FINAL

Environmental Assessment
New Surgical and Clinical Tower and Building Demolition
West Haven Veterans Affairs Medical Center
VA Connecticut Healthcare System, West Haven, CT
VA Project: 689-040

December 2022

U.S. Department of Veterans Affairs
Office of Construction and Facilities Management

EXECUTIVE SUMMARY AND CONCLUSIONS

The U.S. Department of Veterans Affairs (VA) has VA prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code §§ 4321-4370h), as implemented by the Council on Environmental Quality regulations (40 Code of Federal Regulations [CFR] §§ 1500-1508); *Environmental Effects of the Department of Veterans Affairs Actions* (38 CFR Part 26); and VA's *NEPA Interim Guidance for Projects* (VA 2010).

NEPA requires federal agencies to consider the environmental effects of their proposed actions. This EA evaluates the potential impacts on the human environment resulting from proposed construction of a new surgical and clinical tower and demolition of several existing buildings at the West Haven Veterans Affairs Medical Center (WHVAMC), 950 Campbell Avenue, West Haven, New Haven County, Connecticut.

The WHVAMC encompasses approximately 44 acres in the northern section of the City of West Haven, CT. Under the auspices of the General Hospital Society of Connecticut, construction of a hospital for tubercular patients at this the property began in 1916. Today, the WHVAMC serves over 60,000 Veterans annually.

Under the Proposed Action, an approximately 161,000-building-gross-square-foot new surgical and clinical tower would be constructed and operated within the WHVAMC property; no new property would be acquired. The new tower is proposed to be between two and four levels with aboveground passageways to Building #1. A mechanical/electrical/plumbing penthouse would be housed on top of the new facility and a subterranean tunnel would be included for easy access to utilities with connections to existing buildings.

The ***purpose*** of the Proposed Action is to construct a new surgical and clinical tower at the WHVAMC. The medical support services of the new facility would include inpatient surgical/endovascular, ambulatory, intensive care nursing, information & technology, pathology, laboratory medicine, sterile processing, engineering, pharmacy, environmental management, and logistics.

The Proposed Action ***is needed*** to meet VA Standards for space and patient population, improve workflow inefficiencies, reduce the potential for increased infection control issues, and improve life safety egress issues located within Building #1 which houses the existing Surgery Department Operating Suite.

The EA analyzes the Proposed Action, which is to construct and operate one of three conceptual alternatives (defined as Alternatives 1, 2, and 3) for the new surgical and clinical tower, which would be located within a central area at the WHVAMC. All alternatives would require the demolition of several buildings that contribute to the West Haven Veterans Administration Hospital/William Wirt Winchester Memorial Hospital Historic District, which was listed in the National Register of Historic Places (NRHP) on May 26, 2022.

This EA also examines a No Action Alternative, under which the Proposed Action would not be implemented and existing conditions at the WHVAMC would remain unchanged for the foreseeable future. This is required under NEPA and serves as the baseline for impact analysis. Although none of the historic buildings would be demolished under the No Action Alternative, the deficiencies in medical and utility infrastructure, patient care, and safety would remain unresolved.

For this reason, the No Action Alternative does not meet the purpose and need for action and would diminish the level of care that VA is able to provide at the WHVAMC to Veterans throughout Connecticut and southern New England.

The EA provides VA decision makers with information needed to select the conceptual alternative that best fits the WHVAMC long-term operational requirements while minimizing potential adverse impacts to the human environment. Once the EA is completed, the conceptual alternative would be refined during a formal design process performed by VA in collaboration with the U.S. Army Corps of Engineers and a designated Architect/Engineer of Record.

The following table summarizes the impact findings of the environmental analysis of the Proposed Action (Alternatives 1, 2, and 3) and the No Action Alternative.

Environmental Resource Topic	**Proposed Action**	**No Action**
Aesthetics		
Construction	All alternatives under the Proposed Action would have direct, short-term (though lasting up to four years), less-than-significant adverse impact on aesthetics.	No impact
Operation	**Alternative 1** would have a direct, long-term, moderate adverse impact on aesthetics	No impact
	Alternative 2 would have a direct, long-term, negligible adverse impact.	
	Alternative 3 would have a direct, long-term, minor adverse impact.	
Air Quality		
Construction	All alternatives under the Proposed Action would have a direct, short-term, less-than-significant adverse impact on air quality.	No impact
Operation	All alternatives under the Proposed Action would have a direct, long-term, less-than-significant adverse impact on air quality.	No impact
Cultural and Historic Resources		
Construction and Operation	All alternatives under the Proposed Action would have an adverse impact on historic properties due to the demolition of buildings identified as historic resources. There would be no impact to below-ground historic properties. VA and the CT State Historic Preservation Office (SHPO) have signed a Programmatic Agreement (PA) for continued consultation and resolution of potential adverse effects under the Proposed Action.	No impact

Environmental Resource Topic	Proposed Action	No Action
Geology, Topography, and Soils		
Construction	All alternatives under the Proposed Action would have a direct, long-term, negligible adverse impact on geologic resources including on seismic hazards, mineral resources, and prime agricultural land. All alternatives would have a direct, short-term, negligible adverse impact on soil quality.	No impact
	Alternative 1 would have a negligible impact on topographic conditions.	
	Alternatives 2 and 3 would have direct, long-term, negligible adverse impacts on topographic conditions.	
Operation	All alternatives under the Proposed Action would have direct, long-term, negligible impacts on geology, topography, and soil quality.	No impact
Hydrology and Water Quality		
Construction	All alternatives under the Proposed Action would have a direct, short-term, negligible adverse impact on groundwater quality and a direct, short-term, minor adverse impact on hydrology/stormwater.	No impact
Operation	All alternatives under the Proposed Action would have a negligible impact on groundwater quality and a direct, long-term, less-than-significant beneficial impact on hydrology/stormwater.	No impact
Noise and Vibration		
Construction	All alternatives under the Proposed Action would have a negligible impact on noise-sensitive receptors and the surrounding community. All alternatives would have a direct, short-term, negligible adverse impact on vibration-sensitive receptors.	No impact
Operation	All alternatives under the Proposed Action would have a negligible impact on noise-sensitive and vibration-sensitive receptors and the surrounding community.	No impact

Environmental Resource Topic	Proposed Action	No Action
Solid Waste and Hazardous Materials		
Construction	All alternatives under the Proposed Action would have a direct, long-term, less-than-significant beneficial impact on regulated building materials and radiological waste, but a direct, short-term, less-than-significant adverse impact by increasing the volume of waste disposed of at an off-site landfill.	Long-term, negligible adverse impact on hazardous materials, and no impact on solid waste.
Operation	All alternatives under the Proposed Action would have a direct, long-term, negligible adverse impact on solid wastes and hazardous materials.	Long-term, negligible adverse impact on hazardous materials, and no impact on solid waste.
Transportation and Parking		
Construction	All alternatives under the Proposed Action would have a direct, short-term, minor adverse impact on transportation and parking.	No impact
Operation	All alternatives under the Proposed Action would have a direct, long-term, negligible adverse impact on transportation and parking.	No impact
Utilities		
Construction	All alternatives under the Proposed Action would have a direct, short-term, negligible impact on utilities.	No impact
Operation	All alternatives under the Proposed Action would a have direct, long-term, negligible adverse impact on utilities due to a negligible increase in utility consumption. Improvements to WHVAMC utility distribution infrastructure would have a long-term, direct, moderate beneficial impact on utility operations at the WHVAMC.	Utility distribution infrastructure improvements would have a long-term, direct, moderate beneficial impact on utility operations at the WHVAMC.
Community Services		
Construction	All alternatives under the Proposed Action would have a direct, short-term, minor adverse impact on administrative and medical services.	No impact
Operation	All alternatives under the Proposed Action would have a direct, long-term, significant beneficial impact on administrative and medical services.	Long-term, significant adverse impact

Environmental Resource Topic	Proposed Action	No Action
Socioeconomics/ Demographics		
Construction	All alternatives under the Proposed Action would have a direct, short-term, minor beneficial impact on local socioeconomic conditions.	No impact
Operation	All alternatives under the Proposed Action would have direct and indirect, long-term, negligible beneficial impacts on socioeconomic conditions.	No impact
Environmental Justice		
Construction and operation	All alternatives under the Proposed Action would have a negligible impact on Environmental Justice conditions.	No impact
Cumulative Impacts		
Construction and Operation	Depending on the Proposed Action alternative selected, there would be potential short-term and/or long-term adverse cumulative impacts on aesthetics, air quality, historic aboveground properties, soil, stormwater, noise, solid waste, transportation, and utilities. None of the adverse impacts would increase to a significant level. All Proposed Action alternatives would have a potential long-term, beneficial cumulative impact on community services and socioeconomics.	Long-term, significant, adverse cumulative impact on community services.
Potential for Generating Substantial Controversy		
Construction and Operation	All alternatives under the Proposed Action are not anticipated to generate substantial controversy. The loss of historic buildings may be controversial to community members focused on preserving cultural resources. However, mitigation of this controversy and mitigation of the potential loss of historic buildings have been incorporated into the Programmatic Agreement with the CT SHPO.	Significant public controversy due to not meeting VA Standards.
	Alternative 1 – Loss of the courtyard may be negatively perceived by VA staff.	

VA published a NEPA scoping notice in *New Haven Register* on March 17 and 20, 2022, describing the Proposed Action and VA's intent to prepare a Draft EA, to solicit early input and engagement from the public, in the NEPA process. No public scoping comments were received. VA also mailed letters to federally recognized Native American tribes and federal, state, and local regulatory agencies and elected officials with potential interest in the Proposed Action to solicit their comments about issues that should be considered for analysis in the Draft EA. VA received comments from the US Environmental Protection Agency, Connecticut Department of Energy and Environmental Protection, and the Connecticut State Historic Preservation Office; these comments were addressed in the Draft EA.

The Draft EA was published and released for a 30-day review and comment period, as announced by a Notice of Availability (NOA) published in the *New Haven Register* on September 22 and 25, 2022. The NOA was also mailed to selected federal, state, and local agencies, elected officials, and federally recognized Native American tribes, to inform them of the 30-day review and comment period.

As stated in the NOA, the Draft EA was available for review in print at the West Haven Public Library at 300 Elm St, West Haven, CT 06516; and available for electronic download from the VA website: https://www.cfm.va.gov/environmental/index.asp. No comments were received on the Draft EA.

An NOA for the Final EA was published in the *New Haven Register*. The NOA was also mailed to selected federal, state, and local agencies, elected officials, and federally recognized Native American tribes.

As stated in the NOA, the Final EA was made available for review in print at the West Haven Public Library at 300 Elm St, West Haven, CT 06516; and available for electronic download from the VA website: https://www.cfm.va.gov/environmental/index.asp. Requests for additional information may be sent to: Patrick Read, U.S. Department of Veterans Affairs, Office of Construction & Facilities Management, 425 I (eye) Street, NW, Room 6W317D, Washington, D.C., 20001; by email at VACOEnvironment@va.gov; or by telephone at (202) 632-5879. Reference "West Haven VAMC – Proposed Surgical and Clinical Tower Final EA" in all correspondence.

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
ACM	asbestos-containing material
ADT	average daily traffic
A/E	Architect/Engineer
APE	Area of Potential Effect
bgs	Below ground surface
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFM	Office of Construction and Facilities Management
CFR	Code of Federal Regulations
CGP	Construction General Permit
CO	Carbon monoxide
CT	Connecticut
CTDEEP	Connecticut Department of Energy & Environmental Protection
CTDOT	Connecticut Department of Transportation
CTDPH	Connecticut Department of Public Health
DGSF	Departmental Gross Square Feet
DNL	day-night level
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EO	Executive Order
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
HUD	U.S. Department of Housing and Urban Development
LCP	lead-containing paint
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
mRem/yr	millirem per year
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHHP	National Health Physics Program
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NRC	US Nuclear Regulatory Commission
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
OSHA	US Occupational Safety and Health Administration
PA	Programmatic Agreement
PACU	post-anesthesia care unit
PCB	polychlorinated biphenyls
PEL	Permissible exposure limit

Acronym/Abbreviation	Definition
PM	Particulate matter
PSRDM	Physical Security and Resiliency Design Manual
RSO	Radiological Safety Officer
SESC	soil erosion and sediment control
SF	Square foot
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SSSHA	Site-Specific Seismic Hazard Analysis
TPY	tons per year
TTG	The Traffic Group
UFC	Unified Facilities Criteria
US	United States
USAF	United States Air Force
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Agency
USGS	United States Geological Survey
VA	United States Department of Veterans Affairs
VACHS	VA Connecticut Healthcare System
VAMC	VA Medical Center
VdB	Vibration velocity
VISN	Veterans Integrated Service Network
VOC	Volatile organic compound
WHVAMC	West Haven VA Medical Center

1. INTRODUCTION

The U.S. Department of Veterans Affairs (VA) has VA prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code §§ 4321-4370h), as implemented by the Council on Environmental Quality regulations (40 Code of Federal Regulations [CFR] §§ 1500-1508); *Environmental Effects of the Department of Veterans Affairs Actions* (38 CFR Part 26); and VA's *NEPA Interim Guidance for Projects* (VA 2010).

NEPA requires federal agencies to consider the environmental effects of their proposed actions. This EA evaluates the potential impacts on the human environment resulting from proposed construction a new surgical and clinical tower and demolition of several existing buildings at the West Haven Veterans Affairs Medical Center (WHVAMC), 950 Campbell Avenue, West Haven, New Haven County, Connecticut.

The WHVAMC encompasses approximately 44 acres in the northern section of the City of West Haven, CT. Under the auspices of the General Hospital Society of Connecticut, construction of a hospital for tubercular patients at the property began in 1916. Today, the WHVAMC serves over 60,000 patients annually throughout New England.

1.1 Purpose and Need

One of the critical missions of VA is to provide healthcare to the nation's millions of Veterans. Construction projects are often required by VA to meet the changing demand for services, improve aging infrastructure, and to keep pace with ever changing technology and models of care.

The current WHVAMC total surgery space is 35,544 Departmental Gross Square Feet (DGSF) which is 40% below the VA Standards for the VA Connecticut Healthcare System (VACHS) space and patient population. As a result, deficits in space occur in patient registration, patient and family waiting areas, restrooms, and outpatient preparation and recovery.

The purpose of the Proposed Action is to address space deficiencies and continuity of healthcare services via the proposed construction of a new surgical and clinical tower at the WHVAMC. Medical support services of the proposed new facility would include inpatient surgical/endovascular, ambulatory, intensive care nursing, information & technology, pathology, laboratory medicine, sterile processing, engineering, pharmacy, environmental management, and logistics.

The Proposed Action ***is needed*** to meet VA Standards for space and patient population DGSF, ensure continuity of healthcare services, improve workflow inefficiencies, reduce the potential for increased infection control issues, and improve life safety egress issues located within Building #1 which houses the existing Surgery Department Operating Suite

Construction and operation of a new surgical and clinical building at WHVAMC would also address the existing critical deficiencies related to utility failures, infection prevention issues, and patient and staff safety concerns.

1.2 Background

The WHVAMC is part of the larger VA Connecticut Healthcare System (VACHS) which provides medical services to over 60,000 Veterans throughout southern New England (VACHS, 2021). The VACHS was officially formed in 1995, when the VA medical centers in West Haven and Newington became affiliated. Current primary affiliations are with the Yale University School of Medicine, the University of Connecticut Schools of Medicine and Dentistry, and the Fairfield University School of Nursing.

The WHVAMC is a tertiary care facility classified as a Clinical Referral Level One Facility with a total of 216 operational beds. It is a teaching hospital that provides a full range of health services for Veterans, with state-of-the-art technology as well as education and research.

The WHVAMC property dates back to 1919 when it was dedicated as a new tuberculosis hospital by the General Hospital Society of Connecticut. The government purchased the property in 1948 enabling construction of a new hospital for veterans. The WHVAMC was dedicated on September 13, 1953. Of the current 39 buildings, 17 buildings and two structures (the entrance gate and the stack) were built prior to 1953.

The WHVAMC (Figure 1) encompasses approximately 44 acres in the northern portion of the City of West Haven, New Haven County, Connecticut. The WHVAMC is bounded on the south by West Spring Street, on the east by Campbell Avenue, to the north by Terrace Avenue, and on the west by Overlook Street and residential neighborhoods (Figure 2). The campus includes 39 buildings and associated parking facilities (Figure 3).

Figure 1. West Haven VAMC Regional Location Map

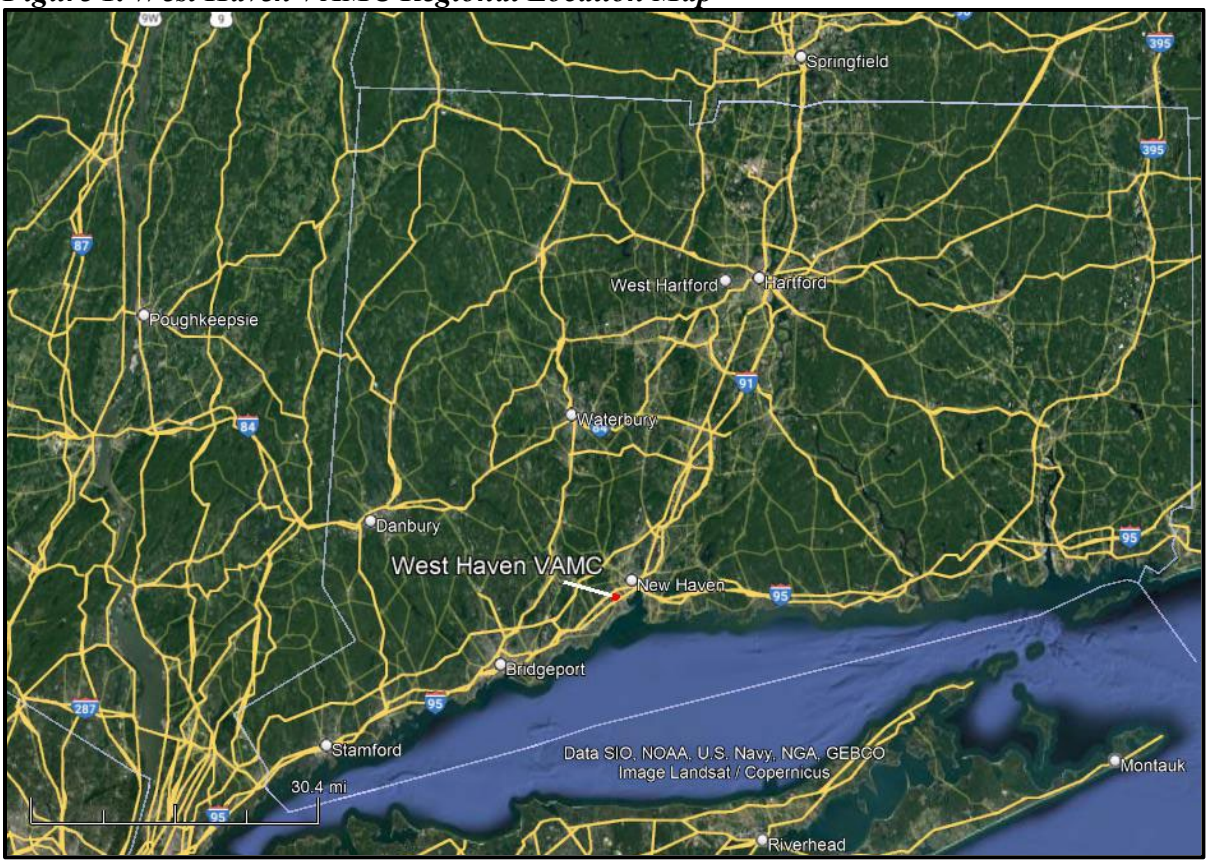


Figure 2. West Haven VAMC Site Locus Map

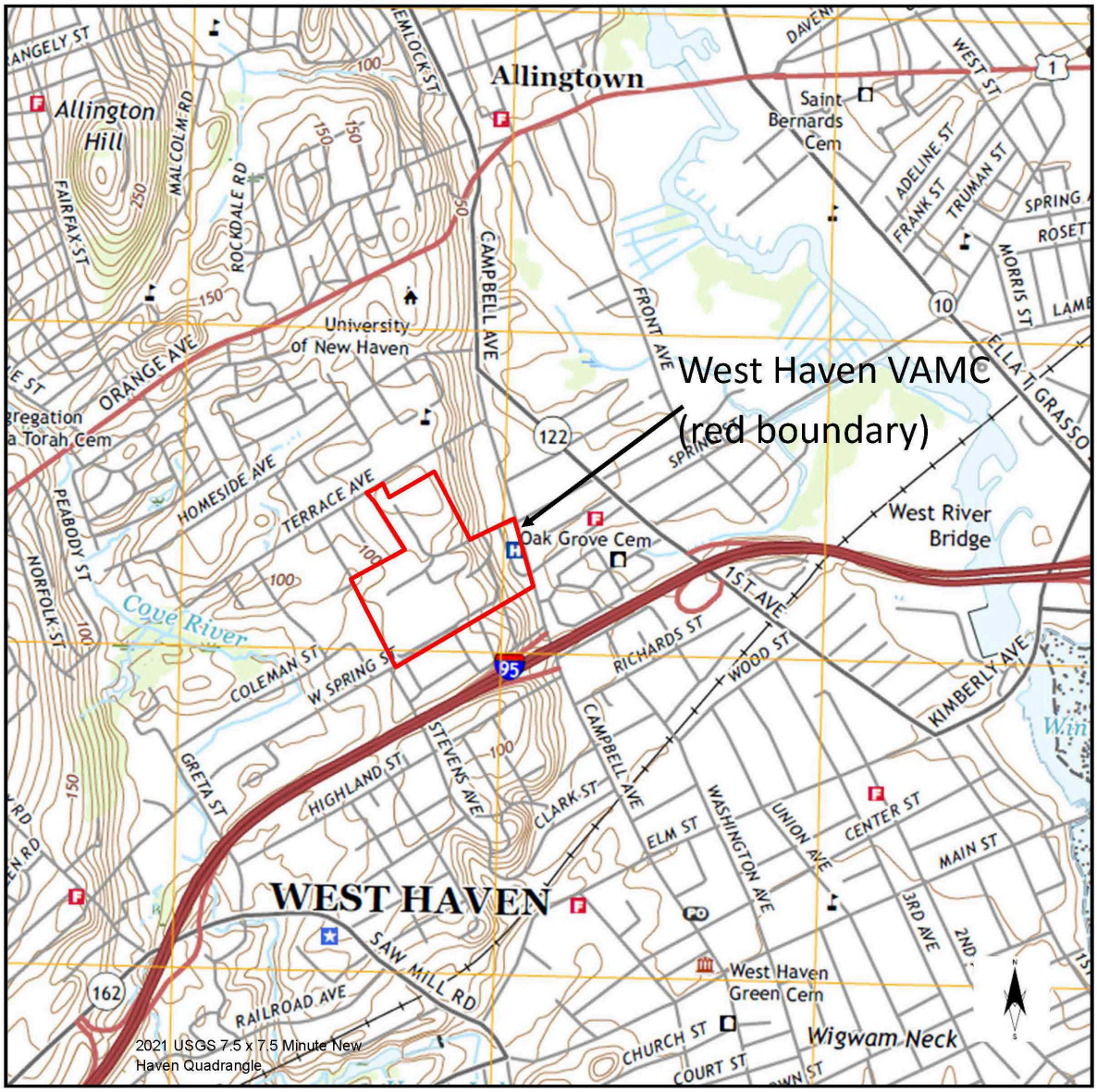
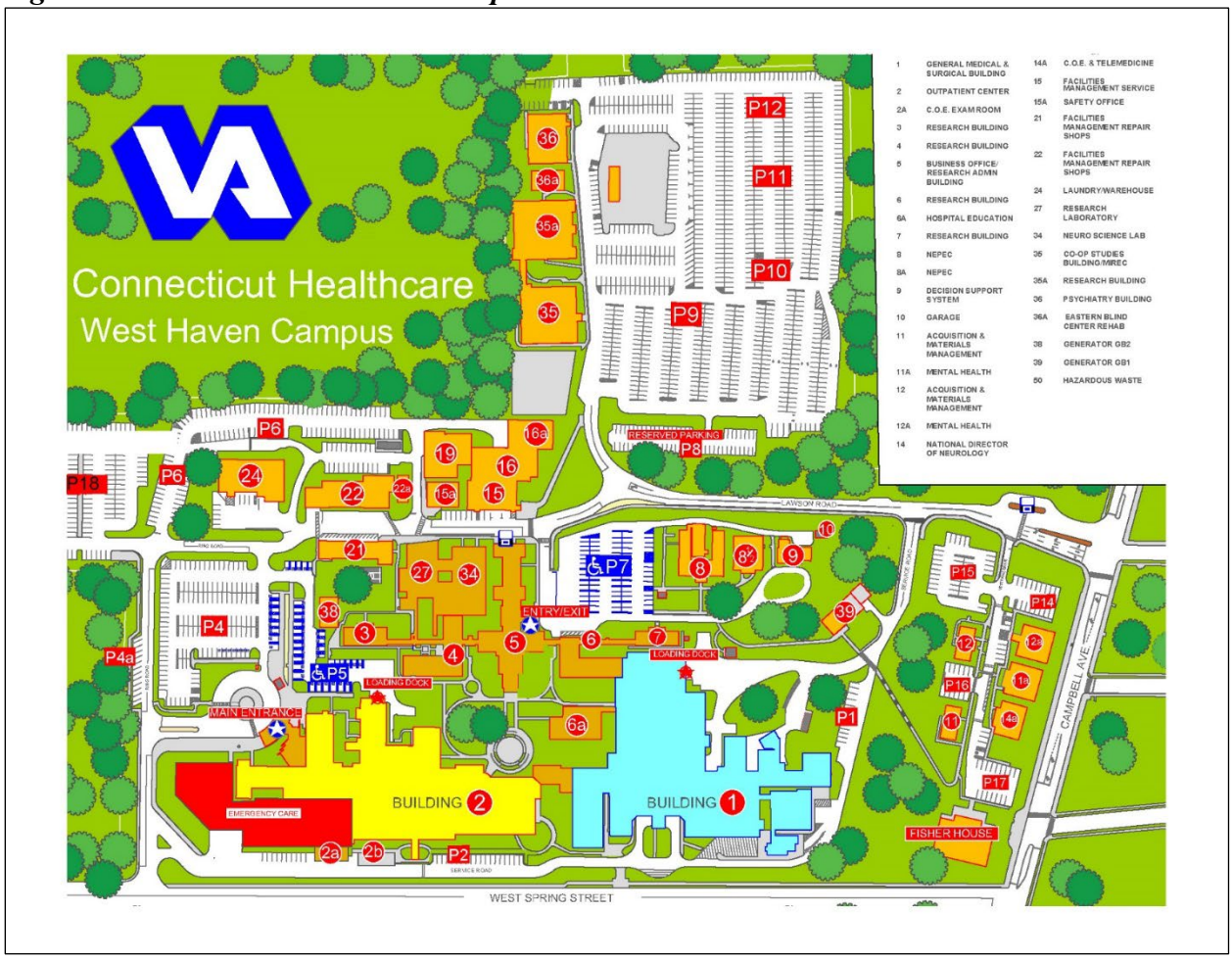


Figure 3. West Haven VAMC Site Map



1.3 Proposed Action

Under the Proposed Action, the US Army Corps of Engineers, on behalf of VA, would design and construct a new surgical and clinical tower at the WHVAMC. The new tower would be classified as Mission Critical because inpatient beds and hospital functions would be located inside. The new tower is proposed to be three to four stories or more. A mechanical/electrical/plumbing penthouse would be housed on top of the new facility and a subterranean tunnel for utilities would be included for easy access to utilities with a tunnel connecting it to existing buildings. The Proposed Action would also involve the renovation of interior spaces in the current General Medical and Surgical Building (Building #1) and would include the construction of aboveground passageways from the new tower to Building #1 to facilitate movement of visitors, patients, staff, and materials/equipment. The Proposed Action would also involve the demolition of several buildings that contribute to the WHVAMC historic district.

