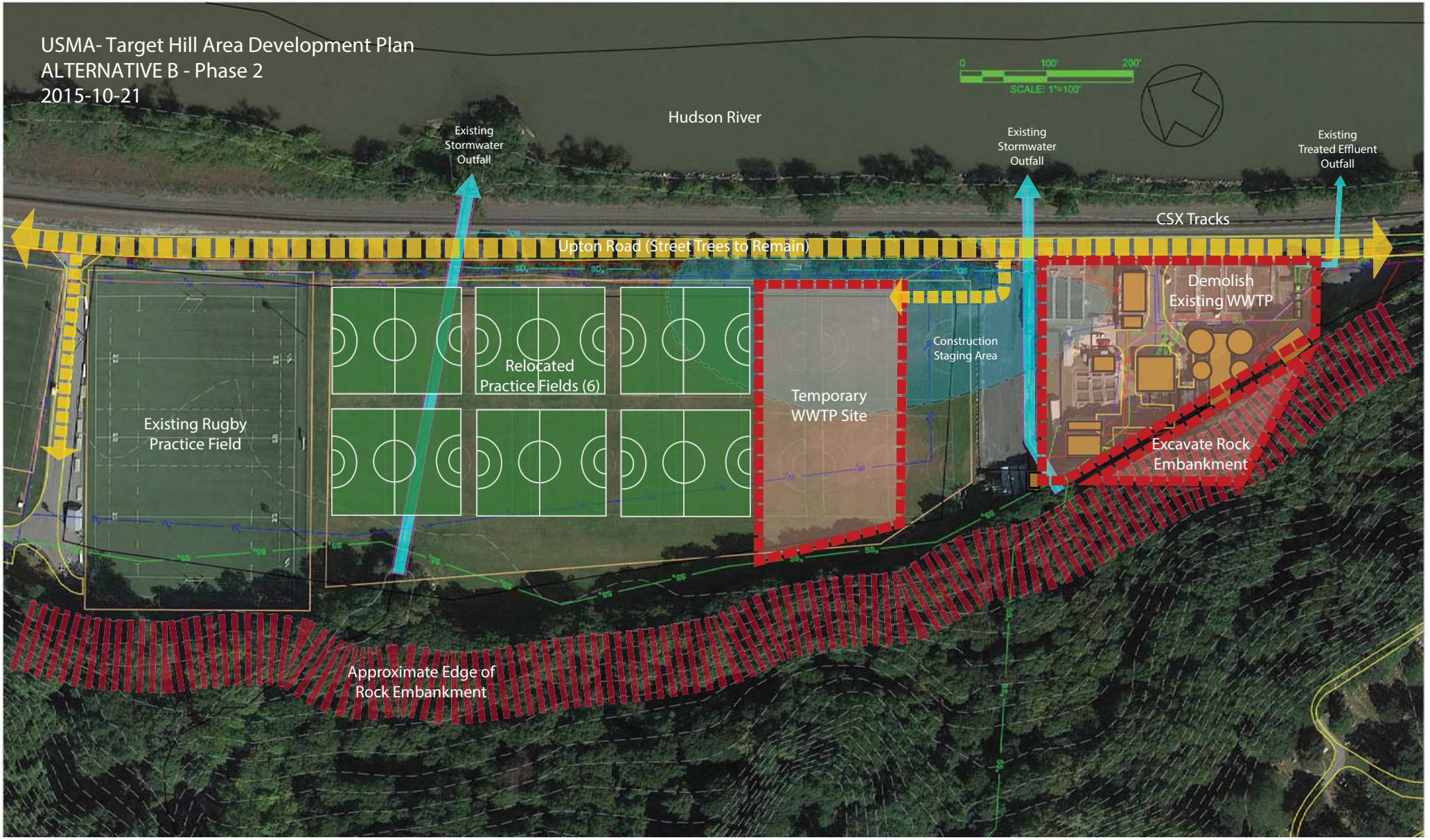
O_3	Ozone
OSHA	Occupational Safety and Health Administration
OVE	Otisville and Hoosic Soils
PA	Programmatic Agreement Among the United States Army Garrison West Point, the New York State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Operations, Maintenance, and Development Activities, United States Army Garrison, West Point, West Point, New York
Pb	Lead
PBS	Petroleum Bulk Storage
PIP	Palisades Interstate Parkway
PM_{10}	Particulate Matter (up to 10 micrometers in size)
$PM_{2.5}$	Particulate Matter (up to 2.5 micrometers in size)
ppb	Parts per Billion
ppm	Parts per Million
PPV	Peak Particle Velocity
PV	Photo Voltaic
RFFA	Reasonably Foreseeable Future Action
RI	Remedial Investigation
ROD	Rock outcrop-Hollis complex
RTE	Rare, Threatened, and Endangered
SASS	Scenic Area of Statewide Significance
SCOs	Soil Cleanup Objectives
SDS	Solids Dump Station
SE	State Endangered
SHB	Solids Handling Building
SHPO	State Historic Preservation Office
SO_x	Sulfur Oxides
SPDES	State Pollutant Discharge Elimination System
SSC	State Special Concern
ST	State Threatened
SVOCs	Semi-volatile Organic Compounds
SWPPP	Stormwater Pollution Prevention Plan
TAL	Target Analyte List

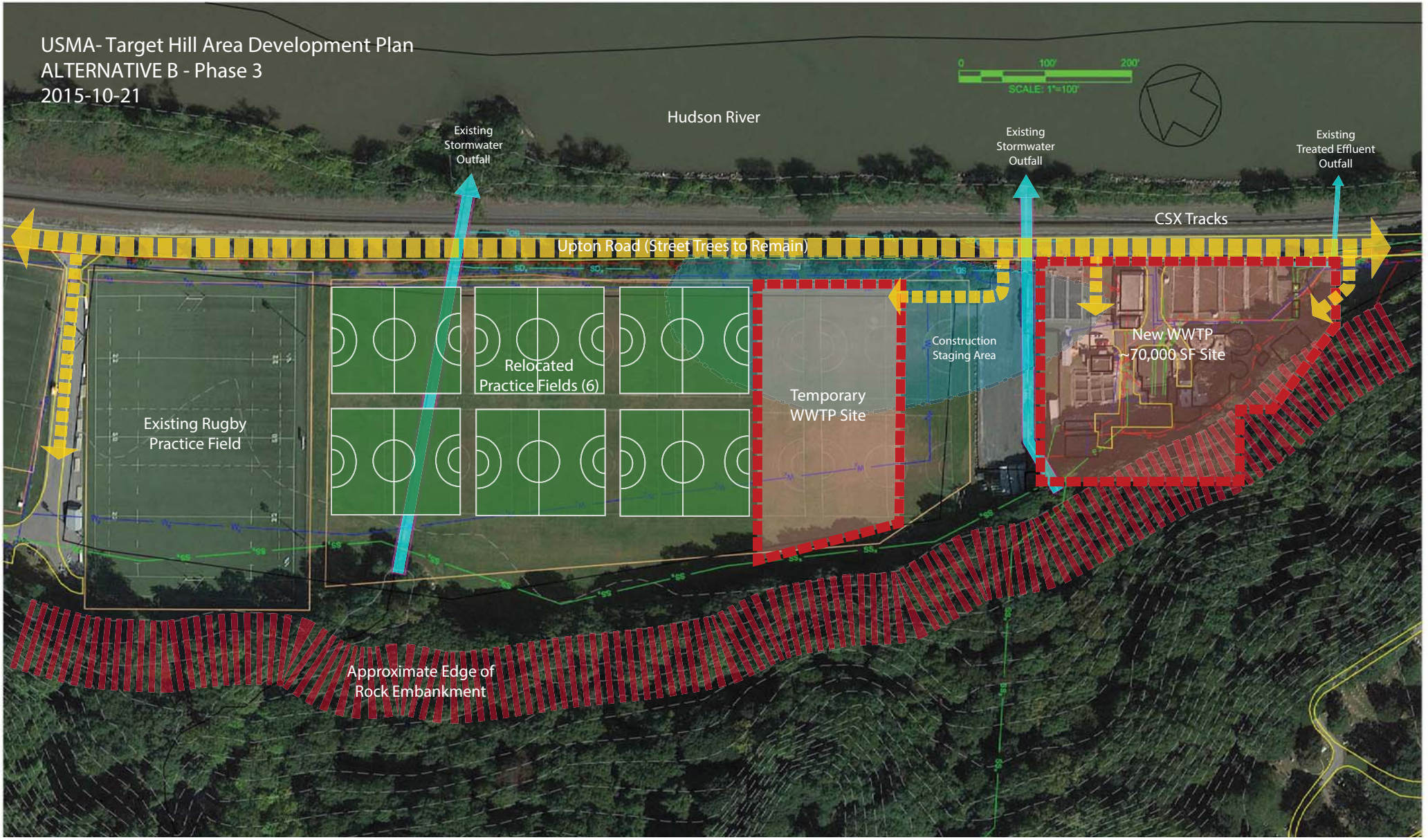
TOGs	Technical and Operational Guidance Series
TPH	Total Petroleum Hydrocarbons
µg/m3	Micrograms per Cubic Meter
UFC	Unified Facilities Code
U.S.	United States
USACE	United States Army Corps of Engineers
USAG-WP	United States Army Garrison at West Point, NY
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish & Wildlife Service
USMA	United States Military Academy
UXO	Unexploded Ordnance
VOCs	Volatile Organic Compounds
WPMR	West Point Military Reservation
WWTP	Wastewater Treatment Plant

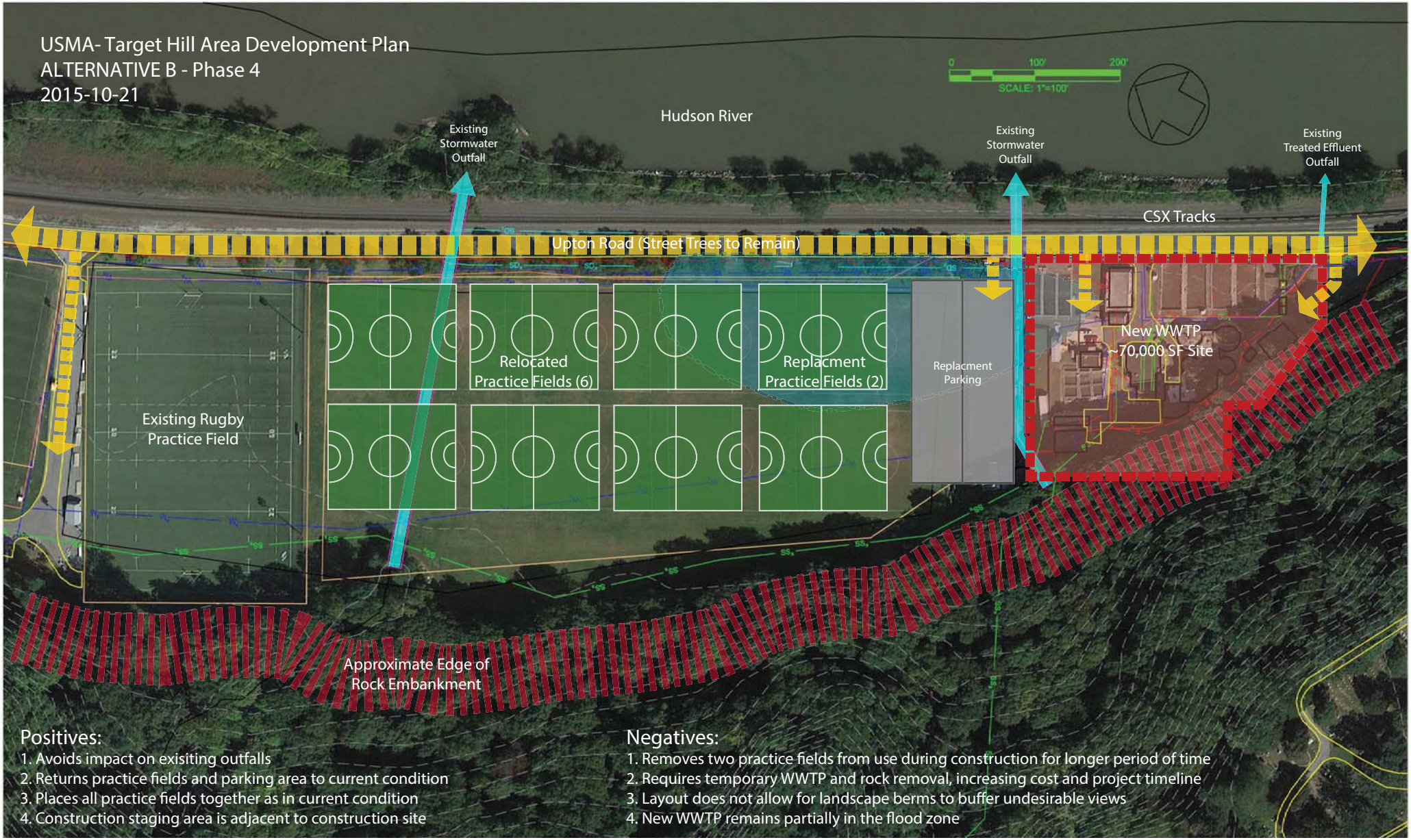
APPENDICES

Alternative B – Site Layout


USMA- Target Hill Area Development Plan
ALTERNATIVE B - Phase 1
2015-10-21
0
100'
200'
SCALE: 1"=100'
Hudson River
Existing
Stormwater
Outfall
Existing
Stormwater
Outfall
Existing
Treated Effluent
Outfall
CSX Tracks
Upton Road (Street Trees to Remain)
Existing Rugby
Practice Field
Relocated
Practice Fields (6)
Temporary
WWTP Site
Construction
Staging Area
Approximate Edge of
Rock Embankment


USMA- Target Hill Area Development Plan
ALTERNATIVE B - Phase 2
2015-10-21
0
100'
200'
SCALE: 1"=100'
Hudson River
Existing Stormwater Outfall
Existing Stormwater Outfall
Existing Treated Effluent Outfall
CSX Tracks
Upton Road (Street Trees to Remain)
Demolish Existing WWTP
Construction Staging Area
Relocated Practice Fields (6)
Temporary WWTP Site
Existing Rugby Practice Field
Excavate Rock Embankment
Approximate Edge of Rock Embankment


USMA- Target Hill Area Development Plan
ALTERNATIVE B - Phase 3
2015-10-21
0
100'
200'
SCALE: 1"=100'
Hudson River
Existing Stormwater Outfall
Existing Stormwater Outfall
Existing Treated Effluent Outfall
CSX Tracks
Upton Road (Street Trees to Remain)
Existing Rugby Practice Field
Relocated Practice Fields (6)
Temporary WWTP Site
Construction Staging Area
New WWTP ~70,000 SF Site
Approximate Edge of Rock Embankment



Positives:

1. Avoids impact on exisiting outfalls
2. Returns practice fields and parking area to current condition
3. Places all practice fields together as in current condition
4. Construction staging area is adjacent to construction site

Negatives:

1. Removes two practice fields from use during construction for longer period of time
2. Requires temporary WWTP and rock removal, increasing cost and project timeline
3. Layout does not allow for landscape berms to buffer undesirable views
4. New WWTP remains partially in the flood zone

Construction Equipment Emissions Inventory

RECORD OF NON-APPLICABILITY

In Accordance with the Clean Air Act-General Conformity Rule for the Proposed Target Hill Wastewater Treatment Plant Project, United States Army Garrison at West Point, Orange County, New York

April 6, 2017

The United States Army Garrison at West Point, NY (USAG-WP) proposes to replace its existing Target Hill Wastewater Treatment Plant (WWTP) with the objective of increasing treatment capacity from the current 2.06 million gallons per day (MGD) to 3.5 MGD maximum-month plant rating (2.8 MGD average daily flow) to meet current and projected future needs (the Proposed Action). As a result of the action, the Proposed Action would generate new direct and indirect emissions from the construction and operation of the new WWTP. The New York State Department of Environmental Conservation (NYSDEC) has classified Lower Orange County, which includes West Point in the Town of Highlands, as in "severe nonattainment" for ozone. As precursors to ozone, nitrogen oxides (NO_X) and volatile organic compounds (VOC) thresholds apply.

General Conformity under the Clean Air Act, Section 176 has been evaluated according to the requirements of Title 40 of the Code of Federal Regulations Part 93, Subpart B. The requirements of this rule are not applicable to the action because:

> The highest total (operation and construction phase) emissions has been estimated at 37.8 tons (34.4 metric tons) of NOx and 7.2 tons (6.6 metric tons) of VOCs, which, are well below the applicability (de minimis) threshold values of 100 tons (90.7 metric tons) for NOx and 50 tons (45.4 metric tons) for VOCs.

Lower Orange County is in attainment or considered unclassifiable (and, therefore, considered in attainment) for other criteria pollutants and are not subject to a further general conformity analysis. Supported documentation and emission estimates:

(X) Are attached

( ) Appeared in the National Environmental Policy Act documentation

( ) Other (not necessary)

ENZO PALAU
Installation Environmental Coordinator
Chief, Environmental Management Division
Directorate of Public Works

Estimate for Temporary Construction Associated Emissions

Construction Equipment				
Equipment	**Number of Units**	**Days on Site**	**Hours Per Day**	**Operating Hours**
Excavators	4	250	4	4,000
Rollers	4	250	4	4,000
Rubber Tired Dozers	4	200	4	3,200
Plate Compactors	8	200	8	12,800
Trenchers	4	200	4	3,200
Air Compressors	4	400	8	12,800
Cement Mixers	4	300	4	4,800
Cranes	3	400	4	4,800
Generators	3	400	8	9,600
Tractors/Loaders/Backhoes	4	250	4	4,000
Pavers	1	90	8	720
Paving Equipment	2	90	8	1440

Construction Equipment Emission Factors (lbs/hr)							
Equipment	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Excavators	0.5828	1.3249	0.1695	0.0013	0.0727	0.0727	119.6
Rollers	0.4341	0.8607	0.1328	0.0008	0.0601	0.0601	67.1
Rubber Tired Dozers	1.5961	3.2672	0.3644	0.0025	0.1409	0.1409	239.1
Plate Compactors	0.0263	0.0328	0.0052	0.0001	0.0021	0.0021	4.3
Trenchers	0.508	0.8237	0.1851	0.0007	0.0688	0.0688	58.7
Air Compressors	0.3782	0.798	0.1232	0.0007	0.0563	0.0563	63.6
Cement Mixers	0.0447	0.0658	0.0113	0.0001	0.0044	0.0044	7.2
Cranes	0.6011	1.61	0.1778	0.0014	0.0715	0.0715	128.7
Generators	0.3461	0.698	0.1075	0.0007	0.043	0.043	61
Tractors/Loaders/Backhoes	0.4063	0.7746	0.1204	0.0008	0.0599	0.0599	66.8
Pavers	0.5874	1.0796	0.1963	0.0009	0.0769	0.0769	77.9
Paving Equipment	0.0532	0.1061	0.0166	0.0002	0.0063	0.0063	12.6

Source: California Environmental Protection Agency, Air Resource Board, 2011 (Mobile Sources Emission Inventory, EMFAC2011 Web Database, **https://www.arb.ca.gov/emfac/2011/**)

Estimate for Temporary Construction Associated Emissions

Construction Equipment Emissions (TPY)							
Equipment	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Excavators	1.2	2.6	0.3	0.003	0.1	0.1	239
Rollers	0.9	1.7	0.3	0.002	0.1	0.1	134
Rubber Tired Dozers	2.6	5.2	0.6	0.004	0.2	0.2	383
Plate Compactors	0.2	0.2	0.03	0.001	0.01	0.01	27.5
Trenchers	0.8	1.3	0.3	0.001	0.1	0.1	93.9
Air Compressors	2.4	5.1	0.8	0.004	0.4	0.4	407
Cement Mixers	0.1	0.2	0.03	0.0002	0.01	0.01	17.3
Cranes	1.4	3.9	0.4	0.003	0.2	0.2	309
Generators	1.7	3.4	0.5	0.003	0.2	0.2	293
Tractors/Loaders/Backhoes	0.8	1.5	0.2	0.002	0.1	0.1	134
Pavers	0.2	0.4	0.1	0.0003	0.03	0.03	28.0
Paving Equipment	0.04	0.08	0.01	0.0001	0.005	0.005	9.1
Totals	12.3	25.6	3.6	0.02	1.5	1.5	2,074

Painting		
Assumed VOC Content	0.84	lbs/gallon
Assumed Coverage	400	sf/gallon
Emission Factor	0.0021	lbs/sf
Wall Surface	150,000	sf of painted
	315	lbs VOC
	0.16	tons VOC

Source: SCAQMO 1993, California Environmental Protection Agency, Air Resource Board, 2011 (Mobile Sources Emission Inventory, EMFAC2011 Web Database, **https://www.arb.ca.gov/emfac/2011/**)

Estimate for Temporary Construction Associated Emissions

Delivery of Equipment and Supplies	
Number of Deliveries/day	8
Number of trips/day	2
Assumed miles per trip	50
Days of Construction	400
Total miles	320,000

Pollutant	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Emission Factor (lbs/mi)	0.0219	0.0237	0.003	0.00001	0.0009	0.0007	2.7
Totals (TPY)	3.5	3.8	0.5	0.002	0.1	0.1	432

Source: California Environmental Protection Agency, Air Resource Board, 2011 (Mobile Sources Emission Inventory, EMFAC2011 Web Database, **https://www.arb.ca.gov/emfac/2011/**)

Surface Distrubance		
TSP Emissions	124.8	lb/acre
PM_{10}/TSP	0.45	
$PM_{2.5}/PM_{10}$	0.15	
Assumed Period of	200	days
Capture Fraction	0.5	

	Area (acres)	TSP (lbs)	PM_{10} (lbs)	PM_{10} (tons)	$PM_{2.5}$ (lbs)	$PM_{2.5}$ (tons)
Demolition	4	99,840	44,928	22.5	14,976	7.5

Source: USEPA 1995 and USEPA 2005, California Environmental Protection Agency, Air Resource Board, 2011 (Mobile Sources Emission Inventory, EMFAC2011 Web Database, **https://www.arb.ca.gov/emfac/2011/**)

Worker Commutes	
Assumed Number of Workers	40
Number of Trips	2
Miles per Trip	30
Days of Construction	400
Total Miles	960,000

Pollutant	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.00001	0.0001	0.0001	1.1
Total (lbs)	10,080	1,056	1,056	10	96	96	1,056,000
Total (TPY)	5.0	0.5	0.5	0.005	0.05	0.05	528

Source: California Environmental Protection Agency, Air Resource Board, 2011 (Mobile Sources Emission Inventory, EMFAC2011 Web Database, **https://www.arb.ca.gov/emfac/2011/**)

Estimate for Temporary Construction Associated Emissions

Rock Removal	
Number of Deliveries	30
Number of Trips	2
Miles per trip	50
Assumed days of removals	60
Total miles	180,000

Pollutant	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Emission factor (lbs/mile)	0.0219	0.0237	0.003	0.00001	0.0009	0.0007	2.7
Total (lbs)	3,942	4,266	540	1.8	162	126	486,000
Total (tons)	2.0	2.1	0.3	0.001	0.08	0.06	243

Source: California Environmental Protection Agency, Air Resource Board, 2011 (Mobile Sources Emission Inventory, EMFAC2011 Web Database, **https://www.arb.ca.gov/emfac/2011/**)

Particulates from Blasting	
Assumed number of blasting	60
Assumed number of blasts/	5

Pollutant	PM_{10}	$PM_{2.5}$
Emission factor (lbs/blast)	0.52	0.03
Emissions (lbs)	156	9
Emissions (tons)	0.08	0.005

Source: California Environmental Protection Agency, Air Resource Board, 2011 (Mobile Sources Emission Inventory, EMFAC2011 Web Database, **https://www.arb.ca.gov/emfac/2011/**)

Total Estimated Temporary Construction Emissions (TPY)

	Pollutant						
Temporary Construction	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Construction Equipment	12.3	25.6	3.6	0.02	1.5	1.5	2,074
Painting	---	---	0.16	---	---	---	---
Deliveries	3.5	3.8	0.5	0.002	0.1	0.1	432
Surface Disturbance	---	---	---	---	22.5	7.5	---
Worker Commutes	5.0	0.5	0.5	0.005	0.05	0.05	528
Rock Removal	2.0	2.1	0.3	0.001	0.08	0.06	243
Blasting	---	---	---	---	0.08	0.005	---
TOTALS	22.8	32.1	5.0	0.031	24.3	9.2	3,277

Estimate for Temporary Construction Associated Emissions

Estimated Solid Waste Generation		
Building Area (sf)	500,000	
Debris Generation Rate	4.40	
Estimated debris (tons)	1100	
Estimated Recycled Material	550	(assumes 50% recycled)
Estimated Landfill Debris	550	

Target Hill and Siege Battery Munitions Response Sites

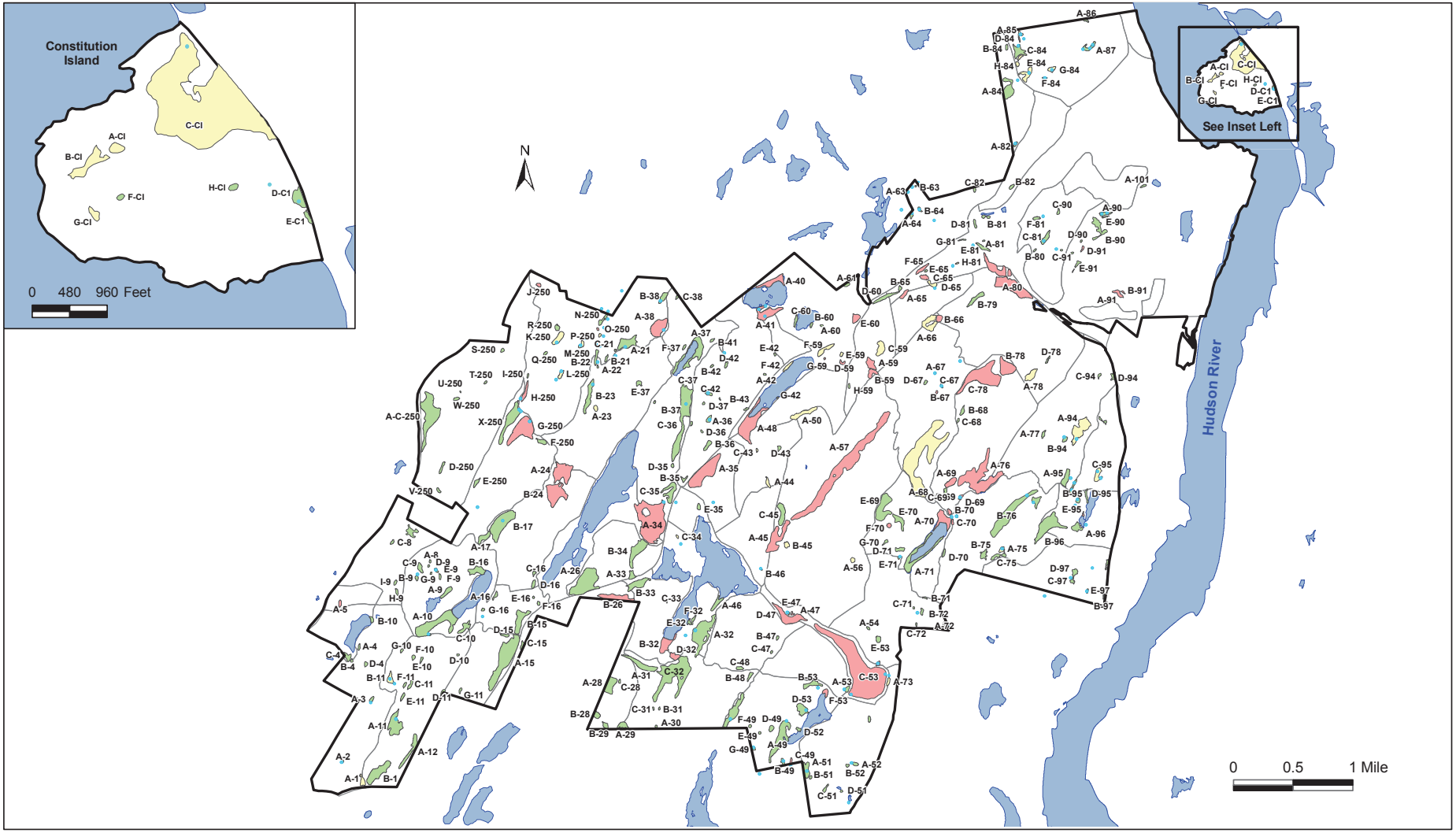
Non-Time Critical Removal Action
Land Use Control Plan
Military Munitions Response Program
USAG West Point, NY

