1st Special Forces Group

Joint Base Lewis-McChord

Master Plan

September 2011

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Acronyms and Terms Used in this Master Plan

AT/FP= Anti-Terrorism Force Protection
BN= Battalion
BOF= Battalion Operations Facility (also BN Ops)
COF= Company Operations Facility (also Co Ops)
CRTF= Combat Readiness Training Facility
CU= Copper
DES= Division of Emergency Services
DESB= Deployment Storage Buildings
DFAC= Dining Facility
DoD= US Department of Defense
DPW= Department of Public Works
ED= Environmental Division
FY= Fiscal Year
GHQ= Group Headquarters
GSB= Group Support Battalion
GSTB= Group Special Troop Battalion
HQ= Headquarters
JBLM= Joint Base Lewis-McChord
MAROPS= Maritime Operations
MCA= Military Construction Army
MH= Manhole
MWD= Military Working Dog (Kennel)
NEC= Network Enterprise Center
POV= Privately Owned Vehicle
PT= Physical Training
RSD= Regional Support Detachment
SCIF= Sensitive Compartmented Information Facility
SFG= Special Forces Group
SOF= Special Operation Forces
SSA= Supply and Support Activity
Telcom= Telecommunications
TEMF= Tactical Equipment Maintenance Facility
THOR3= Physical Fitness Training Facility
TSC= Tech Support Company
TUAV= Tactical Unmanned Aerial Vehicle
UG= Underground
USACE= US Army Corps of Engineers
USASOC= US Army Special Operations Command
YTC= Yakima Training Center

Running with Troops

Acknowledgements

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Executive Summary

The facilities of the 1st Special Forces Group (SFG) currently house three battalions of special operations forces, including space for training and operations support, vehicles and equipment, administrative functions, barracks, and dining. With the exception of recently completed projects, the facilities are outdated, many do not meet life safety requirements, and additional facilities are needed to support a fourth battalion.

The US Army Special Operations Command (USASOC) has identified 21 new projects that the 1st SFG anticipates to receive between FY 2012 and FY 2019. Anticipating these new projects, 1st SFG requested the development of a master plan to provide recommendations for long-range land use planning, mission-essential construction requirements, conceptual site development, and capital improvements.

The development of the master plan included design workshops and meetings involving representatives of the 1st SFG, the USASOC, Joint Base Lewis-McChord (JBLM) Department of Public Works, US Army Corps of Engineers, Seattle District (USACE), and the engineering and planning consultants. The project team analyzed the West and East compounds, developed goals and objectives, delineated the program and phasing, developed and evaluated alternatives, and submitted the recommended plan for refinement and review by the JBLM Command. The interactive process enabled the significant dialogue that occurred between all key parties to shape the design solution.

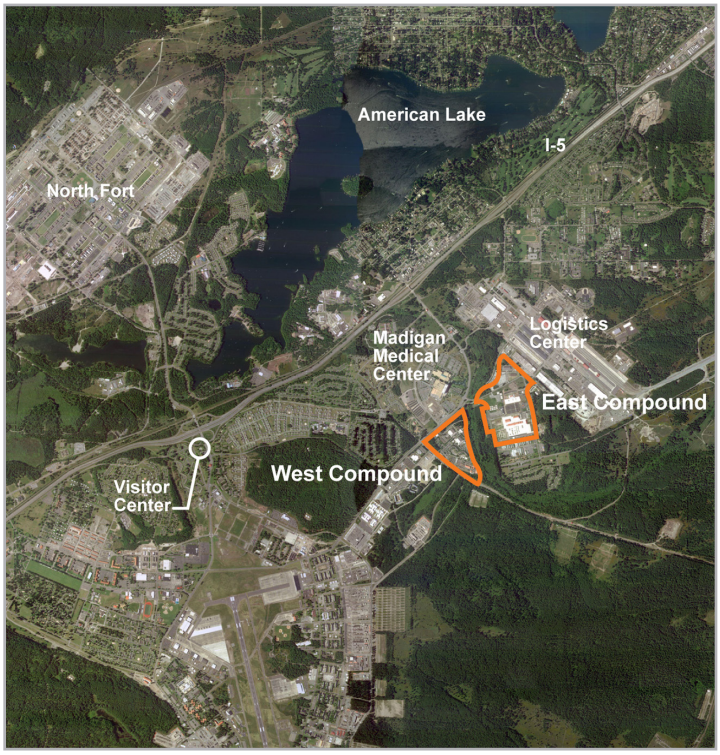


Figure 1. Vicinity Map

This master plan is a road map for the 1st SFG that shows how best to integrate and phase new construction, improve the security perimeter, and enhance functional relationships between buildings while meeting sustainable design mandates and reserving space for future growth. The plan also incorporates many qualitative improvements with the development of a walkable campus environment and a network of landscaped open spaces, running trails, and a parcourse for physical training (PT).

The master plan increases capacity at the site while relocating and consolidating functions so that most administrative, housing, and personnel support facilities are located on the West Compound, while most battalion operations and supporting maintenance facilities are located on the East Compound.

Murray Creek and the vegetated buffer that has been established on either side of the creek divide the 1st SFG installation. This division challenges operational efficiency and security. A pedestrian, bicycle, and vehicle bridge is desired to reduce travel time between the West and East compounds so that the 1st SFG can maintain a secure perimeter in the event of a security lockdown.

The existing Madigan Bypass on the East Compound represents another site challenge: it separates the northeast portion of the site from the rest of the 1st SFG installation, undermining security and direct movement of personnel between facilities. The master plan proposes a new alignment of the Madigan Bypass to eliminate this conflict and use the site area more efficiently.

The master plan addresses phasing challenges that include coordinating the timing of demolition/construction, necessary personnel relocations, projected mission changes and/or group functional additions within the structure of the 1st SFG, and phasing additional parking requirements within the site constraints.

Introduction

The master plan for 1st Special Forces Group (SFG) is developed at the request and direction of the United States Army Special Operations Command (USASOC) with requirements and oversight by the Joint Base Lewis-McChord (JBLM) Department of Public Works (DPW) and the US Army Corps of Engineers, Seattle District (USACE).

The 1st SFG, along with JBLM itself, is experiencing dramatic growth. A separate master planning effort was undertaken to guide the development and growth of the West and East compounds because the 1st SFG is a distinct and separate facility within JBLM. The vision, goals, and objectives of the master plan derive from the Fort Lewis Master Plan: Long-Range Component (the Fort Lewis master plan). The vision statement for the 1st SFG master plan reads, "In support of the mission, soldiers, and families, we will create a sustainable compound with a walkable campus environment that is a great place to live, work and train."

Twenty-one new projects have been identified by the USASOC for the 1st SFG between FY 2012 and FY 2019. An additional 10 projects are being developed through FY2030. Anticipating these new projects, 1st SFG requested the development of a master plan for the West and East compounds that would plan long-range land uses, formulate mission-essential construction requirements and related asset facilities, and recommend capital improvements (Figure 1). For the 1st SFG, the master plan is a road map that shows how new construction can best be integrated and phased into the already constrained West and East compounds.

> **The vision:** a sustainable compound with a walkable campus environment that is a great place for soldiers and families to live, work, and train in support of our mission

East Compound Bird's-Eye View Looking South

Master Plan Development

The development of the master plan included design workshops and meetings involving representatives of the 1st SFG, the USASOC, JBLM DPW, USACE, and the engineering and planning consultants.

The project team analyzed the West and East compounds, developed goals and objectives, delineated the program and phasing, developed and evaluated alternatives, and submitted the recommended plan for refinement and review by the JBLM Command. (Appendices A-C consists of meeting summaries.)

Critical Success Factors

To be successful, the site plan must:

- Take a long-term perspective—The site plan must be flexible, adaptable, and malleable without reworking roadways and utilities, and buildings must be planned to accommodate future uses.
- Provide room to grow—Site planning must promote compact development that reserves sites for future undefined needs.
- Be clear and "actionable"—The site plan aligns with standards and has buy-in from the installation and a phasing strategy for buildings and utilities that works.
- Represent a win-win strategy—The plan must support the needs of JBLM and the 1st SFG.

Master Plan Concept

This master plan is a road map for the 1st SFG that shows how best to integrate and phase new construction, improve the security perimeter, and enhance functional relationships between buildings while meeting sustainable design mandates and reserving space for future growth. The plan also incorporates many qualitative improvements with the development of a walkable campus environment and a network of landscaped open spaces, running trails, and a parcourse for physical training (PT).

> **Practical,** doable with room for long-term growth

The master plan increases capacity at the site while relocating and consolidating functions so that most administrative, housing, and personnel support facilities are located on the West Compound, while most battalion operations and supporting maintenance facilities are located on the East Compound.

Primary West Compound buildings are organized around a large central green and a ceremonial drop-off area at the new Group Headquarters Building (Group HQ). East Compound buildings are organized to maximize efficient use of land area and provide functional adjacencies between uses.

To encourage walking between buildings and build a sense of community, the plan is compact and clusters Group HQ, the barracks, and the Dining Facility (DFAC). Secondary green spaces are provided adjacent to the Barracks for PT and recreation.

Development Challenges

Murray Creek and the vegetated buffer that has been established on either side of the creek divide the 1st SFG installation into West and East compounds. This division challenges operational efficiency and security. A pedestrian, bicycle, and vehicle bridge is desired to reduce travel time between the West and East compounds so that the 1st SFG can maintain a secure perimeter in the event of a security lockdown.

The existing Madigan Bypass represents another site challenge: it separates the northeast portion of the site from the rest of the 1st SFG installation, undermining security and direct movement of personnel between facilities. The master plan proposes a new alignment of the Madigan Bypass to eliminate this conflict and use the site area more efficiently.

The master plan addresses phasing challenges that include coordinating the timing of demolition/construction, necessary personnel relocations, projected mission changes and/or group functional additions within the structure of the 1st SFG, and phasing additional parking requirements within the site constraints.

Program and Phasing

1st SFG facilities will be developed in phases, beginning with work currently programmed for FY12 and FY13 on the East Compound and the roadway, parking and infrastructure work associated with it. Future phases are identified based on current need and funding projections.

- Phase 1 includes currently programmed building projects: a Company Operations Facility (COF), Battalion Operations Facility (BOF), Battalion Tactical Equipment Maintenance Facility (BN TEMF), Military Working Dog (MWD) Kennel, and Tactical Unmanned Aerial Vehicle (TUAV) facility on the east side of the campus, and related site work. Phase 1 also includes roadwork to complete the Madigan Bypass realignment, miscellaneous upgrades on the West Compound including Data Center, rigging facility upgrades, and a PT trail along Murray Creek.
- Phase 2 includes three new buildings: Group Special Troop Battalion (GSTB) BOF, GSTB TEMF, and a Forward Support Company (FSC) of Group Support Battalion (GSB) Band 5 COFand associated hardstand and parking on the East Compound. These facilities must be completed before West Compound construction can begin.
- Phase 3 includes six new buildings: a Group HQ, a Combat Readiness Training Facility/Physical Fitness Training Facility (CRTF/THOR3), two barracks, a DFAC, a community center and associated infrastructure, parking, and landscaping on the West Compound.
- Phase 4 includes two new buildings: a Special Operations Force (SOF) Deployment Warehouse and SOF Logistics Facility on the East Compound.
- Future phase development capacity is an important concept in the master plan. A BOF complex and BN TEMF for 1st Battalion and hypothetical future building footprints have been identified to illustrate and test future development potential on the West Compound. A bridge between the West and East compounds is also shown as a future requirement that is highly desired to improve connectivity within the secure perimeter of the 1st SFG facilities. Keeler Gym will be removed and replaced with parking.

West Compound Bird's-Eye View Looking South

Site Analysis

The West and East compounds are separated by Murray Creek, with access between them occurring on general roadways, i.e., there is no direct access between the compounds.

Existing Site Conditions

The West Compound is bordered by Transmission Line Road to the west, Murray Creek to the east and south, and Jackson Avenue to the north. The tank trail is situated between the West Compound and Jackson Avenue. The West Compound can be accessed from Transmission Line Road at Cramer and Ruddy avenues, with the main access from Cramer Avenue. The site can also be accessed from the north off the tank trail adjacent to Jackson Avenue. This access is gated and is used only for construction and maintenance activities; it is secured by SFG. The West Compound has an existing system of internal roadways composed of Sansone Street and Cramer and Ruddy avenues as the main loop system, with Kalani Avenue and Cordell Street as side streets. The site is heavily buffered by trees and vegetation along Murray Creek to the east, to the north along Jackson Avenue, and in the southwest corner of the property.

Dense Trees between West and East Compounds

The East Compound was developed in the 1940s, and many of the original structures have been removed. The compound is bordered by Wilson Avenue and Murray Creek to the west, McKinley Avenue to the east, the tank trail to the north, and East/West Hayes Street to the south. The Madigan Bypass bisects the northern portion of the site. Further south is Madigan Hospital property, including staff housing. Primary access into the East Compound is from Madigan Bypass onto Wilson Avenue. Wilson and McKinley Avenue are used by hospital staff to access housing to the south and must remain open to travel. Pedestrian routes and bikeways are identified within the Fort Lewis master plan only on Transmission Line Road on the West Compound and are limited to Wilson and McKinley avenues and the Madigan Bypass on the East Compound.

Madigan Bypass is a main route used by JBLM travelers to access the Logistics Center to the east. A Madigan Bypass realignment study was conducted to determine if this east/west corridor could be relocated outside the East Compound or modified in its current location to better accommodate future SFG development, and the realignment of the bypass is discussed in more detail in the roadway analysis section.

The topography of the compounds is relatively flat. The northern end of the West Compound sits approximately 16 feet higher in elevation than the East Compound because of the higher bank on the west side of Murray Creek. The difference in elevation between the sites diminishes as one moves south along the creek bank. The East Compound has relatively few trees, while there are several large groves of mature trees throughout the West Compound. By all indications, soils drain very well in both compounds and should be adequate for infiltrating stormwater on future projects. The East Compound has a seasonally high groundwater table. JBLM staff states that groundwater in the East Compound may rise within 10 feet of the ground surface. According to the Washington State Department of Ecology's Stormwater Management Manual for Western Washington (stormwater manual), which has been adopted by JBLM, the lowest point in an infiltration facility must be 5 feet above the seasonally high groundwater table. Any geotechnical work conducted for building foundations should identify the depth to groundwater.

The Fort Lewis master plan identifies open space and parks space along the Murray Creek corridor; open space is also identified along the northern boundary of the West Compound, where the large stand of trees buffers the compound from Jackson Avenue and the tank trail.

Site Analysis

The site analysis diagrams that follow include JBLM context, existing buildings, open space and vegetation, and circulation. The context plan (Figure 2) shows the location of the 1st SFG facilities in relationship to the surrounding area. The West Compound is south of the Madigan Medical Center, and the East Compound is located south of the Logistics Center. The map of existing vegetation and topography (Figure 3) illustrates the extent of the Murray Creek corridor to be retained, the buffer of trees and vegetation on the north and west perimeters of the West Compound, and the existing street trees on Sansone Street and Cramer Avenue. The map of existing facilities (Figure 4) notes the locations and current uses of 1st SFG buildings and the locations of entries to SFG facilities. Existing buildings to remain or be removed are shown on Figure 5, and discussed in more detail in Appendix D. The existing circulation map includes three internal streets on the West Compound which will be retained—Sansone Street and Cramer and Ruddy avenues—largely because there are existing utilities in their corridors. One internal street on the East Compound—Garfield Street—will be retained (Figure 6).

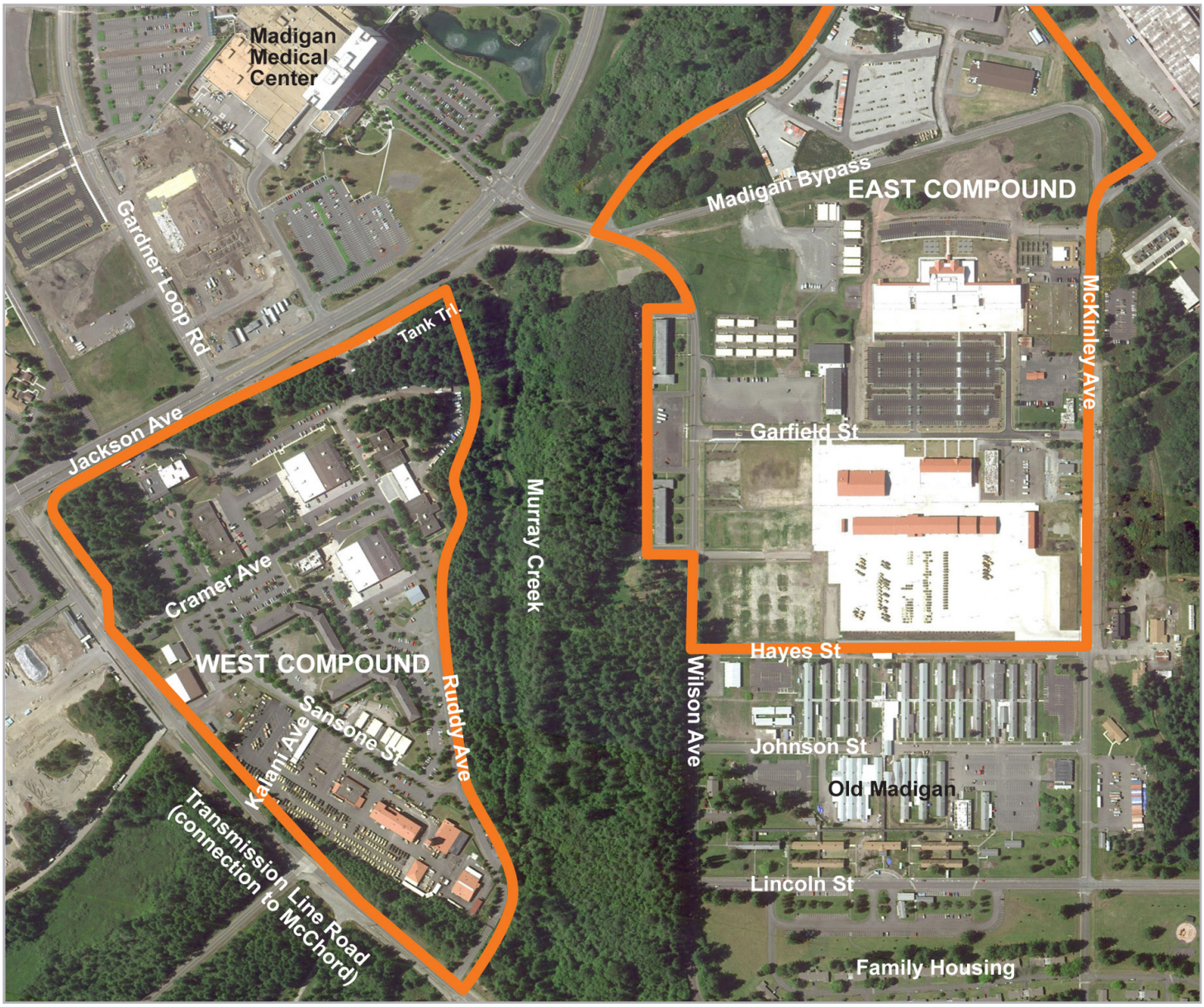


Figure 2. Context Plan

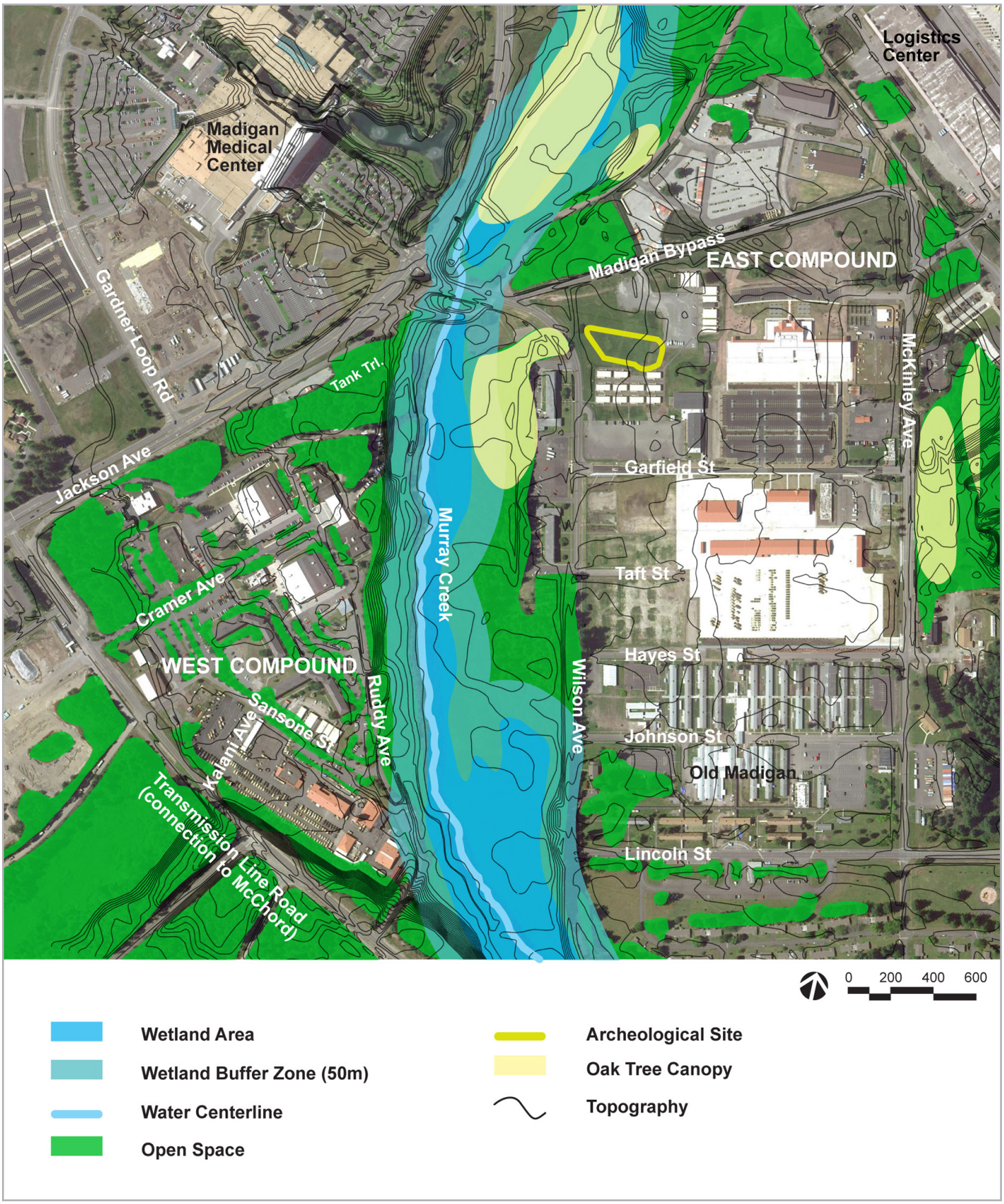


Figure 3. Existing Vegetation and Topography

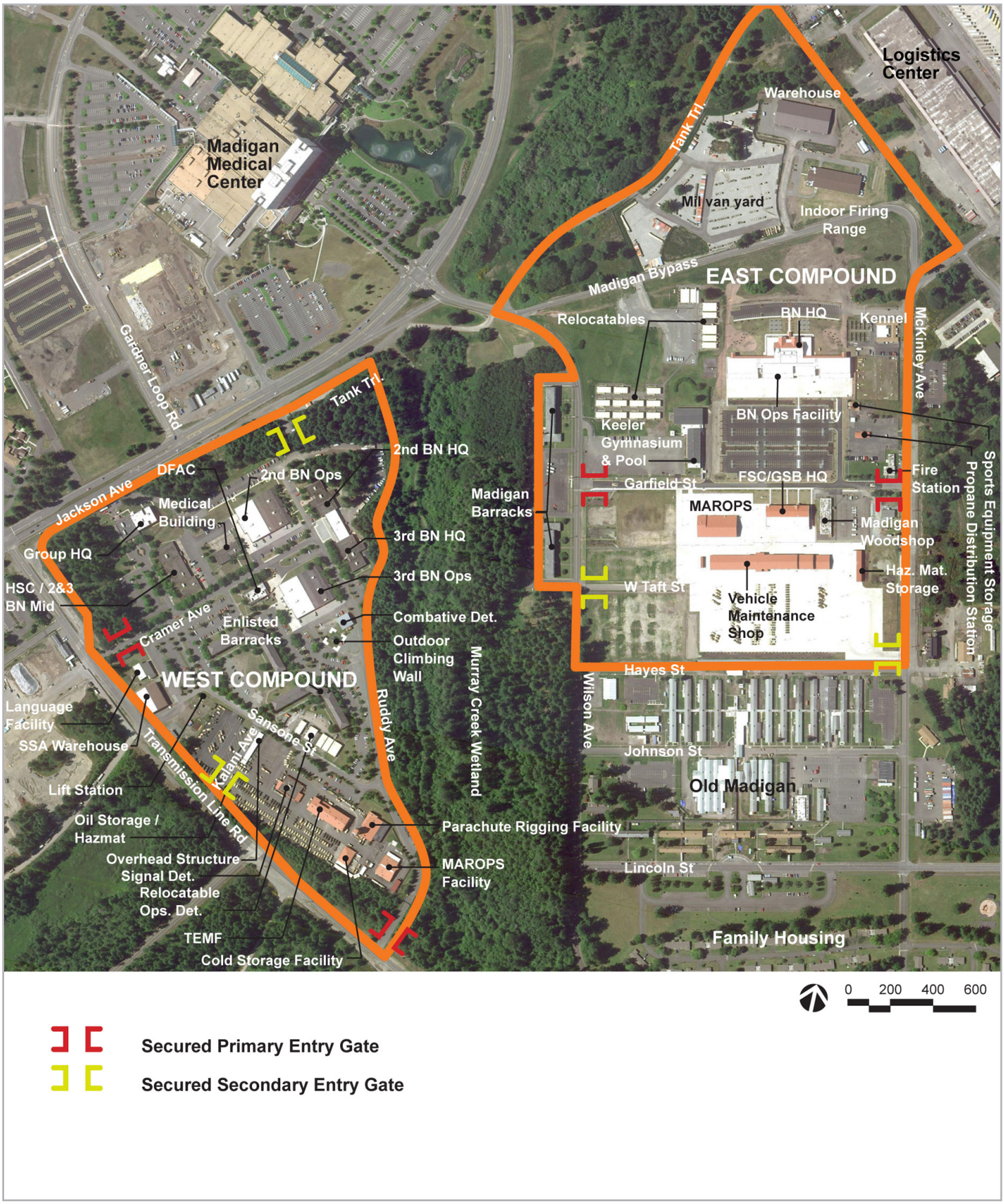


Figure 4. Existing Facilities

Figure 5. Existing Buildings to Remain / Remove

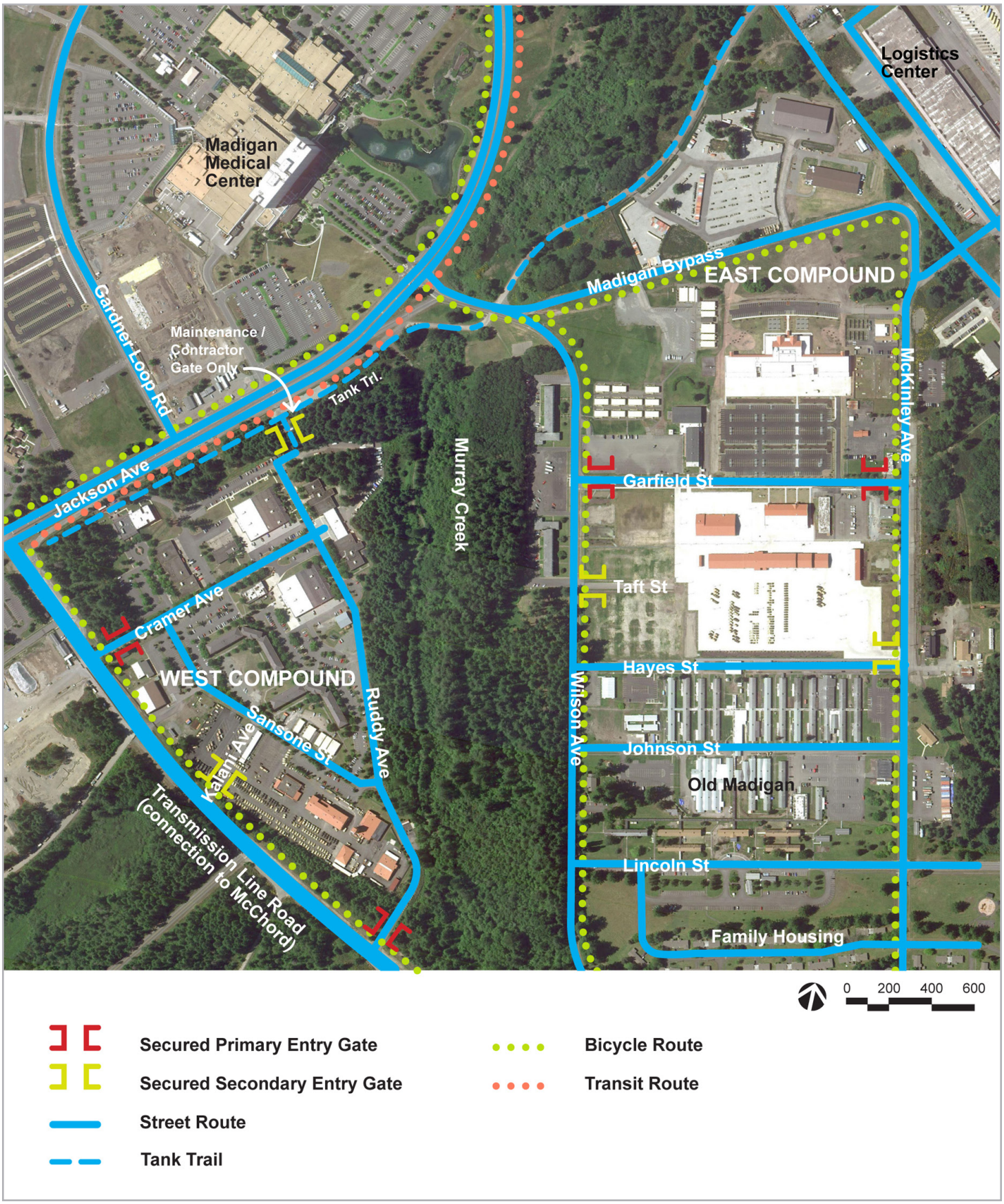


Figure 6. Existing Circulation

Project Constraints

The master plan was developed within constraints imposed by the site and the JBLM existing facilities.

Site Constraints

The wetland buffer and Murray Creek running north-south between the West and East compounds will be preserved as open space. Preservation of the buffer poses a security challenge that demands either constructing a bridge to connect the compounds, or linking them with a secure connection around the north perimeter using the existing tank trail.

Existing Madigan Pump Station on West Compound

The demolition of existing buildings for replacement in both the West and East compounds will affect the selection of sites for new buildings and the phasing of implementation as the use of cleared and previously built sites is a priority for new development.

Existing utilities under Cramer Avenue and Sansone Street in the West Compound will remain, requiring the retention of these two streets or their rights of way to afford access to the utilities. All existing underground (UG) system and manholes (MH) are intended to remain and be utilized.

The existing landscape buffer on the northern and western edges of the West Compound should be conserved where possible, and improved in places. The existing oak trees within the master plan should be preserved, and any stands or individual trees identified as conflicting with the plan will be assessed by DPW for preservation or removal. DPW Environmental has indicated the intent to locate critical trees by GPS to identify viable trees which, if impacted by development, will require mitigation at a 6:1 ratio.

Newly constructed East Compound buildings will be retained. In the East Compound, the existing Madigan Bypass constrains future development to the north and allows access within a secure area. It would be desirable to relocate the Madigan Bypass and reroute traffic on a new Madigan Bypass aligned south of the existing tank trail. The existing tank trail will remain and not be impacted.

Program Constraints

To protect personnel, minimum US Department of Defense (DoD) Anti-Terrorism Force Protection (AT/FP) security regulations require that buildings be set back from parking and roads (UFC 4-010-01). The conventional construction standoff distance is 82 feet, with a minimum standoff distance of 33 feet. Minimal standoff distance is permissible when buildings are hardened by enhanced conventional construction; these methods include using specific building materials and construction techniques that mitigate threat hazards. Regardless of standoff distance, where the building is three stories or more, the progressive collapse provisions of Standard 6 must be applied. In addition to AT/FP, security fencing is required for certain buildings, such as the BN TEMF. Control points are required and should be verified for both compounds.