Three conceptual alternatives (e.g. physical layout and alignment of the new tower) within a portion of the WHVAMC property boundary have been considered for the Proposed Action. A detailed description of the Proposed Action is presented in Section 2.1.1.

1.4 Regulatory Basis for the Environmental Assessment

In accordance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code 4321 *et seq*.), the White House Council on Environmental Quality (CEQ) "Regulations Implementing the Procedural Provisions of NEPA" (40 Code of Federal Regulations [CFR] 1500–1508), VA's NEPA regulations titled "Environmental Effects of the Department of Veterans Affairs Actions" (38 CFR Part 26), and VA's NEPA Interim Guidance for Projects (VA, 2010). VA is required to conduct an Environmental Assessment (EA) to evaluate the potential environmental impacts of VA facilities, operations, and related funding decisions.

1.5 Decision-Making

VA has prepared this EA to identify, analyze, and document the potential physical, environmental, cultural, and socioeconomic impacts associated with implementing the proposed construction, demolition, and operational elements of the Proposed Action. Additionally, this EA evaluates the potential impacts associated with taking No Action.

VA utilizes the NEPA review process as part of their informed decision making prior to implementing a Proposed Action. An EA provides sufficient evidence and analysis for determining whether an action would cause significant environmental impacts [requiring an Environmental Impact Statement (EIS)] (40 CFR 1508.9). VA decision makers review the EA and, if an EIS is not required, can issue a Finding of No Significant Impact (FONSI) (40 CFR 1508.13). As required by NEPA and the implementing regulations from CEQ and VA, this EA also evaluates a No Action Alternative, which provides a baseline for comparison of potential impacts for the Proposed Action.

VA, as a federal agency, is required to incorporate environmental considerations into its decision-making process for the actions it proposes to undertake. This is done according to the regulations and guidance identified above. As such, this EA:

- Informs the public of the possible environmental impacts of the Proposed Action and its alternatives, as well as methods to reduce these impacts;
- Provides for public, state, inter-agency, and tribal input into VA's planning and evaluation;
- Documents the NEPA process; and,
- Supports informed decision-making by the federal government.

The decision to be made is whether—having considered the potential physical, environmental, cultural, and socioeconomic effects—VA should implement the Proposed Action including measures to reduce any potential adverse impacts.

2. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

NEPA regulations require that federal agencies evaluate reasonable alternatives for meeting the purpose of and need for action. Under the Proposed Action three conceptual alternatives have been identified and assessed, as well as a No Action alternative.

2.1 Alternatives

2.1.1 Proposed Action

The Proposed Action involves constructing and operating an approximately 161,000 building gross square foot new surgical and clinical tower at the WHVAMC to comply with VA Standards for VA Connecticut's space and patient population. The primary functions that would occupy the new facility would include surgery, surgical intensive care beds, and pathology.

VA is considering three conceptual alternatives (defined as Alternatives 1,2,3) (regarding the potential location and design of the new surgical and clinical tower. All three alternatives vary in the footprint and orientation of the new tower as well as in the number of existing buildings that would need to be demolished and physical infrastructure to be modified. The three conceptual alternatives analyzed in this EA under the Proposed Action are identified as follows:

- Alternative 1 – Courtyard
- Alternative 2 – Parking Lot 7
- Alternative 3 – Loading Dock

Common elements to all three alternatives are described in Section 2.1.1.1, while unique elements are described in Section 2.1.1.2. Conceptual alignments for each alternative are presented in Figure 5 (Alternative 1), Figure 6 (Alternative 2), and Figure 7 (Alternative 3).

2.1.1.1 Elements Common to All Action Alternatives under the Proposed Action

The following elements would be incorporated into the new surgical and clinical tower regardless of which alternative is selected:

2.1.1.1.1 Medical Support Features

- Inpatient Surgical/Endovascular Services and Ambulatory Surgical Service: Programmed space for 8 operating rooms, 23 patient pre-operative holding/phase II recovery bays, and 14 patient post-anesthesia care unit (PACU)/phase I recovery bays. Operating rooms include rooms for General, Urology/Cystoscopy, Hybrid, Biplane, Orthopedic, and Robotics. Additional needed space for waiting/reception, pre-operative assessment, pre-operative holding, recovery, anesthesia procedure and support, surgical service, PACU and recovery, as well as general support, administration, and education areas.
- Intensive Care Nursing Units: Programmed space for one 15-bed intensive care unit and a step-down unit for patients needing an intermediate level of care between that of the general ward and the intensive care unit. Additional programmed space for waiting, patient area needs, support areas, as well as staff and administration requirements.
- Office of Information & Technology: Programmed space for distributed Telecom rooms.

- Pathology and Laboratory Medicine Service: Programmed space for patient specimen collection, core and clinical pathology work areas, molecular testing pathology suite, anatomical pathology workspace, required support areas, and staff and administration work areas.
- Lobby: Programmed space for an entrance lobby with a police presence and screening area.
- Sterile Processing Service: Programmed space for a biohazard soiled/dirty storage room.
- Engineering Service: Programmed basic and limited receiving area, storage, and engineering workstations/repair shops.
- Pharmacy Service: Programmed space for inpatient pharmacy work, storage, and support areas for Operating Rooms' compounding.
- Environmental Management Service: Programmed space for required lockers, lounges, restrooms with showers, administration, linen and laundry, storage, collection, and staging.
- Logistics Service: Programmed receiving and issuing areas, storage, equipment staging, as well as staff and administration requirements.
- Demolition: Demolition of at least two and no more than five historic buildings that have been identified as contributing elements to the WHVAMC historic district.
- Utility Upgrades: Utility infrastructure, such as piping, tunnels, corridors, and capacities, may be constructed and/or upgraded to supply the new tower and other facilities at the WHVAMC. Additionally, a new above-ground potable water tank or tower with an approximate 1-million-gallon capacity may be constructed at the WHVAMC and operated to ensure there is sufficient potable water supply available to the new tower and other facilities at the WHVAMC.

2.1.1.1.2 Section 106 Compliance

Depending on the alternative selected, the Proposed Action involves demolishing at least two and no more than five historic buildings that contribute to the WHVAMC historic district. VA initiated Section 106 consultation with the Connecticut State Historic Preservation Office (SHPO), federally recognized Native American tribes with interests in New Haven County, Connecticut, and other identified consulting parties (a detailed description of Section 106 consultation is provided in Section 3.5). Because VA has not yet determined the site or design for the undertaking, there is not yet sufficient information to determine the specific effects of the undertaking on aboveground historic resources. Pursuant to 36 CFR § 800.16(b)(1), a Programmatic Agreement (PA) may be used when effects on historic properties cannot be fully determined prior to approval of an undertaking. Therefore, VA developed and signed a PA with the SHPO since the effects of the Proposed Action on historic properties cannot be fully determined at this time in the planning process. Once VA has determined the exact details of the undertaking and the potential adverse effects to historic properties, VA will continue consultation under Section 106 with the SHPO to determine ways to avoid or minimize those effects or develop a Memorandum of Agreement if the effects cannot be avoided per the stipulation in the PA. The Architect/Engineer of Record (A/E) selected by the government to design the new tower would adhere to the stipulations specified in the PA and any additional consultation requirements prior to demolishing any contributing buildings at the WHVAMC.

2.1.1.1.3 Sustainable Design

VA requires major renovations be designed to reduce energy used by a minimum of 30% compared to the baseline building performance rate per ASHRAE 90.1-2019 *Energy Efficiency Standard for Buildings*. The new facility would meet this requirement.

Additionally, per VA Sustainable Design Manual Section 2.4.1, dated August 18, 2017, all VA construction and renovation projects occurring on buildings of 5,000-square-feet (SF) or more shall comply with the 2016 Guiding Principles for Sustainable Federal Buildings. Further, the VA Office of Construction and Facilities Management (CFM) Policy Memorandum 003C-2021-21, *Green Building Certification Requirements*, dated August 3, 2021, and the Standards Alert 018, dated August 24, 2021, established green building certification requirements to support VA facility compliance with applicable laws (VA, 2021). The policy requires that VA must certify all VA major construction projects, including major renovations, using USGBC's LEED certification system and achieve a minimum certification level of silver.

Accordingly, the Proposed Action would incorporate sustainable design elements to include installing LED lighting; maximizing energy performance; installing advanced utility meters for electricity, natural gas, and/or steam; and employing total building commissioning practices (VA 2020). Compliance with the Guiding Principles would be achieved either through the selected A/E's completion of the US General Services Administration's *2016 Guiding Principles Checklist* during each design phase; certifying the project using Green Building Initiative's *Green Globes* program by achieving a minimum of two Green Globes; or certifying the project using the "Leadership in Energy and Environmental Design" (LEED) program via a third-party certification to achieve a minimum of LEED Silver (VA, 2021).

2.1.1.1.4 Staff/Functional Relocation/Demolition

The Proposed Action would require up to approximately 56,455 SF of existing building area to be demolished; the new tower would be located within a portion of this area. The building area to be demolished currently supports predominantly administrative functions and associated staff, though some of this building area is currently vacant or underused (VA, 2021). As a result, approximately 14,280 DGSF of space would be needed to accommodate the displaced staff. Displaced functions would be accommodated with temporary modular swing space for the length of the Proposed Action construction and in combination with added and extended telework plans, and some staff relocations.

2.1.1.1.5 Staffing

The current medical and support staffing levels are anticipated to be maintained at existing levels to support the new surgical and clinical tower. Should additional staff be required, VA would follow standard hiring practices and procedures. (It is noted that for the traffic analysis completed for this EA, it was assumed that up to 225 new staff could be needed to support the Proposed Action based solely on the square footage of the new tower. This increase in staffing numbers is a conservative estimate (high end of projected staffing) and is necessary to project near-term and forward-looking impacts on traffic and parking conditions but is not a reflection of staffing needs at the VAMC related to implementation of the Proposed Action

2.1.1.1.6 Construction Phasing

All three alternatives under the Proposed Action would have similar construction-phasing.

All three alternatives would take approximately the same amount of time to construct and involve the following three major construction phases shown in Table 1 and described below.

Table 1. Summary Table of Estimated Construction Sequencing and Duration

Phase		Estimated Duration
Phase 1	Sitework, Utilities, and Demolition (staff temporarily moved to modular swing space)	15 months
Phase 2	New Surgical and Clinical Tower Construction	48 months
Phase 3	Renovation of Building #1 Vacated Space	24 months
	Total	**7 years**

Phase 1 - Sitework, Utility Upgrades, and Building Demolition: This phase includes preliminary activities, including but not limited to establishing safe work zones that prevent unauthorized pedestrian and vehicle access; establishing a construction lay-down area for construction-related equipment and supplies; relocating utilities; site grading; preparing Building #1 for upgraded utility infrastructure and physical connections to the new surgical and clinical tower; and demolition of selected buildings. To maintain functional adjacency to clinical services predominantly located in Building #1, all alternatives would require significant upfront site and utility work to maintain uninterrupted utility services to all other buildings. This would involve constructing new and redundant connections to Central Utility Plant and creating an anticipated utility tunnel to provide utility services to the new building while maintaining utilities to the existing buildings.

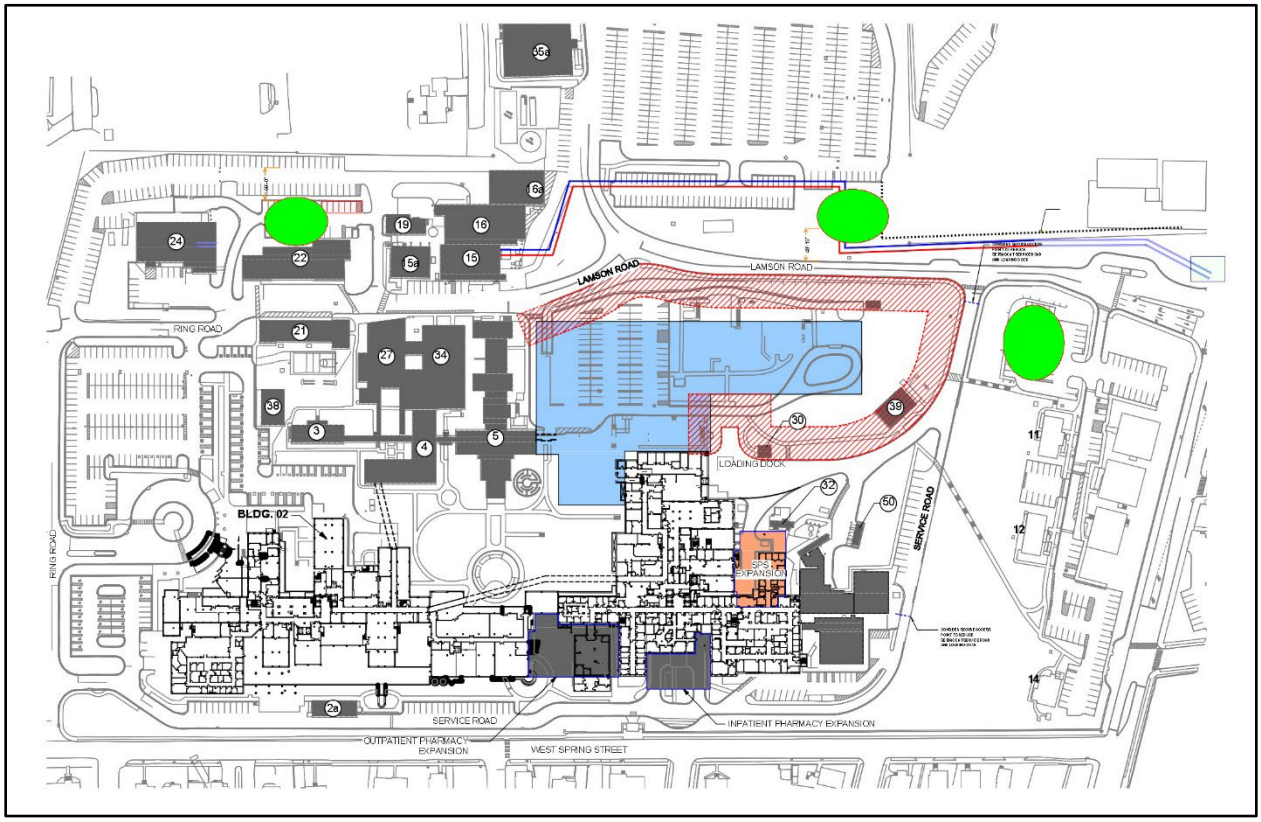
During this potion of work, the existing utilities would be monitored and kept operational until new piping is constructed and completed. Much of the utility piping is original to the campus, has reached its expected life, and must be replaced. Additional boiler capacity may need to be added to the Central Utility Plant to supply the new tower. The A/E would calculate the demand for the design of the new tower and assess whether the Central Utility Plant capacity is sufficient or requires additional capacity. The A/E would coordinate with VA to complete required upgrades. Should new emergency water storage structures (tanks or towers) be constructed, they may be located near the Central Utility Plant or on either side of Lamson Road (see Figure 4), though the final location would be selected during the design phase.

The A/E would also monitor the condition of existing utility lines to ensure these lines are not damaged during the installation of any new utility lines and connections. Disruptions to operations on campus would be avoided and mitigated, if necessary. Temporary facilities may be needed to ensure continuity of operations. Redundant loops and utilities would be constructed because the new surgical and clinical tower would be classified as Mission Critical due to inpatient beds and hospital functions in the new facility. This phase is anticipated to last approximately two (2) years.

Phase 2 - New Surgical Tower and Clinical Tower Construction: Once the site is graded, construction would begin on the new surgical and clinical tower and the connections to Building #1. This construction is anticipated to last approximately four (4) years. As needed, additional boiler capacity and potable water storage infrastructure would also be constructed during this phase.

Phase 3 - Renovation of Building #1 Vacated Space: Once construction of the new tower is complete, services targeted for the new tower would vacate from their existing locations in Building #1 and relocate to the new tower. The vacated locations within Building #1 would create an approximately 48,000 SF area for renovation considerations, including use for a new endoscopy service and two VISN Reference Laboratories for tuberculosis and Virology. Renovation is anticipated to last approximately two (2) years.

Figure 4. Potential Locations for Proposed Emergency Water Storage Structures



2.1.1.2 Elements Unique to Each Alternative Under the Proposed Action

Elements unique to each option concern their alignment and impact on existing buildings, tunnels, and utility lines, as well as their various advantages and disadvantages.

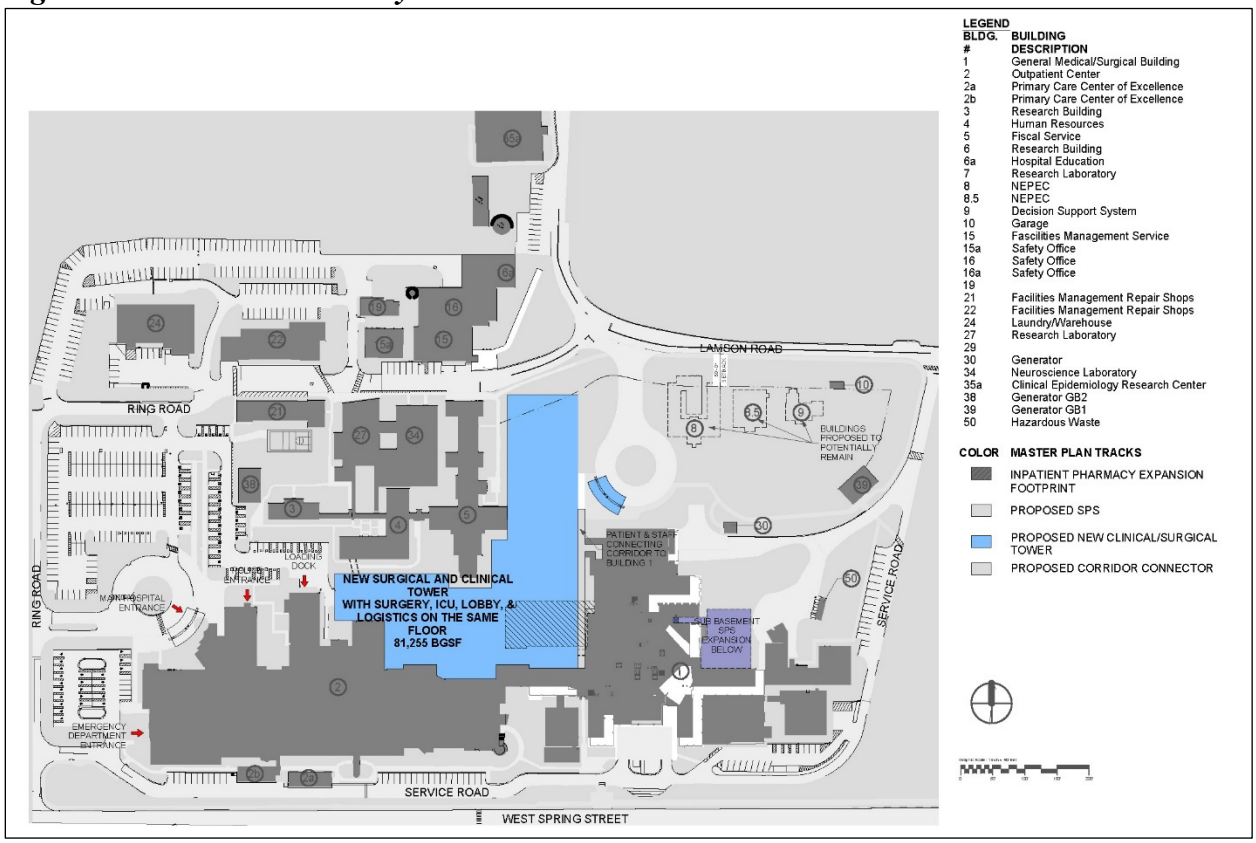
2.1.1.2.1 Alternative 1: Courtyard

Alternative 1 would locate the new surgical and clinical tower in the courtyard between Buildings #1 and #2, and adjacent to Buildings #4 and #5 (Figure 5). Alternative 1 provides the opportunity to make direct connections into the existing horizontal and vertical circulation systems of Building #1. Alternative 1 also provides convenient parking areas for both staff and visitors. This option retains Buildings #8, #9, and #10, but results in the demolition of Buildings #6, #6A and #7. Each of these buildings has been identified as a contributing resource to the National Register of Historic Places (NRHP)-eligible historic district except for Building #6A, which is non-contributing.

Alternative 1 would require an elongated building footprint that would negatively affect optimal layout and flow for staff and patient care. Due to the presence of many existing utilities and tunnels,

construction in this location would require significant replacement and rerouting of these utilities (Figure 8). This location would also require eliminating loading docks in Building #2, potentially impacting how materials are delivered to and distributed throughout the WHVAMC.

Figure 5. Alternative 1: Courtyard

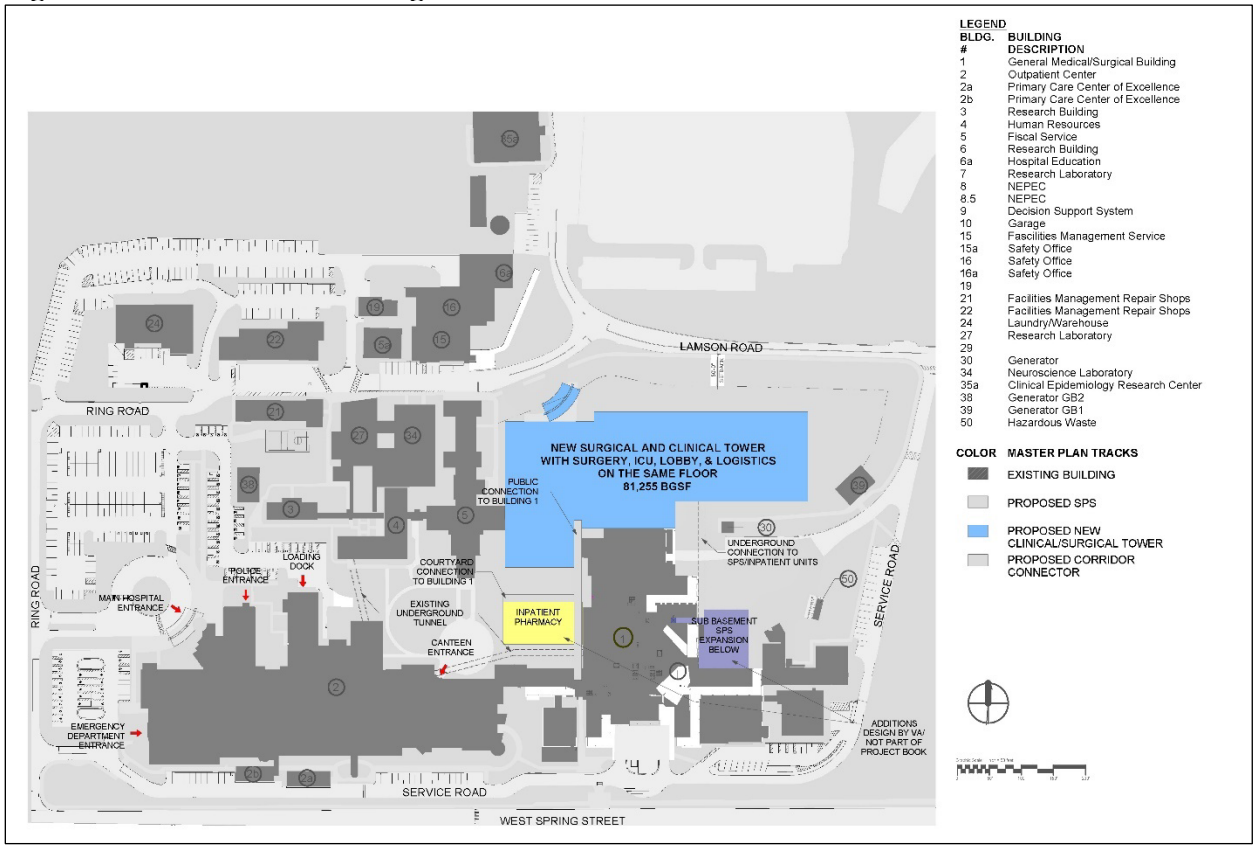


2.1.1.2.2 Alternative 2: Parking Lot 7

Alternative 2 considers locating the new surgical and clinical tower in the existing Parking Lot 7. Alternative 2 provides for ease of connection to the northern portion of Building #1 (Figure 6). The site layout affords more design flexibility to provide efficient configuration of the proposed services and natural and diffused light into the new tower. Alternative 2 would require the demolition of Buildings #6, #7, #8, #9 and #10, all of which have been identified as contributing resources, and the demolition of Buildings #8½ and #6A, both of which are non-contributing. Alternative 2 does not substantively impact the existing service road, nor the loading docks in Building #1. Alternative 2 is located above an existing major electrical power duct bank and would require upgrades to these existing utilities and tunnels, but to a lesser extent than Alternative 1 because fewer such tunnels are beneath Alternative 2 (Figure 8).