Figure 2-8
Siege Battery (WSTPT-015-R-01)

Non-Time Critical Removal Action
Land Use Control Plan
Military Munitions Response Program
USAG West Point, NY

Figure 2-9
Target Hill (WSTPT-017-R-01)

USAG-WP-identified Wetlands



LEGEND

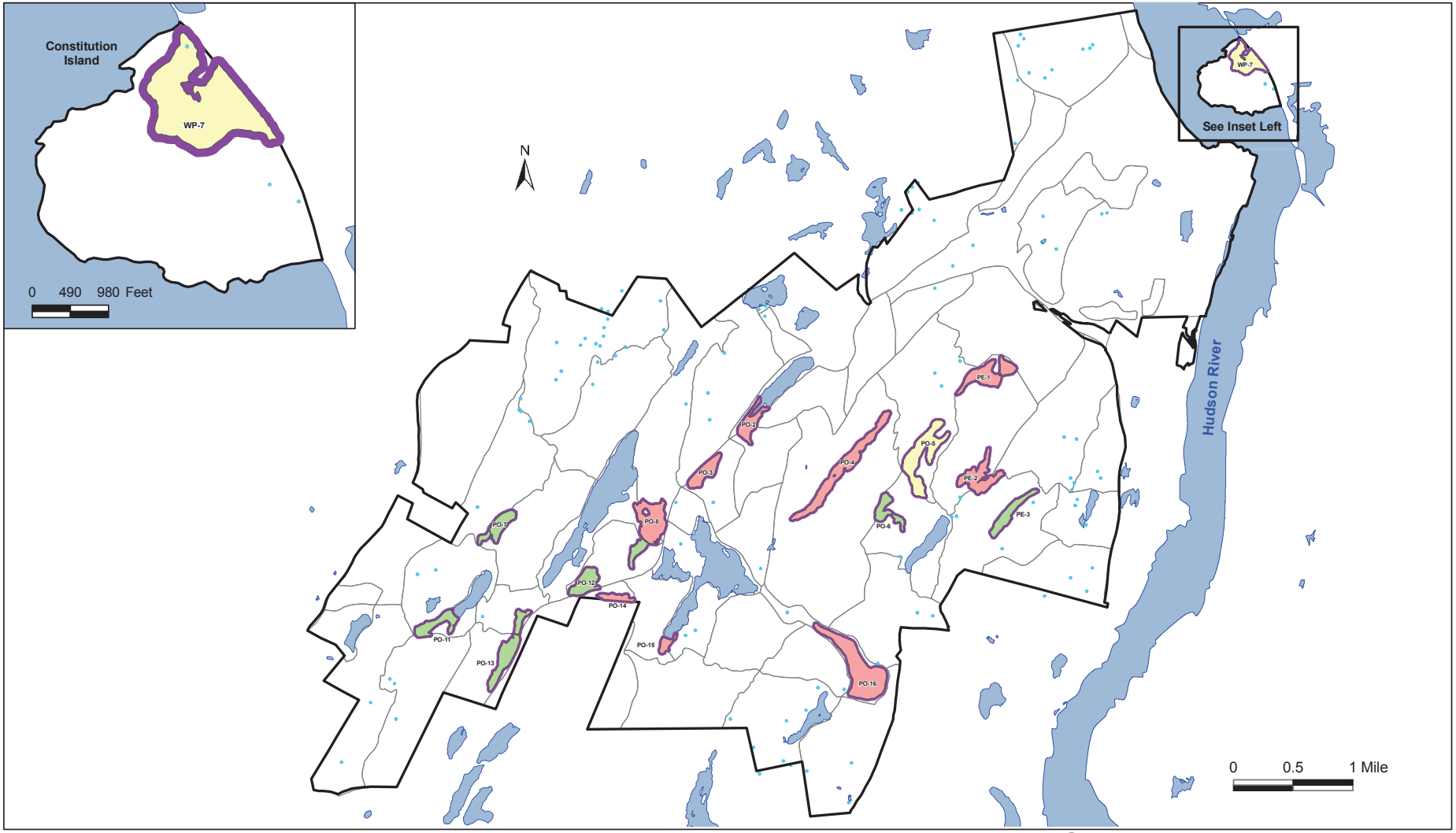
- Palustrine Emergent
- Palustrine Forested
- Palustrine Scrub Shrub
- Vernal Pools
- Training Area Boundary
- Lake

Note: Codes refer to wetland IDs; refer to text for description.

Wetlands

U.S. Army Garrison
West Point, New York
Figure 3-6

Source: USAG - West Point GIS 2009



LEGEND

- Palustrine Emergent
- Palustrine Forested
- Palustrine Scrub Shrub
- 100' NYS Protected Wetland Buffer
- Vernal Pools
- Lake
- Training Area Boundary

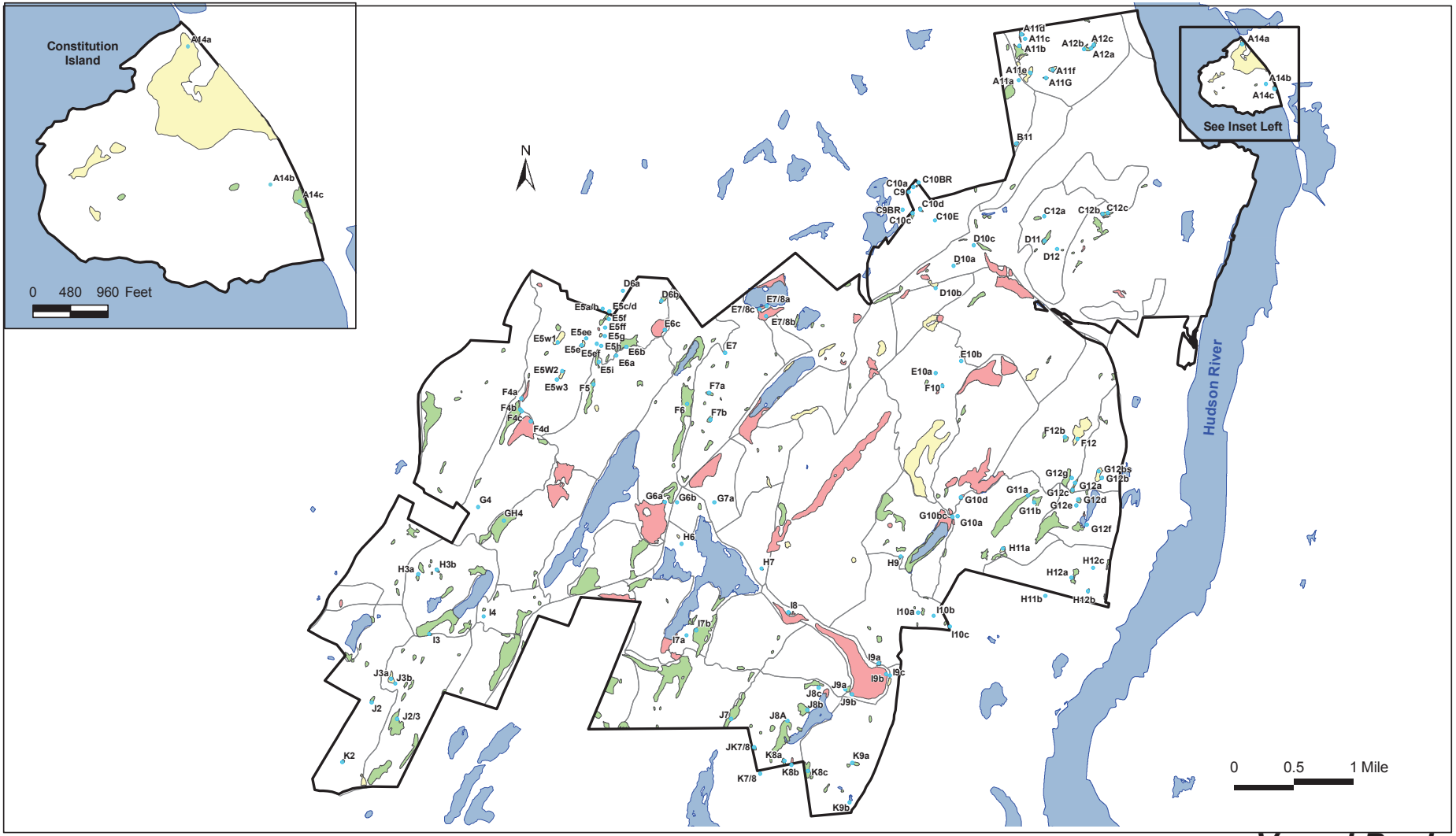
Note: Codes refer to wetland IDs; refer to text for description.

Source: USAG - West Point GIS 2009

New York State Protected Wetlands

U.S. Army Garrison
West Point, New York
Figure 3-7

USAG-WP-identified Vernal Pools



LEGEND

- Palustrine Emergent
- Palustrine Forested
- Palustrine Scrub Shrub
- Vernal Pools
- Lake
- Training Area Boundary

Note: Codes refer to wetland IDs; refer to text for description.

Vernal Pools

U.S. Army Garrison
West Point, New York
Figure 3-8

Source: USAG - West Point GIS 2009

Regulatory Consultation Correspondence

NYSOPRHP CORRESPONDENCE

March 17, 2017

Ruth L. Pierpont
Deputy Commissioner for Historic Preservation
Deputy State Historic Preservation Officer
New York State Division for Historic Preservation
Peebles Island Resource Center
PO Box 189
Waterford, New York 12199-0189

RE: Target Hill Wastewater Treatment Plant
US Army Garrison, West Point
Orange County, New York

Dear Ms. Pierpont;

The US Army Garrison, West Point, (USAG-West Point) is proposing to replace its existing Target Hill Wastewater Treatment Plant (WWTP) with a facility able to meet current and projected future needs and increased capacity (Attachment 1). Treated effluent from the new plant will be discharged to the Hudson River via a new outfall, which will replace the existing permitted outfall. In addition, construction will include new parking areas, fencing, landscaping and exterior lighting. The existing WWTP will be demolished and the site restored as open space fields. The US Army Corps of Engineers, New York District (District), on behalf of the US Army Garrison, West Point (USAG-West Point), is completing a variety of studies and preparing an Environmental Assessment for the proposed action.

The existing WWTP is located on the north east end of the installation along the Hudson River (Attachment 2). The new WWTP will be located adjacent to the existing facility (Attachments 3, 4 and 5). The site proposed for the new facility is currently used as a parking lot and grassed athletic field. Any remaining existing field, after the new facility is built, will be reconfigured to maximize its continued use, in addition to the restoration of the existing WWTP site as open athletic fields. Construction activities will include site clearing and grading, trenching as well as rock removal, which may include the use of blasting.

The Area of Potential Effect (APE) consists of the site of the existing WWTP, the location of the proposed WWTP as well as the right of way for the replacement outfall, which will follow the existing outfall right of way and the area of utility extension, which will follow existing roadways (see Attachment 4).

The existing National Historic Landmark (NHL) nomination and Integrated Cultural Resources Management Plan indicate the existing WWTP is a non-contributing resource to the NHL District. The North Athletic Field, located to the south of the project area, was expanded in the late 1930s through use of material excavated from Target

Hill. The subsequent development of the Target Hill athletic fields required the placement of fill to create a level surface. Based on geotechnical investigations the depth of fill averages about 27 feet. The construction of the new WWTP would not have an adverse effect on archaeological resources. The Target Hill Athletic Fields have been identified in the NHL nomination as well as the Historic Landscape Management Plan (2002) as a contributing element to the NHL District. The rearrangement of the athletic fields and the WWTP will have an adverse effect on the contributing element of the NHL District.

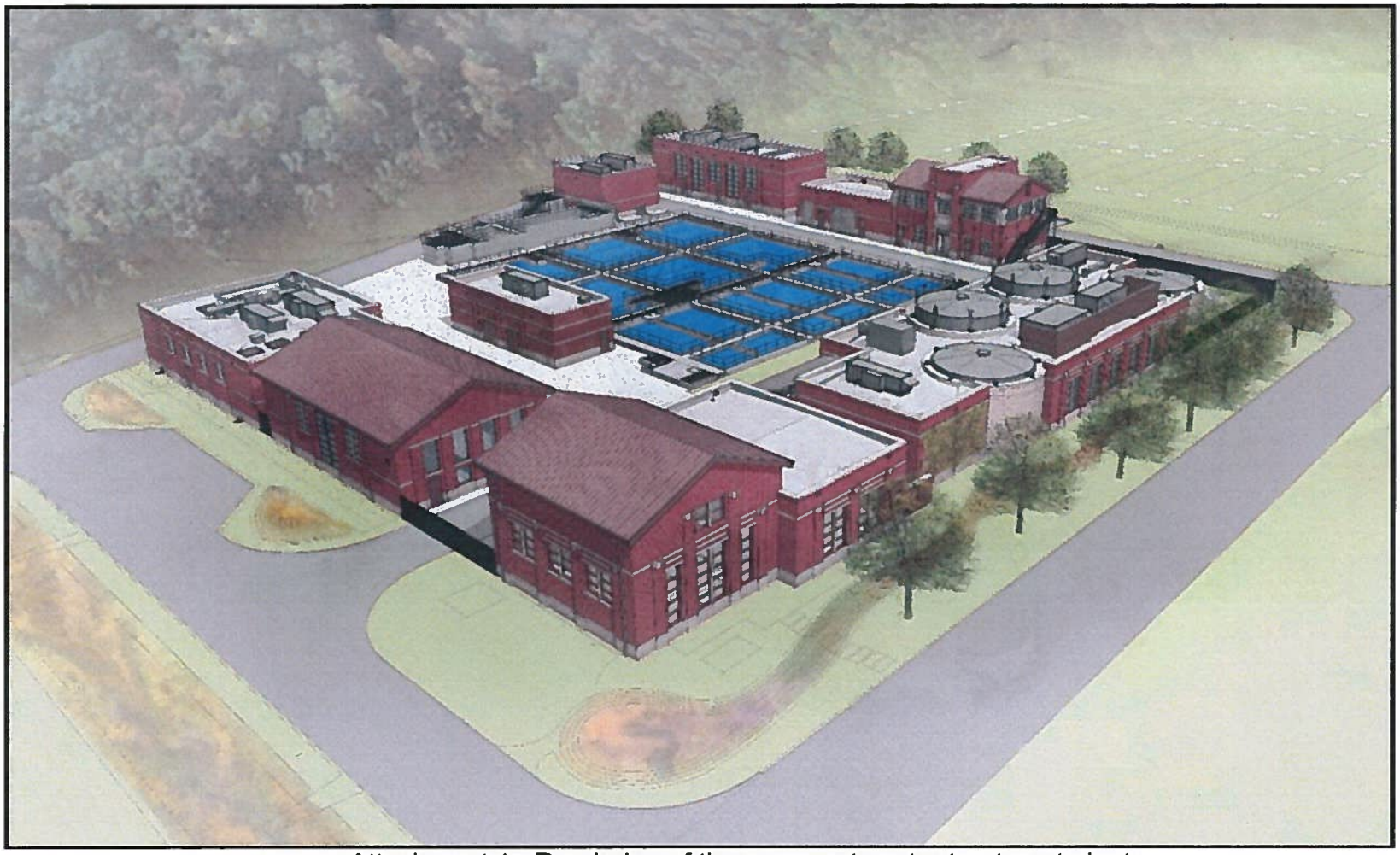
To minimize and mitigate the adverse effect to the Target Hill Athletic Fields, the USAG-West Point proposes to document the integrity of the Target Hill Athletic Fields, as well as develop the historic context for the development of all athletic fields, as recommended by the Historic Landscape Management Plan (2002). The USAG-West Point will also undertake digital photography of the athletic fields to complement the historic research. This documentation will be prepared in coordination with your office. Once the existing WWTP is demolished, the USAG-West Point will ensure the remaining land will be reconfigured as open space athletic fields.

In accordance with the Programmatic Agreement executed July 2016 between your office and the USAG-West Point, a draft Letter Agreement is attached for your review and comment (Attachment 6). If you have any questions or need additional information, please call me at (845) 938-7663 or by email at Patrick.Raley@usma.edu. Thank you for your consideration.

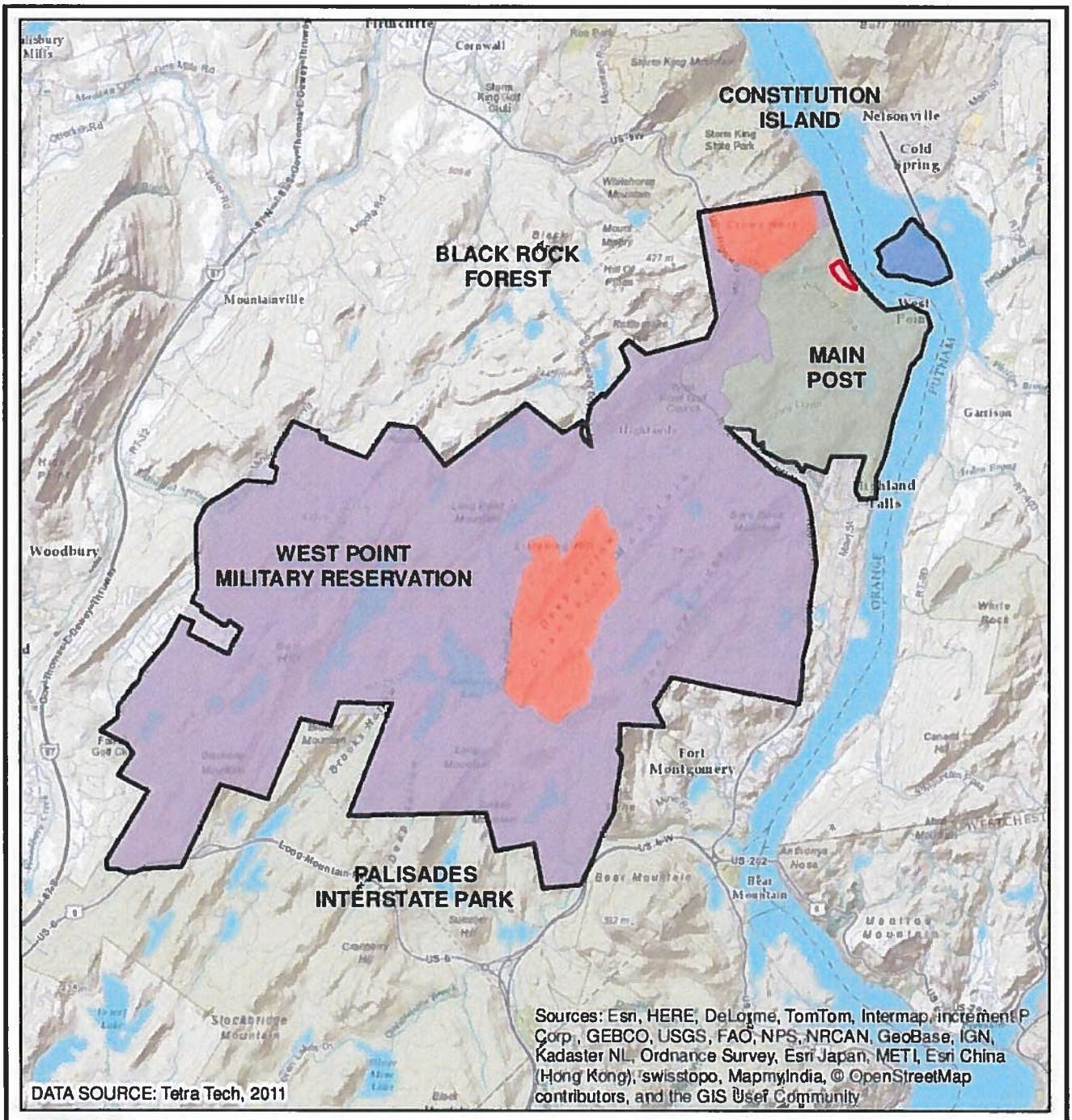
Sincerely,

Patrick Raley
Archaeologist
USAG West Point

Attachments



Attachment 1: Rendering of the new wastewater treatment plant.



LEGEND

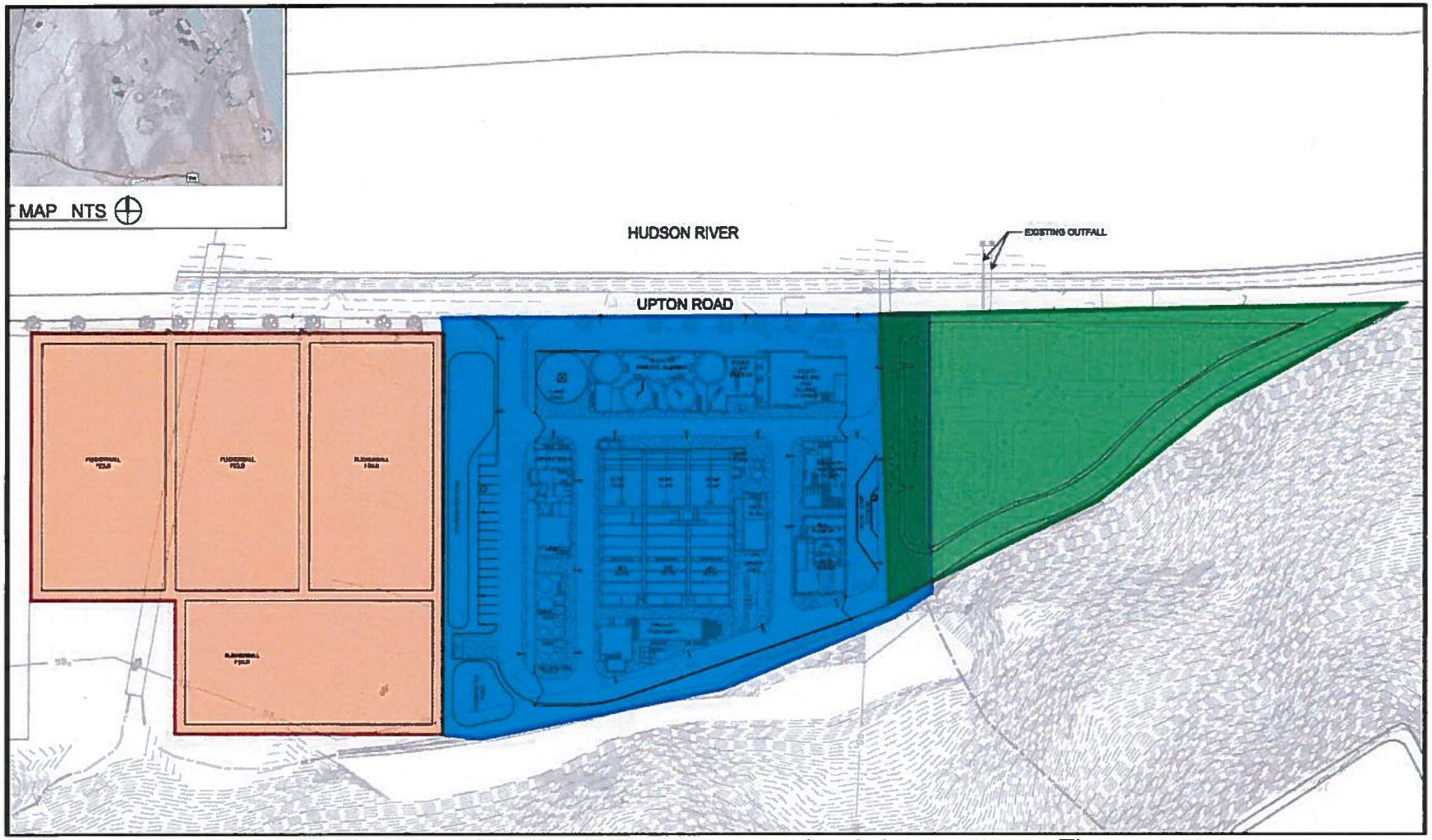
- CONSTITUTION ISLAND
- IMPACT/DANGER AREA
- MAIN POST
- WEST POINT MILITARY RESERVATION
- PROJECT AREA

UNITED STATES ARMY
GARRISON, WEST POINT
TARGET HILL WWTP
WEST POINT, NY

Attachment 2: Map of entire installation showing the location of the WWTP area

Attachment 3: View of Existing Wastewater Treatment Plant at south end of Target Hill Athletic Field

Attachment 4: Location of utility line extension



Attachment 5: Proposed site plan. Existing wastewater treatment plant is in green area. The new wastewater treatment plant is in the blue area.

Minimization and/or Mitigation Measure Modification Regarding the Replacement of the West Point Target Hill Wastewater Treatment Plant in Accordance with the Programmatic Agreement among the United State Army Garrison, West Point, the New York State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Operations, Maintenance, and Development Activities United States Army Garrison, West Point West Point, New York (Agreement)

WHEREAS, the Agreement was executed on July 28, 2016; and

WHEREAS, in the course of the project review for the replacement of the West Point Target Hill Wastewater Treatment Plant (the Undertaking) was found to have an adverse effect on the Target Hill Athletic Field, a contributing element to the National Historic Landmark District, and through consultation between the United States Army Garrison, West Point (West Point), and the New York State Historic Preservation Office (SHPO), minimization and/or mitigation measures to modify the undertaking were identified and concurred on in accordance with the Stipulation II of the Agreement; and

WHEREAS, West Point will send a copy of this executed minimization and/or mitigation measure modification to the Advisory Council on Historic Preservation as part of the annual report in accordance with Stipulation V of the Agreement;

NOW THEREFORE, in accordance with Stipulation II of the Agreement, West Point and SHPO agree to implement the following minimization and/or mitigation measures as follows:

1. West Point will complete the recommendation for the development of an in-depth historic context to include a discussion of integrity, of the United States Military Academy (Academy) athletic fields, specifically for the Target Hill Athletic Fields; and
2. This documentation should include consideration of the other athletic fields identified in the West Point Historic Landscape Management Plan (2002), including Buffalo Soldiers Field, Howse Field, South Field, Doubleday Field, Clinton Field, Daly Field, and North Field; and
3. The development of this historic context should consider the publications and studies on the significance of historic landscapes developed by the National Park Service (https://www.nps.gov/nr/publications/bulletins/nrb18/ and https://www.nps.gov/nr/publications/guidance/nrli/index.htm).

