

East and South Vancouver Barracks Draft Master Plan and Environmental Assessment

Fort Vancouver National Historic Site Clark County, Washington

December 2011

This *East and South Vancouver Barracks Draft Master Plan and Environmental Assessment* describes and analyzes four alternatives for managing the East and South Vancouver Barracks. The East and South Vancouver Barracks are being relinquished from the Department of Defense, U.S. Army, to the Department of the Interior, National Park Service, through the Base Realignment and Closure process and through previous legislation. This *East and South Barracks Draft Master Plan and Environmental Assessment* will help managers make decisions about managing cultural and natural resources, rehabilitation of the structures, and potential leasing options for the property for the next 20 years. Some issues to be addressed are how to manage and preserve the varied cultural resources within the property, including the Hudson's Bay Company Cemetery, archaeological sites and cultural landscapes pertaining to the Hudson's Bay Company and the U.S. Army, and the twenty historic structures listed on the National Register of Historic Places; how to establish a vision for the rehabilitation and public use of the East and South Barracks; and to recommend new uses and activities for the site that are compatible with the NPS mission, the purpose and significance of Fort Vancouver National Historic Site and the Vancouver National Historic Reserve, and the character and needs of the surrounding community and region.

Alternative A, the no-action alternative, describes how the National Park Service would manage the Barracks according to the *Fort Vancouver National Historic Site General Management Plan* (2003) and other relevant policies. Primary land uses would be NPS administrative, maintenance and storage functions with buildings occupied by the National Park Service and Vancouver National Historic Reserve partners. The National Park Service would not actively seek additional tenants.

The three "action" alternatives describe various approaches to managing these new resources.

Alternative B, *A Vibrant, Urban District in a Historic Setting*, would focus on creating a vibrant urban district in the East and South Barracks to complement downtown Vancouver and the surrounding community with a variety of land uses, including retail, office, and residential. The primary land uses would be NPS administrative, maintenance, storage, and curatorial functions as well as a mix of offices, businesses, shops, restaurants, art galleries, and residences for the general public. There would be a heavy emphasis on commercial uses (restaurant, office, etc.).

Alternative C, *A Sustainable, Historic Campus for Public Service (Preferred Alternative)* would create a dynamic, sustainable public service campus where the multi-layered history of the East and South Barracks is preserved and interpreted. This would be accomplished through long-term leases with public agencies to adaptively reuse the existing structures. Primary land uses would be National Park Service and other public agencies' administrative, maintenance, storage, and curatorial functions as well as a mix of offices, businesses, shops, and restaurants.

Alternative D, *A Historic, Educational Campus for All* places a heavy focus on educational, community and nonprofit uses that support the focused interpretation of site-specific history, including Hudson's Bay Company history (1829-1860) south of East 5th Street and U.S. Army history (1901-1948) north of East 5th Street. Buildings would be rehabilitated to serve as offices, classrooms, community spaces and a limited amount of complementary commercial services.

Notes to Reviewers and Respondents

If you wish to comment on the *East and South Vancouver Barracks Draft Master Plan and Environmental Assessment*, you may submit comments to the addresses below.

Individual respondents may request that we withhold their personal information from the record, which we will honor to the extent allowable by law. If you want us to withhold your name and address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety.

Reviewers may submit comments in the following ways:

Online at <http://parkplanning.nps.gov/fova> (preferred)

Mail to:

Fort Vancouver National Historic Site

Attn: East and South Vancouver Barracks Draft Master Plan and Environmental Assessment

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Acronyms Used in this Document

ACHP	Advisory Council on Historic Preservation
AQMA	Air Quality Management Area
BMP	Best Management Practices
BNSF	Burlington Northern Santa Fe
BRAC	Base Realignment and Closure
CCC	Civilian Conservation Corps
CEQ	Council on Environmental Quality
CRC	Columbia River Crossing
CRV	Current Replacement Value
C-TRAN	Clark County Transit Benefit Area Authority
DAHP	Department of Archaeology and Historic Preservation
EPA	United States Environmental Protection Agency
HBC	Hudson's Bay Company
IDT	Interdisciplinary Team
ITE	Institute of Transportation Engineers
LOS	Level of Service
MASH	Mobile Army Surgical Hospital
MMRP	Military Munitions Response Program
MPH	Miles Per Hour
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation
NCRI	Northwest Cultural Resources Institute
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHS	National Historic Site
NPS	National Park Service
NRHP	National Register of Historic Places
PM	Particulate Matter
REC	Recognized Environmental Conditions
SWPPP	Storm Water Pollution Prevention Plan
TCFO	Total Cost of Facility Ownership
VNHR	Vancouver National Historic Reserve
WSDOT	Washington Department of Transportation

Plan Summary

 ocated at an early terminus of the historic Oregon Trail, the East and South Vancouver Barracks represent critical aspects of the history of settling the Pacific Northwest and the United States. The site's resources tell nationally significant stories about American Indian history and culture, the Hudson's Bay Company (HBC), and more than 160 years of continuous U.S. military occupation.

In 2011, the U.S. Army will deed ownership of the East and South Barracks to the National Park Service (NPS). This change will effectively end the longstanding military presence at the Vancouver Barracks, which was the first major U.S. Army post in the Pacific Northwest. At this important moment in the ongoing history of the site, the National Park Service must carefully plan for the preservation and reuse of the East and South Vancouver Barracks as part of an urban national park site.

Purpose of the Plan

Established planning documents provide general guidance for the reuse of the Vancouver Barracks. Yet prior to this *East and South Barracks Draft Master Plan and Environmental Assessment (Environmental Assessment)*, no other document reports specific management direction for the East and South Barracks – including the reuse of its buildings for public or other functions and direction for site design and development. The purpose of the *Environmental Assessment* is to collaborate with partners, other agencies, and the community in order to:

- establish a comprehensive vision for the rehabilitation and public use of the East and South Barracks,
- determine clear direction for future site design and development, and
- recommend new uses and activities for the site and its buildings that are compatible with the National Park Service mission, the purpose and significance of Fort Vancouver National Historic Site, the mission and goals of the Vancouver National Historic Reserve (VNHR), and the character and needs of the surrounding community and region.

This *Environmental Assessment* is intended to be flexible, offering future managers the background and direction necessary to make knowledgeable decisions about how best to implement the spirit of this plan.

Actions Common to All Alternatives

- Adaptive reuse strategies in previously approved plans such as the *Cooperative Management Plan for the Historic Reserve* (2000) and the *Fort Vancouver National Historic Site General Management Plan* (2003) will be adhered to. These strategies are in keeping with Federal Management Regulations (41 CFR 102-79.55), which in part state, “Federal agencies must assume responsibility for the preservation of the historic properties they own or control. Prior to acquiring, constructing or leasing buildings, agencies must use, to the maximum extent feasible, historic properties already owned or leased by the agency.”
- The National Park Service will assume and retain ownership of all structures and properties within the East and South Barracks. The National Park Service will also maintain the buildings it occupies, as well as the HBC Cemetery grounds.

- The National Park Service will retain final approving authority for proposed reuse and tenant improvements for all barracks buildings and grounds.
- Certain National Park Service functions will be relocated to the East or South Barracks under all alternatives and include administration, maintenance, and storage. Park administrative headquarters would likely be relocated to one of the four Parade Ground buildings, and NPS storage and maintenance functions would be relocated to suitable locations in the East or South Barracks.
- All alternatives would have an increased level of visitor access and use. Some degree of interpretation will also be provided consistent with established goals and themes in the *2004 Long-Range Interpretive Plan* and other guidance.
- The National Park Service would actively pursue opportunities to reduce resource consumption and improve the efficiency of building and landscape systems within the East and South Barracks. Techniques such as rainwater collection, renewable energy generation, water and energy conservation, and incentives to encourage healthy activity, public transportation, and waste reduction would be implemented.
- Site improvements would be consistent with the City of Vancouver's Historic Reserve Conservation District ordinance.
- To the greatest extent possible, site improvements and building rehabilitation would accommodate all people and abilities without the need for individual adaptation. For example, improvements such as accessible parking, loading zones, fire access, elevators, ramps, and other modifications would be made in accordance with the Architectural Barriers Act Accessibility Standards and the Accessibility Guidelines for Outdoor Developed Areas.
- The National Park Service would assume principal responsibility for maintenance and interpretation of the HBC Cemetery grounds and adhere to the Native American Graves Protection and Repatriation Act and all other applicable laws and best practices with respect to historic preservation and government-to-government consultations on American Indian and Native Hawaiian burials and human remains. The erection of new buildings would not be considered within the boundaries of the HBC Cemetery grounds.
- Current visitor parking at Fort Vancouver will be reduced to only a few, accessible spaces and drop-off. Primary parking for Fort visitors would be relocated either to the East or South Barracks. In place of existing parking, the cultural landscape would be restored, potentially incorporating an expanded HBC Garden and Orchard.
- The National Park Service would continue to foster public and private partnerships, which are critical in the management and improvement of the park and NPS staff would also encourage new partnerships as opportunities arise.
- Vegetated screening for parking and maintenance areas in the South Barracks will be planted.
- Building 409 (flammable materials storage) would be demolished.
- Tenant improvements to the buildings and grounds would occur.

Actions Common to All Action Alternatives

- The park boundary would be adjusted to include Fort Vancouver Way so that the National Park Service would own and be responsible for the Hudson's Bay Company Cemetery grounds.

- Infrastructure upgrades would occur, utility lines would be buried underground, and landscaping would be installed strategically throughout the site. Sustainable stormwater improvements would be constructed that are compatible with the cultural landscape.
- Building 405, an Aircraft Maintenance Building, would be rehabilitated for use as a regional museum management facility; building 704, an office building, would be reused as retail (café or convenience); building 721, an Auditorium, would be an arts/events/community space; building 754, a Quartermaster Storehouse, would remain retail (potentially existing Post Exchange); building 991, a Double Infantry Barracks, would be mixed use: office and arts/event/community space.
- The overall cultural landscape would be rehabilitated; methods vary by alternative. Asphalt would be reduced where feasible.
- Interpretive exhibits would be encouraged in rehabilitated historic buildings to relate military and American Indian history.
- Throughout the site, circulation for pedestrians and motorists would be enhanced over time to create a welcoming, safe, and sustainable environment. Paving, barricades and fences would be removed, sidewalks would be repaired and extended, trails added, certain internal roads would be redesigned and way finding would be improved.
- New construction would occur, such as plazas, site furnishings, outdoor gathering areas and/or small-scale historic reconstructions of military features; the extent varies by alternative.
- Increased public access to archeological digs would be provided.
- National Park Service staffing levels would increase to accommodate expanded operations and needs. Numbers and types of positions vary by alternative.

Alternatives Considered

This *Environmental Assessment* analyzed four alternatives. Brief summaries are below; more detailed descriptions of the alternatives can be found in Chapter 2.

Alternative A, The Extension of Current Management Practices in the East and South Barracks (No Action Alternative)

This alternative describes current conditions and the application of current management practices to the East and South Barracks. Under the no action alternative, the National Park Service would manage the barracks according to the *Fort Vancouver National Historic Site General Management Plan* (2003) and other relevant policies. The primary land use would be for National Park Service administrative, maintenance and storage functions and buildings would be occupied by the National Park Service and VNHHR partners. The National Park Service would not actively seek additional tenants. National Park Service and Fort Vancouver National Trust administrative offices would be relocated to building 991 along the Parade Ground. The HBC cultural landscape restoration would include reconstruction of the Summer House, restoration of the Orchard (south of building 422), relocate Fort visitor parking to the East Barracks, restore the historic U.S. Army period Maple Allée in the South Barracks, and preserve, rehabilitate and interpret the military landscape north of East 5th Street. Visitor access to the buildings and grounds would be somewhat increased, but there would be few new visitor services or amenities. Pending additional consultation as needed, building 409 would be removed. No substantial changes would be made to the appearance of the barracks and no major rehabilitation efforts would be undertaken.

Alternative B, A Vibrant, Urban District in a Historic Setting

Alternative B would focus on creating a vibrant urban district in the East and South Barracks to complement downtown Vancouver and the surrounding community with a variety of land uses, including retail, office, and residential. The primary land uses would be NPS administrative, maintenance, storage, and curatorial functions as well as a mix of offices, businesses, shops, restaurants, art galleries, and residences for the general public. There would be a heavy emphasis on commercial uses (restaurant, office etc.). National Park Service headquarters, costume storage and other administrative uses would be relocated to building 993 along the Parade Ground. Building 402 in the South Barracks would be the primary NPS maintenance facility and building 401 would be used for NPS maintenance and storage. Building 405 would be rehabilitated as a regional museum management facility, and building 991 would be rehabilitated for partners and special events. Pending additional consultation as needed, two contributing historic structures (buildings 749 and 750) and three noncontributing structures (buildings 409, 710, and 787) would be removed.

The cultural landscape rehabilitation would include enhancing access and improving vehicular and pedestrian circulation, establishment of lush, ornamental plantings, and updates to interpretive signage as needed. There would be a distinct emphasis on visitor appeal. The HBC cultural landscape restoration would be the same as alternative A, except that the Summer House would not be reconstructed, and a new interpretive loop trail would be restored through the historic Maple Allée. The barracks would have new features such as shuttle stops, crosswalks, plazas, lighting, trees, ornamental vegetation, etc. Roads, parking, and circulation would be redesigned for the new uses and to improve circulation, safety, drainage and appearance. Sidewalks would be repaired and extended to connect the barracks, the city of Vancouver, and the rest of the VNHR. Fleet parking would be provided in the South Barracks and some additional small surface lots could be constructed in the East Barracks. The new Fort visitor parking lot would be located east of building 405 in the South Barracks.

Alternative C, A Sustainable, Historic Campus for Public Service (Preferred Alternative)

The primary intent of this preferred alternative would be to create a dynamic, sustainable public service campus where the multi-layered history of the East and South Barracks is preserved and interpreted. Headquarters for Fort Vancouver National Historic Site, other NPS administrative uses, and certain interpretive functions would be relocated to either building 991, and/or 993, both of which are located along the historic Parade Ground. Buildings 400 and 401 in the South Barracks would be retained for NPS maintenance use and storage. Building 753 may also be used for NPS maintenance storage. Building 405 would be rehabilitated as a regional museum management facility for the National Park Service, partners, and the public. Other buildings would be available for use by VNHR partners and other public agencies and organizations with missions that are compatible with that of the National Park Service. Other uses would include retail and nonprofit functions.

Cultural landscape rehabilitation would be extensive. In addition to the actions in alternative B, the National Park Service would remove the gravel lot on the HBC Cemetery, and, pending additional consultation as needed, building 422 would be removed in order to extend historic HBC features such as the Garden, Summer House, Orchard and the U.S. Army period Maple Allée into the South Barracks. The cultural landscape restoration may be expanded to include reconstruction of historic cabins and topographical features in the western portion of the South Barracks reflective of the historic HBC Village. The plant palette would emphasize historic species that are also water wise, as well as some compatible natives. The emphasis on depicting/interpreting historic

conditions would focus on HBC history south of East 5th Street and early/late U.S. Army history in the East Barracks.

Alternative D, A Historic, Educational Campus for All

This alternative places a heavy focus on educational, community and nonprofit uses that support the focused interpretation of site-specific history, including HBC history (1829-1860) south of East 5th Street and U.S. Army history north of East 5th Street (1901-1948). Buildings would be rehabilitated to serve as offices, classrooms, community spaces and a limited amount of complementary commercial services.

As in alternative C, park headquarters, NPS costume storage, and other NPS administrative uses would be relocated to building 993. A portion of building 993 would also be devoted to the interpretation of early military history. Building 404 would become the primary NPS maintenance facility, and other South Barracks buildings may be retained for associated NPS maintenance use and storage. Buildings 749, 750, 753, and 787 would also be retained for these purposes. Building 405 would be rehabilitated as a regional museum management facility.

Building 991 could be reserved and rehabilitated for Fort Vancouver National Trust offices, as well as for special events. Buildings 400 and 402 could be reserved for maintenance or storage use by the Fort Vancouver National Trust or other partners. Pending additional consultation as needed, one contributing historic structure (building 422) and four noncontributing structures (buildings 401, 409, 410, and 710) would be removed.

In the other buildings, the National Park Service would encourage uses such as classrooms, offices, and community spaces through partnerships and other arrangements with educational institutions, nonprofits, and community organizations. Limited commercial services would also be allowed that support the primary functions of the site, such as a café, art gallery, or other functions. Overnight accommodations would be provided to support conferences, educational field schools, school groups, and elder hostel groups. General residential use by the public is not anticipated under this alternative.

Major objectives of landscape rehabilitation would include the depiction and interpretation of historic conditions, with a focus on HBC history south of East 5th Street, and early-to-late U.S. Army history in the East Barracks. Non-historic Douglas-firs along the southern edge of the Parade Ground would be removed to restore open views of building facades across the Parade Ground. Throughout the East and South Barracks, the plant palette would include historic species only. Cultural landscape restoration would include full restoration of the HBC Orchard and Garden to their full extents, as well as reconstruction of the Summer House. The Orchard and Garden would extend north to East 5th Street and encompass the area extending east from building 405 to the existing garden north of the reconstructed Fort Vancouver stockade. Landscape rehabilitation may be expanded to include reconstruction of historic cabins and topographical features west of building 405 in the South Barracks that are reflective of the historic HBC Village. Interpretation of the historic “Crossroads of the Pacific Northwest” would be provided at the former Mobile Army Surgical Hospital (MASH) site, along with parking for visitors to Fort Vancouver. Historic maps of the HBC and U.S. Army period both show a major intersection of historic roads, generally where East 5th Street and Alvord Road meet with Fort Vancouver Way. It appears that this intersection was in place at least by the early 1840s, and possibly as early as 1829. This intersection helped to define the landscape of the HBC and the U.S. Army, and it is suggested that its importance could be demonstrated by interpreting it as

the “Crossroads of the Pacific Northwest.” Fleet parking would be limited to the westernmost portion of the South Barracks to accommodate expanded restoration of the HBC Village.

Environmental Consequences

This *Environmental Assessment* also addresses the likely impacts of implementing each of the alternatives on historic structures; cultural landscapes and vegetation; archeological resources; museum collections; air quality and climate change; visitor resources; socioeconomic factors and land use; park operations; and health, safety and the environment.

The action alternatives are expected to have negligible to moderate adverse impacts on historic structures, and the no action alternative could have moderate to major impacts due to neglect of the historic buildings. Beneficial effects are expected from the rehabilitation of the various cultural landscapes, and negligible to moderate adverse impacts to cultural landscapes could result from the rehabilitation of buildings, removal of structures, landscape treatment actions, and the cultural landscape restoration itself. The no action alternative would have minor adverse impacts to archeological resources and the action alternatives will also have minor adverse impacts from ground disturbance, and potentially moderate adverse cumulative impacts when combined with the Columbia River Crossing (CRC) project. Impacts to museum collections would be moderate to major adverse with no action due to the lack of a new museum management facility, and beneficial to negligible with the action alternatives.

There could be negligible to moderate adverse effects to air quality due to increases in emissions from increased traffic to and within the barracks. Adverse impacts to traffic and circulation patterns and parking could be negligible to moderate. Beneficial effects are anticipated for the socioeconomic climate from the potential increase in jobs, increased spending, and available space for leasing; minor adverse effects to the local real estate market could also result because the additional properties on the market could compete with existing buildings. Beneficial effects to park operations would result from relocating National Park Service functions, development of a museum management facility, and improved infrastructure. Negligible to moderate adverse impacts to park operations are expected due to the additional staff needs, responsibilities and operating costs. Effects to public health and safety would be beneficial or negligible. There will be many benefits to visitors with only short-term adverse impacts during construction.

Numerous mitigation measures are included in the *Environmental Assessment* to help reduce impacts and protect resources. None of the adverse impacts would be extensive, or severe enough to result in impairment of value or resources on National Park Service lands.

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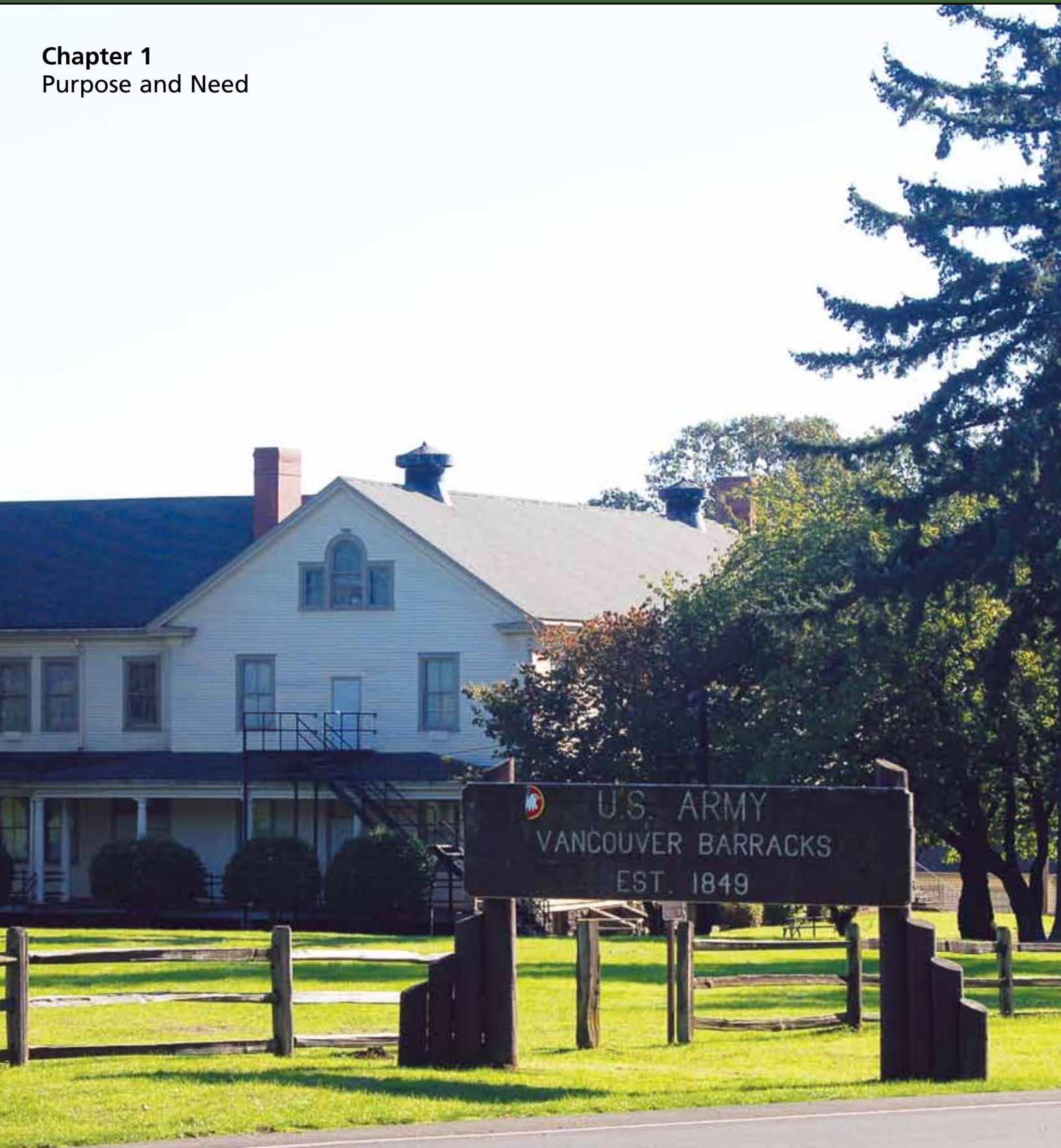
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Chapter 1 Purpose and Need



CHAPTER 1

Purpose and Need

The National Park Service is preparing this *Draft Master Plan and Environmental Assessment (Environmental Assessment)* to establish clear direction for the future use and rehabilitation of the East and South Barracks at Fort Vancouver National Historic Site (NHS). As the early terminus of the historic Oregon Trail, these historic military barracks and their grounds represent critical aspects of the history of settling the Pacific Northwest and the United States. These resources tell nationally significant stories about American Indian history and culture, the Hudson's Bay Company (HBC), and more than 160 years of continuous U.S. military occupation.

In 2011, the U.S. Army will relinquish, and ownership of the East and South Barracks will transfer to the National Park Service, including the lands, buildings, and other improvements. This change will effectively end the longstanding military presence at the Vancouver Barracks, which was the first major U.S. Army post in the Pacific Northwest. At this important moment in the evolving history of the site, it is of the utmost importance that the National Park Service carefully plans for the preservation and reuse of the East and South Vancouver Barracks as part of an urban national park site.

The U.S. Department of Defense currently maintains management responsibility of the East and South Barracks for use by the U.S. Army. However, the U.S. Army has ceased its operations at Vancouver Barracks and is relinquishing ownership of the East and South Barracks to the National Park Service, in accordance with the 1961 legislation and the U.S. Department of Defense 2005 Base Closure and Realignment (BRAC) Commission recommendations. The National Park Service will assume responsibility for an additional 33 acres of land, featuring a variety of cultural and natural resources.

To plan for this considerable change, the National Park Service must integrate established guidance for the Fort Vancouver NHS with recent changes and new insights. Among relevant past public planning documents for the national historic site, the *Fort Vancouver National Historic Site General Management Plan* (2003) provides general guidance for the entire park. It also offers some recommendations for the reuse of the East and South Barracks, which are described later in this chapter. However, at the time the *Fort Vancouver National Historic Site General Management Plan* (2003) was developed, it was not yet certain when the U.S. Army would relinquish these barracks. Therefore, the environmental analysis and decision making that accompanied the *Fort Vancouver National Historic Site General Management Plan* (2003) could not thoroughly address an unknown set of circumstances and timing with respect to this area. In 2005, the timeline for the U.S. Army's relinquishment of the East and South Barracks became known. The National Park Service is now able to revisit the recommendations in the *Fort Vancouver National Historic Site General Management Plan* (2003) to determine their impacts in light of these changes. For this reason, this *Environmental Assessment* is an implementation level plan that responds to the *Fort Vancouver National Historic Site General Management Plan* (2003) and provides more focused management direction for the East and South Barracks.

The ultimate outcome of this master planning effort will direct the National Park Service, its partners, and the public on the desired future conditions for the East and South Barracks as an urban part of the national park system and the Vancouver National Historic Reserve (VNHR). The *Environmental Assessment* will also establish how these conditions may best be achieved and maintained over time. The plan is meant to provide relevant, flexible guidance for park managers for the next twenty years.

It is important to note, that while this *Environmental Assessment* reports a clear vision for the Barracks' future, it may take time to carry out the actions directed by this plan. Implementation of some actions may be delayed or prevented by NPS budget restrictions, broader market conditions, delays in the relinquishment process, or requirements for additional data or environmental compliance for site-specific actions.

PURPOSE AND NEED FOR THE PLAN

There are a number of reasons that this *Environmental Assessment* is needed. Currently there is no specific guiding document for managing the East and South Vancouver Barracks after the relinquishment has occurred. Planning documents such as the *General Management Plan for Fort Vancouver National Historic Site* (2003) and the *Cooperative Management Plan for the Vancouver National Historic Reserve* (2000) provide an overall vision for the project area, but they do not offer in-depth guidance on the public use and rehabilitation of the East and South Barracks. No other plan has addressed management for these Barracks to the level of detail needed. Following the relinquishment, the National Park Service will inherit management responsibility for an additional 33 acres of land, including nationally significant cultural resources.

Moreover, changes in the way visitors access, understand, and use the structures and surrounding lands are expected. As a military post, public access and use of the East and South Barracks is currently limited, but in the future, public access to and interpretation of the resources will be a high priority. Visitation to this portion of the park is expected to rise somewhat, which will also have implications for how visitors access and experience adjacent portions of the park and surrounding lands.

For all of these reasons, this area requires a strong, vibrant vision and framework for management, which this *Environmental Assessment* provides. This *Environmental Assessment* is also designed to be flexible, offering future managers the background and information that will be necessary to make knowledgeable decisions about how best to implement the spirit of this plan.

In summary, the purpose of this *Environmental Assessment* is to collaborate with partners, other agencies and the public in order to:

- establish a comprehensive vision for the rehabilitation and public use of the East and South Barracks,
- determine clear direction for future site design and development, and
- recommend new uses and activities for the site and its buildings that are compatible with the NPS mission, the purpose and significance of Fort Vancouver NHS, the mission and goals of the VNHR, and the character and needs of the surrounding community and region.

SCOPE OF THIS ENVIRONMENTAL ASSESSMENT

This *Environmental Assessment* was prepared pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4341 et seq.), as amended in 1975 by P.L. 94-52 and P.L. 94-83, and analyzes three action alternatives and a no action alternative in order to determine their potential impacts on the human and natural environment. It fully describes both the existing conditions in the project area as well as the project alternatives, and it equally analyzes the effects of each project alternative on the environment. While the project area is specifically defined as the East and South Barracks, this plan is sensitive to the surrounding vicinity, including the entire Fort Vancouver NHS, the VNHR, the Columbia River, the city of Vancouver, and the larger metropolitan region. This *Environmental Assessment* is also intended to serve as an Assessment of Effect in compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470).

Certain topics are beyond the scope of this environmental assessment. They include issues surrounding the legal relinquishment of land and improvements, as well as the removal of U.S. Army management responsibilities for the property, and hazardous material remediation that the U.S. Army will undertake. Additionally, some additional environmental compliance would be required before implementation of certain actions proposed in the *Environmental Assessment*, as required by the NEPA, the NHPA, and other relevant legislation.

Several public comments suggested the *Environmental Assessment* include an analysis of the funding needed for implementation of recommendations contained within the *Environmental Assessment*. Financial feasibility has been deemed an important factor in developing and evaluating proposals contained in this plan. The *Environmental Assessment* contains cost estimates for deferred maintenance and major site improvements. Furthermore, findings generated by an outside firm regarding the financial feasibility of proposed building uses were a consideration in selecting the agency's preferred alternative. However, obtaining funding for project components of this *Environmental Assessment* is an NPS administrative action and does not relate to environmental impacts. As such, specific details about funding mechanisms are outside the scope of this planning effort and will not be included in the *Environmental Assessment*.

In addition, while this *Environmental Assessment* addresses management structure at a general level, specific details such as leasing arrangements and day-to-day responsibilities and operations for the park and partners is beyond the scope of this document. Rather, its focus is on the overall vision for the site, including physical site design, layout, and appropriate uses and activities that will preserve and enhance the special qualities of the East and South Barracks.

BACKGROUND OF THE PARK AND HISTORIC RESERVE

Fort Vancouver National Historic Site

Fort Vancouver NHS is a unit of the national park system, located in southwestern Washington on the north bank of the Columbia River.

At the time of Lewis and Clark's expedition (1803-1806) down the Columbia River to the Pacific Ocean, the Vancouver-Portland Basin contained one of the densest populations of American Indians north of Mexico. It is thought that the resident population of approximately 4,000-5,000 Chinookan people would swell to nearly 10,000 during the seasonal salmon runs, when both riverine and interior peoples, including Chinook, Cowlitz, Klikitat, Taidnapam, Sahala, Kalapuya, and Molala, would congregate in the area.

In 1829, the HBC, a British chartered corporation whose primary interests were in the fur trade of northern North America, moved its palisade to this area, establishing the headquarters and principal supply depot for its operations west of the Rocky Mountains. It was the initial administrative center of the Puget Sound Agricultural Company, the enterprise that linked the various HBC outposts through the trade of agricultural commodities produced in the Pacific Northwest. In the 1830s and 1840s, Fort Vancouver was the largest Euroamerican settlement in the Pacific Northwest.

In 1846, a treaty between Great Britain and the United States established the northernmost boundary of the United States at the 49th parallel, placing HBC Fort Vancouver in U.S. territory. In 1849, the U.S. Army established the Vancouver Barracks to defend settlement of the Oregon Territory, and the U.S. Army has occupied Vancouver Barracks ever since.

In order “to preserve as a national monument the site of the original HBC stockade (of Fort Vancouver) and sufficient surrounding land to preserve the historical features of the area” for “the benefit of the people of the United States” (62 Stat. 532 and the Senate Report on the legislation), Fort Vancouver National Monument was established on June 19, 1948.

In 1961, Congress passed legislation that today necessitates the development of the *Environmental Assessment*. On June 30, 1961, Congress passed an act (75 Stat. 196) to improve the conditions for achieving the legislative requirements of the park, re-designating the national monument as a national historic site. This legislation also enlarged the boundaries of the monument to include the East and South Barracks as well as other areas, adding a total of 130 acres of land “adjacent to, contiguous to, or in the vicinity of the existing monument.” There are now approximately 209 acres within the authorized national historic site boundary, including the East and South Barracks.

Within the boundary of the historic site, the National Park Service currently owns and manages approximately 165 out of 209 total acres, while the U.S. Army, the state of Washington and the City of Vancouver manage the remainder (Figure 1). Once the relinquishment of the East and South Barracks is complete, this management structure will change, as the Department of Defense will no longer own or manage any portion of the barracks. In addition, although not a part of this *Environmental Assessment*, it should be noted that the McLoughlin House NHS, located in Oregon City, Oregon, was added by an act of Congress as a unit of Fort Vancouver NHS in 2003.

Vancouver National Historic Reserve

In 1996, the VNHR was established (Public Law 104-333, Section 502). Though not a unit of the national park system, the 366-acre VNHR includes all land within the legal boundary of Fort Vancouver NHS; thus, the national historic site is essentially a park within a park because of the legislatively established national historic reserve that surrounds it. The national historic site includes the reconstructed HBC Fort, the Parade Ground, the Pearson Air Museum complex, a portion of Pearson Field Airport, the Columbia River waterfront property, and the East and South Barracks. The VNHR includes national park lands, plus additional areas such as the City of Vancouver owned West Vancouver Barracks, the remaining portion of Pearson Field Airport, Officers’ Row, and portions of the Columbia River waterfront.

The VNHR is an affiliated area cooperatively managed by a partnership between the National Park Service, the U.S. Army, the City of Vancouver, and the state of Washington. A partner in the management of the VNHR and a signatory agency to its cooperative management plan, the National Park Service is committed to communicate and coordinate its planning and operational activities within the context of the larger VNHR. The National Park Service also serves as the lead partner in education, interpretation, and cultural resources for the VNHR. In addition, the efforts of the National Park Service and other VNHR partners are supported by the work of the Fort Vancouver National Trust, the official nonprofit organization for the VNHR.

Although the East and South Barracks lie entirely within the boundary of Fort Vancouver NHS, the National Park Service has engaged VNHR partners and others throughout the development of this *Environmental Assessment*. Their involvement in this process is critical to the successful implementation of the recommendations contained within this *Environmental Assessment*.

Purpose and Significance of Fort Vancouver National Historic Site

Purpose of Fort Vancouver National Historic Site

As interpreted through enabling legislation, the purpose of Fort Vancouver NHS is to preserve and interpret the following:

- the site of the 19th century HBC's activities,
- settlement of the Oregon Country (which became Oregon Territory in 1848), and
- the establishment of the U.S. Army's Vancouver Barracks.

Aspects of the park's purpose are tied directly to the project area for the *Environmental Assessment*. Therefore, as the National Park Service assumes ownership of the East and South Barracks, the agency has a tremendous opportunity to more fully satisfy the intent of its legislated park purpose.

Significance of Fort Vancouver National Historic Site

During the development of the *Fort Vancouver National Historic Site General Management Plan (2003)*, the significance of the national historic site was determined to be the following:

- From 1825 through 1846 Fort Vancouver was the site of the HBC's administrative headquarters and supply depot west of the Rocky Mountains. As a result, the HBC greatly influenced the economic, political, and cultural development of the Pacific Northwest.
- Fort Vancouver was the Pacific Northwest center for fur trade and other commerce, agriculture, and industry between 1825 and 1860.
- Fort Vancouver was the first terminus of the Oregon Trail (water route along the Columbia River).
- Vancouver Barracks, established in 1849, was the first military post developed in the Pacific Northwest. It served as headquarters for the U.S. Army operations into the 20th century.
- Fort Vancouver NHS contains extensive archeological resources, both *in situ* (in original location) and recovered, which provide important information about the physical relationships and the cultural and economic operation of the HBC and the U.S. Army.

Some of these statements of significance for the Fort Vancouver NHS relate directly to the project site for the *Environmental Assessment*. For example, there is a great opportunity to further interpret the Vancouver Barracks as the first military post in the Pacific Northwest, now that the National Park Service is assuming ownership of these historic barracks structures and their surrounding grounds.

PROJECT BACKGROUND

Over the last several decades, the U.S. Army has been scaling back its operations at Vancouver Barracks. In 1986, the City of Vancouver took title to buildings along Officers' Row through a federal surplus property transfer. Based on 2000 legislation, the U.S. Army deeded ownership of the West Barracks to the City of Vancouver in 2007. Both Officers' Row and the West Barracks are outside the authorized boundaries of the national historic site. Officers' Row and some of the

buildings within the West Barracks have been rehabilitated to accommodate residential, office, and public uses. Additional rehabilitation of the West Barracks is planned.

In 2005, the U.S. Department of Defense issued the recommendations of the BRAC Commission. Within that report, the commission recommended closing the Vancouver Barracks and relocating headquarters operations elsewhere. Later in 2005, the Department of the Interior approved the acquisition by the National Park Service of property that included the East and South Vancouver Barracks, which are located within the authorized park boundaries. The U.S. Army vacated the Barracks in September 2011 and will soon relinquish ownership of the East and South Barracks—including the lands, buildings, and other improvements—to the National Park Service.

The National Park Service has been working with the U.S. Army over the last five years to coordinate the relinquishment of the East and South Vancouver Barracks. With the support of VNHR partners and others, the National Park Service has attended numerous meetings with the U.S. Army to determine the details of the relinquishment. In addition, a number of assessments are being conducted to describe the condition of the resources. These include a historic structures report on the historic structures in the East and South Barracks, condition assessments of buildings, an environmental site assessment, and utilities studies, some of which are described on the following pages.

PROJECT AREA DESCRIPTION

The authorized boundary of Fort Vancouver NHS is generally defined by the Columbia River to the south, Evergreen Boulevard to the north, East Reserve Street to the east, and Fort Vancouver Way and Interstate 5 to the west (Figures 1 and 2). It should be noted that the project area discussed in this document is slightly larger than the formal boundaries of the land involved in the relinquishment of the East and South Barracks from the U.S. Army to the National Park Service. The formal boundaries being relinquished are shown in Figure 2, overlaid by the project area boundary. It is necessary to discuss this larger project area, rather than the formal boundaries of the relinquishment, due to the fact that the potential implementation of each of the alternatives presented in this document will have effects beyond the formal boundaries of the relinquishment. Located within walking distance of downtown Vancouver and within the city's Central Park district, Fort Vancouver NHS is a cherished part of a regional system of parks and open space throughout the Vancouver and Portland metropolitan areas. The national historic site is within Washington's Third Congressional District in Clark County.

In 2003, the national historic site boundaries were expanded to include the McLoughlin House NHS, located in Oregon City, Oregon.

Within the national historic site, the East and South Vancouver Barracks comprise the project area for this *Environmental Assessment* (Figure 2). The East Barracks lie just east of Fort Vancouver Way and north of East 5th Street. The South Barracks lie south of East 5th Street and are bounded by Interstate 5 to the west and parking for the reconstructed fort to the east.

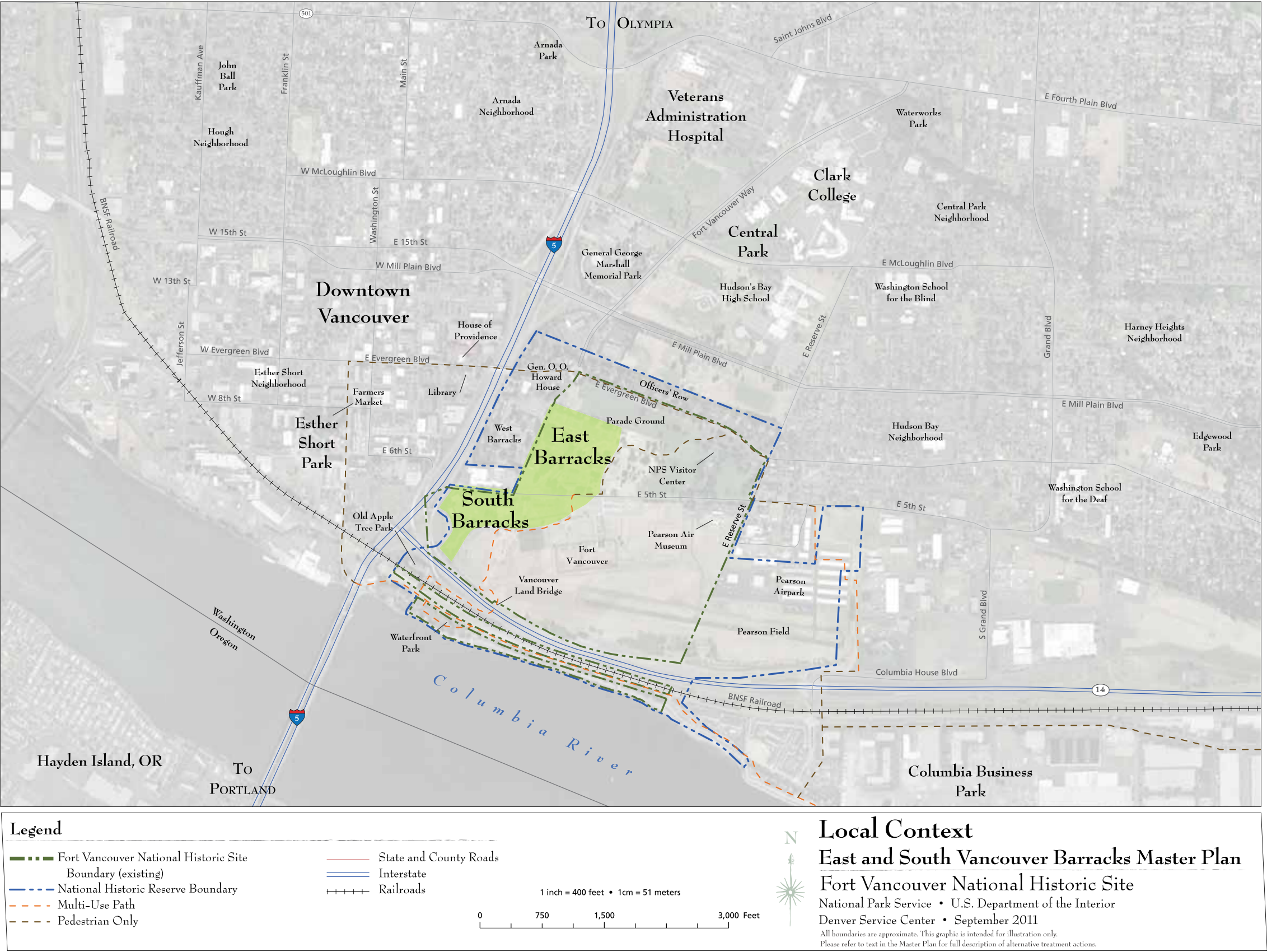


Figure 1. Local Context and Setting of the East and South Barracks



This project area encompasses roughly 33 acres and includes twenty historic military buildings that are listed in the National Register of Historic Places (NRHP) as contributing resources of the VNHR National Historic District (Figure 2). Many of these buildings were constructed in the first half of the 20th century and, therefore, reflect a transition from 19th- to 20th-century military architectural styles. Fronting the historic Parade Ground along the northern boundary of the project area, four historic barracks make up an attractive cluster of buildings in relatively good condition. An historic gymnasium and a number of other military support structures in various states of repair comprise the remainder of the East Barracks buildings.

Six brick buildings in the South Barracks were built by the U.S. Army during the 1980s to house equipment and maintenance functions. These modern structures do not contribute to the historic significance of the VNHR National Historic District.

The East and South Vancouver Barracks are internationally appreciated for their history, architecture, and archeological resources. Many nationally and internationally recognized military personnel have been stationed at Vancouver Barracks at various points in their careers. These include General Ulysses S. Grant, General George C. Marshall (author of the Marshall Plan and recipient of the Nobel Peace Prize), General Oliver O. Howard (Commissioner of the Freedmen's Bureau), as well as a number of Civil War leaders from both the North and South.

The project site is also notable for its cultural landscape, which includes heritage trees and mature groves of Oregon white oaks, the only oak species native to the state of Washington. In addition, there are highly significant archeological resources associated with a cemetery that dates to the HBC period.

For the last century, the East and South Barracks have primarily accommodated U.S. Army activities and personnel. Public access into the heart of the East and South Barracks has been limited and restricted altogether in some areas. No public access into buildings has been allowed, other than in building 754, the Shoppette, a retail establishment managed by the Army Air Force Exchange System. Chain link fencing surrounds the majority of the South Barracks, and access into the East Barracks from the central green space to the east is limited by wood fencing. Fort Vancouver Way is heavily used to access the West Barracks, Officers' Row, the Federal Highway Administration facility, and the Clark County Veterans War Memorial located along the western border of the East Barracks at the HBC Cemetery. In addition, walkers, runners, and bikers often use the portion of East 5th Street that separates the East and South Barracks in order to access multiuse trails that cross the Fort Vancouver NHS.

PLANNING AND LEGAL FRAMEWORK

Relevant Plans

Within the last twelve years, the National Park Service and partners have developed a number of plans for Fort Vancouver NHS, the VNHR, and the surrounding vicinity that remain relevant to this planning effort. Some plans contain specific recommendations for the rehabilitation of the East and South Barracks. Other plans report the overall direction for management in the Fort Vancouver NHS and VNHR, as well as the desired conditions for the Vancouver Barracks as a whole. Some proposals contained within these plans have already been carried out, while others have not.

The following summary describes these past plans and identifies the ways in which they contribute to the development of the *Environmental Assessment*. The *Environmental Assessment* assesses the applicability of these past recommendations to current circumstances in the East and South Barracks. It also builds on established direction and provides more focused guidance appropriate to a new set of circumstances.

Fort Vancouver National Historic Site General Management Plan (2003)

All national park units are required by law to have a general management plan. These comprehensive plans are meant to establish guiding visions for park units that effectively direct future management and resource stewardship in ways that fulfill the NPS mission and the park purpose. Adopted in 2003 and amended in 2007 to include the addition of the McLoughlin House Site in Oregon City, the *Fort Vancouver National Historic Site General Management Plan 2003* laid out this kind of broad guidance. It identified possible management actions for the East and South Barracks, in the event these buildings and grounds would later be deemed excess to the needs of the U.S. Army. These recommendations include restoring the Vancouver Barracks' cultural landscape, adapting and reusing existing historic buildings, providing additional parking, staging public transportation operations, and incorporating administrative functions into East Barracks buildings that front the Parade Ground. Other related General Management Plan proposals include recommendations to eliminate the temporary gravel parking area adjacent to the reconstructed Fort off East 5th Street, construct a replacement parking area (with a minimum of 30 spaces) within East or South Barracks, and resurface East 5th Street with a material such as decomposed granite that is compatible with the cultural landscape.

Anticipating the possibility that the U.S. Army would determine the East and South Barracks in excess of their needs, the *General Management Plan* included the barracks within a particular management zone called the "Historic Zone," in order to distinguish the kind of resource conditions and visitor experiences that could occur there once the National Park Service obtained ownership. In the Historic Zone, the management focus is on maintaining and protecting historic resources, restoring the cultural landscape, recreating elements of the historic scene, maintaining visitor facilities, and mitigating impacts from human use while providing for quality visitor experiences.

Cooperative Management Plan for the Vancouver National Historic Reserve (2000)

The *Cooperative Management Plan for the Vancouver National Historic Reserve* represents a vision shared by four public agencies and their partners for the coordinated preservation and management of the VNHR for public benefit. These agencies include the National Park Service, the U.S. Army, the Washington Department of Archeology and Historic Preservation (DAHP), and the City of Vancouver Washington. The plan recommends a continuing and active public/private partnership in administering the shared assets of the VNHR, with support from the Fort Vancouver National Trust, a private nonprofit organization.

Adopted in 2000, the *Cooperative Management Plan* presents the following three broad goals for the VNHR:

- preservation of historic structures, physical assets, and cultural landscapes,
- education and interpretation of significance and history of area, and

- maintenance of public use of, and accessibility to, the VNHR.

Based on these goals, primary interpretive themes were then developed for the VNHR to guide interpretive and educational program development; one of these themes is particularly relevant to the rehabilitation and public use of the East and South Vancouver barracks:

- The Vancouver Barracks was the first U.S. Army post in the Pacific Northwest and served as the headquarters for the vast Department of the Columbia. Vancouver Barracks was a center for U.S. military operations in the region for the last half of the 19th century and into the 20th century. National mobilization efforts took place here, supplying lumber and ships for two world wars.

Although focusing on the West Barracks, the *Cooperative Management Plan* also describes desired future conditions for the Vancouver Barracks as a whole, which are applicable for the East and South Barracks. For example, it states that the Vancouver Barracks should be adaptively reused to accommodate a mix of public and private uses. It also suggests that interpretive areas be dedicated to the historic role of the U.S. Army, and to locate these areas in one or more of the historic barracks buildings.

Long-Range Interpretive Plan for Vancouver National Historic Reserve with Special Emphasis on Fort Vancouver National Historic Site and Vancouver Barracks (2004)

This long-range interpretive plan is essentially two documents in one, as it merges both the *Fort Vancouver National Historic Site Long-Range Interpretive Plan* with the *Vancouver National Historic Reserve Long-Range Interpretive Plan*. Developed cooperatively by the National Park Service, the VNHR, the Fort Vancouver National Trust, and others, this plan incorporates guidance from the *General Management Plan*, the *Cooperative Management Plan*, and other relevant planning documents to further define the interpretive stories to be told and the various experiences to be made available to visitors to the VNHR.

The plan places special emphasis on the West Barracks. No specific recommendations are made for the East and South Barracks; however, the plan does discuss the HBC Cemetery, which is located inside the project area for this *Environmental Assessment*. The *Long-Range Interpretive Plan* suggests installing a wayside exhibit that further interprets the history, configuration, and make-up of the HBC Cemetery. It also proposes allowing American Indians, Hawaiians, and other groups to visit, reflect, and hold ceremonies on the Cemetery grounds.

The site's long-range interpretive plan has also been updated to include the Village area, and highlights efforts to expand programs into the South Barracks area.

Cultural Landscape Report for Vancouver National Historic Reserve (2005)

The 2005 *Cultural Landscape Report for Vancouver National Historic Reserve* describes the historical development of the cultural landscape of the entire VNHR, including attention to the history of the East and South Barracks. The report identifies important features that contribute to the integrity of the Barracks' cultural landscape. It establishes a treatment plan that recommends the rehabilitation of historic pathways, circulation patterns, and buildings, as well as ornamental landscaping around the East Barracks buildings. The report also recommends the preservation of cultural landscape features such as site topography, spatial organization, and tree groves.

In 1992, the National Park Service developed a cultural landscape report for Fort Vancouver NHS that focused on the reconstruction of the HBC Fort. However, for this *Environmental Assessment*, the 2005 report regarding the VNHR provides more up-to-date and relevant information. Therefore, this *Environmental Assessment* gives primary consideration to the 2005 cultural landscape report.

Vancouver National Historic Reserve Long-Range Plan (2006)

This long-range plan for the VNHR was developed to provide vision and guidance for the growth and development of the VNHR over the 25 years following its adoption in 2006. The vision and guiding principles that it establishes are meant to direct the development of capital projects and operational/programmatic tasks to be completed in 5 years, 10 years, and 25 years.

The plan was jointly developed by the City of Vancouver, the National Park Service, and the Fort Vancouver National Trust—the three organizations that have primary responsibility for the day-to-day operation of the VNHR, in consultation with the Washington State Department of Archeology and Historic Preservation. At the time the plan was adopted, the fourth official partner, the U.S. Army Reserve, still occupied the East and South Vancouver Barracks, although they had announced their intention to leave the site. Extensive planning for this portion of the barracks was, therefore, not part of this plan.

The Village Development Concept Plan (2005)

Bordering the southeastern edge of the project area for the *Environmental Assessment*, the Village is an archeological site that was once occupied by HBC employees stationed at Fort Vancouver between 1825 and 1860. Members of the Village represented more than 30 different American Indian groups whose homelands spanned the continent, as well as Hawaii.

As directed by the *Fort Vancouver National Historic Site General Management Plan 2003*, the National Park Service recently reconstructed a portion of this historic Village. In preparation for that process, staff prepared the *Village Development Concept Plan* in 2005 to establish specific objectives for this reconstruction and restoration. Since that time, two homes, an accessible trail made of decomposed granite, and a split rail fence have been reconstructed. Opening ceremonies were held in June 2010.

The *Village Development Concept Plan* will be updated to include areas in the South Barracks, with particular emphasis on reestablishing landscape features and on interpreting the following sites:

- houses related to Native Hawaiian occupation in the Village,
- the house inhabited by an Iroquois employee (the only dwelling to which a specific American Indian occupant can be tied), and
- the corridor between buildings 404 and 405.

Fort Vancouver National Historic Site Museum Management Plan Addendum (2010)

A museum management plan is a park-specific document that focuses on assessing and developing a park's museum programs, which must meet two key purposes: making museum collections available to the public and preserving the collections. The museum management plan, a fundamental National Park Service resource management planning document, was previously

completed for Fort Vancouver NHS in 1998. Since that time, the park has expanded and greatly improved its museum management infrastructure and capabilities, along with its research and collection-related education programs. However, the park staff realized that an evolving regional museum management strategy and upcoming changes to the management structure of the VNHR required an update or an addendum to the park's plan.

The relinquishment of the East and South Barracks creates opportunities for park staff to expand and improve the overall museum management program, museum management-based public education and outreach activities, and resource-related partnerships. In addition, the museum management plan identifies future opportunities related to the U.S. Army relinquishment of the East and South Barracks, including opportunities for expanded interpretation and additional facilities for curation. For example, building 405 is identified as a prime location for a museum management facility. In consideration of these opportunities, the *Environmental Assessment* dovetails with the recommendations contained in this museum management plan.

West Vancouver Barracks Reuse Plan (2002)

In 2003, the U.S. Army deeded ownership of the West Barracks, which encompassed approximately 15 acres and 16 buildings between Interstate 5 and Fort Vancouver Way, to the City of Vancouver. Prior to this transfer, the firm E. D. Hovee and Company prepared the *West Vancouver Barracks Reuse Plan* for the City of Vancouver and the Fort Vancouver National Trust. This reuse plan established preferred uses, rehabilitation costs and the financial feasibility of the adaptive reuse of the western portion of the larger Vancouver Barracks. The plan recommended that the West Barracks accommodate a complementary mix of programs and services, including education, the arts, hospitality, and office and residential uses. Many of these proposals have been carried out to date.

City of Vancouver Central Park Plan Update (2008)

The *City of Vancouver Central Park Plan Update* represents an implementation strategy recommended by the *Vancouver Comprehensive Plan 2003-2023* (City of Vancouver, 2008). The planning area for the Central Park Plan incorporates the VNHR, as well as City-owned properties to the north and the grounds of Clark College. Within this area, the plan recommends the development and enhancement of existing and new gateways, traffic calming, improved pedestrian crossings, multi-modal access and links to surrounding neighborhoods, as well as interconnecting trail networks. A key feature of the plan is the creation of a central promenade that would connect the VNHR with areas to the north, lead visitors to the reconstructed fort within the Fort Vancouver NHS, and provide a link to the Land Bridge to the south. The suggested alignment of this promenade would connect to the Fort Vancouver NHS via the park road or a developed sidewalk along the park road.

Vancouver Barracks Historic Structures Report (August 2010)

This historic structures report provides documentary, graphic, and physical information about the history and existing conditions of buildings within the entire Vancouver Barracks area, including the East and South Barracks. Because the report identifies important contributing features for each structure, as well as the level of sensitivity that those features demonstrate with respect to alterations, it serves as an important guide for all potential changes made to these historic properties during future repair, rehabilitation, or restoration. It records the findings of research and investigation for future researchers, planners, designers, tenants, and contractors. For these reasons, this report serves as a critical and effective tool for proposing and evaluating potential reuse options for these historic structures.

Value Analysis Study Report Utility Upgrades: East and South Barracks, Fort Vancouver National Historic Site (2010)

The National Park Service has evaluated projects at Fort Vancouver NHS to address improvements and upgrades to bring the existing utilities into compliance with current codes and standards, as well as to meet the anticipated level of service (LOS). These improvements affect potable water, sanitary sewer, storm drain, and electrical/telecommunications utilities at the historic site. Due to the number of different utilities and alternatives within each utility that needed to be addressed in this value analysis study, each alternative was discussed and evaluated separately. The purpose of conducting a value analysis on these improvements is to ensure that discussion and design take into consideration the natural and historical significance, cost, and general constructability in order to find the alternative that best satisfies the project's goals and objectives. With respect to landscape treatments, the preferred alignment of utilities was generally considered in the development and analysis of alternatives for the *Environmental Assessment*.

Service-wide Laws and Policies

Many regulations and Executive Orders are typically addressed in NEPA documents. The following is a summary of guiding documents and regulations that are relevant to the *Environmental Assessment*. Other applicable regulations that were taken into consideration in the development of this *Environmental Assessment* and the analysis of the impacts are identified in Chapter 3.

National Park Service Organic Act

The National Park Service Organic Act of 1916 established management criteria for all units of the national park system. The act directs the National Park Service to manage units “to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations” (16 U.S.C. Sec. 1). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that the National Park Service must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress” (16 U.S.C. Sec. 1 a-1).

National Parks and Recreation Act of 1978

Public Law 95-625, the National Parks and Recreation Act of 1978, requires the preparation and timely revision of general management plans for each unit of the national park system. National Park Service *Management Policies 2006* calls for each general management plan to “...set forth a

management concept for the park [and] establish a role for the unit within the context of regional trends and plans for conservation, recreation, transportation, economic development, and other regional issues...” Congress also specifically directed the National Park Service to consider, as part of the planning process, what modifications of external boundaries might be necessary to carry out park purposes (16 U.S.C. 1a-7[b][4]).

General Authorities Act of 1970

This act defines the national park system as including “...any area of land and water now or hereafter administered by the Secretary of the Interior through the National Park Service for park, monument, historic, parkway, recreational, or other purposes...” (16 USC 1c[a]). It states that “...each area within the national park system shall be administered in accordance with the provisions of any statute made specifically applicable to that area...” (16 USC 1c[b]), in addition to the various authorities relating generally to NPS areas, as long as the general legislation does not conflict with specific provisions.

National Historic Preservation Act of 1966

The National Historic Preservation Act of 1966 (as amended) requires that proposals and alternatives relating to actions that could affect cultural resources both directly and indirectly, and the potential effects of those actions, be provided for review and comment by the State Historic Preservation Officer, Tribal Historic Preservation Officer, and the Advisory Council on Historic Preservation (ACHP). Therefore, this *Environmental Assessment* will be submitted to the appropriate offices for review and comment according to the procedures in 36 CFR Part 800 and delineated in the 2008 Programmatic Agreement signed by the National Park Service, the National Conference of State Historic Officers, and the ACHP. Sections 106, 110, and 111 pertain to this project and are further described in the Environmental Consequences chapter.

Management Policies 2006

NPS *Management Policies* (2006) operates as the basic servicewide policy document of the National Park Service. This volume of policies includes direction for preserving and protecting cultural resources, natural resources, processes, systems, and values (National Park Service 2006). It is the goal of the National Park Service to avoid or minimize potential impacts to resources to the greatest extent practicable, consistent with management policies.