Existing Madigan Barracks on East Compound

The West Compound should be largely an administrative and living campus, while the East Compound will retain its status and further develop as an industrial, service, and support compound. Both compounds will support the 1st SFG.

Existing buildings in the East Compound that do not serve the 1st SFG may remain until replacement facilities can be located include the existing Keeler Gym, Madigan barracks, Madigan woodshop, and JBLM installation fire station (Figure 4). Future construction must not impede emergency functions of the fire station.

Environmental Constraints

The process of developing the master plan identified several environmental issues and constraints. General descriptions are provided below, but as development and redevelopment of the area take place, the issues and constraints will need to be addressed in more detail. Environmental impacts for 1st SFG development in the West and East compounds can only be assessed in studies which were not part of this master planning process. An Environmental Assessment (EA) is being prepared by DPW environmental group to address impacts to Murray Creek.

The environmental constraints identified during the master planning process are summarized below. The greatest share of the issues and concerns that emerged had to do with spanning Murray Creek with a pedestrian or vehicular bridge, but they also included wetlands, stormwater, soils, and potential impacts to habitat and vegetation and archaeological resources.

Murray Creek

Murray Creek bisects the 1st Special Forces East and West compounds. It drains to American Lake and is a sensitive waterway with listed fish species within its reach. The creek and surrounding area provide habitat for various species of birds and mammals, including black bear. No studies were conducted of its environment or habitat, but the master planning process did recognize the sensitivity of the area.

No floodplain or floodway studies were conducted. Each proposed development should assess its impacts to the floodplain and suitable building uses.

Wetlands

Wetlands are located along the length of Murray Creek. The wetlands were not delineated during the master planning process. Existing GIS wetland boundary information from the JBLM DPW was used to provide general guidance for the extent of wetlands along Murray Creek. No construction should occur in the 50-meter buffer zone on each side of the wetland boundary . This general information was used to develop the pedestrian and vehicle bridge layouts.

Before any development (including bridges, structures, or trail systems) takes place along Murray Creek, a wetland delineation and a survey of wetland boundaries should be completed. Avoiding wetland impacts is preferred to placing fill or structures within a wetland. If wetland impacts are unavoidable, then environmental permitting and impact mitigation most likely would be required. Buffers outside the wetland boundary are not regulated by the USACE, but filling or constructing within the buffer may require mitigation. The planning process did not investigate the potential types or extent of wetland or buffer mitigation; these would be determined as part of the NEPA process, which would include determining appropriate permitting with the USACE.

Dense Vegetation along Murray Creek

Stormwater

The stormwater manual provides detailed guidance for handling stormwater runoff from development and redevelopment for water quality and quantity. Any redevelopment of the West and East compounds will require managing stormwater consistent with the stormwater manual. In general, with any redevelopment, all stormwater must be retained on site and water quality and quantity controls must be provided. Currently,

stormwater from buildings and paved surfaces on the East and West compounds drains directly to Murray Creek without controls. Direct discharge of stormwater is detrimental to the natural hydrology of a creek, since the creek sees higher and more frequent peak runoff and polluted water from impervious surfaces. Overall, there should be a direct benefit to Murray Creek as the East and West compounds redevelop, since stormwater will be cleaned and infiltrated on site. Recharging the groundwater table near Murray Creek is beneficial, especially during

Existing Parking and Storm Infiltration Ponds

the summer months when increased groundwater will help recharge the creek. Groundwater infiltration of stormwater will eliminate high peak runoff from entering Murray Creek, which will help reduce bank erosion and provide a more natural hydrological flow condition into this section of the corridor.

Because the East Compound has seasonally high groundwater table that may rise to within 10 feet of ground surface and the stormwater manual requires that the lowest point in a stormwater infiltration facility be five feet above the groundwater table, geotechnical studies should determine the depth to groundwater, which will provide the maximum depth to which any infiltration facility can be constructed.

Soils

No geotechnical studies were completed for the master plan. In general, most areas of JBLM have soils that drain very well. A geotechnical report was prepared for the FY08 Battalion Operations Facility (BOF) built in the East Compound just west of McKinley Avenue. The FY08 BOF manages stormwater runoff from the building and impervious surfaces by means of a series of infiltration swales. Based on information from the soils report and the existence of infiltration swales, the master planning process assumed that soils in the area are well drained and that stormwater infiltration facilities would be used in the East and West compounds. Geotechnical studies and reports will be prepared for any new building being proposed by 1st SFG. These reports will verify actual soil conditions and infiltration potential.

Many sites have the potential to be contaminated by current or past practices. During development and site clearing, soils disturbed will be evaluated for contamination and appropriate cleanup measures identified.

Habitat and Vegetation

The Murray Creek area between the East and West compounds provides habitat for a variety of fish, birds, and mammals and it is understood that Murray Creek is a natural migration route through JBLM for many of these species. Oregon white oak trees are scattered throughout the area, with a large stand identified between Murray Creek and Wilson Avenue next to the East Compound. Although JBLM DPW was scheduled to conduct a survey of white oaks within the area during the master planning process, the data was not yet available at the time of the completion of the master plan. Any development within the corridor will require more detailed studies and, if impacts occurred along Murray Creek, they would need to be minimized and/or mitigated. Protection of white oak is preferred, and if the white oak are disturbed, mitigation at a 6:1 ratio will be required. Preserving stands of large mature trees of Oregon white oak is a best management practice. Master plan development could impact such area, and appropriate environmental assessment will be needed, as well as mitigation if required.

JBLM has new requirements of zero potable water use for irrigation; therefore, native plant materials from the approved plant list should be used in site development. All landscaping in wetland areas and buffers must be Pacific Northwest native species or approved by the USACE Environmental Division Fish and Wildlife Section (refer to JBLM Approved Plant list in Appendix G).

Native Oregon White Oaks on the West Compound

Proposed buildings are located in areas where site disturbance has already occurred, and impacts to additional vegetation should be minimized by building design consideration, especially along Murray Creek.

Archaeology

No archaeological studies were conducted as part of the master planning process. One known archaeological site, a “native camp site,” was identified by JBLM DPW staff. The site is located east of Wilson Avenue in the location of the proposed FY13 BOF in the East Compound (Figure 3). According to DPW staff, this known site will be surveyed, catalogued and cleared within the next year and the area may be used by the 1st SFG for development. No other sites were identified by DPW staff within the development areas of the East and West compounds.

Planning Goals and Objectives

The project team adapted the goals and objectives of the Fort Lewis master plan for the 1st SFG master plan. These goals and objectives were consistent with the vision stated in the introduction, and framed a plan that would be compatible with the mission, respect the JBLM installation, and support SFG operational activities.

Goals

- Enhance mission capabilities
- Sustainable compound
- Walkable campus
- Identifiable center, with clear wayfinding
- Great places to live, work, and train

Objectives

- Close-in training
- Great views
- Efficient transportation
- Focal points
- Car parks
- Narrow buildings
- Street trees
- Multi-story buildings
- Compact development
- Low impact development
- Helicopter landing pad
- Running paths
- Low maintenance
- Organizational storage

Compatible with the mission, respectful of the installation, sustainable, and supportive of SFG operational activities

Participants Evaluating Planning Objectives

Program Elements

The reuse of existing facilities and/or additions and upgrades to existing facilities are the preferred approach where possible; however, many existing buildings need to be replaced as they are substandard and do not meet health and life safety requirements.

The improvements in the West Compound and East Compound that are part of the master plan are described and summarized in tables 1 and 2 below. In many cases, standard designs were used; however, when competing goals such as compact development precluded the use of standard designs, the standards were used to develop square footage requirements. Projects such as the barracks and DFAC are funded by MILCOM funds and will need to meet the requirements set by the Center of Standardization (CoS). However, most projects included in the 1st SFG Master Plan are funded by SOCOM; the facilities are similar to the standard designs developed by the CoS but have been customized to meet the unique mission of the SFG.

Site development, including landscaping and parking areas, will occur project by project in association with building construction. Three projects include site development only: the relocation of the Madigan Bypass, a new PT trail along Murray Creek, and a future vehicle bridge.

Program flexibility is built into the master plan in a number of locations. First, each barracks is planned to accommodate 385 residents based on current JBLM standards, although greater capacity may be needed. The plans show a footprint that can accommodate up to 500 residents per building if it is built at a height of 4 stories. A building for 385 residents can be accommodated by building the full footprint 3 stories high or by building 4 stories and eliminating a wing. Second, the 385 per building barracks population justifies a small standard design for the DFAC, but the site plan was developed to accommodate a larger DFAC if funding permits. A larger DFAC would support the sense of community that is desired within the 1st SFG facilities while reducing traffic and increasing efficiency — more commuting personnel could stay on site at meal time.

West Compound

The program for the West Compound includes eight new buildings and upgrades and an expansion of the existing Rigging Facility. The new buildings will be clustered around a central green space to encourage walking and build a sense of community within the core campus. Existing support buildings will remain at the south end of the compound unless the land is needed for future uses or parking.

- Group HQ: 68,000 SF
- CRTF/THOR3: 57,000 SF*
- Two barracks: 70,500 SF each, 385 residents per building
- DFAC: 17,500 SF, standard design for “small” facility
- Community Center: 8,500 SF*
- Rigging Facility upgrade and expansion: 15,000 SF (est.)
- Data Center: 1,600 SF

East Compound

The program for the East Compound includes ten new buildings that will consolidate most battalion operations and maintenance and support facilities for four battalions. These buildings include the following.

- FY13 BOF: 120,000 SF
- FY12 COF: 48,000 SF
- FY13 BN TEMF: 12,500 SF
- MWD Kennel: 9,300 SF
- TUAV: 9,200 SF
- BN BOF (GSTB): 122,000 SF
- BN TEMF (GSTB): 12,500 SF
- GSB COF: 78,500 SF
- SOF Deployment Warehouse: 50,000 SF*
- SOF Logistics Warehouse: 54,000 SF*

* These buildings have been requested as part of the Master Plan review but have not been authorized for funding.

Program Notes

While keeping the existing MWD Kennel was considered, the existing building does not meet current standards.

The GSB COF expansion is being built to support the FSC of GSB Band 5. Because of the limitations of the site, the building is planned as a 3-story design instead of the standard 2-story. The new Group HQ was planned as a 3-story instead of the standard 2-story design to create a compact and walkable core for the West Compound.

Building Program Requirements - West Compound

WEST Compound			2011-14	2014 -17	2017-20	2020-23	2023-30		
BN	**description**	**existing**	**phase 1**	**phase 2**	**phase 3**	**phase 4**	**future**	**# of flrs**	**notes**
9141	**SSA Warehouse**	12,345	12,345	12,345	12,345	12,345	0		future demo
9142	**Language Facility**	5,183	5,183	5,183	5,183	5,183	0		future demo
9145	**Tactical Equipment Maintainance Facility (TEMF)**	16910	16910	16910	16910	16910	0		future demo
9146	**Cold Storage Facility**	4205	4205	4205	4205	4205	0		future demo
9149	**Signal Det.**	8638	8638	8638	8638	8638	0		future demo
9156	**General Purpose Warehouse**	1281	1281	1281	1281	1281	0		future demo
9157	**MAROPS Facility**	7983	7983	7983	7983	7983	0		future demo
9160	**2nd Battalion Headquarters (BN HQ)**	13,488	13,488	0	0	0	0		demo phase 2
9162	**3rd Battalion Headquarters (BN HQ)**	13,488	13,488	0	0	0	0		demo phase 2
9175	**Enlisted Barracks**	58,120	58,120	58,120	0	0	0		demo phase 3
9176	**Enlisted Barracks**	58,120	58,120	58,120	0	0	0		demo phase 3
9177	**3rd Battalion Operations Facility (BN Ops.)**	19,882	19,882	0	0	0	0		demo phase 2
9178	**2nd Battalion Operations Facility (BN Ops.)**	19,882	19,882	0	0	0	0		demo phase 2
9179	**Enlisted Person Dining Facility (DFAC)**	6,747	6,747	6,747	0	0	0		demo phase 3
9180	**Medical Building**	6,553	6,553	6,553	0	0	0		demo phase 3
9181	**HSC/2nd & 3rd BN Mid.**	26,460	26,460	26,460	0	0	0		demo phase 3
9190	**Group HQ Building**	20,066	20,066	20,066	0	0	0		demo phase 3
9155	**Parachute Rigging Facility**	9239	15,000	15,000	15,000	15,000	0		renovation phase 1
tbd	**Data Center**		1600	1600	1600	1600	1600	1	build phase 1, modified design
tbd	**Group HQ**				68,000	68,000	68,000	3	build phase 3, modified design
tbd	**CRFT/THOR 3**				57,000	57,000	57,000	2	build phase 3, std design
tbd	**Barracks**				70,500	70,500	70,500	3 or 4	build phase 3, std design
tbd	**Barracks**				70,500	70,500	70,500	3 or 4	build phase 3, std design
tbd	**DFAC**				17,500	17,500	17,500	1	build phase 3, std design
tbd	**Community Center**				8,500	8,500	8,500	1	build phase 3, std design
tbd	**Future 1st BN Ops Fac (BOF)**						120,000	2	future, std design
tbd	**Future 1st BN TEMF**						12,500	1	future, std design
tbd	**Future Admin Building(s)**						tbd	2	future, std design
Total Area		**308,590**	**315,951**	**249,211**	**365,145**	**365,145**	**426,100**		
Total SFC Facilities		185,603	192,964	126,224	206,645	206,645	267,600		
Total JBLM Facilities		122,987	122,987	122,987	158,500	158,500	158,500		

Notes:
Total 1st SFG Facilities excludes JBLM facilities, includes all others
Total JBLM Facilities includes Keeler Gym, Madigan Barracks, Madigan Woodshop, Propane Distribution Station, Fire Station
As required, existing facilities shall be replaced prior to demolition.

Table 1. Building Program Requirements - West

Building Program Requirements - East Compound

EAST Compound			2011-14	2014-17	2017-20	2020-23	2023-30		
BN	**description**	**existing**	**phase 1**	**phase 2**	**phase 3**	**phase 4**	**future**	**# of flrs**	**notes**
9655	**Warehouse**	28,793	28,793	28,793	28,793	28,793	28,793	1	existing bldg to remain
9654	**Indoor Firing Range**	25,860	25,860	25,860	25,860	25,860	25,860	1	existing bldg to remain
9934	**FY08 BN Ops Fac (BOF)**	122,396	122,396	122,396	122,396	122,396	122,396	2	existing bldg to remain
9936	**MAROPS**	15,509	15,509	15,509	15,509	15,509	15,509	1	existing bldg to remain
9937	**FSC/GSB BN HQ**	38,994	38,994	38,994	38,994	38,994	38,994	2	existing bldg to remain
9938	**Hazardous Materials Storage**	6,615	6,615	6,615	6,615	6,615	6,615	1	existing bldg to remain
9940	**TEMF (GSB)**	45,088	45,088	45,088	45,088	45,088	45,088	1	existing bldg to remain
9942	**Oil Storage Building**	1,009	1,009	1,009	1,009	1,009	1,009	1	existing bldg to remain
9997	**Madigan Barracks**	33,091	33,091	33,091	33,091	0	0		demo phase 4
9998	**Madigan Barracks**	33,091	33,091	33,091	33,091	0	0		demo phase 4
9791	**Propane Distribution Station**	1,800	0	0	0	0	0		demo phase 1
9985	**Madigan Woodshop**	7,956	0	0	0	0	0		demo phase 1, replace off-site prior to demo
9986	**Fire Station**	3,763	3,763	3,763	3,763	3,763	3,763		existing bldg to remain
9988	**MWD Kennel**	5,440	0	0	0	0	0		demo phase 1
9989	**Sports Equipment Storage**	1,768	0	0	0	0	0		demo phase 1
9993	**Keeler Gym (includes storage bldgs 9996 & 9917)**	18,393	18,393	18,393	18,393	18,393	0		Future demo, replace off-site prior to demo
tbd	**FY13 BN Ops Fac (BOF)**		120,000	120,000	120,000	120,000	120,000	2	build phase 1, std design
tbd	**FY12 SOF COF**		48,000	48,000	48,000	48,000	48,000	2	build phase 1, std design
tbd	**MWD Kennel**		9,300	9,300	9,300	9,300	9,300	1	build phase 1, std design
tbd	**BN TEMF**		12,500	12,500	12,500	12,500	12,500	1	build phase 1, std design
tbd	**TUAV**		9,000	9,000	9,000	9,000	9,000	1	build phase 1, std design
tbd	**BN Ops Fac (GSTB)**			122,000	122,000	122,000	122,000	2 or 3	build phase 2, std design
tbd	**BN TEMF (GSTB)**			12,500	12,500	12,500	12,500	1	build phase 2, std design
tbd	**FSC/GSB BN COF**			78,500	78,500	78,500	78,500	3	build phase 2, FSC/GSB BN HQ expansion, modified design
tbd	**SOF Deployment Warehouse**					50,000	50,000	1	build phase 4, std design
tbd	**SOF Logistics Facility**					54,000	54,000	1	build phase 4, std design
Total Area		**389,566**	**571,402**	**784,402**	**784,402**	**822,220**	**803,827**		
Total SFC Facilities		291,472	483,064	696,064	696,064	800,064	800,064		
Total JBLM Facilities		98,094	88,338	88,338	88,338	22,156	3,763		

Notes:
Total 1st SFG Facilities excludes JBLM facilities, includes all others
Total JBLM Facilities includes Keeler Gym, Madigan Barracks, Madigan Woodshop, Propane Distribution Station, Fire Station
As required, existing facilities shall be replaced prior to demolition.

Table 2. Building Program Requirements - East

Master Plan Design

The design team developed the master plan in an iterative process that involved charrettes, discussions with 1st SFG, the USASOC, JBLM DPW, and USACE, and several sets of revisions.

Plan Alternatives

As a result of input from the 1st SFG, JBLM DPW, USACE, and other stakeholders, and based on project goals/objectives and program, the project team developed six alternatives for the West Compound (West—Options 1-6) and two alternatives for the East Compound (East—Options 1 and 2). After the team reviewed this initial set of alternatives in a workshop, they developed the refined set of alternatives that is illustrated in the figures that accompany the summaries (Appendix A and Appendix B).

The alternatives address the vision, goals, and objectives of the JBLM master plan; they also satisfy the critical success factors that should characterize the SFG master plan. In addition, the alternatives fulfill specific SFG needs including the following.

The Alternatives:

- Provide a low-impact link across the wetland to and from the West and East compounds, satisfying the desire of the 1st SFG to be self-contained and self-sufficient;
- Minimize disruption by using existing major circulation;
- Respect the value of the Murray Creek wetland area;
- Create flexibility and identify opportunities for future growth;
- Align with planning, site, and building standards;
- Utilize sites that become available when buildings are demolished for development to limit impacts to existing trees; and
- Highlight Cramer Avenue as the primary spine through the West Compound.

Looking Northeast along Cramer Avenue

Master Plan

Sustainability, walkability, and planning for the future were key concepts during development of the 1st SFG master plan. The plan's vision statement enunciates the creation of a sustainable compound and a walkable campus as its goals. These goals are mutually reinforcing, and in turn they reinforce the plan's objective of compact development, which itself sets the standard for judging the success of the plan. For example, does the plan, through the use of compact development, reserve a substantial area in the West Compound for future growth?

The complex of administration, housing, and support developed in the 1st SFG master plan is compact and concentrated to the north end of the site, reserving substantial area in the West Compound for future, as-yet unprogrammed facilities to the south and west edges of the site. The plan envisions the West and East compounds functioning as one in support of the 1st SFG. While their functions overlap, the program of the East Compound concentrates on additional installation support and operations and maintenance, warehousing, and logistics facilities and the program of the West Compound includes administration, troop housing, close-in training, and support functions, such as the DFAC and the CRTF/THOR3 (Figure 7).

The final recommended Master Plan is intended to be flexible and capable of responding to future changing needs, priorities, and phasing. To demonstrate this desired flexibility, the report includes a preferred plan and alternative plan. The essential structure of the plan is the same in both; their differences are described below.

In the preferred plan, the future Battalion Operations (BnOps) complex is sited on the West Compound, and the SOF Logistics Facility and the SOF Deployment Warehouse are sited on the East Compound on the site of the existing Madigan Barracks. That site is somewhat constrained by the proximity of wetlands on its western edge. The size of hardstand serving the proposed Logistics Facility and the Deployment Warehouse may be restricted. The site must be carefully evaluated at the time the two facilities come on-line for construction. Program, building sizes, and configurations should be confirmed; setbacks and security fencing, impacts on open space and wetlands, required maneuvering of vehicles, and parking needs along with other issues should be considered.

In the alternative plan, the future BnOps complex is sited on the East Compound near the existing FY08 BnOps, and the SOF Logistics Facility and the SOF Deployment Warehouse are sited on the West Compound (Figure 8). The alternative plan will be considered if the Madigan Barracks site does not become available for new development. The alternative plan would likely require the addition of a parking structure to meet the need for parking for privately owned vehicles (POV). The parking structure site envelope illustrated east of Wilson Avenue could accommodate 1020 cars at 3 levels, 1360 at 4 levels, and 1700 at 5 levels.

The following discussion reflects the Preferred Plan and the Phasing required for development. A substantial natural area that includes Murray Creek and its adjoining wetlands separates the West and East compounds (Figure 9). The plan preserves this area. The vegetated woodland along Murray Creek in the buffer between the West and East compounds is an excellent location for a PT trail accessible to 1st SFG as well as JBLM personnel. The plan also preserves most of the buffer of trees on the perimeter of the West Compound; in some places, possibly on the west edge and a portion of the northern edge, this buffer will be increased to provide visual screening from adjacent streets. Of the existing trees, the oaks are most valued and should be preserved. In addition to preserving the trees on the buffer for their beauty, maturity, and contribution to environmental sustainability, the buffer separates the West Compound from Jackson Avenue and Transmission Line Road, which are busy streets.

A circulation map (Figure 10) shows how the proposed roadway improvements help tie the compounds together and redirect traffic appropriately. The plan alternatives and final plan relocate the existing Madigan Bypass in the East Compound to the south side of the existing tank trail in the northwest sector. Relocating Madigan Bypass routes installation traffic around, rather than through, the East Compound for improved security. In addition, the plan joins the West and East compounds with a two-lane vehicular and pedestrian bridge across Murray Creek. This future-phase bridge is located where W Taft Street once was located before its replacement with a motor pool. Madigan Bypass, Wilson Avenue, and McKinley Avenue are JBLM roadways and must remain open for circulation.

