ENVIRONMENTAL ASSESSMENT

SAN FRANCISCO VA MEDICAL CENTER
BUILDING 203 SEISMIC RETROFIT/PATIENT PRIVACY IMPROVEMENTS

US Department of Veterans Affairs

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1. PROPOSED ACTION

The U.S. Department of Veterans Affairs (VA) is proposing to conduct a seismic retrofit of Building 203 (B/203) at the San Francisco VA Medical Center (SFVAMC). This building is the core acute care hospital building at the SFVAMC and is also the major diagnostic, specialty programs and research facility. The seismic retrofit work is required by Executive Order (EO) 12941 and Veterans Health Administration Directive 2005-019.[1]

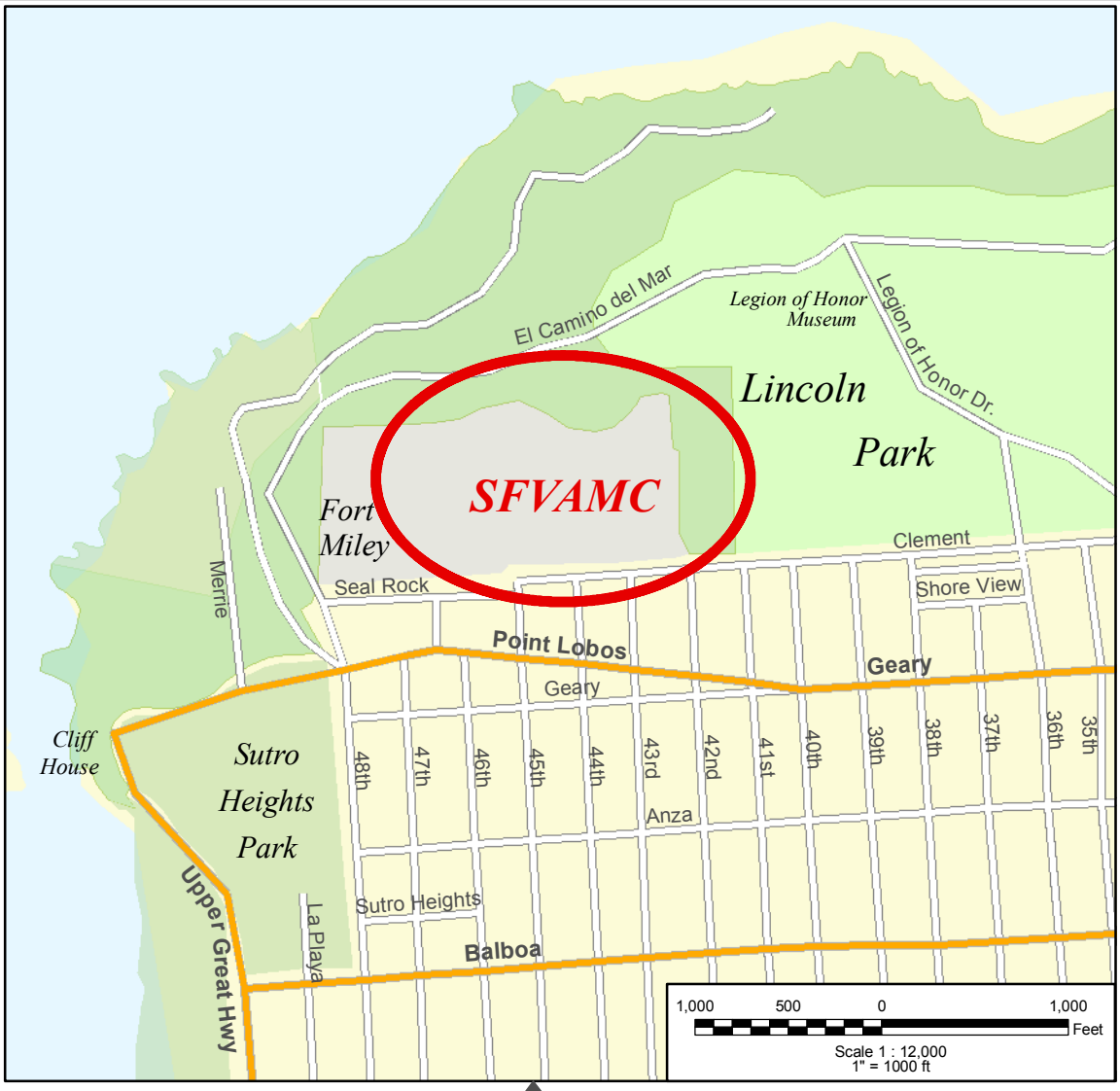
At the same time, the VA proposes the reconfiguration of the interior space of B/203 in order to improve patient privacy. The patient privacy improvements would include converting the existing four-bed patient rooms into two-bed patient rooms; and two-bed rooms into single-bed rooms. The total number of patient beds in B/203 (124 beds) would not change. In addition, the proposed action would provide restrooms in each patient care room instead of the current shared restrooms located outside of patient rooms.[2] These improvements would address compliance with current VA standards for patient privacy and Uniform Federal Accessibility Standards (UFAS).

The proposed action also includes the construction of a new 7,600 square-foot building on the SFVAMC to accommodate existing research/lab space currently located in B/203 that would be relocated to accommodate the patient privacy improvements.

The SFVAMC is located on a 29-acre site in northwest San Francisco and is a major tertiary care facility that serves as a VA regional referral center for specialized medical and surgical programs. In addition, the SFVAMC is part of the National Disaster Medical System (NDMS), a federally coordinated initiative that augments the nation's emergency medical response capability. The SFVAMC serves as the Federal Coordinating Center (FCC) for the Northern California area. (Please see Figure 1 – Location Map).

[1] The State of California has a similar law - See Senate Bill 1953, Chapter 740, 1994, which is an amendment to and furtherance of the Alfred E. Alquist Hospital Seismic Safety Act of 1983, Sections 130000 through 130070

[2] Current VA standards call for only one- and two-bed patient rooms - Department of Veterans Affairs Handbook 7610 – Chapter 100, January 13, 1995.



Source: StreetMapUSA / EDAW 2006

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Location Map

Figure 1

1.1 PURPOSE AND NEED

The purpose of the Proposed Action is to 1) seismically upgrade B/203, fulfilling the VA's mandate to provide seismically safe essential buildings and to ensure continued operations after a major earthquake; and 2) achieve functional and technical improvements through this construction that would bring the building up to current VA standards, including the standards for patient privacy and accessibility by physically handicapped persons in accordance with the Uniform Federal Accessibility Standards (UFAS).[3]

1.1.1 SEISMIC RETROFIT

B/203 was constructed in 1976 and is the core acute care hospital building at the SFVAMC. The building has never been seismically reinforced despite its location in Seismic Zone 4 (highest risk). B/203 is one of the highest ranked structures in the nation on the VA's list of Extremely High-Risk Buildings.[4] The C-Wing of B/203, in particular, poses life safety hazards for the staff and veteran patients who occupy the operating room recovery area, the cardiac catheterization lab, medical research labs and outpatient clinical research center in B/203 and B/200. The C-Wing also includes an elevated walkway (skywalk) that provides an important connection between B/203 and B/200.

Veterans Health Administration (VHA) Directive 2005-019 establishes policy regarding the seismic safety of VHA buildings. This policy is based primarily on the National Earthquake Hazards Reduction Act of 1977, as amended and Executive Order 12941. Since facilities identified as essential must remain in operation after a seismic event, the VA is committed to providing adequate life-safety protection to veterans, employees, and other building occupants. The VA has had an active seismic mitigation program since the 1971 California San Fernando earthquake. This earthquake completely destroyed two occupied patient buildings killing 46 people. Since that tragedy, all VA buildings (approximately 1,000) located in medium and high seismic zones have been screened. Approximately 40 percent of those buildings were found to be at major risk, of which 35 percent have been strengthened, demolished, replaced, or such work is underway.

The VA concern for seismic upgrading of existing facilities heightened following the 1989 Loma Prieta and 1994 Northridge earthquakes, which produced extensive damage to California structures, including hospitals. Because of the severe damages hospital structures sustained in these earthquakes, the State of California enacted laws that

[3] UFAS sets standards for facility accessibility by physically handicapped persons for Federal and federally-funded facilities.
[4] An extremely high risk building is defined by the VA Seismic Inventory to be: (1) located in an area of high or very high seismicity, (2) is an essential or critical facility, (3) did not utilize VA Seismic Design Requirements and/or the building was constructed before 1977, (4) is not otherwise exempt, (5) is greater than 10,000 square feet.

mandated seismic upgrading for existing hospitals.[5] By January 1, 2008, buildings which pose certain risks shall only be used for non-acute, outpatient medical care. By the year 2030, the State of California expects all of its hospital structures to be sufficiently seismic resistant to meet all life, safety, and immediate occupancy standards. Hospital owners are required by 2002 to submit plans for seismically upgrading their facilities by 2008-2013 and 2030, depending upon the structural quality of the existing facility.

The SFVAMC is the National Disaster Medical System (NDMS) Federal Coordinating Center (FCC) for the Northern California area. It is the only facility within the Veterans Integrated Service Networks (VISN) designated as an FCC.[6] This designation has far reaching ramifications for the City and County of San Francisco, whose medical facilities have not yet been seismically retrofitted. The NDMS is a federally coordinated initiative that augments the nation's emergency medical response capability. The four federal partners in NDMS are Department of Health and Human Services (U.S. Public Health Service), Federal Emergency Management Agency (FEMA), Department of Defense, and Department of Veterans Affairs. The overall purpose of NDMS is to establish a single national medical response capability for: 1) Assisting state and local authorities in dealing with the medical and public health effects of major peacetime disasters; and 2) Providing support to the military medical system in caring for casualties resulting from overseas armed conflicts.

The linkages between NDMS and non-federal hospitals are made by the NDMS Federal Coordinating Centers (FCCs) that are designated to oversee NDMS activities in these geographical areas. Each FCC coordinates all aspects of NDMS implementation, planning, exercise and operation within the designated area of responsibility. The SFVAMC is the NDMS FCC for VISN 21. It has the responsibility for the development, implementation, maintenance and evaluation of the local NDMS program.

1.1.2 PATIENT PRIVACY

B/203 was designed in the late 1960's and was built in the early 1970's when most veterans were men, and the use of congregate restrooms was not an issue. Now that women veterans are more common, the need for private restrooms has become an important patient privacy requirement. Current VA standards require that all patient beds be contained in one-and two-bed rooms; and a private bathroom be provided with every bedroom to meet modern standards of infection control and patient privacy (VA Handbook 7610 (100)).

To address compliance with current VA standards for patient privacy and in keeping with healthcare industry standards, a reconfiguration of the interior space of B/203 is

[5] See Senate Bill 1953, Chapter 740, 1994, which is an amendment to and furtherance of the Alfred E. Alquist Hospital Seismic Safety Act of 1983, Sections 130000 through 130070

[6] The SFVAMC is within the VA Sierra Pacific Network, also known as VISN 21. The SFVAMC is one of seven VA medical centers/health systems that manage a total of thirty-six care sites. The VISN 21 area covers central California to the Oregon border, and the northwestern portion of Nevada.

part of the proposed action. This would involve converting the existing four-bed patient rooms into two-bed patient rooms; and two-bed rooms into single-bed rooms. In addition, the proposed action would provide restrooms in each patient care room instead of the current shared restrooms located outside of patient rooms. These improvements would address compliance with current VA standards for patient privacy and Uniform Federal Accessibility Standards (UFAS).

1.2 DESCRIPTION OF B/203 SEISMIC RETROFIT

B/203 consists of the A-Wing , B-Wing, and C-Wing. The A-Wing is the west half of B/203, B-Wing is the east half of B/203, and C-Wing provides an elevated walkway (skywalk) that connects B/203 to B/200. The hospital facility housed in B/203 would remain in operation during construction. The B/203 seismic upgrades would include both exterior and interior improvements, as described below.

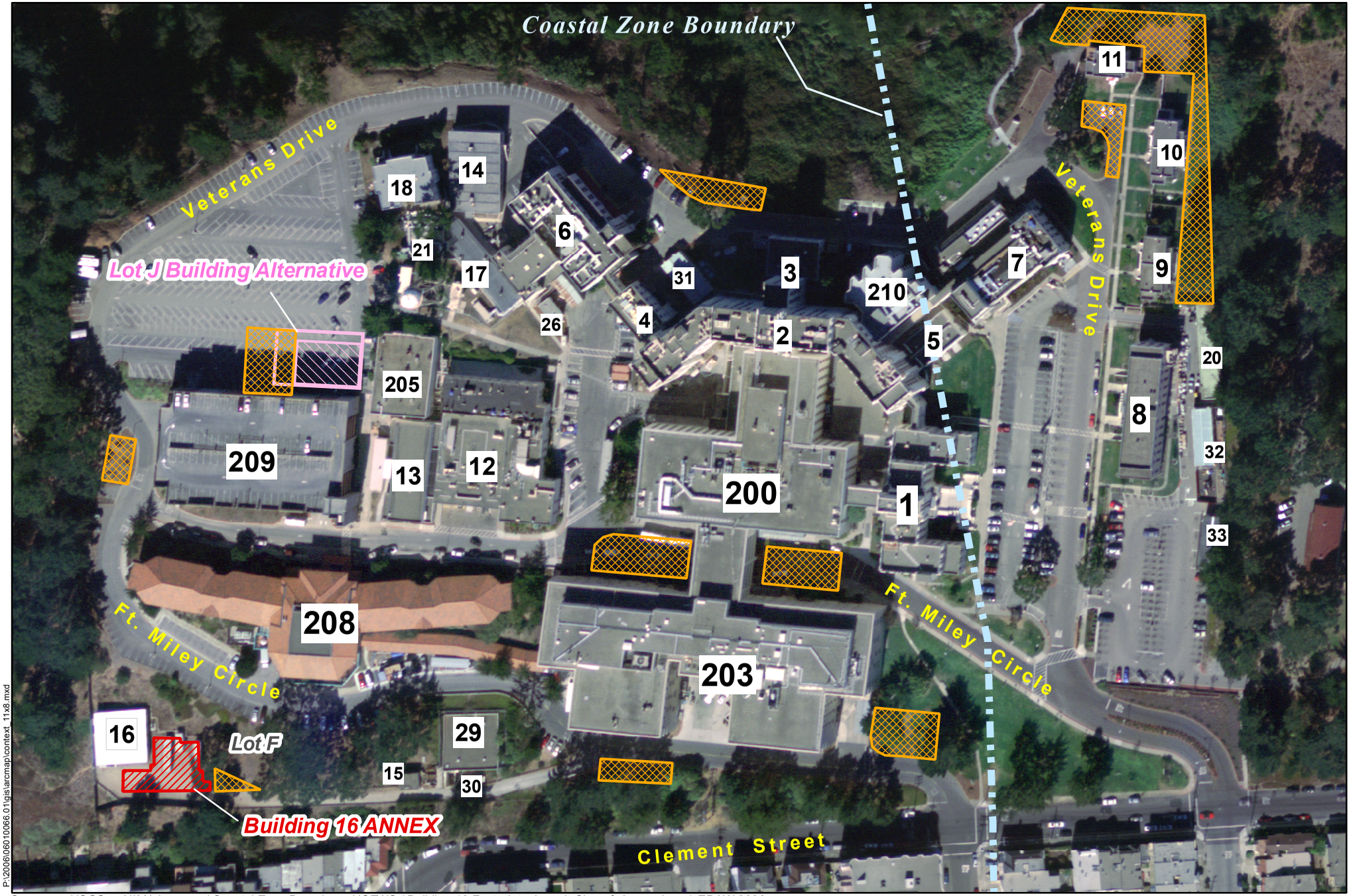
The seismic retrofit work involves the installation of shear walls along the B/203 exterior, which would require excavating and replenishing a total of approximately 5,000 cubic yards of soil around the perimeter of the building. The retrofit also includes modifications to the building's interior to improve building infrastructure systems, upgrade HVAC controls and piping valves, and upgrade the nurse call systems.

The exterior seismic retrofit of B/203 involves seven (7) phases which will take approximately 31 months to complete. The seismic upgrades would require the installation of shear walls along the B/203 exterior, which would require excavating and replenishing a total of approximately 5,000 cubic yards of soil at the perimeter of the building. The excavated earth would be put back in place at the end of each phase. The exterior seismic retrofit would involve the following:

- Phase 1 -Construct a new food service dock on the east end of B/203 and complete structural upgrades to the east wall at the basement level.
- Phase 2 - Complete structural upgrades to the central walls at all levels.
- Phase 3 - Reconfigure the existing center dock with new roof and construct a new linen room.
- Phase 4 - Construct C-wing buttress structural support at all levels and structural upgrades to the north wall at all levels.
- Phase 5 - Complete structural upgrades to south walls at all levels.
- Phase 6 - Complete structural upgrades to west A-Wing walls at all levels and to the east B-Wing walls above basement level.
- Phase 7 - Restore landscaping, demobilize site contractors and seismically retrofit east walls above ground level.

The reconfigured loading docks would allow for more efficient separation of various loading and unloading activities for food service and material delivery and removal (i.e. hospital linens, trash). Each of these phases would require different staging areas, as noted in Figure 2 – Site Plan. The project contractor's trailer would be located in the staging area at the southeast corner of B/203.

Excavation and backfill operations required to complete the seismic retrofit would be completed during each of the proposed phases. For Phases 1 and 6, soil excavation would require up to two weeks each. For Phases 2 and 3, excavation would require up to one week each, while excavation for Phase 4 is expected to take up to three weeks. Backfilling would require approximately the same duration for each phase, approximately two weeks each for Phases 1 and 6, up to one week each for Phases 2 and 3, and up to three weeks for Phase 4. All construction equipment would access B/203 via existing entrances to the hospital site at 42nd and 43rd Avenues. Only one hauler would be onsite at any one time, except for an occasional stand-by parked along Fort Miley Circle, within SFVAMC site boundaries.



Source: USGS -- NIMA Imagery / Coastal Zone Boundary: USFWS / Building 16 Footprint: Joseph Chow & Assoc, Inc. / EDAW 2006

150 75 0 150 Feet

Scale 1 : 1,800
1" = 150 ft

Staging Areas
Source: SFVA 2006

Site Plan
Figure 2

SAN FRANCISCO VETERANS AFFAIRS MEDICAL CENTER
B/203 SEISMIC RETROFIT / PATIENT PRIVACY IMPROVEMENTS

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Caissons would be installed to support the new foundations. These caissons would measure between 36 inches to 42 inches in diameter and 20 feet to 35 feet in height. Each caisson would be filled with cylindrical rebar cage. The delivery of pre-assembled cages would be timed to allow storage within construction staging areas. Delivery of these materials would be accomplished using long semi-trucks, with a maximum of three deliveries per day. A large auger would be used to drill the holes for the caissons.

Steel casing would be installed to form the mold for the caissons, and each casing would consist of 8-foot tall sections of steel cylinders inserted into the ground by a crane. A concrete mixer and large pump would fill these cylinders, and each caisson would take between one to one and a half mixer loads to fill. A 40-foot crane would be utilized to lift the full length rebar cages into the ground. The vertical walls of B/203 would be reinforced by erecting scaffolding with debris containment netting to cover entire wall section. In order to ensure adhesion of the netting, wall surfaces would be sand blasted. This operation would require use of a large air compressor. Holes would then be drilled in the wall and tie bars would be inserted with epoxy.

Once the walls are erected, rebar would be installed to reinforce them. The rebar would be delivered to inside site boundaries and stored within designated setup areas.

Shotcrete (shooting concrete onto vertical walls) would also be required. Each concrete mixer would transport concrete from the plant and perform the mixing at least partially enroute.

The construction equipment required to serve the project, listed by phase and construction type, is presented in Appendix A.

1.3 DESCRIPTION OF B/203 INTERIOR MODIFICATIONS/PATIENT PRIVACY IMPROVEMENTS

The proposed action would include modifications to the building's interior space to improve building infrastructure systems, upgrades to HVAC controls and piping valves, upgrades to the nurse call systems, and to address compliance with current VA standards for patient privacy and Uniform Federal Accessibility Standards (UFAS) as described above. A series of program consolidations and use relocations were implemented in order to vacate the approximately 24,000 square feet of space needed for patient privacy and other interior improvements in B/203. Uses were moved to other locations within B/203 and to other existing buildings on the campus where space was available to accommodate displaced B/203 uses. To provide for additional needed space, a new 7,600 sf building is proposed that would house the urology and pacemaker programs displaced from B/203.

1.4 NEW RESEARCH/LAB BUILDING

A new, two-story 7,600 square-foot building is proposed on the SFVAMC site to house the urology wet labs, pacemaker study group and associated offices currently located in B/203. Two alternative locations for the research/lab building are considered in this EA (see Chapter 2, Alternatives). The new research/lab building would be constructed prior to the start of the interior improvements to B/203.

Table 1 lists the approximate square footage of uses that would be relocated to the new research/lab building:

Table 1
Uses Relocated to Research/Lab Building

LOWER LEVEL	SQUARE FEET*
Prostate Wet Labs	2,262
Urology Offices	442
Urology Break/Conference	310
Toilets, Elec/Data, Corridor, Accessory Space	786
UPPER LEVEL	
Prostate Wet Labs	465
Pacemaker Study Groups	1,315
Offices	1,136
Toilets, EMS, Accessory Space	884
TOTAL	**7,600**

* The square footage for each use is approximate and may vary slightly depending on the site and building configuration that is selected. Total building square footage would not exceed 7,600 gross square feet.

1.5 OPERATIONAL CHARACTERISTICS OF NEW RESEARCH BUILDING

The research and lab space that would be relocated to the new building would maintain the same functions as they currently do in B/203. Materials use, storage, and management practices would remain essentially the same, and would comply with all applicable regulations.

The prostate wet labs are classified as Bio-safety Level 2 (BSL 2) labs.[7] These labs are basic research units that investigate urological diseases and prostate cancer. The pacemaker study group is an office-based monitoring service, whereby patients are contacted by telephone. The prostate histology lab uses very limited amounts of radiation for tracing purposes.

The labs use carbon dioxide as a compressed gas to grow cells used in research studies. The cells are grown in special incubators that maintain a temperature of 37°C and a special atmosphere consisting of ambient air and 5% carbon dioxide. Tanks containing carbon dioxide as a compressed gas would be delivered twice per week by an outside vendor to the cell culture room where they would be attached to the incubators and secured to the wall by an apparatus consisting of bolts, straps and chains to prevent them from falling over. The labs would have 4-6 of these tanks on hand that are approximately 4 feet tall and 1 foot in diameter. Liquid nitrogen is used for long-term storage of cell lines that are not currently being cultivated for research. The labs would use two liquid nitrogen containers in the cell culture room that are designed specifically for storing liquid nitrogen and frozen cell samples. The liquid nitrogen containers would be checked and replenished on a regular basis by an outside vendor (there would no mass storage of these tanks at the new building site).

1.6 ENVIRONMENTAL ASSESSMENT PROCESS

This Environmental Assessment (EA) is prepared in accordance with the National Environmental Policy Act (NEPA), the Regulations of the Council on Environmental Quality (CEQ), 40 CFR Parts 1500 et seq., and the Department of Veteran Affairs Environmental Compliance Manual. Guidelines for NEPA requires federal agencies to integrate environmental values into their decision-making process by considering the environmental impacts of their actions and reasonable alternatives to those actions (Sec 102 (2)(C) [42 USC Section 4332]). This EA has been prepared to determine whether the proposed project would significantly affect the quality of the human environment.

7. *National Institute of Health. Biosafety in Microbiological and Biomedical Laboratories* (BMBL). http://bmbl.od.nih.gov/sect3bsl2.htm. A BSL 2 lab is suitable for work involving agents of moderate potential hazard to personnel and the environment, and are commonly located on hospital properties, medical center campuses and research facilities. Laboratory personnel have specific training in handling pathogenic agents and are directed by competent scientists; access to the laboratory is limited when work is being conducted; extreme precautions are taken with contaminated sharp items; and certain procedures in which infectious aerosols or splashes may be created are conducted in biological safety cabinets or other physical containment equipment. The SFVAMC has a total of 81 BSL 2 labs on the campus. The University of California, San Francisco (UCSF) has over 200 BSL 2 labs.

To make this determination, the EA uses significance criteria detailed in Chapter 4. If the analysis finds that the project would not significantly impact the human environment, a Finding of No Significant Impact (FONSI) will be prepared, and the VA will proceed with the project. The Council of Environmental Quality regulations consider the human environment to include the natural and physical environment and the relationship of people with that environment. If the evaluation contained within this EA finds that the proposed action does significantly affect the human environment, NEPA requires the preparation of an Environmental Impact Statement (EIS). Economic or social effects, however, are not intended by themselves to require preparation of an EIS (40 CFR 1508.14).

This EA identifies, documents, and evaluates the effects of the proposed action on existing resources at SFVAMC. An interdisciplinary team of planners and environmental experts prepared the technical analysis contained in Chapters 3 and 4. These chapters present a project-level overview of the current environmental and socioeconomic conditions at SFVAMC and potential impacts to these resources from each alternative. The impact analysis uses a variety of significance criteria for assessing the magnitude of effects. These significance criteria and the environmental consequences of the proposed alternatives are described in Chapter 4. Chapter 5 describes other projects planned or being developed at SFVAMC and the general vicinity, and analyzes associated cumulative effects of the sum of these actions.

1.7 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

A Notice of Availability (NOA) for the EA was published in the San Francisco Chronicle on January 15, 2007. In addition, the NOA was mailed to interested individuals, organizations, and government agencies, and copies were posted at the SFVAMC. Copies of the EA were made available for review at the SFVAMC and at local libraries (San Francisco Main Library and the Anza Branch). The VA will consider public comments submitted within the 30-day public review period. If analysis finds that the proposed action would not significantly impact the human environment, a Finding of No Significant Impact (FONSI) will be prepared and approved.

If it is determined that significant impacts to the environment cannot be avoided or if there is no feasible way in which significant impacts can be mitigated, an EIS will be prepared.