Secretary’s Standards for Treatment of Historic Properties and Cultural Landscapes

The Secretary of the Interior has established a set of standards to guide the treatment of historic properties and cultural landscapes. These standards are neither technical nor prescriptive, but are intended to promote responsible preservation practices that help protect our nation’s irreplaceable cultural resources. They cannot be used to make essential decisions about which contributing features of a cultural landscape should be retained and which can be changed. But once a specific treatment is selected, the standards can provide the necessary philosophical framework for a consistent and holistic approach for a cultural landscape project. All work done on contributing historic properties and landscape features within the planning area for the *Environmental Assessment* will be conducted in accordance with these standards.

Guiding Laws, Policies and Regulations Specific to Fort Vancouver National Historic Site Fort Vancouver National Historic Site Legislation

On June 19, 1948, an act established Fort Vancouver National Monument, including the site of the HBC stockade, as a federal area of national historical importance for the benefit of the people of

the United States (62 Stat. 532). An act on June 30, 1961 (75 Stat. 196) revised the boundaries and re-designated the protected area as Fort Vancouver NHS. In advance of NPS ownership, this 1961 legislation deliberately added the East and South Vancouver Barracks to the NHS, thus recognizing their national significance. This legislation is a critical driver for this *Environmental Assessment*.

On July 29, 2003, President George W. Bush signed Public Law 108-63 (known as H.R. 733), which authorizes the Secretary of the Interior to acquire the McLoughlin House NHS in Oregon City, Oregon for inclusion in Fort Vancouver NHS. The National Park Service now manages this site.

Vancouver National Historic Reserve Legislation

In 1996, Congress established the VNHR to provide for the coordinated preservation, public use, and management of historic sites within Vancouver, Washington. The 366-acre VNHR includes Fort Vancouver NHS, Vancouver Barracks, Officers' Row, Pearson Field Airport, the Water Resources Education Center, and portions of the Columbia River waterfront. The legislation established a cooperative management partnership composed of four VNHR partners, including the National Park Service, the City of Vancouver, the U.S. Army, and the state of Washington.

Vancouver National Historic Reserve Conservation District

Incorporated into Section 20.640.040 of Vancouver's municipal code, the Vancouver National Historic Reserve Conservation District includes the Vancouver Barracks, Fort Vancouver NHS, Pearson Field Airport, Jack Murdock Aviation Center, and Waterfront Park. The code lays out the following purpose for the District: *The federally designated Vancouver National Historic Reserve is unique in its cultural and historic resources. The purpose of this section is to establish standards that protect those resources and the historic character of the [Historic] Reserve. To do so, the city is establishing an area of special regulation in the Vancouver Central Park Plan District. The Historic Reserve Conservation District is intended to result in a seamless environment that provides overall design and development standards while reflecting area and era specific standards within the Conservation District.*

The Defense Base Realignment and Closure Act of 1990

The Defense Base Realignment and Closure Act of 1990, Public Law 101-510, as amended, established the legal basis for the transformation that the U.S. Department of Defense is currently undergoing in order to reorganize the number and nature of its bases. In 2005, the Department of Defense updated statutory requirements related to this process and produced a set of recommendations for the realignment and closure of certain bases. In the 2005 Defense BRAC Commission report, the Department of Defense recommended closing Vancouver Barracks and relocating the 104th Division to Fort Lewis, Washington (recommendation #54). This recommendation to close these Barracks triggered the need for this *Environmental Assessment*.

THE PLANNING PROCESS AND PUBLIC INVOLVEMENT

Public Involvement

The National Park Service hosted numerous internal planning meetings with an interdisciplinary team (IDT) from the National Park Service, City of Vancouver, and Fort Vancouver National Trust, to obtain preliminary ideas on the scope of the plan as well as potential issues and impact topics (Figure 3). Following that process, the park conducted public scoping from March 20 through May 1, 2010.

Because the East and South Barracks are treasured by the general public and the 26 federally recognized American Indian tribes and Native Hawaiian groups affiliated with the Fort Vancouver NHS, public involvement is essential to planning for this area. The National Park Service made every effort to engage these agencies, organizations, and members of the public during the development of the *Environmental Assessment*. This planning process continues to emphasize open and inclusive communications to engage the public and to understand their desires and concerns. Completing the *Environmental Assessment* will require ongoing consultation and coordination with the many entities involved in planning and implementation.

During the public scoping phase of the planning process, the National Park Service conducted several public meetings in April 2010 to gather the public's ideas on what the plan should address. These meetings were designed to promote a high level of interaction between the public and the planning team. National Park Service staff set up listening stations at the meetings where the background, issues, and vision and goals for this project could be discussed in depth. Maps, posters, and handouts presented this material in a visual format and helped guide discussion. Materials were made available online at a website specifically established for this project (<http://parkplanning.nps.gov/fova>). NPS staff also led walking tours of the project site in order to familiarize attendees with the East and South Barracks. The National Park Service also announced the opportunity to be involved via the project website, a scoping newsletter and postcard, as well as at the park visitor center. Public comments received during this time greatly influenced the development of the *Environmental Assessment*.

The planning process and public involvement are described in further detail in the "Consultation and Coordination" portion of this document.



Figure 3. The planning process for this *Environmental Assessment* included public meetings, where public comments were sought and collected. (National Park Service)

Vision and Goals for the East and South Vancouver Barracks

The planning team developed vision and goals to help guide development of the *Environmental Assessment*. These statements served as an important point of reference throughout the planning process. One reason for developing a vision and goals was to synthesize the relevant guidance contained in established plans such as the cooperative management plan for the VNHR the *Fort Vancouver National Historic Site General Management Plan 2003* for Fort Vancouver NHS, and other documents. In addition, the vision and goals incorporate new insights of the planning team. Taken together, these statements communicate key values that should be preserved and perpetuated, and they articulate important aims of management and site design. The vision and goals were presented for review at the public scoping meetings.

VISION STATEMENT

Located in a thriving metropolitan area along the Columbia River, the Vancouver Barracks is a nationally significant resource and a treasured part of its local community. An intricate mosaic of stories and well-preserved structures, landscapes, and archeological resources, the Barracks provides rare opportunities to engage diverse audiences in the dynamic history of the Pacific Northwest. Through the adaptive reuse of historic military structures and a lively mix of educational, commercial, recreational, and cultural activities, the Vancouver Barracks models environmental and cultural stewardship and fosters deep connections between people and place.

Although the East and South Barracks is the subject of this *Environmental Assessment*, team members felt it was important to develop a vision statement that addressed the Vancouver Barracks as a whole. In this way, the statement emphasizes the important relationship that the project area maintains with its immediate surroundings. This vision statement expresses in very broad terms what the Vancouver Barracks should be like in the future, and what planners hope to achieve there.

Using the vision statement as a guide, the team then developed goals for specific topics. Goals are descriptive, open-ended statements of desired future conditions. While still very broad, they provide a finer level of direction than the vision. Goals define general targets in support of the vision and the park purpose. They also helped define the criteria by which the planning team could evaluate the success of the different alternatives in order to select an agency-preferred alternative (described in Chapter 2).

The following goals reflect input received throughout the internal and public scoping phases:

Cultural Resources

Historic Structures: Historic structures should be preserved through adaptive reuse. All rehabilitation will be conducted in accordance with the *Secretary of the Interior's Standards*

for the Treatment of Historic Properties (36 CFR Part 68. 1995). Public access to and enjoyment of historic buildings will be prioritized, with an emphasis on uses that are compatible with historic themes, function, design, and economic viability. The strategic removal of select structures may be considered, following appropriate compliance procedures.

Cultural Landscapes: Rehabilitation of the cultural landscapes will proceed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*—with an emphasis on preserving historic features. Site design will retain historic landscape patterns and features to the extent possible, such as spatial organization, views, circulation, and vegetation. Addition of new features will be compatible with the historic character of the Barracks.

Archeological Resources: The *in-situ* preservation of archeological sites and materials will be a top priority. When the removal of materials is necessary, excavation and analysis will employ the latest archeological methodologies in consultation with interested parties and partners. All recovered archeological artifacts will be catalogued and curated to federal standards. Responsive site design and maintenance will take seriously the preservation of archeological resources.

Museum Collections: As museum collections expand due to archeological discoveries and other sources, the tangible history of Vancouver Barracks will be further preserved, interpreted, and researched. Appropriate items for acquisition are defined in the Fort Vancouver NHS approved Scope of Collection statement, and may include photographs, documents, clothing, personal items and other materials associated with the Barracks buildings, soldiers and their families, and other relevant stories.

Transportation, Access and Circulation

Management should promote universal access and alternative means of transportation to the Barracks, including pedestrian, bike, and public transit. Site design will provide the appropriate level of parking, while minimizing harmful effects on natural, cultural, and scenic resources. Circulation networks would be informed by historic conditions and will emphasize connectivity within the VNHR and to the surrounding community.

Public Use and Enjoyment

Public use would enliven the East and South Barracks through a wide range of visitor opportunities appropriate to the historic setting. Public use and enjoyment of the Barracks will foster appreciation for their significance within the larger park and VNHR, and underscore the National Park Service's continuing relevance to diverse audiences.

Education and Interpretation

Education and interpretation should be part of every visitor's experience. The experience of the Barracks will be linked to clear interpretive themes, such as prehistoric settlement of the site, the HBC, and U.S. Army occupation. Wayside exhibits, publications, and digital media will encourage a self-guided, contemplative experience of the site, which will connect visitors to its resources and stories.

Development Character

New development—which may include historical reconstructions—will be limited, and proposed only if it is essential to public use, enjoyment, and understanding. Design should

integrate with historic themes, taking inspiration from historical precedent. Design of signs and other features throughout the Vancouver Barracks will be consistent, facilitating a seamless experience of the entire setting.

Environmental, Social, and Economic Sustainability

Rehabilitation of the Vancouver Barracks should promote a sustainable natural, social, and economic environment. New facilities will embody environmentally friendly practices such as on-site stormwater management and the responsible use of materials and energy. A vibrant Barracks will provide tangible, long-term benefits to the surrounding community.

Park Operations

Existing and new facilities in the East and South Barracks will support the operations of the National Park Service and other VNHR partners. Administrative and maintenance functions will be sited with consideration for their impacts on the setting, including factors such as visibility, public access, and adjacent land uses.

ISSUES AND IMPACT TOPICS

As mentioned above, the National Park Service conducted both internal and public scoping to define potential issues and impact topics. An issue is defined as an opportunity, conflict or problem regarding the use or management of public lands. The list of issues was then refined by NPS staff, the general public, and representatives from local, state and federal agencies, American Indian tribes, and various organizations.

Issues and Impact Topics Retained For Analysis

Alternatives presented later in this *Environmental Assessment* provide strategies for addressing these issues within the context of the park purpose, significance and special mandates. These issues formed the basis for the impact topics that are carried forward and discussed in Chapters 3 and 4 of this *Environmental Assessment*. Impact topics identify the resources or values that would be affected by the alternatives. This *Environmental Assessment* will analyze the following impact topics: Historical Structures; Cultural Landscapes; Archeology; Museum Collections; Climate Change/Air Quality, Visitor Experience; Traffic, Circulation and Parking; Park Operations; Socioeconomic Factors and Land Use; and Health and Safety.

The issue statements and corresponding impact topics developed by the IDT are presented below.

Ground-disturbing activities involved in building and landscape rehabilitation have the potential to affect archeological materials, which are abundant throughout the site. The project site includes resources associated with the HBC Cemetery and buried resources are likely to be present. There are 26 federally recognized tribes that maintain ties to Fort Vancouver and many groups feel strongly that burial remains must be respected. These issues will be addressed under the *Archeological Resources* impact topic.

The Vancouver Barracks are rich with cultural resources and contain many layers of history. Most buildings within the East Barracks are on the NRHP. The alternatives propose the rehabilitation of existing historic structures and removal of historic buildings. Many structures contain distinctive features that must be preserved as part of the rehabilitation and accessibility improvements. These issues will be addressed under both

Historic Structures and Cultural Landscapes.

The Vancouver National Historic Reserve Cultural Landscape Report (National Park Service 2005) describes the Vancouver Barracks as a “component landscape” within the “parent landscape.” Prior plans as well as public comment suggested the cultural landscape be restored, particularly in the South Barracks. Activities and functions in the Barracks must be appropriate to the historic setting. Changes to buildings, circulation, vegetation, roads, and paths could all have effects on this cultural landscape and visual character of the East and South Barracks area. Alternatives also vary in their ability to weave together the character of the East and South Barracks with the rest of the VNHR. This will be addressed under ***Cultural Landscapes***.

The U.S. Army will turn over archival information to the National Park Service for curation, and other objects found during construction may be collected. Construction of additional curatorial space is an opportunity that is included in the alternatives. These issues will be addressed under ***Museum Collections***.

As a result of the relinquishment, the types of use in the East and South Barracks will change; military use will cease and the Barracks will be adaptively re-used for public and private uses. These changes could possibly provide economic and other benefits to the community such as employment opportunities as well as additional rental real estate. Activities and functions in the Barracks must support the mission of the National Park Service and the VNHR, and be financially viable for the long-term. These topics will be addressed under ***Socioeconomic Factors and Land Use***.

Public use and access is a high priority for the East and South Barracks; however, many buildings are not universally accessible. Universal access must be addressed in a way that respects the historic character of the buildings and structures. Accessibility will be addressed under ***Visitor Resources*** and ***Historic Structures***.

The existing road network is somewhat confusing and haphazard. Some road segments are contributing historic resources because they follow the paths of historic roads and other routes. Other road segments and parking areas developed incrementally during the second half of the 20th century. The *Environmental Assessment* presents an opportunity to improve the vehicular, pedestrian and bicycle circulation network as well as remove some excess asphalt in the barracks. Parking will also be reorganized in the barracks and additional parking will be needed to accommodate the new uses. The *Environmental Assessment* will address connections with other portions of the park, VNHR, and community. These issues will be addressed under ***Traffic, Circulation and Parking*** and ***Visitor Experience***.

Climate change presents significant risks and challenges to the National Park Service and actions in the East and South Barracks directly and indirectly contribute to this issue. In 2009, a joint National Park Service and Environmental Protection Agency’s Climate Friendly Parks workshop (National Park Service 2010c) was conducted to develop plans to reduce greenhouse gases and criteria air pollutants through the climate friendly management of park operations, and increased outreach and education efforts. The acquisition of 28 additional buildings creates a challenge for the park to maintain the NPS goals for sustainability and reduction of its carbon footprint. Further, the existing buildings and infrastructure are energy-inefficient and outdated and upgrades are necessary to improve efficiency and environmental sustainability. This issue will be further discussed under ***Air Quality/Climate Change, Park Operations, and Historic Structures***.

Visitor access is generally limited in the Barracks due to use by the U.S. Army. Many scoping comments expressed a clear desire for expanded public use of the buildings and interpretation of the history of the Barracks. Each of the alternatives in this *Environmental Assessment* addresses this issue in a different way. The alternatives also address improvements to the visitor experience by way of circulation and access through the Barracks, the rest of the VNHR, and downtown Vancouver as well as improve accessibility. In the short-term, noise, dust, construction traffic, or restricted access could reduce current visitors' enjoyment. These issues will be discussed under the *Visitor Experience* impact topic.

The alternatives propose a variety of landscape treatments in the Barracks, including restoration of the HBC Orchard and the historic Maple Allée as well as tree removal. Further, there is a stand of Oregon white oak (*Quercus garryana*) in the project area which is listed as a Priority Habitat by the Washington Department of Fish and Wildlife. These topics will be addressed under *Cultural Landscapes*.

There is contamination from lead, asbestos and other hazardous substances in the East and South Barracks, as well as the potential for unexploded ordinance in the South Barracks. This will be addressed under *Health and Safety*.

Actions proposed for the East and South Barracks may alter utility/infrastructure needs which are currently energy inefficient and outdated. Building upgrades are necessary to improve efficiency and environmental sustainability. Proposed actions would have effects on water use and supply, stormwater and wastewater collection. The type of use will change, requiring changes to operation and maintenance of these areas. Adaptive reuse of buildings could fulfill park curatorial and administrative needs and as well as other partner functions. These issues will be addressed under the *Park Operations* topic.

Impact Topics Considered but Dismissed

The following impact issues are identified as typical topics for analysis in a NPS environmental assessment. The National Park Service determined that the resources associated with these topics would not be affected, or impacts of the alternatives would be negligible or minor. Minor to negligible effects are localized impacts that would be below or at the lowest level of detection and barely measurable, relative to existing conditions, and would have no appreciable consequences. Therefore, these impact topics issues were dismissed from further analysis. The rationale for dismissal is given below.

Geology, Soils, and Geohazards

Utility improvements and other construction activities will disturb native soils. However, the project is not expected to result in any substantial loss or gain of soil or change the geologic character of the site. Utility work and changes to the circulation would occur primarily in previously disturbed areas. There are no unique geologic features that would be impacted by the project, nor would the project increase erosion, as construction work would implement mitigations to ensure that soils remain on-site to the greatest extent possible. These measures are included in the list of mitigations in Chapter 2. Based upon the *Seismic Hazard Evaluation Report of Findings*, (Collins Engineers, Inc. 2010), the project would not contribute to any threats from geohazards or seismic activity, and the project will include actions to retrofit buildings as appropriate during rehabilitation efforts. Since impacts are anticipated to be short-term, localized, and minor, this issue and impact topic was dismissed from further analysis.

Visual Resources

The visual quality of the East and South Barracks will be improved under all action alternatives. Any proposed changes to the buildings will be addressed under *Historic Structures*, and changes to vegetation, circulation patterns or overall appearance of the Barracks will be addressed under *Cultural Landscapes* and *Vegetation*.

Vegetation

The vegetation within the project area is an integral component to the cultural landscape. Thus it is analyzed under the *Cultural Landscapes* topic and not discussed separately.

Ethnographic Resources

Ethnographic resources are defined as any site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it (National Park Service 1998). None of the federally recognized tribes and other groups that maintain ties to Fort Vancouver identified any ethnographic resources in the project area. Resources with traditional importance, such as the HBC Cemetery, are addressed under *Archeology*.

Floodplains/Wetlands

Executive Order 11988, *NPS Management Policies 2006*, and DO-77-2 require examination of impacts to floodplains and the potential risks involved in placing facilities within floodplains. Executive Order 11990, *NPS Management Policies 2006*, and DO-77-1 direct that wetlands be protected and that wetlands and wetland functions and values be preserved. The project area does not contain any floodplains or wetlands; therefore, there would be no impacts to either resource. Based upon the current projections of global climate change and the understanding of the current water table, it is not anticipated that there is any immediate threat of an increased potential risk of seasonal inundation of the East and South Barracks area due to a raised water table. Because there would be no impact to wetlands under the no action or preferred alternative, this topic was dismissed from further evaluation in this *Environmental Assessment*.

Wildlife/Special Status Wildlife Species

In February 2011, the National Park Service conducted a survey to assess the presence or absence of special status species, as well as provide information about the general palette of plants and animals in the East and South Vancouver Barracks. It was determined that there are no unique wildlife species, or threatened or endangered wildlife species or critical habitat within the project area. The southern edge of the project area is approximately 905 feet from the north bank of the Columbia River and therefore won't affect salmonid species in the river.

Natural Soundscapes

In accordance with *NPS Management Policies (2006)* and Director's Order #47, Sound Preservation and Noise Management, an important part of the NPS mission is preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. The current ambient sound environment in the general East and South Barracks area is comprised of noise by motor vehicles traveling on State Route 14 and Interstate 5, freight

trains on the Burlington Northern Santa Fe (BNSF) Railway and frequent aircraft overflights from Portland International Airport, (and less frequently from Pearson Field Airport).

During scoping, the public noted that the *Environmental Assessment* should balance commercial uses with the quiet, historic character of the current site. Maintaining the character of the site was considered during development of the alternatives. None of the proposed uses for the barracks would produce measurable effects on the natural soundscape of the Barracks. New uses would generate sounds compatible with the existing uses in the park and the VNHR. As such, the issue of natural soundscapes will not be addressed further. Short-term noise impacts would occur during construction and will be addressed under *Visitor Experience*.

Lightscape Management

In accordance with *NPS Management Policies (2006)*, the National Park Service strives to preserve natural ambient landscapes, which are natural resources and values that exist in the absence of human-caused light. Additional street lights may be installed as part of the improvements in the barracks. Any new lights would be compatible with the cultural landscape and shielded so that light is directed downwards to prevent light pollution of the night sky. No other light sources would be constructed and there would not be any night construction. For these reasons, impacts to the night sky from lighting are expected to be negligible and for these reasons, this issue is not evaluated in this document.

Wilderness

No designated wilderness areas are located within the study area; therefore this issue is not evaluated.

Prime and Unique Farmlands

No lands qualifying as prime or unique farmlands are found within the project area so this issue is not evaluated.

Wild and Scenic Rivers

No designated wild and scenic rivers are located within the study area so this issue is not evaluated.

Environmental Justice

Executive Order 12898 requires federal agencies to evaluate the potential for disproportionate environmental, social or economic effects on minority and low income opportunities. Actions proposed in this *Environmental Assessment* would not create disproportionately high or adverse human health or environmental effects on minority or low-income populations of the surrounding community, but rather, would expand recreational and educational opportunities to them as well as the general population. Any changes to employment or income are expected to affect all segments of the population equally.

Chapter 2 Alternatives



*Photo Courtesy of
National Park Service*

CHAPTER 2

Alternatives

OVERVIEW

This chapter presents the range of alternatives for management and site planning for the East and South Vancouver Barracks. Information is organized by alternatives, which are explained through a combination of text and graphics. Descriptive materials for each alternative include:

- **Overview** – A brief narrative overview summarizes the alternative concept and highlights a few key actions.
- **Alternatives Matrix**—A matrix explains each alternative in greater detail.
- **Conceptual Site Plan** – A conceptual site plan graphically depicts the general character and locations of site improvements and adaptive reuse.
- **Conceptual Circulation Plan** – Conceptual drawings for each alternative illustrate potential changes to vehicular and pedestrian circulation and parking.

The chapter also:

- describes the process used to develop alternatives and select the agency’s preferred alternative,
- lists elements of draft alternatives that were eventually eliminated from consideration and summarizes the rationale for dismissal,
- identifies the environmentally preferable alternative as defined by Section 101 of the NEPA, and
- includes preliminary cost estimates for capital development and ongoing maintenance.

BACKGROUND

The National Park Service began this planning effort by reviewing the park’s establishing legislation, the park’s purpose and significance, and National Park Service servicewide policies and mandates. The planning team also solicited input from the public; NPS staff from the park, the Pacific West Region and Denver Service Center; other government agencies; and affiliated tribes regarding issues and desired conditions for the barracks. The next step in the planning process was to develop alternatives that reflect the range of ideas presented during internal and public scoping and that are consistent with relevant legislation, policies, and planning documents.

Four alternatives are described in this chapter, along with summary tables that demonstrate key differences among them. A no action alternative describes the baseline that is used for comparison with the three action alternatives, including the preferred alternative. The preferred alternative represents the mix of uses, management actions, and site planning concepts that the National Park Service believes best supports the NPS mission, the legislated purpose of Fort Vancouver NHS, and the vision and goals for the *Environmental Assessment*.

Full execution of this plan could take many years. Interim solutions may be needed to account for changes in economic conditions and market readiness. In addition, all proposals have been made using the best information and data available at the time of plan writing; however in some cases, further study will be necessary during design and construction in the future.

DEVELOPMENT OF THE ALTERNATIVES

Definition of Alternatives

Alternatives are a collection of possible management actions and strategies for a park to consider. According to NPS Director's Order 12, alternatives "propose different means of accomplishing your park's goals, while at the same time protecting or minimizing impacts to some or all resources." Alternatives are consistent with a park's purpose and significance. They also reflect the range of stakeholders' interests in the park and the desirability of providing for a variety of visitor experiences. Alternatives help NPS staff explore different ways of satisfying the vision and goals for the project area, which were developed earlier in the planning process (included in Chapter 1). Alternatives also allow NPS staff to assess the potential for impacts to resources of certain proposals, in order to decide which course of action is most prudent and beneficial.

The development of draft alternatives is a two-way exchange of ideas with the public, cooperating agencies, and others; it ultimately leads to the development of the agency's preferred alternative. For this *Environmental Assessment*, the National Park Service developed draft alternatives with input from several sources, including public comments, internal scoping, agency workshops, and cultural resource consultations in accordance with the NHPA and the NEPA. Public and agency participation comments were solicited through public scoping. The process of selecting a preferred alternative from these draft alternatives is discussed below.

RANGE OF ALTERNATIVES CONSIDERED IN THIS DOCUMENT

The NEPA and NPS policies require that park managers consider a full range of reasonable alternatives before choosing a preferred alternative, which is the agency's preferred course of action. The four alternatives that are being considered for the protection, use, and management of the East and South Vancouver Barracks are described in the following order:

- Alternative A: The Extension of Current Management Practices in the East and South Barracks (no action alternative)
- Alternative B: A Vibrant, Urban District in a Historic Setting
- Alternative C: A Sustainable, Historic Campus for Public Service (preferred alternative)
- Alternative D: A Historical, Educational Campus for All

Alternatives are described in further detail in subsequent parts of this chapter.

FINANCIAL FEASIBILITY

One of the primary goals of this plan is to outline ways the National Park Service can manage the site that achieves the stated vision while at the same time defrays the total costs of ownership (TCFO) borne by the government as much as possible. Developing leasing arrangements for the majority of the buildings, while recognizing the likely prospect of generating income from them, is one potentially effective way to achieve this goal.

To help evaluate alternatives, the National Park Service contracted with Booz Allen Hamilton to conduct an economic feasibility study for commercial leasing in the East and South Barracks. The results of this study informed decisions made as part of the Choosing by Advantages workshop, held the week of January 24, 2011, which resulted in the development of a draft preferred alternative. The financial study will also help inform future planning efforts and implementation of the *Environmental Assessment*.

The key elements of the study included: (1) a limited market analysis to assess the competitive landscape and future demand for commercial and residential leasing in select East and South Barracks buildings; (2) the determination of the true net assignable space for select buildings; and (3) an in-depth financial analysis, including a *pro forma* statement, investment analysis, and scenario analysis, in order to determine the future financial performance of select buildings as their uses vary across alternatives.

Results of the limited market analysis suggest that a healthy mix of building use types would best diversify the building portfolio, reduce risk and help create demand in order to make all building uses financially successful. The report determined that the most profitable building use is office, followed by residential, in part because office and residential tenants generate income while also creating demand for additional property types such as restaurant and retail. The report also recommends a phased approach that brings additional property types to market over time so that the available space does not exceed market demand and occupancy level goals can be achieved.

The report further recommends that the National Park Service could choose to market the East and South Barracks as a “one-of-a-kind” attraction with a mix of tenants in a unique historic setting. This strategy most closely resembles alternative B, which proposes special event nights featuring art galleries and music from local musicians. The report also suggests that promoting the barracks as a campus dedicated to a specific use could help sustain demand for an appropriate mix of supporting building uses. This approach resembles the focus of the preferred alternative, which aims to encourage a cluster of offices occupied by public agencies with missions compatible with the NPS mission.

USING “CHOOSING BY ADVANTAGES” TO DEVELOP A PREFERRED ALTERNATIVE

In January 2011, the National Park Service held a workshop to evaluate the draft alternatives and develop an agency-preferred alternative. The preferred alternative represents the mix of uses, management actions, and site planning concepts that the National Park Service believes best supports the mission of the National Park Service, the legislated purpose of Fort Vancouver NHS, and the vision and goals for the *Environmental Assessment*. NPS personnel from Fort Vancouver NHS, the Pacific West Regional Office, the Denver Service Center, and Golden Gate National Recreation Area took part in the workshop, along with representatives from the City of Vancouver and the Fort Vancouver National Trust.

Workshop participants used the “Choosing by Advantages” system of decision making to evaluate the success of the draft alternatives. This evaluation considered a range of information including anticipated environmental impacts, a preliminary assessment of financial viability, and preliminary cost estimates for capital development and ongoing operations. Attendees compared and rated the advantages of each alternative. The following six evaluation factors were used to address key aims of management, which had been set forth earlier in planning for the *Environmental Assessment*’s vision and goals:

- 1) Retention and adaptive reuse of historic structures
- 2) Protection of archeological resources and museum collections
- 3) Preservation of cultural landscape features and patterns
- 4) Promotion of public use, enjoyment, and appreciation
- 5) Efficient operations for the National Park Service and partners
- 6) Environmental sustainability

Participants agreed that draft alternative C ranked the most advantages in the workshop and offered the greatest advantage overall. Therefore, it was used as a basis for developing the preferred alternative. Certain actions from other draft alternatives were also incorporated into the draft alternative C to create the preferred alternative described in this *Environmental Assessment*.

UNDERSTANDING THE ALTERNATIVES

Each alternative is a collection of management strategies, specific actions, and site plan concepts to consider for the East and South Barracks. Each alternative includes approaches to specific topics such as the desired mix of uses for adaptive reuse, potential removal of buildings, treatment of the cultural landscape, interpretation, and visitor experience. Each alternative also specifies which buildings would likely be retained for NPS functions and which would be made available to other parties for adaptive reuse.

Adaptive Reuse of Buildings

In all alternatives and in accordance with approved plans such as the *Fort Vancouver National Historic Site General Management Plan (2003)*, the National Park Service would put historic and nonhistoric barracks buildings in the East and South Barracks to new uses. However, the mix of desired functions and uses for each building or cluster of buildings varies by alternative. These different arrangements of possible land uses helped the planning team anticipate possible effects on visitor experience, resource protection, access and circulation, and other conditions. The results of this process will help guide park managers as they consider future proposals from potential tenants.

In proposing certain mixes of desired uses, the planning team considered the following:

- *Historic and present uses of barracks buildings.* For many years the buildings along the Parade Ground have been used for recruiting and office functions for the U.S. Army, and their interiors have been modified to accommodate these uses. Therefore, locating new offices in place of U.S. Army offices allows a logical, efficient transition that preserves the architectural integrity and character of these grand, historic buildings.
- *Functional suitability.* According to general assumptions about programming and space requirements of particular uses, locations for specific functions are proposed under each alternative based on building sizes, adjacent uses, and conditions. For example, according to a general understanding about the size, nature, and location of facilities that a restaurant may require in order to succeed, the planning team recommended buildings that may adequately accommodate this kind of commercial use.
- *Complementary uses.* The planning team also explored how the location of certain uses and functions can influence the activities that may occur in adjacent areas (specifically Officers' Row and the West Barracks). For example, encouraging the establishment of a daycare operation close to office buildings would enhance the attractiveness of offices, while providing a regular customer base for the daycare operation.

Adaptive Reuse Categories

Proposed uses are represented on the conceptual site plan for each alternative. In order to propose and evaluate locations for land uses, the planning team adapted conventional land use categories into categories of reuse that are applicable to the site. Reuse categories are intended to be general, in order to preserve flexibility in plan implementation. By assigning potential uses to particular buildings, the National Park Service is not officially zoning buildings for particular

uses. **Potential land uses identified under each alternative, including the preferred, are advisory in nature only and should not be construed as limitations on the specific uses that each building may accommodate.** Rather than limiting reuse to uses identified in this *Environmental Assessment*, NPS staff will entertain a variety of requests for the responsible and sensitive reuse of these treasured historic structures. It is also important to note that building occupancy of any Barracks building cannot occur until after the property is officially relinquished to the Secretary of the Interior by the Secretary of the Army.

The following examples of potential uses help illustrate these general categories:

- *Office*: Every alternative proposes that a substantial percentage of space would be used for offices. Office space may be occupied by government agencies, nonprofit organizations, for-profit companies, educational organizations, or other groups.
- *Retail*: This category includes retail shops that are compatible with the historic setting such as bike rentals and bookstores, as well as restaurants such as brew pubs, cafés, or delicatessens. Daycare was also identified as an appropriate activity and would be considered a retail function.
- *Interpretation/Visitor Services*: This category indicates possible uses such as museum spaces, educational exhibit spaces, visitor information, or visitor services.
- *Arts/Events/Community*: Art studios, galleries, musical and theatrical performance space, rental space for events and community purposes, or space for educational activities may occur under this reuse category. Certain buildings, such as 721 and 991, contain spaces that are well suited to hosting public events. Therefore, every action alternative proposes some sort of events function for these buildings.
- *Maintenance/Storage*: This reuse category could refer to uses such as curatorial storage of museum collections, as well as conventional maintenance functions and equipment storage.
- *Residential*: This category denotes general use by the public. It implies the conversion of structures into residential units such as apartments, condominiums, or townhomes.
- *Lodging*: The lodging category encompasses uses such as short-term, overnight accommodations for conferences, training activities, staff, or educational camps.

Buildings may also be reused for a combination of the above general uses. This mixed-use approach is indicated on conceptual site plans and in Table 9. The discussion of reuse also identifies which buildings the National Park Service would designate for NPS functions, which buildings partners would be encouraged to use, and which buildings would be made available for leasing.

The planning process also generated more specific ideas for the adaptive reuse of particular buildings. The alternative matrix records these specific ideas. For example, if retail has been identified as an appropriate use for a certain building, more specific uses such as daycare, cafés, or restaurants may also be described. These suggestions are not meant to place limitations on future reuse but to inform future decision-making by better explaining the overall concept.

This *Environmental Assessment* uses “partner” in the broadest sense of the word. For the purposes of this document, an NPS partner may include legislated VNHR partners, as well as other public agencies, nonprofits, and other organizations with which the National Park Service may work cooperatively to achieve the spirit of this *Environmental Assessment*.

Potential Building Demolition

As the nation's premier historic preservation agency, the National Park Service would approach the potential demolition of structures following prescriptive procedures set out by the *Secretary of the Interior's Standards for the Treatment of Historic Properties*; especially those considered to be contributing to the NRHP significance of the historic district. Both maintaining and demolishing structures incur financial costs and have varying effects on visitor experience. Therefore, before taking any action, NPS staff would carefully consider the architectural integrity of structures, as well as the significance of individual structures on the overall significance to the historic district and the integrity, restoration, and interpretation of the cultural landscape. The physical condition of buildings, the amount of deferred maintenance, and the cost to maintain facilities in a reasonable condition, as well as market conditions in the regional economy that affect the potential for occupancy would also be considered. In all cases, NPS staff would work closely with the Washington DAHP, federally recognized tribes, and other consulting parties regarding demolition. If the demolition of a structure is considered an adverse effect to the historic property associated with the VNHR National Historic District, the National Park Service will consult with the ACHP, and will draft a Programmatic Agreement listing mitigations for this adverse effect with the Washington DAHP and any necessary consulting parties. If any buildings will be demolished, reuse of materials, particularly large dimension timbers, will be given strong consideration. Under each alternative, the rationale for potential demolition of select buildings is briefly summarized.

Access, Circulation, and Parking

Each alternative examines options for access and parking in order to explore various options for circulation. Concept sketches for each alternative illustrate these options. The goal of this effort was to provide overall direction for site planning that can inform, and be further refined, through subsequent design. Major issues considered include:

- location of fort visitor parking;
- how to connect the East Barracks to the rest of park; for example, by extending McClellan Road or other roads along historic alignment;
- whether to retain or remove parking within HBC Cemetery grounds; and
- how to integrate and interpret the HBC cultural landscape into the South Barracks.

Using parking requirements under the City of Vancouver Municipal Code as a guide, the planning team also developed estimates for parking requirements under each alternative, based on differences in building uses. The proposed general locations for parking also vary with each alternative, according to the physical location of certain building uses, as well as proposed cultural landscape restoration and other site improvements.

In order to propose changes to multimodal circulation and parking throughout the East and South Barracks, the National Park Service used the best data and information available at the time of plan writing. However, as funding and building occupancy becomes secured over time, understanding of specific access and parking needs will become clearer, allowing the National Park Service to develop these recommendations in further detail. Outside variables such as the potential construction of the multimodal community connector bridge over Interstate 5 and potential redevelopment of buildings in close proximity to the project area may also affect the viability of specific recommendations contained within this plan. Lastly, archeological discoveries may also require revising certain proposals. Therefore, it is important to understand that

proposed transportation actions are subject to change as further study, design, and construction are pursued.

ALTERNATIVES CONSIDERED

ACTIONS COMMON TO ALL ALTERNATIVES

Adaptive Reuse

Previously approved plans such as the *Cooperative Management Plan for the Historic Reserve (2000)* and the *Fort Vancouver National Historic Site General Management Plan (2003)* established adaptive reuse as the overarching preservation strategy for historic structures. The National Park Service will adhere to these previous plans and pursue reuse as part of a long-term strategy for the preservation and interpretation of resources.

Ownership and Resource Protection

Under all alternatives and consistent with legislation, the National Park Service will assume and retain ownership of all structures and properties within the East and South Barracks. The National Park Service will also maintain the buildings it occupies, as well as the HBC Cemetery grounds. Approaches to managing the rest of the property continue to be explored and are dependent on the nature of tenants (public or private), leasing arrangements, and other factors. However, under no circumstances will ownership be transferred to another entity.

Under all alternatives, the National Park Service will also retain final approving authority for proposed reuse and tenant improvements for all barracks buildings and grounds. In coordination with the Washington DAHP, the Advisory Council on Historic Preservation, and, as appropriate, the City of Vancouver and other partners, the National Park Service will assess the suitability of each proposed reuse for each historic structure. In all cases, preserving the historic integrity of historic structures, archeological sites and resources, and cultural landscapes will serve as the primary criteria for review and consideration.

Accommodating National Park Service Operations

The relinquishment of the East and South Vancouver Barracks presents the National Park Service with an opportunity to accommodate operations that have previously been underserved by space limitations and budget constraints. Therefore, consistent with section 110 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470h-2), which requires Executive federal agencies to give preference to historic properties already under agency control rather than acquiring leased space, the National Park Service will relocate certain functions to the East or South Barracks under all alternatives. Those functions would include administration, maintenance, and storage under all alternatives. Park administrative headquarters would likely be relocated to one of the four Parade Ground buildings, and NPS storage and maintenance functions would be relocated to suitable locations in the East or South Barracks. Specific locations of these functions vary by alternative. These proposed actions will increase operational efficiency by increasing the available space for these functions. Upon moving to these new spaces, it is proposed to convert the current administrative headquarters building located at 612 East Reserve Street back into a park housing unit for use of staff and/or visiting researchers, and the current maintenance structure will be used as an interim period clothing storage area. These two buildings are outside of the project area, and the effects of these moves are not analyzed in this document. As with all elements of this *Environmental Assessment*, the National Park Service maintains flexibility with respect to implementation of these proposals.

Visitor Information, Education, and Enjoyment

Currently, the U.S. Army restricts the use of Barracks buildings and grounds; therefore, comparatively few visitors can access this part of the VNHR (Figure 4). All alternatives assume an increased level of access and use. Some degree of interpretation will also be provided under all of the alternatives, consistent with established goals and themes in the *Long-Range Interpretive Plan* (2004) and other guidance on interpretation. According to previous guidance, established interpretive themes will be employed, covering such topics as the HBC, the settlement of the Oregon Country, and the establishment of the U.S. Army Vancouver Barracks.

Sustainable Design and Development

Under all alternatives, and as guided by national laws and policies, as well as by regional NPS directives, the National Park Service will actively pursue opportunities to reduce resource consumption and improve the efficiency of building and landscape systems within the East and South Barracks. The National Park Service will consider techniques such as rainwater collection, renewable energy generation, water and energy conservation, and incentives to encourage healthy activity, public transportation, and waste reduction. All rehabilitation efforts will pursue at least a Silver LEED (Leadership in Energy and Environmental Design) rating, where appropriate. In accordance with Executive Order 13423, new construction and major renovations will also comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings* (2006).

Development Character

The alternatives differ in their levels of site improvements; however, as appropriate, site improvements would be consistent with the City of Vancouver's Historic Reserve Conservation



Figure 4. An example of existing boundary fencing in the South Barracks, which limits public access into the property. (National Park Service)

District ordinance. National Park Service staff worked cooperatively with the City of Vancouver in developing this ordinance. Adopted into Vancouver's Municipal Code (VMC 20.640.040), this ordinance established standards to protect the resources and historic character of the VNHR. The ordinance includes recommendations on the character of site furnishings, lighting, plantings and other general improvements. The Historic Reserve Conservation District is intended to establish a seamless environment that provides overall design and development standards while reflecting area and period specific standards within the Conservation District. Some improvements may need to diverge from the ordinance to accommodate delineation and interpretation of the HBC Cemetery and the Fort Vancouver Village, or to avoid adverse effects to landscape features.

Universal Accessibility

To the greatest extent possible, site improvements and building rehabilitation would accommodate all people and abilities without the need for individual adaptation. Once building occupancy is secured, the National Park Service would ensure that requirements for public health, safety, and accessibility are incorporated into subsequent design. For example, improvements such as accessible parking, loading zones, fire access, elevators, ramps, and other modifications would be made in accordance with the *Architectural Barriers Act Accessibility Standards* and the *Accessibility Guidelines for Outdoor Developed Areas of 1966* (42 USC 4151). All character-defining features of historic buildings and landscapes would be preserved to the maximum extent possible.

Hudson's Bay Company Cemetery

Under all alternatives, the National Park Service would assume principal responsibility for maintenance and interpretation of the HBC Cemetery grounds. In doing so, the National Park Service would in all cases adhere to the Native American Graves Protection and Repatriation Act (NAGPRA) and its enabling legislation and all other applicable laws and best practices with respect to historic preservation and government-to-government consultations on American Indian and Native Hawaiian burials and human remains. As the nation's premier preservation agency, the National Park Service is committed to the protection of the HBC Cemetery. To that end, new buildings would not be considered within the boundaries of the HBC Cemetery grounds.

Fort Visitor Parking

In keeping with the *Fort Vancouver National Historic Site General Management Plan (2003)*, all alternatives recommend reducing current visitor parking at HBC Fort Vancouver to only a few accessible spaces and drop-off. As funding allows, primary parking for Fort visitors would be relocated either to the East or South Barracks. The general location of new parking varies by alternative. In place of existing parking, the cultural landscape would be restored, potentially incorporating an expanded HBC Garden and Orchard.

Partnerships

The National Park Service regularly engages VNHR partners and others in one-time and ongoing efforts. Although the East and South Barracks lay entirely within the boundary of Fort Vancouver NHS, National Park Service staff would continue to foster these public and private partnerships, which are critical in the management and improvement of the park. NPS staff would also encourage new partnerships as opportunities arise. For example, under all alternatives the

National Park Service would work with the Clark County Transit Benefit Area Authority (C-TRAN) and the City of Vancouver to explore possibilities for a fuel-efficient shuttle system for transporting visitors to, from, and around the VNHR. Opportunities for shared parking and cooperative property management would also be explored.

ALTERNATIVE A: NO ACTION OR THE EXTENSION OF CURRENT MANAGEMENT PRACTICES INTO THE EAST AND SOUTH BARRACKS

The following actions would be in addition to those described as common to all alternatives. For additional information on all alternatives see Table 8.

Alternative Emphasis

The no action alternative describes the baseline for comparison with other alternatives. The no action alternative assumes the National Park Service would only take those actions to preserve and rehabilitate historic structures and the cultural landscape that have already been identified in approved plans, policies, and legislation. Without the more focused guidance of this *Environmental Assessment*, the National Park Service would take ownership of the East and South Barracks, and manage them according to the *Fort Vancouver National Historic Site General Management Plan (2003)* and relevant policies.

Adaptive Reuse

Previous planning documents do not explicitly lay out a strategy for attracting outside tenants to occupy barracks buildings. Therefore, under alternative A, adaptive reuse would only be addressed initially by relocating certain NPS operations to the East and South Barracks, and by allowing legislated and other partners to do the same (Figure 5). According to the current general management plan, administrative headquarters for Fort Vancouver NHS would likely be relocated to one of the four buildings along the Parade Ground, potentially co-located in building 991 along with offices for the Fort Vancouver National Trust. National Park Service maintenance and storage functions would likely be relocated to one or more buildings in the South Barracks; however, the general management plan does not specify which buildings. Reconstruction of the historic HBC Sale Shop would also be pursued inside the Fort Vancouver stockade in order to house museum collections.

National Park Service staff would entertain requests from outside organizations, agencies, or businesses to adaptively reuse buildings on a case by case basis; however, the National Park Service would not actively seek new tenants. Therefore, the majority of buildings in the East and South Barracks would remain largely unoccupied for some length of time. Regardless of occupancy, the National Park Service would carry out the minimum repairs necessary to preserve the Fort Vancouver NHS and meet Congressional intent.

Cultural Landscape Treatment

Overall

Park staff would pursue limited restoration of the HBC cultural landscape according to the *Fort Vancouver National Historic Site General Management Plan (2003)*.

East Barracks

The military landscape north of East 5th Street would be preserved and interpreted in order to meet Congressional intent; however, no major rehabilitation efforts would be undertaken.

South Barracks

Pending further research, treatment of this area would include reconstructing the historic Summer House and surrounding Gardens north of the HBC fort, which would likely require the demolition of building 409 because it is believed to stand in place of the HBC Summer House. The National Park Service would continue efforts to restore the HBC Orchard. National Park Service staff would also seek to reinstate the historic Maple Allée to screen maintenance functions in the South Barracks.

Development Character

No substantial changes would be made to improve the aesthetic appearance of the streetscape, building exteriors and grounds, overhead wires, signage, plantings, irrigation, or stormwater management. For example, aside from reconstruction of the HBC Summer House, no new building construction is proposed. Overhead wires would not be buried underground, and no new landscaping would be installed.

Construction Activity

Subject to additional decision making and compliance, building 409 would be removed to accommodate reconstruction of the historic HBC Summer House and surrounding Garden. This building would be removed because it is a noncontributing, modern, intrusive structure. As such, it interferes with cultural landscape restoration of the HBC period landscape in this area and would detract from visitor experience.

Construction of new buildings in the East Barracks would not be permitted. Construction of new buildings in the South Barracks would be limited to historic reconstructions such as the historic HBC Summer House.

No other major construction activity or major utility work would occur within project boundaries. Minimal repairs and maintenance for buildings, grounds, and utilities would be performed as needed to meet applicable standards and policies. Rehabilitation will be reviewed and approved on a case by case basis. Current plans include the rehabilitation of the interiors of buildings 404 and 987.

Visitor Use and Experience

Visitor use and experience would be limited under this alternative because very few buildings would be restored and rehabilitated for visitor use. Visitors would only be allowed inside those buildings that have been brought up to applicable building and accessibility codes and standards. Access to the site's grounds would be mostly unrestricted, with the exception of select NPS maintenance and storage areas. Grounds may be used occasionally for walking tours or programs primarily focused on other areas of the park.

Interpretation would be limited to established interpretive themes and established methods such as the park website. No interpretive signs, programming, or visitor facilities would be added.

Access, Circulation, and Parking

No substantial changes would be made to the road network, sidewalks, trails, access to public transit, or wayfinding (Figure 6). In accordance with the *General Management Plan (2003)*, parking for visitors to Fort Vancouver would be relocated to the southeast corner of the East Barracks, near the intersection of East 5th Street and the Park Road. Parking for relocated NPS administrative functions would be provided in the East Barracks, south of the Parade Ground, near the existing lot at the intersection of McClellan and Alvord roads.

Park Operations

This alternative would require increased workloads for buildings and grounds maintenance, over and above what current staffing levels could accommodate. Therefore, the National Park Service seeks additional maintenance staff, as well as a site manager to oversee grounds and building maintenance in the East and South Barracks and respond to inquiries from outside parties interested in leasing building spaces. Maintenance and cultural resource employees would check on all buildings and utilities periodically and make necessary repairs, as well as keep the site clean, safe, and accessible, as required. The National Park Service would thoughtfully consider the various options available to accomplish this work. See Table 7 for a summary of staffing estimates by alternative.

This alternative would seek to defray costs to the government for these services with income generated from tenants who find benefit in locating to this site. The National Park Service would thoughtfully consider the various options available to accomplish this work such as through partnering, contracting out or managing the work in-house based on policy, efficiencies gained and cost. In any case, it is recognized that there are certain functions that are inherently governmental and those positions would have to be filled by NPS employees. At a minimum, NPS personnel would assume day-to-day maintenance responsibilities for those buildings occupied by the agency and also for the area surrounding and including the HBC Cemetery.

ALTERNATIVE B: A VIBRANT, URBAN DISTRICT IN AN HISTORIC SETTING

The following actions would be in addition to those described as common to all alternatives. For additional information on all alternatives see Table 8.

Alternative Emphasis

Similar to Officers' Row and West Barracks, alternative B would focus on creating a lively urban district that complements downtown Vancouver and the surrounding community with a variety of land uses. The National Park Service would promote a mix of offices, businesses, shops, restaurants, art galleries, and residences for the general public, with a heavy emphasis on commercial uses.

Alternative A – No-Action

In Alternative A, the National Park Service would manage the barracks according to previous plans and policies only. Buildings would be minimally maintained to standards and reuse would be accommodated on a case-by-case basis; however, buildings would mostly remain unoccupied and unchanged.

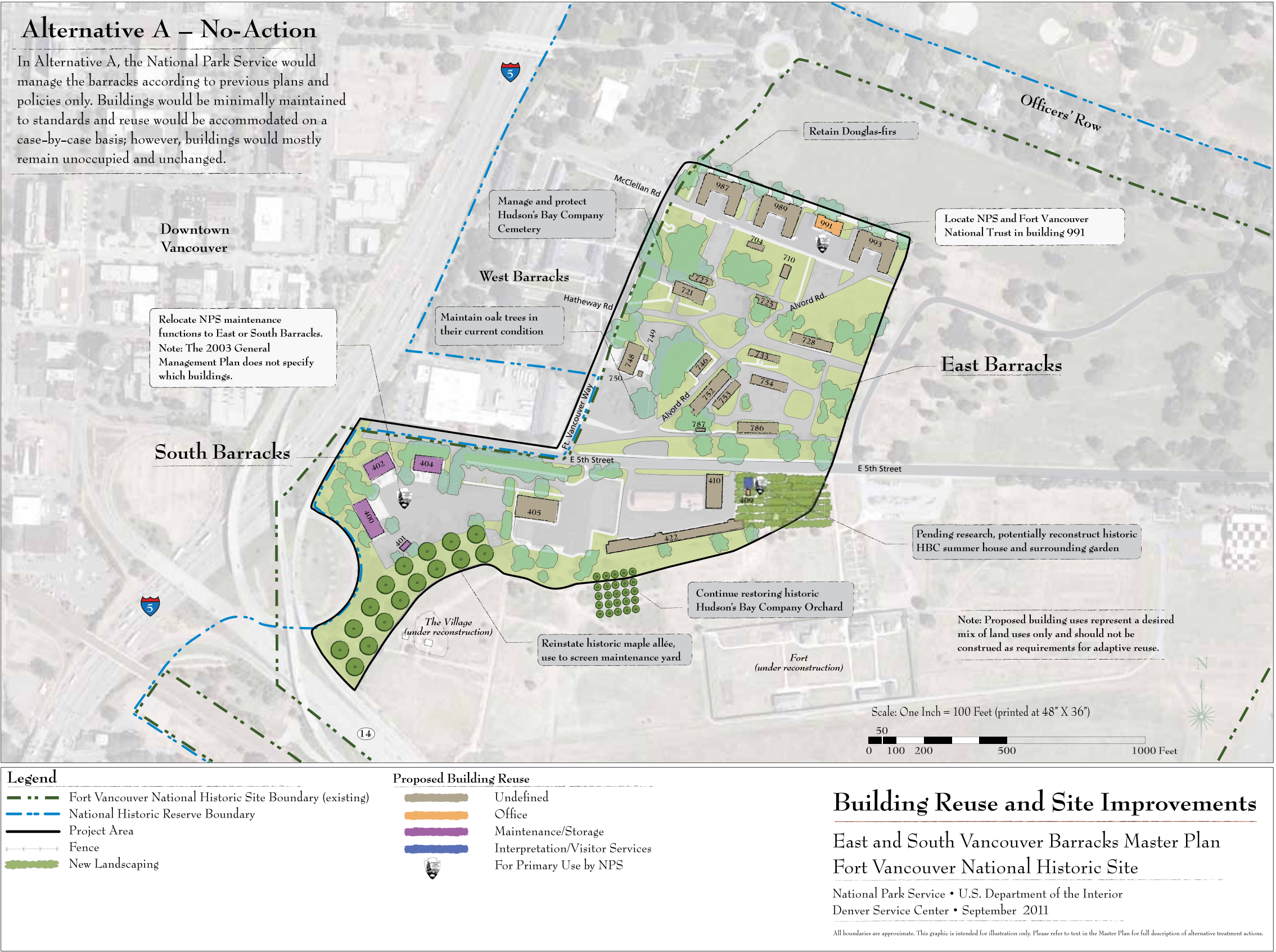


Figure 5. Building reuse and site improvements for alternative A.

Alternative A – No Action

Note:
This map represents initial concepts for improving circulation that were considered during the planning process. More detailed study and design will be undertaken before any proposal is implemented.

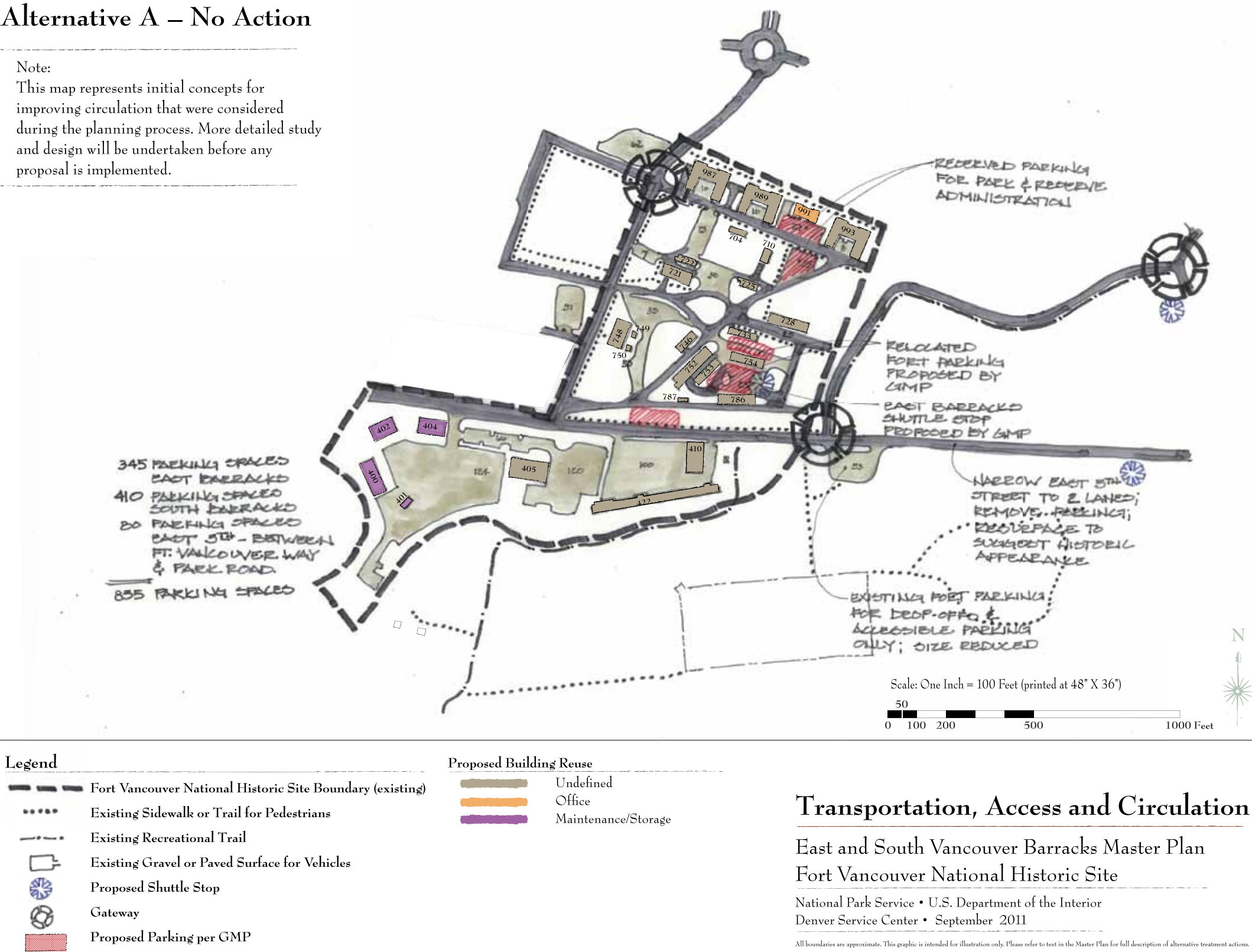


Figure 6. Transportation, access and parking recommendations for alternative A.

Adaptive Reuse

For Use by National Park Service and Partners

Along with NPS costume storage and other administrative NPS uses, the headquarters for Fort Vancouver NHS would be relocated to building 993 along the Parade Ground (Figure 7). The National Park Service has a volunteer program with over 600 volunteers and staff, many of whom periodically wear over 4,000 costume items portraying fur traders, U.S. soldiers, and other historical characters. This building would provide a central place for these and other critical NPS functions in a location that overlooks the Parade Ground and the Fort in the distance. It has adequate space to accommodate administrative functions for Fort Vancouver NHS and other NPS offices. Building 993 also demonstrates the highest degree of historic integrity, which presents an opportunity to interpret military history.

Building 402 in the South Barracks would become the primary NPS maintenance facility, and building 401 would be retained for associated NPS maintenance use and storage.

Building 405 would be rehabilitated as a regional museum management facility, in which collections from the National Park Service and other partners throughout the Pacific Northwest would be appropriately housed and exhibited for the public. This public museum would become a visitor venue, with indoor and outdoor spaces for education programming and attractive exhibition spaces for important archeological and museum resources. It is expected that exhibits would minimally interpret the Fort Vancouver Village, and the U.S. Quartermaster's Depot, displaying artifacts and information gleaned from current and past Washington State Department of Transportation (WSDOT) highway projects. Other exhibits pertinent to the American Indian, fur trade, and U.S. Army use of the region would also be developed.

Building 991 may be used by the Fort Vancouver National Trust, other partners, or other organizations for special events.

Building 404 could be used for maintenance or storage by the Fort Vancouver National Trust or other partners.

For Use by Other Tenants

All buildings not reserved for National Park Service or partner use would be made available to other parties for adaptive reuse. Under this alternative, the National Park Service would encourage the adaptive reuse of additional buildings for new commercial purposes such as offices, businesses, shops, restaurants, and art galleries. Unlike all other alternatives, alternative B also includes residential uses for the general public, such as multifamily residences similar to those available on Officers' Row and the West Barracks. Buildings 746 and 786 were identified as potentially suitable for this purpose under this alternative. Residential use would help generate demand to sustain the heavy retail activity reflected in this alternative.

Cultural Landscape Treatment

Overall

While preserving contributing landscape resources, the overall cultural landscape would be rehabilitated to support new and expanded uses. Major objectives of landscape rehabilitation would include enhancing access, improving vehicular and pedestrian circulation, and maximizing aesthetic appeal (Figure 8). Similar to the landscaping of Officers' Row and the West Barracks, the National Park Service would install lush ornamental landscaping and a variety of inviting outdoor

gathering areas. The historic scene would be interpreted through new or updated interpretive signs, as needed.

East Barracks

The military landscape north of East 5th Street would be preserved, rehabilitated and interpreted as appropriate. These improvements would be undertaken to only minimally restore or interpret the military cultural landscape.

In response to recent documentary and archeological discoveries, the National Park Service would seek to adjust park boundaries to include the western side of Fort Vancouver Way so that the National Park Service would own and be responsible for all HBC Cemetery grounds.

Where feasible, restoration of the Oregon white oak Woodland Priority Habitat would be in accordance with recommendations from Washington Department of Fish and Wildlife. Under this alternative, the row of Douglas-firs along the southern edge of the Parade Ground, which are noncontributing landscape features, would be maintained and replaced as necessary.