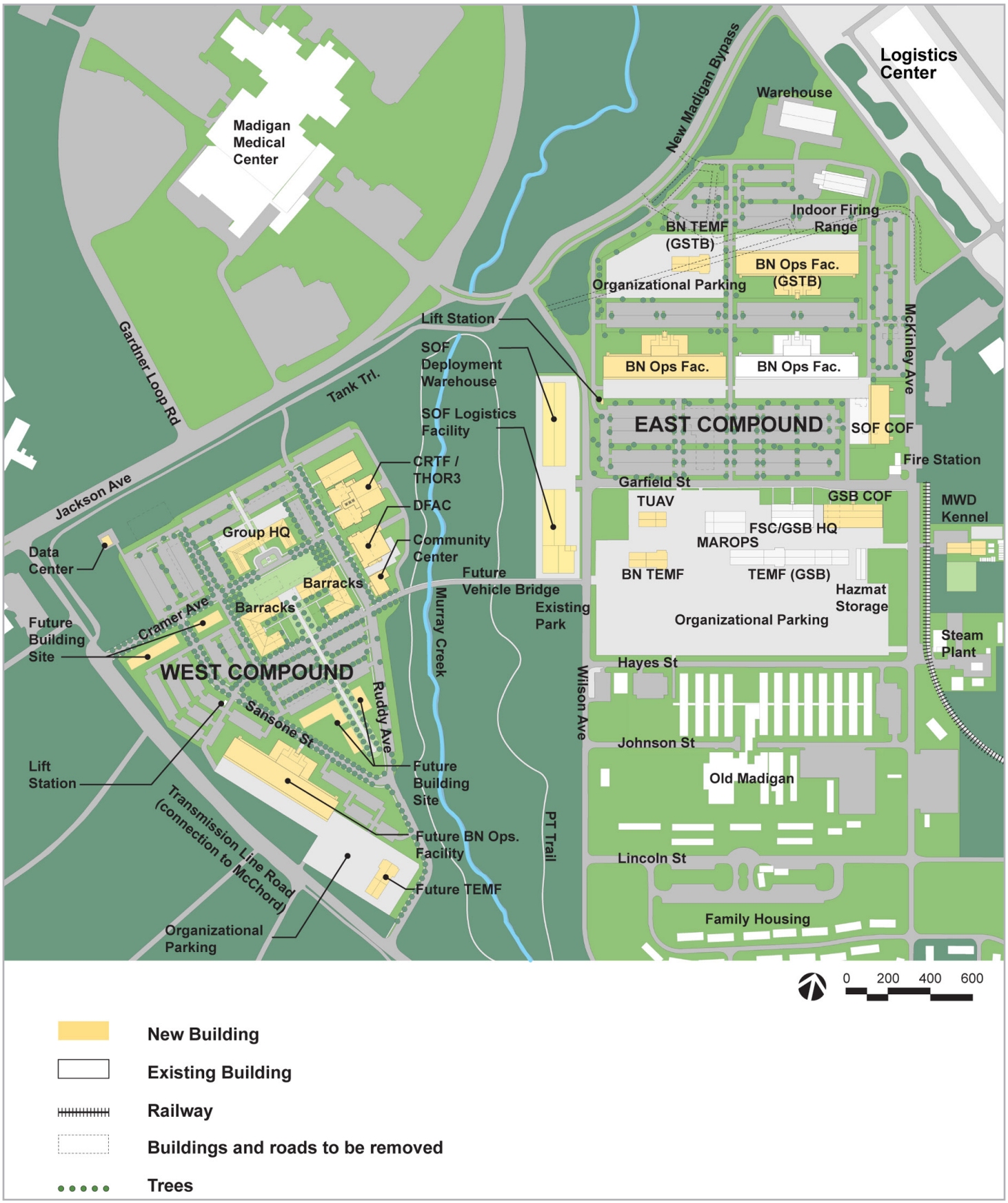


Figure 7. 1st SFG Master Plan

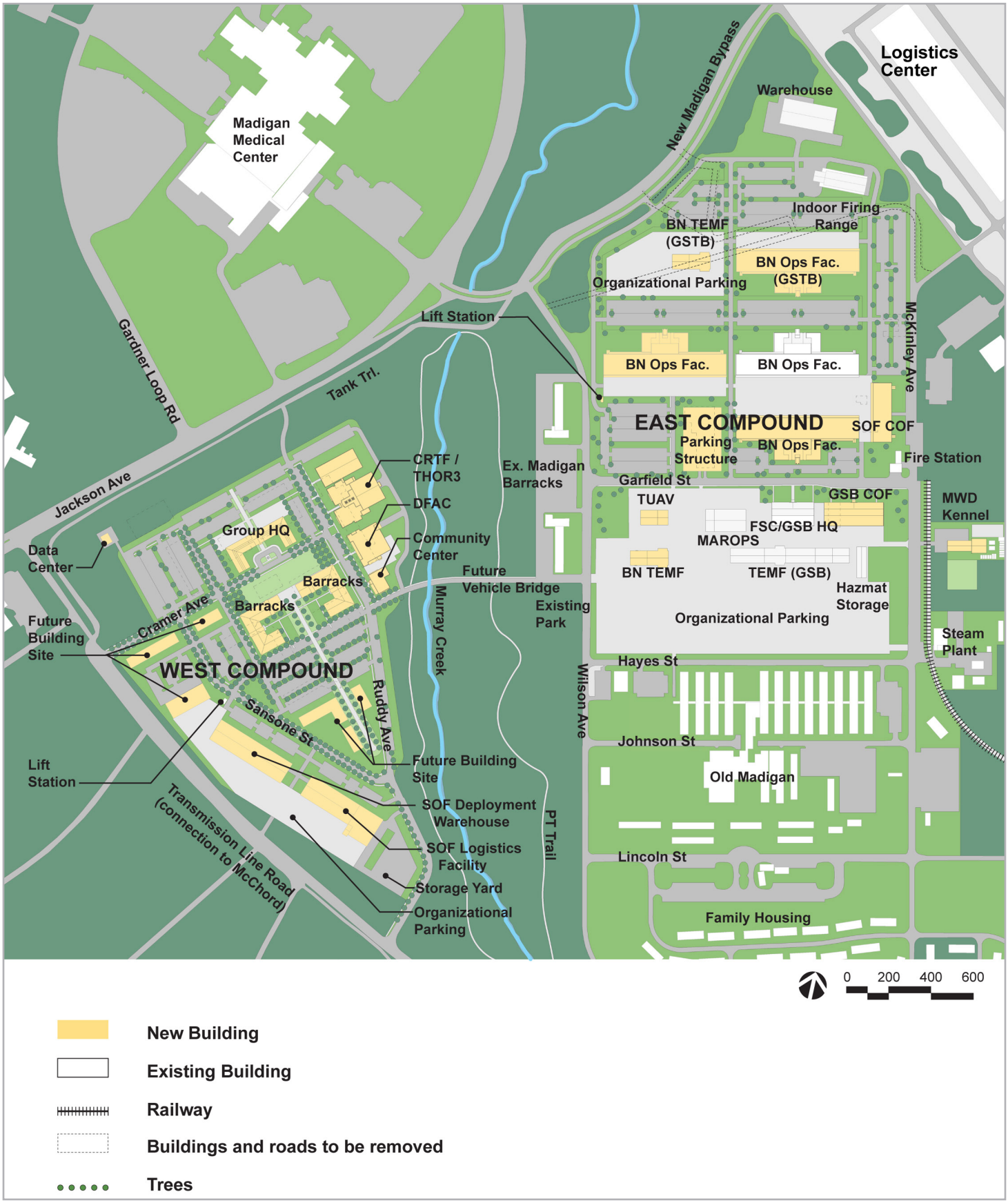


Figure 8. 1st SFG Alternative Plan

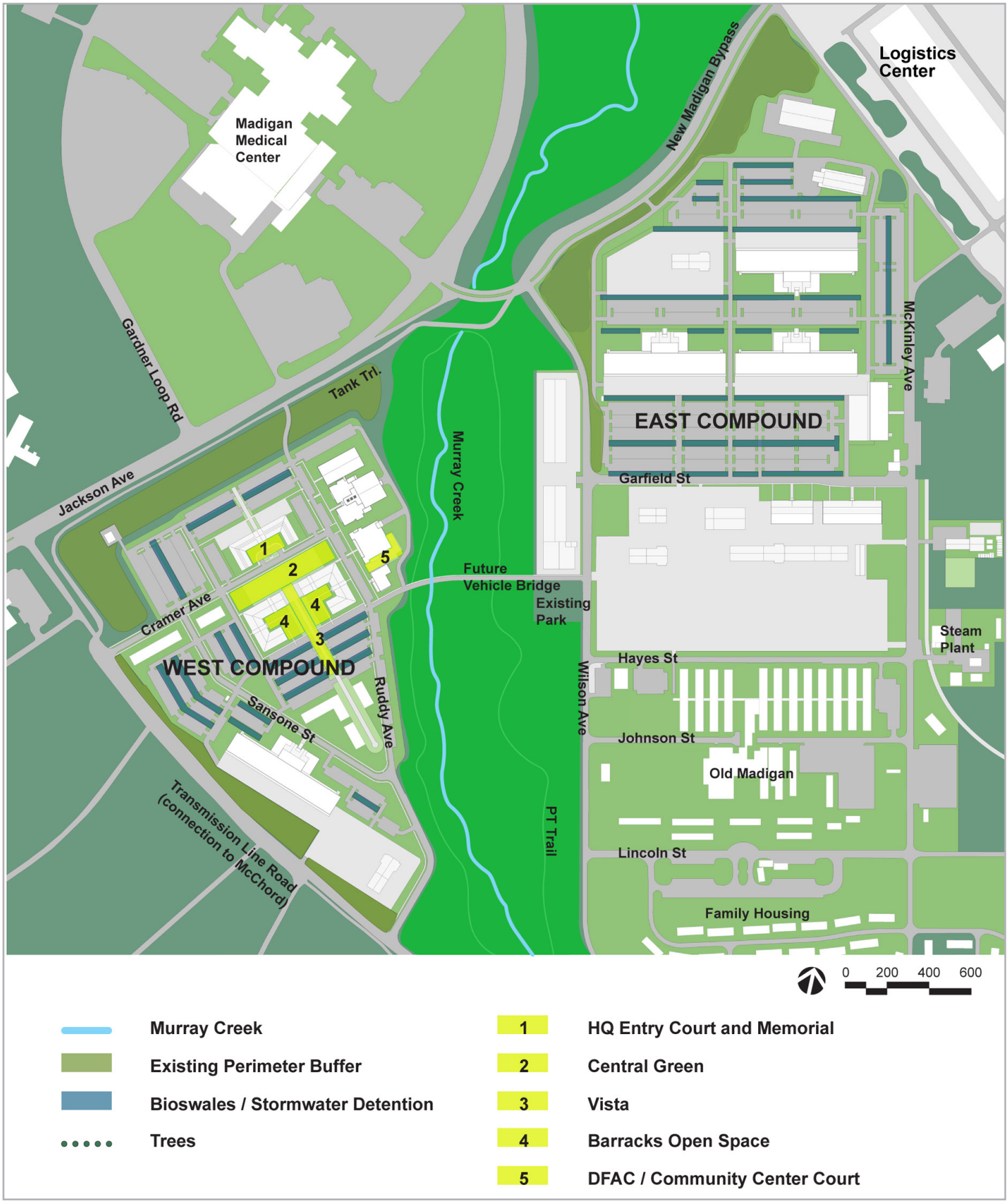


Figure 9. Proposed Vegetation and Open Space

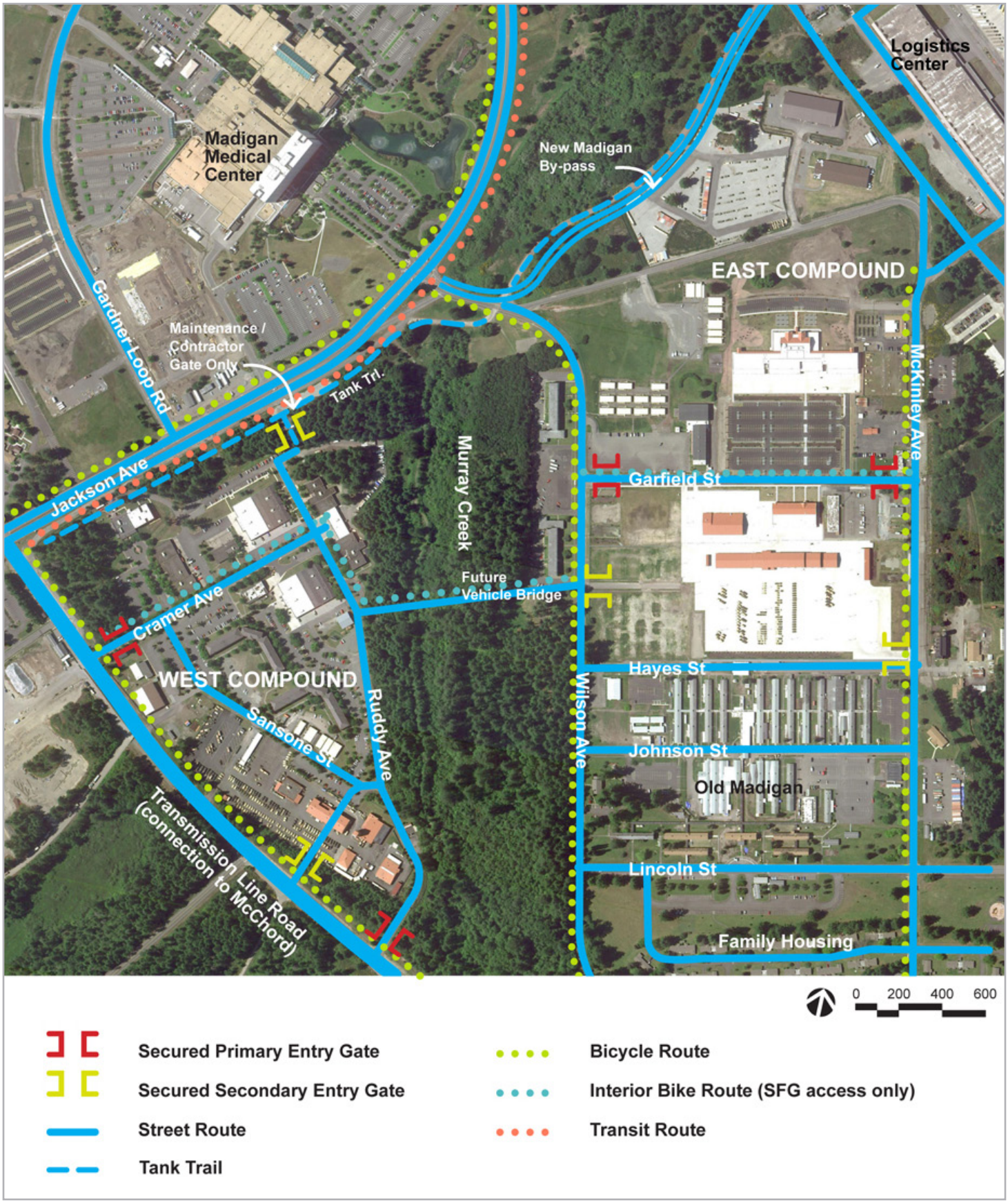


Figure 10. Proposed Circulation Plan

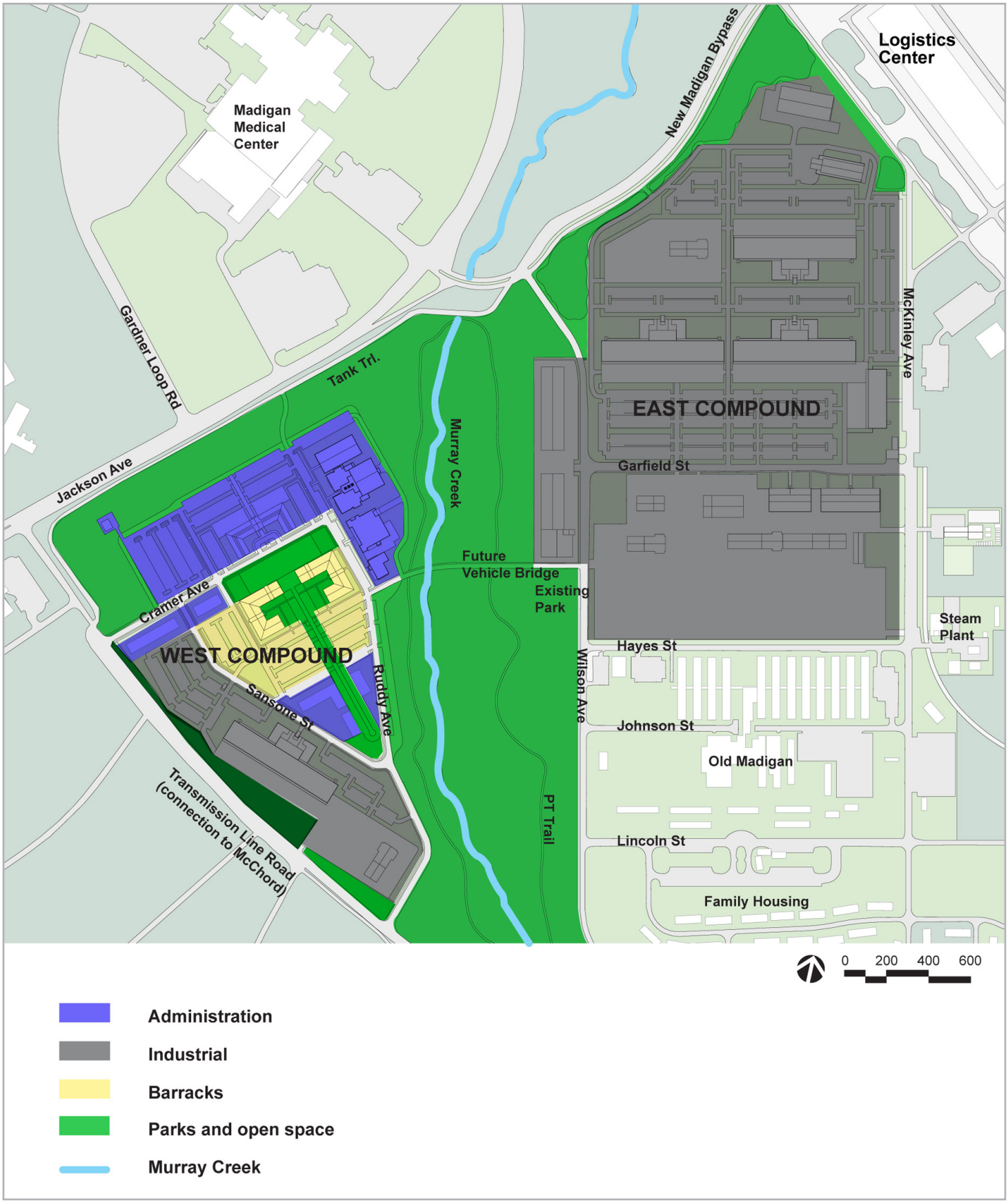


Figure 11. Regulating Plan

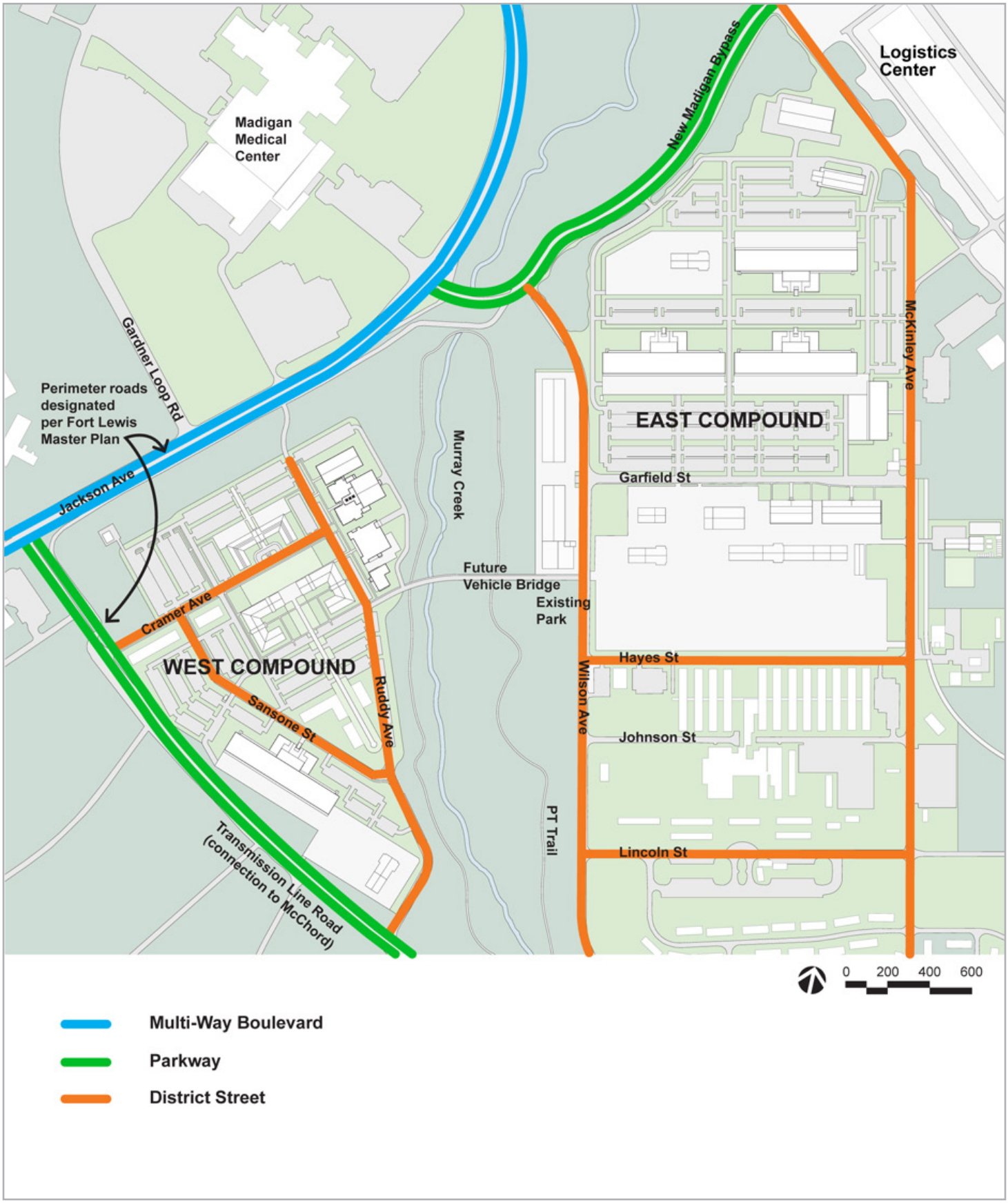


Figure 12. Transportation Plan

The Fort Lewis master plan sets out guidelines for development in and around the West Compound and the East Compound (also known as the Old Madigan area). The compounds are designated as Special Use/ Non-Regulated Areas with Troop Support functions. However, land-use designations have been proposed as a part of this master plan effort and a new Regulating Plan created to update the Fort Lewis master plan (Figure 11). The Regulating Plan identifies land-use for both the West and East compounds. As program changes occur designation of land-use will help maintain intent of master plan.

While this non-regulating designation exempts 1st SFG facilities from some Fort Lewis master plan requirements, the exemption does not apply to street standards. The new Transportation Plan identifies road standards that were developed with the Fort Lewis Master Plan. For the West Compound, Cramer Avenue, Sansone Street, and Ruddy Avenue are identified as District Streets. For the East Compound, Wilson and McKinley avenues and Garfield and E/W Hayes streets are identified as District Streets, while the Madigan Bypass is designated Parkway (Figure 12).

West Compound

The existing buildings in the West Compound will largely be replaced with new facilities. The planning concept for the West Compound includes a campus open space faced by the Group HQ, barracks, CRTF/THOR3, and DFAC. The open space is intended to be used for close-in training, recreation, and ceremonies, and as a helipad.

The Group HQ is sited to include a drop-off from Cramer Avenue, space for a flag and memorial, a hard area and parking behind the building to the north, and additional parking on the east and west edges. (The configuration shown for the Group HQ is for illustrative purposes only.)

The CRTF/THOR3 and DFAC have been sited in the northeast corner of the West Compound, closest to the East Compound and the proposed future bridge. Additionally, these two buildings should open up to views into the Murray Creek natural area. The two new replacement barracks are separated by a north-south open space axis affording views from the Group HQ across the open space, towards Mt. Rainier.

A BOF complex and a BN TEMF for 1st Battalion and hypothetical future building footprints have also been identified to illustrate potential future development.

Cramer Avenue, Sansone Street, and Ruddy Avenue will remain in the West Compound. Cramer and Sansone include significant utilities which will serve new development as shown in the site utilities section. Primary access to the

Central Green between Barracks and Group HQ

compound will occur at the Cramer Avenue and Ruddy Avenue intersections with Transmission Line Road. A existing minor gate access point will remain for construction access along the tank trail adjacent to Jackson Ave and could be used for vehicular access between the West and East compounds.

Parking in the West Compound is, for the most part, located on the perimeter, reserving the center for pedestrians and decreasing the visible pressure of parking. Future buildings are proposed on the south side of Cramer Avenue leading in from the main entrance from Transmission Line Road to the Group HQ and campus open space; this placement is also intended to diminish the presence of parking. The parking areas will include swales, vegetation, and trees to collect and partially cleanse stormwater.

East Compound

This 1st SFG master plan proposes three modifications to the Fort Lewis master plan. All of these modifications take place in the East Compound.

Relocate the Madigan Bypass south of the existing tank trail to provide access from Wilson and the Jackson Avenue entrance to the north. Relocating the bypass will facilitate joining the northern and southern sectors of the East Compound and improve security.

Provide development sites for two major buildings related to the facilities north of the existing Madigan Bypass. These two buildings are likely to be another BOF and a TEMF.

Connect the West and East compounds with a vehicle, bicycle, and pedestrian bridge across Murray Creek in the vicinity of West Taft Street. This future internal connection will facilitate access for and provide an internal, secure access within the compound in case of lockdowns.

Much of the East Compound is built out, and buildings are already funded for sites that this planning process evaluated and found suitable. These include two BOFs, two COFs, two TEMFs, TUAV and MWD Kennel.

The SOF Deployment Warehouse and Logistics Facility are located on the site of the existing Madigan Barracks. Keeler Gym eventually would be replaced with parking.

No major roadway improvements are anticipated on the East Compound and parking for the most part is located in the large lots adjacent to BOFs and COFs. Warehouses and buildings that are support facilities with variable occupancy are accommodated with shared parking in these larger lots eliminating duplicate parking being provided for the same personnel in the same location.

Outdoor Patio between DFAC and Community Center

Phasing Issues and Strategies

Facilities and infrastructure for the 1st SFG at JBLM will be developed in phases, beginning with work that is currently funded and underway on the East Compound and associated roadway and infrastructure work. Future phases are identified based on current need and funding projections.

The master plan increases capacity at the site while consolidating functions so that most battalion operations and support facilities are located on the East Compound and most administrative, housing, and personnel support facilities are located on the West Compound. Challenges addressed during the master planning process include coordinating the timing of construction and demolition of existing facilities, the necessary relocations of personnel within the compound, and the phasing of additional parking requirements given the constraints of the site.

The primary relocation challenge relates to the phasing and relocation of the 4th BN which currently occupies the FY08 BOF facility. It is expected that the 4th BN function will change to a GSTB function. Once the GTSB facility is constructed and occupied in Phase 2, the 2nd and 3rd Battalions—currently occupying the facilities on the West Compound—will relocate to the FY08 and FY13 BOFs on the East Compound. When that relocation is complete, four buildings currently occupied by 2nd and 3rd BN and the administration building in front of Group HQ can be demolished to make room for the construction of a new Group HQ building on the West Compound.

> **The** phasing plans are set up to show major phases only. Within each phase, individual projects further define the ultimate construction phasing.

Replacement of some existing facilities that interfere with site utilization is also a challenge. The existing gym is a base facility and cannot be demolished until JBLM builds a new one elsewhere in that area on main Fort Lewis. No replacement gym is currently funded. The 1st SFG CRTF/THOR3 is not a replacement facility, as it is a training facility for the 1st SFG. The Madigan Woodshop, another installation facility located on the East Compound next to the FSC/GSB HQ building, must be relocated and the building demolished prior to the construction of the FSC/GSB COF expansion. Efforts are underway to find a new location for this facility. The fire station located at the corner of Garfield Avenue and McKinley is also a JBLM facility. Future development of the 1st SFG must not impede emergency functions of the fire station. The phasing plans are set up to show major phases only. Within each phase, individual projects will further define the ultimate construction phasing. The major phases are defined as follows.

The Barracks Courtyard is Phase 3

Phase 1

Phase 1 includes currently funded building projects on the east side of the campus and related site work, roadwork to complete the Madigan Bypass, upgrades on the West Compound, and Murray Creek (Figure 13).

- FY13 BOF: This new 120,000-SF facility will house 522 personnel. The project includes a 100-foot-wide apron of hardstand and 470 parking spaces. 181 additional spaces are proposed to offset the East Compound parking deficit.
- FY12 SOF COF: This new 48,000-SF facility is a support facility for the battalions housed on the East Compound. The project includes a 100-foot-wide apron of hardstand and 24 new parking off McKinley Ave will be provided.
- FY13 BN TEMF: This new 12,500-SF facility is a support facility for the battalions housed on the East Compound. The project includes a 100- foot-wide apron of hardstand along the west side of the building and no new parking.
- MWD Kennel: This new 9,300-SF facility will replace the current kennel on the East Compound. This includes administration space, indoor and outdoor kennel area, outdoor storage, an obedience course, and 18 new parking stalls.
- Data Center: This new 1600-SF communications facility on the West Compound will provide connectivity for all SOF facilities in each compound with the Group HQ building.
- Madigan Bypass: This new roadway will replace the Madigan Bypass that bisects the northern portion of the East Compound.
- TUAV: This new 9,200-SF building is a support facility. No new parking will be provided.
- Rigging Facility upgrades: The existing rigging tower facility on the West Compound will be upgraded to enable continued use of this essential facility.
- PT Trail: A trail will be provided along Murray Creek between the West and East compounds.

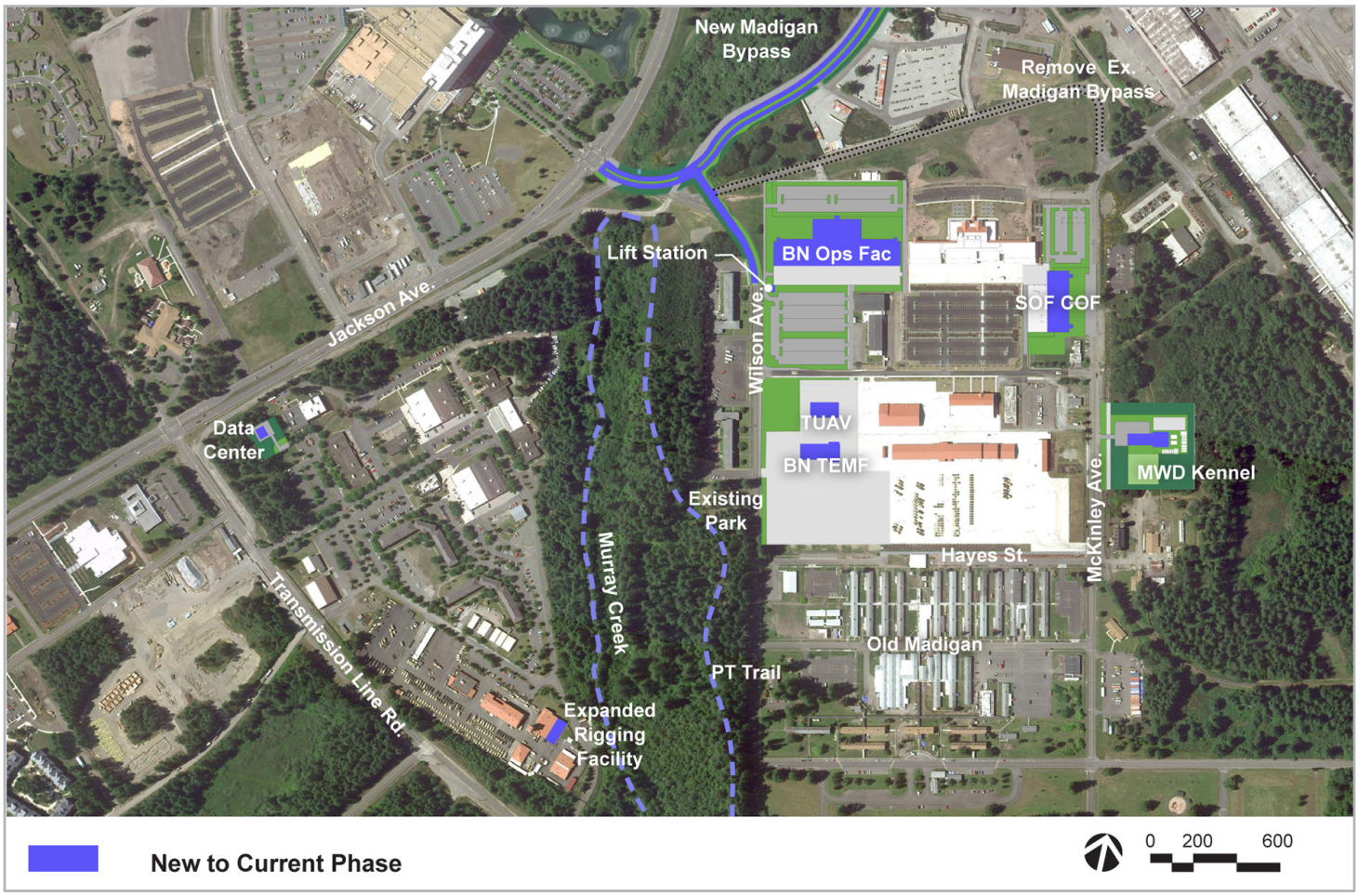


Figure 13. Phase 1 Master Plan Development

Phase 2

Phase 2 includes three new buildings and associated hardstand and parking on the East Compound (Figure 14). These facilities must be completed before construction of facilities can begin on the West Compound. Because of the need to replace the Keeler Gym prior to its demolition, it is expected that some East Compound parking will be provided on the West Compound until the demolition of the gym is approved.

- BN BOF (GSTB): This new 122,000-SF building will house 450 personnel. The project includes a 100-foot-wide apron of hardstand and provides 405 additional parking spaces.
- BN TEMF (GSTB): This new 12,500-SF building is a support facility for the battalions housed on the East Compound. The project includes a 100-foot-wide apron of hardstand on all sides of the building and no new parking.
- FSC/GSB BN COF: This new 78,500-SF building will house 541 personnel and provides 342 additional parking spaces.

Phase 3

Phase 3 includes six new buildings and associated infrastructure, parking, and landscaping on the West Compound (Figure 15). The timing of individual projects will depend on funding. The sub-phasing within this phase of work will need to be coordinated carefully, as the existing HQ, DFAC, and Barracks buildings need to be replaced before they can be demolished. Because many of the buildings are replacement buildings, existing parking capacity can be reallocated to the

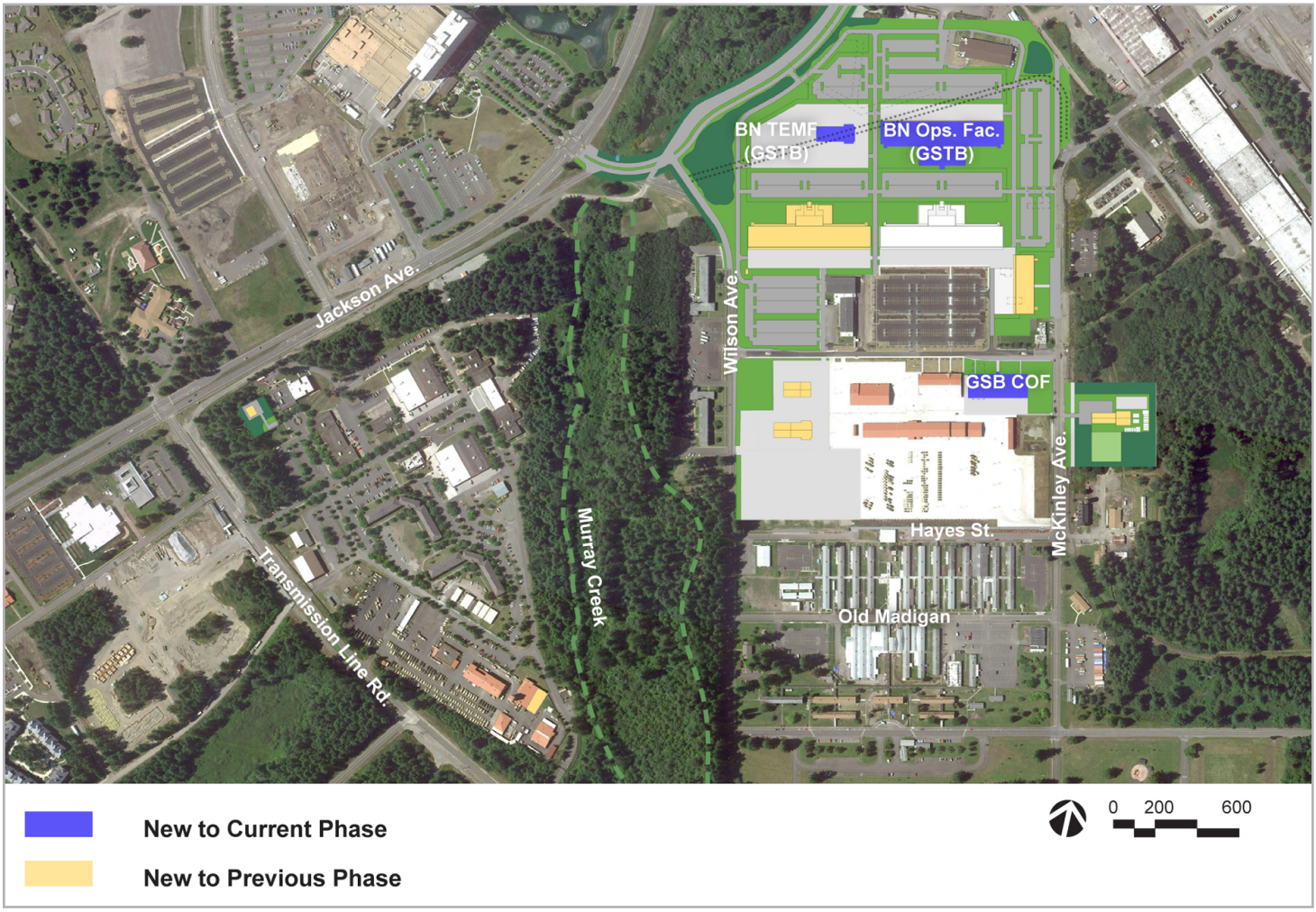


Figure 14. Phase 2 Master Plan Development

new projects. New parking will displace the Mil Van Storage Yard. Materials that are currently stored in the yard will be moved into the new constructed facilities.

- Group HQ: This new 68,000-SF building will house 480 personnel. The project will include a drop-off area with landscaping on the south of the building, 100 feet of hardstand along its north, and a total of 516 parking spaces.
- CRTF/THOR3: This new 57,000-SF building and associated landscaped areas will provide training for SFG personnel. Approximately 94 parking spaces have been provided to accommodate personnel who drive to the facility.
- Barracks: Two new barracks buildings are proposed at 70,500 SF each to house approximately 385 personnel. A landscaped green to the north and a landscaped courtyard to the south are included, as well as parking for 448 cars. These two buildings and associated site development will be funded with MILCON funds.
- DFAC: This new 17,500SF building will provide meal service to personnel on the West and East compounds. Site development includes an outdoor dining area, building service drives, approximately 35 convenience parking spaces, and landscaping around the buildings. This building and associated site development will be funded with MILCON funds.
- Community Center: This new 8,500-SF building will provide needed space for visiting families and supplement the space available for dining. No additional parking is provided. This building and associated site development will be funded with MILCON funds.

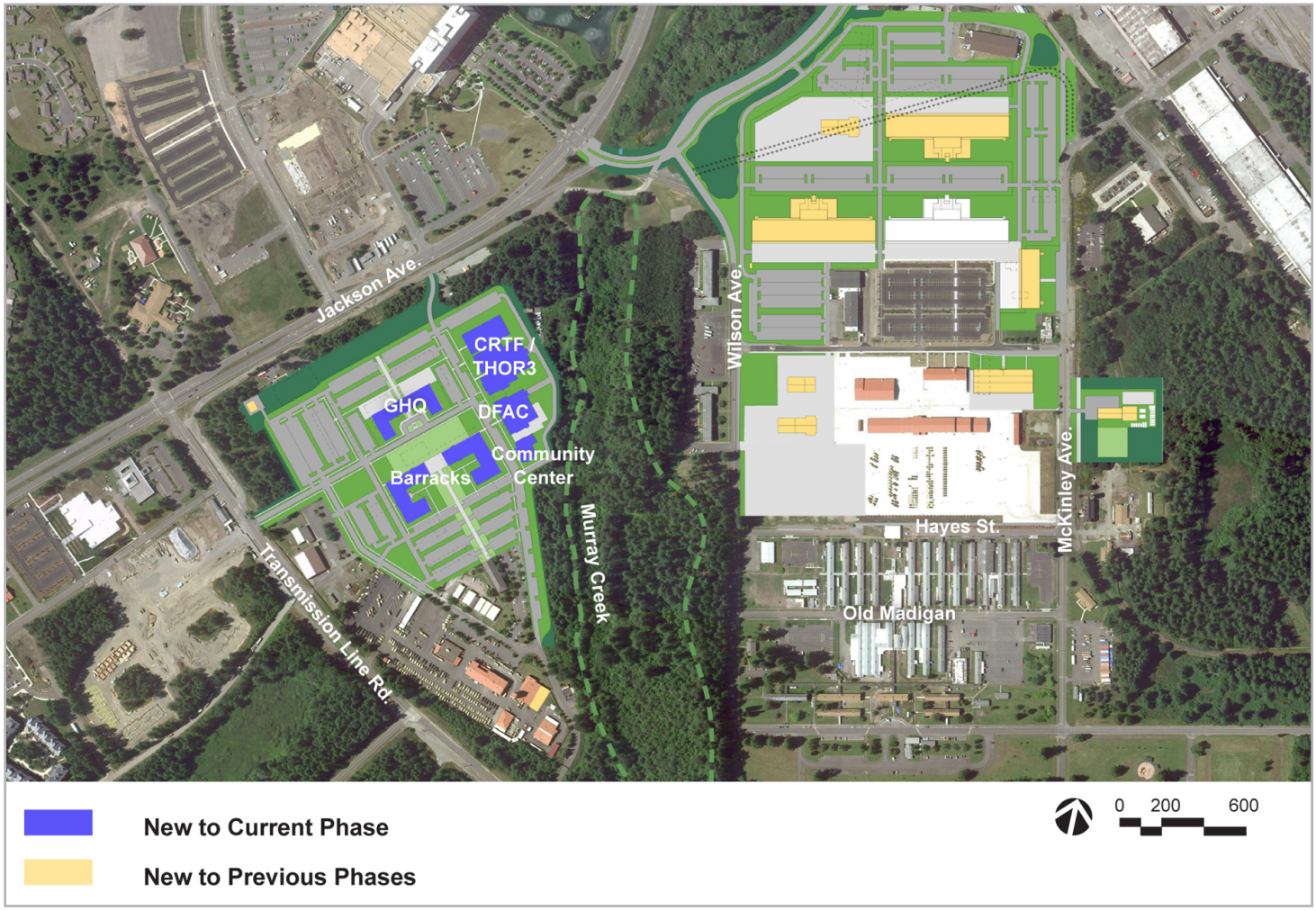


Figure 15. Phase 3 Master Plan Development

Phase 4

Phase 4 (Figure 16) includes two new buildings on the East Compound on the site of the current Madigan Barracks. An alternative plan would locate these two buildings on the West Compound, if it is not feasible to remove the barracks and the site is not available for the warehouses. Removal of the Keeler Gym will be required to provide additional parking on the East Compound.

