3.6.3.1.3 Soils

The Proposed Action would require some excavation of soil to create utility trenches for the new subsurface stormwater infrastructure (piping and catch basins). Any excess soil would be reutilized on-site to the maximum extent practicable or transported off-site for reuse. Excavation would expose soils and increase the potential for erosion. Soil erosion from construction activities is regulated in New Hampshire under the New Hampshire Department of Environmental Services (NHDES) Stormwater Management and Erosion and Sediment Control Handbook for Urban Developing Areas of 1992 (NHDES, 1992).

Accordingly, a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) would be obtained from USEPA by the construction contractor, and permit-required and -approved BMPs also specified in the NHDES Stormwater Management and Erosion and Sediment Control Handbook would be implemented and maintained to minimize soil erosion and sedimentation resulting from land-disturbing activity. Although NHDES is not delegated by USEPA to administer the NPDES permit, NHDES must certify that the limitations and conditions contained in the NPDES permit to ensure that the proposed discharge would not violate any state law or regulation. BMPs may include but are not limited to:

- Silt fences around the area of disturbance
- Re-vegetation of bare soils
- Mulching of bare soils
- Wet suppression of soils to reduce wind erosion
- Covering of any soil stockpile
- Stone-lined and grass-lined ditches and channels
- Preserving existing site vegetation
- Construction monitoring and reporting

As part of the construction of the loop road, three retaining walls would be built to strengthen the slope of the land and prevent the sloped soil from eroding. The first would be approximately 150 feet in length and built northwest of Smyth Tower in the east portion of the campus to retain about 5 feet of vertical height to accommodate a site cut. The second would be approximately 630 feet in length and built along the west, north, and south sides of the proposed north parking lot to retain tapered fills up to 16 feet in height. The third retaining wall would be approximately 800 feet in length and built along the northeast side of the proposed loop road on the northeast side of the existing north parking lot to retain tapered fills up to 10 feet in height.

Soil quality could be impacted in the event of the accidental release of petroleum-based fluids (diesel or hydraulic fluid) from construction vehicles and equipment. Petroleum can degrade soil quality if the release is not immediately remediated. To avoid such potential releases and impacts, construction equipment would be properly maintained in good working order and equipped with emergency spill kits, with workers trained on the proper deployment of kits. This would ensure that construction contractors are prepared to respond to an emergency release of petroleum-based fluids, contain the release, and prevent impacts to soil. Additionally, construction equipment would be refueled in designated areas with impervious surfaces to avoid potentially impacting soil from spilled fuel.

By utilizing appropriate erosion and sedimentation BMPs, applying stormwater management BMPs, ensuring adherence to the terms of the NPDES CGP and the Stormwater Management and

Erosion and Sediment Control Handbook, and effectively revegetating the site following demolition, impacts from construction of the Proposed Action on soil would be minimized to short-term, less-than-significant adverse levels. When considered on a cumulative basis with other current and future developments in the area, impacts from the Proposed Action would not be significant.

3.6.3.2 No Action

No changes to the site would occur from implementation of the No Action alternative; therefore, no impacts to geology, topography, or soils would occur. Baseline conditions would remain.

3.7 Water Resources

The Proposed Action would be considered to have a significant adverse impact on water resources (surface water or groundwater) if:

- It could cause an exceedance of a total maximum daily load;
- It could cause a change in the impairment status of that water feature; or
- It could cause an unpermitted direct impact on a waterbody of the United States.

Floodplains are those areas that would be inundated by a flood event having a defined chance of exceedance in any given year. The Proposed Action would be considered to have a significant impact on floodplains if the action:

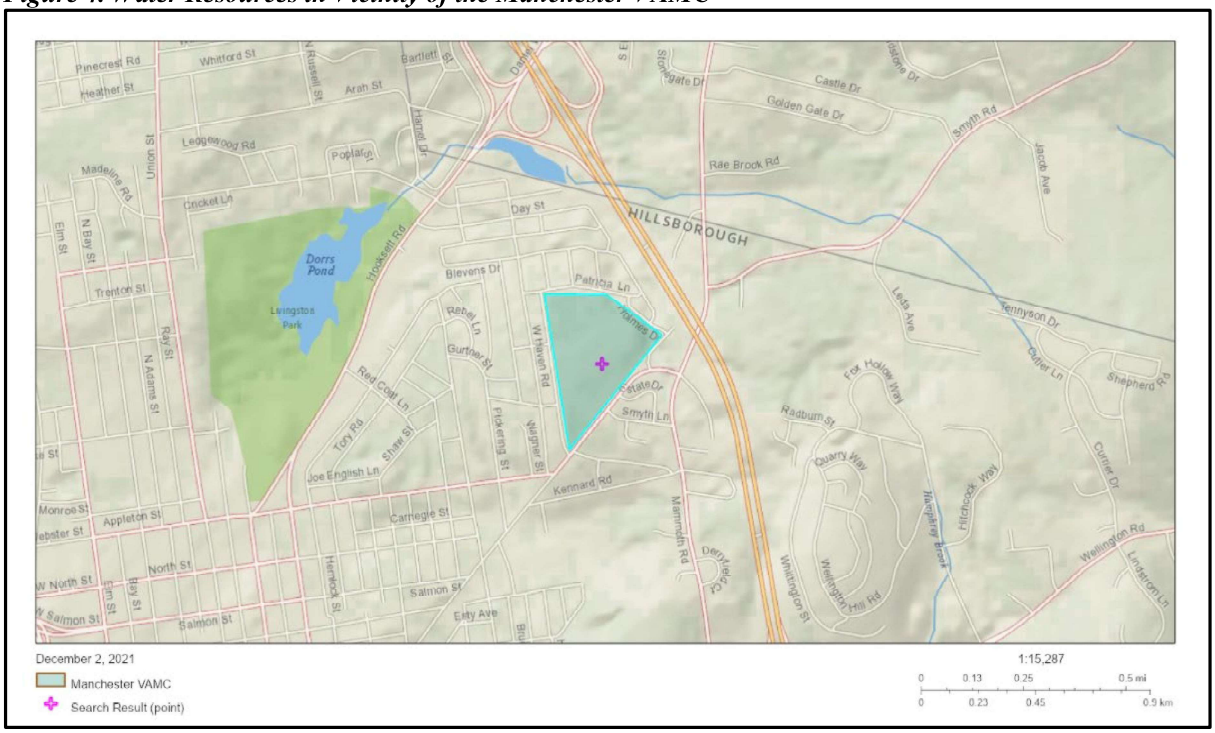
- Reduces water availability or supply to existing users;
- Overdrafts groundwater basins;
- Exceeds safe annual yield of water supply sources;
- Threatens or damages unique hydrologic characteristics;
- Endangers public health by creating or worsening health hazard conditions; or,
- Violates established laws or regulations adopted to protect floodplains.

3.7.1 Existing Environment

3.7.1.1 Surface Water Resources

The Manchester VAMC is located within the 5,010-square-mile Merrimack River Watershed, the fourth largest watershed in New England. No streams or surface waterbodies are present on the Manchester VAMC property. The nearest waterbody is a riverine area abutting the southeast portion of the property; this area is approximately 230-feet southeast of Proposed Action area. The Manchester VAMC southeast outflow for a portion of stormwater generated at the campus is discharged to this riverine area. Located directly north of the Manchester VAMC is Goldfish Pond, which flows west and discharges into Dorrs Pond (Figure 4). Both Goldfish Pond and Dorrs Pond are classified as freshwater ponds, and the Merrimack River is classified as a riverine system.