Throughout the East and South Barracks, the plant palette would emphasize water-wise, historic species dating to late military historic periods, as well as some compatible native plant species where appropriate.

South Barracks

Similar to alternative A, park staff would pursue limited restoration of the HBC cultural landscape according to the *Fort Vancouver National Historic Site General Management Plan 2003*. However, the historic HBC Summer House, surrounding Gardens and Sale Shop would not be reconstructed under this alternative. Instead, cultural landscape treatments would involve continued efforts to restore the HBC Orchard, as well as new actions to restore the historic Maple Allée and to screen maintenance functions in the South Barracks from the reconstructed HBC Village. Under alternative B, an interpretive trail would be added through the historic Maple Allée in order to improve visitor experience, linking together visitors from the Discovery Trail, the historic Fort, and the rehabilitated building 405.

Development Character

A greater number of newly designed site features would be installed under this alternative, such as shuttle stops, crosswalks, plazas, lighting, benches, street trees, picnic facilities, bike racks, and other site furnishings. These improvements would be installed in accordance with handicap accessibility standards and designed to be compatible with the cultural landscape. East Barracks buildings would be repainted, employing the same paint scheme used at Officers' Row and the West Barracks. Lush ornamental plantings would also be most abundant under alternative B in order to enhance the visual appearance of the site. Temporary and non-historic changes to buildings made by the U.S. Army would likely be reversed under this alternative in order to improve visual appeal.

The National Park Service would implement the preferred alternative in the *Schematic Design Report for Fort Vancouver National Historic Site East and South Barracks Utility Upgrades*. This upgrade would involve replacing existing utility lines with an underground system.

Construction Activity

Subject to additional compliance, two contributing historic structures (buildings 749 and 750) and three noncontributing structures (buildings 409, 710, and 787) would be removed. All structures subject to removal under this alternative are in poor condition according to

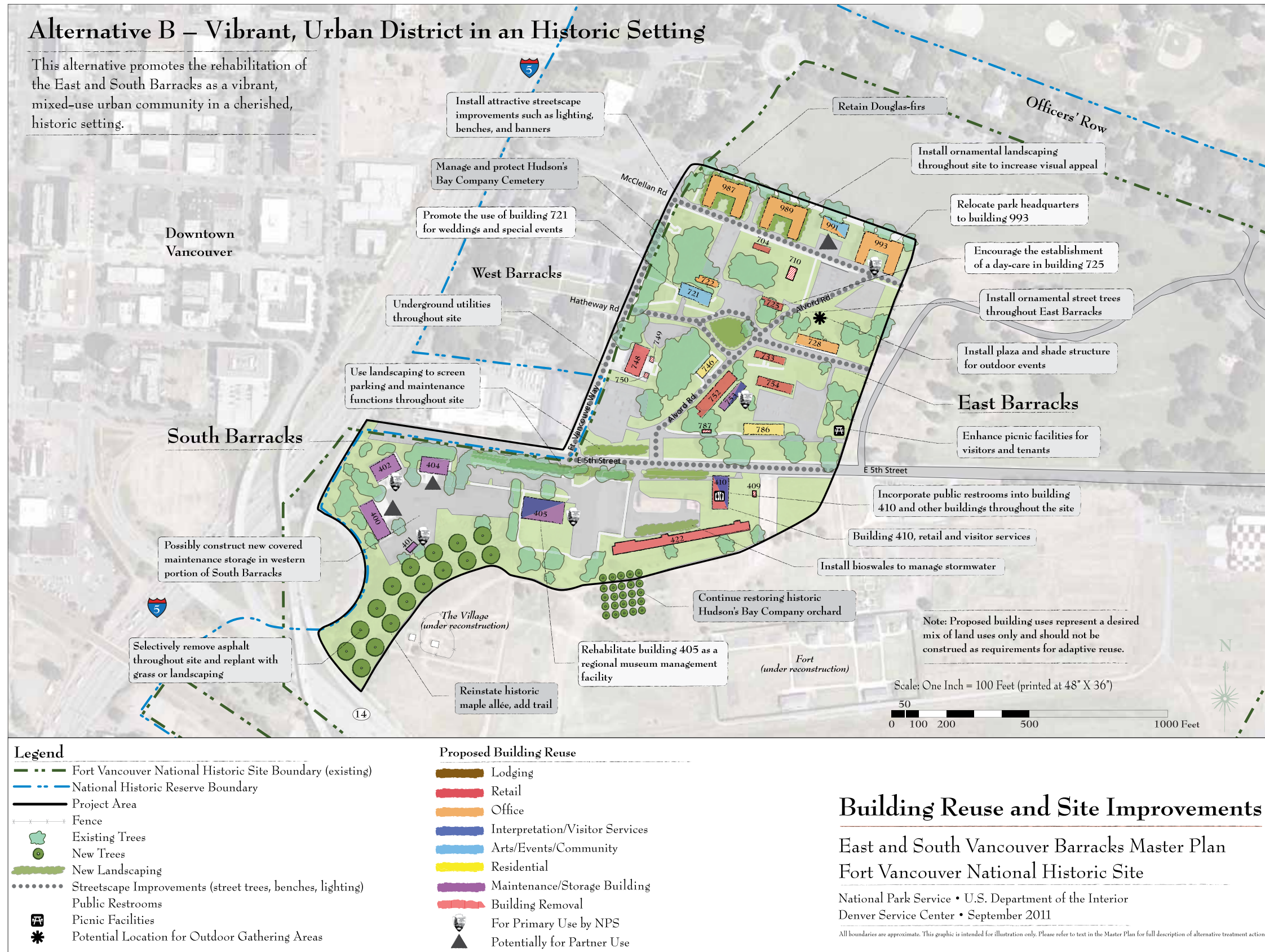


Figure 7. Building reuse and site improvements for alternative B.

Alternative B – A Vibrant, Urban District in an Historic Setting

Note:
This map represents initial concepts for improving circulation that were considered during the planning process. More detailed study and design will be undertaken before any proposal is implemented.

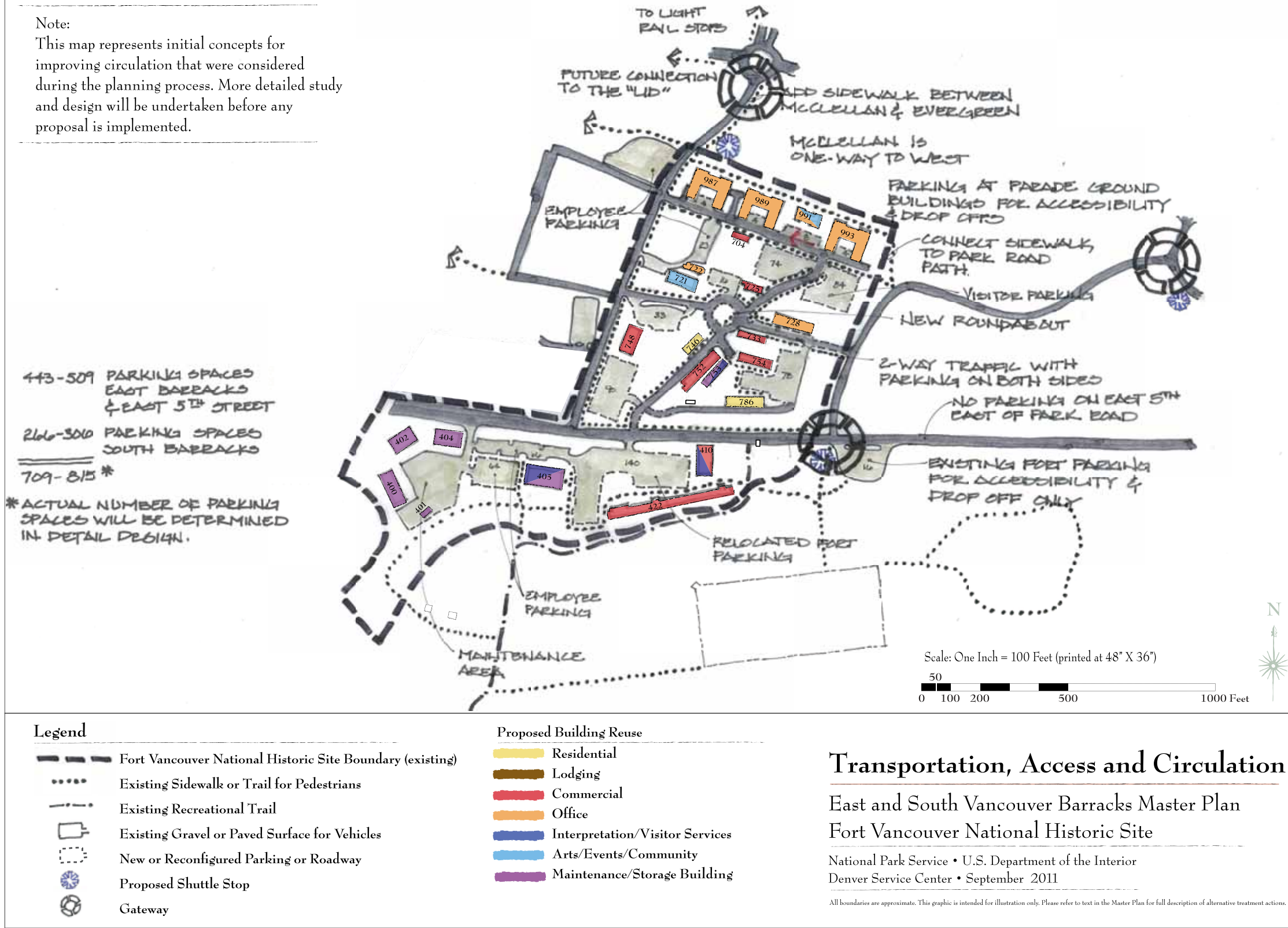


Figure 8. Transportation, access and parking recommendations for alternative B.

the *Conditions Assessment for Fort Vancouver National Historic Site*. Further, the historical structures are quite small and their removal would likely pose only limited effects to the historic setting. They are also unlikely to be reusable. Removal of non-contributing buildings would likely have a positive effect on the historic landscape.

New development would be limited and proposed only if it is essential to public use, enjoyment, and understanding. For example, construction of new buildings in the South Barracks could be limited to covered storage for NPS maintenance functions in the western portion of the South Barracks.

The National Park Service would also proactively improve building envelopes of remaining buildings to maximize resource efficiency, as feasible.

Visitor Use and Experience

Public access would be enhanced in alternative B as a number of buildings would be rehabilitated for occupancy and visitor use. The National Park Service would provide interpretation primarily through non-personal services such as self-guiding walking tours, personal media, and modest interpretive exhibits within foyers. The installation of some new interpretive waysides focusing on site history may be appropriate.

The rehabilitation of building 405 as a regional museum management facility would provide the public with increased opportunities to appreciate and learn about the region's archeological resources (Figure 9). As a visitor venue for the public, this building would accommodate interpretation and educational programming and engaging exhibition spaces for important archeological and museum resources. In a key location, the building and its surrounding grounds would connect visitors traveling between the Fort, the Discovery Trail, and the reconstructed HBC Village.



Figure 9. In alternatives B, C, and D, Building 405 will be rehabilitated into a regional museum management facility. (National Park Service)

Special events would also be accommodated and encouraged in suitable buildings and select locations throughout the site. Examples would include private weddings, art events, and public receptions. The National Park Service would also promote retail use of building 410 in order to serve visitors to the Discovery Trail and Fort Vancouver (Figure 10). Public restrooms would be made available in key buildings throughout the site.

Access, Circulation, and Parking

Throughout the project area, roads, parking, and circulation would be redesigned to accommodate new uses (Figure 11). The National Park Service would use pervious paving surfaces to improve stormwater management where feasible. Fleet parking for NPS staff and select tenants would be provided in the western portion of the South Barracks. A limited number of additional small surface parking lots may be constructed north of East 5th Street, close to commercial destinations so that visitors may park close by. For example, the Mobile Army Surgical Hospital (MASH) site would accommodate parking, to allow the opportunity to use building 748 for a busy retail function, such as a restaurant. Parking for tour buses, recreational vehicles, and trailers would be accommodated in the new Fort visitor parking lot, located east of building 405 in the South Barracks. No substantial changes would be made to existing parking associated with the HBC Cemetery grounds.

Internal roads would selectively be redesigned to improve circulation, safety, drainage, and appearance. For example, Hatheway Road would be extended along a historic alignment to intersect Park Road, in order to connect the East Barracks with the rest of the park. Analysis indicates that the current intersection with Alvord Road and Fort Vancouver Way is likely to be dangerous with increased traffic. Therefore, Alvord Road would be realigned at the southern end to meet East 5th Street to improve safety at the intersection and align with new parking for Fort Vancouver. Redesign of the intersection between Hatheway and Alvord roads would be addressed by way of a new roundabout or other suitable traffic calming device consistent with the historic landscape.

Sidewalks would be repaired and extended, providing links with existing and proposed trail networks in the immediate surroundings. For example, a new sidewalk along Hatheway Road would connect to a pedestrian overpass that is currently planned to extend over Interstate 5. A new trail would be added through the reconstructed historic Maple Allée. Physical gateways and connections between the barracks, the city of Vancouver and the rest of the VNHR would help revitalize the urban interface, invite more activity on the site, and improve wayfinding.

Park Operations

The National Park Service would increase staffing levels to accommodate expanded operations and higher volumes of visitors. For example, this alternative would require a business specialist due to the additional leasing and concessions workload that comes with a heavy emphasis on commercial uses. This alternative also requires staffing for NPS curatorial functions in building 405. Additional positions may include staff for maintenance, archeology, facility services, park safety, and law enforcement. In particular, new maintenance and cultural resource employees would be required to assure proper management and maintenance of buildings and grounds. See Table 5 for a summary of staffing estimates by alternative.

As in alternative A, NPS staff would seek to defray costs to the government with income generated through lease agreements from tenants and would consider the various options available to accomplish this work.

ALTERNATIVE C: A SUSTAINABLE, HISTORIC CAMPUS FOR PUBLIC SERVICE (PREFERRED ALTERNATIVE)

The following actions would be in addition to those described as common to all alternatives. For additional information on all alternatives see Table 8.

Alternative Emphasis

The primary focus of the preferred alternative is to create a dynamic, sustainable, public service campus where the history of the East and South Barracks is preserved and interpreted, and to provide a model in integrating sustainability with historic preservation and rehabilitation. Education is a key part of this alternative, with an emphasis on interpreting the history of military occupation and the HBC in different locations throughout the barracks. This alternative is in keeping with Federal Management Regulations (41 CFR 102-79.55), which in part state, “Federal agencies must assume responsibility for the preservation of the historic properties they own or control. Prior to acquiring, constructing or leasing buildings, agencies must use, to the maximum extent feasible, historic properties already owned or leased by the agency.” This alternative also emphasizes educating the public on environmentally sustainable practices, while at the same time remaining financially sustainable.

Adaptive Reuse

For Use by National Park Service and Partners

Under the preferred alternative, the National Park Service will have the option to move administrative functions to either building 991 or building 993, based upon future management and staffing options (Figure 10). Building 991 is well suited to be used in this function, with ready-made offices on the main floor, adequate storage in the basement, and a large meeting space on the second floor. Building 993 is equally suited for this function, with the added benefit of allowing a substantial portion of the building to be devoted to interpretation of early military history for the public. Currently, over 600 volunteers and staff use the costumes to portray fur trade and soldiers in the premier living history program in the Pacific Northwest. No static or hands-on military history exhibits currently exist on the VNHR. Building 993 provides an appropriate location for these critical NPS functions.

A portion of either building 991 or building 993 could also accommodate the park’s living history, special events, cultural demonstrations, and costume collections, numbering over 4,000 items and growing by approximately 15% each year. The costumes and accessories are essential props for interpretive programs that include living history events, cultural demonstrations, and educational training programs. These collections represent a substantial investment of both federal and private funds, and require secure storage with controlled access and use. The costume department also has a substantial workforce of volunteers who fabricate and repair clothing and accessories, fit costumes to individuals, administer the costume loans, catalog new acquisitions, and conduct research to increase authenticity of the collection. Therefore, the space for the costume department would include secure costume and accessory storage, workrooms for fabrication and repair, office space for cataloging and recordkeeping, lockers, and changing rooms.

Building 400 would become the primary NPS maintenance facility, and building 401 would be retained for associated NPS maintenance use and storage. Building 753 may also be suitable for NPS maintenance storage.

As in alternative B, building 405 would be rehabilitated as a regional museum management facility for the National Park Service, partners, and the public.

Buildings 402 and 404 could be used for maintenance or storage use by the Fort Vancouver National Trust, U.S. Forest Service, or other partners.

For Use by Other Tenants

Under the preferred alternative, the National Park Service would seek to attract public agencies and organizations with compatible missions to the National Park Service to occupy office spaces. In addition to office use, a mix of other uses would be encouraged that integrates well with the rest of the VNHR. These uses may include nonprofit and community functions and limited commercial uses like retail shopping, restaurants, and a daycare. Overnight accommodations may be provided to support conferences, environmental field schools, school groups, and elder hostel groups. General residential use by the public is not anticipated under this alternative.

Cultural Landscape Treatment

Overall

Over time, the cultural landscape would be rehabilitated to support the multi-agency campus concept and increased visitation. Major objectives of landscape rehabilitation would include the depiction and interpretation of historic conditions, with a focus on HBC history in the South Barracks, and early to late military history in the East Barracks.

East Barracks

The military landscape in the East Barracks would be preserved, rehabilitated, and interpreted. Where feasible, restoration of the Oregon white oak Woodland Priority Habitat would be in accordance with recommendations from Washington Department of Fish and Wildlife. For example, the National Park Service would explore revegetating the MASH site with Oregon white oaks. National Park Service staff will approach this action with caution, given the potential for future archeological discoveries in this area.

To improve resource conditions, visitor experience, building conditions, and public safety, the National Park Service would also choose not to replace diseased or damaged Douglas-firs along the southern edge of the Parade Ground, which are noncontributing landscape features.

The National Park Service would also remove the gravel parking lot at the HBC Cemetery and replace it with turf or other materials in order to create a contemplative, park-like setting.

Throughout the East and South Barracks, the plant palette would emphasize water-wise, historic species dating to late military historic periods, as well as some compatible native plant species where appropriate.

As in alternative B, the National Park Service would seek to adjust park boundaries to include the western side of Fort Vancouver Way so that the National Park Service would own and be responsible for all HBC Cemetery grounds.

South Barracks

To allow extended restoration of the HBC cultural landscape into the South Barracks, building 422 would be proposed for demolition subject to appropriate compliance clearances. As feasible,

this robust landscape rehabilitation would include expanding the HBC Garden and Orchard, reconstructing the Summer House and the historic Maple Allée, and establishing an interpretive loop trail that connects visitor areas to various aspects of the historic site. The Maple Allée would be integrated with the screening and fencing of the maintenance yard.

Under the preferred alternative, the Fort Vancouver Village would continue to be a focus for interpretation and archeological investigation. In accordance with the site's *Long-Range Interpretive Plan* and the *Village Development Concept Plan*, particular emphasis would be placed on reestablishing landscape features and on interpreting the following sites:

- houses representing the diverse, multi-cultural population of the Village, and
- the sites and roadway between buildings 405 and 404 in the northern portion of the Village.

Interpretive activities or projects for this area may include reconstruction, living history events, exhibit panels, talks, tours, demonstrations, educational programs, and park-sponsored special events. Interpretation of the historic "Crossroads of the Pacific Northwest" would also be provided at the former MASH site or within the northern portion of the Village. Historic maps of the HBC and U.S. Army period both show a major intersection of historic roads, generally where East 5th Street and Alvord Road meet with Fort Vancouver Way. It appears that this intersection was in place at least by the early 1840s, and maybe as early as 1829. This intersection helped to define the landscape of the HBC and the U.S. Army and it is suggested that its importance could be demonstrated by interpreting it as, the "Crossroads of the Pacific Northwest." Interpretive activities could also occur on a pedestrian trail along a converted stretch of Alvord Road.

Development Character

Newly designed features such as shuttle stops, crosswalks, plazas, lighting, benches, street trees, picnic facilities, bike racks, and other site furnishings would be permitted and designed in accordance with accessibility standards and the historic setting. In keeping with the preferred alternative's emphasis on sustainable practices, the National Park Service would explore the use of cisterns for rainwater capture, solar panels, geothermal heat sources, and other technologies in ways that do not intrude on the cultural landscape but still provide opportunities for educating the public on these practices.

As in alternative B, East Barracks buildings would be repainted consistent with the paint scheme used at Officers' Row and the West Barracks. However, pending further research, NPS staff may explore restoring one or two East Barracks buildings to a historic paint scheme for interpretive purposes. Where allowed by policy and code, temporary and non-historic changes to buildings made by the U.S. Army would likely be reversed under this alternative, such as fire escapes and temporary access ramps. For plantings throughout the site, historic plant species would be preferred, with an emphasis on species that are water-wise. Some flexibility would be granted to include native species where appropriate.

As in alternative B, the National Park Service would implement the preferred alternative in the *Schematic Design Report for Fort Vancouver National Historic Site East and South Barracks Utility Upgrades* (2010).

Construction Activity

Subject to additional compliance, three contributing historic structures (buildings 422, 749, and 750) and three noncontributing structures (buildings 409, 710, and 787) would be demolished. At this time, all other buildings are slated to remain on site and be rehabilitated as appropriate

tenants and funding are secured. Rationale for removal relates to conflicts with HBC cultural landscape restoration and visitor access, as well as the poor condition of many of the structures as reported in the *Conditions Assessment*. For example, building 422 undermines the experience and restoration of the HBC cultural landscape south of East 5th Street. It is also in poor condition, the cost of repairs is estimated to be more than the current cost of replacement, and the building restricts access between Fort Vancouver and the future site of visitor parking.

New building construction will be limited, and proposed only if it is essential to support public use, enjoyment, and understanding. For example, construction of new buildings in the South Barracks would be limited to historic reconstructions and covered storage for NPS maintenance functions in the westernmost portion of the South Barracks.

As in alternative B, the National Park Service would proactively maintain envelopes of remaining buildings to maximize resource protection, energy efficiency, and water conservation, as feasible. In addition, NPS staff would seek to model and interpret these and other sustainable construction and maintenance practices for the public.

Visitor Use and Experience

The National Park Service would attempt to create visitor experiences that foster a sense of interconnectedness with other park and VNHR resources.

Public access would be increased under the preferred alternative as a larger number of buildings would be rehabilitated for occupancy and visitor use in comparison to the no action alternative. Visitors would enjoy opportunities to learn about the work of agencies on campus, because tenants of buildings along the Parade Ground would be encouraged to provide public access, interpretive exhibits, and public restrooms in building foyers. Visitors would also have opportunities to learn about sustainability, and how it may be achieved in a historic context. Sustainable practices and technologies would be located and demonstrated in ways that educate the public.

Public spaces in rehabilitated historic buildings would be refurnished to recreate the historic appearance of U.S. Army barracks buildings. For example, a prominent interpretive exhibit could be located in the park headquarters building (in either building 991 and/or building 993) and would be rehabilitated to a more historic appearance. This key visitor attraction would enable the National Park Service to better interpret early military history, which is part of the park's legislated purpose.

In order to complement the direct, person-to-person interpretation occurring elsewhere in the Fort Vancouver NHS, the National Park Service would provide interpretive opportunities primarily through non-personal services such as interpretive waysides, self-guided walking tours, personal media, and modest displays within foyers such as interior interpretive panels. The design of the interpretive exhibits and spaces would follow sustainable design and accessibility standards and would emphasize environmental sensitivity in constructing the exhibits: using nontoxic materials, conserving resources, and recycling materials.

The National Park Service would also host public demonstration events related to cultural heritage, such as American Indian history and culture, as well as educational events on sustainability. Programs and media would also be developed to interpret the trail associated with the restored Maple Allée in the South Barracks.

As in alternative B, the rehabilitation of building 405 as a regional museum management facility would provide the public with increased opportunities to appreciate and learn about the region's archeological and museum resources. The National Park Service would also promote retail use of building 410 in order to serve as a central gathering place for the high number of visitors to building 405, the Discovery Trail, and Fort Vancouver. Public restrooms would be made available in building 410, as well as in key buildings throughout the site.

Healthy food options and the local use of food grown in the HBC Orchard and Garden would be encouraged, as well as themed dining opportunities in keeping with historic U.S. Army traditions.

As in alternative B, special events would also be accommodated.

Access, Circulation, and Parking

Pending future design and study, circulation for pedestrians and motorists would be enhanced over time throughout the site to create a welcoming, safe, and sustainable environment (Figure 11). The National Park Service would reduce paving, largely remove barricades and fences, and structure a safer, more coherent and legible experience for motorists and pedestrians. As part of all changes to the road network, the National Park Service would explore the use of sustainable stormwater management approaches, such as porous pavements, in a manner that respects the cultural landscape.

As in alternative B, physical gateways would be installed to help revitalize the urban interface and improve wayfinding. Sidewalks would be repaired and extended, and a new interpretive trail would be added through the reconstructed historic Maple Allée. Trail improvements would be coordinated with similar efforts in the surrounding areas pursued by the VNHR and other partners.

Parking for visitors to Fort Vancouver would be relocated to the area east of building 405 and west of building 410. The National Park Service would also ensure that future site design of this area integrates parking with new pedestrian connections between the Discovery Trail, building 405, and Fort Vancouver, as well as with the adjacent restoration of the HBC Orchard and Garden.

Internal roads would selectively be redesigned to improve circulation, safety, drainage, and appearance. For example, McClellan Road may be extended along a historic alignment to connect with the Park Road, pending further study. This new connection would weave together the East Barracks with the rest of the park and create convenient circulation among park destinations (e.g., the Fort, visitor center, and new NPS administration located in either building 991 or building 993). As in alternative B, Alvord Road may be realigned at the southern end to meet East 5th Street to improve pedestrian and vehicular safety. Under the preferred alternative, the existing southern portion of Alvord Road from building 733 to East 5th Street would be converted to pedestrian use only to provide for interpretation of the "Crossroads of the Pacific Northwest."

The National Park Service may also selectively remove extraneous roads and parking areas throughout the site (e.g., spur to building 710, minor drives between buildings 721 and 722, and between 752 and 753). In order to create a more contemplative, reverent setting, and in close consultation with affiliated tribes, NPS staff would seek the removal of extraneous parking lots laid on top of the HBC Cemetery, such as the gravel lot and the small lot west of building

721. The National Park Service would also enhance the authenticity of the historic setting by removing asphalt at the bases of buildings 987, 989, 991, and 993, where appropriate. Parking in this area would be limited to a small number of close-in handicap parking spaces, drop-off areas, and service access.

The need for additional parking and changes to traffic patterns would be further evaluated. To the extent possible, the National Park Service may limit the expansion of new surface lots in order to minimize damage to resources, yet new lots may be added with final locations determined by specific building needs and occupation levels. National Park Service staff would also pursue collaborative parking solutions with the City of Vancouver and other partners, including but not limited to shared parking on sites external to the project area.

Preferred parking for carpools and vanpools would also be considered. Most fleet parking would be located in the western portion of the South Barracks to accommodate expanded restoration of the HBC Village. Parking for tour buses, recreational vehicles, and trailers would be accommodated in the new Fort visitor parking lot, located east of building 405 in the South Barracks.

Park Operations

The National Park Service would need to increase staffing levels to accommodate expanded operations and needs. For example, a business manager would handle leases or other agreements possibly through property management companies and work with government Contracting Officers. Under this alternative, the National Park Service would strive to attract long-term tenants, with an emphasis on federal and other public agencies, which may help support this effort. This alternative would also require additional facilities and grounds maintenance staff, as well as several positions dedicated to the rehabilitation and reuse of the historic barracks buildings. Maintenance and cultural resource employees would ensure that all buildings and grounds are properly maintained and strive to increase use of sustainable maintenance practices. Attracting federal agencies to become long-term tenants would help further these efforts, as federal agencies are bound by executive orders on sustainability that require reduced resource consumption and increased use of sustainable technologies and practices.

As in alternative B, this alternative would require curatorial and cultural resources staffing for building 405, as well as other locations throughout the Barracks. Additional positions would be needed to address increased workload in the areas of resource management, maintenance, and law enforcement.

As in alternatives A and B, NPS staff would seek to defray costs to the government with income generated through lease agreements from tenants and would work with its partners as they consider the various options available to accomplish this work. It is intended, and expected, that future maintenance costs for any building not directly used or occupied by the National Park Service for operational or visitor use would be fully supported by revenue derived from the lessee.

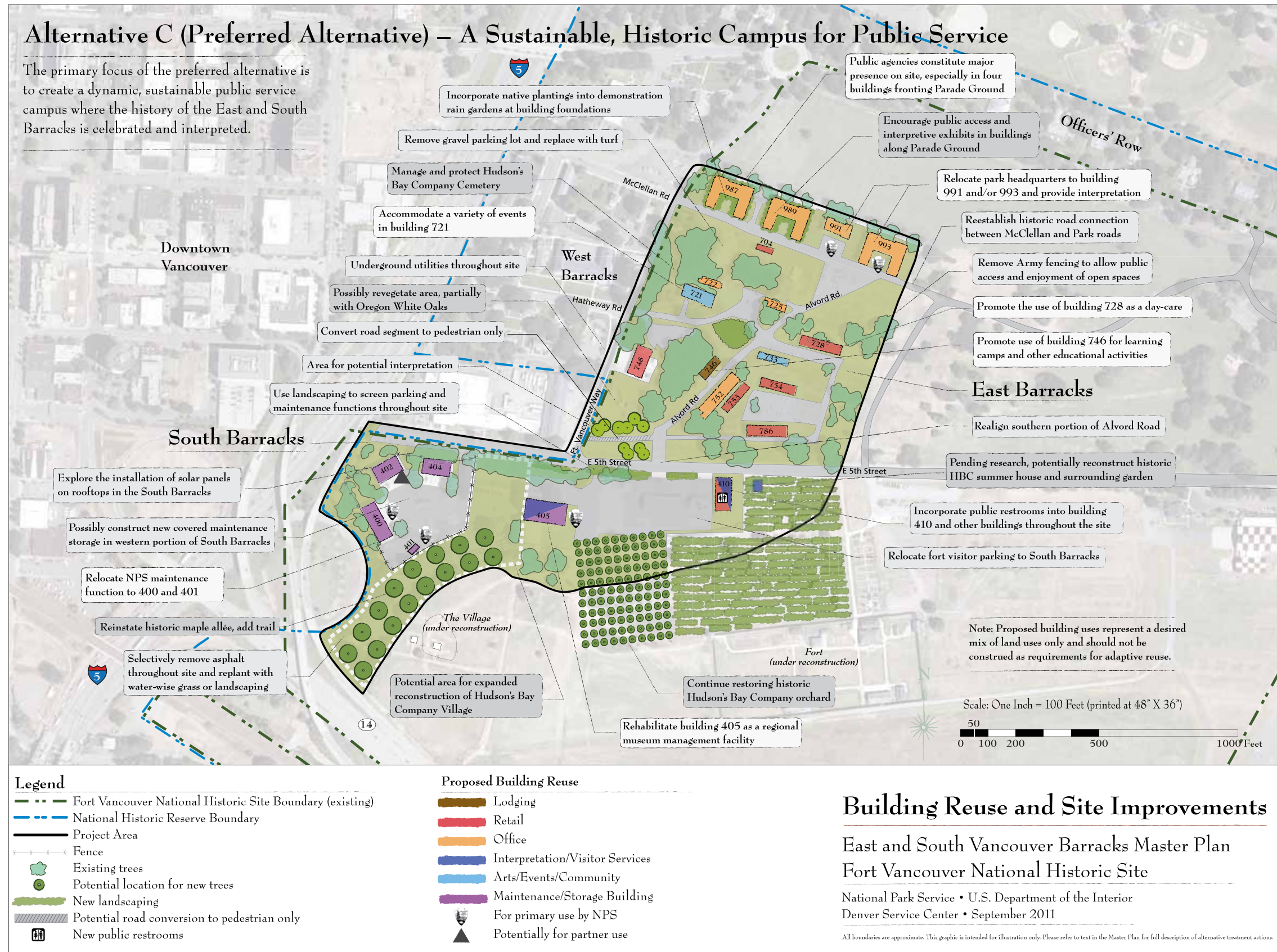


Figure 10. Building reuse and site improvements for alternative C.

Alternative C (Preferred Alternative)
A Sustainable, Historic Campus for Public Service

Note:
This map represents initial concepts for improving circulation that were considered during the planning process. More detailed study and design will be undertaken before any proposal is implemented.

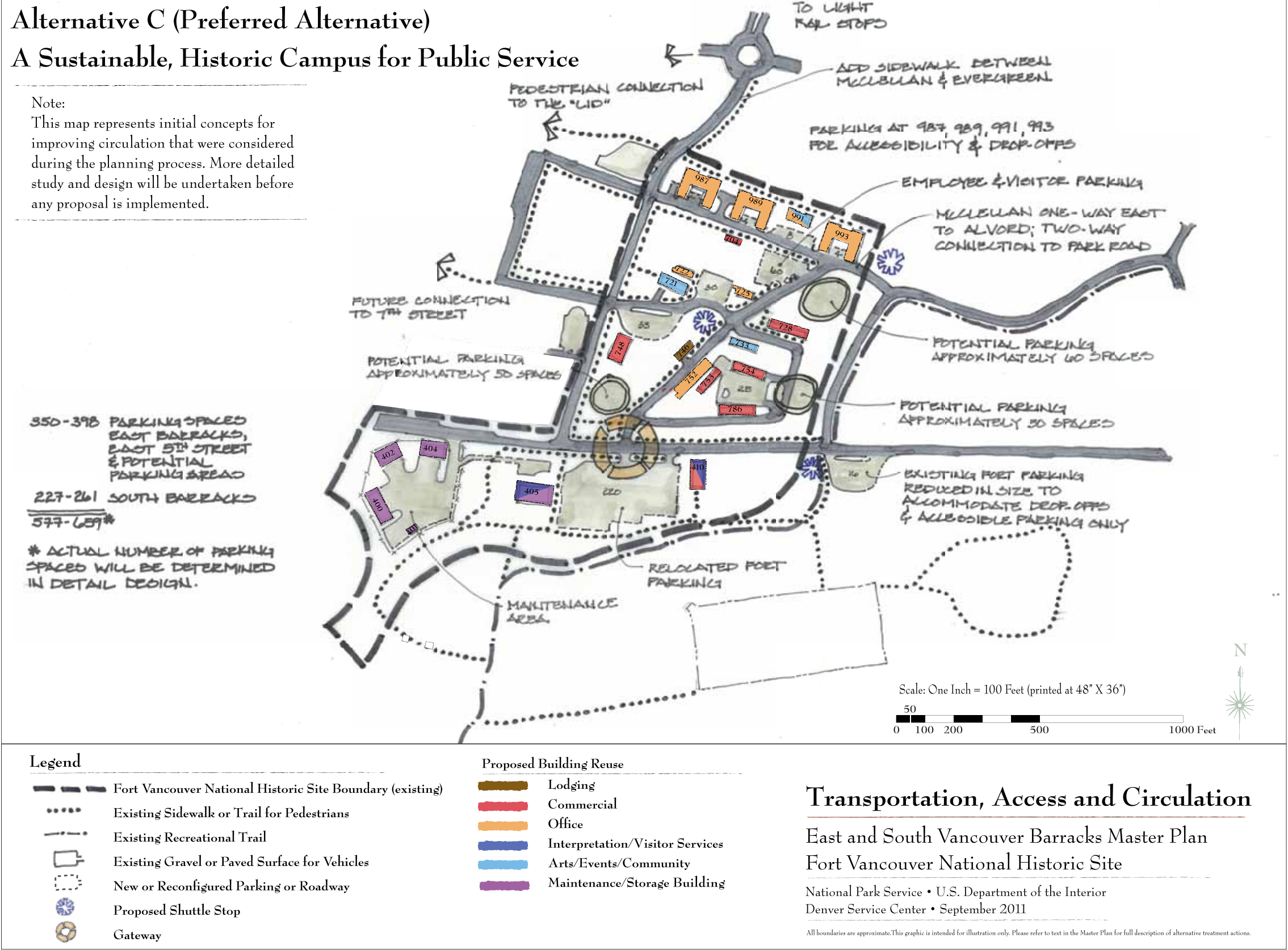


Figure 11. Transportation, access and parking recommendations for alternative C.

ALTERNATIVE D: A HISTORIC, EDUCATIONAL CAMPUS FOR ALL

The following actions would be in addition to those described as common to all alternatives. For additional information on all alternatives see Table 8.

Alternative Emphasis

This alternative places a heavy focus on educational, community and nonprofit uses that support the focused interpretation of site-specific history, including HBC history (1829-1860) south of East 5th Street and military history (1901-1948) north of East 5th Street. Buildings would be rehabilitated to serve as offices, classrooms, community spaces and a limited amount of complementary commercial services.

Adaptive Reuse

For Use by National Park Service and Partners

As in alternative B, park headquarters, NPS costume storage, and other NPS administrative uses would be relocated to building 993. A portion of building 993 would also be devoted to interpretation of early military history.

Building 404 would become the primary NPS maintenance facility, and other South Barracks buildings may be retained for associated NPS maintenance use and storage. Buildings 749, 750, 753, and 787 would also be retained for these purposes.

Similar to alternatives B and C, building 405 would be rehabilitated as a regional museum management facility.

Building 991 could be rehabilitated for Fort Vancouver National Trust offices, as well as for special events. Buildings 400 and 402 could be used for maintenance or storage by the Fort Vancouver National Trust or other partners.

For Use by Other Tenants

The National Park Service would encourage uses such as classrooms, offices, and community spaces through partnerships and other arrangements with educational institutions, nonprofits, and community organizations. Limited commercial services would also be allowed that support the primary functions of the site, such as a café, art gallery, or other functions. Overnight accommodations would be provided to support conferences, educational field schools, school groups, and elder hostel groups. General residential use by the public is not anticipated under this alternative.

Cultural Landscape Treatment

Overall

Major objectives of landscape rehabilitation would include the depiction and interpretation of historic conditions, with a focus on HBC history in the South Barracks, and early to late military history in the East Barracks.

East Barracks

The military landscape in the East Barracks would also be preserved, rehabilitated, and interpreted. Limited expansion of the Oregon white oak savanna community may occur, and Douglas-firs along the southern edge of the Parade Ground, which are noncontributing landscape features, would be removed to restore open views of building facades across the Parade Ground. Throughout the East and South Barracks, the plant palette would include

historic species only. Small-scale features such as bollards and flags may be reconstructed. Historic roads may be resurfaced per the *Cultural Landscape Report*, in order to reinstate historic conditions of the military landscape. As in alternative C, the gravel lot on the HBC Cemetery may be converted to turf to create a more contemplative park-like setting.

As in alternatives B and C, the National Park Service would seek to adjust park boundaries to include the western side of Fort Vancouver Way.

South Barracks

Robust cultural landscape restoration would include full restoration of the HBC Orchard and Garden to their full extents, as well as reconstruction of the Summer House. The Orchard and Garden would extend north to East 5th Street and encompass the area extending east from building 405 to the existing garden north of Fort Vancouver. As in alternatives B and C, the National Park Service would also reinstate the historic Maple Allée and establish an interpretive trail through that area. Later U.S. Army structures south of East 5th Street (i.e., buildings 410, 422, 409) would be removed to accommodate HBC cultural landscape restoration.

As in alternative C, landscape rehabilitation may be expanded to include reconstruction of historic houses and topographical features west of building 405 in the South Barracks that are reflective of the historic HBC Village. Interpretation of the historic “Crossroads of the Pacific Northwest” would be provided at the former MASH site, along with parking for visitors to Fort Vancouver.

Development Character

Newly designed features such as shuttle stops, crosswalks, plazas, lighting, benches, street trees, picnic facilities, bike racks, and other site furnishings would be most limited in this alternative and would be designed in accordance with accessibility standards and the historic setting (Figure 12). The plant palette would include historic species only. Historic methods of



Figure 12. An example of an existing building information sign in the West Barracks, which can be used as a model for similar site furnishings in the East and South Barracks. (National Park Service)

irrigating and maintaining the landscape would be employed in select locations for interpretive purposes. As in alternative C, temporary and non-historic changes to buildings made by the Army would likely be reversed.

As in alternative C, East Barracks buildings would be repainted; one or two East Barracks buildings may be repainted to a historic paint scheme for interpretive purposes.

As in alternatives B and C, the National Park Service would implement the preferred alternative in the *Schematic Design Report for Fort Vancouver National Historic Site East and South Barracks Utility Upgrades* (2010).

Construction Activity

Subject to additional compliance, two contributing historic structures (buildings 410 and 422) and three noncontributing structures (buildings 401, 409, and 710) would be removed. These structures conflict with HBC cultural landscape restoration and visitor access. For example, building 410 would be removed to accommodate full restoration of the HBC Garden, Summer House, and Orchard. Building 422 is in poor condition, the cost of repairs is estimated to be more than the current cost of replacement, and the building restricts access between Fort Vancouver and the future site of visitor parking.

New building construction would be limited, and proposed only if it is essential to public use, enjoyment, and understanding. For example, construction of new buildings in the South Barracks would be limited to historic reconstructions and covered storage for NPS maintenance functions in the westernmost portion of the South Barracks.

As feasible, the National Park Service would proactively improve building envelopes and fixtures in remaining buildings to maximize energy efficiency and water conservation.

Visitor Use and Experience

Public access would be increased under this alternative as a large number of buildings would be rehabilitated for occupancy and visitor use (Figure 13). Visitors would enjoy opportunities to learn about the history of buildings in the East Barracks because tenants would be encouraged to provide public access, interpretive exhibits, and public restrooms in building foyers. Public spaces in rehabilitated historic buildings would be refurnished with original, reproduction, or similar furnishings to recreate the historic appearance of Army barracks buildings. An interpretive exhibit in keeping with historic Barracks themes would be located in the park headquarters building.

As in alternative C, the National Park Service would provide non-personal interpretive services such as interpretive waysides, self-guided walking tours, personal media, and modest displays within foyers. The design of the interpretive exhibits and spaces would follow accessibility standards. The rehabilitation of building 405 as a regional museum management facility would provide the public with increased opportunities to appreciate and learn about archeological and museum resources. The National Park Service would also partner with outside organizations to offer additional museum spaces.

Educational and interpretive events would also be accommodated and encouraged, such as environmental learning camps, lectures, and other activities. The National Park Service would also host public demonstration events related to cultural heritage, such as American Indian

history and culture, and would promote themed dining opportunities in keeping with historic Army traditions.

Access, Circulation, and Parking

The National Park Service would reduce the amount of asphalt on-site and use pervious surfaces where feasible (Figure 14). Physical gateways and connections between the Barracks, the city, and the rest of the VNHR would reflect the historic scene and announce its distinctiveness to visitors. Sidewalks would be repaired and extended, providing linkages with existing and proposed trail networks. A new trail would be added through the reconstructed historic Maple Allée.

Internal roads would selectively be redesigned to improve circulation, safety, drainage, and appearance. For example, McClellan Road, Hatheway Road, and the southernmost east-west road in the East Barracks would all be reconnected to the Park Road along historic routes. McClellan Road would be narrowed across the HBC Cemetery and limited to pedestrian use only. East of the HBC Cemetery, McClellan Road would be widened to accommodate two-way traffic. South of Hatheway Road, Alvord Road would be converted to pedestrian use only, and Hatheway Road would be realigned where it meets Alvord Road.

As in alternative C, the National Park Service would selectively remove extraneous minor drives and parking areas throughout the site. In close consultation with affiliated tribes, NPS staff would seek the removal of parking lots lying on top of the HBC Cemetery, such as the gravel lot and the small lot west of building 721. As in alternatives B and C, the National Park Service would selectively remove asphalt near building foundations and limit the expansion of new surface parking lots.

Full restoration of the HBC Orchard and Garden south of East 5th Street would encompass the area designated for relocated Fort parking under alternatives B and C. Therefore, under alternative D, parking for visitors to Fort Vancouver would be relocated to the MASH site. Fleet parking would be limited to the westernmost portion of the South Barracks to accommodate expanded restoration of the HBC Village. The National Park Service would work with the City of Vancouver to accommodate parking for tour buses, recreational vehicles, and trailers in existing lots in the West Barracks, and in relocated Fort visitor parking.

Park Operations

The National Park Service would increase staffing levels to accommodate expanded operations and needs. This alternative will require a business specialist to deal with the anticipated partner-related workload. It would also require additional interpretation and education staff to provide programming and educational services. As in alternative C, this alternative would require curatorial staffing for building 405, as well as other locations throughout the Barracks. Additional positions may include staff for resource management and grounds and facility maintenance. Maintenance and cultural resource employees would regularly maintain all buildings. See Table 5 for a summary of staffing estimates by alternative.

As in alternatives B and C, NPS staff would seek to defray costs to the government with income generated through lease agreements from tenants and would consider the various options available to accomplish this work.

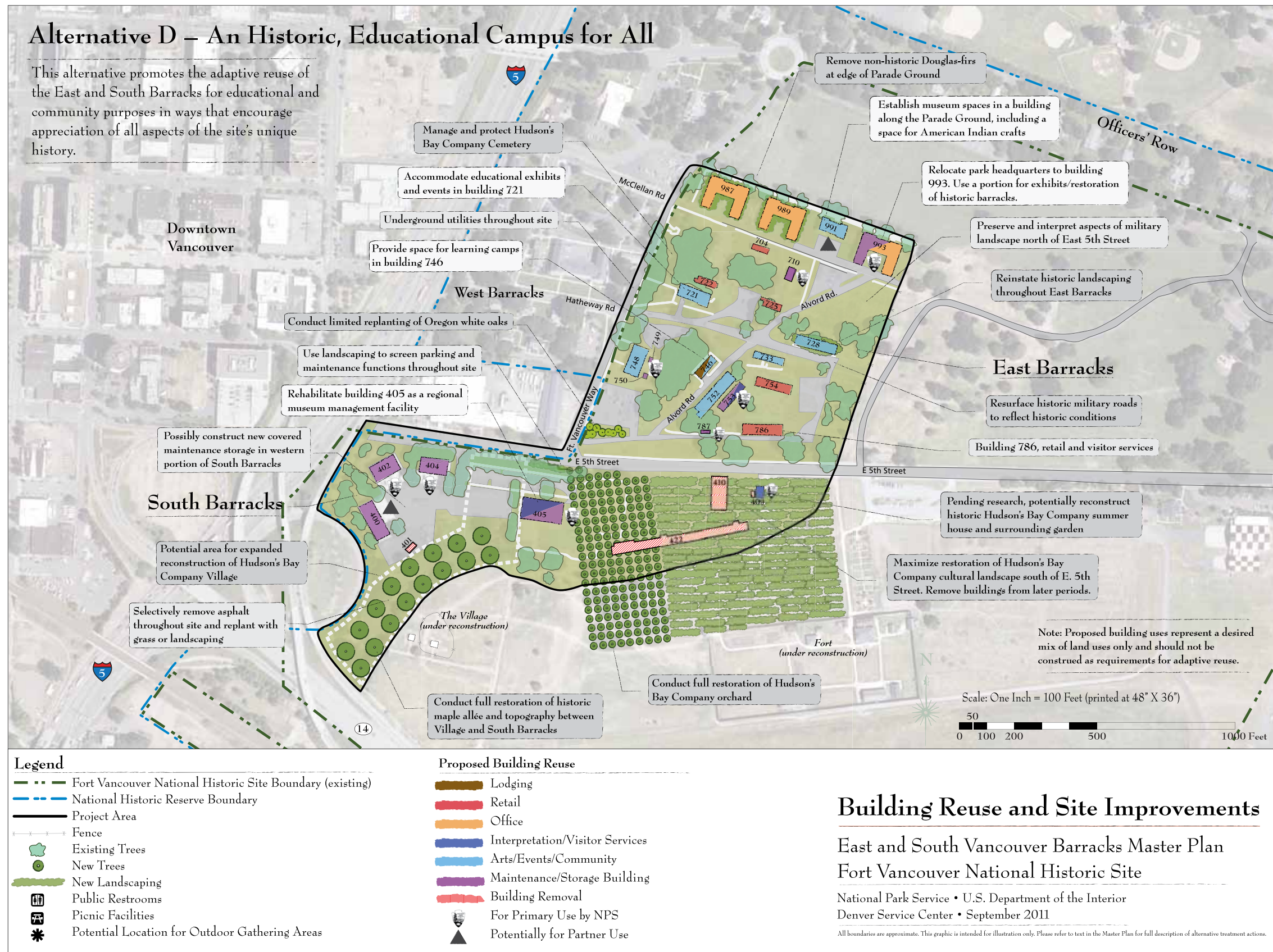


Figure 13. Building reuse and site improvements for alternative D.

Alternative D – An Historic, Educational Campus for All

Note:
This map represents initial concepts for improving circulation that were considered during the planning process. More detailed study and design will be undertaken before any proposal is implemented.

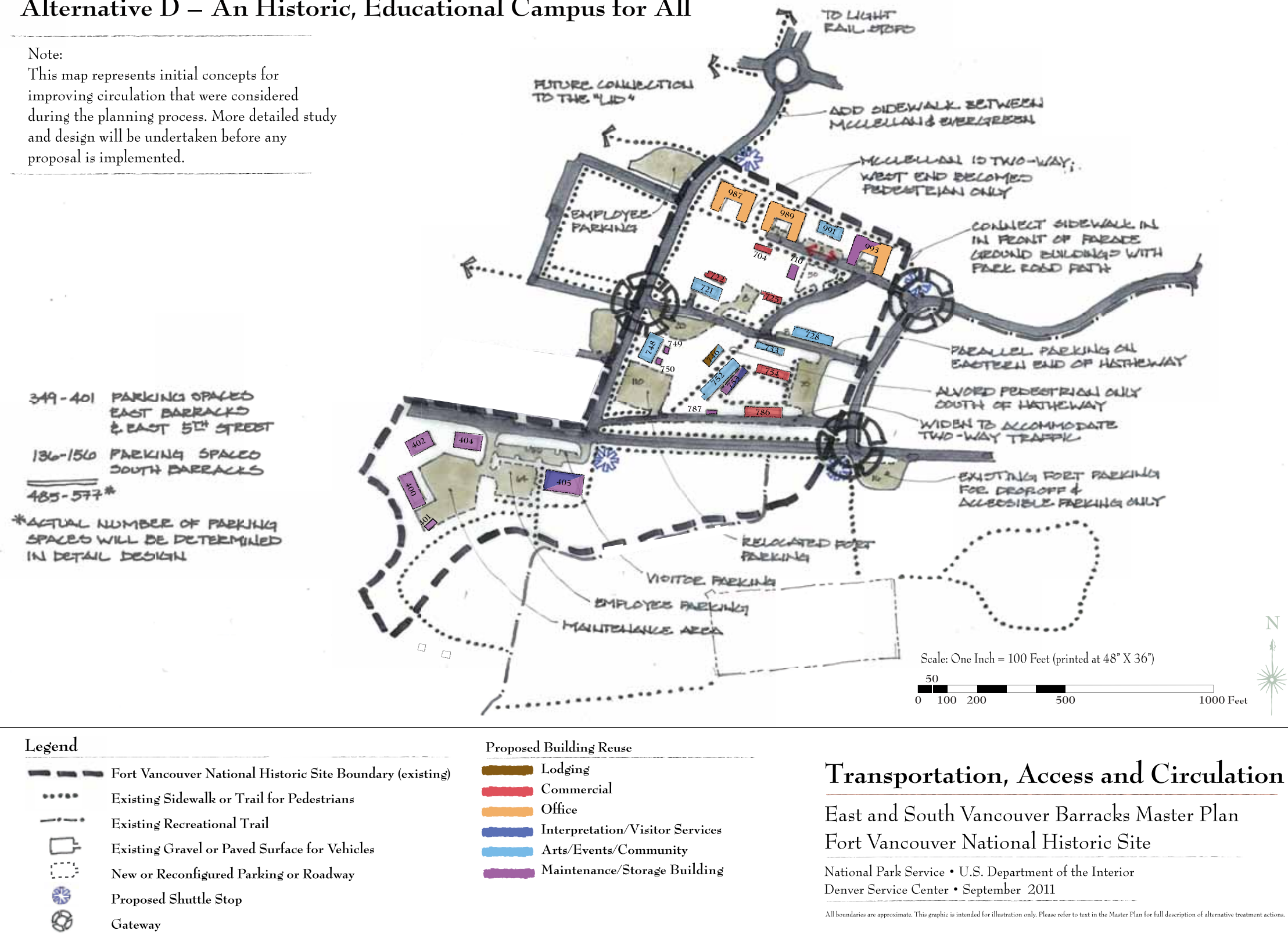


Figure 14. Transportation, access and parking recommendations for alternative D.

ALTERNATIVES ACTIONS CONSIDERED BUT DISMISSED

As stated in NPS Director's Order #12: Handbook for Environmental Impact Analysis (National Park Service 2001b), the National Park Service generally eliminates alternatives from further study because of (a) technical or economic infeasibility; (b) inability to meet project objectives or resolve need; (c) duplication with other, less environmentally damaging or less expensive alternatives; (d) conflict with an up-to-date and valid park plan, statement of purpose and significance, or other policy such that a major change in the plan or policy would be needed to implement; and (e) too great an environmental impact. In accordance with this guidance, the following actions were considered, but dismissed from further analysis:

REMOVING BUILDINGS AND INFRASTRUCTURE WITHIN THE HUDSON'S BAY COMPANY CEMETERY

Earlier in the planning process, NPS staff attended a meeting with the Affiliated Tribes of Northwest Indians, which was held outside the official public scoping period and was not considered a formal tribal consultation meeting. Participants at that meeting expressed a variety of concerns, ranging from a general desire to preserve remaining sub-surface elements of the HBC Cemetery *in situ*; to some level of commemoration of the HBC Cemetery; to in at least one instance, the desire to see all buildings, trails, roads, infrastructure and the Clark County War Veterans Memorial currently located within the HBC Cemetery removed to restore a park-like setting to the area.

The planning team discussed these concerns and decided that removing historic buildings on the NRHP – especially those that act as contributing resources to the historic district – runs counter to national laws and policies. Buildings 987 and 721, which are located on HBC Cemetery grounds, help establish the historic character of the whole district. Therefore, their removal would negatively affect the interpretation and visitors' experience of this intact, historic military landscape. It is important to state, however, that this decision was not made lightly. It is recognized that the HBC Cemetery is of high significance to the historic district, and as the resting place of people from many nations, including American Indian Tribes and Native Hawaiians, requires a respectful and thoughtful approach to management. It is expected that consultation with the direct descendants of people buried in the HBC Cemetery and appropriate Indian tribes and Hawaiian groups will be ongoing.

Partial solutions to these challenges were explored, such as removing parking and the portions of Fort Vancouver Way that are on top of the HBC Cemetery. In order to expand the park-like setting of the HBC Cemetery, alternatives explore removing asphalt and gravel parking areas on HBC Cemetery grounds. In all cases, the National Park Service will also maintain full responsibility for management of HBC Cemetery grounds.

In addition, recent documentary and archeological discoveries revealed that the Cemetery extends into the western side of Fort Vancouver Way. Therefore, in order to protect the integrity of human remains, this *Environmental Assessment* explores the expansion of park boundaries to include that portion of Fort Vancouver Way so that the National Park Service will own and be responsible for all HBC Cemetery grounds.

The replacement of utilities was also discussed prior to and during the planning process for the East and South Barracks. The utilities serving the barracks are failing and in need of replacement if barracks buildings are to adequately serve future tenants. In preparation for, and in support of, this planning process, the National Park Service developed several alternative alignments for

utility corridors in order to study various ways of minimizing impacts to human remains in the HBC Cemetery, while still providing much needed upgrades for future tenants of the barracks buildings. In consultation with tribes, NPS staff selected a preferred alternative that established the preliminary schematic design for utility upgrades. This schematic alignment would follow the existing utility corridor through the HBC Cemetery along Fort Vancouver Way. Through this process, it was determined that in accordance with the NHPA, replacing utilities along an existing corridor would likely not disturb intact graves and cause the least damage to the HBC Cemetery. Additional future work on design and engineering will evaluate this issue further.

These competing resource issues will continue to require ongoing and timely consultation with the tribes. In all cases, the National Park Service will consult with tribes to further define treatment and management of HBC Cemetery grounds. Cultural resources staff at the park will continue to consider and evaluate potential solutions to these issues, and will thoughtfully and respectfully consult with tribes.

MANAGEMENT OF THE SITE AS A MUSEUM

Previous approved plans—such as the *Fort Vancouver National Historic Site General Management Plan (2003)*, as well as the *Cooperative Management Plan (2000)* and the *Cultural Landscape Report for the Historic Reserve (2005)*—established adaptive reuse as the overarching preservation strategy for historic structures. These plans recommend a mix of public and private uses for Barracks buildings. Therefore, the National Park Service will adhere to these previous plans and pursue reuse as part of a long-term strategy for the preservation and interpretation of the site's nationally significant resources. The National Park Service will not preserve the entirety of the East and South Barracks for the purposes of interpretation only.

COMPARISON OF ALTERNATIVES

In order to develop the preferred alternative, each of the draft alternatives was compared according to estimated building occupancies, estimated parking requirements, financial feasibility, conceptual costs of capital development and ongoing maintenance, and potential environmental impacts. The environmentally preferable alternative was also determined by comparing the alternatives to the goals listed in the NEPA. In the summary comparison tables and text below, alternative C represents the preferred alternative. The alternatives are shown in detail in Table 7.

ESTIMATED BUILDING OCCUPANCY

In order to understand the extent to which new building uses may affect regular and recurring use of the site, the planning team developed estimates of maximum occupancy for each building based on proposed uses. The team used Table 1004.1.1 from the 2006 International Building Code, *Maximum Floor Area Allowances per Occupant*, as a guide. These occupancy estimates reflect the gross maximum number allowed for fire safety codes, and do not provide a real-world estimate on the number of people likely to inhabit and use these buildings on a regular and recurring basis. However, these numbers were useful in understanding what the maximum use of buildings under each alternative may generate in terms of traffic.

Table 1 summarizes the total maximum occupancy for the entire site under each alternative.

Table 1. Estimated Maximum Occupancy of the East and South Barracks Allowed by Code by Each Alternative

	Alternative A	Alternative B	Alternative C	Alternative D
Estimated Maximum Occupancy	234	2,972	3,208	4,414

Overall, the no action alternative shows the lowest occupancy estimate. Estimated occupancy levels for the three action alternatives are similar, with alternative D accommodating slightly more due to increased educational and community programming. These estimates take into account proposed demolitions. Because estimated building occupancy estimates provide a maximum possible number, these numbers should not be understood as requirements for regular use parking.

ESTIMATED PARKING CAPACITY

Using requirements under the City of Vancouver Municipal Code, Chapter 20.945-Section 20.945.070, *Minimum Off-Street Parking Requirements*, estimates were developed for maximum parking requirements under each alternative. In most cases, the gross square footage of buildings was used in order to determine Vancouver Municipal Code requirements, which vary according to building uses. However, for live performance space proposed for building 721, estimated maximum occupancy for that building was used.

In general, these estimates vary under each alternative, based on differences in building uses and potential building demolitions (Table 2). In addition, the amount of parking that the barracks can accommodate varies in each alternative according to the extent and nature of treatments to the cultural landscape. Therefore, the alternatives vary in terms of how well and in what location estimated parking needs may be accommodated. Parking estimates assume complete implementation of the plan, and therefore, represent maximum expected parking numbers. In order to address any parking shortages and reduce the amount of surface parking needed, the National Park Service may explore a shared parking strategy with the City of Vancouver and other partners. For a more in-depth analysis of estimated parking needs and capacities, please see Chapter 4.