Alternative 2 has a drop in grade on its eastern border and would require stabilization with grading and retaining walls. Demolishing Parking Lot 7 would eliminate approximately 90 parking spaces of which 72 are handicapped accessible. However, under a separate project for which an EA/FONSI was completed 2015, VA is currently designing a parking garage, to be constructed in 2023, that would be located at the existing "P4" surface lot on the western portion of the WHVAMC property. Construction of the garage would add a total of 403 parking spaces and would off-set the anticipated loss of the Lot 7 parking capacity (VA, 2015).

Figure 6. Alternative 2: Parking Lot 7



2.1.1.2.3 Alternative 3: Loading Dock

Alternative 3 considers locating the new surgical and clinical tower to the east of Parking Lot 7 (Figure 7). In this Alternative, the connection to Building #1 would be longer and more circuitous than Alternatives 1 or 2 but would not require complete removal of Parking Lot 7. Alternative 3 would require demolishing Buildings #7, #8, #9, and #10, which are contributing resources to the NRHP-listed historic district, and the demolition of Building #6A and 8½, both of which are non-contributing resources.

Alternative 3 would require rerouting or reconstruction of an existing major electrical power duct bank beneath the proposed building footprint (Figure 8) and would have to be designed so that the southeast corner of the new tower avoids the adjacent Building #39, which houses a generator. Alternative 3 provides daylight and does not limit the viewshed from within the new tower. Alternative 3 would require significant grading and retaining walls. The upper floor of the new surgical and clinical tower under this scheme aligns at grade level of Parking Lot 7. Due to its relatively greater distance away from Building #1, Alternative 3 would require significant hardening for blast resistance to comply with VA's Physical Security requirements.

Figure 7. Alternative 3: Loading Dock

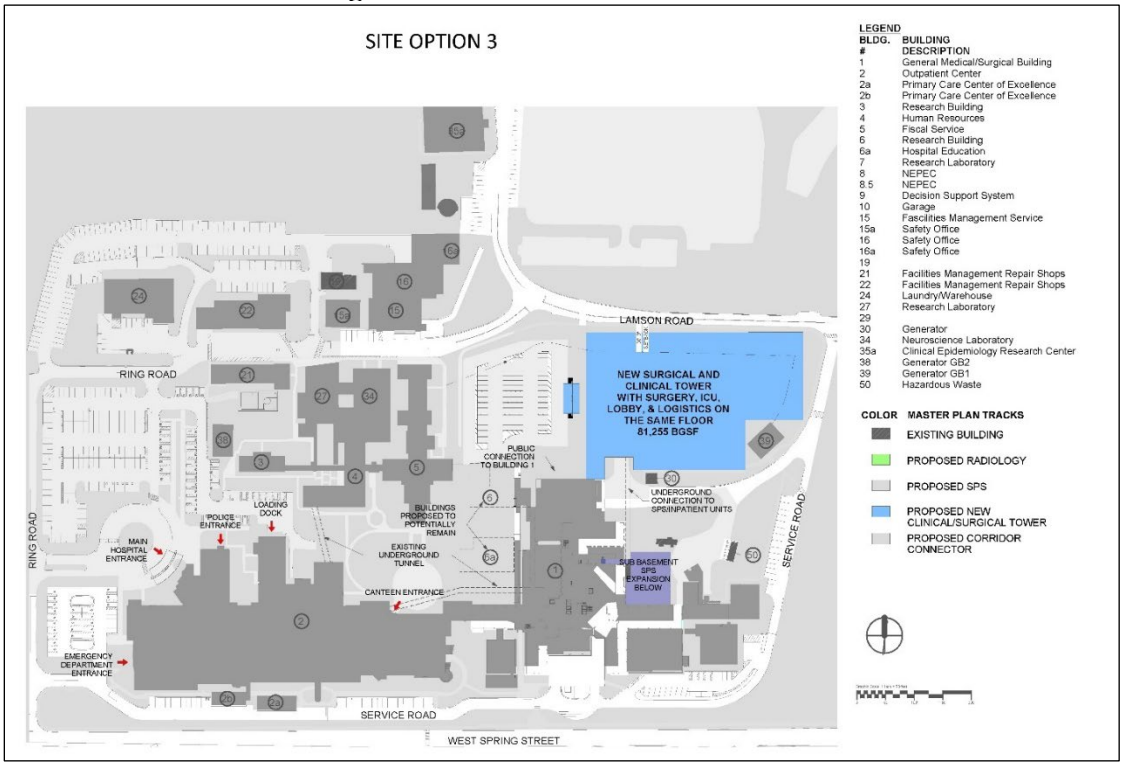
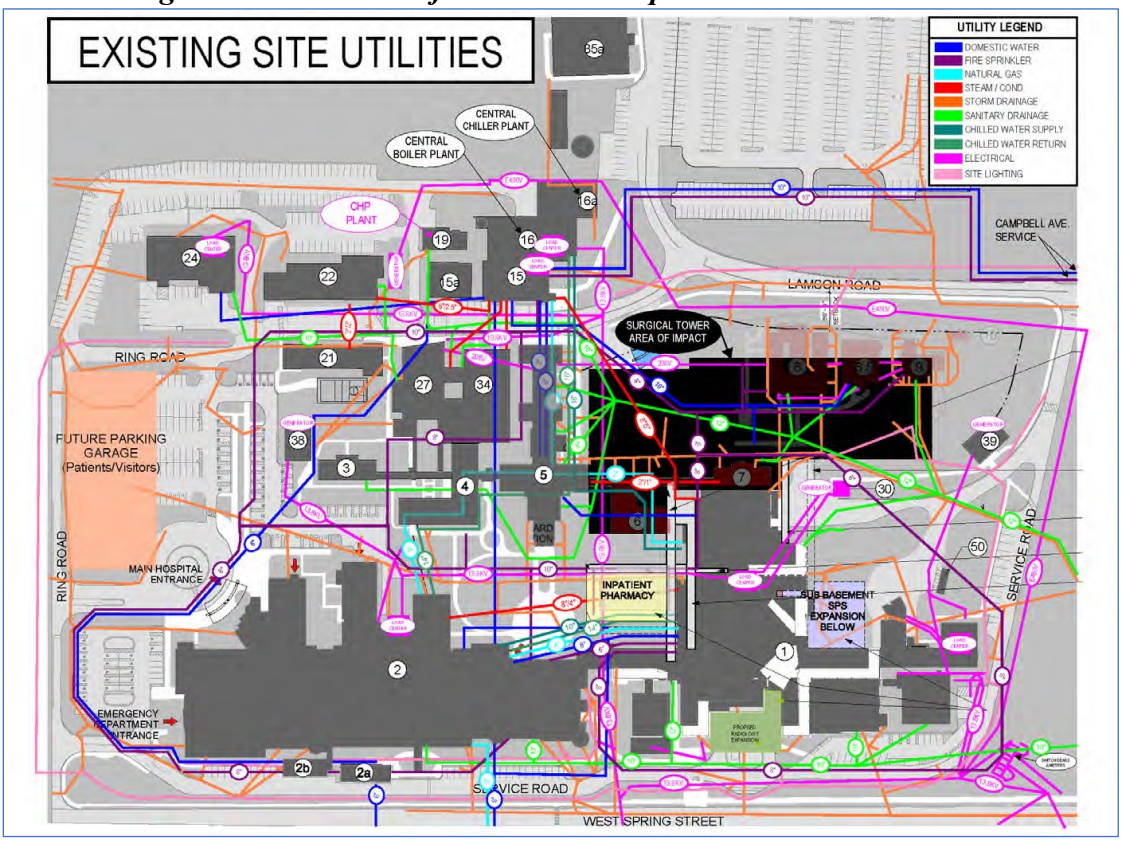


Figure 8. Existing WHVAMC Subsurface Utilities Map



2.1.2 No Action Alternative

The No Action Alternative serves as the baseline for which the effects of the Proposed Action can be evaluated, as required by the VA NEPA regulations (38 CFR Part 26). Under the No Action Alternative, the Proposed Action would not be implemented. None of the historic buildings would be demolished. However, the No Action Alternative does not meet the purpose and need for action and would diminish the level of care that VA is able to provide at the WHVAMC to Veterans throughout Connecticut and southern New England. Deficiencies in medical and utility infrastructure, patient care, and safety issues would remain unresolved.

2.2 Alternatives Considered but Dismissed from Further Analysis

Alternatives considered but dismissed from further analysis included renovation of existing buildings, locating the tower farther from Building #1, and an off-site suit to lease option.

Renovation of Existing Buildings

Renovating one or more of the individual Buildings #6, #7, #8, #8½, #9, and #10, to provide a modern medical workspace would not provide a consolidated work area, nor would the total renovated workspace square footage meet the VA Standards for VACHS space and patient populations.

Additionally, the renovated buildings would not provide a direct connection to Building #1, which is necessary to meet the purpose and need for action

WHVAMC Parking Lot 9/10

The WHVAMC property is nearing full build out and has limited potential space. One potential site within WHVAMC that was explored for implementation of the Proposed Action is located at the newly constructed Parking Lot 9/10 (see "P9" and "P10" on Figure 3) located north of Lamson Road. While Parking Lot 9/10 has the area for the Proposed Action, this area is too far removed to allow for a direct connection to Building #1. Additionally, locating the Proposed Action in this space would require the demolition of the newly constructed Parking Lot 9/10 and would eliminate a significant number of on-site parking spaces, with no plan for the construction of an additional parking lot to offset this loss.

Off-Site Suit to Lease

VA's *Surgical and Endovascular Services Design Guide* (revision 5/22) states, "Recently there has been a shift toward one integrated interventional platform consolidating surgical and invasive cardiovascular services directly adjacent to each other. By utilizing the same aseptic environment this concept maximizes efficiency by sharing resources and promotes quality outcomes and patient safety." The VA *Surgical and Endovascular Services Design Guide* does not describe locating these services away from the main campus in an off-site facility.

An off-site suit to lease facility would not allow VA to consolidate critical medical services at the WHVAMC, would not provide a direct connection to Building #1, and therefore would not improve Veterans access to VA-provided medical services.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the affected environment and evaluates the potential environmental effects of the Proposed Action and No Action Alternative. The affected environment includes the project area, and depending on the resource, a region surrounding the project area. CEQ regulations (40 CFR 1501.3) specify that in considering whether the effects of a proposed action are significant, agencies shall analyze the potentially affected environment and degree of the effects of the action. In considering the potentially affected environment, agencies should consider, as appropriate to the specific action, the affected area (national, regional, or local) and its resources, such as listed species and designated critical habitat under the Endangered Species Act.

In this EA, the Proposed Action site is an approximately 5-acre area within which the new surgical and clinical tower would be variously aligned under Alternatives 1, 2, and 3, and where grading, utility upgrades, construction lay down areas, and other construction-related activities would generally occur. As previously described, should new emergency water storage structures be constructed, then may be located outside of this 5-acre site but within the WHVAMC property (Figure 4). The Proposed Action site is located in the highly developed central portion of the WHVAMC. As a result, all three alternative locations have similar site conditions. However, Alternative 1 is unique because it is situated within the existing courtyard area and is directly adjacent to Building #1, while Alternatives 2 and 3 are near Parking Lot 7 and approximately 80 feet north from Building #1 (see Figure 5, Figure 6, and Figure 7).

This section provides a single analysis for topics where existing conditions and environment impacts are similar for all three alternatives Separate analyses are presented for alternatives having substantially different environmental conditions and impacts. Additionally, for topics where potential environmental impacts could reasonably extend beyond the Proposed Action site or the WHVAMC, a broader "Geographic Region of Influence" is analyzed.

3.1 Criteria for Analysis of Impacts

The specific criteria for evaluating the potential environmental impacts of the Proposed Action and the No Action Alternative are described in the following sections. The significance of an action is also measured in terms of its context and intensity. The context and intensity of potential environmental impacts are described in terms of duration, the magnitude of the impact, and whether they are adverse or beneficial, as summarized in the following paragraphs:

- **Short-term or long-term.** In general, short-term impacts are those that would occur only with respect to a particular activity, for a finite period, or only during the time required for construction or installation activities. Long-term impacts are those that are more likely to be persistent and chronic. Impacts must also be reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives.
- **Less-than-significant (negligible, minor, moderate), or significant.** These relative terms are used to characterize the magnitude or intensity of an impact. Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor impact is slight, but detectable. A moderate impact is readily apparent. Significant impacts are those that, in their context and due to their magnitude (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR Part 1508.27)

and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill NEPA. Significance criteria by resource area are presented in the following sections.

- **Adverse or beneficial.** An adverse impact is one having unfavorable or undesirable outcomes on the human-made or natural environment. A beneficial impact is one having positive outcomes on the human-made or natural environment.

3.2 Environmental Resources Dismissed from Further Analysis

The potential impacts of the Proposed Action and the No Action Alternative on the following environmental resources were dismissed from further analysis because these resources are not present at the WHVAMC and, therefore, the Proposed Action would not impact nor necessitate compliance with any requisite regulatory requirements associated with protecting these resources. A brief summary of the environmental resources dismissed from further detailed analysis is provided in Table 2.

Table 2. Environmental Resources Dismissed from Further Analysis

Environmental Resource Dismissed	Rationale
Land Use and Zoning	The Proposed Action is consistent with activities at the WHVAMC and with the City of West Haven Land Use and Zoning regulations. The Proposed Action would not require changes in land use or zoning to properties adjacent to or in the vicinity of the WHVAMC. Additionally, the WHVAMC has been operating in this location for over 100 years in concert with increasing residential and commercial development in abutting properties and throughout West Haven. Thus, the Proposed Action would not reasonably be anticipated to induce any future changes in land use or zoning at properties outside of the WHVAMC. Therefore, the Proposed Action would have no impact on these resources.
Wildlife and Habitat	There are no federal- or state-listed flora or fauna at the Proposed Action site. The Proposed Action site is highly developed with buildings, pavement, and has grounds that are subject to routine mowing and maintenance; thus, the site does not provide suitable habitat to support listed wildlife species or birds protected under the Migratory Bird Treaty Act. Therefore, the Proposed Action would have no impact on wildlife or habitat. The findings from the US Fish and Wildlife (USFWS) Information for Planning and Consultation (IPaC) database search results are provided in Appendix A.

Environmental Resource Dismissed	Rationale
Floodplains, Wetlands, and Coastal Zone Management	The Proposed Action site is not within a 100- or 500-year floodplain; does not contain wetlands; and is not within the coastal zone per the Coastal Zone Management Act. Therefore, the Proposed Action would have no impact on these resources. The database results from the USFWS National Wetland Inventory, Federal Emergency Management Agency, and CT Coastal Zone Program are provided in Appendix A.

3.3 Aesthetics

Aesthetics refers to the visual resources, including natural and human-made features that give a particular piece of land its aesthetic properties. A combination of natural and built features influence and contribute to the aesthetic environment of an area. Natural features may include topography and vegetation, which may have been altered over time by human action, while built features can include buildings and other constructed elements. Beneficial or adverse impacts may occur depending on how changes to the existing aesthetic environment are perceived by human receptors, which can include visitors and staff at the WHVAMC, and residents living adjacent to and in the vicinity of the WHVAMC.

3.3.1 Existing Conditions

The Proposed Action site is located in the central-southern portion of the WHVAMC. This area of the WHVAMC is dominated by the built environment, which includes buildings, roadways, walkways, curbing, landscaped grounds and plantings, light fixtures, and supporting infrastructure.

The WHVAMC also includes a designated historic district that encompasses the buildings located in all three of the alternatives. The buildings that would be demolished are contributing elements (except for Building #8½) to the historic district and influence the aesthetics of the WHVAMC. The impacts of the Proposed Action's changes to the historic district are discussed separately in Section 3.5. Aesthetic conditions unique to each alternative are described in the following subsection.

3.3.1.1 Alternative 1

Alternative 1 is located in the WHVAMC courtyard. The existing aesthetic conditions for the Alternative 1 location are dominated by the courtyard, Buildings #1, #2, #4, #5, #6, and #7, and Parking Lot 7. The courtyard is an approximately one-acre area and is the largest designated greenspace at the WHVAMC. The courtyard includes a constructed concrete amphitheater, picnic tables, concrete walkways, and landscaped grounds with sparsely planted trees and shrubs. The courtyard is just outside of the cafeteria in Building #1 and is often used by visitors and staff as an outdoor eating area. The eastern portion of the courtyard is currently improved with nine office trailers that are temporarily being used to support the pharmacy operations. Under a separate project, VA will remove the trailers and construct a permanent pharmacy building in their place.

3.3.1.2 Alternatives 2 and 3

The existing aesthetic conditions are similar for the Alternative 2 and 3 locations. The existing aesthetic conditions for Alternatives 2 and 3 are dominated by the presence of Buildings #6, #7, #8, #8½, #9, and #10, Parking Lot 7, and the service road that surrounds this site area. The eastern portion of this site area has a steeply sloping grass-covered hill with approximately a dozen mature deciduous trees. The northern boundary of the area is sparsely vegetated with trees and shrubs and is bounded by a near vertical retaining wall along Lamson Road. This site area is visible to staff, patients, and visitors from north-facing windows above the third floor in Buildings #1 and #2 and from east-facing windows in Building #5. The trees located on the eastern slope of the Alternative 2 and 3 site are visible from outside the campus, but only from an approximately 700-foot linear portion of Campbell Avenue that directly borders the eastern entrance to the WHVAMC.

3.3.2 Environmental Consequences

3.3.2.1 Proposed Action

3.3.2.1.1 Construction

Aesthetic impacts unique to Alternative 1 are primarily associated with the permanent loss of the courtyard. Once construction begins, the courtyard would become permanently unavailable to patients, visitors, and staff. Views into the courtyard from the north-facing windows in Buildings #1 and #2, and south-facing windows in Buildings #4 and #5, would be impacted by the presence of construction equipment and machinery, followed by the incremental presence of building massing associated with the new tower construction.

Aesthetic impacts unique to Alternatives 2 and 3 include the removal of some or all of the existing landscape oak, birch, and pine trees (approximately 30 trees) on the eastern slope of the site area. The loss of selected trees would have a minor adverse impact on the viewshed; however, WHVAMC staff have not indicated that these trees are historic or have heritage for the campus (VA, 2021). Once these trees are removed, construction activities on this eastern-facing slope would be visible to passersby on Service Road and from the Campbell Road entrance. However, during the final stages of construction, undeveloped portions of the slope would be replanted with native, non-invasive ornamental trees and shrubs to restore this viewshed element.

For all three alternatives, the aesthetic impacts during construction are associated with creating a construction work zone, installing temporary privacy fencing around the construction site to obstruct the view of on-going construction activities, demolition of selected buildings and infrastructure, construction of new utility infrastructure, grading the site for the new tower, and the vertical construction of the new tower. These activities would occur within an area limited to the selected alternative footprint.

The Proposed Action may also include construction of a potable water tank or tower. Although a water tank or tower configuration has not yet been designed, the design would seek to minimize any potential adverse impact on the WHVAMC historic district viewshed. Further, Buildings #1 and #2 dominate the existing viewscape from within and outside the WHVAMC and would continue to do so even if a water tower was present. A tank would likely be located near the Central Utility Plant and would not be readily visible to visitors or staff within the WHVAMC and would not be visible from outside the WHVAMC. A water tower may be more visible to visitors and staff, and, depending on its location and design, may be visible from outside the WHVAMC. (A

typical 1M gallon water tower is approximately 165 feet tall, or approximately the same height at Buildings #1 and #2.)

Due to the limited visibility of the Proposed Action site from within and external to the WHVAMC, the existing intensely developed conditions of the area, and the presence of construction privacy fencing around active work areas, construction of the Proposed Action is anticipated to have a direct, short-term (though lasting up to four years), less-than-significant adverse impact on aesthetics at the WHVAMC.

3.3.2.1.2 Operation

Following construction, aesthetic impacts unique to the operation of Alternative 1 are associated with daylight and viewscape concerns. The physical presence of new tower would effectively diminish the amount of daylight reaching the south facing windows in Buildings #4 and #5. The new tower would also have a direct connection to the north sides of Buildings #1 and #2, thereby eliminating the outward view of north-facing windows from the ground floor up to approximately the 4th floor of Buildings #1 and #2. Additionally, daylight into the new tower would be relatively less than Alternatives 1 and 2, because the southern side of the new tower would be connected to Buildings #1 and #2 and absent of outward facing windows on that side.

Alternative 1 would permanently eliminate the courtyard, which is the largest greenspace on campus. Therefore, Alternative 1 would have a direct, long-term, moderate adverse impact on aesthetics as it relates to the aesthetic viewshed associated with the courtyard. To mitigate this impact a new courtyard/greenspace offering similar benefits as the former courtyard could need to be established and maintained elsewhere on campus.

Operation of the new tower under Alternatives 2 and 3 would have no impact on the courtyard and therefore would avoid the moderate adverse impact to aesthetics associated with Alternative 1. Additionally, under Alternatives 2 and 3, the new tower would have generally unobstructed daylight and a wider viewshed compared with Alternative 1, because there would be outward facing windows on all four sides of the building.

Alternative 3 would require clearing of the majority of sparse but mature trees present along the eastern slope of the site area. The permanent loss of trees would have a minor adverse impact on aesthetics by removing an element that provided a natural viewshed on this portion of the campus. Without this vegetation, passersby on Campbell Avenue and Lamson Road would have a direct view of the eastern side of the new tower. To help minimize this impact, new landscaping with native, non-invasive vegetation would be planted around the new tower and professionally maintained.

Therefore, Alternative 2 is likely to have a direct, long-term, negligible adverse impact, while Alternative 3 is likely to have a direct, long-term, minor adverse impact on aesthetics.

3.3.2.2 No Action

Under the No Action Alternative, no changes to the current aesthetics of the grounds would occur at the Proposed Action site. The existing WHVAMC viewshed would remain unchanged as the Proposed Action would not be implemented. Therefore, the No Action Alternative would have no impact on aesthetics.

3.4 Air Quality

Air quality refers to the concentration of air contaminants in a specific location. Air quality is determined by the type and number of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions.

3.4.1 Existing Conditions

3.4.1.1 Regional Climate

Weather and climate are important influences on air resources. On average, New Haven receives approximately 48 inches of rainfall and 29 inches of snowfall per year. The average temperature is warmest in July, at approximately 83 degrees Fahrenheit (°F), and coldest in January at approximately 20.5°F in January (NOAA, 2022).

3.4.1.2 National Ambient Air Quality

The ambient air quality in an area can be characterized in terms of its compliance with the primary and secondary National Ambient Air Quality Standards (NAAQS). The Clean Air Act (CAA), as amended, requires the US Environmental Protection Agency (USEPA) to set NAAQS for pollutants considered harmful to public health and the environment. NAAQS are provided for the following principal pollutants, called "criteria pollutants" (as listed under Section 108 of the CAA):

- Carbon monoxide (CO)
- Lead (Pb)
- Nitrogen oxides (NO_x)
- Ozone (O_3)
- Particulate matter (PM), divided into two size classes:
    - Aerodynamic size less than or equal to 10 micrometers (PM_{10})
    - Aerodynamic size less than or equal to 2.5 micrometers ($PM_{2.5}$)
- Sulfur dioxide (SO_2)

Geographic areas are designated by the USEPA as "attainment", "non-attainment", "maintenance", or "unclassified" with respect to the NAAQS. Regions in compliance with the standards are designated as "attainment" areas. In areas where the applicable NAAQS are not being met, a "non-attainment" status is designated. Areas that have been classified as "non-attainment" but are now in compliance can be re-designated "maintenance" if the state completes an air quality planning process for the area. Areas for which no monitoring data are available are designated as "unclassified" and are by default considered to be in attainment of the NAAQS. According to the USEPA Green Book, New Haven County, Connecticut is currently designated as in moderate non-attainment for the 2015 standard for 8-hour ozone (2015), serious non-attainment for the 2008 standard for 8-hour ozone, and moderate non-attainment for the 1987 standard for PM_{10}, (USEPA, 2022). New Haven County is in attainment for $PM_{2.5}$, SO_2 and NO_x.