- SOF Deployment Warehouse: This new 50,000-SF building is a support building. A new hardstand area will be provided adjacent to Wilson Avenue.
- SOF Logistics Facility: This new 54,000-SF building is a support building. A new hardstand area will be provided for load out adjacent to Wilson Avenue and no additional parking spaces will be provided.

Future

Future development capacity is an important concept in the master plan. Hypothetical future building footprints have been identified to illustrate and test future development potential on the West Compound (Figure 17). Based on that preliminary analysis, the West Compound can accommodate approximately 150,000 SF of future facilities. Depending on the types of facilities proposed, additional space for parking may be required; this will need to be considered carefully before confirming

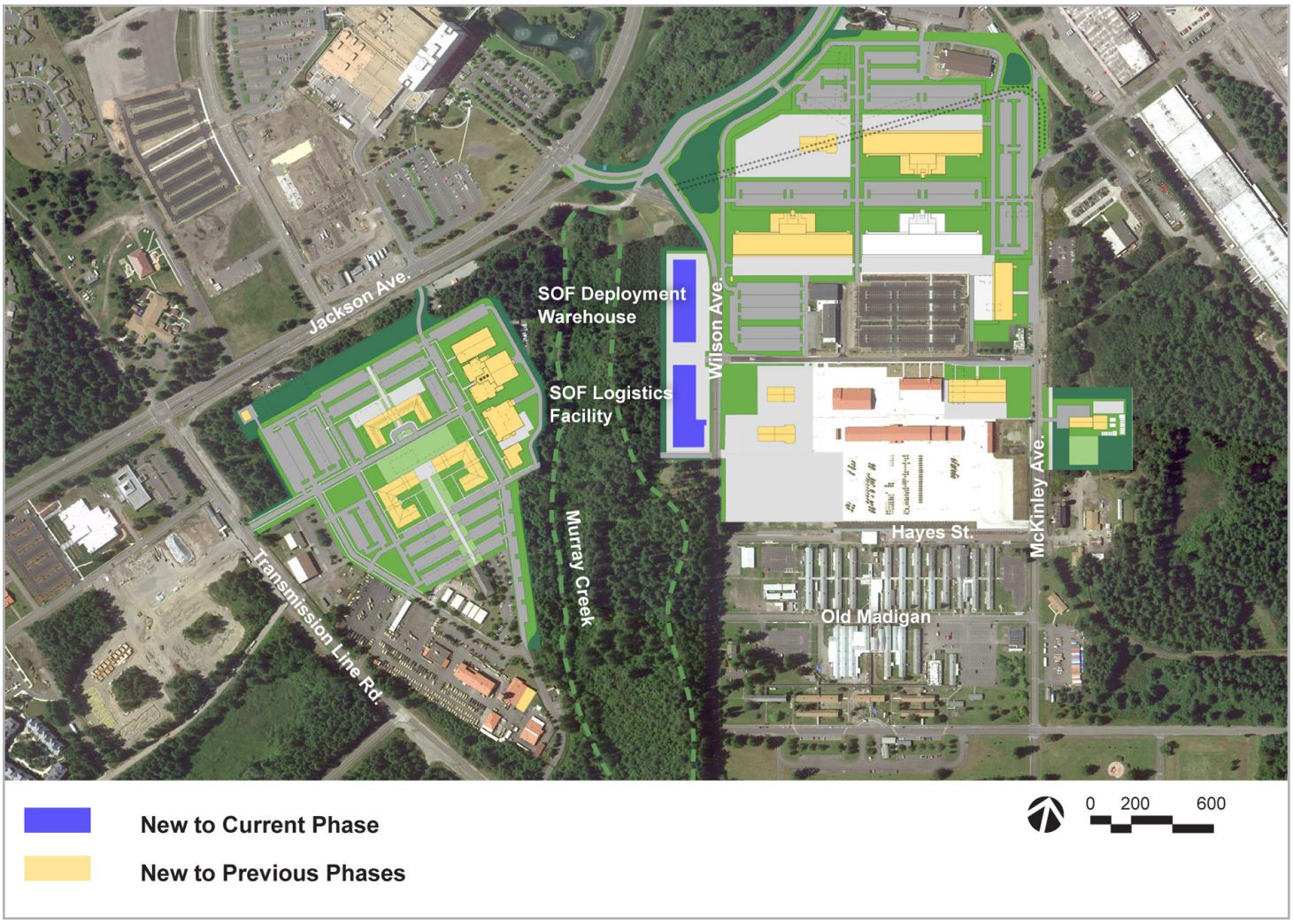


Figure 16. Phase 4 Master Plan Development

future development potential. Future development on the East Compound has not been projected, and will require structured parking to free land area for buildings.

- Future building footprints on West Compound include an additional BOF, TEMF, and administrative buildings. Provides 389 additional parking spaces.
- The demolition of Keeler Gym provides 212 additional parking spaces in the East Compound.
- In addition, a new bridge is under consideration to provide connectivity for pedestrians, vehicles, and bicycles between the West and East compounds. Parking requirements are summarized below.

Parking

The amount of parking that is required is significant, as transit and other non-automotive transportation options are limited at JBLM, and especially so within 1st SFG facilities. The privately owned vehicle (POV) parking requirement for the master plan is based on current standards that demand parking for 90% of building occupancy for SFG facilities, and parking for 70% of building occupancy for barracks buildings.

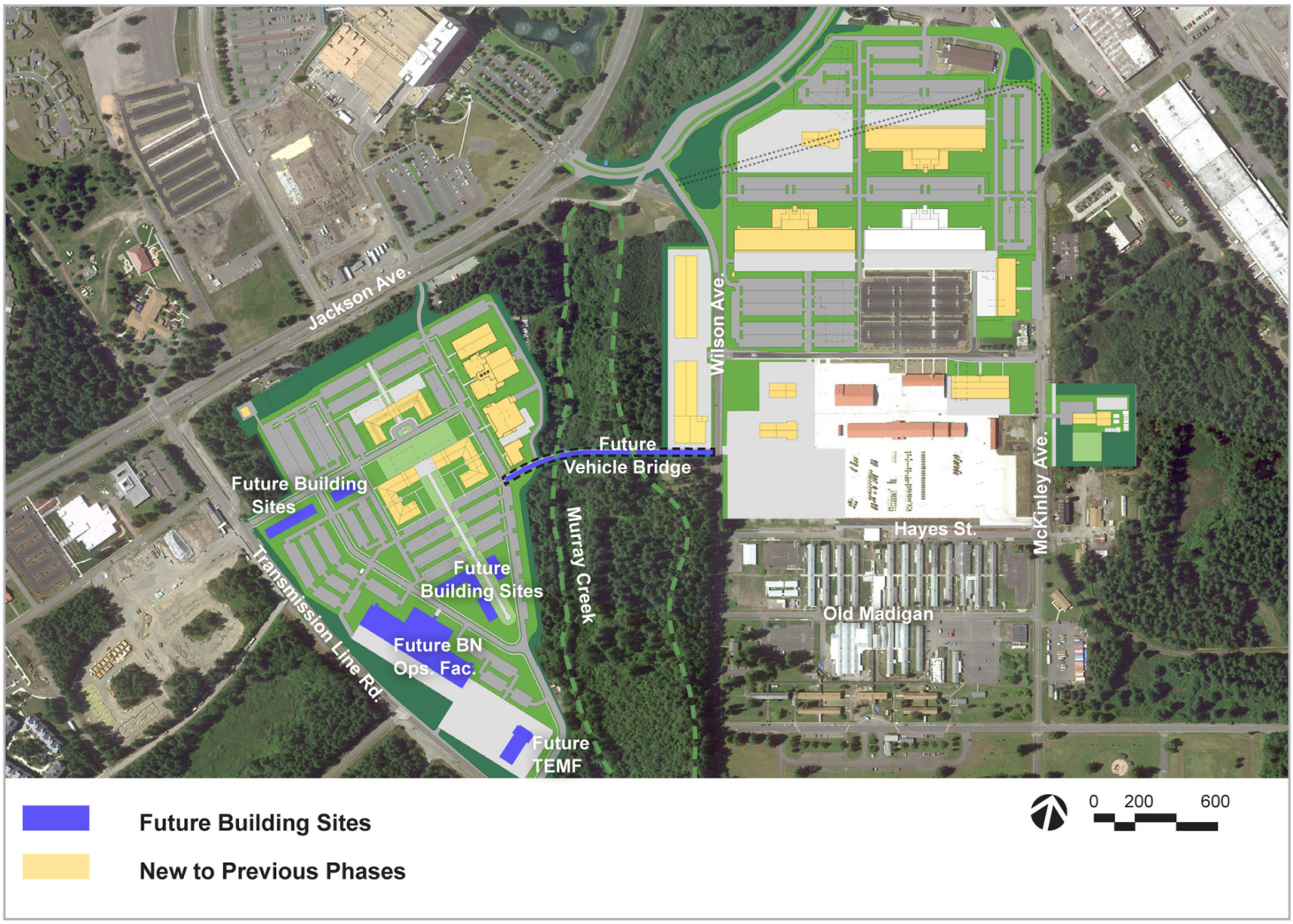


Figure 17. Future Master Plan Development

Note that, for buildings such as the BOFs and the HQ that house personnel during most of the day, the plan provides parking for 90% of the building occupants, while for buildings that are support facilities with variable occupancy, the plan provides shared parking, a strategy that eliminates duplicate parking being provided for the same personnel in the same location. In the West Compound, a limited amount of convenience parking is provided for the DFAC and the CRTF/THOR3, as those facilities will be used exclusively by SFG personnel that are already parking within the compound. Parking will be built in phases and to the greatest extent possible will be located close to the buildings served. To support the development of a walkable campus environment, parking is located to the greatest extent possible in perimeter locations, Organizational parking and staging areas are provided where needed and are tracked on a square foot basis (see tables 3 and 4 and Figure 18 for a summary of all POV parking and organizational parking requirements).

Current parking in the East Compound does not meet required needs. However, surface parking for new development on both the West and East compounds will meet the new parking requirements of phases 1-3. In Phase 4, due to limited space, no additional parking is provided with the construction of the Logistics Facility and Deployment Warehouse. Parking will remain restricted in the East Compound until Keeler Gym can be removed and additional parking provided. Parking in the future phase in the West Compound is hard to predict, as most of the building sizes and uses are hypothetical, but it is likely that parking will not be available to support direct application of the current standards. Either structured parking or parking demand reduction strategies will be needed.

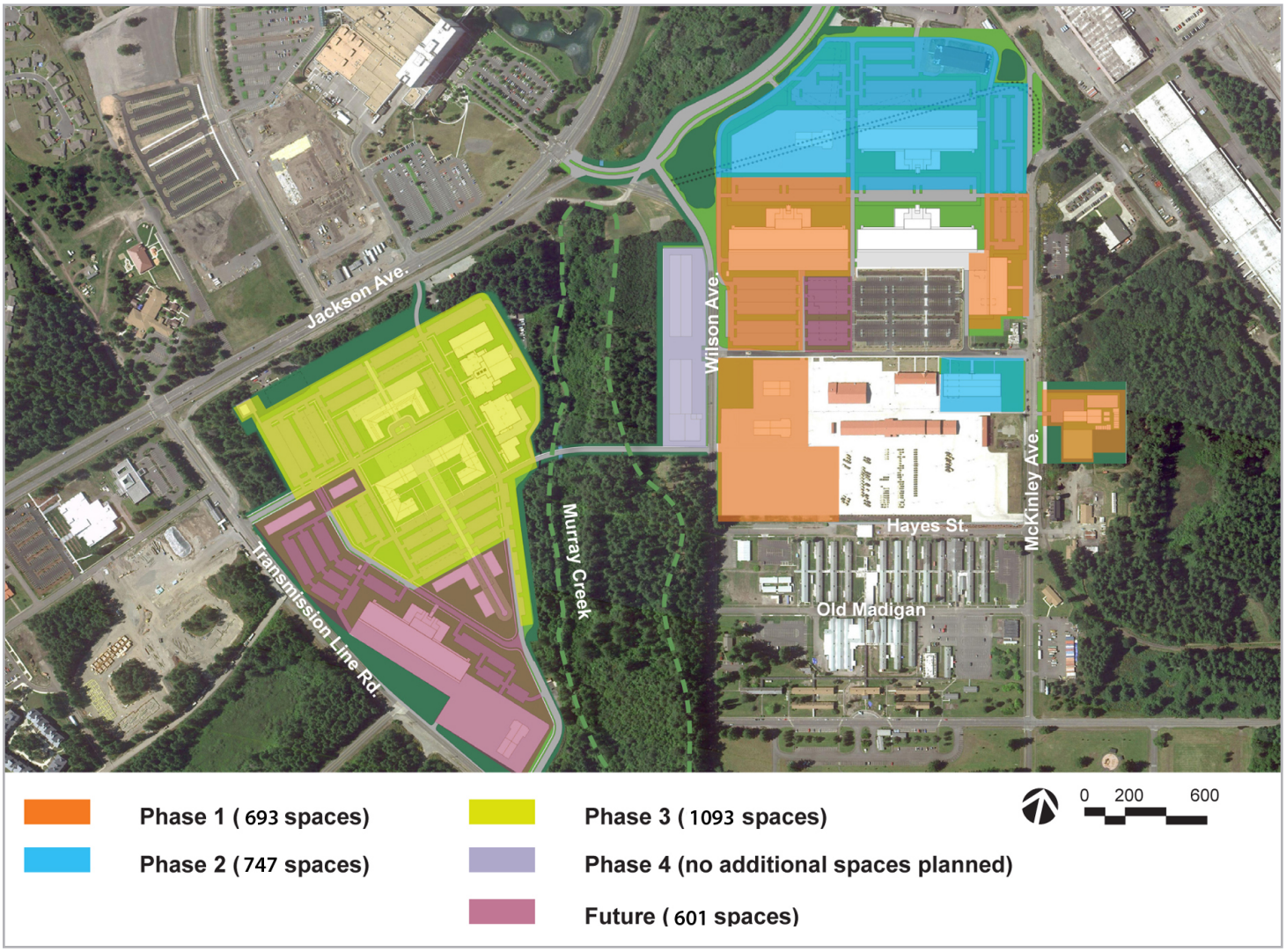


Figure 18. Parking Analysis

Parking Requirements - West Compound

West Compound		Bldg. Square Footage	Organizational Parking (SF)	Personel Number	POV Parking Stds	POV Parking Required	POV Parking Provided
Phase 1	Data Center	1,600	na	varies	existing	0	
	Parachute Rigging Facility	15,000	na	varies	existing	0	
	Subtotal West (phase 1)		**0**			**0**	**0**
Phase 3	Group HQ	68,800	na	480	90%	432	
	Barracks #1	70,500	na	385	70%	270	
	Barracks #2	70,500	na	385	70%	270	
	CRTF/THOR3	57,000	na	varies	shared parking	20	
	Community Center	8,500	na	varies	shared parking	0	
	DFAC	17,500	na	varies	shared parking	20	
	Subtotal West (phase 3)		**0**			**1012**	**1093**
Future	1st BN Ops Fac (BOF)	120,000	58,000	522	90%	470	
	1st BN TEMF	12,500	29,200	varies	shared parking	0	
	Admin Bldg (s)	tbd	na	tbd	90%	tbd	
	Subtotal West (future)		**87200**			**470**	**389**
	Total West (incl Future)		**87200**			**1482**	**1482**

Parking Requirements - East Compound

East Compound		Bldg Square Footage (SF)	Organizational Parking (SF)	Personel Number	POV Parking Stds	POV Parking Req	POV Parking Provided
Existing Buildings	Warehouse	28,793	na	varies	shared parking	0	
	Indoor Firing Range	25,860	na	varies	10 (est.)	10 (est.)	
	FY08 BN Ops Fac (BOF)	122,396	existing	522	90%	470	
	MAROPS	15,509	existing	varies	shared parking	0	
	FSC/GSB BN HQ	38,994	existing	373	90%	336	
	TEMF (GSB)	45,088	existing	varies	shared parking	0	
	Hazadous Materials Storage	6,615	existing	varies	shared parking	0	
	Oil Storage Building (GSB)	1,009	existing	varies	shared parking	0	
	Keeler Gym	18,393	na	varies	shared parking	0	
	Subtotal East (existing)		**0**			**816**	**540**
Phase 1	FY13 BN Ops Fac (BOF)	120,000	58,000	522	90%	470	
	FY12 SOF COF	48,000	25,200			24	
	FY13 BN TEMF	12,500	342,275	varies	shared parking	0	
	TUAV	9,200		varies	shared parking	0	
	MWD Kennel	9,315	11,000	20	90%	18	
	Subtotal East (phase 1)		**436475**			**512**	**693**
Phase 2	4th BN Ops Fac (GSTB)	122,000	52,200	450	90%	405	
	4th BN TEMF (GSTB)	12,500	77,500	varies	shared parking	0	
	GSB COF (Expansion)	78,500	103,000	441	90%	397	
	Subtotal East (phase 2)		**232700**			**802**	**747**
Phase 4	SOF Logistic Warehouse	54,000	42,000	varies	shared parking	25	
	SOF Deployment Warehouse	50,000		varies	shared parking	25	
	Subtotal East (phase 4)		**42000**			**50**	**0**
Future	Keeler Gym demolition		na				
	Subtotal East (future)		**0**			**0**	**212**
Total East			**711175**			**2180**	**2192**

Table 3. Parking Requirements West and East

Sustainability Strategies

During the development of the master plan, opportunities were explored to embed sustainable design into the fabric of the plan. This work included primary decisions about density and walkability as well as a systematic look at stormwater management, planning for energy efficiency, and other issues.

An overview of the issues explored is provided below, as well as a summary of JBLM sustainability goals, additional relevant guidance documents, and a preliminary assessment of LEED strategies. Of particular note for the 1st SFG facilities are the recycling and solid waste diversion strategies that should be integrated into the planning, design, and construction process for all facilities.

JBLM Sustainability Goals

Reduce installation stationary source and non-tactical motor vehicle air emissions 85 percent by 2025.

Reduce total energy consumption by 30 percent by 2015.

Sustain all activities on post using renewable energy sources by 2025.

Create sustainable neighborhoods for a livable JBLM community that enhances the Puget Sound region.

Cycle all material use to achieve zero net waste by 2025.

Maintain the ability of JBLM to meet its current and future military missions without compromising the integrity of natural and cultural resources, both on the installation and regionally.

Recover all listed and candidate federal species in the South Puget Sound region.

Treat all wastewaters to Class A reclaim standards by 2025 to conserve water resources and improve Puget Sound water quality.

> **Sustainable** design is a project goal and a requirement for JBLM and the SFG

Sustainability Strategies

Sustainable design is a project goal and a requirement for JBLM and the SFG. The following documents are applicable to the 1st SFG master plan.

- Department of Defense (DoD) Sustainable Buildings Policy: This memorandum was signed by Dr. Dorothy Robyn, Deputy Under Secretary of Defense (Installations and Environment), October 25, 2010.
- Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (updated December 2008): Executive orders 13423 and 13514 require new federal construction, major renovation, and repair and alteration to comply with the these guiding principles to the maximum practicable extent.
- JBLM Green Procurement Guide for Construction: Various laws and executive orders direct federal agencies to purchase environmentally preferable products to the maximum extent practicable. Collectively, these legal requirements are referred to as “green procurement.” DoD, Department of the Army, and Department of the Air Force policies require JBLM to maintain a green procurement program in accordance with these laws.
- JBLM Neighborhood Checklist for Sustainable Design: This is a voluntary guidance document for projects at JBLM.
- US Green Building Council LEED® Green Building Rating System: LEED Silver is mandatory, but, in general, JBLM attempts to achieve LEED Gold status.
- See the Whole Building Design Guide at: **http://www.wbdg.org/references/exec_orders.php** for a detailed list of federal executive orders and DoD mandates that apply to development at JBLM.

Neighborhood Design Checklist

JBLM has developed its own objective tool to track progress toward meeting the goal of creating "a sustainable community of walkable neighborhoods with identifiable town centers connected by great streets that support the mission." The system is based on 39 design principles drawn from the Fort Lewis master plan, with a design checklist to assess if the community-based sustainability principles are being implemented. The checklist ties into the five planning goals, encourages LEED standards, and measures the progress of the installation's achievement toward the US Army's Strategy for the Environment. Given the unique nature of 1st SFG facilities, the results are strong in some areas and less strong in others. Points related to mixed-use development including retail were not applicable to the building types being proposed at this time; however, the plan does allow room for additional buildings in the walkable core of the campus in the future. (Refer to Appendix G for LEED and Neighborhood Checklist.)

LEED Green Building Rating System

JBLM and the SFG have a mandate to achieve a minimum of LEED Silver under the USGBC's LEED Green Building Rating System. While LEED, which is a tool for measuring compliance with sustainability goals, allows some project–by-project flexibility—project teams can select the credits they choose to pursue—DoD gives priority to energy and water efficiency.

The DoD Sustainable Buildings Policy requires that beginning in FY12, for projects in the planning stage, the sum of energy and water efficiency credits must equal or exceed 40% of the points required for a LEED-Silver (or equal) rating to be earned in any combination of these credit categories.

- SS 7.1 Heat Island Effect, Non-Roof
- SS 7.2 Heat Island Effect, Roof
- SS 8 Light Pollution Reduction
- WE 1.1 Water Efficient Landscaping - Reduce Potable Water Use by 50%
- WE 1.2 Water Efficient Landscaping - No Potable Use or No Irrigation
- WE 2 Innovative Wastewater Technologies
- WE 3 Water Use Reduction
- EA 1 Optimize Energy Performance
- EA 2 On-Site Renewable Energy
- EA 3 Enhanced Commissioning
- EA 5 Measurement & Verification
- lEA 6 Green Power
- IEQ 1 Outside Air Delivery Monitoring
- IEQ 8.1 Daylight & Views - Daylight 75% of Spaces
- ID 1.1-1.5 Innovative Design, if achieved for energy and/or water savings
- RP 1.1-1.4 Regional Priorities, if achieved for energy and/or water savings

In addition to the prerequisites, the following LEED-New Construction (NC)/NR credits will be included in all MCA projects where applicable:

- SS 6.1 Stormwater Design, Quantity Control
- SS 6.2 Stormwater Design, Quality Control
- WE 1 Water Efficient Landscaping: No potable water used for irrigation.
- WE 3 Water Use Reduction: earn at least two points under this credit
- EA 1 Optimize Energy: earn at least 15 points under this credit
- EA 3 Enhanced Commissioning
- EA 5 Measurement and Verification
- MR 2 Construction Waste Management
- MR 4 Recycled Content
- IEQ 3.1 Construction IAQ Management Plans
- IEQ 3.2 Construction IAQ Management Plans
- IEQ 7.1 Thermal Comfort Design

Because of limited transit opportunities and the low density of development in the 1st SFG master plan area, many LEED site-related credits are not available. This means that a greater effort must be made in the energy and water portions of the rating system to achieve compliance. While this is consistent with the DoD Sustainable Buildings Policy and will reduce long-term operating costs, making compliance a reality will require a commitment to designing and budgeting improved building systems.

To help align the master plan with high performance design strategies, the master plan process looked at sustainable design opportunities that can be employed on individual projects to ease compliance with LEED and other sustainability requirements.

Encouraging Bicycle Use: Bicycle pathways are included throughout the master plan design and in the development of the bridge between the West and East compounds. While bicycle use is not prevalent now, it could become much more so in the future. Use of bicycles also supports PT goals. One LEED point is available for including bicycle storage areas and changing rooms in building designs.

Bike Shelters Close to Work and Living Areas

- **Preferred Parking for Low-Emitting and High-Efficiency Vehicles:** Given the reliance at JBLM on personal vehicles for transportation, encouraging the use of hybrids and other high-efficiency vehicles would be especially advantageous. Three LEED points are available for projects that set aside a minimum of 5% of the total parking area as preferred parking for drivers using low-emitting and high efficiency vehicles.
- **Stormwater Management Design:** Continued use of the JBLM standards for stormwater management will improve water quality and reduce impacts, even given the increase in site utilization. All stormwater at JBLM needs to be treated and managed on site. The current JBLM standards for low impact design of parking areas using rain gardens and bioswales have been incorporated into the master plan where space permits. Permeable paving is acceptable in parking areas only; however, maintenance costs are associated with it. JBLM has a contract for parking lot sweeping and vactor services to maintain permeable pavements on the base. Two LEED points are available for stormwater design for quality and quantity control.
- **Water Efficient Landscaping:** Continued use of the JBLM standards that mandate zero potable water use for landscaping to meet water efficiency goals is another strategy. The use of native and naturalized trees is proposed throughout to eliminate the need for irrigation beyond the period of establishment for landscaping. Four LEED points are available for landscapes with zero potable water use.
- **Water Collection and Reuse:** Rainwater collection is recommended on the West Compound to support irrigation of open space and on both the West and East compounds for toilet flushing. Holding tanks could go under the pavement or above ground, integrated within buildings. Maintenance of cisterns and water treatment devices (if needed) will need to be considered carefully. Four LEED points are available for projects that reduce water use by 40% or more.

Raingarden Bio-filtration Swales in Parking Lots

Waterwise Landscapes

- **Energy Efficiency:** Energy-efficient building design will contribute to long-term cost savings and is necessary to meet LEED requirements. To meet LEED Silver for energy efficiency, as many as 12 LEED points may need to be targeted. An additional five LEED points can be gained for the use of enhanced commissioning and of measurement and verification protocols to ensure that savings are achieved and maintained over time. High performance design strategies will vary depending on the building type. An integrated design process (see below) should be employed by building design teams to ensure that energy goals are met.
- **Renewable Energy:** Renewable energy should be considered. Currently, only solar for hot water is used, as the rate of return on investment is currently much higher for solar hot water than for photovoltaic (PV) systems. Third-party financing of PV systems may be a good method for financing these systems without burdening project budgets. Up to seven LEED points are available for the use of renewable energy systems. This could be an important strategy for projects attempting to meet LEED Gold.
- **Construction Waste Management:** Recycling construction waste reduces the amount of material sent to the landfill and is commonly available in Washington. Two LEED points are available for recycling 75% or more of the construction waste stream (see the following section for guidance on recycling at JBLM).
- **Environmentally Preferable Materials:** JBLM Green Procurement Guidelines require the use of recycled content materials. Reuse of waste material generated from construction and demolition of buildings on site should also be considered (see Construction and Demolition Waste Recycling below for more detailed discussion). Four LEED points are available for the use of recycled content and regional materials.
- **Daylighting:** Building design standards at JBLM encourage the use of narrow building floorplates for daylighting; however, creative solutions are needed to balance security requirements and the cost associated with AT/FP-compliant windows to meet daylighting goals. This is a high priority goal for JBLM as daylighting improves the quality of the indoor environment and has long-term benefits for reduced energy use. In addition to windows with blast-resistant glazing, skylights, light tubes, clerestory windows, and use of interior glazing to provide “borrowed daylight” to interior zones should be explored.

Captured Rainwater for Landscape Needs

- **Construction Indoor Air Quality Strategies:** These can be built into project requirements documents as a standard. Two LEED points are available for the use of construction indoor air quality management plans during and after construction.
- **Low-Emission Materials:** The JBLM Green Procurement Guidelines require the use of building materials that limit emissions of volatile organic compounds (VOCs) into

the indoor environment. This is good practice and these materials are commonly available and cost competitive. Four LEED points are available for the use of low-emitting materials.

- **Thermal Comfort:** Strategies that promote thermal comfort are commonly employed in the design of highly energy-efficient buildings. Verification of thermal comfort is a valuable tool for understanding building performance. Two LEED points are available for thermal comfort design and verification.
- **District Energy Systems:** The integrated use of district energy systems involving cogeneration could be extremely beneficial at JBLM. Steam, which is a byproduct of cogeneration, is produced by the Steam Plant and would be a good source of heat for the barracks buildings. This potential application will require an independent study that can be applied to all buildings on the compound. This strategy could be beneficial in reducing long-term operating costs and the payback may be high. This should be studied independently of individual building projects because these may have time and budget constraints that limit investigation of multiple building solutions.

Construction and Demolition Waste Recycling

Solid waste diversion from construction and demolition activities presents a large opportunity given the quantity of demolition and construction activity that is planned at JBLM over the next 20 years. Current guidelines for all construction activities at JBLM require the diversion of at least 60 percent of construction and demolition materials (e.g., excess lumber, roofing, drywall, carpet, piping, cardboard, etc.) from the landfill. Waste material generated by the project may be recycled or reused on post in designated recycling and reuse areas. It will be necessary to dispose, recycle, and reuse all other materials not designated for on post recycling or reuse off post at the Contractor's expense.

Government policy is to apply sound environmental principles in the design, construction, and use of facilities. As part of the implementation of that policy, the Contractor must practice efficient waste management when sizing, cutting, and installing products and materials, and use all reasonable means to divert construction and demolition waste from landfills and incinerators and facilitate their recycling or reuse.

Recycle Construction Waste
(Photo Credit: U.S. Army Corps of Engineers Wilmington District)

The Contractor must submit a waste management plan within 15 days after Notice to Proceed (NTP) and prior to initiating any site preparation work. The plan must include the elements listed below:

- Names of individuals on the Contractor's staff responsible for waste prevention and management.
- Actions to be taken to reduce solid waste.
- Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas and equipment to be used for processing, sorting, and temporary storage of wastes.
- Characterization, including estimated types and quantities, of the waste to be generated.
- Name of landfill and/or incinerator to be used and the estimated costs for use, assuming no salvage or recycling on the project.
- Identification of local and regional reuse programs, including JBLM programs and non-profit organizations such as schools, local housing agencies, and organizations that accept used materials such as materials exchange networks and Habitat for Humanity.
- List of specific waste materials to be salvaged for resale, salvaged and reused, or recycled. Recycling facilities to be used shall be identified, including those on JBLM.
- Identification of materials that cannot be recycled/reused with an explanation or justification.

- Anticipated net cost savings determined by subtracting Contractor program management costs and the cost of disposal from the revenue generated by sale of the materials and the incineration and/or landfill cost avoidance.

JBLM recycling and reuse areas for the specified materials follow.