1.8 STATUTES AND REGULATIONS

Typical statutes, regulations, and Presidential Executive Orders guiding VA project planning, development, and operation are listed below. These policies and guidelines are applicable to a variety of projects at all VA facilities and some may not apply to the

proposed action. Where relevant, Chapters 3 and 4 discuss specific laws, regulations, and permits that may affect the proposed action:

- National Environmental Policy Act of 1969, as amended
- Executive Order 12088, Federal Compliance as amended
- Clean Water Act of 1977, as amended
- Federal Water Pollution Control Act, Sec. 313, As Amended by Clean Water Act of 1977 (33 U.S.C. 1323)
- EPA Regulations on the National Pollutant Discharge Elimination System (40 CFR 122)
- National Earthquake Hazards Reduction Act of 1977, as amended
- Executive Orders 12699 and 12941
- Noise Control Act of 1972
- Coastal Zone Management Act (16 U.S.C. 1451 et seq, Amended By PL 101-508)
- EPA Regulations on Polychlorinated Biphenyls Manufacturing, Processing Distribution in Commerce and Use Prohibitions (40 CFR 761)
- Uniform Federal Accessibility Standards (42 U.S.C. 4151-4157, Amended By PL 90-480)

2. ALTERNATIVES

2.1 DEVELOPMENT OF ALTERNATIVES

Alternatives were developed following review of information about existing facilities and space requirements at SFVAMC, projected facilities needs, and the core mission of the SFVAMC, which is to:

- Provide primary through tertiary care that is cost effective and of high quality.
- Deliver needed care in the most appropriate setting as near veterans' homes as possible.
- Educate current and future health care professionals.
- Contribute to health care knowledge through research.
- Remain a ready resource for DOD (Department of Defense) backup in event of national emergency.

2.2 DESCRIPTION OF THE ALTERNATIVES

This EA considers the four alternatives described below:

Alternative 1 - No Action Alternative. Under this alternative, the existing condition of B/203 would remain unchanged and no seismic retrofit would occur. Patient privacy improvements would not occur, and no new or replacement structures or facilities would be constructed or developed. B/203 would continue to be one of the highest ranked structures in the nation on the VA's list of Extremely High-Risk Buildings.

Alternative 2 - B/16 Annex Alternative. Under this alternative, the seismic retrofit to B/203 would occur, and patient privacy improvements would be made, as described in Chapter 1. A new two-story, approximately 7,600 sf building would be constructed to house the prostate/urology wet labs, pacemaker study group and associated offices currently located in B/203. The new building would be located at the southwest corner of the SFVAMC site, in Lot F (see Figure 2 – Site Plan). The new building would be constructed adjacent to the existing 3,600 square-foot Building 16 (B/16), which would remain unchanged.[8]

Alternative 3 – Lot J Alternative. Under this alternative, the seismic retrofit of B/203 would occur, and patient privacy improvements would be made, the same as under Alternative 2. A new two-story, approximately 7,600 sf building

[8] B/16 is currently used by the University of California, San Francisco (UCSF), and the HIV Collaborative.

would be constructed within the Lot J parking area to house the same research/lab space and associated offices currently located in B/203, as described above. Lot J is located in the northwest portion of the SFVAMC site. The building would be constructed adjacent to Building 205 (Steam Plant) and Building 209 (parking structure), within an area that is currently used as surface parking, as shown on Figure 2.

Alternative 4 – B/203 Seismic Upgrade Alternative. Under this alternative only the seismic retrofit to B/203 would occur. No patient privacy improvements would be made under this alternative.

A comparison of the alternatives is listed in Table 2.

Table 2
Comparison of Environmental Conditions

ELEMENT OF THE ENVIRONMENT	ALTERNATIVE 1 NO PROJECT	ALTERNATIVE 2 B/16 ANNEX RESEARCH BLDG.	ALTERNATIVE 3 LOT J RESEARCH BLDG.	ALTERNATIVE 4 B/203 SEISMIC UPGRADE ONLY
Aesthetics				
Views	Existing campus conditions.	Existing campus with additional 2 story research building (B/16 Annex) adjacent to B/16 and new canopies on B/203 north end, along with new buttress adjacent to the north end of the skywalk connecting B/203 and B/200.	Existing campus with additional 2 story research building in southeast corner of Lot J and new canopies on B/203 north end, along with new buttress adjacent to the north end of the skywalk connecting B/203 and B/200.	New canopies on B/203 north end, along with new buttress adjacent to the north end of the skywalk connecting B/203 and B/200.
Air Quality				
	Average Daily Trips consisting of SFVAMC staff, patients, and visitors.	Average Daily Trips consisting of SFVAMC staff, patients, and visitors plus short-term emissions from construction equipment and construction staff traffic.	Same as Alternative 2	Similar to Alternative 2, but with lower short-term emissions from construction equipment and construction staff traffic.
Community Services & Utilities				
	124 hospital beds in 4-bed and 2-bed configuration. Served by underground utilities which include water, storm drainage, sanitary sewer, electric, and gas service lines. Non-compliance with VA and Federal mandate for seismic improvements. No patient privacy improvements.	Reconfiguration of 4-bed to 2-bed patient rooms and 2-bed to 1-bed patient rooms for patient privacy improvements. This reconfiguration would require more space to maintain the same number of beds in B/203. The increased space for the reconfigured rooms would be accommodated by the lab space which would be relocated to B/16 Annex. Internal reconfigurations of the utility lines in B/203 and B/16 Annex connection to sewer, water, and electricity lines. Compliance with VA and Federal mandate for seismic	Reconfiguration of 4-bed to 2-bed patient rooms and 2-bed to 1-bed patient rooms for patient privacy improvements. This reconfiguration would require more space to maintain the same number of beds in B/203. The increased space for the reconfigured rooms would be accommodated by the lab space which would be relocated to Lot J. Internal reconfigurations of the utility lines in B/203 and Lot J connection to sewer, water, and electricity lines. Compliance with VA and Federal mandate for seismic	124 hospital beds in 4-bed and 2-bed configuration. Served by underground utilities which include water, storm drainage, sanitary sewer, electric, and gas service lines. Compliance with VA and Federal mandate for seismic improvements. No patient privacy improvements to meet current VA standards.

		improvements.	improvements.	
Cultural Resources				
	N/A. No ground disturbance.	Consultation with professional archaeologist in event subsurface archaeological resources is encountered.	Same as Alternative 2	Same as Alternative 2.
Floodplains, Wetlands, Watersheds, Rivers, Lakes, Coastal Zone, Etc.				
	N/A	No significant change to impervious site characteristics. Coastal Commission consistency determination.	Same as Alternative 2	Same as Alternative 2.
Geology & Soils				
	Significant seismic hazard with no seismic retrofit on B/203.	Reduction in short- and long-term adverse risk of damage to people from collapse of structures from strong seismic ground shaking to minimal levels. Long-term adverse risk of damage from liquefaction and/or settlement reduced to minimal level with incorporation of geotechnical engineer's recommendations into site design.	Same as Alternative 2	Same as Alternative 2.
Hydrology, Water Quality				
	NA	Slight increase in stormwater runoff from new development on 0.087 acres with addition of B/16 Annex, however runoff would be handled by improved drainage system in B/16 area. Reduction in level of contaminants collected in surface water runoff from parked cars in B/16 lot.	No change to stormwater runoff as Lot J site is already developed with impervious surface. Contaminants collected in surface water runoff from parked cars in B/16 lot would continue.	No change to stormwater runoff. No new buildings would be constructed.
Land Use				
Developed	29 acres	29 acres and construction of new 2 story, 7,600 sf building (3,800 sf footprint) within existing	29 acres and construction of new 2 story, 7,600 sf building (3,800 sf footprint) within existing campus,	29 acres.

		campus, adjacent to B/16.	in southeast corner of Lot J.	
Noise				
	No change.	No long-term operational change. Slight reduction in noise at B/16 lot due to loss of parking spaces and less traffic to B/16 area. Short-term impacts from construction.	No long-term operational change. Short-term impacts from construction.	Same as Alternative 3, but with less short-term impacts from construction noise, because no new building would be constructed.
Socioeconomics				
	No change in employees.	No change in SFVAMC employees. Short-term increase in employees and economic activity due to construction. $42 million project that would last approximately two and a half years and would result in additional wages and increase in local purchase of goods and services.	Same as Alternative 2	No change in SFVAMC employees. Short-term increase in employees and economic activity comparable to Alternative 2.
Solid/Hazardous Waste				
	No change.	Short-term increase in construction related solid waste. Labs relocated to B/16 Annex would continue to operate as they currently do and have similar waste and hazardous waste generations. Compliance with existing safety and research procedures and regulations would minimize health hazards.	Short-term increase in construction related solid waste. Labs relocated to Lot J would continue to operate as they currently do and have similar waste and hazardous waste generations. Compliance with existing safety and research procedures and regulations would minimize health hazards.	Short-term increase in construction related solid waste. No long-term change. B/203 lab uses would not be relocated, and would continue to comply with existing safety and research procedures and regulations.
Transportation and Parking				
	No change.	Short-term increase in construction related traffic and parking. Loss of parking area (approximately 20 spaces) that was used for staff/employee parking adjacent to B/16 as a result of constructing B/16 Annex building.	Short-term increase in construction related traffic and parking. Loss of up to 40 spaces (long-term) in Lot J as a result of new research building. An additional 10 to 20 parking spaces would be temporarily unavailable (short-term) during construction in order to accommodate a construction staging	Short-term increase in construction related traffic and parking as a result of seismic retrofit activities. No long-term impacts on parking.

			area.	
Vegetation and Wildlife				
	No change.	Pre-construction survey for nesting birds if vegetation or tree removal needed for B/16 Annex construction.	Pre-construction survey for nesting birds if vegetation or tree removal needed for new building construction.	Minimal trimming/ vegetation removal required around perimeter of B/203.
Environmental Protection	**Measures**			
	NA	Stormwater Pollution Prevention Plan; Construction Dust Control Practices, VA Environmental Protection Specification 01568	Same as Alternative 2	Same as Alternative 2.

2.3 ALTERNATIVES ELIMINATED FROM DETAILED CONSIDERATION

A wide range of alternatives were considered early in the planning process of the B/203 seismic retrofit project, but were eliminated from detailed consideration in this EA. The following is a list of several of the alternatives that were considered, along with the reasons for why they were eliminated from consideration:

Replacement Facility: Construct a new facility to the northwest of existing B/203, in the existing Lot J surface parking area and site occupied by buildings 17, 21, 26, 28, the pump house and the water tower. The replacement facility would house all current services and programs residing in B/203. A connection to Building 200 would need to be established to integrate the operating rooms with recovery and the inpatient bed units. B/203 would be reused for non-hospital/research uses. This alternative was considered but dismissed from further consideration due to the severe impact it would have on parking and occupied structures; and the substantial cost.

Construct new building on front lawn near entrance at Clement and 43rd Avenue: Construct new 7,600 sf Urology/Pacemaker building on the front lawn area, on the east side of B/203. This alternative was considered but dismissed from further consideration due to previous opposition to construction in this area by the local community when a neuroscience building was proposed at this same location.

Relocate Childcare Center: Relocate the Cheryl Andersen-Sorensen Childcare Center from its current location in B/32 to Lot F (mud lot) and construct the new Urology/Pacemaker building in the B/32 location. This

alternative was considered but dismissed from further consideration due to timing/phasing conflicts.

Relocate B/16 Occupants Off-site; Move Urology/Pacemaker to B/16: Vacate and permanently relocate HIV Collaborative at B/16 off-site; Use existing B/16 to accommodate displaced lab space from B/203. This alternative was considered but dismissed from further consideration for the following reasons: 1) it would require permanent relocation of HIV Collaborative, a use that is related to one of the core missions of the VA; 2) B/16 is not suited for urology research; and 3) B/16 is too small to meet program need.

Relocate B/14 Occupants Off-site; Move Urology/Pacemaker to B-14: Relocate B/14 occupants (Northern California Institute for Research and Education (NCIRE)) to an off-site lease and use existing B/14 location to accommodate displaced lab space from B/203. This alternative was considered but dismissed from further consideration for the following reasons: 1) B/14 is not suited for urology research; and 2) B/14 is too small to meet program need.

Move Research Off-Site; Relocate all research functions in B/203 to an off-site location: This alternative was considered but dismissed from further consideration for the following reasons: 1) it would require relocation of research, one of the core missions of the VA, away from the VA campus; 2) it would require clinician researchers to constantly travel between B/203 (and other buildings on-site) and the off-site location; 3) it would disrupt vital collaboration between off-site and on-site research; and 4) it did not meet timing/phasing requirements.

Eliminate Research Programs to Reduce Space Requirements: Over 20,000 sf of research/lab and support space is currently housed in B/203. A series of program consolidations and use relocations were implemented in order to vacate the space needed for patient privacy and other interior improvements in B/203. Uses were moved to other locations within B/203 and to other existing buildings on the campus where space was available to accommodate displaced B/203 uses. A new building is required for research/lab space that could not be relocated into an existing building on campus. If the research programs housed in B/203 were eliminated, there would be no need to construct a new building for the research function. This alternative was considered but dismissed from further consideration because it conflicts with one of the core missions of the SFVAMC: Contribute to health care knowledge through research.

Comprehensive Build-Out: Construct a 14,400 sf building in Lot F to house research functions displaced as a result of the B/203 Seismic project. This

alternative was considered but dismissed from further consideration for the following reasons: 1) the cost of the project exceeded the funding allocated; and 2) the SFVAMC, as a result of meetings with local neighborhood groups and early concern about the size of this facility, reprogrammed functions to reduce the size of the facility from 14,400 sf down to 7,600 sf.

Upgrade B/203 and Move Research into the Enhanced Use Building: The VA has had under consideration the construction of a new research building under the auspices of its Enhanced Use (EU) leasing authority. The building would be able to accommodate all the research functions located in B/203. As originally envisioned, the building would have been completed by 2007. However, due to financing issues, the EU never moved past the concept stage, and therefore was dismissed from further consideration.

3. AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter presents the baseline environmental and socioeconomic conditions at the SFVAMC. Only those environmental resources and socioeconomic conditions relevant to the proposed action are presented.

Resources not addressed include agricultural resources, mineral resources, and real property. The proposed action would not result in development on any areas containing agricultural resources of statewide importance, and there are no known mineral resources located on the site. Furthermore, the proposed action does not involve change in ownership, encroachment on critical areas or changes of easements. Therefore real property is not addressed in this EA.

Baseline data was compiled from existing documentation pertaining to the SFVAMC, consultation with facility engineers, queries from resource-specific databases, and correspondence with agency representatives.

3.2 AESTHETICS

SFVAMC is located along a bluff overlooking the northwestern edge of San Francisco and the Pacific Ocean. The Golden Gate National Recreation Area (GGNRA) borders the SFVAMC site to the north, east and west, and the western edge of San Francisco's outer Richmond district is adjacent to the south. SFVAMC sits at an elevation of 300 to 350 feet relative to mean sea level (msl), and is higher than the areas in its immediate vicinity: the land to the north and west of the site drops sharply downward towards the ocean, while the terrain to the east slopes more gently through the Lincoln Park Golf Course and towards the Seacliff neighborhood. The Richmond district lays beyond a moderate downward slope to the south of the SFVAMC. The SFVAMC is not located adjacent to any designated state scenic highways nor is it near any roads that are part of the San Francisco 49-Mile Scenic Drive.

The SFVAMC is characterized by the facility's visually prominent buildings and the natural features that surround them – mainly mature, native trees – located both within and adjacent to the developed area. Monterey pine and Monterey cypress are the most visible vegetation in the area, and are found in landscaped areas within the SFVAMC site as well as in the adjacent, natural GGNRA areas. These trees and other vegetation partially screen views to and from areas within the southern and southwestern portions of the SFVAMC. However, in views from points outside of the SFVAMC, the trees and vegetation do not completely obscure the site's mostly developed and disturbed nature, as

evidenced by the buildings, paved roadways, gravel lots and outdoor storage areas.

As previously described, the proposed project would include exterior alterations to B/203, the main hospital building, which is a relatively large, reinforced-concrete building with a flat roof. This building, which is located in the southern portion of the SFVAMC, is visually prominent from points throughout the SFVAMC, as well as from the neighborhood to the south, and its connection to Building 200 (B/200) by a sky bridge spanning Fort Miley Circle adds to the apparent mass of the building. B/203 was designed in the Brutalist mode (VA 2001), and its exterior walls are unfinished concrete, given texture by continuous, vertically-oriented bands of anodized aluminum windows and irregularly spaced windows.

3.3 AIR QUALITY

Air quality within San Francisco County is regulated by the U.S. Environmental Protection Agency (EPA), California Air Resources Board (ARB), and the Bay Area Air Quality Management District (BAAQMD). Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent.

Air quality regulations in the San Francisco Bay Area focus on the following air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), lead, and respirable and fine particulate matter (PM_{10} and $PM_{2.5}$). Particulate matter is a complex mixture of extremely small particles and liquid droplets, made up of acids, organic chemicals, metals, and soil or dust particles. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as "criteria air pollutants."

The federal Clean Air Act (CAA) required the EPA to establish national ambient air quality standards (NAAQS) for these criteria air pollutants. The California Clean Air Act (CCAA), which was adopted in 1988, required the ARB to establish California ambient air quality standards (CAAQS). The ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS.

BAAQMD attains and maintains air quality conditions in the County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air-quality issues. The clean air strategy of BAAQMD includes the preparation of plans and programs

for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. BAAQMD also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the CAA, federal Clean Air Act Amendments of 1990 (CAAA), and the CCAA.

In an effort to reach attainment of the state and national ozone standards, the BAAQMD prepared the Bay Area 2000 Clean Air Plan (CAP) and the 2001 Ozone Attainment Plan (OAP). More recently, the BAAQMD, in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), has prepared the Bay Area 2005 Ozone Strategy. The Ozone Strategy is a plan showing how the air basin will achieve compliance with the state 1-hour ambient air quality standard for ozone as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins (BAAQMD 2006).

With respect to ozone, the County is currently designated as a nonattainment area for the state 1-hour (serious) and national 8-hour (marginal) ambient air quality standards, respectively (CARB 2006). The County is also designated as a nonattainment area with respect to the state PM_{10} and $PM_{2.5}$ standards (CARB 2006). For all other state and national ambient air quality standards, the City and County is designated as an attainment and/or unclassified area.

Toxic Air Contaminants (TACs) refer to a category of air pollutants that poses a present or potential hazard to human health, but which tend to have more localized impacts than criteria pollutants. There are no ambient standards for TACs, instead stationary sources are regulated directly through emission standards and risk reduction strategies implemented at the sources of the emissions. When a new source of TACs is proposed, a health risk assessment may be needed to estimate the project's potential health risks.

Asbestos is the name given to a number of naturally occurring fibrous materials that have been used in a variety of building materials including walls, ceilings, floors, fire proofing, and pipe insulation. Asbestos is made up of microscopic bundles of fibers that may become airborne when distributed. These fibers get into the air and may become inhaled into the lungs, where they may cause severe health problems.

Sensitive receptors are identified areas that would be used by persons most sensitive to the effects of air pollution, such as the very young, the elderly, or people weak from illness or disease. These receptors are generally residential, schools, hospitals, and retirement homes. The project site itself is a medical center/hospital location and would be considered a sensitive receptor. Outside

the medical center, the nearest sensitive receptors are residential homes on the south side of Clement Street/Seal Rock. Located near the western edge of San Francisco overlooking the Pacific Ocean, the site has relatively good air quality because of windy conditions and a location generally upwind of source emissions.

3.4 COMMUNITY SERVICES AND UTILITIES

The SFVAMC is already served by services and utilities, which include water, storm drainage, sanitary sewer, electric, and gas service lines. Operational demands of water, sewer, gas, and electricity are currently being met.

SFVAMC is located within a combined sewer and drainage system area of service. The site is fully developed and storm drainage and capacity for storm runoff is in place. Please refer to the Hydrology, Water Quality Section for additional discussion on drainage.

The SFVAMC itself is a major tertiary care facility that serves as a regional referral center for specialized medical and surgical programs for veterans. In addition, the SFVAMC is part of the National Disaster Medical System (NDMS), a federally coordinated initiative that augments the nation's emergency medical response capability. The SFVAMC is designated as the Federal Coordinating Center (FCC) for the Northern California area, and serves as link between NDMS and non-federal hospitals in the region. The overall purpose of NDMS is to establish a single national medical response capability for: 1) Assisting state and local authorities in dealing with the medical and public health effects of major peacetime disasters; and 2) Providing support to the military medical system in caring for casualties resulting from overseas armed conflicts.

3.5 CULTURAL RESOURCES

A records search was conducted on August 22, 2006 by the Northwest Information Center (NWIC) utilizing a one-half mile radius from the project area. NWIC files indicated that the San Francisco VA Medical building is located within the Fort Miley Military Reservation, a National Register listed district. B/203 itself, however, is not considered a part of the historic district (non-contributor). Fort Miley was added to the National Register in 1980 for its association to the historic theme of the sea-coastal defense of the San Francisco Bay. No other cultural resources were noted within the project area.

B/203 was constructed in 1976, and at less than 50 years old, is therefore not considered a historical resource. Five (5) previously recorded resources were noted by the NWIC as being within a one-half mile radius of the project area.

These fives resources include three prehistoric sites (shell mounds), and two historic-era buildings. None of the prehistoric sites appear to have been evaluated for potential eligibility to the National Register. Both buildings were previously evaluated and determined ineligible for listing to the National Register.

3.6 FLOODPLAINS, WETLANDS, WATERSHEDS, RIVERS, LAKES, COASTAL ZONE, ETC.

Based on the *City and County of San Francisco Community Safety Element,* San Francisco is not subject to flooding of natural waterways (CCSF 1996). The National Flood Insurance Program, which designates flood-prone areas, does not provide floodplain mapping for urban areas. Therefore no floodplain designation is available for this site. The SFVAMC is located on the high point of a bluff at approximately 300 to 350 feet relative to mean sea level (msl). Since the project is located at a higher elevation than the surrounding landscape, flooding hazard is not present. Also, due to the site's elevation of 300 to 350 ft relative to msl, it is well above any tsunami run up inundation zone. Neither wetland areas nor any water courses are located within the project site.

3.7 GEOLOGY AND SOILS

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

The Alquist-Priolo Act (Public Resources Code Sections 2621–2630) was passed by the State Legislature in 1972 to mitigate the damage to structures designed for human occupancy caused by surface faulting. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as "Earthquake Fault Zones" around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to

demonstrate that proposed buildings would not be constructed across active faults.

The California Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6), addresses earthquake hazards from non-surface fault rupture, including liquefaction and seismically-induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

The VA guidance for building design is the VA handbook H-18-8, VA Seismic Design Requirements (SDR) and the 2003 International Building Code (IBC). In addition, the Veterans Health Administration (VHA) Directive 2005-019 establishes policy regarding the seismic safety of VHA buildings. This policy is based primarily on the National Earthquake Hazards Reduction Act of 1977, as amended and Executive Order 12941. The California Building Code (CBC) Title 24 was included in the amendments to the IBC for buildings identified as Critical and Essential Facilities, buildings that would need to remain functional after an earthquake or other natural disaster.

The project site is located on bluffs approximately 300 to 350 above mean sea level overlooking the Pacific Ocean, within the Coast Range geomorphic province. From approximately 140 to 28 million years ago, during the Mesozoic and early Cenozoic Eras, rocks of the present Coast Ranges formed as new oceanic crust collided with and became attached to the western continental margin. As the Farallon oceanic plate was consumed along the North American Plate during the process of subduction, the Pacific oceanic plate came into direct contact with the North American Plate. When this occurred, the boundary where the two plates met changed from a subduction zone (one tectonic plate being pushed underneath another) to a transform boundary (two plates moving past each other), and the San Andreas Fault Zone was formed. Tectonic activity along the San Andreas and many smaller faults continues to the present time, and has resulted in a variety of folded and faulted rock sequences in the Coast Ranges.

The project site is located within geologic formations mapped as late Pleistocene and Holocene dune sand (Wagner et al. 1991, Ninyo & Moore 2004), underlain by the Franciscan Complex. The Franciscan is referred to as a "complex" because it appears to consist of portions of a number of different oceanic plates that were added to the North American Plate – primarily during

the Mesozoic Era. The Franciscan includes greenstone, chert, graywacke, various metamorphic rocks, and serpentinite.

Surface ground rupture along earthquake faults is generally limited to a linear zone a few meters wide. Although the project site is underlain by a seismic source, the City College fault, this fault has not been active in the last 1.6 million years (Jennings 1994). Because no faults designated as "active" by the California Geological Survey or USGS have been mapped across the project site, nor is the project site located within an Alquist-Priolo Earthquake Fault Zone, fault ground rupture at the project site is considered unlikely (California Geological Survey 1999, Hart and Bryant 1999).

Table 3 identifies faults in the project vicinity that have been designated by the California Division of Mines and Geology as "active," and therefore are known to pose a potential geologic hazard to the project site. These faults, which are also shown on Figure 3, show evidence of displacement during Holocene time (11,000 years ago to present). In addition, Table 3 identifies the approximate distance from the project site, maximum moment magnitude (M), and fault type.

The California Division of Mines and Geology identifies low, medium, and high earthquake severity zones within California. The project site lies in a high severity seismic hazard zone.

Ground motion can be estimated by probabilistic method at specified hazard levels. The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake, site soil conditions, and the characteristic of the source. The *Probabilistic Seismic Hazard Assessment for the State of California* (Petersen et al. 1996), published by USGS and the California Division of Mines and Geology (CDMG), identifies the seismic hazard based on a review of these characteristics and historical seismicity throughout California. The results of these studies suggest that there is a 10% probability that the peak horizontal acceleration experienced in the project vicinity would exceed 0.65 g (where g [gravity] is a percentage of the earth's normal gravitational strength) in 50 years.

Ninyo & Moore (2004) performed site-specific probabilistic ground acceleration calculations for the project site. Peak horizontal ground acceleration (the level of ground shaking) was calculated for fill, dune sand, alluvium, and the Franciscan Complex. The results of Ninyo & Moore's analysis indicate that there is a 10% probability that the site-specific peak horizontal ground acceleration from an earthquake would exceed 0.99 g in 50 years.