Figure 4. Water Resources in Vicinity of the Manchester VAMC



3.7.1.2 Groundwater Resources

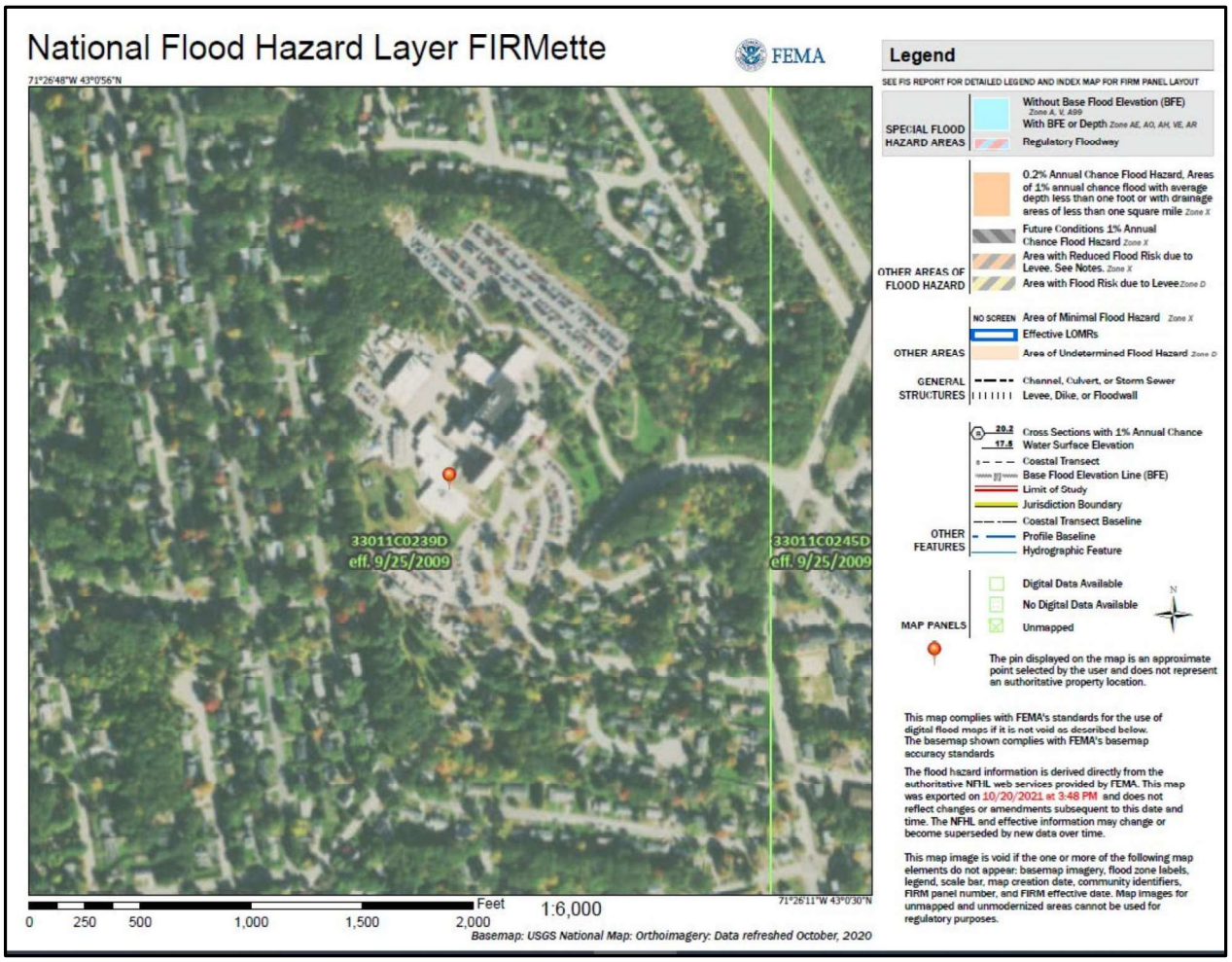
Groundwater in New Hampshire is found in fractured rock formations and in the surficial material deposited and shaped by receding glaciers. Surficial aquifers are relatively shallow, generally less than 100 feet thick. The shallow nature of surficial aquifers and the limited space for water in fractured bedrock limits the storage of water in the ground. In general, surface waters and groundwater are highly interconnected with one another in New Hampshire. When the ground is not frozen, on average 40 percent of precipitation recharges groundwater with more recharge occurring prior to and after the growing season (NHDES, 2008). Groundwater is anticipated to be present at approximately 7-feet or more below the ground surface at the Proposed Action area. The Manchester VAMC does not utilize groundwater resources underlying the property for any facility function.

3.7.1.3 Floodplains

Based on a review of available Federal Emergency Management Agency (FEMA) Flood Zone Maps for the City of Manchester (Code number 330169), the Proposed Action area is featured on boundary map 33011C0239D, effective September 25, 2009 (FEMA, 2021) (Figure 5).

According to the FEMA flood zone map, the Manchester VAMC is not located within a flood zone (FEMA, 2021). Therefore, the Proposed Action area is in an area of minimal flood hazard.

Figure 5. FEMA Floodplain Map (floodplain boundary map 33011C0239D)



3.7.2 Thresholds of Significance

Impacts to water resources would be considered significant if VA's actions: exceed applicable federal and state regulatory limits for surface water quality or result in unpermitted direct impacts to waterbodies of the U.S.; substantially affect surface water drainage or stormwater runoff; substantially affect groundwater quantity or quality; or are inconsistent with enforceable policies under the CZMA.

3.7.3 Environmental Consequences

3.7.3.1 Proposed Action

3.7.3.1.1 Water Resources

The Proposed Action would not involve construction in, on, or above surface waters, and thus would not result in disturbance, alteration, or filling of any surface waters on or around the site.

The Manchester VAMC maintains a Municipal Separate Storm Sewer Systems (MS4) permit to reduce the discharge of pollutants from the southeast outflow to the riverine area located in the southeastern portion of the campus. The Proposed Action would decrease the stormwater volumes currently discharging to the southeast outflow by redirecting a portion of this stormwater to new infiltration systems in the northern portion of the campus. Other stormwater runoff captured under the Proposed Action would be discharged to the proposed new connection to the City of

Manchester stormwater sewer system at Patricia Lane. Therefore, the Proposed Action would have no impact on surface water resources.

Subsurface construction activities (excavations for utility trenches and stormwater piping) may require excavations that could encounter shallow groundwater. Should this happen, dewatering of groundwater in the open excavation would occur. The volume dewatered would depend on site-specific conditions, but the volume is not anticipated to exceed 10,000 gallons. This volume of groundwater is negligible in context to the remaining larger volume of groundwater in the underlying aquifer. Additionally, dewatering groundwater does not change the mineralogical or chemical characteristics of the remaining groundwater in the underlying aquifer. Thus, dewatering would have no impact on groundwater resources or quality..

3.7.3.1.2 Floodplains

The Proposed Action area is not located within a flood zone. Therefore, the Proposed Action would have no adverse impact on floodplain conditions on or off site.

3.7.3.2 No Action

No changes to the Proposed Action site would occur from implementation of the No Action alternative; therefore, no changes to water resources or floodplains would occur. Baseline conditions would remain.

3.8 Wildlife and Habitat

3.8.1 Regulatory Basis

Federally listed species are those plants and animals protected by the federal government pursuant to the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). Federally listed species are classified as endangered or threatened.

State-listed species are those plants and animals managed by the New Hampshire Fish and Game Department classified as endangered, threatened, or species of special concern.