Table 2. Estimated Parking Capacity Based Upon Vancouver Municipal Code (VMC)

	Alternative A VMC/ITE Report	Alternative B VMC/ITE Report	Alternative C VMC/ITE Report	Alternative D VMC/ITE Report
South Barracks	410	266-306	227-261	136-156
East Barracks	323	443-509	350-398	349-401
Totals	733	709-815	577-659	485-557

Note: The actual amount of parking that will be provided will be dependent on resource considerations (archeology/cultural landscapes) and site conditions (slope, walkway location/size, etc.). These specifics will not be known until later in the design process. Because of this variability, the National Park Service has estimated the parking numbers will vary approximately 7% over or under the numbers originally derived from using the 2011 study results.

ESTIMATED COSTS

The National Park Service considers projected initial improvement costs and long-term costs in its decision making. The cost figures presented in the following tables enabled the planning team to compare the magnitude of representative costs across alternatives. These costs were developed using industry standards to the extent possible with the best information available at the time of analysis. Nevertheless, the costs are preliminary, Class C estimates, and should not be used for budgetary purposes. More precise costs will be determined at a later date, considering the design of facilities, detailed resource protection needs, and other factors.

Again it should be noted that while the costs shown here are intended to indicate the full costs of ownership, the expectation is that most of the financial investment by the government would be recouped over time through leasing agreements.

Capital Improvement Costs

National Park Service personnel—including planning staff from the Denver Service Center and facility management personnel from the Pacific West Region—developed the following one-time cost estimates for major components of the draft alternatives (Table 3). A variety of methods and materials were used, including RS Means and the National Park Service current replacement value (CRV) calculator. Initially, the estimates were prepared for the preferred alternative Workshop that took place in January, 2011. Following the workshop, the team refined the estimates to more fully reflect anticipated costs. One change involved the application of a substantial markup to cover project level “soft costs,” including pre-design, design, environmental compliance, supplemental services, construction management, and contingency. These one-time costs do not include annual staffing costs.

Note that deferred maintenance costs for buildings do not reflect the full costs for rehabilitating those structures. Instead, they reflect the necessary maintenance activity needed to stabilize and protect buildings and to correct utility and code deficiencies (Figure 15). Current cost estimates to rehabilitate 17 buildings based on the planned redevelopment uses as decided in the Preferred Alternative are shown in Table 3. Cost estimates for one-time expenses are presented by alternative in Table 4.



Figure 15. The west facade of building 728, showing distressed paint as one example of maintenance activities needed to stabilize and protect buildings in the East and South Barracks. (National Park Service)

Table 3. Estimated Costs to Rehabilitate 17 Buildings in the East and South Barracks
(For Planning Comparisons Only)*

Building Number		GSF	\$ per SF	Base Cost	Contractor Gross Construction
410	Training Classrooms to Retail/Public Visitor Center	7,081	\$184.25	\$1,304,676	\$2,235,954
704	USAR Center to Office	1,282	\$98.49	\$126,621	\$217,003
721	Gym/Auditorium to Public Use	11,171	\$184.70	\$2,063,317	\$3,536,113
722	Administrative Offices to Office	2,030	\$178.47	\$341,416	\$585,119
725	Administrative Offices to Office	1,950	\$178.47	\$341,416	\$585,119
728	Administrative Office to Retail	5,040	\$193.46	\$975,051	\$1,671,042
733	Administrative Office to Retail	2,400	\$196.56	\$471,756	\$808,495
746	Band Training to Residential	4,720	\$196.63	\$928,081	\$1,590,545
748	NPS Storage and Parking to Retail	6,280	\$145.17	\$911,664	\$1,562,410
752	Post Exchange to Office	12,080	\$170.30	\$2,057,272	\$3,525,753
753	National Guard Storage to Retail	2,640	\$177.94	\$469,765	\$805,083
754	Grocery Store to Grocery Store	5,040	\$187.14	\$736,584	\$1,262,358
786	Carpenter Shop to Retail & Office	10,080	\$172.47	\$1,738,478	\$2,979,404
989	Administrative Offices to Office	32,292	\$144.50	\$4,666,302	\$7,997,108
989	Administrative Offices to Office	32,292	\$144.50	\$4,666,302	\$7,997,108
991	Administrative to Public Use	12,804	\$163.70	\$2,095,986	\$3,592,101
993	Administrative Offices to Office	32,292	\$144.50	\$4,666,302	\$7,997,108
				\$28,560,989	48,947,823

*This table reflects cost estimating information recently developed for the project area based on the planned redevelopment uses as described in the Preferred Alternative. Costs for these buildings as well as other rehabilitation and redevelopment costs will continue to be revised over time.

Table 4. One-Time Cost Estimates (For Planning Comparisons Only)*

	Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D
Building Demolition	\$15,937	\$179,644	\$303,256	\$415,690
Deferred Maintenance & Code Deficiencies (does not include costs to operate and maintain)	\$59,527,914	\$57,465,237	\$56,340,906	\$53,694,043
New Construction (e.g. historic reconstructions, outdoor gathering spaces, picnic facilities)	\$307,430	\$112,760	\$180,993	\$495,925
Landscape Improvements (e.g. cultural landscape restoration, streetscape improvements, plantings, interpretive signage)	\$28,915	\$511,759	\$733,070	\$846,554
Infrastructure, Transportation & Access (e.g. new sidewalks, trails, parking lots, road construction, road closures, utility upgrades)	\$6,769,843	\$8,505,765	\$7,997,867	\$7,562,184
TOTAL	\$66,650,040	\$66,775,165	\$65,556,092	\$63,113,277
Difference from the No Action Alternative		+ \$125,125	- \$1,093,948	- \$3,536,763

*Costs are reported in 2011 dollars using the best information available at time of writing.

Total Cost of Facility Ownership and Costs for Buildings

In addition to the one-time costs reported above, the National Park Service considered the anticipated annual facility lifecycle costs associated with buildings. Another consideration is that all major improvements—such as roads, parking, utilities infrastructure, and landscape treatments—would require upkeep and therefore incur expenses for the National Park Service and its partners. In particular, facility ownership costs for the Barracks structures would generate substantial costs.

As discussed above, the National Park Service contracted the financial consulting firm Booz Allen Hamilton to prepare an economic feasibility study. A representative from this firm was present at the preferred alternative workshop to explain the findings of this study. The representative also assisted the National Park Service to prepare informal and preliminary estimates for annual facility costs for building assets. These estimates were intended merely to inform discussion at the workshop.

To generate these estimates, Booz Allen Hamilton applied a modified version of the outputs from the TCFO model to the alternatives. Booz Allen Hamilton originally developed the TCFO model for the National Park Service in 2010. This model uses industry standard required facility costs, including recurring maintenance, preventive maintenance, facility operations, component renewal, and unscheduled maintenance to present an informed and comprehensive preview of facility ownership costs. These costs also include estimated staffing dedicated to maintenance in order to achieve the abovementioned aspects of facility ownership. The modified costs contained herein reflect adjusted costs, based on the NPS assumption that the actual amounts spent will be less than the required industry standard costs. The adjusted costs reflect a percentage adjustment downward according to anticipated standards of care, based on “priority bands.”¹ Based on consensus reached at the preferred alternative Workshop, the estimates below use NPS priority band 2² in order to reflect the level of maintenance that the National Park Service typically invests in these types of assets, given limited funding and other constraints.

The development of property management strategies is at an early stage. At present it is unclear whether the National Park Service would self-perform operations and maintenance and other facility costs for all buildings within the project area on a reimbursable basis—or perhaps for only those buildings that the agency would occupy for its own purposes. However, in order to understand the magnitude of costs under each alternative, it was assumed that the National Park Service would be responsible for facility costs for all buildings proposed for NPS use.

The figures in Table 5 address only those buildings that the National Park Service would use under each alternative—for instance NPS maintenance shops, administrative headquarters, and other NPS storage or office buildings. Therefore, cost estimates vary based on the number and size of buildings that would be retained for NPS use under each alternative. Differences in proposed uses for those NPS buildings also affect cost estimates for each alternative. The costs contained herein are not reflective of non-building assets such as roads, parking, and landscapes, nor do they include buildings that are planned for lease by non-NPS entities.

Table 5. Estimated Annual TCFO Costs for Buildings (for Planning Comparisons Only)*

	Alternative A	Alternative B	Alternative C	Alternative D
Total TCFO costs	\$175,320	\$263,315	\$366,146	\$7,608

*These cost estimates include annual costs for facility maintenance activities as described above for only those buildings retained for NPS use under the different alternatives. They do not include facility costs for roads, sidewalks, or grounds. These estimate do include the cost of maintenance staff; however, they do not include additional staffing costs beyond those related to maintenance.** Figures are reported in 2011 dollars and for “priority band 2” only (see above).

1 Priority bands are based on the average planned spending levels reflected as servicewide average planned spending as a percentage of required spending.

2 Based on available average servicewide park asset management plan data, as a percentage of industry “required” costs, priority band 2 represents: (a) 36% of recurring maintenance costs, 34% of required preventive maintenance costs, and 59% of required operations for building assets, and (b) 47% of recurring maintenance costs, 50% of required preventive maintenance costs, and 75% of required operations for housing assets.

Booz Allen Hamilton and the National Park Service also used the modified TCFO model to generate a preliminary estimate addressing every existing building within the project area. The Park Asset Management Plan priority band 3 percentages of required spending were applied to approximate a “caretaking” strategy—which would involve simply maintaining the buildings and operating them at minimum level, rather than using the buildings to capacity on a regular basis. This figure does not represent any one alternative, although this strategy would align most closely with the no action alternative. This estimate illustrates that even maintaining the buildings at a very basic level would still involve substantial annual costs. It is higher than the TCFO costs presented above, because under this scenario, the National Park Service would be responsible for the great majority of these costs – rather than leasing out certain buildings to other entities that would share the costs (Table 6).

Table 6. Estimated Annual Costs to Maintain Every Building in the Project Area at a Minimum Level of Care*

Maintain All 22 Buildings Now Standing at a Minimum Level	
Total TCFO costs	\$905,011

** Assumes no demolition of any existing structures. Priority band 3 was selected to represent a lower standard of maintenance (see above).*

The National Park Service will continue to investigate TCFO costs as better information becomes available.

Staffing Estimates

Across all alternatives, the National Park Service would have to increase staffing levels to a certain extent in order to accommodate expanded operations and needs. The military post, which consists of 27 buildings, will add roughly 242,000 square feet and 33 acres to the park asset portfolio. However, each alternative emphasizes different aspects of visitor experience, interpretation, resource management, and park operations. Therefore, the amounts and types of staff needed would vary under each alternative according to those emphases. For example, alternative D involves the greatest amount of interpretive and educational activities, as well as an emphasis on partnering with local or nonprofit organizations. Therefore, more staff would be needed for archiving, collections management, and interpretation. The amount of expected redevelopment would also affect estimated staffing needs. For example, alternative A would involve the least amount of additional staffing because NPS staff would not proactively seek redevelopment opportunities. It is expected that over time tenants would directly offset 50% of the facility maintenance costs (\$256,000) and that the National Park Service would cover much of the remaining costs over time through lease revenues.

In order to develop realistic staffing needs and the annual costs associated with staffing, NPS staff from the Washington Office guided park staff through a thorough group exercise meant to separate desired positions from real and expected staffing needs. Park staff discussed anticipated workloads under each alternative and collectively decided on new position types needed, the number of new employees needed, and the annual costs of additional staff necessary to achieve the intent of each alternative. Table 7 below summarizes these estimates.

Table 7. Additional Staffing Needs by Alternative

Alternative	New or Modified Positions	Additional Full-time Employees Needed	Additional Annual Staffing Costs
A: No Action or Extension of Current Management Practices into the East and South Barracks	• Maintenance Worker • Maintenance Carpenter • Existing Maintenance Staff taken off furlough • Facilities Services Assist • Grounds Worker • Site Manager	4.9	\$240,474
B: A Vibrant Urban District in an Historic Setting	• Barracks Project Manager • Bring 2 Current Archaeologists up to Full Time • Business Manager • Park Safety & Environmental Specialist • Maintenance Worker • Historical Architect • Maintenance Carpenter • Maintenance Mechanic • Facilities Services Assist • Existing Maintenance Staff taken off furlough • Grounds Worker • Collections Registrar • Archivist • Archeology Lab Director • Business Specialist	13.2	\$1,210,134
C: A Sustainable, Historic Campus for Public Service (Preferred Alternative)	• Barracks Project Manager • Business Manager • Bring 2 Current Archaeologists up to Full Time • Park Safety & Environmental Specialist • Maintenance Worker • Historical Architect • Maintenance Carpenter • Maintenance Mechanic • Facilities Services Assist • Existing Maintenance Staff taken off furlough • Grounds Worker • Collections Registrar • Archivist • Archeology Lab Director	12.2	\$1,118,911

Table 7. Additional Staffing Needs by Alternative (cont.)

Alternative	New or Modified Positions	Additional Full-time Employees Needed	Additional Annual Staffing Costs
D: A Historic, Educational Campus for All	• Barracks Project Manager • Bring 2 Current Archaeologists up to Full Time • Business Manager • Park Safety & Environmental Specialist • Maintenance Worker • Historical Architect • Maintenance Carpenter • Maintenance Mechanic • Facilities Services Assist • Existing Maintenance Staff taken off furlough • Grounds Worker • Collections Registrar • Archivist • Archeology Lab Director • Business Specialist • Park Ranger (Interpretation) • Park Guide	15.2	\$1,306,351

Under all alternatives, the National Park Service would consider the various options available to accomplish this work such as through partnering, contracting out, or managing the work in-house, based on policy, efficiencies gained, and cost. In any case, it is recognized that there are certain functions that are inherently governmental, and those responsibilities would remain with park service employees.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is the alternative that promotes the national environmental policy expressed in the NEPA (Sec. s101(b)). This alternative would fulfill the following six goals:

- (1) Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- (2) Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- (3) Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- (4) Achieve a balance between population and resource use that would permit high standards of living and a wide sharing of life's amenities;

- (5) Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources (National Park Service DO-12 Handbook, Section 2.7D); and
- (6) Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources (National Park Service DO-12 Handbook, Section 2.7D).

The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and the alternative that best protects, preserves, and enhances historic, cultural, and natural resources. After considering the environmental consequences of the alternatives, including consequences to the human environment, the National Park Service has concluded that the preferred alternative is also the environmentally preferable alternative. This alternative best realizes the full range of national environmental policy goals as stated in section 101 of the NEPA.

For the purposes of this *Environmental Assessment*, goals 2, 3, and 4 are the most relevant to this planning process. Alternative C, the preferred alternative, was selected as the environmentally preferable alternative. The justification for this selection follows below.

Goal Two

To varying degrees, all alternatives would slow down the deterioration of historic barracks structures within the Fort Vancouver NHS, thereby improving public health and safety as well as the appearance of aging historic structures. However, the preferred alternative includes the greatest extent of restoration of the Oregon white oak ecosystem, thereby improving and diversifying the aesthetic and cultural aspects of the site. Extensive cultural landscape restoration and educational activities would also interpret American Indian history and culture to the greatest extent under the preferred.

Goals Three and Four

The actions outlined in all alternatives preserve important historic and cultural aspects of our national heritage by preserving and rehabilitating historic structures and restoring aspects of the cultural landscape (Tables 8 and 9). However, the no action alternative neither supports diversity nor inhibits it. It does not provide a variety of individual choices for the visitor or encourage a wide range of uses. Alternative B provides a diversity of visitor experiences; however, it does the least to preserve historic and cultural resources. For example, under alternative B reconstruction of the historic HBC village would not extend into the South Barracks to the area west of building 405. While alternative D, on the other hand, provides the greatest amount of cultural landscape restoration and interpretation of the site's resources, it also reduces the diversity of activities available on-site by focusing on educational programming. For example, it limits the amount of commercial activity that may take place on site by focusing on educational uses. The preferred alternative, however, would allow the visitor to experience the Fort Vancouver NHS's resources through a variety of means, and would actively encourage demonstration and interpretation of American Indian history and culture. The preferred alternative also supports diversity by encouraging office use by public agencies whose policies often require attention to equal employment opportunities. The preferred alternative also preserves important historic, cultural, and national aspects of our American heritage regarding development of the Pacific Northwest. Therefore, the preferred alternative best meets goals 3 and 4.

Chapter 3 Affected Environment



*Photo Courtesy of
National Park Service*

CHAPTER 3

Affected Environment

HISTORIC STRUCTURES

Vancouver Barracks is the location of many historical buildings that encompass the entire history of the U.S. Army presence on the landscape of Fort Vancouver NHS and the VNHR. Twenty historical U.S. Army buildings, constructed between 1904 and 1940, remain within East and South Barracks (Figure 17; Table 10). All of these structures are listed on the NRHP as contributing elements to the VNHR National Historic District.

Most of these historical structures have undergone significant interior remodeling at least once since their original construction, dictated by changes in the use of the building through the years. Two buildings (buildings 733 and 746), were moved into East Barracks from south of the hospital in West Barracks, ahead of Interstate 5 freeway construction in the 1950s. Modifications to buildings include the addition, reconfiguration, and removal of windows, doors, entryways, rooms, staircases, porches, chimneys, fire escapes, roofing, bathrooms, heating and electrical systems, ramps, elevators, and loading docks. As seen in Table 10, all of these structures date from the early to mid-20th century, and are evocative of an Army post between the two World Wars.

The 400 series buildings are located in the South Barracks, and are a mixture of historic and early 1980s architecture. Not listed in Table 10 are buildings 400, 401, 402, 404, and 405, all of which are modern, 1980s-period brick structures, constructed for vehicle maintenance functions, and are not in keeping with the historic nature presented by the other structures in the East and South Barracks. Buildings 410 and 422 are the only remaining 1930s-period structures built specifically to support the efforts of the Civilian Conservation Corps (CCC).

The 700 series buildings are all located in the East Barracks, and mostly represent the activity and support structures that were core to the mission of the troops housed in the barracks. These include a gymnasium, mess houses, offices, repair shops, and storehouses. Pivotal among these is building 721, a large 1904 gymnasium that has also been used as an auditorium and even a mess hall.

The 900 series buildings are all barracks or administrative structures that front the Parade Ground, and are arguably the signature structures remaining in the East and South Barracks (Figure 16). Buildings 987, 989 and 993 are all Infantry Barracks constructed from 1904-1907, whereas building 991 is an Administration/Headquarters structure built in 1906. All of these structures are large and commanding, with colonnaded fenestrations that present the grandeur of early 20th century U.S. Army posts.



Figure 16. Buildings 987, 989, 991, and 993, as they appeared ca. 1920, facing east across the Parade Ground. (Photo courtesy of Oregon Historical Society, OrHi 31534)

Table 10. Historical Structures within East and South Barracks (Krafft and Krafft 2010)

Building Number	Historical Use	Date Built	Current Use
410	CCC Automotive Repair Shop	1935	Civil Air Patrol training classrooms, storage
422	Issue and Receiving Warehouse	1935	Offices and storage
704	Warehouse	1935	U.S. Army center, U.S. Army recruiting
721	Gymnasium	1905	Kitchen/banquet facility/gym, fitness center in basement
722	Mess House	1914	Administrative offices
725	Mess House	1914	Administrative offices
728	Finance House	1941	Administrative offices, classrooms
733	Hospital Storehouse	1919	Administrative offices
746	Barracks	1940	Band training building
748	Motor Repair Shop	1919	NPS storage and equipment parking
749	Temporary Storage	1941	storage
750	Temporary Storage	1943	Unoccupied
752	Quartermaster Storehouse	1906	Unoccupied
753	Quartermaster Storehouse	1917	National Guard storage
754	Quartermaster Storehouse	1909	Army Air Force Exchange System store – Shoppette grocery store
786	Quartermaster Workshops	1906	Barber shop, facilities operations office
987	Double Infantry Barracks	1907	Administrative offices
989	Double Infantry Barracks	1904	Administrative offices
991	Administration Building	1906	Administrative offices
993	Double Infantry Barracks	1907	Administrative offices

CULTURAL LANDSCAPES

The National Park Service defines four cultural landscapes on the VNHR: the reconstructed HBC Fort Vancouver and HBC Village, the Great Meadow area of the HBC Fort Vancouver, the U.S. Army Vancouver Barracks and Parade Ground, and the Mission 66 Park Headquarters and Visitor Center (Figure 17). Of these, elements of both the East and South Barracks are within the U.S. Army Vancouver Barracks/Parade Ground Cultural Landscape, and the HBC Fort Vancouver and HBC Village Cultural Landscape are bounded on the west by the South Barracks.

Reconstructed Hudson's Bay Company Fort Vancouver and HBC Village. The South Barracks shares some of the same general characteristics as the East Barracks; however the area has substantially more paved surfaces and its adjacency to Interstate 5 alters both the soundscape and visual atmosphere. Here, patches of lawn are punctuated with trees and shrubs, and most buildings have foundation plantings. In many instances, heavily pruned shrubbery serves to identify the entryway to public buildings. Buildings in this area date from the middle and late 20th century. A portion of the Fort Vancouver Village is within the South Barracks. Formerly the southern entrance to Vancouver Barracks, McLoughlin Road and its 1880s heritage maple, oak and buckhorn tree Allée are surviving landscape features in this area. South Barracks, although highly modified over the years, has the potential to be reconnected to the Village and to add to the interpretation of this cultural landscape.

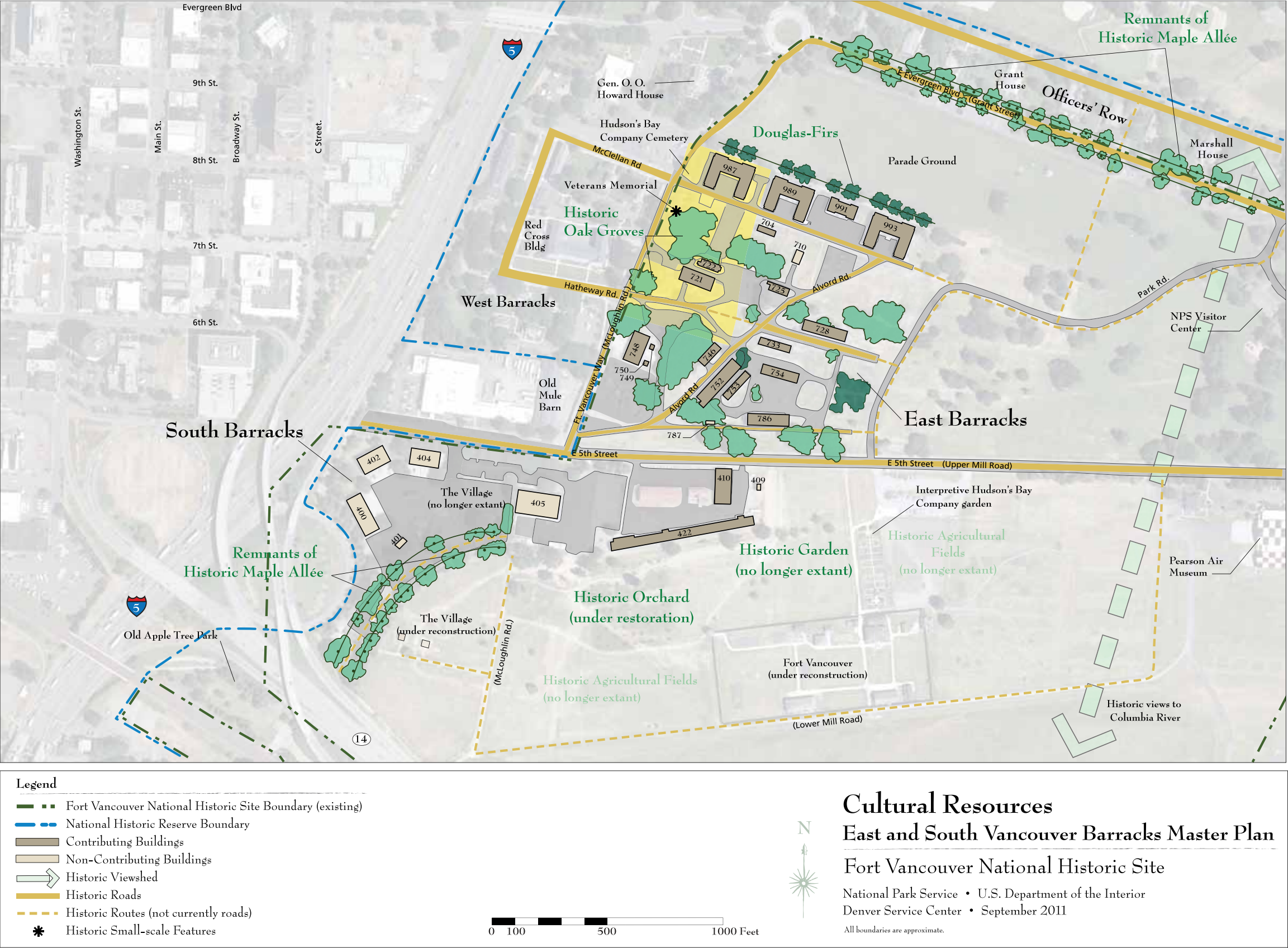


Figure 17. Extant, visible, cultural resources in the East and South Barracks

The cultural landscape related to the HBC has been reconstructed by the National Park Service since 1966, and is bounded by, and visible, from the South Barracks. Fort Vancouver, the heart of HBC operations, was located on a low-lying river plain that was known as Fort Plain, six miles upriver from the confluence of the Columbia and Willamette rivers. During the height of the HBC occupation, more than 20 buildings were present within the Fort. The area around the Fort contained agricultural fields, Gardens, and an Orchard, with the employee Village located to the west. The Village extended from Upper Mill Road (now East 5th Street) to the Columbia River waterfront, and contained as many as 100 houses, sheds, workshops, storehouses, and stables. Reconstructed fence lines define use areas within the Village, and many of the original employee houses probably had fenced kitchen gardens.

The stockade, bastion, and 15 structures have been reconstructed within the Fort. Two reconstructed Village houses and split rail fence lines reflect the historical scale and use of structures within the Village. Other reconstructed landscape features include a recreated Orchard with historical fruit varieties, an interpretive garden (on the historical site of a cultivated field), and historical roads, paths, and fence lines. The Land Bridge interprets the Village pond and reestablishes the connection between the Village area and the Columbia River waterfront.

The road system at Fort Vancouver was related to the transportation needs of a fur-trading post and a large agricultural establishment. Providing access was critical to the success of a remote trading establishment, and early roads and riverfront access became significant landscape features. River Road ran from the St. James Mission to the waterfront on the east side of the Village. This major north/south road that ran from Upper Mill Road, now East 5th Street, through the Village to the waterfront, named McLoughlin Road by the 1880s and lined with trees planted in October 1882, became the south entrance to Vancouver Barracks. Lower Mill Road, an east/west road, has been reconstructed along the south side of the Fort, defined with three-rail fence lines through an entry gate to the Village, where it meets River Road, represented by the decomposed granite-paved Land Bridge Trail. The Land Bridge Trail reconnects the waterfront area by traversing under the BNSF Railway berm, and over SR-14, leading through the reconstructed HBC apple Orchard and connecting to East 5th Street.

U.S. Army Vancouver Barracks and Parade Ground. As of the writing of this document, the Cultural Landscape Inventory boundaries for the U.S. Army Vancouver Barracks and Parade Ground only listed the historic U.S. Army Parade Ground. With the impending transfer of the East and South Barracks, the Cultural Landscape Inventory boundary is currently being rewritten and expanded by NPS-Seattle Regional Office staff to include the East Barracks.

A major consideration of the rewritten Cultural Landscape Inventory listing will be the 20 historic structures that are currently in the East and South Barracks. The historic character of these structures evokes the general architectural nature of U.S. Army posts of the between-the-World Wars period (ca. 1918-1941). Fortunately, the exteriors of most of these structures are overall very well preserved, with the only notable modifications being the change of most roofs from original slate tiles to 3-tab asphalt shingles; the removal or addition of loading docks, stairways, and fire escapes; and the relocation/removal/additions of doors and windows. Throughout the U.S. Army's occupation of this landscape, buildings were constructed, demolished, and moved according to the needs of the military. The last major building phase at Vancouver Barracks took place in the late-19th and early-20th centuries. Most of the remaining buildings, and circulation and landscape features, date from this period.

With the growth of the post through time, the U.S. Army created new transportation and circulation routes in the East and South Barracks. This area is divided north/south by McLoughlin Road (now Fort Vancouver Way), which ran north from the Columbia River to Officers' Row and beyond, and east/west by Upper Mill Road (now East 5th Street). Grant Avenue (now Evergreen Boulevard) was the main thoroughfare between the Parade Ground and Officers' Row at the north end of the Barracks. Other roads and circulation features served various portions of the post.

The landscape character in portions of the East Barracks is still suggestive of the vegetation associated with the historical period. For example, during the early years of the HBC at Fort Vancouver, the undeveloped area north of Upper Mill Road (including East Barracks) consisted of Oregon white oak and Douglas-fir trees scattered across a natural prairie in the transition zone between floodplain and forest. Today, relict Oregon white oak, likely descendants of the prehistoric fire-managed prairie landscape, and Douglas-fir trees scattered across the lawns of East Barracks, retain the general character of the historical period (Figures 18 and 19). The stand of Oregon white oak in the East Barracks meets the criteria of a Priority Habitat for conservation and management by the Washington Department of Fish and Wildlife (Larsen and Morgan 1998).

Over the course of U.S. Army development at the Vancouver Barracks, vegetation was planted to create formal areas (with rows of trees or expanses of lawn), and private, residential yards (lawn delineated by trimmed hedges and shrubs), and existing native oak trees were retained and incorporated into the landscape design of the area.

In the East Barracks, vegetation is characterized by substantial expanses of lawn between concrete sidewalks and buildings, a grove of native oak trees, and foundation plantings around



Figure 18. View of buildings 991 and 989, across the Parade Ground, facing south. (National Park Service)



Figure 19. View of one of the Oregon white oak groves in the East Barracks, with buildings 989, 991, and 993 in the background, facing northeast. (National Park Service)

the buildings. The buildings are interspersed with relict groves of native Oregon white oak and Douglas-fir that evoke the original transitional zone between floodplain and forest. Features in this area that overlapped with the HBC occupation include the St. James Mission and HBC Cemetery. The ages of the individual trees is not known, but historic records indicate that a grove of oaks has been in the location since the HBC era. An HBC post physician, William Tolmie, recorded the HBC Cemetery in 1833 as being located near “a pretty grove of young oaks & other trees” (Tolmie, correspondence May 1833). It is likely that the existing oaks are descendents of trees that were in this area in the 19th century and retain an important characteristic of the historic landscape that may have resulted from Chinook Indian seasonal burnings of the Fort Plain area.

Foundation plantings around the buildings include varieties of camellia, hydrangea, lilac and spirea, many of which are pruned to a globe form, typical of late 1800s/early 1900s military landscapes. Trees and shrubs lining the concrete walks and in lawns (English holly and spruce trees), may date to the historic period.

Visual Resources

Closely tied to the cultural landscape of the East and South Barracks are the visual resources available in the area. The East and South Barracks is located along the westernmost area of the VNHR, itself a primary visual resource of the Portland/Vancouver metro area. In general, the VNHR is characterized by an open plain overlooked by a series of lightly forested terraced hills, narrow roadways, the reconstructed HBC Fort Vancouver and military structures associated with the Vancouver Barracks.

The East and South Barracks is visible from a variety of locations including several roadways—Evergreen Boulevard, East 5th Street, and Fort Vancouver Way. The Fort can also be viewed from open space locations such as the Parade Ground and the Great Meadow, as well as from the pedestrian and bicycle trails in the general study area—the Land Bridge and the Spruce Mill Trails. It is also visible from other park facilities, including the reconstructed HBC Fort Vancouver, the partially reconstructed HBC Village, and the VNHR Visitor Center.

The East and South Barracks is situated at the base of a gentle south-facing slope offering panoramic views from many areas to Mt. Hood to the southeast. The Parade Ground presents an open expanse to the north which is also fronted by the historic Officers' Row and the historic maple, oak, and buckhorn tree Allée along Evergreen Boulevard. The natural landform of the East and South Barracks site is a gentle grade paralleling the distant Columbia River shore which influenced the fort's architectural design and transportation patterns. Indeed, most structures are oriented along a series of stepped terraces parallel to the natural slope.

Current views of the East Barracks landscape reveal its original organization dating to the turn of the 20th century-period construction—an organization plan revolving around the central Parade Ground with the main barracks (buildings 987, 989, and 993) and administration (building 991) buildings bordering it. This plan was further enhanced during this period by the construction of support structures, such as mess halls, storehouses, and a gymnasium down slope from the Parade Ground, barracks and administration buildings.

The views of the South Barracks landscape are less aesthetically pleasing, and reflect the 1980s-period modifications that resulted from the upgrades to the Interstate 5 and State Route 14 highways. The western portion of the South Barracks has a predominant rise in topography resulting from the importation of fill soils to protect significant archeological deposits associated with the HBC Village and U.S. Army Quartermaster's Depot. The original ground level is demonstrated by small "tree wells" that were placed to protect 1880s-period trees that formed the historic McLoughlin Road maple, oak and buckhorn tree Allée. The area is also predominantly paved, and the four large maintenance structures (buildings 400, 402, 404, and 405) are all two-story, red brick, flat roofed structures that are in architectural opposition to the historic structures in the East Barracks.

ARCHEOLOGICAL RESOURCES

The East and South Barracks are components of the NRHP-listed VNHR National Historic District, where as a result of over 60 years of archeological investigations more than two million artifacts have been recovered and curated on site at Fort Vancouver NHS, and scores of scholarly archeological reports have been produced and archived. The above ground features of the Fort, Village, and early U.S. Army post have disappeared, leaving behind the richest historical archeological site in the Pacific Northwest. Since its establishment as a monument in 1948, NPS professionals and scholars alike have understood the importance of the *in situ* archeological resources of Fort Vancouver, including foundations, features, and artifacts. The historical documentation of the HBC in the Pacific Northwest has continually been strengthened and enhanced by the analysis of the data and artifacts from excavations at Fort Vancouver. As a result of these archeological investigations, the interpretive theme at the park is as much a celebration of the archeological resources of the Fort area as it is the story of the HBC and the U.S. Army.

Although a large percentage of the VNHR has been systematically surveyed for the presence and absence of significant sub-surface archeological deposits, most of the East Barracks, and some of the South Barracks remains unsurveyed. As of September 30, 2009, approximately 55% of the 366 acres within the VNHR had been adequately surveyed for subsurface archeological resources.

The remaining lands within the authorized boundary of the VNHR, including East and South Barracks, will be surveyed. Fort Vancouver NHS staff will use geophysical and other types of remote sensing, and subsurface shovel probes and shovel tests, to determine the presence and extent of subsurface cultural deposits. This will help to determine their integrity and whether they are likely to contribute to the significance of the VNHR National Historic District.

South Barracks and Fort Vancouver Village. Much of the South Barracks area is located on what was once a portion of the HBC Fort Vancouver Village, extending west of the Fort stockade. Archeological deposits associated with the Village currently exist throughout this area. The first archeological study in the Village was conducted in 1968 and the data and artifacts resulting from these and subsequent excavations have provided important information on the life, culture, and culture change of this ethnically diverse community.

Extensive archeological testing completed by WSDOT contractual archaeologists in the HBC Village, along the right of way of State Route 14 and Interstate 5, occurred from 1974-1981. These excavations revealed significant archeological deposits associated with several HBC Village households; a HBC contagion hospital, boatsheds and workshops; structures associated with the 19th century U.S. Army Quartermaster's Depot; and the discovery of a historical pond used as a refuse dump by both the HBC and the U.S. Army. HBC Village artifacts and features were observed underlying early U.S. Army deposits throughout the Depot area and in the South Barracks. Archeological resources that were not fully excavated in the South Barracks were left in the ground and protected under a meter of imported fill.

In 2009, NPS archaeologists conducted test excavations on the west and south portions of South Barracks for the CRC, the proposed new Columbia River Interstate 5 bridge project. Archeological resources discovered included two buildings associated with the early U.S. Army Quartermaster's Depot, the historical McLoughlin Road and Maple Allée, and three HBC Village houses with associated between-house features. Most of these resources were protected under a meter of imported fill deposited after the construction of four new U.S. Army buildings in the 1980s.

East Barracks. Limited archeological investigations have been carried out within East Barracks, north of East 5th Street and east of Fort Vancouver Way. Few buildings have been demolished and only one new building has been constructed since WWII, so the historical setting remains largely unchanged over the last 50 years.

In 1987, the U.S. Army conducted archeological testing near the intersection of Alvord and McClellan roads for the proposed construction of a residence. A magnetometer survey and test excavations yielded the remains and foundation of an 1885 infantry barracks (building 710, demolished in 1955), an 1887 privy (related to building 55, demolished in the 1930s), and possibly a second privy. Because of the archeological resources, the proposed structure was not built. A new arms storage facility, building 710, was constructed nearby to the west in 1978, apparently without additional archeological testing. It lies within the footprint of an 1885 infantry barracks, building 35.

The HBC Cemetery. In the early 2000s, the U.S. Army and the National Park Service sponsored a joint project to study and better define the boundaries of the HBC Cemetery, located within East Barracks. In 2001, a cartographic contractor used historical maps and drawings of the Cemetery to estimate the boundaries. Geophysical remote sensing surveys were conducted in the Cemetery area using a magnetometer and ground-penetrating radar. The magnetic survey was conducted in 2002, and the ground-penetrating radar survey was conducted in 2003. This remote sensing work identified some subsurface anomalies associated with possible gravesites, and many anomalies

associated with later U.S. Army disturbance of the site, including trenches and pipelines. The cartographic analysis helped define the probable extent of the HBC Cemetery. These studies have provided a means to better manage and protect the historical HBC Cemetery.

According to historic records, human remains and coffin parts were encountered in the HBC Cemetery area in the East Barracks during excavations for a now non-extant new building in 1885, and during work in the basement of the Gymnasium/Auditorium (building 721) in 1982. There is no information as to the disposition of the remains from the 1885 event, and the remains discovered in 1982 were reburied *in situ* in 1993. An inadvertent discovery of human remains occurred during archeological monitoring of construction activities on the corner of Fort Vancouver Way and Hatheway Street related to the updating of infrastructure at the West Barracks in 2004. Through a NAGPRA consortium, these remains were reinterred in a location within the identified boundaries of the HBC Cemetery, to the southeast of the Clark County War Veterans Memorial.

MUSEUM COLLECTIONS

Archeological excavations over the last 60 years at Fort Vancouver NHS have created a vast collection of artifacts unparalleled at any other HBC site. The collection also encompasses many artifacts of U.S. Army origin; objects that help interpret Vancouver Barracks and early military life in the area. Currently, Fort Vancouver curates more than two million objects. The collection, which includes artifacts from other northwest National Park Service HBC sites – Fort Colville at Lake Roosevelt National Recreation Area, Whitman Mission NHS's Fort Nez Percés, and Bellevue Farm at San Juan Island National Historical Park, represents the largest recovered HBC fur-trade period artifact collection in the world.

In 1995, the entire collection was moved into the reconstructed Fur Store building inside the reconstructed Fort stockade. This facility has provided an adequate storage and climate controlled system for the collections, and it has also been a rich resource for research and interpretation of the many cultures that helped shape the modern northwest community. The Fort Vancouver NHS museum collection also includes over 4,000 historical objects, many of which are used as furnishings in the interpretive spaces of reconstructed buildings. The preservation, management, and interpretation of these collections continue to be one of the most important cultural resource issues at the park. Representing the original fabric of Fort Vancouver and Vancouver Barracks and providing insight into the lives of its occupants, the collections are an internationally significant resource.

However, the curation space in the Fur Store facility is currently at capacity. Increased space is needed to fulfill the park's critical function not only as a repository, but also as a research and education center. As one of the recommendations in the *Fort Vancouver National Historic Site Museum Management Plan Addendum* (2010a), it is expected that building 405 in South Barracks will be developed into a new curation facility. In addition to serving the archeological collection that is already housed at Fort Vancouver, the National Park Service is recommending that archeological collections from around the Pacific West Region be consolidated at this new facility. At the time of this *Environmental Assessment*, some NPS parks from the Pacific West Region have expressed potential interest in using the facility for their museum collections in support of sustainability, shared efficiencies and better service to the public through co-location of these facilities. In addition, the National Park Service is in negotiations with the CRC, a bi-state commission for the construction of a new Interstate 5 bridge over the Columbia River, to curate all archeological collections from the state of Washington produced through archeological research necessary to build the new bridge. Fort Vancouver is working with the U.S. Army

Reserve and key community members to ensure that significant historical records and objects from Vancouver Barracks are preserved in the NPS museum program.

Archives and Library. The park research library, available for use by staff, volunteers, and the public, is currently located in the Fur Store collections and curation facility. Part of the museum collection includes archival collections with historical documents, maps and images, books and periodicals, and microfilm of Fort Vancouver records from the HBC archives. The collection also contains the papers of NPS historian John Hussey, who conducted seminal historical research on Fort Vancouver, and field records from over 60 years of archeological excavations. Archival materials cover the full range of history of the VNHR, from the American Indian pre-contact era, through the HBC, to the U.S. Army and modern National Park Service occupations.

Northwest Cultural Resources Institute. The Northwest Cultural Resources Institute (NCRI) is a cooperative partnership based at Fort Vancouver NHS, dedicated to facilitating research and educational activities relating to the cultural resources of the area. This partnership-based institute includes the National Park Service, Portland State University, and Washington State University Vancouver. The foundations of the NCRI include the archeological collections, the archeological resources remaining *in situ*, and the extant historical architecture of Fort Vancouver NHS and the VNHR. These cultural resources form an unparalleled opportunity for researchers, students, and members of the public to study within the fields of archeology, history, museum studies, preservation and conservation, and historical architecture.

Through place-based learning and working on the VNHR itself, participants have the opportunity to integrate their research topics with larger physical and social contexts. The mission of this vibrant partnership is accomplished through archeological excavations and field schools, analysis of collections and archives, recording of oral histories, development of digital educational tools, the fostering and publication of research papers, lectures and demonstrations on related topics, programs that highlight the cultural resources professions, and public outreach. This mission will be furthered through the creation of new and larger curation and learning space in building 405 in the South Barracks, when it is converted to a new curation space.

CLIMATE CHANGE AND AIR QUALITY

As there are no direct climate and air quality data for the East and South Barracks, data from the City of Vancouver and Clark County are used for their interpretive value. The City of Vancouver and Clark County have mild wet winters and warm dry summers, with an average rainfall of 41.9 inches, snowfall of 6.5 inches, and a growing season of 218 days. Approximately 80% to 85% of the precipitation occurs in the months of October through May. Fog is common during the spring and fall months. Seasons are distinct, yet temperatures are not severe. Summer temperatures of 80° and 90° Fahrenheit are common (especially within the last 20 years), while temperatures frequently fall below 30° Fahrenheit in winter.

Prevailing winds during the summer are from the northwest averaging eight to nine miles per hour (mph). Prevailing winter winds are from the southeast, with an average velocity of eight mph. However, high winds do occur, and during the fall, winds from the southwest can exceed 60 mph on occasion. The highest recorded wind was on October 12, 1962, at 106 mph.

Climate Change. Climate change presents significant risks and challenges to the National Park Service. In 2009, a joint National Park Service and EPA Climate Friendly Parks workshop (National Park Service 2010c) was conducted to develop plans to reduce greenhouse gases and criteria air pollutants through the climate friendly management of park operations, and increased outreach and education efforts.

Scientists cannot predict with certainty the severity of climate change or its impacts. Average global surface temperatures have increased about 1.1° Fahrenheit since the late 19th century, and the 10 warmest years of the 20th century all occurred within the last 15 years. The single leading cause of this warming is the buildup of greenhouse gases in the atmosphere – primarily carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and water vapor – which are produced by the combustion of fossil fuels and the decomposition of organic matter, and which trap heat that otherwise would be released into space. The continued addition of greenhouse gases to the atmosphere will raise the earth's average temperature more rapidly in the next century; a global average warming of 4-7° Fahrenheit by the year 2100 is considered likely.

Fort Vancouver NHS committed to a set of actions to reduce energy, transportation, and waste greenhouse gas emissions from park operations to 24% below 2007 levels by 2016; and to preserve to the highest degree possible the park's natural and cultural resources and infrastructure from the impacts of climate change. A reduction in overall park emissions to 35% below 2007 levels – which includes emissions from visitor use of the park – will be achieved by 2016.

Current measures taken to achieve these goals included conducting an emission inventory, setting emission reduction goals, developing an action plan, and committing to educate park staff, visitors, and community members about climate change. Fort Vancouver NHS provides a model within the National Park Service to mitigate its impact on climate change.

Air Quality. Air pollutants of concern in Vancouver are similar to those of other urban areas and include carbon monoxide, ozone, fine particulate matter (PM) less than 10 micrometers in diameter (PM₁₀), fine PM less than 2.5 micrometers in diameter (PM_{2.5}), nitrogen dioxide, sulfur dioxide, and lead. The City of Vancouver, and therefore the area including the East and South Barracks, is currently meeting, or in “attainment” with, the National Ambient Air Quality Standards (NAAQS) for all seven air pollutants.

Current air quality monitoring in the Vancouver area includes a PM_{2.5} monitor at East 82nd and 4th Plain Boulevard, approximately 5.3 miles from the park, and an ozone monitor at Mountain View High School, approximately 7.5 miles from the park. Historically, carbon monoxide was monitored at Fourth Plain Boulevard and East Reserve, approximately 1 mile from Fort Vancouver NHS.

A Southwest Clean Air Agency 2008 Annual Report, Washington State Department of Ecology 2010 Ambient Air Monitoring Network Report (Washington Department of Ecology 2010a), and Washington State Department of Ecology 2010 Ambient Air Monitoring Network Assessment Report (Washington Department of Ecology 2010b) provide the following information about air quality in the Vancouver area.

In 1987, the EPA determined that the Portland-Vancouver Interstate Air Quality Management Area (AQMA) was in nonattainment for carbon monoxide. The major source of carbon monoxide is the incomplete combustion of fossil fuels, and sources include woodstoves, outdoor burning, and industrial boilers. Because of success in reducing carbon monoxide levels, the Portland-Vancouver AQMA was declared in attainment of the carbon monoxide NAAQS in 1996. Carbon monoxide monitoring was discontinued in Vancouver in 2006.

Ozone is a secondary pollution that is formed when nitrogen oxides and volatile organic compounds released by automobiles and other sources react in the atmosphere. The reaction is driven by heat and sunlight, so ozone is primarily a concern in the summer. The ozone trend in the Portland-Vancouver AQMA has shown overall improvement in the last ten years. In 1997, the Portland-Vancouver AQMA was designated in attainment with the one-hour ozone NAAQS of

120 ppb (parts per billion). In 2004, the Portland-Vancouver AQMA was designated in attainment for the revised 8-hour ozone NAAQS of 75 ppb. If EPA issues a more stringent ozone NAAQS of 60-70 ppb as anticipated in the near future, the Portland-Vancouver AQMA may become nonattainment for ozone. A nonattainment designation would require local and state air quality agencies to develop a plan to bring the area back into compliance with air quality standards.

Particulate matter is predominantly a wintertime pollutant, coming primarily from smoke associated with woodstoves and fireplaces. Most PM pollution events are short in duration and are most often associated with wintertime stagnation. Although the Portland-Vancouver AQMA is currently in attainment with PM standards, on a number of days during 2007-2009, PM concentrations were elevated.

The East and South Barracks are within proximity to Pearson Field Airport, a municipal airport. Air quality impacts associated with the airport have not been monitored, and so are unknown.

VISITOR EXPERIENCE

As previously mentioned, the East and South Barracks is part of Fort Vancouver NHS. Fort Vancouver NHS is one of the most visited park settings in the greater Portland-Vancouver metro area, with annual visitation of approximately 1 million.

The national park lands surrounding the East and South Barracks are unique not only in their diversity and quantity of cultural and natural features, but also in their proximity to a major urban population that has regional status as a tourist destination. This makes the East and South Barracks and surrounding park land's resources and recreational opportunities readily accessible to a large number of people, and enhances the importance of the special qualities for which it was set aside. Park visitors can be local residents who have the park as part of their "backyard" as well as visitors from all over the world who have traveled to the Portland/Vancouver metro area to see many different attractions, including the national park, as part of their visit.

The East Barracks provides some limited passive recreational activities such as picnicking, walking, running, dog walking, and biking. But visitors are generally discouraged from entering the Barracks. There is only one NPS interpretive wayside, which honors the first Post Exchange, in the East Barracks. In general, the lack of amenities and placement of jersey barriers for security in East Barracks does not create a welcoming visitor experience.

The South Barracks is currently not accessible to the public as it is surrounded by fencing. In the South Barracks, visitors are restricted to the roads and sidewalks, and there is no NPS interpretive signage or other amenities. There are no NPS-sponsored interpretive or permitted events in the East or South Barracks.

Within the other areas of the Fort Vancouver NHS, the National Park Service provides a variety of visitor services such as guided ranger tours, campfire programs, lantern tours, an audio tour, historic weapons programs, and cultural demonstrations with a living history component. In addition to the NPS seasonal ranger-led tours of the reconstructed fort and environs, there are also living history-based special events revolving around the history of both the HBC and the U.S. Army, and educational programs to over 20,000 fourth and fifth graders every year. Wayside exhibits tell the history of the U.S. Army throughout the VNHR.

Special events at the park draw tens of thousands of additional visitors, including the annual Independence Day fireworks event managed by the Fort Vancouver National Trust (averages over 40,000 visitors), and the annual Campfires and Candlelight living history event managed by the National Park Service (averages over 5,000 visitors). The Fort Vancouver NHS is also available

for private events and functions that require special use permits (weddings, receptions, organized events, etc.). Between 2009 and 2010, 130 such events meeting the permit threshold were held (an average of 65 per year) in the park. These events brought a combined 116,979 people to the park over the two year span. On average, the highest numbers of special use permits are issued in July and October (an average of 10). November, December, and January are the lowest use months for special permits, with one event per month on average. Note that these figures do not include events occurring at Pearson Air Museum complex, which is part of the Fort Vancouver NHS.

At 366 acres, the sites and features of the VNHR can be easily reached from the East and South Barracks. There are trails in the area, such as the Land Bridge Trail and the City of Vancouver's Discovery trails that lead to the Barracks. The Visitor Center is east of the Barracks, on the eastern edge of the historic Parade Ground. It is open daily from 9:00 AM to 5:00 PM in the spring and summer, and 9:00 AM to 4:00 PM in the fall and winter, and offers exhibits on the history of HBC Fort Vancouver, as well as a gift shop.

From the Visitor Center, visitors can access Fort Vancouver, a reconstructed 1845-period Fort stockade, by driving along the park road, or by walking the 300 yards to the Fort. Programs within the Fort interpret HBC activities, including the fur trade, lumbering, milling, blacksmithing, coopering, shipbuilding, salmon preserving, and agriculture.

Other visitor attractions near the Barracks include the HBC employee Village, which is located west of the reconstructed Fort and adjacent to the South Barracks. Visitors can access this area from Lower Mill Road on the south side of the Fort stockade, by a paved trail from East 5th Street that follows a portion of the historical River Road within the Village, and from the Land Bridge Trail. The National Park Service also owns approximately nine acres of shoreline on the Columbia River. Visitors can also access the Fort Vancouver waterfront. Pedestrians and cyclists can also travel between the Fort area and the waterfront along a 0.6-mile paved trail from East 5th Street, adjacent to East and South Barracks, through the Fort Vancouver Village, and onto the Land Bridge. The Land Bridge Trail crosses over State Route 14 into Old Apple Tree Park under the BNSF railroad berm and through a tunnel to the waterfront, which reestablishes the historical link between Fort Vancouver and the Columbia River. Wayside exhibits at the river explain the historical use of the Columbia River waterfront by the HBC and U.S. Army for commerce and communication, and by early settlers arriving after their journey on the Oregon Trail.

Other recreational venues within the VNHR include Officers' Row, the West Barracks, Old Apple Tree Park, and the Water Resources Education Center. The City of Vancouver owns and manages these venues. Officers' Row and the West Barracks include 22, 19th century, U.S. Army officer's structures, and 19 additional former U.S. Army structures, all of which are adaptively re-used as private or commercial rental space, including a restaurant and hospitality/meeting space.

Noise

The soundscape of a park, and visitors' appreciation of it, is considered a component of the general visitor experience. The project area is a developed area, and when compared to backcountry areas, experiences higher noise levels as a result of, among other things, the elevated/concentrated human activity, the concentrated vehicular traffic, and mechanized noise associated with visitation and park operations (maintenance, visitor services, etc.).

Background noise in the park is generally much lower than that expected or tolerated in developed areas in which federal noise guidelines are applied. Park and park partner operations in and around the East and South Barracks generate noise intermittently from personnel, vehicles, generators, hand tools such as hammers and power saws, heavy equipment such as lawn

mowers and tractors, and smaller power equipment such as chain saws and weed-eaters. Noise from park operations above ambient levels is currently confined to daylight hours (National Park Service 2004).

The current ambient noise environment in the East and South Barracks is influenced by motor vehicles traveling on State Route 14 and Interstate 5. In addition, the BNSF Railway berm to the south of the Barracks produces train noises from upwards of 25 freight trains per day. Frequent aircraft over-flights from Portland International Airport, (and less frequently from Pearson Field Airport) also contribute to the ambient noise environment. Visitor activities (e.g., groups of visitors) can also frequently be heard, particularly around the VNHR Visitor Center and the HBC Fort Vancouver, where educational programming involves hundreds of students arriving by school bus during most school days.

The proposed CRC replacement project presents a noise analysis of specific locations within 100 ft. of the highway right-of-ways, associated with the VNHR. Some of these locations, specifically within the HBC Village area, are near to the South Barracks, so the analysis provides useful baseline data on the current ambient noise environment in the East and South Barracks (2009). These data were specifically collected to determine the ambient noise environment as influenced by State Route 14 and Interstate 5, and do not reflect noises originating from aircraft fly-overs or the BNSF railroad berm. They are presented in Table 11.

Table 11. Results of the Columbia River Crossing Noise Analysis for Three Separate Locations in the VNHR

Resource Name and Parcel Info	Noise Levels in dBA			
	Existing	No Build Projections	*LPA (with no sound walls)	*LPA (with sound walls)
Post/Barracks Hospital (Building 638)	70	71	78	69
HBC Village	62/64	63/65	68/67	63/65
Officers' Row (as measured and modeled for two locations near Interstate 5)	61/68	62/69	68/74	67/72

*LPA (Locally Preferred Alternative): The LPA calls for a ten lane replacement bridge with light rail access and increased overall traffic volume.

Accessibility

The National Park Service is committed to the inclusion of visitors with disabilities in all its facilities wherever possible. In June 2010, the National Center on Accessibility conducted a comprehensive physical and programmatic accessibility assessment of Fort Vancouver NHS. Although the report of this assessment had not been completed as of this writing, preliminary results indicate a high level of effort and accomplishment for accessibility throughout the park. Preliminary analysis of the East and South Barracks shows that there are accessibility challenges posed with many of these facilities, specifically most of the historic structures. These include lack of ramps into buildings, elevators within buildings, inaccessible pathways, etc.

TRAFFIC, CIRCULATION AND PARKING

Access

The East and South Barracks and the VNHR are centrally located within the Vancouver-Portland metropolitan area. Many transportation options are currently available to visitors, including surface streets, freeways, trails, public bus and air travel. The majority of visitors come by automobile, and the East and South Barracks are accessed via two main roads: Fort Vancouver Way from the north, and East 5th Street from the east.

Main Roads in the Study Area

Surface street access to the East and South Barracks is from Evergreen Boulevard through to Fort Vancouver Way on the north and East Reserve Street through to East 5th Street on the east. The two main roadways that run through East and South Barracks and the VNHR are Fort Vancouver Way, which links Evergreen Boulevard with East 5th Street on the west side of East Barracks; and East 5th Street, which runs from the Interstate 5 freeway between East and South Barracks, and continues to East Reserve Street and beyond (Figure 18).

Roadways internal to East Barracks includes McClellan Road, which runs east/west across Fort Vancouver Way and continues on the south side of the Parade Ground infantry barracks buildings; Hatheway Road, which runs east/west across Fort Vancouver Way and continues into East Barracks; Alvord Road, which angles north and east from the intersection of Fort Vancouver Way and East 5th Street, crossing Hatheway Road to meet McClellan Road; and other minor access roads and driveways.

The southwest corner of South Barracks is adjacent to the junction of Interstate 5 and State Route 14, but there is no direct access between these highways and the South Barracks. State Route 14 is a four-lane highway that connects Interstate 5 with Interstate 205 and continues along the Columbia River to the east. Interstate 5 is the only continuous north/south freeway on the West Coast, connecting Canada and Mexico through the states of Washington, Oregon, and California. It allows high capacity, high-speed traffic movement in urban and rural areas. Interstate 5, a state designated freight route, is a heavily used part of the national highway system. This freeway connects downtown Portland, Oregon to Vancouver, Washington.

Interstate 5 generally consists of three through-lanes in each direction within the Vancouver-Portland metropolitan area. Just south of the VNHR at the Columbia River, Interstate 5 provides a critical connection to two major ports, deep-water shipping, up-river barging, two transcontinental rail lines, and much of the region's industrial land. For residents of the Vancouver-Portland area, the Interstate 5 Bridge provides one of two crossings of the Columbia River for automobiles, transit, cycling, and pedestrians. It connects the communities of Vancouver and Portland for work, recreation, shopping, and entertainment. Averages of 135,000 trips are made across the Interstate 5 Bridge every day (Washington State Department of Transportation 2008). Interstate 5 and State Route 14 experience heavy traffic volumes during peak weekday commute times (6:30-8:00 am and 3:30-6:00 pm).

Public Transit

Public bus transportation to the VNHR is available through the C-TRAN, which serves the Vancouver area and outlying communities. Express commuter service is available between Vancouver and Portland. Bus service to the VNHR is provided by two routes along Evergreen Boulevard on the north side of Vancouver Barracks; visitors can also walk the short distance from downtown Vancouver to the VNHR. Future plans call for the creation of a lid over a portion of Interstate 5, providing a direct pedestrian link between downtown Vancouver and the VNHR. This community connector will provide vital resources protection as well as critical public access.

C-TRAN's 20-year development plan (Clark County Transit Benefit Area Authority 2010) will preserve the existing levels of service, expand the number of bus routes, increase the frequencies on many bus routes, increase service for people with disabilities, create two new park-and-ride locations, and provide a new rapid transit route on Fourth Plain Boulevard. C-TRAN will also fund the cost of operation and maintenance of an extension of the Portland MAX light rail system into downtown Vancouver as part of the CRC project.

Traffic Volume

Data from a traffic study conducted during June 15-20, 2010 indicate very light traffic loads on the surface streets of the VNHR, around the East and South Barracks. Traffic flow within the VNHR is largely at the "A" LOS, where drivers are practically unaffected by the presence of other vehicles on the road. Traffic counters were placed on East 5th Street between Fort Vancouver Way and East Reserve Street, and on Evergreen Boulevard in front of the Grant House. Weekday peak traffic hours reflect travel to and from work and lunch. Weekend peak hours were the same, except that the peak hour for Sunday afternoon was earlier. The average number of cars traveling past the East 5th Street traffic counter was approximately 1,000 per day; the average number of cars traveling past the Evergreen Boulevard counter was approximately 3,000 per day. Within 10%, an equal number of cars were recorded traveling eastbound and westbound at these two locations. The average number of cars traveling southbound past a traffic speed detector on Fort Vancouver Way between Evergreen Boulevard and East 5th Street was approximately 700. At all locations, the heaviest travel day was Saturday, and the lightest travel day was Sunday.