Source: Faults: CA Dept of Mines & Geology -- Jennings 1994 / StreetMapUSA / EDAW 2006

0 0.5 1 2 3 4 5 Miles

Scale 1 : 190,080
1" = 3 miles

EDAW | AECOM

1/10/07

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Fault Lines
Figure 3

SAN FRANCISCO VETERANS AFFAIRS MEDICAL CENTER
B/203 SEISMIC RETROFIT / PATIENT PRIVACY IMPROVEMENTS

Table 3
Active Faults in the Vicinity of the Project Site

FAULT	DISTANCE FROM PROJECT SITE	MAXIMUM MOMENT MAGNITUDE[1]	FAULT TYPE[2]
San Andreas	3.6 miles	7.1	A
San Gregorio	7.0 miles	7.2	B
Hayward	15.0 miles	6.7	A
Point Reyes	33.8 miles	6.8	B
Rodgers Creek	37.2 miles	7.1	A

Note:
1 The moment magnitude scale is used by seismologists to compare the energy released by earthquakes. Unlike other magnitude scales, it does not saturate at the upper end, meaning there is no particular value beyond which all earthquakes have about the same magnitude, which makes it a particularly valuable tool for assessing large earthquakes.
2 Faults with an "A" classification are capable of producing large magnitude (M) events (M greater than 7.0), have a high rate of seismic activity (e.g., slip rates greater than 5 millimeters per year), and have well-constrained paleoseismic data (e.g., evidence of displacement within the last 700,000 years). Class "B" faults are those that lack paleoseismic data necessary to constrain the recurrence intervals of large-scale events. Faults with a "B" classification are capable of producing an event of M 6.5 or greater.

Sources: Petersen et al. 1996, Cao et al. 2003, Ninyo & Moore 2004, ENGEO 2006

The California Building Standards Code specifies more stringent design guidelines where a project would be located adjacent to a Class "A" or "B" fault as designated by the California Probabilistic Seismic Hazard Maps. As shown in Table 3, the project site is located within 3.6 miles of a Class A fault.

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. Factors determining the liquefaction potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands and peat deposits are susceptible to liquefaction, while clayey silts, silty clays, and clays deposited in freshwater environments are generally stable under the influence of seismic ground shaking. According to Ninyo & Moore (2004) and ENGEO (2006), the project site is not located within an area of historical or potential liquefaction, although the alluvial sediments at the site were found to be poorly consolidated (loose) and wet to saturated, indicating a potential for liquefaction. The Holocene fill, dune sand, and alluvial sediments at the project site could experience seismically-induced settlement of 5 to 8 inches (Ninyo & Moore 2004, ENGEO 2006).

Earthquakes may affect open bodies of water by creating seismic sea waves. Seismic sea waves (often called "tidal waves") are caused by abrupt ground movements (usually vertical) on the ocean floor in connection with a major earthquake. Because of the elevation of the project site above the ocean, approximately 300 to 350 feet above mean sea level, seismic sea waves

(tsunami) should not pose an adverse risk for people or structures at the project site.

A landslide is the downhill movement of masses of earth material under the force of gravity. This process typically involves the surface soil and an upper portion of the underlying bedrock. The factors contributing to landslide potential are steep slopes, unstable terrain, and proximity to earthquake faults. Project site topography drops sharply down to the Pacific Ocean on the north and west sides, there is a moderate slope to the south, and a gentle slope towards the east. Mapped landslides are located outside the project site and do not pose a hazard to the sites of the proposed construction activities (Ninyo & Moore 2004, ENGEO 2006).

Subsurface investigations of the project site conducted by Ninyo & Moore (2004) and ENGEO (2006) indicate that the top 4 to 5 feet of soil consists of loose to medium dense fill material. Holocene dune sand underlies the fill material to depths of 28 to 34 feet. Loose to dense clayey sand grading to stiff sandy clay alluvium was encountered beneath the dune sand, in layers 2 to 10 feet thick underneath B/203 and 13 to 17 feet thick at the site of the proposed B/16 Annex. Bedrock (Franciscan Complex) was encountered beneath the alluvium. At the site of B/16 Annex, the bedrock consists of sandstone at depths of 45 to 50 feet below the ground surface. At the site of B/203, the bedrock consists of shale, chert, serpentinite, and graywacke sandstone at approximately 30 to 45 feet below the ground surface. While clay soils at the project site could expand and contract (shrink-swell), building foundations would not be constructed in these soils.

Groundwater was encountered at the site of the proposed B/16 Annex at depths of 43 and 48 feet below the ground surface (ENGEO 2006). Groundwater at the site of B/203 was not evaluated; however, the alluvium 20 to 30 feet below the ground surface was found to be saturated at some soil boring locations, which could indicate a perched groundwater table (Ninyo & Moore 2004). Fluctuations in the groundwater table can occur due to rainfall, groundwater pumping, and seasonal variations.

3.8 HYDROLOGY, WATER QUALITY

REGIONAL SETTING

The proposed project area is characterized by the sloping hillside bluffs of Point Lobos and Lands End. The terrain surrounding the SFVAMC campus has a sharp downward drop toward the Pacific Ocean on the north and west, a gentle slope to the east toward the Seacliff neighborhood, and a moderate slope toward the lower-lying Richmond district neighborhood (DMJM 2005).

The average annual rainfall in the site area is 19.89 inches. Most of the area precipitation falls as rain during the months from October through April. Storm water generated on this site would likely go to the Oceanside Water Pollution Control Plant (OSP), where it would receive treatment, and then would be pumped to an outfall in the Pacific Ocean (DMJM 2005).

The project site is within the San Francisco Public Utilities Commission (SFPUC) combined storm system area of service. In San Francisco, the combined sewer system (which collects both sewer and storm water) is comprised of a distribution system (including approximately 900 miles of underground pipes and 25,000 street drains), water pollution control plants, an underground system of storage/transport tanks, and effluent outfalls to the San Francisco Bay and Pacific Ocean. The combined sewer system reduces pollution in the San Francisco Bay and Pacific Ocean by treating urban runoff that would otherwise flow to the Bay and Ocean. Street drains that flow to treatment plants must be kept contaminant free because the wastewater treatment facilities do not treat toxic pollutants (DMJM 2005).

The OSP provides secondary treatment of wastewater for flows coming from the western half of the City and serves as the storm and waste water collection area for project site runoff during storm events. During peak wet weather, the plant provides primary treatment for an additional 22 million gallons per day from the City's west side. Flows above 65 MGD receive flow-through treatment and are discharged either at the shoreline or at the Southwest Ocean Outfall (SWOO). The plant treatment process consists of a headworks with fine bar screens and grit removal, primary sedimentation tanks, pure oxygen aeration basins, and secondary clarifiers. The OSP meets all federal and state discharge standards. For wastewater receiving secondary treatment, approximately 95% of the pollutants are removed before discharge into the Pacific Ocean through the 3.75 mile long Southwest ocean outfall (DMJM 2005).

The OSP is regulated under NPDES Permit No. CA0037681 (Order Number R2-2003-0073), "NPDES Permit for City and County of San Francisco Oceanside Treatment Plant, Southwest Ocean Outfall, and Westside Wet Weather Facilities", which was issued by the Regional Water Quality Control Board on August 20, 2003 (DMJM 2005).

Per NPDES Permit No CA0037681, receiving waters for the discharges from the Oceanside Water Pollution Control Plant are not impaired or listed on the 303 (d) list. There are additional storm water plans in place in the City of San Francisco, including the Storm Water Management Plan (San Francisco Public Utilities Commission) which seeks to manage discharge from separate storm sewers within the City and County of San Francisco; and a separate Storm

Water Management Plan produced by the Port of San Francisco to cover the Port areas. Neither of these plans applies to the discharges from this project (DMJM 2005).

The site is not located within a dam inundation zone as identified by the Association of Bay Area Governments (ABAG), the regional planning and services agency for the nine-county San Francisco Bay Area.

SITE SPECIFIC SETTING

The project site is located within a completely improved medical center complex, with features including paved streets with curbs, gutters, and storm drain inlets. Runoff on the SFVAMC site is currently handled by surface water collection via an existing drainage system consisting of collection inlets and drainage pipes along roads within the complex. A storm drainage improvement project was completed in 2004 for the B/16 lot area to handle both the existing B/16 and expanded B/16 runoff. This project consisted of a series of drop and curb inlets designed to collect runoff and ultimately direct it to the storm/sewer system. No capacity problems are known to exist within this drainage system; the existing system is adequate for conveying water from average storm events.

Groundwater levels at the site were encountered at depths of 43 to 48 feet at the site of the proposed B/16 Annex, but not evaluated at the site of B/203 (DMJM 2005). However, the alluvium (at approximately 20 to 30 feet deep) was found to be saturated in some locations and may indicate a perched water table. Previous boring logs completed by the SFVAMC showed seepage at approximately 25 to 35 feet (Ninyo and Moore 2004).

B/203 is bounded on the west by a nursing home facility (B/208) and on the east by a surface parking area and sloping lawns. Building 203 is located on the high point of a bluff overlooking the Pacific Ocean at approximately 300 to 350 feet relative to mean sea level (msl).

The site currently has a landscaped vegetative erosion control system including trees, shrubs, and iceplants. Existing landscaping that will be preserved for grading in the vicinity of B/203 includes a cherry tree on the northeast corner of the building; a large cypress tree located near the southwest corner of the building and the covered walkway; four cypress trees and one pine tree located on the west side of the building; and a stand of shrubbery located at the southeast corner of the building.

3.9 LAND USE

The SFVAMC is a 29-acre site in the northwestern corner of the City and County of San Francisco, immediately north of the Richmond neighborhood (Please see Figure 4 – Surrounding Land Use). The site is bounded on the north, east and west by the Golden Gate National Recreation Area (GGNRA) Fort Miley site, and to the south by Clement Street/Seal Rock Dr. The SFVAMC site is zoned "Public Use" in the City and County of San Francisco's Zoning Map. The Outer Richmond is a residential neighborhood comprised of moderate density development, with a mix of single family homes and apartment buildings. The residential area immediately south of the SFVAMC is zoned RH-1 (Residential, House Districts, One-Family) and RH-2 (Residential, House Districts, Two-Family).

Existing land uses on the campus vary and are characterized by the location of buildings scattered across the site. The two largest and main buildings on the site are B/200 and B/203, which focus on outpatient and inpatient care, and are located in the center and south end of the site. An original cluster of residential buildings (Buildings 9, 10 and 11) is located in the northeast corner of the site. A nursing home (B/208) is located to the west of B/203. The remaining buildings generally have multiple functions for administrative, support and research services.

P:\2006\06010066.01\gis\arcmap\context_11x8.mxd

Source: USGS -- NIMA Imagery / EDAW 2006

1,000 500 0 1,000 Feet

Scale 1 : 12,000
1" = 1000 ft

EDAW | AECOM

1/10/07

Surrounding Land Use

Figure 4

SAN FRANCISCO VETERANS AFFAIRS MEDICAL CENTER
B/203 SEISMIC RETROFIT / PATIENT PRIVACY IMPROVEMENTS

3.10 NOISE

The noise environment of the project site is influenced by roadway traffic on Clement Street/Seal Rock Dr., 42nd and 43rd avenues, and the perimeter road within the SFVAMC. In addition, parking lot noise (e.g., car doors slamming, car alarms, engines starting, voices, etc.), building mechanical and ventilation equipment, and loading docks also contribute, to a lesser extent, to the existing noise environment.

Sensitive noise receptors (e.g., residences) in the project vicinity include patients on site, existing residences located to the south along Clement Street/Seal Rock Dr., and users of GGNRA to the east, north, and west. The closest residence to the south is located at a lower elevation and approximately 125 feet from the existing B/16. Lincoln Park is approximately 300 feet from the eastern border of the SFVAMC. GGNRA is immediately adjacent to the eastern, northern, and western boundary of the SFVAMC property.

The VA requires project contractors to implement noise control measures in its Environmental Protection Specification, Section 01568. The measures require that noise be minimized using every action possible, including performing noise producing work during less sensitive hours of the day or week. According to the Environmental Protection Specification, the construction activities are to be performed only during the hours of 8:00 am and 6:00 pm, unless otherwise permitted by local ordinance. San Francisco's noise ordinance (Article 29 of City Police Code) prohibits construction work between the hours of 8:00 pm and 7:00 am, if noise would exceed the ambient noise level by five dBA at the property line, unless a special permit is authorized by the Director of Public Works.

Repetitive impact noise on the property should not exceed the following decibel (dB) limitations as shown in Table 4:[9]

[9] A decibel (dB) is a logarithmic unit of sound energy intensity. A dBA is a decibel adjusted for the variation in frequency response of the typical human ear at commonly encountered noise levels.

Table 4
Decibel Limitations

TIME DURATION OF IMPACT	NOISE SOUND LEVEL IN DB
More than 12 Minutes	70
Less than 30 seconds in any hour	85
Less than three minutes of any hour	80
Less than 12 minutes of any hour	75

At 50 feet from the source, the VA requires that equipment sound muffling devices must meet maximum permissible construction equipment noise levels established in the Environmental Protection Specification. The maximum sound level for most equipment ranges from 75 to 80 dBA. Physical barriers should be used to restrict noise transmission. The use of silencers on equipment intakes and mufflers on the intake and exhaust of combustion engines would also reduce noise levels. Truck loading, unloading, and hauling operations should be conducted to keep noise levels at a minimum.

Under VA requirements, monitoring of the sound levels should occur at least once every five consecutive working days while work is being performed above 55 dBA. The measurement should be taken at the property line or 50 feet from the noise source, whichever is greater. The measurement should be taken on a general purpose sound level meter on an A weighted scale at slow response. The recorded information should be submitted to the VA's Resident Engineer noting any problems and alternatives for mitigation.

However, it may be assumed that construction contractors will be required to use construction equipment that would be equipped with feasible noise control devices (e.g., intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications). Consequently, the projected noise levels would likely be much lower, and in compliance with Section 2907 (Construction Equipment) of San Francisco's noise ordinance (Article 29 of City Police Code) which limits equipment noise levels to 80 dBA at 100 feet. Section 2907 requires that impact tools (i.e., jackhammers) must also have both intake and exhaust muffled to the satisfaction of the Director of Public Works. The City of San Francisco Municipal Code, defines noise levels for commercial and industrial property noise limits and construction related noise. Under the City's noise ordinance, no person shall produce, suffer or allow to be produced by any machine or device, or any combination of same, on commercial or industrial property, a noise level more than eight dB above the local ambient at any point outside of the property line.

In accordance with VA Samples and Shop Drawings Specifications, Section 01568, all contractors must include an Environmental Protection Plan, including a noise abatement plan with their proposal. The plan would include mitigation measures and monitoring procedures that would ensure the noise levels remain below the specified amounts.

3.11 SOCIOECONOMICS

The SFVAMC is a major tertiary care referral center and provides outpatient, long term, and home based care for veterans throughout Northern California. In addition to patient care, the SFVAMC also has clinical programs in acute medical, neurological, surgical and psychiatric care. The SFVAMC is affiliated with the University of California San Francisco (UCSF) School of Medicine and provides approximately one third of all medical student training for the UCSF teaching hospital (SFVAMC 2005). Research programs also have a large role at the SFVAMC. With an annual budget of $74 million, it is the largest funded research program in the Veterans Health Administration (SFVAMC 2005). The SFVAMC population, which includes VA and non-VA employees, volunteers, and short-term residents, is approximately 3,075.

3.12 SOLID/HAZARDOUS WASTE

The SFVAMC serves as a major tertiary care referral center for military veterans throughout Northern California. The facility has 124 acute care hospital beds and is renowned for its state-of-the-art acute medical, neurological, surgical and psychiatric care. In addition to the medical care, the SFVAMC is equipped with a variety of laboratories that support operational and research procedures.

Laboratories at the SFVAMC are required to adhere to practices associated with Laboratory Biosafety Level 2 (BSL 2). Work at BSL 2 laboratories can involve agents of moderate potential hazard to personnel and the environment. At this level, personnel have specific training in handling pathogenic agents, access to the laboratory is limited when work is being conducted, extreme precautions are taken with contaminated sharp items, and certain procedures in which infectious aerosols or splashes may be created are conducted in biological safety cabinets or other physical containment equipment.

The SFVAMC's BSL 2 laboratories undergo an annual biosafety inspection and certification process by Biosafety Officers from the Department of Veterans Affairs in order to certify that required safety procedures are being followed. The SFVAMC's laboratories were most recently certified on May 17, 2006. Each of the laboratories' certification reports are required to be kept on file at the lab and the VA Biosafety Office. The certification process includes

inspection of each lab, which includes (but not limited to) ensuring biosafety manual and emergency action plan is kept on-site, personnel and safety training, personnel exposure control, labeling, contamination control, and ensuring bio-waste containers and treatment/removal are present on-site.

In addition, the SFVAMC adheres to various regulations and requirements related to handling of hazardous materials as required by the EPA, OSHA, and Code of Federal Regulations (CFR). These regulations and requirements include:

- **Green Environmental Management Systems (GEMS) Policy.** The SFVAMC has adopted the GEMS policy in response to Executive Order 13148, which directs federal agencies to have a governing environmental policy in place for the operation of its facilities. This Executive Order also requires that VA facilities develop and implement environmental management systems to ensure that facilities are in full compliance with environmental regulations and are operated and managed in such a way as to result in the continual improvement of the environmental program.
- **SFVAMC Chemical Hygiene Plan for Research Service.** This plan educates research personnel on the potential hazards associated with chemicals and other materials, and assures that appropriate protective measures are implemented. This plan is intended to comply with all Occupational Safety and Health Administration (OSHA) standards with specific regard to Part 1910.1450 of Title 29 of the CFR.
- **SFVAMC Control of Hazardous Agents in VA Research Laboratories (Veterans Health Administration Handbook 1200.06).** Establishes policy and procedures related to select agents and toxins and the prevention and/or detection of terrorist events occurring in or originating from the Department of Veterans Affairs research laboratories.
- **SFVAMC Research Service Hazardous Materials Management Plan.** Establishes a hazardous materials management plan for the research services at the SFVAMC. Outlines procedures for educating employees in the safe use of chemicals, monitoring the use of these agents and reporting accidents involving them.
- **SFVAMC Research Laboratory Controlled Substances Policy.** Establishes guidelines for the control and storage of controlled substances.

- **SFVAMC Laboratory Biosafety Manual.** Provides personnel in the Research Service with a convenient source for training and quick reference when questions involving biosafety arise.
- **VA Master Specifications.** The Department of Veterans Affairs Office of Facilities Management has over 300 master specifications that are used for building construction projects. These include construction waste management requirements, environmental protection, and asbestos removal requirements.

3.13 TRANSPORTATION AND PARKING

The SFVAMC campus is located off of Clement Street (which turns into Seal Rock Dr.), and has entrances at 42nd and 43rd Avenues. 42nd Avenue is the main entrance for patients, visitors, and staff. Veterans Drive (which turns into Fort Miley Circle) is the road that loops the campus. The road network in the project area is shown in Figure 5. San Francisco Municipal Railway's Route 38 bus has two stops within the SFVAMC at B/203 and B/208 along Fort Miley Circle.

There are approximately 1,214 total parking spaces at the SFVAMC. The largest parking area is B/209, a parking garage with 422 spaces. Patient and visitor traffic is concentrated in Parking Lots A, B, E, and H. Patient and visitor parking are situated so that they are located in close proximity to the main hospital buildings.

SFVAMC employees park in Lots D, E, G, and J. Approximately 20 cars, mostly B/16 employees, park in Lot F, a gravel lot with no designated parking spaces, except for two spaces designated for persons with disabilities. Aside from the B/209 parking garage, all other parking at SFVAMC is located on surface lots.

There is a parking shortage at the SFVAMC, which has resulted in parking overflowing to the adjacent neighborhood area. A study by CHS Consulting Group concluded that about 257 VA cars are parked on the street during the day, with a total excess demand of 340 spaces (SmithGroup 2005). Parking at the SFVAMC is crowded during the peak day shift and excess demand calculations vary according to the study (SmithGroup 2005). VA Central Office has projected an excess demand of 657 spaces (SmithGroup 2005).

3.14 VEGETATION AND WILDLIFE

A site reconnaissance was conducted on August 7, 2006, which revealed a mostly urbanized, landscaped, and disturbed site encompassing gravel lots, paved parking, and storage areas where the majority of the site disturbance is to

occur. The vegetation surrounding the existing facilities was primarily non-native annual grasses and landscape or planted species including: Monterey pine (*Pinus radiata*) Monterey cypress (*Cupressus macrocarpa*), wild radish (*Raphanus sativus)*, iceplant (*Carpobrotus edulis*), German ivy (*Senecio mikanioides*), English Ivy (*Hedera Helix*), black locust (*Robinia pseudoacacia*), Pittosporum (*Pittosporum* sp.), Euonymus (*Euonymus* sp.), rattlesnake grass (*Briza maxima)*, ripgut brome (*Bromus diandrus*), wildoats (*Avena fatua*), white ramping fumitory (Fumaria capreolata), common knotweed (*Polygonum arenastrum*) and native pearly everlasing (*Anaphalis margaritacea*), meadowrue (*Thalictrum fendleri*), bush lupine (*Lupinus arboreus*) and California poppy (*Eschscholzia californica*). It is likely both the Monterey pines and cypress are also native species to California. Monterey pine is commonly planted as a landscape species.

P:\2006\06010066.01\gis\arcmap\context_11x8.mxd

Source: USGS -- NIMA Imagery / EDAW 2006

400 200 0 400 Feet

Scale 1 : 4,800
1" = 400 ft

EDAW | AECOM

1/10/07

Road Network
Figure 5

SAN FRANCISCO VETERANS AFFAIRS MEDICAL CENTER
B/203 SEISMIC RETROFIT / PATIENT PRIVACY IMPROVEMENTS

4. ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

4.1.1 IMPACT ANALYSIS

This chapter discusses the potential consequences of each alternative, including the No Project Alternative, on the environmental and socioeconomic resources at the SFVAMC. The impact discussion is organized by alternative and resource category, reflecting the order of those topics in Chapter 3. Descriptions of alternatives and maps illustrating them are included in Chapters 1 and 2.

Alternatives 2, 3, and 4 include the seismic retrofit of B/203. Impacts may be long-term or short-term. Short-term is defined as the period in which the action is being implemented, encompassing all construction-related activities. Long-term assumes the action is complete and focuses on the operational status at B/203 and the new research building.

For socioeconomic impacts, the impact analysis identifies potential impacts to the region of influence (ROI). Socioeconomic impacts are linked through cause and effect relationships. VA payroll and local procurement contribute to the economic base for the ROI.

4.1.2 SIGNIFICANCE CRITERIA

In accordance with regulations implementing NEPA, the term "significance" is used to describe the magnitude of potential impacts, considering both the context and intensity of the impact. Significance can vary in relation to the context of the action. For proposed actions, context may include consideration of effects on a national, regional, or local basis, and both short-term and long-term effects may be relevant. Impacts also are evaluated in terms of their intensity or severity. Factors contributing to the intensity of an impact include the following:

- The degree to which the action affects public health of safety;
- The proximity of the action to resources that are legally protected by various statutes, such as wetlands, regulatory floodplains, or resources listed in the National Register of Historic Places;
- The degree to which the action would adversely affect federally listed endangered or threatened species or their habitat;
- The degree to which the action is related to other actions with individually insignificant but cumulatively significant impacts; and

- Whether the action threatens to violate federal, state, or local laws imposed for protecting the environment (summarized from CEQ Regulations, Section 1508.27).

In addition, impacts were assessed to ensure compliance with Executive Order 12898, Environmental Justice. The guiding principle of the executive order is to avoid disproportionately high and adverse human health or environmental effects from federal policies and actions on minority and low-income populations. Effects on target populations of the Environmental Justice Executive Order are discussed in the section on socioeconomic effects.

The impact analysis assesses the potential change in environmental conditions that could result from implementing each of the four alternatives. If no adverse or beneficial effects would result, the action is considered to have no impact. If there is an effect, the impact is compared against significance criteria to determine if the impact is likely to be significant. Specific significance criteria used in this analysis for each resource area is presented in Table 5.

Table 5
Significance Criteria for Impact Analysis

RESOURCE AREA	SIGNIFICANCE CRITERION
Aesthetics	• Adversely degrades the existing visual character or quality of the site and its surroundings • Substantially adversely affects a scenic vista • Results in substantial light or glare
Air Quality	• Causes or contributes to a violation of state or federal ambient air quality standards • Results in emissions increases that have the potential to delay the projected date for attainment of state or federal air quality standards • Violates procedural, operational, monitoring, or reporting requirements of federal, state, or local air quality agencies
Community Services and Utilities	• Results in an increase in wastewater generation requiring the expansion or construction of sewage treatment plants • Violates federal, state, or local treatment standards for wastewater quality • Results in an increase in demand on public utilities requiring the construction of new or expanded facilities • Results in an increase in demand for public utilities exceeding available supply • Results in an increase in demand for public services including fire protection, police protection, parks, or other community services.
Cultural Resources	• Results in direct or indirect change to historical, archaeological, or paleontological resources.
Floodplains, Wetlands, Watersheds, Rivers, Lakes, Coastal Zone, etc.	• Results in construction within 100- or 500-year floodplain • Results in loss of wetlands or adversely degrades critical environmental area of wetlands.
Geology and Soils	• Causes substantial soil erosion or loss of top soil • Exposes people to geologic hazards such as strong seismic ground shaking, seismic related ground failure, liquefaction, or landslides.
Hydrology, Water Quality	• Causes substantial flooding, erosion, or siltation • Adversely affects any significant water body, including marine sanctuaries • Exposes people to reasonably foreseeable hydrologic hazards, such as flooding • Results in substantial alteration of surface water drainage and/or ground water regime
Land Use	• Conflicts with established recreational, educational, or scientific uses • Conflicts with land use goals of the community • Results in substantial alteration of present or planned land use
Noise	• Violates land use compatibility criteria and applicable noise guidelines • Generates new sources of substantial noise that violates applicable noise guidelines • Increases intensity of noise levels to sensitive receptors
Socioeconomics	• Substantially alters the location and distribution of the ROI population or causes the population to exceed existing growth rates • Adversely affects the local housing market and vacancy rates • Results in substantial increase in resident population or alteration of demographic characteristics • Adversely affects local economy
Solid/Hazardous Waste	• Results in substantial increase in solid waste • Results in emissions of hazardous emissions or transportation of hazardous materials.
Transportation and Parking	• Causes traffic volumes to exceed capacity of area roadways • Causes the operating conditions at one or more approaches at an unsignalized intersection to fall to undesirable (LOS E) or unacceptable (LOS F)

Table 5
Significance Criteria for Impact Analysis

RESOURCE AREA	SIGNIFICANCE CRITERION
	• Results in parking demand exceeding capacity
Vegetation and Wildlife	• Causes disruption to or removal of an endangered or threatened species, its habitat, migration corridors, or breeding areas • Results in the loss of a substantial number of native plant or animal species that could affect abundance or diversity beyond normal variability

4.2 ALTERNATIVE 1: NO ACTION

Under this alternative, the seismic retrofit of B/203 would not be completed. No new or replacement structures or facilities would be constructed or developed. B/203 would continue to be one of the highest ranked structures in the nation on the VA's list of Extremely High-Risk Buildings.