- Sequalitchew Training Area and Center for Environmental Education and Earthworks (aka, Earthworks). Materials accepted for recycling purposes are concrete, asphalt, brick, concrete block (if not painted with lead-based paint), rock, land clearing/clearing debris, and excess uncontaminated soil.
- Uncontaminated excavated or unsuitable soils are accepted at the following pits subject to availability and direction of JBLM DPW: Sequalitchew, Gray Army Airfield Pit, East Gate Pit, and Lincoln Pit. Non-hazardous lead-contaminated soil (top 6 inches from designated areas) is accepted at former Landfill 2 subject to availability and direction from JBLM PW.
- Submit a "Borrow Source Use and Entry Notification Form" to dispose of uncontaminated soils within JBLM at the designated sites and under the direction of JBLM PW.
- Coordinate all recycling activities, disposal of materials on JBLM, and obtaining of permit forms through JBLM PW, Solid Waste and Recycling Program Manager, JBLM PW/ED, phone: (253) 966-6452; cell: (253) 377-1420; fax: (253) 967-9937; e-mail: ron.norton1@us.army.mil.
- Disposal, recycling, and reuse of materials at JBLM YTC shall be coordinated with JBLM YTC ED.
- The Government maintains the right to salvage all materials from the building until the NTP date.
- Assume that all demolition buildings will have no salvage value.
- Fill depressions caused by the removal of demolished materials such as building pavements, sidewalks, utility lines, and pad, etc., to grade, compact per soil compaction requirements, and slope to drain towards the nearest appropriate structural stormwater management measure.
- If fuel-contaminated soils are found during demolition or cut/fill operations, the Contractor must cease work immediately and notify either the Contracting Officer representative or the Contracting Officer for resolution that can include removal of the contaminated soil, filling, and capping the area with clean, uncontaminated soil. The Contractor should coordinate with JBLM ED to ensure proper classification and procedures prior to removal of contaminated soil.

Design Process to Meet High Performance Building Goals

All projects should use a collaborative, integrated planning and design process to optimize performance within the budget. This process begins with establishing performance goals for siting, energy, water, materials, and indoor environmental quality along with other comprehensive design goals and ensures the incorporation of these goals throughout the design and lifecycle of the building. Developing a whole building energy model is key to evaluating alternatives to meet aggressive energy goals. The integrated design process is described in the Whole Building Design Guide:

http://www.wbdg.org/design/engage_process.php

Roadway Analysis

The Fort Lewis master plan sets out guidelines for development in and around the West Compound and the East Compound (also known as the Old Madigan area). The compounds are designated as Special Use/ Non-Regulated Areas with Troop Support functions.

While this designation exempts 1st SFG facilities from some Fort Lewis master plan requirements, the exemption does not apply to street standards. For the West Compound, Cramer Avenue, Sansone Street, and Ruddy Avenue are identified as District Streets.

For the East Compound, Wilson and McKinley avenues are identified as District Streets, while the Madigan Bypass is currently designated Parkway. Cross-sections developed as a part of the Fort Lewis master plan are included to help illustrate design intent for the 1st SFG master plan (Figure 19).

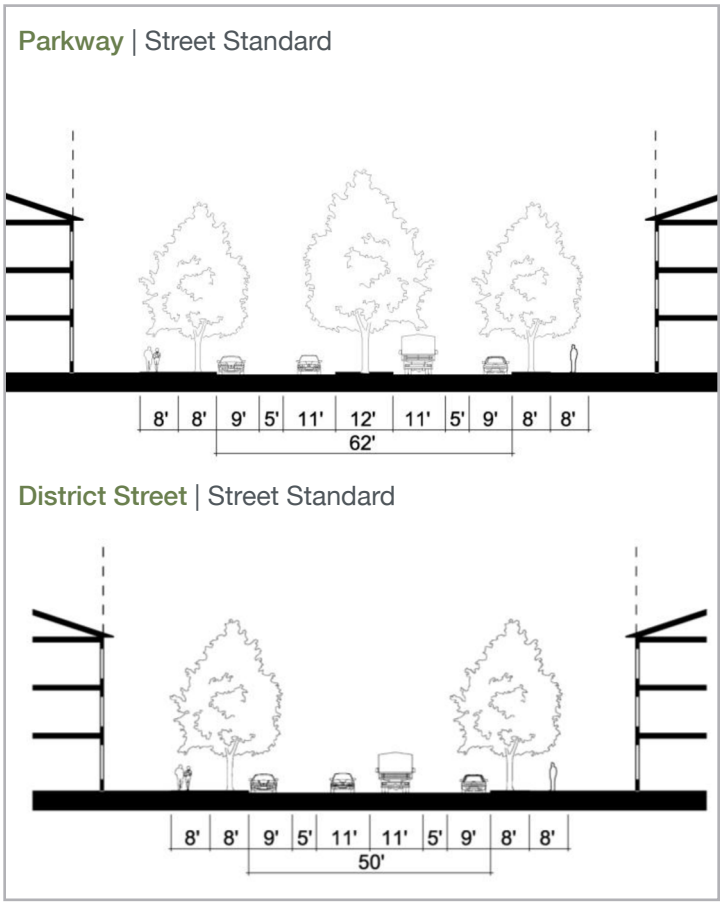


Figure 19. District & Parkway Cross-section (Street Standards per the Fort Lewis Master Plan: Long Range Component)

Improvements to Perimeter Roadways

Madigan Bypass Realignment

The existing Madigan Bypass is heavily used by civilian and military traffic traveling between Jackson Avenue and the Logistics Center. Although the Madigan Bypass is considered a JBLM roadway, the relocation was considered as a part of this master planning effort. The new Madigan Bypass is identified in the Fort Lewis master plan as a parkway, with the existing tank trail to the north and existing facilities to the south.

On the east end, the road makes a sharp bend to the south and intersects at an obtuse angle with South “L” Street and what becomes McKinley Avenue. The Madigan Bypass splits the northern end of the SFG compounds, creating a barrier between SFG operations on either side of the roadway.

Three alternative roadway alignments for a new Madigan Bypass were developed during the master planning process. The goal of the alignment study was to either enhance the existing roadway through the SFG East Compound, or provide a new alignment outside the complex. The roadway section for all alternatives is composed of two 11-foot lanes in each direction, a 15-foot median between east/west lanes, and a 4-foot planter strip with 6-foot sidewalk on the south side only. A traffic analysis is required to decide the ultimate roadway section. The Madigan Bypass is proposed to be designed and constructed in Phase I.

Alternative 1

Alternative 1 abandons the existing location of Madigan Bypass and shifts the roadway to the north along the south side of the existing tank trail (Figure 20). The alignment would enter the Logistics Center at Perry Avenue and South “I” Street. This alternative would require a slice of SFG’s Mil Van yard for its entire length, and would demolish buildings along South “I” Street to connect to Perry Avenue.

Alternative 1 provides the most benefit to the SFG: it removes Madigan Bypass from the East Compound and maximizes the opportunity to redevelop the area within SFG control. Alternative 1 incorporates a roundabout at the intersection of Wilson Avenue. A large grove of Oregon white oak trees are located west of the Mil Van yard, north of the existing Madigan Bypass road, and south of the tank trail. Part of the Alternative 1 roadway is located along this section and the roadway design will need to consider the oak trees in this area and avoid large oaks or mitigate as necessary.

- Estimated Alternative 1 construction cost: $3,692,000

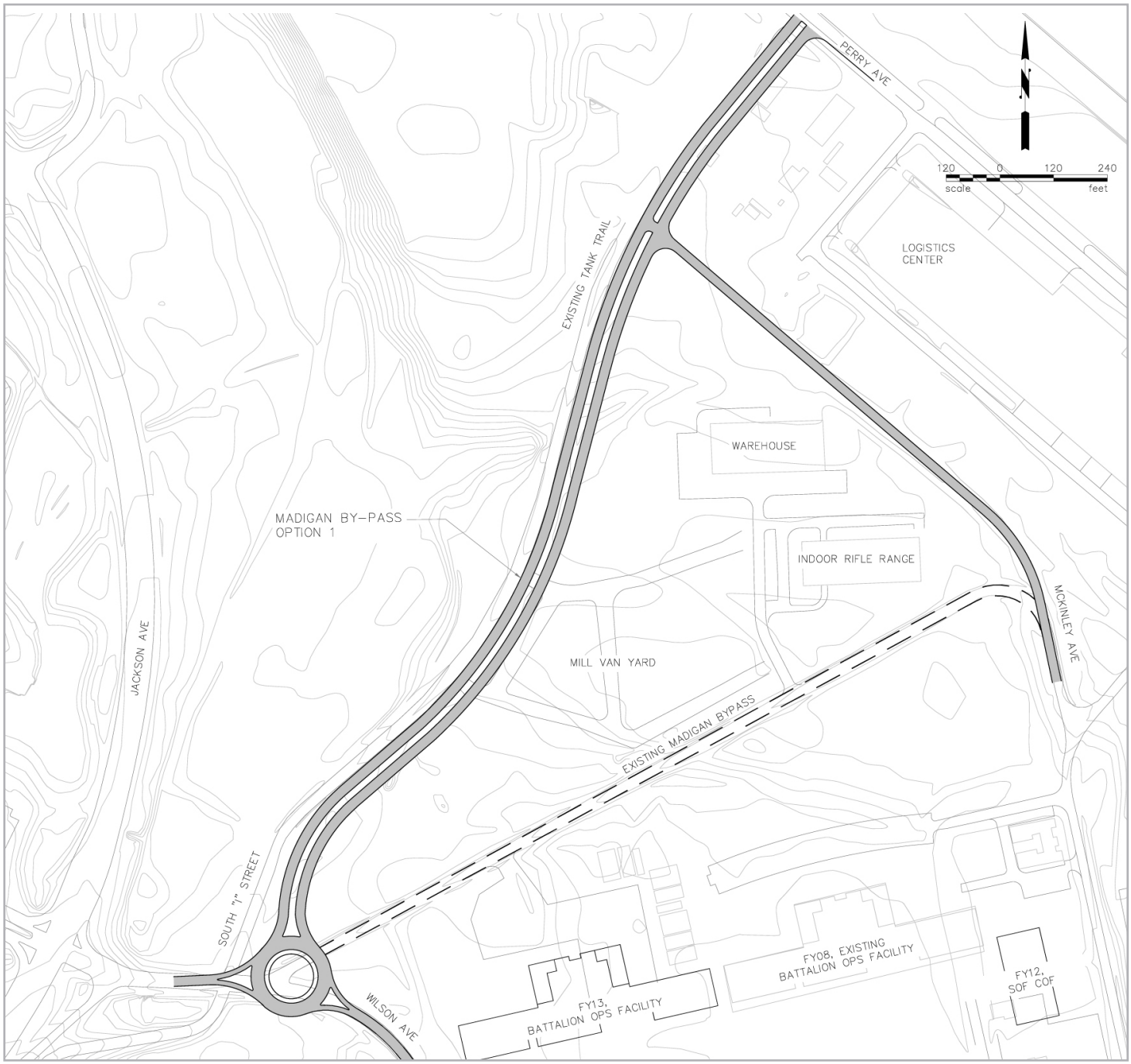


Figure 20. Madigan Bypass Alternative 1

Alternative 2

Alternative 2 is the same as Alternative 1, except the roundabout at Wilson Avenue is replaced with a standard T-intersection (Figure 21). Similar to Alternative 1, a portion of the roadway is located in the vicinity of a large grove of Oregon white oak trees. Alternative 2 is the preferred alignment and is used throughout the planning document.

- Estimated Alternative 2 construction cost: $3,765,000

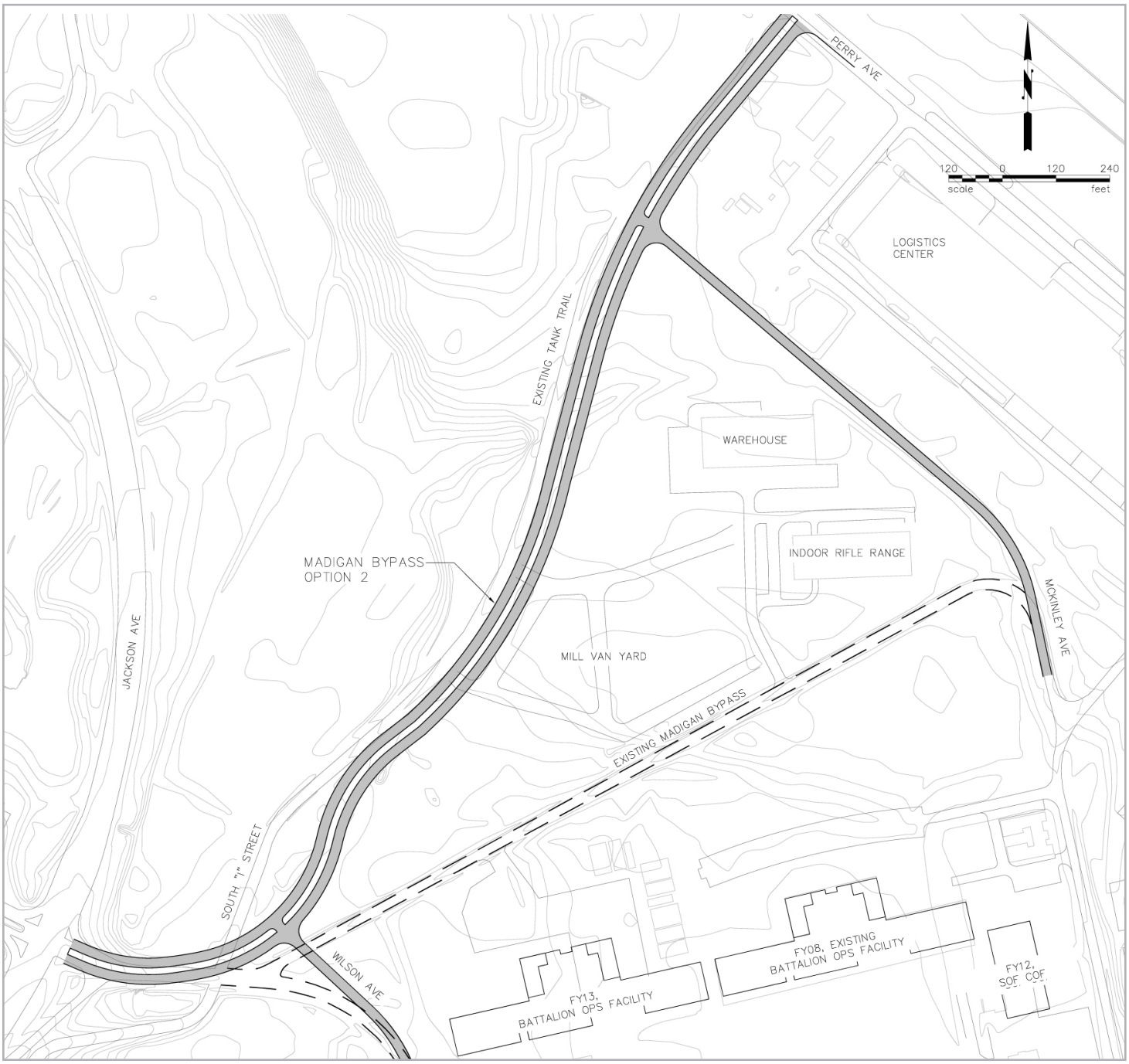


Figure 21. Madigan Bypass Alternative 2

Alternative 3

Alternative 3 shifts the roadway to the south of its current location and provides a more direct alignment into McKinley Avenue and South “L” Street (Figure 22). This alternative continues to split the northern portion of the SFG facilities, but creates more usable space for their development. Alternative 3 provides better traffic alignments at the intersections of Wilson Avenue and the tank trail to the west and with McKinley Avenue and South “L” Street to the east. Alternative 3 includes a roundabout at McKinley Avenue.

- Estimated Alternative 3 construction cost: $2,967,000

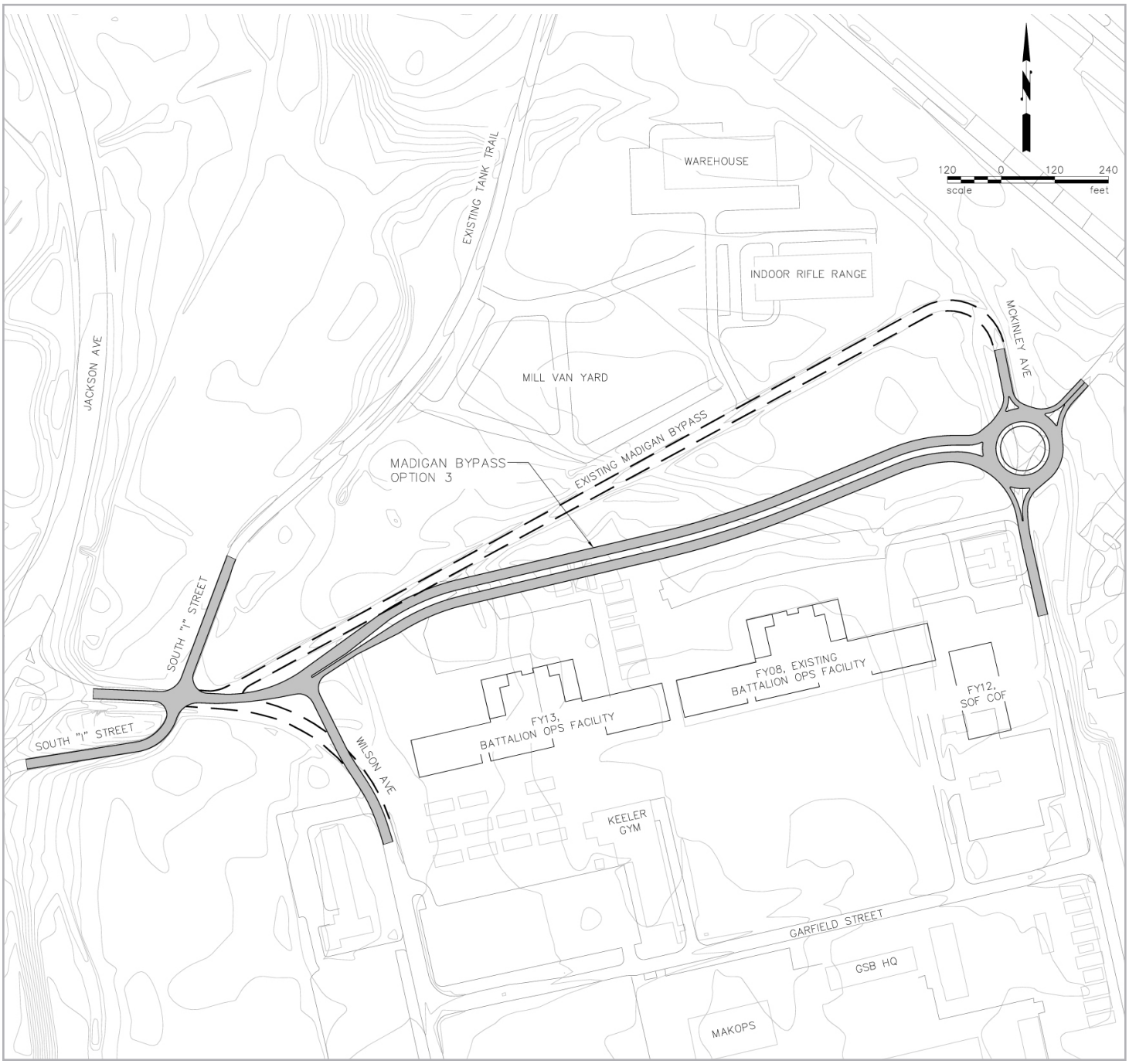


Figure 22. Madigan Bypass Alternative 3

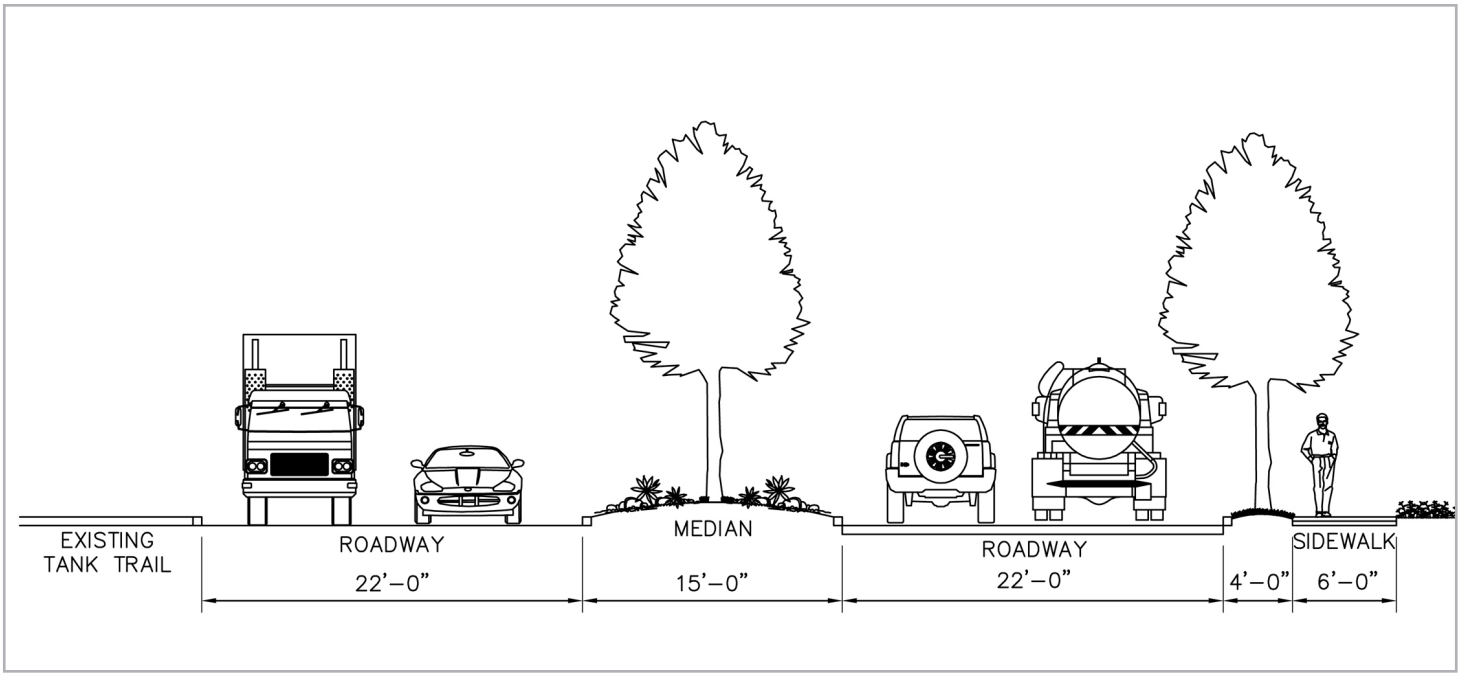


Figure 23. Proposed Madigan Bypass Cross-section

The roadway section for all alternatives is composed of two 11-foot lanes in each direction, a 15-foot median between east/west lanes, and a 4-foot planter strip with 6-foot sidewalk on the south side only (Figure 23). A traffic analysis is required to decide the ultimate roadway section.

> **Although** the new Madigan Bypass is identified in the Fort Lewis master plan as a parkway, the cross-section has been modified slightly to best fit the site, with the existing tank trail to the north and existing facilities to the south

Transmission Line Road

Transmission Line Road forms the eastern boundary of the West Compound. The road is programmed to become the main arterial for JBLM traffic between Fort Lewis and McChord Air Force base. The proposed roadway cross section and its alignment along the West Compound were under study at the time of the master planning process, so any potential impacts from a new Transmission Line Road to the West Compound are not yet known.

Roadway and Parking Phasing

Roadway phasing parallels the development phasing recommended in the 1st SFG master plan.

Phase 1

No roadway upgrades are anticipated in Phase 1 in the West Compound. A driveway extension is needed from the existing parking area near the Group Headquarters to the Data Center.

A primary roadway improvement for Phase 1 is taking the old roadway of the Madigan Bypass, which divides the East Compound, and shifting the roadway to the north of the existing 1st SFG facilities so that traffic can bypass the site instead of traveling through the middle of East Compound. Reconnecting Madigan Bypass with Wilson Avenue

and McKinley Avenue will be necessary to connect Old Madigan and the residential areas south of the site. In the East Compound, Garfield Street was improved with the FY08 BOF project and no other improvements are necessary (Figure 24).

The FY12 SOF COF is located next to McKinley Avenue. Currently, the only planned improvements to McKinley Avenue are the addition of 24 on-street parking spaces and sidewalks to service the project site. The proposed FY13 BOF is served by Garfield Street. A service drive is included with this project and extends from Garfield Street north to the proposed parking lot in front of the complex. The other service drive extends between the BOF complexes to the same parking lot to the hardstand. Internal driveways connect hardstands and parking lots to the north and south of the BOF facilities. The MWD Kennel will be relocated north of the existing steam plant and include an access driveway and associated parking. The TUAV and TEMF projects are situated between Garfield Street and West Hayes Street and consist of organizational parking. The former location of West Taft Street aligns with the proposed future bridge across Murray Creek. (Refer to the Bridge section below, which discusses the bridge evaluations and crossing locations.)

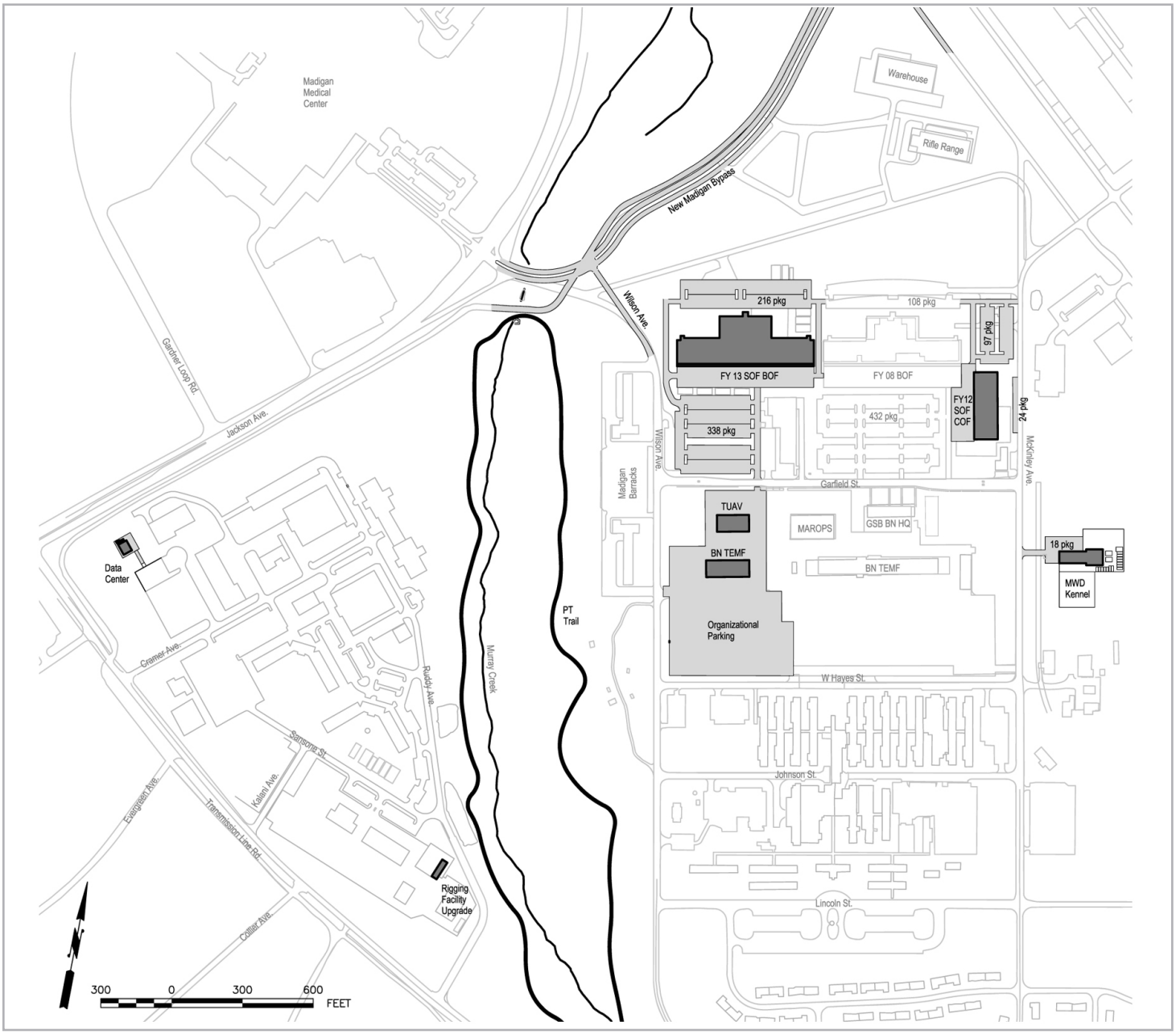


Figure 24. Phase 1 Infrastructure

Phase 2

No roadway upgrades are anticipated for the West Compound in Phase 2. In the East Compound, Phase 2 extends the service drives started in Phase 1 and includes a new east-side service drive (Figure 25). These service drives provide a loop system around the complex and interconnect. This allows the 1st SFG to access facilities from various locations without having to use public streets. Phase 2 also includes the proposed FSC/GSB COF which is located at the corner of Garfield Street and McKinley Avenue. This includes an access drive off McKinley Avenue and hardstand to support the facility. No road improvements are planned with this project.

Phase 3

Roadway and parking upgrades on the West Compound depend on funding cycles and securing funding for various buildings programmed in Phase 3 (Figure 26). When the Group HQ is constructed, Cramer Avenue should be upgraded with new paving, curb and gutter, and sidewalks for its entire length. Cramer Avenue will be the main thoroughfare into the

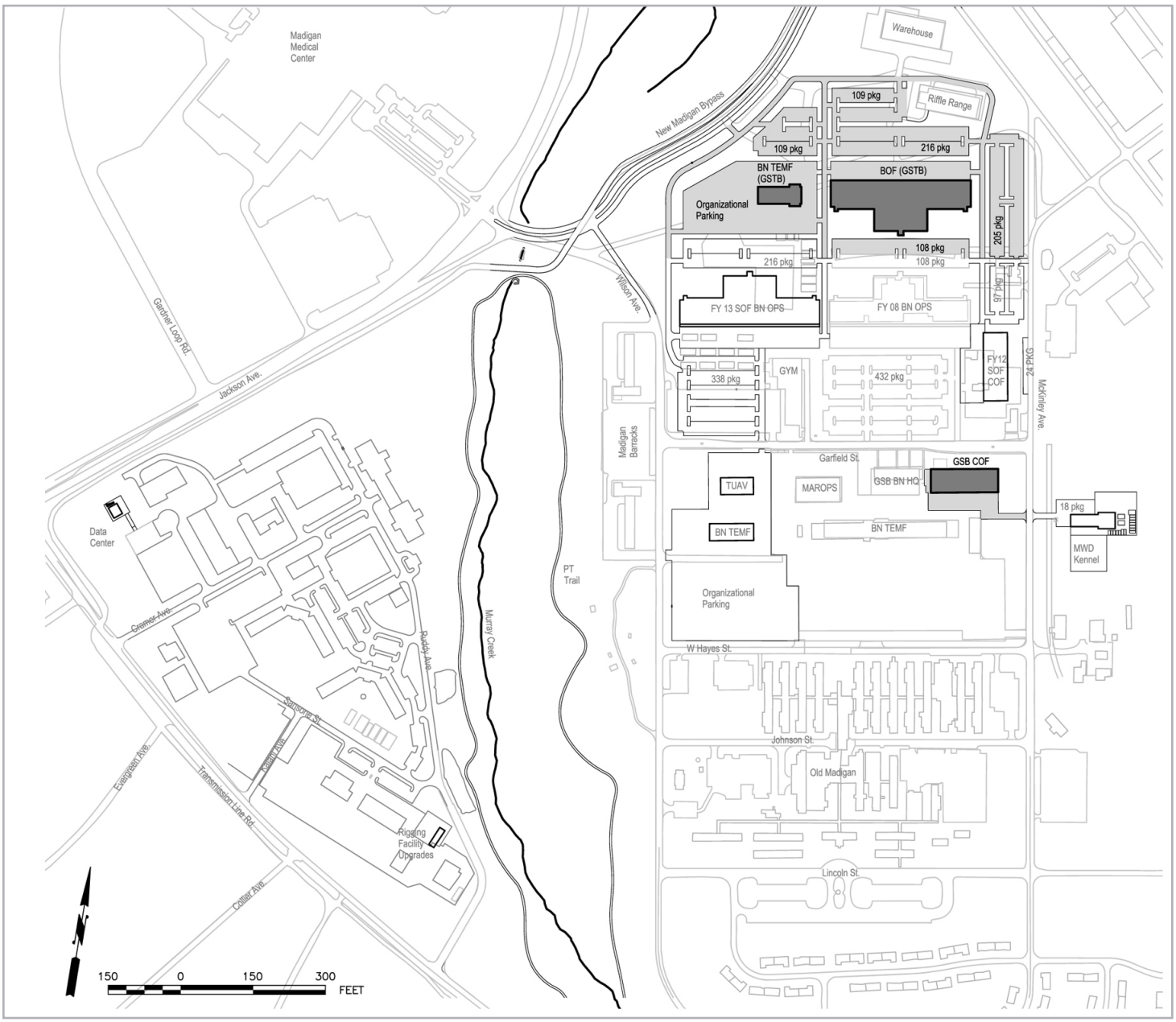


Figure 25. Phase 2 Infrastructure

compound and will support other facilities as they come on line. Sansone Street north of Cramer Avenue should also be reconstructed with the Group HQ because it will provide access to the rear parking area and hardstands. The construction of the Group HQ will require the removal of Cordell Street.