The average speed of cars traveling southbound on Fort Vancouver Way between Evergreen Boulevard and East 5th Street was 20-30 mph: 70-75% of cars were traveling within 5 mph of the speed limit, and 90% of cars were traveling below 32 mph.

In the years 1999-2009, traffic counters recorded a monthly average of 3,626 cars at the Visitor Center and 4,302 cars at the Fort site, with the lowest numbers recorded in November-February (National Park Service 2010d).

Level of Service

The LOS is defined by the *Highway Capacity Manual* (Transportation Research Board 2010) as a measure of the ability of an intersection or roadway segment to accommodate traffic volumes. LOS values range from LOS A, which indicates free-flow conditions with minimal delay, to LOS F, which indicates congested conditions with extremely long delays. LOS A, B, C, and D are generally considered satisfactory service levels in urban areas. LOS E and LOS F are typically considered unacceptable.

Traffic data from the City of Vancouver between 1997 and 2010 were analyzed for a 2011 NPS traffic study for four intersections; the roundabout at Evergreen Parkway and Fort Vancouver Way, the two-way stop controlled intersection at Evergreen and Park Road, the two way stop controlled intersection at Fort Vancouver Way and East 5th Street and the two way stop controlled intersection at East 5th street and Park Road (Hardin 2011). The LOS values for these four intersections for existing conditions are presented in Table 12, and with results of either A or B, are considered acceptable by urban design standards.

Table 12. Traffic Level of Service of Four Intersections Surrounding the East and South Barracks

INTERSECTION	LEVEL OF SERVICE
Evergreen & Fort Vancouver Way	A
Fort Vancouver Way & East 5th Street	A
East 5th Street and Park Road	A
Park Road and Evergreen Boulevard	B

Parking

There are approximately 425 formal parking spaces currently available within the East Barracks, with an additional 80 spaces of potential parallel parking spaces along East 5th Street, and an additional 344 non-formal (unmarked) spaces and 66 formal spaces in paved areas in the South Barracks (Tables 13 and 14). All combined, using currently paved and graveled areas, there is the potential for a total of 835 parking spaces immediately around the East and South Barracks (or 773 parking spaces if the City of Vancouver owned lot on the corner of Fort Vancouver Way and McClelland Road is not included). The formal parking areas in the East Barracks are presented in Table 13, while the formal and non-formal parking spaces in the South Barracks are presented in Table 14.

Parking Utilization

Parking utilization refers to the balance between parking supply and demand during peak visitation periods. A parking utilization survey conducted in the winter of 2010-2011 documented parking use at major parking sites over a few winter weekdays. The survey was conducted only at the major use sites and not for the entire park because of the large number of minor parking facilities.

At no point did the parking demand exceed overall parking supply under current conditions, other than on U.S. Army Reserve training weekends, when all of the available parking spaces within the East Barracks were occupied, and many cars were observed parking on East 5th Street.

Prior to September 2011, East and South Barracks use of parking was directly related to U.S. Army staff usage, Reservist training weekends, and use of the Army Air Force Exchange Service Shoppette shopping facility. Staff parking tended to be longer term, whereas customers of Army Air Force Exchange Service tend to park less than one hour at a time. The parking utilization survey showed an average of 93 military vehicles parked in open storage in the South Barracks—all of which has been moved from the site when the U.S. Army vacated the property in September 2011, freeing up these spaces. In addition, the parking utilization survey showed a Monday through Friday average of 69 vehicles parked in the East Barracks (including the City of Vancouver owned lot on the corner of Fort Vancouver Way and McClelland Road); and an average of 19 (non-military) vehicles parked in the South Barracks (National Park Service, unpublished data). In addition, the parking utilization study showed a Monday through Friday average of 65 vehicles parked on East 5th Street, from the Park Road, westwards to where East 5th Street dead-ends at Interstate 5. Most of these vehicles are assumed to be associated with the Federal Highway Administration facility located on the west end of East 5th Street.

Table 13. Primary Parking Areas in the East Barracks

Location	Description	Designation	Surface	Number of Parking Spaces (est.)
Corner of Fort Vancouver Way and McClelland Road*	Lot	Striped	Paved	62
South of Building 987	Head-In	Unmarked	Gravel	23
Between Building 722 and 725	Lot	Striped	Paved	30
South of Building 721	Lot	Striped	Paved	33
South of Building 991	Lot	Striped	Paved	27
South of Building 728	Head-In	Striped	Paved	25
Between Building 754 and Building 786	Lot	Striped	Paved	25
South of Building 748	Lot	Unmarked	Gravel	50
Courtyard of Building 987	Head-In	Unmarked	Paved	10
Courtyard of Building 989	Head-In	Unmarked	Paved	10
Courtyard of Building 993	Head-In	Unmarked	Paved	8
West of Building 721	Head-In	Striped	Paved	7
Corner of Alvord Road and McClellan Road	Lot	Striped	Paved	35
On-Street Parking, East 5th Street, from Fort Vancouver Way to the Park Road	On Street	Unmarked	Paved	80
Total				425

*Note, this lot is outside of the project area, is owned by the City of Vancouver, and was traditionally used by U.S. Army Reserve staff as a general parking area.

Table 14. Formal and Informal Parking Spaces in the South Barracks

Location	Description	Designation	Surface	Number of Parking Spaces (est.)
Between Building 404 and Building 405	Lot	Striped	Paved	(Formal) 66
Southeast of Building 404	Lot	Unmarked	Paved	(Non formal)124
East of Building 405	Lot	Unmarked	Paved	(Non formal)120
Courtyard Between Building 410 and Building 422	Lot	Unmarked	Gravel/ Paved	(Non formal)100
Total				410

Pedestrian and Cyclist Circulation

The many roadways, pathways, and sidewalks throughout the VNHR are well traveled by bicycle and foot traffic alike. East and South Barracks are served by sidewalks along Fort Vancouver Way and East 5th Street, and East Barracks has several internal roadways that are attractive to pedestrians and cyclists.

The Discovery Historic Loop, a popular route for cyclists and pedestrians, is a four-mile trail that winds through Officers' Row, Vancouver Barracks, Fort Vancouver NHS, the Village, and across the Land Bridge to Old Apple Tree Park and the Columbia River. It goes around the South Barracks via the Land Bridge Trail, and adjacent to the East Barracks via Fort Vancouver Way.

As determined by the National Park Service, pedestrian and cyclist counts on the Land Bridge in 2009 showed a total of 252,106 users (with no data recorded in January and February of that year). The lowest use month was April, with 2,595 users, and the highest use month was August, with 73,264 users.

SOCIOECONOMIC FACTORS AND LAND USE

Regional Setting

The East and South Barracks are owned by the U.S. Army and located in Clark County, which is one of seven counties included in the Portland-Vancouver-Hillsboro, OR/WA Metropolitan Statistical Area (MSA), the 23rd largest in the United States. The US consulting firm Mercer, in a 2009 assessment "conducted to help governments and major companies place employees on international assignments," ranked Portland 42nd worldwide in quality of living.

Vancouver is immediately north of the city of Portland, Oregon, on the north side of the Columbia River and 107 river miles from the Pacific Ocean. The region is bordered on the east by the Cascade Mountains and on the west by the Coast Range. Major road approach routes are Interstate 5 and Interstate 205 from the north and south; and Interstate 84, and Washington and State Route 14 from the east. Visitors may also arrive at the park by air by using Pearson Field Airport or Portland International Airport. Seattle is 165 miles north; Olympia is 100 miles north; Portland is 8 miles south; Eugene is 110 miles south; Pendleton, Oregon is 215 miles east; and Astoria, Oregon is 105 miles west.

Land Ownership

The East and South Barracks are situated in an urban setting within the boundaries of the VNHR and Vancouver's Central Park. The 366-acre VNHR consists of a mixture of ownership and management among the federal government and the City of Vancouver. The VNHR includes the following: Fort Vancouver NHS (National Park Service); Pearson Air Museum Complex (owned by the National Park Service and managed through agreement by the City of Vancouver); Pearson Field Airport (portions owned by both the National Park Service and the City of Vancouver); East and South Barracks (U.S. Army, but in the process of being relinquished to the National Park Service); West Barracks (owned by the City of Vancouver); Officers' Row (owned by the City of Vancouver); Water Resources Education Center (owned by the City of Vancouver), and Marine Park and portions of the Columbia River waterfront (portions owned by both the National Park Service and the City of Vancouver).

There are 26 federally recognized tribes that have associations with Fort Vancouver NHS, and a few non-federally recognized tribes that also maintain cultural ties to Fort Vancouver. Some of these tribes do not have reservation lands, yet they constitute contemporary tribal communities that live among non-Indians in the area surrounding Fort Vancouver. Likewise, in this ethnically diverse area of Washington and Oregon, there are dispersed American Indian groups that may constitute American Indian or Native Hawaiian communities who have interests in, and enduring historical connections to, Fort Vancouver.

Because the relinquishment of East and South Barracks by the U.S. Army to the National Park Service is an imminent action, it is being considered as the existing, baseline condition for the purpose of this analysis.

Population

According to the state of Washington's Office of Financial Management (2010) website, Clark County is Washington's fifth most populated county, accounting for 6.5% of the state's population in 2010. In 2000-2010, Clark County was the second fastest growing county in the state. Vancouver is Washington's fourth most populated city, and is currently the sixth fastest growing city in the state.

Clark County represented approximately 19% of the MSA total in 2009. The southwest portion of Clark County contains the largest share of the population. Vancouver and Clark County have experienced steady growth over the past 30 years (Table 15). From 1990 to 2000, Vancouver's population increased 210%. During this same period, Clark County's population increased 45%, and Washington State's population increased 21.1%. From 2000 to 2010 it is estimated that Vancouver's population increased 15.3%. During this same time period, Clark County increased 26.2%, and Washington State increased 14.2%. Most immigrants into Washington come from the states of Oregon and California.

Table 15. Population Growth 1980-2010

Year	Washington State	Clark County	Vancouver
1980	4,132,156	192,227	42,834
1990	4,866,692	238,053	46,380
2000	5,894,121	345,238	143,560
2010 (est.)	6,733,300	435,600	165,500

In the next 20 years, the population of Clark County is expected to increase by almost 150,000, or 34%, and this growth is expected to occur in designated urban growth areas. It is projected that the population of Washington State will increase 25% by 2030.

Employment

The MSA's location is beneficial for several industries. Relatively low energy cost, accessible resources, north-south and east-west Interstates, international air terminals, large marine shipping facilities, and both west coast intercontinental railroads (BNSF and Union Pacific) are all economic advantages. However, Portland's history of attracting and retaining company

headquarters is mixed; some major businesses, as well as smaller companies, have moved headquarters out of the city. The City of Vancouver also offers a mix of businesses that support the financial and professional center of the community. Downtown Vancouver's largest employers include publishing, hospitality, telecommunications, public services, and finance. Large manufacturing firms are also located near the downtown core, which is entering into a period of major redevelopment. Vancouver is currently undergoing growth in both commercial and residential development, with major employers in health care, high-technology industry, education, paper manufacturing, retail, professional and service businesses, and regional and corporate headquarters.

The current recession, however, resulted in substantial job losses and high unemployment. Unemployment remains very high by historical standards. Population growth has exacerbated this increase in joblessness. The July, 2011 unemployment rate for Clark County is within the top third for the state at 10.1%. The overall unemployment rate for Washington State in July, 2011 was 9.3%. Jobs, or the lack of them, will continue to be the biggest challenge facing the Portland economy. Economic recovery is fragile; labor markets are weak and consumer confidence fell in June 2011, while consumer spending also declined. Unemployment claims rose in June, 2011 to their highest levels since November, 2010.

Where the region's population and employment numbers ultimately land will be affected by several factors. They include varying conditions in the local and global economies, changing population and workforce demographics, and policy decisions and investments made in local communities that may attract particular types of population and employment growth to certain areas of the region. In March 2009, the Metro Council, a regional government agency, released updated 20- and 50-year population and employment forecasts to inform upcoming policy decisions and investments to support the health and sustainability of the region. This report forecasted a 90% chance that there will be between 1.3 and 1.7 million jobs in the MSA in 2030 and a 90% chance that there will be between 1.7 million and 2.4 million jobs in the same area in 2060. In 2000, there were approximately 973,000 jobs.

Portland MSA Real Estate Market

The buildings for lease in the real estate market can be divided into three classes and according to a combination of location and physical characteristics. Class B and Class C buildings are always defined in reference to the qualities of Class A buildings. There is no formula by which buildings can be placed into classes; judgment is always involved. However, the following generally describes the different building classes.

Class A. These buildings represent the highest quality buildings in their market. They are generally the best looking buildings with the best construction, and possess high quality building infrastructure. Class A buildings also are well-located, have good access, and are professionally managed. As a result of this, they attract the highest quality tenants and also command the highest rents.

Class B. Class B buildings are generally a little older, but still have good quality management and tenants. Often times, value-added investors target these buildings as investments since well-located Class B buildings can be returned to the Class A level through renovation such as facade and common area improvements. Class B buildings should generally not be functionally obsolete and should be well maintained.

Class C. Class C is the lowest classification of office building and space. These are older buildings (usually more than 20 years), are located in less desirable areas, and are in need of extensive renovation. Architecturally, these buildings are the least desirable and building

infrastructure and technology is outdated. As a result, Class C buildings have the lowest rental rates, take the longest time to lease, and are often targeted as re-development opportunities.

The MSA offers a mix of specialty retail, business services and large industries, with a leasable space in all building classes. The following statistics are for Vancouver, but they are assumed to be similar for the rest of the MSA. Currently there is a high percentage of vacant Class A and B office space in the MSA. The average vacancy rate in the Vancouver office market is over 20% and the majority of space is Class A or B. Older properties, Class C, total only 5% submarket, and have a lower vacancy rate of approximately 8%. In the near term future of the Vancouver office market, vacancy rates are expected to decrease and rental rates are expected to increase. Building space available for lease on Officers' Row is 3.5%. The Vancouver office submarket is the top ranked submarket in the region in terms of rent growth. Rental growth rates were higher in this area than in the region and nationally at the end of 2010. Rental rates are expected to slowly increase over the next five years with an annualized growth rate of 2% per year (Booz Allen Hamilton, 2011).

The Vancouver retail submarket is the top ranked submarket in the region (Portland). Rent growth and rental growth rates were higher in the area than in the region and nationally at the end of 2010. Its retail vacancy rate was low at 6.9%. Only 12% of the retail space was built before 1970 (Class C). Retail vacancy rates are expected to decrease and rental rates are expected to increase, but both slowly. The vacancy rate for Class C restaurant space is 13.7%.

The residential or multifamily submarket in Vancouver is on the road to recovery and leading all other submarkets in terms of leasing activity. Positive signs in the Vancouver economy are reinforcing a level of confidence in renters who are now more likely to sign leases. The average vacancy rate in the residential market was measured at 4.8 % in 2010. This is indicative of a very strong market for residential use. The occupancy rate for residential space in the West Barracks is 90-100%.

It is a tenant's market as landlords compete for new leases and lease extensions. But the market is showing upward trends: 77% of properties in the Vancouver area experienced positive rental rate growth in the last quarter, whereas only three properties experienced negative growth in the same period.

PARK OPERATIONS, FACILITIES, AND INFRASTRUCTURE

Park operations that could be affected by this project include the relocation of existing NPS functions located at Fort Vancouver NHS, requirements related to the upkeep and maintenance of historic structures and landscapes, the provision of utilities, and staffing levels.

Staff

There are between 25 and 30 full- and part-time staff (seasonally adjusted) working at Fort Vancouver NHS, including facility management staff, cultural resource specialists, interpreters, and administrators. Maintenance of the landscaping, buildings, and other facilities within Fort Vancouver NHS is performed by park facility management personnel. More than 600 dedicated volunteers provide invaluable services to the park throughout the year.

Currently, the only active U.S. Army use in the East and South Barracks is the Army Air Force Exchange Service Shopette.

Up until recently, approximately 40 full time civilian and military employees worked in these facilities. An additional 950 Reservists and 230 National Guard members trained monthly in these facilities. The U.S. Army currently contracts out custodial services, building maintenance, and landscaping for East and South Barracks to private contractors. The City of Vancouver manages and maintains boundary roads, sidewalks, paths, and landscaped areas along the park borders.

Utilities

Utilities utilized within the East and South Barracks include potable water, sewage, stormwater disposal, natural gas, and power, all of which could be affected by the proposed *Environmental Assessment*. A *Schematic Design for Utility Upgrades for the East and South Barracks* (2010) was conducted by Kennedy/Jenks Consultants to evaluate the condition of the utilities in East and South Barracks, and to address improvements and upgrades necessary to bring the existing utilities into compliance with current codes and standards at the anticipated LOS. The study recommended improvements to the potable water, sanitary sewer, storm drain, and electrical/telecommunications systems; these recommendations are noted below.

Potable Water

The City of Vancouver supplies the drinking water for the East and South Barracks. According to U.S. Army records (2006), a total of 73,370 gallons of water were used in the East and South Barracks in that year. This averages 6,114 gallons per month, with U.S. Army records indicating a yearly high of 6,465 gallons in September, and a low of 1,111 gallons in March. The distribution system originates from a 6 inch buried pipe in Fort Vancouver Way, and is distributed through the East Barracks via pipes in McClellan and Alvord roads. The South Barracks receives water from an 8 in. buried pipe in East 5th Street.

All of Vancouver's drinking water comes from wells that tap three underground aquifers. Groundwater is first expected at 60 feet below ground surface in the Salmon Creek aquifer. This alluvial aquifer has an estimated thickness of 40 feet, with its base on top of the Troutdale Formation. Groundwater is inferred to flow toward the southwest, following the local topography (Department of the Army 1999). The region's most important groundwater aquifer is the Troutdale gravel aquifer, which supplies over 99% of the drinking water used in the area. This aquifer is estimated to be 100 feet below Vancouver Barracks with a thickness of about 150 feet. It was designated a "sole source" aquifer in 2006, which means that it supplies at least 50% of the drinking water for the area and that there is no viable alternative replacement source (U.S. Environmental Protection Agency 2006). The Upper Troutdale aquifer has a gradient of about 0.01 ft./mile, moving south toward the Columbia River. No drinking water wells are present in the East and South Barracks.

This existing water infrastructure system serving eastern portions of the South Barracks is deteriorating. The existing system has reached the end of its service life, is in poor condition, shows multiple signs of failure and is not capable of meeting fire suppression requirements. South Barracks has acceptable eight-inch mains, but the mains are connected to an aging six-inch system that does not meet current fire flow delivery standards. The eight-inch mains may not meet City of Vancouver design or construction standards. Service to the older South Barracks buildings consists of an older six-inch line that is in poor condition. Buildings 400, 402, 404, and 405 in South Barracks are relatively new construction and receive adequate capacity.

Fire Flow

Water for fire suppression comes from the same City of Vancouver distribution system as potable water. Acceptable rates of flow and water pressure meet the requirements for buildings within Fort Vancouver NHS and in the 400-series buildings in South Barracks. The water system in East Barracks and in the older buildings in South Barracks currently does not meet fire suppression requirements.

Stormwater

The East and South Barracks stormwater collection and discharge system is composed of shallow ditches and a subsurface drainage system. Several culvert and ditch systems are severely

undersized and require modifications. The subsurface system consists of lateral pipes ranging from six inches in diameter, to the City of Vancouver's 27-inch diameter municipal stormwater pipes. The Vancouver Barracks system discharges into the City of Vancouver's stormwater drainage system (which in turn discharges into the Columbia River). The City of Vancouver's storm drain enters Vancouver Barracks at Evergreen Boulevard. The storm drains converge south of vehicle maintenance building 400 in South Barracks, with the discharge point located approximately 800 feet from Vancouver Barracks' southern boundary (CH2M Hill 1998).

The City of Vancouver provides the direction and technical expertise needed in the planning, review, and design of efficient stormwater systems; and works to protect and improve surface and ground water resources for the community and environment. Every year, the City of Vancouver cleans 12,000-plus catch basins or storm water drains, removing approximately 500 tons of leaves, sediment, and other debris. They also maintain more than 300 miles of storm water pipe lines.

The East and South Barracks is currently operating under a National Pollutant Discharge Elimination System General Stormwater Permit, issued by the EPA after completion and certification of the Vancouver Barracks Stormwater Pollution Prevention Plan in 1998 (Department of the Army 1999). An Industrial Multi-Sector General Stormwater Permit was issued for the South Barracks motor pool area in 2008 (Palfy and Schell 2009).

Wastewater

The existing sanitary sewer system serving East and South Barracks is currently provided by a combination of public sewer lines and on-site lines owned by the U.S. Army. Wastewater from the East and South Barracks is treated at the Westside Water Reclamation Facility, located approximately two miles west of the Barracks at the Port of Vancouver. Treated water is discharged into the Columbia River. According to U.S. Army records (2006), a total of 2,564 CCF of wastewater (1 CCF= 100 cubic feet, or 748 gallons) originated in the East and South Barracks in that year. That averages to approximately 213.7 CCF of wastewater per month, or approximately 159,880 gallons per month.

Vancouver's wastewater collection system includes approximately 710 miles of wastewater pipes, 38 pumping stations, and 2 wastewater treatment facilities, which treat up to 25 million gallons of wastewater a day, with ample capacity to serve a population base of approximately 210,000. Pumping stations move wastewater from areas lacking gravity sewer lines to an adjacent area where gravity lines exist. The total size of the collection system expands each year due to growth. In recent years, developer extensions have added 15 to 20 miles of new pipe to the system annually.

In the East Barracks, the piping is in poor condition and does not meet current code, city or state design and construction requirements. The sewer system needs to be replaced to meet current standards and align it within utility corridors being established through the site. Building service laterals also need to be replaced between the sewer main and the building outfall connection point. In the South Barracks, only building 410 will need new service.

Electrical/Gas/Telecommunications

Electrical service to the East and South Barracks is provided by Clark Public Utilities District. Clark Public Utilities District maintains more than 62,000 poles, 55 substations/switching stations, and 6,600 miles of power lines. Northwest Natural Gas provides gas service. Telephone service and the data/fiber optic line in the East and South Barracks are currently operated by CenturyLink. Electrical service to East and South Barracks is fed from an overhead supply.

Solid Waste

Solid waste in East and South Barracks is managed by placement of waste in dumpsters within the Barracks and collection by the City of Vancouver's Waste Connections. Illegal dumping at dumpster locations, primarily household waste and home appliances, was reported at various locations in the Vancouver Barracks (Department of the Army 1999).

HUMAN HEALTH, SAFETY, AND THE ENVIRONMENT

Safety and Emergency Services

Police and fire services for the East and South Barracks are currently provided by the City of Vancouver. The City of Vancouver's West Police Precinct is located at 2800 Stapleton Road, three miles from the East and South Barracks. The closest fire station is the Downtown Fire Station, one mile away at 900 West Evergreen. Within the East and South Barracks, two fire hydrants are located in the East Barracks and two are located in the South Barracks.

As noted under Park Operations, the water lines do not meet the requirements for fire suppression, and there are some structural fire code deficiencies in the Barracks buildings. The two fire hydrants are insufficient for the need and do not meet current fire codes. The buildings are in need of upgrading to meet other code requirements, such as some seismic repairs.

The closest emergency medical facility is the Southwest Washington Medical Center, located four miles east of the VNHR on East 92nd Avenue and Mill Plain Boulevard. The Veterans Administration Hospital Campus is located 1.5 miles north of the VNHR off Fort Vancouver Way and Fourth Plain Boulevard.

Hazardous Materials

Before the National Park Service can accept property, it must complete an Environmental Site Assessment (ESA) to confirm or deny the presence of any Recognized Environmental Conditions (RECs) on the property. RECs are defined as the presence or likely presence of any hazardous substance or petroleum products on a property that indicate an existing release, a past release, or a material threat of a release, of any hazardous substances or petroleum projects into structures on the property or into the ground, groundwater, or surface water of the property. A Level 1 ESA was completed for the East and South Barracks for the National Park Service by Tetra Tech, Inc. in July 2009.

The Level 1 ESA identified the following RECs in the project area:

- Residual organochlorine pesticides could be located in soils beneath building foundations, since the U.S. Army has historically applied these pesticides for termite control.
- Deteriorated lead based paint on buildings exteriors may have released lead into the soil, accumulating over time, and could be released when soils are disturbed.
- Lead dust with concentrations exceeding legal thresholds has been documented in former firing ranges at buildings 993, 989, and 987 and potentially in the basement of building 721.
- Approximately 8.15 acres, including portions of the South Barracks, was used as an ordnance depot and firing range from approximately 1849 until 1960. There is a potential that unexploded ordnances, hazardous materials associated with explosives, and elevated levels of lead or other metals, could be found in the soils of that area. The Army Corps of Engineers is currently conducting a Military Munitions Response Program (MMRP) Remedial Investigation, and it is anticipated that the field survey will be completed by December 2011.

- Asbestos containing material may be encountered in soils during future soil disturbance. Deteriorating exterior asbestos containing material can release asbestos to soils over time if not abated.
- Wood preservers were commonly used on railroad ties, which are associated with the property. Hazardous chemicals associated with coal tar creosote, such as arsenic, could have been released into the soil.

Additionally, because of the activities historically conducted within certain buildings, a variety of chemicals and waste have likely been stored in the workshops and maintenance buildings of East and South Barracks. These materials may include facilities maintenance supplies in building 786; fuels, lubricants, and solvents associated with the vehicle maintenance facilities in buildings 400, 402, 404, and 405; and other similar materials.

A Level II ESA was conducted in the spring of 2011, the results of this study include:

- Organochlorine compounds were detected in several samples from the site, but all were well below the corresponding Environmental Screening Level (ESL) for Unrestricted Land Use (3 mg/kg DDT).
- Lead (likely originating from lead based paint from pre-1978 structures) was detected in almost every soil sample analyzed. Most of these samples came in at results above the corresponding ESL for Unrestricted Land Use.
- Asbestos was not detected in any of the bulk soils collected from the areas of non-extant buildings.
- Gasoline-range organics were detected in only two composite soil samples collected from the Soil Staining RECs. Diesel-range and residual-range organics (DRO) were detected in multiple composite soil samples, however, no result exceeded the corresponding ESL.
- Polychlorinated biphenyls were not detected in any composite or discrete soil sample above the corresponding reporting limits.
- Semi-volatile organic compounds were present in four composite soil samples. No individual semi-volatile organic compounds exceeded the corresponding ESL in any sample.
- Various Resource Conservation and Recovery Act metals were detected in composite soil samples, however, with the exception of lead, none of the metals (silver, arsenic, barium, cadmium, chromium, mercury, or selenium) exceeded the corresponding ESL for that constituent.

The authors of the Level II ESA had the following conclusions and recommendations:

- Further assessment of the lateral and vertical extent of lead in soil is warranted, particularly in the East Barracks near buildings 991, 993, 728, 754, 786 and non-extant buildings south of building 993, east of building 754 and east of building 410. Concentrations of lead in soil are high enough to pose a potential threat to human health and the environment and are well above the Unrestricted Land Use ESL in this area. Soil disturbance in these areas should not be performed other than by properly trained personnel.
- With the exception of lead, none of the composite or discrete samples contained Resource Conservation and Recovery Act metals above the corresponding residential ESL.

Unexploded Ordnance

There is a small possibility for unexploded ordnance to be present throughout the East and South Barracks – especially in the South Barracks. The Army Corps of Engineers completed a Munitions Historical Records Review in 2006, and recommended that two Munitions Response Sites should be further evaluated. These included an underwater site in the Columbia River outside of the East and South Barracks, and an 8.15 acre site in the South Barracks. The Army Corps of Engineers is currently conducting a MMRP Remedial Investigation, and it is anticipated that the field survey will be completed by December 2011. Any future suspected unexploded ordnance should be reported to the City of Vancouver Police Department.

Chapter 4 Environmental Consequences



*Photo Courtesy of
National Park Service*

CHAPTER 4

Environmental Consequences

The NEPA requires the disclosure of environmental effects of proposed federal actions, and any adverse environmental effects that cannot be avoided should the preferred alternative be implemented. The Environmental Consequences chapter analyzes both beneficial and adverse impacts that would result from implementing any of the four alternatives described in this *Environmental Assessment*. In addition, this chapter includes a summary of laws and policies relevant to each impact topic, definitions of impact “thresholds” (negligible, minor, moderate, major), explanations of methods used to analyze impacts, and the analysis methods used for determining cumulative effects. As required by the Council on Environmental Quality (CEQ) regulations implementing NEPA, a summary of the environmental consequences for each alternative is provided in Table 8 (Chapter 2 Alternatives). The resource topics presented in this chapter, and the organization of the topics, correspond to that presented in Chapter 3 Affected Environment.

General Analysis Methods

The analysis of impacts follows CEQ guidelines and Director’s Order 12 procedures. This includes the application of results of the relevant scientific research related to park resources which has been conducted within Fort Vancouver NHS and the East and South Barracks area in particular. It also includes the use of other best available scientific literature applicable to the region and setting, the resources being evaluated, and the actions being considered in the alternatives. All alternatives have been evaluated for their effects on the resources and values identified during the alternatives development and scoping processes. For each impact topic, impacts are defined in terms of thresholds of effect, context, intensity, duration, and timing. In this document, intensity definitions are not assigned for beneficial effects. The intensity thresholds that are defined for each impact topic apply to adverse impacts only.

Impacts and cumulative effects are discussed in each impact topic. Definitions of intensity levels vary by impact topic. Where it is not specifically stated otherwise under each impact topic, the following definitions apply.

Assessment Methodology

For each impact topic, thresholds are established to determine the magnitude and extent of effects. These thresholds are generally derived from best professional judgment and scientific literature. Assessment methods and specific thresholds are identified under each topic area.

Type of Impact

Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

Adverse: A change that moves the resource away from a desired condition or detracts from its appearance or condition.

Note: The words impact and effect are used interchangeably in this document.

Context and Duration

Local: Occurs primarily within the immediate vicinity of the East and South Barracks and to a lesser extent within the remainder of Fort Vancouver NHS and the VNHR.

Regional: Occurs throughout the Portland/Vancouver metro area, and/or in the surrounding community.

Short-term: Impacts that would not continue beyond the action itself, e.g. would last only during construction/rehabilitation efforts.

Long-term: Impacts would extend beyond the construction/rehabilitation efforts.

Geographic Analysis Area

The geographic area for the analysis of impact related to the project encompasses not only the East and South Barracks, but also the VNHR and its immediate surroundings (Figures 1 and 2, Chapter 2).

Cumulative Impact Scenario

CEQ regulations for the implementation of NEPA require the assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as the “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions” (40 CFR 1508.7). Cumulative impacts are addressed for all alternatives, including the no action. The geographic analysis area for cumulative impacts can be local, regional, or larger, depending on the resource and sources of impact to it. For the purposes of this project, the following projects were considered for the cumulative impact analysis.

Excess and Disposal of West Vancouver Barracks Reservation (2007)

The U.S. Army ended its management interests for a portion of the Vancouver Barracks, known as the West Barracks, in the VNHR, by deeding this area to the City of Vancouver in 2007, prior to the inclusion of the post on the BRAC. The U.S. Army assessed the impacts of terminating its interest at the West Barracks, and transferring the land outside of federal ownership. The outcome was to adaptively reuse historic buildings for a variety of public, non-profit, and commercial purposes consistent with VNHR objectives. The City of Vancouver (along with the National Park Service, the U.S. Army, and the state of Washington), is a managing partner of the VNHR, which was designated in 1996 by Congressional legislation. The City of Vancouver initiated rehabilitation efforts on the 19 structures within the West Barracks, along with a complete utility upgrade, accomplishing the project in 2000-2007. Currently the Fort Vancouver National Trust, through a master lease with the City of Vancouver, leases 14 of the 19 structures to both private individuals and a hospitality and catering school, and has long range plans to adaptively reuse the remaining five structures in the future.

NPS General Management Plan/Environmental Impact Statement

The National Park Service prepared a general management plan and environmental impact statement for Fort Vancouver NHS in 2003-2004 that included plans for adaptive reuse of historic structures, reconstruction of historic structures and landscape, expansion of interpretive programs and visitor services, parking construction, trails construction and maintenance. It also included strategies for management of park resources and their interpretation. The actions

approved in the general management plan for the East and South Barracks are included in this *Environmental Assessment* and are common to all alternatives. Other actions in the general management plan, not related to the East and South Barracks that could have potential for cumulative impacts, are listed here.

- ***The Village Development Concept Plan*** - Proposed reconstruction and restoration of the Village. This has been partly accomplished through the reconstruction of two of the structures from the HBC Village, as well as associated fence lines and replica roads. Based upon the development concept plan and the latest general management plan, at least two more structural reconstructions (and upwards of an additional seven) could be built on current NPS lands and in the lands of the South Barracks.
- ***Access Improvements and Land Bridge Construction for Fort Vancouver National Historic Site*** - This project was a cooperative undertaking by the City of Vancouver, the National Park Service, WSDOT, the Federal Highway Administration, and the Confluence Project. This project constructed a pedestrian and bicycle land bridge on Fort Vancouver NHS and on WSDOT property, including construction of the north landing of the Land Bridge on Fort Vancouver NHS, access across Fort Vancouver NHS necessary to maintain the structure, and the construction of trail improvements on Fort Vancouver NHS to access the structure. The project was completed in 2007.
- ***Fort Vancouver NHS Visitor Center*** - This project, also contained within the *Fort Vancouver National Historic Site General Management Plan* (2003), would remodel and enlarge the current visitor center as an NPS managed visitor center, with new exhibits regarding all historical elements related to the VNHR.
- ***Closing East 5th Street and Parking Plans*** - The preferred alternative from the general management plan calls for closing East 5th Street to general automobile traffic, and removing the current parking lot for the reconstructed HBC Fort Vancouver, relocating this parking into the southeastern portion of the East Barracks. Although this is the preferred alternative for the *Fort Vancouver National Historic Site General Management Plan* (2003), the National Park Service realizes that closing East 5th Street to general automobile traffic is likely infeasible due to the fact that the street is owned by the City of Vancouver. The City of Vancouver has determined that such a closure would be detrimental to automobile traffic flow and emergency vehicle routes in this part of town.

Columbia River Crossing Project - In 1998, WSDOT and Oregon Department of Transportation formed a bi-state partnership to study alternatives for the Interstate 5 Interstate bridges. Two studies resulted from the initial work, *The Portland/Vancouver I-5 Trade Corridor Freight Feasibility and Needs Assessment Study Final Report* (2000), and the *Portland/Vancouver I-5 Transportation and Trade Partnership Final Strategic Plan* (2002). This bi-state work included a variety of corridor-wide improvement and traffic management recommendations. One key recommendation called for adding capacity over the Columbia River with a replacement bridge or by supplementing existing Interstate 5 bridges to ease impacts of bottlenecks on local travel and interstate commerce. Another recommendation called for considering high-capacity transit improvements in the area of the Interstate 5 Interstate Bridge. WSDOT and Oregon Department of Transportation are focusing efforts on these recommendations in the CRC project. Additional study recommendations regarding freight rail capacity, land use, and transportation demand and system management are being addressed in other venues. (Washington Department of Transportation, March 2005).

The current Locally Preferred Alternative calls for a ten lane, two span bridge, with light rail and dedicated bicycle/pedestrian lanes (Figure 20). This bridge will be substantially higher than



Figure 20. A cropped image of the latest (June 2011) rendering of the Locally Preferred Alternative Aerial Image of the CRC project's projected bridge path. (Accessed from [http://columbiarivercrossing.org/Library/CRC Project Aerial Map](http://columbiarivercrossing.org/Library/CRC%20Project%20Aerial%20Map). June 2011)

the present ones, negatively altering the visible cultural landscape of the Vancouver Barracks. The proposed alignment would affect the western end of Fort Vancouver NHS and the VNHR, including a portion of the South Barracks. The Locally Preferred Alternative also calls for the transfer of up to three acres of archeologically sensitive land currently within the VNHR National Historic District. Potential mitigation measures being discussed between WSDOT and the National Park Service include the rehabilitation of building 405 in the South Barracks into a curation and museum space, the inclusion of sound walls along the right of way, and the inclusion of landscaping sensitive to the existing cultural landscapes. Related to this project as a community enhancement is an approved design concept for a large-scale pedestrian and multi-modal overpass that spans Interstate 5 and connects the VNHR to downtown Vancouver. The proposed installation, referred to as the Community Connector, would create a park-like setting over the

highway that would extend from Evergreen Boulevard at the northern edge to 7th Street at the southern edge. Final designs have not been developed.

Hazardous Material Clean up – Based upon the results of the Level II ESA completed in the spring of 2011, (which tested the East and South Barracks for a wide suite of potential environmental contaminants), the only contaminant in the soil that exceeded actionable ESL was lead. High concentrations of lead were discovered in soils around extant and non-extant historic structures, likely the result of the peeling of lead based paint from these structures. Currently the National Park Service and the U.S. Army are negotiating the details on how to address these findings. Cleanup would take place based on what is required by Federal and State agencies, using a risk based approach that gives due consideration to the possible impacts to sensitive archeological sites.

Management of Pearson Air Museum - Signed in 1994, the National Park Service and the City of Vancouver have a Memorandum of Agreement (MOA) designating the City of Vancouver, or its designated entity, to operate and manage the Pearson Air Museum complex, which is owned by the National Park Service. The City of Vancouver has subsequently signed (in 2005) a MOA with the Fort Vancouver National Trust to operate the Museum. The City of Vancouver has notified the National Park Service that due to budget constraints, it would be terminating its agreement with the National Park Service to operate the Museum on December 31, 2012. The National Park Service is currently working with the City of Vancouver and the Fort Vancouver National Trust regarding the continued operation of this important aspect of the NHS. A Long Range Interpretive Plan Addendum for Pearson Air Museum has begun with plans for completion in 2012.

Pearson Lease Extension - Currently, the City of Vancouver operates Pearson Field Airport, a municipal airfield, under a lease agreement with the National Park Service. The National Park Service owns the western half of the Pearson runway, and leases it to the City of Vancouver. The National Park Service and the City of Vancouver completed negotiations in 2011 to lease the western portion of the airfield to the City of Vancouver to allow the continued operation of the airfield to at least 2050, with restrictions on the numbers and types of aircraft that can fly from the field.

Downtown Vancouver Revitalization - In 1997 the City of Vancouver decided to dedicate the next 15–20 years to redeveloping and revitalizing a significant portion of the downtown core. The first projects started in the early 2000s with the construction of many tall condominium structures around Esther Short Park and in the Uptown Village neighborhood. The most lauded outside investment was the construction of a Hilton hotel directly across from this park. Recently, a new shopping complex has been built, including a Fred Meyer store, just outside of the downtown core and east of the VNHR. The *Columbian* newspaper has recently finished construction of a seven-story building, adjacent to the Hilton, which the City of Vancouver purchased and is redeveloping into a City Hall. The new Vancouver Municipal Library was constructed along C Street in downtown and opened in July 2011. In addition, there are these anticipated projects:

- *Riverwest* – Located on the west side of the Interstate 5 corridor, just opposite of the VNHR and the historic Post Hospital, this mixed-use project includes a condominium building, and an office building.
- *The Luxe* – Currently under construction, and located at 412 East 13th Street, just southwest of the intersection of Interstate 5 and East Mill Plain Boulevard, this will be a six-story office and condominium building.

- *Waterfront Redevelopment* – Located on the Columbia River waterfront, southwest of the present downtown area, this proposed development includes condominiums and apartments for over 10,000 residents, retail, offices, parks, and more.
- *Prestige Plaza* – A proposed development of two four-story buildings, including condominiums and offices. Located at 307 East Mill Plain Boulevard in downtown Vancouver, each building would hold 50 apartment units. Construction is slated to begin in the fall of 2011, with leasing to follow in the spring of 2012.

Impairment of National Park Resources

In addition to determining the environmental consequences of implementing the preferred and other alternatives, *NPS Management Policies 2006* (section 1.4) requires analysis of potential effects to determine whether or not proposed actions would impair a park's resources and values.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the National Park Service the management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of the park. That discretion is limited by the statutory requirement that the National Park Service must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values (National Park Service 2006). Whether an impact meets this definition depends on the particular resources that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.

An impact on any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance.

Impairment findings are not necessary for visitor experience, socioeconomics, public health and safety, land use, or park operations, because impairment findings relate back to park resources and values.

CULTURAL RESOURCES

As expressed in the Affected Environment chapter, there are numerous cultural resources present at Fort Vancouver NHS, and most are listed as contributing elements to the VNHR National Historic District. As there are specific types of cultural resources present, and as each type may have specific management concerns, each type is addressed separately in this document. These

cultural resources types are: Archeological Resources, Cultural Landscapes and Vegetation, Museum Collections, and Historic Structures.

Guiding Regulations and Policies

The National Park Service is charged with management and protection of cultural resources through a variety of guidance documents and legislation in which NPS managers avoid, or minimize to the greatest degree practicable, adverse impacts on park resources and values. The following are the primary guidance documents used by the National Park Service for the management of cultural resources.

The NHPA, as amended, is the principal legislative authority for management of cultural resources located within national parks. It requires federal agencies to strive to minimize harm to historic properties that would be adversely affected by an undertaking. Section 106 of the NHPA requires all federal agencies to consider the effects of their actions on cultural resources determined eligible for inclusion in the NRHP (see discussion below). Section 110 of the NHPA, among other things, charges federal agencies with the responsibility to establish preservation programs for the identification, evaluation and nomination of cultural resources to the NRHP.

DO-28, Cultural Resources Management (National Park Service 1998) is the fundamental basis for managing cultural resources in the national park system. It contains park management standards and other requirements for cultural resources, including archeological resources, historic and prehistoric structures, museum collections, cultural landscapes and ethnographic resources. This document also addresses energy conservation and historic preservation. Federal agencies are required to reduce energy consumption; this guideline addresses the means to ensure preservation of historic material and character while conserving energy. For example, proposed retrofit measures would be reviewed by historical architects and/or landscape architects, and other cultural resources specialists who would consider whether (1) the evaluation of effect for compliance purposes is adequate; (2) the proposed action is planned and would be conducted in accordance with relevant management policies, guidelines, and standards; and (3) the proposal incorporates all feasible measures to minimize any adverse effects on cultural resources) (National Park Service 1998, Chapter 4).

NPS Management Policies 2006 outlines NPS management policies for cultural resources including the identification and evaluation of cultural resources, the integration of this information in planning and decision-making, and the stewardship to ensure that cultural resources are preserved and protected (National Park Service 2006a, 60).

Executive Order 13175 Consultation and Coordination with Indian Tribal Governments, November 6, 2000, provides for regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications.

DO-24, NPS Museum Collection Management (National Park Service 2008) and the Museum Property Act of 1955 as Amended both provide policy guidance, standards, and requirements for preserving, protecting, documenting and providing access to, and the use of, NPS museum collections.

Section 106 Compliance

This cultural resource analysis is intended to comply with the requirements of both NEPA and Section 106 of the NHPA (36 CFR Part 800, Protection of Historic Properties). A Section 106 determination of effects follows the conclusion statement for each alternative. The ACHP regulations for implementation of Section 106 require that impacts to historic resources be identified and evaluated by determining: (1) the area of potential effects (the area of geographic study); (2) identifying cultural resources present in the area of potential effects that are either

listed on or eligible for listing on the NRHP; (3) applying the criteria of adverse effect (see below) to affected cultural resources either listed on, or eligible for listing on, the NRHP; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the ACHP's regulations, a determination of either adverse effect or no adverse effect must be made for affected NRHP-listed or eligible cultural resources located within the area of potential effects. An adverse effect occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the NRHP. Adverse effects also include reasonably foreseeable effects caused by the proposal that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, Assessment of Adverse Effects). The resolution of adverse effects can occur in a variety of ways, in accordance with 36 CFR 800.6, Resolution of Adverse Effects. A determination of no adverse effect means there is an effect, but the effect would not diminish, in any way, the characteristics of the cultural resource that qualify it for inclusion in the NRHP. All effect determinations are made in consultation with the Washington DAHP. To streamline the Section 106 process for the multi-variate potential effects to varied cultural resources as a result of implementing this *Environmental Assessment*, the National Park Service is drafting a Programmatic Agreement between the Washington DAHP, the ACHP, and any consulting tribes who wish to be signatories. This Programmatic Agreement sets forth recommended practices and responsibilities for each party of the agreement, to ensure that there will be no adverse effect to the many cultural resources present at the site as this *Environmental Assessment* is implemented.

In all cases where new cultural resources are discovered during project activities, or where it is discovered post-review that NRHP-eligible resources may be affected, potential adverse impacts to those NRHP-eligible resources would be coordinated by the park with the DAHP. For each of the impact threshold definitions and determinations below, there are statements specifically related to adverse impacts as defined in 36 CFR 800; which for the determinations are designated by a determination of effect, set in parentheses after the potential environmental impact is stated.

Assessment Methodology

The following describes the methodology used to evaluate the impacts to cultural resources that could result from implementation of each of the alternatives.

Area of Potential Effect

In accordance with the ACHP's regulations implementing Section 106, the "area of potential effects" is determined as the geographic area within which an undertaking may directly or indirectly cause alteration in the character or use of historic properties (36 CFR 800.16(d)). For analysis of effects to cultural resources for the East and South Barracks, the area of potential effect is comprised of two sections; the larger area surrounding the project site that could be indirectly affected, and the area on which the project would occur. These are defined as follows:

1. The indirect area of potential effects consists of the VNHR National Historic District and allows for a cumulative look at effects of the project on the NRHP property (Figure 1). The VNHR Historic District consists of a 336 acre area of terraced plains and shoreline comprising Fort Vancouver NHS, the Vancouver Barracks (West Barracks, East Barracks, and South Barracks), Pearson Field Airport, Pearson Air Museum, and Officers' Row (National Register Nomination Form, 2007). This larger district is historically and architecturally significant as a district because of the multi-layered effects of prehistoric and historic settlement that are key to the development and settlement of the Pacific Northwest as it is known today. The effects of the incorporation of the East and South Barracks into Fort Vancouver NHS within the historic district would be assessed for effects to the district's general integrity.

2. The direct area of potential effects is defined as the East and South Barracks (Figure 2). This is the area in which the greatest potential to affect cultural resources exists as a result of National Park Service rehabilitation and improvements activities (e.g., construction activities, infrastructure upgrades etc.).

Context

Local: Impacts to cultural resources occur within the vicinity of the East and South Barracks.

Regional: Impacts to cultural resources occur within the VNHR National Historic District.

HISTORIC STRUCTURES

As discussed in the Affected Environment chapter, Vancouver Barracks is the location of many historical buildings that encompass the entire history of the U.S. Army presence on the landscape of the VNHR. Twenty historical U.S. Army buildings, constructed between 1904 and 1940, remain within East and South Barracks. All of these structures are listed on the NRHP as contributing elements to the VNHR National Historic District.

Duration of Impacts: Potential impacts to historic structures are seen as only being long-term impacts.

Impact Intensities for historic structures are defined below:

Negligible: Effect is at the lowest levels of detection with no perceptible consequences. The determination of effect for Section 106 would be no adverse effect.

Minor: The impact would not affect the character defining features of a structure or building listed on or eligible for the NRHP. For purposes of Section 106, the determination of effect would be no adverse effect.

Moderate: The impact would alter a character defining feature(s) of the structure or building but would not diminish the integrity of the resource to the extent that its NRHP eligibility would be jeopardized. For purposes of Section 106, the determination of effect would be adverse effect.

Major: The impact would alter one or more character defining feature(s) of the structure or building, diminishing the integrity of the resource to the extent that it is no longer eligible to be listed on the NRHP. For purposes of Section 106, the determination of effect would be adverse effect.

Impacts of Alternative A—No Action

Under the no action alternative, all 20 of the existing historic structures (those that contribute to the VNHR National Historic District) would be retained. Still, only one historic structure (building 991) would be rehabilitated for National Park Service and, potentially, the Fort Vancouver National Trust administrative use. The remaining 19 structures would remain vacant with only limited historic structures rehabilitation (only that necessary to make specific structures compatible with the NPS mission, and for basic maintenance and life and safety issues). These structures would remain vacant and without rehabilitation efforts until viable tenants could be identified for them, placing these structures in a caretaking mode, which potentially degrades the structures through benign neglect. There is also the possibility that the empty buildings would become an attractive nuisance, and that resulting graffiti and damage would further impact the integrity of the structures. If left vacant long enough, this situation poses the possibility of adverse impacts to these major structures (adverse effect for Sec. 106).

Cumulative Effects

The impacts of Excess and Disposal of the West Vancouver Barracks from the U.S. Army to the City of Vancouver in 2007, in combination with the impacts of alternative A, would result in beneficial, long-term cumulative impacts to historic structures at the site. Although the many historic structures associated with the U.S. Army and the Vancouver Barracks are now and would be under separate ownership between the City of Vancouver and the National Park Service, the adaptive reuse efforts by the City of Vancouver with the West Barracks and on Officers' Row, help to preserve the greater and overall context of the U.S. Army's occupation and operation of the Vancouver Barracks as a whole. The continued preservation of these structures supports National Park Service efforts at preserving the historic structures within the East and South Barracks.

The potential impacts of the implementation of the CRC project, in combination with the impacts of alternative A, would result in minor, permanent adverse cumulative impacts to historic structures associated with the East Barracks. The current Locally Preferred Alternative plans for the CRC call for the conversion of up to 3 acres of VNHR land into highway right-of-way, and the right-of-way would closely parallel the western edge of the West Barracks portion of the VNHR. The new Interstate 5 highway alignment is proposed to be within five feet of the western wall of the Post Hospital structure located in the West Barracks—threatening the viability of rehabilitating the structure for future occupation and eventually the viability of the structure itself. However, the proposed Community Connector, and vibration monitoring plan for the Post Hospital, will mitigate the adverse effects to the Post Hospital. The CRC Locally Preferred Alternative is indicating a much greater height to the new bridge (as compared to the current bridges) and highway roadbed, and it appears that these new facilities would be quite visible from most of the South Barracks and from much of the East Barracks, changing the landscape views that are present now, which affects the context and setting for these historic properties. New sound walls, planting screening vegetation, and constructing the Community Connector overpass over Interstate 5 adjacent to the Post Hospital will limit visual and audible intrusions of traffic to the structure; mitigating the adverse effect to these resources. The new museum/curation facility in building 405 will mitigate adverse effects, both direct and indirect, associated with the VNHR National Historic District.

Conclusions

The no action alternative has the highest level of retention of historic structures (100%), yet has the lowest possibility of structural rehabilitation and proper caretaking for these historic structures, with rehabilitation efforts only occurring when viable tenants are identified who can help fund such efforts. From a distance, this scenario seems beneficial to the historic structures through their overall retention, yet without directed and quick attempts at rehabilitation and an appropriate budget and effort at upkeep; it is assumed that the structures could suffer from benign neglect within a relatively short period of time. This could result in the possibility of minor to moderate adverse impacts to these structures.

For purposes of Section 106 of the NHPA, structures listed in or eligible for the NRHP are expected to be adversely affected under this alternative (adverse effect for Sec. 106), see Table 16 below.

Impacts of Alternative B—A Vibrant, Urban District in a Historic Setting

Historic Building Rehabilitation. Under this alternative, 18 of the 20 historic structures in the East and South Barracks would be retained. Buildings 749 and 750, two contributing ca. 1941 storage sheds, could be removed. This would result in a long-term adverse major impact to the historic structures (adverse effect for Sec. 106). The remaining historic building exteriors would

generally be preserved while interiors would be rehabilitated for commercial, residential, and other uses. Rehabilitation is defined as:

...the act or process of making possible a compatible use for a property through repair, alteration, and additions while preserving those portions or features which convey its historical, cultural or architectural values (NPS 1996, 49).

Under rehabilitation, historic properties can be given new uses that require minimal change to their character as long as preservation is ensured. Treatment does not need to recreate a literal historic character in the landscape at any one point during the historic period, but rather preserve and enhance the multiple layers of development through ca. 1948, which is the end date of the NPS-defined periods of significance for the site.

Although all NPS rehabilitation efforts are guided by *The Secretary of the Interior's Standards for Historic Rehabilitation*, the rehabilitation efforts of the East and South Barracks historic structures under this alternative would be given the widest leeway to enhance their marketability for the proposed uses. These efforts would result in an improved state for existing and new uses of the historic structures. Still, in this alternative, there would be a high emphasis placed on the potential of rehabilitating structures into public residences, and these efforts may run counter to the Secretary of the Interior's Standards.

See "Historic Building Rehabilitation" under Elements Common to All Action Alternatives in the Alternatives chapter for details on rehabilitation treatment. The rehabilitation work, per Mitigation Measure CR-5 Treatment of Historic Properties and Landscape, would conform to appropriate guidance documents. Rehabilitation activities which allow for compatible uses of historic structures are therefore expected to result in long-term, localized, direct benefits to the Vancouver Barracks and Parade Ground cultural landscape and the larger VNHR National Historic District (no adverse effect for Sec. 106). In addition, there is the realization that in any of the action alternatives, there will be the necessity of introducing modern elements for improvements to accessibility and potentially for energy sustainability. Features such as elevators, access ramps, and fire escapes for accessibility; and solar panels, and improvements to the insulation factors for existing structures for energy sustainability will be considered for new construction and installation throughout the site. Each of these potential actions will be designed in consideration of *The Secretary of the Interior's Standards for Historic Preservation*, and are expected to have only minor adverse effects to these properties (no adverse effect for Sec. 106).

Removal of Historic Buildings. Although the final decisions for the removal of structures will be made on a case by case basis, under this alternative, buildings 749 and 750 could both be removed.

Buildings 749 and 750 are both storage structures constructed in 1941, and both contribute to the Vancouver Barracks cultural landscape and the VNHR National Historic District. The removal of both of these structures would be a moderate adverse impact to both the Vancouver Barracks cultural landscapes and the VNHR National Historic District (adverse effect for Sec. 106). Although these structures are contributing elements to the VNHR National Historic District, they are of small stature (just over 200 square feet each), and they are in poor condition. The environmental assessment process is not identifying a likely function for them. The mitigation stipulations for the removal of these structures are defined in the Programmatic Agreement for Sec. 106 of the NRHP being enacted between the National Park Service, the Washington DAHP, and consulting parties.

Cumulative Effects

As in alternative A, the impacts of the Excess and Disposal of the West Vancouver Barracks from the U.S. Army to the City of Vancouver in 2007, in combination with the impacts of alternative B, would result in beneficial, long-term, cumulative impacts to historic structures at the site.

Likewise, just like alternative A, the potential impacts of the implementation of the CRC project, in combination with the impacts of alternative A, would result in moderate, permanent adverse cumulative impacts to historic structures within the East Barracks.

Conclusions

This alternative presents an overall high percentage of retention of historic structures (18 of 20), yet more importantly, efforts at rehabilitation of the remaining structures would be directed and accomplished as quickly as funding could be obtained. The goal of preserving as many of the building exteriors in their historic guise, while adapting building interiors would generally be acceptable to *The Secretary of the Interior's Standards for Historic Structure Rehabilitation*; however there are concerns on the appropriateness of residential rehabilitation for some of these structures. Still, the rehabilitation of the East and South Barracks historic structures would be undertaken in a manner designed to preserve the character-defining features of the buildings which contribute to their significance (e.g., form structure, roofs, exterior materials, etc.). These efforts would result in an improved state for these structures and new uses of the historic structures and should limit potential impacts to negligible to minor levels.

For purposes of Section 106 of the NHPA, there would be no adverse effect on structures listed in or eligible for the NRHP (no adverse effect for Sec. 106). See Table 16 below.

Impacts of Alternative C—A Sustainable Public Service Campus (Preferred Alternative)

Historic Building Rehabilitation. Under this alternative, historic building exteriors would generally be preserved while interiors would be rehabilitated for commercial, residential, and other uses. Rehabilitation would have the same definition as presented in alternative B.

Removal of Historic Buildings. Although the final decisions for the removal of structures will be made on a case by case basis, under this alternative, buildings 422, 749, and 750 could all be removed.

Building 422, a ca. 1935 Quartermaster's Issue and Receiving Warehouse, is a contributing structure to the VNHR National Historic District. The removal of this structure would be a moderate impact to the VNHR National Historic District (adverse effect for Sec. 106), but would also be a benefit to the HBC cultural landscape. The removal of the structure would assist in restoring the viewshed of the reconstructed HBC Fort Vancouver from East 5th Street, while also enabling the National Park Service to restore more of the HBC Orchard and Gardens in this area. Still, the removal of this structure would necessitate the execution of a memorandum of agreement between the National Park Service and the State Historic Preservation Officer and, if necessary, the ACHP in accordance with 36 CFR 800.6(b).

Buildings 749 and 750 are both storage structures constructed in 1941, and both contribute to the Vancouver Barracks cultural landscape and the VNHR National Historic District. The removal of both of these structures would be a moderate adverse impact to both the Vancouver Barracks cultural landscapes and the VNHR National Historic District (adverse effect for Sec. 106). Although these structures are contributing elements to the VNHR National Historic District, they are of small stature (just over 200 square feet each), and they are in poor condition. The *Environmental Assessment* process is not identifying a likely function for them and rehabilitating them may not be worth the costs or effort required for keeping them. The mitigation stipulations for the removal of these structures are defined in the Programmatic Agreement for Sec. 106 of the NRHP being enacted between the National Park Service, the Washington DAHP, and consulting parties.

Cumulative Effects

Potential cumulative effects are identical to alternative B.

Conclusions

This alternative presents an overall high percentage of retention of historic structures (17 of 20), yet more importantly, efforts at rehabilitation of the remaining structures would be directed and accomplished as quickly as funding efforts could be accomplished. The goal of preserving as many of the building exteriors in their historic guise, while adapting building interiors would generally be acceptable to *The Secretary of the Interior's Standards for Historic Structure Rehabilitation*. It is likely that the adaptive reuse of most of these structures under office and retail guises would be more in keeping with the Secretary's standards than the residential possibilities expressed under alternative B. Likewise, the rehabilitation of the East and South Barracks historic structures would be undertaken in a manner designed to preserve the character-defining features of the buildings which contribute to their significance (e.g., form structure, roofs, exterior materials, etc.). These efforts would result in an improved state for these structures and new uses of the historic structures and should limit potential impacts to negligible to minor levels.

For purposes of Section 106 of the NHPA, there would be no adverse effect on structures listed in or eligible for the NRHP (no adverse effect for Sec. 106). See Table 16 below.

Impacts of Alternative D—An Historic, Educational Campus for All

Historic Building Rehabilitation. Under this alternative, there would be a heavier emphasis on attempting to reflect the overall historic development character of the post as a U.S. Army barracks, and the historic building exteriors would generally be preserved while interiors would be rehabilitated mostly for National Park Service, educational and community non-profit use. Rehabilitation would have the same definition as presented in alternative B.

Removal of Historic Buildings. Although the final decisions for the removal of structures will be made on a case by case basis, under this alternative, buildings 410 and 422 could be removed.

Building 410, a ca. 1935 Automotive Repair Shop, is a contributing structure to the VNHR National Historic District. The removal of this structure would be a moderate impact to the VNHR National Historic District (adverse effect for Sec. 106), but would also be a minor benefit to the HBC cultural landscape. The removal of the structure would restore the viewshed of the reconstructed HBC Fort Vancouver from East 5th Street, while also enabling the National Park Service to restore more of the HBC Orchard and Gardens in this area. The mitigation stipulations for the removal of these structures are defined in the Programmatic Agreement for Sec. 106 of the NRHP being enacted between the National Park Service, the Washington DAHP, and consulting parties.