4.2.1 AESTHETICS

Alterations to the exterior of B/203 would not be completed, and no new research building would be constructed under Alternative 1. Views to and from the site would remain the same. Therefore no changes or impacts to visual resources would occur.

4.2.2 AIR QUALITY

The City and County of San Francisco is currently designated as a nonattainment area for the state 1-hour (serious) and national 8-hour (marginal) ambient air quality standards, respectively (CARB 2006). The County is also designated as a nonattainment area with respect to the state PM_{10} and $PM_{2.5}$ standards (CARB 2006). For all other state and national ambient air quality standards, the City and County is designated as an attainment and/or unclassified area. Alternative 1 would not result in additional employees or patients and therefore would not generate additional vehicle trips. Short-term construction emissions from site preparation, grading, relocation of utilities, and construction would not occur under Alternative 1.

4.2.3 COMMUNITY SERVICES AND UTILITIES

Under Alternative 1 the seismic retrofit and patient privacy improvements of B/203 would not be completed, and the construction of the new research building to accommodate displaced research/lab space would not occur. The total number of hospital beds would remain the same, and the research/lab space in B/203 would remain in its current location. The four-bed and two-bed patient rooms would remain in their current configurations. This would be a long-term adverse impact as this alternative would not meet the VA and Federal mandate to retrofit buildings, and would not meet the patient privacy standards.

The SFVAMC is also the National Disaster Medical System (NDMS) Federal Coordinating Center (FCC) for the Northern California area. It is the only facility within the Veterans Integrated Service Networks (VISN) designated as a

FCC.[10] Without the seismic retrofit of B/203, the SFVAMC's ability to serve at this capacity would be compromised.

Under Alternative 1, there would be no change in the SFVAMC operation, and there would be no impact or increased demand on police protection, fire protection, parks or other community services. No new connections to sewer, water and electricity lines would be needed under Alternative 1.

4.2.4 CULTURAL RESOURCES

No new construction or ground disturbance would occur under Alternative 1. Therefore, no impact to cultural resources would occur.

4.2.5 FLOODPLAINS, WETLANDS, WATERSHEDS, RIVERS, LAKES, COASTAL ZONE, ETC.

Under Alternative 1, the seismic retrofit of B/203 and construction of a new research building would not be completed. Runoff conditions around the site would therefore remain the same. Flood waters to nearby properties would not be displaced, and no change to impervious surfaces would occur. All runoff would continue to be collected in the storm drains and conveyed in San Francisco's integrated sewer/stormwater system. No impacts to floodplains, wetlands, watersheds, rivers, lakes, and coastal zone would occur under Alternative 1.

4.2.6 GEOLOGY AND SOILS

The project site is located in an area of high seismic activity, which could expose people and structures to risk of damage from earthquakes along nearby active faults. Under Alternative 1, B/203 would continue to be one of the highest ranked structures on VA's list of Extremely High-Risk Buildings. Seismic hazards would not be reduced under this Alternative, as B/203 would not be retrofitted in conformance with the Department of Veterans Affairs Handbook H-18-8, Seismic Design Requirements or IBC. Alternative 1 would constitute a short- and long-term adverse impact due to the risk of damage to people from collapse of structures from minimal to strong seismic ground shaking levels.

Based on geologic data or recurrence patterns, it may be generally assumed that the longer the interval between major earthquakes on the key active fault systems of the region, the greater is the likelihood that a major earthquake will occur. The building occupants (together with the rest of the Bay Area population) may assume with a high degree of confidence that the project will be exposed to a major (and possibly great) earthquake during its operating life.

[10] The SFVAMC is within the VA Sierra Pacific Network, also known as VISN 21. The SFVAMC is one of seven VA medical centers/health systems that manage a total of thirty-six care sites. The VISN 21 area covers central California to the Oregon border, and the northwestern portion of Nevada.

Non-structural damages would remain a significant hazard to building occupants and most injuries to people likely would result from such damage during an earthquake. Non-structural hazards to occupants would be caused by falling non-structural elements such as unattached wall panels, suspended light fixtures and pipelines, overturned bookcases and equipment, fires, and spillage of materials that may be hazardous. Some specific risks during an earthquake would include hazardous materials handled and stored on site.

Strong seismic ground shaking could cause seismic-related ground failure, possibly including liquefaction and/or seismically-induced settlement, of poorly consolidated (loose) and wet to saturated alluvial sediments at the project site. The Holocene fill, dune sand, and alluvial sediments at the project site could experience seismically-induced settlement of 5 to 8 inches and that amount of settlement would be sufficient to potentially result in structural damage. Under Alternative 1, engineering designs to reduce long-term adverse risk of damage from liquefaction and/or settlement to a minimal level would not be incorporated. Seismic-related impacts would be significant under Alternative 1.

Short-term construction-related erosion impacts would not occur under this alternative as no grading activities would occur.

4.2.7 HYDROLOGY, WATER QUALITY

Hydrology and water quality would not be affected by Alternative 1. The seismic retrofit of B/203 and construction of a new research building would not occur. There would be no increase in impervious surfaces that would result in increased runoff.

4.2.8 LAND USE

Alternative 1 would not change land uses at the SFVAMC. Activities and land uses at SFVAMC would continue as they currently do. No land use conflicts would occur as a result of this alternative.

4.2.9 NOISE

Short-term demolition, excavation, and construction-related noise would not occur under Alternative 1, and no changes to operational noise would occur under this alternative. Traffic-generated noise would not change. There would be no new employees or patients under Alternative 1. Therefore, no increases in traffic and associated vehicle noise would occur around or off the campus.

4.2.10 SOCIOECONOMICS

There would be no short-term increase in area employment under Alternative 1, as the seismic retrofit of B/203 and patient privacy improvements would not occur, and a new research building would not be constructed. There would be no additional wages or increase in local purchase of goods and services. The

SFVAMC employment and patient activities would not change in the long term under Alternative 1.

4.2.11 SOLID/HAZARDOUS WASTE

The SFVAMC would continue to operate in its current capacity under Alternative 1. The prostate/urology wet labs, pacemaker study group, and associated offices would remain in their current locations in B/203. Compliance with existing safety and research procedures and regulations would continue in order to minimize health hazards both to the building occupants and in the surrounding area.

4.2.12 TRANSPORTATION AND PARKING

No construction would occur under Alternative 1. The SFVAMC would continue to operate in its current capacity and would not result in increased employees. The number of vehicles traveling to and from the SFVAMC, both short-term and long-term, would remain the same. No short-term increase in traffic from construction equipment and workers would occur under Alternative 1.

The number of patient and visitor parking spaces would not change under Alternative 1. No parking spaces would be displaced and no impacts to traffic or on-site circulation would occur.

4.2.13 VEGETATION AND WILDLIFE

No construction would take place under Alternative 1. No trees would be removed and no staging areas would be required under this alternative. No impacts to biological resources would occur under Alternative 1.

4.3 ALTERNATIVE 2: B/203 SEISMIC RETROFIT AND B/16 ANNEX

Under this alternative, the seismic retrofit to B/203 would be completed, and patient privacy improvements would be made, as described in Chapter 1. A new two-story, approximately 7,600 square foot (sf) building would be constructed to house the prostate/urology wet labs, pacemaker study group and associated offices currently located in B/203. The new building would be located at the southwest corner of the SFVAMC site, in what is referred to as Lot F (see Figure 2 – Site Plan). The new building would be constructed as an annex adjacent to the existing 3,600 sf Building 16 (B/16), which would remain unchanged.

4.3.1 AESTHETICS

The proposed project would result in alterations to the exterior of B/203 and the construction of B/16 Annex, adjacent to the existing B/16. With implementation of the Mitigative Actions described below, the proposed project would have minimal aesthetic impact in terms of change to existing visual character and views of the SFVAMC from nearby areas.

All of the visual changes evident at B/203 would be related to seismic retrofitting and an upgrade of patient privacy measures. As such, upon completion of the proposed project, B/203 would include new canopies on its north end, along with new buttresses adjacent to the north end of the skywalk connecting B/203 and B/200. There would be no change in the building's overall size, nor are changes to any exterior lighting anticipated. Because the alterations to B/203 would not substantially alter the visual character of the building or expand its footprint, there would be no aesthetic impact from these proposed actions.

The proposed new B/16 Annex would be built adjacent to the existing B/16. The building would be two stories in height, and would be designed in a style (modular, wood-paneled, off-white in color, and flat-roofed) similar to the structure of the existing building. While larger in height and greater in bulk than the existing B/16 (and therefore likely to occupy a greater portion of views from within the SFVAMC), the B/16 Annex would not be out-of-scale with the existing nearby buildings.

Figure 6 shows the existing view of B/16 alongside a simulated view of the proposed B/16 Annex, as viewed from a hiking trail to the west of the project site, within the GGNRA land. From this vantage point, the proposed building would appear as a prominent addition, and the structural edge of the SFVAMC would appear to extend southward, toward the adjacent residential neighborhood. Trees and other natural features are the primary scenic

resources in the existing view, and the new building would partially obstruct views of the cluster of trees just uphill from the proposed B/16 Annex area.

However, the addition of B/16 Annex would not constitute a substantial change in the area's existing visual character. The new building would be located entirely within an already disturbed and developed part of the landscape, at a scale not inconsistent with nearby existing buildings. Existing scenic resources would be preserved, as no mature trees on the site would be removed during the course of the building's construction. The trees located to the immediate south and southeast of the project site would therefore remain the dominant features in this view, and would likely serve to partially screen the new building in views from the residential area to the south. Finally, the proposed building would not break into the skyline formed by the trees and B/208 and B/203, all of which would remain visible in the proposed view, beyond and above the new building.

Exterior lighting would be placed on the new building. New exterior lighting resulting from the proposed B/16 Annex could be visible to residents in the neighborhood to the south of the SFVAMC, as well as to viewers in the GGNRA land to the west of the site. Mitigative Actions as described below shall be implemented to reduce visibility of lighting from the areas surrounding the SFVAMC. There would be no impacts from glare with the incorporation of Mitigative Actions. In addition, the B/203 exterior seismic retrofit would not use highly reflective materials or finishes, nor would it use reflective canopies or mirrored glass. No new sources of glare would occur as a result of the project.

Further, the seismic retrofit and construction of the B/16 Annex would result in a short-term visual impact. Construction equipment and associated activities would be apparent in some views from nearby residential neighborhoods and GGNRA land.

The following Mitigative Actions shall be implemented, as described below, to reduce aesthetic and visual impacts.

MITIGATIVE ACTION - AESTHETICS

- The exterior building lights shall be shielded and directed downward to minimize light spillover and ensure that no light source is directly visible from either neighboring residential areas or adjacent GGNRA lands.
- Lighting along the access road to B/16 shall be positioned such that light spillover to the south of the road is minimized. Lights shall be shielded and directed towards the access road.

- Highly reflective building materials and/or finishes shall not be used in the designs for proposed structures.
- The project contractor shall place temporary fencing around all staging areas so as to limit the frequency and prominence of views of construction equipment and associated construction materials/activities from nearby residential neighborhoods and GGNRA land.

Existing

Visual Simulation of B/16 Annex

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Source: Field of Vision 2006

Visual Simulation of B/16 Annex

Figure 6

4.3.2 AIR QUALITY

Operational Emissions. Minimal emissions are expected from onsite activities such as ventilation units and existing or new emergency generators and ventilation units. If implemented, the new emergency generator would be a diesel engine which would be used only during emergencies and periodic testing. The number of VA employees would not increase as a result of the proposed action because the seismic retrofit activities and construction of the B/16 Annex would only require relocation of existing employees within the SFVAMC campus. Therefore, the project would result in staff levels and patient activities similar to the existing condition. The resulting operational air emissions due to traffic are considered to be unchanged. Therefore no impacts would occur.

Construction Emissions. Foreseeable construction/demolition activities would occur during site preparation, grading, relocation of utilities and other infrastructure, placement of foundations for structures, fabrication of structures, and demolition of existing structures. Construction activities would require the use of heavy trucks, excavating and grading equipment, concrete mixers, cranes, and other mobile and stationary construction equipment. During construction, air quality could potentially be affected for a short time period. Heavy equipment could create fugitive dust and emit reactive organic gas (ROG), NO_x, CO, SO_2, and PM (10 and 2.5) emissions as a result of diesel fuel combustion. The primary pollutant of concern in fugitive dust would be PM_{10}. PM_{10} is also released as a result of construction activities such as excavation or soil movement.

Construction emissions would be short-term and temporary (approximately 31 months), but could cause adverse effects on local air quality by adding windblown dust to the particulate matter in the atmosphere while soil is exposed.

Construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors, and front-end loaders which temporarily emit precursors of ozone (i.e., ROG or NO_x) are already included in the emission inventories of state- and federally-required air plans and would not have an adverse impact on the attainment and maintenance of ozone ambient air quality standards. However, unless PM_{10} emissions are reduced by implementation of feasible control measures, impacts caused by these emissions could be adverse. This would be considered a moderate impact.

Implementation of the Mitigative Action below would reduce impacts caused by PM_{10} emissions to a minimal level according to BAAQMD standards.

Asbestos. Before any demolition or renovation activities occur, an asbestos abatement plan must be prepared, an asbestos clearance must be obtained from the BAAQMD, and the project must comply with 40 CFR Section 61 Subpart M for National Emissions Standards for Hazardous Air Pollutants (NESHAP) for asbestos and BAAQMD Rule 11-2. This would ensure that no improper handling of asbestos would occur during the proposed demolition activities. If there is potential for the presence of asbestos in buildings to be demolished, prior to demolition, the VA proposes to remove all friable and potentially friable Asbestos Containing Material (ACM) (as required by law).[11] Removal and disposal would occur in accordance with applicable laws and regulations, including compliance with VA Specification 01568, EPA, BAAQMD, and the Occupational and Safety Hazards Act (OSHA). Once the asbestos removal is certified, the demolition would be allowed to proceed. To ensure safety during asbestos abatement, legal requirements for safety as defined by the OSHA would be followed. The air quality and safety impacts from asbestos would be minimal when combined with the application of current laws and regulations.

MITIGATIVE ACTIONS- AIR QUALITY (CONSTRUCTION DUST)

Implementation of the following Mitigative Actions, in accordance with BAAQMD standard mitigation requirements for areas near sensitive receptors, would reduce construction-related air quality impacts to a minimal level. No long-term mitigation would be required.

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at the construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at the construction sites.
- Sweep public streets adjacent to construction sites daily (with water sweepers) if visible soil material is carried onto the streets.
- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 miles per hour.

[11] Friable ACM is any material containing more than one percent asbestos.

- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the construction site.
- Install wind breaks at the windward sides of the construction areas.
- Suspend excavation and grading activities when wind (as instantaneous gusts) exceeds 25 miles per hour.

4.3.3 COMMUNITY SERVICES AND UTILITIES

The seismic retrofit and patient privacy improvements to B/203 would not result in an increase or decrease in the hospital services provided SFVAMC. There are currently 124 patient beds located in B/203; this number would not change under this alternative. The patient privacy improvements would convert the existing four-bed to two-bed patient rooms, and two-bed rooms to one-bed patient rooms. In addition, restrooms would be provided in each patient care room instead of the current shared restrooms located outside of patient rooms.

This alternative would result in a beneficial long-term impact, as B/203 would be upgraded to meet seismic building standards mandated by Executive Order (EO) 12941 and Veterans Health Administration Directive 2005-019; and patient privacy standards would be met. Current VA standards require that all patient beds be contained in one-and two-bed rooms; and a private bathroom be provided with every bedroom to meet modern standards of infection control and patient privacy. In addition, this alternative would enhance the SFVAMC's ability to serve as the Federal Coordinating Center (FCC) for National Disaster Medical System (NDMS) for the Northern California area.

Because there would be no change in the SFVAMC operation, there would be no impact on police protection, fire protection, parks or other community services. The B/203 seismic retrofit would result in an improved structure for fire and emergency response.

The main utility lines serving B/203 would not change as a result of the seismic retrofit. Aside from internal reconfigurations of the utility lines as a result of the seismic retrofit and patient privacy improvements, no changes to utility lines would occur at B/203.

Construction of the B/16 Annex would require connection to sewer, water, and electricity lines. Short-term impacts would consist of excavation to uncover the existing sewer and water lines to connect the B/16 Annex to the

system. Plans for the B/16 Annex include heating, ventilation, and air conditioning (HVAC) systems, which are required for the lab operations and would be built in compliance with the VA Master Specifications.

As discussed in the Hydrology and Water Quality section, drainage improvements were made to the B/16 area in 2004, and there is sufficient capacity to handle runoff from the new B/16 Annex. There would be no change to impervious surfaces at B/203 after the seismic retrofit as it is an already developed area. Thus, there would be no adverse affect on the stormwater runoff.

The seismic retrofit of B/203 and B/16 Annex construction would not result in a net increased use of utilities once the work is complete, since staffing levels and uses would remain essentially the same as existing conditions.

4.3.4 CULTURAL RESOURCES

Due to the presence of known prehistoric resources near the project area, as well as a high level of documented historic activity within the project area, there is a possibility of encountering subsurface cultural resources during project-related ground disturbing activities: this would be a moderate adverse impact. The following Mitigative Action shall be implemented in the event that subsurface cultural resources are encountered during ground disturbance activities around B/203 and preparation of the B/16 Annex area.

MITIGATIVE ACTION - ARCHAEOLOGICAL RESOURCES

Implementation of the following Mitigative Action is required to avoid any potential adverse effect from the proposed project on the inadvertent discovery of archaeological resources:

- The VA shall notify the project contractor involved in ground-disturbing activities within the project area of the potential to encounter subsurface archaeological resources. Archaeological resources may take the form of stone tools and tool fragments, unusual amounts of burned or unburned shell and bone, as well as glass, metal, and ceramic objects. If an archaeological resource is discovered, excavation in the area of the find shall be halted, and a qualified professional archaeologist shall be consulted. The archaeologist, in consultation with the State Historic Preservation Office, shall determine whether the resource is potentially significant (i.e. eligible for listing on the National Register (36 CFR 800.3[c]).

4.3.5 FLOODPLAINS, WETLANDS, WATERSHEDS, RIVERS, LAKES, COASTAL ZONE, ETC.

Floodplain impacts relating to the construction of the B/16 Annex and retrofit of B/203 would be considered minimal because it would not displace flood waters to nearby properties and would result in minimal alterations to runoff conditions around the site (see the Hydrology and Water Quality section of this document). The B/16 Annex would replace an existing gravel parking lot and would not adversely alter land use or impervious site characteristics. The seismic retrofit and patient privacy improvements of B/203 would result in little change to impervious site characteristics, since the improvements would be made to an existing structure. All runoff is collected in the storm drains and conveyed in San Francisco's integrated sewer/stormwater system.

The project site is located within the Coastal Zone Management Area (CZMA). Coastal Commission staff has been consulted and the project will be reviewed for a consistency determination. Please see Figure 2 for a delineation of the CZMA.

4.3.6 GEOLOGY AND SOILS

The SFVAMC is located in an area of high seismic activity, which could expose people and structures to risk of damage from earthquakes along nearby active faults. To minimize the site hazard, the project would be designed in conformance with the Department of Veterans Affairs Handbook H-18-8, Seismic Design Requirements. The project would also be designed in conformance with standards set forth in the 2003 International Building Code (IBC).

The purpose of the retrofit on B/203 is to make the structure safer for human occupancy in the event of a large magnitude earthquake. To that end, engineering design reports have been prepared by qualified, licensed geotechnical engineers (Ninyo and Moore 2004), and the VA is incorporating those recommendations into its design of project site structures.

Seismic engineering design recommendations have also been prepared for construction of the B/16 Annex (ENGEO 2006). The design factors are intended to prevent the collapse of a structure due to an earthquake. However, a major earthquake could produce substantial damage which would prevent the building's continued use. These factors, when considered as a whole, would reduce the short-term and long-term adverse risk of damage to people from collapse of the structures from strong seismic ground shaking to minimal levels.

The greatest earthquake hazards to building occupants would occur if a major earthquake struck during regular work hours. While earthquake prediction is

not a precise science, based on geologic data of recurrence patterns, it may be generally assumed that the longer the interval between major earthquakes on the key active fault systems of the region, the greater is the likelihood that a major earthquake will occur. The building occupants (together with the rest of the Bay Area population) may assume with a high degree of confidence that the project will be exposed to a major (and possibly great) earthquake during its operating life.

Non-structural damages would remain a significant hazard to building occupants and most injuries to people likely would result from such damage during an earthquake. Non-structural hazards to occupants would be caused by falling non-structural elements such as unattached wall panels, suspended light fixtures and pipelines, overturned bookcases and equipment, fires, and spillage of materials that may be hazardous. Some specific risks during an earthquake would include hazardous materials handled and stored on site.

Substances may be released during a moderate to large earthquake by container and pipe breakage and spills. Chemicals, in particular, may react with each other and the environment and be transferred through walls, windows, and floors. Explosion and fire are also concerns in laboratories during and following earthquakes. As summarized in the Solid/Hazardous Waste section of this EA, the *SFVAMC Control of Hazardous Agents in VA Research Laboratories, SFVAMC Chemical Hygiene Plan for Research Service, SFVAMC Laboratory Biosafety Manual, SFVAMC Research Laboratory Controlled Substances Policy, and the SFVAMC Research Service Hazardous Materials Management Plan* includes plans and procedures to be followed in the event of emergencies and accidents. In addition, each lab is required to develop and implement an emergency preparedness and response plan (updated annually) which includes all elements as required by OSHA and must address procedures to be followed in the event of fires, explosions, spills, release of chemicals, biological agents, toxins or radioactive material, bomb threats, more severe weather, and other natural disasters or emergencies. Biohazard warning signs are required to be posted outside areas where these materials are used. These signs inform emergency responders of the types of materials that may be involved in an accident.

Most hazardous materials would be stored in closed containers, although some of these containers could fail in an earthquake. Researchers could also be in the process of handling hazardous materials when an earthquake strikes. The project would be constructed with various levels of controls to minimize the possible effects of a major earthquake, including building to the standards of the IBC, providing secondary containment where feasible. BSL 2 laboratories are designed to have secondary barriers to contain materials that might be spilled during an earthquake. Secondary barriers include lockable doors for

restricted agents, a laboratory designed so that it can be easily cleaned and decontaminated, impervious bench tops, laboratory furniture capable of supporting anticipated loading and uses, installation of biological safety cabinets to operate within its parameters for containments, sinks and eyewash stations, and ventilation systems. All work within biosafety cabinets would be halted after an earthquake until the biosafety cabinets are recertified and building integrity confirmed. For these reasons, hazardous materials spills would generally not escape the buildings where they occur. Liquid spills would be trapped by secondary containment.

A sprinkler system would be included in the design of the project as required by the IBC and would reduce fire hazards to minimal levels. Vapors from spilled materials in laboratories would be exhausted through fume hoods, which would be powered by emergency generators if necessary. If the indoor ventilation systems were to fail, workers would not be exposed to life threatening hazards if they are physically able to evacuate the premises. Workers could be subject to risks of falling chemicals if hazardous chemicals were stored on shelves without sufficient lips or in high places (above head level). Implementation of the Mitigative Actions described below would reduce hazardous materials-related non-structure safety hazards of an earthquake to an acceptable level of risk. While earthquake hazards cannot be entirely eliminated, after mitigation, this impact would be considered minimal.

Strong seismic ground shaking could cause seismic-related ground failure, possibly including liquefaction and/or seismically-induced settlement, of poorly consolidated (loose) and wet to saturated alluvial sediments at the project site. The Holocene fill, dune sand, and alluvial sediments at the project site could experience seismically-induced settlement of 5 to 8 inches and that amount of settlement would be sufficient to potentially result in structural damage. However, engineering design reports have already been prepared by qualified, licensed geotechnical engineers, and the VA is incorporating those recommendations into its design of project site structures. Incorporation of the geotechnical engineer's recommendations into the site design would reduce the long-term adverse risk of damage from liquefaction and/or settlement to a minimal level.

Project-related grading activities would expose site soils to an increased potential for short-term construction-related erosion from wind and water. However, by law, the project applicant would be required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) in compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements. The SWPPP must include site-specific Best Management Practices (BMPs) to reduce erosion, as well a description of the location, implementation schedule, and maintenance schedule of all erosion and

sediment control measures, a description of measures designed to control dust and stabilize the construction-site road and entrance, and a description of the location and methods of storage and disposal of construction materials. Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing. Implementation of the approved SWPPP and associated BMPs would reduce the short-term adverse effect of increased erosion potential to a minimal level.