Ruddy Avenue can be built in phases based on which project moves forward first. The CRTF/THOR3 building would complete Ruddy Avenue north of Cramer Avenue and the DFAC would upgrade Ruddy Avenue to the south. The most economical method would be for one project to complete the roadway for its entire length. Similar to Ruddy Avenue, each facility should build its portion of the rear access and delivery road as shown on the Phase 3 plan. The west Barracks building should reconstruct Sansone Street south of Cramer Avenue because it provides access to the rear of the complex and parking area. The east Barracks is served by Ruddy Avenue, which should be reconstructed by the DFAC project. An unnamed street located between the new barracks and Sansone Street extends from Cramer Avenue. This street or drive provides access to parking for the west Barracks and should be constructed with that project. No roadway improvements are planned in the East Compound in Phase 3.

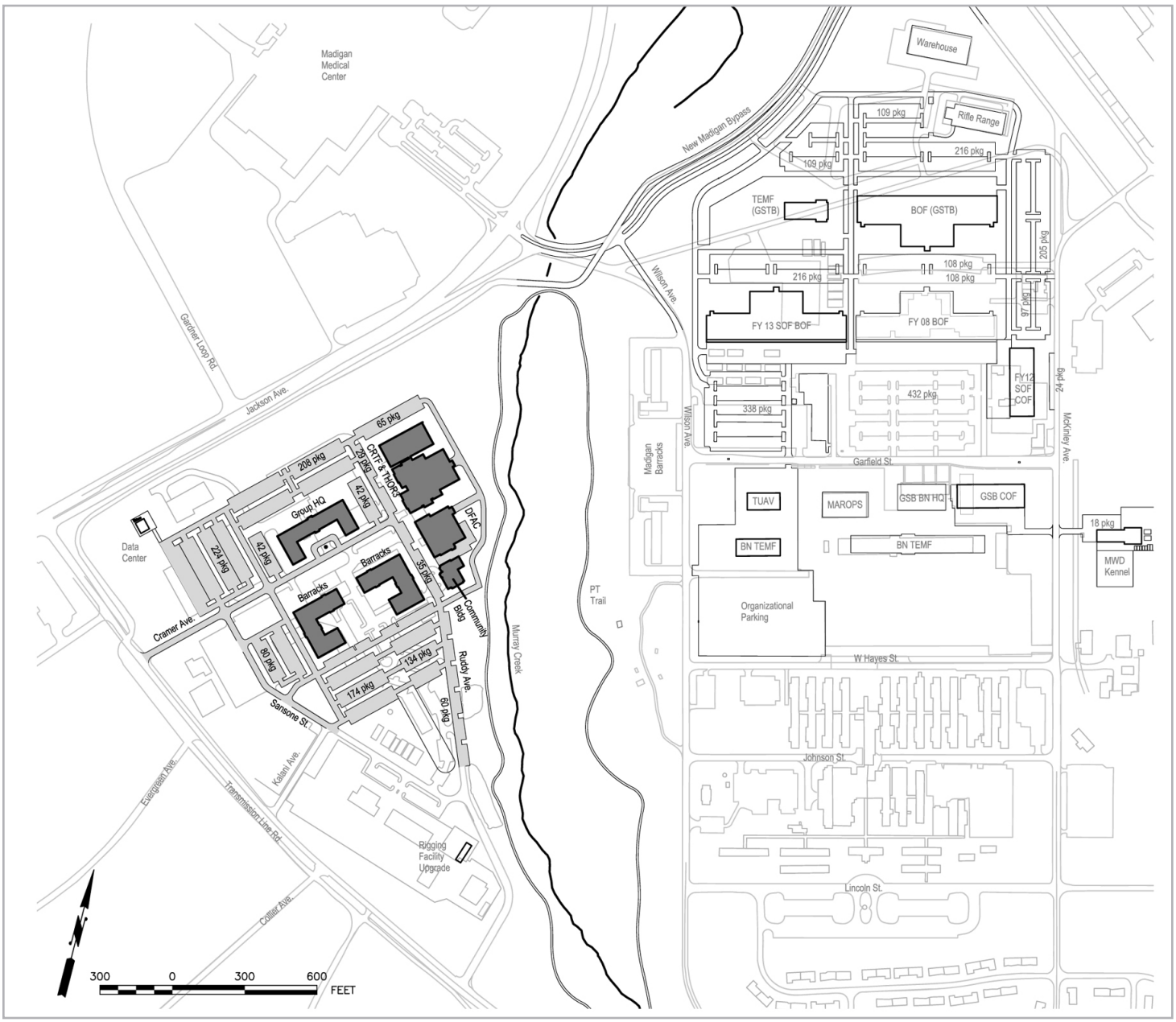


Figure 26. Phase 3 Infrastructure

Phase 4

No roadway upgrades are anticipated in either compound in Phase 4 (Figure 27) except for driveway and hardstand development for SOF Deployment Warehouse and Logistics Facility on the East Compound.

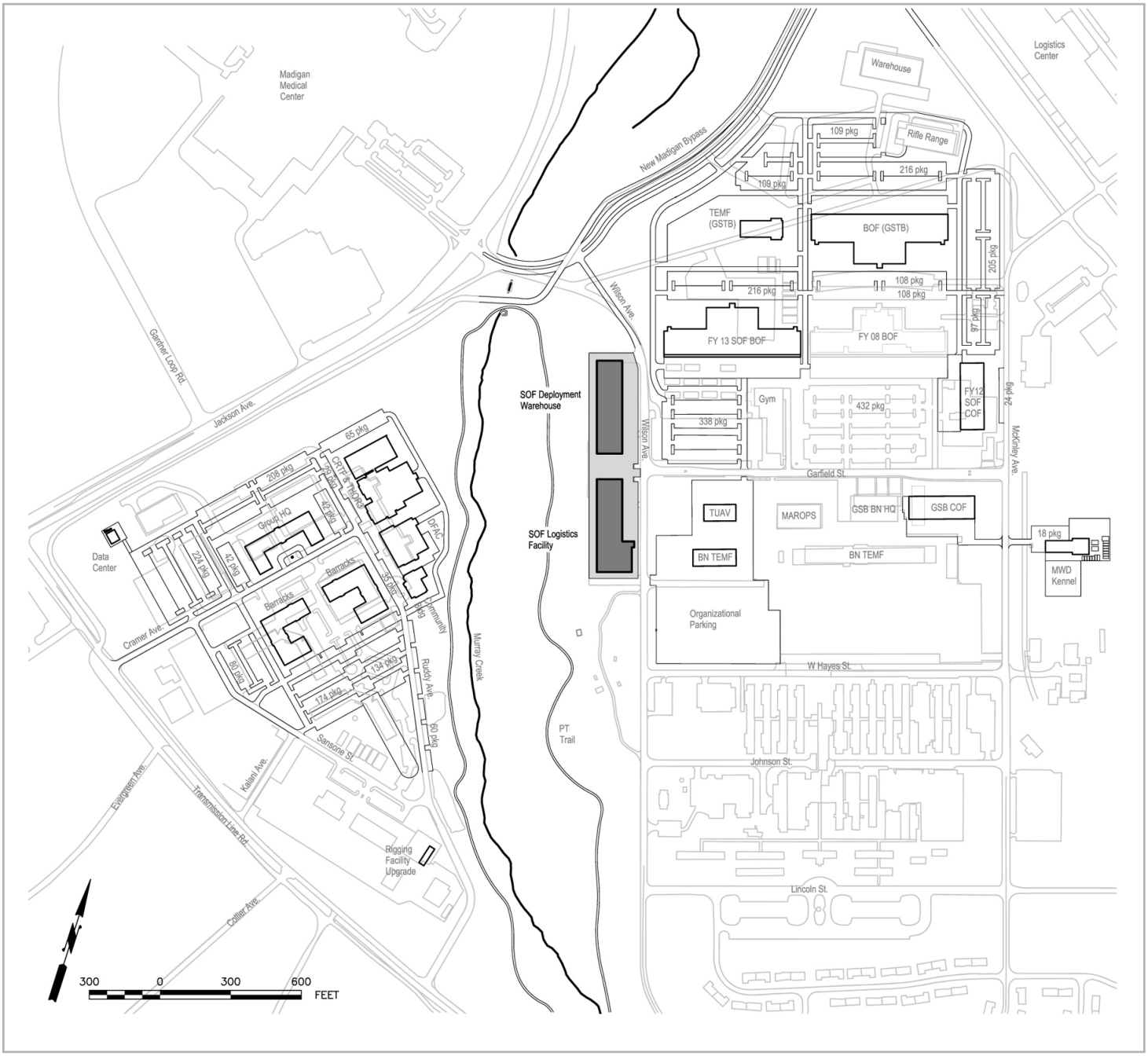


Figure 27. Phase 4 Infrastructure

Future

In the West Compound, future expansion areas should complete the reconstruction of the remaining sections of Sansone Street and Ruddy Avenue. This will complete the internal street system for the West Compound. Future phase includes BOF and TEMF consists of organizational parking, access driveways and parking development in front of the facilities. Hypothetical building footprints need associated access drives and parking lots. This phase of development also includes the vehicle bridge which connects the West and East compounds. No roadway improvements are anticipated in the East Compound in the future (Figure 28).

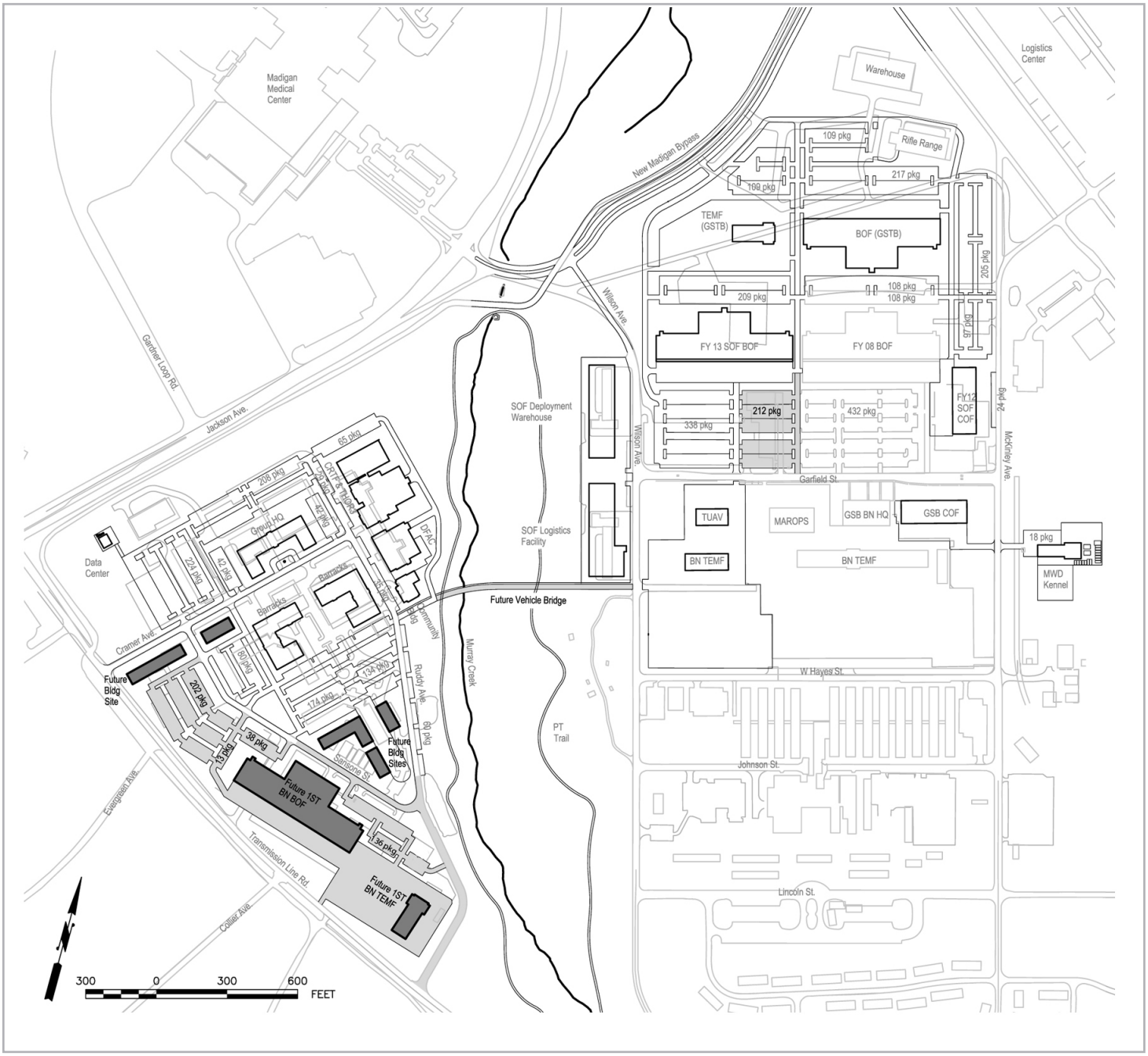


Figure 28. Future Infrastructure

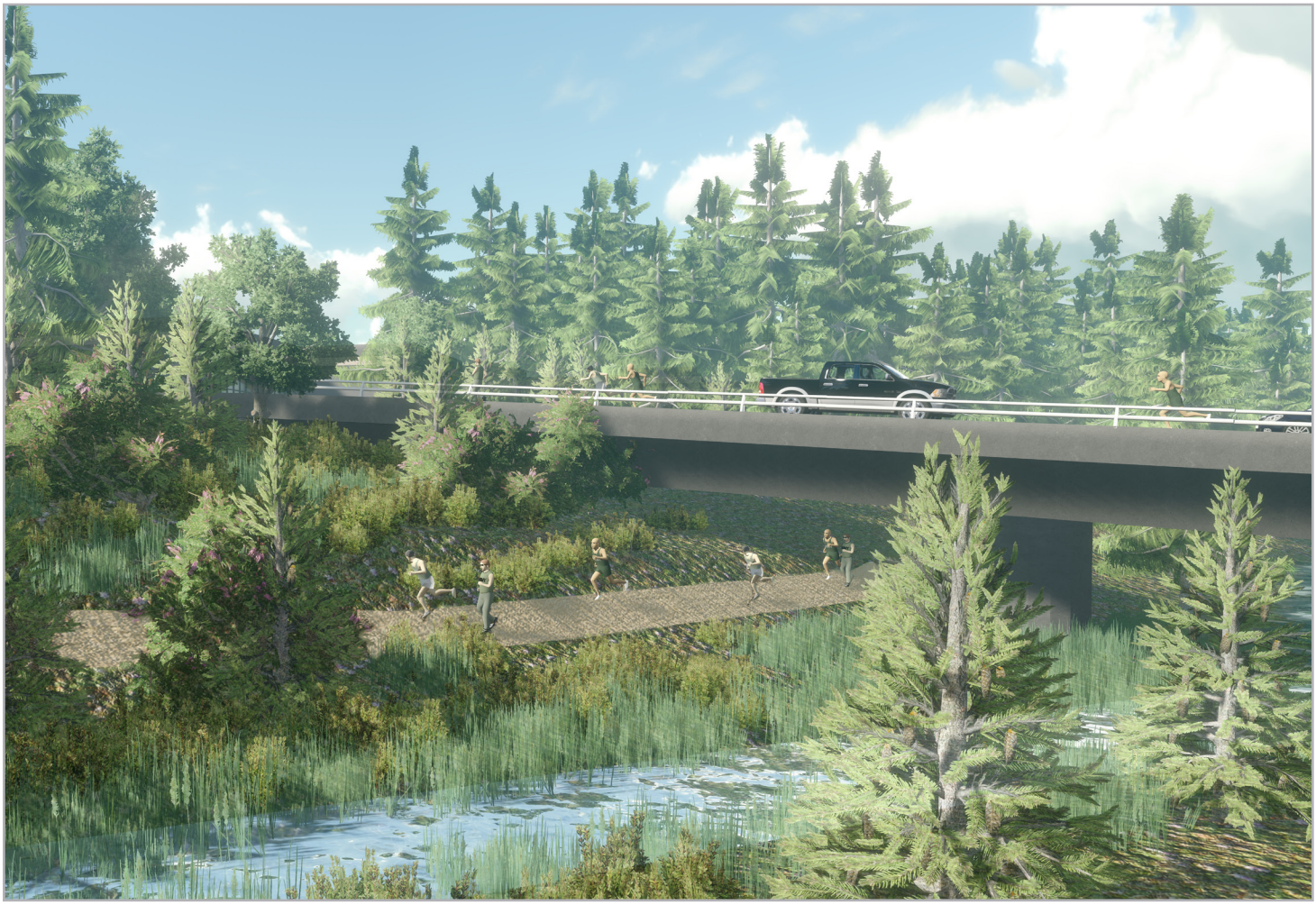
Bridge Analysis

The West and East compounds are separated by Murray Creek, and the only access between them is by way of Jackson Avenue. As part of the master planning exercise, the analysis of a new and more direct access between the compounds was proposed. A bridge structure over Murray Creek was viewed as the most direct and beneficial for movement of personnel and materials.

Environmental Issues

Murray Creek, adjacent wetlands, and the 50-meter buffer zones on both sides of the wetland are sensitive areas. Murray Creek has listed fish species within its reach and flows to American Lake. Placing structures (piers) or fill within the wetlands would require a USACE 404 permit, which could take up to a year to obtain and would likely require expensive measures to mitigate impacts from fill or structures placed in the wetlands. The goal of each bridge option was to clear span the wetlands and Murray Creek, eliminating the need to obtain a permit and minimizing environmental concerns by JBLM staff, tribes, and the public.

It is possible to place fill and structures within the buffer zone of the creek. The buffer zone is not regulated by the USACE. JBLM would require mitigation for buffer impacts at a ratio of 4 to 1, meaning that for every square foot of construction within the zone, 4 square feet of mitigation would have to be completed in an area on JBLM property.



Vehicle Bridge Connecting Compounds

Pedestrian Bridge Analysis

At first, a pedestrian bridge was proposed between the two compounds since it would provide personnel access at the least cost. The development of pedestrian bridge options (see figures 29 and 30) and construction costs included the following assumptions.

- An 8-foot-wide prefabricated bridge superstructure consisting of weathering steel trusses and timber planks
- Concrete abutments and intermediate concrete piers supported by piles
- Pedestrian bridge only (no vehicular traffic)
- All options would clear span Murray Creek and wetlands (see Environmental - Bridge Options for a discussion of the options).
- Analyze both a north and a south alignment
- Cost based on fall 2010 construction pricing

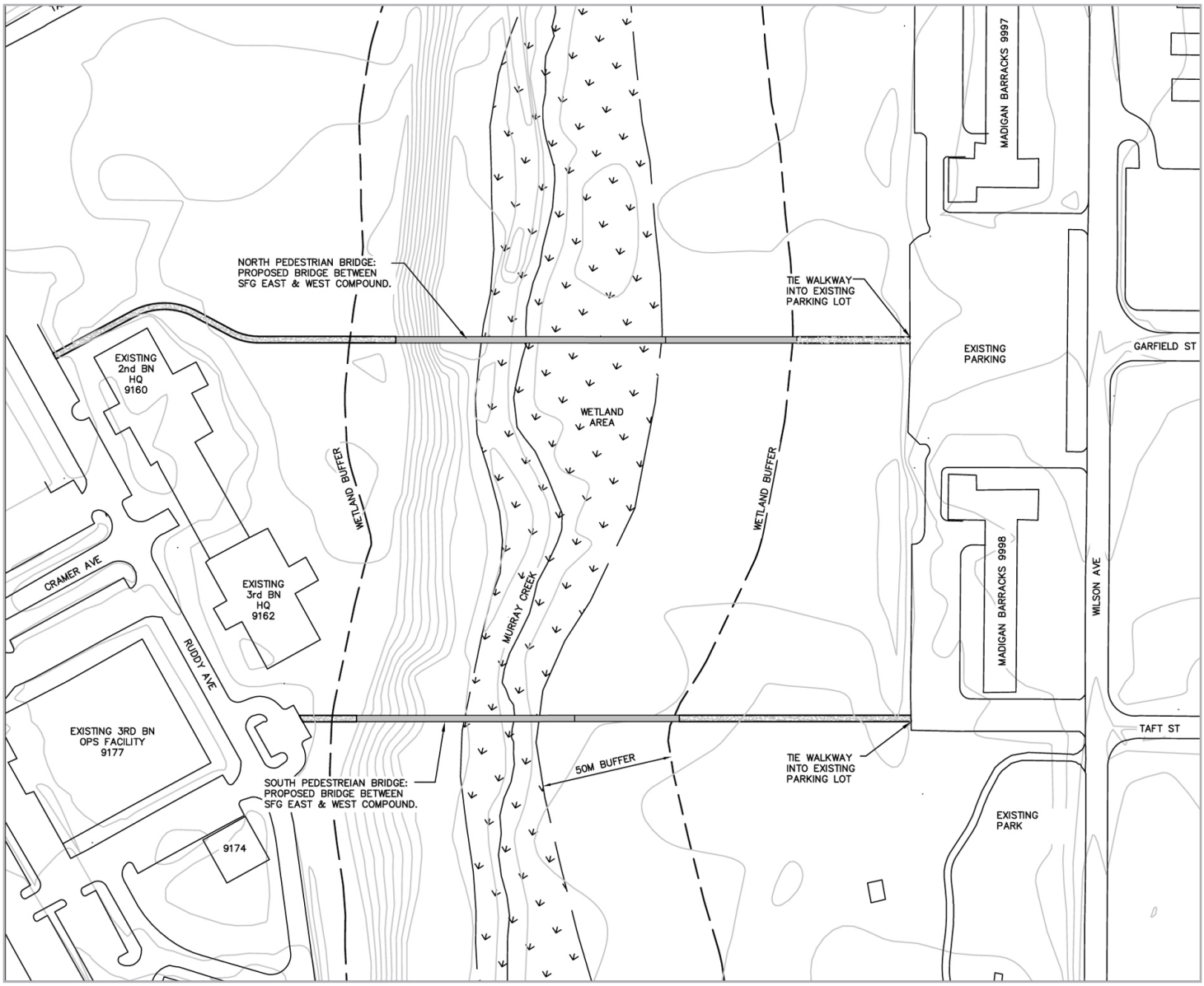


Figure 29. Pedestrian Bridge Alternative Locations

North Pedestrian Bridge – Option 1

Option 1 for the north pedestrian bridge begins in the existing parking lot on the west side of the East Compound between buildings 9997 and 9998 (Madigan barracks), a location selected because it aligns with Garfield Street and is near the center of East Compound operations. The west landing of the bridge would be near the existing building 9160 and the proposed new sites of the DFAC and CRTF/THOR3 buildings and close to the proposed location of the new headquarters. This proximity to buildings and functions helped drive the north bridge alignment option. One drawback to this location is the width of the wetlands adjacent to Murray Creek and the need to clear span this sensitive area. The bridge has approximately 500 feet of elevated structure consisting of 4 spans elevated on piers, with the longest span being 235 feet to clear the wetlands. Approximate cost to construct in 2010 dollars is $1.3 million.

North Pedestrian Bridge – Option 2

Option 2, another option for the north pedestrian bridge, is in the same location as Option 1. This bridge has approximately 340 feet of elevated structure consisting of 2 spans, including a 235-foot span of the wetlands and creek. The length of elevated structure needed to span the wetlands was shortened by placing the east abutment within the east buffer zone and just outside the wetland boundary. Approximate cost to construct in 2010 dollars is $1 million.

South Pedestrian Bridge – Option 3

In Option 3 for the south pedestrian bridge, the width of the wetland boundary along Murray Creek has been decreased considerably downstream from the north bridge location. This reduces the length of a bridge required to clear span the wetlands and reduces overall costs. The south bridge options are located south of building 9998 and align with West Taft Street on the East Compound. The west landing of the bridge would connect south of existing building 9162 and close to the proposed site of the Community Center. The bridge is approximately 400 feet of elevated structure consisting of 4 spans, including a 105-foot-long clear span over the wetlands and Murray Creek. Because the south options are located over a narrower portion of the wetland, only about half the span length is required to clear these sensitive areas, thus reducing costs. The approximate cost to construct is $730,000.

South Pedestrian Bridge – Option 4

Option 4, another option for the south pedestrian bridge, is in the same location as Option 3. This bridge has approximately 280 feet of elevated structure consisting of 2 spans, including an approximately 145-foot-long span over the wetlands. The elevated portion of the bridge is shorter than Option 3 because the east abutment is placed within the east buffer zone and the bridge is limited to a maximum 5.0% grade. Construction cost is approximately $600,000.

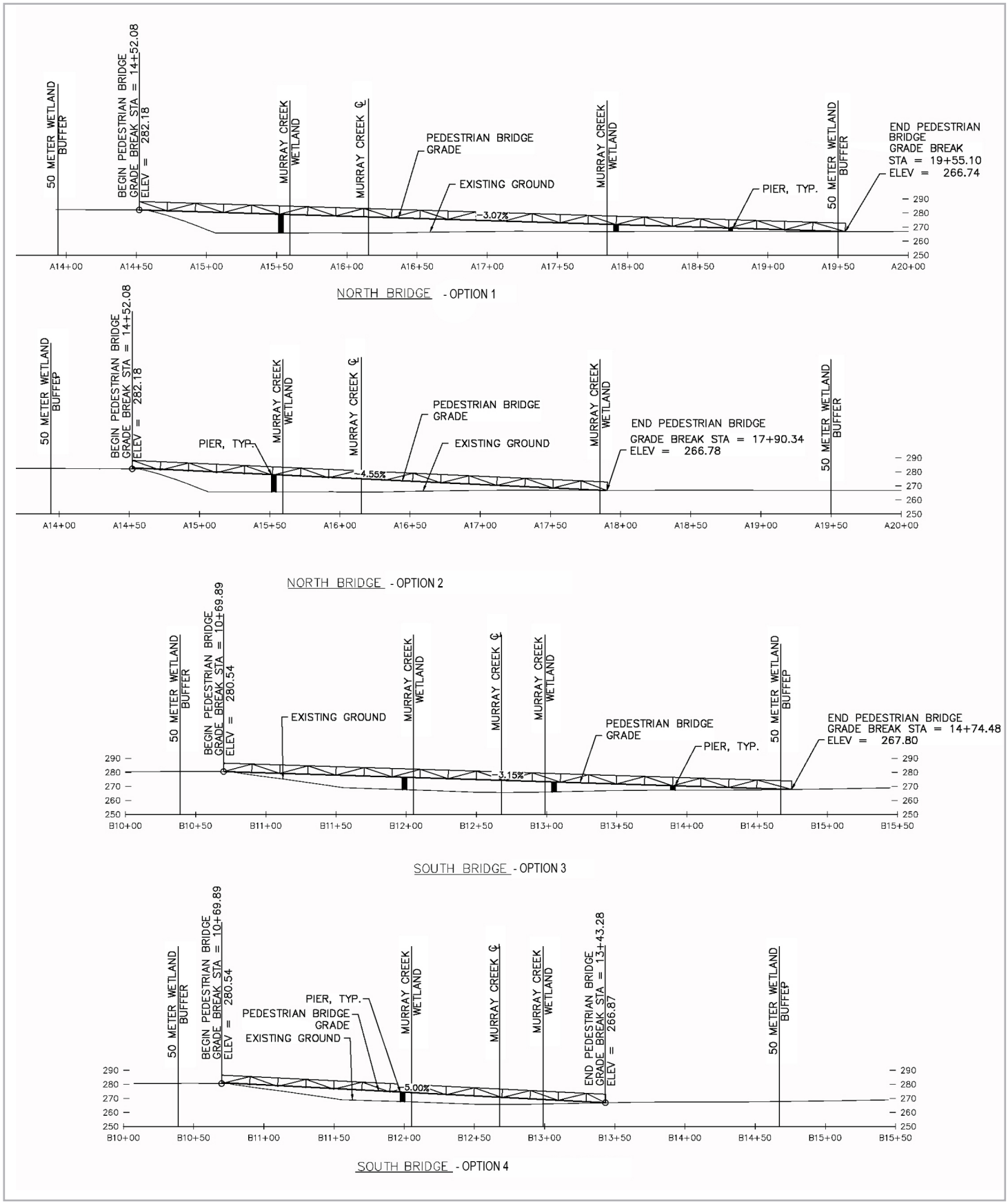


Figure 30. Pedestrian Bridge Options 1-4

Vehicle Bridge Analysis

The master planning process moved from a pedestrian bridge analysis to a vehicle bridge analysis. The thought was a vehicle bridge would provide the 1st SFG enhanced mobility for personnel and equipment, especially during lockdown situations, and alleviate the need to travel onto Jackson Avenue to conduct business between the West and East compounds. SFG preferred the vehicle bridge because most military personnel will use vehicles to move between the compounds and haul equipment.

The following assumptions were made about the vehicle bridge.

- Overall bridge width of 41 feet, including a 6-foot sidewalk and two 12-foot travel lanes with 3-foot shoulders
- Bridge superstructure constructed with precast concrete girders and concrete deck
- Concrete abutments and intermediate concrete piers supported by piles
- Consistent girder lengths to reduce costs
- Cost estimates did not include approach roadways on the east and west ends
- Bridge cost based on fall 2010 construction pricing

An earlier analysis of a northern bridge alignment at same location estimated that a structure at this location with a clear span over the wetlands would cost over $6 million. Because of costs and environmental concerns, the northern alignment was dropped from consideration.

The width of the wetland decreases along Murray Creek further south of the north alignment. This decreased wetland boundary reduces the clear span length needed for a vehicle bridge and reduces costs.

All of the vehicle bridge options are in the same location, with the eastside landing being south of building 9998 and aligning with West Taft Street, and the west landing of the bridge connecting south of the existing building 9162, close to the proposed site of the community center. Four options were prepared for a southern alignment. Each option differs by pile location, which drives span length and the amount of fill placed in the wetland buffer or the wetland itself.

Vehicle Bridge – Option 1

Option 1 for the vehicle bridge is located so that it crosses near the narrowest portion of the wetland area to minimize the amount of elevated bridge structure and reduce the overall project cost. The west abutment of the elevated bridge structure is within the west buffer zone, and the east abutment lands outside the east. The purpose of this option was to span the wetland area. The total length of elevated structure is approximately 405 feet and would consist of 3 spans, including an

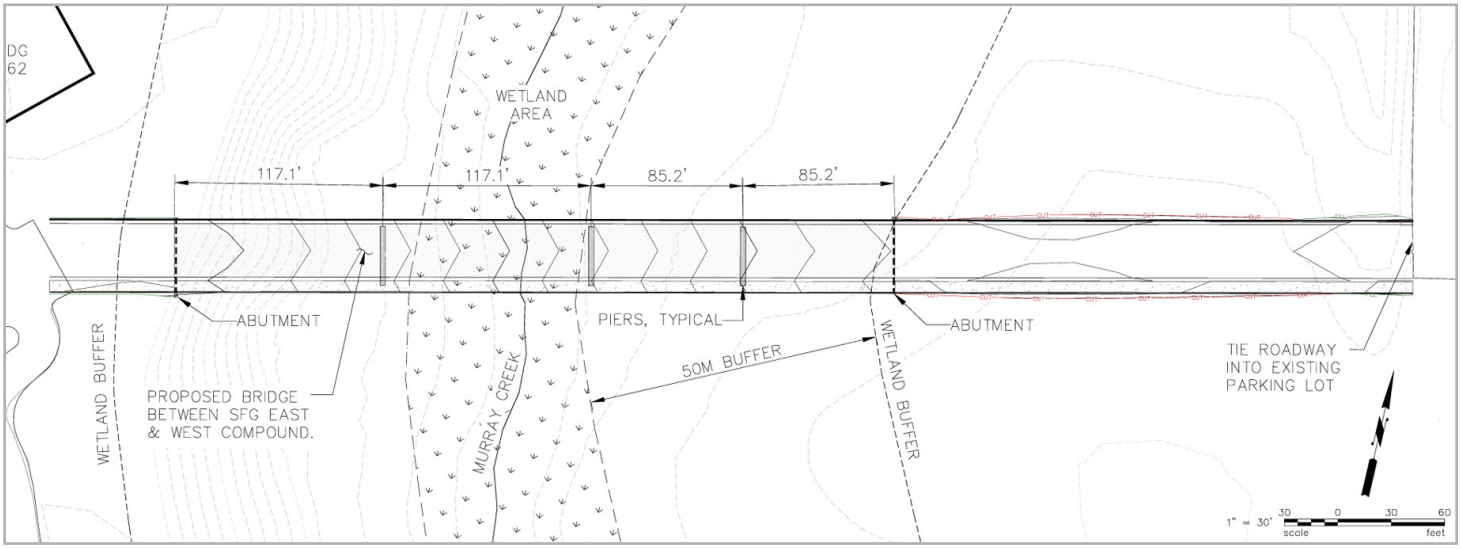


Figure 31. Vehicle Bridge Option 1

approximately 120-foot clear span over the wetland. The bridge has a maximum 3.6% grade and its construction cost is approximately $4.2 million (Figure 31).