3.4.1.3 Local Emissions Sources

Emissions sources at the WHVAMC that can impact air quality include the Central Heating Plant boilers, which primarily burn natural gas, to generate steam for hot water and heat that is then distributed to the majority of buildings throughout the campus. Large chillers also burn natural gas

to produce cooled water that is used to cool indoor air. Additionally, WHVAMC operates several diesel-fueled emergency generators, which are used to provide back-up power to critical medical functions in the event of a main power outage.

Other sources of emissions that can impact air quality at WHVAMC include regulated building materials, including asbestos-containing materials (ACM) and lead-containing paint (LCP). These materials, if disturbed and made small enough, can be released into the air and cause health impacts. VA completed a survey for ACM and lead-containing paint LCP in Buildings #6, #7, #8, #8½, #8T, #9, and #10 on September 27 and 28, 2021, and October 27, 2021, (VA, 2021(b)). The findings from the survey are presented in Table 3.

Table 3. ACM and LCP Survey Findings

Building	ACM	LCP
6	**Present**	**Present**
7	**Present**	**Present**
8	**Present**	**Present**
8½	**Present**	Not present
8T	None present	Not present
9	**Present**	**Present**
10	**Present**	**Present**

3.4.1.4 Sensitive Receptors

CEQ NEPA regulations require evaluation of the degree to which the Proposed Action affects public health (40 CFR 1508.27). Children, the elderly, and people with illnesses are especially sensitive to the effects of air pollutants; therefore, hospitals, schools, convalescent facilities, and residential areas are considered to be sensitive receptors for air quality impacts, particularly when located within one mile from the emissions source.

Sensitive air quality receptors in the immediate vicinity of the Proposed Action include patients in Buildings #1 and #2. The residential receptors abut the WHVAMC on all sides. The nearest school is Notre Dame High School, located approximately 0.5-miles north of the WHVAMC. No other sensitive receptors were identified in the vicinity of the WHVAMC.

3.4.2 Environmental Consequences

The impacts of the Proposed Action on air quality are analyzed on a local region of influence. This is the area within approximately 1,500 feet of the Proposed Action site where sensitive receptors may experience localized air quality impacts (e.g. from fugitive construction dust) from construction and operational activities occurring at the Proposed Action site.

Direct emissions are emissions that are caused or initiated by a federal action and occur at the same time and place as the action. Indirect emissions are reasonably foreseeable emissions that are caused by the action but might occur later in time and/or be farther removed in distance from the action itself, and that the federal agency can practicably control. There are no indirect emissions anticipated with this Proposed Action.

3.4.2.1 Construction

Construction Emissions. Emissions of criteria pollutants would be generated during the construction phase of the Proposed Action, regardless of the alternative selected. Under the Proposed Action,

potential air quality impacts from construction activities would occur from: 1) combustion emissions due to the use of fossil fuel-powered equipment and vehicles; 2) particulate emissions during earth-moving activities; and 3) demolition of buildings and infrastructure.

Construction vehicles would consist of a mixture of land preparation equipment, vertical construction, paving, and interior finishing, including graders, tractors, cranes, excavators, generator sets, welders, aerial lifts, cement and mortar mixers, pavers, paving equipment, rollers, Other equipment includes generator sets and on-road vehicles that would be active during the construction phase, such as material delivery trucks, tractor trailers used for transporting off-road heavy equipment, and workers commuting daily to and from the job site in their personal vehicles.

To minimize adverse impacts on air quality, the construction contractor would implement Best Management Practices (BMPs) including implementing dust suppression methods identified in VA Specification *01 57 19: Temporary Environmental Controls*. Available methods include application of water mist or other dust palliatives to the structure being demolished and to exposed soils; use of enclosures and covers over highly friable materials being demolished; covering haul trucks with tarps; and postponing dust-generating activities during sustained high wind conditions (10-40 mph with gusts at or above 50 mph). All haul trucks would be covered with a tarp prior to transporting any material to or from the site. Construction vehicles would limit to no more than three minutes in compliance with Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies. Construction vehicles would also utilize Tier 4-compliant engines, to the extent practicable, to reduce emissions of particulate matter and nitrogen oxides to meet emission standards established by USEPA.

Fugitive dust and particulate air emissions containing AMC and LCP can also be generated during demolition of the buildings where ACM and LCP were identified. To minimize the potential for the release of ACM or LCP, these materials would be abated (removed) from the buildings prior to demolition and transported off-site for proper disposal as described in Section 3.9.

3.4.2.1.1 Fugitive Dust Air Emissions

Construction activities often generate fugitive dust. The amount of fugitive dust, also referred to as total suspended particles, can be estimated from the amount of ground surface exposed, the type and intensity of activity, soil type and conditions, wind speed, and dust control measures used.

Total suspended particulates that may be generated during the grading phase of the Proposed Action, regardless of the alternative selected, were calculated using the emission factor for heavy construction activity operations from "AP-42, Compilation for Air Pollutant Emission Factors" (USEPA, 1995). Although the Proposed Action site is approximately 5 acres, none of the alternatives would occupy this entire area. The actual size of the area to be disturbed by any one of the alternatives would depend on the final design and alignment of the new tower. However, a 5-acre area of disturbance was used to represent a conservative (high) estimate of potential total suspended particulate emissions (Table 4). Detailed emissions inputs and calculations are presented in Appendix A.

Table 4. Estimate of Total Suspended Particulates during Construction of the Proposed Action

Total Area (acre)	Exposed Area (acre)	Construction Duration (months)	Emission Factor (tons/acre/month)[1]	Control Efficiency (%)	Total Suspended Particulate Emissions (tons/year)
5	0.69	12	1.2	50%	0.052

1 – Emission factor for Heavy Construction Operations (USEPA, 1995).

3.4.2.1.2 Off-Road Construction Equipment Emissions

Off-road, diesel-fueled heavy construction equipment, such excavators, loaders, and backhoes, would emit criteria pollutants during the new tower construction phase. The off-road construction equipment and the emissions generated from operating this equipment would be similar for all of the alternatives, because the size of the new tower would also be similar under each alternative.

Emissions were estimated using the USEPA MOVES3.0 software (USEPA, 2020). Emission factors for year 2025 were used in these calculations, though it is understood that construction activities would occur farther into the future; emission factors typically decrease over time as new and more efficient equipment is brought to market. Therefore, using year 2025 factors represents a conservative (higher) estimate of potential emissions. Additionally, a single emission factor representing a composite of different construction equipment (e.g. excavators, graders, loaders, lifts) was used in this calculation. The emissions estimate assumes that two sets of composite construction equipment would be in use during the 15-month site preparation, demolition, grading, and utility modification phase; five sets during the 48-month new tower construction phase, in addition to specific paving equipment for 1 month; and one set during the 24-month renovation of Building #1. Table 5 presents the annual emission generated by off-road equipment for each phase of construction in a given year. Detailed emissions inputs and calculations are presented in Appendix A.

Table 5. Off-Road Construction Equipment Emissions

Activity	CO	VOC	NO_2	SO_2	PM_{10}	$PM_{2.5}$
Phase 1: Site preparation, Utilities, Demolition (15 months)	4.1306	0.5628	10.0357	0.0116	0.5885	0.5526
Phase 2: New Surgical and Clinical Tower Construction (48 months)	10.6064	1.4546	26.0859	0.0305	1.5165	1.4255
Phase 3: Renovation of Building #1 Vacated Space (24 months)	6.1959	0.8441	15.0536	0.0174	0.8827	0.8289
ANNUALIZED EMISSIONS (TPY)	**2.8873**	**0.3947**	**7.0586**	**0.0082**	**0.4121**	**0.3872**

Notes:
CO, carbon monoxide; VOC, Volatile Organic Compound; NO2, nitrogen dioxide; SO2, sulfur dioxide; PM, particulate matter

3.4.2.1.3 On-Road Heavy-Duty Construction/Haul Trucks

Construction of the Proposed Action, regardless of alternative selected, would utilize on-road heavy-duty vehicles, such as multi-axle dump trailers and flatbed trucks, to transport materials off-site, such as demolition debris, and to bring materials on-site, such as building supplies and equipment. Table 6 present an annualized average of emissions for each phase of the Proposed Action generated by on-road diesel-fueled heavy-duty vehicles (greater than 8,501 lbs) using emissions factors specific to Connecticut for the year 2025 (USAF, 2021). Detailed emissions inputs and calculations are presented in Appendix A.

Table 6. Total Haul Truck Emissions

TOTAL HAUL TRUCK EMISSIONS	CO	VOC	NO_2	SO_2	PM10	PM2.5
Site Preparation/ Demo/Grading/Utilities (15 months)	0.00046	0.00007	0.00198	0.00001	0.00004	0.00004
New Surgical and Clinical Tower Construction (48 months)	0.00050	0.00008	0.00214	0.00001	0.00004	0.00004
Renovation of Building #1 Vacated Space (24 months)	0.00006	0.00001	0.00027	0.00000	0.00001	0.00000
TOTAL HAUL TRUCK EMISSIONS (Annualized average)	**0.00014**	**0.00002**	**0.00061**	**0.000003**	**0.000012**	**0.000011**

3.4.2.1.4 Construction Workers' Vehicle Emissions

Emissions were estimated from construction workers' vehicles (e.g., gasoline-fueled light-duty trucks) in use during the Proposed Action construction phase, regardless of the alternative. Emission factors specific to Connecticut for emission year 2025 were used in the calculation (USAF, 2021). Table 7 presents the estimated emissions from construction workers' vehicles. Detailed emissions inputs and calculations are presented in Appendix A.

Table 7. Construction Workers' Vehicles Annual Emissions

Construction Workers Annual Emissions (tpy)						
NAAQS:	**CO**	**VOC**	**NO_2**	**SO_2**	**PM10**	**PM2.5**
Phase 1: Site Preparation, Demolition, Grading, Utilities	0.023731	0.000344	0.001376	0.000021	0.000017	0.000015
Phase 2: New Surgical and Clinical Tower Construction (48 months)	0.047461	0.000688	0.002751	0.000042	0.000034	0.000030
Phase 3: Renovation of Building #1 Vacated Space (24 months)	0.009492	0.000138	0.000550	0.000008	0.000007	0.000006
TOTAL WORKER EMISSIONS (Annualized average)	**0.011129**	**0.000161**	**0.000645**	**0.000010**	**0.000008**	**0.000007**

The total estimated construction emissions on an annualized average basis, and regardless of the alternative, are presented in Table 8. Based on these estimates, none of the criteria pollutant concentrations exceed the General Conformity *de minimis* threshold limits. Thus, a formal General Conformity Determination would not be required for the Proposed Action. Therefore, construction of the Proposed Action, regardless of alternative, would be considered to have a direct, short-term, less-than-significant adverse impact on air quality.

Table 8. Total Construction Emissions

	Construction Emissions (tons per year [tpy])					
Element	**CO**	**VOC**	**NO_2**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Heavy Duty Haul Truck Emissions	0.00014	0.00002	0.00061	0.000003	0.00001	0.00001
Construction Worker Vehicle Emissions	0.011	0.0002	0.0006	0.00001	0.00001	0.00001
Off-Road heavy Duty Construction Equipment	0.612	0.078	0.360	0.002	0.013	214.128
Fugitive Dust Emissions	--	--	--	--	0.045	0.007
Asphalt Curing Emissions	--	0.001	--	--	--	--
Total Construction Emissions, annualized average (tpy)	**0.62**	**0.08**	**0.36**	**0.00**	**0.06**	**214.13**
***de minimis* threshold 40 CFR 93.153(b)(1,2)**	100	25	25	100	100	100

3.4.2.2 Operation

The new surgical and clinical tower would require the use of utilities, including electricity, steam, and hot and cold water. The new tower would incorporate energy efficient designs and equipment to minimize the operational demand for utilities. (Additional analysis of utilities is provided in Section 3.11.) The additional emissions generated to provide these utilities would be less than the General Conformity *de minimis* threshold limits for any individual criteria pollutant. Therefore, operation of any of the Proposed Action alternatives, would be considered to have a direct, long-term, less-than-significant adverse impact on air quality.

3.4.2.3 No Action

Under the No Action Alternative, current baseline air emissions would continue unchanged for the foreseeable future. Known regulated building materials (e.g. ACM, LCP) would remain at Buildings #6, #7, #8, #8½, #9, and #10 where routine building maintenance would continue to ensure these regulated building materials are not released into the environment.

3.5 Cultural and Historic Resources

3.5.1 Existing Conditions

3.5.1.1 Historic District

Under the auspices of the General Hospital Society of Connecticut, construction of a hospital for tubercular patients at this property began in 1916. The New York-based architectural firm of

Scopes & Feustmann designed the original buildings, applying many of the guidelines and plans published by the National Association for the Study and Prevention of Tuberculosis. The buildings were of brick construction, and most were executed in the Colonial Revival style. Beatrix Farrand, a noted landscape architect and one of the founding members of the American Society of Landscape Architects, provided landscape designs for the campus including the design for the elaborate gate and entrance elements on Campbell Avenue.

Upon its official opening (1918), the Society leased the hospital to the U.S. Army for the care of tubercular soldiers returning from World War I. The hospital was administered by the United States Public Health Services and then the Veteran's Bureau (ca. 1919-1927) and then reverted back to the General Hospital Society of Connecticut for a tuberculosis treatment division (1927-1940). In 1948, VA took ownership of the facility, and the campus was dedicated in 1953. Of the current 39 buildings, 17 buildings and two structures (the entrance gate and the stack) were built prior to 1953. Unlike many other campuses, where older buildings were demolished, the original buildings were incorporated into the new facility and remain today.

In 2014, VA determined that the West Haven Veterans Administration Hospital/William Wirt Winchester Memorial Hospital Historic District was eligible for listing in the NRHP, in the areas of Health/Medicine and Government on a national level as a facility utilized by VA as part of the Third Generation of Veterans' hospitals, and under Criterion C in the areas of Architecture and Landscape Architecture at the national level for its association with Scopes & Feustmann and Beatrix Farrand. The West Haven VAMC historic district was listed in the National Register of Historic Places (NRHP) on May 26, 2022.

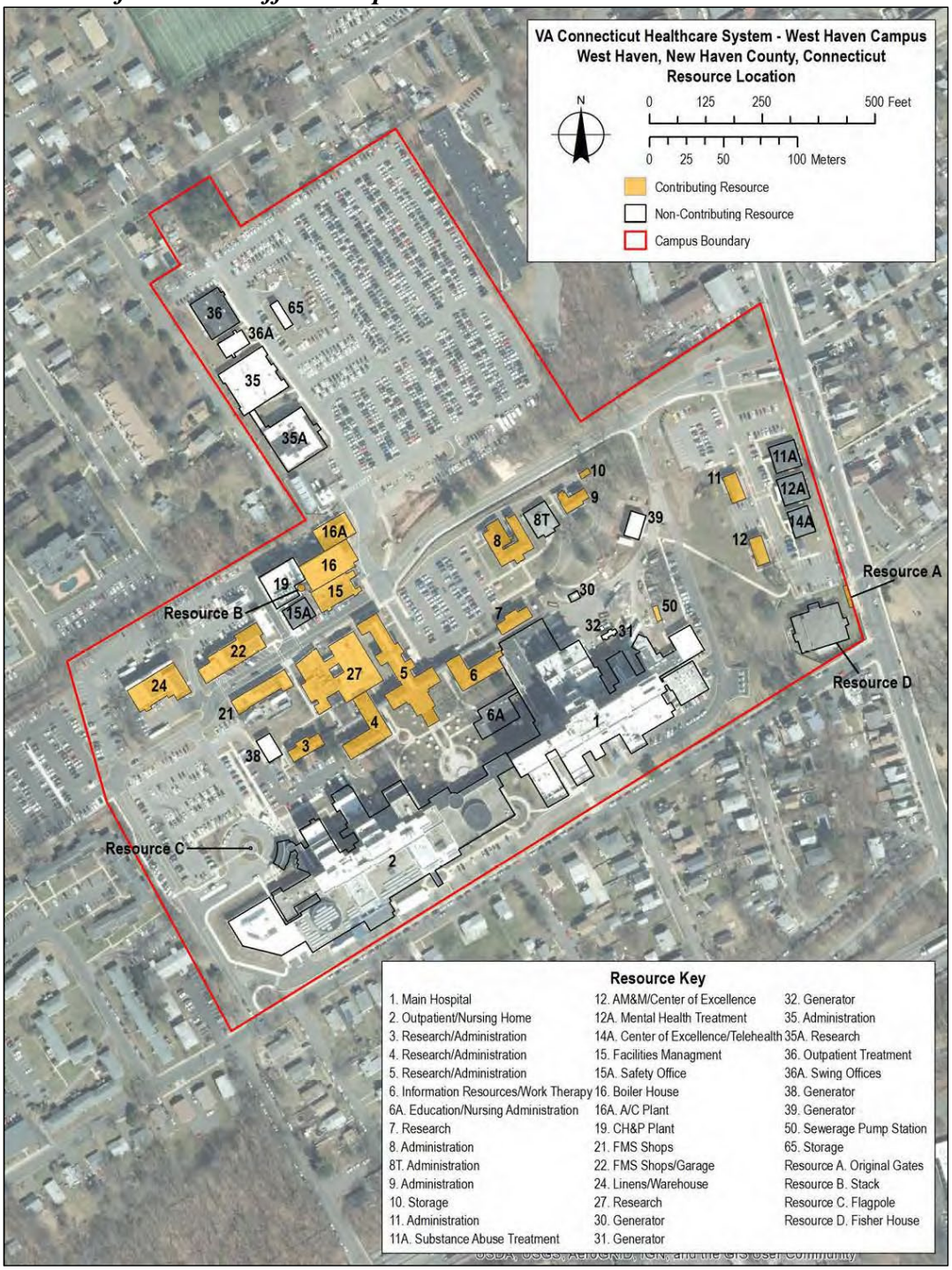
3.5.1.2 Area of Potential Effect

The Area of Potential Effects (APE), as defined in 36 CFR 800.16(d), is "*the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.*"

Because the Proposed Action would result in the demolition of buildings that contribute to the NRHP-listed historic district, VA determined that the APE consists of the boundaries of the historic district, which effectively is the WHVAMC property, as depicted on Figure 9.

The APE considered in this assessment was defined as the footprint of the proposed building demolition and new surgical and clinical tower construction, including all associated new or revised utility corridors, construction laydown areas, and any graded or landscaped areas.

Figure 9. Area of Potential Effects Map



3.5.1.3 Architectural Resources

Several buildings located within the Proposed Action site are contributing resources to the historic district. The individual buildings located within each alternative site area are shown in Table 9. A description of each contributing building is provided in the following paragraphs.

Table 9. Historic Buildings within the Proposed Action Site

Contributing Building	Alternative 1 – Courtyard	Alternative 2 – Parking Lot 7	Alternative 3 – Loading Dock
Building #6	Within this site area	Within this site area	Not in site area
Building #7	Within this site area	Within this site area	Within this site area
Building #8	Not in site area	Within this site area	Within this site area
Building #9	Not in site area	Within this site area	Within this site area
Building #10	Not in site area	Within this site area	Within this site area

Building #6 was historically used as Administration/Quarters. It currently houses functions related to Information Resources/Voluntary/Compensated Work Therapy. It mirrors Building #4 featuring a truncated L-shaped footprint, red brick exterior laid in a Flemish bond, and hipped roof with rounded dormers. The south and east corner porches have been enclosed while the two-story columns remain extant and now appear to function as pilasters. The window openings are detailed with brick jack-arched lintels and cast stone sills. Openings on the first floor feature a cast stone keystone in the arch. Windows are replacement one-over-one sash. It is linked to several of the surrounding buildings via connected corridors that obscure several of the original access points to the building. The last renovations to the building occurred in 1987.

Building #7 was historically used as a Radioisotope Laboratory but is now vacant and no longer operational, though it still houses defunct research and office equipment. Located near the northwest elevation of Building #1, Building #7 is a two-story brick building covered by an asphalt shingle-clad hipped roof with a cross gable located on the front (northwest) elevation. A pedimented gable-roofed wing projects from the center of the front elevation. The wing holds the main entrance door, which is accessed from a portico with Doric columns, puncheon dentil cornice, corner scrolls, and a balustraded flat roof. Stone lintels, keystones, and water table relieve the strict red brick of the exterior. A metal exterior staircase has been added to the northeast elevation. The building has a rectangular footprint. Most windows are one-over-one replacement sash. The last renovations to the building occurred in 1992.

Building #8 historically housed Nurses Quarters and now houses a variety of administrative functions including infection prevention, epidemiology, infection diseases, emergency medical services, and selected programs associated with the Northeast Program Evaluation Center. The two-story brick building is covered by a hipped roof with rounded dormers on the front and side slopes with two interior brick chimneys. The building is U-shaped in plan with a pedimented entry porch projecting from the southeast (front) elevation. The lower level of the three-bay porch is open while the former screened-in porch on the upper level has been enclosed with vinyl siding and sash windows. Screened-in porches on the northeast and southeast corners of the building have been enclosed. The columns that once provided architectural detailing have been sheathed in vinyl, retaining the historic form if not the appearance. The remaining sections of the building are sheathed in red brick laid in Flemish bond. Stone lintels underscore each window though stone keystones at the center of each jack arch crown only the windows of the first floor. A stone belt course encircles the building. The last renovations to the building occurred in 1993.

Building #9 historically served as a Manager's Quarters and now houses administration offices. Oriented towards the southeast, the building sits northeast of Building #8½ on a small cul-de-sac adjacent to other former quarters. The building is residential in scale and appearance and is executed in the Colonial Revival style. The two-and-a-half-story, three-bay, brick-clad building is covered by a side-facing gable roof of asphalt shingles with three gable-roofed dormers on the

front and interior brick chimneys on the rear slope. The gable ends are clad with brick and large modillion blocks are present on the raking eave. A one-story, screened-in porch formerly stood on the northeast end of the house; the porch was replaced by a two-story, one-bay-wide brick wing that is setback from main elevation. A two-story, one-bay ell also projects from the rear of the house. The paneled front entrance door is recessed within an architrave surround and is framed by sidelights and a transom. The windows on the lower floor feature stone keystones at the center of each jack arch lintel and cast stone sills. Wooden louvered shutters with crescent moon cutouts cover several of the windows, but the majority have been removed. Windows include eight-over-eight wooden sash, round-arched windows in the dormers, and a Palladian window in the gable end. The latest renovations to the building occurred in 1991.

Building #10, built in 1916, is a contributing building to the historic district and originally served as the garage for the Managers Quarters. It is now used for storage. The one-story building, located just to the north of Building #9, features a brick clad exterior, flat roof, and a single garage door opening on the southwest elevation. A window opening on the northeast elevation has been infilled within concrete blocks and clad on the exterior with bricks (date uncertain).

3.5.1.4 Archaeological Resources

In 2015 and 2016, a baseline archaeological study that included background research and pedestrian survey was conducted at the WHVAMC (VA, 2016). As a result of that studyand others, no archaeological sites have been identified at the WHVAMC. The report included a recommendation for no additional archaeological investigations at the WHVAMC, as follows (from page 36 in VA, 2016):

> *Although research indicates that the area initially may have had a moderate potential for archeological resources from both the pre-Contact and twentieth century historic periods, the extensive and intensive development of the VAMC campus argues strongly against thepresence of archeological resources that retain stratigraphic integrity or that possess the ability to provide data important to our understanding of significant research questions. The results of this archeological assessment support a recommendation for no further archeological work within the West Haven VAMC campus.*

A site visit in 2021 visually confirmed the presence of extensive surface and subsurface disturbances are present in all areas of the WHVAMC, and the potential for intact, significant archaeological resources is negligible. Additionally, the extent of subsurface disturbance from existing utility installations is extensive (Figure 8).

3.5.2 Section 106 Consultation

On March 8, 2022, VA initiated Section 106 consultation with the CT SHPO, as well as the four federally recognized Native American tribes with interests in New Haven County, CT, as listed in the U.S. Department of Housing and Urban Development (HUD) Tribal Directory Assessment Tool (HUD, 2021) and as required under NHPA, Native American Graves Protection and Repatriation Act (NAGPRA), EO 13007, *Indian Sacred Sites*, and EO 13175, *Consultation and Coordination with Indian Tribal Governments:*

- Delaware Tribe of Indians
- Mashantucket Pequot Indian Tribe
- Mohegan Tribe of Indians of Connecticut

- Narragansett Indian Tribe

Additionally, VA initiated Section 106 consultation with the following organizations and offered them an opportunity to participate as a consulting party:

- City of West Haven Planning
- Connecticut Historic Society and Museum
- West Haven Historical Society
- Preservation Connecticut
- West Haven Veterans Museum

VA's Section 106 consultation letter described the WHVAMC historic district, provided detailed information about the Proposed Action, and identified the Area of Potential Effect (APE) for architectural and archaeological resources. Based on this information, VA included a determination of finding that the grounds of the WHVAMC had been high disturbed and was unlikely to contain intact, significant archaeological deposits; therefore, no additional archaeological work was necessary. However, VA determined that the Proposed Action has the potential to adversely affect historic architectural properties due to the proposed demolition of several historic buildings.

Neither the tribes nor potential consulting parties provided comments on the Draft EA or responded to the Section 106 consultation letters. Copies of consultation letters are provided in Appendix B.