4. West Point shall coordinate with the SHPO through the drafting of the document and delivery of the final product. The SHPO shall review and comment on the end product; and
5. As part of the development of an historic context, West Point shall prepare a digital photography package documenting the existing conditions of the Target Hill Athletic Field, primarily, and elements of all of the athletic fields landscapes.
    a. The Digital Photography Package will meet the standards cited in the National Park Service's *National Register of Historic Places Photograph Policy March 2010* (*NPS Photograph Policy*) or subsequent revision;
    b. The Digital Photography Package shall include a comprehensive collection of photographs of all the athletic fields, identifying elements that are significant to athletic field as a historic landscape. This may include but not be limited to fencing, lighting, placement of activity areas, field houses and other structures, etc. All views shall be keyed to a site plan while interior views shall be keyed to a floor plan of the building/structure. The photographs shall be indexed according to the date photographed, site name, site address, direction, frame number, subject matter and photographer's name recorded on the review side in pencil.
    c. The Digital Photography Package shall include printed color copies of the digital photographs (on appropriate paper per the *NPS Photographic Policy*), a CD/DVD of the digital photographs, a completed state architectural inventory form will accompany the historic context developed above.
    d. West Point shall submit the Digital Photography Package to the SHPO for review and comment. Once approved by the SHPO, West Point shall file copies of the approved Digital Photography Package to the West Point Cultural Resources Repository for permanent retention.
6. West Point will create open space fields in the area of the existing wastewater treatment as part of the restoration of the site after the existing plant's demolition.

Execution of this Modification by West Point and implementation of its terms evidence that West Point has taken into account the effects of this Undertaking on historic properties.

SIGNATORIES:

UNITED STATES ARMY GARRISON WEST POINT

BY: for Odessey Gore Date: 30 Mar 17

Director of Public Works

NEW YORK STATE HISTORIC PRESERVATION OFFICER

BY:_____ Date:_____

Deputy Commissioner for Historic Preservation

NATURAL HERITAGE PROGRAM CORRESPONDENCE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

June 17, 2016

Nancy J. Brighton
U.S. Army Corps of Engineers, New York District
Jacob K. Javits Federal Building
New York, NY 10278

Re: Replacement of Wastewater Treatment Plant, U.S. Military Academy, West Point
Town/City: Highlands. County: Orange.

Dear Nancy J. Brighton:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur, or may occur, on your site or in the immediate vicinity of your site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 3 Office, Division of Environmental Permits, at dep.r3@dec.ny.gov, (845) 256-3054.

Sincerely,

Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program

726

The following state-listed animals have been documented in the vicinity of your project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 3 Office at dep.r3@dec.ny.gov, (845) 256-3054. For information about potential impacts of your project on these species, and how to avoid, minimize, or mitigate any impacts, contact the Region 3 Wildlife staff at Wildlife.R3@dec.ny.gov, (845) 256-3098.

The following species have been documented within .5 mile of the project site. Potential onsite and offsite impacts from the project may need to be addressed.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Mammals				
Eastern Small-footed Myotis *Bachelor colony*	*Myotis leibii*	Special Concern		14707
Birds				
Bald Eagle *Wintering (Hudson River)*	*Haliaeetus leucocephalus*	Threatened		5782
Fish (Hudson River)				
Shortnose Sturgeon	*Acipenser brevirostrum*	Endangered	Endangered	1091
Atlantic Sturgeon	*Acipenser oxyrinchus*	No Open Season	Endangered	11464

The stretch of the Hudson River at the project site (Hudson River Miles 44-56) is also a designated Significant Coastal Fish and Wildlife Habitat, supporting an anadromous fish concentration area.

The following species have been documented within 1 mile of the project site. Individual animals may travel 1.5 miles from documented locations.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Reptiles				
Timber Rattlesnake	*Crotalus horridus*	Threatened		7891

The following species have been documented within 3.5 miles of the project site. Individual animals may travel 5 miles from documented locations.
The main impact of concern for bats is the removal of potential roost trees.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Mammals				
Northern Long-eared Bat *Hibernaculum*	*Myotis septentrionalis*	Threatened	Threatened	14181

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

NYSDEC, DIVISION OF ENVIRONMENTAL PERMITS, REGION 3 CORRESPONDENCE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz, NY 12561-1620
P: (845) 256-3054 I F: (845) 255-4659
www.dec.ny.gov

June 21, 2016

Nancy Brighton
Planning Division, Environmental Analysis Branch
Department of the Army, Corps of Engineers
Jacob K. Javits Federal Building
New York, New York 10278

RE: U.S. Army Garrison, West Point, WWTP Replacement Project
Town of Highlands, Orange County
CH #: 6494

Dear Ms. Brighton:

The New York State Department of Environmental Conservation (DEC) has received you inquiry in regards to the above referenced project. Within your inquiry, you request a review of potential environmental impacts resultant from this project, and a determination on environmental permits required from the DEC for the proposed work. Please be aware that a State Pollutant Discharge Elimination System (SPDES) Permit Application is currently in front of the Department for this project.

Based upon our review of your inquiry dated 5/16/2016, DEC offer the following comments:

PROTECTION OF WATERS

The project site is located near the Hudson River (NYS Water Index #: H portion, Class B) and Sawmill Brook (NYS Water Index #: H-81, Class C). According to the submitted information, it appears no disturbance to these waterbodies are proposed as the existing WWTP discharge pipe will be utilized for the replacement WWTP. However, if the plans are modified to alter the discharge pipe, and include disturbances below the mean high water level of the Hudson River, a Protection of Water Permit would be required as the Hudson River is considered a navigable waterbody. Sawmill Brook is considered a non-protected stream, therefore, a Protection of Waters Permit is not required for any disturbance to the bed or banks of that stream.

If a permit is not required, please note, however, the project sponsor is still responsible for ensuring that work shall not pollute any stream or waterbody. Care shall be taken to stabilize any disturbed areas promptly after construction, and all necessary precautions shall be taken to prevent contamination of the stream or waterbody by silt, sediment, fuels, solvents, lubricants, or any other pollutant associated with the project.

FRESHWATER WETLANDS

The project site is not within a New York State protected Freshwater Wetland. However, the project sponsor should contact town officials for any permitting they might require.

STATE-LISTED SPECIES

DEC has reviewed the State's Natural Heritage records. We have determined that the site is located within or near record(s) of the following state-listed species: Bald Eagles *(Haliaeetus leucocephalus)*; Timber rattlesnakes *(Crotalus horridus)*; Northern Long-eared bats *(Myotis septentrionalis)*; Least Bittern *(Ixobrychus exilis)*; and Shortnose sturgeon *(Acipenser brevirostrum)*.

Detailed project plans were not included with the permit application materials that were submitted to the Department on 2/19/2016. Therefore, DEC has requested these plans and any proposed avoidance measures for our review of potential impacts to the above listed species.

The absence of data does not necessarily mean that other rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES)

As stated above, DEC received Application Form NY-2A for U.S. Department of the Army to discharge a maximum flow of 3.5 million gallons per day (MGD) from the Target Hill Wastewater Treatment Plant to the Hudson River. DEC Division of Water is currently reviewing the proposal in regards to requirements and limitations for the treatment and discharge of the WWTP effluent to the Hudson River.

CULTURAL RESOURCES

A review of the statewide inventory of archaeological resources maintained by the New York State Museum and the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) indicates that the project is located within an area considered to be sensitive with regard to historic and archaeological resources. Please be aware that pursuant to the Uniform Procedure Act, 6 NYCRR Part 621, a determination on whether any historic, architectural, archeological or cultural resources are present in the project area and if the project may have any impacts on such resources must be made by OPRHP. If the project has been reviewed in accordance with Section 106 of the Federal National Historic Preservation Act of 1966, the project sponsor should submit the results of the review and any comments by ORPHP to the Department.

Please contact this office if you have questions regarding the above information. Thank you.

Sincerely,

Jonathan Stercho
Division of Environmental Permits
Region 3, Telephone No. 845/256-3096

NOTE: Regarding erosion/sedimentation control requirements:
Stormwater discharges require a State Pollutant Discharge Elimination System (SPDES) Stormwater permit from this Department if they either:

- occur at industrial facilities and contain either toxic contaminants or priority pollutants OR
- result from construction projects involving the disturbance of 5000 square feet or more of land within the NYC Department of Environmental Protection East of Hudson Watershed or for proposed disturbance of 1 acre or more of land outside the NYC DEP Watershed

Your project may be covered by one of two Statewide General Permits or may require an individual permit. For information on stormwater and the general permits, see the DEC website at http://www.dec.ny.gov/chemical/8468.html.
For construction permits, if this site is within an MS4 area (Municipal Separate Storm Sewer System), the stormwater plan must be reviewed and accepted by the municipality and the MS-4 Acceptance Form must be submitted to the Department. If the site is not within an MS4 area and other DEC permits are required, please contact the regional Division of Environmental Permits.

NOAA CORRESPONDENCE

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

APR - 6 2017

Christopher Pray
Department of the Army
USAG West Point
681 Hardee Place
West Point, New York 10996-1514

Re: Target Hill Waste Water Treatment Plant (WWTP) Outfall Installation

Dear Mr. Pray:

We have completed our consultation under section 7 of the Endangered Species Act (ESA) in response to your letters received on February 17, 2017 and April 3, 2017, regarding the above-referenced proposed project. We reviewed your consultation request document and related materials. Based on our knowledge, expertise, and your materials, we concur with your conclusion that the proposed action is not likely to adversely affect the NMFS ESA-listed species. Therefore, no further consultation pursuant to section 7 of the ESA is required.

While we generally agree with the rationale you provided to support your determination that the proposed action is not likely to adversely affect listed species, there are some exceptions for which we offer clarifications below. Specifically, these relate to the action area, the conference on effects to proposed critical habitat for Atlantic sturgeon, and the effects analysis. We have concluded, however, that your determination that the proposed action is not likely to adversely affect listed species is still appropriate for the reasons discussed below and therefore, are providing these additional clarifications for your information only.

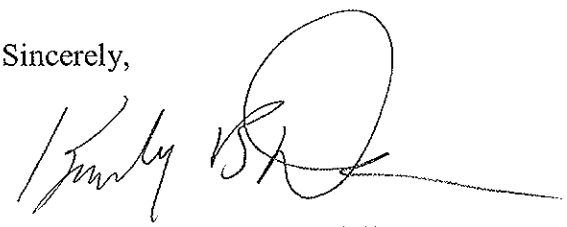
We agree with the rationale you provided to support your determination that the proposed action is not likely to adversely affect listed species. Specifically, we agree with your project description. For the action area, you mention that it includes the distance of the turbidity plumes (up to 1,640 feet). Due to the fact that the turbidity will occur within the cofferdam and turbidity curtains, we believe the action area includes the 75 foot by 25 foot area surrounded by the cofferdam and turbidity curtains, vessel traffic routes, impacts to water quality surrounding the newly installed outfall (35 linear feet), and a 40 meter sound buffer surrounding the site.

We agree with your description of listed species, life stages, and behaviors in the action area. While your conference on effects to proposed critical habitat for Atlantic sturgeon addresses the effects of the project itself, it does not address the effects of the effluent after the project is completed. Because the effluent is rapidly diluted to within minimum water quality standards or to non-detectable levels, it would have insignificant or discountable effects on water depth, water flow, dissolved oxygen levels, salinity, temperature or the ability for Atlantic sturgeon to migrate in the action area.

We agree that the effects, which you analyzed, constitute all of the direct and indirect effects of the action and that there are no interrelated or interdependent activities. We wanted to clarify that although you include tables on the estimated distances to sturgeon/salmon injury and behavioral thresholds, we concur with your Species Description section that there are no salmon present in the Hudson River. We agree with your application of the terms "insignificant" and "discountable" to each of the effects you analyzed, and that your analysis of the effects of the action when added to baseline conditions supports your "not likely to adversely affect" determination. Finally, we agree that you based your determinations on the best available scientific and commercial information.

Reintiation of consultation is required and shall be requested by the Federal agency, or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation or; (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. Should you have any questions about this correspondence please contact Edith Carson at 978-282-8490 or Edith.Carson@noaa.gov. For questions related to Essential Fish Habitat please contact Ursula Howson with our Habitat Conservation Division at 732-872-3116 or Ursula.Howson@noaa.gov.

Sincerely,



Kimberly B. Damon-Randall
Assistant Regional Administrator
for Protected Resources

EC: Carson NMFS/PRD; Pray Army; Howson NMFS/HCD
PCTS: NER-2017-14074
File Code: \Section 7\Non-Fisheries\DOD\Army\2017\USAG-WP Waste Water Plant Outfall Hudson

DEPARTMENT OF THE ARMY
U.S. ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON WEST POINT
681 HARDEE PLACE
WEST POINT, NEW YORK 10996-1514

IMML-PWE-N

3 April 2017

MEMORANDUM FOR:
Mrs. Kimberly Damon-Randall
Protected Resources Division
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, Massachusetts 01930

SUBJECT: Target Hill Waste Water Treatment Plant (WWTP) Outfall Installation

Dear Mrs. Damon-Randall:

We, the US Army Garrison West Point (USAG-WP) with the Army Corps of Engineers (Corps), propose to construct an outfall for the new Target Hill Waste Water Treatment Plant in the Hudson River. We request that the National Marine Fisheries Service (NMFS) concur with our determination that the proposed activity may affect, but is not likely to adversely affect, any species listed as threatened or endangered, or critical habita for the same, by NMFS under the Endangered Species Act (ESA). Our supporting analysis is provided in the attached Biological Assessment (BA).

Please have your staff contact myself, Christopher Pray, at (845) 938-7122 if further information is required.

Sincerely,

PRAY.CHRISTOPHER.CHARLES.1265294746

Digitally signed by PRAY.CHRISTOPHER.CHARLES.1265294746
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=PRAY.CHRISTOPHER.CHARLES.1265294746
Date: 2017.04.03 09:37:45 -04'00'

CHRISTOPHER C. PRAY
Natural Resources Manger
USAG West Point
IMML-PWE-N
667A West Point, NY 10996

1 Encl
1. Effects Determination Target Hill WWTP Outfall Installation

4-3-2017

NOAA'S National Marine Fisheries Service
Protected Resources Division
55 Great Republic Drive
Gloucester, MA 01930

Attn: Mrs. Kimberly Damon-Randall

Re: Target Hill Waste Water Treatment Plant (WWTP) Outfall Installation

Dear Mrs. Damon-Randall,

We, the US Army Garrison West Point (USAG-WP) with the Army Corps of Engineers (Corps), propose project as described below. Construction is anticipated to begin in October 2017. This letter is to request Endangered Species Act (ESA) concurrence from your office for the Target Hill WWTP Outfall Installation. We have made the determination that the proposed activity may affect, but is not likely to adversely affect, any species listed as threatened or endangered by NMFS under the ESA of 1973, as amended. Our supporting analysis is provided below.

Proposed Project

The Army Corps of Engineers proposes to construct a new wastewater treatment plant (WWTP) to replace an existing plant and create a new replacement outfall into the Hudson River, in Orange County, New York. The proposed plant improvements will employ modern treatment methods and advanced technology, thus achieving a higher level of treatment and reducing or eliminating instances of incomplete sewage treatment and discharge. Treated effluent would be conveyed approximately 340 feet from the WWTP to the Hudson River, and approximately 50 feet into the river. Please see the attached technical memo for site specific maps and plan views.

USAG West Point is currently seeking approval from New York State and Department of Environmental Conservation (NYSDEC) and the federal government through the Corps permitting office allowing modification of its current SPDES permit for the Target Hill Plant, permitting associated with the disturbance of waters of the State, Clean Water Act permitting, and Coastal Zone Act concurrence. An Environmental Assessment is also being prepared in accordance with the National Environmental Policy Act, which will be submitted to NOAA for review and comment.

The Corps had planned to reuse the existing WWTP's outfall that consists of parallel 14" diameter cast iron pipelines discharging into the Hudson River. During the design process, an internal inspection of the existing WWTP's effluent pipelines revealed significant defects. Remaining service life of the existing outfall has been estimated at five to ten years due to structural cracking, crown erosion and sagging joints. Given these inspection results, the Corps plans to construct a replacement outfall as part of the project. Construction of a new outfall will mitigate the need for eventual repair/replacement of the existing outfall and lessen construction activities associated with connecting both the active existing plant and the future plant to the same active discharge system.

Both the existing and new outfalls are very similar in design and construction. The proposed site for the new outfall is approximately 150 feet north of the existing. Treated effluent

does/will enter the Hudson River through twin 14”-diameter pipelines separated by 9 feet centerline to centerline. The only notable difference between existing and new outfalls is that the new outfall will be installed at a mean lower-low water (MLLW) depth of approximately 10 feet; the existing outfall is at a MLLW depth of approximately 4 feet. There appears to be little difference in river characteristics between the two locations.

Construction of the new outfall system will consist of landward open-trench construction of a single pipeline from the Effluent Treatment Facility to the west side of Upton Road. From there, dual pipelines with casings will be installed using jack-and-bore techniques under an existing CSX railway. Finally, dual pipelines will be installed from the east (river side) of railway into the Hudson River using a cofferdam system to allow the construction work to be performed in the dry. Construction equipment for the river portion will likely be barge mounted.

The treated effluent would be discharged into the Hudson River through the outlets of the submerged pipelines at an approximate invert elevation of about -10.0 feet mean sea level (msl), which allows the crown of the pipe to be about 5.7 feet below the MLLW elevation -2.90 msl. A riprap scour pad will be placed at the pipe outlets to limit long-term scour potential. Riprap installation will be accomplished using a barge-mounted excavator to place stones inside the ‘dry’ space created with the use of a cofferdam. The discharge point would be located approximately 50 feet from the shore. The pipes would be installed at an angle of approximately 90 degrees from the direction of river flow. We anticipate the use of helical screws or pre-cast concrete blocks for pipe support/anchoring.

The Contractor shall be responsible for final development and implementation of an erosion and sediment pollution control plan for all construction areas including the outfall system. Temporary control measures that comply with NYSDEC’s regulations will be used for this project, dependent upon the contractor’s construction methods but will include sediment curtains around river work limits at a minimum. Permanent control measures and facilities that will be used for this project include riprap for scour protection along disturbed areas of the Hudson River bank and seeding and mulching of all disturbed land areas.

Construction dewatering and management of sediment-laden surface waters will be managed in accordance with existing USAG-WP best management practices, as well as New York State requirements and guidelines. We expect that those discharges will be treated with an appropriate BMP recognized by the NYSDEC. Discharge points shall be established to provide the maximum distance to active waterways. Sediment removed from erosion and sediment pollution controls and facilities shall be disposed of in accordance with NYSDEC guidance. As mentioned previously, installation of the parallel discharge pipes within the wetted confines of the Hudson River will be accomplished through use of a cofferdam system. Work within the confines of the Hudson River will be limited to a period of September to through February, and is expected to take approximately four to six months.

Cofferdams should allow the contractor to work in the dry. The contractor will be responsible for the design of the cofferdam system following site-specific engineering analysis. It is anticipated the cofferdam will enclose an area of approximately 75 feet by 25 feet, and installation shall be accomplished using vibratory driving of sheet pilings. The estimated noise at the source and distance to relevant thresholds for species in the action area was determined based on the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS) acoustic tool spreadsheet. The maximum distance to 206 dB Peak (injury) and the behavioral distance threshold for sturgeon is 40 meters. A properly designed and installed cofferdam typically includes turbidity curtains and should be effective at minimizing sediment

dispersion in the Hudson River during outfall installation. The contractor will be expected to pay special attention to ensure that disturbed river sediments along the cofferdam are stabilized prior to removal of the cofferdam. Careful installation and removal of the cofferdam and restoration of the work area is required to ensure effectiveness of the work and prevent the escape of significant volumes of silt.

Dewatering discharges from the cofferdam system typically requires sediment removal to ensure that turbid water is not discharged into nearby waterbodies. Similar to dewatering discharges elsewhere on the project site, we expect that those discharges will be treated with an appropriate BMP recognized by the NYSDEC, such as sediment filtration. Material excavated from the cofferdam work areas will be handled and disposed of using NYSDEC approved measures, and not redeposited within the cofferdam.

Upon completion of work, removal of the cofferdam should occur with minimal additional soil disturbance and in a manner that minimizes turbidity in the nearby waterbody. Disturbed areas within the cofferdam will be stabilized with stone fill to minimize turbidity during removal of the cofferdam. Backfilling with hydraulic dredge or via slurry application should be avoided, if possible.

West Point is currently working with the NYSDEC in regards to appropriate SPDES limits for the new WWTP. The State has run the CORMIX model for the proposed outfall location to determine the acute, and chronic dilution factors associated with the proposed discharge. As of this writing, the State has not issued a final determination on this subject, but it appears that the mixing zone will be approximately 35 linear feet from the discharge point, and the approximate resultant dilution factors will be 4x for acute discharge and 12-15x for chronic discharge.

The installation of piles will disturb bottom sediments and may cause a temporary increase in suspended sediment in the action area. Using available information, we expect pile driving activities to produce total suspended sediment (TSS) concentrations of approximately 5.0 to 10.0 mg/L within approximately 300 feet of the pile being driven (FHWA 2012). The small resulting sediment plume is expected to settle out of the water column within a few hours. Studies of the effects of turbid water on fish suggest that concentrations of suspended sediment can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton 1993).

Wilber et al. (2006) reported that elevated total suspended sediment (TSS) concentrations associated with the active beach nourishment site were limited to within 1,312 feet of the discharge pipe in the swash zone (defined as the area of the nearshore that is intermittently covered and uncovered by waves), while other studies found that the turbidity plume and elevated total suspended sediment levels are expected to be limited to a narrow area of the swash zone up to 1,640 feet down current from the discharge pipe (Burlas et al. 2001). Based on this and the best available information, turbidity levels created by the beach fill operations along the shoreline are expected to be between 34.0-64.0 mg/L; limited to an area approximately 1,640 feet down current from the discharge pipe; and, are expected to be short term, only lasting several hours.

Vessel Information

Vessels associated with this project are currently undefined as this would be part of the construction materials and methods to be determined by the design/build contractor. However, it is likely that the contractor will elect to use one or two construction barges, placed parallel to the

cofferdam footprint and of similar size to the cofferdam site as a work platform. These would likely be transported up or down river from other Hudson River sites by tug, and parked, nose to shore. Other watercraft used on site would likely consist of row-boats or small motor boats for transportation, site inspection, etc.

For supply during construction, West Point is negotiating with CRX, the owner of the railroad for access. This will allow for loading and unloading from the shore of materials and equipment, greatly reducing the need for multiple trips to the work site over water. Otherwise, West Point maintains a marina and commercial dock, termed South Dock, located approximately 2 miles to the south of the work site capable of servicing medium sized vessels, as well a smaller, less used dock, North Dock, available for use ½ mile to the south. If need be, it is likely that either dock may be employed as a transit site for supply, etc.

Description of the Action Area.

The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50CFR§402.02). The Action Area (AA) for this project is considered to be the 75 foot by 25 foot work site where the outfall installation will occur, the area surrounded by the cofferdam and turbidity curtains, the extent of the suspended solids plume caused by pile driving, riprap, dewatering and fill (approximately 1,640 feet), vessel traffic routes, impacts to water quality surrounding the newly installed outfall (35 linear feet), and a 40 meter sound buffer surrounding the site. The AA will contain a dewatered section of riverbed and bank approximately 75 feet by 25 feet and space to park a barge or two of similar size required to support materials and construction equipment. Post construction, the site will contain paired 50 foot discharge pipes, associated pipe anchoring, and a scour-pad at the point of discharge. The centroid of the AA is located at UTM NAD83 Zone 18 4583936N, 586498E, US Army Garrison West Point, Orange County, NY. The work site occurs within the confines of the Hudson River at approximately River Mile (RM) 53. See figures 1 and 2 for general and specific site locations. This area is expected to encompass all of the effects of the proposed project.

The Hudson at West Point is an oligohaline reach with changeable salinities, ranging from 0.5ppt to 5ppt, depending upon season. In summer, the salt front occurs north of West Point to as far as Kingston NY, moving southward past the Garrison in autumn to Haverstraw Bay and returning to the north in late spring. This reach of the river is deep, ranging to 60 meters. Due to strong currents and a sharp bend in the river, there is little shallow water habitat, generally confined to the lee areas north and south of Constitution Island and north and south of the Academy. At its narrowest, the river is ~1400 feet wide from Gee's Point to Constitution Island. The river is tidal at West Point with an average difference of approximately 3.5 feet between low and high tides.

Within the AA the work site ranges in depth at high tide from zero depth at shore to approximately 15 feet in depth at the proposed outfall end, and a depth of approximately 25 feet at the terminus of the noise buffer arc before dropping off steeply into the main river. The substrate off West Point was sampled in a 2008 by the Fish and Wildlife Service (Lyttle 2008) and determined to be 87% clay/silt, 5% fine sand, 5% course sand, and 3% gravel. Rooted aquatic vegetation is lacking in this area.

Figure 1. General WWTP Location

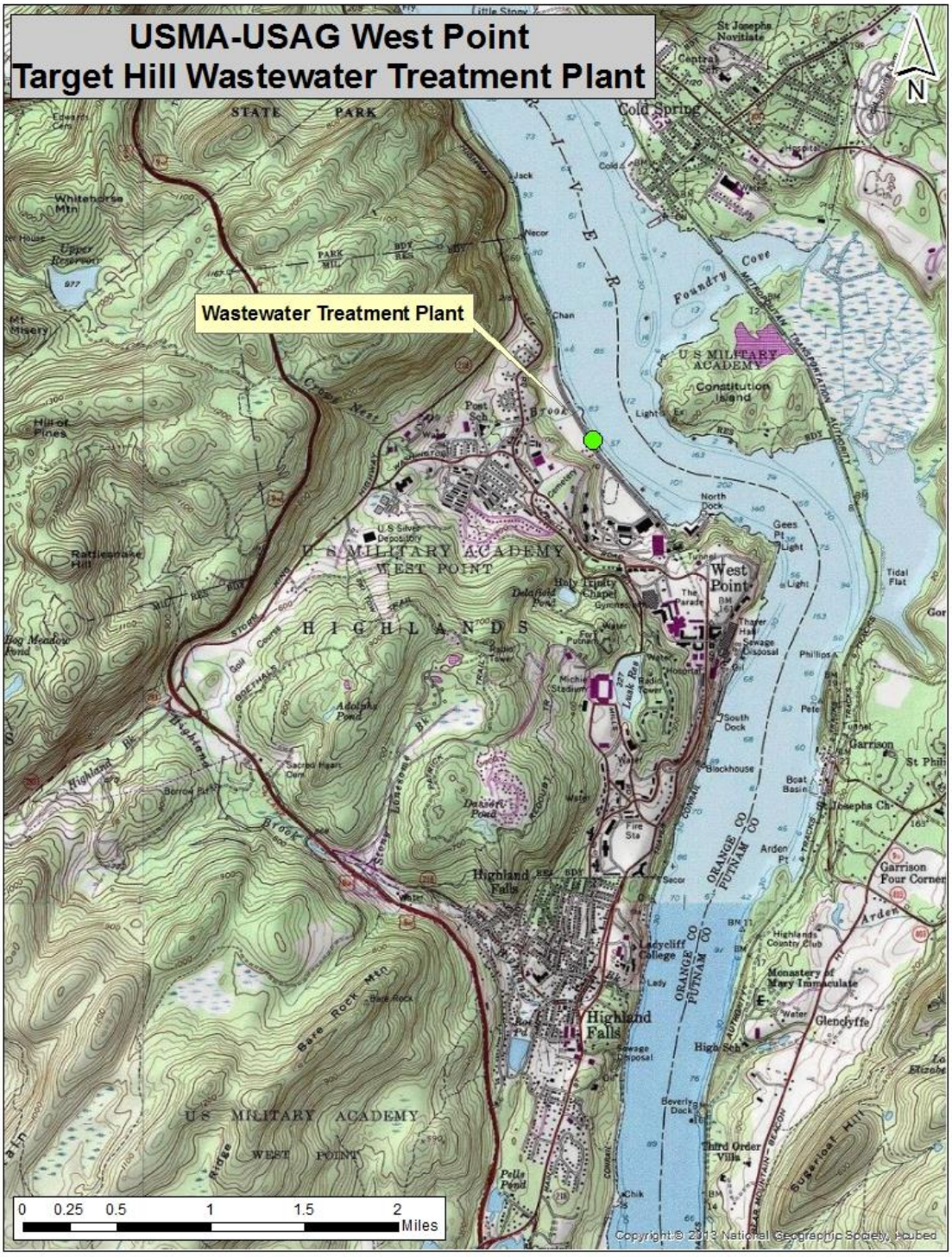


Figure 2. Specific Area Map.