3.8.2 Existing Environment

The Manchester VAMC property was assessed via the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) online system on October 20, 2021. The USFWS IPaC indicated the potential occurrence in the 12-acre area for one Candidate insect species, the Monarch Butterfly (*Danaus plexippus*), and four migratory bird species protected under the *Migratory Bird Treaty Act* of 1918 (MBTA) and *the Bald and Golden Eagle Protection Act* of 1940 (Table 13). A Candidate species is defined as a species under consideration for official listing for which there is sufficient information to support listing. The area that would be disturbed under the Proposed Action was assessed for the occurrence of USFWS Critical Habitat as defined by 17 CFR 35.1532. Per the USFWS Critical Habitat for Threatened & Endangered Species database, the Proposed Action area does not contain critical habitat. A copy of the IPaC results is included in Appendix A.

The Manchester VAMC does not provide suitable conditions for the Monarch butterfly due to longstanding routine landscaping and mowing of the grounds and lack of milkweed, a plant that provides forage for the Monarch butterfly. Additionally, the campus generally does not provide suitable habitat to sustain wildlife populations, as the majority of the site is developed with buildings and impervious surfaces, and there is a high level of human activity (pedestrians, vehicle traffic) that is not conducive to maintaining wildlife populations.

3.8.2.1 Migratory Bird Treaty Act

The MBTA makes it unlawful to kill, hunt, sell, or possess listed birds (USFWS, 2017). Table 13 summarizes the MBTA species that the USFWS IPaC database indicated could potentially be present at the Manchester VAMC.

Table 13. Migratory Bird Treaty Act Species Potentially Present

Scientific Name	Common Name	Level of Concern
Haliaeetus leucocephalus	Bald Eagle	Vulnerable
Dolichonyx oryzivorus	Bobolink	Bird of Concern
Dendroica discolor	Prairie Warbler	Bird of Concern
Hylocichla mustelina	Wood Thrush	Bird of Concern

Even though the bobolink, prairie warbler, and wood thrush may be present, the site would not be their primary habitat for breeding, foraging or resting because of the constant human activity. Although the bald eagle is no longer state or federally listed, it is still federally protected by the *Bald and Golden Eagle Protection Act* in accordance with 16 United States Code 668. The bald eagle typically uses riparian habitat associated with coastal areas, lake shorelines, and riverbanks. The nests are generally located near bodies of water that provide a dependable food source. No bald eagles or nests were observed during a field survey on October 22, 2021. For these reasons, it has been determined that the Proposed Action would have no impact on bald eagles.

3.8.3 Thresholds of Significance

Factors considered in the analysis of potential impacts on biological resources include serious disruption to normal wildlife behavioral patterns, or serious disturbance to habitat.

The Proposed Action would be considered to have a significant impact on the biological environment if:

- It could result in a permanent net loss of habitat at a landscape scale;
- It could cause a long-term loss or impairment of a substantial portion of local habitat on which native species depend; or
- It could result in the unpermitted "take" of bald eagles or a threatened or endangered species.

3.8.4 Environmental Consequences

The majority of the wildlife currently found at the Manchester VAMC are adapted to living in a disturbed and/or suburban area and co-existing with human activity and no protected species were identified during the field survey. Therefore, the Proposed Action would have no adverse impact on wildlife or change the type or quality of habitats.

3.8.4.1 No Action

Under the No Action Alternative, environmental conditions would remain as they currently exist, and there would be no impact to wildlife or habitats.

3.9 Noise

Sound occurs when vibrations that travel through a medium are interpreted by the biological elements of the ear. Noise occurs when sounds become undesirable, unpleasant, or damaging. 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 12. 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).

The National Institute for Occupational Safety and Health recommends that individuals working in an environment of 85 dBA or louder for an eight-hour workday limit their exposure to this noise level and wear protective earwear to help manage and prevent hearing loss due to noise exposure.

3.9.1 Noise Receptors

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.

The nearest sensitive noise receptors include the patients in the Manchester VAMC hospital buildings and the surrounding residences located along Hillhaven Road, approximately 70-feet west of the western border of the Manchester VAMC.

No schools, convalescent facilities, religious institutions, libraries, or recreation areas are present within 0.25 miles of the campus.

Table 13. Common Household, Industrial, and Construction Sound Levels

Sound Level (dBA)	Common Sounds	Effect
140	Jet engine	Painful
130	Near air-raid siren	Painful
120	Jet plane takeoff, siren	Painful
110	Chain saw, thunder, garbage truck	Extremely Loud
100	Hand drill	Extremely Loud
90	Subway, passing motorcycle	Extremely Loud
85	Excavator, backhoe, paver	Very Loud
80	Blow-dryer, kitchen blender, food processor, cement mixer, power saw	Very Loud
70	Busy traffic, vacuum cleaner, alarm clock	Loud
60	Typical conversation, dishwasher, clothes dryer	Moderate
50	Moderate rainfall	Moderate
40	Quiet room	Moderate
30	Whisper, quiet library	Faint

3.9.2 Existing Environment

The Manchester VAMC is surrounded by residential communities with a soundscape typical of a suburban area. The predominant ambient sounds audible within the Manchester VAMC are from vehicular traffic on the roads bordering the site: Smyth Road, Hillhaven Road, and Patricia Lane. No other notable noise-generating sources are present within the immediate vicinity of the site.

Sources of noise generated within the Manchester VAMC campus include staff and visitor traffic, emergency generator testing, and CHP operations. Ambulance routinely shut off their sirens when entering the hospital grounds so as not to disturb patients.

3.9.3 Thresholds of Significance

Impacts to noise receptors would be considered significant if the Proposed Action significantly increased ambient noise levels or exceeded any applicable environmental noise limit guidelines.

3.9.4 Environmental Consequences

3.9.4.1 Proposed Action

The Proposed Action would generate noise from mobilizing equipment to and from the Proposed Action site. Once mobilized to the site, the majority of construction equipment would remain within the construction area until construction is complete. This approach would minimize the need for multiple mobilizations of equipment, thereby decreasing the amount of noise associated with equipment traveling to and from the Manchester VAMC. The primary noise associated with the Proposed Action would then be generated from the operation of the heavy machinery at the site.

Noise from construction activities would vary depending on the type of equipment being used at the time. The loudest anticipated piece construction equipment would be a jackhammer, which is approximately 130 dBA. Jackhammering would be utilized to rip bedrock and would occur during an approximately a 4-month period. The impact from this noise on a receptor depends on the distance between the noise source and receptor. Anticipated cumulative construction sound levels generated during daytime hours at specified distances are shown in Table 14. The jackhammering would occur approximately 200 feet from the residences so would be between 78-82 dBA VA, however, VA would use temporary, high-performance acoustic barriers that would not ensure that construction does not exceed the maximum allowable noise levels specified by the City of Manchester (55 dBA).

Table 14. Estimated Noise Levels from Construction Activities

Distance from Noise Source, feet (meters)	Estimated Sound Level in dBA
50 (15.2)	90–94
100 (30.5)	84–88
150 (45.7)	81–85
200 (61.0)	78–82
400 (121.9)	72–76
800 (243.8)	66–70
1,200 (365.8)	< 64

The nearest sensitive noise receptors to the Proposed Action site would be patients at the main hospital building. Off-site, the nearest receptors would be residents on the western portion of the Manchester VAMC along Hillhaven Road. Under the Proposed Action, portions of the loop road and parking lots would be approximately 60-feet from the residential properties on Hillhaven Road. To minimize vehicular traffic sound to these residences, VA would install a 6-foot opaque vinal privacy fence and vegetated buffer to help minimize noise levels along the western property border.

Construction workers would be working in close proximity to construction equipment and could be exposed to noise levels between 90-120 dBA. This noise level is above the permissible noise

exposure level defined by the Occupational Safety and Health Administration (OSHA). These levels would be reduced to permissible levels through feasible administrative or engineering controls, such as by equipping construction equipment with appropriate sound-muffling devices (i.e. from the original equipment manufacturer or better), limiting construction-equipment engine idling to less than five minutes, using sound shields, and providing workers with hearing protection.