MITIGATIVE ACTIONS - GEOLOGY AND SOILS

- To minimize hazards to building occupants from non-structural damage, heavy objects should be attached to secure walls and floors, and light, loose objects should be placed to minimize their potential to move or overturn. Large storage containers shall not be loosely stacked, and those stored on shelves should have appropriate restraints or other means to prevent them from tipping or sliding off shelves.
- The VA shall take feasible steps to minimize potential earthquake safety risks related to hazardous materials. Specific steps may include appropriate seismic safety provisions, such as prohibiting the storage of hazardous materials in containers above head level (about five feet), anchoring hazardous materials shelves and heavy equipment to walls and floors, requiring sufficient lips on shelves, constructing heavy doors that are designed to remain shut during earthquake vibrations, providing hand-operable closures for vents and air ducts, and other provisions as discussed in the Association of Bay Area Governments' *Hazardous Material Problems in Earthquakes: A Guide to Their Cause and Mitigation*. Other measures would be implemented as recommended by the San Francisco Fire Department. Additionally, the VA's Emergency Procedures Manual shall be periodically revised to be consistent with changes in the facilities and operations.

4.3.7 HYDROLOGY, WATER QUALITY

SHORT-TERM IMPACTS

Surface drainage water quality can be affected by both the amount of impervious surface area and the type of land use. Storm water pollutants include a wide array of environmental, chemical, and biological compounds from both point and non-point sources. In the urban environment, storm water characteristics depend on site conditions (e.g., land use, perviousness, and pollution prevention measures), rain events (duration or intensity), soil type and particle size, the amount of vehicular traffic, and atmospheric deposition. Increases in runoff rate and peak flows could also contribute to greater erosion

potential of exposed surfaces, sediment transport and sedimentation, and bank erosion.

Delivery, handling, and storage of construction materials and wastes as well as use of construction equipment onsite could also introduce a risk for stormwater contamination during the construction phase of the project.

Construction materials have the potential to contribute pollutants, including sediment, to storm water runoff. These include:

- Vehicle or other mechanical fluids, including oil, grease, petroleum, battery acid, and coolants;
- Asphaltic emulsions used to cap excavated areas;
- Cementitous materials associated with Portland cement concrete (PCC) structures and shotcrete;
- Base and sub-base material;
- Joint and curing compounds;
- Concrete curing compounds;
- Solvents, thinners, acids, glue;
- Debris and dust associated with demolition of structures (e.g., rubble);
- Sediment associated with excavation;
- Mortar mix;
- Metals and plated products;
- Roofing materials;
- BMP materials;
- Lumber (treated or untreated materials and wastes);
- General litter, and
- Landscaping materials.

Both B/203 and the B/16 Annex have the potential to contribute pollutants to storm water runoff during seismic retrofit and construction, respectively. However, with incorporation of the Mitigative Actions identified in this EA and Mitigative Actions required in the SWPPP that was prepared for the project, impacts would be considered less than significant.

Building 203

The seismic retrofit and patient privacy improvements of B/203 would result in little difference between the pervious and impervious areas before and after

construction, since the improvements would be made to the existing structure. The construction site area is estimated at 1.4 acres. The exterior seismic retrofit would involve excavating and replenishing a total of approximately 5,000 cubic yards of soil over approximately 31 months (around the building) and installing exterior shear walls. The excavated earth would be put back in place once each phase is complete. None of the proposed construction would be expected to affect groundwater levels.

Building 16 Annex

The proposed new B/16 Annex would be located on a flat unpaved area directly above the Richmond neighborhood on Clement Street and Seal Rock Dr. that contains an existing parking area with a 6-inch curb designed to direct surface flows into inlet areas. The site portion that faces the adjacent neighborhood currently has a retaining wall in place, since the slope drops off sharply along Seal Rock Dr., where existing homes are located.

The proposed new B/16 Annex would result in 0.087 acres of development in a previously undeveloped area. However, since there would be a concurrent reduction in the amount of parking of approximately 20 spaces on site, there would also be a reduction in the level of contaminants collected in the surface water run off on the site from parked cars. The two existing paved, disabled person accessible parking spaces would remain after the addition is completed. No new additional paved surfaces are proposed as part of the B/16 Annex. Construction of the new B/16 Annex would require only minimal grading; approximately 30 cubic yards of cut/fill. The proposed structure would not change the drainage patterns onsite, other than to create a slightly higher storm water runoff from the new development on 0.087 acres with the addition of B/16 Annex. The project would not adversely alter land use or impervious site characteristics.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). A SWPPP has already been prepared for the B/203 construction which states that no Notice of Intent (NOI) is required for the B/203 project since the project proposes to discharge storm water to the City of San Francisco Public Utilities Commission combined storm/sewer system with eventual treatment before discharge. The project (for both B/203 and B/16 Annex) will not be discharging storm water to a receiving water body or MS4, therefore, no NOI would need to be filed with the State Water Resources Control Board (DMJM 2005).

A Best Management Practices (BMP) Program, as required by the Regional Water Quality Control Board (RWQCB), describes stormwater management practices (structural and operational measures) to control the quantity and

quality of stormwater runoff. Practices include onsite detention and treatment, reporting and clean-up of spills, implementing "good housekeeping" techniques to reduce contamination of surface water, preventive maintenance, inspection and record-keeping, security measures, and employee training. A Spill Prevention Control and Countermeasure Plan (SPCC) is included in the program. If construction is scheduled to occur throughout the year or is unlikely to be restricted to the dry months of the year, the BMPs must be implemented to ensure that sediment is confined to the construction area and not transported off-site.

The proposed project area is hydrologically isolated from surface water features except through the storm drain system; surface runoff would not likely contribute pollutants or sediment directly to surface waters through overland flow. Additionally, General Construction Permit requirements would reduce the potential erosion hazard from bare soil surfaces, provide storm drain inlet protection from sediment and pollutants, and provide containment of potential construction pollutants. Consequently, construction impacts to alteration of surface water quality, erosion, and sedimentation would be temporary and of minimal impact.

None of the proposed construction would be expected to affect groundwater levels.

LONG-TERM IMPACTS

No long-term hydrological impacts would result from the retrofitting of B/203 or the proposed B/16 Annex. Following construction of the B/16 Annex building, runoff would continue to be minimized through landscape cover and collected in the storm drain system as described previously.

MITIGATIVE ACTIONS - HYDROLOGY AND WATER QUALITY (B/203 AND B/16 ANNEX)

The Mitigative Actions described below address the identified short-term, construction-related impacts. No long-term mitigation would be required.

- The project contractor shall preserve existing vegetation as feasible.
- Temporary erosion control measures shall be applied as required by the California Storm water Quality Association (CASCA) Construction BMPs Manual, Permits, and associated permits.
- During the rainy season (October through April), additional erosion control BMPs (i.e. fiber rolls, straw bale barriers, gravel bag berms) shall be applied at regular intervals to mitigate any impacts resulting from storm-created runoff.

- Areas that are non-active shall be stabilized with vegetation, erosion control blankets and flood control (see following) within 14 days of cessation of construction activities.
- Erosion control measures shall be applied in concentrated flow paths. These measures may include all or some of the following: erosion control blankets, check dams, erosion control seeding, earthen dikes and drainage swales, velocity dissipation devices, slope drains, etc. as required during construction, particularly during the rainy season.
- Physical or vegetative erosion control BMPs (not simply standby BMP measures) shall be installed as soon as grading and/or excavation is completed for any portion of the site during the rainy and non-rainy season.
- Sufficient erosion control measures shall be maintained on site to allow implementation in conformance with Permit requirements as specifically listed in the SWPPP for B/203 (DMJM 2005). This shall include implementation requirements for active and non-active areas that require deployment before the onset of rain.

With the incorporation of the above mitigation actions, impacts would be considered minimal.

4.3.8 LAND USE

The proposed project would involve construction of the B/16 Annex adjacent to B/16, which would house research and laboratory facilities relocated from B/203. The footprint of the B/16 Annex would be placed around two sides of the existing one-story B/16, forming an L-shape.

The research and laboratory activities that would be relocated from B/203 to the B/16 Annex would not result in a land use change within the SFVAMC, since these activities would represent a continuation of existing land uses that currently take place at the SFVAMC.

4.3.9 NOISE

SHORT-TERM IMPACTS

Demolition, excavation, and project construction would temporarily increase noise in the project vicinity. Construction-phase operations would take approximately six (6) months for completion of the B/16 Annex exterior, another three to four months to complete the B/16 Annex, and approximately 31 months for completion of the B/203 seismic retrofit (the 9-10-month construction period for the B/16 Annex would occur during the 31-month construction period for B/203 seismic retrofit). Construction activity noise levels would increase the ambient noise levels in the project area; however,

noise levels would not exceed the specified limitations established by the VA's Environmental Protection Specification, provided the contractors follow the limits established in the specification.

According to the Environmental Protection Specification, the construction activities are to be performed only during the hours of 8:00 am and 6:00 pm, unless otherwise permitted by local ordinance. Construction hours for the project are proposed to be between the hours of 7:30 am and 5:30 pm, which would comply with the local ordinance, since San Francisco's noise ordinance permits construction activities between the hours of 7am-8pm (Note: San Francisco's noise ordinance prohibits construction work between the hours of 8:00 pm and 7:00 am, if noise would exceed the ambient noise level by five dBA at the property line, unless a special permit is authorized by the Director of Public Works).

Construction noise would fluctuate depending on the construction phase, equipment type and duration of use, distance between noise source and listener, and presence or absence of barriers. Noise impacts from the project would be temporary in nature and limited to the daytime hours. In addition, construction equipment is required to comply with VA Environmental Protection Specification 01568, which requires the minimization of noise using every action possible. This includes providing sound-deadening devices on equipment, use of shields or other physical barriers to restrict noise transmission, providing soundproof housings or enclosures for noise-producing machinery, and using efficient silencers on equipment air intakes. Therefore, construction noise impacts would be considered minimal due to their limited duration and required compliance with VA and local noise specifications.

LONG-TERM IMPACTS

After construction, noise impacts generated by B/203 operations (loading dock activities, ventilation equipment, etc.) would not change. Noise impacts generated by the proposed B/16 Annex operations would be negligible because lab/research uses are not significant noise contributors. Any noise from such use would be contained within the structure, and would be similar to the sources already present in the vicinity. Thus, those sources would not contribute substantially to the ambient noise environment. The operational noise impacts from the project would be minimal, given that there would be no substantial increase in existing ambient noise levels.

Traffic-generated noise would not change substantially under this alternative, since there would be no change in staffing levels or the number of patient beds. Since the area currently used for parking in Lot F would no longer be available,

the number of vehicles traveling access road to Lot F, and the associated traffic-related noise, would be reduced.

SENSITIVE RECEPTORS

Operational and construction noise would not have an adverse impact on the sensitive receptors located off-site due to the distance of the site from their location, and potential shielding effects from other buildings.

Construction activities would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Table 6 displays vibration levels for typical construction equipment.

Sensitive receptors within the SFVAMC, would be impacted by construction noise. This impact, while adverse, would be minimal as they would be temporary and of limited duration, and would comply with the Environmental Protection Specifications for hours of construction and noise source limits.

As discussed previously, the on-site construction equipment required for the activities would likely include dump trucks, scrapers, bulldozers, compactors, and front-end loaders, and caisson drilling. According to Federal Transit Administration (FTA), vibration levels associated with the drilling is 0.089 inches per second (in/sec) peak particle velocity (PPV) and 87 vibration decibels [VdB referenced to 1 microinch per second (μin/sec) and based on the root mean square (RMS) velocity amplitude] 25 feet, as shown in Table 6. Based on these values, worst-case vibration levels would not exceed Caltrans' recommended standard of 0.2 in/sec PPV with respect to the prevention of structural damage for typical buildings (Caltrans 2002). However, FTA's maximum-acceptable vibration standard of 80 VdB with respect to human annoyance for uses where people sleep, such as hospitals and residences, could be exceeded at 25 feet from some processes (FTA 2006). However, large, heavy-duty pieces of construction equipment, as listed above, would not be operated within 60 feet of a hospital patient. Heavy pieces of equipment would be used for earth moving and material handling activities outside B/203. Staging areas and activities involving heavy-duty equipment would be located greater than 60 feet from where patients are housed. In addition, laboratories, which are also considered vibration-sensitive because they require very still environments to operate sensitive equipment, would be relocated to the B/16 Annex; therefore, no excessive vibration-generating processes would take place within 60 feet of laboratory equipment, and no laboratory processes would be disrupted.

Construction equipment that would be operated within the hospital would be limited in size and horsepower to smaller pieces of equipment, such as electric powered handheld tools, small forklifts, and other mechanical equipment. Operation of these types of equipment would not generate groundborne vibration levels in excess of 80 VdB, even at 25 feet from the source. Therefore, L_V would remain below 80 VdB where vibration sensitive receptors would be located, and disturbance associated with vibration will remain minimal. Thus, short-term construction would not result in the exposure of sensitive receptors to excessive groundborne vibration or groundborne noise levels.

Table 6
Typical Construction-Equipment Vibration Levels

EQUIPMENT	PPV AT 25 FEET (IN/SEC)1	APPROXIMATE LV AT 25 FEET2
Caisson Drilling	0.089	87
Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

[1] Where PPV is the peak particle velocity
[2] Where L_v is the velocity level in decibels (VdB) referenced to 1 μinch/second and based on the root mean square (RMS) velocity amplitude.
Source: Federal Transit Administration. *Transit Noise and Vibration Impact Assessment*. 2006.

4.3.10 SOCIOECONOMICS

The SFVAMC employment and patient activities would not change in the long term as a result of this alternative. The research/lab employees displaced as a result of the B/203 seismic retrofit and patient privacy improvements would be relocated to the B/16 Annex, which is within the SFVAMC. This relocation would not result in any impact to employment at the SFVAMC campus.

Employment in the area would temporarily increase as a result of the project's construction activities. The construction personnel onsite would result in a short-term increase in the number of persons working at the site. The number of construction personnel onsite would vary from 10 to 60, depending on the construction phase.

There would be no long-term change to the SFVAMC population under this alternative. The B/203 research/lab employees would be relocated to the B/16 Annex as a result of the seismic retrofit and reconfiguration of patient rooms to meet current VA standards for patient privacy, with no additional staff added. B/203 would continue to operate as a hospital with the same number of patient beds and essentially the same staffing levels.

4.3.11 SOLID/HAZARDOUS WASTE

The B/203 seismic upgrades and patient privacy improvements would require relocation of prostate/urology wet labs, pacemaker study group, and associated offices. Under this alternative, these uses would be relocated to new 7,600 sf B/16 Annex adjacent to B/16. B/16 houses the HIV Collaborative, which is

an office-based service that tracks HIV studies, and does not involve any lab work.

The SFVAMC has various standards and procedures in place to reduce biosafety and hazardous materials risks associated with the labs, which are described in the Affected Environment section. Prior to the relocation of the labs, the Principal Investigator (PI) for these labs is required to inform the Biosafety Compliance Officer in writing that biohazardous material will no longer be used in the area in which it was assigned. The PI is also to arrange for and oversee the plan for the disinfection and decontamination of the work area and equipment as detailed in the Biosafety Manual, and fill out the Laboratory Decommissioning Form. The Biosafety Officer is responsible for verifying the disinfection and signing off on the Decommissioning Form. The same safety procedures and regulations would still apply to the B/16 Annex once the labs are relocated.

The B/203 seismic retrofit and patient privacy improvements, and construction of the B/16 Annex building would result in a short-term increase in construction waste generation. The project contractor is required to submit an Environmental Protection Plan pursuant to the Department of Veterans Affairs Environmental Protection Specifications Section 01568. This plan requires the contractor to specify controls to be taken to manage environmental pollution, which includes the handling and disposal of solid waste. Solid waste is required to be transported and disposed of in compliance with Federal, State, and local regulations.

The project would also require the demolition of internal walls in B/203. Due to the age of B/203 (approximately 30 years old), asbestos is most likely to be present and therefore presents a significant health hazard. Asbestos is considered to be a hazardous material, and the removal of such materials is subject to the regulations of OSHA, EPA, and the Code of Federal Regulations (CFR). The Mitigative Action below shall be implemented to reduce health hazards as a result of asbestos removal.

The asbestos abatement plan includes, but is not limited to, the following details: summary of work; applicable codes, regulations and standards; notices, permits, and licenses; project coordination; respiratory protection; worker protection; decontamination facilities; materials and equipment, containment barriers; monitoring, inspection and testing; standard operating procedures; submittals, encapsulants; execution of asbestos abatement; and final inspection and testing.

Although some of the lab space would be relocated to the new B/16 Annex building, the other operational activities of B/203 would remain the same. Lab

operations that would occur in the new B/16 Annex would have similar waste and hazardous waste generation as the lab and associated office space currently located in Building B/203. No additional labs or different uses are proposed to occur in the B/16 Annex, as the labs are only being relocated within the SFVAMC campus. The type of materials generated in the B/16 Annex would be similar to those currently generated in the labs in B/203 that would be relocated.

Compliance with existing safety and research procedures and regulations would minimize health hazards to occupants of SFVAMC buildings and the surrounding area. There would be no adverse effect associated with laboratory operations at the B/16 Annex, provided that the required safety procedures are followed.

MITIGATIVE ACTION - HAZARDOUS MATERIALS

- The project contractor shall prepare and submit an asbestos abatement plan as required by Traditional Asbestos Abatement Specifications Section 01569 of the VA Master Specifications for the B/203 seismic retrofit work.

4.3.12 TRANSPORTATION AND PARKING

SHORT-TERM IMPACTS

The seismic retrofit of B/203 and construction of the B/16 Annex would result in a short-term increase in traffic and parking demand from construction equipment and workers. The number of construction personnel needed onsite would vary from 10 to 60 depending on construction phase. Staging areas for the construction equipment would be provided, as shown on Figure 2 - Site Plan. Construction traffic within the SFVAMC campus would consist mainly of trucks delivering building materials and equipment. Traffic flow and access to the SFVAMC could be affected by partial road closures of short duration as a result of the delivery of the construction equipment, materials, and the delivery of the modular building unit, if selected for the B/16 Annex.

Vehicles essential to support construction would be parked at the staging areas (i.e. Bobcat, dump truck). Vehicles that transport construction personnel to the site would result in a short-term increase in parking demand. In order to reduce these short-term construction effects, the SFVAMC shall implement the Mitigative Actions described below to reduce any potential parking shortages and direct parking away from the surrounding residential areas.

Construction would occur Monday through Friday from 7:30 a.m. to 5:30 p.m., which is when delivery of materials and equipment would occur. Phase 4 would consist of work on the north wall of B/203 and installation of new

buttresses on the north end of the skywalk connecting B/203 and B/200. This would involve temporary closure of Fort Miley Road along the length of B/203 and would result in re-routing the 38 bus route. The project contractor shall implement the Mitigative Actions described below to re-route and establish alternate bus stops for the duration of Phase 4. Phases 1, 2, and 5 consist of work on the south walls of B/203 and require re-routing delivery drop off/pick up for the duration of these phases. The project contractor shall implement Mitigative Actions below to establish alternate delivery routes during the retrofit activities.

LONG-TERM IMPACTS

Implementation of this alternative would not change the number of employees at the SFVAMC campus. The number of patient beds in B/203 would not increase, and staffing levels for research/lab uses relocated to the B/16 Annex would not change. Therefore, traffic volumes associated with the operation of SFVAMC would not change as a result of this alternative.

There would be no long-term loss of parking spaces as a result of work on B/203. The B/16 Annex would be constructed in an area currently used for parking, adjacent to B/16. Although this area has no designated parking spaces, except for two spaces designated for persons with disabilities, it is used by employees for parking. Approximately 20 cars park in the area where the B/16 Annex would be constructed. Employees who currently use this area for parking would need to park at other locations on the campus -- in Lots D, E, G, J, or the parking structure (B/209); or they could park off-site. Given the shortage of parking at the SFVAMC facility, the loss of parking that would result from implementation of this alternative would be a long-term, adverse impact.

Since the area currently used for parking in Lot F would no longer be available, the number of vehicles traveling to Lot F would be reduced.

The following Mitigative Actions shall be implemented to reduce transportation and traffic impacts:

MITIGATIVE ACTIONS – TRANSPORTATION AND TRAFFIC (SHORT-TERM)

- The project contractor shall have a traffic controller onsite to direct construction traffic at all times during construction activity periods.
- The construction contract and specifications shall specify that construction personnel shall not be permitted to park in the SFVAMC parking areas. Furthermore, in order to minimize short-term impacts on the surrounding residential area, construction personnel shall be

directed to park along El Camino del Mar, a street west of the SFVAMC that provides access to the USS San Francisco Parking Lot. This roadway segment, approximately 1,000 feet long and 40 feet wide, would accommodate construction personnel vehicles without impacting tourist access and view point, vista, and memorial areas.[12]

- The SFVAMC shall coordinate with the San Francisco Municipal Railway to route Bus 38 from the 42nd Avenue entrance to Veterans Drive and along the outer loop of the SFVAMC and establish alternate bus stops during Phase 4 of the B/203 retrofit construction.
- The SFVAMC shall coordinate with vendors and delivery trucks during Phase 4 of the B/203 retrofit construction to establish alternate delivery routes along the outer loop of the SFVAMC and alternate drop-off/pick-up points at available B/203 docks during Phase 1 and 3.

MITIGATIVE ACTION – TRANSPORTATION AND TRAFFIC (LONG-TERM)

- The SFVAMC shall develop and implement a strategy to reduce parking demand by at least 20 spaces in order to off-set the permanent loss of parking that would result from the construction of the B/16 Annex. This strategy shall be integrated into on-going SFVAMC programs that provide incentives to increase the use of public transportation and carpooling to the campus by visitors and employees.

[12] Information provided by SFVAMC.

4.3.13 VEGETATION AND WILDLIFE

The retrofit of existing B/203 and the construction of the B/16 Annex would have little impact on established vegetation since these buildings are located adjacent to asphalt, concrete or are within a gravel lot (Lot F). The laydown or staging areas consist of ruderal (weedy) species, cypress and pines, or are bare ground covered by duff or stored materials.

No wildlife was seen during the site visit. It is likely that a variety of birds and small mammals utilize the site. Nesting birds could be affected by removal of trees and groundcover.

SENSITIVE SPECIES

Because of the nature of the project location and the minimal potential impacts to resources, the database queries were narrower in scope than commonly conducted for projects with greater probable impacts to natural resources.

Queries were conducted of the 2006 California Natural Diversity Database (CNDDB) and the 2006 California Native Plant Society's (CNPS) database for the North San Francisco 7.5-minute quadrangle. These queries indicated 16 species (9 plants and seven wildlife species) and 11 plant species, respectively. Four species are considered extirpated (locally extinct). The U.S. Fish and Wildlife Service's (USFWS) list includes: 4 plant species, 16 species of wildlife (3 invertebrates, 1 amphibian, 5 birds and 7 mammals) and 5 fish species. Many of these species are whales, anadromous fish or other marine species (e.g., abalone, albatross) (USFWS 2006).

Many terrestrial rare species are found within the Presidio and Golden Gate National Recreation Area due to the relatively minor disturbances the military operations and facilities had on the landscape. Other sites with known sensitive species are Golden Gate Park, Baker Beach, Twin Peaks, and other hill top sites. Two species are known only from Marin County. Typical habitat for the sensitive species include: serpentine derived soils or outcrops, coastal scrub or sand dunes, wetlands and native grasslands. None of these habitats occur on the site. More importantly, the existing site has had significant alterations over time.

Sensitive species were not seen during the site visits and it is not anticipated that any sensitive species occur within the VA property. Sensitive birds such as raptor species could occasionally hunt within the area but it is unlikely they reside at the site. Additionally, the sensitive plant species that occur within the region have little suitable habitat on site. Since the site has been heavily impacted over the years and the site is predominately non-native ruderal and

landscape species, no impact would result from implementation of the proposed project.

Impacts to sensitive species are not anticipated to occur as a result of the project construction or operation. However, impacts could occur to other biological resources as a result of vegetation removal such as tree removal during construction. These impacts could affect nesting birds which could be in violation of the federal Migratory Bird Treaty Act of 1916 (16USC 703-711) and California Fish and Game Code (Sections 3503, 3513, or 3800). In order to avoid nesting birds it is recommended that any shrub, tree, or any vegetative cover removal be conducted during the non-breeding season for birds, which is roughly from February 1 through August 31.

Avoidance of the nesting season is recommended to ensure compliance with state and federal regulations that protect nesting birds. Should vegetation removal need to occur within the breeding season for birds, the following Mitigative Action is recommended to mitigate any potential impacts.

MITIGATIVE ACTION - WILDLIFE (NESTING BIRDS- PRECONSTRUCTION SURVEY)

- A survey for nesting birds shall be conducted by a qualified wildlife biologist no earlier than 14 days prior to the removal of trees, shrubs, grassland vegetation, buildings or other construction activity. Survey results shall be valid for 21 days following the survey. The area surveyed shall include all construction areas as well as areas within 150 feet outside the boundaries of the areas to be cleared or as otherwise determined by the biologist. If an active nest is discovered in the areas to be cleared, or in other habitats within 150 feet of construction boundaries, clearing and construction shall be postponed for at least two weeks or until a wildlife biologist has determined that the young have fledged (left the nest), the nest is vacated, and there is no evidence of second nesting attempts.
- Vegetation removal would be considered a short-term impact to wildlife species that utilize the site. Nesting birds would return upon completion of the construction or after other disturbances have abated (i.e., noise from pile driver), and after landscaping trees and shrubs are replaced.

4.4 ALTERNATIVE 3: B/203 SEISMIC RETROFIT AND DEVELOPMENT OF LOT J RESEARCH BUILDING

Under this alternative, the seismic retrofit of B/203 would occur, and patient privacy improvements would be made, the same as under Alternative 2. A new two-story, approximately 7,600 sf building would be constructed within the Lot J parking area to house the same research/lab space and associated offices currently located in B/203, as described above. Lot J is located in the northwest portion of the SFVAMC site. The building would be constructed adjacent to Building 205 (Steam Plant) and Building 209 (parking structure), within an area that is currently used as surface parking, as shown on Figure 2.

4.4.1 AESTHETICS

The proposed project would result in alterations to the exterior of B/203 and the construction of a new research building (Lot J Research Building) in the southeast corner of Parking Lot J at the SFVAMC, immediately north of Building 209 (parking structure) and immediately west of Building 205. Provided that the Mitigative Actions described below are implemented, the Lot J Alternative would have minimal aesthetic impact in terms of change to existing visual character and views of the SFVAMC from nearby areas.