NMFS Listed Species:
Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)-Endangered except for GOM DPS-Threatened (77 FR 5880 and 77 FR 5914)
Shortnose Sturgeon (*Acipenser brevirostrum*) (32 FR 4001; Recovery plan: NMFS 1998)

Shortnose Sturgeon

Shortnose sturgeon are endangered throughout their range which extends from the Minas Basin, Nova Scotia to the St. Johns River, Florida. At West Point, adult shortnose sturgeon may be found offshore outside of breeding and wintering periods - July to November. Primary foraging habitat, shallow vegetated flats, is present on the east shore of the Hudson, north and south of Constitution Island. Foraging may also take place over margin-fine (silty clay) substrate as is in the AA, but invertebrate density in this habitat is relatively low. Adult shortnose sturgeon resting habitat potentially occurs offshore in the channel (Lyttle 2008) outside the AA. No shortnose sturgeon spawning occurs near USAG West Point, however, young-of-the year could be present (Dovel et al. 1992).

Juvenile shortnose sturgeon may congregate over sand or gravel at depths exceeding nine meters. This habitat exists primarily northwest of West Point grounds outside the AA and along the eastern shore south of Constitution Island. Margin-fine substrate may be used for foraging such as within the AA. Summer habitat will most often occur in fresh water north of the AA. Wintering habitat for juvenile shortnose sturgeon occurs in deep water upriver from the salt front and may occur off West Point (Lyttle 2008).

Atlantic Sturgeon
There are five Distinct Population Segments (DPSs) of Atlantic sturgeon listed as threatened or endangered. Atlantic sturgeon originating from the New York Bight, Chesapeake Bay, South Atlantic, and Carolina DPSs are listed as endangered, while the Gulf of Maine DPS is listed as threatened. The marine range of all five DPSs extends along the Atlantic coast from Canada to Cape Canaveral, Florida. The New York Bight DPS spawning is associated with deep water upstream of the salt front in the river over appropriate rocky substrate. While the salt front does occur off West Point during the April to June during the sturgeon's spawning period the depth, current and substrate of the AA would be unattractive to spawning fish. In the Hudson, Atlantic sturgeon spawning is more likely north of Cornwall and as far as Kingston. It is most likely that the reach of the Hudson off West Point serves as transient and resting habitat for adult, juvenile, and early life stages of Atlantic sturgeon. The area within the AA would not likely be used for this purpose, but may serve as a foraging area.

Conference on the Effects to Proposed Critical Habitat
The action we have proposed would occur in an area proposed to be designated as critical habitat. We have reviewed the proposed action in order to determine whether a conference is required in this case. We are required to confer with NMFS on any action that is likely to jeopardize the continued existence of any species proposed for listing or result in destruction or adverse modification of proposed critical habitat (50 CFR §402.l 0). "Destruction or adverse modification" is defined as a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species (50 CFR § 402.02).

On June 3, 2016, NMFS issued two proposed rules to designate critical habitat for the five listed distinct population segments of Atlantic sturgeon found in U.S. waters (81 FR 35701 and 81 FR 36078). The proposed rule identifies the following four (4) essential physical and biological features necessary for the conservation of the species. The term "physical or biological features" is defined as the features that support the life history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species or other features. The four (4) essential physical and biological features are:

1) Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0 to 0.5 parts per thousand range) for settlement of fertilized eggs, refuge,g rowth, and development of early life stages;

2) Aquatic habitat with a gradual downstream salinity gradient of 0.5 to 30 parts per thousand and soft substrate (e.g., sand, mud) downstream of spawning sites for juvenile foraging and physiological development;

3) Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: (1) Unimpeded movement of adults to and from spawning sites; (2) seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and (3) staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (e.g. 1.2 meters) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river; and

4) Water, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support: (1) spawning; (2) annual and interannual adult, subadult, larval, and juvenile survival; and (3) larval, juvenile, and subadult growth, development, and recruitment (e.g., 13°C to 26°C for spawning habitat and no more than 30°C for juvenile rearing habitat, and 6 mg/L dissolved oxygen for juvenile rearing habitat).

Since the area within the cofferdam where the action will occur is so small (75 feet by 25 feet), and the effects to substrate will be short term (four to six months) during the outfall construction, the proposed action would not affect hard bottom substrate in low salinity waters that support the settlement and development of early life stages or soft substrate habitat downstream of spawning sites that supports foraging and physiological development. Additionally, because the proposed action includes the use of a cofferdam and turbidity curtains to contain any disturbed sediment within the project area, it would have insignificant or discountable effects on water depth, water flow, dissolved oxygen levels, salinity, temperature, or the ability for Atlantic and shortnose sturgeon to migrate in the action area.

We have considered the effects of the proposed action on proposed critical habitat and conclude that the proposed action is not likely to result in the destruction or adverse modification of proposed critical habitat. Accordingly, no conference is required at this time.

Effects Determination:

Change in Water Quality from Effluent:
The construction of a new WWTP for USAG West Point is expected to be a significant improvement over the current treatment process and result in a more complete and reliable treatment of effluent. As such, water quality in the Hudson River should improve, enhancing sturgeon habitat in general. The current Target Hill WWPT is a permitted Combined Sewage Overflow (CSO) system, allowing up to six wet-weather discharges per year where minimally treated effluent may be discharged to the river. The new plant will improve on current plant capacity, reducing the incidence of wet-weather discharge, and will employ state of the art treatment, improving the quality of discharged effluent. Post construction, foraging sturgeon may encounter effluent associated with the new WWTP in both diluted and source concentrations. West Point is currently working with the NYSDEC in regards to appropriate SPDES limits for the new WWTP. The State has run the CORMIX model for the proposed outfall location to determine the acute, and chronic dilution factors associated with the proposed discharge. As of this writing, the State has not issued a final determination on this subject, but it appears that the mixing zone will be approximately 35 linear feet from the discharge point, and the approximate resultant dilution factors will be 4x for acute discharge and 12-15x for chronic discharge. Adherence to SPEDES permit limits will ensure minimal impact on sturgeon species.

Long term impacts to protected resources are not expected to occur. All of the protected resources within the area of concern are highly mobile and migratory. Any contaminant potentially present is rapidly diluted to within minimum water quality standards or to non-detectable levels. Based on the best available information, the effects of effluent on species in the action area will be discountable.

Change in Water Quality from Siltation:
Construction associated with the WWTP itself, the footprint of which occupies an existing athletic field, will occur under a state issued construction stormwater permit as the area of disturbance will be over 1 total acre. Adherence to construction BMPs will prevent an impacts to water quality associated with this construction. West Point is preparing an environmental assessment for this project which will be submitted to NOAA fisheries for review and comment.

Potential negative impacts to sturgeon species related to water quality could be associated with the potential release of silt associated with construction activities. The project will employ the use of both a cofferdam and turbidity curtain to control the release of silt into the wider environment. According to the NOAA Fisheries Section 7 Program website table *Turbidity Effects*
(http://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/turbiditytablenew.html), pile driving, fill, riprap, and dewatering with the use of filter media, such as a turbidity curtain are expected to result in turbidity concentration less than those anticipated to result in negative consequences for protected fish species. See below excerpt:

> *Pile Driving The installation of piles will disturb bottom sediments and may cause a temporary increase in suspended sediment in the action area. Using available information, we expect pile driving activities to produce total suspended sediment (TSS)*

concentrations of approximately 5.0 to 10.0 mg/L within approximately 300 feet of the pile being driven (FHWA 2012). The small resulting sediment plume is expected to settle out of the water column within a few hours.

Dewatering Dredged Sediment The release of effluent during the dewatering of dredged sediment may temporarily increase turbidity and/or suspended sediments in the receiving waterbody. However, by discharging effluent through a turbidity curtain or fabric filter, prior to the effluent entering the receiving waterbody, any remaining sediment in the discharge water will be trapped and able to settle out of suspension, thereby avoiding exposure of listed species to elevated turbidity and suspended sediment levels.

Wilber et al. (2006) reported that elevated total suspended sediment (TSS) concentrations associated with the active beach nourishment site were limited to within 1,312 feet of the discharge pipe in the swash zone (defined as the area of the nearshore that is intermittently covered and uncovered by waves), while other studies found that the turbidity plume and elevated total suspended sediment levels are expected to be limited to a narrow area of the swash zone up to 1,640 feet down current from the discharge pipe (Burlas et al. 2001). Based on this and the best available information, turbidity levels created by the beach fill operations along the shoreline are expected to be between 34.0-64.0 mg/L; limited to an area approximately 1,640 feet down current from the discharge pipe; and, are expected to be short term, only lasting several hours.

Studies of the effects of turbid water on fish suggest that concentrations of suspended sediment can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton 1993). The TSS levels expected for pile driving (5.0 to 10.0 mg/L), dewatering, and fill/riprap (34.0 -64.0 mg/L) are below those shown to have adverse effect on fish (580.0 mg/L for the most sensitive species, with 1,000.0 mg/L more typical; see summary of scientific literature in Burton 1993) and benthic communities (390.0 mg/L (EPA 1986)).

While construction activity will result in disturbance to the substrate and the potential for silt release, precautions will be in place to contain and filter such releases including allowing the water level within the cofferdam to normalize prior to removal. Therefore, the effects of water quality from pile driving, dewatering, riprap, and fill are discountable.

Habitat Modification

Minor short term impacts to benthic biota are expected for the trenched portion of the outfall pipe due to construction operations. This may temporarily affect sturgeon foraging opportunities. The area of actual disturbance will be small in the context of the Hudson River and post-construction there will be no appreciable change to the benthic habitat in the AA. Benthic communities in the disturbed area will initially decline, but resettling and recolonization will occur rapidly. Given the expansive foraging opportunities outside of the action area, any minor loss of foraging habitat would be too small to be meaningfully measured or detected. Therefore, any reduction in benthic prey from the action will be insignificant.

Noise:
It is anticipated the cofferdam will enclose an area of approximately 75 feet by 25 feet, and installation shall be accomplished using vibratory driving of sheet pilings. Noise associated with construction was considered for impact on both sturgeon species. We used the NOAA supplied spreadsheet (http://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/index.html) to calculate potential effects. Below are outputs from the spreadsheet. Table 1 shows a projection of thresholds associated with noise for various marine species. Behavioral impacts occur at 150dB, physiological impacts at 206dB.

Table 1.

Behavioral and Physiological (Injury) Thresholds for ESA-Listed Species in NMFS' Greater Atlantic Region

Species	Thresholds	Units
Sturgeon/Salmon Behavioral	150	dB re 1 µPA RMS
Sturgeon/Salmon Physiological	206	dBpeak
Sturgeon/Salmon Physiological (>2g)	187	cSEL
Sturgeon/Salmon Physiological (<2g)	183	cSEL

The estimated sound levels and distances to species injury and behavioral thresholds associated with the proposed project are presented in Tables 2-4, and discussed below.

Table 2. Proxy Projects for Estimating Underwater Noise

Project Location	Water Depth (m)	Pile Size (inches)	Pile Type	Hammer Type	Attenuation rate (dB/10m)
Not Available	15	24"	AZ Steel Sheet	Vibratory	5
Not Available	15	24"	AZ Steel Sheet	Vibratory	5

Table 3. Proxy-Based Estimates for Underwater Noise

Type of Pile	Hammer Type	Estimated Peak Noise Level (dB_{Peak})	Estimated Pressure Level (dB_{RMS})	Estimated Single Strike Sound Exposure Level (dB_{sSEL})
24" AZ Steel Sheet	Vibratory	175	160	160
24" AZ Steel Sheet	Vibratory	182	165	165

Table 4. Estimated Distances to Sturgeon/Salmon Injury and Behavioral Thresholds

Type of Pile	Hammer Type	Distance (m) to 206dB_{Peak} (injury)	Distance (m) to sSEL of 150 dB (surrogate for 187 dBcSEL injury)	Distance (m) to Behavioral Disturbance Threshold (150 dB_{RMS})
24" AZ Steel Sheet	Vibratory	NA	30.0	30.0
24" AZ Steel Sheet	Vibratory	NA	40.0	40.0

Exposure to underwater noise levels of 206 dBPeak and 187 dBcsEL can result in injury to sturgeon. In addition to the "peak" exposure criteria which relates to the energy received from a single pile strike, the potential for injury exists for multiple exposures to noise over a period of time; this is accounted for by the cSEL threshold. The cSEL is not an instantaneous maximum noise level, but is a measure of the accumulated energy over a specific period of time (e.g., the period of time it takes to install a pile). When it is not possible to accurately calculate the distance to the 187 dBcsEL isopleth, we calculate the distance to the 150 dBssEL isopleth. The further a fish is away from the pile being driven, the more strikes it must be exposed to accumulate enough energy to result in injury. At some distance from the pile, a fish is far enough away that, regardless of the number of strikes it is exposed to, the energy accumulated is low enough that there is no potential for injury. For this project, the distance to the 150 dBssEL isopleth is no greater than 40 meters. In order to be exposed to potentially injurious levels of noise during installation of the piles, a sturgeon would need to be within 40 meters of the pile being driven to be exposed to this noise for any prolonged time period. This is extremely unlikely to occur as it is expected that sturgeon would modify their behavior at 40 meters from the installed piles and quickly move away from the area before cumulative injury levels are reached.

Behavioral effects, such as avoidance or disruption of foraging activities, may occur in sturgeon exposed to noise above 150 dBRMs. It is expected that underwater noise levels would be below 150 dBRMS at distances beyond approximately 40 meters from the pile being installed Should sturgeon move into the action area where the 150 dBRMS isopleth extends, as described above, it is reasonable to assume that a sturgeon, upon detecting underwater noise levels of 150 dBRMS, will modify its behavior such that it redirects its course of movement away from the ensonified area and therefore, away from the project site. If any movements away from the ensonified area do occur, it is extremely unlikely that these movements will affect essential sturgeon behaviors (e.g., spawning, foraging, resting, and migration), as the area is not a spawning or overwintering area, and the Hudson River is sufficiently large enough to allow sturgeon to avoid the ensonified area while continuing to forage and migrate. Given the small distance a sturgeon would need to move to avoid the disturbance levels of noise, any effects will not be able to be meaningfully measured or detected. Therefore, the effects of noise on sturgeon are insignificant.

Vessel Traffic

Watercraft associated with the project are limited to that required to support construction equipment and materials, such as a construction barge and a tug to place it. Post construction, there will be no change in boat traffic associated with the proposed action.

In our analysis we considered three elements: (1) the existing baseline conditions, (2) the action and what it adds to existing baseline conditions, and (3) new baseline conditions (the existing baseline conditions and the action together). We have determined that vessel traffic added to baseline conditions as a result of the proposed project is not likely to adversely affect ESA-listed species for the following reasons.

Adding project vessels to the existing baseline will not increase the risk that any vessel in the area will strike an individual, or will increase it to such a small extent that the effect of the action

(i.e., any increase in risk of a strike caused by the project) cannot be meaningfully measured or detected. The baseline risk of a vessel strike within the Hudson River is unknown. The increase in traffic associated the proposed project is extremely small. The Hudson River is a commercial river and currently sees a great deal of boat traffic, including large ocean-going coal and oil transports. The number and use of the vessels likely to be employed in the construction of this project will be minimal when compared to the mean, and will not represent an unusual change to boat traffic in the river. During the project activities, approximately two project vessels will be added to the baseline. The addition of project vessels will also be intermittent, temporary, and restricted to a small portion of the overall action area on any given day. As such, any increased risk of a vessel strike caused by the project will be too small to be meaningfully measured or detected. As a result, the effect of the action on the risk of a vessel strike in the action area is insignificant.

Conclusions

Based on the analysis that all effects of the proposed action will be insignificant and/or discountable, we have determined that Target Hill WWTP Outfall Installation is not likely to adversely affect any listed species or critical habitat under NMFS' jurisdiction. We certify that we have used the best scientific and commercial data available to complete this analysis. We request your concurrence with this determination.

Sincerely,

PRAY.CHRISTOPHER.CHARLES.1265294746

Digitally signed by PRAY.CHRISTOPHER.CHARLES.1265294746
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=PRAY.CHRISTOPHER.CHARLES.1265294746
Date: 2017.04.03 09:46:57 -04'00'

Christopher C. Pray
Natural Resources Manager
West Point, NY

Attachments:

Lyttle, Madeleine. 2008. Habitat Suitability and Use by Shortnose Sturgeon (*Acipenser brevirostrum*) in the Hudson River at West Point Military Academy. Report prepared for USAG West Point. 19 pp.

Pray, Christopher. 2010 Endangered Species Management Plan for the Shortnose Sturgeon (*Acipenser brevirostrum*) for the US Army Garrison - West Point. 6pp.

Endress, Bob. 2017. Target Hill WWTP; Replacement Discharge Point. ATKINS Technical Note. 5 pp.

Literature Cited

Burlas, M., G. L Ray, & D. Clarke. 2001. The New York District's Biological Monitoring Program for the Atlantic Coast of New Jersey, Asbury Park to Manasquan Section Beach

Erosion Control Project. Final Report. U.S. Army Engineer District, New York and U.S. Army Engineer Research and Development Center, Waterways Experiment Station.

Burton, W.H. 1993. Effects of bucket dredging on water quality in the Delaware River and the potential for effects on fisheries resources. Versar, Inc., 9200 Rumsey Road, Columbia, Maryland 21045.

Dovel, W.L., A.W. Pekovitch, and T.J. Berggren. (1992). Biology of the Shortnose Sturgeon (Acipenser brevirostrum Lesueur, 1818) in the Hudson River Estuary, New York. Pages 187-216 in C.L. Smith, editor, Estuarine Research in the 1980s. State University of New York Press, Albany, New York.

FHWA 2012. Biological Assessment for the Tappan Zee Pile Installation Demonstration Project. January 2012. 105 pp.

NMFS (National Marine Fisheries Service). 1998. Recovery Plan for the Shortnose Sturgeon (Acipenser brevirostrum). Prepared by the Shortnose Sturgeon Recovery Team, for the National Marine Fisheries Service, Silver Springs, MD.

NOAA Fisheries. Atlantic Sturgeon New York Bight Distinct Population Segment: Endangered. Website.

NOAA Fisheries. 2016. Proposed Critical Habitat for Atlantic Sturgeon, the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments. Website. 48pp.

Smith, C. L. 1985. The Inland Fishes of New York State. New York State Department of Environmental Conservation. xii + 522 pp.

Wilber, D. H., Clarke, D. G., & Burlas, M. H. 2006. Suspended sediment concentrations associated with a beach nourishment project on the northern coast of New Jersey. Journal of Coastal Research, 1035-1042.

From: Steve Eckler
Sent: Monday, April 10, 2017 8:49 AM
To: Pray, Christopher CIV USA IMCOM
Cc: Vaeth, James CIV USA IMCOM; Brighton, Nancy J NAN02; Christy Rosenbarker; Colin Lautz
Subject: RE: [Non-DoD Source] Re: EFH coordination for Project at West Point NY - Hudson River

Thanks Chris.

-----Original Message-----
From: Pray, Christopher CIV USA IMCOM [mailto:Christopher.Pray@usma.edu]
Sent: Monday, April 10, 2017 8:41 AM
To: Vaeth, James CIV USA IMCOM <James.Vaeth@usma.edu>; Brighton, Nancy J NAN02 <Nancy.J.Brighton@usace.army.mil>; Steve Eckler <Steve.Eckler@obg.com>
Subject: FW: [Non-DoD Source] Re: EFH coordination for Project at West Point NY - Hudson River

Final word. All set with NOAA fisheries

Christopher Pray
Natural Resources Manager
West Point, NY
10996

(845) 938-7122

-----Original Message-----
From: Ursula Howson - NOAA Affiliate [mailto:ursula.howson@noaa.gov]
Sent: Friday, April 07, 2017 3:49 PM
To: Pray, Christopher CIV USA IMCOM <Christopher.Pray@usma.edu>
Subject: Re: [Non-DoD Source] Re: EFH coordination for Project at West Point NY - Hudson River

As long as you comply with the regional conditions of the Nationwide Permit, you don't need to do anything else with us. However, if you can't comply with the regional conditions, let me know.

And of course, if you have any more questions, please feel free to contact me.

On Mon, Apr 3, 2017 at 12:16 PM, Pray, Christopher CIV USA IMCOM <Christopher.Pray@usma.edu <mailto:Christopher.Pray@usma.edu> > wrote:

Thank you ma'am for the response.

Just to be clear are you expecting something else from me, or is the consultation do provided we use NWP 7? I think that's how I read it.

We are near finished with the EA for this project, and will be sending that your way later this month for comment if you choose.

Just finishing the effects determination for T&E with NMFS, so that's almost done.

Thanks again,

Christopher Pray
Natural Resources Manager
West Point, NY
10996

(845) 938-7122 <tel:%28845%29%20938-7122>

-----Original Message-----
From: Ursula Howson - NOAA Affiliate [mailto:ursula.howson@noaa.gov <mailto:ursula.howson@noaa.gov>]
Sent: Monday, April 03, 2017 10:15 AM
To: Pray, Christopher CIV USA IMCOM <Christopher.Pray@usma.edu <mailto:Christopher.Pray@usma.edu> >
Subject: [Non-DoD Source] Re: EFH coordination for Project at West Point NY - Hudson River

Hi Chris,
I apologize for not replying earlier, I was expecting either a tech request or a letter of coordination to follow your email.

Regarding the project, please make sure to comply with all of the regional conditions of Nationwide Permit #7 and you will be covered for EFH. If you can't comply with those conditions, please let me know and we can coordinate further.

Thanks,
Ursula

On Friday, March 31, 2017, Pray, Christopher CIV USA IMCOM <Christopher.Pray@usma.edu <mailto:Christopher.Pray@usma.edu> <mailto:Christopher.Pray@usma.edu <mailto:Christopher.Pray@usma.edu> > > wrote:

> Dear Dr. Howson,
>
> Just checking in on the EFH submittal from the 17th. Is there anything else you might require?
>
> I do not believe that it effects our determination on effect on EFH, but I just received an amended technical note from the designer with the in-river work shifted from December through June to September through the end of February. I have included the memo for your review.
>
> Best-
>
> Christopher Pray
> Natural Resources Manager
> West Point, NY
> 10996
>
> (845) 938-7122 <tel:%28845%29%20938-7122>
>

> -----Original Message-----
> From: Karen Greene - NOAA Federal [mailto:karen.greene@noaa.gov <mailto:karen.greene@noaa.gov>
> <mailto:karen.greene@noaa.gov <mailto:karen.greene@noaa.gov> >]
> Sent: Tuesday, February 21, 2017 7:01 AM
> To: Pray, Christopher CIV USA IMCOM <Christopher.Pray@usma.edu <mailto:Christopher.Pray@usma.edu>
> <mailto:Christopher.Pray@usma.edu <mailto:Christopher.Pray@usma.edu> > >
> Cc: Vaeth, James CIV USA IMCOM <James.Vaeth@usma.edu <mailto:James.Vaeth@usma.edu>
> <mailto:James.Vaeth@usma.edu <mailto:James.Vaeth@usma.edu> > >; Brighton, Nancy J NAN02
> <Nancy.J.Brighton@usace.army.mil <mailto:Nancy.J.Brighton@usace.army.mil>
> <mailto:Nancy.J.Brighton@usace.army.mil <mailto:Nancy.J.Brighton@usace.army.mil> > >; Ursula Howson - NOAA
> Affiliate <ursula.howson@noaa.gov <mailto:ursula.howson@noaa.gov> <mailto:ursula.howson@noaa.gov <mailto:ursula.howson@noaa.gov> > >
> Subject: [Non-DoD Source] Re: EFH coordination for Project at West
> Point NY - Hudson River
>
> Hello,
>
>
> Diane Rusanowsy has left NMFS for a position with the US Coast Guard in Washington, DC. I am the supervisor for the field offices that cover NY south to VA and until recently did review all NY projects. Dr. Ursula Howson of my office now handles all NY reviews, I have copied her on this e-mail. Her mailing address it the same as mine below and her phone number is 732 872-3116 <tel:732%20872-3116> .
>
>
> The EFH worksheet you have used has been replaced by a new version that can found on our website:
>
> https://www.greateratlantic.fisheries.noaa.gov/habitat/efh/efhassessme <https://www.greateratlantic.fisheries.noaa.gov/habitat/efh/efhassessme>
> nt.html
>
>
> However, there is no need to redo what you have submitted. Dr. Howson will contact you if she needs additional information to complete the consultation. If you have any questions or need additional information, she will be happy to help you.
>
>
>
>
> Karen Greene
> Mid-Atlantic Field Offices Supervisor
> NOAA/National Marine Fisheries Service Greater Atlantic Regional
> Fisheries Office Habitat Conservation Division James J. Howard Marine
> Sciences Laboratory
> 74 Magruder Rd.
> Highlands, NJ 07732
> 732 872-3023 <tel:732%20872-3023> (office)
>
>
>

> On Fri, Feb 17, 2017 at 3:33 PM, Pray, Christopher CIV USA IMCOM <Christopher.Pray@usma.edu <mailto:Christopher.Pray@usma.edu> <mailto:Christopher.Pray@usma.edu <mailto:Christopher.Pray@usma.edu> > <mailto:Christopher.Pray@usma.edu <mailto:Christopher.Pray@usma.edu> <mailto:Christopher.Pray@usma.edu <mailto:Christopher.Pray@usma.edu> > > > wrote:

>

>

> Ma'am,

> Attached please find an EFH assessment for a project to install a new WWTP outfall at West Point. It has been a while since I have completed an assessment. I hope this is still the correct form.

>

> I used to coordinate with Diane Rusanowsky, who as I remember was in the Milford Connecticut office, but I could not locate that address on the NOAA website. Rather, it directed me to your e-mail. I trust I have not reached you in error?

>

> If you have any questions, please feel free to contact me at the address and number below.

>

> Respectfully-

>

> Christopher Pray

> Natural Resources Manager

> West Point, NY

> 10996

>

> (845) 938-7122 <tel:%28845%29%20938-7122> <tel:%28845%29%20938-7122>

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Ursula Howson, PhD
Environmental Specialist
Integrated Statistics, Inc

Under contract to National Marine Fisheries Service Greater Atlantic Regional Fisheries Office Habitat Conservation Division James J. Howard Marine Sciences Laboratory

74 Magruder Rd.

Highlands, NJ 07732

732 872-3116 <tel:732%20872-3116> <tel:732%20872-3116> (office) ursula.howson@noaa.gov <mailto:ursula.howson@noaa.gov> <mailto:ursula.howson@noaa.gov <mailto:ursula.howson@noaa.gov> >

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Ursula Howson, PhD
Environmental Specialist
Integrated Statistics, Inc

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NOAA FISHERIES
NORTHEAST REGIONAL OFFICE
EFH ASSESSMENT WORKSHEET FOR
FEDERAL AGENCIES
(modified 08/04)

Introduction:

The Magnuson-Stevens Fishery Conservation and Management Act mandates that federal agencies conduct an EFH consultation with NOAA Fisheries regarding any of their actions authorized, funded, or undertaken that may adversely effect essential fish habitat (EFH). An adverse effect means any impact that reduces the quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

This worksheet has been designed to assist Federal agencies in determining whether an EFH consultation is necessary, and developing the needed information should a consultation be required. This worksheet will lead you through a series of questions that will provide an initial screening to determine if an EFH consultation is necessary, and help you assemble the needed information for determining the extent of the consultation required. The information provided in this worksheet may also be used to develop the required EFH Assessment.