All construction noise levels would adhere to the *Manchester, NH Code of Ordinances §94.10 Noise Levels* standard, which specifies that any commercial power equipment operated upon any residential, commercial, industrial or public premises between 7:00 a.m. and 9:00 p.m. does not exceed a sound pressure level of 88 dBA when measured at the property line of the receiving premise. Accordingly, VA would not operate construction equipment that exceeds 60 dBA between the hours of 9:00 p.m. and 7:00 a.m. 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 Manchester VAMC.

Therefore, construction and operation of the Proposed Action would result in short-term, less-than-significant adverse impacts to noise receptors, including visitors and staff at the hospital, off-site receptors, and construction workers. When considered on a cumulative basis with other current and potential future developments in the area, the impacts from the Proposed Action would not increase to a significant adverse level.

3.9.4.2 No Action

Under the No Action Alternative, the Proposed Action would not occur. No changes to the current noisescape at the Manchester VAMC would occur.

3.10 Solid Waste and Hazardous Materials

Hazardous and toxic materials or substances are generally defined as materials or substances that pose a risk (i.e., through either physical or chemical reactions) to human health or the environment. Generally, hazardous wastes are discarded materials (e.g., solids or liquids) not otherwise excluded by 40 CFR 261.4 that exhibit a hazardous characteristic (i.e., ignitable, corrosive, reactive, or toxic), or are specifically identified within 40 CFR 261.

3.10.1 Existing Environment

On December 2 and 16, 2020, the Manchester VAMC conducted a survey of the Proposed Action area to determine if regulated building materials, including asbestos and/or lead, were present. The survey was limited to testing pit excavations and materials identified during a site walk of the proposed loop road path. Materials sampled included suspect debris collected from one of the test pit excavations, utility vault debris found near Lot E, and painted curbs that may be disturbed under the Proposed Action. The survey found no asbestos-containing materials or lead-based paint. Additionally, VA noted that a steam line that contained asbestos had recently been replaced. All pipes on campus are steel jacketed, and if asbestos is present, it is contained below the steel jacketing (VA, 2021).

The Manchester VAMC maintains several above-ground fuel storage tanks in the northern portion of the campus, but there are no underground storage tanks at the campus.

3.10.2 Thresholds of Significance

Impacts to solid waste hazardous materials, or hazardous waste, would be considered significant if the Proposed Action were to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or wastes from accidental release, or if it were to impair implementation of or physically interfere with an adopted emergency response or evacuation plan.

3.10.3 Environmental Consequences

3.10.3.1 Proposed Action

In the event that regulated building materials are detected during the construction phase, they would be abated (by removal or encapsulation) by licensed workers according to all applicable federal and state regulations, e.g., New Hampshire asbestos abatement regulations outlined in *RSA 141-E Asbestos Management & Control* (NHDES, 2021). They would then be transported off-site in appropriate containers (i.e., double-lined) and under manifest for proper disposal at a USEPA-approved disposal facility. Following abatement, the debris would not contain hazardous materials. As previously described, no regulated building materials were detected within the Proposed Action area.

During the construction phase, all other debris would be landfilled off-site as construction debris. The nearest New Hampshire-licensed landfill is the Manchester Solid Waste Drop-off Facility at 500 Dunbarton Road, Manchester, NH, and is operated by the City of Manchester, though other licensed landfills may also be used.

Accordingly, the nature of the solid wastes generated during construction of the Proposed Action would be similar to a typical construction project and the volumes generated would not be anticipated to make a major contribution to the overall solid waste volume generated and disposed of in Hillsborough County or southeastern New Hampshire.

These management measures would ensure that potential impacts from construction of the Proposed Action on solid waste and hazardous materials conditions would remain at short-term, negligible adverse levels. When considered on a cumulative basis with other current and future developments in the area, the negligible adverse impacts from the Proposed Action would not increase to significant levels.

3.10.3.2 No Action

Under the No Action alternative, the Proposed Action would not be implemented. No changes to solid waste and hazardous material volumes or management procedures would occur and baseline conditions would remain.

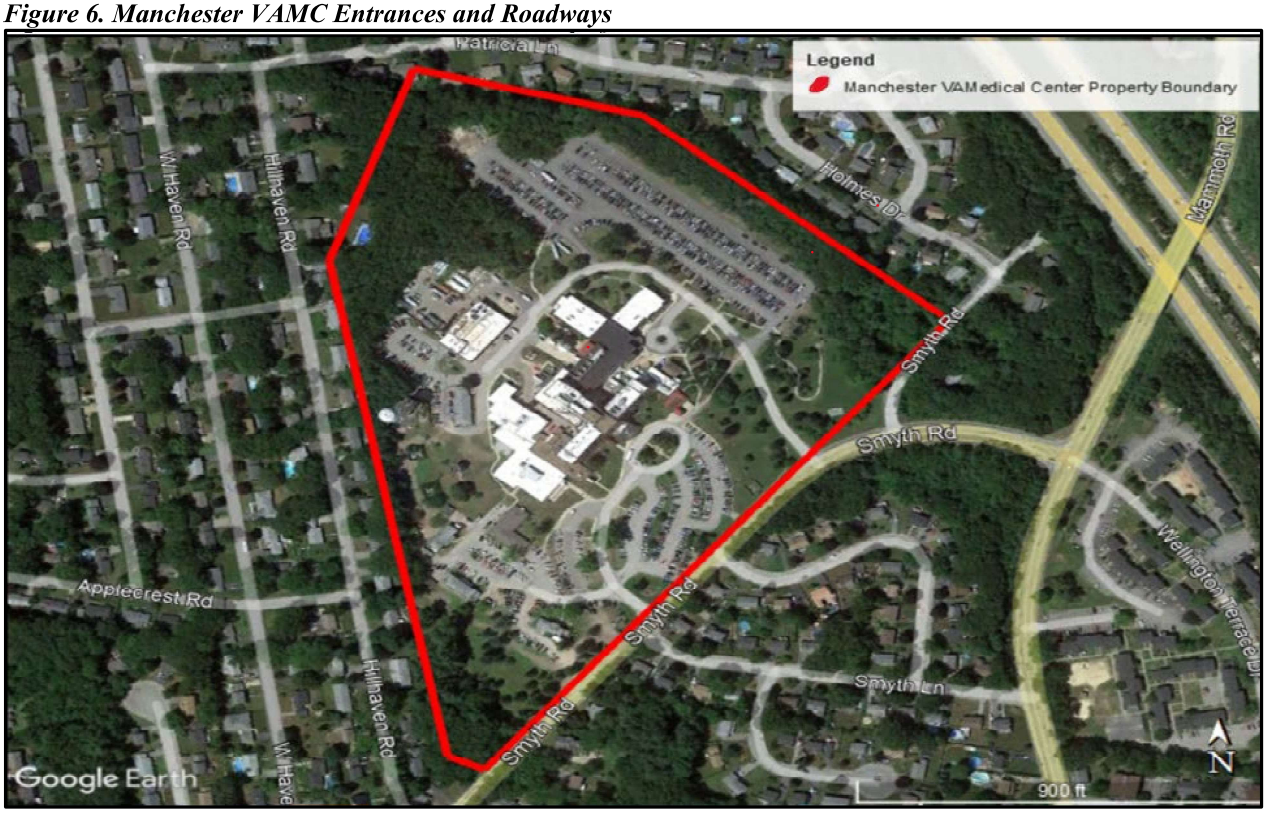
3.11 Transportation and Parking

3.11.1 Existing Environment

The Manchester VAMC is accessible to visitors and staff from the west and east entrances located along Smyth Road (Figure 6). According to the New Hampshire Department of Transportation (NHDOT), Smyth Road has an Annual Average Daily Traffic (AADT) volume of 3,800 vehicles (NHDOT, 2021). The Manchester Transit Authority (MTA) is the principal public transportation service available in Manchester. The Manchester VAMC can be reached by MTA Route 1. According to the Manchester VAMC representative, each year vehicular congestion occurs at the entrances during the months of October and November when the flu shot clinic is held in Building 7.