Building 422, a ca. 1935 Quartermaster's Issue and Receiving Warehouse, is a contributing structure to the VNHR National Historic District. The removal of this structure would be a moderate impact to the VNHR National Historic District (adverse effect for Sec. 106), but would also be a minor benefit to the HBC cultural landscape. The removal of the structure would restore the viewshed of the reconstructed HBC Fort Vancouver from East 5th Street, while also enabling the National Park Service to restore more of the HBC Orchard and Gardens in this area. The mitigation stipulations for the removal of these structures are defined in the Programmatic Agreement for Sec. 106 of the NRHP being enacted between the National Park Service, the Washington DAHP, and consulting parties.

Cumulative Effects

Potential cumulative effects are identical to alternative B.

Conclusions

This alternative also presents an overall high percentage of retention of historic structures (18 of 20), and just as importantly, efforts at rehabilitation of the remaining structures would be directed and accomplished as quickly as funding could be obtained. The goal of preserving as many of the building exteriors in their historic guise, while adapting building interiors would generally be acceptable to *The Secretary of the Interior's Standards for Historic Structure Rehabilitation*. It is likely that the adaptive reuse of most of these structures under office, interpretation/visitor services, and arts/events/community guises would be more in keeping with the Secretary's Standards than, for example, the residential possibilities expressed under alternative B. Likewise, the rehabilitation of the East and South Barracks historic structures would be undertaken in a manner designed to preserve the character-defining features of the buildings which contribute to their significance (e.g., form structure, roofs, exterior materials, etc.). These efforts would result in an improved state for these structures and new uses of the historic structures and should limit potential impacts to negligible to minor levels.

For purposes of Section 106 of the NHPA, there would be no adverse effect on structures listed in or eligible for the NRHP (no adverse effect for Sec. 106). See Table 16 below.

Table 16. Section 106 Assessment of Effect on Historic Structures by Alternative

ALTERNATIVE	HISTORIC STRUCTURE TREATMENT	ASSESSMENT OF EFFECT
A	Retain all 20 historic structures, but only building 991 would be immediately rehabilitated.	Possibility of an Adverse Effect due to benign neglect of historic structures
B	Demolish contributing buildings 749 and 750	Adverse Effect
B	Retain and rehabilitate remaining historic structures for new commercial, residential and other uses	No Adverse Effect
C	Demolish contributing buildings 422, 749 and 750	Adverse Effect
C	Retain and rehabilitate remaining historic structures for new commercial, residential and other uses	No Adverse Effect
D	Demolish contributing buildings 410 and 422	Adverse Effect
D	Retain and rehabilitate remaining historic structures for new commercial, residential and other uses	No Adverse Effect

CULTURAL LANDSCAPES AND VEGETATION

As discussed in the Affected Environment chapter, there is a NPS-listed cultural landscape within the East Barracks, specifically labeled the Vancouver Barracks cultural landscape, as well as the Parade Ground cultural landscape that immediately adjoins the northern boundary of the East Barracks. These cultural landscapes constitute the built environment as well as the mix of historically planted and maintained vegetation that surrounds the built environment. In addition, the Washington Department of Fish and Wildlife lists much of the area associated with the East Barracks as an "Oak Woodland Priority Habitat," and the Washington Department of Fish and Wildlife has specific recommendations on how to manage this habitat for continued

vitality (Larsen and Morgan 1998). The presence of these oaks can be seen as both a natural and a cultural resource, representing the interplay between nature and human cultures (Figure 21).

Duration of Impacts: Potential impacts to *Cultural Landscapes and Vegetation* are only seen as long-term impacts.

Impact intensities for cultural landscape resources are defined below:

Negligible: The impact is at the lowest levels of detection or barely perceptible and not measurable. For purposes of Section 106, the determination of effect would be no adverse effect.

Minor: Adverse impact: The impact would not notably affect the character-defining features of a cultural landscape listed on or eligible for the NRHP. For purposes of Section 106, the determination of effect would be no adverse effect.

Moderate: Adverse impact: The impact would alter a character-defining feature or features of the cultural landscape but would not diminish the integrity of the landscape to the extent that its NRHP eligibility would be jeopardized. For purposes of Section 106, the determination of effect would be adverse effect.

Major: Adverse impact: The impact would alter a character-defining feature(s) of the cultural landscape, diminishing the integrity of the resource to the extent that it would no longer be



Figure 21. One of the Oregon white oak groves present in the East Barracks that are listed by the Washington Department of Fish and Wildlife as an “Oak Woodland Priority Habitat.” (National Park Service)

eligible to be listed on the NRHP. For purposes of Section 106, the determination of effect would be adverse effect. A memorandum of agreement is executed between the National Park Service and applicable State or Tribal Historic Preservation Officer and, if necessary, the ACHP in accordance with 36 CFR 800.6(b).

Impacts of Alternative A—No Action

Under this alternative, building 409 (a non-contributing hollow block construction storage shed) would be removed, and the National Park Service would conduct historical and archeological research on the possibility of reconstructing the HBC Summer House near this location. Utilizing correct methods, the removal of the existing structure, the archeological research in the location, and the subsequent reconstruction of the Summer House could all be done without damaging any archeological deposits *in situ*, thereby resulting in no adverse effect to these resources. The restoration of the Summer House would be beneficial to the HBC cultural landscape. In addition, efforts would be made to expand the HBC Orchard northwards up to the southern boundary of building 422.

Along with these changes, the current HBC Fort Vancouver parking lot south of East 5th Street would be greatly reduced in size (limited to only ADA parking needs), and the main visitor parking lot would be moved into the South Barracks, adjacent to buildings 410 and 422. This move would assist in restoring the HBC cultural landscape and obscure parked vehicles while at the same time providing a more centralized visitor parking location for all of the resources in and around Fort Vancouver NHS.

In the South Barracks, an attempt would be made to partially restore the ca. 1880s U.S. Army Maple Allée that once lined the historic McLoughlin Road, and efforts would be made to help preserve the remaining original trees. Although the reestablishment of the Maple Allée would partly reconstruct this historic road alignment, no attempt would be made to reconstruct the actual road or create a trail in its place. The reestablishment of this Allée would be a benefit to the cultural landscape, and could be done without impacts to the historic resource (no adverse effect for Sec. 106).

The row of mature Douglas-fir trees (that post-date ca. 1948) in front of buildings 987 through 993 have been determined to be non-contributing landscape features to the Vancouver Barracks cultural landscape. Due to their maturity and presence at the site, they will be maintained as is under this alternative, but when they naturally die, they will not be replaced (no adverse effect for Sec. 106). It is estimated that it may take another 50 to 100 years until all of these trees die from natural effects.

Throughout the East Barracks, intact military landscape features (ranging from structures to vegetation) would be preserved, rehabilitated and interpreted as much as possible. Only limited historic structures rehabilitation (only that necessary for basic maintenance and life and safety issues) would take place under the no action alternative. Therefore, there would be no impacts (no adverse effect for Sec. 106).

Cumulative Effects

A few local projects have the potential to cumulatively affect the cultural landscapes and vegetation of the East and South Barracks and the surrounding lands.

The excess and disposal of the West Barracks from the U.S. Army to the City of Vancouver, and the subsequent rehabilitation of the historic structures in the West Barracks for adaptive reuse

has “set the stage,” for the planned rehabilitation efforts by the National Park Service in the East and South Barracks. The adaptive reuse efforts in the West Barracks have preserved the historic barracks structures in the area, helping to keep the remaining contributing elements of the Vancouver Barracks and the VNHR National Historic District intact. These efforts, along with this project, would have a beneficial cumulative effect on the cultural landscapes in the East and South Barracks and the VNHR National Historic District as a whole.

The potential impacts of the implementation of the CRC project, in combination with the impacts of alternative A, would result in minor, permanent cumulative adverse impacts to historic structures associated with the East Barracks. The current Locally Preferred Alternative plans for the CRC call for the conversion of up to 3 acres of VNHR land into highway right-of-way. This right-of-way would closely parallel the western edge of the West Barracks portion of the VNHR. The new Interstate 5 highway alignment is proposed to be within five feet of the western wall of the Post Hospital structure located in the West Barracks—threatening the viability of rehabilitating the structure for future occupation and eventually the viability of the structure itself. However, the proposed Community Connector, and vibration monitoring plan for the Post Hospital will mitigate the adverse effects to the Post Hospital. The CRC Locally Preferred Alternative is indicating a much greater height to the new bridge and highway roadbed, and it appears that these new facilities would be quite visible from most of the South Barracks and from much of the East Barracks, changing the landscape views that are present now, which affects the context and setting for these historic properties. New sound walls, planting screening vegetation, and potentially constructing the Community Connector overpass over Interstate 5 adjacent to the Post Hospital will limit visual and audible intrusions of traffic to the structure; mitigating the adverse effect to these resources. The new museum/curation facility in building 405 will mitigate adverse effects, direct and indirect, associated with the VNHR National Historic District.

Conclusions

Under this alternative, no activities would occur that would adversely affect cultural landscapes and their associated vegetation. Specifically, measures would be taken to protect the groves of Oregon white oaks in the area. The implementation of mitigation measure CR-9 will ensure there is no impact to these trees. But, as pointed out above, there is the potential for adverse cumulative impacts to cultural landscapes from the CRC. Overall, impacts would be negligible, adverse or beneficial.

For purposes of Section 106 of the NHPA, no cultural landscapes listed in or eligible for the NRHP are expected to be adversely affected under this alternative (no adverse effect for Sec. 106), see Table 17 below.

Impacts of Alternative B—A Vibrant, Urban District in a Historic Setting

Landscape Treatment Options. Under this alternative, the overall landscape of the East and South Barracks would be rehabilitated for adaptive reuse to support new and expanded uses. These efforts would be done while at the same time attempting to preserve the contributing elements of the cultural landscape. The major objectives of landscape rehabilitation would be to enhance visitor appeal and attract a wider spectrum of residential and commercial uses for the property as well as enhance access and improve vehicular and pedestrian circulation. A greater number of newly designed site features would be installed under this alternative, such as shuttle stops, crosswalks, plazas, lighting, benches, street trees, picnic facilities, bike racks, and other site

furnishings. These improvements would be installed in accordance with accessibility standards and designed to be compatible with the cultural landscape (no adverse effect for Sec. 106). East Barracks buildings would be repainted, employing the same paint scheme used at Officers' Row and the West Barracks. Temporary and non-historic changes to buildings made by the U.S. Army would likely be reversed under this alternative in order to improve visual appeal.

Lush, ornamental plantings would also be most abundant under alternative B in order to enhance the visual appearance of the site. Although these plantings would not be historic *per se*, they would be chosen to be compatible with the cultural landscape and the existing ornamental plantings that the U.S. Army chose and utilized throughout the area. Plantings, which would be approved by the National Park Service prior to planting, might include: bigleaf maple, Douglas-fir, Oregon white oak, western red cedar, lilac, climbing rose, hybrid rhododendron, boxwood, hydrangea, viburnum, spirea, honeysuckle, azalea, and camellia. Based upon the appropriateness of these plantings from a cultural landscapes perspective, this treatment would be a minor adverse impact (no adverse effect for Sec. 106).

In addition to these ornamental plantings, there would be efforts made to enhance the HBC and Vancouver Barracks cultural landscapes through vegetation restoration efforts. Specifically, most of the current HBC Fort Vancouver public parking lot on East 5th Street would be removed (with a new parking lot constructed in the South Barracks), and the lot area would be restored to a grass field to help interpret the HBC-period farming activities in this area.

In addition, the National Park Service would continue its efforts to restore the HBC Garden and Orchard. With the removal of the existing cyclone fence around the present National Park Service-U.S. Army boundary in the South Barracks, it would be possible to expand these interpretive elements into the South Barracks area, at least up to the southern face of building 422. These efforts would be a minor benefit to the HBC Cultural Landscape (no adverse effect for Sec. 106). Likewise, efforts will be made to preserve and enhance the existing groves of Oregon white oak trees.

The row of mature Douglas-fir trees (that post-date ca. 1948) in front of buildings 987 through 993 have been determined to be non-contributing landscape features to the Vancouver Barracks cultural landscape. Due to their maturity and presence at the site, they will be maintained as is under this alternative, but when they naturally die, they will not be replaced (no adverse effect for Sec. 106). It is estimated that it may take another 50 to 100 years until all of these trees die from natural effects.

Finally, efforts would be made to restore the ca. 1880s maple, oak, and buckhorn tree Allée of the former McLoughlin Road in the area that currently bounds the HBC Village and South Barracks. This restoration would entail the removal of upwards of 3 feet of sedimentary fill and the elimination of "tree wells" where 1880s-period heritage trees are still growing. These landscape restoration efforts should not affect these trees, and should actually benefit their livelihood (no adverse effect for Sec. 106). Saplings of like-kind could then be planted in the locations where heritage trees are presently missing, helping to further delineate this historic roadway. In addition, a decomposed granite trail replicating the pathway of the historic McLoughlin Road would be constructed within the Maple Allée, connecting in a loop with the existing Land Bridge trail in the HBC Village.

Under alternative B, most of the existing transportation, access and circulation routes for automobiles, pedestrians and cyclists will remain the same as they are now. The only major proposed change to automobile routes is the reorientation of the southern portion of Alvord Road to intersect with East 5th Street, rather than turning west towards Fort Vancouver Way. This

proposed change would reorient one of the oldest road beds in the VNHR, as it appears from historic maps and sketches of the 19th century that Alvord Road was an existing HBC-period road when the U.S. Army arrived. Although this reorientation may be a safety improvement and ease traffic and circulation concerns, it alters this character defining element of the HBC and Vancouver Barracks cultural landscapes enough to be classified as a moderate impact (adverse effect for Sec. 106). In addition, the existing Fort Vancouver parking lot on East 5th Street will be reduced in size, only being available for drop offs of pedestrians and handicap parking, while a new visitor parking lot will be developed in the South Barracks, adjacent to buildings 410 and 422. This proposal will create more replica agricultural fields, a beneficial impact to the HBC cultural landscape.

The implementation of these efforts would provide benefits to both the HBC and the Vancouver Barracks cultural landscapes (no adverse effect for Sec. 106).

Removal of Historic Buildings. Although the final decisions for the removal of structures will be made on a case by case basis, under this alternative, buildings 749 and 750 could both be removed. The loss of these contributing structures would be an adverse effect to these structures themselves, yet would have a minimal effect on the Vancouver Barracks cultural landscape in the East Barracks (no adverse effect for Sec. 106).

Buildings 749 and 750 are both storage structures constructed in 1941, and both contribute to the VNHR National Historic District. The removal of both of these structures would be a moderate adverse impact to both the Vancouver Barracks cultural landscapes and the VNHR National Historic District (adverse effect for Sec. 106). Although these structures are contributing elements to the VNHR National Historic District, they are of small stature (just over 200 square feet each), and they are in poor condition. The environmental assessment process is not identifying a likely function for them and rehabilitating them may not be worth the costs or effort required. The mitigation stipulations for the removal of these structures are defined in the Programmatic Agreement for Sec. 106 of the NRHP being enacted between the National Park Service, the Washington DAHP, and consulting parties.

Removal of Non-Historic Buildings. Although the final decisions for the removal of structures will be made on a case by case basis, under this alternative, buildings 409, 710, and 787 could all be removed.

Building 409, a hazardous materials storage shed in the South Barracks constructed in the 1980s, would be removed. This hollow block structure with one open face is intrusive to the HBC and the Vancouver Barracks cultural landscapes as well as the VNHR National Historic District, and its removal would be a minor benefit to both of these cultural landscapes. The improvement to these cultural landscapes would also provide a tangible benefit to the contexts and setting of the nearby remaining historic structures (no adverse effect for Sec. 106).

Building 710, a munitions storage structure constructed in 1979, is intrusive to the Vancouver Barracks cultural landscape and the VNHR National Historic District. Its removal would be a minor benefit to the Vancouver Barracks cultural landscapes and the VNHR National Historic District. The improvement to these cultural landscapes would also provide a tangible benefit to the contexts and setting of the nearby remaining historic structures (no adverse effect for Sec. 106).

Building 787, a storage structure of unknown date and origin (but certainly post-dating 1970), is intrusive to the Vancouver Barracks cultural landscape and the VNHR National Historic District. Its removal would be a minor benefit to the Vancouver Barracks cultural landscapes and the VNHR National Historic District. The improvement to these cultural landscapes would also

provide a tangible benefit to the contexts and setting of the nearby remaining historic structures (no adverse effect for Sec. 106).

Cumulative Effects

Cumulative impacts would be as described under alternative A; they would result in both long-term beneficial and moderate adverse, permanent cumulative impacts to cultural landscapes.

Conclusions

Under this alternative, some activities would occur that would adversely affect cultural landscapes. The removal of buildings 749 and 750 is an adverse effect to these structures themselves, and will also have a moderate adverse effect on the Vancouver Barracks cultural landscape (adverse effect for Sec. 106). There would be no contribution to any cumulative impacts, but as pointed out above, there is the potential for cumulative impacts to cultural landscapes. Overall, impacts would be beneficial and would enhance cultural landscapes associated with both the HBC and the U.S. Army (no adverse effect for Sec. 106).

The remaining proposed activities under this alternative would provide either negligible adverse or beneficial effects to the available cultural landscapes associated with the East and South Barracks. Specifically, efforts will be made to preserve and enhance existing vegetation, such as the groves of Oregon white oak trees. The implementation of mitigation measure CR-9 will ensure there is no impact to these priority species trees.

For purposes of Section 106 of the NHPA, the proposed removal of buildings 749 and 750 would be an adverse effect to the Vancouver Barracks cultural landscape (adverse effect for Sec. 106), see Table 17 below.

Impacts of Alternative C—A Sustainable Public Service Campus (Preferred Alternative)

Landscape Treatment Options. Much like alternative B, the overall landscape of the East and South Barracks would be rehabilitated for adaptive reuse to support new and expanded uses, while preserving contributing landscape resources. These efforts would have an emphasis on not only enhancing access and improving vehicular and pedestrian circulation, but also actively interpreting historic conditions. These historic conditions would concentrate on the history of the HBC south of East 5th Street and the early/late military history in the East Barracks, as defined in the Affected Environment chapter. In keeping with the preferred alternative's emphasis on sustainable practices, the National Park Service would explore the use of cisterns for rainwater capture, solar panels, geothermal heat sources, and other technologies in ways that do not intrude on the cultural landscape but still provide opportunities for educating the public on these practices (no adverse effect for Sec. 106).

In addition, the National Park Service would continue its efforts to restore the HBC Garden and Orchard. These efforts would be partially achieved with the removal of building 422 and the existing cyclone fence around the present National Park Service-U.S. Army boundary in the South Barracks. With these U.S. Army features removed, it would be possible to expand the HBC Garden and Orchard back into the South Barracks, at least up to the proposed public parking lot in the area. As part of the HBC Garden restoration effort, the National Park Service would conduct historical and archeological research on the possibility of reconstructing the HBC Summer House near building 410. Likewise, efforts will be made to preserve and enhance

the groves of Oregon white oak trees in the area. The implementation of these efforts would be a moderate impact to the Vancouver Barracks cultural landscape by the removal of building 422, a contributing structure to the VNHR National Historic District (adverse effect for Sec. 106). At the same time, the removal of this structure, and the subsequent restoration of the HBC Orchard and Garden would be a moderate benefit to the HBC cultural landscape (no adverse effect for Sec. 106).

Finally, efforts would be made to restore the ca. 1880s Maple Allée along the former McLoughlin Road in the area that currently bounds the HBC Village and the South Barracks. This restoration would entail the removal of upwards of 3 feet of sedimentary fill and the elimination of “tree wells” where 1880s-period heritage trees are still growing. Saplings of like-kind could then be planted in the locations where heritage trees are presently missing, helping to further delineate this historic roadway. In addition, a decomposed granite trail replicating the pathway of the historic McLoughlin Road would be constructed within the Allée, connecting in a loop with the existing Land Bridge trail in the HBC Village. In addition to these efforts, the preferred alternative calls for the partial restoration of the HBC Village north-south road alignment through the South Barracks by the removal of most of the pavement and sedimentary fill in the area between buildings 404 and 405. This highly significant area has the remains of no less than four HBC Village structures, including two that may be directly associated with known HBC French-Canadian employees. The removal of the pavement and sedimentary fill from this area would allow access to these archeological sites for additional archeological research (they were last researched in 1980), and would potentially allow the National Park Service to reconstruct some of these structures and their associated roadways (as degraded granite or other compatible surface material pedestrian trails) and other landscape features.

The row of mature Douglas-fir trees (that appear to post-date ca. 1948) in front of buildings 987 through 993 have been determined to be non-contributing landscape features to the Vancouver Barracks cultural landscape. To improve resource conditions, visitor experience, building conditions, and public safety, the National Park Service would choose not to replace these trees as they age, become diseased or damaged through time (no adverse effect for Sec. 106).

Alternative C proposes substantial alterations to the existing transportation, access and circulation routes for automobiles, pedestrians and cyclists, specifically in the East Barracks. Much like alternative B, it is proposed to have the southern portion of Alvord Road intersect with East 5th Street, rather than turning west towards Fort Vancouver Way. This proposed change would reorient one of the oldest road beds in the VNHR, as it appears from historic maps and sketches of the 19th century that Alvord Road was an existing HBC-period road when the U.S. Army arrived. Although this reorientation may be a safety improvement and ease traffic and circulation concerns, it alters this character defining element of the HBC and Vancouver Barracks cultural landscapes enough to be classified as a moderate adverse effect for Sec. 106. This alternative also proposes to reconnect the eastern terminus of McClelland Road with the Park Road, reconnecting this historic east to west oriented route, which will be a beneficial impact to the Vancouver Barracks cultural landscape (no adverse effect for Sec. 106). This alternative also proposes to remove the gravel parking lot south of building 987 and the paved lot and road east of building 721 in an effort to restore the green space associated with the HBC Cemetery. This will be a beneficial impact to the HBC cultural landscape in this area, and as it does not alter paved or lot areas that pre-date World War II, it will not alter character defining elements of the Vancouver Barracks cultural landscape (no adverse effect for Sec. 106). In addition, the existing Fort Vancouver parking lot on East 5th Street will be reduced in size, only being available for drop offs of pedestrians and handicap parking, while a new visitor parking lot will be

developed in the South Barracks, adjacent to building 410. This proposal will create more replica agricultural fields, a beneficial impact to the HBC cultural landscape.

Overall, the implementation of these efforts would provide benefits to both the HBC and the Vancouver Barracks cultural landscapes (no adverse effect for Sec. 106).

Removal of Historic Buildings. Although the final decisions for the removal of structures will be made on a case by case basis, under this alternative, buildings 422, 749, and 750 could all be removed. The loss of these contributing structures would be an adverse effect to these structures themselves, yet would actually improve the HBC cultural landscape in the area north of the reconstructed Fort Vancouver, and would have a minimal effect on the Vancouver Barracks cultural landscape in the East Barracks.

Building 422, a ca. 1935 Quartermaster's Issue and Receiving Warehouse, is a contributing structure to the VNHR National Historic District. The removal of this structure would be a moderate impact to the VNHR National Historic District (adverse effect for Sec. 106), but would also be a minor benefit to the HBC cultural landscape. The removal of the structure would assist in restoring the viewshed of the reconstructed HBC Fort Vancouver from East 5th Street, while also enabling the National Park Service to restore more of the HBC Orchard and Gardens in this area. The mitigation stipulations for the removal of these structures are defined in the Programmatic Agreement for Sec. 106 of the NRHP being enacted between the National Park Service, the Washington DAHP, and consulting parties.

Buildings 749 and 750 are both storage structures constructed in 1941, and both contribute to the VNHR National Historic District. The removal of both of these structures would be a moderate adverse impact to both the Vancouver Barracks cultural landscapes and the VNHR National Historic District (adverse effect for Sec. 106). Although these structures are contributing elements to the VNHR National Historic District, they are of small stature (just over 200 square feet each), and they are in poor condition. The environmental assessment process has not identified a likely function for them and rehabilitating them may not be worth the costs or effort required. The mitigation stipulations for the removal of these structures are defined in the Programmatic Agreement for Sec. 106 of the NRHP being enacted between the National Park Service, the Washington DAHP, and consulting parties.

Removal of Non-Historic Buildings. Although the final decisions for the removal of structures will be made on a case by case basis, under this alternative, buildings 409, 422, 710, and 787 could be removed.

Building 409, a hazardous materials storage shed in the South Barracks constructed in the 1980s, would be removed. This hollow block structure with one open face is intrusive to the HBC and the Vancouver Barracks cultural landscapes as well as the VNHR National Historic District, and its removal would be a minor benefit to both of these cultural landscapes. The improvement to these cultural landscapes would also provide a tangible benefit to the contexts and setting of the nearby remaining historic structures (no adverse effect for Sec. 106).

Building 710, a munitions storage structure constructed in 1979, is intrusive to the Vancouver Barracks cultural landscape and the VNHR National Historic District. Its removal would be a minor benefit to the Vancouver Barracks cultural landscape and the VNHR National Historic District (no adverse effect for Sec. 106). The improvement to these cultural landscapes would also provide a tangible benefit to the contexts and setting of the nearby remaining historic structures (no adverse effect for Sec. 106).

Building 787, a storage structure of unknown date and origin (but certainly post-dating 1970), is intrusive to the Vancouver Barracks cultural landscape and the VNHR National Historic District. Its removal would be a minor benefit to the Vancouver Barracks cultural landscapes and the VNHR National Historic District (no adverse effect for Sec. 106). The improvement to these cultural landscapes would also provide a tangible benefit to the contexts and setting of the nearby remaining historic structures (no adverse effect for Sec. 106).

Cumulative Effects

Cumulative impacts would be as described under alternative A; they would result in both minor long-term beneficial and moderate adverse, permanent cumulative impacts to cultural landscapes.

Conclusions

Under this alternative, some activities would occur that would adversely effect cultural landscapes. The proposed removal of building 422 in the South Barracks is an adverse effect to this structure itself, but will not have an adverse effect on the HBC or Vancouver Barracks cultural landscapes. The removal of buildings 749 and 750 is also an adverse effect to these structures themselves, and will also have a moderate adverse effect on the Vancouver Barracks cultural landscape (adverse effect for Sec. 106). There would be no contribution to any cumulative impacts, but as pointed out above, there is the potential for cumulative impacts to cultural landscapes. Overall, impacts would be beneficial and would enhance cultural landscapes associated with both the HBC and the U.S. Army (no adverse effect for Sec. 106).

The remaining proposed activities under this alternative would provide either negligible adverse or beneficial effects to the available cultural landscapes associated with the East and South Barracks. For instance, efforts will be made to preserve and enhance existing vegetation, such as the groves of Oregon white oak trees. The implementation of mitigation measure CR-9 will help ensure there is no impact to these priority species trees.

For purposes of Section 106 of the NHPA, the proposed removal of buildings 749 and 750 would be an adverse effect to the Vancouver Barracks cultural landscape (adverse effect for Sec. 106), see Table 17 below.

Impacts of Alternative D—An Historic, Educational Campus for All

Landscape Treatment Options. Much like alternative B, the overall landscape of the East and South Barracks would be rehabilitated for adaptive reuse to support new and expanded uses, while preserving contributing landscape resources. These efforts would have an emphasis on not only enhancing access and improving vehicular and pedestrian circulation, but also actively interpreting historic conditions. Much like alternative C, these historic conditions would concentrate on the history of the HBC in the South Barracks and the early/late military history in the East Barracks.

In addition, under this alternative, the National Park Service would maximize its efforts to restore the HBC Garden and Orchard. These efforts would be achieved with the removal of buildings 409, 410 and 422 and the existing cyclone fence around the present National Park Service-U.S. Army boundary in the South Barracks, and the subsequent expansion of the HBC Garden and Orchard back into the South Barracks area. These efforts would also be maximized as the public parking lot for the reconstructed HBC Fort Vancouver would not be moved from its current

location, allowing for the full restoration of the Garden and Orchard. As part of the HBC Garden restoration effort, the National Park Service would conduct historical and archeological research on the possibility of reconstructing the HBC Summer House near building 410. The implementation of these efforts would be a moderate adverse impact to the Vancouver Barracks cultural landscape by the removal of buildings 410 and 422, both contributing structures to the VNHR National Historic District (adverse effect for Sec. 106). At the same time, the removal of these structures, and the subsequent restoration of the HBC Orchard and Garden would be a benefit to the HBC cultural landscape (no adverse effect for Sec. 106). Similarly, efforts will be made to preserve and enhance the groves of Oregon white oak trees in the area.

The row of mature Douglas-fir trees (that appear to post-date ca. 1948) in front of buildings 987 through 993 have been determined to be non-contributing landscape features to the Vancouver Barracks cultural landscape. In order to reinstate the open views of the facades of buildings 987 through 993 across the Parade Ground this row of trees will be removed under this alternative. The removal of these trees will be done in an archeologically sensitive manner with trained archeological monitors on site during their removal, and limited use of a stump grinder to minimize sub-surface disturbance that may disturb intact archeological deposits (no adverse effect for Sec. 106).

Alternative D proposes substantial alterations to the existing transportation, access and circulation routes for automobiles, pedestrians and cyclists, specifically in the East Barracks. Although Alvord Road will remain overall intact, it will be restricted to pedestrian and cyclist use only south of its intersection with Hatheway Road. This can likely be accomplished with the installation of bollards at this intersection, and overall it should not alter this character defining element of both the HBC and Vancouver Barracks cultural landscapes making for a negligible adverse impact (no adverse effect for Sec. 106). Much like alternative C, this alternative proposes to reconnect the eastern terminus of McClelland Street with the Park Road, reconnecting this historic east to west oriented route, which will be a beneficial impact to the Vancouver Barracks cultural landscape (no adverse effect for Sec. 106). The west end of McClelland Road (west of building 989), will also become a pedestrian and bicyclist only route through the use of the installation of bollards (no adverse effect for Sec. 106). This alternative also proposes to remove the gravel parking lot south of building 987 and the paved lot and road east of building 721 in an effort to restore the green space associated with the HBC Cemetery. This will be a beneficial impact to the HBC cultural landscape in this area, and as it does not alter paved or lot areas that pre-date World War II, it will not alter character defining elements of the Vancouver Barracks cultural landscape (no adverse effect for Sec. 106). In addition, the existing Fort Vancouver parking lot on East 5th Street will be reduced in size, only being available for drop offs of pedestrians and handicap parking, while a new visitor parking lot will be developed in the East Barracks, adjacent to buildings 754 and 786. This proposal will create more replica agricultural fields, a beneficial impact to the HBC cultural landscape (no adverse effect for Sec. 106).

Removal of Historic Buildings. Although the final decisions for the removal of structures will be made on a case by case basis, under this alternative, buildings 410 and 422 could both be removed. The loss of these contributing structures would be an adverse effect for the structures themselves, yet would actually improve the HBC cultural landscape in the area north of the reconstructed Fort Vancouver (no adverse effect for Sec. 106).

Building 410, a ca. 1935 Automotive Repair Shop, is a contributing structure to the VNHR National Historic District. The removal of this structure would be a moderate impact to the VNHR National Historic District, but would also be a minor benefit to the HBC cultural landscape (no adverse effect for Sec. 106). The removal of the structure would restore the

viewshed of the reconstructed HBC Fort Vancouver from East 5th Street, while also enabling the National Park Service to restore more of the HBC Orchard and Gardens in this area. The mitigation stipulations for the removal of these structures are defined in the Programmatic Agreement for Sec. 106 of the NRHP being enacted between the National Park Service, the Washington DAHP, and consulting parties.

Building 422, a ca. 1935 Quartermaster's Issue and Receiving Warehouse, is a contributing structure to the VNHR National Historic District. The removal of this structure would be a moderate impact to the VNHR National Historic District, but would also be a minor benefit to the HBC cultural landscape (no adverse effect for Sec. 106). The removal of the structure would restore the viewshed of the reconstructed HBC Fort Vancouver from East 5th Street, while also enabling the National Park Service to restore more of the HBC Orchard and Gardens in this area. The mitigation stipulations for the removal of these structures are defined in the Programmatic Agreement for Sec. 106 of the NRHP being enacted between the National Park Service, the Washington DAHP, and consulting parties.

Removal of Non-Historic Buildings. Although the final decisions for the removal of structures will be made on a case by case basis, under this alternative, buildings 400, 401, 402, and 409 could all be removed.

Building 400, a non-historic vehicle maintenance structure in the South Barracks constructed in the 1980s, would be removed. This masonry structure with large bay doors is intrusive to the HBC and the Vancouver Barracks cultural landscapes as well as the VNHR National Historic District, and its removal would be a minor benefit to both of these cultural landscapes (no adverse effect for Sec. 106). The improvement to these cultural landscapes would also provide a tangible benefit to the contexts and setting of the nearby remaining historic structures (no adverse effect for Sec. 106).

Building 401, a non-historic hazardous materials storage shed in the South Barracks constructed in the 1980s, would be removed. This hollow block structure with one open face is intrusive to the HBC and the Vancouver Barracks cultural landscapes as well as the VNHR National Historic District, and its removal would be a minor benefit to both of these cultural landscapes (no adverse effect for Sec. 106). The improvement to these cultural landscapes would also provide a tangible benefit to the contexts and setting of the nearby remaining historic structures (no adverse effect for Sec. 106).

Building 402, a non-historic vehicle maintenance structure in the South Barracks constructed in the 1980s, would be removed. This masonry structure with large bay doors is intrusive to the HBC and the Vancouver Barracks cultural landscapes as well as the VNHR National Historic District, and its removal would be a minor benefit to both of these cultural landscapes (no adverse effect for Sec. 106). The improvement to these cultural landscapes would also provide a tangible benefit to the contexts and setting of the nearby remaining historic structures (no adverse effect for Sec. 106).

Building 409, a hazardous materials storage shed in the South Barracks constructed in the 1980s, would be removed. This hollow block structure with one open face is intrusive to the HBC and the Vancouver Barracks cultural landscapes as well as the VNHR National Historic District, and its removal would be a minor benefit to both of these cultural landscapes (no adverse effect for Sec. 106). The improvement to these cultural landscapes would also provide a tangible benefit to the contexts and setting of the nearby remaining historic structures (no adverse effect for Sec. 106).

Cumulative Effects

Cumulative impacts would be as described under alternative A; they would result in both minor long-term beneficial and moderate adverse, permanent cumulative impacts to cultural landscapes.

Conclusions

Under this alternative, no activities would occur that would adversely affect cultural landscapes. The proposed removal of buildings 410 and 422 in the South Barracks is an adverse effect to these structures themselves, but will not have an adverse effect on the HBC or Vancouver Barracks cultural landscapes. There would be no contribution to any cumulative impacts, but as pointed out above, there is the potential for cumulative impacts to cultural landscapes. Overall, impacts would be beneficial and would enhance cultural landscapes associated with both the HBC and the U.S. Army. Specifically, efforts will be made to preserve and enhance existing vegetation, such as the groves of Oregon white oak trees. Implementation of mitigation measure CR-9 will help ensure there is no impact to these priority species trees.

For purposes of Section 106 of the NHPA, although the removal of contributing structures to the VNHR National Historic District is an adverse effect, no cultural landscapes listed in or eligible for the NRHP are expected to be adversely affected under this alternative (no adverse effect for Sec. 106), see Table 17 below.

Table 17. Section 106 Assessment of Effect of Key Actions by Alternative on Cultural Landscape Resources

ALTERNATIVE	CULTURAL LANDSCAPE/AREA OF POTENTIAL IMPACT	TREATMENT	ASSESSMENT OF EFFECT
A	HBC Cultural Landscape Restoration	Reconstruct Summer House, Restore Orchard, Restore McLoughlin Road Maple Allée (without a trail), Relocate Fort Parking	No Adverse Effect
B	Vancouver Barracks Landscape Rehabilitation	Maximizing aesthetic appeal with lush, ornamental plantings; Preserve contributing existing landscape resources	No Adverse Effect
B	Vancouver Barracks Landscape Rehabilitation	Removal of buildings 749 and 750	Adverse Effect
B	HBC Cultural Landscape Restoration	Restore McLoughlin Road Maple Allée (with a trail running through it); Partially restore HBC Orchard	No Adverse Effect
B	Reorientation of Traffic, Access and Circulation Routes	Reorient Alvord Road into East 5th Street	Adverse Effect
C	Vancouver Barracks Landscape Rehabilitation	Overall landscape to be rehabilitated with focus of military history in the East Barracks and the removal of buildings 749 and 750	Adverse Effect

Table 17. Continued

ALTERNATIVE	CULTURAL LANDSCAPE/AREA OF POTENTIAL IMPACT	TREATMENT	ASSESSMENT OF EFFECT
C	HBC Cultural Landscape Restoration	A robust HBC cultural landscape restoration including: the move of the HBC Fort Vancouver parking lot into the South Barracks, the partial restoration of the HBC Orchard and Garden, and the associated Summer House, the partial restoration of the HBC Cemetery by the removal of existing parking lots and some minor roads on the HBC Cemetery	No Adverse Effect
C	HBC Cultural Landscape Restoration	The removal of building 422	No Adverse Effect
C	Reorientation of Traffic, Access and Circulation Routes	Reorient Alvord Road into East 5th Street	Adverse Effect
C	Reorientation of Traffic, Access and Circulation Routes	Reconnect McClelland Road into the Park Road	No Adverse Effect
D	Vancouver Barracks Landscape Rehabilitation	Overall landscape to be rehabilitated with focus of military history in the East Barracks	No Adverse Effect
D	HBC Cultural Landscape Restoration	A robust HBC cultural landscape restoration including: the move of the HBC Fort Vancouver parking lot into the South Barracks, the partial restoration of the HBC Orchard and Garden, and the associated Summer House, the partial restoration of the HBC Cemetery by the removal of existing parking lots and some minor roads on the Cemetery	No Adverse Effect
D	Reorientation of Traffic, Access and Circulation Routes	Convert portions of Alvord Road and McClelland Road into pedestrian and cyclist access only	No Adverse Effect
D	Reorientation of Traffic, Access and Circulation Routes	Reconnect McClelland Road to the Park Road	No Adverse Effect
D	HBC Cultural Landscape Restoration	The removal of buildings 410 and 422	No Adverse Effect

ARCHEOLOGICAL RESOURCES

As stated in the Affected Environment section of this document, Fort Vancouver NHS is the premier historical archeological site in the Pacific Northwest, and deposits of sub-surface archeological materials are both known to be, and likely to be, endemic to the project area. Due to the non-renewable nature of archeological resources, adverse impacts are considered permanent.

Assessment Methodology

To comply with Section 106 of the NHPA, archeological testing and evaluation work would focus on areas slated for park development and rehabilitation, and then proceed to other park areas. Archeological work would be integrated with the park's existing Geographic Information System. Additional archival research would be conducted to identify and preliminarily assess any intact and potentially contributing archeological resources that are discovered. Interested and consulting parties, including the Washington DAHP and appropriate American Indian tribes would be consulted and notified about the proposed undertakings.

Archeological testing and evaluation would be conducted as needed to determine the significance of archeological resources that could be impacted by park projects within the East and South Barracks. Wherever possible, reconstruction, trail and road development, and other projects would seek to avoid archeological resources that are intact and contribute to the significance of the VNHR National Historic District. Any future archeological investigations would follow the highest standards for scientific investigations using state of the art remote sensing and excavation techniques. Where possible, as much of the actual archeological resources would be left *in situ*. If it is not possible to avoid significant archeological deposits for a proposed undertaking, a data recovery or other mitigation plan would be developed and implemented. Artifacts collected during testing and evaluation work would be cataloged to the *Secretary of the Interior's Standards* and curated at the Fort Vancouver NHS curation facility.

Duration of Impacts: Potential impacts to archeological resources are only seen as permanent impacts.

Impact intensities for archeological resources are defined below:

Negligible: The impact is at the lowest level of detection or barely measurable, with no perceptible consequences, either adverse or beneficial, to archeological resources. For purposes of Section 106, the determination of effect would be no adverse effect.

Minor: Disturbance of a site(s) results in little loss of integrity or important information potential, and the qualities of the site(s) are retained. For purposes of Section 106, the determination of effect would be no adverse effect.

Moderate: Disturbance of a site(s) results in loss of integrity but not a substantial loss of important data related to either the site's significance or other NHPA criteria associated with the archeological resource. For purposes of Section 106, the determination of effect would be adverse effect. A memorandum of agreement is executed between the National Park Service and the Washington DAHP and, if necessary, the ACHP in accordance with 36 CFR 800.6(b).

Major: Disturbance of a site would be substantial and would result in the loss of most or all of the site and its potential to yield important information. For purposes of Section 106, the determination of effect would be adverse effect. A memorandum of agreement is executed between the National Park Service and the Washington DAHP and, if necessary, the ACHP in accordance with 36 CFR 800.6(b).

Impacts of Alternative A—No Action

Ground Disturbance. Under this alternative, there is no directly anticipated ground disturbance associated with specific projects, as there would be no development and limited rehabilitation projects. There is however, the likelihood of limited ground disturbance necessary for the emergency repairs of the sub-surface utility system throughout the East Barracks. Based upon the report on the existing utility systems throughout the project area prepared by Kennedy/Jenks Consultants (2010), the gas lines, water lines, storm water, and sewer lines are all beyond their serviceable life span, and require replacement. Without this required replacement, it is anticipated that there would be many failures to these systems requiring immediate emergency repairs.

These repair activities have the potential to result in permanent, localized adverse impacts depending on the archeological resource involved and the level of disturbance created, particularly if within undisturbed sedimentary layers. These potential impacts occur through the loss of cultural context of artifacts, features, etc. Infrastructure upgrades will be designed after archeological testing has been conducted and will avoid where possible archeological deposits that contribute to the NRHP significance of the VNHR National Historic District. Further, in the unlikely event that NHRP-significant, subsurface archeological resources cannot be avoided, then implementation of Mitigation Measures CR-1 Pre-Construction Field Surveys and Training, CR-2 Archeological and American Indian Monitoring, CR-3 Previously Undiscovered Cultural Resources, and CR-4 Cultural Resources Monitoring Plan, would reduce adverse impacts to archeological resources within the East and South Barracks from major to minor in intensity (no adverse effect for Sec. 106).

Cumulative Effects

A few National Park Service and local projects have the potential to cumulatively affect the archeological resources of the East and South Barracks.

The potential impacts of the implementation of the CRC project, in combination with the impacts of alternative A, would result in moderate, permanent adverse cumulative impacts to archeological resources, specifically in the South Barracks area adjacent to State Route 14 and Interstate 5. The current Locally Preferred Alternative plans for the CRC calls for the conversion of up to 3 acres of VNHR land into highway right of way. Several known archeological sites associated with the HBC Village and the U.S. Army Quartermaster's Depot sites are within this right of way area, and would likely be impacted by construction related activities. Even with the proposed mitigation measure of a data recovery archeological excavation for these sites, the result is still an adverse effect to these resources, and like any archeological resource, once they are excavated, they are permanently, adversely impacted. The CRC project is slated to have a Record of Decision for an Environmental Impact Statement, for the proposed project sometime in 2012, and the National Park Service is currently negotiating a Memorandum of Agreement with the CRC on how to mitigate these undertakings on the archeological sites within the proposed right of way. These mitigations will include archeological data recovery operations, as well as the implementation of Mitigation Measures CR-1 Pre-Construction Field Surveys and Training, CR-2 Archeological and American Indian Monitoring, CR-3 Previously Undiscovered Cultural Resources, and CR-4 Cultural Resources Monitoring Plan. These, in combination with the new museum/curation facility in building 405 will mitigate adverse effects, both direct and indirect, associated with the VNHR National Historic District, and keep the potential to a moderate cumulative impact.

Based upon the results of a Level II ESA completed in the spring of 2011, (which tested the East and South Barracks for a wide suite of potential environmental contaminants), the only contaminant in the soil that exceeded actionable ESL was lead. High concentrations of lead were discovered in soils around extant and non-extant historic structures, likely the result of the peeling of lead based paint from these structures. Currently the National Park Service and the U.S. Army are negotiating the details on how to address these findings. Cleanup would take place based on what is required by Federal and State agencies using a risk based approach giving due consideration to the possible impacts to sensitive archeological sites. However, the lead cleanup project will be designed after archeological testing has been conducted in contaminated areas and will avoid, where possible, archeological deposits that contribute to the NRHP significance of the VNHR. Further, in the unlikely event that NHRP-significant, subsurface archeological resources cannot be avoided, then implementation of mitigation measures CR-1 Pre-Construction Field Surveys and Training, CR-2 Archeological and American Indian Monitoring, CR-3 Previously Undiscovered Cultural Resources, and CR-4 Cultural Resources Monitoring Plan, CR-6 Use of sedimentary fill to encapsulate contaminated soils adverse impacts to archeological resources from this remediation action within the East and South Barracks should not exceed minor in intensity (no adverse effect for Sec. 106).

With mitigation, the impacts of the above actions, in combination with the impacts of alternative A, would result in minor to moderate adverse, permanent, cumulative impacts to local archeological resources.

Conclusions

Under this alternative, no activities would occur that would adversely impact archeological resources. Overall, impacts would be minor adverse. For purposes of Section 106 of the NHPA, no archeological resources that contribute to the NRHP significance of the VNHR National Historic District are expected to be adversely affected under this alternative (no adverse effect for Sec. 106), see Table 18 below.

The actions of alternative A, when combined with the potential impacts of the implementation of the CRC project, would result in moderate, permanent adverse cumulative impacts to archeological resources, specifically in the South Barracks area adjacent to State Route 14 and Interstate 5 (adverse effect for Sec. 106).

Impacts of Alternative B—A Vibrant, Urban District in a Historic Setting

Ground Disturbance. Under this alternative, most of the anticipated ground disturbance would be from the result of all infrastructure and utilities being upgraded and replaced underground, requiring the excavation of some new trenches within the project area. Such ground disturbance has the potential to adversely effect prehistoric and historic archeological resources, particularly those buried resources which have not been previously identified or evaluated. In addition, some of these utility upgrades may occur within the area of the HBC Cemetery boundaries, with the potential to disturb intact burials.

In order to minimize potential excavations into intact human burials within the HBC Cemetery, the current schematic utility upgrade plan attempts to follow previous utility corridors within the Cemetery as much as possible. Further, an inadvertent discovery plan has been developed and would be approved by the consulting tribes and the Washington DAHP.

Much of the fill within the East and South Barracks has been previously disturbed by site development over the past 150+ years.

In addition, there is the added potential ground disturbing activities from the proposed rerouting of the southern end of Alvord Road more directly into East 5th Street, and some pavement around selected historic structures would be removed. Under this alternative, it is also proposed to create a traffic circle in the heart of the East Barracks at the Hatheway Road/Alvord Road intersection, which would necessitate ground disturbing activities within the cartographically identified boundaries of the HBC Cemetery, as well as within an area associated with non-extant 19th and 20th century U.S. Army structures (Figure 22). Finally, this alternative proposes to remove buildings 409, 710, 749, 750, and 787. The demolition of these structures would likely result in ground disturbance and the records indicate that no formal archeological survey has been undertaken around these structures to date.

These activities have the potential to result in permanent, localized adverse impacts depending on the archeological resource involved and the level of disturbance created, particularly if within undisturbed sediments. These potential impacts occur through the loss of cultural context of artifacts, features, etc. However, these activities will be designed after archeological testing has been conducted and will avoid where possible archeological deposits that contribute to the NRHP significance of the VNHR. Further, in the unlikely event that NHRP-significant, subsurface archeological resources cannot be avoided, then implementation of Mitigation Measures CR-1 Pre-Construction Field Surveys and Training, CR-2 Archeological and American Indian Monitoring, CR-3 Previously Undiscovered Cultural Resources) and CR-4 Cultural Resources Monitoring Plan, adverse impacts to archeological resources from this remediation action within the East and South Barracks should not exceed minor in intensity (no adverse effect for Sec. 106).



Figure 22. The south end of Alvord Road, looking north towards the intersection with Hatheway Road. (National Park Service)

Cumulative Effects

Cumulative impacts would be as described under alternative A; they would result in moderate adverse, permanent cumulative impacts to localized archeological resources.

Conclusions

Under this alternative, impacts would be permanent, local, minor adverse. For purposes of Section 106 of the NHPA, no archeological resources listed in or eligible for the NRHP are expected to be adversely affected under this alternative (no adverse effect for Sec. 106), see Table 18 below.

The actions of alternative B, when combined with the potential impacts of the implementation of the CRC project, would result in moderate, permanent adverse cumulative impacts to archeological resources, specifically in the South Barracks area adjacent to State Route 14 and Interstate 5 (adverse effect for Sec. 106).

Impacts of Alternative C—A Sustainable Public Service Campus (Preferred Alternative)

Ground Disturbance. The utility upgrade plan for the East and South Barracks would be in effect for this alternative, and the effects would be identical to those identified for alternative B. In addition, this alternative proposes to respect the boundaries of the HBC Cemetery by removing the parking lots that are currently located south of building 987, west of building 721, and the minor drives near buildings 721 and 722. The removal of these lots may pose some limited ground disturbance, while it may also be possible to essentially bury these lots in place with imported sediments. There are added potential ground disturbing activities from the proposed rerouting of the southern end of Alvord Road more directly into East 5th Street. This alternative also proposes to remove buildings 409, 422, 710, 749, 750, and 787, and the same recommended mitigation measures from alternative B are recommended for these proposed actions.

In addition, this alternative proposes to reconnect McClelland Road with the Park Road, and connect Alvord Road with East 5th Street to assist with vehicle circulation routes. These proposals will require ground disturbance to construct a new road bed.

These activities have the potential to result in permanent, localized adverse impacts depending on the archeological resource involved and the level of disturbance created, particularly if within undisturbed sediments. These potential impacts occur through the loss of cultural context of artifacts, features, etc. However, these activities will be designed after archeological testing has been conducted and will avoid where possible archeological deposits that contribute to the NRHP significance of the VNHR National Historic District. Further, in the unlikely event that NHRP-significant, subsurface archeological resources cannot be avoided, then implementation of Mitigation Measures CR-1 Pre-Construction Field Surveys and Training, CR-2 Archeological and American Indian Monitoring, CR-3 Previously Undiscovered Cultural Resources, and CR-4 Cultural Resources Monitoring Plan, adverse impacts to archeological resources from this remediation action within the East and South Barracks should not exceed minor in intensity (no adverse effect for Sec. 106).

Cumulative Effects

Cumulative impacts would be as described under alternative A; they would result in moderate adverse, permanent cumulative impacts to localized archeological resources.

Conclusions

Under this alternative, no activities would occur that would adversely impact archeological resources. Overall, impacts would be minor adverse. For purposes of Section 106 of the NHPA, no archeological resources listed in or eligible for the NRHP are expected to be adversely affected under this alternative (no adverse effect for Sec. 106), see Table 18 below.

The actions of alternative C, when combined with the potential impacts of the implementation of the CRC project, would result in moderate, permanent adverse cumulative impacts to archeological resources, specifically in the South Barracks area adjacent to State Route 14 and Interstate 5 (adverse effect for Sec. 106).

Impacts of Alternative D—An Historic, Educational Campus for All

Ground Disturbance. The utility upgrade plan for the East and South Barracks would be in effect for this alternative, and the effects would be identical to those identified for alternative A. In addition, this alternative proposes most of the same parking lot removals on the HBC Cemetery as are proposed in alternative C. This alternative also proposes to remove buildings 400, 401, 402, 409, 410, 422, and the same recommended mitigation measures from alternative B are recommended for this proposed action.

In addition, this alternative proposes to reconnect McClelland Road with the Park Road to assist with vehicle circulation routes. This proposal will require ground disturbance to construct a new road bed.

These activities have the potential to result in permanent, localized adverse impacts depending on the archeological resource involved and the level of disturbance created, particularly if within undisturbed soils layers. However, these activities will be designed after archeological testing has been conducted and will avoid where possible archeological deposits that contribute to the NRHP significance of the VNHR National Historic District. Further, in the unlikely event that NHRP-significant, subsurface archeological resources cannot be avoided, then implementation of Mitigation Measures CR-1 Pre-Construction Field Surveys and Training, CR-2 Archeological and American Indian Monitoring, CR-3 Previously Undiscovered Cultural Resources, and CR-4 Cultural Resources Monitoring Plan, adverse impacts to archeological resources from this remediation action within the East and South Barracks should not exceed minor in intensity (no adverse effect for Sec. 106).

Cumulative Effects

Cumulative impacts would be as described under alternative A; they would result in moderate adverse, permanent cumulative impacts to localized archeological resources.

Conclusions

Under this alternative, impacts would be permanent, local, minor adverse. For purposes of Section 106 of the NHPA, no archeological resources listed in or eligible for the NRHP are expected to be adversely affected under this alternative (no adverse effect for Sec. 106), see Table 18 below.

The actions of alternative D, when combined with the potential impacts of the implementation of the CRC project, would result in moderate, permanent adverse cumulative impacts to archeological resources, specifically in the South Barracks area adjacent to State Route 14 and Interstate 5 (adverse effect for Sec. 106).

Table 18. Section 106 Assessment of Effect on Archeological Resources by Alternative

ALTERNATIVE	CULTURAL LANDSCAPE/AREA OF POTENTIAL IMPACT	TREATMENT	ASSESSMENT OF EFFECT
A	HBC Cemetery	Upgrade utilities	No Adverse Effect
A	Rest of Project Area	No changes immediately proposed	No Adverse Effect
B	HBC Cemetery	Upgrade utilities	No Adverse Effect
B	Rest of Project Area	Upgrade utilities, reroute southern portion of Alvord Road, remove buildings 409, 710, 749, 750, and 787	No Adverse Effect
C	HBC Cemetery	Upgrade utilities, remove parking pots on HBC Cemetery area	No Adverse Effect
C	Rest of Project Area	Upgrade utilities, reroute southern portion of Alvord Road, remove buildings 409, 422, 710, 749, 750, and 787	No Adverse Effect
D	HBC Cemetery	Upgrade utilities, remove parking lots on HBC Cemetery area	No Adverse Effect
D	Rest of Project Area	Remove buildings 400, 401, 402, 409, 410, 422	No Adverse Effect

MUSEUM COLLECTIONS

Both 36 CFR 800 and the NHPA define historic property as including artifacts, records, and remains that are related to and located within such NRHP eligible or listed properties [36 CFR 800.16(l)(1); also see NHPA Section 301(5)]. Therefore, the impact intensity definitions for museum collections must be applied, in part, in association with a related archeological site, cultural landscape, ethnographic resource, or historic or prehistoric structure. For assessing impacts to museum collections where Section 106 is not applicable, only the first part of each definition statement should be applied. Under all action alternatives, the capacity of the anticipated collections facility would be sufficient for the current collection and potential growth factors, and the inclusion of other partner collections (and their effect on capacity) within the facility would be considered based upon National Park Service facility modeling.

Duration of Impacts: Potential impacts to Museum Collections are only seen as long-term impacts.

Impact intensities for museum collection resources are defined below:

Negligible: The effect would be at the lowest levels of detection, barely perceptible, with no measurable consequences, either adverse or beneficial, to the collections. The Section 106 determination would be no adverse effect.

Minor: The effect is measurable or perceptible, but it is slight and affects the integrity of a few items in the museum collection, but would not degrade the usefulness of the collection for future research and interpretation. Slight alteration to any of the characteristics of the collection that qualify its related resource for inclusion in the NRHP may diminish the integrity of the resource and its related collection. For purposes of Section 106, the determination of effect would be adverse effect.

Moderate: The effect is measurable and perceptible, and would affect the integrity of many items in the collection and diminish the usefulness of the collection for future research and interpretation. The effect changes one or more of the characteristics of the collection that qualify its related resource for inclusion in the NRHP and diminishes the integrity of the resource and its related collection, but does not jeopardize the NRHP eligibility of the resource related to the collection. For purposes of Section 106, the determination of effect would be adverse effect.

Major: The effect on the collection is substantial, noticeable, and permanent, and would affect the integrity of most items in the collection and destroy the usefulness of the collection for future research and interpretation. The action severely changes one or more characteristics of the collection that qualify its related resource for inclusion in the NRHP, diminishing the integrity of the resource and its related collection to such an extent that the resource is no longer eligible for listing in the NRHP. For purposes of Section 106, the determination of effect would be adverse effect.

Impacts of Alternative A—No Action

Museum Collection Management Options

The current curatorial facility, which meets federal standards for a museum collection facility, as outlined in 36 CFR Part 79, would continue to be located in the reconstructed Fur Store building inside of the HBC Fort Vancouver stockade. Therefore, there would be no potential for impacts to the museum collection due to moving the collection (no adverse effect for Sec. 106).

However, based upon this same scenario, there would be great limitations on the potential growth of the archeological collections since the current facility is near capacity. Without expanded curatorial space, and with the current pace of archeological collection growth due to compliance and research projects, not moving the collection into a larger space would soon constitute a moderate to major impact to the collection. Additions to the collection would cause overcrowding in the current facility, adversely affecting preservation efforts and accountability, and some material types might have to be curated in spaces with a less tightly controlled climate. (adverse effect for Sec. 106). Another potential necessity could be splitting the collection into multiple, smaller spaces (perhaps even some off-site), creating operational inefficiency and removing collections from their site of origin. The National Park Service, U.S. Army, City of Vancouver, WSDOT, and the consulting tribes, are in agreement that collections from the VNHR and adjacent, related sites should be kept as near to the site of origin as possible and made accessible to associated cultural groups, researchers, and interested members of the public. Triage actions of either overcrowding or splitting the collection would jeopardize both the preservation of the collection and our responsibilities to interested parties. In addition, operating multiple, small curation areas would be directly counter to the consolidation efforts documented in the servicewide *Park Museum Collection Storage Plan* (2007).

Cumulative Impacts

The potential impacts of the CRC project not proceeding to construction, in combination with the impacts of alternative A, would result in moderate, long-term cumulative impacts to the park's existing museum collections and those associated with the East and South Barracks for the reasons outlined above. Under this alternative, it is assumed that the CRC project would not proceed, and therefore that there would be no agreement for mitigation between the National Park Service and WSDOT to fund the rehabilitation of building 405 into a curation center. This would keep the museum collections in the current curatorial facilities located in the reconstructed Fur Store building inside of the HBC Fort Vancouver stockade, which is already at capacity. The slow and steady pace of additions to the archeological collections from Sec. 106 undertakings within the park would slowly overwhelm the facility, affecting the integrity of many items in the collection and diminishing the usefulness of the collection for future research and interpretation (adverse effect for Sec. 106).

Conclusions

Under this alternative, there would be no attempt to rehabilitate building 405 into a new curatorial space, and the museum collections would remain in their current reconstructed Fur Store building inside of the HBC Fort Vancouver stockade. The current curatorial facilities located in the reconstructed Fur Store building are near capacity, placing great limitations on professional curation of the archeological collections. Without expanded curatorial space, and with the current pace of archeological collection growth due to compliance and research projects, not transferring the collection into a larger space would soon constitute a moderate adverse impact to the collection.

For purposes of Section 106 of the NHPA, it is anticipated that alternative A would result in an adverse effect to artifacts, records, and remains that are related to and located within such NRHP eligible or listed properties. See Table 19 below.

Impacts of Alternative B—A Vibrant, Urban district in a Historic Setting

Museum Collection Management Options

Under this alternative, building 405, a 1984 U.S. Army aircraft hangar, would be rehabilitated into a state of the art curation center and public interpretive space for archeology and cultural resources. This facility would be designed to handle not only the existing collection, including the multiple parks for whom curation responsibilities are based at Fort Vancouver NHS, but would also allow for future growth.

The realization of this alternative would provide a benefit to the museum collection as a whole, and with appropriate management practices during the move process (as defined in the NPS *Museum Handbook*, Part I, Chapter 6: Handling, Packing, and Shipping Museum Objects), it is anticipated that there would be a negligible impact to the collection (no adverse effect for Sec. 106).