Consultation through NOAA Fisheries regarding other NOAA-trust resources may also be necessary if a proposed action results in adverse impacts. Part 6 of the worksheet is designed to help assess the effects of the action on other NOAA-trust resources. This helps maintain efficiency in our interagency coordination process. In addition, consultation with NOAA Fisheries may be required if a proposed action impacts marine mammals or threatened and endangered species for which we are responsible. Staff from our Northeast Regional Office, Protected Resources Division should be contacted regarding potential impacts to marine mammals or threatened and endangered species.

Instructions for Use:

An EFH Assessment must be submitted by a Federal agency to NOAA Fisheries as part of the EFH consultation. An EFH Assessment must include the following information:
1) A description of the proposed action.
2) An analysis of the potential adverse effects of the action on EFH, and the managed species.
3) The Federal agency□s conclusions regarding the effects of the action on EFH.
4) Proposed mitigation if applicable.

In some cases, this worksheet can be used as an EFH Assessment. If the Federal agency determines that the action will not cause substantial impacts to EFH, then this worksheet may suffice. If the action may cause substantial adverse effects on EFH, then a more thorough discussion of the action and its impacts in a separate EFH Assessment will be necessary. The completed worksheet should be

forwarded to NOAA Fisheries Northeast Regional Office, Habitat Conservation Division (HCD) for review.

The information contained on the HCD website (http://www.nero.noaa.gov/hcd/) will assist you in completing this worksheet. The HCD web site contains information regarding: the EFH consultation process; Guide to EFH Designations which provides a geographic species list; Guide to EFH Species Descriptions which provides the legal description of EFH as well as important ecological information for each species and life stage; and other EFH reference documents including examples of EFH Assessments and EFH Consultations.

EFH ASSESSMENT WORKSHEET FOR FEDERAL AGENCIES (modified 08/04)

PROJECT NAME: Install replacement outfall for new Target Hill WWTP **DATE:** 17 March 2017

PROJECT NO.: _____ **LOCATION:** West Point, NY Orange County

PREPARER: Christopher Pray

Step 1. Use the Habitat Conservation Division EFH webpage, Guide to Essential Fish Habitat Designations in the Northeastern United States to generate the list of designated EFH for federally-managed species for the geographic area of interest (http://www.nero.noaa.gov/hcd/index2a.htm). Use the species list as part of the initial screening process to determine if EFH for those species occurs in the vicinity of the proposed action. Attach that list to the worksheet because it will be used in later steps. Make a preliminary determination on the need to conduct an EFH Consultation.

1. INITIAL CONSIDERATIONS		
EFH Designations	**Yes**	**No**
Is the action located in or adjacent to EFH designated for eggs?	x	
Is the action located in or adjacent to EFH designated for larvae?	x	
Is the action located in or adjacent to EFH designated for juveniles?	x	
Is the action located in or adjacent to EFH designated for adults?	x	
Is the action located in or adjacent to EFH designated for spawning adults?	x	
If you answered no to all questions above, then EFH consultation is not required -go to Section 5. If you answered yes to any of the above questions proceed to Section 2 and complete remainder of the worksheet.	x	

Step 2. In order to assess impacts, it is critical to know the habitat characteristics of the site before the activity is undertaken. Use existing information, to the extent possible, in answering these questions. Please note that, there may be circumstances in which new information must be collected to appropriately characterize the site and assess impacts.

2. SITE CHARACTERISTICS	
Site Characteristics	**Description**
Is the site intertidal, sub-tidal, or water column?	**Intertidal**
What are the sediment characteristics?	**Clay/silt**
Is Habitat Area of Particular Concern (HAPC) designated at or near the site? If so what type, size, characteristics?	**No**
Is there submerged aquatic vegetation (SAV) at or adjacent to project site? If so describe the spatial extent.	**No**
What is typical salinity and temperature regime/range?	**0.5 – 5.0 ppt,**
What is the normal frequency of site disturbance, both natural and man-made?	**Site it estuarine. There is an existing outfall to the site 150ft south (to be abandoned in place). A storm water outfall is ~50 feet south. No other regular disturbance.**
What is the area of proposed impact (work footprint & far afield)?	**Outfall pipes will extent ~50 feet into the Hudson. Area to be de-watered for construction will be approximately 30ft x 60ft. See Attached Construction Memo.**

Step 3. This section is used to describe the anticipated impacts from the proposed action on the physical/chemical/biological environment at the project site and areas adjacent to the site that may be affected.

3. DESCRIPTION OF IMPACTS			
Impacts	**Y**	**N**	**Description**
Nature and duration of activity(s)			Construction of the new outfall system will consist of landward open-trench construction of a single pipeline from the Effluent Treatment Facility to near the west side of Upton Road. From there, dual pipelines with casings will be installed using jack-and-bore techniques under an existing CSX railway. Finally, dual pipelines will be installed from the rail way into the Hudson River using a cofferdam system to allow the construction work to be performed in the dry. July to December construction wintow. See attached memo.
Will benthic community be disturbed?	**x**		**The area must be temporarily dewatered for construction.**
Will SAV be impacted?		**x**	
Will sediments be altered and/or sedimentation rates change?	**x**		**Disturbance during cofferdam construction and removal, dewatering, and construction. End state should be very similar to pre-construction.**
Will turbidity increase?	**x**		**Only during construction phase. Turbidity curtain and construction BMPs to be deployed.**
Will water depth change?		**x**	
Will contaminants be released into sediments or water column?		**x**	
Will tidal flow, currents or wave patterns be altered?		**x**	
Will ambient salinity or temperature regime change?		**x**	
Will water quality be altered?		**x**	**Water quality should be improved as a result of this action.**

Step 4. This section is used to evaluate the consequences of the proposed action on the functions and values of EFH as well as the vulnerability of the EFH species and their life stages. Identify which species from the EFH species list (generated in Step 1) will be adversely impacted from the action. Assessment of EFH impacts should be based upon the site characteristics identified in Step 2 and the nature of the impacts described within Step 3. The Guide to EFH Descriptions webpage (http://www.nero.noaa.gov/hcd/list.htm) should be used during this assessment to determine the ecological parameters/preferences associated with each species listed and the potential impact to those parameters.

4. EFH ASSESSMENT			
Functions and Values	**Y**	**N**	**Describe habitat type, species and life stages to be adversely impacted**
Will functions and values of EFH be impacted for:			
Spawning	**x**		**There may be some minor impact to those species which spawn or forage on muddy estuarine flats. Impact will be minor and temporary – limited to construction.**
Nursery	**x**		**There may be some minor impact to those species which spawn or forage on muddy estuarine flats. Impact will be minor and temporary – limited to construction.**
Forage		**x**	
Shelter		**x**	
Will impacts be temporary or permanent?			**Temporary**
Will compensatory mitigation be used?		**x**	

Step 5. This section provides the Federal agency=s determination on the degree of impact to EFH from the proposed action. The EFH determination also dictates the type of EFH consultation that will be required with NOAA Fisheries.

5. DETERMINATION OF IMPACT		
	☞	**Federal Agency=s EFH Determination**
Overall degree of adverse effects on EFH (not including compensatory mitigation) will be: **(check the appropriate statement)**		**There is no adverse effect on EFH** **EFH Consultation is not required**
	X	**The adverse effect on EFH is not substantial.** **This is a request for an abbreviated EFH consultation. This worksheet is being submitted to NMFS to satisfy the EFH Assessment requirement.**
		The adverse effect on EFH is substantial. **This is a request for an expanded EFH consultation. A detailed written EFH assessment will be submitted to NMFS expanding upon the impacts revealed in this worksheet.**

Step 6. Consultation with NOAA Fisheries may also be required if the proposed action results in adverse impacts to other NOAA-trust resources, such as anadromous fish, shellfish, crustaceans, or their habitats. Some examples of other NOAA-trust resources are listed below. Inquiries regarding potential impacts to marine mammals or threatened/endangered species should be directed to NOAA Fisheries' Protected Resources Division.

6. OTHER NOAA-TRUST RESOURCES IMPACT ASSESSMENT	
Species known to occur at site (list others that may apply)	**Describe habitat impact type (i.e., physical, chemical, or biological disruption of spawning and/or egg development habitat, juvenile nursery and/or adult feeding or migration habitat).**
alewife	
blueback herring	
rainbow smelt	
Atlantic sturgeon	**We are also consulting with protected species in regards to Atlantic and Shortnose sturgeon.**
Atlantic menhaden	
American shad	
American eel	
American lobster	
blue mussels	
soft-shell clams	
quahog	
Other species:	

Moore House Monument Location

Figure 8. Target Hill Field Section sketch map, illustrating STPs and historic dump site boundaries.

Utility Extensions

GENERAL NOTES

1. SEE SHEET CU201-CU202 FOR UTILITY PROFILES
2. SEE SHEET CS501 FOR LIQUID DUMP STATION DETAILS
3. ALL EXISTING TO REMAIN AND PROPOSED EFFLUENT LINE SANITARY MANHOLE COVERS SHALL BE BOLTED DOWN DUE TO POTENTIAL FUTURE SURCHARGE
4. LOCATION, SIZE, MATERIAL, AND DEPTH OF EXISTING UTILITY LINES SHOWN ON CU102 - CU106 ARE UNKNOWN. CONTRACTOR TO FIELD VERIFY PRIOR TO CONSTRUCTION.

SHEET KEYNOTES

SHEET LEGEND

- LIMITS OF DISTURBANCE
- GAS LINE
- WATER LINE
- SANITARY SEWER LINE
- SANITARY SEWER STRUCTURE
- COMM — FIBER OPTIC LINE
- STORM PIPE
- STORM INLET
- STORM MANHOLE
- STORM MES
- PROCESS PIPING - LIQUIDS
- PROCESS PIPING - SOLIDS
- PROCESS PIPING - DRAIN LINES
- SITE LIGHTING POLE
- SD_x EXISTING STORM MAIN PIPE
- SS_x EXISTING SANITARY MAIN PIPE
- UTL EXISTING COMMUNICATION LINE
- W_x EXISTING WATER LINE
- E E E EXISTING ELECTRIC LINE
- SITE ELECTRICAL DUCT BANK (SEE ELECTRICAL PLANS)
- SITE ELECTRICAL MANHOLE (SEE ELECTRICAL PLANS)

PLAN NORTH

0 30' 60'

US Army Corps of Engineers ®
New York District

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US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
Point of Contact: Fred Hand
(917) 790-8293

UNITED STATES ARMY GARRISON
WEST POINT, NEW YORK
FY16 WASTEWATER TREATMENT PLANT
CONTRACT NO. W912DS-16-C-0003

SITE UTILITY PLAN

SHEET ID
-
CU101

STATE OF NEW YORK * JOSEPH T. WRIGHT * 095873 * LICENSED PROFESSIONAL ENGINEER

FOR PERMIT REVIEW

WATER MAIN LENGTHS		
PIPE SECTION	DESCRIPTION	LENGTH (FT)
P1	8" PVC	83
P2	8" PVC	225
P3	8" PVC	8
P4	8" PVC	22
P5	8" PVC	32
P6	8" PVC	67
P7	8" PVC	195
P8	8" PVC	24
P9	8" PVC	71
P10	8" PVC	8
P11	8" PVC	34
P12	8" PVC	25
P13	8" PVC	15
P14	8" PVC	15
P15	8" PVC	27
P16	8" PVC	122
P17	6" PVC (FH)	14
P18	6" PVC (FH)	13
P19	6" PVC (FH)	39
P20	4" PVC (LDS)	49

GENERAL NOTES

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- EXISTING STORM MAIN PIPE
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- EXISTING COMMUNICATION LINE
- EXISTING WATER LINE
- EXISTING ELECTRIC LINE
- SITE ELECTRICAL DUCT BANK (SEE ELECTRICAL PLANS)
- SITE ELECTRICAL MANHOLE (SEE ELECTRICAL PLANS)

PLAN NORTH

0 30' 60'

US Army Corps of Engineers ®
New York District

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FILE NUMBER:
FILE NAME: (TYPOGRAPHY)

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2318 MILL ROAD SUITE 1040 ALEXANDRIA VA 22314

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FY16 WASTEWATER TREATMENT PLANT
CONTRACT NO. W912DS-16-C-0003

SITE UTILITY PLAN

SHEET ID
-
CU102

STATE OF NEW YORK
JEREMY A. WRIGHT
095873
LICENSED PROFESSIONAL ENGINEER

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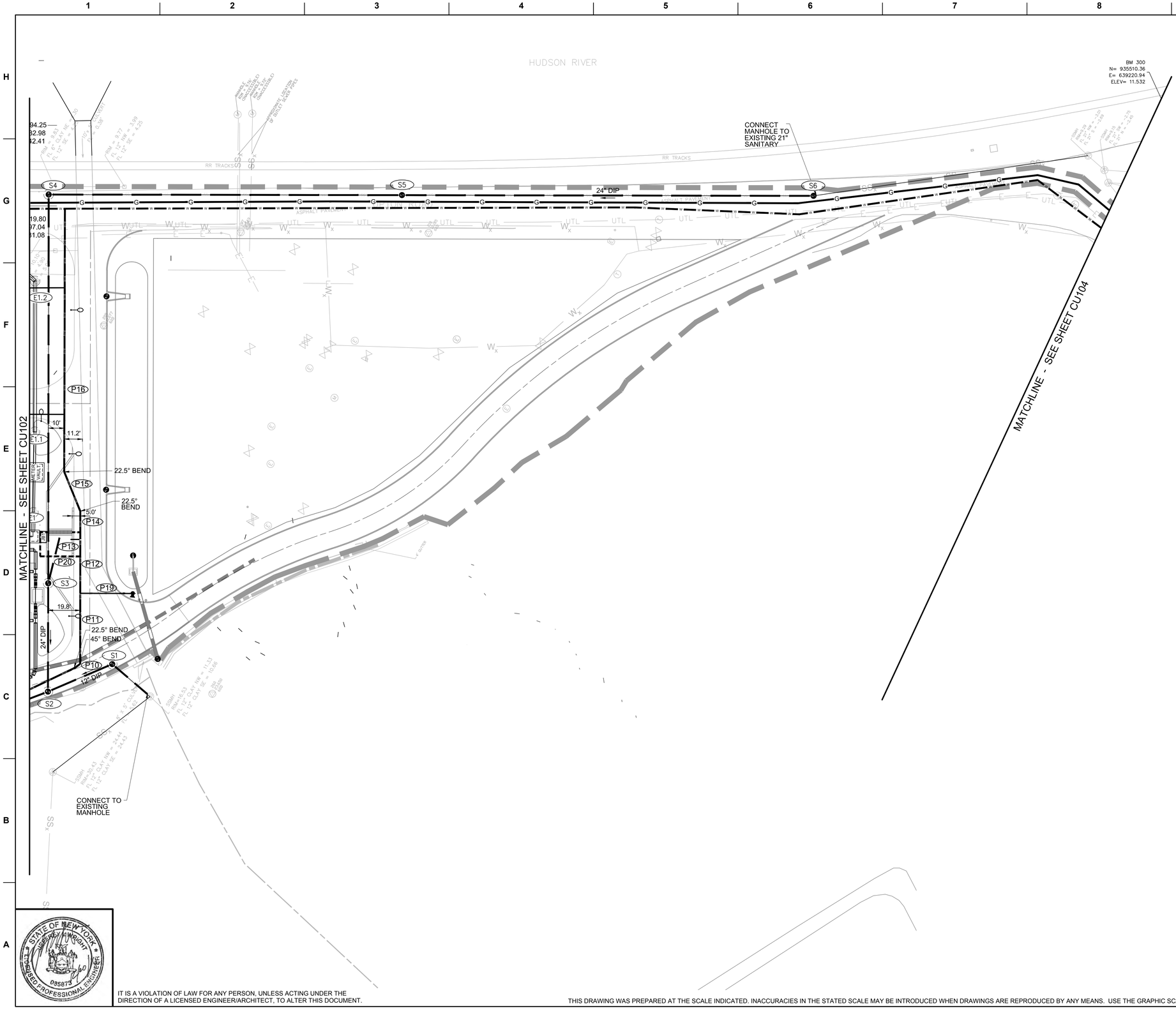

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PLAN NORTH

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New York District

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US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
Point of Contact: Fred Hand
(917) 790-8293

UNITED STATES ARMY GARRISON
WEST POINT, NEW YORK
FY16 WASTEWATER TREATMENT PLANT
CONTRACT NO. W912DS-16-C-0003

SITE UTILITY PLAN

SHEET ID

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CU103

STATE OF NEW YORK
JEREMY M. WRIGHT
095873
LICENSED PROFESSIONAL ENGINEER

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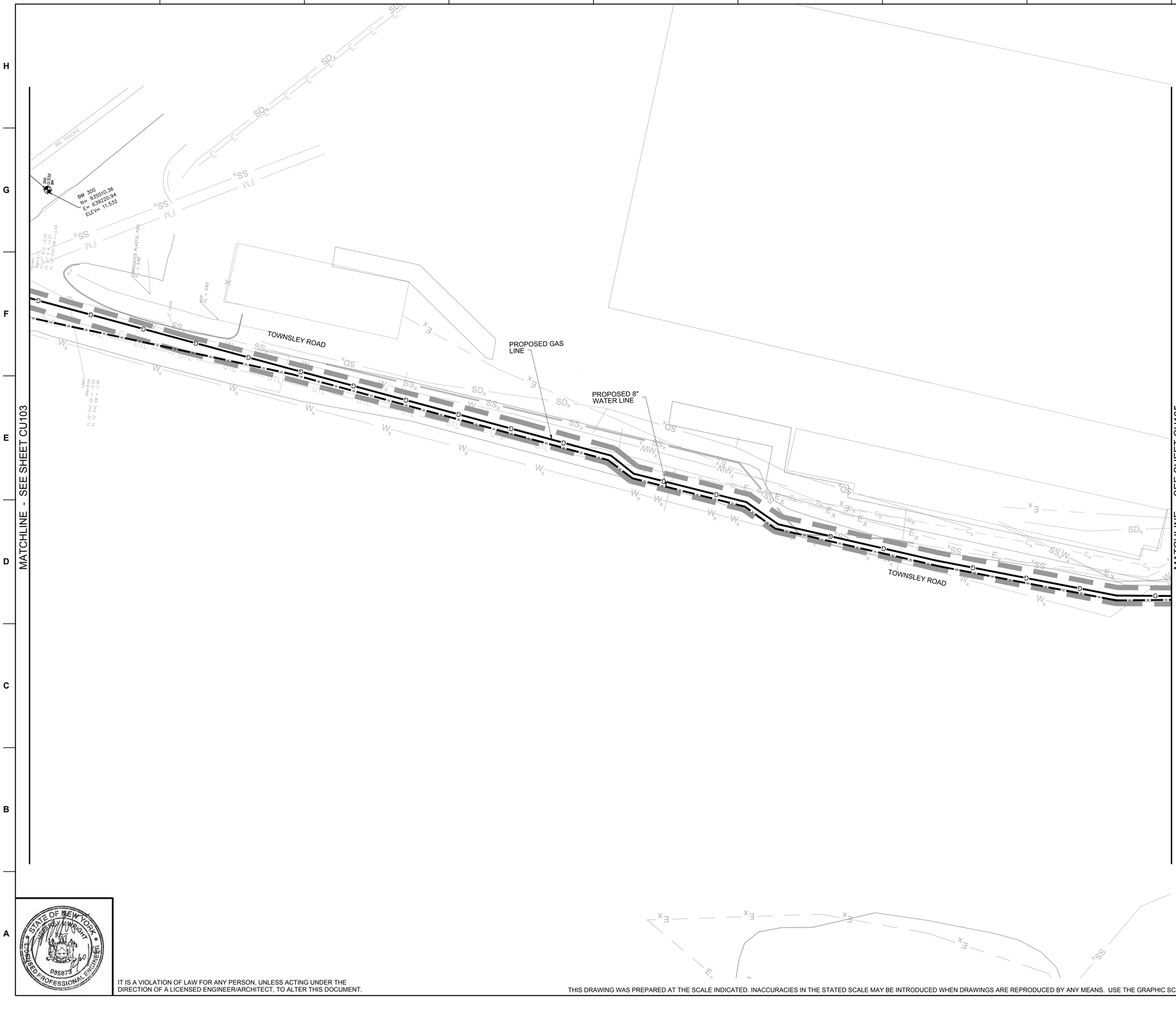

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- SANITARY SEWER STRUCTURE
- FIBER OPTIC LINE (COMM)
- STORM PIPE
- STORM INLET
- STORM MANHOLE
- STORM MES
- PROCESS PIPING - LIQUIDS
- PROCESS PIPING - SOLIDS
- PROCESS PIPING - DRAIN LINES
- SITE LIGHTING POLE
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- EXISTING SANITARY MAIN PIPE (SS_x)
- EXISTING COMMUNICATION LINE (UTL)
- EXISTING WATER LINE (W_x)
- EXISTING ELECTRIC LINE
- SITE ELECTRICAL DUCT BANK (SEE ELECTRICAL PLANS)
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PLAN NORTH

0 30' 60'

STATE OF NEW YORK
JEREMY M. WRIGHT
095873
LICENSED PROFESSIONAL ENGINEER

US Army Corps of Engineers ®
New York District

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NEW YORK DISTRICT
Point of Contact: Fred Hand
(917) 790-8293

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WEST POINT, NEW YORK
FY16 WASTEWATER TREATMENT PLANT
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SITE UTILITY PLAN

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CU104

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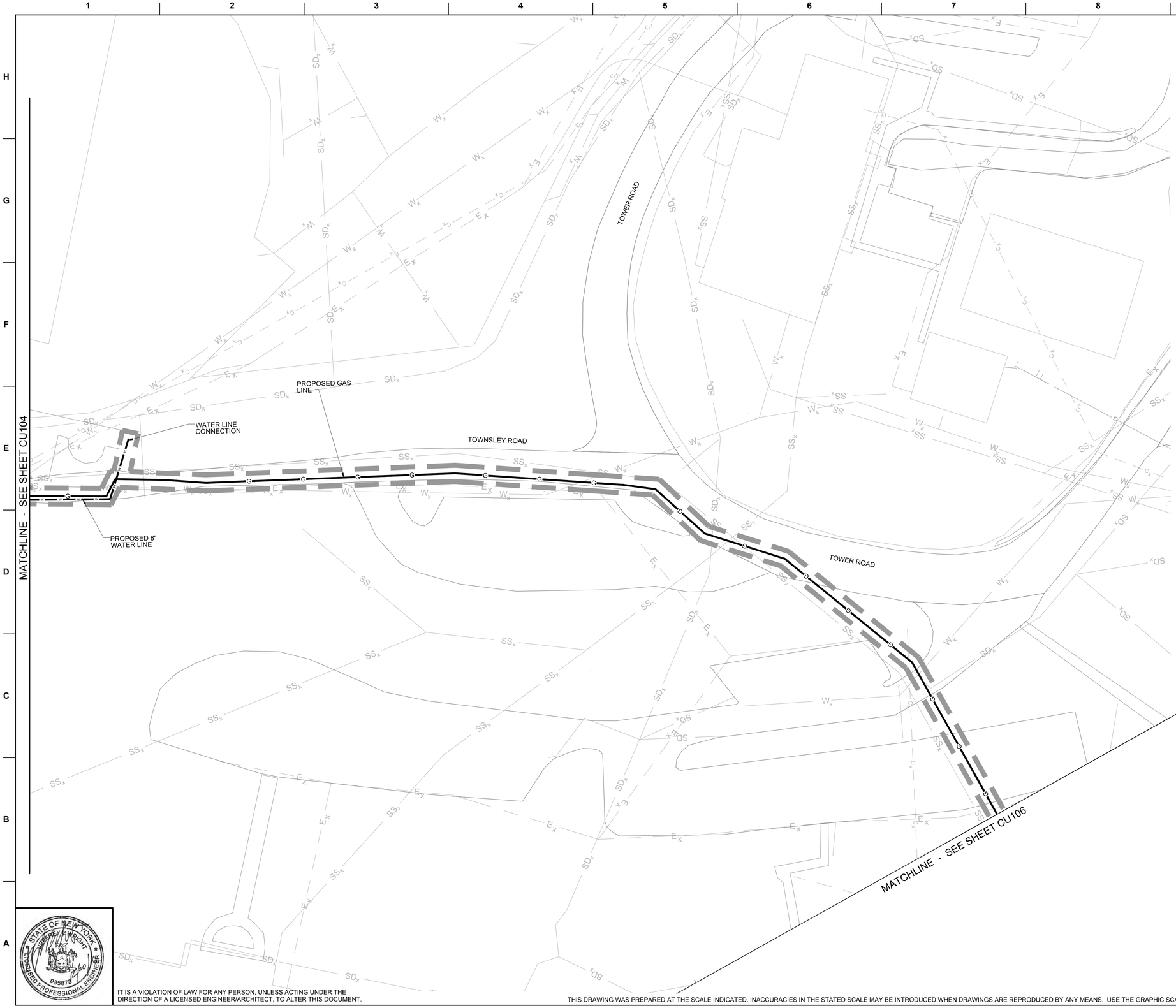

GENERAL NOTES

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PLAN NORTH

0 30' 60'

US Army Corps of Engineers ®
New York District

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UNITED STATES ARMY GARRISON
WEST POINT, NEW YORK
FY16 WASTEWATER TREATMENT PLANT
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SITE UTILITY PLAN

SHEET ID

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CU105

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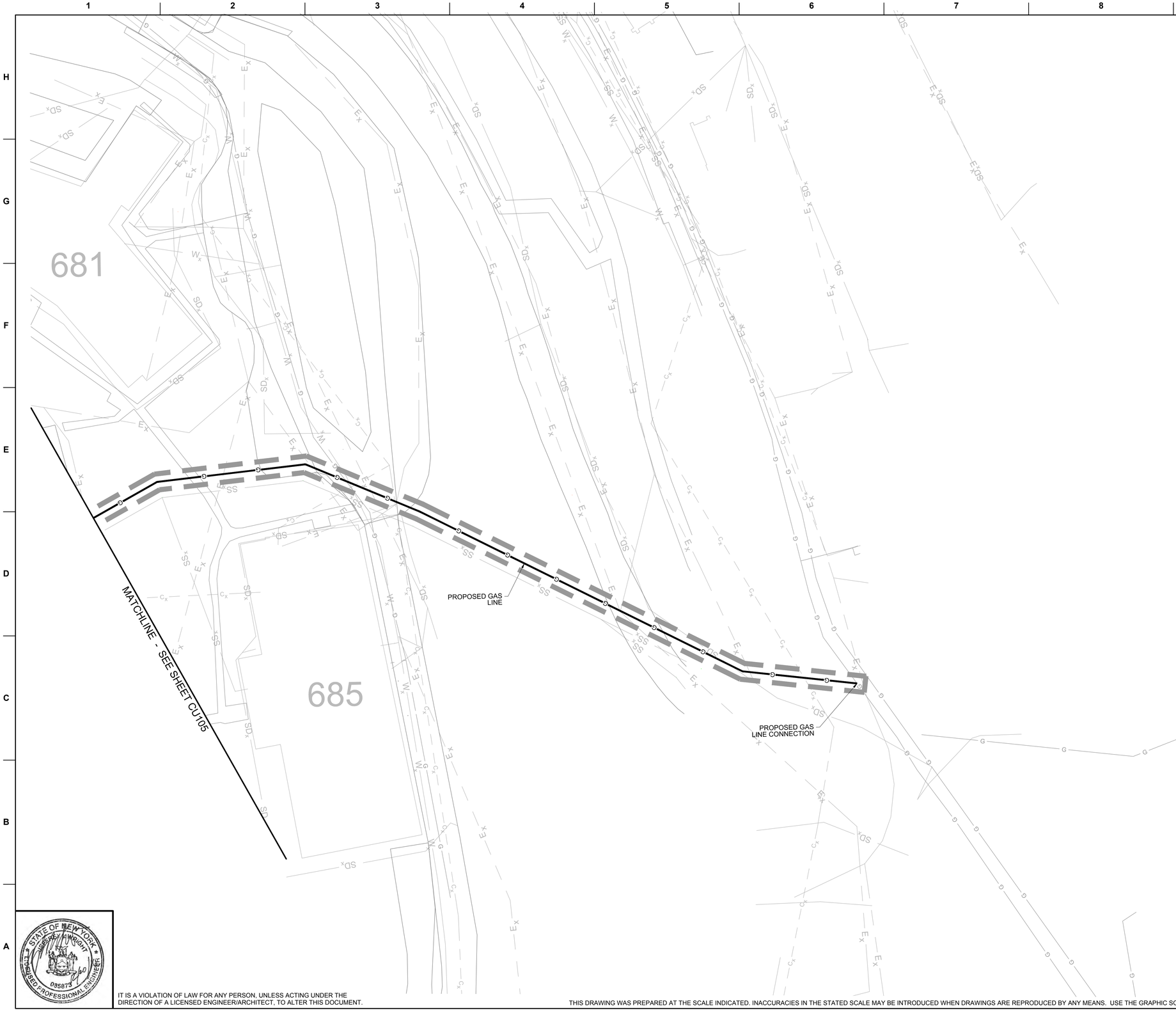

GENERAL NOTES

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- SITE LIGHTING POLE
- SD_x — EXISTING STORM MAIN PIPE
- SS_x — EXISTING SANITARY MAIN PIPE
- UTL — EXISTING COMMUNICATION LINE
- W_x — EXISTING WATER LINE
- E — EXISTING ELECTRIC LINE
- SITE ELECTRICAL DUCT BANK (SEE ELECTRICAL PLANS)
- SITE ELECTRICAL MANHOLE (SEE ELECTRICAL PLANS)

PLAN NORTH

0 30' 60'

STATE OF NEW YORK
JEFFREY M. WRIGHT
095073
LICENSED PROFESSIONAL ENGINEER

US Army Corps of Engineers ®
New York District

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FILE NUMBER:
FILE NAME: [redacted]

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US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
Point of Contact: Fred Hand
(917) 790-8293

UNITED STATES ARMY GARRISON
WEST POINT, NEW YORK
FY16 WASTEWATER TREATMENT PLANT
CONTRACT NO. W912DS-16-C-0003

SITE UTILITY PLAN

SHEET ID
-
CU106

FOR PERMIT REVIEW

NYSDOS Correspondence

New York State Department of State
Office of Planning and Development
Attn: Jeffrey Zappieri
Consistency Review Unit
One Commerce Plaza-Suite 1010
99 Washington Avenue
Albany, New York 12231

March 16, 2017

Re: Federal Coastal Consistency Review – Negative Determination for the Target Hill Wastewater Treatment Plant Replacement, Orange County, New York

This letter provides the New York State (NYS) Coastal Management Program (CMP) Consistency Review Unit with the United States Army Garrison at West Point's (USAG-WP) negative determination under the Coastal Zone Management Act and 40 Code of Federal Regulations (CFR) 930.35(b) for the proposed replacement of the existing Target Hill Wastewater Treatment Plant (WWTP) (*i.e.,* the Proposed Action). A brief description of the Proposed Action is provided below. In accordance with the National Environmental Policy Act (NEPA), USAG-WP is preparing an Environmental Assessment (EA) to evaluate potential environmental and socio-economic impacts associated with implementation of the Proposed Action.