On April 6, 2022, the SHPO issued a letter to VA that concurred with VA's finding for archaeological resources and that no additional archaeological work is necessary. The SHPO also concurred that the Proposed Action has the potential to adversely affect architectural resources but requested more information about the project planning, siting considerations, and project alternatives. In response, on June 23, 2022, VA issued a letter to the SHPO with the requested information and potential strategies to mitigate any adverse impacts to historic resources.

3.5.3 Environmental Consequences

3.5.3.1 Proposed Action

3.5.3.1.1 Construction and Operation

As previously described, the SHPO concurred with VA's determination that no below-ground historic properties would be affected by the undertaking within the APE pursuant to 36 CFR 800.4(d)(1).

However, the Proposed Action would have an adverse effect on architectural resources by demolishing the selected contributing historic buildings, as shown in Table 10. As previously described, the Proposed Action may also include construction of a potable water tank or water tower. Although a water tank or water tower configuration has not yet been designed, the design would seek to minimize any potential adverse impact on the WHVAMC historic district viewshed.

Table 10. Contributing Historic Buildings Impacted for each Alternative

Contributing Building	Alternative 1 – Courtyard	Alternative 2 – Parking Lot 7	Alternative 3 – Loading Dock
Building #6	To be demolished	To be demolished	Not in site area, retained
Building #7	To be demolished	To be demolished	To be demolished
Building #8	Not in site area, retained	To be demolished	To be demolished
Building #9	Not in site area, retained	To be demolished	To be demolished
Building #10	Not in site area, retained	To be demolished	To be demolished

VA recognizes that the Proposed Action would result in the demolition of buildings identified as contributing to the NRHP-listed historic district and this would result in an adverse effect on historic resources. However, no other location at the WHVAMC is adequate for siting the new tower, which is needed to meet VA's goals for patient care. Because the new tower is still in the pre-design phase, VA developed a PA for the undertaking that will provide stipulations to address the undertaking's effects. Pursuant to 36 CFR §800.16(b)(1), a PA with the SHPO and identified consulting parties may be used when effects on historic properties cannot be fully determined prior to approval of an undertaking. A PA documents an agreed upon process among the VA, SHPO, and other identified consulting parties for evaluating and resolving potential adverse effects to historic properties resulting from the Proposed Action. The PA will allow VA to later determine which of the alternatives will be selected. Once VA has selected an alternative and has determined the potential adverse effects to historic properties, VA can determine ways to avoid or minimize those effects or develop a Memorandum of Agreement if the effects cannot be avoided per the stipulation in the PA. On September 30, 2022, VA submitted a draft PA to the SHPO for review. On October 20, 2022, VA and the SHPO met at the WHVAMC to conduct a site walk and review the draft PA. The final PA was signed by the SHPO on November 18, 2022.

Additionally, in the event that ground-breaking activities and development of infrastructure during the Proposed Action disturb and/or remove previously undiscovered cultural resources, and in accordance with NHPA's *Act of 1979* and NAGPRA's EO 13007, VA would implement an "Inadvertent Discovery" plan. Under this plan, if prehistoric or historic artifacts that could be associated with Native American, early European, or American settlement are encountered at any time during construction or operation of the expansion areas, VA would cease all activities involving subsurface disturbance in the vicinity of the discovery. Should human remains or other cultural items, as defined by NAGPRA, be discovered during project construction, the construction contractor would immediately cease work until VA, a qualified archaeologist, any affected Native American tribes, and the SHPO, are contacted to properly identify and appropriately treat discovered items in accordance with applicable state and federal law(s). The work would not resume in the area of the discovery until the resource has been documented and evaluated for eligibility for the NRHP, in compliance with Section 106 of the NHPA.

3.5.3.2 No Action

Under the No Action Alternative, VA would not implement the Proposed Action at the WHVAMC. There would be no change in existing conditions and no impacts to the historic district or to the contributing historic buildings. Therefore, the No Action Alternative would have no impact on cultural and historic resources.

3.6 Geology, Topography, and Soils

3.6.1 Existing Conditions

3.6.1.1 Geology

Connecticut lies within the Coastal Lowland portion of the New England Upland Physiographic Section of the New England Physiographic Province. Glacial meltwater deposits in the area consist of non-sorted, generally non-stratified mixtures of grain-sizes ranging from clay to large boulders. The matrix of most tills is composed predominantly of sand and silt. Boulders within and on the surface of tills range from sparse to abundant. The glacial and post-glacial deposits are underlain by Precambrian igneous rocks (primarily granite) and bedrock outcropping is common (USGS, 2005). The WHVAMC is not located in an area where karst conditions and associated sinkholes are present. No active significant faults are known to extend through the subsurface geology at the WHVAMC.

Within the Proposed Action site, the general bedrock geology underlying is split between the Allingtown Metavolcanics, which is a fine-grained massive greenstone from the middle Ordovician epoch and the Oronoque Schist, which is a gray to silver medium to fine-grained schist and granofels of the lower Ordovician. The bedrock is overlain by glacial till deposits which can be thick to thin. The thin and thick till deposits in the area are generally described as discontinuous on slopes or in areas of moderate local relief and which bedrock controls the topography. The upper till is loose to moderately compact, generally sandy, and commonly stony. Both lodgment and ablation facies are present in places. Bedrock outcrops were not observed within the Proposed Action site during visits to the site in September 2021.

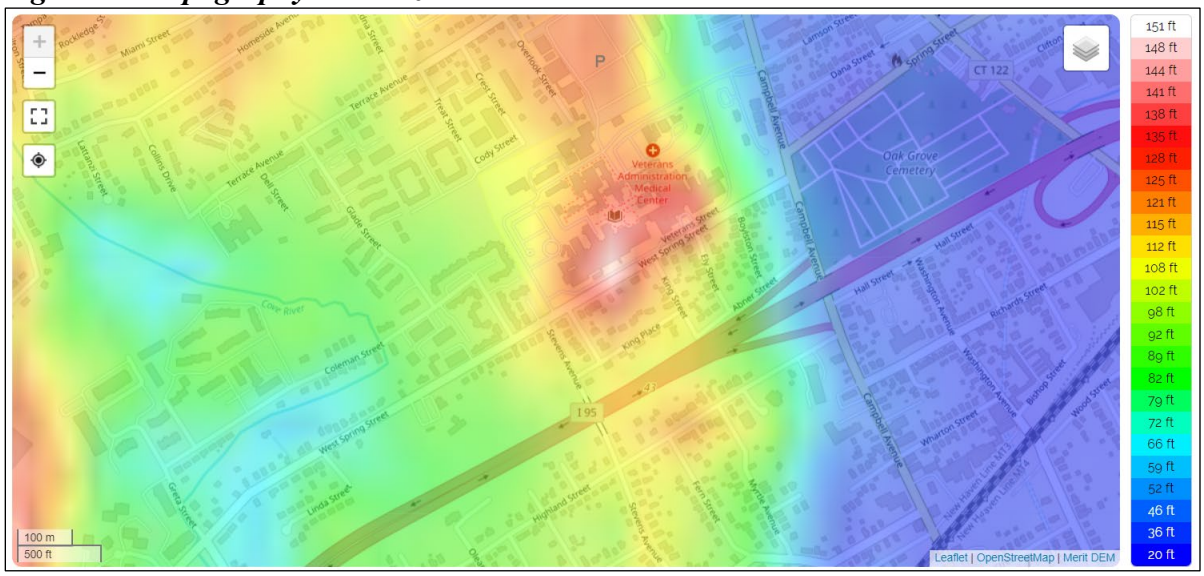
VA conducted a geotechnical investigation of the Proposed Action site in January 2021 (VA, 2021). Intact bedrock was encountered at depths ranging from 12.5 to 23.7 feet below the ground surface, which corresponds to approximate elevations of 73.3 to 95 feet above mean sea level. The general trend of the bedrock surface is similar to the ground surface and tends to slope downwards to the eastern portion of the site. Bedrock consisted of fine-grained greenstone, which showed moderate weathering. Recovery of the rock cores ranged from 88 to 100 percent, while rock quality designation values ranged from 0 to 50 percent, which is indicative of poor rock.

3.6.1.2 Topography

The WHVAMC is located in the southern portion of New Haven County, CT. The gross topography (Figure 10) of the area slopes from the northwest to the southeast (Yamazaki, 2017). The WHVAMC sits on a topographic ridge, with slopes to the west, south, and east. Thus, slopes vary depending on the position within the campus.

Within Alternative 1, the topography is relatively flat. However, within Alternatives 2 and 3, the topography is generally flat at Parking Lot 7, but gradually slopes eastward toward Buildings #9 and #10, where the slope becomes steeper, with grades from approximately 15% to 26% eastward until reaching Service Road. The slope continues eastward, but more gradually, until reaching Campbell Road, where the topography is generally flat and gently sloping south and east.

Figure 10. Topography Visualization



Note: Scale at right represents feet above mean sea level.

3.6.1.3 Soils

According to the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS), Udorthents-Urban land complex and Cheshire-Urban land complex soils have been classified within the Proposed Action site and throughout much of the WHVAMC and vicinity (Table 11 and Figure 11) (USDA-NRCS, 2021). The typical profile for Udorthents is loam, gravelly loam, and very gravelly sandy loam with the depth to the water table ranging from 54 to 72 inches below the ground surface (bgs). The typical profile of Cheshire soil is fine sandy loam and gravelly sandy loam with the depth to the water table greater than 80 inches bgs. Both soils have been assigned a hydrologic soil group of B. Group B soils are defined by USDA-NRCS as soils having a moderate infiltration rate when thoroughly wet and consisting chiefly of moderately deep or deep, moderately well-drained or well-drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

VA evaluated subsurface soil conditions during the 2021 geotechnical survey of the Proposed Action site (VA, 2021). The survey determined that soils within the Proposed Action site have been compacted and disturbed. Relatively shallow uncontrolled existing fill was identified across the Proposed Action site and at various depths including to the top of bedrock. Sandy soils were encountered at the subgrade elevation in each boring. These soils are susceptible to excessive pumping or rutting caused by construction operations, particularly during times of elevated groundwater. Previously placed fill was encountered at the ground surface in each boring that extended from 3- to 5.5-feet bgs. The existing fill consisted of fine to coarse, silty to clayey sand with varying amounts of gravel and crushed rock. Documentation regarding the placement and compaction of the existing fill was not available; however, VA anticipates the fill was generated from general site grading when the original improvements were made. Based on the results of the field and laboratory testing, the existing fill appears to have been placed with compactive effort (VA, 2021).

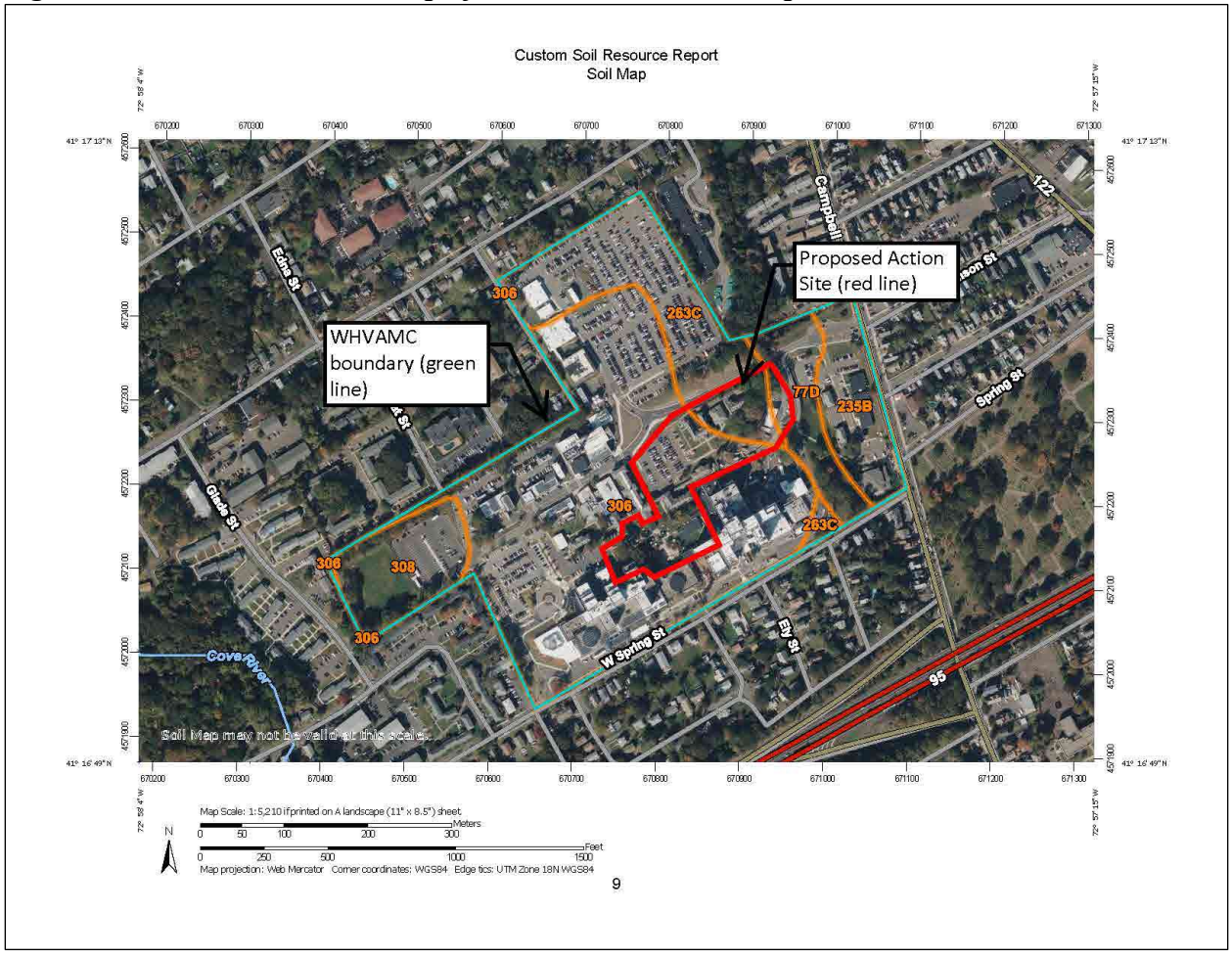
The USDA Farmland Protection Policy Act (7 USC 4201, et seq.) applies to prime or unique farmlands to ensure preservation of agricultural lands that are of Statewide or local importance.

Soils designated as prime farmland are capable of producing high yields of various crops when managed using modern farming methods. None of the WHVAMC soils are characterized as prime farmland. Therefore, preparation of a Farmland Conversion Impact Rating form AD-1006 is not required for the Proposed Action.

Table 11. USDA-NRCS Soil Types within the Proposed Action Site

Map Unit Symbol (on Figure 11)	Map Unit Name	Acres	Percent
77D	Cheshire-Holyoke complex, 15to 35 percent slopes, very rocky	0.2	3.6%
263C	Cheshire-Urban land complex,8 to 15 percent slopes	1.4	26.3%
306	Udorthents-Urban land complex	3.7	70.0%
	Totals for Area of Interest	**5.3**	**100.0%**

Figure 11. USDA NRCS Soil Map of the WHVAMC and Proposed Action Site



3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

3.6.2.1.1 Geology

Construction and Operation

The WHVAMC is not located in an area where karst conditions and associated sinkholes are present. No active significant faults are known to extend through the subsurface geology at the Action Alternative sites. As such, no impacts associated with seismic hazards are identified. No mineral resource impacts are anticipated, as the Proposed Action would not involve the commercial extraction of mineral resources, nor affect mineral resources considered important on a local, state, national, or global basis. In addition, the Proposed Action would not impact prime agricultural land.

All of the alternatives would incorporate seismic design elements and requirements specified in VA *H-18-8 Seismic Design Requirements;* VA Master Construction Specification *13 05 41-Seismic Restraint Requirements for Non-Structural Components;* and the Unified Facilities Criteria (UFC 3-310-04), which required structures, such as the proposed new tower, to be designed to resist an earthquake with a 2 percent Probability of Exceedance (PE) over a 50-year exposure period (i.e. a 2,475-year design earthquake). Additionally, the A/E design team would include a Site-Specific Seismic Hazard Analysis as part of the design process, as required under VA *H-18-8*. The A/E would also complete a Tier 2 seismic study to determine requirements for the design of an elevated skybridge connecting the new tower and Building #1, such that the skybridge is able to withstand a seismic event specific to the required design thresholds.

Should the selected design require footings or other structural elements to be advanced into bedrock, bedrock removal may include ripping or chipping with a hydraulic hammer. It is anticipated that blasting of rock would not be allowed to avoid causing vibrations that could impact medical services in nearby buildings at the WHVAMC.

The advancement of borings, footings, or removal of bedrock in an area localized to the Proposed Action site would not substantively change geologic conditions at WHVAMC or in the surrounding area. Thus, the Proposed Action, regardless of the alternative selected, would have a direct, long-term, negligible adverse impact on geologic resources.

3.6.2.1.2 Topography

Construction and Operation

Alternative 1: The courtyard area is generally flat; therefore, Alternative 1 would require only minor grading to ensure the proper elevations are achieved for the building footprint. Following construction, the grounds would no longer be accessible; thus, Alternative 1 would have a negligible impact on topographic conditions at the Proposed Action site.

Alternative 2: Alternative 2 has an existing large difference in grade between the west and east sides of the area where the proposed building footprint would be located; the east side of the proposed building footprint would be approximately 20-25 feet lower than the west side. The eastern portion of the building footprint would be constructed into the eastern hillside, effectively covering and removing the existing eastern slope. Concrete retaining walls, segmental block

retaining walls, or mechanically stabilized earth walls may be needed to help alleviate some of the differential with the buildable grades (VA, 2021). The A/E would complete a global stability analysis, performed by a qualified geotechnical engineer, for the specific wall system chosen.

However, the overall topographic conditions on the grounds surrounding the building and elsewhere at the WHVAMC would remain unchanged. Therefore, Alternative 2 would have a direct, long-term, negligible adverse impact on topographic conditions.

Alternative 3: Similar to Alternative 2, under Alternative 3 the eastern end of the new tower would be approximately 25-35 feet lower than the western end. However, under Alternative 3 the eastern side of the building would extend approximately 100 feet further east than Alternative 2, effectively removing the majority of the existing hillside. Concrete retaining walls, segmental block retaining walls, or mechanically stabilized earth walls may be needed to help alleviate some of the differential with the buildable grades, and the appropriate design engineering analysis (as described for Alternative 2) would also be required (VA, 2021).

However, the overall topographic conditions on the grounds surrounding the building and elsewhere at the WHVAMC would remain unchanged. Therefore, Alternative 3 would have a direct, long-term, negligible adverse impact on topographic conditions.

3.6.2.1.3 Soils – Construction

For any alternative, construction activities associated with site preparation, grading, and excavating for foundations and utilities would remove vegetation and pervious cover (e.g. asphalt), exposing the underlying soil. Exposed soils can be subject to erosion from wind, precipitation, or mechanical means. Erosion can lead to nuisance dust generation and sedimentation of stormwater run-off from the construction site.

To minimize soil erosion, the A/E would develop, apply for, obtain, and implement the terms of the CT Department of Energy & Environmental Protection (CTDEEP) General Permit for Stormwater Dewatering Wastewaters from Construction Activities (CGP). The CGP applies to discharges of stormwater and dewatering wastewater from construction activities where the activity disturbs more than an acre. The requirements of the current general permit include registration to obtain permit coverage and development and implementation of a Stormwater Pollution Control Plan (SWPCP). The SWPCP contains requirements for the permittee to describe and manage their construction activity, including implementing erosion and sediment control measures as well as other control measures to reduce or eliminate the potential for the discharge of stormwater runoff pollutants (e.g. suspended solids and floatables, such as oil and grease, trash) both during and after construction. A registration form and the SWPCP would be prepared and submitted by the construction contractor to CTDEEP at least 60-90 days prior to the start of construction.

The construction contractor would adhere to BMPs specified in the CGP and VA's *Specification 01 57 19: Temporary Environmental Controls*, and would include the following measures at a minimum:

- Install and maintain sedimentation and erosion control measures, including silt fences and water breaks, detention basins, filter fences, sediment berms, interceptor ditches, synthetic hay bales, rip-rap, and/or similar physical control structures.
- Retain on-site vegetation to the maximum extent possible.

- Revegetate disturbed areas with native, non-invasive vegetation as soon as construction is completed.

Spill Prevention: The construction contractor would implement spill and leak prevention and response procedures, including maintaining a complete spill kit at the site, to reduce the impacts of incidental releases of construction vehicle fluids (such as diesel or hydraulic fluids) to soil quality. The construction contractors would be required to report releases of regulated quantities of petroleum-based fluids to VA and CTDEEP and be responsible for performing cleanup according to applicable state regulatory requirements.

Thus, with these permit-required BMPs in place, construction of the Proposed Action, regardless of the alternative selected, would have a direct, short-term, negligible adverse impact on soil quality.

3.6.2.1.4 Soils – Operation

Following commissioning of the new tower, operational activities would have no mechanism to further impact geology or topography. Soils exposed during construction and revegetated would be professionally maintained during operation to prevent exposure and subsequent erosion. Stormwater from the Proposed Action site would also be minimized through engineering controls and improvements to the WHVAMC stormwater management system (described in further detail in Section 3.7). Therefore, operation of the Proposed Action, regardless of the alternative selected, would have a negligible impact on soil quality.

3.6.2.2 No Action

Under the No Action Alternative, VA would not implement the Proposed Action at the WHVAMC. There would be no changes in existing conditions and therefore there would be a negligible impact on geology, topography, or soils.

3.7 Hydrology and Water Quality

This section focuses on groundwater resources and on hydrology related to stormwater management.

As previously described in Section 2.2, the Proposed Action site is not within a 100- or 500-year floodplain; does not contain wetlands; and is not within a Coastal Zone Management area (see Appendix A for maps). There are no surface water bodies present at the WHVAMC. Therefore, the Proposed Action would have no impact on these resources; these topics are not further analyzed in this EA.

3.7.1 Existing Conditions

3.7.1.1 Groundwater

Aquifers that supply fresh groundwater to the WHVAMC include New England crystalline rock aquifers. Areas where thin or barely permeable glacial deposits of till blanket the bedrock, surficial aquifers are not readily available and the bedrock itself is an important source of water (Groundwater Atlas of the U.S.; USGS, 1995). According to the CTDEEP Aquifer Protection Program, the City of West Haven is not included as an area with a protected aquifer (CTDEEP, 2016). The CTDEEP ECO map classifies groundwater beneath the WHVAMC as "GB." The

CTDEEP defines "GB" groundwater resources as "groundwater designated for industrial process water and cooling waters; base flow for hydraulically connected surface water bodies; presumed not suitable for human consumption without treatment."

There are no state wells or public water supply systems located within a one-mile radius of the WHVAMC (Mabbett, 2016). Six water wells located within a one-mile radius of the WHVAMC have been installed as part of the National Water Inventory System to enable the USGS to collect data on groundwater in the area.

During the January 2021 geotechnical investigation within the Proposed Action site, groundwater was observed in all of the boreholes, generally within several inches of the top of bedrock (VA, 2021). This corresponds to depths ranging from 12.5 to 23.7 feet bgs. The groundwater appears to be on top of the bedrock and follows a general trend of sloping downward to the east, following the same slope of the ground surface and surface of bedrock. However, groundwater flow within the Proposed Action site may vary due to the presence of underground utilities such as sewers, storm drains, and heterogeneous subsurface soil conditions.

3.7.1.2 Hydrology/Stormwater Management

The Proposed Action site has a combination of pervious and impervious surfaces. Table 13 summarizes the approximate acreages of pervious and impervious surface areas unique to each alternative site. These impervious surfaces include building footprints, paved walkways, parking lots, and the concrete amphitheater in the courtyard. Stormwater run-off from these impervious surfaces enters the WHVAMC stormwater management system infrastructure.

Table 12. Pervious and Impervious Surfaces at the Proposed Action site

Alternative	Area (approx. acres)	Current impervious area within the site footprint (approx. acres)	Current pervious area within the site footprint (approx. acres)
Alternative 1	1.5	0.2	1.3
Alternative 2	2	1.5	0.5
Alternative 3	1.9	0.6	1.3

The WHVAMC stormwater management system infrastructure consists of several components designed to capture stormwater originating from different portions of the campus (VA, 2021-b). The system includes three underground detention facilities (e.g. large underground tanks) to capture and detain stormwater generated during large storm events. The detained stormwater is then allowed to slowly discharge to the City of West Haven's stormwater catch basins (operated by the City of West Haven) located along Campbell Avenue.

Once stormwater run-off leaves the WHVAMC, it may eventually reach the West River and the Cover River. The West River is located approximately one mile east from the WHVAMC. The West River is classified by CTDEEP as a Class SD/SB waterbody, indicating that the water quality is impaired. It has a Class SB water quality goal, which would allow the following designated uses: fishing, swimming & recreation, healthy marine habitat, commercial shellfish harvesting (requires purification), and industrial supply.

The Cove River is located approximately two miles south from the WHVAMC. The Cove River is classified by CTDEEP as a Class A waterbody, with the following designated uses: potential drinking water supply; fish and wildlife habitat; recreational use; agricultural and industrial supply and other legitimate uses including navigation.

Both rivers are separated from the WHVAMC by physical infrastructure, including roads, residences, and commercial and industrial development. However, stormwater from the WHVAMC eventually discharges to these rivers; the rivers also receive stormwater discharges from point sources located outside of the WHVAMC.