Currently, parking at the Manchester VAMC is regularly at full capacity (VA, 2021). The Manchester VAMC has several parking lots throughout the campus, with the main parking lot on the eastern side. Due to the disconnected internal roadways, contiguous traffic flow and unobstructed access to all facilities and parking lots throughout the campus is severed. The largest parking area is accessible from the East entrance and provides approximately 350 ground-level parking spaces.

Figure 6. Manchester VAMC Entrances and Roadways



3.11.2 Thresholds of Significance

An action would be considered to have a significant impact when it would cause a reduction by more than two levels of service at roads and intersections within the Region of Influence (ROI), or an increase in daily traffic of more than 20% above pre-action levels, or when parking demand exceeds parking supply at the facility.

3.11.3 Environmental Consequences

3.11.3.1 Proposed Action

During the construction phase of the Proposed Action, there would be a temporary increase in the number of vehicles (including both construction vehicles and worker vehicles) traveling on Smyth Road. No more than 40 vehicles per day associated with the construction phase are anticipated. This amount of traffic represents an approximate 1% increase in the current AADT on Smyth Road. Smyth Road can adequately support the temporary construction traffic increase and would not require physical alterations or traffic pattern modifications to support the Proposed Action.

Construction vehicles would access the campus from both entrances on Smyth Road. Due to Smyth Road's low AADT volume, it is not anticipated that the temporary presence of construction vehicles would create congestion at either entrance or on Smyth Road.

During the construction phase, portions of parking lots would be temporarily closed while the lots are expanded or improved, and to allow for staging of construction vehicles and equipment. To limit the temporary adverse impact on parking during construction, VA would construct the additional parking areas included in the Proposed Action at the beginning of the construction phase. Supplementary parking spaces would also be provided for staff at the Brady Sullivan building located on Elm Street in downtown Manchester, along with shuttle service to and from the Manchester VAMC.

To further improve traffic conditions at the western entrance on Smyth Road, it would be shifted approximately 50-feet to the west to better align with the existing Smyth Lane intersection on Smyth Road. The realignment would occur on the Manchester VAMC property, such that construction would not impact travel on Smyth Road. The western entrance would be temporarily closed while the realignment is completed.

Following construction and site restoration, VA would reopen the parking areas that were temporarily closed, and a minimum of 135 new parking spaces would become available.

The Proposed Action would have a short-term, minor adverse impact on transportation and parking, but during operation there would be a long-term significant beneficial impact on transportation and parking within the Manchester VAMC and along Smyth Road. When considered on a cumulative basis with other current and future developments in the area, the short-term construction impacts from the Proposed Action would not increase to a significant adverse level.

3.11.3.2 No Action

No changes to transportation or parking at the Manchester VAMC would occur under the No Action alternative so severed traffic flow and insufficient parking capacity would remain. Thus, the No Action alternative would not meet the purpose and need for action.

3.12 Utilities

3.12.1 Existing Environment

The Manchester VAMC currently receives utility services from the following providers:

- Electric: Eversource
- Potable Water: City of Manchester Water Works
- Gas: Liberty Utilities
- Sanitary Sewer: City of Manchester Department of Public Works

Utility lines generally enter the Manchester VAMC property from Smyth Road and then are distributed to individual buildings, depending on need and function.

This existing underground potable water utility infrastructure at the Manchester VAMC is aging and many of the valves have failed and are frozen in the open position. On December 30, 2020, a subsurface utility assessment was conducted to evaluate the condition of the water main on campus and identify all valves that need to be replaced. All of the sections of existing cast iron pipes tested revealed thinning pipe walls with very little remaining service life.

According to the assessment, the existing water main distribution system is comprised of both cast iron and ductile iron cement-lined pipe ranging in age from 1949 to 2020. Connection to the public water system on Smyth Road occurs at two locations along the southern side of the Manchester

VAMC property that borders Smyth Road, with each connection point metered by City of Manchester Water Works within a concrete meter vault.

3.12.1.1 Stormwater

Stormwater runoff in urban areas is one of the leading sources of water pollution in the United States. The Manchester VAMC currently maintains a stormwater management system, which includes engineering controls to avoid water pollution and to capture, manage, and control the discharge of stormwater from overland runoff generated within the campus boundary. There are a number of storm drains and catch basins located throughout the campus. However, Manchester VAMC staff report that excessive stormwater migrates to abutting residential properties, which has resulted in significant concern from neighbors, primarily those on Hillhaven Road (VA, 2021). Due to a recent 100-year storm event, these residents stated that they have been most affected by flooding from stormwater runoff. Additionally, the basement of 107 Patricia Lane periodically floods due to a clogged stormwater T-extension pipe that passes through a right of way that connects to the campus.

The majority of the campus drains to the southeast outflow, which is a riverine area near the intersection of Smyth Road and Holmes Drive on the eastern portion of the campus. Stormwater entering the riverine area then flows through a culvert that is owned and maintained by VA. The culvert travels beneath Holmes Drive. The culvert is connected to the City of Manchester's MS4 system, which discharges to Goldfish Pond, then Dorrs Pond, and ultimately to the Merrimack River. Stormwater from residential properties on Holmes Road may also flow into this riverine area. The culvert frequently clogs, resulting in flooding of residential yards along Holmes Road.

3.12.2 Thresholds of Significance

Impacts to facilities, energy demand and generations, and utilities would be considered significant if the Proposed Action were to cause an impairment of utility service elsewhere at the Manchester VAMC, to local communities, homes, or businesses.

The Proposed Action would result in significant adverse impacts to stormwater conditions if it:

- Increases runoff beyond water quantity or quality capacity of existing stormwater management infrastructure; or
- Results in noncompliance with the existing Manchester VAMC stormwater management plan.

3.12.3 Environmental Consequences

3.12.3.1 Proposed Action

3.12.3.1.1 Gas and Water Utilities

Under the Proposed Action, the natural gas utility line would need to be disconnected or capped to ensure that construction activities would not interrupt this service elsewhere on campus or within the surrounding community. Prior to construction, the construction contractor would coordinate with Liberty Utilities to identify shut-off valves or locations. VA does not anticipate that the Proposed Action would cause a deterioration or disruption in gas utility services supplied to other locations within the Manchester VAMC or to existing customers in the community.

Underground water utility infrastructure improvements would include confirmatory testing to identify the locations of cast-iron water lines, service lines, and fittings on the Manchester VAMC property, followed by the replacement of cast iron parts with non-corroding materials. Sections comprised of ductile iron cement-lined pipe proved to be in good working condition and would

not require replacement. The extent of cast iron piping on campus is currently not known and would require additional non-destructive utility test holes to determine the limits of cast iron pipe that would require replacement. Much of the water distribution system has already been replaced, however, the section extending from the city tie-in at the south portion of campus requires replacement. Piping should be replaced between the street and the vault by the city. The existing water main pipe is 6-inches in diameter and the replacement would be 8-inches in diameter.

3.12.3.1.2 Stormwater

The Proposed Action would address stormwater runoff issues through the improvement and expansion of the existing stormwater management systems.