Project Description

The USAG-WP proposes to replace its existing Target Hill WWTP with the objective of increasing treatment capacity from the current 2.06 million gallons per day (MGD) to 3.5 MGD maximum-month plant rating (2.8 MGD average daily flow) to meet current and projected future needs. Construction and demolition activities will be phased to ensure that the treatment of wastewater flow from West Point operations will not be disrupted. Treated effluent from the new plant will be discharged to the Hudson River via a new outfall, which will replace the existing New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES)-permitted outfall[1]; it is anticipated that existing effluent limits will be maintained[2].

The USAG-WP installation is considered to consist generally of three parts: Main Post (also referred to as cantonment area), which is located on the west side of the Hudson River; the West Point Military Reservation (WPMR); and Constitution Island. As identified in Figure 1, the project area is located within the Main Post of USAG-WP. WPMR is located west of the Main Post, and Constitution Island is located along the east side of the Hudson River.

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[1] During the design process, an internal inspection of the existing WWTP's effluent pipelines revealed significant defects. Remaining service life of the existing outfall has been estimated at five to ten years due to structural cracking, crown erosion and sagging joints. Construction of a new, replacement outfall will mitigate the need for eventual repair/replacement of the existing outfall and lessen construction activities associated with connecting both the active existing plant and the future plant to the same active discharge system. The existing outfall will be abandoned-in-place.

[2] The SPDES permit modification process has been initiated and is expected to be completed in 2017.

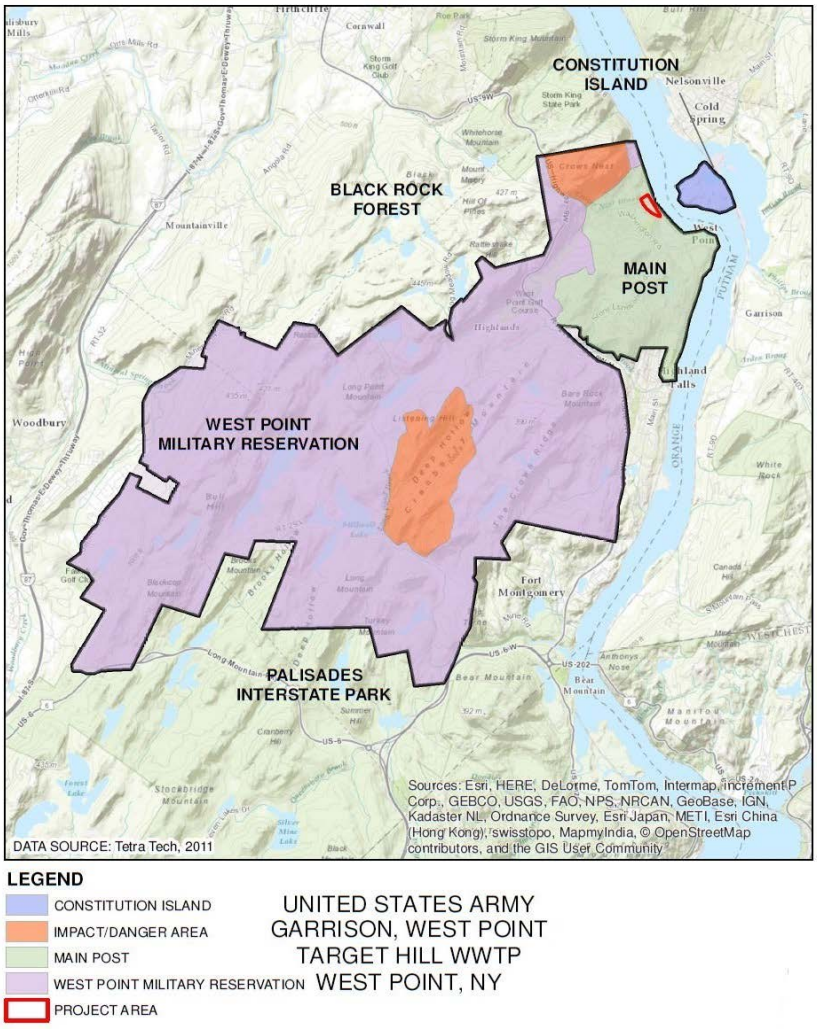

Figure 1. Installation Map

The new WWTP will be located adjacent to the existing facility (see Figure 2); operations at the existing facility will be maintained through the construction phase, then demolished after the successful start-up of the new facility. The proposed site is currently utilized as a parking lot and grassed athletic fields. As part of the Proposed Action, the remaining existing fields will be reconfigured to maximize their continued use and a multi-use grassy area will be developed on the site of the existing WWTP. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields.

The new facility will be designed to a minimum life of 50 years[3] in accordance with Department of Defense (DoD) Unified Facilities Code (UFC) 1-200-02 including energy efficiencies, building envelope and integrated building systems performance. USAG-WP is a Net-Zero Energy pilot installation; therefore, energy that is consumed in operating the WWTP is to be partially offset by the use of alternative energy systems (see below).

[3] 50 years – Structural / Architectural & Civil; 20 years – Process, Mechanical, Electrical, Instrumentation & Control

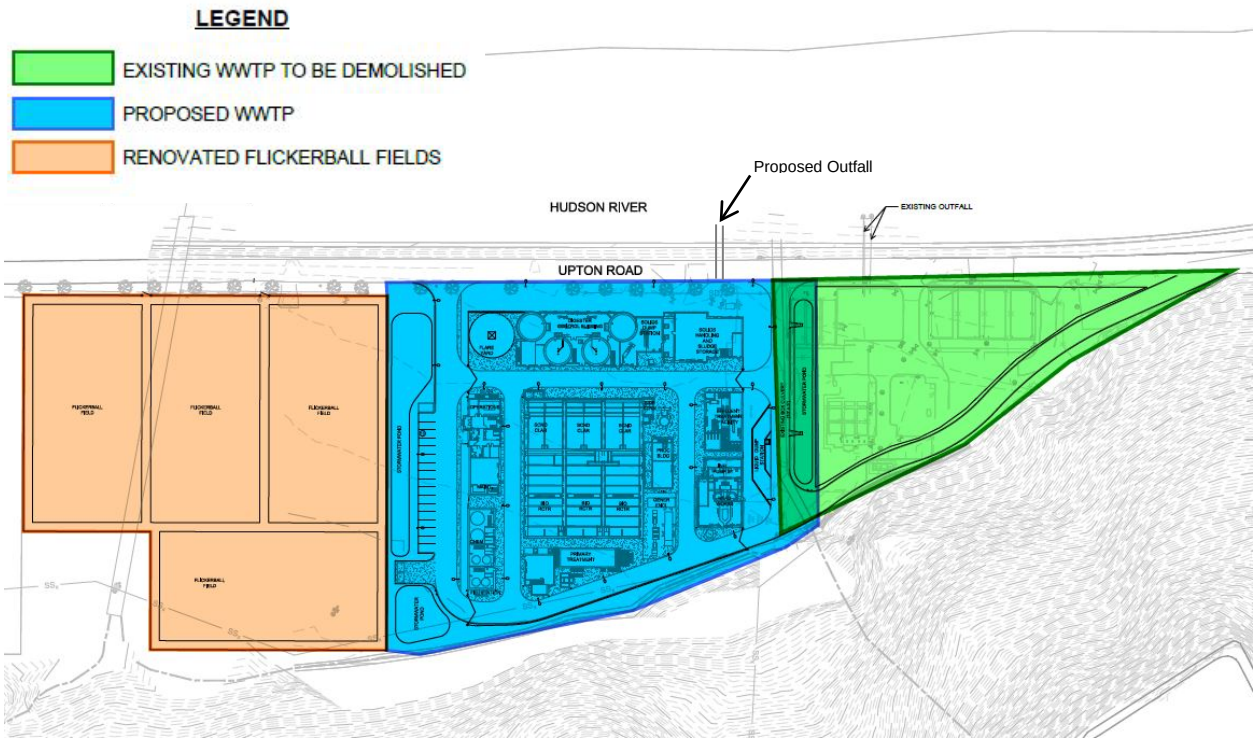

Figure 2. Proposed Site Plan

In addition to the construction of the new WWTP, demolition of the existing WWTP, and reconfiguration of athletic fields, the Proposed Action includes the following elements:

- Land-based stabilization of the two existing box culverts, which discharge stormwater via existing outfalls to the Hudson River; no work in the Hudson River is proposed.
- Installation of, and SPDES-permitted discharges from, a replacement outfall, which will extend approximately 340 linear feet from the new WWTP to a discharge point in the Hudson River; the existing outfall will be abandoned in-place.
- Integration of alternative energy systems to support USAG-WP sustainability goals; potential systems under consideration consist of:
  - WWTP-generated methane gas including anaerobic digestion of food waste generated on the USAG-WP site to improve gas production and energy value
  - Geothermal facilities
- Reuse of a portion of the treated effluent from the new WWTP (with additional filtration) as irrigation water for adjacent recreational fields may be conducted in the future. This component is no longer proposed as part of the current construction project
- Construction of accessory components (*i.e.*, site access/circulation, parking, utility connections and stormwater management)

In addition to these activities, utility extensions will be required within the project area depicted in Figure 1, as well as within existing right-of-ways including Washington Road, Ruger Road, Tower Road, Townsley Road and Upton Road. In addition, a portion of the proposed natural gas line will extend from Tower Road to Washington Road. Attachment 2 depicts the proposed locations for the new utilities.

Construction phase activities will include site clearing and grading, trenching, as well as rock removal. Construction phase activities are anticipated to commence and end in Summer 2017 and Summer 2019, respectively.

Consistency Determination

On behalf of the USAG-WP, a consistency determination has been completed for the Proposed Action and is being submitted for your review. The following information is enclosed:

- A description of the evaluation of the effects of the activity on the relevant enforceable policies of the State's CMP;
- A detailed description (including, as appropriate, maps, site plans, photos and the timing of the activity), its associated facilities and their coastal effects; and
- Comprehensive data and information sufficient to support the federal agency's consistency statement.

Based on the enclosed assessment, the Proposed Action will be undertaken in a manner consistent to the maximum extent practicable with enforceable policies of the State's CMP; a negative determination has been prepared.

The following table (Table 1) provides a discussion of the applicable costal policies and an evaluation of consistency. A complete listing of the 44 coastal policies, including a policy description and applicability, is provided in Attachment 1. Additional discussion regarding the consistency evaluation related to cultural resources and visual aesthetic resources is provided after the table.

Table 1. Consistency Evaluation

Policy #	Results of Consistency Evaluation
Development Policies	
Policy #1	**Policy Statement:** Restore, revitalize, and redevelop deteriorated and underutilized waterfront areas for commercial, industrial, cultural, recreational, and other compatible uses.
	Consistent. The existing plant was constructed in 1956 and upgraded in 1972. The majority of the existing structural/architectural and mechanical/electrical systems are at or beyond their expected life (Atkins/OBG, November 2016). The replacement of the existing WWTP with the new WWTP will allow USAG-WP to meet current and projected future needs. The remaining existing athletic fields to the north of the new WWTP will be reconfigured to maximize their continued use. The area, currently occupied by the existing WWTP and southern parking area, would be converted to green space for recreational use. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields
Policy #2	**Policy Statement:** Facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters.
	Consistent. The continued siting of the WWTP proximal to the Hudson River is ideal given that treated effluent will continue to be discharged to the Hudson River via the new, replacement outfall.
Policy #5	**Policy Statement:** Encourage the location of development in areas where public services and facilities essential to such development are adequate.
	Consistent. Utility extensions are required; however, existing utility infrastructure capacity is adequate to meet project needs. In addition, replacement of the existing WWTP with the new WWTP will allow USAG-WP to meet current and projected future needs.
Fish and Wildlife Policies	
Policy #7	**Policy Statement:** Significant coastal fish and wildlife habitats will be protected, preserved, and where practical, restored so as to maintain their viability as habitats.
	Consistent. Adherence to the requirements of the NYSDEC's SPDES General Permit (General Permit) for Stormwater Discharges from Construction Activity (GP-0-15-002) should provide sufficient mitigation to eliminate potential significant adverse impacts related to stormwater and adjacent surface waters. Installation of the new outfall will require work to be performed in the Hudson River. The Atlantic and Shortnose sturgeons are each a federally-listed endangered species and have been documented within a half mile of the proposed project area (NYSDEC, 2016). To minimize potential impacts to

Policy #	Results of Consistency Evaluation
	these species the following mitigation measures will be implemented: ▪ Temporary control measures to limit upland erosion and sedimentation to the Hudson River, which may impact Sturgeon foraging habitat through increased sediment loading, will be implemented. These control measures may include silt barrier fencing, sediment filter bags, erosion control mulch blanket(s), rock filters, temporary sandbag diversion dam, and pumping to divert ground- and stormwater. Additionally, implemented erosion and sedimentation measures will be maintained and inspected following each runoff event and on a weekly interval to ensure compliance. ▪ A cofferdam (or other means to provide for work in dry conditions) will be utilized to install the new replacement outfall in the Hudson River. Under dry conditions, direct mortality from construction activity will be avoided, as Sturgeon will be excluded from the Site during in-water pipeline installation. In addition, it is estimated that the in-river outfall work will be brief (days to weeks) after the cofferdam is installed. ▪ Installation of the cofferdam will utilize best management practices to minimize vibration impacts; temporary vibratory impacts from the cofferdam installation to Sturgeon will be minimized. Incidental Take Permits will be obtained from appropriate agencies, as necessary. ▪ To avoid potential impacts to migratory Sturgeon moving upstream to spawning grounds, and juveniles associated with the salt from near the Site in late spring (and moving upstream during summer months), an in- an in-river work window between September through end of February will be implemented. This window takes into account National Oceanic and Atmospheric Administration (NOAA)-designated Essential Fish Habitat (EFH) requirements. ▪ In-river sediment that is temporarily disturbed or removed as part of the installation of the pipelines in the Hudson River will be replaced in-kind to support current benthic communities for Sturgeon forage. Treated effluent from the new WWTP will continue to be discharged to the Hudson River via the new, replacement outfall. USAG-WP is in the process of modifying its existing SPDES permit to include this new outfall; it is anticipated that existing effluent limits will be maintained.
Policy #8	**Policy Statement:** Protect fish and wildlife resources in the coastal area from the introduction of hazardous wastes and other pollutants which bio-accumulate in the food chain or which cause significant sublethal or lethal effect on those resources.
	Consistent. Wastes generated during construction activities and operation of the new WWTP will be handled and disposed in accordance with applicable federal, state and local laws and regulations including Army Regulation (AR) 200-1 ("Environmental Protection and Enhancement") and USAG-WP Policy #26 (Installation Hazardous Waste Management).
Flooding and Erosion Hazard Policies	
Policy #11	**Policy Statement:** Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.
	Consistent. Based on a review of the current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the project area (Community Panel No. 36071C0364E effective August 3, 2009, Panel 364 of 630, Suffix E) and project footprint, no new buildings or surface structures are proposed within the 100-year or 500-year floodplain. Due to the proximity of the WWTP to the Hudson River, it is anticipated that the finished floor elevation for the proposed WWTP will be above the 100-year flood elevation to provide additional flood protection and resiliency.
Policy #14	**Policy Statement:** Activities and development, including the construction or reconstruction of erosion protection structures, shall be undertaken so that there will be no measurable increase in erosion or flooding at the site of such activities or development, or at other locations.
	Consistent. The area of disturbance will exceed 1-acre and require coverage under General Permit

Policy #	Results of Consistency Evaluation
	(GP-0-15-002). Coverage under the General Permit will require preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will include erosion and sedimentation controls (E&SCs), which will be maintained by the Contractor through site restoration/stabilization activities. The potential for temporary impacts from exposure of bare soils during construction will be mitigated through the implementation and maintenance of the SWPPP. The SWPPP will be prepared in accordance with the General Permit, as well as New York State guidance documents: New York State Standards and Specifications for Erosion and Sediment Control (2005) and New York State Stormwater Management Design Manual (2015).
Policy #17	**Policy Statement:** Non-structural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible.
	Consistent. As previously described, it is anticipated that the finished floor elevation for the proposed WWTP will be above the 100-year flood elevation. The potential for temporary impacts from exposure of bare soils during construction will be mitigated through the implementation and maintenance of the SWPPP including E&SCs.
General Policy	
Policy #18	**Policy Statement:** To safeguard the vital economic, social and environmental interests of the state and of its citizens, proposed major actions in the coastal area must give full consideration to those interests, and to the safeguards which the state has established to protect valuable coastal resource areas.
	Consistent. The Proposed Action will not significantly impair valuable coastal waters and resources.
Recreation Policies	
Policy #21	**Policy Statement:** Water-dependent and water-enhanced recreation will be encouraged and facilitated, and will be given priority over non-water-related used along the coast.
	Consistent. The remaining existing athletic fields to the north of the new WWTP will be reconfigured to maximize their continued use. The area, currently occupied by the existing WWTP and southern parking area, would be converted to green space for recreational use. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields
Policy #22	**Policy Statement:** Development, when located adjacent to the shore, will provide for water-related recreation, whenever such use is compatible with reasonably anticipated demand for such activities, and is compatible with the primary purpose of the development.
	Consistent. The remaining existing athletic fields to the north of the new WWTP will be reconfigured to maximize their continued use. The area, currently occupied by the existing WWTP and southern parking area, would be converted to green space for recreational use. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields.
Historic and Scenic Resources Policies	
Policy #23	**Policy Statement:** Protect, enhance and restore structures, districts, areas or sites that are of significance in the history, architecture, archaeology or culture of the state, its communities, or the nation.
	Consistent: See discussion following this table.
Policy #24	**Policy Statement:** Prevent impairment of scenic resources of statewide significance.
	Consistent: See discussion following this table.
Water and Air Resources Policies	
Policy #30	**Policy Statement:** Municipal, industrial, and commercial discharge of pollutants, including but not limited to, toxic and hazardous substances, into coastal waters will conform to state and national water quality standards.
	Consistent. Adherence to the requirements of the General Permit (GP-0-15-002) should provide sufficient mitigation to eliminate potential significant adverse impacts related to stormwater and adjacent surface waters. Treated effluent from the new WWTP will continue to be discharged to the

Policy #	Results of Consistency Evaluation
	Hudson River the new, replacement outfall. USAG-WP is in the process of modifying its existing SPDES permit to include this new outfall; it is anticipated that existing effluent limits will be maintained.
Policy #33	**Policy Statement:** Best management practices will be used to ensure the control of stormwater runoff and combined sewer overflows draining into coastal waters.
	Consistent. Adherence to the requirements of the General Permit (GP-0-15-002) should provide sufficient mitigation to eliminate potential significant adverse impacts related to stormwater and adjacent surface waters. During operations, stormwater runoff will be managed via permanent stormwater management facilities designed and constructed to control the quantity and quality of the runoff discharged from the site. The stormwater management system will be designed to Energy Independence Security Act (EISA) 2007 Section 438 regulation using low impact development (LID) elements. Specifically, the stormwater management system will be designed to retain the 95th percentile rainfall event.
Policy #35	**Policy Statement:** Dredging and filling in coastal waters and disposal of dredged material will be undertaken in a manner that meets existing State permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.
	Consistent. Installation of the new outfall will require work to be performed in the Hudson River. A Joint Application for Permit/Pre-Construction Notification (PCN) is being submitted to the NYSDEC and USACE to obtain authorization to perform the work within the River. Permits/approvals associated with the work within the River include: ▪ NYSDEC: Article 15 Permit (Excavation and Fill in Navigable Waters, Stream Disturbance), 401 Water Quality Certification, and Incidental Taking Permit ▪ USACE: Section 404 of the Clean Water Act (Nationwide Permit [NWP] Nos. 7 and/or 12) and Section 10 of the Rivers & Harbors Act of 1899 (NWP Nos. 7 and/or 12) ▪ NYSDOS: Federal Coastal Assessment ▪ NYSOGS: Application for Easement, Lease, Permitted Use of Land Underwater. Potential temporary, construction phase impacts to surface water will be mitigated through the implementation of the SWPPP, which includes measures to minimize sedimentation within the Hudson River during construction of the outfall.
Policy #36	**Policy Statement:** Activities related to the shipment and storage of petroleum and other hazardous materials will be conducted in a manner that will prevent or at least minimize spills into coastal waters; all practicable efforts will be undertaken to expedite the cleanup of such discharges; and restitution for damages will be required when these spills occur.
	Consistent. Removal of Petroleum Bulk Storage (PBS) and Chemical Bulk Storage (CBS) tanks may be necessary prior to demolition of the existing WWTP. Storage tanks and other bulk materials may be reused at the new WWTP. Additional petroleum bulk storage may be temporarily used on-site by construction contractors. Removal and addition of regulated containers will be conducted in accordance with applicable NYSDEC and USEPA regulations, including closure requirements, design requirements including secondary containment, modifications to USAG-WP's existing spill prevention plans (*e.g.,* Spill Prevention, Control and Countermeasure Plan, Spill Prevention Report), PBS and CBS registration certificates, operation and maintenance requirements, as well as waste characterization, management, handling and disposal. Construction and operation of the WWTP will require the use of chemicals and other potentially hazardous materials. These materials will be stored, handled and managed in accordance with USAG-WP's hazardous materials management system (HMMS) and applicable Federal, State and local laws and regulations.

Policy #	Results of Consistency Evaluation
Policy #37	**Policy Statement:** Best management practices will be utilized to minimize the non-point discharge of excess nutrients, organics and eroded soils into coastal waters.
	Consistent. Stormwater runoff will be managed via permanent stormwater management facilities designed and constructed to control the quantity and quality of the runoff discharged from the site. The stormwater management system will be designed to Energy Independence Security Act (EISA) 2007 Section 438 regulation using low impact development (LID) elements. Specifically, the stormwater management system will be designed to retain the 95th percentile rainfall event.
Policy #38	**Policy Statement:** The quality and quantity of surface water and groundwater supplies will be conserved and protected, particularly where such waters constitute the primary or sole source of water supply.
	Consistent. Adherence to the requirements of the General Permit (GP-0-15-002) should provide sufficient mitigation to eliminate potential significant adverse impacts related to stormwater and adjacent surface waters. Treated effluent from the new WWTP will continue to be discharged to the Hudson River via the new outfall. USAG-WP will be modifying its New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) permit to include this new outfall; it is anticipated that existing effluent limits will be maintained.
Policy #39	**Policy Statement:** The transport, storage, treatment and disposal of solid wastes, particularly hazardous wastes, within coastal areas will be conducted in such a manner so as to protect groundwater and surface water supplies, significant fish and wildlife habitats, recreation areas, important agricultural land, and scenic resources.
	Consistent. Wastes generated during construction activities and operation of the new WWTP will be handled and disposed in accordance with applicable federal, state and local laws and regulations including Army Regulation (AR) 200-1 ("Environmental Protection and Enhancement") and USAG-WP Policy #26 (Installation Hazardous Waste Management).
Policy #41	**Policy Statement:** Land use or development in the coastal area will not cause national or state air quality standards to be violated.
	Consistent. The contractor will be required to implement measures to minimize impacts including proper maintenance of vehicles and equipment, dust suppression, the use of low sulfur diesel fuel and best available technology to achieve the greatest reduction in particulate emissions. Particulate Matter PM2.5, ozone and nitrogen dioxide (NO_2), emissions during construction will be maintained below the *de minimis.* In addition, greenhouse gas emissions from the proposed WWTP are expected to result in reduced GHG emissions (compared to existing operations) since the methane that is created as a byproduct of the larger WWTP will be utilized in the hybrid cogeneration plant as fuel. It is expected that the facility's Title V air permit (DEC ID 3-3336-00022/00055) will need to be modified to accommodate both the construction of the proposed WWTP, as well as the demolition of the existing plant. It is noted that emissions associated with the proposed WWTP's operations at startup may be similar to emissions associated with current WWTP operations. The increase in plant rating and upgrade in liquid and solids treatment processes, along with allowance for peak-shaving to address incoming electric power limitations, may increase overall emissions as flows and loads approach the design capacity. Proposed processes may trigger additional permit requirements and/or emission controls. The need for emission controls will be identified through the NYSDEC permitting process. Violations of national or state air quality standards are not anticipated.
Policy #43	**Policy Statement:** Land use or development in the coastal area must not cause the generation of significant amounts of acid rain precursors: nitrates and sulfates
	Consistent. The Proposed Action will not cause the generation of significant amounts of acid rain precursors.