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

3.7.2.1.1 Groundwater – Construction

Construction of the Proposed Action is not anticipated to require subsurface excavations at depths that would encounter groundwater. However, should groundwater be encountered in the excavation (e.g. during a period where the depth to groundwater is at a seasonal high), the excavation would be dewatered and the captured water would be transported off-site for disposal, or disposed on-site into the WHVAMC stormwater management system if the groundwater meets existing CTDEEP stormwater permit conditions for total suspended solids.

Construction vehicles and equipment utilize petroleum-based fluids that, if accidentally released, could migrate through soil and into the underlying groundwater. To minimize the probability of a release, all equipment would be maintained in good working order according to the manufacturer's requirements. Additionally, construction vehicles would be equipped with spill kits to remediate surficial releases of petroleum-based fluids, and contractors would be properly trained to use these kits. Should a release occur, the construction contractor would deploy the spill kit and notify WHVAMC and CTDEEP immediately. This would help to ensure that an accidental release of petroleum-based fluids would not cause more than a direct, short-term, negligible adverse effect on groundwater quality.

Therefore, the Proposed Action, regardless of the alternative selected, would have a direct, short-term, negligible adverse impact on groundwater quality.

3.7.2.1.2 Groundwater – Operation

Operation of the Proposed Action has no mechanism to impact groundwater. The groundwater underlying the WHVAMC would not be extracted for potable or other uses. Potable water would continue to be obtained from the City of West Haven. The Proposed Action would not change regional groundwater recharge rates, flow patterns, or elevations. Thus, operation of the Proposed Action would have a negligible impact on groundwater quality.

3.7.2.1.3 Hydrology/Stormwater Management – Construction

Under Section 438 of the Energy Independence and Security Act (EISA), federal facilities with a construction footprint exceeding 5,000 SF shall use site planning, design, construction, and maintenance strategies to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property in the post-development condition. Therefore, the A/E would design the new tower to comply with EISA Section 438 to the maximum extent technically feasible.

VA anticipated that under any alternative, some pervious areas would be permanently converted to impervious surfaces during construction of building massing, sidewalks, and roadways. The loss of pervious area would increase the volume of stormwater run-off generated at the site and

requiring management under the WHVAMC Municipal Separate Storm Sewer System (MS4) permit program. Table 13 summarizes the area of pervious soil loss that would occur based on a conceptual pre-design footprint for each alternative.

Table 13. New Impervious Surface Area Created for each Alternative

Location	Site footprint (approx. acres)	New impervious surface area with footprint (approx. acres)
Alternative 1	1.5	1.3
Alternative 2	2	0.5
Alternative 3	1.9	1.3

A hydrology/stormwater system report completed in 2021 identified the existing WHVAMC stormwater management system catch basins, manholes, and stormwater piping that are located within the conceptual footprint of each alternative, as summarized below (VA, 2021-b):

- Alternative 1 would overlap 11 catch basins, 3 manholes, and associated drainpipes.
- Alternative 2 would overlap 10 catch basins, 3 manholes, and associated drainpipes.
- Alternative 3 would overlap 9 catch basins, 4 manholes, and associated drainpipes.

Depending on the final design for the new tower, these WHVAMC stormwater system elements may need to be relocated, removed, and/or re-routed. Additionally, depending on the final design selected, new subsurface detention and/or infiltration systems may need to be constructed. The final design should also consider avoiding direct connections between the roof drains on the new tower and the WHVAMC stormwater system (i.e. avoid a direct pipe-to-pipe connection). Instead, stormwater runoff from the roof should first be discharged at grade and either flow over pervious grounds, discharged to rain gardens, or captured in cisterns and used for irrigation or other gray-water functions. The use of pervious pavement, which is a type of pavement with gaps which allow passage of water, is not recommended in the northeast US because the gaps often become obstructed by sand or salt used during winter de-icing and long-term routine maintenance is required to ensure it functions as designed.

To ensure the Proposed Action stormwater system is properly designed, the A/E would be required to complete the following stormwater system analyses prior to any construction or modifications to the WHVAMC stormwater system infrastructure:

- Hydrologic analysis of existing and proposed conditions for the selected alternative;
- Calculation of stormwater runoff rates for existing and proposed conditions to determine increases in rates of stormwater runoff and volume, if any, in each of the affected watersheds within the WHVAMC;
- Analysis of existing stormwater system to determine inlet grate capacities, pipe capacities, and subsurface system performance;
- Determination of modifications needed to existing system to accommodate the selected alternative;
- Preparation of a design that works with existing system and provides for continued compliance with any federal, state, and local requirements.

- Ensure there is not a net increase of pollutant loading (of the specific pollutant that the waterbody is impaired by) to any impaired waterbodies. The design must also consider any planned updates to the City of West Haven's MS4 permit required BMPs as well as operational and maintenance requirements.

Thus, pre-construction planning would be completed to ensure that the WHVAMC stormwater infrastructure remains functional and complaint with the existing WHVAMC MS4 permit. Therefore, regardless of the alternative selected, construction is anticipated to have a direct, short-term, minor adverse impact on hydrology due to the loss of pervious ground cover and while any necessary modifications are made to the existing WHVAMC stormwater system infrastructure.

3.7.2.1.4 Hydrology/Stormwater Management – Operation

During operation, WHVAMC personnel would integrate the new stormwater management infrastructure installed for the new tower into the overall operational and maintenance program for other WHVAMC stormwater system infrastructure. This would ensure that the combined infrastructure would comply with WHVAMC MS4 permit requirements. Therefore, operation of the Proposed Action, regardless of the alternative selected, is anticipated to have direct, long-term, less-than-significant beneficial impact on hydrology/stormwater.

3.7.2.2 No Action

Under the No Action Alternative, current groundwater and hydrology/stormwater conditions would remain unchanged. No new impervious areas would be created, and stormwater runoff would continue to infiltrate into vegetated ground and/or enter the existing WHVAMC MS4 infrastructure. Routine maintenance and any future upgrades to stormwater infrastructure would occur. Therefore, the No Action Alternative would have a negligible impact on groundwater and hydrology/stormwater.

3.8 Noise and Vibration

3.8.1 Noise

Noise is traditionally defined as unwanted sound that interferes with normal activities in a way that reduces the quality of the environment. Magnitudes of sound, whether wanted or unwanted, are usually described by sound pressure. There are two primary types of sound sources that generate noise: stationary and transient. Sounds produced by these sources can be intermittent or continuous. A stationary source is usually associated with a specific land use or site, such as construction activities or the operation of generators. Transient sound sources, such as vehicles and aircraft, move through the area. The human auditory system is sensitive to fluctuations in air pressure above and below the barometric static pressure. The loudness of sound as heard by the human ear is measured on the A-weighted decibel (dBA) scale.

Sound pressure levels are quantified in decibels (dB), which is dependent on both frequency and intensity, and is given a level on a logarithmic scale. The way the human ear hears sound intensity is quantified in A-weighted decibel (dBA), which are level "A" weights according to weighting curves. Sound levels for common activities and construction work are presented in Table 14. Noise levels and durations from these activities would vary depending on the specific equipment being used, and the impact from this noise on a receptor would depend on the distance between the receptor and the source of the noise. Generally, noise levels decrease by approximately 6 dBA for

every doubling of distance for point sources (such as a single piece of construction equipment), and approximately 3 dBA for every doubling of distance for line sources (such as a stream of motor vehicles on a busy road at a distance).

Table 14. Common Sound Levels and Exposure Conditions

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

3.8.1.1 Vibration

Vibration is the motion of the ground transmitted into a building that can be described in terms of displacement, velocity, or acceleration (Metro Council, 2015). Vibration velocity (VdB) is used to describe vibration because it corresponds well to human response to environmental vibration. Vibration is defined by the maximum vibration level during a given event. Human sensitivity to vibration increases with increasing numbers of events during the day. Vibration velocity is defined by the following terms:

- Level: Vibration is expressed in vibration decibels (VdB). And represents how much the ground is moving. The threshold of human perception to vibration is approximately 65 VdB and annoyance begins to occur for frequent events at vibration levels over 70 VdB.
- Frequency: Vibration frequency is expressed in Hertz (Hz). Human response to vibration is typically from approximately 6 Hz to 200 Hz.
- Time Pattern: Environmental vibration changes all the time and human response is correlated to the number of vibration events during the day.

3.8.2 Existing Conditions

3.8.2.1 Noise

Sensitive noise receptors are defined as properties where frequent human use occurs and where a lowered noise level would be of benefit. Hospitals, schools, convalescent facilities, religious institutions, libraries, recreation areas, and residential areas are considered to be sensitive receptors, particularly when located within 0.25 miles of the noise source. Sensitive noise receptors in the immediate vicinity of the Proposed Action site include Buildings #1 and #2, while the nearest residential receptors abut the WHVAMC on all sides. No other sensitive receptors were identified within 0.25 miles of the WHVAMC. The nearest school is Notre Dame High School, located approximately 0.5-miles north of the WHVAMC.

The soundscape at the Proposed Action site typical of a modern VA Medical Center or other active hospital campus. During a site visit on September 28, 2021, sound levels measured over a 10-

minute period ranged from approximately 40-65 dBA within the Proposed Action site. The soundscape was dominated by motor vehicles, including passenger cars, buses, and various types of commercial trucks. Noise from building operations, such as generators and heating/ventilation and air conditioning (H/VAC) systems equipped with noise-dampeners/mufflers or a noise-shielding structure contribute to the soundscape to a lesser extent. No other notable noise-generating sources are present in the vicinity of the Proposed Action site.

External noise sources that can be heard within the WHVAMC include vehicle traffic on Campbell Avenue and Spring Street.

3.8.2.2 Vibration

Normal facility operations and vehicle traffic within the WHVAMC do not cause vibrations that impact sensitive receptors within the WHVAMC (West Haven VAMC, 2022).

3.8.3 Environmental Consequences

3.8.3.1 Proposed Action

3.8.3.1.1 Noise – Construction

Proposed Action activities would generate noise during building demolition, site grading, and construction of the new tower. These construction-related noises would have a direct, short-term, minor adverse impact on sensitive receptors, including Buildings #1, #2, #4, and #5, which are all located adjacent to the Proposed Action site.

Construction equipment would include excavators, cranes, backhoe-loaders, welders, aerial lifts, graders, pavers/paving equipment, rollers, haul trucks, and concrete mixing trucks. Once mobilized to the site, construction equipment would be operated within the work site for the selected alternative. Construction noise levels would vary depending on the type of equipment being used at the time. Table 15 summarizes the predicted noise levels (at a distance of 50 feet from the source) for common construction equipment (FTA, 2018).

Table 15. Predicted Noise Levels for Construction Equipment

Construction Category and Equipment	Predicted Noise Level at 50 feet (dBA)
Clearing and Grading	
Grader/Dozer	80–93
Truck	83–94
Roller	73–75
Excavation	
Backhoe	72–93
Jackhammer	81–98
Construction	
Concrete mixer	74–88
Welding generator	71–82
Crane	75–87
Paver	86–88

The noise from demolition and construction equipment would be localized and intermittent during the Proposed Action phases. Intermittent loud construction sound levels at the construction site are anticipated to range from approximately 90 to100 dBA.

The sound levels experienced by human receptors would vary depending on distance from the noise source. The distance between the construction site and other buildings and parking areas ranges from approximately 10 to 300 feet. Thus, noises from active demolition and exterior building construction would be audible to visitors, patients, and staff who are traveling past the construction site. Noise levels decrease approximately 6 dBA with every doubling of distance. Therefore, the predicted noise levels that a receptor might experience will vary depending on their distance from the construction site, as shown in Table 16 (assuming construction activity generates noise at 90-100 dBA). Additionally, indoor noise levels would be expected to be 15-25 decibels lower than outdoor levels at the same distance.

Table 16. Predicted Noise Levels Based on Distance from Source

Distance from Noise Source (feet)	Predicted Noise Level (dBA)
50	90 to 94
100	84 to 88
150	81 to 85
200	78 to 82
400	72 to 76
800	66 to 70
1,500	Less than 64

Construction workers who are in close proximity to construction equipment may be exposed to noise levels above 90 dBA, which is the permissible exposure level defined by U.S. Occupational Safety and Health Administration (OSHA).

VA identifies management measures to minimize noise impacts during development projects on VA property in Section 01-57-19, Temporary Environmental Controls in the VA Technical Information Library (VA, 2014). To comply with VA's noise control requirements, as well as the City of West Haven noise control ordinance (Chapter 154) (West Haven City Council, 2003), the construction contractor would implement required administrative and engineering noise controls to include but not limited to the following BMPs:

- Construction activities would take place during daylight hours and during weekdays, unless there is a specific activity that needed to be completed outside of this schedule to avoid impacting the staff, visitors, and patients at the WHVAMC. Should such activity be necessary, the WHVAMC Public Information Office would notify sensitive receptors in advance of the work taking place.
- Use shields or other physical barriers to restrict noise transmission.
- Provide soundproof housings or enclosures for noise producing machinery.
- Use efficient intake and exhaust mufflers on internal combustion engines that are maintained so equipment performs below noise levels specified.
- Conduct truck loading, unloading, and hauling operations so that noise is kept to a minimum.
- Select material transportation routes as far away from sensitive receptors as possible.
- Shut down noise-generating heavy equipment when it is not needed (do not allow equipment to idle for more than three minutes).

Therefore, construction of the Proposed Action, regardless of the alternative selected, would have a direct, short-term, less-than-significant adverse impact on noise-sensitive receptors at the WHVAMC and a negligible impact on the surrounding community.

3.8.3.1.2 Noise – Operation

Operation noises generated by the new tower would be limited to air handlers for cooling and ventilation. These systems may be roof-mounted or placed in another location. The A/E would design and locate the air handling system to minimize noise impacts to occupants of the new tower and other buildings at the WHVAMC. Therefore, operation of the Proposed Action, regardless of the alternative selected, would have a negligible impact on noise-sensitive receptors at the WHVAMC and in the surrounding community.

3.8.3.1.3 Vibration – Construction

Demolition of buildings and other infrastructure would cause various degrees of ground vibration, depending on the equipment, methods employed, and soil compactness, but the vibrations diminish in strength with distance (Hanson, 2006). The vibration velocity level experienced at a receptor located more than 230 feet from the vibration source (except impact pile driving) would diminish below the 65-VdB threshold of perception by humans and interference with vibration-sensitive activities.

From a vibration standpoint, a jackhammer would be the most likely to create vibrational impacts. At a distance of 75 feet from the jackhammer, the vibration level, measured in peak particle velocity, would be 0.01 inches per second. The threshold of perceptibility is 0.08-0.019 inches per second. Thus, vibration levels would be nearly imperceptible by a receptor located 50 feet or more away from the jackhammering. This is supported by information provided by the WHVAMC Project Engineer who stated that jackhammering of concrete on the grounds immediately outside of Building #1 has not caused any vibration or noise impacts to medical operations inside of Building #1 (West Haven VAMC, 2022).

Should pile driving be required to help shore the ground and support the new facility, the construction contractor would implement all necessary precautions to reduce the potential for vibration impacts to any medical operations at Building #1. Additionally, the construction contractor would coordinate in advance with the WHVAMC Director to ensure the timing of such activity does not impact any ongoing vibration-sensitive medical activities.

Therefore, construction of the Proposed Action, regardless of the alternative selected, would have a direct, short-term, negligible adverse impact on vibration-sensitive receptors at the WHVAMC and in the surrounding community.

3.8.3.1.4 Vibration – Operation

The Proposed Action would have no mechanisms to create vibrations that would disrupt medical operations elsewhere at the WHVAMC. Therefore, operation of the Proposed Action, regardless of the alternative selected, would have no impact on vibration-sensitive receptors at the WHVAMC or in the surrounding community.

3.8.3.2 No Action

Under the No Action Alternative, the existing soundscape and vibration conditions at the WHVAMC would remain unchanged.

3.9 Solid Waste and Hazardous Materials

3.9.1 Existing Conditions

A Phase I Environmental Site Assessment (ESA) of the Proposed Action site and its buildings was performed on behalf of VA by Mabbett in September 2021 (Mabbett, 2021). The Phase I ESA included a site visit, interviews with WHVAMC staff knowledgeable about the site, a review of historic information, and a review of local, State and Federal environmental regulatory information for the WHVAMC and surrounding area. The Phase I ESA identified the following Recognized Environmental Conditions (RECs) at the Proposed Action site:

- Radiological waste in Building #7
- Underground sludge trap associated with the former Building #7 radioisotope laboratory/

Additionally, the Phase I ESA confirmed that regulated building materials, while noted defined as a REC, were identified during Regulated Building Materials Surveys at Buildings #6, #7, #8, #8½, #9, and #10 in September and October 2021 (Mabbett, 2020). The surveys identified the presence of asbestos, lead, and likely presence of PCBs in caulk.

3.9.1.1 Regulated Building Materials

Regulated building material surveys were conducted at Buildings #6, #7, #8, #8½, #9, and #10 in September and October 2021 (Mabbett, 2020). The surveys identified the presence of asbestos, lead, and likely presence of PCBs in caulk, in Buildings #6, #7, #8, #9, and #10.

3.9.1.2 Radioactive Waste

Radioactive materials were last used in Building #7 in 2004 (VACHS, 2021b). The building was decommissioned prior to 2010, but due to lack of documentation of decommissioning, VACHS in August and September 2012 completed comprehensive surveys of the second floor of Building #7, where radioactive materials had been used between 1998 and 2004. The surveys confirmed that radiological measurements were below U.S. Nuclear Regulatory Commission (NRC) "NUREG" screening levels, and the NRC National Health Physics Program inspector recommended releasing all of Building #7 for unrestricted use. However, radioactive material remains in selected benchtop and hood fixtures at concentrations above background levels (these fixtures are currently affixed with labels reading "Caution, Radioactive Material"). As a result, the fixtures cannot be disposed of as regular solid waste; the radionuclide(s) present will first need to be identified and then disposed of in compliance with all pertinent radiation related regulations (VACHS, 2021b).

VA provided design plans dated 1949 that depict an underground sludge trap associated with the former radioisotope laboratory at Building #7. The plan depicts a subsurface sludge trap with two maintenance covers located immediately northeast of the Building #7 entrance. During a site visit on September 28, 2021, the two maintenance covers were visually observed in the physical location depicted on the 1949 drawing. The WHVAMC site representative confirmed these maintenance covers are access points to the sludge trap. To date, VA has not performed an investigation to assess the contents and condition of the sludge trap. Therefore, prior to any

subsurface work in this area, the AE of Record would be required to assess the condition and contents of the sludge trap according to guidance from the CTDEEP Radiation Division. Should radiological waste be present, the construction contractor would be required to manage the material according to regulations set forth by the U.S. Nuclear Regulatory Commission, USEPA, Federal Department of Transportation, Connecticut Department of Transportation, and CTDEEP.

3.9.2 Environmental Consequences

3.9.2.1 Proposed Action

3.9.2.1.1 Regulated Building Materials – Construction

Although VA has completed an ACM and LCP survey of the buildings to potentially be demolished, the construction contractor would be required to complete a pre-demolition survey for polychlorinated biphenyls (PCBs), which may be present in caulk used around windows, door frames, masonry columns and other masonry building materials in buildings constructed or renovated prior to 1978. PCBs may also be present in transformers, capacitors, fluorescent light ballast and other oil-containing equipment, and in other building materials (e.g., paint, roofing, flooring, insulation). This survey would allow the construction contractor to determine appropriate disposal methods and comply with CTDEEP and USEPA guidance regarding disposal of PCB bulk product waste.

Prior to demolition of the buildings containing regulated building materials, the construction contractor would prepare a CTDEEP-required Construction and Demolition Waste Management Plan identifying the waste to be generated during demolition and how it would be handled. Additionally, prior to demolition, the construction contractor would submit to CTDEEP an *Application Form for Special Waste or Asbestos Disposal Authorization* (DEP-WEED-APP-200) to obtain a *Special Waste Disposal Authorization* to dispose of a "special waste" (not hazardous) or asbestos.

Additionally, prior to demolition, the construction contractor would apply for and obtain a demolition permit from the City of West Haven, in accordance with the 2012 Connecticut General Statutes: *Title 29 – Public Safety and State Police, Chapter 541 – Building, Fire and Demolition Codes, Fire Marshals and Fire Hazards, Safety of Public and Other Structures.*

At least 10 days prior to demolition, the construction contractor would also submit a Demolition Notification Form to Connecticut Department of Public Health (CTDPH). However, if an Asbestos Abatement Notification was previously submitted to the CTDPH, the submission of the Demolition Notification Form is not required provided that an Asbestos Abatement Notification Form was previously submitted to the CTDPH. In all cases of demolition, one and only one form (Notification of Demolition Form or Asbestos Abatement Notification Form) shall be sufficient to satisfy the CTDPH notification requirements detailed in Section 19a- 332a-3 of the Regulations of Connecticut State Agencies.

The construction contractor would then use CT-licensed workers to abate the regulated building materials and transport them off-site for proper disposal.

The number of buildings requiring abatement prior to demolition varies among the proposed action alternatives as follows:

- Alternative 1 abatement: Buildings #6 and #7
- Alternative 2 abatement: Buildings #6, #7, #8, #9, #10

- Alternative 3 abatement: Buildings #7, #8, #9, #10

3.9.2.1.2 Radiological Waste – Construction

The VACHS has been issued a Broad Scope permit by the National Health Physics Program (NHHP) for management of radioactive material; this permit covers activities involving radioactive material at the WHVAMC. The NHHP specifies policies for decommissioning laboratories containing radioactive materials. The WHVAMC follows these policies and performs close-out surveys prior to decommissioning. A close out survey refers to performance and documentation of a historical assessment and radiological measurements/calculations of sufficient quality to support release of a room, area or building for unrestricted use per 10 CFR 20.1401.

CTDEEP does not regulate radioactive material at WHVAMC, because WHVAMC is a federal facility. However, CTDEEP would expect to be consulted for building demolition. Their release criterion is 19 millirem per year (mRem/yr) plus As Low As Reasonably Achievable levels (CTDEEP, 2020), rather than the 25 mRem/year used by the US Nuclear Regulatory Commission (NRC) and Multi-Agency Radiation Survey And Site Investigation Manual (MARSSIM) (MARSSIM, 2020). Additionally, CTDEEP identifies remediation standards for radionuclide contamination in Connecticut (CTDEEP, 2020).

Prior to demolition of Building #7 or removal of the subsurface sludge trap outside of Building #7, additional radiological investigations would be performed by the A/E and the data reviewed by the VACHS Radiological Safety Officer (RSO) to determine the appropriate requirements for the removal of the tank and its transport off-site for disposal to an appropriate licensed disposal facility.

3.9.2.1.3 Demolition Requirements – Construction

Prior to any building demolition, the A/E would prepare and submit an application and subsequently obtain a demolition permit from the City of West Haven, in accordance with the 2012 Connecticut General Statutes: *Title 29 – Public Safety and State Police, Chapter 541 – Building, Fire and Demolition Codes. Fire Marshals and Fire Hazards. Safety of Public and Other Structures.*

Demolition of the buildings would generate construction debris. The A/E would be required to recycle or reuse this construction debris to the maximum extent practicable. Only materials that could not be reused or recycled would be transported off-site for disposal at a landfill approved for construction debris.

Therefore, the construction phase of the Proposed Action, regardless of the alternative selected, would have a direct, long term, less-than-significant beneficial impact on regulated building materials and radiological waste by removing these materials from at the WHVAMC, but a direct, short-term, less-than-significant adverse impact by increasing the volume of waste disposed of at an off-site landfill.

3.9.2.1.4 Solid Waste and Hazardous Materials – Operation

During operation of the Proposed Action, WHVAMC would continue to manage any operational-related solid waste and hazardous materials in accordance with VA's Standard Operating Procedures (SOPs) and applicable federal and state laws governing the use, generation, storage, or transportation and disposal of these materials.

Therefore, operation of the Proposed Action would have a direct, long-term, negligible adverse impact on solid wastes and hazardous materials associated with normal medical operations.

3.9.2.2 No Action

Under the No Action Alternative, existing conditions at the WHVAMC would remain unchanged for the foreseeable future. WHVAMC would continue to perform operational and maintenance activities at the Proposed Action site buildings to minimize the risk of exposing staff to regulated building material hazards and to prevent the release of these materials to the environment. The Building #7 fixtures containing radiological contamination would continue to be managed by the RSO according to applicable regulations. The former sludge tank would remain in its present condition unless the WHVAMC identifies a specific need for its assessment and removal.

Therefore, the No Action Alternative would have a long-term, negligible adverse impact on hazardous materials, and no impact on solid waste.

3.10 Transportation and Parking

3.10.1 Existing Conditions

3.10.1.1 Regional Transportation

Public transportation is provided to the WHVAMC by CT Transit via bus stops located along Ring Road (Bus Routes 265 and 268), as well as additional stops located at the intersection of Campbell Avenue and Lamson Street (Bus Route 265) and at the intersection of West Spring Street and Stevens Avenue (Bus Route 268) on and/or adjacent to the WHVAMC.

Primary vehicle access to the WHVAMC is provided by the Connecticut Turnpike (Interstate 95), a six-lane divided highway. I-95 is located approximately 600 feet south of the WHVAMC. The WHVAMC is accessible from exit 43 when traveling south or north on I-95. Once off I-95, traffic approaches the WHVAMC from Campbell Avenue and 1st Avenue (Route 122). The I-95 exit ramps to Campbell Avenue and 1st Avenue are fully signalized.