Cumulative Impacts

The potential impacts of the implementation of the CRC project, in combination with the impacts of alternative B, would result in beneficial, long-term cumulative impacts to museum collections associated with the park. The current CRC Locally Preferred Alternative calls for

the conversion of up to 3 acres of VNHR land into highway right of way. This right of way would closely parallel the western edge of the West Barracks portion of the VNHR. Part of the mitigation measures for these adverse impacts includes the rehabilitation of building 405 into a museum/curation facility. The National Park Service has agreed to curate all archeological objects recovered from the Washington side of the Columbia River as a part of the CRC project. The National Park Service museum facility model confirms that all of these collections can be housed in this renovated facility, and still allow for the projected growth of archeological collections. The realization of these plans would not only ensure the continued preservation of the existing park collections, but would enhance the collection and research capabilities for visiting scholars and the public to include regional contexts.

Conclusions

Under this alternative, no activities would occur that would adversely affect the management of existing or future museum collections. There would be no contribution to any cumulative impacts. Overall, impacts would be beneficial and would enhance the long-term management abilities of the museum collections.

For purposes of Section 106 of the NHPA, no elements of the existing or potential future museum collection are expected to be adversely affected under this alternative (no adverse effect for Sec. 106), see Table 19 below.

Impacts of Alternative C—A Sustainable, Historic Campus for Public Service (Preferred Alternative)

Museum Collection Management Options

Same as alternative B

Cumulative Effects

Same as alternative B

Conclusions

Same as alternative B

Impacts of Alternative D—An Historic, Educational Campus for All

Museum Collection Management Options

Same as alternative B

Cumulative Effects

Same as alternative B

Conclusions

Same as alternative B

Table 19. Section 106 Assessment of Effect on Museum Collections by Alternative

ALTERNATIVE	MUSEUM COLLECTION MANAGEMENT OPTION	ASSESSMENT OF EFFECT
A	Continue to operate museum collection facility within the Fur Store building, which cannot handle anticipated collection needs	Adverse Effect
B	Rehabilitate building 405 into a museum facility to increase capacity	No Adverse Effect
C	Same as B	No Adverse Effect
D	Same as B	No Adverse Effect

CLIMATE CHANGE AND AIR QUALITY

Guiding Regulations and Policies

Beyond the National Park Service's responsibility to protect air quality under the Clean Air Act and the 1916 Organic Act, NPS *Management Policies 2006* state that National Park Service would, "seek to perpetuate the best possible air quality in parks to; (1) preserve natural resources and systems; (2) preserve cultural resources; and (3) sustain visitor enjoyment, human health, and scenic vistas. The Service would. . . minimize air quality pollution emissions associated with park operations. . ." (Sec. 4.7.1).

Assessment Methodology

Type of Impact: Beneficial air quality impacts would reduce pollutant emissions or lower pollutant concentrations, while adverse impacts would increase them.

Impact Intensities

The air quality analysis was based on both qualitative and quantitative assessment of typical air emissions from construction and operations activities as well as emissions related to an increase in traffic. Impacts from construction activities would generally be considered short-term impacts, while an increase in vehicles and traffic would result in more long-term impacts to both air quality and climate change.

Short-Term Construction-Generated Emissions

Negligible: Measurable or anticipated degree of change to air quality would be localized and not be detectable or would be only slightly detectable. In addition, there would be no potential for impact to air quality from odors associated with project activities.

Minor: Measurable or anticipated degree of change would be localized, have a slight effect, causing a slightly noticeable change compared to existing conditions. In addition, sensitive individuals may notice odors, but they would be barely detectable and not offensive.

Moderate: Changes in air quality would be measurable or anticipated degree of change is readily apparent, appreciable, and would be noticed by most people. Changes can be localized or widespread. In addition, sensitive receptors would notice odors and may find them objectionable.

Major: Measurable or anticipated degree of change would be substantial, causing a highly noticeable change compared to existing conditions. Effects are often widespread. In addition, sensitive receptors would universally notice odors and find them objectionable.

Long-Term Regional and Local Mobile Source Emissions

Negligible: The daily traffic volume or the LOS for individual locations would not change.

Minor: The change in daily traffic volume from existing conditions would be less than 1,000 trips. The LOS for individual locations would change by one category and would remain at an acceptable level (LOS A, B, C, or D).

Moderate: The change in daily traffic volume from existing conditions would be 1,001 to 2,000 trips. The LOS for individual locations would change by more than one category but would remain at an acceptable level (LOS A, B, C, or D).

Major: The change in daily traffic volume from existing conditions would be more than 2,000 trips. The LOS for individual locations would change.

Impacts of Alternative A—No Action

Short-term Construction-Generated Emissions: Under the no action alternative, construction and rehabilitation efforts within the East and South Barracks would be limited to the rehabilitation of structures only for National Park Service use, and repairs to existing utility systems, as necessary. Such localized work would result in short-term use of heavy construction equipment. Dust generation would be mitigated through limiting the disturbed areas and use of water for dust suppression. It is expected that this should result in only minor adverse effects to localized air quality and negligible adverse contributions to overall global climate change.

Long-Term Regional and Local Mobile Source Emissions: Under the no action alternative, the average weekday trips generated through the East and South Barracks would markedly decrease from existing conditions. The number of trips into and out of South Barracks would markedly increase from 171 to 464 (a 58.3% increase), yet the number of trips into and out of the East Barracks would markedly decrease from 2,545 to 281 (a 1,323% decrease). Total trips generated into the entire East and South Barracks would fall from 2,716 to 745, a 264% decrease in traffic volume. In effect, under the no action alternative, there is a marked loss of operational automobile traffic coming into or out of the East and South Barracks, meaning a negligible impact to local air quality and global climate change.

Cumulative Effects

Several projects in the cumulative impact scenario have the potential to cause both beneficial and adverse cumulative effects when combined with the no action alternative. The remodel of the Visitor Center, when combined with the effects of the limited construction from alternative A, could add cumulative, minor, short-term negative effects to short-term, construction-generated emissions. In and of itself, the construction of the CRC project could generate moderate short-term adverse effects through construction-related emissions. When combined with the no action alternative, the CRC project could result in moderate short-term cumulative impacts.

There is also the potential for long-term negligible to minor impacts from the CRC project. According to the *Columbia River Crossing Draft Environmental Impact Statement*, whether the CRC project is built or not, long-term emissions of all air pollutants along the Interstate 5

corridor would be substantially lower than present due to expected improvements in vehicle emissions by 2030—although this seems to be an optimistic assessment when considering the increased traffic volume expected by 2030. When combined with the decrease in the number of projected vehicles accessing the East and South Barracks proposed in alternative A, it is projected that there would be at least negligible to minor cumulative impacts to air quality.

Conclusions

The no action alternative proposes little in the way of active construction activities or an increase in daily automobile traffic accessing the East and South Barracks area. These factors limit short-term construction-generated emissions to negligible to moderate impacts; while the long-term air emissions from general automobile usage should decrease in the short-term, and improve in the long-term due to more stringent vehicle emission standards. Overall, the no action alternative would result in negligible to minor adverse impacts.

The results of alternative A, when combined with the potential impacts of the implementation of the CRC project, would result in moderate short-term construction related cumulative impacts. There is also the potential for long-term negligible to minor impacts from air pollutants from traffic using the CRC Bridge.

Impacts of Alternative B—A Vibrant, Urban District in a Historic Setting

Short-term Construction-Generated Emissions: The proposed rehabilitation efforts, the demolition of five structures, reorientation of paved roads, and the replacement of existing utilities would all result in short-term construction-related emissions. Dust generation would be mitigated through limiting the disturbed areas and use of water for dust suppression. None of the proposed building uses would result in objectionable odors. Based upon the total area projected for these construction efforts (probably over a period of several years), it is likely that these construction activities would constitute a short-term, moderate adverse effect to air emissions and minimal contributions to global climate change.

Long-Term Regional and Local Mobile Source Emissions: Under alternative B, based upon analysis conducted by the National Park Service in 2011, the average weekday trips generated through the East and South Barracks would markedly increase from existing conditions. The number of trips into and out of South Barracks would increase from 171 to 1,516 (a 786% increase), while the number of trips into and out of the East Barracks would increase from 2,545 to 3,674 (a 44% increase). Total trips generated into the entire East and South Barracks would increase from 2,716 to 5,290, a 94.7% increase in traffic volume. However, it is expected that by 2030, long-term emissions of all air pollutants would be substantially lower than present due to expected improvements in vehicle emissions. This is a large increase in operational automobile traffic coming into or out of the East and South Barracks, and with over 5,000 vehicle trips into the East and South Vancouver Barracks every day, there would be major adverse long-term impacts to local air quality and major adverse contributions to global climate change.

Cumulative Effects

Cumulative impacts for alternative B are largely similar to those for alternative A. Combining the effects of the rehabilitation of the Visitor Center and the construction of the CRC project with the projected increases in traffic volume in alternative B would still result in long-term negligible to minor cumulative impacts for air quality and global climate change.

Conclusions

Under alternative B, the National Park Service would enact substantial rehabilitation and construction activities within the East and South Barracks, which would cause short-term, construction-related air emissions for a number of years. These emissions would constitute a short-term, minor adverse effect to air emissions and global climate change.

In addition, it is projected that under full development of alternative B, there would be a seven-fold increase in the number of automobiles accessing and parking within the East and South Barracks. Even with the projected lessening of air emissions per vehicle based upon more stringent vehicle emission standards, the projected increase in the number of vehicles utilizing the area would still constitute a long-term minor impact to air emissions and global climate change. Some of these effects can be moderated through the use of mitigation measure AQ-1, encouraging staff and non-NPS tenants to utilize mass transit and bicycling options whenever feasible.

Impacts of Alternative C—A Sustainable Public Service Campus (Preferred Alternative)

Short-term Construction-Generated Emissions: Short-term, construction-generated emissions are projected to be the same as those under alternative B.

Long-term Regional and Local Mobile Source Emissions: Under alternative C, based upon analysis conducted by the National Park Service in 2011, it is anticipated that full development of the proposed uses of the East and South Barracks would result in an increase up to a total of 577 automobiles driving into the East and South Barracks, parking, and leaving during the day. Based upon parking counts in the East and South Barracks in 2011, this is a six-fold increase in the average number of vehicles entering and parking in the East and South Barracks on a Monday-Friday basis. This is a large increase in operational automobile traffic coming into or out of the East and South Barracks, but it is still fewer than 1,000 vehicle trips into the area, resulting in minor, long-term adverse impacts to local air quality and minor contributions to global climate change.

Cumulative Effects

Cumulative effects would be the same as those under alternative B.

Conclusions

Under alternative C, the National Park Service would enact substantial rehabilitation and construction activities within the East and South Barracks, which would cause short-term, construction-related air emissions for a number of years. These emissions would constitute a short-term, minor adverse effect to air emissions and global climate change.

In addition, it is projected that under full development of alternative C, there would be a six-fold increase in the number of automobiles accessing and parking within the East and South Barracks. Even with the projected lessening of air emissions per vehicle based upon more stringent vehicle emission standards, the projected increase in the number of vehicles utilizing the area would still constitute a long-term minor impact to air emissions and global climate change. Some of these effects can be moderated through the use of mitigation measure AQ-1, encouraging staff and non-NPS tenants to utilize mass transit and bicycling options whenever feasible.

The results of alternative C, when combined with the potential impacts of the implementation of the CRC project, would result in moderate short-term construction related cumulative impacts. There is also the potential for long-term negligible to minor impacts from air pollutants from traffic using the CRC bridge.

Impacts of Alternative D—An Historic, Educational Campus for All

Short-term, construction-generated emissions are projected to be the same as those under alternative B.

Long-Term Regional and Local Mobile Source Emissions: Under alternative D, based upon analysis conducted by the National Park Service in 2011, it is anticipated that full development of the proposed uses of the East and South Barracks would result in an increase up to a total of 604 automobiles driving into the East and South Barracks, parking, and leaving during the day. Based upon parking counts in the East and South Barracks in 2011, this is more than a six-fold increase in the average number of vehicles entering and parking in the East and South Barracks on a Monday-Friday basis. This is a large increase in operational automobile traffic coming into or out of the East and South Barracks, but it is still fewer than 1,000 vehicle trips into the area, resulting in a minor, long-term impact to local air quality and global climate change.

Cumulative Effects

Cumulative effects would be the same as those under alternative B.

Conclusions

Under alternative D, the National Park Service would enact substantial rehabilitation and construction activities within the East and South Barracks, which would cause short-term, construction-related air emissions for a number of years. These emissions would constitute a short-term, minor adverse effect to air emissions and global climate change.

In addition, it is projected that under full development of alternative D, there would be more than a six-fold increase in the number of automobiles accessing and parking within the East and South Barracks. Even with the projected lessening of air emissions per vehicle based on more stringent vehicle emission standards, the projected increase in the number of vehicles utilizing the area would still constitute a long-term minor impact to air emissions and global climate change. Some of these effects can be moderated through the use of mitigation measure AQ-1, encouraging staff and non-NPS tenants to utilize mass transit and bicycling options whenever feasible.

The results of alternative D, when combined with the potential impacts of the implementation of the CRC project, would result in moderate short-term construction-related cumulative impacts. There is also the potential for long-term negligible to minor impacts from air pollutants from traffic using the CRC bridge.

VISITOR EXPERIENCE

Guiding Regulations and Policies

The importance of and commitment to visitor experience is affirmed in various NPS documents. The 1916 Organic Act requires the National Park Service to ensure its natural and cultural resources are not impaired, while providing for the enjoyment of these resources. NPS *Management Policies 2006* (NPS 2006) state that the enjoyment of park resources and values by the people of the U.S. is part of the fundamental purpose of all parks, and that the National Park Service is committed to providing appropriate, high-quality opportunities for visitors (Figure 23).

Director's Order 47: Soundscape Preservation and Noise Management, articulates NPS policies that address the protection, maintenance or restoration of the natural soundscape resource in a condition unimpaired by inappropriate or excessive noise sources (National Park Service 2000). Therefore, noise is an important consideration in visitor experience.



Figure 23. Ranger-led tours are one of many high-quality visitor experiences possible in the East and South Barracks. (National Park Service)

The National Park Service has committed to providing facilities which are designed to be accessible to all individuals. Under Director's Order #42: Accessibility for Visitors with Disabilities in National Park Service Programs and Services, the National Park Service ensures that all people should have the highest level of accessibility that is reasonable to NPS programs, facilities and services in conformance with applicable regulations and standards.

Assessment Methodology

The purpose of this impact analysis is to determine if the proposed actions are compatible, or in conflict with, the purpose of the park, its visitor experience goals, and the direction provided by NPS policies. Effects to the visitor experience related to traffic and parking restrictions are addressed and are not intended to function as a technical transportation analysis. Rather, they are analyzed as to how they would effect a visitor's enjoyment of the area. See the *Transportation* section for additional analysis of transportation-related effects.

Noise is an important consideration of the visitor experience. The analysis of the effects of noise on visitor experience in national parks involves a variety of factors, many of which are not easily quantifiable. These include, among other things, a visitor's expectation (e.g., presumptions of noise levels in developed vs. undeveloped/wilderness areas), a visitor's personal characteristics (the likelihood of being annoyed by noise), and the degree to which a quiet experience is desired (Gramann 1999). Noise receptors in the area could be affected by construction noise, and include park and partner staff and park visitors.

Context and Duration of Impact

Short-term: Effects would be perceptible to visitors only temporarily (e.g., construction-related) and/or these management actions would persist for less than one year.

Long-term: Effects would be repeatedly perceptible to visitors, lasting for at least a year or more.

Impact Intensities

Negligible: Visitors would not likely be aware of changes related to visitor use, in critical characteristics of visitor experiences fundamental to the park's purpose and significance, or in any defined indicator of visitor satisfaction. There would be little or no change in the visitor experience or visitor safety.

Minor: Change in the visitor experience or visitor safety would be noticeable; however they would be slight and likely short-term. Other areas in the park would remain available for similar visitor experience and use without derogation of park resources and values.

Moderate: Visitors would be aware of the effects associated with changes proposed for visitor use and enjoyment of park resources. Changes in visitor use and experience would be readily apparent and likely long-term. Other areas in the park would remain available for similar visitor experience and use without derogation of park resources and values, but visitor satisfaction might be measurably affected (visitors could be either satisfied or dissatisfied). Some visitors who desire to continue their use and enjoyment of the activity/visitor experience would be required to pursue their choice in other available local or regional areas.

Major: Visitors would be highly aware of the effects associated with changes proposed for visitor use and enjoyment of park resources. Changes in visitor use and experience would be readily apparent and long-term. The change in visitor use and experience proposed in the alternative would preclude future generations of some visitors from enjoying park resources and values. Some visitors who desire to continue their use and enjoyment of the activity / visitor experience would be required to pursue their choice in other available local or regional areas.

Alternative A – No Action

Under this alternative, there would be very few initial changes or improvements to the visitor experience. Increases to park visitation are expected to be slight and barely noticeable. Building 991 would be rehabilitated for a National Park Service and Fort Vancouver National Trust administrative headquarters, but all of the other buildings would remain vacant until a prospective tenant comes forward, leaving the majority of space (81%) unavailable for public use, access, or education.

There would be some public informational or exhibit space in building 991 that would be open to park visitors, but no other space would be developed for interpretive or educational programs or special events.

The grounds would be maintained but not improved, so visitors would not benefit from improved landscape in either the East or South Barracks. The fences around the South Barracks, as well as unattractive concrete security barriers in the East would be removed, allowing for some increased public access to the buildings and grounds. Access through the grounds would be mostly unrestricted except for NPS maintenance and storage areas. Alternative A would not include construction of any new visitor facilities such as restrooms or exhibit space. The potential reconstruction of the Summer House would add to the visitor experience since it recreates a piece of history which may be interpreted for the public.

Interpretive themes and programming would be the same as it exists currently and use established interpretive themes such as HBC, settlement of Oregon Country and establishment

of the U.S. Army Vancouver Barracks. A small number of interpretive signs currently exist on site. There would not be any immediate plans for additional interpretive signage or programming.

Parking for the Fort would be relocated to the East Barracks near building 753 and north of building 754, which is approximately 500 feet farther from the existing lot, and would result in a 5-10 minute walk to the Fort for most visitors. There would be a drop off adjacent to the Fort for those with mobility needs. There would be no other changes to visitor parking for personal vehicles, tour buses, recreational vehicles, or trailers.

Noise generated during any construction activities, such as minor utility repairs and building rehabilitation, would impact visitors who are in the park and most likely within the VNHR. This impact would be temporary, and noise would not occur on nights or weekends. After any temporary construction, the soundscape of the park would be similar to what exists today.

To the greatest extent possible, site improvements and building rehabilitation would accommodate all people and abilities without the need for individual adaptation. Once building occupancy is certain and subsequent design work is developed, the National Park Service would ensure the incorporation of public health and safety requirements, including standard accessibility requirements, into the design. For example, improvements such as accessible parking, loading zones, fire access, elevators, ramps, and other modifications would be made in accordance with the *Architectural Barriers Act Accessibility Standards* and the *Accessibility Guidelines for Outdoor Developed Areas*. The park would also strive to be as universally accessible as possible and make improvements that make the East and South Barracks buildings, grounds, and interpretive displays accessible to all people.

Cumulative Impacts

Several projects in the cumulative impact scenario have the potential to cause both beneficial and adverse cumulative effects when combined with the no action alternative. The remodel of the Visitor Center, when combined with the effects of the limited construction from alternative A, could add cumulative, minor, short-term adverse effects to the visitor experience if construction were to occur at the same time. This would result from additional noise, dust, detours, and other construction activities in visitor areas. Similar impacts would result from the hazardous material remediation and restoration of the Village. In and of itself, the CRC project could generate moderate to major long-term adverse effects to visitors due to: the direct taking of existing park lands and conversion into the right of way, the destruction of archeological sites within this new right of way, construction activities that may last over five years, the increased height of the new bridge, the increased visibility of moving vehicles on the bridge, the anticipated increase in traffic, and the loss of visibility of the west hills of Portland from the park which has been an iconic view since the creation of the park. When combined with the no action alternative, moderate to major long-term cumulative impacts are expected.

There is also the potential for cumulatively long-term beneficial effects. When combined with the increased access and limited restoration to the East and South Barracks proposed in alternative A, the past construction of the Land Bridge, the future remediation of hazardous materials and improvement to the Visitor Center, as well as the potential Community Connector (mitigation for the CRC project) all add an increased LOS, access, and safety for the visitor. Additionally, the deeding of the West Barracks to the City of Vancouver in 2007 also contributes to cumulative beneficial impacts to visitors, as now the majority of the VNHR is accessible to the public.

Conclusion

Compared to existing conditions, the no action alternative would result in a slight benefit to the visitor experience. Although the majority of buildings would not be open to the public, the grounds would be more open, available and visitor friendly and foot access would be permitted throughout both the East and South Barracks. Both the addition of the public space in building 991 and reconstruction of the Summer House would also add to the visitor experience. In the short-term, there would also be a benefit from the accessibility and universal access improvements that would be completed as part of the rehabilitation of building 991. Benefits from improved access for the rest of the East and South Barracks would be delayed until plans are developed for future use of the area.

As demonstrated during the public scoping period, only proceeding with actions approved in the *Fort Vancouver National Historic Site General Management Plan* (2003) in the foreseeable future would result in long-term moderate adverse effects to the visitor experience as visitors would likely be dissatisfied with the lack of space available for public events, programs, and recreational activities as well as lack of improvements to the barracks buildings and grounds, and interpretive programs. Construction in the barracks would result in short-term minor adverse impacts to visitors, but many of these can be mitigated through mitigation measures VE-2, Timing; VE-3, Construction Related Noise Control; VE-4, Construction Exclusion Areas-Visitor Restrictions, and VE-5, Visitor Notification. There would be short and long-term adverse minor to major cumulative impacts, as well as some long-term beneficial effects.

Alternative B - A Vibrant, Urban District in a Historic Setting

In this alternative, the Barracks would provide a welcoming environment and there would be opportunities for the public to work, shop, dine, recreate, and learn in the historic barracks. Park visitation could increase slightly, but no substantial increases are expected. There would be increased public access to the majority of buildings and the grounds of the Barracks and a variety of activities and gathering places for visitors. Buildings that provide office space would have some public component, such as an interpretive display in the lobby or event space. Other buildings may provide larger spaces for community/public activities such as arts, events, performances, festivals, weddings, galleries or meeting space. Some buildings would contain a retail function, such as shops and a restaurant which would support visitor use. A building with a visitor support function (restrooms, bike rentals, food service, etc.) could be provided near the Discovery Trail and HBC Fort area (building 410). Restrooms would also be made available in key buildings throughout the site. The public would also have the opportunity to live in the historic barracks, as some buildings could be rehabilitated into multi-family residences and made available to rent.

Additional museum space would also be developed. In this alternative, building 405 would be developed into a regional museum management facility which would not only provide needed space for curatorial functions but also a public exhibit and/or educational facility for National Park Service and other Pacific Northwest museum collections. The number and size of special events could increase in the future with the availability of additional special use areas, and the growth in knowledge and appreciation of this historic site. These functions would constitute a substantial improvement to the visitor experience in the East and South Barracks.

Interpretive themes and programming would be the same as currently existing and use established interpretive themes such as HBC, settlement of Oregon Country and establishment of U.S. Army Vancouver Barracks. Interpretation would occur mostly through non-personal

services such as self-guided walking tours, personal media, and signs within some of the Barracks buildings. Military history may also be interpreted in the East Barracks. The park would also build opportunities for self-directed learning about the history and resources of the historic Barracks (such as self-guided trails, new media, etc.).

The landscape of the Barracks would have a distinct emphasis on visitor appeal: shade trees, ornamental plantings, and other site furnishings would be maximized. Improved aesthetics would also enhance the visitor experience. Overhead power lines would be buried as part of infrastructure improvement. Multi-modal access and circulation would be improved throughout the project site; sidewalks would be repaired and possibly extended throughout East and South Barracks. Excess asphalt around the buildings would be removed (i.e. paving at building foundations, extraneous lanes and spurs between buildings, etc.) and re-vegetated, which would improve the visitor experience of the area. Removal of fencing in the South Barracks and removal of barriers in the East Barracks would increase public access and allow more area for recreation and exercise. Linkages with existing and proposed trail networks would be created, and a new interpretive loop trail would be created to connect with the historic Maple Allée, HBC Village and Discovery Trail. These actions would also provide an improvement and benefit visitors.

The existing visitor parking at the Fort would be reduced to a few handicap parking spaces only, and the area would be re-vegetated to appear as historic agricultural fields. Parking would be relocated to the South Barracks, east of building 405, which is approximately 700 feet farther from the existing lot, and would result in a 5-10 minute walk to the Fort for most visitors. New surface lots throughout the site would be constructed to service retail and commercial functions (i.e. small lots north of East 5th Street). Tour buses, recreational vehicles, and trailer parking would be accommodated in the new Fort parking lot in the South Barracks. The National Park Service would also work with the City of Vancouver to use existing lots in the West Barracks.

Noise and dust generated during construction activities would impact visitors who are in the park and most likely the VNHR. These actions would include utility upgrades, potential building demolition, historic building rehabilitation, installation of solar panels, asphalt removal, and road construction, and could involve the use of equipment such as hand tools, power drills, saws, trucks, dump trucks, excavators, jack hammers, cement mixers, and front end loaders. Use of this mechanized equipment, particularly heavy equipment, would result in temporary increases in noise levels within the Barracks and the VNHR and affect staff and visitors of the park, West Barracks, and possibly Officers' Row. Noise emission levels for typical construction equipment are displayed in Table 20.

As points of reference, normal conversation at the source point results in a 60 dBA noise level, while whispering at five feet results in a 20 dBA noise level. At levels above 80 dBA, it is recommended that exposure time be limited to avoid hearing loss (National Institute for Occupational Safety and Health 2006). Table 21 provides additional information on predicted noise levels from any source at various distances from a construction site using a combination of the three loudest pieces of construction equipment simultaneously.

Under alternative B, there is the potential that some buildings would be demolished. While any demolition and/or construction are underway, most visitors would choose activities away from the noise. The Visitor Center is approximately 1,150 feet from the eastern boundary of the East Barracks, while occupied buildings or picnic areas in the West Barracks are approximately 230 feet from the East Barracks and 450 feet from the South Barracks. The reconstructed Fort Vancouver is 340 feet from the South Barracks and 570 feet from the East Barracks. At these distances, noise levels are generally expected to be in the 60-80 dBA range for visitors.

Table 20. Noise Emission Levels Typical for Construction Equipment

EQUIPMENT	TYPICAL NOISE LEVEL (9dBA) 50 FEET FROM SOURCE
Backhoe	80
Grader	85
Loader	85
Roller	75
Bulldozer	85
Truck	88
Scraper	89

Note: dBA = A-weighted decibel scale. Source: Federal Transit Administration, 1994

Table 21. Examples of Estimated Noise Levels Associated with Construction

DISTANCE TO RECEPTOR	SOUND LEVELS AT RECEPTOR (dBA)
50	92
100	86
200	80
400	73
600	69
800	67
1000	64
1500	60
2000	57
2500	54

The intensity of the effects on the park's soundscape would vary with the type of construction activity, its location, and the duration of the activity. Noise impacts are also affected by a variety of other factors, including the distance from noise-sensitive receptors, weather, topography, ambient noise levels, etc. Noise effects would be compounded by simultaneous use of several pieces of noise-generating equipment. Considering these many factors, it is believed that construction-related noise effects could result in short-term, localized, negligible to moderate adverse impacts on visitor experience. The range in impact would vary based upon the sound level at the receiver, and the receiver's perception of the sound. The effects would be short-term and localized. Implementation of Mitigation Measures VE-1 General Measures, VE-2 Construction Management Plan, and VE-4 Construction-Related Noise Control would generally reduce these impacts to a minor adverse level, although isolated instances of moderate impacts are likely.

To the greatest extent possible, site improvements and building rehabilitation would accommodate all people and abilities without the need for individual adaptation; these improvements would provide a substantial benefit to park visitors as well as future building tenants. Such improvements will be done to not only be consistent with both the Americans

with Disabilities Act, and *The Secretary of the Interior's Standards for Historic Rehabilitation*. Rehabilitation examples from similar sites (such as the Presidio and Fort Baker at Golden Gate National Recreational Area) will be used as models on how to balance handicap accessibility with historic preservation efforts.

Cumulative Impacts

Cumulative impacts would be similar to alternative A, but have the potential to be more substantial since more construction is planned under alternative B. The remodel of the Visitor Center, when combined with the effects of the construction from alternative B, could add cumulative, minor, short-term adverse effects to the visitor experience if construction were to occur at the same time. This would result from additional noise, dust, detours, and other construction activities in visitor areas. Similar impacts would result from the hazardous material remediation and restoration of the Village. In and of itself, the CRC project could generate moderate to major long-term adverse effects to visitors, and when combined with alternative B, moderate to major long-term cumulative impacts are expected. This is due to: the direct taking of existing park lands and conversion into the right of way, the destruction of archeological sites within this new right of way, construction activities that may last over five years, the increased height of the new bridge, the increased visibility of moving vehicles on the bridge, the anticipated increase in traffic, and the loss of visibility of the west hills of Portland from the park which has been an iconic view since the creation of the park. When combined with alternative B, moderate to major long-term cumulative impacts are expected.

There is also the potential for cumulatively long-term beneficial effects. When combined with the increased access, utility improvements, building rehabilitation, and other visitor improvements associated with alternative B – the past construction of the Land Bridge, the future remediation of hazardous materials and improvement to the Visitor Center, as well as the potential Community Connector (mitigation for the CRC project) add an increased LOS, access, and safety for the visitor.

Conclusion

Collectively, the rehabilitation and interpretation of the historic East and South Barracks structures and landscape would result in long-term, localized benefits to visitor experience related to the greatly expanded opportunities and amenities for visitors; increased public access to many buildings and grounds and improved circulation; additional educational, conferencing and event space; infrastructure improvement; increased interpretive signage and programs; improved aesthetics; increased accessibility; and furtherance of the understanding of the historic significance of the Barracks.

Short-term, localized minor to moderate adverse effects related to noise from construction, dust, construction traffic/detours and restricted access during construction. Many of these effects can be mitigated through mitigation measures VE-2, Timing; VE-3, Construction Related Noise Control; VE-4, Construction Exclusion Areas-Visitor Restrictions, and VE-5, Visitor Notification. Adverse visitor impacts resulting from parking reconfiguration is expected to be negligible. There would be short and long-term adverse minor to major cumulative impacts, as well as long-term beneficial effects.

Alternative C - A Sustainable Public Service Office Campus (Preferred)

Under alternative C, the visitor experience would be marked by increased public access to buildings and grounds, a variety of activities and opportunities for visitors, enhanced circulation

for pedestrians and motorists, welcoming and safe environment, and opportunities to learn about the work of federal agencies within a historic, multi-agency campus. Conferences, lectures and other events and activities would energize the site. The Barracks would be a lively campus that provides many opportunities for the public to work, shop, dine, recreate, and learn. A wide variety of uses would complement the existing mix of uses occurring in the VNHR.

Handicap accessibility improvements would be incorporated to the greatest extent possible in the rehabilitation of the buildings, landscape, and enhanced interpretive programming. Buildings that provide office space for the National Park Service, Fort Vancouver National Trust, or other federal or non-federal agencies (52%) would have some public component, such as an interpretive display in the lobby or event space. Buildings 991 and/or 993, to be rehabilitated for NPS Headquarters, would have a public space devoted to interpretation of early military history. Other buildings such as 991, 993 and 721 (~8%) may provide larger spaces for community activities such as arts, events, performances, festivals, galleries or meeting space that is tied to the mission of the public agencies that reside in the barracks. Educational activities (lectures, conferences, and trainings) would be an ideal public use for the barracks, but events such as weddings, theater or performances could also occur. This alternative would also provide some limited overnight accommodations for visitors who attend conferences, trainings or business meetings on site, as well as for educational groups such as field schools, elder hostels, environmental camps, etc.

This function would greatly enhance the visitor experience. As with alternative B, building 405 would be developed into a regional museum management facility which would contain a public exhibit and/or educational facility for museum collections. A building with a visitor support function (restrooms, bike rentals, food service, etc.) could be provided near the Discovery Trail and HBC Fort area (building 410). Restrooms would also be made available in key buildings throughout the site.

A wide variety of uses would complement the existing mix of uses occurring in the VNHR. There would be some limited retail services, such as shops, a café or deli and a daycare facility, to support visitors and those people working in the offices within the Barracks. Healthy and locally produced foods would be encouraged in food establishments. The number and size of special events is expected to increase in the future with the availability of additional special use areas, and the growth in knowledge and appreciation of this historic site. These functions would constitute a substantial improvement to the visitor experience in the East and South Barracks.

Generally, the interpretive themes, programming, and methods (i.e. signage) would be the same as alternatives A, and B, but with some additions. The multiple layers of history in the Barracks would be interpreted in different portions of the site, where those interpretive opportunities exist (e.g., HBC in the South Barracks and in the HBC Cemetery, and early military history in the East Barracks). With alternative C, there would be a focus on the interpretation of environmental sustainability with possible demonstration areas and/or events that highlight the environmentally responsible landscape and building practices that were incorporated into the East and South Barracks. Some buildings in the East Barracks would devote space to interpreting military history. Interpretation of American Indian history and culture would also be expanded. Themed dining opportunities (that focus on healthy sustainably grown foods) would be encouraged.

There are opportunities for collaboration between multiple agencies to encourage active interpretation of the varied missions of these agencies to the visiting public. As in alternative B, other additions could also include restoring the Barracks scene or other interpretive exhibits. In partnership with non-NPS organizations, educational programming and interpretive opportunities would be maximized, and new programs, such as American Indian crafts making,

could be offered to give the public a fuller understanding and appreciation for the history and resources of the project area. There would be an emphasis on non-personal interpretation (such as waysides, self-guided tours) of military and other history that complements more person-to-person interpretation elsewhere in the park. Special events, such as conferences, lectures, weddings, exhibits, and other activities, would be encouraged and would provide the visitor with a fun and unique environment to learn, recreate, and gather.

The grounds will be enhanced through additional plantings, reducing the amount of paved area, restoring the HBC Orchard and Garden, and reconstruction of the Summer House in conjunction with the HBC Garden restoration. The gravel lot on the HBC Cemetery would be removed and restored to a park-like setting.

As with alternative B, multi-modal access and circulation would be improved throughout the project site, sidewalks would be repaired and possibly extended throughout East and South Barracks. Excess asphalt around the buildings would be removed (i.e. paving at building foundations, extraneous lanes and spurs between buildings, etc.) and re-vegetated, which would improve the visitor experience of the area, create a simpler road pattern for drivers, and create designated safe places for pedestrian activities and passive recreation. Removal of fencing in the South Barracks and removal of barriers in the East Barracks would increase public access and allow for more area for recreation and exercise. Linkages with existing and proposed trail networks would be created, and a new interpretive loop trail would be created to connect with the historic Maple Allée, HBC village and Discovery Trail. Site amenities such as picnic tables, bike racks, benches, etc., would be installed through the barracks as appropriate. These actions would also provide an improvement and benefit visitors.

Parking and vehicular activity in the East Barracks would be limited. The existing visitor parking at the Fort would be reduced to a few accessible spaces and the area would be re-vegetated. The new parking lot in the South Barracks east of building 405 would be 580 feet farther from the existing lot, and would result in a 5-10 minute walk to the Fort. Other additional parking needs would be evaluated, but expansion of new surface lots would be limited to the greatest extent possible to minimize resource damage. Tour buses, recreational vehicles and trailer parking would be accommodated in the new Fort parking lot in South Barracks. The National Park Service would also work cooperatively with the City of Vancouver regarding parking throughout the VNHR, including addressing the use of existing lots in West Barracks for parking for carpools, vanpools, etc. Although visitors may not be able to park directly adjacent to their destination, the walk would be short and no more than 5-10 minutes for most visitors, creating a more tranquil and safe pedestrian park experience.

In this alternative, there is the potential that some buildings would be demolished. This could enhance the visitor experience by improving the aesthetics of the Barracks, but would create short-term negligible to minor adverse visitor impacts to visitor due to noise, dust and other construction impacts.

Cumulative Impacts

Cumulative impacts for alternative C would be the same as alternative B.

Conclusion

Similar to alternative B, the impacts of alternative C are anticipated to be long-term and beneficial due to the greatly expanded opportunities and amenities for visitors: increased public access to many buildings and grounds and improved circulation; additional educational, conferencing and event space; infrastructure improvement; increased interpretive signage and special events;

improved aesthetics; increased handicap accessibility; and furtherance of the understanding of the historic significance of the Barracks and the environmentally sustainable ways of maintaining and preserving it.

There would also be short-term minor to moderate adverse impacts as a result of noise from construction, building removal, dust, construction traffic/detours and restricted access during construction. Many of these effects can be mitigated through mitigation measures VE-2, Timing; VE-3, Construction Related Noise Control; VE-4, Construction Exclusion Areas-Visitor Restrictions, and VE-5, Visitor Notification. Adverse visitor impacts resulting from parking reconfiguration are expected to be negligible. There would be short and long-term adverse minor to major cumulative impacts, as well as long-term beneficial effects.

Alternative D - An Historic, Educational Campus for All

As with alternatives B and C, alternative D would also increase public access in the Barracks as a large number of buildings would be rehabilitated for public use, but the number of opportunities would be greater than the other action alternatives. Park visitation could increase slightly, but no substantial increases are expected. There would be a heavy focus on educational, community and non-profit uses that support the history of the project area. Offices, classrooms and community spaces would be encouraged. In partnership with outside organizations, educational programming and interpretive opportunities such as environmental learning camps, American Indian crafts making, and other activities would be maximized. This alternative would host the greatest number of museums. There would also be some commercial activity to support visitors. Accessibility improvements would be incorporated to the greatest extent possible in the rehabilitation of the buildings, landscape, and enhanced interpretive programming.

A wide variety of uses would complement the existing mix of uses occurring in the VNHR. Buildings that provide office space for the National Park Service, Fort Vancouver National Trust, or other federal or non-federal agencies would also have some public component, such as an interpretive display in the lobby or event spaces. A portion of building 993 would be devoted to interpretation of early military history, and similar to the other action alternatives, building 405 would be rehabilitated into a museum management facility with public exhibits. Portions of building 991 would be reserved for special public events. Visitor services, such as bike rentals, concessions (i.e. food service), and public restrooms would be incorporated into building 786. Restrooms would also be made available in other key buildings throughout the site, to provide this necessary visitor amenity conveniently throughout the Barracks. Themed dining opportunities (at the Mess Hall for example) would provide the public with a unique recreation of history, and contribute to the wide range of public activities available in the project area. All of these functions would greatly enhance the visitor experience in the East and South Barracks.

Interpretation of the East and South Barracks would be consistent with the goals and themes of the *Long Range Interpretive Plan* and focus on themes such as HBC, settlement of the Oregon Country and establishment of the U.S. Army Vancouver Barracks. In addition, in this alternative, 20th Century military history in the East Barracks would be emphasized, while HBC and American Indian history and culture would be emphasized in the South Barracks. The National Park Service would implement non-personal interpretive methods in the Barracks (similar to alternative B and C) but also could accommodate guided tours and demonstrations where feasible and seek partnerships with outside organizations to develop other interpretive opportunities. These increased opportunities would greatly improve the visitor's experience of the Barracks.

There would be robust cultural landscape restoration under this alternative, which would improve the visitor experience in the Barracks. This would include restoration of the HBC

Orchard and Garden, reconstruction of the Summer House, reinstatement of the historic Maple Allée, and potential limited expansion of the Oregon white oak savanna plant community. In order to restore the historic views of the Parade Ground, the Douglas-firs along its southern edge would be removed. While the overall landscape improvements would benefit the public experience, some people may be unhappy with the tree removal – this could result in both a short and long-term minor adverse impact.

As with alternative B and C, multi-modal access and circulation would be improved throughout the project site, sidewalks would be repaired and possibly extended throughout East and South Barracks. Excess asphalt around the buildings would be removed (i.e. paving at building foundations, extraneous lanes and spurs between buildings, etc.) and re-vegetated, which would improve visitor experience and create safe, designated places for pedestrian activities and passive recreation. Removal of fencing in the South Barracks and removal of barriers in the East Barracks would increase public access and allow for more area for recreation and exercise. Linkages with existing and proposed trail networks would be created, and a new interpretive loop trail would be created to connect with the historic Maple Allée, HBC Village and Discovery Trail. These actions would also provide an improvement and benefit visitors.

New site amenities, such as crosswalks, plazas, benches, and other site furnishings would be limited in this alternative in order to maintain the historic setting.

In addition to the above improvements, aesthetics would be improved within the Barracks because excess asphalt on the site would be reduced. Sidewalks would be repaired and extended, and provide links to existing and proposed trails. Road circulation would be improved to enhance visitor safety and appearance. Some roadways would be converted to pedestrian only, which would help the visitor enjoy the Barracks as they might have been historically, as well as to provide a more reverent pathway across the HBC Cemetery. The parking lots on the HBC Cemetery would also be removed. Parking around the buildings in the East Barracks would be limited to a small number of handicap accessible and drop off spaces, and new lots would be minimized. Parking for the Fort would be moved to the MASH site. The National Park Service would work cooperatively with the City of Vancouver regarding parking, including accommodating parking for tour buses, recreational vehicles, and trailers in existing lots in the West Barracks. Although visitors may not be able to park directly adjacent to their destination, the walk would be short, no more than 5-10 minutes, creating a more tranquil pedestrian experience.

In this alternative, buildings could be removed, and other construction activities related to site improvement and building rehabilitation would occur. Building removal may improve the visitor experience by improving the aesthetics of the Barracks and allow for the restoration of the HBC Garden, Summer House, and Orchard, but this demolition would also create short-term negligible to minor adverse visitor impacts due to dust and other construction impacts. Impacts to the visitor from noise generated by this construction would be the same as under alternative B.

Cumulative Impacts

Cumulative impacts for alternative D would be the same as alternative B.

Conclusion

Similar to the other action alternatives, alternative D is expected to result in long-term, localized benefits to visitor experience for the same reasons mentioned above for alternatives B, and C. Benefits to the visitor may be slightly greater in this alternative since there would be

more museums, more interpretive signage, history programs, event space, and space for non-profit organizations.

There would also be short-term, localized minor to moderate adverse effects related to noise from construction, building removal, dust, construction traffic/detours and restricted access during construction. Many of these effects can be mitigated through mitigation measures VE-2, Timing; VE-3, Construction Related Noise Control; VE-4, Construction Exclusion Areas-Visitor Restrictions, and VE-5, Visitor Notification. Adverse visitor impacts resulting from parking reconfiguration is expected to be negligible. The visitors could experience short and long-term adverse impacts as a result of the removal of Douglas-firs along the Parade Ground. There would be short and long-term adverse minor to major cumulative impacts, as well as long-term beneficial effects.

TRAFFIC, CIRCULATION AND PARKING

Guiding Regulations and Policies

The *NPS Management Policies* (National Park Service 2006) instructs park units to consider several factors when modification of a road inside the park is needed. Most of these factors are more germane to a proposal to expand or construct roadway systems to accommodate additional visitors or provide additional access to a park site. However, Section 9.2 of the policies indicates parks should consider whether the road modification “is appropriate and necessary to meet park management needs...” and requires that it be “designed with extreme care and sensitivity to the landscape through which it passes.”

Assessment Methods

Assessment methods are divided into three considerations, traffic volume, LOS, and parking utilization. The numbers of parking spaces and trips are based on full occupation of the East and South Barracks over the life of this plan. It is not anticipated, based on the assumptions of the plan, that these numbers will be significantly higher.

This analysis focuses on calculations for weekdays since the majority of proposed functions in the East and South Barracks, such as offices and child care, under any of the action alternatives, would require the most parking and operate primarily during weekdays. Retail generates less trips and parking on weekends than weekdays and restaurants are about the same or just slightly higher (Institute of Transportation Engineers Trip Generation Report, 2008). Buildings with a public use function are a small percentage of the proposed uses in alternative B and C, and about the same as offices for alternative D. It is anticipated that planning for parking for weekdays would be inclusive of the weekend parking requirements. Similarly, except for special events, the traffic within the project area is expected to be lower on weekends than weekdays.

Traffic Volume

As previously discussed in Chapter 3, recent NPS analysis calculated average weekday trips at 171 for the South Barracks and 2,545 for the East Barracks, or a total of 2,716 trips generated for the project area. Trip generation estimates the number of “trip ends” produced in and/or attracted to each land use in a development. Each trip is made of two “trip ends,” one at the production end of the trip and one at the attraction end of the trip. Since peak traffic generally occurs during the traditional lunch hour and the majority of building functions proposed in the action alternatives is employment related, it is assumed that both trip ends will occur within the project area. For

example, if an employee goes to lunch during the work day, one trip occurs when the employee leaves the facility and a second when the employee returns.

These data were determined using the Institute of Transportation Engineers Trip Generation Report (2008). The traffic was distributed to the adjacent external roadway system based on traffic count data provided by the City of Vancouver and supplemented by additional traffic counts taken by Western Federal Lands Division of the Federal Highway Administration. Resulting traffic was evaluated at four intersections; the roundabout at Evergreen Boulevard and Fort Vancouver Way, the two-way stop controlled intersection at Evergreen Boulevard and Park Road, the two-way stop controlled intersection at Fort Vancouver Way and East 5th Street and the two-way stop controlled intersection at East 5th Street and Park Road.

For the purpose of the study, the project was divided into two multi-use developments: the East Barracks and the South Barracks. Internal trip distribution and pedestrian connections were not analyzed. Since all the buildings within each development are fairly close to each other and are situated within reasonable walking distance; facilities or parts of facilities assigned the same Institute of Transportation Engineers (ITE) Land Use Code were combined to determine the trip generation. Trips that would occur between facilities, but within either the East or South Barracks complex, were not calculated. If it is believed that a large number of these types of vehicle trips would occur, then internal trips should be calculated as part of the pedestrian circulation portion in the final design process.

Impact intensities for traffic volume are defined below:

Negligible: The change in daily traffic throughout the Barracks would be less than 10% and the LOS for individual intersections and locations would remain the same.

Minor: The effect would be slightly detectable, but there would not be an overall effect on the condition of roads and/or traffic flow. The change in daily traffic throughout the Barracks would be between 10% and 20%.

Moderate: The change in daily traffic throughout the Barracks would be between 20% and 30% and the LOS would change by no more than one category and would remain at an acceptable LOS (A, B, C or D)

Major: The change in daily traffic throughout the Barracks would be more than 30% and the LOS would change by one or more categories and would deteriorate to an unacceptable LOS (E or F).

Level of Service

The 2010 Highway Capacity Manual was used to calculate the LOS at each of the four study intersections for the existing traffic and the preferred alternative. Level of Service is a calculation of the average delay experienced by a driver. Delay is the amount of time a driver must wait to complete the desired maneuver.

Six levels of service (LOS A through LOS F) are defined for intersections, based on the average total delay to a motorist at the intersection. An intersection described as LOS A has the shortest delay, while LOS F is the longest delay.

Four intersections surrounding the park property were analyzed to determine the long-term effect of increased traffic on the surrounding transportation system (short-term effects were not analyzed). The four intersections included in this study are: the roundabout at Fort Vancouver Way and Evergreen Boulevard, the stop controlled “T” intersection at Fort Vancouver Way and

East 5th Street, the stop controlled intersection at East 5th Street and Park Road, and the stop controlled intersection at Park Road and Evergreen Boulevard near the park's Visitor Center.

The LOS delay is calculated for the drivers that must stop and the drivers that desire to turn left across free flow traffic; the maximum delay is used to express the LOS. For the roundabout intersection on Fort Vancouver Way, the delay is calculated for each approach and the average of all approaches is used to determine the LOS. The volume to capacity (V/C) ratio for the considered roadways shown below is also calculated for the Fort Vancouver Way roundabout traffic only. Intersection capacity is determined by roadway characteristics such as the number and width of lanes, and the existence of right turn lanes. The capacity of the intersection is expressed as the total number of passenger cars that can be accommodated in a one hour period. The capacity is compared to the traffic volume and expressed as a decimal. When the volume to capacity ratio equals 1.0 or greater; the LOS is identified as F regardless of the average calculated delay. The existing volume to capacity ratio for Fort Vancouver Way was determined to be 0.38, well below the 1.0 threshold where LOS determinations reach an "F." Table 22 shows how LOS classifications are assigned.

Table 22. Definition of LOS by Control Delay of vehicles and by Volume to Capacity ratio

CONTROL DELAY (Sec/Veh)	LOS BY VOLUME-TO-CAPACITY RATIO	
	V/C≤1.0	V/C>1.0
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-45	E	F
>50	F	F

Impact intensities for LOS are defined below:

Negligible: The LOS for individual locations would remain the same.

Minor: The LOS would change by one category and would remain at an acceptable LOS (A, B, C or D).

Moderate: The LOS would change by more than one category and would remain at an acceptable LOS (A, B, C or D).

Major: The LOS would change by one or more categories and would deteriorate to an unacceptable LOS (E or F).

Parking

As described in the Affected Environment chapter, a parking utilization study conducted in 2011 documented parking use around the East and South Barracks on weekdays. Using the results of the 2011 study, expected parking needs were projected for the project area under each alternative. However, the final parking capacity/numbers of parking spaces will vary as more detailed designs are developed. The actual amount of parking that will be provided will be dependent on a variety of issues such as compatibility with the cultural landscape, archeology, sloping site conditions, location and size of walkways, and location and size of planting islands (Figure 24). Because of this variability, the National Park Service has estimated that parking



Figure 24. Parking opportunities will be dependent on a variety of issues, such as compatibility with the cultural landscape, archeology, existing slopes, and locations of walkways. (National Park Service)

numbers will vary approximately 7% over or under the numbers originally derived from using the 2011 study results. This deviation does not apply to alternative A, no action, for which parking numbers are taken from the the American Land Title Association/American Congress on Surveying and Mapping/National Park Service Land Title Survey of the East and South Barracks completed in 2002 and on-site car counts.

Using requirements under the City of Vancouver Municipal Code, Chapter 20.945 -Section 20.945.070, Minimum Off-Street Parking Requirements, estimates were developed for maximum parking requirements under each alternative. In most cases, the gross square footage of buildings was used in order to determine Vancouver Municipal Code requirements, which vary according to building uses. However, for live performance space proposed for building 721, estimated maximum occupancy for that building was used.

In general, these estimates vary under each alternative, based on differences in building uses and potential building demolitions. In addition, the amount of parking that the Barracks can accommodate varies in each alternative according to the extent and nature of treatments to the cultural landscape. Therefore, the alternatives vary in terms of how well and in what location estimated parking needs may be accommodated. Parking estimates assume complete implementation of the plan, and therefore, represent maximum expected parking numbers. In order to address any parking shortages and reduce the amount of surface parking needed, the National Park Service may explore a shared parking strategy with the City of Vancouver and other partners.

Impact intensities for parking need:

Negligible: There would not be a perceptible change in the current parking balances and/or imbalances.

Minor: A change in the current parking balances and/or imbalances would be slightly perceptible.

Moderate: A change in the current parking balances and/or imbalances would be moderately perceptible.

Major: A change in the current parking balances and/or imbalances would be very perceptible.

Impacts of Alternative A—No Action

Traffic Volume

Under the no action alternative, it is anticipated that there would be limited construction activities that would likely have a short-term, negligible effect on traffic volume. It is calculated that the long-term, average weekday trips generated through the East and South Barracks would markedly decrease from existing conditions. The number of trips generated into and out of South Barracks would markedly increase from 171 to approximately 464 (a 58% increase), yet the number of trips into and out of the East Barracks would markedly decrease from 2,545 to approximately 281 (a 1,323% decrease). Total trips generated into the entire East and South Barracks would fall from 2,716 to 745, an approximate 264% decrease in traffic volume. This would result in both a short-term and long-term beneficial impact on traffic volume, and the decrease in the number of trips generated into the project area would be perceptible.

Level of Service

Under the no action alternative, the long-term LOS for each of the analyzed intersections would remain unchanged. The traffic volume to roadway capacity ratio for alternative A was determined to be 0.36, even lower than the existing determination. This would result in a long-term negligible impact on the LOS.

Parking Needs

Under the no action alternative, it is anticipated that there would be limited construction activities that would likely have a short-term, negligible effect on parking needs. In the long-term, it is estimated that there will be 410 parking spaces available in the South Barracks and 323 spaces available in the East Barracks, for a total of 733 parking spaces (Figure 6). Using current Vancouver Municipal Code guidelines for Officers' Row and the West Barracks, and the proposed building uses for alternative A, it is estimated that there will only be demand for a total of 86 parking spaces on weekdays in the East and South Barracks, resulting in a surplus of over 650 parking spaces. Using the ITE estimates, total demand is only 78 spaces, with a similar surplus of over 650 parking spaces (Table 23). Based on the modeling estimates for alternative A, parking utilization under alternative A will result in a short-term and long-term negligible impact.

Cumulative Effects

A few local projects have the potential to cumulatively affect the traffic, circulation and parking in the East and South Barracks and the surrounding lands.

The excess and disposal of the West Barracks from the U.S. Army to the City of Vancouver, and the subsequent rehabilitation of the historic structures in the West Barracks for adaptive reuse has "set the stage," for the planned rehabilitation efforts of the National Park Service in the East and South Barracks. The adaptive reuse efforts in the West Barracks have preserved the historic barracks structures in the area, helping to keep the remaining contributing elements of the Vancouver Barracks and the VNHR National Historic District intact. These efforts have created and maintained parking areas in the West Barracks, while the presence of residences, public, and private events in the West Barracks have created their own traffic and circulation demands within the East and South Barracks. These existing conditions, with the growth of rehabilitation efforts

Table 23. Estimated Parking Needs for Alternative A

	POTENTIAL SPACES AVAILABLE	# OF SPACES PER VMC	OVER/ <UNDER> # OF SPACES PER VMC	# OF SPACES PER ITE REPORT	OVER/ <UNDER> # OF SPACES PER VMC
South Barracks	410	52	358	33	377
East Barracks	323	34	298	45	278
Totals	733	86		78	

Note: The actual amount of parking that will be provided will be dependent on resource considerations (archeology/cultural landscapes) and site conditions (slope, walkway location/size, etc.). These specifics will not be known until later in the design process. Because of this variability, the NPS has estimated the parking numbers will vary approximately 7% over or under the numbers originally derived from the using the 2011 study results.

in the West Barracks, will likely increase the traffic, circulation, and parking needs within the area. These future demands, combined with the effects of alternative A, will likely produce minor to moderate long-term cumulative impacts to traffic volume, LOS, and parking utilization in the East and South Barracks project area.

The potential impacts of the implementation of the CRC project, in combination with the impacts of alternative A, may produce negligible long-term cumulative impacts to traffic volume, LOS, and parking utilization in the East and South Barracks project area. According to the *Draft Columbia River Crossing Environmental Impact Statement*, if no action is taken to replace the existing bridges, traffic levels on the Interstate 5 bridges will increase 37% from 135,000 vehicles a day to over 184,000 vehicles a day by the year 2030. The *Draft Columbia River Crossing Environmental Impact Statement* analyzes three action alternatives, which have corresponding increases in vehicles a day from between 165,000 to 179,500 vehicles per day by the year 2030. Not only will the construction of the new bridges (with some kind of transit—buses or rail) reduce the number of vehicles traveling over the bridges each day compared to the no action alternative, it is anticipated that the increase in the number of lanes combined with the elimination of the lift-span capability of the bridge, will reduce the number of hours of traffic congestion on the bridge and its arterials by several hours compared to the no action alternative. In short, all of the action alternatives for the CRC will reduce traffic congestion on the Interstate 5 bridges and their arterials compared to the CRC no action alternative, likely meaning that traffic volume will go up but will be accommodated more effectively by the proposed changes and its associated traffic concerns, within the East and South Barracks, compared to the no action alternative.

Conclusions

The no action alternative would result in an overall long-term decrease in the average number of vehicle trips generated into and out of the East and South Barracks, resulting in no change to the LOS at four major intersections around the Barracks, and a surplus in the available parking versus daily demand for parking. Overall, the no action alternative would result in both short-term and long-term negligible adverse to beneficial impacts to traffic, circulation, and vehicle parking around the East and South Barracks.

Cumulative impacts for alternative A are limited to minor to moderate, long-term cumulative impacts to LOS, and parking utilization due to an increase in traffic volume in the East and South Barracks project area for the rehabilitation of the West Barracks, and negligible impacts for the CRC project.

Impacts of Alternative B—A Vibrant, Urban District in a Historic Setting

Traffic Volume

Under alternative B, it is anticipated that construction activities could cause temporary road closures and detours that could have short-term minor to moderate effects on traffic volume. The average long-term weekday trips generated through the East and South Barracks would markedly increase from existing conditions. The number of trips into and out of South Barracks would increase from 171 to approximately 1,516 (a 786% increase), while the number of trips into and out of the East Barracks would increase from 2,545 to approximately 3,674 (a 44% increase). Total trips generated into the entire East and South Barracks would increase from 2,716 to approximately 5,290 (a 94.7% increase). This would result in a moderate impact on traffic volume, and the increase in the number of trips generated into the project area would be perceptible.

Level of Service

Under alternative B, the LOS for three out of the four analyzed intersections would remain the same. Only the traffic circle at Fort Vancouver Way and Evergreen would possibly decrease from a LOS A to a LOS B or an increase in delay of 5 seconds. The traffic volume to roadway capacity ratio for alternative B was determined to be 0.91, which is approaching capacity, but not surpassing it over the life of the plan. The LOS drops only one level because the existing roadway infrastructure in the project area has existing capacity to absorb the additional traffic. This would result in a long-term minor impact on the LOS.

Parking Needs

Under alternative B, it is anticipated that construction activities could cause temporary road closures and detours that could have short-term minor to moderate effects on parking utilization. In addition, it is estimated that long-term, there could be approximately 266-306 parking spaces available in the South Barracks and 443-509 spaces available in the East Barracks, for a total of 709-815 parking spaces (Table 24). Using current Vancouver Municipal Code guidelines for Officers' Row and the West Barracks, and the proposed building uses for alternative B, it is estimated that there will be demand for a total of 604 parking spaces on weekdays in the East and South Barracks, resulting in a surplus of between 105 to 211 parking spaces. Still, using these estimates, there will be an excess of parking in the South Barracks of over 108 to 178 parking spaces, and either a deficiency or surplus in the East Barracks of approximately 30 spaces. Using ITE estimates, total demand is over 1,030 parking spaces, with a deficiency of 215 to 321 parking spaces, with most of the demand coming from the East Barracks. Based on the modeling estimates for alternative B, parking utilization under alternative B will result in a minor to moderate impact.

Table 24. Estimated Parking Needs for Alternative B

	POTENTIAL SPACES PROVIDED	# OF SPACES PER VMC	OVER/ <UNDER> # OF SPACES PER VMC	# OF SPACES PER ITE REPORT	OVER/ <UNDER> # OF SPACES PER VMC
South Barracks	266-306	128	108-178	128	108-148
East Barracks	443-509	476	<33>	902	<393-459>
Totals	709-815	604		1030	

Note: The actual amount of parking that will be provided will be dependent on resource considerations (archeology/cultural landscapes) and site conditions (slope, walkway location/size, etc.). These specifics will not be known until later in the design process. Because of this variability, the National Park Service has estimated the parking numbers will vary approximately 7% over or under the numbers originally derived from using the 2011 study results.

Cumulative Effects

As discussed for alternative A, the presence of residences, public and private events in the West Barracks, along with the likely growth of rehabilitation efforts there, could increase the traffic, circulation, and parking needs within the area. These future demands, combined with the effects of alternative B, will likely produce minor to moderate long-term adverse cumulative impacts to traffic volume, LOS, and parking utilization in the East and South Barracks project area.