Supplemental Information

Policy #23*: Protect, enhance and restore structures, districts, areas or sites that are of significance in the history, architecture, archaeology or culture of the state, its communities, or the nation.*

The Proposed Action is located on a National Historic Landmark and within the Hudson Highlands Scenic Area of Statewide Significance (SASS). The area of potential effect (construction limits) consists of the area currently occupied by the existing WWTP, Target Hill athletic fields, and several road rights-of-way (utility extensions).

Site activities are assessed as to their potential impacts on cultural, historic and archaeological resources (cultural resources). To manage cultural resources, the USAG-WP prepared an "Integrated Cultural Resources Management Plan" (ICRMP). The ICRMP is intended to guide West Point in complying with the related Cultural Resource Management (CRM) federal preservation requirements and Army regulations.

Assessment of potential project-related impacts on cultural resources is also guided by the "*Programmatic Agreement Among the United States Army Garrison West Point, the New York State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Operations, Maintenance, and Development Activities, United States Army Garrison, West Point, West Point, New York*" (PA) executed in July 2016, which outlines the consultation process with key cultural resource decision-makers and stakeholders. The PA also lists key and contributing elements of the National Historic Landmark District, as well as other historic properties.

Based on a review of New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) Field Services Bureau's[4] online Cultural Resource Information System (CRIS), the USAG-WP site (including the project area) is listed in the National Register Building Sites inventory (NY Number 90NR02302) and within an area identified by SHPO as "archaeologically sensitive." The USAG-WP site is also identified within the National Park Service's (NPS's) Hudson River Valley National Heritage Area.[5]

Included in the ICRMP is a cultural resource inventory for the USAG-WP installation, which includes a listing of known cultural resources including buildings, structures, archaeological sites, landscape features and objects, which contribute to the cultural significance of the site. The ICRMP includes the following information regarding the cultural significance of the existing WWTP and Target Hill athletic fields:

- The existing WWTP is identified in the inventory as a non-contributing building cultural resource.
- The Target Hill athletic fields are identified in the inventory as a contributing element to the National Historic Landmark District as a historic landscape.

The area to the west of the existing WWTP consists of a forested embankment with exposed bedrock outcroppings. A portion of this area may be excavated (via blasting) to provide adequate space for the Proposed Action. As previously described, soils in this area are steeply sloped and shallow. Based on a review of the "NYS Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State" (The New York Archaeological Council, 1994), this area has a low probability of archaeological significance due to its steep slopes (greater than 12-15%).

In 2005, the USAG-WP prepared an EA to evaluate potential impacts associated with the construction and use of additional athletic fields at the Target Hill Field complex. In support of the 2005 EA, a Phase I Cultural Resource Investigation was completed within the area located to the west of the project area. During the investigation, a flush-mounted marker commemorating the former Stephen Moore House was observed adjacent to the athletic fields along the northeast border of the project area (AAC, 2006) (see Attachment 3). The monument is located outside of the area of potential effect (construction limits).

[4] Also known as the State Historic Preservation Office or SHPO.
[5] http://www.nps.gov/maps/full.html?mapId=01a03739-ab0c-40eb-bc3d-6791d3bb67fa

Evaluation

Demolition of the Existing WWTP

As stated in the ICRMP, the existing WWTP is identified as a non-contributing cultural resource. Consequently, the demolition and replacement of the existing facility is not considered a significant adverse cultural resource impact.

Target Hill Athletic Fields

As previously stated, equitable recreational space will be restored to counterbalance a reduction in the current number of athletic fields.

The North Athletic Field (located south of the project area) was expanded beginning in 1937 by removing a portion of Target Hill and using the excavated dirt as fill to create a level area for athletic fields. The existing Target Hill athletic fields were constructed in the previously excavated area.[6]

In support of the 2005 EA prepared for the rugby and soccer facilities, a Phase I Cultural Resource Investigation was conducted, which encompasses a significant portion of the current project area. The investigation also included steep terrace slopes to the west and north of the fields (NEA, 2005). The document stated that "archaeologically, the project is located in an area with low to moderate sensitivity for the presence of archaeological resources (steep terrain and exposed bedrock with greater than 25 percent slope overlooking the present Target Hill Fields that are situated on fill)." (NEA, 2005).

The results of the Phase I Cultural Resources Investigation concluded that no historic properties would be affected by the athletic field project, either at Target Hill Field or on the adjacent hillside area that might be affected by the construction of athletic fields, buildings, roads, or utilities (NEA, 2005).
The Proposed Action will not impact the location of the Moore Monument; no construction activities are proposed in that area.

Moore Monument

The Proposed Action will not impact the location of the Moore Monument; no construction activities are proposed in that area.

Utility Extensions

In addition to the area of potential effect associated with the proposed WWTP and reconfigured athletic fields, utility extensions will be required to service the new WWTP. These alignments are summarized below and illustrated in Attachment 2.

- Natural Gas – The new gas line will extend from the main located at Washington Road to the south east towards Tower Road, down Tower and Townsley Roads to the middle of Upton Road. The gas line will be located in the middle of Upton Road and run to the north side of the new WWTP site, resulting in approximately 3,000 linear feet of new main. The main will be sized for any possible future connections, such as the Anderson Rugby Complex. With the exception of the gas line extension from the existing main to Tower Road, this work will be conducted within existing USAG-WP road rights-of-way. The majority of the section of the natural gas line from the existing main to Tower Road is located in an area previously disturbed for the installation of sanitary sewer line. The remaining portion of piping (less than 100 linear feet) will extend from Washington Road to Ruger Road.
- Sanitary Sewer – The existing 21-inch diameter gravity sanitary sewer line under Upton Road will be replaced with a 24-inch diameter sewer line. The replacement line will run down Upton Road (adjacent to the new gas line described above) and be rerouted to connect to the existing sanitary sewer line west of the existing WWTP.

[6] http://www.aec.army.mil/Portals/3/IAP/NY-WestPoint.pdf

- Water - A new 8" diameter waterline is proposed along Townsley and Upton Roads to increase the supply of water along Upton Road and to the proposed WWTP. The new 8-inch diameter water line main is proposed to loop around the new WWTP with two connections to the existing new main along Upton Road (one near the north entrance to the site and one near the south entrance); three new hydrants are proposed along this alignment.

No short- or long-term impacts on cultural resources are anticipated from the extension of the natural gas line and sanitary sewer to the project site. The utilities will be installed in existing road rights-of-way, which were previously disturbed during the installation of the road and existing utilities.

No significant adverse impacts to cultural resources were identified. The construction of the new Target Hill WWTP will have an adverse effect on the Target Hill Athletic Fields, a historic landscape that is a contributing element to the National Historic Landmark. In accordance with the PA, the USAG-WP will execute a letter agreement for the minimization and mitigation of the adverse effects. Activities required by the PA include retaining the location of the existing wastewater treatment plant as open space after it has been demolished and the development of an historic context for the athletic fields, including Target Hill, as recommended by the USAG-WP Historic Landscape Management Plan (ERDC/CERC, 2002).

***Policy #24**: Prevent impairment of scenic resources of statewide significance.*

The USAG-WP is located within the Hudson Highlands SASS. The Hudson Highlands SASS is comprised of 28 subunits. The Proposed Action is located within the Contemporary West Point Military Academy Subunit (Subunit HH-3) of the Hudson Highlands SASS. This subunit contains extensive contemporary living quarters and support structures and is included in the Hudson Highlands SASS because it is links more distinctive subunits; specifically, Storm King Subunit (Subunit HH-2) to the north and West Point Military Academy Subunit to the south (Subunit HH-5) and the designation of the USAG-WP site as a National Historic Landmark (NYSDOS, 1993, reprinted 2004).

As previously described, the project area is developed by land uses (WWTP and recreational use), which will be maintained as part of the project. The site is buffered from adjacent uses by the Hudson River to the east and an undeveloped, forested embankment to the west. The existing Rugby Stadium and athletic fields are located to the north of the site and Shea Stadium and North Athletic Fields, Gillis Field House, Tronsrue Marksmanship Center and Eisenhower Hall are located to the south.

The athletic fields are currently situated on the northern portion of the project area and the southern portion is occupied by the existing WWTP. These areas are considered recreational and industrial, respectively.

As previously described, the existing WWTP is identified in the USAG-WP's cultural resource inventory as a non-contributing building. The Target Hill athletic fields are identified as a contributing element of the National Historic Landmark District as a historic landscape.

This project and surrounding areas along the riverfront are dominated by the playing fields and a number of large brick masonry buildings (see Figure 3). With the exception of Eisenhower Hall, the natural geography of the site hides the Post Services and Target Hill buildings when viewed from the Plain. When viewed from across the River, the brick buildings are discernable, but they do not detract from the historic landscape. They are also partially hidden by a row of trees lining the street at the edge of the river bank.

Figure 3. Aerial View of Local Site Area

Architectural Cues

The proposed WWTP is located within the Target Hill Area, which is adjacent to (north of) the Shea Stadium Area (Post Services), and adjacent to the Hudson River Waterfront. Another adjacent area is the Lee Housing Area, which is located to the west at the top of Target Hill. The buildings within each of these areas are represented by specific architectural styles and contributing features. These "architectural cues" are summarized below.

Lee Housing Area

The Lee Housing Area is a partially wooded, housing area located west and up-gradient of the project area. The elevated location provides for views of the Hudson River. Contributing features include neo-Georgian style architecture utilizing brick and stone buildings. The Lee Housing Area is "visually-separated" from the proposed WWTP site.

Target Hill, Shea Stadium and Hudson River Waterfront Areas

Many of these existing buildings house sports and utility functions that require expansive walls with few windows. This includes Gillis Field House, Tronsrue Marksmanship Center, Shea Stadium maintenance facility and the existing WWTP. The Rugby Stadium, at the north end of Target Hill, is a relatively new structure that incorporates a large glass-enclosed viewing area (see Figure 4 through Figure 8). Although located at similar elevations and along the Hudson River waterfront, views between the areas are partially obstructed by buildings and existing wooded areas.

Figure 4. Gillis Field House

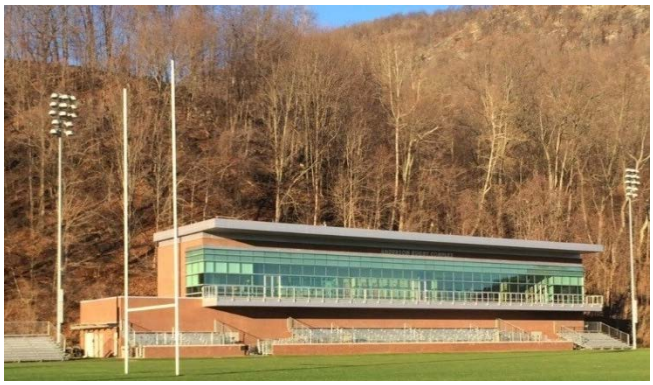

Figure 5. Rugby Stadium

Figure 6. Tronsrue Marksmanship Center

Figure 7. Shea Stadium Maintenance Building

Figure 8. Existing WWTP

Building aesthetics within the Shea Stadium and Target Hill Areas are architecturally connected. The predominant exterior building material is red brick with cast stone, or precast concrete, accents at entrances, openings, cornices, copings and water tables. For the older buildings, the Gothic style of the academic core is emulated through the use of brick masonry piers that modulate the long expanses of masonry wall. The Marksmanship Center also includes false window openings in the masonry to provide additional detail and character. Both steep-slope and low-slope roofs are utilized in the local buildings, therefore there are no predominating roof characteristics (Atkins/OBG, November 2016).

The existing WWTP buildings are enclosed in grey concrete masonry walls with stone copings and the roofs are low-slope flat roofs. Due to its coloration and low profile, the existing plant is not as architecturally evident as other structures in the Target Hill and Shea Stadium Areas.

Evaluation
The existing viewshed is not anticipated to change significantly. The proposed location of the new WWTP is currently utilized as athletic fields. To construct the new WWTP, the remaining existing athletic fields will be reconfigured to maximize their continued use. The area, currently occupied by the existing WWTP and southern parking area, would be converted to green space for recreational use. The purpose of this green space is to provide equitable recreational space to counterbalance a reduction in the current number of athletic fields.

Scale/Sizing
The new WWTP will be a low-rise building so that it will not obstruct existing views.

Materials and Style
The new WWTP will be constructed of red brick with buff-colored, trim to match the architectural context and style of the Post Services and Target Hill Areas. The WWTP will integrate a simplified version of the Military Gothic style developed in the Academic Area, including design elements such as buttresses along the walls, crenelated parapets, and arched openings.

Landscape and Hardscape
Landscaping within the WWTP site will be limited due to site size constraints. Perimeter landscaping will include an area of buffer planting between the parking lot and the sports field fence along the north. Along the Upton Road, existing sycamore trees will remain and additional trees of the same species may be added along Upton Road in selected locations to improve the visual screening within the Hudson River Valley viewshed.

As illustrated in Figure 9, Three rain gardens (*i.e.,* planted detention areas) will be situated along the eastern and southern portions of the new WWTP. In addition, three retention-detention ponds will be situated on the northern and southern portions of the new WWTP. Additional landscape features include landscaping around the flare stack, ground cover plantings and visual buffer planting.

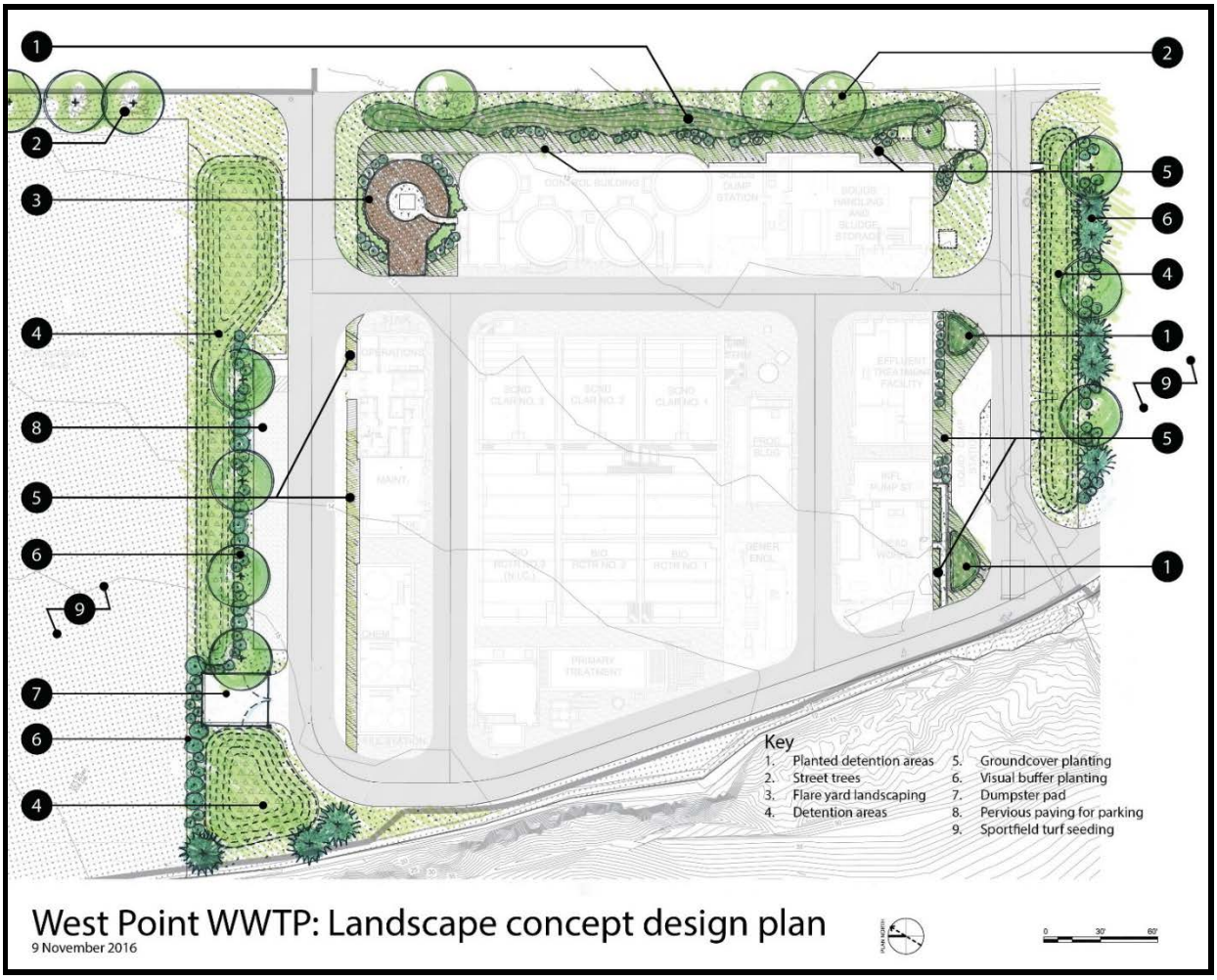

Figure 9. Landscape Concept Design Plan

Due to site constraints, there will be no additional landscaping along the west side of the site

The majority of the interior surfaces will be hardscape in the form of asphalt roads, concrete loading areas and sidewalks, and gravel areas where applicable. Pervious pavers will be used for the parking area on the north of the new WWTP.

Lighting

Fully shielded fixtures will be utilized to prevent glare and night-sky related light pollution. Fixture and lamp types shall be selected to match existing where possible. Stanchion light fixtures and wall-mounted exterior light fixtures shall be utilized to the greatest extent possible. Lighting control shall be accomplished via a photocell tied into a lighting contactor. Light pollution shall be minimized to conform to LEED requirements. No lighting is proposed at the athletic fields and multi-use green space.

Conclusions

As described above, USAG-WP has identified measures to be implemented such that potential significant adverse impacts will be mitigated and implementation of the Proposed Action will conform to the applicable policies within the CMP. Significant adverse effects on coastal resources are not anticipated. As a result of this coastal consistency evaluation, USAG-WP is submitting this negative determination in accordance with 15 CFR 930.35(b).

In accordance with 15 CFR 930.35(c), the Consistency Review Unit has 60 days from receipt of this letter to concur or object to this negative determination or to request an extension of 15 days. Concurrence with this determination will be presumed if a response is not heard within 60 days of receipt of this letter. For additional information, please contact me at (917) 790-8703 or at the email address listed above.

Sincerely,

Christopher Pray
Natural Resources Manager
IMML-PWE-N
667A Ruger Rd.
West Point, NY 10996

Enclosures:

- Attachment 1 – Federal Coastal Policy Applicability
- Attachment 2 – Utility Extensions
- Attachment 3 – Moore House Monument Location

References

- Alexander Archaeological Consultants, Inc. (AAC). 2006. *Phase I Cultural Resource Survey of Target Hill Area and Building No. 1227, The United States Military Academy, West Point, Orange County, New York*. Wildwood, GA.
- Atkins/O'Brien & Gere Engineers, Inc. (OBG) Joint Venture. November 2016. *Design Analysis United States Army Garrison West Point, NY Wastewater Treatment Plant Contract No. W912DS-16-C-003 90% Design Submittal*.
- Engineer Research and Development Center/Construction Engineering Research Laboratory (ERDC/CERL). 2002. *Historic Landscape Management Plan for the U.S. Military Academy at West Point*, New York. Champaign, IL.
- NYSDEC, 2016. Correspondence from Nicholas Conrad, Division of Fish & Wildlife & Marine Resources, New York Natural Heritage Program to Nancy Brighton, Department of the Army, Corps of Engineers. June 17, 2016.
- New York State Department of State (NYSDOS). 1993, Reprinted 2004. *Scenic Areas of Statewide Significance*. Albany, NY.
- The New York Archaeological Council. 1994. *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State*.
- Northern Ecological Associates, Inc. (NEA). 2005. *Draft Environmental Assessment, Construction of Rugby and Soccer Facilities at Target Hill Field, Unites States Army Garrison*, West Point, Orange County, NY.
- *Programmatic Agreement Among The United States Army Garrison West Point, The New York State Historic Preservation Officer, and the Advisory Council on Historic Preservation regarding Operations, Maintenance, and Development Activities*, United States Army Garrison, West Point, West Point, New York. July 2016.

ATTACHMENT 1

Federal Coastal Policy Applicability

APPENDIX 1 – Federal Costal Policy Applicability

Policy #	Policy Description	Applicable (Y/N)
Development Policies		
1	Restore, revitalize, and redevelop deteriorated and underutilized waterfront areas for commercial, industrial, cultural, recreational, and other compatible uses.	☒ Y / ☐ N
2	Facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters.	☒ Y / ☐ N
3	Further develop the state's major ports of Albany, Buffalo, New York, Ogdensburg, and Oswego as centers of commerce and industry, and encourage the siting, in these port areas, including those under the jurisdiction of state public authorities, of land use and development which is essential to, or in support of, the waterborne transportation of cargo and people.	☐ Y / ☒ N
4	Strengthen the economic base of smaller harbor areas by encouraging the development and enhancement of those traditional uses and activities which have provided such areas with their unique maritime identity.	☐ Y / ☒ N
5	Encourage the location of development in areas where public services and facilities essential to such development are adequate.	☒ Y / ☐ N
6	Expedite permit procedures in order to facilitate the siting of development activities at suitable locations.	☐ Y / ☒ N
Fish and Wildlife Policies		
7	Significant coastal fish and wildlife habitats will be protected, preserved, and where practical, restored so as to maintain their viability as habitats.	☒ Y / ☐ N
8	Protect fish and wildlife resources in the coastal area from the introduction of hazardous wastes and other pollutants which bio-accumulate in the food chain or which cause significant sublethal or lethal effect on those resources.	☒ Y / ☐ N
9	Expand recreational use of fish and wildlife resources in coastal areas by increasing access to existing resources, supplementing existing stocks, and developing new resources.	☐ Y / ☒ N
10	Further develop commercial finfish, shellfish, and crustacean resources in the coastal area by encouraging the construction of new, or improvement of existing on-shore commercial fishing facilities, increasing marketing of the state's seafood products, maintaining adequate stocks, and expanding aquaculture facilities.	☐ Y / ☒ N
Flooding and Erosion Hazard Policies		
11	Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.	☒ Y / ☐ N
12	Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural protective features including beaches, dunes, barrier islands and bluffs.	☐ Y / ☒ N

Policy #	Policy Description	Applicable (Y/N)
13	The construction or reconstruction of erosion protection structures shall be undertaken only if they have a reasonable probability of controlling erosion for at least thirty years as demonstrated in design and construction standards and/or assured maintenance or replacement programs	☐ Y / ☒ N
14	Activities and development, including the construction or reconstruction of erosion protection structures, shall be undertaken so that there will be no measurable increase in erosion or flooding at the site of such activities or development, or at other locations.	☒ Y / ☐ N
15	Mining, excavation or dredging in coastal waters shall not significantly interfere with the natural coastal processes which supply beach materials to land adjacent to such waters and shall be undertaken in a manner which will not cause an increase in erosion of such land.	☐ Y / ☒ N
16	Public funds shall only be used for erosion protective structures where necessary to protect human life, and new development which requires a location within or adjacent to an erosion hazard area to be able to function, or existing development; and only where the public benefits outweigh the long term monetary and other costs including the potential for increasing erosion and adverse effects on natural protective features.	☐ Y / ☒ N
17	Non-structural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible.	☒ Y / ☐ N
General Policy		
18	To safeguard the vital economic, social and environmental interests of the state and of its citizens, proposed major actions in the coastal area must give full consideration to those interests, and to the safeguards which the state has established to protect valuable coastal resource areas.	☒ Y / ☐ N
Public Access Policies		
19	Protect, maintain, and increase the level and types of access to public water-related recreation resources and facilities.	☐ Y / ☒ N
20	Access to the publicly-owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publicly-owned shall be provided and it shall be provided in a manner compatible with adjoining uses.	☐ Y / ☒ N
Recreation Policies		
21	Water-dependent and water-enhanced recreation will be encouraged and facilitated, and will be given priority over non-water-related used along the coast.	☒ Y / ☐ N
22	Development, when located adjacent to the shore, will provide for water-related recreation, whenever such use is compatible with reasonably anticipated demand for such activities, and is compatible with the primary purpose of the development.	☒ Y / ☐ N

Policy #	Policy Description	Applicable (Y/N)
Historic and Scenic Resources Policies		
23	Protect, enhance and restore structures, districts, areas or sites that are of significance in the history, architecture, archaeology or culture of the state, its communities, or the nation.	☒ Y / ☐ N
24	Prevent impairment of scenic resources of statewide significance.	☒ Y / ☐ N
25	Protect, restore or enhance natural and man-made resources which are not identified as being of statewide significance, but which contribute to the overall scenic quality of the coastal area.	☐ Y / ☒ N
Agricultural Land Policy		
26	Conserve and protect agricultural lands in the state's coastal area.	☐ Y / ☒ N
Energy and Ice Management Policies		
27	Decisions on the siting and construction of major energy facilities in the coastal area will be based on public energy needs, compatibility of such facilities with the environment, and the facility's need for a shorefront location.	☐ Y / ☒ N
28	Ice management practices shall not interfere with the production of hydroelectric power, damage significant fish and wildlife and their habitats, or increase shoreline erosion or flooding.	☐ Y / ☒ N
29	Encourage the development of energy resources on the outer continental shelf, in Lake Erie and in other water bodies, and ensure the environmental safety of such activities.	☐ Y / ☒ N
Water and Air Resources Policies		
30	Municipal, industrial, and commercial discharge of pollutants, including but not limited to, toxic and hazardous substances, into coastal waters will conform to state and national water quality standards.	☒ Y / ☐ N
31	State coastal area policies and management objectives of approved local waterfront revitalization programs will be considered while reviewing coastal water classifications and while modifying water quality standards; however, those waters already overburdened with contaminants will be recognized as being a development constraint.	☐ Y / ☒ N
32	Encourage the use of alternative or innovative sanitary waste systems in small communities where the costs of conventional facilities are unreasonably high, given the size of the existing tax base of these communities.	☐ Y / ☒ N
33	Best management practices will be used to ensure the control of stormwater runoff and combined sewer overflows draining into coastal waters.	☒ Y / ☐ N
34	Discharge of waste materials into coastal waters from vessels subject to state jurisdiction will be limited so as to protect significant fish and wildlife habitats, recreational areas and water supply areas.	☐ Y / ☒ N

Policy #	Policy Description	Applicable (Y/N)
35	Dredging and filling in coastal waters and disposal of dredged material will be undertaken in a manner that meets existing State permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.	☒ Y / ☐ N
36	Activities related to the shipment and storage of petroleum and other hazardous materials will be conducted in a manner that will prevent or at least minimize spills into coastal waters; all practicable efforts will be undertaken to expedite the cleanup of such discharges; and restitution for damages will be required when these spills occur.	☒ Y / ☐ N
37	Best management practices will be utilized to minimize the non-point discharge of excess nutrients, organics and eroded soils into coastal waters.	☒ Y / ☐ N
38	The quality and quantity of surface water and groundwater supplies will be conserved and protected, particularly where such waters constitute the primary or sole source of water supply.	☒ Y / ☐ N
39	The transport, storage, treatment and disposal of solid wastes, particularly hazardous wastes, within coastal areas will be conducted in such a manner so as to protect groundwater and surface water supplies, significant fish and wildlife habitats, recreation areas, important agricultural land, and scenic resources.	☒ Y / ☐ N
40	Effluent discharged from major steam electric generating and industrial facilities into coastal waters will not be unduly injurious to fish and wildlife and shall conform to state water quality standards.	☐ Y / ☒ N
41	Land use or development in the coastal area will not cause national or state air quality standards to be violated.	☒ Y / ☐ N
42	Coastal management policies will be considered if the state reclassifies land areas pursuant to the prevention of significant deterioration regulations of the federal clean air act.	☐ Y / ☒ N
43	Land use or development in the coastal area must not cause the generation of significant amounts of acid rain precursors: nitrates and sulfates.	☒ Y / ☐ N
Wetlands		
44	Preserve and protect tidal and freshwater wetlands and preserve the benefits derived from these areas.	☐ Y / ☒ N

ATTACHMENT 2

Utility Extensions

WATER MAIN LENGTHS		
PIPE SECTION	DESCRIPTION	LENGTH (FT)
P1	8" PVC	83
P2	8" PVC	225
P3	8" PVC	8
P4	8" PVC	22
P5	8" PVC	32
P6	8" PVC	67
P7	8" PVC	195
P8	8" PVC	24
P9	8" PVC	71
P10	8" PVC	8
P11	8" PVC	34
P12	8" PVC	25
P13	8" PVC	15
P14	8" PVC	15
P15	8" PVC	27
P16	8" PVC	122
P17	6" PVC (FH)	14
P18	6" PVC (FH)	13
P19	6" PVC (FH)	39
P20	4" PVC (LDS)	49

GENERAL NOTES

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2. SEE SHEET CS501 FOR LIQUID DUMP STATION DETAILS
3. ALL EXISTING TO REMAIN AND PROPOSED EFFLUENT LINE SANITARY MANHOLE COVERS SHALL BE BOLTED DOWN DUE TO POTENTIAL FUTURE SURCHARGE
4. LOCATION, SIZE, MATERIAL, AND DEPTH OF EXISTING UTILITY LINES SHOWN ON CU102 - CU106 ARE UNKNOWN. CONTRACTOR TO FIELD VERIFY PRIOR TO CONSTRUCTION.