WHVAMC is bordered to the east by Campbell Avenue and to the south by Spring Street. Vehicles enter the campus via Lamson Road at its intersection with Campbell Avenue, and via Ring Road, from its intersection with Spring Street. The intersection of Spring Street and Campbell Avenue and the intersection of Campbell Avenue and Lamson Road are fully signalized. The intersection of Spring Street and Ring Road is not signalized and has a stop sign on Ring Road.

3.10.1.2 WHVAMC Roadways and Parking

Within the WHVAMC, Lamson Road connects to the Ring Road, which provides vehicle and pedestrian access throughout the campus. Parking lots for staff and visitors are available throughout the WHVAMC. Parking Lot 7 is a designated handicapped parking area and provides approximately 90 spaces. WHVAMC also offers valet parking at Lot 7. Emergency vehicles are allowed to transport patients directly to and from Buildings #1 and #2. VA is currently constructing a multi-level parking garage in the western portion of the campus.

Traffic and parking conditions at the WHVAMC were analyzed and presented in a report prepared by IMEG, Inc. dated May 9, 2021, (VA, 2021). An updated traffic study was performed in September 2021 by The Traffic Group, Inc. (TTG). The TTG study presented future projections

of traffic and parking conditions that could potentially occur under the Proposed Action, evaluated circulation patterns, and made additional recommendations to increase pedestrian and vehicle safety within the WHVAMC (TTG, 2021). The Proposed Action does not require new staff to be hired to operate the new tower. However, the standard traffic prediction model used a hypothetical increase of 225 staff based on the square footage of the proposed new tower. The model then projected a 1% increase in traffic volume annually through year 2046, with and without the hypothetical staffing increase. Because no new staff are required for the Proposed Action, the traffic prediction model overestimates potential traffic increases and associated impacts. The traffic model projected the increases in average daily traffic at the two WHVAMC entrances, with and without a hypothetical staff increase (Table 17).

The traffic model also projected how the increase in average daily traffic volume, both with and without the hypothetical staff increase, would impact levels of service (LOS) at the WHVAMC intersections. The existing LOS at the WHVAMC entrances ranges from A to C (Table 18). The traffic model also indicated that the LOS at the WHVAMC parking lot 9/10 intersection would decrease from B to E (for AM peak hour) by year 2046. This decrease in LOS would occur regardless of implantation of the Proposed Action.

Table 17. Average Daily Traffic (ADT) – Existing and Projected

Location	Existing ADT	Future ADT (No Action)	% Increase in Future (No Action)	Future ADT with Proposed Action	% Increase in Future ADT withProposed Action
Campbell Avenue	13,100	16,768	28%	18,001	7.3%
West Spring Street	4,100	5,248	28%	5,752	9.6%

Table 18. Intersection Level of Service – Existing and Projected

Intersection	AM Peak Period			PM Peak Period		
	2021	2046 (with Proposed Action)	2046 (with No Action)	2021	2046 (with Proposed Action)	2046 (with No Action)
West Spring Street & WHVAMC southwest entrance	B	D	D	C	C	C
Within WHVAMC at the entrance to Lot 9/10	C	E	E	B	C	C
Campbell Avenue & WHVAMC eastern entrance (main entrance)	B	C	C	C	C	C
Campbell Avenue & West Spring Street intersection	A	B	B	B	D	D

3.10.2 Environmental Consequences

3.10.2.1 Proposed Action

3.10.2.1.1 Construction

The existing network of federal highways, state roads, and local roads is sufficient for construction equipment and materials to be transported to the WHVAMC during the construction phase of the Proposed Action. Therefore, no modifications to transportation infrastructure or traffic patterns to these roads would be required.

The number of construction workers traveling to and from the WHVAMC during the Proposed Action construction phase is anticipated to be fewer than 100 at any given time. Assuming each worker drives one vehicle, the additional volume would add an insignificant increase (<20%) in overall traffic volume on roadways outside of the WHVAMC. VA's NEPA regulations at 38 CFR 26(26.62)(ii) define a significant traffic impact as "an increase in average daily traffic volume of at least 20 percent on access roads to the site or the major roadway network"; such impacts would typically require an Environmental Impact Statement.

When traveling on these roadways, construction workers would be required to follow all existing posted traffic requirements, as all non-emergency vehicles must.

The existing roadways within the WHVAMC also provide sufficient access to the Proposed Action site; no modifications to existing WHVAMC roadways would be required.

To ensure that construction vehicles do not degrade the quality of the roadways within the WHVAMC, gravel construction pads would be installed at the construction site exit to ensure debris is physically removed from construction equipment before that equipment travels on WHVAMC roadways; brushes and/or water may also be used to remove debris. Additionally, flaggers may be utilized within WHVAMC to alert other drivers when oversized vehicles are traveling through the WHVAMC.

Construction within any of the alternative areas would temporarily disrupt pedestrian and vehicle circulation patterns during demolition of selected buildings; when heavy equipment and building materials are delivered to the construction site; and during the construction phase for the new tower. Impacts unique to each alternative are discussed in the following paragraphs.

For Alternative 1, the sidewalk within the courtyard would be permanently eliminated. Pedestrians would no longer be able to walk directly from Lot 9/10, or from Buildings #4 and #5, to the northern entrances of Buildings #1 and #2. Instead, to reach Buildings #1 and #2 from Lot 9/10, pedestrians would likely have to walk around the western sides of Buildings #21 and #38. The underground tunnel systems leading to Building #1 would also close once construction begins on the surface above the tunnel. Additionally, Parking Lot 7 and the roadway leading to Building #9 may be intermittently closed to avoid safety concerns when building materials and equipment are being transported to the courtyard work area.

Therefore, Alternative 1 would have a direct, short-term, minor adverse impact on transportation and parking.

For Alternatives 2 and 3, Parking Lot 7 would be permanently closed, eliminating 90 parking spaces (of which 72 are handicapped accessible). The new parking garage would accommodate this loss in parking, but a shuttle may be required to assist with transporting handicapped visitors

to and from the new garage (or other designated handicapped parking area) to their destination within the WHVAMC. Alternatives 2 and 3 would also permanently eliminate the northern and southern access roadway that extends from Parking Lot 7 to Building #10.

Therefore, Alternatives 2 and 3 would have a direct, short-term, minor adverse impact on transportation and parking.

3.10.2.1.2 Operation

Operation of the Proposed Action would have no direct impact on traffic volumes because VA does not anticipate increasing staffing levels to operate the new tower. The traffic model projected increases in average daily traffic volumes at the entrances and within the WHVAMC. These increases would occur with or without Proposed Action. The impact of these projected future traffic increases would result in a general decrease in the LOS at WHVAMC intersections (Table 18). These impacts would have no direct impact on the operation of the new tower because staff and visitors would remain able to access the WHVAMC.

Other operational impacts to traffic and parking unique to each alternative are discussed in the following sections.

For Alternative 1, a new round-about with a designated patient drop-off area would be created in the place of the existing Parking Lot 7. This would provide patients with direct, convenient access to the eastern entrance of new tower. Sidewalk access would be restored to pedestrians traveling to and from Lot 9/10 and the new tower or to Building #1. Additionally, there would be direct pedestrian access to the new tower from within Buildings #1, #2, and #5.

Vehicular access to Buildings #8, #8½, #9 and #10 would be from the existing access road to the south of these buildings. Similar to existing conditions, none of these buildings would have dedicated staff parking lots.

Therefore, Alternative 1 would have a direct, long-term, negligible adverse impact on transportation and parking.

For Alternative 2, a semi-circular new patient drop-off area would be created in the place of the existing Parking Lot 7. This would provide patients with direct, convenient access to the eastern entrance of the new tower. However, this new patient drop-off area would be substantially smaller than the round-about for Alternative 1. This smaller size could cause traffic back-ups when many patients are dropped-off in a short time period.

Sidewalk access would be restored to pedestrians traveling to and from Lot 9/10 and the new tower. Additionally, there would be direct pedestrian access to the new tower from within Buildings #1 and #5.

Vehicular access to Building #10 (the only building not demolished under Alternative 2) would be from the existing narrow access road located to the north of the new tower.

Therefore, Alternative 2 would have a direct, long-term, negligible adverse impact on transportation and parking.

For Alternative 3, Parking Lot 7 would be reutilized as a patient drop-off area. While a new round-about is not proposed, the new drop-off area would provide patients with direct, convenient access to the western entrance of the new tower.

Sidewalk access would be restored to pedestrians traveling to and from Lot 9/10 and the new tower or to Building #1. Additionally, there would be direct pedestrian access to the new tower from within Building #1.

None of the existing buildings (#6, #7, #8, #8½, #9, #10) or the access roadways to these building would remain or be needed (the new tower footprint covers these elements).

Therefore, Alternative 3 would have a direct, long-term, negligible adverse impact on transportation and parking.

3.10.2.2 No Action

Under the No Action Alternative, the increases in average daily traffic levels and the resulting impacts to LOS would occur as shown in Table 17 and Table 18, respectively. Under the No Action Alternative, the current parking conditions at Lot 7 and the service roads would remain unchanged. (Construction and operation of the new parking garage would continue as a separate project that is independent of the Proposed Action.) Recommended traffic and circulation improvements described in the 2021 IMEG Traffic Study and the 2021 TTG Traffic Study could occur.

Therefore, the No Action Alternative would have no impact on traffic and parking conditions at the WHVAMC.

3.11 Utilities

3.11.1 Existing Conditions

The WHVAMC obtains utilities from several companies and then distributes these utilities to buildings and facilities throughout the WHVAMC via VA-owned infrastructure. Additionally, the WHVAMC Central Utility Plant generates and distributes steam, hot water, and chilled water to buildings throughout the campus. Medical-grade oxygen and fuel for emergency generators are stored in designated tanks on the WHVAMC property. A map of the WHVAMC utility distribution infrastructure is provided in Figure 8.

Table 19 summarizes currently available information about the utilities, including suppliers, and existing supply and demand. The table also identifies upgrades to the utility distribution infrastructure identified by WHVAMC as necessary to support current WHVAMC operations and to meet VA PSRDM redundancy requirements, even if the Proposed Action is not implemented (from VA, 2021). Additionally, the WHVAMC does not have emergency water storage capacity for potable, fire, and industrial use, as required by the VA PSDRM.

Table 19. Current WHVAMC Utility Information

Utility:	Electricity	Sanitary Sewer	Potable Water	Natural Gas	Steam	Chilled Water/AC	Hot Water System	Medical Gas System	Fuel Storage	Telecom
Provider:	United Illuminated	City of West Haven Public Works Department	South Connecticut Regional Water Authority	Southern Connecticut Gas Company	WHVAMC	WHVAMC	WHVAMC	External vendor (not specified)	External vendor (not specified)	External vendor (not specified)
Existing Capacity:	Two 13.2kV feeds from West Spring Street. Third 13kV feed dedicated to PET CT in Building #1.	N/A	N/A	N/A	Three boilers, each with output capacity of 26,000-27,000 pounds per hour (lbs/hour) at 110 psi	Two 800-ton steam absorption chillers in the new CHP. One 1,000-ton in fair condition but past useful life. One 800-ton chiller new in 2012. 6,000 tons of thermal storage (10 hours)	WHVAMC generates and distributes hot water from the CUP (steam to hot water exchangers) at 35 psi	6,500 gallons	65,000 gallons, which is stored in four 21,2250 gallon above-ground storage tanks	N/A
Existing Demand	6.3M Kilowatt hours (KWh)	N/A	67M gallons (in FY2020)	61.5M cubic feet	58,000 lbs/hour	4,000 tons	N/A	686,000 cubic feet per month	N/A	N/A
Upgrades recommended to support current WHVAMC operations	Upgrade switchgear to meet VA PSRDM redundancy requirements	Replace or line original pipes	Most pipes are original and likely will not hold pressure (50 pounds per square inch [psi])	No upgrades identified	There is a current project to replace the boilers and main steam condensate return lines, but design has not started.	Cooling towers are in poor condition and will need to be upgraded.	N/A	Existing bulk storage tanks and vaporizer are undersized.	N/A	Single path for data and voice does not meet VA PSRDM redundancy requirements

N/A – Not available

3.11.2 Environmental Consequences

3.11.2.1 Proposed Action

Table 19 identifies upgrades needed to much of the current utility infrastructure to support current WHVAMC operations and meet VA PSRDM requirements. As stated previously, upgrades to the current utility infrastructure are necessary with or without implementation of the Proposed Action and would also meet the anticipated demand for utilities for the Proposed Action (Table 21).

Neither the design for utility upgrades nor the Proposed Action have been finalized. Based on the final design for the new tower, the A/E would confirm the anticipated utility demands, then coordinate with each external utility provider to assess whether there is sufficient supply to meet this demand without impacting service quality to other external customers.

The A/E of Record would also coordinate with the WHVAMC Chief of Facilities to ensure that any utility upgrades that are planned to correct existing deficiencies in the current infrastructure would consequently support the new tower. The A/E and the WHVAMC Chief of Facilities would determine the specific utility corridors and lines that would require re-configuration without disrupting utility service to other users within the WHVAMC. Re-configuration would involve upfront site work to maintain uninterrupted utility services to all other buildings, creation of redundant utility connections, and creation of new utility corridors. However, should new utility corridors be required, they would still generally occur within existing areas of disturbance on the WHVAMC property.

The A/E and the WHVAMC Chief of Facilities would also determine the size, design, and location for emergency water storage structures (tanks and/or towers) within the WHVAMC property (preliminary proposed locations are depicted on Figure 4). It is anticipated the total emergency water storage capacity would be approximately one million gallons.

The following subsections describe the potential impacts associated with constructing the utility upgrades associated with the Proposed Action.

Table 20. Proposed Action Anticipated Utility Demand

Utility	Electricity	Steam	Chilled Water/AC	Fuel Storage
Anticipated Demand from the Proposed Action(1)	250-500kVA	15,000 lbs/hour	575 tons	35,000 gallons

1 – Anticipated demand was not available for sanitary sewer, potable water, natural gas, hot water, medical gas, and telecommunications. However, the Proposed Action would utilize all of these utilities.

3.11.2.1.1 Construction

Once the design of the new tower is finalized, utility upgrades and re-configurations would be constructed. Construction would involve creating new and redundant connections to the WHVAMC Central Utility Plant and a new utility tunnel to service the new tower. Redundant loops would be required because the new tower would be classified as Mission Critical due to the inclusion of inpatient beds and hospital functions. Temporary utility lines may be needed to ensure continuity of utility services throughout the WHVAMC while permanent new utility lines are constructed. The new utility lines installed during construction would present an improvement compared with the prior existing conditions. Additionally, the new tower would utilize energy efficient design principles to reduce the demand for heating, cooling, and water use.

The pre-design and design coordination among the A/E, WHVAMC Chief of Facilities, and external utility providers, as well as the construction management measures implemented by the A/E, would ensure that Proposed Action does not adversely impact the existing utility distribution during the Proposed Action construction phase.

The extensive utility pre-construction coordination and intensive monitoring activities during construction may be considered to have direct, short-term, negligible adverse impact on overall utility operations at the WHVAMC.

As a result, all of the Proposed Action alternatives would be anticipated to have a direct, short-term, negligible adverse impact on utility services at the WHVAMC, and no impact on customers outside of the WHVAMC.

3.11.2.1.2 Operation

Operation of the Proposed Action would utilize all of the utilities identified in Table 19, with anticipated demand for selected utilities identified in Table 20. Once the selected medical functions previously located in Building #1 are relocated to the new tower, those functions would become operational and begin using utilities. The utility demand would be minimized by utilizing energy efficient equipment. As a result, only a negligible, direct, long-term increase in utility demand is anticipated.

As previously described, as part of the design process the A/E would ensure utility service providers and the WHVAMC have sufficient capacity to meet operational utility demand for the new tower and without reducing service quality elsewhere at WHVAMC or to other utility customers. Should mitigation be required to avoid a significant adverse impact on utility service quality, the A/E would design the mitigation strategy and provide a monitoring and maintenance plan to ensure the mitigation remains effective over time.

Therefore, operation of the Proposed Action, regardless of the alternative selected, is anticipated to have a direct, long-term, negligible adverse impact on utilities due to the increased consumption of utilities, but no impact on utility service quality within or external to the WHVAMC.

Utility improvements required regardless of the Proposed Action would occur and have a long-term, direct, moderate beneficial impact on utility operations at the WHVAMC.

3.11.2.2 No Action

Under the No Action Alternative, existing utility conditions at the Proposed Action site would remain unchanged. However, under the No Action Alternative, upgrades to the majority of utility infrastructure, including a new emergency water storage facility, would be required regardless of construction and operation of the new tower. Upgrades would increase the safety and efficiency of utility distribution, such as reducing leakage from original piping and valves, and improving digital monitoring and distribution capabilities. Therefore, the No Action Alternative would have a long-term, direct, moderate beneficial impact to the WHVAMC through an improvement in utility distribution and monitoring infrastructure.

3.12 Community Services

Community services include security (police, fire), medical (hospital and ambulatory), educational (public and private schools), and recreational areas (parks, playgrounds) to the community.

With the exception of hospital medical services, the Proposed Action would not increase, reduce, or otherwise impact the level of community services (police, fire, ambulance, schools, public institutions). Therefore, this section analyzes how the Proposed Action would impact medical services provided to Veterans in Connecticut and southern New England.

3.12.1 Existing Conditions

As previously described in Section 1, the WHVAMC is the primary care facility for Veterans in Connecticut and is a tertiary care facility classified as a Clinical Referral Level One Facility with a total of 216 operational beds. It is a teaching hospital that provides a full range of health services for Veterans, with state-of-the-art technology and educational and research functions.

As previously described in Section 1.1 (Purpose and Need), VA Standards for the VACHS space and patient population establish a total surgery space of approximately 60,000 DGSF for the WHVAMC. Currently, the WHVAMC has 35,544 DGSF, which is approximately 40% below the standard. Therefore, the current facilities do not provide the amount of space specified in the VA Standards.

3.12.2 Environmental Consequences

3.12.2.1 Proposed Action

3.12.2.1.1 Construction

For all three alternatives, construction of the new tower would require demolition of several buildings where administrative functions are performed. Table 21 summarizes the buildings that would be demolished for each alternative. For all alternatives, displaced functions would be accommodated with temporary modular swing space for the length of the construction phase, and in combination with added and extended telework plans and some staff relocations. These accommodations would ensure there are minimal disruptions to these administrative and medical support services.

Table 21. Building Impacts by Alternative

Building	Function	Alternative 1 – Courtyard	Alternative 2 – Parking Lot 7	Alternative 3 – Loading Dock
Building #6	Administrative	To be demolished	To be demolished	Retained
Building #7	Vacant	To be demolished	To be demolished	To be demolished
Building #8	Administrative and Supportive Medical	Retained	To be demolished	To be demolished
Building #8½	Administrative	Retained	To be demolished	To be demolished
Building #9	Administrative	Retained	To be demolished	To be demolished
Building #10	Facilities Garage	Retained	To be demolished	To be demolished

Alternative 1 would demolish the fewest number of buildings (#6 and #7) and therefore would be least disruptive to administrative functions. Building #6 is used for administrative work functions while Building #7 is vacant.

Construction of the new tower within the courtyard area would involve direct connections into the north and west sides of Building #1 and the north side of Building #2 (Figure 5). Construction would involve removal of portions of exterior walls where the new tower connects to these buildings.

This construction activity would require extensive coordination with medical staff in Buildings #1 and #2 to minimize adverse impacts to medical services, patients, and staff in those affected areas.

Therefore, construction of Alternative 1 would have a direct, short-term, minor adverse impact on administrative and medical services.

Alternative 2 would demolish six buildings and require relocation of more administrative functions compared with Alternatives 1 and 3. Construction of the new tower would involve direct connections into the north side of Building #1 (Figure 6). Construction would involve removal of portions of Building #1 exterior walls where the new tower and Building #1 connect. This construction activity would require extensive coordination with the medical staff to minimize adverse impacts to medical services, patients, and staff in Building #1.

Therefore, construction of Alternative 2 would have a direct, short-term, minor adverse impact on administrative and medical services.

Alternative 3 would demolish four buildings and would also disrupt administrative functions in those buildings. Construction of the new tower would involve a small connection on the northeast portion of Building #1 (Figure 7). Construction would involve removal of portions of exterior walls where the new tower and Building #1 connect. This construction activity would require less extensive coordination with the medical staff to minimize adverse impacts to medical services, patients, and staff in Building #1. Alternative 3 would eliminate the loading dock area between it and Building #1. The A/E would be required to design a permanent alternative loading dock area.

Therefore, construction of Alternative 3 would have a direct, short-term, minor adverse impact on administrative and medical services.

3.12.2.1.2 Operation

Operation of the Proposed Action would meet the VA Standards for the VACHS space and patient population for DGSF at the WHVAMC, provide additional medical support features including inpatient surgical/endovascular, ambulatory, intensive care nursing, information & technology, pathology, laboratory medicine, sterile processing, engineering, pharmacy, environmental management, and logistics, increase the efficient use of building utilities, and improve VACHS's ability to provide modern medical services to Veterans in Connecticut and southern New England.

Therefore, operation of the Proposed Action, regardless of the alternative selected, would have a direct, long-term, significant beneficial impact on administrative and medical services.

3.12.2.2 No Action

Under the No Action Alternative, the Proposed Action would not be implemented. The current WHVAMC would not meet the VA Standards for the space and patient populations. Existing medical functions would continue, but the purpose and need for action would not be met.

Therefore, the No Action Alternative would have a direct, long-term, significant adverse impact on Veterans' medical services.

3.13 Socioeconomics/Demographics

3.13.1 Existing Conditions

The West Haven VAMC is located within a suburban, medium-density area in New Haven County, Connecticut. The socioeconomic conditions are influenced by the employment opportunities in the region, which are predominantly associated with health care and social assistance, retail trade, and educational services (Data USA, 2021). The median annual income in New Haven County is $69,905, which is slightly less than the median annual income of $78,444 for Connecticut and slightly more than the United States median annual income of $62,843 (USCB, 2019). New Haven County is the third most populated county of the eight counties in Connecticut. The population in New Haven County has decreased by 0.9% to approximately 854,757 individuals from 2010 to 2019 (the year the most recent data was reported) (USCB, 2019).

Relevant demographic data for New Haven County and for Connecticut are presented in Table 22 and economic data are presented in Table 23. The data presented are from the U.S. Census Bureau 2010-2019 Quick Facts dataset (USCB, 2019).

Table 22. Demographic Data for New Haven County and Connecticut

Location	Total Population	Median Age	% Population under age 18	% Minority Population[(1)]	% High School Graduates	Veterans
New Haven County	854,757	40.6	20.0%	22.7%	90.1%	38,410
Connecticut	3,565,287	41.0	20.4%	20.3%	90.6%	167,521

Notes:
1 – Data include all race/ethnicity categories except non-Hispanic White persons.

Table 23. Economic Data for New Haven County and Connecticut

Location	Number of Households	% Population in Poverty	Total Employment
New Haven County	330,572	12.0%	343,018
Connecticut	1,370,746	10.0%	1,538,341

3.13.2 Environmental Consequences

3.13.2.1 Proposed Action

3.13.2.1.1 Construction

The Proposed Action would require the construction contractor to employ skilled laborers and make expenditures on construction equipment, vehicles, supplies, and support facilities (e.g., office trailers, safety equipment, erosion-control materials). Additionally, workers from outside of New Haven County who are involved with construction of the new tower may utilize area lodging and other amenities. The expenditures would be generally similar regardless of the alternative selected. The temporary increase in the number of workers supporting construction of the Proposed Action would not induce changes in the demographic profile of New Haven County as it relates to population, housing, or income levels.

There are no children or child-case centers at the WHVAMC. The construction contractor would also establish a safe work zone with signage and fencing to ensure only authorized personnel can enter the work zone. These measures would help to keep children, as well as other visitors and staff, outside of the construction area. As a result, the Proposed Action would not pose

disproportionate environmental health and safety risks to children and would comply with EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*.

Therefore, under any of the alternatives, the temporary increase in employment and spending on equipment, supplies, and local services would have a direct, short-term, minor beneficial impact on local socioeconomic conditions in New Haven County.

3.13.2.1.2 Operation

Operation of the Proposed Action would enable Veterans in Connecticut and southern New England to continue receiving medical care at the WHVAMC, avoiding the related expenses of traveling to outside of this region to obtain medical care at another VA medical center or at a non-VA medical provider.

Once construction is completed, the Proposed Action would require capital expenditures to operate and maintain the new tower, including the purchase of maintenance and medical equipment. During the design phase, VA would also determine whether new staff would need to be hired to support the new tower. Although the specific operating budget and staffing levels would be defined during the design phase, routine operating expenditures would generally benefit New Haven County through additional tax revenue. However, the New Haven-Milford CT Metropolitan Statistical Area has a total domestic gross product of approximately $53 billion in 2022 (FRED, 2022). Therefore, operation of the Proposed Action would have direct and indirect, long-term, negligible beneficial impact on socioeconomic conditions in New Haven County.

3.13.2.2 No Action

Under the No Action Alternative, the Proposed Action would not be implemented. There would be no increase in expenditures on local or regional services and materials. Baseline expenditures on local services and materials would continue for the foreseeable future. Therefore, the No Action Alternative would have no impact on socioeconomics and demographics.

3.14 Environmental Justice

3.14.1 Existing Conditions

For this analysis, data for minority and low-income population were obtained for the area within a 2.5-mile radius of the West Haven VAMC, New Haven County, and Connecticut (USCB, 2019) (Table 24). According to this data, the area within a 2.5-mile radius of the West Haven VAMC has a larger minority population than New Haven County and Connecticut, but a slightly lower percentage of low-income populations (household income less than $25,000/year) than New Haven County, and a slightly larger percentage of low-income populations than Connecticut.