All of the visual changes evident at B/203 would be related to seismic retrofitting and an upgrade of patient privacy measures. As such, upon completion of the proposed project, B/203 would include new canopies on its north end, along with new buttresses adjacent to the north end of the skywalk connecting B/203 and B/200. There would be no change in the building's overall size, nor are changes to any exterior lighting anticipated. Because the alterations to B/203 would not substantially alter the visual character of the building or expand its footprint, there would be no aesthetic impact from these proposed actions.

The proposed new Lot J Research Building would be two stories in height and include 7,600 square feet of research, laboratory and office space. The design and scale of the building would be compatible with the adjacent buildings within the SFVAMC (modular, off-white in color, and flat-roofed).

The addition of the Lot J Research Building would not constitute a substantial change in the area's existing visual character. Construction of the building would take place within a developed part of the site, and at a scale not inconsistent with nearby existing buildings. Two mature trees located on the west side of B/205 would need to be removed in order to make way for the Lot J Research Building. While these trees help to soften the view of B/205, their removal would not substantially alter the existing visual character of the area.

No scenic resources would be affected by the Lot J Alternative, given that the proposed new building would not be placed in a location that would block scenic views. The Lot J Research Building would not be visible from off-site of the SFVAMC, due to the screening provided by the dense stand of trees that surround the northwest portion of the SFVAMC; and the adjacent buildings to the south and east. Views from adjacent buildings- B/205 - the steam plant, and B/209, a four-level parking structure, would change upon implementation of this alternative. However, these buildings are maintenance buildings that are not occupied by patients or visitors, and are not considered sensitive viewpoints.

In summary, implementation of this alternative would not result in a significant impact to aesthetic or visual resources because no off-site views would be affected by construction of the Lot J Research Building, and because views from affected on-site vantage points are not considered sensitive viewpoints.

Exterior lighting would be placed on the new Lot J Research Building; however, the ambient lighting level of the area would not change substantially, given that there are a number of existing light standards throughout the Lot J parking area. To ensure that there would be no light or glare impacts to surrounding GGNRA land to the north and west of the site, Mitigative Actions described below shall be implemented to reduce visibility of lighting from the areas surrounding the SFVAMC. In addition, the B/203 exterior seismic retrofit would not use highly reflective materials or finishes, nor would it use reflective canopies or substantial amounts of mirrored glass. No new sources of glare would occur as a result of the project.

MITIGATIVE ACTIONS - AESTHETICS

- The exterior building lights shall be shielded and directed downward to minimize light spillover and ensure that no light source is directly visible from adjacent GGNRA lands.
- Highly reflective building materials and/or finishes shall not be used in the designs for proposed structures.

4.4.2 AIR QUALITY

Operational Emissions. Minimal emissions are expected from onsite activities such as ventilation units and existing or new emergency generators and ventilation units. If implemented, the new emergency generator would be a diesel engine which would be used only during emergencies and periodic testing. The number of VA employees would not increase as a result of the proposed action because the seismic retrofit activities and construction of the Lot J Research Building would only require relocation of existing employees within the SFVAMC campus. Therefore, this alternative would result in staff

levels and patient activities similar to the existing condition. The resulting operational air emissions due to traffic are considered to be unchanged. Therefore no impacts would occur.

Construction Emissions. Foreseeable construction/demolition activities associated with this alternative would occur during site preparation, grading, relocation of utilities and other infrastructure, placement of foundations for structures, fabrication of structures, and demolition of existing structures. Construction activities would require the use of heavy trucks, excavating and grading equipment, concrete mixers, cranes, and other mobile and stationary construction equipment. During construction, air quality could potentially be affected for a short time period. Heavy equipment could create fugitive dust and emit reactive organic gas (ROG), NO_x, CO, SO_2, and PM_{10} and $PM_{2.5}$ emissions as a result of diesel fuel combustion. The primary pollutant of concern in fugitive dust would be PM_{10}. PM_{10} is also released as a result of construction activities such as excavation or soil movement.

Construction emissions would be short-term and temporary (approximately 31 months), but could cause adverse effects on local air quality by adding windblown dust to the particulate matter in the atmosphere while soil is exposed.

Construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors, and front-end loaders which temporarily emit precursors of ozone (i.e., ROG or NO_x) are already included in the emission inventories of state- and federally-required air plans and would not have an adverse impact on the attainment and maintenance of ozone ambient air quality standards. However, unless PM_{10} emissions are reduced by implementation of feasible control measures, impacts caused by these emissions could be adverse. This would be considered a moderate impact.

Implementation of Mitigative Actions below, would reduce impacts caused by PM_{10} emissions to a minimal level according to BAAQMD standards.

Asbestos. Before any demolition or renovation activities occur, an asbestos abatement plan must be prepared, an asbestos clearance must be obtained from the BAAQMD, and the project must comply with 40 CFR Section 61 Subpart M for National Emissions Standards for Hazardous Air Pollutants (NESHAP) for asbestos and BAAQMD Rule 11-2. This would ensure that no improper handling of asbestos would occur during the proposed demolition activities. If there is potential for the presence of asbestos in buildings to be demolished, prior to demolition, the VA proposes to remove all friable and potentially friable asbestos-containing materials (ACM) (as required by law).[13] Due to the

[13] Friable ACM is any material containing more than one percent asbestos.

age of B/203, it is likely that ACM are present in the building. Removal and disposal would occur in accordance with applicable laws and regulations, including compliance with VA Specification 01568, EPA, BAAQMD, and the Occupational and Safety Hazards Act (OSHA). Once the asbestos removal is certified, the demolition would be allowed to proceed. To ensure safety during asbestos abatement, legal requirements for safety as defined by the OSHA would be followed. The air quality and safety impacts from asbestos would be minimal when combined with the application of current laws and regulations.

MITIGATIVE ACTIONS - AIR QUALITY (CONSTRUCTION DUST)

Implementation of the following Mitigative Action, in accordance with BAAQMD standard mitigation requirements for areas near sensitive receptors, would reduce construction-related air quality impacts to a minimal level. No long-term mitigation would be required.

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at the construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at the construction sites.
- Sweep public streets adjacent to construction sites daily (with water sweepers) if visible soil material is carried onto the streets.
- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the construction site.
- Install wind breaks at the windward sides of the construction areas.
- Suspend excavation and grading activities when wind (as instantaneous gusts) exceeds 25 miles per hour.

4.4.3 COMMUNITY SERVICES AND UTILITIES

This alternative's seismic retrofit and patient privacy improvements would not result in an increase or decrease in hospital services. There are currently 124 hospital beds located in B/203, which would not increase or decrease as a result of the Lot J Alternative. The project would improve patient privacy by reconfiguring the four-bed to two-bed patient rooms and two-bed to one-bed patient rooms. This reconfiguration would require more space to maintain the same number of beds in B/203. The increased space for the reconfigured rooms would be accommodated by the lab space which would be relocated to the Lot J Research Building. The reconfigured rooms would be a beneficial long term impact, as B/203 would be up to seismic building standards and patient privacy would be improved. Because there would be no change in the SFVAMC operation, there would be no impact on police protection, fire protection, parks or other community services. The B/203 seismic retrofit would result in an improved structure for fire and emergency response.

The main utility lines serving B/203 would not change as a result of the seismic retrofit. Aside from internal reconfigurations of the utility lines as a result of the seismic retrofit and patient privacy improvements, no changes to utility lines would occur at B/203.

Construction of the Lot J Research Building would require connection to sewer, water, and electricity lines. Short term impacts would consist of excavation to uncover the existing sewer and water lines to connect the Lot J Research Building to the system. Plans for the Lot J Research Building include heating, ventilation, and air conditioning (HVAC) systems, which are required for the lab operations and would be built in compliance with the VA Master Specifications.

As discussed in the Hydrology and Water Quality section, there would be no change to impervious surfaces at B/203 after the seismic retrofit, or on the proposed Lot J Research Building site, as these are already developed areas. Thus, there would be no adverse affect related to stormwater runoff.

The seismic retrofit of B/203 and Lot J Research Building construction would not result in a net increased use of utilities once the project is complete, since there would be no increase in employment and land uses would remain the same.

4.4.4 CULTURAL RESOURCES

Due to the presence of known prehistoric resources near the project area, as well as a high level of documented historic activity within the project area, there is a possibility of encountering subsurface cultural resources during project-related ground disturbing activities. However, the potential for this to occur

would be slim, because the areas proposed for development under this alternative have already been developed. The Mitigative Action below shall be implemented in the unlikely event that subsurface cultural resources are encountered during ground disturbance activities around B/203 and preparation of the Lot J Research Building site.

Implementation of this alternative would have no impact related to historic resources. None of the structures that immediately surround the Lot J Research Building site are considered significant historic resources, as documented in a historic and architectural assessment of the SFVAMC.[14] B/205 is a one-story, 8,207-square foot, reinforced concrete building constructed in 1973 as the new SFVAMC power plant. It is still used for that purpose today. B/206 is located immediately north of B/205 and immediately east of the Lot J Research Building site, and is a small maintenance facility constructed in 1973. B/209 is a four-level reinforced parking structure built in 1989, and located immediately south of the Lot J Research Building site.

These buildings were constructed later than the period of significance defined by the historical assessment (1932 to 1934). Buildings on the SFVAMC campus constructed during the period of significance would be considered eligible for listing on the National Register of Historic Places. B/205, B/206 and B/209 are not considered significant historic resources, and altering their context through construction of the Lot J Research Building would not be a significant impact.

MITIGATIVE ACTION - ARCHAEOLOGICAL RESOURCES

Implementation of the following Mitigative Action is required to avoid any potential adverse effect from the proposed project on the inadvertent discovery of archaeological resources:

- The VA shall notify the project contractor involved in ground-disturbing activities within the project area of the potential to encounter subsurface archaeological resources. Archaeological resources may take the form of stone tools and tool fragments, unusual amounts of burned or unburned shell and bone, as well as glass, metal, and ceramic objects. If an archaeological resource is discovered, excavation in the area of the find shall be halted, and a qualified professional archaeologist shall be consulted. The archaeologist, in consultation with the State Historic Preservation Office, shall determine whether the resource is potentially significant (i.e. eligible for listing on the National Register (36 CFR 800.3[c]).

[14] Department of Veterans Affairs, National Register of Historic Places Registration Form, May 27, 2003, p. C-18.

4.4.5 FLOODPLAINS, WETLANDS, WATERSHEDS, RIVERS, LAKES, COASTAL ZONE, ETC.

Floodplain impacts relating to the construction of the Lot J Research Building and retrofit of B/203 would be considered minimal because it would not displace flood waters to nearby properties and would provide minimal alterations to runoff conditions around the site (see the Hydrology and Water Quality section of this document). The Lot J Research Building would replace an existing portion of Parking Lot J and would not adversely alter land use or impervious site characteristics. The seismic retrofit and patient privacy improvements of B/203 would result in little change to impervious site characteristics, since the improvements would be made to an existing structure. All runoff is collected in the storm drains and conveyed in San Francisco's integrated sewer/stormwater system.

The project site is located within the CZMA. Coastal Commission staff has been consulted and the project will be reviewed for consistency determination. Please see Figure 2 for a delineation of the CZMA.

4.4.6 GEOLOGY AND SOILS

The project site is located in an area of high seismic activity, which could expose people and structures to risk of damage from earthquakes along nearby active faults. To minimize the site hazard, the Lot J Research Building project alternative would be designed in conformance with the Department of Veterans Affairs Handbook H-18-8, Seismic Design Requirements. This project alternative would also be designed in conformance with standards set forth in the International Building Code (IBC).

The IBC sets forth specific design requirements in areas that are prone to seismic ground shaking, including projects that are located in the vicinity of Class A or B faults as designated by the California Division of Mines and Geology. The purpose of the retrofit on B/203 is to make the structure safer for human occupancy in the event of a large magnitude earthquake. To that end, engineering design reports have already been prepared by qualified, licensed geotechnical engineers (Ninyo and Moore 2004), and the VA is incorporating those recommendations into its design of project site structures. Seismic engineering design recommendations would be prepared by a second qualified, licensed geotechnical engineering firm (ENGEO 2006) for construction of the Lot J Research Building, which the VA would also incorporate into its design. The design factors are intended to prevent the collapse of a structure due to an earthquake. However, a major earthquake could produce substantial damage which would prevent the building's continued use. These factors, when considered as a whole, would reduce the short-term and long-term adverse risk of damage to people from collapse of the structures from strong seismic ground shaking to minimal levels.

The greatest earthquake hazards to building occupants would occur if a major earthquake struck during regular work hours. While earthquake prediction is not a precise science, based on geologic data of recurrence patterns, it may be generally assumed that the longer the interval between major earthquakes on the key active fault systems of the region, the greater is the likelihood that a major earthquake will occur. The building occupants (together with the rest of the Bay Area population) may assume with a high degree of confidence that the project will be exposed to a major (and possibly great) earthquake during its operating life.

Non-structural damages would remain a significant hazard to building occupants and most injuries to people likely would result from such damage during an earthquake. Non-structural hazards to occupants would be caused by falling non-structural elements such as unattached wall panels, suspended light fixtures and pipelines, overturned bookcases and equipment, fires, and spillage of materials that may be hazardous. Some specific risks during an earthquake would include hazardous materials handled and stored on site.

Substances may be released during a moderate to large earthquake by container and pipe breakage and spills. Chemicals, in particular, may react with each other and the environment and be transferred through walls, windows, and floors. Explosion and fire are also concerns in laboratories during and following earthquakes. As summarized in the Solid/Hazardous Waste section of this EA, the *SFVAMC Control of Hazardous Agents in VA Research Laboratories, SFVAMC Chemical Hygiene Plan for Research Service, SFVAMC Laboratory Biosafety Manual, SFVAMC Research Laboratory Controlled Substances Policy, and the SFVAMC Research Service Hazardous Materials Management Plan* includes plans and procedures to be followed in the event of emergencies and accidents. In addition, each lab is required to develop and implement an emergency preparedness and response plan (updated annually) which includes all elements as required by OSHA and must address procedures to be followed in the event of fires, explosions, spills, release of chemicals, biological agents, toxins or radioactive material, bomb threats, more severe weather, and other natural disasters or emergencies. Biohazard warning signs are required to be posted outside areas where these materials are used. These signs inform emergency responders of the types of materials that may be involved in an accident.

Most hazardous materials would be stored in closed containers, although some of these containers could fail in an earthquake. Researchers could also be in the process of handling hazardous materials when an earthquake strikes. The project would be constructed with various levels of controls to minimize the possible effects of a major earthquake, including building to the standards of the IBC and the *Uniform Fire Code*, providing secondary containment where

feasible. BSL 2 laboratories are designed to have secondary barriers to contain materials that might be spilled during an earthquake. Secondary barriers include lockable doors for restricted agents, a laboratory designed so that it can be easily cleaned and decontaminated, impervious bench tops, laboratory furniture capable of supporting anticipated loading and uses, installation of biological safety cabinets to operate within its parameters for containments, sinks and eyewash stations, and ventilation systems. All work within biosafety cabinets would be halted after an earthquake until the biosafety cabinets are recertified and building integrity confirmed. For these reasons, hazardous materials spills would generally not escape the buildings where they occur. Liquid spills would be trapped by secondary containment.

A sprinkler system would be included in the design of the Lot J Alternative as required by the IBC and would reduce fire hazards to minimal levels. Vapors from spilled materials in laboratories would be exhausted through fume hoods, which would be powered by emergency generators if necessary. If the indoor ventilation systems were to fail, workers would not be exposed to life threatening hazards if they are physically able to evacuate the premises. Workers could be subject to risks of falling chemicals if hazardous chemicals were stored on shelves without sufficient lips or in high places (above head level). Implementation of the Mitigative Actions identified below would reduce hazardous materials-related non-structure safety hazards of an earthquake to an acceptable level of risk. While earthquake hazards cannot be entirely eliminated, after mitigation, this impact would be considered minimal.

Strong seismic ground shaking could cause seismic-related ground failure, possibly including liquefaction and/or seismically-induced settlement, of poorly consolidated (loose) and wet to saturated alluvial sediments at the project site. The Holocene fill, dune sand, and alluvial sediments at the project site could experience seismically-induced settlement of 5 to 8 inches and that amount of settlement would be sufficient to potentially result in structural damage. Incorporation of the geotechnical engineer's recommendations into the site design would reduce the long-term adverse risk of damage from liquefaction and/or settlement to a minimal level.

Grading activities related to the Lot J Alternative would expose site soils to an increased potential for short-term construction-related erosion from wind and water. However, by law, the project applicant would be required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) in compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements. The SWPPP must include site-specific Best Management Practices (BMPs) to reduce erosion, as well a description of the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, a description of measures designed to control dust

and stabilize the construction-site road and entrance, and a description of the location and methods of storage and disposal of construction materials. Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing. Implementation of the approved SWPPP and associated BMPs would reduce the short-term adverse effect of increased erosion potential to a minimal level.

MITIGATIVE ACTIONS - GEOLOGY AND SOILS

- To minimize hazards to building occupants from non-structural damage, heavy objects should be attached to secure walls and floors, and light, loose objects should be placed to minimize their potential to move or overturn. Large storage containers shall not be loosely stacked, and those stored on shelves should have appropriate restraints or other means to prevent them from tipping or sliding off shelves.
- The VA shall take feasible steps to minimize potential earthquake safety risks related to hazardous materials. Specific steps may include appropriate seismic safety provisions, such as prohibiting the storage of hazardous materials in containers above head level (about five feet), anchoring hazardous materials shelves and heavy equipment to walls and floors, requiring sufficient lips on shelves, constructing heavy doors that are designed to remain shut during earthquake vibrations, providing hand-operable closures for vents and air ducts, and other provisions as discussed in the Association of Bay Area Governments' *Hazardous Material Problems in Earthquakes: A Guide to Their Cause and Mitigation*. Other measures would be implemented as recommended by the San Francisco Fire Department. Additionally, the VA's Emergency Procedures Manual shall be periodically revised to be consistent with changes in the facilities and operations.

4.4.7 HYDROLOGY, WATER QUALITY

SHORT-TERM IMPACTS

Surface drainage water quality can be affected by both the amount of impervious surface area and the type of land use. Storm water pollutants include a wide array of environmental, chemical, and biological compounds from both point and non-point sources. In the urban environment, storm water characteristics depend on site conditions (e.g., land use, perviousness, and pollution prevention measures), rain events (duration or intensity), soil type and particle size, the amount of vehicular traffic, and atmospheric deposition. Increases in runoff rate and peak flows could also contribute to greater erosion potential of exposed surfaces, sediment transport and sedimentation, and bank erosion.

Delivery, handling, and storage of construction materials and wastes as well as use of construction equipment onsite could also introduce a risk for stormwater contamination during the construction phase of the Lot J Alternative.

Construction materials have the potential to contribute pollutants, including sediment, to storm water runoff. These include:

- Vehicle or other mechanical fluids, including oil, grease, petroleum, battery acid, and coolants;
- Asphaltic emulsions used to cap excavated areas;
- Cementitous materials associated with Portland cement concrete (PCC) structures and shotcrete;
- Base and sub-base material;
- Joint and curing compounds;
- Concrete curing compounds;
- Solvents, thinners, acids, glue;
- Debris and dust associated with demolition of structures (e.g., rubble);
- Sediment associated with excavation;
- Mortar mix;
- Metals and plated products;
- Roofing materials;
- BMP materials;
- Lumber (treated or untreated materials and wastes);
- General litter, and
- Landscaping materials.

Proposed seismic retrofitting of B/203 and construction of the Lot J Research Building would potentially contribute pollutants to storm water runoff during these activities. However, with incorporation of Mitigative Actions identified in this section, and the Mitigative Actions required in a SWPPP, impacts would be considered less than significant.

Building 203

The seismic retrofit and patient privacy improvements of B/203 would result in little difference between the pervious and impervious areas before and after construction, since the improvements would be made to an existing structure. The construction site area is estimated at 1.4 acres. The exterior seismic

retrofit would involve excavating and replenishing a total of approximately 5,000 cubic yards of soil over approximately 31 months (around the building) and installing exterior shear walls. The excavated earth would be put back in place once each phase is complete. None of the proposed construction would be expected to affect groundwater levels.

Lot J Research Building

The proposed new Lot J Research Building would result in 0.087 acres of development in a previously undeveloped area. However, since there would be a concurrent reduction in the amount of parking of 30-40 spaces on site, there would also be a reduction in the level of contaminants collected in the surface water run off on the site from parked cars. No new additional paved surfaces are proposed for the Lot J Research Building. The site of the proposed Lot J Research Building is relatively flat and would require only minimal grading, probably less than 30 cubic yards. Because the Lot J Alternative site is already developed, and consists of predominantly impervious surface, the proposed Lot J Research Building would not change the drainage patterns onsite.

The Construction General Permit requires the development and implementation of a SWPPP. A SWPPP has already been prepared for the B/203 construction which states that no Notice of Intent (NOI) is required for the B/203 project since the project proposes to discharge storm water to the City of San Francisco Public Utilities Commission combined storm/sewer system with eventual treatment before discharge. The project (for both B/203 and Lot J Research Building) would not discharge storm water to a receiving water body. Therefore, no NOI would need to be filed with the State Water Resources Control Board (DMJM 2005).

A BMP Program, as required by the Regional Water Quality Control Board (RWQCB), describes stormwater management practices (structural and operational measures) to control the quantity and quality of stormwater runoff. Practices include onsite detention and treatment, reporting and clean-up of spills, implementing "good housekeeping" techniques to reduce contamination of surface water, preventive maintenance, inspection and record-keeping, security measures, and employee training. A Spill Prevention Control and Countermeasure Plan (SPCC) is included in the program. If construction is scheduled to occur throughout the year or is unlikely to be restricted to the dry months of the year, the BMPs must be implemented to ensure that sediment is confined to the construction area and not transported off-site.

The Lot J site is hydrologically isolated from surface water features except through the storm drain system; surface runoff would not likely contribute pollutants or sediment directly to surface waters through overland flow. Additionally, General Construction Permit requirements would reduce the

potential erosion hazard from bare soil surfaces, provide storm drain inlet protection from sediment and pollutants, and provide containment of potential construction pollutants. Consequently, construction impacts to alteration of surface water quality, erosion, and sedimentation would be temporary and of minimal impact.

None of the proposed construction associated with this alternative would be expected to affect groundwater levels.

LONG-TERM IMPACTS

No long-term hydrological impacts would result from the retrofitting of B/203 or construction of the Lot J Research Building. Following construction of the Lot J Research Building, runoff would continue to be minimized through landscape cover and collection in the storm drain system as described previously.

MITIGATIVE ACTIONS - HYDROLOGY AND WATER QUALITY (B/203 AND LOT J RESEARCH BUILDING)

The Mitigative Actions described below address the identified short-term, construction-related impacts. No long-term mitigation would be required.

- The project contractor shall preserve existing vegetation as feasible.
- Temporary erosion control measures shall be applied as required by the California Storm Water Quality Association (CASCA) Construction BMPs Manual, Permits, and associated permits.
- During the rainy season (October through April), additional erosion control BMPs (i.e. fiber rolls, straw bale barriers, gravel bag berms) shall be applied at regular intervals to mitigate any impacts resulting from storm-created runoff.
- Areas that are non-active shall be stabilized with vegetation, erosion control blankets and flood control (see following) within 14 days of cessation of construction activities.
- Erosion control measures shall be applied in concentrated flow paths. These measures may include all or some of the following: erosion control blankets, check dams, erosion control seeding, earthen dikes and drainage swales, velocity dissipation devices, slope drains, etc. as required during construction, particularly during the rainy season.
- Physical or vegetative erosion control BMPs (not simply standby BMP measures) shall be installed as soon as grading and/or excavation is completed for any portion of the site during the rainy and non-rainy season.

- Sufficient erosion control measures shall be maintained on site to allow implementation in conformance with Permit requirements as specifically listed in the SWPPP for Building 203 (DMJM 2005). This shall include implementation requirements for active and non-active areas that require deployment before the onset of rain.

With the incorporation of the above mitigation actions, impacts would be considered minimal.

4.4.8 LAND USE

The Lot J Alternative would involve construction of the Lot J Research Building, which would house research and laboratory facilities relocated from B/203. The new two-story building's footprint would be placed immediately north of B/209 and immediately west of B/205 and B/206.

Activities that would occur in the Lot J Research Building would not result in a land use pattern change relative to current land uses at the project site. The research/laboratory activities that would take place in the Lot J Research Building would not result in a land use change within the SFVAMC, since activities currently taking place in B/203 would be relocated to the Lot J Research Building.

4.4.9 NOISE

SHORT-TERM IMPACTS

Demolition, excavation, and project construction would temporarily increase noise in the project vicinity. Construction phase operations would take approximately 6 months for completion of the Lot J Research Building exterior, another three to four months to complete the B/16 Annex, and approximately 31 months for completion of the B/203 seismic retrofit (the 9-10-month construction period for the B/16 Annex would occur during the 31-month construction period for B/203 seismic retrofit). Construction activity noise levels would increase the ambient noise levels in the project area; however, noise levels would not exceed the specified limitations established by the VA's Environmental Protection Specification, provided the contractors follow the limits established in the specification. Construction noise would fluctuate depending on the construction phase, equipment type and duration of use, distance between noise source and listener, and presence or absence of barriers. Noise impacts from this alternative would be temporary in nature and limited to the daytime hours. In addition, construction equipment is required to comply with VA Environmental Protection Specification 01568, which requires the minimization of noise using every action possible. This includes providing sound-deadening devices on equipment, use of shields or other physical barriers to restrict noise transmission, providing soundproof housings or enclosures for noise-producing machinery, and using efficient silencers on

equipment air intakes. Therefore, construction noise impacts would be considered minimal due to their limited duration and required compliance with VA and local noise specifications.

LONG-TERM IMPACTS

Operational noise sources associated with this alternative would include loading dock activities, ventilation equipment, and potentially a standby generator, when in use. The loading dock and standby generator would be intermittent noise sources and would generate noise similar in noise level to the sources already present in the vicinity; thus those sources would not contribute substantially to the ambient noise environment.

Noise impacts once the Lot J Research Building is operational would be negligible because lab uses are not significant noise contributors and any noise from such use would be contained within the structure.