Under the Proposed Action, there would be a decrease in volume of stormwater discharged to the southeast outflow because a portion of the current stormwater volume would be redirected to the new infiltration system in the northern portion of the campus, to ultimately discharge to the City of Manchester stormwater system via the new connection at Patricia Lane. Additionally, VA would improve maintenance measures on the southeast outflow culvert to ensure it functions as designed.

To infiltrate stormwater runoff from the 95th percentile of storm events in the Manchester, NH area, and to comply with EISA 438, stormwater runoff from the majority of the loop road would be collected by an extension of the existing stormwater management system, which would be captured and infiltrated on site. A new underground retention and soil infiltration system would be used to manage stormwater runoff from the newly paved parking lot near the intersection of Smyth Road and Hillhaven Road and from the realigned parking lot near the maintenance building.

If 95th percentile storm events are exceeded, the excess runoff would be conveyed into a new pipe that would connect to an existing (but unused) municipal stormwater pipe extension located within an easement between the northeastern portion of the campus and Patricia Lane. Prior to making this new connection, the municipal stormwater pipe extension would be inspected and made functional. This stormwater would then flow directly into the City of Manchester stormwater sewer system.

For storm events larger than the 95th percentile, stormwater runoff from the Smyth Road/Hillhaven Drive parking lot in the southwest portion of the campus would flow toward Smyth Road as it currently does but would first flow through a detention basin equipped with a level spreader to minimize the discharged stormwater flow rate.

VA would incorporate the new stormwater systems into the campus' existing MS4 permit, as well as maintenance plans to ensure the new upgrades continue to perform as designed.

The Proposed Action would have a long-term significant beneficial impact on water utilities and stormwater management conditions.

3.12.3.2 No Action

Under the No Action alternative, no changes to any of the water utility services would occur and baseline conditions would remain. Underground water utility infrastructure would remain in poor condition, and the Manchester VAMC's adjacent residences would continue to experience stormwater flooding issues. Thus, the No Action alternative would not meet the purpose and need for action.

3.13 Socioeconomics

3.13.1 Existing Environment

The Manchester VAMC is located within a suburban, medium-density area in Hillsborough County, New Hampshire, which is the state's most densely populated county. The socioeconomic conditions are influenced by the employment opportunities in the region, which are predominantly associated with health care, social services, retail trade, and manufacturing (Data USA, 2021). The median annual income in Hillsborough County is $81,460, which is slightly more than the median annual income of $76,768 for New Hampshire, and the United States median annual income of $62,843 (USCB, 2020). The population in Hillsborough County has increased by 4.1% to approximately 422,937 individuals from 2010 to 2020 (the year the most recent data were reported) (USCB, 2020).

Relevant demographic data for Hillsborough County and for New Hampshire are presented in Table 15 and economic data are presented in Table 16. The data presented are from the U.S. Census Bureau 2010-2020 Quick Facts dataset (USCB, 2020).

Table 15. Demographic Data for Hillsborough County and New Hampshire

Location	Total Population	Median Age	% Population under age 18	% Minority Population(1)	% High School Graduates	Veterans
Hillsborough County	417,025	40.7	20.2%	15.2%	92.1%	26,449
New Hampshire	1,377,529	42.9	18.8%	6.9%	93.1%	96,098

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

Table 16. Economic Data for Hillsborough County and New Hampshire

Location	Number of Households	% Population in Poverty	Total Employment
Hillsborough County	161,086	7.5%	191,526
New Hampshire	532,037	7.3%	620,164

3.13.2 Thresholds of Significance

Impacts to socioeconomics would be considered significant if the Proposed Action caused substantial change to the sales volume, income, employment, or population in the region.

3.13.3 Environmental Consequences

3.13.3.1 Proposed Action

The Proposed Action would require the employment of skilled laborers, and the use of construction vehicles, supplies, and support facilities (office trailer, safety equipment, and erosion-control materials). Additionally, workers from outside of the region would utilize area lodging and other services during the construction phase. The temporary increase in employment and spending on equipment, supplies, and local services would have a short-term, less-than-significant beneficial impact on the local economy. On a regional scale, the Proposed Action would not be considered to result in a long-term significant beneficial or adverse impact on socioeconomic conditions because the spending levels and short-term duration of the Proposed Action would not be significant in relation to regional levels.

3.13.3.2 No Action

Under the No Action alternative, the Proposed Action would not be implemented. There would be no increase in expenditures on local services. Baseline conditions would remain.

3.14 Environmental Justice

3.14.1 Existing Environment

Executive Order (EO) 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" was enacted in 1994 to focus federal agencies' attention on the environmental and human health conditions in minority and low-income communities with the goal of achieving environmental justice. Under this EO, federal agencies must identify and address the human health or environmental effects of their actions on minority and low-income populations.

For this analysis, data for minority and low-income population were obtained for the area within a 2.5-mile radius of the Manchester VAMC, Hillsborough County, and New Hampshire (USCB, 2020) (Table 17). This area has a slightly smaller minority population than Hillsborough County and the state and a slightly higher percentage of low-income populations (household income less than $25,000/year) than the county and the state.

Table 17. Minority and Low-Income Populations

Location	Total Population	% Minority Population(1)	Percentage of Population Below Poverty Level
2.5-mile radius of the Manchester VAMC	115,644	15.2%	14.1%
Hillsborough County	417,025	10.1%	7.5%
New Hampshire	1,377,529	6.9%	7.3%

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

3.14.2 Thresholds of Significance

Impacts to environmental justice would be considered significant if the action caused substantial change to the economic conditions and demographics of the population of the surrounding ROI, or measurably and disproportionately impacted environmental quality and conditions within environmental justice communities.

3.14.3 Environmental Consequences

3.14.3.1 Proposed Action

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 Hillsborough County or state-wide. The Proposed Action would notcause human health or environmental impacts on the minority and low-income communities. nor change the underlying demographic or socioeconomic profile of the community through changes in population, income levels, housing, local tax revenues, or associated community services. However, the Proposed Action may provide a temporary increase in local employment if the contractor selected to perform construction activities hires local workers, which could result in a minor short-term positive socioeconomic impact on the community.

3.14.3.2 No Action

No changes at the Manchester VAMC would occur under the No Action alternative. No impacts to environmental justice conditions would occur.

4 Agency Coordination 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 policy for implementing the NEPA. Additional guidance is provided in VA's Environmental Compliance Management Directive (VA, 2012) and 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. Agencies, organizations, and members of the public with interest in the Proposed Action are encouraged to participate.

4.1 Early Input from Federal, State, and Local Agencies

During preparation of the Draft EA, VA solicited input from selected federal, state, and local agencies for early input on the Proposed Action and environmental concerns to be addressed in the draft EA. Comments received have been incorporated in the Draft EA. Copies of correspondence are provided in Appendix A.

4.2 Public Review

The Draft EA has been published and released for a 30-day review and comment period, as announced by a Notice of Availability (NOA) published in the *Union Leader*, a daily newspaper of general circulation. The NOA was also mailed to selected federal, state, and local agencies, to inform them of the 30-day review and comment period. A copy of the Draft EA NOA is provided in Appendix B.

As stated in the NOA, the Draft EA was available for review in print in the reference section of the Manchester City Library at 405 Pine Street, Manchester, NH 03104; and available for electronic download from the VA website: *https://www.va.gov/manchester-health-care/news-releases/*

Comments or requests for additional information should be sent to: Mr. Keith Lacasse, VA Manchester Health Care System, 718 Smyth Road, Manchester, NH 03104. Reference "EA for New Campus Loop Road - Manchester VA Medical Center" in all correspondence.

Comments received during the 30-day review period for the Draft EA would be included and addressed in the Final EA.