Table 24. Minority and Low-Income Populations

Location	Total Population	% Minority Population[(1)]	% Population Below Poverty Level
2.5-mile radius of the West Haven VAMC	54,620	36.7%	11.8%
New Haven County	854,757	22.7%	12.0%
Connecticut	3,565,287	20.3%	10.0%

Notes:
1 – Includes all race/ethnicity categories except non-Hispanic White persons

3.14.2 Environmental Consequences

3.14.2.1 Proposed Action

Construction and operation of the Proposed Action would not have a disproportionate impact on low-income or minority groups, as these populations are not present within the local community at dissimilar rates compared with levels within New Haven County or state-wide.

Therefore, the Proposed Action, regardless of the alternative selected, would have a negligible impact on environmental justice conditions.

3.14.2.2 No Action

No changes at WHVAMC would occur under the No Action Alternative. No impacts to environmental justice conditions would occur.

3.15 Cumulative Impacts

As defined by the CEQ regulations in 40 CFR Part 1508.7, cumulative impacts are those which "result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, without regard to the agency (federal or non-federal) or individual who undertakes such other actions."

Cumulative impact analysis captures the effects that result from the Proposed Action in combination with the effects of other actions taken before, during, or after the Proposed Action in the same geographic area.

The Proposed Action site is located within an approximately 5-acre area within the central portion of the 44-acre WHVAMC. The Proposed Action site is highly developed, having been improved with many of the existing buildings in 1916. The Proposed Action site is devoid of wildlife habitat or significant natural features (e.g. wetlands, water bodies). The Proposed Action site has been extensively graded, and the subsurface environment consists of densely compacted urban fill interspersed with numerous utility corridors and duct banks.

The surrounding WHVAMC grounds are also highly developed with medical and infrastructure support buildings, roadways, parking areas, designated entrances, utility infrastructure, and landscaped grounds. The continued use of the WHVAMC property as a medical hospital is also consistent with the West Haven CT Plan of Conservation and Development (City of West Haven, 2017).

The WHVAMC is located in the north-central portion of the City of West Haven, which is highly urbanized and includes a mixture of institutional, residential, commercial, and recreational uses. There has been no large-scale development in the vicinity of the WHVAMC, primarily because there is little to no undeveloped land remaining in this area.

More recent development has occurred on the West Haven VAMC campus, which has undergone periodic additions and modifications. Surface parking was expanded in the northeastern portion of the campus in the late 1990s. VA developed the parking lot northwest of the Site (P18) in 2018.

No new development plans were identified for off-campus properties in the Site area. Given the fully developed nature of the surrounding area, there is little remaining space for in-fill development.

Other projects planned for the West Haven VAMC campus in the near future include the construction of an approximately 10,000 square-foot inpatient pharmacy addition (scheduled for construction in 2023/2024), a new multi-deck parking garage to replace parking lot P4 9 (2023/2024), and the relocation and addition of an approximately 8,000 square-foot sterile processing service (2023/2024).

3.15.1 Proposed Action

The Proposed Action would result in adverse impacts to different portions of the site, depending on the alternative selected, as described throughout Section 3. These include potential short-term and/or long-term adverse impacts to aesthetics, air quality, above-ground historic properties, soil, noise, solid waste, transportation, and utilities.

Cumulative impacts on these resources are mostly likely to occur through additional development within the WHVAMC. Additional development could increase impervious surface area and/or impact the existing stormwater management infrastructure, such that new and/or replacement infrastructure is required to achieve MS4-permit requirements. Cumulative impacts would include a potential negligible impact on groundwater quality and a potential direct, long-term, less-than-significant beneficial impact on hydrology/stormwater.

Major projects within the WHVAMC that involve new or expanded medical or administrative functions, such as the new pharmacy and sterile processing facility, would increase the demand for utilities. This demand, when considered on a cumulative basis with other developments, can be considered to have a less-than-significant adverse impact because the resources from which the utilities are obtained may not be renewable. Based on VA's experience constructing and operating similar projects, potential adverse impacts from these future projects are anticipated to remain less-than-significant because of increases in the efficiencies in building systems.

As VA continues to identify improvements and advancements in standards of delivering care, future renovations to existing facilities may be required. Where renovations are not feasible economically or physically, then demolition may be required to additional buildings that are considered contributing elements to the WHVAMC historic district. Mitigation of adverse effects to historic properties would be required.

The Proposed Action and other planned major projects within the WHVAMC would have a beneficial long-term cumulative impact on community services by continuing to provide world-class medical services to Veterans, and socioeconomics through employment of medical and operational staff and expenditures on operational supplies from local and regional vendors.

3.15.2 No Action

The No Action Alternative would have a significant adverse impact on community services (medical). When considered on a cumulative basis with other projects at the WHVAMC, the No

Action Alternative would have a significant adverse impact on this resource because it would not allow the WHVAMC to achieve the VA Standards for supportive medical care.

3.16 Potential for Generating Substantial Public Controversy

3.16.1 Proposed Action

The Proposed Action is not anticipated to generate substantial controversy or lead to negative public reaction, because it would improve VA's ability to increase the level of care offered at WHVAMC to Veterans in Connecticut and throughout southern New England. The Proposed Action is anticipated to be widely accepted and positively perceived within both the Veteran and non-Veteran communities. However, the loss of historic buildings may be perceived negatively and be controversial to community members focused on preserving resources that contribute to the historic district. Additionally, Alternative 1 would eliminate the courtyard, which serves many visitors and staff on a daily basis and may be perceived less positively than Alternatives 2 or 3.

3.16.2 No Action

Significant public controversy would be anticipated under the No Action Alternative because of awareness that VA Standards for the VACHS space and patient population are not being met at the WHVAMC.

4. Management, Regulatory Compliance, and Mitigation Measures

This section summarizes the BMPs, regulatory compliance, and mitigation measures that would minimize potential adverse effects of the Proposed Action.

Per established protocols, procedures, and requirements, the A/E and construction contractors would incorporate and implement BMPs and permit-required regulatory compliance measures in the design, construction, and operation of the new surgical and clinical tower at the WHVAMC. These BMP and regulatory compliance measures are consistent with those regularly implemented on VA construction projects and in the State of Connecticut. These measures are common to all three alternatives. For all alternatives, the Proposed Action for also includes mitigation to reduce the impact to above-ground historic properties from potentially significant to less-than-significant adverse levels.

Table 25 lists the BMPs, regulatory compliance, and mitigation measures that are incorporated into the Proposed Action for all alternatives.

Table 25. Measures Incorporated into the Proposed Action

AESTHETICS	*Description*
Construction	
• Implement dust suppression methods identified in VA Specification 01 57 19: Temporary Environmental Controls. Available methods include application of water, dust palliative, or soil stabilizers; use of enclosures, covers, silt fences, or wheel washers; and suspension of dust-generating activities during sustained high wind conditions (10-40 mph with gusts at or above 50 mph).	BMP
• Install gravel pads at the construction site exit to prevent tracking loose soil onto roadways.	BMP
• Designate a central staging area for equipment and materials that is within or close to the construction site.	BMP
• Install construction privacy fencing between the construction area and the existing hospital grounds to reduce visual impacts to visitors and staff.	BMP
• Plant native, non-invasive, drought-resistant vegetation following grading to stabilize soils and minimize dust generation.	BMP
Operation	
• Professionally maintain newly landscaped areas with native, non-invasive vegetation.	BMP
AIR QUALITY	
Construction	
• Use Tier 4-compliant engines to reduce emissions of particulate matter and nitrogen oxides to meet emission standards established by USEPA.	BMP
• Limit the idling of mobile sources to three minutes.	BMP

• Implement dust suppression methods identified under Aesthetics.	BMP
CULTURAL RESOURCES	
• VA and CT SHPO have a signed PA for continued consultation and resolution of potential adverse effects to historic properties under the Proposed Action. This may include avoidance or development of a Memorandum of Agreement should adverse effects be unavoidable.	Mitigation
• Conclude Section 106 consultation with the CT SHPO and federally recognized Native American tribes prior to construction.	Regulatory requirement
• Implement a plan to address unanticipated discoveries in the event construction impacts previously unknown archaeological properties.	BMP
GEOLOGY, SOILS, AND TOPOGRAPHY	
Construction	
• Avoid blasting bedrock due to the proximity to the existing medical buildings at the WHVAMC.	BMP
• Retain on-site vegetation to the maximum extent possible.	BMP
• Implement spill and leak prevention and response procedures, including maintaining a complete spill kit at the site, to reduce the impacts of incidental releases of construction vehicle fluids to soil quality. Report releases of regulated quantities of regulated chemicals to VA and CTDEEP. Perform cleanup according to applicable regulatory requirements.	BMP, Regulatory requirement
• Revegetate disturbed areas as soon as construction is completed. Use native, non-invasive vegetation.	BMP
• Develop and adhere to the terms of the CTDEEP-approved *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities* (DEEP-WPED-GP-015) and implement and maintain the site-specific BMPs. These BMPs would also be consistent with VA's *Specification 01 57 19: Temporary Environmental Controls*. Install and maintain sedimentation and erosion control measures, including silt fences and water breaks, detention basins, filter fences, sediment berms, interceptor ditches, synthetic straw bales, rip-rap, and/or similar physical control structures.	Permit-required regulatory compliance
Operation	
• Conduct professional routine landscaping to ensure soil remains vegetated and stabilized to prevent erosion.	BMP
HYDROLOGY AND WATER QUALITY	
Construction and Operation	

• Design the stormwater management systems to comply with the WHVAMC National Pollutant Discharge Elimination System and MS4 permits.	Permit-required regulatory compliance
• Design the Proposed Action to comply with EISA Section 438 to the maximum extent technically practicable.	Regulatory requirement
• Should excavations require dewatering, discharge the groundwater to the WHVAMC MS4 system only if the groundwater meets permit requirements for total suspended solids.	Permit-required reg compliance
• All construction vehicles would be equipped with spill kits and contractors would be properly trained on their use. Should a release of regulated chemicals occur, the construction contractor would notify WHVAMC and CTDEEP immediately and implement required remedial measures to protect groundwater quality.	BMP, Regulatory requirement
NOISE and VIBRATION	
Construction	
• Perform construction activities between 7:00 am and 10:00 pm on weekdays unless there is a specific activity that needs to be completed outside of this schedule to avoid impacting the staff, visitors, and patients at the WHVAMC to the extent practicable. Should such activity be necessary, the WHVAMC Public Information Office would notify sensitive receptors in advance of the work taking place.	BMP
• Implement VA's noise control requirements and noise management BMPs.	BMP
• Comply with OSHA requirements to protect hearing of workers around loud construction equipment.	Regulatory requirement
• Should pile driving be required, coordinate with WHVAMC Director in advance and implement precautions to reduce vibration impacts on vibration-sensitive receptors.	BMP
HABITAT AND WILDLIFE	
Construction	
• Minimize clearing or damaging the existing mature vegetation around the existing buildings and elsewhere at the site.	BMP
• Replace any damaged or removed vegetation with native, non-invasive, drought-resistant varieties.	BMP
SOLID WASTE AND HAZARDOUS MATERIALS	
Construction	
• Complete the abatement of regulated building materials prior to building demolition. Use licensed contractors and follow all applicable federal, state, and local regulations for material handling, transport, and disposal.	Permit-required regulatory compliance
• Prior to demolition of Building #7 or removal of the subsurface sludge trap outside of Building #7, complete a radiological	Regulatory requirement

investigation and review data with VACHS RSO to determine the appropriate federal, state, and local requirements for the removal of the tank and its transport off-site for disposal.	
• Prior to building demolition, obtain a demolition permit from the City of West Haven per 2012 Connecticut General Statutes: *Title 29 - Public Safety and State Police, Chapter 541 - Building, Fire and Demolition Codes. Fire Marshals and Fire Hazards. Safety of Public and Other Structures.*	Permit-required regulatory compliance
• Recycle or reuse construction debris that does not require landfilling.	BMP
Operation	
• Follow VA's SOPs and applicable federal and state laws governing the use, generation, storage, or transportation and disposal of solid waste and hazardous materials.	Regulatory requirement
TRANSPORTATION AND PARKING	
Construction	
• Implement housekeeping measures to keep WHVAMC roadways free of debris, as specified under Aesthetics.	BMP
• Utilize flaggers when transporting oversized vehicles to and from the construction site.	BMP
UTILITIES	
Construction	
• Incorporate energy efficiency elements in the design of the new tower.	BMP

5. Agency and Public Involvement

VA invites public participation in decision-making on new proposals through the NEPA process. Public participation with respect to decision-making on the Proposed Action is guided by 38 CFR Part 26, VA's regulations for implementing NEPA. Additional guidance is provided in VA's NEPA Interim Guidance for Projects (VA, 2010). Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. Members of the public with a potential interest in the Proposed Action are encouraged to participate. A record of the public involvement associated with this EA is provided in Appendix C.

5.1 Scoping

VA initiated the public scoping process for the Proposed Action in March 2022, with publication of a notice in the *New Haven Register*, a daily newspaper with circulation throughout New Haven County, about the opportunity to provide early input on the Proposed Action. The notice was published on March 17 and 20, 2022 (a copy is available in Appendix C). No comments from the public were received.

This notice requesting early input was also emailed to stakeholders who may have interest in the Proposed Action; these stakeholders included federally recognized Native American tribes; federal, state, and city regulatory agencies; and federal, state, and municipal elected officials. A list of stakeholders is provided in the following list.

- Delaware Tribe of Indians
- Mashantucket Pequot Indian Tribe
- Mohegan Tribe of Indians of Connecticut
- Narragansett Indian Tribe
- US Fish and Wildlife Service - North Atlantic-Appalachian Regional Office
- USDA Natural Resource Conservation Service
- US Environmental Protection Agency Region 1
- US Army Corps of Engineers, Regulatory Division (CT)
- CTDEEP Office of Planning and Development, Environmental Review
- CTDEEP Bureau of Air Management
- CTDEEP Bureau of Natural Resources, Wildlife Division
- Connecticut Advisory Commission on Intergovernmental Relations
- Connecticut State Historic Preservation Office
- Connecticut Department of Economic and Community Development
- Connecticut Department of Transportation, Office of Environmental Planning
- City of West Haven Building Department
- City of West Haven Housing Authority
- City of West Haven Inland Wetlands Watercourse Agency
- City of West Haven Parks and Recreation
- City of West Haven Department of Planning and Development
- City of West Haven Public Works Department
- City of West Haven Office of the Mayor
- Southwest Conservation District
- The Honorable Richard Blumenthal, United States Senate

- The Honorable Chris Murphy, United States Senate
- The Honorable Rosa L. DeLauro, United States House of Representatives, 3rd District
- Connecticut Historical Society and Museum
- Preservation Connecticut
- West Haven Historical Society
- West Haven Veterans Museum
- New Haven Museum
- New Haven Preservation Trust

The USEPA provided information about EISA Section 438 and MS4 permit requirements. CTDEEP provided information about construction and special waste management, stormwater management, air quality, and wetlands and wildlife management. The SHPO requested continued consultation under Section 106. No other input was received from stakeholders. Input from stakeholders was incorporated in the development of the EA. Copies of correspondence with stakeholders are provided in Appendix B.

5.2 Draft EA

The Draft EA was published and released for a 30-day review and comment period, as announced by a Notice of Availability (NOA) published in the *New Haven Register* on September 22 and 25, 2022. The NOA was also mailed to selected federal, state, and local agencies, elected officials, and federally recognized Native American tribes, to inform them of the 30-day review and comment period. A copy of the Draft EA NOA is provided in Appendix C.

As stated in the NOA, the Draft EA was available for review in print at the West Haven Public Library at 300 Elm St, West Haven, CT 06516; and available for electronic download from the VA website: https://www.cfm.va.gov/environmental/index.asp.

Comments or requests for additional information may be sent to: Patrick Read, U.S. Department of Veterans Affairs, Office of Construction & Facilities Management, 425 I (eye) Street, NW, Room 6W317D, Washington, D.C., 20001; by email at VACOEnvironment@va.gov; or by telephone at (202) 632-5879. Reference "West Haven VAMC – Proposed Surgical and Clinical Tower Draft EA" in all correspondence.

No comments were received during the Draft EA 30-day review period.

5.3 Final EA

An NOA for the Final EA was published in the *New Haven Register*. The NOA has also been mailed to selected federal, state, and local agencies, elected officials, and federally recognized Native American tribes. A copy of the Final EA NOA is provided in Appendix C.

As stated in the NOA, the Final EA was made available for review in print at the West Haven Public Library at 300 Elm St, West Haven, CT 06516; and available for electronic download from the VA website: https://www.cfm.va.gov/environmental/index.asp. Requests for additional information may be sent to: Patrick Read, U.S. Department of Veterans Affairs, Office of Construction & Facilities Management, 425 I (eye) Street, NW, Room 6W317D, Washington, D.C., 20001; by email at VACOEnvironment@va.gov; or by telephone at (202) 632-5879. Reference "West Haven VAMC – Proposed Surgical and Clinical Tower Final EA" in all correspondence.

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7. List of Preparers

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Mabbett & Associates, Inc. (Contractor)	
A. Glucksman	Project Manager, Research and Data Gathering, Document Preparation, Affected Environment, Environmental Impact Analysis, and Scoping Coordination
D. McClaine	Architectural History Research and Affected Environment
K. Kittel	Research and Data Gathering, Affected Environment
E. Fernandes	Research and Data Gathering, Affected Environment
S. Grabelle	Environmental Justice, Technical QA/QC

8. Glossary

Sources:

- Army NEPA Glossary, http://aec.army.mil/portals/3/nepa/glossary00.pdf
- Glossary of Terms Used in Department of Energy NEPA Documents, http://energy.gov/sites/prod/files/NEPA_Glossary%2008_2011.pdf
- NEPA Glossary, U.S. Fish and Wildlife Service, http://www.fws.gov/r9esnepa/Intro/Glossary.PDF

Aesthetic resources: The components of the environment as perceived through the visual sense only. Aesthetic specifically refers to beauty in both form and appearance.

Affected environment: A portion of the NEPA document that succinctly describes the environment of the area(s) to be affected or created by the alternatives under consideration. Includes the environmental and regulatory setting of the proposed action.

Alternative: A reasonable way to fix the identified problem or satisfy the stated need.

Attainment area: An area that the Environmental Protection Agency has designated as being in compliance with one or more of the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and particulate matter. An area may be in attainment for some pollutants but not for others.

Conformity analysis: The *Clean Air Act* requires the Environmental Protection Agency to promulgate rules to ensure that federal actions conform to the appropriate state implementation plans (SIP) for air quality. Two sets of rules (one for transportation and one for all other actions) developed by USEPA establish the criteria and procedures governing the determination of this conformity. A conformity analysis follows these criteria and procedures to quantitatively assess whether a proposed federal action confirms with the SIP.

Council on Environmental Quality (CEQ): Established by Congress within the Executive Office of the President as part of the *National Environmental Policy Act of 1969*, CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives. The Council's Chair, who is appointed by the President with the advice and c consent of the Senate, serves as the principal environmental policy adviser to the President. The CEQ reports annually to the President on the state of the environment, oversees federal agency implementation of the environmental impact assessment process, and acts as a referee when agencies disagree over the adequacy of such assessments.

Criteria pollutant: An air pollutant that is regulated by National Ambient Air Quality Standards (NAAQS). Criteria pollutants include sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and two size classes of particulate matter, PM10 and PM2.5 New pollutants may be added to, or removed from, the list of criteria pollutants as more information becomes available.

Cumulative effect (cumulative impact): The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other

actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Decibel (dB): A unit for expressing the relative intensity of sounds on a logarithmic scale from zero for the average least perceptible sound to about 130 for the average level at which sound causes pain to humans. For traffic and industrial noise measurements, the A-weighted decibel (dBA), a frequency-weighted noise unit, is widely used. The A-weighted decibel scale corresponds approximately to the frequency response of the human ear and thus correlates well with the loudness perceived by people.

Effects: Effects and impacts, as used in NEPA, are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect would be beneficial. There are direct effects and indirect effects. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Endangered species: Plants or animals that are in danger of extinction through all or a significant portion of their ranges and that have been listed as endangered by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service following the procedures outlined in the *Endangered Species Act (ESA)* and its implementing regulations.

Environmental assessment (EA): A concise public document for which a federal agency is responsible that serves to briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact; aid an agency's compliance with NEPA when no environmental impact statement is necessary; or facilitate preparation of an EIS when one is necessary. Includes brief discussions of the need for the proposal, of alternatives, of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.

Environmental impact statement (EIS): A detailed written statement required by Section 102(2)(C) of NEPA, analyzing the environmental impacts of a proposed action, adverse effects of the project that cannot be avoided, alternative courses of action, short-term uses of the environment versus the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitment of resources.

Environmental justice: The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Executive Order 12898 directs federal agencies to make achieving environmental justice part of their missions by identifying and addressing disproportionately high and adverse effects of agency programs, policies, and activities on minority and low-income populations.

Finding of no significant impact (FONSI): A public document issued by a federal agency briefly presenting the reasons why an action for which the agency has prepared an environmental assessment has no potential to have a significant effect on the human environment and, thus, would not require preparation of an environmental impact statement.

Floodplain: The lowland and relatively flat areas adjoining inland and coastal waters including flood- prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year. **100-Year Flood –** A flood event of such magnitude that it occurs, on average, every 100 years; this equates to a one percent chance of it occurring in a given year.

Fugitive emissions: Emissions that do not pass through a stack, vent, chimney, or similar opening where they could be captured by a control device. Any air pollutant emitted to the atmosphere other than from a stack. Sources of fugitive emissions include pumps; valves; flanges; seals; area sources such as ponds, lagoons, landfills, and piles of stored material (such as coal); and road construction areas or other areas where earthwork is occurring.

Hazardous material: Any material that poses a threat to human health and/or the environment. Hazardous materials are typically toxic, corrosive, ignitable, explosive, or chemically reactive.

Historic property: Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to a Native American tribe or Native Hawaiian organization and that meet the National Register criteria.

Impacts: see Effects.

Impervious surface: A hard surface area that either prevents or retards the entry of water into the soil or causes water to run off the surface in greater quantities or at an increased rate of flow. Common impervious surfaces include, but are not limited to, rooftops, walkways, patios, driveways, parking lots, storage areas, concrete or asphalt paving, and gravel roads.

National Ambient Air Quality Standards (NAAQS): Standards defining the highest allowable levels of certain pollutants in the ambient air (i.e., the outdoor air to which the public has access). Primary standards are established to protect public health; secondary standards are established to protect public welfare (for example, visibility, crops, animals, buildings).

National Pollutant Discharge Elimination System (NPDES): A provision of the *Clean Water Act* that prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the Environmental Protection Agency, a state, or, where delegated, a tribal government on an Indian reservation.

National Register of Historic Places: The nation's inventory of known historic properties that have been formally listed by the National Park Service (NPS). The National Register of Historic Places is administered by the NPS on the behalf of the Secretary of the Interior. National Register listings include districts, landscapes, sites, buildings, structures, and objects that meet the set of criteria found in 36 CFR 60.4.

No action Alternative: The alternative where current conditions and trends are projected into the future without another proposed action.

Particulate matter (PM), PM10, PM2.5: Any finely divided solid or liquid material, other than uncombined (that is, pure) water. A subscript denotes the upper limit of the diameter of particles included. Thus, PM10 includes only those particles equal to or less than 10 micrometers (0.0004 inch) in diameter; PM2.5 includes only those particles equal to or less than 2.5 micrometers (0.0001 inch) in diameter.

Proposed action: In a NEPA document, this is the primary action being considered. Its impacts are analyzed together with the impacts from alternative ways to achieve the same objective and the required no action alternative, which means continuing with the status quo.

Runoff: The portion of rainfall, melted snow, or irrigation water that flows across ground surface and is eventually returned to streams. Runoff can pick up pollutants from the air or the land and carry them to streams, lakes, and oceans.

Scope: Consists of the range of actions, alternatives, and impacts to be considered in an environmental analysis. The scope of an individual statement may depend on its relationships to other statements (also see tiering).

Scoping: An early and open process for determining the extent and variety of issues to be addressed and for identifying the significant issues related to a proposed action (40 CFR §1501.7). The scoping process helps not only to identify significant environmental issues deserving of study, but also to deemphasize insignificant issues, narrowing the scope of the NEPA process accordingly, and for early identification of what are and what are not the real issues (40CFR §1500.5(d)). The scoping process identifies relevant issues related to a proposed action through the involvement of all potentially interested or affected parties (affected federal, state, and local agencies; federally recognized Native American tribes; interest groups, and other interested persons) in the environmental analysis and documentation.

Significantly: As used in NEPA, requires considerations of both context and intensity.

> *Context*— significance of an action must be analyzed in its current and proposed short- and long-term effects on the whole of a given resource (for example, affected region).
>
> *Intensity*—refers to the severity of the effect.

Solid waste: Non-liquid, non-soluble materials ranging from municipal garbage to industrial wastes that contain complex and sometimes hazardous substances. Solid wastes also include sewage sludge, agricultural refuse, demolition wastes, and mining residues. Technically, solid waste also refers to liquids and gases in containers.

Wetlands: Those areas that are inundated by surface water or groundwater with a frequency sufficient to support, and under normal circumstances do, or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas.

Jurisdictional wetlands are those wetlands protected by the *Clean Water Act*. They must have a minimum of one positive wetland indicator from each parameter (vegetation, soil, and hydrology). The U.S. Army Corps of Engineers requires a permit to fill or dredge jurisdictional wetlands.

APPENDICES

APPENDIX A

APPENDIX B

APPENDIX C