Conclusions

Under alternative B, in the long-term, the NPS efforts at rehabilitating the East and South Barracks into a dynamic, mixed use urban campus would markedly increase the number of vehicles entering, parking, and leaving the Barracks each day. This increase would have a moderate impact on traffic volume, a minor impact on the LOS on at least one of the four main intersections surrounding the East and South Barracks, and a minor to moderate impact to parking utilization around the Barracks.

Some of these effects can be moderated through the use of mitigation measure AQ-1, encouraging staff and non-NPS tenants to utilize mass transit and bicycling options whenever feasible.

Cumulative impacts for alternative B are likely to produce minor to moderate long-term cumulative impacts to traffic volume, LOS, and parking utilization in the East and South Barracks project area.

Impacts of Alternative C (Preferred Alternative)—A Sustainable Public Service Campus

Traffic Volume

Under alternative C, it is anticipated that construction activities could cause temporary road closures and detours that could have short-term minor to moderate effects on traffic volume. In the long-term, it is anticipated that the average weekday trips generated through the East and South Barracks would markedly increase from existing conditions. The number of trips into and out of the South Barracks would increase from 171 to 845 (a 394% increase), while the number of trips into and out of the East Barracks would increase from 2,545 to 3,743 (a 47% increase). Total trips generated into the entire East and South Barracks would increase from 2,716 to 4,588, a 68.9% increase in traffic volume. This would result in a moderate impact on traffic volume, and the increase in the number of trips generated into the project area would be perceptible.

Level of Service

In the long-term, even with the projected 68% increase in traffic volume, the calculations for the LOS for all four of the analyzed intersections would remain the same. The traffic volume to roadway capacity ratio for alternative C was determined to be 0.92, again approaching capacity for these roadways, but not surpassing it, over the life of the plan. The existing roadway infrastructure is able to handle the traffic demands generated in this alternative. This would result in a long-term negligible to minor impact on the LOS.

Parking Needs

Under alternative C, it is anticipated that construction activities could cause temporary road closures and detours that could have short-term minor to moderate effects on parking utilization. In the long-term, it is estimated that there will be approximately 227-261 parking spaces available in the South Barracks and between 350 to 398 spaces available in the East Barracks, for a total of 577-659 parking spaces (Figure 11). Using current Vancouver Municipal Code guidelines

for Officers' Row and the West Barracks, and the proposed building uses for alternative C, it is estimated that there will be demand for a total of 638 parking spaces on weekdays in the East and South Barracks, ranging from either a deficiency of approximately 61 to a surplus of approximately 20 parking spaces, based on the two different methods used. Still, using these estimates, there will be an excess of parking in the South Barracks of up to 183 parking spaces, and a deficiency in the East Barracks of approximately 162-210 spaces. Using ITE estimates, total demand increases to 877 parking spaces, with a deficiency of between 218 to 300 parking spaces, with most of the demand coming from the East Barracks (Table 25). Based on modeling estimates for alternative C, parking utilization under this alternative will result in a moderate to major impact.

Table 25. Estimated Parking Needs for Alternative C

	POTENTIAL SPACES PROVIDED	# OF SPACES PER VMC	OVER/ <UNDER> # OF SPACES PER VMC	# OF SPACES PER ITE REPORT	OVER/ <UNDER> # OF SPACES PER VMC
South Barracks	227-261	78	149-183	67	160-194
East Barracks	350-398	580	<162-210>	810	<412-460>
Totals	577-659	638		877	

Note: The actual amount of parking that will be provided will be dependent on resource considerations (archeology/ cultural landscapes) and site conditions (slope, walkway location/size, etc.). These specifics will not be known until later in the design process. Because of this variability, the National Park Service has estimated the parking numbers will vary approximately 7% over or under the numbers originally derived from using the 2011 study results.

Cumulative Effects: The cumulative effects would be the same as alternative B.

Conclusions

Under alternative C, the long-term NPS efforts at rehabilitating the East and South Barracks into a sustainable public service campus would markedly increase the number of vehicles entering, parking, and leaving the Barracks each day. This increase would have a moderate impact on traffic volume, a negligible impact on the LOS on all four of the main intersections surrounding the East and South Barracks, and a moderate impact to the parking utilization around the Barracks.

Some of these effects can be moderated through the use of mitigation measure AQ-1, encouraging staff and non-NPS tenants to utilize mass transit and bicycling options whenever feasible. The effects on the parking utilization may be partially off-set by the development of a parking lot in the East Barracks, south of building 993 (Figure 11).

Cumulative impacts for alternative C are likely to produce minor to moderate long-term cumulative impacts to traffic volume, LOS, and parking utilization in the East and South Barracks project area.

Impacts of Alternative D—An Historic, Educational Campus for All

Traffic Volume

Under alternative D, it is anticipated that construction activities could cause temporary road closures and detours that could have short-term minor to moderate effects on traffic volume. In the long-term, the average weekday trips generated through the East and South Barracks would markedly increase from existing conditions. The number of trips into and out of South Barracks would increase from 171 to 487 (a 184% increase), while the number of trips into and out of the

East Barracks would increase from 2,545 to 3,785 (a 48.7% increase). Total trips generated into the entire East and South Barracks would increase from 2,716 to 4,272, a 57.2% increase in traffic volume. This would result in a moderate impact on traffic volume, and the increase in the number of trips generated into the project area would be perceptible.

Level of Service

Under alternative D, even with the 57% increase in traffic volume, the long-term calculations for the LOS for all four of the analyzed intersections would remain the same. The traffic volume to roadway capacity ratio for alternative C was determined to be 0.40, because the existing roadway structure has the capacity to handle the traffic demands generated by the alternative. Altogether, this would result in a long-term negligible impact on the LOS.

Parking Needs

Under alternative D, it is anticipated that construction activities could cause temporary road closures and detours that could have short-term minor to moderate effects on parking utilization. In the long-term, it is estimated that there would be approximately 136-156 parking spaces available in the South Barracks and 275-315 spaces available in the East Barracks, for a total of approximately 485-557 parking spaces (Figure 14). Using current Vancouver Municipal Code guidelines for Officers' Row and the West Barracks, and the proposed building uses for alternative D, it is estimated that there will be demand for a total of 606 parking spaces on weekdays in the East and South Barracks, resulting in a deficiency of approximately 49-121 parking spaces. Still, using these estimates, there will be an excess of parking in the South Barracks of 80-100 parking spaces, and a deficiency in the East Barracks of 235-275 spaces. Using ITE estimates, total demand increases to 955 parking spaces, with a deficiency of 438 to 510 parking spaces, with most of the demand coming from the East Barracks (Table 26). Based on the modeling estimates for alternative D, parking utilization will result in a moderate to major impact.

Table 26. Estimated Parking Needs for Alternative D

	POTENTIAL SPACES PROVIDED	# OF SPACES PER VMC	OVER/ <UNDER> # OF SPACES PER VMC	# OF SPACES PER ITE REPORT	OVER/ <UNDER> # OF SPACES PER VMC
South Barracks	136-156	56	80-100	23	113-133
East Barracks	349-401	550	<149-201>	972	<571-623>
Totals	485-557	606		995	

Note: The actual amount of parking that will be provided will be dependent on resource considerations (archeology/cultural landscapes) and site conditions (slope, walkway location/size, etc.). These specifics will not be known until later in the design process. Because of this variability, the National Park Service has estimated the parking numbers will vary approximately 7% over or under the numbers originally derived from using 2011 study results.

Cumulative Effects: The cumulative effects would be the same as alternative B.

Conclusions

Under alternative D, the NPS efforts at rehabilitating the East and South Barracks into an educational campus would markedly increase the number of vehicles entering, parking, and leaving the Barracks each day.

Some of these effects can be moderated through the use of mitigation measure AQ-1, encouraging staff and non-NPS tenants to utilize mass transit and bicycling options whenever feasible.

Cumulative impacts for alternative D are likely to produce minor to moderate long-term cumulative impacts to traffic volume, LOS, and parking utilization in the East and South Barracks project area.

SOCIOECONOMIC FACTORS AND LAND USE

The actions contained in the alternatives in this *Environmental Assessment* are strategies for reuse and rehabilitation of the East and South Barracks buildings and grounds. Relinquishment of the Barracks from the U.S. Army to the National Park Service is considered part of the existing conditions for the purpose of this analysis.

Regulations and Policies

Council on Environmental Quality regulations for implementing the NEPA, 40 CFR 1500, direct economic analyses of federal actions that would affect local or regional economies. Economic effects are commonly expressed in terms of the number and types of jobs supported, changes in income, the number of visitors, and the resulting changes in local tourism spending.

Assessment Methodology

Socioeconomic impacts were determined based on applied logic, professional expertise, and professional judgment.

Context of Impact

Socioeconomic impacts were considered for the Portland-Vancouver-Hillsboro, Oregon/Washington MSA.

Impact Intensities

Adverse impacts are those effects that are generally recognized to diminish the established social environment, decrease economic benefits, or diminish the environment for particular populations or communities.

Duration of Impact

Short-term effects are those that occur during and in response to the planning, design, construction, and major maintenance of buildings, trails, parking lots, and other improvements associated with federal spending. These effects diminish or disappear after the project is completed. "Short-term" may also describe the first or early response in social or economic conditions to more fundamental changes in the park or reserve management and operations and to changes in visitor use, but which give way to broader changes over time. Generally, "short-term" describes those effects that may last up to 5 years.

Long-term effects are those that last longer than 5 years, including some that may not begin until after completion of direct activities associated with the initial federal government spending or changes in management.

Intensity of Impact

Negligible: No effects would occur or the effects on socioeconomic conditions would be below or at the level of detection. The effect would be slight and no long-term effects on socioeconomic conditions would occur. Little or no noticeable change would occur in economic activity, employment and income levels, regional population or land use. The impact is barely detectable and/or would affect few neighbors.

Minor: The effects on socioeconomic conditions are small but detectable, and only affect a small number of businesses and/or a small portion of the population. The impact is slight, not detectable outside the affected area, and/or would affect a minority of neighbors.

Moderate: The impact is readily apparent and/or would affect many neighbors on a local scale (e.g. a gateway community) within the affected area, but would not alter basic socioeconomic structure or functions. Impacts would most likely be long-term.

Major: The effects on socioeconomic conditions are readily apparent with widespread, substantial changes in overall economic activity, employment and income levels, or regional population or land use. Measurable changes in social or economic conditions at the county or regional level occur. The impact is severely adverse within the affected area and/or would affect the majority of neighbors.

Alternative A – No Action

Under alternative A, the National Park Service would assume and retain ownership and all structures and properties within the East and South Barracks. The National Park Service would use some of the buildings in the barracks for their own use, but would not proactively seek tenants so the vast majority of buildings would remain empty. These empty buildings could also attract vandalism, which would increase maintenance costs. They would not generate any income for the building upkeep, park, or community, nor would any new jobs be created.

Use of the land would change from U.S. Army functions (offices, training, and operations restricted from the public) to NPS functions such as office and public open space.

U.S. Army personnel have been transferred from the Vancouver Barracks to a new installation in the eastern part of Vancouver, which has resulted in no immediate job losses in Clark County. There may be some shift in economies from the west side of Vancouver to the east side of town, but this should have little overall effect to the economy of the city as a whole, or of Clark County. This should result in long-term negligible economic impacts.

When the property is relinquished, there would be some immediate and long-term beneficial effects to Contemporary Tribal Communities due to the changes in ownership and management from military to National Park Service. Cultural Resources would be protected under NPS management, in accordance with the NPS Organic Act of 1916 which states resources are to be “preserved for future generations.” There is also the potential for increased interpretation and consultation efforts regarding northwest tribal history.

Cumulative Impacts

Potential mitigation for the CRC project is a Community Connector that would provide a pedestrian friendly crossing over Interstate 5. This project, as well as the completed Land Bridge, contributes beneficial cumulative effects to the East and South Barracks project because these connections have, and would, allow more people to access downtown Vancouver to, and from, the Barracks. As the buildings eventually become rehabilitated and leased, employees of the Barracks would likely spend money within Vancouver. The City of Vancouver’s City Center vision, which includes redevelopment on the waterfront, is also expected to add socioeconomic benefits to this alternative for similar reasons.

Conclusion

There would be both a short-term and a long-term negligible to minor adverse impact to the economy of the MSA under alternative A due to the loss of jobs in the Barracks and potential for increased vandalism and maintenance. This includes effects to the local real estate market (negligible short-term and long-term impacts), and the potential change in local employment (negligible short-term and long-term impacts).

Alternative B – A Vibrant, Urban District in a Historic Setting

In this alternative, the National Park Service would assume and retain ownership of all structures and properties within the East and South Barracks after their relinquishment from the U.S. Army. Some structures would be used by the National Park Service and its partners, and others would be rehabilitated for a mix of offices, businesses, shops, restaurants, art galleries, and residences.

U.S. Army personnel and operations would no longer function in the Barracks. Instead, the National Park Service would use some of the buildings for their own purposes as well as lease buildings out for a variety of other functions. In order to identify future uses that would be economically successful for the National Park Service, as well as the local and regional community, the National Park Service completed a Limited Market Analysis Study, which was prepared by Booz Allen Hamilton (2011). The analysis was developed based on competitor leasing data in order to assist in developing future demand expectations for commercial leasing in the Barracks.

The analysis found that Fort Vancouver NHS would likely have success in leasing the buildings in the future, and that the reuse proposals in the *Environmental Assessment* have “strong potential to add tremendous value to the park, the National Park Service, the Fort Vancouver partnership, and the larger Vancouver community.” It also stated, “[t]he environment offered in Fort Vancouver is unparalleled in the region as there are no other leasing opportunities like it; it provides public open space in an historical setting.” Some of the draw and allure that attracts visitors and future tenants to the area include the proximity to the Vancouver central business district, proximity to Portland, lack of an income tax in the state of Washington, and great neighborhoods and schools (Booz Allen Hamilton 2011). However, successful commercial leasing would require great care in planning, marketing, and managing the endeavor, including attracting and maintaining the right mix of tenants and visitors. The study recommended that a good mix of all proposed building uses – office, retail, restaurant, residential (multifamily) and public benefit/public use is the ideal scenario for reuse of the East and South Barracks.

The buildings that would be available for lease for these purposes are Class C buildings. There is currently a surplus of vacant Class A and B office space in Vancouver. Companies and organizations seeking to lease Class A or B buildings rarely switch to a Class C because they require buildings with high quality building infrastructure, good access and locations, and professional management. Therefore, Class C buildings generally do not compete against A and B classes. Tenants that seek out historic buildings (which are generally Class C) are a niche market that rarely considers Class A or B properties.

This is evidenced by the low vacancy rate in the Officers’ Row properties managed by the Fort Vancouver National Trust, as well as Vancouver’s generally lower vacancy rates for older buildings. Therefore, adding East and South Barracks to the real estate supply is not expected to negatively impact Class A & B markets within the MSA. Furthermore, absent a funding source, the leasing of the Barracks buildings would most likely be phased. As such, lease properties would enter the market slowly over time, reducing the likelihood of an oversupply of Class C office space. Since there is a slight chance of the Barracks buildings competing with

other office space, the effect would be adverse; however it would be negligible, meaning that the effects on the leasing market in the MSA would be slight, below or at the level of detection. If a phased approach is taken to bringing the buildings to the real estate market, then it would be effective to offer the building uses that command the highest demand up front, including (in priority order), residential, office, and some public benefit/public use. This phasing strategy would help to achieve financial feasibility and to elicit a critical mass of people traffic to support a subsequent implementation of the building uses that require such traffic for success, such as retail and restaurant.

U.S. Army personnel have transferred out of the Barracks, and there could be a loss of jobs and revenue in Clark County, in the short-term, until the buildings are leased and rehabilitated. But in the long-term, the *Environmental Assessment* would contribute to an increase in jobs in Clark County. New business would move into the Barracks and would contribute to, and benefit, the local economy. People visiting, working, and living in the Barracks would also provide benefits to the economy because they would be spending money and generating tax revenues within the MSA. There would also be an increase in jobs associated with development of infrastructure upgrades. As such, alternative B is expected to result in beneficial effects to the job market and contribute to a reduction in unemployment.

While the primary land use would be federal use with approximately 29,150 square feet to be used by the National Park Service for offices, maintenance, storage, and curatorial functions, there would be a heavy emphasis on commercial uses with this alternative. In alternative B, the desired mix of uses appropriate to the site include: 36.1% office, 17.3% residential (this could include apartments) 26.1% retail, 7.9% restaurants, and 11.9% public benefit/use.

New uses of the buildings and grounds that invite public use would also contribute positively to the social and recreational environment of the local area, if not southwestern Washington. It is anticipated that people living in nearby communities and counties could visit the Barracks for special events, museum exhibits, or dining and shopping experiences. During times of economic instability, the public's recreational use of national parks increases because of the low cost of access. Over the past several years of economic down turn, park visitation has increased and it is anticipated that the proposed new uses for the Barracks would bring even more visitors to the park and surrounding area.

The reuse plans could also result in a small increase in population in the MSA, as businesses move into the Barracks. This business may bring in staff that may be new to the area or the state, thus increasing the productive tax base of the area.

Because of plans for new offices, businesses, shops, restaurants, art galleries, and residences for the general public, there would be obvious benefits to the local economy from increased employment, and changes to business activity, as well as improvements to the social/recreational environment. The proposed uses under alternative B would also complement the uses of the West Barracks buildings and the rest of the VNHR, both in theme and number of buildings for lease. While there would be some similar uses, a partnership approach can ensure complementary uses of both sites. While there would be residential functions in both the East and West Barracks, there is significant demand for this housing (currently, the VNHR residential properties boast a 90-100% occupancy rate and there is a waiting list for available units). It is anticipated that rentals in the East Barracks would not be numerous enough to negatively affect occupancy rates in the West Barracks. The intent of the combination of uses for alternative B is to create a mixed urban use community where people could eat, work, and recreate. This could have long-term, minor adverse impacts to downtown Vancouver as people might spend more money in the East and South Barracks, but these are expected to be no greater than negligible impact.

As with alternative A, there would be beneficial effects to contemporary tribal communities due to the changes in ownership and management from military to National Park Service. Cultural Resources would be protected under NPS management, in accordance with the NPS Organic Act of 1916 which states resources are to be “preserved for future generations.” There is also the potential for increased interpretation and consultation efforts regarding northwest tribal history.

Cumulative Impacts

Potential mitigation for the CRC project is a Community Connector that would provide a pedestrian friendly crossing over Interstate 5. This project, as well as the completed Land Bridge, contributes beneficial cumulative effects to the project because these connections have, and would, generate synergies that would allow more people to access downtown Vancouver to, and from, the Barracks. Vancouver residents would likely visit the Barracks, spend money, and contribute to the economy and residents or employees of the Barracks would do the same in Vancouver. The City of Vancouver’s City Center vision, which includes redevelopment on the waterfront with Class A office space, is also expected to add socioeconomic benefits to this alternative for similar reasons.

Conclusion

It is expected that, as buildings become rehabilitated and leased, alternative B would have both short and long-term beneficial effects on the socioeconomic climate of the Portland MSA due to increased spending, employment, and local population. There could be both short and long-term negligible adverse impacts to the real estate market of the MSA due to competition with other vacancies, but by the time the buildings are leased, this impact should be barely detectable. Competition between the Barracks building uses and the building uses in Vancouver is also expected to be negligible.

Alternative C (Preferred Alternative) - A Sustainable Public Service Office Campus

The impacts of alternative C are expected to be very similar to alternative B. The differences in effects relate to the different building uses proposed under this alternative. No residential uses are proposed, so this use would not compete with residential leasing in the West Barracks. There would be less retail and restaurants, and the focus of the rehabilitation would be for office space. In this case, there could be even more benefits to the economy of the MSA because people working, recreating, and learning (such as in an environmental learning camp) in the Barracks would travel outside of the Barracks to spend money on food, lodging, etc. Having the National Park Service and other federal agencies as an anchored hub also creates benefits and stability to the campus, as this could attract conference and other special events which would also drive business to the MSA.

The primary land use would be office with approximately 68,342 square feet. In alternative C, the desired mix of uses appropriate to the site include: 40.7% office, 0% residential, 13.3% retail, 2.7% restaurant, and 13.2% public benefit/use.

Cumulative Impacts

The cumulative impacts for alternative C are the same as alternative B.

Conclusion

It is expected that the impacts for alternative C would be the same as alternative B.

Alternative D - An Historic, Educational Campus for All

The impacts of alternative D are expected to be very similar to alternative B. The differences in effects relate to the different building uses proposed under this alternative. No residential uses are proposed, so this use would not compete with residential leasing in the West Barracks. There would be fewer retail and restaurant operations and the focus of the rehabilitation would be to create office space for the National Park Service, Fort Vancouver National Trust and non-profits or community organizations, museums, an environmental learning camp and complementary commercial services. In this scenario, there would be even greater benefits to the economy of the MSA because people working, recreating, and learning (such as in an environmental learning camp) within the Barracks would travel outside of it to spend money on food, lodging, etc. Having the NPS offices as an anchor would add benefits and stability to the campus by attracting conference and other special events which would also drive business to the MSA. The addition of museums and community space also creates benefits to the social environment.

The primary land use would be public benefit with approximately 105,480 square feet. In alternative D, the desired mix of uses appropriate to the site include: 16% NPS Office, 38% Nonprofit/education office, 0% residential, 7% retail, 1% restaurant, and 38% public benefit/use.

Cumulative Impacts

Cumulative impacts are expected to be the same as Alternative B.

Conclusion

It is expected that the impacts of alternative D would be the same as alternative B.

PARK OPERATIONS, FACILITIES AND INFRASTRUCTURE

Several aspects of park operations have the potential to be affected by project implementation, as the National Park Service moves some of its operations to buildings within the East and South Barracks. In order to support this new use, utilities must be improved. Best professional judgment was used to assess impacts.

Guiding Regulations and Policies

NPS *Management Policies 2006* (National Park Service 2006a) detail the basic service-wide policies for implementation of the Organic Act, including NPS park operations. The Management Policies require that park operations achieve certain conditions related to the accomplishment of management goals through environmental leadership and the use of sustainable practices in planning, design siting, construction and maintenance. NPS *Management Policies 2006* also states that “NPS consumptive use of water will be efficient and frugal, especially in water scarce areas,” and mandates the National Park Service to use “biodegradable materials, the reuse and recycling and materials and other appropriate measures to minimize solid waste and conserve natural resources to the greatest extent possible.”

Executive Order 13514 – Federal Leadership in the Environmental, Energy, and Economic Performance states that, “federal agencies shall increase energy efficiency; measure, report, and

reduce their greenhouse gas emissions from direct and indirect activities; conserve and protect water resources through efficiency, reuse, and stormwater management; eliminate waste, recycle, and prevent pollution; leverage agency acquisitions to foster markets for sustainable technologies.”

Assessment Methodology

Operational efficiency refers to adequacy of staffing levels and the quality and effectiveness of the infrastructure used in the operation of the park in order to adequately protect and preserve vital park resources. Impacts for each alternative were evaluated by identifying changes to operations. These effects were compared to existing operations, staffing, and funding.

Discussion of impacts to park operations focuses on (1) ability to protect and preserve resources, (2) staff size, whether staffing needs to be increased or decreased, (3) existing and needed facilities, (4) appropriate utilities (sewer, electric, water, communication) and (5) use of resources. Park staff knowledge was used to evaluate the impacts of each alternative and is based on the current description of park operations presented in the Affected Environment section of this document.

Context of Impact: Park operations impacts were considered within the project area and for Fort Vancouver NHS. Impacts on park operations would result from the need for additional staffing or changes in duties for current staff, changes in funding levels, changes in facilities, and from cost-saving measures associated with new facilities.

Type of Impact: Adverse impacts would increase staffing, operating costs or fuel consumption. Beneficial impacts would decrease these. With beneficial impacts, the efficiency of park operations would also be improved and may lower the overall cost of operation.

Impact Intensities

Negligible: Park operations would not be affected or the effect would not be noticeable or outside normal variability. No detectable changes to utility use patterns on site would occur. The effect on water supply and availability would not be measurable. No effects would occur or the effects to energy requirements and conservation potential would be below or at the level of detection. The effect would be slight and no long-term effects to energy requirements and conservation potential would occur.

Minor: The effect would be detectable but would be of a magnitude that it would not have an appreciable effect on park operations. While possibly noticeable to staff or park partners, it would not be noticeable to the public. Very small-scale effects to utility use patterns may occur.

The effects to energy requirements and conservation potential would be detectable, likely short-term. Any effects would be small and if mitigation were needed to offset potential adverse effects, it would be simple and successful. The effect on water supply and availability would be barely measurable.

Moderate: The effect would be readily apparent, resulting in discernable changes in park operations noticeable to staff, park partners, and possibly to an aware public. Changes to utility use patterns would be readily measurable. The effect on water supply and availability would be noticeable. The effects to energy requirements and conservation potential would be readily apparent and likely long-term. Any effects would result in changes to energy requirements and conservation potential on a local scale. If mitigation is needed to offset potential adverse effects, it could be extensive, but would likely be successful.

Major: The effect would be readily apparent, resulting in substantial changes in park operations in a manner noticeable to staff, park partners, and the public. Changes to utility use may mean limits for the area are close to being reached. The effects to energy requirements and conservation potential would be readily apparent, long-term, and would cause substantial changes to energy requirements and conservation potential conditions in the region. Mitigation measures to offset potential adverse effects would be extensive and their success could not be guaranteed. The effect on water supply and availability would be highly noticeable.

Alternative A – No Action

Under alternative A, the National Park Service and the Fort Vancouver National Trust would move their main administrative office functions to building 991. NPS maintenance and storage functions would likely be relocated to one or more of the buildings in the South Barracks. Currently, the space needs for administrative and maintenance functions are greater than the available space in their current building locations, warranting such a move. The current administrative headquarters building will be converted back to park housing (its original function), while the maintenance structure will be used for interim living history materials storage space. Preservation of historic structures would occur as necessary (i.e., caretaking mode) and include some minimal exterior restoration and rehabilitation to protect building envelopes. Only minimal repairs to the utility systems would occur, also on an as-needed basis. Minimal landscaping, ground and road maintenance would also occur as necessary.

Approximately five additional employees would be needed to maintain the buildings and grounds. These could include a maintenance worker, carpenter, grounds keeper, or site manager. The park is in need of additional space to house staff, museum collections and equipment. Lack of adequate museum space could create an adverse long-term moderate impact to those objects and would inhibit the National Park Service's ability to protect and preserve the resources. Further, lack of rehabilitation and habitation of the historic buildings would also hinder the preservation of those resources, resulting in additional maintenance. The effect on the infrastructure through lack of comprehensive rehabilitation would be measurable, and frequent repairs of an antiquated system could increase park operating costs. Over time, there could be measurable changes to the utilities due to their state of disrepair. This would also contribute to long-term moderate impacts. Water use would be expected to be lower than the existing use.

Some minor upgrades would be made to the buildings for energy conservation, in compliance with Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management) and Executive Order 13514 (Federal Leadership in Environmental, Energy and Economic Performance), but no substantial improvements would be immediately planned to conserve energy or water in the project area. There would continue to be failures in the waterlines, which would result in a loss of water and impacts to water quality.

Cumulative Impacts

The remodel of the Visitor Center would presumably improve NPS operational efficiency, as would the hazardous material clean-up since it would better eliminate hazardous substances from park resources. These projects, when combined with the no action alternative, would have an adverse negligible effect on park operations. The CRC project has already created moderate impacts to park operations since there has been substantial involvement by park staff. This involvement is expected to continue over approximately the next 20 years during the remainder of planning and implementation, leaving the park with fewer resources to fulfill the mission of

the park. As such, the CRC, when combined with the no action alternative, would create both short and long-term moderate adverse cumulative impacts.

Conclusion

Alternative A would have long-term moderate adverse impacts on park operations related to reduction in efficiency caused by lack of repairs and utilization of buildings for park use. Because the National Park Service is assuming ownership of the project area, there would inevitably be an increase in operating costs for the park, which would result in a long-term minor impact on park operations. In addition, under this alternative, it is assumed that the curation facility would not move to building 405 and remain in the currently at-capacity Fur Store facility, leading to short-term minor, and long-term minor to moderate impacts on the museum collection. These impacts are partially off-set by short and long-term benefits to the park by moving maintenance operations into the South Barracks, and the headquarters function to the East Barracks.

Alternative B – A Vibrant, Urban District in a Historic Setting

Facilities and Staff

In alternative B, various buildings in the East and South Barracks would be utilized by the National Park Service and Fort Vancouver National Trust for office space, costume storage, maintenance use, and storage. Building 993 would become the NPS administrative headquarters and building 402 in the South Barracks would become a new maintenance facility. Currently, the space needs for administrative and maintenance functions are greater than the available space in their current building locations, warranting such a move. The current administrative headquarters building will be converted back to park housing (its original function), while the maintenance structure will be used for interim living history materials storage space. Building 405 would be rehabilitated as a regional museum management facility, which is critical to park operations. Use of these buildings would improve operational efficiency as there is currently not adequate space for these functions in the park. The park would be better able to preserve and protect museum collections and ultimately serve the public. Rehabilitation of all of the buildings in the project area would incorporate sustainable design development practices in order to conserve water and energy. The relocation of functions into Barracks buildings, as well as building rehabilitation, would improve efficiency and therefore result in beneficial effects to park operations.

Buildings not occupied by the National Park Service would be leased out for a variety of other functions such as offices, businesses, shops, galleries, etc. It is anticipated that the leasing and management of these building occupants would be by an entity other than the National Park Service, although there would be some NPS oversight and coordination with this entity. Therefore, this aspect of the project would have negligible adverse impacts to park operations due to the extra NPS oversight of the structures.

There are many projects contained within this alternative of the *Environmental Assessment*. Planning and implementing projects requires staff time, expertise, and assistance, which must be taken from daily duties such as visitor contacts, interpretation, resource protection, and safety. The National Park Service would need to hire additional staff to address the expanded park operations, numerous rehabilitations, cultural landscape treatments, and higher volumes of visitors. Anticipated staffing needs total approximately 13 additional positions, including a project manager, a business manager, park safety and environmental specialist, maintenance worker, historical architect, maintenance carpenter, maintenance mechanic, facilities services assistant, grounds worker, collections registrar, archivist, archeology lab director, business specialist, and bringing two existing archaeologist positions and existing maintenance staff to

full time. Maintenance staff, in coordination with cultural resources staff, would be responsible for maintaining the exterior of NPS buildings. It is likely that other maintenance responsibilities could be borne by tenants or lessees, but management of the leased property has not been determined at this time. In this alternative, ornamental plantings (with irrigation) would be more abundant and grounds-keeping could require more staff time. Operating costs are also expected to rise. Long-term minor to moderate adverse effects could result. If funding were not available for this extra staff, the effects to park operations could be moderate, as the extra workload on existing staff would be readily apparent and public services could be affected as well. If funding were available for these positions, the adverse effect would be less appreciable.

During construction of buildings and roads, there would be short-term adverse minor impacts to park operations due to construction management responsibilities, construction detours, etc.

Utilities

There would be substantial upgrades to the utilities in the East and South Barracks, as recommended in the *Schematic Design for Utility Upgrades at Fort Vancouver East and South Barracks* (2010) conducted by Kennedy/Jenks. The existing utilities include water, sanitary sewer, natural gas, storm water, electrical, and telephone. The improvements and upgrades would bring the existing utilities into compliance with current codes and standards, as well as to meet the anticipated LOS. It is the goal of the National Park Service that the City of Vancouver, Clark Public Utilities District, Qwest, and Comcast assume ownership and maintenance of the utility systems within the East and South Barracks. For them to accept ownership, the systems need to be in conformance with their requirements, and with the applicable code and State requirements. The existing sewer system throughout East Barracks is not in a condition that the City of Vancouver would accept ownership. The National Park Service would coordinate with the appropriate operating companies for all of the upgrades to ensure the systems are developed to their standards, and also to reduce impacts to sensitive NPS resources.

The planned future ownership and maintenance of much of the utility systems by the local utility companies would result in beneficial effects to park operations because the park would not be responsible for costly and time-consuming maintenance of the systems. The new systems would presumably have fewer outages and break-downs, and require less maintenance; which would allow the National Park Service to be efficient and spend more time working on other important NPS issues. The failing water lines would be replaced to increase capacity for the potable supply as well as fire suppression.

Ditches and culverts would be enlarged and replaced to improve flow of stormwater, which is anticipated to be less than the current flow because wherever possible the National Park Service will take steps to dispose of a greater amount of storm water on-site, and asphalt would be removed and replaced with permeable surfaces. Runoff from impervious surfaces would be allowed to sheet drain into the permeable soils or may be channeled into natural swales, which would help manage the storm water flow and remove sediments and pollutants before the water enters the storm sewer. There is a collection point in the South Barracks that can be sampled prior to water entering the system when required. All of these improvements to the storm water system would markedly decrease the amount of storm water that enters the storm sewer, reducing the levels of sediment and pollutants that could potentially contaminate downstream aquifers or the City of Vancouver storm water management system.

The improvements and upgrades would bring the existing utilities into compliance with current codes and standards, as well as to meet the anticipated LOS. It is assumed that the water representing the peak building potable water use (excluding that used for irrigation)

enters the waste water system. Undersized wastewater pipes in the East Barracks and for building 410 in the South Barracks would be replaced with 6 in. lateral connected to the 27 in. main to be able to handle all future loads from the Barracks when fully occupied. City of Vancouver did inform the National Park Service that there would be no issues with accepting future use wastewater loads from the East and South Barracks at the Westside Water Reclamation Facility, where wastewater would be treated.

Utility interruptions would be adverse and short-term, but there would be long-term beneficial impacts as a result of the actions proposed in this alternative. There would be no adverse effects to the existing utility systems as they will be upgraded to accommodate the increases in loads.

Use of Resources

Upgrades to energy systems would also occur in this alternative, as the existing systems are antiquated and cannot handle future load requirements. Each building must have a power meter and would likely require upgraded heating, ventilating, and air conditioning, thereby increasing the electrical load; and street lighting would need to be upgraded. Electrical lines would be upgraded and then buried underground. Renewable energy components, such as solar panels, would also be installed where appropriate. Energy efficient fixtures will be included in all building rehabilitation. Improvements to the infrastructure of both Barracks would result in beneficial effects by substantially improving the efficiency of park operations and ultimately reducing operating costs.

Demands on the public water system include domestic, fire suppression, and landscape irrigation uses. The City of Vancouver supplies water for domestic consumption as well as fire suppression. The City has informed the National Park Service that there is no issue with supplying the needed water for future uses of East and South Barracks (Cozby, personal communication, June 20, 2011). The National Park Service has an existing well used for irrigation; this high yield well is in good operating condition and will be able to irrigate any new areas in the Barracks with no loss in pressure (Kennedy/Jenks 2010).

The Kennedy/Jenks *Schematic Design Report for Fort Vancouver National Historic Site Utility System Upgrade Alternatives* (2010), states that the water system upgrades will supply the maximum domestic water demands and provide fire flow capacity for all buildings that meets both National Park Service and City of Vancouver requirements. Domestic use and fire flow was calculated on a building by building basis in accordance with the International Plumbing Code, and International Fire Code, respectively. Estimates for water demand were conservative and flexible to account for changes in building uses throughout the planning process. Therefore, calculations were not completed for the different building uses in each alternative, as the estimated water demands in each of the buildings in the East and South Barracks identified in the Schematic Design Report are assumed to be the maximum water demand needed under any circumstance or occupancy level.

Water use could increase slightly from the existing condition, which has less water use than when the Barracks were fully utilized by the U.S. Army, as the U.S. Army started to scale down its operations in the Barracks since 2000. But overall water use is expected to be no greater with implementation of the *Environmental Assessment* than when the Barracks were at full capacity by the U.S. Army. The *Environmental Assessment* proposes no new buildings or high volume consumptive uses (such as laundries or campground showers). The rehabilitated water system will repair all leaks, and the National Park Service will add water meters, providing for better management of water resources. Irrigation will be minimized to the greatest extent possible.

All buildings would be rehabilitated with energy efficient fixtures such as low flow toilets and faucets, waterless urinals, etc. And, with the inclusion of the mitigation measures below, water will be further conserved.

These water conservation measures are a critical part of the project, not only to comply with NPS policies to be “efficient and frugal” with water use, but also because research has shown that it is likely that Clark County will face an extremely high risk of water shortage by 2050 as a result of global warming (Natural Resources Defense Council, 2010). This analysis concluded that climate change will greatly increase the risk that water supplies will not be able to keep pace with withdrawals in many areas of the United States. With the inclusion of water conservation measures mentioned above and below mitigation measures, the project is expected to have negligible adverse effects on water supply.

Cumulative Impacts

The remodel of the Visitor Center would presumably improve NPS operational efficiency, as would the hazardous material clean-up since it would better eliminate hazardous substance from park resources. This project, when combined with the impacts of alternative B, could have adverse moderate impacts on park operations. The issue of the management of the Pearson Air Museum could also contribute cumulative impacts to the project and could result in additional staff time to address both the short and long-term situation. The CRC project has already created moderate impacts to park operations since there has already been substantial involvement by park staff. This involvement is expected to continue over approximately the next 20 years during the remainder of planning and implementation, leaving the park with fewer resources to fulfill the mission of the park. As such, the CRC, when combined with alternative B, would create both short and long-term moderate to major adverse cumulative impacts. As the Vancouver-Portland area becomes more populated, water demand is anticipated to increase; as such this project could have minor cumulative adverse impacts on water use.

Conclusion

Alternative B is expected to have short-term minor impacts and long-term minor to moderate impacts as well as beneficial impacts. Cumulative impacts are expected to be adverse, and range from minor to major.

Alternative C (Preferred Alternative) - A Sustainable Public Service Office Campus

The effect on park operations for alternative C would be essentially the same as for alternative B. The buildings selected for office space, maintenance use, and storage varies, but the impacts remain the same. Currently, the space needs for administrative and maintenance functions are greater than the available space in their current building locations, warranting such a move. The current administrative headquarters building will be converted back to park housing (its original function), while the maintenance structure will be used for interim living history materials storage space. The buildings not occupied by the National Park Service would be leased out for a variety of other functions such as offices, businesses, shops, galleries, etc. Water use could be less than alternative B since there would be no residential use in the Barracks. The projects under alternative C would require the same level of staff time, expertise, and assistance as alternative B, so additional staff would be needed. For alternative C, the National Park Service estimates that approximately twelve additional staff positions would be needed. The same utility upgrades would occur under all action alternatives as well, resulting in the same effects. Resource use would essentially be the same as alternative B.

Cumulative Impacts

The cumulative impacts would be the same as alternative B.

Conclusion

Alternative C is expected to have short-term minor impacts and long-term moderate impacts as well as beneficial impacts. Cumulative impacts are expected to be adverse, and range from minor to major.

Alternative D - An Historic, Educational Campus for All

The effect on park operations for alternative D would be essentially the same as for alternative B. The buildings selected for office space, maintenance use, and storage varies, but the impacts remain the same. Currently, the space needs for administrative and maintenance functions are greater than the available space in their current building locations, warranting such a move. The current administrative headquarters building will be converted back to park housing (its original function), while the maintenance structure will be used for interim living history materials storage space. The buildings not occupied by the National Park Service would be leased out for a variety of other functions such as offices, businesses, shops, galleries, etc. Water use could be less than alternative B since there would be no residential use in the Barracks. The National Park Service estimates that approximately 15 additional staff would be needed under alternative D. The same utility upgrades would occur under all action alternatives as well, resulting in the same effects.

Cumulative Impacts

The cumulative effects would be the same as alternative B.

Conclusion

Alternative D is expected to have short-term minor impacts and long-term moderate impacts as well as beneficial impacts. Cumulative impacts are expected to be adverse, and range from minor to major.

HUMAN HEALTH, SAFETY, AND THE ENVIRONMENT

The section discusses the impacts on human health and the environment related to the exposure of hazardous substances associated with use resulting from the improvements and rehabilitation proposed in the *Environmental Assessment* alternatives.

Clean-up of the contaminated sites is a separate project, and remediation of the property would occur in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act. A plan would be developed that would outline the strategy for the remediation; this would likely prioritize immediate hazards and dangers to the public. The National Park Service would not implement elements of the alternative in areas affected by contamination until the U.S. government has undertaken necessary remediation in accordance with applicable laws regarding health, safety and the environment.

Assessment Methodology

Duration

Short-term impacts are temporary, transitional, or construction-related impacts associated with project activities.

Long-term impacts are typically those effects that would last several years or more or would be permanent.

Context of Impact

Local: Vancouver National Historic Reserve

Regional: Clark County

Impact Intensities

Negligible: Public health and safety would not be affected, or the effects would be at low levels of detection and would not have an appreciable effect on public health and safety. The impact to visitor safety would not be measurable or perceptible.

Minor: The effect would be detectable and would likely be short-term, but would not have an appreciable effect on public health and safety. If mitigation were needed, it would be relatively simple and would likely be successful. The impact to visitor safety would be measurable or perceptible, but it would be limited to a relatively small number of visitors at localized areas. Impacts to visitor safety might be realized through a minor increase in the potential for visitor conflicts in current accident areas.

Moderate: The effects would be readily apparent and long-term, and would result in substantial, noticeable effects to public health and safety on a local scale. Mitigation measures would probably be necessary and would likely be successful. The impact to visitor safety would be sufficient to cause a change in accident rates at existing low accident locations or create the potential for additional visitor conflicts in areas that currently do not exhibit noticeable accident trends.

Major: The effects would be readily apparent and long-term, and would result in substantial, noticeable effects to public health and safety on a regional scale. Extensive mitigation measures would be needed, and their success would not be guaranteed. The impact to visitor safety would be substantial. Accident rates in areas usually limited to low accident potential are expected to substantially increase in the short and long-term.

Alternative A – No Action

Under this alternative, the National Park Service would abate health and safety issues within the buildings as part of rehabilitation efforts, and prior to the buildings' reuse. As part of building rehabilitation, the construction contractor would be responsible for conducting testing for lead-based paint either before or concurrent with construction activities. If found, any necessary cleanup would be done either before or concurrent with construction activities that would disturb these materials. If a building is found to contain friable asbestos, the material should either be sealed or removed by qualified contractors.

During building rehabilitation, construction workers would implement BMPs to avoid exposure to hazardous levels of lead-based paint and asbestos. The BMPs (described below) address worker safety hazards that may arise during renovation, including respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, and training, among other BMPs. Abatement and remediation crews should experience no adverse impacts when the project is run properly and the long-term effect with the removal of these materials would be beneficial. Specific BMPs are as follows:

- Comply with all applicable regulations and policies during the removal and remediation of asbestos and lead paint.

- Provide on-site air monitoring during all abatement activities and perimeter monitoring to ensure no contamination of work or adjacent areas.

Major infrastructure upgrades would not occur and as such, water lines would not be replaced to meet fire suppression standards. Fire detection systems would be installed according to building codes, as would all other life safety code requirements within the buildings. This would result in a long-term moderate adverse impact to public health and safety. Police and fire services would still be provided by the City of Vancouver.

Accidental leaks or spills of hazardous materials used during construction activities (oil, grease, fuels, and chemicals such as those needed to remove lead paint), could potentially contaminate the soil or groundwater, creating a short-term minor adverse effect. To mitigate this effect, contractors would be required to develop a Spill Prevention and Response Plan prior to commencement of construction activities to contain and/or clean up any stored or spilled fuels or chemicals and prevent oil, grease, or fuel leaks from equipment.

Because hazardous substances and building code issues would be resolved prior to use by staff or the public, this alternative would result in negligible impacts to public health and safety. If spills or contamination were to occur during construction, mitigation measures would be implemented to ensure the area is blocked off and cleaned up immediately; this short-term negligible adverse impact would be barely perceptible to the public.

Cumulative Impacts

The required clean-up of contaminated sites in the East and South Barracks is a separate project, which would remediate hazardous conditions in the project area. A plan would be developed that would outline the strategy for remediation; this would prioritize immediate hazards and dangers to the public. This effect, when combined with the no action alternative, would result in long-term beneficial effects on human health, safety and the environment.

Conclusion

There would be short-term minor adverse impacts as a result of possible leaks or spills during construction and long-term moderate adverse impacts from the lack of water improvements for fire suppression. There would be cumulative long-term beneficial impacts to human health and safety.

Alternative B – A Vibrant, Urban District in a Historic Setting

The analysis for alternative B is the same as alternative A, except that in alternative B, there would be repairs to the potable water lines. This improvement would provide the East and South Barracks with sufficient water pressure for fire suppression, resulting in a long-term beneficial effect. As determined by the Level II ESA, there are significantly high levels of lead in the soils surrounding most of the historic structures in the East Barracks, apparently from lead based paint peeling off of the exteriors of these structures. As recommended by the Level II ESA, any soil disturbance in these areas necessary for the upgrades to the utility system should not be performed other than by properly trained personnel, and lead clean up procedures ahead of the utility upgrades should be considered. This improvement would provide the East and South Barracks with sufficient water pressure for fire suppression, resulting in a long-term beneficial effect.

This alternative could also contribute to benefits to public health, due to the increased recreational opportunities from expanded trail networks and pedestrian walkways.

Cumulative Impacts

The analysis for alternative B is the same as alternative A.

Conclusion

There would be short-term minor adverse impacts as a result of possible leaks or spills during construction and long-term beneficial effects from the water improvements for fire suppression. There would be cumulative long-term beneficial impacts to human health and safety.

Alternative C (Preferred Alternative) - A Sustainable Public Service Office Campus

The analysis for alternative C is the same as alternative B.

Cumulative Impacts

The analysis for alternative B is the same as alternative A.

Conclusion

The analysis for alternative C is the same as alternative B.

Alternative D - An Historic, Educational Campus for All

The analysis for alternative C is the same as alternative B.

Cumulative Impacts

The analysis for alternative C is the same as alternative B.

Conclusion

The analysis for alternative C is the same as alternative B.

Chapter 5 Consultation and Coordination



*Photo Courtesy of
National Park Service*

CHAPTER 5

Consultation and Coordination

 This chapter describes the consultation and coordination efforts conducted by the National Park Service in preparation of this *Environmental Assessment*.

Project Scoping

Project scoping is designed to gather early input in the NEPA process. These efforts include both internal scoping and public involvement. In addition to notifying interested parties about the proposed project, the purpose of scoping is to solicit input on the conceptual range of alternatives being contemplated and to identify issues and concerns that should be studied in the environmental document.

Internal Scoping

Discussion of ideas related to the relinquishment of the East and South Barracks from the U.S. Army to the National Park Service has been ongoing since August of 2005, when the Vancouver Barracks was listed on the Department of Defense's BRAC list. Starting in the spring of 2006, National Park Service and U.S. Army representatives met at least quarterly to discuss an orderly transition of the property from the Department of Defense to the Department of the Interior.

In addition, an IDT consisting of NPS representatives was formed to provide guidance for the *Environmental Assessment*. In 2009 the IDT developed a set of planning guidelines for the development of alternatives for the *Environmental Assessment* (see the Alternatives Development Process section of the Alternatives chapter for more detail).

In October 2009, the NPS IDT members participated in an internal alternatives development workshop from which alternative concepts for campus improvements and expansion were drafted. These concepts were further refined and approved for presentation during public scoping which was held in April 2010 (see Public Scoping below). In August 2010, an internal IDT workshop was held to further refine the plan alternatives. Comments obtained through public scoping efforts (see Public Scoping below) were considered in this effort. As a result, three action alternatives were identified for analysis.

In January 2011, the NPS IDT used a decision making process called Choosing by Advantages to help make value-based decisions and identify a preferred alternative. Attendees of this workshop (Fort Vancouver staff, NPS Denver Service Center staff, NPS Pacific West Regional Office staff, City of Vancouver representatives, Washington State Historical Society representatives, Fort Vancouver National Site Trust representatives, and consultants), worked together to develop the preferred alternative.

Public Scoping

To ensure a high degree of transparency and involvement from the public, the National Park Service announced opportunities to participate in the planning process in many different ways. A scoping newsletter and a postcard were sent in March 2010 via direct mail and email to park

visitors, regulatory agencies, park neighbors and other interested parties. These mailings were meant to introduce the project, announce public meetings and initiate the formal public scoping period. A press release was also issued, and meetings were advertised via local media outlets and social media tools such as Twitter. Comments were also solicited on the NPS Planning, Environment and Public Comment website at <http://parkplanning.nps.gov/fova> and www.nps.gov/fova, and comment cards were made available at public meetings and at the Visitor Center for Fort Vancouver NHS.

The public scoping comment period ran from March 20 through May 1, 2010, during which time open houses and solicitation of public comments were designed to gather early input on the public's ideas and thoughts on the project and the range of conceptual alternatives being considered (Figure 25). Information from these studies and data collection efforts was used to refine the plan alternatives.



Figure 25. Public scoping meetings in April 2010 allowed NPS personnel to gather the public's ideas on what this plan should address. (National Park Service)

The National Park Service conducted several scoping meetings in April 2010 to gather the public's ideas on what the plan should address. On April 6, 2010, an agency scoping meeting was held to collect input from the Washington DAHP, as well as from tribes affiliated with the Fort Vancouver NHS. Attendees at this meeting included NPS staff, representatives from the Washington DAHP, and five participants with tribal or Hawaiian ancestry. At a later date, NPS staff also attended a meeting with the Associated Tribes of Northwest Indians in order to discuss the plan and gather additional input from tribes.

On April 7, 2010 the National Park Service hosted two public scoping meetings at the VNHR, which were designed to promote a high level of interaction between the public and planning team personnel. NPS staff set up listening stations at the meetings where the background, issues, vision and goals for this project could be discussed in depth. Maps, posters and handouts presented this material in a visual format and helped guide discussion. These materials are available online at <http://parkplanning.nps.gov/fova>. NPS staff also led walking tours of the project site in order to familiarize attendees with the East and South Barracks.

Attendance at these public meetings mostly consisted of members of the local Vancouver community, as well as some from outlying areas in the region. Approximately 70 people attended the afternoon meeting, and 60 people attended the evening meeting. In addition, local journalists covered the meetings, resulting in several articles in Vancouver's local newspaper *The Columbian*.

To help solicit comments from the public, the planning team developed four questions (see below) about the *Environmental Assessment*. The questions were presented on comment cards, in the public scoping newsletter, online at the project website, and at public scoping meetings. In response, 59 individuals or organizations submitted comments online or in writing. Among these respondents were members of nine organizations, including the Vancouver Bridge Club, Vancouver Police, Lewis and Clark Young Marines, Southwest Washington Royal Scottish Country Dance Society, Ft. Vancouver Pipe Band, Vancouver USA Scottish Dancers, Veterans of Foreign Wars Vancouver Post 7824, National Parks Conservation Association, and Métis Consulting, LLC.

The summary below synthesizes comments submitted online and via email, in hard copy, and at the public scoping meeting. A more comprehensive summary of scoping comments is posted online at <http://www.parkplanning.nps.gov/projectHome.cfm?projectID=30274>.

1. What do you like best about the East and South Barracks?

Generally speaking, respondents described the historic character of the building and grounds as a favorite aspect of the Barracks. Many also mentioned the Barracks' close proximity to the Columbia River and downtown Vancouver as qualities they like best about the barracks. The open green spaces of Fort Vancouver NHS are also cherished. One respondent greatly appreciates the periodic archeological digs carried out in the area.

2. What opportunities do you see for these areas?

Almost all comments included suggestions for future use of the Barracks buildings. Many spoke about museums and collections space, including popular support for the idea of a military museum located on-site. Many comments also expressed a clear desire for expanded interpretation in general and included specific recommendations for increased interpretation of American Indian history and culture. One comment recommended involving the Métis people in this process, as well as in other work around the Fort Vancouver NHS.

Other popular suggestions for adaptive re-use of buildings included art galleries and studios, performance venues, restaurants, community spaces, educational facilities, offices and facilities for non-profits, and a hotel or hostel. Some expressed concern that too much commercial development might overpower the quiet, historic site. Other comments suggested that all Barracks structures should be removed altogether, or that buildings and infrastructure located

within the HBC Cemetery be removed to restore a park-like setting. At the same time, there was also strong support for adapting the area to become a conference retreat center similar to Fort Worden State Park in Port Townsend, Washington.

Ideas on how to address the building grounds were also submitted, such as restoring and maintaining the cultural landscape, adding an off-leash dog park and designing more walking paths. Suggestions also addressed access and circulation issues, such as adding parking at the MASH unit site, reinstating historic circulation patterns and materials, and improving public transportation to, from, and around the site.

3. What issues do you think this plan should address?

There were many opinions on what the plan should explore. Most commonly, these included the preservation of historic and cultural resources, funding for implementation, proposed management structures for the transfer and management of the Barracks, public use of the Barracks, and the development character of the East and South Barracks as it relates to the rest of the VNHR. Several comments also addressed management and interpretation of the HBC Cemetery. Others suggested that the plan should address interpretation, parking, wayfinding, stormwater management, and the sustainability of aging buildings. One respondent reiterated the need for careful research and analysis of cultural, natural and economic conditions as alternatives are developed and evaluated. This level of analysis is required by the NEPA and common practice for the National Park Service.

4. What challenges should we keep in mind?

The comment analysis revealed several concerns held by respondents. The most common concern involved costs and funding for implementation, especially with respect to the aging condition of historic structures and the advantages and disadvantages of rehabilitation. At times, these concerns were coupled with questions about the long-term viability of proposed uses, as well as current and future market conditions of the surrounding neighborhoods and downtown Vancouver. The second most common concern involved the desire to see the historic character of the Barracks upheld and enhanced through the rehabilitation of the project area. Many also felt that the proposed developments along Interstate 5 should be closely monitored and considered in the development of the *Environmental Assessment*. Others brought up challenges related to the disorganized layout of the site, the need for additional parking, and the need to balance new uses with desires and needs of American Indian groups affiliated with the Fort Vancouver NHS.

Agency Scoping

The National Park Service prepared scoping packets which included descriptions of the conceptual alternatives, issues identified for study, the draft environmental screening form, and the dates of public scoping for interested or affected public agencies. No agency comments were received during initial public scoping.

A list of regulatory and/or interested agencies included in this scoping notification is presented in Table 27. Letters to the Washington DAHP and the ACHP informing them of early planning efforts can be accessed from the NPS website.

Table 27. List of Regulatory and Interested Agencies Consulted During the Development of this *Environmental Assessment*

Agency	Address	City	State	Zip Code
Dept. of Archeology and Historic Preservation	1063 South Capitol Way, Suite 106	Olympia	WA	98501
US Army Corps of Engineers-Environmental Quality	PO Box 2946	Portland	OR	97208
US Fish & Wildlife Service	2600 S.E. 98th Ave, Ste 100	Portland	OR	97266
Environmental Protection Agency-Region 10	1200 Sixth Avenue	Seattle	WA	98101
WA Dept. of Ecology, Water Quality Program	PO Box 47600	Olympia	WA	98504
WA Department of Fish And Wildlife	1111 Washington St. SE	Olympia	WA	98501
US Coast Guard, Sector Portland Oregon	6767 N Basin Ave	Portland	OR	97217
WA State Dept. of Natural Resources	PO Box 47000, 1111 Washington Street SE	Olympia	WA	98504
WA State Dept. of Transportation	PO Box 47331	Olympia	WA	98504
Washington Department of Fish And Wildlife Region 5	2108 Grand Boulevard	Vancouver	WA	98661

Agency Consultation

State Historic Preservation Office

Section 106 of the NHPA requires federal agencies, or those they fund or permit, to consider the effects of their actions on the properties that may be eligible for listing or are listed in the NRHP. As mentioned above, the NPS conducted an agency scoping meeting with the Washington DAHP. A representative from the Washington DAHP attended the first internal scoping meeting for the project on February 8, 2010. The DAHP was also sent a copy of the administrative draft *Environmental Assessment* to provide early input. The National Park Service will continue to coordinate with the Washington DAHP as part of the environmental compliance effort, including preparation of a draft Programmatic Agreement between the National Park Service and the SHPO regarding the project. The Programmatic Agreement stipulates the procedures for compliance with Section 106 of the NHPA. The Programmatic Agreement, once fully executed, evidences the park's compliance with Section 106 of the NHPA and shall govern the undertaking (36 CFR 800.6). The PA establishes the procedures for conducting further efforts to inventory archeological resources, requirements for American Indian consultation, procedures for consultation with the Washington DAHP, procedures for development of strategies to avoid and protect resources, and reporting and monitoring requirements. This Programmatic Agreement will be completed concurrent with the completion of the *Environmental Assessment*.

American Indian Consultation

As stated earlier in this document, the National Park Service regularly consults with 26 federally recognized tribes at Fort Vancouver NHS. As part of the efforts of developing this *Environmental Assessment*, the National Park Service has hosted several tribal consultation meetings regarding the future of the East and South Barracks. The first of these agency scoping meetings occurred on February 26, 2010. Representatives of the Confederated Tribes of the Grand Ronde Indians of Oregon, the Confederated Tribes of the Warm Springs, the Umatilla Tribe of Indians, the Spokane Tribe, the Cowlitz Tribe, the Yakama Tribe, the Nisqually Tribe, and local representatives of Native Hawaiian ancestry all attended this meeting. In May of 2010, NPS staff also attended a meeting with the Affiliated Tribes of Northwest Indians in Grand Ronde, Oregon, in order to discuss the plan and gather additional input from tribes. An additional scoping meeting occurred on April 25, 2011, with representatives of the Confederated Tribes of the Grand Ronde Indians of Oregon, the Confederated Tribes of the Warm Springs, the Umatilla Tribe of Indians, the Spokane Tribe, the Cowlitz Tribe, the Yakama Tribe, the Nisqually Tribe, and local representatives of Native Hawaiian ancestry attending this meeting. These consulting tribes were also sent a copy of the Administrative Draft of this *Environmental Assessment* to provide input during the summer of 2011. Parties who provided comments were included as signatory parties in the Programmatic Agreement between the National Park Service and the Washington DAHP for future Section 106 of the NHPA activities on the East and South Barracks property.

U.S. Fish and Wildlife Service

The Endangered Species Act of 1973 requires that each federal agency ensure that proposed agency actions do not jeopardize the continued existence of a listed species or result in destruction or adverse impact to designated critical habitat. Fort Vancouver NHS received a Habitat and Species Map from the Washington Department of Fish and Wildlife. The National Park Service then conducted a natural resource survey to determine the presence of any special status species that had potential to occur at the site. There are no threatened or endangered species in the area that would be affected by the project. The only species of concern is the Oregon white oak (*Quercus garryana*), or Garry oaks, which are defined as a priority habitat by Washington Department of Natural Resources. These trees will be retained for their value as wildlife habitat and protected during any construction activities. Because all Oregon white oak trees will be maintained in their current condition and there will be no impact to the grove, the National Park Service has made a determination of no effect to this species. The National Park Service will send a copy of this *Environmental Assessment*, along with notification of the no effect determination, to the Washington Department of Fish and Wildlife and the U.S Fish and Wildlife Service.

List of Environmental Assessment Preparers and Contributors

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NPS Washington Support Office

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List of Recipients of the *Environmental Assessment*

The *Environmental Assessment* will be distributed to the list of agencies noted in Table 26 that were sent copies of the scoping notice and newsletter. In addition, a notice of availability of the *Environmental Assessment* will be sent to a mailing list of 509 individuals and specific organizations and groups:

The *Environmental Assessment* will be available at <http://parkplanning.nps.gov/fova> and hard copies will be available for viewing at the Fort Vancouver NHS Visitor Center as well as:

Vancouver Community Library
901 C Street
Vancouver, WA 98660

Vancouver Mall Community Library
8700 NE Vancouver Mall Drive, Suite 285
Vancouver, WA 98662

Multnomah County Central Library
801 S.W. 10th Avenue
Portland, OR 97205

Oregon City Public Library
606 John Adams
Oregon City, OR 97045

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