5 Environmental Management Measures

This chapter summarizes the avoidance, minimization, and management measures incorporated into the Proposed Action to ensure that adverse impacts remain at or below less-than-significant levels. "Management measures" are defined as routine BMPs and/or regulatory environmental compliance and protection measures that are regularly implemented as part of proposed activities, as appropriate. Per established protocols, procedures, and requirements, VA (and VA's design and construction contractors) would implement these management measures and satisfy all applicable regulatory requirements associated with the design, construction, and operation of the Proposed Action. These management measures are summarized in Table 18. Additionally, environmental permits and approvals potentially required to implement the Proposed Action are summarized in Table 19.

Table 18. Environmental Protection Measures and Monitoring Incorporated into the Proposed Action

AESTHETICS
Short-term, less-than-significant adverse impacts would occur to Manchester VAMC aesthetics due to the presence of heavy construction equipment and unfinished stages of construction. Construction would also have the potential to release fugitive dust and fine particulate emissions, and the tracking of loose soil onto roadways.
▪ Construction areas would be visually obscured using temporary opaque vinyl privacy fencing and a permanent privacy fence.
▪ Water trucks or other dust palliatives would be used to minimize fugitive dust emissions.
▪ Loose soil would be brushed from construction vehicles' tires before leaving the site.
▪ Gravel-covered pads would be installed to remove any remaining loose soil from equipment exiting the construction site.
AIR QUALITY
Short-term, negligible adverse impacts on air quality would occur from operating diesel-fueled construction equipment during construction..
▪ All anticipated emissions would be below the National Ambient Air Quality Standards General Conformity Rule *de minimus* thresholds.
▪ All equipment would be maintained in good working order.
▪ Idling of mobile emission sources would be limited to three minutes.
▪ Equipment with Tier 4-compliant engines would be used to the extent practicable to reduce emissions of particulate matter and nitrogen oxides to meet emission standards established by USEPA and California Air Resources Board.
▪ The beds of all incoming and outgoing haul trucks would be covered with tarps.
▪ Enclosures, covers, silt fences, and wheel washers would be used as necessary.
▪ Dust-generating activities would be suspended during sustained high wind conditions (10-40 miles per hour [mph] with gusts at or above 50 mph).
▪ The speed of construction vehicles on paved roads would not exceed posted limits.
▪ On any unpaved surfaces at the construction area, vehicle speeds would be maintained at or below 5-miles per hour.
▪ All construction activities would be monitored daily, particularly during extended periods of dry weather when additional dust control measures would be implemented as needed.
▪ During demolition, filter media would be installed over hospital building air intakes to avoid intake of fugitive dust.
▪ Exposed soil would be stabilized with vegetation or mulching.

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CULTURAL RESOURCES
Archeological resources are not anticipated to be encountered because the site is heavily disturbed and developed.
▪ VA initiated Section 106 consultation with the State Historic Preservation Office (SHPO).
▪ VA received concurrence with a finding of no adverse impact contingent upon VA's existing Memorandum of Agreement (MOA) between VA and the SHPO regarding the demolition of outbuildings D2, 3, 4, 5, 13, and 14 which is required to occur prior to the Proposed Action.
▪ VA would implement the mitigation measures stated in the MOA prior to the demolition of the outbuildings.
▪ VA would implement an "Inadvertent Discovery" plan according to the NHPA's *Act of 1979* and NAGPRA's EO 13007.
▪ Under this plan, if prehistoric or historic artifacts that could be associated with Native American, early European, or American settlement are unearthed 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 tribes, and the SHPO, are contacted to properly identify and appropriately treat the items in accordance with applicable state and federal law(s).
▪ The work would not resume in the area of the discovery until the artifacts have been documented and evaluated for eligibility for the NRHP, in compliance with Section 106 of the NHPA.
GEOLOGY, TOPOGRAPHY, AND SOILS
Construction of the Proposed Action would have a short-term, negligible adverse impact on geology. Overall, there would be no widespread landscape-level changes to topography during construction and operation. Short-term, less-than-significant adverse impact on soils could occur due to the increased potential for soil erosion and sedimentation of stormwater runoff. Soil quality could be impacted in the event of the accidental release of petroleum-based fluids (diesel or hydraulic fluid) from construction vehicles and equipment.
▪ VA would implement National Pollutant Discharge Elimination System (NPDES)-permit required BMPs specified in the New Hampshire Department of Environmental Services (NHDES) Stormwater Management and Erosion and Sediment Control Handbook for Urban Developing Areas.
▪ VA would submit a NPDES Construction General Permit to the NHDES for approval and develop a Stormwater Pollution Prevention Plan (SWPPP) to minimize the amount of sediment and other pollutants discharged through stormwater runoff.
▪ As part of the construction of the loop road, three retaining walls would be built to strengthen the slope of the land and prevent the sloped soil from eroding.
▪ Suitable on-site soils would be used for grading to the maximum extent practicable. Otherwise, suitable clean fill from an off-site source would be utilized.
▪ Silt fences would be temporary installed around the area of disturbance.
▪ Bare soils would be re-vegetated, wet suppressed, and mulched.
▪ Soil stockpiles would be covered.
▪ Ditches and channels would be stone-lined or grass-lined.
▪ Existing site vegetation would be preserved.

▪ Construction equipment would be properly maintained in good working order.
▪ Construction equipment would be equipped with emergency spill kits.
▪ Workers would be trained on the proper deployment of spill kit to ensure that they are prepared to respond to an emergency release of petroleum-based fluids, contain the release, and prevent impacts to soil.
▪ Construction equipment would be refueled in designated areas with impervious surfaces to avoid potentially impacting soil from spilled fuel.
NOISE
Short-term, less-than-significant adverse impacts to sensitive noise receptors (patients, visitors, staff, and abutting residents) could occur due to noise generated from heavy construction equipment.
▪ The majority of construction equipment would remain within the construction area until construction is complete.
▪ High-performance acoustic barriers would be temporarily installed.
▪ Construction equipment would be equipped with appropriate sound-muffling devices.
▪ Engine idling would be limited to under three minutes.
▪ Construction workers would also be provided with hearing protection.
▪ All construction noise levels would adhere to the *Manchester, NH Code of Ordinances §94.10 Noise Levels* standards.
▪ No construction equipment that exceeds 60 dBA would be operated between the hours of 9:00 p.m. and 7:00 a.m.
▪ 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
SOLID WASTE AND HAZARDOUS MATERIALS
Short-term, negligible adverse impacts could occur from an increase in the volume of non-hazardous solid waste from construction activities, including demolition of concrete foundations, asphalt, vegetation, and excess soil.
▪ In the event that regulated building materials are detected during the construction phase, they would be abated (by removal or encapsulation) by licensed workers according to all applicable federal and state regulations, e.g., New Hampshire asbestos abatement regulations outlined in *RSA 141-E Asbestos Management & Control* (NHDES, 2021).
▪ Any regulated building materials detected would then be transported off-site in appropriate containers (i.e., double-lined) and under manifest for proper disposal at a USEPA-approved disposal facility.
▪ Demolition debris would be transported off-site to a licensed landfill for disposal or reuse.
TRANSPORTATION AND PARKING
Short-term, negligible adverse impacts on transportation and parking would occur during the Proposed Action due to the temporary closure of parking lots being improved.
▪ The new parking areas would be constructed first to provide supplementary parking capacity while the existing parking lots are closed.
▪ VA would provide temporary, supplementary parking capacity at the Brady Sullivan building on Elm St. and shuttle service for the 2-mile ride to and from the campus.