Vehicle Bridge – Option 2

In Option 2, both the west and east abutment land within the buffer zone, reducing the total length of elevated structure by 38 feet to 367 feet, and reducing the number of piers from 3 to 2. This bridge is slightly steeper than Option 1, with a maximum 5.0% grade. Construction cost estimate is approximately $3.6 million (Figure 32).

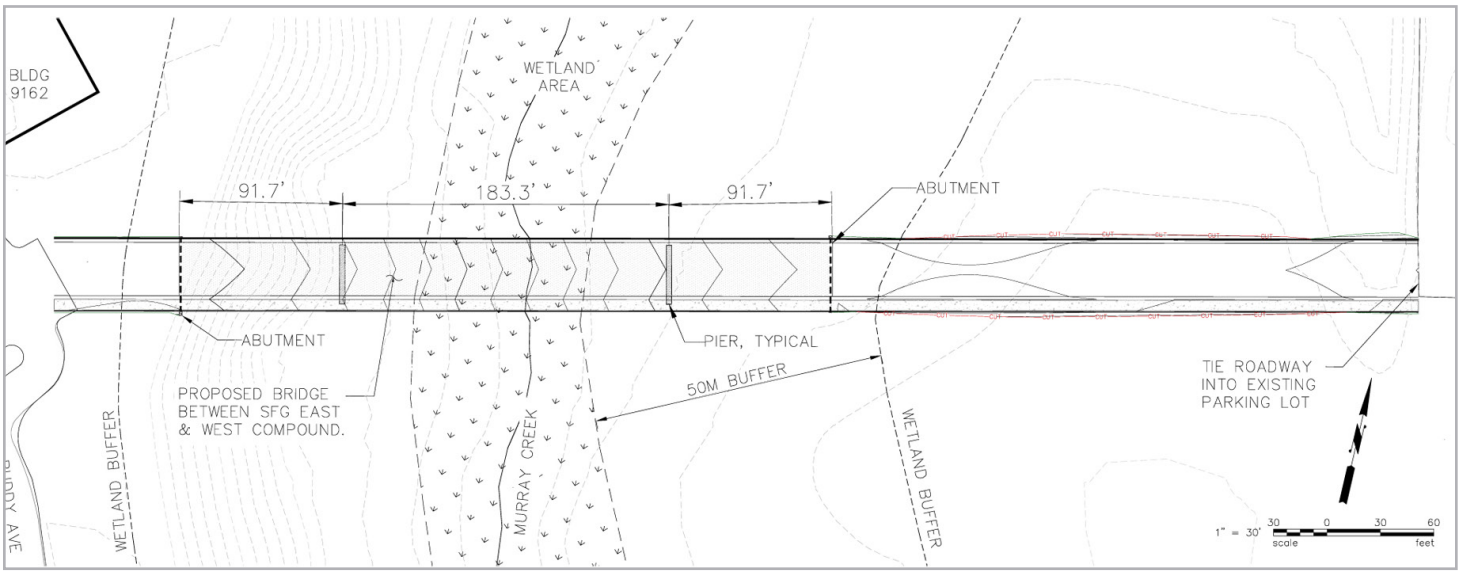


Figure 32. Vehicle Bridge Option 2

Vehicle Bridge – Option 3

Option 3 is similar to Option 2, except the east approach lies within the east buffer zone on fill rather than elevated on a structure. The overall length is approximately 235 feet. This bridge has a maximum grade of 5%. Construction cost estimate is approximately $2.4 million (Figure 33).

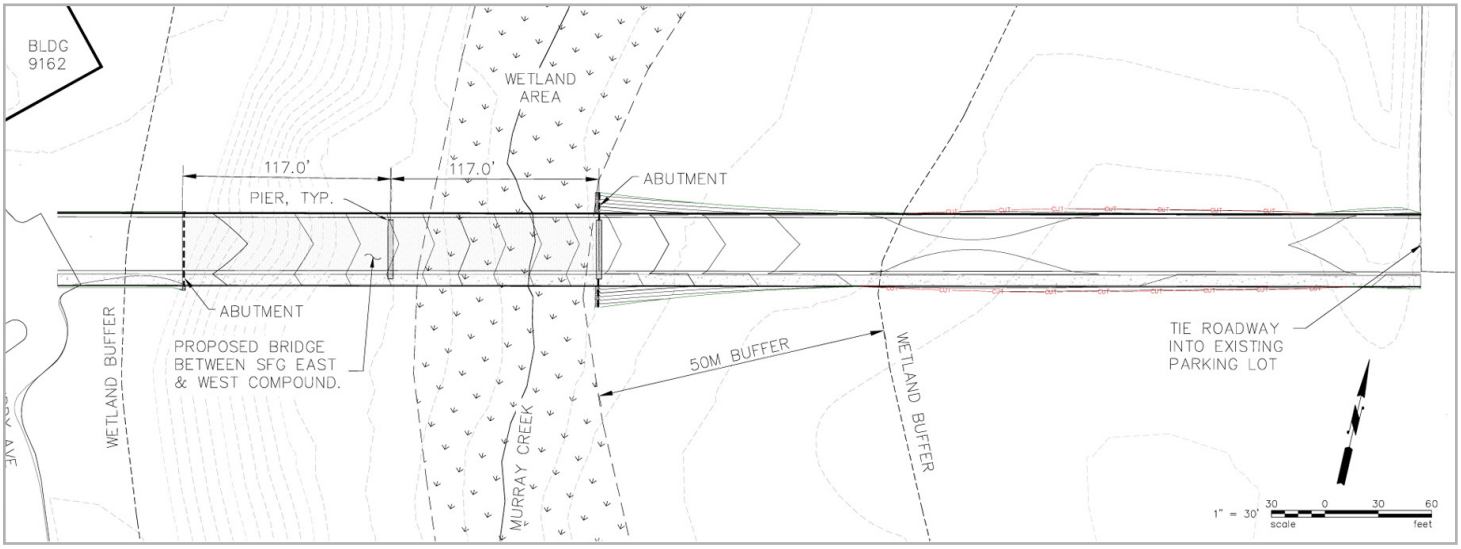


Figure 33. Vehicle Bridge Option 3

Vehicle Bridge – Option 4

Option 4 consists of a three-sided concrete box culvert over Murray Creek with an open span of 40 feet and an inside height of 16 feet. This option would require the placement of fill material in the buffer zone and wetlands adjacent to the creek. While this is the least-cost option, it would require the most environmental permitting because of impacts to the buffer and wetland. The master planning process did not include an analysis of permitting requirements for this option or permitting costs. Construction cost estimate is approximately $750,000 (Figure 34).

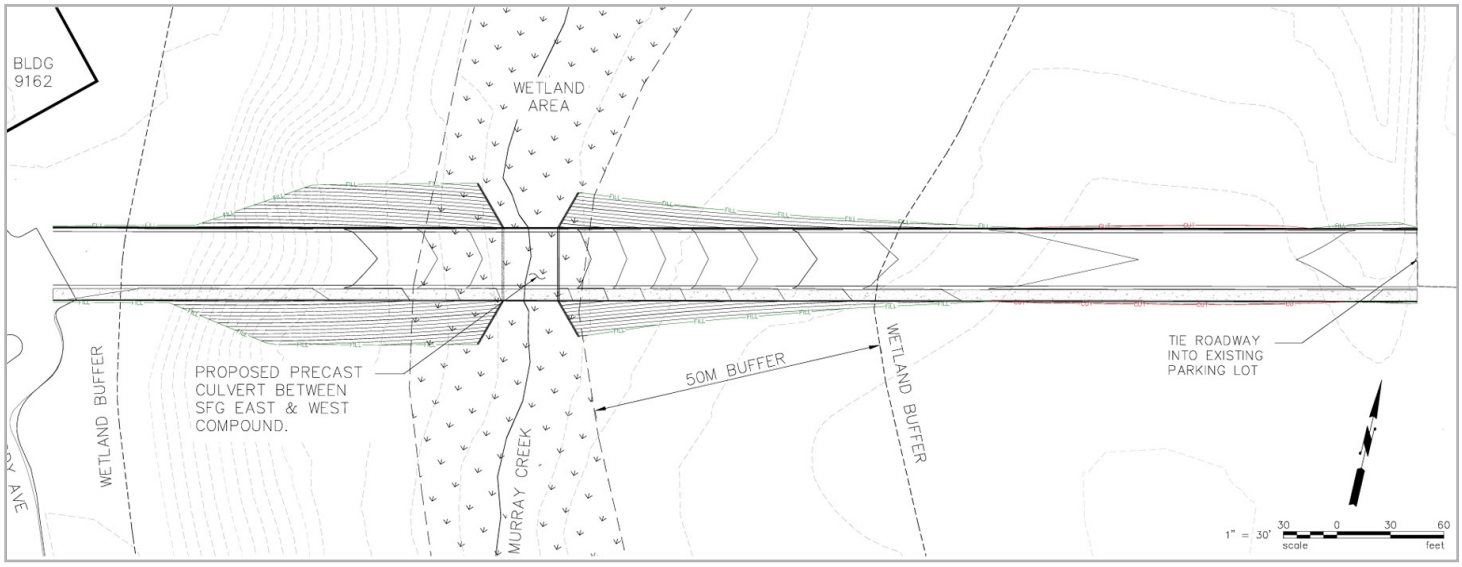


Figure 34. Vehicle Bridge Option 4

Bridge Conclusions

The master plan analysis of the pedestrian and vehicle bridge included no environmental assessment or hydraulic or geotechnical studies or research. Both hydraulic and geotechnical conditions in the area of the proposed options could affect bridge costs either positively or negatively. Limited environmental documentation and agency reviews were conducted, and these will affect costs as well. It is anticipated that bridge lighting would be provided by either bollard lighting spaced along the deck or low level lighting inserts along the bridge side barriers. Overhead bridge lighting should be avoided to minimize nighttime glare along the Murray Creek corridor.

Stormwater runoff from any bridge structure will need to meet stormwater requirements for water quality and quantity as prescribed by the stormwater manual prior to the discharge of the runoff to Murray Creek or groundwater.

The next steps for assessing any bridge option would be to prepare a type, size and location report (TS&L), conduct a wetland delineation, establish the ordinary high water mark (OWHM), and investigate the floodplain and floodway and stormwater controls. A 30% bridge design should be prepared for review by regulatory agencies to better understand and affirm what environmental mitigation measures will be required of a bridge crossing at Murray Creek.

Site Utilities

The West Compound utilities are relatively new, being built in the mid-80s, whereas the East Compound utilities are vintage 1940s.

Existing Utilities

Existing utilities on the West Compound comprise water, sewer, storm, and natural gas. System mains are located within existing roadways throughout the compound, with lateral branches servicing buildings and parking areas. Sewer mains are located in Cramer Avenue and Sansone Street. The sewer collection system flows to a sewer lift station located approximately 60 feet south of Sansone Street near the northeast corner of the north parking lot adjacent to Kalani Avenue. The sewer lift station collects flows from the West Compound and surrounding areas. Flow is pumped through a force main down Mil Park Avenue and discharges to gravity main.

Existing Madigan Pump Station on West Compound

Water is supplied to the compound from two locations. One is located at the intersection of Transmission Line Road and Cramer Avenue, and the other comes from the Madigan Hospital area, running cross country where it intersects with Sansone Street. The water system loops through the compound along Cramer Avenue, Ruddy Avenue, and Sansone Street and is composed of 8-inch PVC piping. There are several other smaller waterline loop systems around existing buildings. The existing stormwater system in the West Compound has some unique features. Just west of the compound across Transmission Line Road is a large marsh area. During wet weather events, the marsh overflows to a stormwater pipe that crosses under Transmission Line Road near Kalani Avenue in the West Compound and connects to the West Compound drainage system. This overflow pipe and pipes in the southern portion of the compound drain to a large oil/water separator located in the southeast corner of the site, and then discharge to a detention facility and eventually to Murray Creek. There are four other discharge points to Murray Creek, each discharging to detention facilities located between the compound and Murray Creek.

Natural gas is supplied to the site from the system in Transmission Line Road extending up Cramer Avenue. Similar to the other utilities, gas distribution lines are located in existing roadways with mains located in Cramer Avenue and branching north and south down Sansone Street. There is no gas main in Ruddy Avenue.

Existing utilities in the West Compound (Figure 35), if maintained, should have a service life of 50+ years. Since the systems were installed in the mid-80s, they should be functional up to year 2030 and beyond.

East Compound utilities are vintage 1940s (Figure 36). Existing utilities comprise water, sewer, storm, steam, and natural gas. For the most part, system mains are located within existing roadways throughout the compound, with lateral branches servicing buildings and parking areas. There is a large sewer main that runs north and south across the compound and serves as the main collection system for flows from the compound and surrounding areas. The sewer main is not located in the existing roadway system, but parallels Wilson Avenue approximately 410 feet to the east. Near the north end of the East Compound, the sewer main runs in a northeast direction toward the Logistics Center. The system was recently slip-lined and is in good condition.

Water is supplied from two primary feeds. One feed is from intersection of Madigan and Jackson avenues and the other is from the Logistics Center coming cross country west into the compound near the intersection of Garfield Street and McKinley Avenue. Both feeds are 16-inch cast iron pipes.

Water is distributed around the compound along Wilson and McKinley avenues through cast iron pipes either 16 or 12 inches in diameter. These main distribution lines are linked by a 16-inch line in Garfield Street, 8-inch in Hayes and Johnson streets, 12-inch in Lincoln Street, and 8-inch in Washington Street. The distribution system supplies water to an area much larger than the East Compound.

There is a network of stormwater collection systems within the compound which follow along existing roadways, with laterals to existing buildings, parking lots, and areas which have been cleared of structures. The stormwater systems are located in Garfield, Taft, and Hayes streets and discharge either west to Murray Creek or east into the wetland area between the East Compound and Logistics Center by the intersection of East Hayes and McKinley Ave.

Natural gas is supplied to the area from a distribution line from the Logistics Center and runs the length of McKinley Avenue and Old Madigan Bypass. The gas main in Madigan Bypass is 8 inches and is a major distribution line for the post. From the distribution line, natural gas branches out into the East Compound in a haphazard manner, with most branches going cross country and not following existing roadways. Since natural gas came after the 1940s, it is assumed the system was installed along open spaces through the compound to avoid trenching in existing streets.

There is an existing steam generation plant located east of the intersection of E. Hayes and McKinley Avenue. The plant supplies steam to the existing buildings in the East Compound and Logistics Center.

Future Utilities

Utilities within the West Compound were installed during the 1980s and have not reached their service life. It has been the goal to keep as many of the existing utilities by

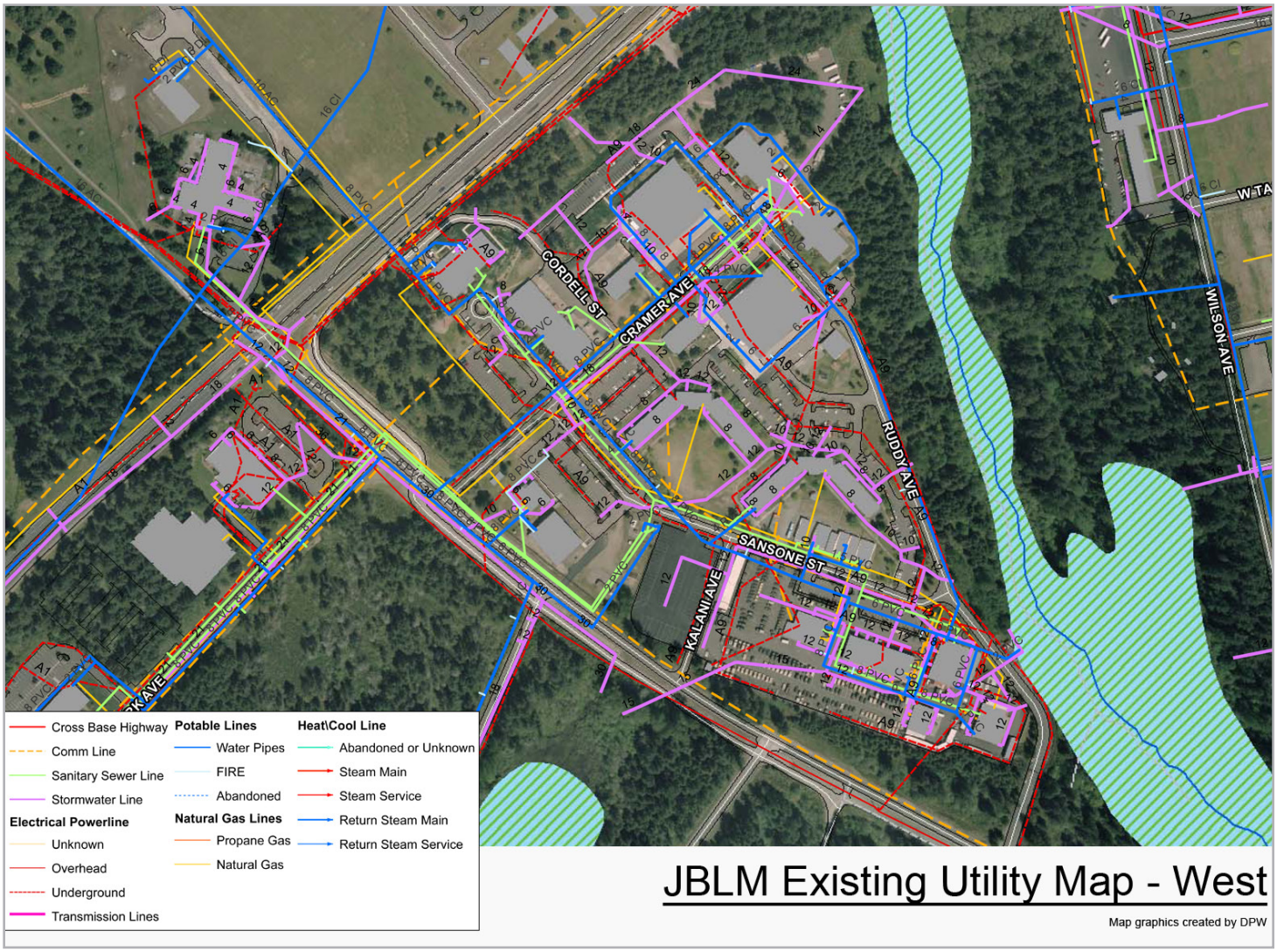


Figure 35. Existing Utility Map - West

configuring the new layout of the West Compound around existing roadways. Most utilities in the compound follow existing roadways, with existing buildings being serviced from laterals from these main lines. Maintaining existing systems helps reduce costs by eliminating the need to demolish and reconfigure service utilities. There is a sewer lift station located on the compound. The sewer lift station serves the West Compound plus the Madigan Hospital area, which makes this facility a vital component for the base. Moving this facility would be expensive and could be problematic, so maintaining its location is important. Laterals and minor utility lines outside established roadways should be demolished in place or removed to accommodate any new building configuration. These utilities should be truncated at logical locations such as a valve for waterlines and a manhole for sewer.

The backbone systems in the West Compound are located in existing roadways, and the roadway system and utilities will remain through full build out of the site. Minor laterals will be demolished as older buildings are removed and new structures built. The existing stormwater lateral systems should be removed, as each phase is required to retain its own stormwater on site.

The West Compound water distribution system is composed of 8-inch PVC lines in a looped system around the complex. Depending on fire flow demands for new structures, the 8-inch looped system should be adequate to supply water for new building demands. A hydraulic analysis was not conducted and was not part of the scope of work for the master planning process. If a future fire water demand analysis determines that the existing system is not adequate, then the existing 8-inch line which crosses

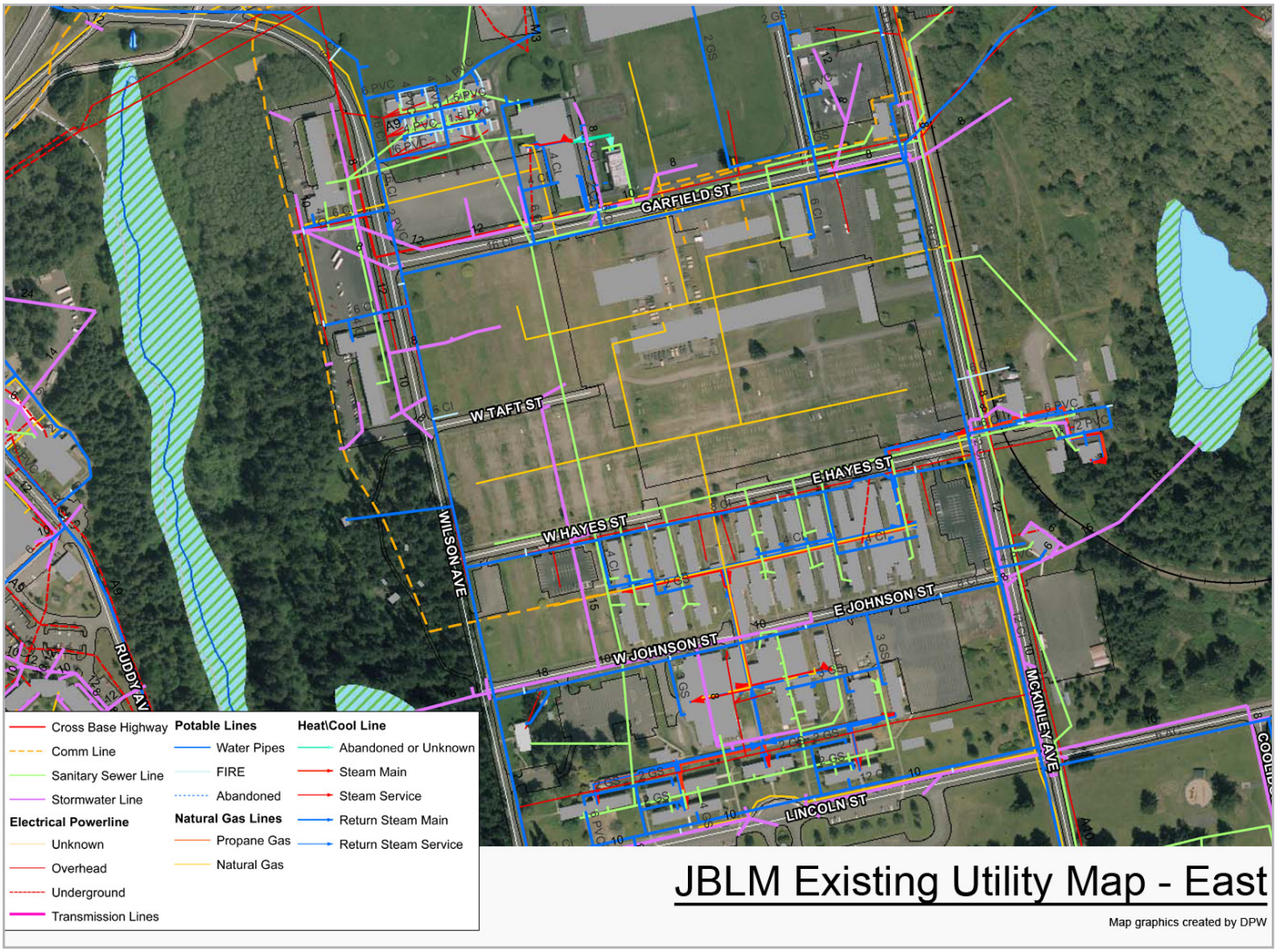


Figure 36. Existing Utility Map - East

Jackson Avenue from Madigan Hospital would need to be upgraded. The existing 8-inch line from Madigan Hospital is connected to a 16-inch ductile iron pipe which is the main water distribution line for the area.

The backbone of the sewer system is located in major streets within the West Compound and is relatively new, having been installed during the mid-80s. The system should have capacity for redevelopment because most new facilities use low flow water fixtures. More intensive development is programmed in the master plan, but sewer flows should not increase substantially and the existing system should not require upgrading.

Most of the stormwater system will not be used since new stormwater discharges from buildings and impervious surfaces must be retained onsite. The existing stormwater system could be used for emergency overflow from new onsite drainage structures. There is a stormwater line that traverses the southern portion of the West Compound that ties into Kennedy marsh which is located west of Transmission Line Road. The stormwater piping system handles overflow from Kennedy marsh area and will need to be maintained to provide this overflow function. The current overflow system should not be impacted until future phase build out. A detailed analysis will need to be conducted of the overflow system during future phase development.

Utilities within the East Compound are relatively old, with most systems being built in the 1940s. The sewer trunk line, which bisects the compound running north/south, was recently slip lined and should be in good shape. The waterlines from the same era are cast iron and have been known to last decades without problems (see tables 5 and 6 for a summary of water, sanitary, and storm utility requirements).

Phase 1

No buildings are programmed for the West Compound in this phase. The existing FY08 BOF on the East Compound was recently constructed in the vicinity of the proposed Phase 1 projects (Figure 37). A number of existing utilities were removed or abandoned and replaced with newer facilities with the existing FY08 BOF. The proposed FY13 SOF BOF will be able to connect to the new waterlines installed by FY08 projects. The main sewer trunk line is a more difficult situation because the line runs directly under the proposed Phase 1 FY13 BOF building. The existing sewer line will need to be relocated between the proposed BOF and the existing BOF facility. The slope of the existing sewer main is very shallow and rerouting a new gravity sewer main around the building is not feasible. This will require installation of a sewer lift station and forcemain around the building connecting back to the existing manhole north of the building.

Gas service is provided by Puget Sound Energy (PSE). There are several options for connection to gas. Connections could be made from Wilson Avenue, the parking lot of existing BN HQ, or from the line stubbed and cap west of the new MAROPS. Natural gas will need to be coordinated closely with PSE. The proposed FY12 SOF COF can connect to the existing water, sewer, and gas systems located in McKinley Avenue. The proposed TUAV and TEMF facilities in Phase 1 can make connections to water from two locations—either the 6-inch waterline stub provided by the FY08 GSB HQ located west of the MAROPS building, or directly to the existing waterline located on the south side of Garfield Street. Sewer is available east of the proposed locations, and gas can be supplied from the stub-out provided by the MAROPS project. The MWD Kennel can make all utility connections to existing systems located in McKinley Avenue.

Phase 1 will require close coordination with PSE for relocating the natural gas line located along the Madigan Bypass corridor. This gas line is a major feeder to the

Tactical Unmanned Air Vehicle
(Photo Credit: U.S. Army Captain Jennifer Bocanegra, 3rd SFG)

Infiltration Rain Gardens Adjacent to Parking

post and cannot be shut down and removed until a new distribution line has been installed and is operational. The Madigan Bypass is proposed to be relocated to accommodate the new facilities (see Roadway discussion).

Phase 2

No buildings are programmed for the West Compound in this phase. Water for the TEMF (GSTB) and BOF (GSTB) located in East Compound will be supplied from the existing 16-inch waterline located in Wilson Avenue (Figure 38). The waterline should be looped north around the buildings and tie back into the existing system near the FY08 BOF. The existing waterline system located between the Phase 1 BOF and BN COF should be extended north up the proposed roadway and connect into the new north loop system. Sewer for both facilities can be routed to the existing sewer trunk line which runs between the buildings.

Sewer, water, and gas for the FSC/GSB COF can be supplied from the systems constructed with the FY08 Support BN Complex project. These systems are located directly south of the proposed building.

Phase 3

New buildings on the West Compound will be serviced from laterals from these main lines. Proposed development includes the Group HQ, DFAC, CRTF, Community Bldg. and Barracks. No buildings are programmed for the East Compound in this phase (Figure 39).

Phase 4

No buildings are programmed for the West Compound in this phase. Utilities for the SOF Deployment and SOF Logistics warehouses on East Compound can be supplied with water, sewer, and gas from existing systems in Wilson Avenue, and new buildings will be serviced from laterals from these main lines (Figure 40).

Future

Utilities for future buildings in the West Compound will be serviced from laterals from existing lines in the roadway. No buildings are anticipated in the East Compound (Figure 41).

Stormwater

Stormwater from pre-2008 construction at the West and East compounds are collected into pipes and discharges to Murray Creek. The existing system is more disjointed than other utilities, and was developed to provide service to a building or particular site. The existing stormwater system may be used for emergency overflow from new detention/retention facilities and provide stormwater collection for any roadways that remain with the new configured site plan. JBLM requires the collection and on-site retention of stormwater from new building, parking lot, and access roadway construction. This provision accords with Ecology's stormwater manual, which JBLM has adopted, and its detailed guidance for handling stormwater runoff for water quality and quantity. Any redevelopment of the compounds will require managing stormwater consistent with the manual.

In the East Compound, because the groundwater table is high and basements in Madigan Barracks have flooded, there is some concern about using stormwater infiltration ponds for the large areas of impervious surface that will accompany the buildings and pavement proposed for this compound. However, the ponds that collect and discharge stormwater from recently constructed buildings in the East Compound appear to functioning as designed, indicating that stormwater runoff can be infiltrated successfully by the soils in the compound and that its high water table has not affected the functioning of these facilities.

Stormwater Infiltration Requirements				
Development	**Total Area (acres)**	**Impervious Area (acres)**	**Pervious Area (acres)**	**Infiltration Area (acres)**
Existing to Remain	27.0	10.0	17.0	na
Phase 1	30.0	19.2	10.8	2.0
Phase 2	34.0	21.1	12.9	0.9
Phase 3	32.5	17.2	15.3	1.5
Phase 4	4.5	4.0	0.5	0.3
Future	22.0	11.5	10.5	1.1
Master Plan Build-out	**150.0**	**83.0**	**67.0**	**5.8**

Table 4. Storm Infiltration Requirements

While the master plan includes extensive impervious surfaces, designing the specific areas needed for infiltration is challenging. The performance of stormwater facilities, which can be infiltration ponds, raingardens, pervious pavements, underground infiltration facilities, or a combination, depends on factors such as soil characteristics, geology, groundwater, runoff rates, and pond geometry, information that was not available during the development of the master plan report. Although the location, length, width, and depth of each facility are determined by many factors, traditional simulations and observations suggest that deep facilities and elongated storm ponds with a greater proportion of side to bottom area result in higher infiltration.