Traffic noises outside the campus would not be expected to change as a result of the Lot J Alternative. There would be no new employees or patients as a result of this alternative. Therefore, no increases in traffic and associated vehicle noise would occur around or off the SFVAMC campus.

SENSITIVE RECEPTORS

Operational and construction noise would not have an adverse impact on the sensitive residential receptors off campus, due to the distance of the Lot J Alternative site from their location and potential shielding effects from other buildings on campus. The sensitive receptors in the hospital locations on campus would be impacted by construction noise, but these activities, while adverse, would be minimal as they would be temporary and comply with noise ordinances for hours of construction and noise source limits.

Under this alternative, construction activities have the potential to result in varying degrees of temporary groundborne vibration, as discussed under Alternative 2. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Sensitive receptors within the SFVAMC, especially in B/203 and B/208, would be impacted by construction noise. This impact, while adverse, would be minimal as they would be temporary and of limited duration, and would comply with the Environmental Protection Specifications for hours of construction and noise source limits.

On-site construction equipment required for the activities would likely include dump trucks, scrapers, bulldozers, compactors, front-end loaders, and caisson drilling. Noise resulting from construction of the Lot J Research Building

would be a considerable distance away from sensitive noise receptors located in B/203, B/208 and B/200, and existing adjacent buildings (B/205, B/209) would serve as a noise barrier.

Short-term construction would not result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. In addition, the long-term operation of the proposed project would not include any vibration sources.

4.4.10 SOCIOECONOMICS

The SFVAMC employment and patient activities would not change in the long term as a result of this alternative. Research/lab employees displaced as a result of the B/203 seismic retrofit and patient privacy improvements would be relocated to the new building constructed in Lot J, which is within the SFVAMC. This relocation would not result in any impact to employment at the SFVAMC campus.

Employment in the area would temporarily increase as a result of the project's construction activities. The construction personnel onsite would result in a short-term increase in the number of persons working at the site. The number of construction personnel onsite would vary from 10 to 60, depending on the construction phase.

There would be no long-term change to the SFVAMC resident population as a result of the project. The B/203 research/lab employees would be relocated to the Lot J Research Building as a result of the seismic retrofit and reconfiguration of patient rooms to meet current VA standards for patient privacy. This is a relocation of existing employees within the SFVAMC campus, and no additional staff would be added. B/203 would continue to operate as a hospital with the same number of patient beds, and no additional staff would be required.

4.4.11 SOLID/HAZARDOUS WASTE

The B/203 seismic upgrades and patient privacy improvements would require relocation of prostate/urology wet labs, pacemaker study group, and associated offices. Under this alternative, these uses would be relocated to new 7,600 sf building located in Lot J.

The SFVAMC has various standards and procedures in place to reduce biohazardous materials risks associated with the labs, which are described in the Setting section above. Prior to the relocation of the labs, the Principal Investigator (PI) for these labs is required to inform the Research Biosafety Officer in writing that biohazardous material will no longer be used in the area in which it was assigned. The PI is also to arrange for and oversee the plan for

the disinfection and decontamination of the work area and equipment as detailed in the Biosafety Manual, and fill out the Laboratory Decommissioning Form. The Biosafety Officer is responsible for verifying the disinfection and signing off on the Decommissioning Form. The same safety procedures and regulations would still apply to the Lot J Research Building once the labs are relocated.

The B/203 seismic retrofit and patient privacy improvements and Lot J Research Building would result in a short-term increase in construction waste generation. The project contractor is required to submit an Environmental Protection Plan pursuant to the Department of Veterans Affairs Environmental Protection Specifications Section 01568. This plan requires the contractor to specify controls to be taken to manage environmental pollution, which includes the handling and disposal of solid waste. Solid waste is required to be transported and disposed of in compliance with Federal, State, and local regulations.

Implementation of this alternative would also require the demolition of internal walls in B/203. Due to the age of B/203 (approximately 30 years old), asbestos is most likely to be present and therefore presents a significant health hazard. Asbestos is considered to be a hazardous material and the removal of this material is subject to the regulations of OSHA, EPA, and the CFR. The Mitigative Action below shall be implemented to reduce health hazards as a result of asbestos removal.

The asbestos abatement plan includes, but is not limited to, the following details: summary of work; applicable codes, regulations and standards; notices, permits, and licenses; project coordination; respiratory protection; worker protection; decontamination facilities; materials and equipment, containment barriers; monitoring, inspection and testing; standard operating procedures; submittals, encapsulants; execution of asbestos abatement; and final inspection and testing.

Operational activities of B/203 would remain the same, and some of the lab space would be relocated to the Lot J Research Building. The Lot J Research Building would be a new structure and would not require an asbestos abatement plan.

Lab operations that would occur in the proposed Lot J Research Building would have similar waste and hazardous waste generation as that which occurs in Building B/203. No additional labs or different uses are proposed to occur in the Lot J Research Building, as the labs are only being relocated within the SFVAMC campus. The type of materials generated by the proposed building would be similar to those currently generated in the existing building. There

would be no increase in long term SFVAMC employees or number of beds in respect to the project.

Compliance with existing safety and research procedures and regulations would minimize health hazards both to the building occupants and in the surrounding area. There would be no adverse effect associated with laboratory operations at the Lot J Research Building, provided that existing safety procedures are followed.

MITIGATIVE ACTION - HAZARDOUS MATERIALS

- The project contractor shall prepare and submit an asbestos abatement plan as required by Traditional Asbestos Abatement Specifications Section 01569 of the VA Master Specifications for the B/203 seismic retrofit work.

4.4.12 TRANSPORTATION AND PARKING

SHORT-TERM IMPACTS

The seismic retrofit of B/203 and construction of the new research building in Lot J would result in a short-term increase in traffic and parking demand from construction equipment and workers. The number of construction personnel needed onsite would be the same as for Alternative 2, and would vary from 10 to 60 depending on construction phase. Staging areas for the construction equipment would be provided, as shown on Figure 2 - Site Plan. The staging area would result in a short-term displacement of up to 20 parking spaces in Lot J. Construction traffic within the SFVAMC campus would consist mainly of trucks delivering building materials and equipment. Traffic flow and access to the SFVAMC could be affected by partial road closures of short duration as a result of the delivery of the construction equipment, materials.

Vehicles essential to support construction would be parked at the staging areas (i.e. Bobcat, dump truck). Vehicles that transport construction personnel to the site would result in a short-term increase in parking demand. In order to reduce these short-term construction effects, the SFVAMC shall implement the Mitigative Actions identified below to reduce any potential parking shortages and direct parking away from the surrounding residential areas.

Construction would occur Monday through Friday from 7:30 a.m. to 5:30 p.m., which is when delivery of materials and equipment would occur. Phase 4 would consist of work on the north wall of B/203 and installation of new buttresses on the north end of the skywalk connecting B/203 and B/200. This would involve temporary closure of Fort Miley Road along the length of B/203 and would result in re-routing the 38 bus route. The project contractor shall implement the Mitigative Action below to re-route and establish alternate bus

stops for the duration of Phase 4. Phases 1, 2, and 5 consist of work on the south walls of B/203 and would require re-routing delivery drop off/pick up for the duration of these phases. The project contractor shall implement Mitigative Actions identified below to establish alternate delivery routes during the retrofit activities.

LONG-TERM IMPACTS

Implementation of this alternative would not change the number of employees at the SFVAMC campus. The number of patient beds in B/203 would not increase, and staffing levels for research/lab uses relocated to the Lot J Research Building would not change. Therefore, traffic volumes associated with the operation of SFVAMC would not change as a result of this alternative.

There would be no long-term loss of parking spaces as a result of the seismic work on B/203. However, construction of a new research building in Lot J would result in a permanent loss of 30 to 40 parking spaces. The number of spaces that would be eliminated is based on a building footprint of 3,800 square feet and an overall development area of 6,500 square feet, which would include areas for pedestrian and automobile access as well as modest buffer areas adjacent to the building. The Lot J development area is shown in Figure 7. Given the shortage of parking at the SFVAMC facility, the loss of up to 40 parking spaces that would result from implementation of this alternative would be a long-term, adverse impact.

The following Mitigative Actions shall be implemented to reduce transportation and traffic impacts:

MITIGATIVE ACTIONS -TRANSPORTATION AND TRAFFIC (SHORT-TERM)

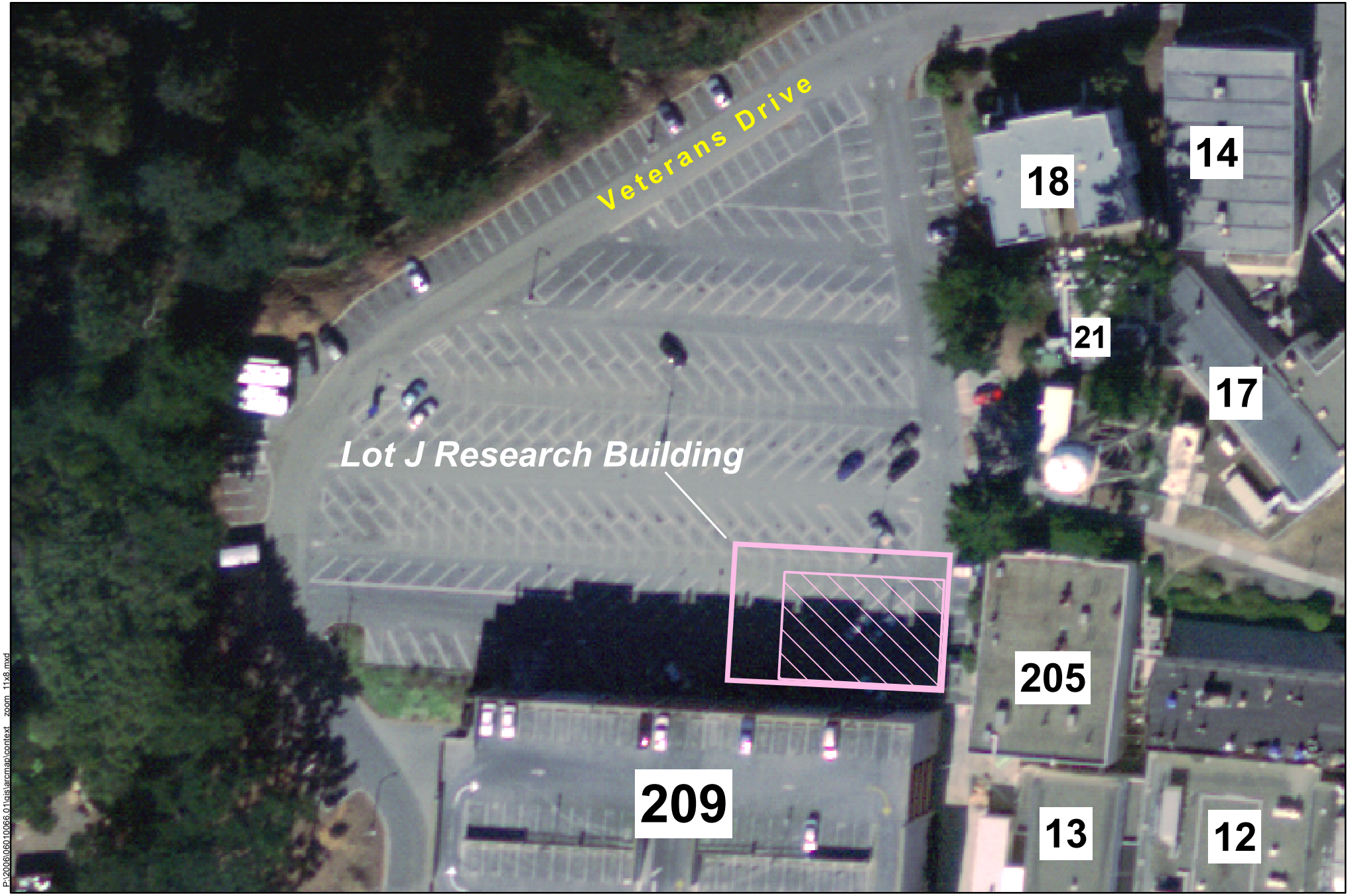
- The project contractor shall have a traffic controller onsite to direct construction traffic at all times during construction activity periods.
- The construction contract and specifications shall specify that construction personnel shall not be permitted to park in the SFVAMC parking areas. Furthermore, in order to minimize short-term impacts on the surrounding residential area, construction personnel shall be directed to park along El Camino del Mar, a street west of the SFVAMC that provides access to the USS San Francisco Parking Lot. This roadway segment, approximately 1,000 feet long and 40 feet wide, would accommodate construction personnel vehicles without impacting tourist access and view point, vista, and memorial areas.
- The SFVAMC shall coordinate with the San Francisco Municipal Railway to route Bus 38 from the 42nd Avenue entrance to Veterans

Drive and along the outer loop of the SFVAMC and establish alternate bus stops during Phase 4 of the B/203 retrofit construction.

- The SFVAMC shall coordinate with vendors and delivery trucks during Phase 4 of the B/203 retrofit construction to establish alternate delivery routes along the outer loop of the SFVAMC and alternate drop-off/pick-up points at available B/203 docks during Phase 1 and 3.

MITIGATIVE ACTION - TRANSPORTATION AND TRAFFIC (LONG-TERM)

The SFVAMC shall develop and implement a strategy to reduce parking demand by at least 40 spaces in order to off-set the permanent loss of parking that would result from the implementation of the Lot J Alternative. This strategy shall be integrated into on-going SFVAMC programs that provide incentives to increase the use of public transportation and carpooling to the campus by visitors and employees.



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Source: USGS -- NIMA Imagery / EDAW 2006

100 50 0 100 Feet

Scale 1 : 720
1" = 60 ft

EDAW | AECOM

Proposed Building

Building Footprint

Development Area

Parking Lot J -- Building Alternative

Figure7

SAN FRANCISCO VETERANS AFFAIRS MEDICAL CENTER

B/203 SEISMIC RETROFIT / PATIENT PRIVACY IMPROVEMENTS

1/10/07

4.4.13 VEGETATION AND WILDLIFE

The retrofit of B/203 and construction of the Lot J Research Building would have little impact on established vegetation since these buildings are located adjacent to asphalt or concrete. The laydown or staging areas consist of ruderal (weedy) species, cypress and pines, asphalt or are bare ground covered by duff or stored materials.

No wildlife was seen during the site visit. It is likely that a variety of avian species and small mammals utilize the site.

SENSITIVE SPECIES

Because of the nature of the project location and the minimal potential impacts to resources, biological resources database queries were narrower in scope than commonly conducted for projects with greater probable impacts to natural resources.

Queries were conducted of the 2006 California Natural Diversity Database (CNDDB) and the 2006 California Native Plant Society's (CNPS) database for the North San Francisco 7.5-minute quadrangle, as discussed under Alternative 2.

Many terrestrial rare species are found within the Presidio and Golden Gate National Recreation Area due to the relatively minor disturbances the military operations and facilities had on the landscape. Other sites with known sensitive species are Golden Gate Park, Baker Beach, Twin Peaks, and other hill top sites. Two species are known only from Marin County. Typical habitat for the sensitive species include: serpentine derived soils or outcrops, coastal scrub or sand dunes, wetlands and native grasslands. None of these habitats occur on the site. More importantly, the existing site has had significant alterations over time.

Sensitive species were not seen during the site visits and it is not anticipated that any sensitive species occur within the VA property. Sensitive birds such as raptor species could occasionally hunt within the area but it is unlikely they reside at the site. Additionally, the sensitive plant species that occur within the region have little suitable habitat on site. Since the site has been heavily impacted over the years and the site is predominately non-native ruderal and landscape species, no impact would result from implementation of the proposed project.

Impacts to sensitive species are not anticipated to occur as a result of the project construction or operation. However, impacts could occur to other

biological resources as a result of vegetation removal such as tree removal during construction. These impacts could affect nesting birds which could be in violation of the federal Migratory Bird Treaty Act of 1916 (16USC 703-711) and California Fish and Game Code (Sections 3503, 3513, or 3800). In order to avoid nesting birds it is recommended that any shrub, tree, or any vegetative cover removal be conducted during the non-breeding season for birds, which is roughly from February 1 through August 31.

Avoidance of the nesting season is recommended to ensure compliance with state and federal regulations that protect nesting birds. Should vegetation removal need to occur within the breeding season for birds, the following is recommended to mitigate any potential impacts.

MITIGATIVE ACTION - WILDLIFE (NESTING BIRDS- PRECONSTRUCTION SURVEY)

- A survey for nesting birds shall be conducted by a qualified wildlife biologist no earlier than 14 days prior to the removal of trees, shrubs, grassland vegetation, buildings or other construction activity. Survey results shall be valid for 21 days following the survey. The area surveyed shall include all construction areas as well as areas within 150 feet outside the boundaries of the areas to be cleared or as otherwise determined by the biologist. If an active nest is discovered in the areas to be cleared, or in other habitats within 150 feet of construction boundaries, clearing and construction shall be postponed for at least two weeks or until a wildlife biologist has determined that the young have fledged (left the nest), the nest is vacated, and there is no evidence of second nesting attempts.

Vegetation removal would be considered a short-term impact to wildlife species that utilize the site. Nesting birds would return upon completion of the construction or after other disturbances have abated (i.e., noise from construction), and after landscaping trees and shrubs are replaced.

4.5 ALTERNATIVE 4: SEISMIC UPGRADES TO B/203

Under this alternative, only the seismic retrofit of B/203 would be completed. No patient privacy improvements would be made under this alternative.

4.5.1 AESTHETICS

The proposed project would result in alterations to the exterior of B/203. With implementation of the Mitigative Actions described below, the proposed project would have minimal aesthetic impact in terms of change to existing visual character and views of the SFVAMC from nearby areas.

All of the visual changes evident at B/203 would be related to seismic retrofitting. As such, upon completion of the proposed project, B/203 would include new canopies on its north end, along with new buttresses adjacent to the north end of the skywalk connecting B/203 and B/200. There would be no change in the building's overall size, nor are changes to any exterior lighting anticipated. Because the alterations to B/203 would not substantially alter the visual character of the building or expand its footprint, there would be no aesthetic impact from these proposed actions.

MITIGATIVE ACTION - AESTHETICS

- The project contractor shall place temporary fencing around all staging areas so as to limit the frequency and prominence of views of construction equipment and associated construction materials/activities from nearby residential neighborhoods and GGNRA land.

4.5.2 AIR QUALITY

Operational Emissions. Minimal emissions are expected from onsite activities such as ventilation units and existing or new emergency generators and ventilation units. If implemented, the new emergency generator would be a diesel engine which would be used only during emergencies and periodic testing. The number of SFVAMC employees would not increase as a result of implementation of this alternative because the number of patient beds and staff would be the same as the existing condition. The resulting operational air emissions due to traffic are considered to be unchanged. Therefore no impacts would occur.

Construction Emissions. Foreseeable construction/demolition activities would occur during site preparation, grading, relocation of utilities and other infrastructure, placement of foundations for structures, fabrication of structures, and demolition of existing structures. Construction activities would

require the use of heavy trucks, excavating and grading equipment, concrete mixers, cranes, and other mobile and stationary construction equipment. During construction, air quality could potentially be affected for a short time period. Heavy equipment could create fugitive dust and emit reactive organic gas (ROG), NO_x, CO, SO_2, and PM (10 and 2.5) emissions as a result of diesel fuel combustion. The primary pollutant of concern in fugitive dust would be PM_{10}. PM_{10} is also released as a result of construction activities such as excavation or soil movement.

Construction emissions would be short-term and temporary (approximately 31 months), but could cause adverse effects on local air quality by adding windblown dust to the particulate matter in the atmosphere while soil is exposed.

Construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors, and front-end loaders which temporarily emit precursors of ozone (i.e., ROG or NO_x) are already included in the emission inventories of state- and federally-required air plans and would not have an adverse impact on the attainment and maintenance of ozone ambient air quality standards. However, unless PM_{10} emissions are reduced by implementation of feasible control measures, impacts caused by these emissions could be adverse. This would be considered a moderate impact.

Implementation of the Mitigative Actions below would reduce impacts caused by PM_{10} emissions to a minimal level according to BAAQMD standards.

Asbestos. Before any demolition or renovation activities occur, an asbestos abatement plan must be prepared, an asbestos clearance must be obtained from the BAAQMD, and the project must comply with 40 CFR Section 61 Subpart M for National Emissions Standards for Hazardous Air Pollutants (NESHAP) for asbestos and BAAQMD Rule 11-2. This would ensure that no improper handling of asbestos would occur during the proposed demolition activities. If there is potential for the presence of asbestos in buildings to be demolished, prior to demolition, the VA proposes to remove all friable and potentially friable Asbestos Containing Material (ACM) (as required by law).[15] Removal and disposal would occur in accordance with applicable laws and regulations, including compliance with VA Specification 01568, EPA, BAAQMD, and the Occupational and Safety Hazards Act (OSHA). Once the asbestos removal is certified, the demolition would be allowed to proceed. To ensure safety during asbestos abatement, legal requirements for safety as defined by the OSHA would be followed. The air quality and safety impacts from asbestos would be minimal when combined with the application of current laws and regulations.

[15] Friable ACM is any material containing more than one percent asbestos.

MITIGATIVE ACTIONS - AIR QUALITY (CONSTRUCTION DUST)

Implementation of the following Mitigative Actions, in accordance with BAAQMD standard mitigation requirements for areas near sensitive receptors, would reduce construction-related air quality impacts to a minimal level. No long-term mitigation would be required.

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at the construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at the construction sites.
- Sweep public streets adjacent to construction sites daily (with water sweepers) if visible soil material is carried onto the streets.
- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the construction site.
- Install wind breaks at the windward sides of the construction areas.
- Suspend excavation and grading activities when wind (as instantaneous gusts) exceeds 25 miles per hour.

4.5.3 COMMUNITY SERVICES AND UTILITIES

Under this alternative, the seismic retrofit of B/203 would not result in an increase or decrease in the hospital services provided at SFVAMC, as compared to the existing condition. The existing number of patient beds (124) and bathrooms in B/203 would remain in the current configuration, which does not conform to current VA standards.

This alternative would result in a beneficial long-term impact, as B/203 would be upgraded to meet seismic building standards mandated by Executive Order (EO) 12941 and Veterans Health Administration Directive 2005-019. Because there would be no change in the overall SFVAMC operation, there would be no impact on police protection, fire protection, parks or other community services.

The main utility lines serving B/203 would not change as a result of the seismic retrofit. Aside from internal reconfigurations of the utility lines as a result of the seismic retrofit, no changes to utility lines would occur at B/203. There would be no change to impervious surfaces at B/203 after the seismic retrofit as it is an already developed area. Thus, there would be no adverse affect on the stormwater runoff.

The seismic retrofit of B/203 would not result in a net increased use of utilities once the work is complete, since staffing levels and uses would remain essentially the same as existing conditions.

4.5.4 CULTURAL RESOURCES

Due to the presence of known prehistoric resources near the project area, as well as a high level of documented historic activity within the project area, there is a possibility of encountering subsurface cultural resources during ground disturbing activities required for the seismic: this would be a moderate adverse impact. The following Mitigative Action shall be implemented in the event that subsurface cultural resources are encountered during ground disturbance activities around B/203.

MITIGATIVE ACTION - ARCHAEOLOGICAL RESOURCES

Implementation of the following Mitigative Action is required to avoid any potential adverse effect from the proposed project on the inadvertent discovery of archaeological resources:

- The VA shall notify the project contractor involved in ground-disturbing activities within the project area of the potential to encounter subsurface archaeological resources. Archaeological resources may take the form of stone tools and tool fragments, unusual amounts of burned or unburned shell and bone, as well as glass, metal, and ceramic objects. If an archaeological resource is discovered, excavation in the area of the find shall be halted, and a qualified professional archaeologist shall be consulted. The archaeologist, in consultation with the State Historic Preservation Office, shall determine whether the resource is potentially significant (i.e. eligible for listing on the National Register (36 CFR 800.3[c]).

4.5.5 FLOODPLAINS, WETLANDS, WATERSHEDS, RIVERS, LAKES, COASTAL ZONE, ETC.

Floodplain impacts relating to the retrofit of B/203 would be considered minimal because it would not displace flood waters to nearby properties and would result in minimal alterations to runoff conditions around the site (see the Hydrology and Water Quality section of this document). The seismic retrofit of B/203 would result in little change to impervious site characteristics, since the improvements would be made to an existing structure. All runoff is collected in the storm drains and conveyed in San Francisco's integrated sewer/stormwater system.

The project site is located within the coastal zone management area. Coastal Commission staff has been consulted and the project will be reviewed for consistency determination. Please see Figure 2 for a delineation of the coastal zone management area.

4.5.6 GEOLOGY AND SOILS

The SFVAMC is located in an area of high seismic activity, which could expose people and structures to risk of damage from earthquakes along nearby active faults. To minimize the site hazard, the project would be designed in conformance with the Department of Veterans Affairs Handbook H-18-8, Seismic Design Requirements. The project would also be designed in conformance with standards set forth in the 2003 International Building Code (IBC).

The purpose of the retrofit on B/203 is to make the structure safer for human occupancy in the event of a large magnitude earthquake. To that end, engineering design reports have been prepared by qualified, licensed geotechnical engineers (Ninyo and Moore 2004), and the VA is incorporating those recommendations into its design of project site structures.

The greatest earthquake hazards to building occupants would occur if a major earthquake struck during regular work hours. While earthquake prediction is not a precise science, based on geologic data of recurrence patterns, it may be generally assumed that the longer the interval between major earthquakes on the key active fault systems of the region, the greater is the likelihood that a major earthquake will occur. The building occupants (together with the rest of the Bay Area population) may assume with a high degree of confidence that the project will be exposed to a major (and possibly great) earthquake during its operating life.

Project-related grading activities would expose site soils to an increased potential for short-term construction-related erosion from wind and water. However, by law, the project applicant would be required to develop and

implement a Storm Water Pollution Prevention Plan (SWPPP) in compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements. The SWPPP must include site-specific Best Management Practices (BMPs) to reduce erosion, as well a description of the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, a description of measures designed to control dust and stabilize the construction-site road and entrance, and a description of the location and methods of storage and disposal of construction materials. Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing. Implementation of the approved SWPPP and associated BMPs would reduce the short-term adverse effect of increased erosion potential to a minimal level.