Table 19. Potential List of Environmental Permits Required

Permit, Approval, or Certification	Responsible Agency	Applicable Criteria	Required Actions	Permitting Sch
Permits/Approvals				
Section 106 of the National Historic Preservation Act (NHPA): Consultation and Coordination with Indian Tribal Governments (EO 13175) and Native American Graves Protection and Repatriation Act (NAGPRA) (EO 13007) https://www.epa.gov/laws-regulations/summary-executive-order-13175-consultation-and-coordination-indian-tribal https://www.nps.gov/history/local-law/eo13007.htm	New Hampshire Division of Historical Resources	Required when a federal agency project or effort may affect historic properties located on tribal lands, or land that has cultural/historic significance regardless of location.	Notify the SHPO when the Draft EA is released for a 30-day review and comment period.	Correspondenc would continue the project.
National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)	USEPA New England	Required prior to ground disturbance	Construction contractor to apply for and obtain NPDES permit.	Permit-require also specified Stormwater M and Sediment would be imp maintained to and sedimenta land-disturbin

***Assumptions:** *Local environmental permits would not be obtained.*

6 List of Preparers

U.S. Department of Veterans Affairs, Manchester VA Health Care System

Keith Lacasse
VA Resident Engineer

Amanda Furtado
VA GEMS Manager

Contractors (AboveGroup & Mabbett)

Name	Role	Years of Experience
M. Liimakka, PE	Project Manager, Document Review	12
A. Glucksman, BS, MS, LEED AP	Mabbett, Project Manager, Subject-Matter Expert, Document Review	19
E. Fernandes, BS	Mabbett, Junior Staff Scientist, Document Preparation	2

7 References

Bond, R. W. (1981). *Soil Survey of Hillsborough County, New Hampshire, Eastern Part.* United States Department of Agriculture, Soil Conservation Service, in cooperation with the New Hampshire Agricultural Experiment Station.

Casella, R. a. (2010). *National Register Nomination: VA Hospital, Manchester. Historic Documentation Company, Inc.* Portsmouth, RI: New Hampshire State Historic Preservation Office,.

Data USA. (2021). *Hillsborough County, NH.* Retrieved from Data USA: https://datausa.io/profile/geo/manchester-nh/

Federal Register. (2020, July 16). *Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act*. Retrieved from https://www.federalregister.gov/documents/2020/07/16/2020-15179/update-to-the-regulations-implementing-the-procedural-provisions-of-the-national-environmental

FEMA. (2021). *Flood Zones*. Retrieved from Federal Emergency Management Administration, U.S. Department of Homeland Security, Federal Emergency Management Administration: https://www.fema.gov/glossary/flood-zones

Flanagan, S. M. (1999). *Water-Quality Assessment of the New England Coastal Basins in Main, Massachusetts, New Hampshire, and Rhode Island: Environmental Settings and Implications for Water Quality and Aquatic Biota: Water-Resources Investigations Report 98-4249.* Pembroke, New Hampshire: U.S. Department of the Interior. U.S. Geological Survey.

HUD. (2021). *Federally-recognized Native American Tribes in Hillsborough County*. Retrieved from U.S. Department of Housing and Urban Development Tribal Directory Assessment Tool: https://egis.hud.gov/TDAT/

Manchester Master Plan. (2021, August). *Manchester Master Plan 2021*. Retrieved from https://www.manchesternh.gov/Portals/2/Departments/PCD/MANCHESTER_MASTER_PLAN_FINAL_JULY_21.PDF

NHDES. (1992, August). *Stormwater Management and Erosion and Sediment Control Handbook for Urban Developing Areas.* Retrieved from http://www.rockinghamccd.org/wp-content/uploads/2014/02/Erosion-Control-PDF.pdf

NHDES. (2008). *New Hampshire Water Resources Primer.* USEPA.

NHDES. (2021). *141-E: Asbestos Management and Control.* Retrieved from New Hampshire Statutes: http://www.gencourt.state.nh.us/rsa/html/NHTOC/NHTOC-X-141-E.htm

NHDOT. (2021). *Traffic Volume Maps*. Retrieved from New Hampshire Department of Transportation: https://snhpc.maps.arcgis.com/apps/webappviewer/index.html?id=a18b7f94d4ca4838b1bc0f418946182c

NOAA. (2020). *Manchester, New Hampshire 2020 Annual Climate Summary.* Retrieved from National Weather Service:

https://forecast.weather.gov/MapClick.php?lat=42.9912&lon=-71.4631#.YYmbwGDMK1s

NPS. (2015, May). *National Register of Historic Places Research Program*. Retrieved from National Park Service: http://www.nps.gov/nr/research/

SCAQMD. (2020). *Off-Road -- Model Mobile Source Emission Factors, Year 2023.* California.

USAF. (2020). *Emission Estimation Method for Hauling Excavation Materials and Construction Supplies: United States Air Force (USAF) Institute for Environment, Safety and Occupational Health Risk Analysis (IERA) Air Emissions Inventory Guidance Document.*

USCB. (2020). *QuickFacts.* Retrieved from New Hampshire; Manchester city, New Hampshire; United States: https://www.census.gov/quickfacts/fact/table/US,NH,manchestercitynewhampshire/PST045219

USCB. (2021). *QuickFacts United States; Pennsylvania, Lebanon County; Pennsylvania (Population estimates as of July 1, 2019).* Retrieved from United States Census Bureau: https://www.census.gov/quickfacts/fact/table/US,PA,lebanoncountypennsylvania/PST045219

USDA-NRCS. (1981). *Soil Survey of Hillsborough County New Hampshire Eastern Part.*

USEPA. (1995). *Heavy Construction Operations.* Retrieved from https://www3.epa.gov/ttnchie1/ap42/ch13/final/c13s02-3.pdf

USEPA. (2009). *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act.* Washington, D.C.: U.S. Environmental Protection Agency (USEPA).

USEPA. (2020, August 4). *Air Plan Approval; New Hampshire; Infrastructure State Implementation Plan Requirements for the 2015 Ozone and 2012 PM2.5.* Retrieved from Federal Register: https://www.federalregister.gov/documents/2020/08/04/2020-16011/air-plan-approval-new-hampshire-infrastructure-state-implementation-plan-requirements-for-the-2015

USEPA. (2021). *New Hampshire Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants.* Retrieved from USEPA Green Book: https://www3.epa.gov/airquality/greenbook/anayo_nh.html

USEPA. (2021). *United States Environmental Protection Agency.* Retrieved from How's My Waterway?: https://mywaterway.epa.gov/community/1670%20Clairmont%20Rd,%20Decatur,%20GA%2030033/overview

USGS. (2021). *GROUND WATER ATLAS of the UNITED STATES.* Retrieved from United States Geological Survey: https://pubs.usgs.gov/ha/ha730/ch_g/G-text8.html

VA. (2010, September 30). *NEPA Interim Guidance for Projects.* Retrieved from Department of Veterans Affairs: https://www.cfm.va.gov/environmental/NEPAGuidance.pdf

VA. (2010). *NEPA Interim Guidance for Projects. September.* Washington, D.C.: U.S. Department of Veterans Affairs.

VA. (2012). *Final Tiered Environmental Assessment for Phased Development at Indiantown Gap National Cemetery.* MACTEC.

VA. (2021, October 22). Interview with VA Site Representatives. (I. Mabbett & Associates, Interviewer)

VA. (2021). *Veterans*. Retrieved from https://www.benefits.va.gov/persona/veteran-elderly.asp#:~:text=and%20health%20services.-,VA%20Benefits,rehabilitation%20and%20employment%2C%20and%20burial.

WHO. (1995). *Guidelines for Community Noise.* Retrieved from https://www.who.int/docstore/peh/noise/Comnoise-1.pdf

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* 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.

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 an Indian 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; recognized Indian 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 – Regulatory Communications

Appendix B – Public Involvement