SHEET KEYNOTES

SHEET LEGEND

- LIMITS OF DISTURBANCE
- GAS LINE
- WATER LINE
- SANITARY SEWER LINE
- SANITARY SEWER STRUCTURE
- COMM — FIBER OPTIC LINE
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- STORM INLET
- STORM MANHOLE
- STORM MES
- PROCESS PIPING - LIQUIDS
- PROCESS PIPING - SOLIDS
- PROCESS PIPING - DRAIN LINES
- SITE LIGHTING POLE
- SD_x EXISTING STORM MAIN PIPE
- SS_x EXISTING SANITARY MAIN PIPE
- UTL EXISTING COMMUNICATION LINE
- W_x EXISTING WATER LINE
- E EXISTING ELECTRIC LINE
- SITE ELECTRICAL DUCT BANK (SEE ELECTRICAL PLANS)
- SITE ELECTRICAL MANHOLE (SEE ELECTRICAL PLANS)

PLAN NORTH

0 30' 60'

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE
0	FOR PERMIT REVIEW	DEC. 20, 2016

ISSUE DATE:
SOLICITATION NO.:
CONTRACT NO.:
FILE NUMBER:
DESIGNED BY: KCHRISTY
DRAWN BY: KCHRISTY
CKD BY: JJWRIGHT
SBMT BY: JJWRIGHT
PLOT DATE: 12/20/16
PLOT SCALE: 1:1
PLOT STYLE TABLE: ATKINS.CTB
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22"X34"

ATKINS | O'BRIEN & GERE JOINT VENTURE

4201 MITCHELLEVILLE ROAD SUITE 560 BOWIE, MD 20716
2318 MILL ROAD SUITE 1040 ALEXANDRIA VA 22314

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
Point of Contact: Fred Hand
(917) 790-8293

UNITED STATES ARMY GARRISON
WEST POINT, NY
FY16 WASTEWATER TREATMENT PLANT
CONTRACT NO. W912DS-16-C-0003

SITE UTILITY PLAN

SHEET ID
-
CU102

STATE OF NEW YORK
JEREMY J. WRIGHT
095873
LICENSED PROFESSIONAL ENGINEER

FOR PERMIT REVIEW

HUDSON RIVER

BM 300
N= 935510.36
E= 639220.94
ELEV= 11.532

CONNECT MANHOLE TO EXISTING 21" SANITARY

RR TRACKS

24" DIP

MATCHLINE - SEE SHEET CU104

MATCHLINE - SEE SHEET CU102

22.5° BEND

22.5° BEND

45° BEND

22.5° BEND

24" DIP

12" DIP

CONNECT TO EXISTING MANHOLE

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0 30' 60'

STATE OF NEW YORK
JEREMY M. WRIGHT
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US Army Corps of Engineers ®
New York District

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DRAWN BY: KJASZYCA
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O'BRIEN & GERE JOINT VENTURE

ATKINS

2316 MILL ROAD SUITE 1040 ALEXANDRIA VA 22314

4201 MITCHELLEVILLE ROAD SUITE 1500 BOWIE, MD 20716

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
Point of Contact: Fred Hiard
(917) 790-4293

UNITED STATES ARMY GARRISON
WEST POINT, NEW YORK
FY16 WASTEWATER TREATMENT PLANT
CONTRACT NO. W912DS-16-C-0003

SITE UTILITY PLAN

SHEET ID
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MARK	DESCRIPTION	DATE
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SBMT BY: JJWRIGHT
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ATKINS | O'BRIEN & GERE JOINT VENTURE

2318 MILL ROAD SUITE 1040 ALEXANDRIA VA 22314
4201 MITCHELLEVILLE ROAD SUITE 500 BOWIE, MD 20716

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SITE UTILITY PLAN

SHEET ID
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STATE OF NEW YORK
JASON J. WRIGHT
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LICENSED PROFESSIONAL ENGINEER

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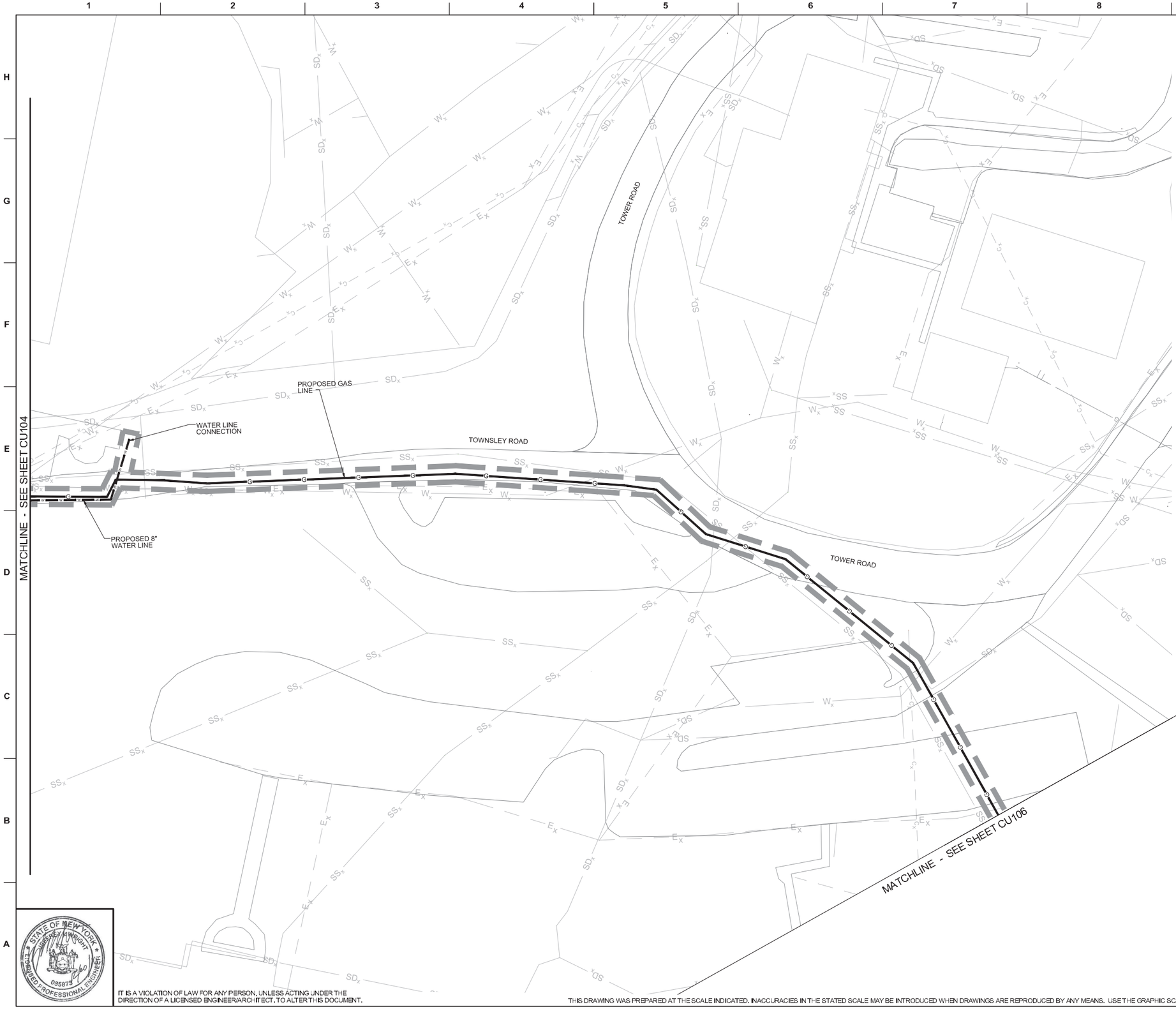

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SIZE: 22"X34"

UNITED STATES ARMY GARRISON
WEST POINT, NEW YORK
FY16 WASTEWATER TREATMENT PLANT
CONTRACT NO. W912DS-16-C-0003

SITE UTILITY PLAN

SHEET ID
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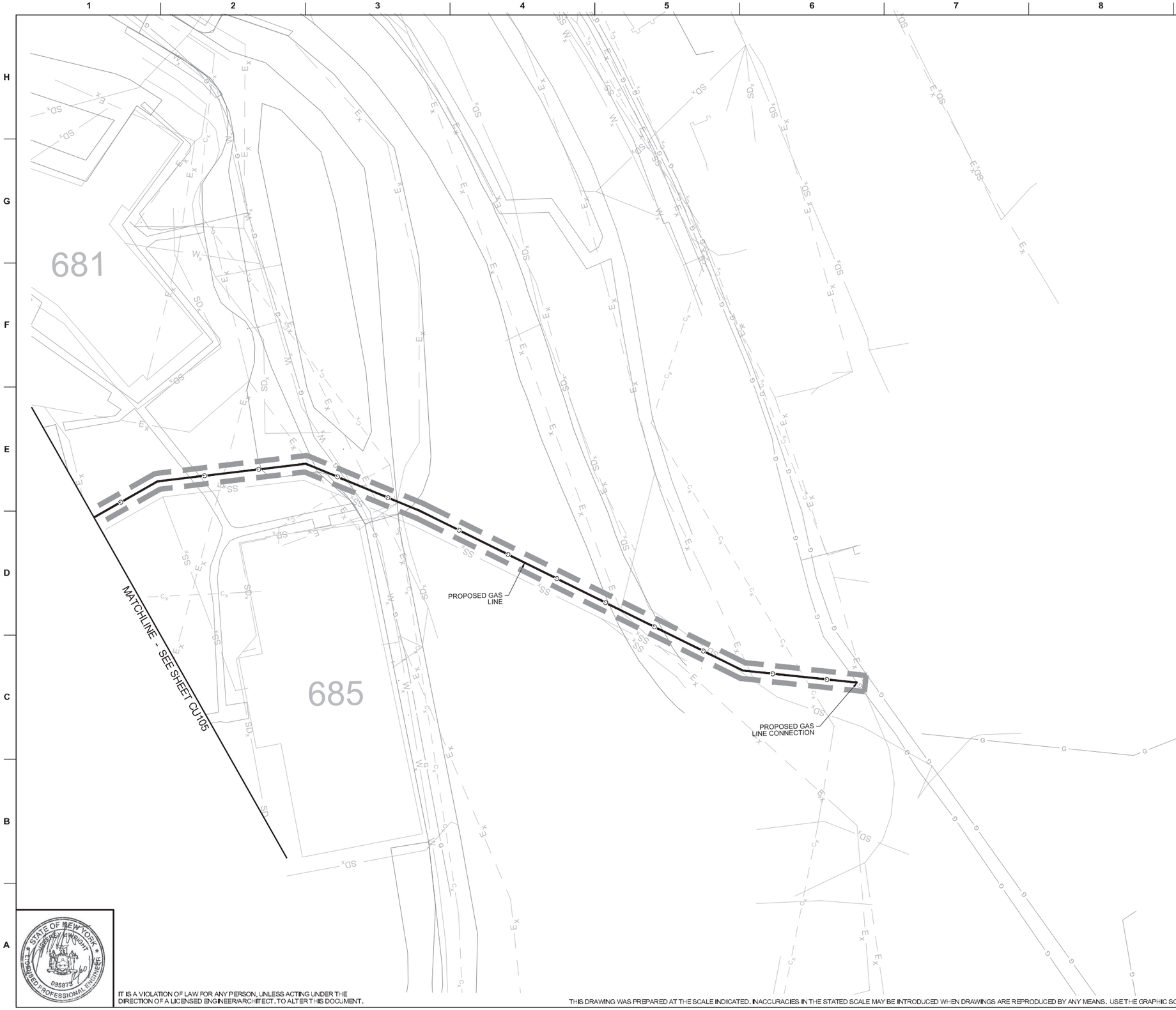
CU105

STATE OF NEW YORK
JEFFREY J. WRIGHT
095873
LICENSED PROFESSIONAL ENGINEER

FOR PERMIT REVIEW



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SHEET LEGEND

- LIMITS OF DISTURBANCE
- GAS LINE
- WATER LINE
- SANITARY SEWER LINE
- SANITARY SEWER STRUCTURE
- COMM — FIBER OPTIC LINE
- STORM PIPE
- STORM INLET
- STORM MANHOLE
- STORM MES
- PROCESS PIPING - LIQUIDS
- PROCESS PIPING - SOLIDS
- PROCESS PIPING - DRAIN LINES
- SITE LIGHTING POLE
- SD_x — EXISTING STORM MAIN PIPE
- SS_x — EXISTING SANITARY MAIN PIPE
- UTL — EXISTING COMMUNICATION LINE
- W_x — EXISTING WATER LINE
- E E E — EXISTING ELECTRIC LINE
- SITE ELECTRICAL DUCT BANK (SEE ELECTRICAL PLANS)
- SITE ELECTRICAL MANHOLE (SEE ELECTRICAL PLANS)

PLAN NORTH

0 30' 60'

STATE OF NEW YORK — ROBERT A. WRIGHT — 095873 — LICENSED PROFESSIONAL ENGINEER

FOR PERMIT REVIEW

US Army Corps of Engineers ®
New York District

ATKINS | O'BRIEN & GERE JOINT VENTURE
2318 MILL ROAD
SUITE 1040
ALEXANDRIA VA 22314

4201 MITCHELLEVILLE ROAD
SUITE 560
BOWIE, MD 20716

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
Point of Contact: Fred Hand
(917) 790-8293

MARK	DESCRIPTION	DATE
0	FOR PERMIT REVIEW	DEC. 20, 2016

DESIGNED BY: KCASEY/CA
DRAWN BY: KCASEY/CA
SBMT BY: JJWRIGHT
ISSUE DATE:
SOLICITATION NO.:
CHD BY: JJWRIGHT
PLOT DATE: 12/20/16 2:12 PM
CONTRACT NO.:
PLOT SCALE: As Indicated
FILE NUMBER:
SHEET SIZE: 22"X34"
FILE NAME: ...\PERMIT\CU106.dwg

UNITED STATES ARMY GARRISON
WEST POINT, NEW YORK
FY16 WASTEWATER TREATMENT PLANT
CONTRACT NO. W912DS-16-C-0003

SITE UTILITY PLAN

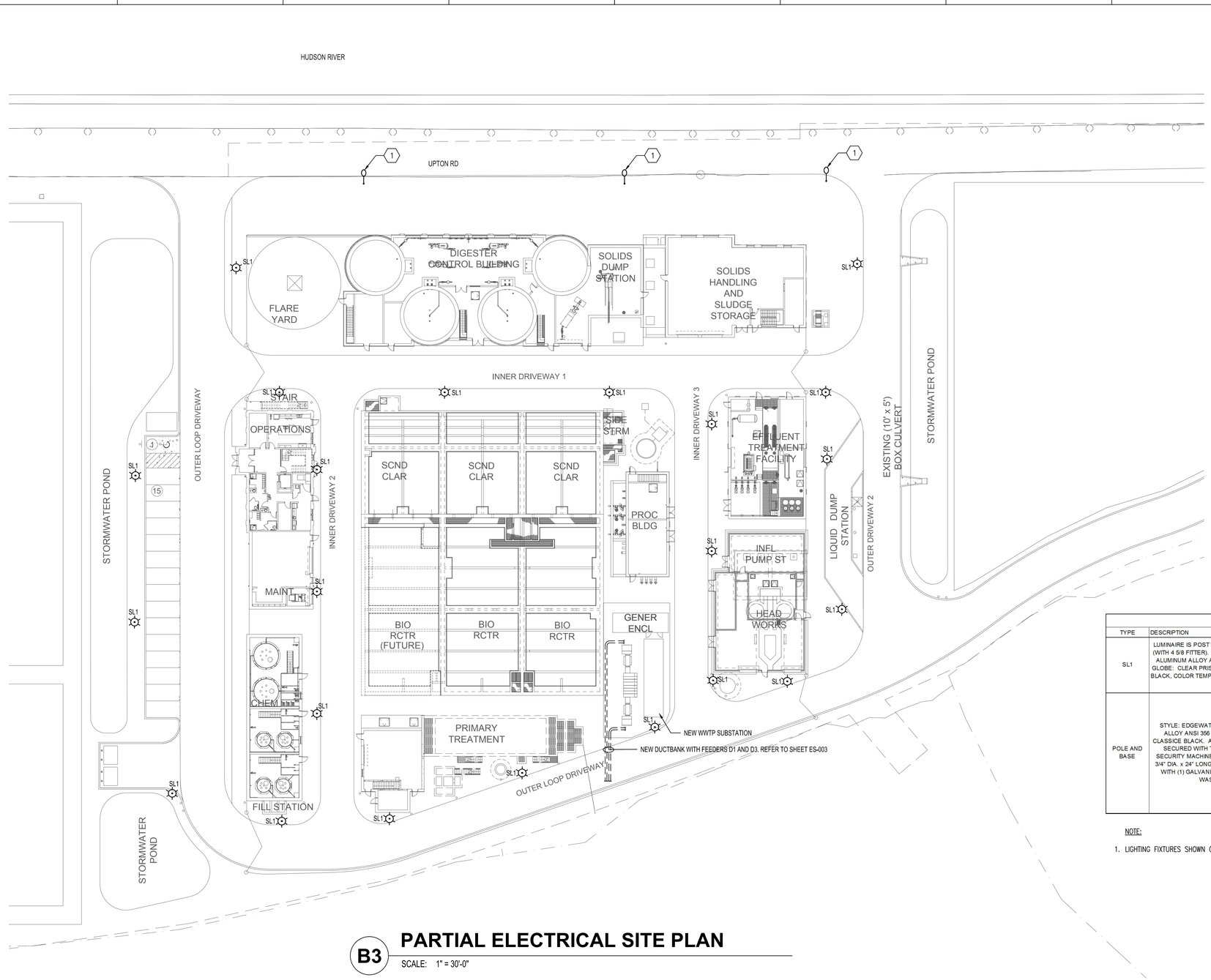
SHEET ID
-
CU106

ATTACHMENT 3

Moore House Monument Location

Figure 8. Target Hill Field Section sketch map, illustrating STPs and historic dump site boundaries.

Photometric Plan



KEYED NOTES:

1 EXISTING LIGHT POLE TO REMAIN.

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	DESIGN SELECTION	VOLTS	LAMPS/FIXT.	MOUNTING HEIGHT
SL1	LUMINAIRE IS POST TOP MOUNT STYLE: WEST POINT (WITH 4 5/8 FITTER). HEIGHT: 34", WIDH: 19 1/2", CAST ALUMINUM ALLOY A.N.S.I. 356 PER A.S.T.M. B26-95. GLOBE: CLEAR PRISMATIC ACRYLIC, FINISH: CLASSIC BLACK, COLOR TEMP: 3000K, AND DISTRIBUTION: TYPE III.	SPRING CITY ELECTRICAL MFG. CO. LMWSP-LED62/EVX/X2-30-CR3-TPRM-FWP-BT-CW OR EQUIVALENT	UNIV	LED (60W)	16' - 0"
POLE AND BASE	STYLE: EDGEWATER, (1) PIECE CAST ALUMINUM ALLOY ANSI 356 PER A.S.T.M. B26-95. FINISH: CLASSICE BLACK. ACCESS DOOR LOCATED IN BASE SECURED WITH TAMPER PROOF HEX SOCKET SEQURITY MACHINE SCREWS. ANCHOR BOLTS: (4) 3/4" DIA. x 24" LONG + 3" HOOK (FULLY GALVANIZED WITH (1) GALVANIZED NUT AND (1) GALVANIZED WASHER PER BOLT).	SPRING CITY ELECTRICAL MFG. CO. OR EQUIVALENT	-	-	16" HEIGHT + 20" OCTAGONAL BASE

NOTE:

1. LIGHTING FIXTURES SHOWN ON FIXTURE SCHEDULE WILL BE CONTROLLED VIA PHOTOCELL/TIME CLOCK.

B3 PARTIAL ELECTRICAL SITE PLAN

SCALE: 1" = 30'-0"

0 30' 60'

FULL SCALE: 1"=30'
HALF SCALE: 1"=60'

PLAN NORTH

PRELIMINARY
NOT FOR CONSTRUCTION
DATE: NOV. 18, 2016

US Army Corps of Engineers ®
New York District

DESIGNED BY: JP	ISSUE DATE:
DRAWN BY: JLA	SOLICITATION NO.:
CKD BY: JP/PT	CONTRACT NO.:
SBMT BY: -	PLOT DATE: 11/14/2016
PLOT SCALE: As Indicated	PLOT TIME: 8:40:30 AM
SIZE: 22"X34"	FILE NUMBER:
FILE NAME:	

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SUITE 5800
BOWIE, MD 20716

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SUITE 1040
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UNITED STATES ARMY GARRISON
WEST POINT, NEW YORK
FY16 WASTEWATER TREATMENT PLANT
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PARTIAL ELECTRICAL SITE PLAN

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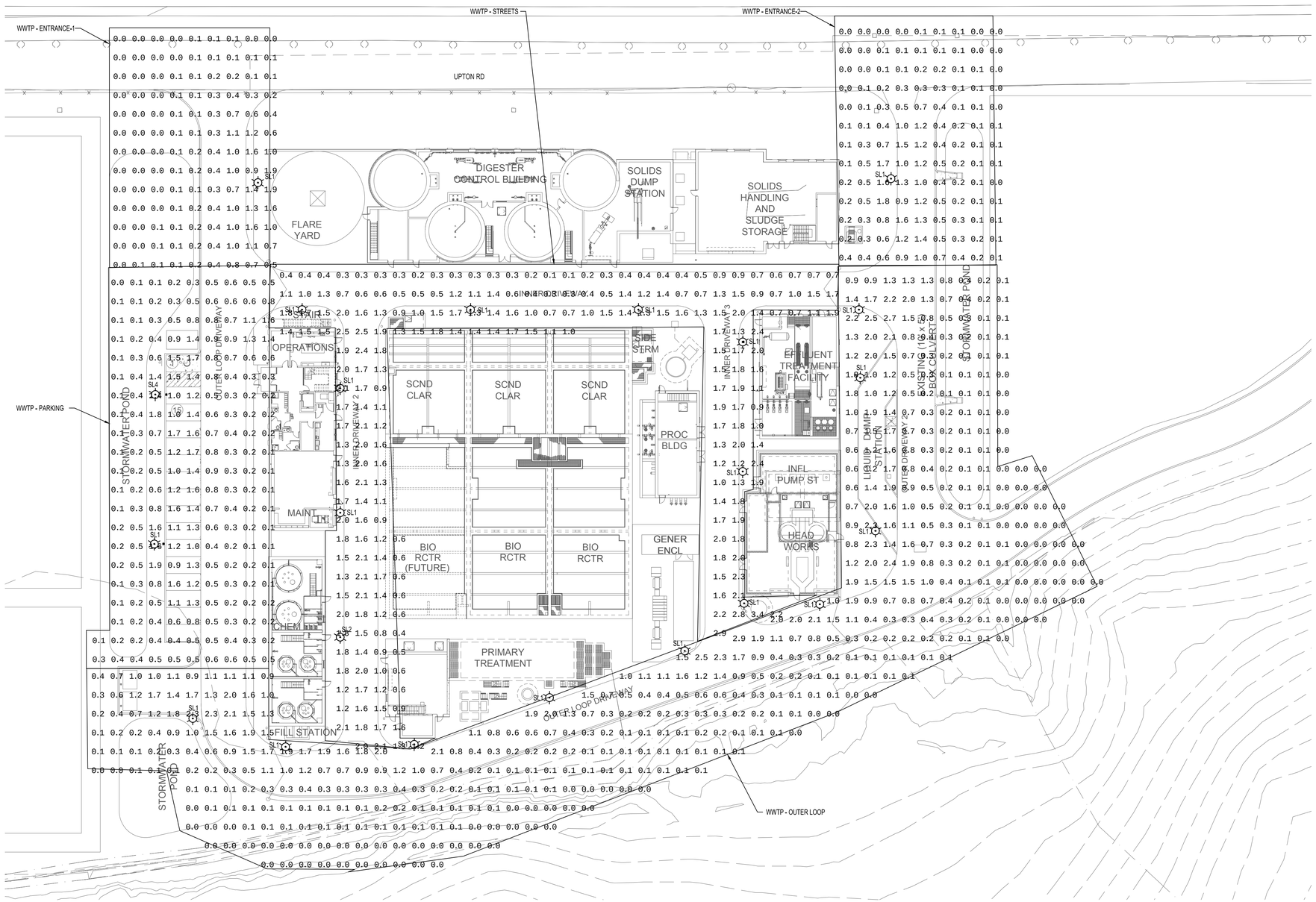
LUMINAIRE SCHEDULE						
SYMBOL	QTY	LABEL	ARRANGEMENT	LLF	DESCRIPTION	ARR. WATTS
☼	22	SL1	SINGLE	1.000	WSP-LE060-X2-30-CR3	60

CALCULATION SUMMARY					
LABEL	CALC TYPE	UNITS	AVG	MAX	MIN
WWTP - ENTRANCE -1	ILLUMINANCE	FC	0.32	1.9	0.0
WWTP - ENTRANCE-2	ILLUMINANCE	FC	0.38	1.8	0.0
WWTP - OUTER LOOP DR	ILLUMINANCE	FC	0.54	2.9	0.0
WWTP - PARKING	ILLUMINANCE	FC	0.57	1.9	0.0
WWTP - STREETS	ILLUMINANCE	FC	1.31	3.4	0.1



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A4 PARTIAL PHOTOMETRIC SITE PLAN

SCALE: 1" = 30'-0"

0 30' 60'
FULL SCALE: 1"=30'
HALF SCALE: 1"=60'

PLAN NORTH

US Army Corps of Engineers ®
New York District

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WEST POINT, NEW YORK
FY16 WASTEWATER TREATMENT PLANT
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PARTIAL PHOTOMETRIC SITE PLAN

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Affidavits of Publication