MITIGATIVE ACTIONS - GEOLOGY AND SOILS

- To minimize hazards to building occupants from non-structural damage, heavy objects should be attached to secure walls and floors, and light, loose objects should be placed to minimize their potential to move or overturn. Large storage containers shall not be loosely stacked, and those stored on shelves should have appropriate restraints or other means to prevent them from tipping or sliding off shelves.
- The VA shall take feasible steps to minimize potential earthquake safety risks related to hazardous materials. Specific steps may include appropriate seismic safety provisions, such as prohibiting the storage of hazardous materials in containers above head level (about five feet), anchoring hazardous materials shelves and heavy equipment to walls and floors, requiring sufficient lips on shelves, constructing heavy doors that are designed to remain shut during earthquake vibrations, providing hand-operable closures for vents and air ducts, and other provisions as discussed in the Association of Bay Area Governments' *Hazardous Material Problems in Earthquakes: A Guide to Their Cause and Mitigation*. Other measures would be implemented as recommended by the San Francisco Fire Department. Additionally, the VA's Emergency Procedures Manual shall be periodically revised to be consistent with changes in the facilities and operations.

4.5.7 HYDROLOGY, WATER QUALITY

SHORT-TERM IMPACTS

Surface drainage water quality can be affected by both the amount of impervious surface area and the type of land use. Storm water pollutants include a wide array of environmental, chemical, and biological compounds from both point and non-point sources. In the urban environment, storm

water characteristics depend on site conditions (e.g., land use, perviousness, and pollution prevention measures), rain events (duration or intensity), soil type and particle size, the amount of vehicular traffic, and atmospheric deposition. Increases in runoff rate and peak flows could also contribute to greater erosion potential of exposed surfaces, sediment transport and sedimentation, and bank erosion.

Delivery, handling, and storage of construction materials and wastes as well as use of construction equipment onsite could also introduce a risk for stormwater contamination during the construction phase of the project.

Construction materials have the potential to contribute pollutants, including sediment, to storm water runoff. These include:

- Vehicle or other mechanical fluids, including oil, grease, petroleum, battery acid, and coolants;
- Asphaltic emulsions used to cap excavated areas;
- Cementitous materials associated with Portland cement concrete (PCC) structures and shotcrete;
- Base and sub-base material;
- Joint and curing compounds;
- Concrete curing compounds;
- Solvents, thinners, acids, glue;
- Debris and dust associated with demolition of structures (e.g., rubble);
- Sediment associated with excavation;
- Mortar mix;
- Metals and plated products;
- Roofing materials;
- BMP materials;
- Lumber (treated or untreated materials and wastes);
- General litter, and
- Landscaping materials.

B/203 has the potential to contribute pollutants to storm water runoff during seismic retrofit. However, with incorporation of the Mitigative Action identified in this section and Mitigative Actions required in the SWPPP that was prepared for the project, impacts would be considered less than significant.

The seismic retrofit of B/203 would result in little difference between the pervious and impervious areas before and after construction, since the improvements would be made to the existing structure. The construction site area is estimated at 1.4 acres. The exterior seismic retrofit would involve excavating and replenishing a total of approximately 5,000 cubic yards of soil over approximately 31 months (around the building) and installing exterior shear walls. The excavated earth would be put back in place once each phase is complete. None of the proposed construction would be expected to affect groundwater levels.

LONG-TERM IMPACTS

No long-term hydrological impacts would result from the retrofitting of B/203. Upon completion of the seismic retrofit, runoff would continue to be minimized through landscape cover and collected in the storm drain system.

MITIGATIVE ACTIONS - HYDROLOGY AND WATER QUALITY (B/203)

The Mitigative Actions described below address the identified short-term, construction-related impacts. No long-term mitigation would be required.

- The project contractor shall preserve existing vegetation as feasible.
- Temporary erosion control measures shall be applied as required by the California Storm water Quality Association (CASCA) Construction BMPs Manual, Permits, and associated permits.
- During the rainy season (October through April), additional erosion control BMPs (i.e. fiber rolls, straw bale barriers, gravel bag berms) shall be applied at regular intervals to mitigate any impacts resulting from storm-created runoff.
- Areas that are non-active shall be stabilized with vegetation, erosion control blankets and flood control (see following) within 14 days of cessation of construction activities.
- Erosion control measures shall be applied in concentrated flow paths. These measures may include all or some of the following: erosion control blankets, check dams, erosion control seeding, earthen dikes and drainage swales, velocity dissipation devices, slope drains, etc. as required during construction, particularly during the rainy season.
- Physical or vegetative erosion control BMPs (not simply standby BMP measures) shall be installed as soon as grading and/or excavation is completed for any portion of the site during the rainy and non-rainy season.
- Sufficient erosion control measures shall be maintained on site to allow implementation in conformance with Permit requirements as

specifically listed in the SWPPP for Building 203 (DMJM 2005). This shall include implementation requirements for active and non-active areas that require deployment before the onset of rain.

With the incorporation of the above mitigation actions, impacts would be considered minimal.

4.5.8 LAND USE

Activities and land uses at SFVAMC would continue at they currently do under this alternative. No land use conflicts would occur.

4.5.9 NOISE

SHORT-TERM IMPACTS

Demolition, excavation, and project construction would temporarily increase noise in the project vicinity. The seismic retrofit of B/203 would take approximately 31 months to complete. Construction activity noise levels would increase the ambient noise levels in the project area; however, noise levels would not exceed the specified limitations established by the VA's Environmental Protection Specification, provided the contractors follow the limits established in the specification.

According to the Environmental Protection Specification, the construction activities are to be performed only during the hours of 8:00 am and 6:00 pm, unless otherwise permitted by local ordinance. Construction hours for the project are proposed to be between the hours of 7:30 am and 5:30 pm, which would comply with the local ordinance, since San Francisco's noise ordinance permits construction activities between the hours of 7am-8pm (Note: San Francisco's noise ordinance prohibits construction work between the hours of 8:00 pm and 7:00 am, if noise would exceed the ambient noise level by five dBA at the property line, unless a special permit is authorized by the Director of Public Works).

Construction noise would fluctuate depending on the construction phase, equipment type and duration of use, distance between noise source and listener, and presence or absence of barriers. Noise impacts from the project would be temporary in nature and limited to the daytime hours. In addition, construction equipment is required to comply with VA Environmental Protection Specification 01568, which requires the minimization of noise using every action possible. This includes providing sound-deadening devices on equipment, use of shields or other physical barriers to restrict noise transmission, providing soundproof housings or enclosures for noise-producing machinery, and using efficient silencers on equipment air intakes. Therefore, construction noise impacts would be considered minimal due to

their limited duration and required compliance with VA and local noise specifications.

LONG-TERM IMPACTS

After construction, noise impacts generated by B/203 operations (loading dock activities, ventilation equipment, etc.) would not change from the existing condition.

Traffic-generated noise would not change substantially under this alternative, since there would be no change in staffing levels or the number of patient beds

SENSITIVE RECEPTORS

Operational and construction noise would not have an adverse impact on the sensitive receptors located off-site due to the distance of the project site from their location, and potential shielding effects from other buildings.

Construction activities would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Table 6 displays vibration levels for typical construction equipment.

Sensitive receptors within the SFVAMC would be impacted by construction noise. This impact, while adverse, would be minimal as they would be temporary and of limited duration, and would comply with the Environmental Protection Specifications for hours of construction and noise source limits.

As discussed previously, the on-site construction equipment required for the activities would likely include dump trucks, scrapers, bulldozers, compactors, and front-end loaders, and caisson drilling. However, these large, heavy-duty pieces of construction equipment would not be operated within 60 feet of a hospital patient. Heavy pieces of equipment would be used for earth moving and material handling activities outside B/203. Staging areas and activities involving heavy-duty equipment would be located greater than 60 feet from where patients are housed. Laboratories, which are also considered vibration-sensitive because they require very still environments to operate sensitive equipment, could be temporarily disrupted by vibration generated by construction (retrofit) activities.

Construction equipment that would be operated within the hospital would be limited in size and horsepower to smaller pieces of equipment, such as electric powered handheld tools, small forklifts, and other mechanical equipment. Operation of these types of equipment would not generate groundborne

vibration levels in excess of 80 VdB, even at 25 feet from the source. Therefore, L_V would remain below 80 VdB where vibration sensitive receptors would be located, and disturbance associated with vibration will remain minimal.

4.5.10 SOCIOECONOMICS

The SFVAMC employment and patient activities would not change in the long term as a result of this alternative.

Employment in the area would temporarily increase as a result of the B/203 seismic retrofit construction activities. The construction personnel onsite would result in a short-term increase in the number of persons working at the site. The number of construction personnel onsite would vary from 10 to 60, depending on the construction phase.

There would be no long-term change to the SFVAMC population under this alternative. B/203 would continue to operate as a hospital with the same number of patient beds and essentially the same staffing levels.

4.5.11 SOLID/HAZARDOUS WASTE

Under this alternative, the SFVAMC would continue to operate in its current capacity and the various labs would remain in their current locations in B/203. Compliance with existing safety and research procedures and regulations would continue in order to minimize health hazards both to the building occupants and the surrounding area.

The B/203 seismic retrofit would result in a short-term increase in construction waste generation. The project contractor is required to submit an Environmental Protection Plan pursuant to the Department of Veterans Affairs Environmental Protection Specifications Section 01568. This plan requires the contractor to specify controls to be taken to manage environmental pollution, which includes the handling and disposal of solid waste. Solid waste is required to be transported and disposed of in compliance with Federal, State, and local regulations.

The project would also require the demolition of internal walls in B/203. Due to the age of B/203 (approximately 30 years old), asbestos is most likely to be present and therefore presents a significant health hazard. Asbestos is considered to be a hazardous material, and the removal of such materials is subject to the regulations of OSHA, EPA, and the Code of Federal Regulations (CFR). The Mitigative Actions identified below shall be implemented to reduce health hazards as a result of asbestos removal.

The asbestos abatement plan includes, but is not limited to, the following details: summary of work; applicable codes, regulations and standards; notices, permits, and licenses; project coordination; respiratory protection; worker protection; decontamination facilities; materials and equipment, containment barriers; monitoring, inspection and testing; standard operating procedures; submittals, encapsulants; execution of asbestos abatement; and final inspection and testing.

The operational activities of B/203 would remain the same. No additional labs or different uses are proposed to occur in B/203. Compliance with existing safety and research procedures and regulations would minimize health hazards to occupants of SFVAMC buildings and the surrounding area.

MITIGATIVE ACTION - HAZARDOUS MATERIALS

- The project contractor shall prepare and submit an asbestos abatement plan as required by Traditional Asbestos Abatement Specifications Section 01569 of the VA Master Specifications.

4.5.12 TRANSPORTATION AND PARKING

SHORT-TERM IMPACTS

The seismic retrofit of B/203 would result in a short-term increase in traffic and parking demand from construction equipment and workers. The number of construction personnel needed onsite would vary from 10 to 60 depending on construction phase. Staging areas for the construction equipment would be provided, as shown on Figure 2 - Site Plan. Construction traffic within the SFVAMC campus would consist mainly of trucks delivering building materials and equipment. Traffic flow and access to the SFVAMC could be affected by partial road closures of short duration as a result of the delivery of the construction equipment, and materials. Mitigative Actions described below shall be implemented to reduce short-term circulation and traffic impacts to less than significant levels.

Vehicles essential to support construction would be parked at the staging areas (i.e. Bobcat, dump truck). Vehicles that transport construction personnel to the site would result in a short-term increase in parking demand. In order to reduce these short-term construction effects, the SFVAMC shall implement the Mitigative Actions below to reduce any potential parking shortages and direct parking away from the surrounding residential areas.

Construction would occur Monday through Friday from 7:30 a.m. to 5:30 p.m., which is when delivery of materials and equipment would occur. Phase 4 would consist of work on the north wall of B/203 and installation of new buttresses on the north end of the skywalk connecting B/203 and B/200. This

would involve temporary closure of Fort Miley Road along the length of B/203 and would result in re-routing the 38 bus route. The project contractor shall implement Actions identified below to re-route and establish alternate bus stops for the duration of Phase 4. Phases 1, 2, and 5 consist of work on the south walls of B/203 and require re-routing delivery drop off/pick up for the duration of these phases. The project contractor shall implement Mitigative Actions described below to establish alternate delivery routes during the retrofit activities.

LONG-TERM IMPACTS

Implementation of this alternative would not change the number of employees at the SFVAMC campus. The number of patient beds in B/203 would not increase, and staffing levels would not change. Therefore, traffic volumes associated with the operation of SFVAMC would not change as a result of this alternative.

There would be no long-term loss of parking spaces as a result of the seismic retrofit work proposed under this alternative.

The following Mitigative Actions shall be implemented to reduce short-term transportation and traffic impacts:

MITIGATIVE ACTIONS – TRANSPORTATION AND TRAFFIC (SHORT-TERM)

- The project contractor shall have a traffic controller onsite to direct construction traffic at all times during construction activity periods.
- The construction contract and specifications shall specify that construction personnel shall not be permitted to park in the SFVAMC parking areas. Furthermore, in order to minimize short-term impacts on the surrounding residential area, construction personnel shall be directed to park along El Camino del Mar, a street west of the SFVAMC that provides access to the USS San Francisco Parking Lot. This roadway segment, approximately 1,000 feet long and 40 feet wide, would accommodate construction personnel vehicles without impacting tourist access and view point, vista, and memorial areas.
- The SFVAMC shall coordinate with the San Francisco Municipal Railway to route Bus 38 from the 42nd Avenue entrance to Veterans Drive and along the outer loop of the SFVAMC and establish alternate bus stops during Phase 4 of the B/203 retrofit construction.
- The SFVAMC shall coordinate with vendors and delivery trucks during Phase 4 of the B/203 retrofit construction to establish alternate delivery routes along the outer loop of the SFVAMC and alternate

drop-off/pick-up points at available B/203 docks during Phase 1 and 3.

4.5.13 VEGETATION AND WILDLIFE

The retrofit of existing B/203 would have little impact on established vegetation since this building is located adjacent to asphalt or concrete. The laydown or staging areas consist of ruderal (weedy) species, cypress and pines, or are bare ground covered by duff or stored materials.

No wildlife was seen during the site visit. It is possible that a variety of birds and small mammals utilize the site. Nesting birds could be affected by removal of trees and groundcover.

SENSITIVE SPECIES

Because of the nature of the project location and the minimal potential impacts to resources, the database queries were narrower in scope than commonly conducted for projects with greater probable impacts to natural resources.

Sensitive species were not seen during the site visits and it is not anticipated that any sensitive species occur within the VA property. Sensitive birds such as raptor species could occasionally hunt within the area but it is unlikely they reside at the site. Additionally, the sensitive plant species that occur within the region have little suitable habitat on site. Since the site has been heavily impacted over the years and the site is predominately non-native ruderal and landscape species, no impact would result from implementation of the proposed project.

Impacts to sensitive species are not expected to occur as a result of implementation of this alternative. However, impacts could occur to other biological resources as a result of vegetation removal such as tree removal during construction. These impacts could affect nesting birds which could be in violation of the federal Migratory Bird Treaty Act of 1916 (16USC 703-711) and California Fish and Game Code (Sections 3503, 3513, or 3800). In order to avoid nesting birds it is recommended that any shrub, tree, or any vegetative cover removal be conducted during the non-breeding season for birds, which is roughly from February 1 through August 31.

Avoidance of the nesting season is recommended to ensure compliance with state and federal regulations that protect nesting birds. Should vegetation removal need to occur within the breeding season for birds, the following Mitigative Action is recommended to mitigate any potential impacts.

MITIGATIVE ACTION - WILDLIFE (NESTING BIRDS- PRECONSTRUCTION SURVEY)

- A survey for nesting birds shall be conducted by a qualified wildlife biologist no earlier than 14 days prior to the removal of trees, shrubs, grassland vegetation, buildings or other construction activity. Survey results shall be valid for 21 days following the survey. The area surveyed shall include all construction areas as well as areas within 150 feet outside the boundaries of the areas to be cleared or as otherwise determined by the biologist. If an active nest is discovered in the areas to be cleared, or in other habitats within 150 feet of construction boundaries, clearing and construction shall be postponed for at least two weeks or until a wildlife biologist has determined that the young have fledged (left the nest), the nest is vacated, and there is no evidence of second nesting attempts.

Vegetation removal would be considered a short-term impact to wildlife species that utilize the site. Nesting birds would return upon completion of the construction or after other disturbances have abated (i.e., noise from pile driver), and after landscaping trees and shrubs are replaced.

5. CUMULATIVE IMPACTS

This chapter summarizes cumulative impacts identified for the alternatives. Cumulative impacts are those that would result from the incremental consequences of an action when added to past, present, and reasonably foreseeable future public or private actions. By itself, the effects of a specific project may be undetectable. However, when considered in conjunction with other actions or incremental effects, a proposed action could lead to measurable environmental impacts. Combined effects of connected actions must be considered in the aggregate with those of the proposed action. These combined effects are addressed in this EA as cumulative impacts.

5.1 KEY FACTORS IN EVALUATING CUMULATIVE EFFECTS

This EA considers key factors in assessing cumulative effects to the environment, including the incremental effects on natural resources, effects on traffic and parking, and any growth-inducing effects of the proposed action. The analysis also considers changes to the area resulting from cumulative effects from projects planned in close proximity of the SFVAMC Campus.

5.2 PLANNED PROJECTS IN THE VICINITY

The SFVAMC is located in the northwestern corner of the City and County of San Francisco. The site is accessed from Clement Street, with entrances at 42nd (the main entrance for patients, visitors, and staff) and 43rd Avenues, and is bounded on the north, east and west by the Golden Gate National Recreation Area (GGNRA) Fort Miley site, and to the south by a residential neighborhood comprised of moderate density development containing a mix of single family homes and apartment buildings.

Evaluation of potential environmental impacts of the alternatives in this EA include consideration of the effects of other actions or projects planned in close proximity to the SFVAMC Campus, along major roadway arterials, within the City of San Francisco or adjacent GGNRA lands. Major projects or actions planned in these areas are listed below.

Lands End Coastal Trail Enhancements - The National Park Service and the Golden Gate National Parks Conservancy are proposing enhancements to the California Coastal Trail and its surrounding landscape and habitat within the Sutro and Lands End District of the Golden Gate National Recreation Area (GGNRA). This area is located south and west of the SFVAMC. The work proposes a variety of improvements to the trail system, including the rehabilitation of existing trails, new access points, improvements to meet ADA accessibility requirements, and implementation of a forest and vegetation management plan to ensure the health of the forest. In addition, the work includes improvements to the Lands End parking lot at Merrie Way, which would be rehabilitated to accommodate approximately 130 parking spaces, five handicapped

parking spaces, and parking for five buses. The parking lot entrance would be moved to the east – approximately 200 feet from the intersection of Geary Boulevard, Point Lobos Avenue, 48th Avenue and El Camino del Mar.

There are no other known transportation improvements proposed in the immediate project area. No other projects or events are known in the vicinity that would result in cumulative effects in combination with the proposed action.

5.3 PROJECTS PLANNED AT SFVAMC

While a number of projects have been identified for future consideration on the SFVAMC campus, most of these projects are in the conceptual stage and are not funded. The projects below have moved beyond the conceptual stage, are fully funded, and therefore are considered reasonably foreseeable:

Emergency Room Expansion – This project would expand the Emergency Room (ER), which is located in the northwest portion of B/200, into the existing ambulance entrance area. This expansion would add 3,500 square feet to the existing ER facility to ease current crowded conditions and to bring the ER up to current emergency medical care standards. The ER addition would be constructed in a paved area, and would displace and require relocation of two parking spaces designated for persons with disabilities.

Clinical Support Annex – This project would add three floors to B/200, above the ER expansion area described above. This area would be used for additional exam rooms, radiology, and surgical support services.

5.4 CUMULATIVE IMPACTS

Based on the other projects at SFVAMC and the surrounding area, the topics of community services and transportation (including parking) are identified as the only environmental elements subject to meaningful impact by cumulative effects. Cumulative effects related to aesthetics, air quality, cultural resources, geology and soils, hydrology/water quality, land use, noise, socioeconomics, and vegetation and wildlife are not anticipated to occur in combination with other projects or events.

The projects planned at the SFVAMC and in close proximity to the facility, combined with the seismic retrofit and patient privacy improvements proposed for B/203, would have a long-term, beneficial impact on community services. The planned improvements, which includes upgrades to the Emergency Room and Clinical Support services of the SFVAMC, would enhance the SFVAMC's ability to assist state and local authorities in dealing with the medical and public health effects of major peacetime

disasters; as well as serve as the Federal Coordinating Center (FCC) for National Disaster Medical System (NDMS) for the Northern California area.

Short-term cumulative effects associated with construction activities would increase traffic volume on Clement Street and El Camino del Mar, and other smaller streets in the area. During the construction phase, traffic flow and access to the SFVAMC could be affected by partial road closures of short duration as a result of the delivery of the construction equipment and materials to the site. In addition, the increased demand for parking during construction, up to 60 construction workers on-site during the peak construction phase, combined with other construction/enhancement projects in the area, could have a short-term, adverse cumulative effect on the streets in vicinity. Implementation of Mitigative Actions identified in Chapter 4, and coordination with GGNRA and the City and County of San Francisco on the timing of any temporary road closures would minimize this short-term, cumulative effect.

6. SOURCES

6.1 PERSONS CONSULTED

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APPENDIX A

Construction Equipment Listed by Phase and Construction Type

Appendix A

Construction Equipment Listed by Phase and Construction Type

(I) EXCAVATION, BACKFILL AND TEMPORARY SHORING	
Phases 1, 3, 4, and 6	• One Bobcat consistently on site • One backhoe for excavation • One dump truck • Welding equipment • Air compressor
Phases 2 and 5	• One Bobcat consistently on site • One dump truck • Welding equipment • Air compressor
(II) INSTALLING NEW CAISSONS FOR THE NEW FOUNDATIONS	
Phase 1	• One auger • One crane up to 40 feet • One Bob Cat (on standby) • One air compressor (on standby) • Long semi-truck to deliver the 30 plus feet re-bar cages (one truckload at a time) • Large truck to deliver cylindrical liners and additional re-bars
Phases 3 and 4	• One auger • One crane up to 40 feet • One Bob Cat (on standby) • One air compressor (on standby) • Long semi-truck to deliver the 20 plus feet re-bar cages (one truckload at a time) • Big truck to deliver cyclindrical liners and additional re-bars
(III) PREPARING VERTICAL WALLS FOR REINFORCEMENT	
Phases 1 thru 6	• Truck to deliver scaffolding • Hand tools to assemble scaffolding and hang netting • One mid size compressor to drive sand, and associated hoses and tools • One to four trucks to deliver sand bags • Drills for dowels • Hand tools to insert tie bars and epoxy • Trucks to deliver tie bars (estimated one delivery required for Phase 1 and up to four deliveries for Phases 4 and 6) • After sand blasting, one or two truck load deliveries of wood to install forms around windows and doors • 40-foot crane to stand by to lift hoses for blasters and deliver wood to higher levels

Construction Equipment Listed by Phase and Construction Type

(IV) INSTALLING REBARS FOR WALL REINFORCEMENT	
Phases 1 thru 6	• Up to 10 individual truck deliveries for rebar would be required • One small compressor (on stand by) • One 40-foot crane (part of the time) • One fork lift • Welding and cutting torches
(V) SHOTCRETE OPERATIONS	
Phases 1 thru 6	• One cement mixer (continuously) • One mid-size compressor • One hose truck • Bobcat to stand by to manage remnant crete between shots • Dump truck to remove remnant shotcrete twice a day
(VI) MAKING FORMS FOR NEW CONCRETE STRUCTURES	
Phases 1, 3, 4, and 6	• Up to four trucks per phase would deliver wood and other material • Air compressor to drive fasteners • Table saw and hand saws • Up to 30-foot crane to lift forms into place
(VII) POUR CRETE TO FORM NEW CONCRETE STRUCTURES	
Phase 1 (during three separate periods)	• Concrete mixer (between 2 to 4 deliveries for each period) • Trucks to deliver wood and other material (between 2 to 4 truck loads per period) • Up to 30-foot crane • Air compressor • Table saw and hand saws to dismantle forms • Between 2 to 4 truck loads to haul debris for each period
Phase 3 (during four separate periods)	• Concrete mixer (between 2 to 4 deliveries for each period) • Trucks to deliver wood and other material (between 2 to 4 truck loads per period) • Up to 30-foot crane to install and remove forms • Air compressor to drive fasteners • Table saw and hand saws to dismantle forms • Between 2 to 4 truck loads to haul debris during each period
Phase 4 (two separate periods)	• Concrete mixer (up to 4 deliveries for each period) • Trucks to deliver wood and other material (between 2 to 4 truck loads per period) • Up to 40-foot crane to install and remove forms • Air compressor to drive fasteners • Table saw and hand saws to dismantle forms • Between 2 to 4 truck loads to haul debris for each period

Construction Equipment Listed by Phase and Construction Type

Phase 6	• Concrete mixer (up to 4 deliveries) spread out across various locations • Trucks to deliver wood and other material (up to 8 deliveries spread out across various locations) • Up to 30-foot crane to install and remove forms • Air compressor to drive fasteners • Table saw and hand saws to dismantle forms • Up to 4 truck loads spread out at various locations to haul debris
Phase 7	• Concrete mixer (up to 2 deliveries) • Dismantle form and haul debris to be part of general site cleanup and demobilization once the project is constructed
(VIII) BUILD ROOF DECK AT LOADING DOCKS	
Phases 1 and 3	• Up to 3 deliveries by truck • Air compressor to drive tools • Saw cutting • Torch welding • Deliveries to support installation of roof membrane using cold tar process
(IX) RE-INSTALL SMALL COOLING TOWERS	
Phase 1	• Truck to deliver new tower • 50-foot crane to lift tower onto top of building
Phase 3	• 30-foot crane to lift existing tower into position
Phase 6	• 30-foot crane to lift existing tower into position