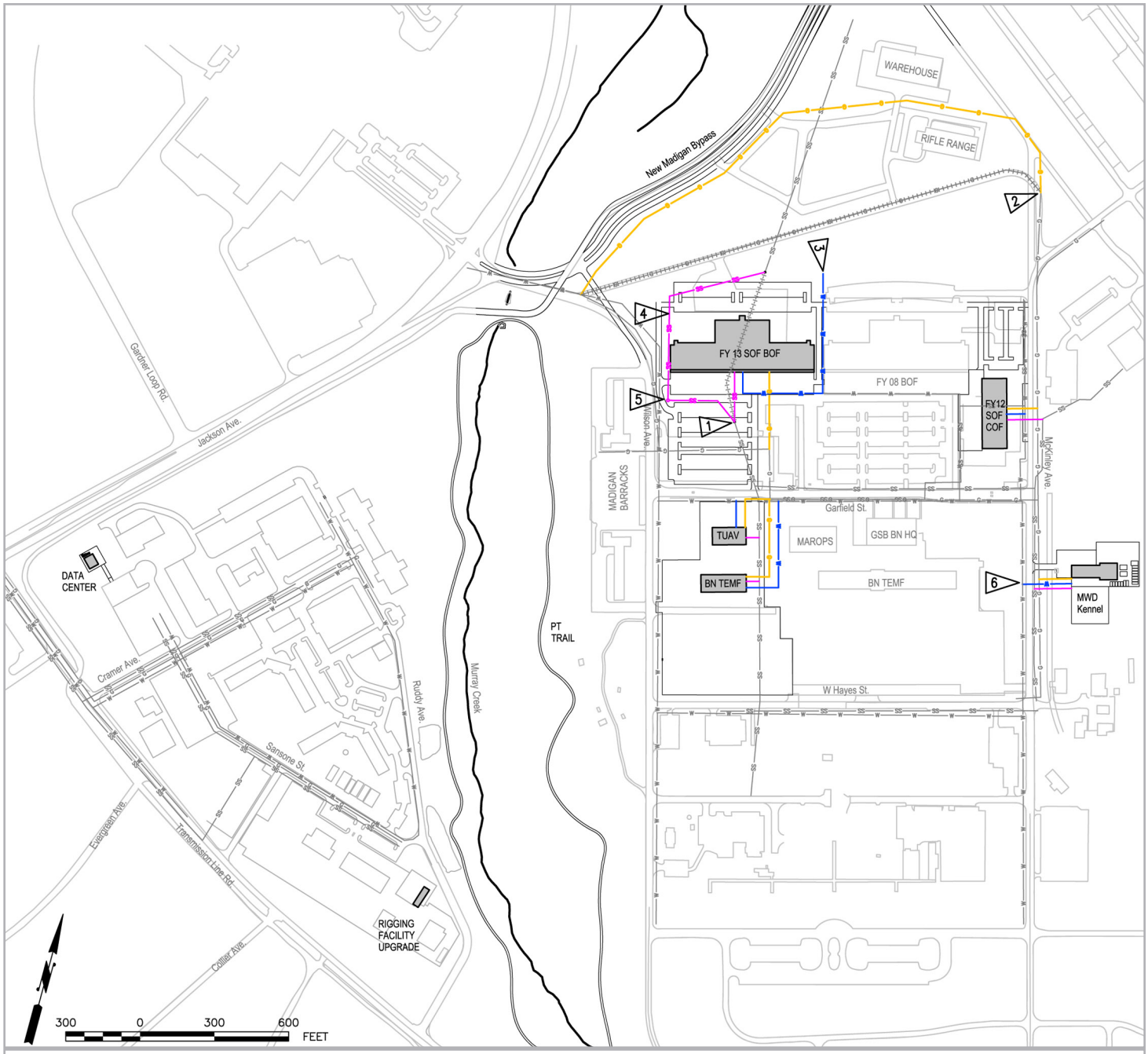
For a macro-level estimate of the area needed for infiltration ponds, chosen because they represent the maximum probable land area needed for stormwater management, the master planning team completed a hydrologic analysis that focused on a worst-case situation in which in all phases all new surfaces were impervious and all new roof runoff was directed to infiltration facilities. The analysis made no allowance for using drywells, pervious pavements, splash blocks, infiltration galleries, or other methods that would reduce significantly the amount of area needed for infiltration. The team calculated the overall amount of pervious versus impervious area to find out whether sufficient area would be available for infiltration (Table 4). The following table represents the approximate area of infiltration needed per phase, with a total of 5.8 acres needed for infiltration ponds after the completion of all phases of development.

While further evaluation is necessary to locate and size specific facilities, the master plan assumes stormwater bioswales adjacent to all parking areas (Figure 9), and a significant amount of open space is available adjacent to roadways and buildings for larger storm ponds and infiltration gardens. The storm infiltration ponds (identified in tables 5 and 6) were sized per building to fully infiltrate all runoff generated by a storm with a 50-year return period, with overflow allowed for storm events exceeding the 50-year event. The total square footage for each pond assumes an average 10-foot depth; the actual depth can be determined only as part of site design and would be a function of design factors that cannot be predicted at this conceptual level.

The Ecology-approved continuous flow model, MGS Flood, was used to size infiltration ponds based on the impervious surface areas constructed under each phase. The Massmann infiltration rate assumed a hydraulic conductivity of 30 inches per hour, resulting in an effective infiltration rate of 12.9 inches per hour at zero depth. Use of this infiltration rate was based on reports of similar rates previously observed at Fort Lewis, but should be verified for more detailed design analyses. and reports of similar rates previously observed at Fort Lewis were used in the analysis, but these should be verified for more detailed design analyses.

Propane Air

Currently, there is no propane-air distribution system in either compound. According to JBLM staff, propane air is not proposed or programmed for installation in either compound.



REFERENCE NOTES:

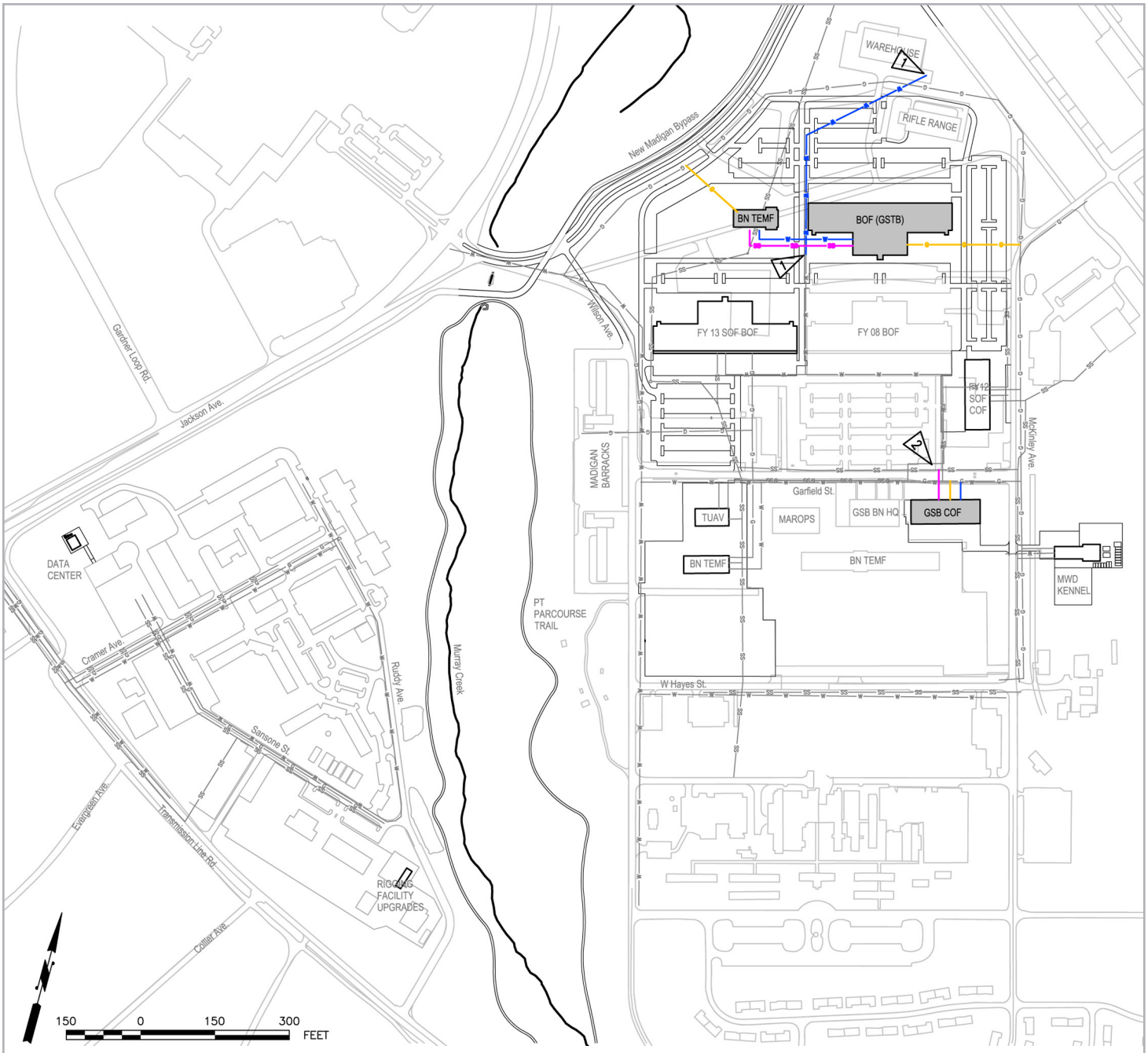
1. TIE-IN TO EXISTING SS MH AND REROUTE TO NEW SEWER LIFT STATION.
2. CLOSE COORDINATION WITH PSE MUST OCCUR FOR RELOCATION OF MAJOR GAS LINE. EXISTING GAS LINE CANNOT BE DEMOLISHED UNTIL GAS MAIN IS REROUTED ADJACENT TO NEW MADIGAN BY-PASS. EXACT LOCATION TO BE COORDINATED WITH PSE. DEMO OLD.
3. TIE INTO EXISTING WATER LINE AND EXTEND FOR FUTURE LOOPED WATER SYSTEM.
4. 1,000 LF PROPOSED 8" SANITARY FORCEMAIN
5. PROPOSED 600 GPM SANITARY LIFT STATION AND SEWER FORCEMAIN AROUND PROPOSED FY13 BUILDING FOOTPRINT.
6. BUILDING TIE-IN TO EXISTING UTILITIES AT ROADWAY, TYP.

LEGEND:

- SS — NEW SANITARY SEWER LINE
- G — NEW GAS LINE
- W — NEW WATER LINE
- SS — EXISTING SANITARY SEWER LINE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE

NOTE: UTILITIES SHOWN ON MAP ARE SCHEMATIC AND NOT INTENDED TO SHOW ALL EXISTING CONDITIONS.

Figure 37. Phase 1 Utilities



REFERENCE NOTES:

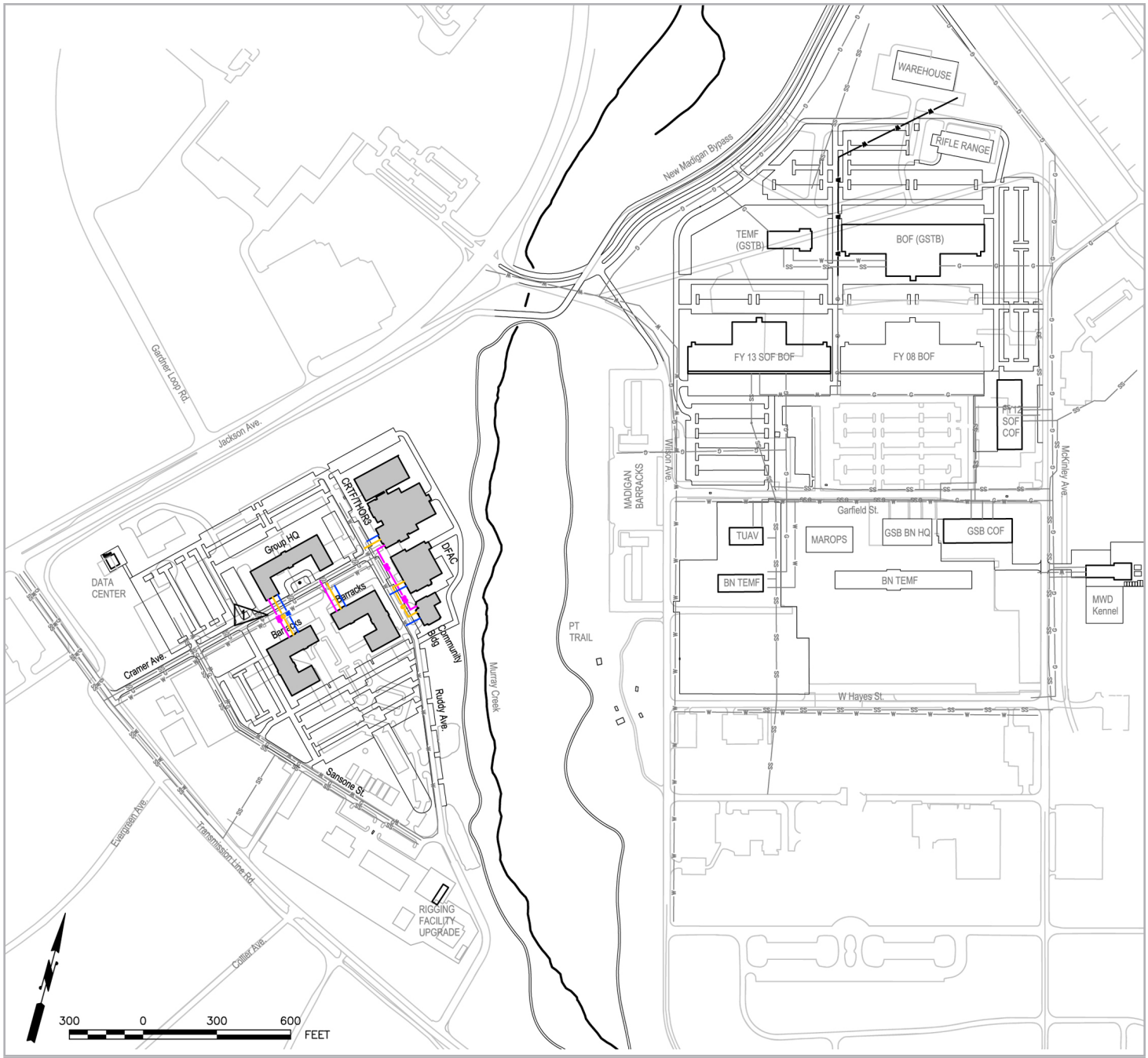
1. TIE INTO EXISTING WATER LINE AND EXTEND FOR FUTURE LOOPED WATER SYSTEM.
2. BUILDING TIE-IN TO EXISTING UTILITIES AT ROADWAY, TYP.

LEGEND:

- SS — NEW SANITARY SEWER LINE
- G — NEW GAS LINE
- W — NEW WATER LINE
- SS — EXISTING SANITARY SEWER LINE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE

NOTE: UTILITIES SHOWN ON MAP ARE SCHEMATIC AND NOT INTENDED TO SHOW ALL EXISTING CONDITIONS.

Figure 38. Phase 2 Utilities



REFERENCE NOTES:

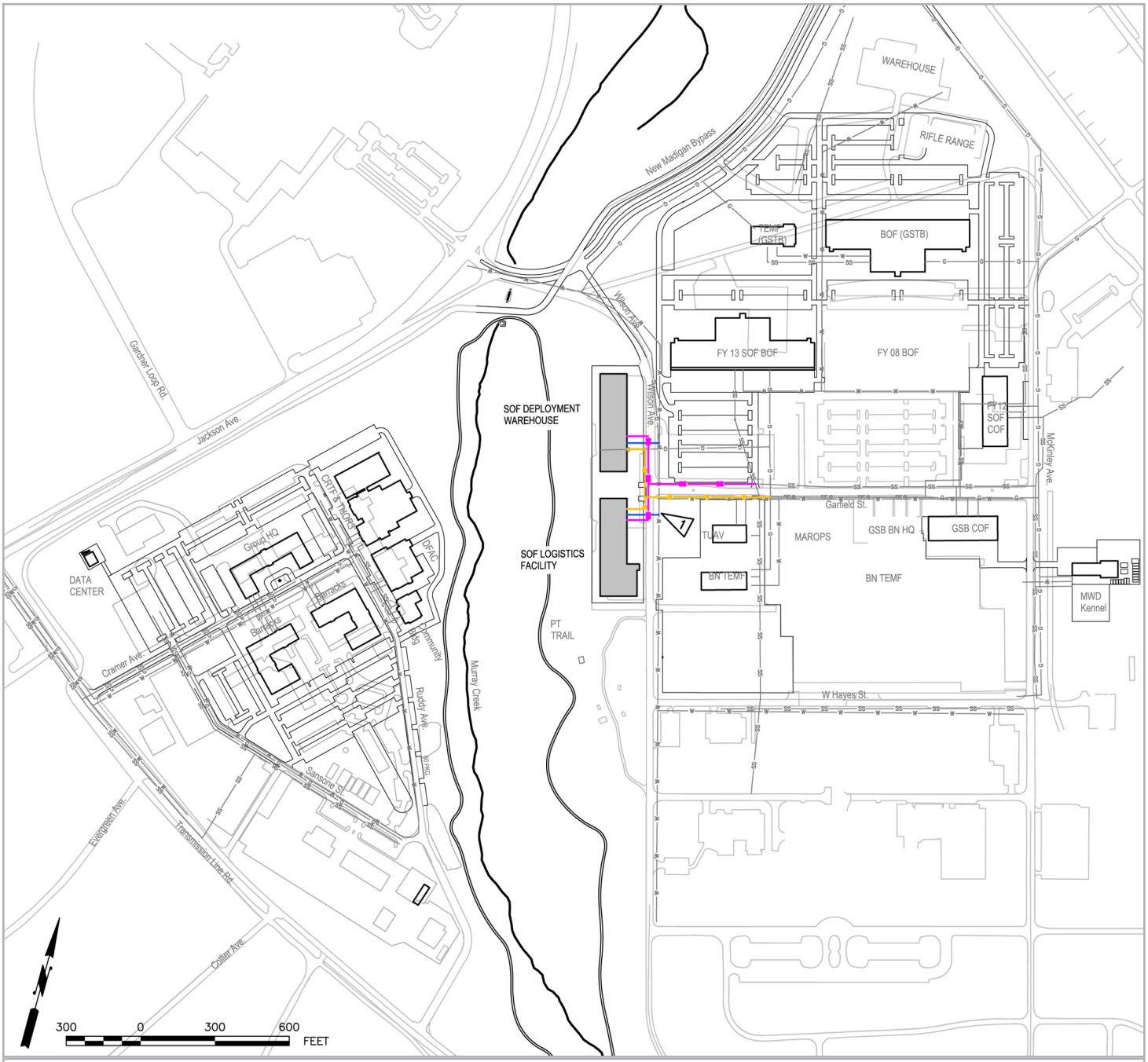
1 BUILDING TIE-IN TO EXISTING UTILITIES AT ROADWAY, TYP.

LEGEND:

SS SS	NEW SANITARY SEWER LINE
G G	NEW GAS LINE
W W	NEW WATER LINE
SS SS	EXISTING SANITARY SEWER LINE
G G	EXISTING GAS LINE
W W	EXISTING WATER LINE

NOTE: UTILITIES SHOWN ON MAP ARE SCHEMATIC AND NOT INTENDED TO SHOW ALL EXISTING CONDITIONS.

Figure 39. Phase 3 Utilities



REFERENCE NOTES:

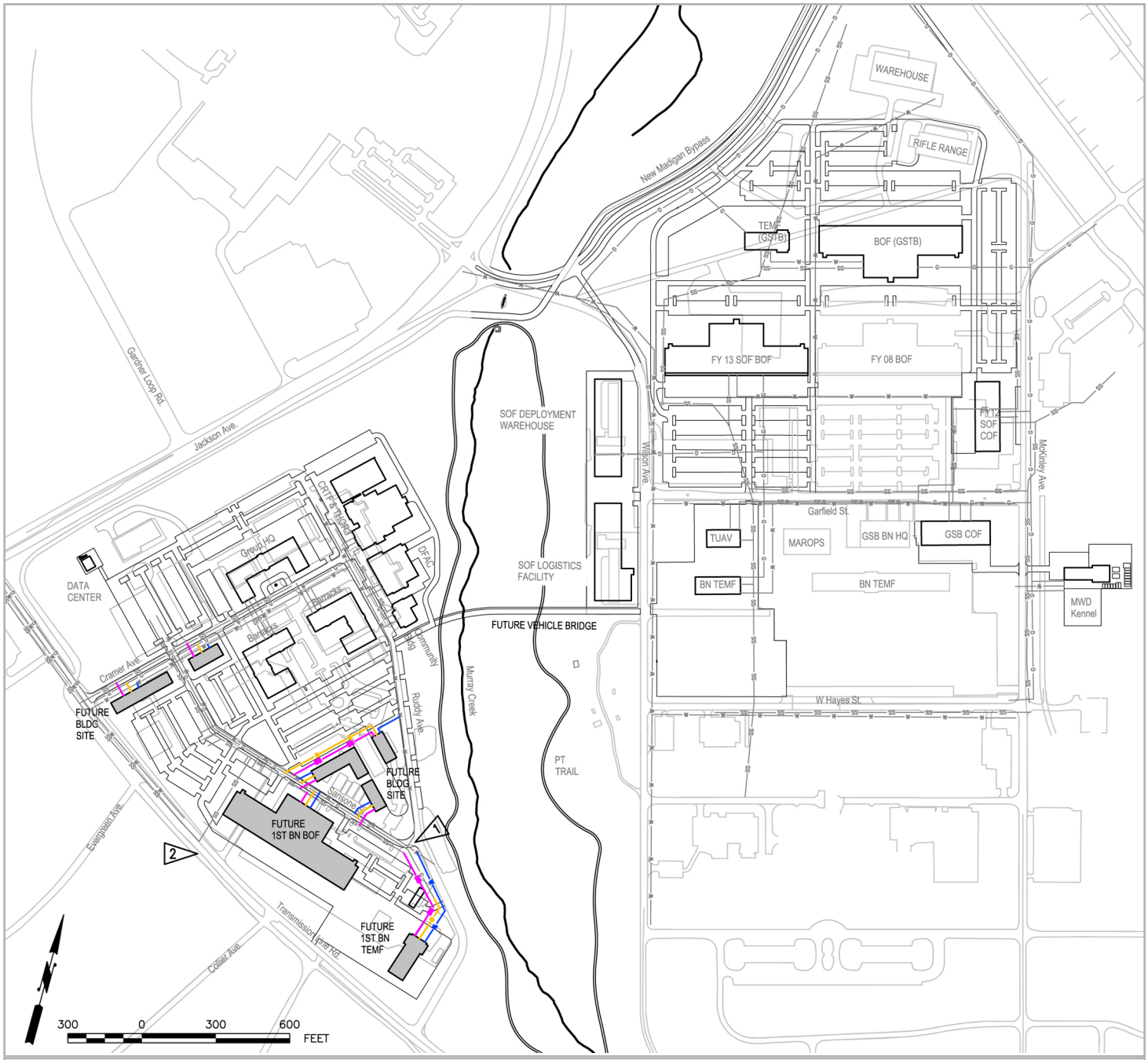
1 BUILDING TIE-IN TO EXISTING UTILITIES AT ROADWAY, TYP.

LEGEND:

SS SS	NEW SANITARY SEWER LINE
G G	NEW GAS LINE
W W	NEW WATER LINE
SS SS	EXISTING SANITARY SEWER LINE
G G	EXISTING GAS LINE
W W	EXISTING WATER LINE

NOTE: UTILITIES SHOWN ON MAP ARE SCHEMATIC AND NOT INTENDED TO SHOW ALL EXISTING CONDITIONS.

Figure 40. Phase 4 Utilities



REFERENCE NOTES:

1. BUILDING TIE-IN TO EXISTING UTILITIES AT ROADWAY, TYP.
2. KENNEDY MARSH OVERFLOW PIPE TO REMAIN OR BE RELOCATED TO ACCOMMODATE WITH IN NEW DEVELOPMENT.

LEGEND:

SS SS	NEW SANITARY SEWER LINE
G G	NEW GAS LINE
W W	NEW WATER LINE
SS SS	EXISTING SANITARY SEWER LINE
G G	EXISTING GAS LINE
W W	EXISTING WATER LINE

NOTE: UTILITIES SHOWN ON MAP ARE SCHEMATIC AND NOT INTENDED TO SHOW ALL EXISTING CONDITIONS.

Figure 41. Future Utilities

Water Sanitary & Storm Utility Requirements - West Compound

West Compound Site Demolition					
PN	description	water	sanitary	storm	notes
9141	SSA Warehouse	90	130	356	demo phase 4
9142	Language Facility	25	25	0	demo phase 4
9145	TEMF	360	390	480	future demo
9146	Cold Storage Facility	0	0	180	future demo
9149	Signal Det.	40	40	375	future demo
9156	General Purpose Warehouse	0	0	0	future demo
9157	MAROPS	495	340	630	future demo
9160	2nd BN HQ Building	410	90	250	demo phase 2
9162	3rd BN HQ Building	400	90	250	demo phase 2
9175	Enlisted Barracks	45	45	960	demo phase 3, replace before demo
9176	Enlisted Barracks	80	80	1,400	demo phase 3, replace before demo
9177	3rd BN Ops	630	125	440	demo phase 2
9178	2nd BN Ops	570	130	220	demo phase 2
9179	DFAC	65	70	180	demo phase 3
9180	Medical Building	115	115	340	demo phase 3
9181	HSC/2nd and 3rd BN Mid.	60	260	220	demo phase 3
9190	Group HQ Building	220	450	150	replace before demo
9155	Parachute Rigging Facility	0	0	0	temp renovation in phase 3, future demo
Total Demolition - LF		3,605	2,380	6,431	
West Compound New Construction					
PN	description	water	sanitary	storm	notes
tbd	Data Center				build phase 1
tbd	Group HQ	740	360	32,000	build phase 3
tbd	CRFT / THOR 3	850	295	7000	build phase 3
tbd	Barracks #1	600	230	12000	build phase 3
tbd	Barracks #2	600	530	12000	build phase 3
tbd	DFAC	460	190	2400	build phase 3
tbd	Future 1st BN Ops Fac (BOF)	400	200	16000	Future
tbd	Future 1st BN TEMF	650	200	16000	Future
tbd	Future Admin Building (s)	150	150	16000	confirm
Totals		4,450	2,155	113,400	

Notes:
New waterlines assumed to be 8 inches
New sewer lines assumed to be 6 inches
Storm is estimated square footage of land needed to site an infiltration facility.

Table 5. Water, Sanitary & Storm Utility Requirements – West Compound

Water, Sanitary & Storm Utility Requirements - East Compound

East Compound Site Demolition					
PN	description	water	sanitary	storm	notes
9655	Warehouse	0	0	0	existing bldg to remain
9654	Indoor Firing Range	0	0	0	existing bldg to remain
9934	FY08 BOF	0	0	0	existing bldg to remain
9936	MAROPS	0	0	0	existing bldg to remain
9937	FSC/GSB BN HQ	0	0	0	existing bldg to remain
9338	Hazardous Materials Storage	0	0	0	existing bldg to remain
9940	GSB TEMF	0	0	0	existing bldg to remain
9942	Oil Storage Building	0	0	0	existing bldg to remain
9985	FE Facility (Madigan woodshop)	40	275	50	Phase 1 - Site demo
9986	Fire Station	50	165	350	future demo
9988	MWD Kennel	270	230	140	replace before demo
9989	Sports Equipment Facility	0	0	0	demo phase 1
9993	Keeler Gym	705	380	350	replace before demo
tbd	FY12 BOF	1,400	320	240	demo phase 1
tbd	SOF COFs	300	0	100	demo phase 1
tbd	MWD Kennel	0	0	0	demo phase 1
tbd	BN TEMF/TUAV	0	0	620	demo phase 1
Total Demolition - LF		**2,765**	**1,370**	**1,850**	
New Utility Construction					
PN	description	water	sanitary	storm	notes
tbd	FY13 SOF BOF	1,000	900	16,000	build phase 1, std design*
tbd	FY12 SOF COF	100	100	2,700	build phase 1, std design
tbd	MWD Kennel	130	130	510	build phase 1, std design
tbd	BN TEMF	450	150	25,000	build phase 1, std design
tbd	TUAV	450	150	25,000	build phase 1, std design
tbd	BN Ops (GSTB)	1,200	400	16,000	build phase 2, std design
tbd	BN TEMF (GSTB)	700	250	10,000	build phase 2, std design
tbd	FSC/GSB COF	150	150	9,100	build phase 2, std design, adjacent to GSB BN HQ
tbd	SOF Deployment Warehouse	1300	140	7,000	build phase 4
tbd	SOF Logistics Facility	110	140	7,000	build phase 4
Total New Construction - LF		**4,180**	**2,230**	**104,310**	

Notes:
LF = Linear Foot
FY12 BOF may require the installation of a sewer lift station
Storm is estimated square footage of land needed to site an infiltration facility.
New waterlines assumed to be 8 inches
* New sewer lines assumed to be 6 inches, except 24 inch diameter sewer replacement for FY13 SOF BOF

Table 6. Water, Sanitary & Storm Utility Requirements – East Compound

Site Power and Telcom

The existing primary power distribution system at JBLM is a 13,800-volt, 3-phase, 3-wire, single-point grounded wye system.

Existing Site Power

Service to the West Compound is underground from the Army Central Substation (Figure 42). A utility transformer currently provides power to street lighting within the compound at 480 volts, with photoelectric control. Two feeders extend from the Army Central Substation to a point near the Madigan Bypass roadway, where service is taken overhead adjacent to the Madigan Bypass roadway to the Logistics Center. A feeder from the Madigan substation extends from the Logistics Center to pole-mounted switches near Wilson Avenue that provide the ability to feed the East Compound and the housing area to the south from any of the three primary circuits.

The primary power system in the East Compound (Figure 42) is served from the overhead system, except that an underground system was recently installed in the FY08 BN Operations project along Garfield Street between Wilson Avenue and McKinley Avenue. Padmount service transformers were installed for buildings associated with the FY08 project.

Lighting for Parking Lots and Pedestrian Security

Future Site Power

Phase 1

In the first phase of the master plan, the existing Madigan Bypass roadway will be replaced with a new road that follows the tank trail and connects to the Logistics Center on South I Street (Figure 43). The existing overhead primary distribution system on the south side of Madigan Bypass between Jackson Avenue and South L Street will be replaced with an underground system. Prior to relocation or removal of existing utilities, a survey will be conducted to determine if hazardous materials (PCB contamination) exist. Appropriate remediation must be provided if hazardous materials are discovered.

A utility transformer will be provided for street lighting along the new roadway. A structural support system will be required to bridge Murray Creek for support of feeder raceways to the new padmount switches. A two-company FY12 COF will be constructed to the southeast of the existing BOF. Overhead service to existing buildings at this location will be removed, and a padmount transformer will be provided, fed from the existing underground system in the parking area.

Existing power poles on the south of the Madigan Bypass roadway will be removed and services to relocatables buildings demolished.

A new FY13 BOF will be constructed adjacent to the existing FY08 BOF using the same design, including a 1500kVA service transformer and emergency power generator. The service transformer will be fed from the new underground primary system.

A TUAV and TEMF will be located south of Garfield Street. Primary power will be extended from the existing transformer serving the west guard shack to a transformer sized for the combined load of the new buildings.

The existing MWD Kennel on McKinley Avenue near the existing Madigan Bypass road will be removed upon

completion of a new MWD Kennel located on the east side of McKinley Avenue south of Garfield Street. A padmount service transformer will be fed from the existing primary switch.

In the West Compound, a Data Center will be constructed near existing Building 9190 (the existing Group Headquarters). The padmount transformer will be fed from the existing underground primary system and a standby generator will be provided for the facility.

The existing Rigging Facility will be expanded during Phase 1, but no modifications are anticipated to the building service.

Phase 2

In Phase 2 of the master plan, a third BOF (GSTB) will be constructed north of the existing FY08 BOF using the same design, including a 1500kVA service transformer and emergency power generator. The service transformer will be fed from the new underground primary system (Figure 44).

A BN TEMF (GSTB) will be constructed to the west of the BOF (GSTB), also fed from the new UG primary system.

An FSC/GSB COF will be located south of Garfield Street, fed from the existing manhole junction. The conceptual building footprint as shown on the site plan conflicts with the existing underground primary duct bank that serves the TEMF and Hazmat Storage building. Modifications will be required to reroute the UG primary system around the new building.

Phase 3

In Phase 3 of the master plan, existing buildings in the north area of the West Compound will be removed and replaced with a new Group HQ, Barracks, DFAC, CRTF/THOR3, and Community Center (Figure 45).

The existing underground primary system will be maintained to the extent possible. The conceptual building footprint for the Barracks conflicts with the existing primary duct bank that serves buildings to the south and will require modifications. Duct bank extensions will also be required for the extension of the primary system for future buildings. The existing utility transformer serving street lighting will be removed and replaced at a new location to feed existing and new street lighting circuits and will be controlled by photocell.

Phase 4

In Phase 4 of the master plan, SOF Deployment warehouse, SOF Logistics facility and a container storage area will be constructed in the East Compound (Figure 46). The underground primary system will be extended as required to provide service to the new buildings.

Future

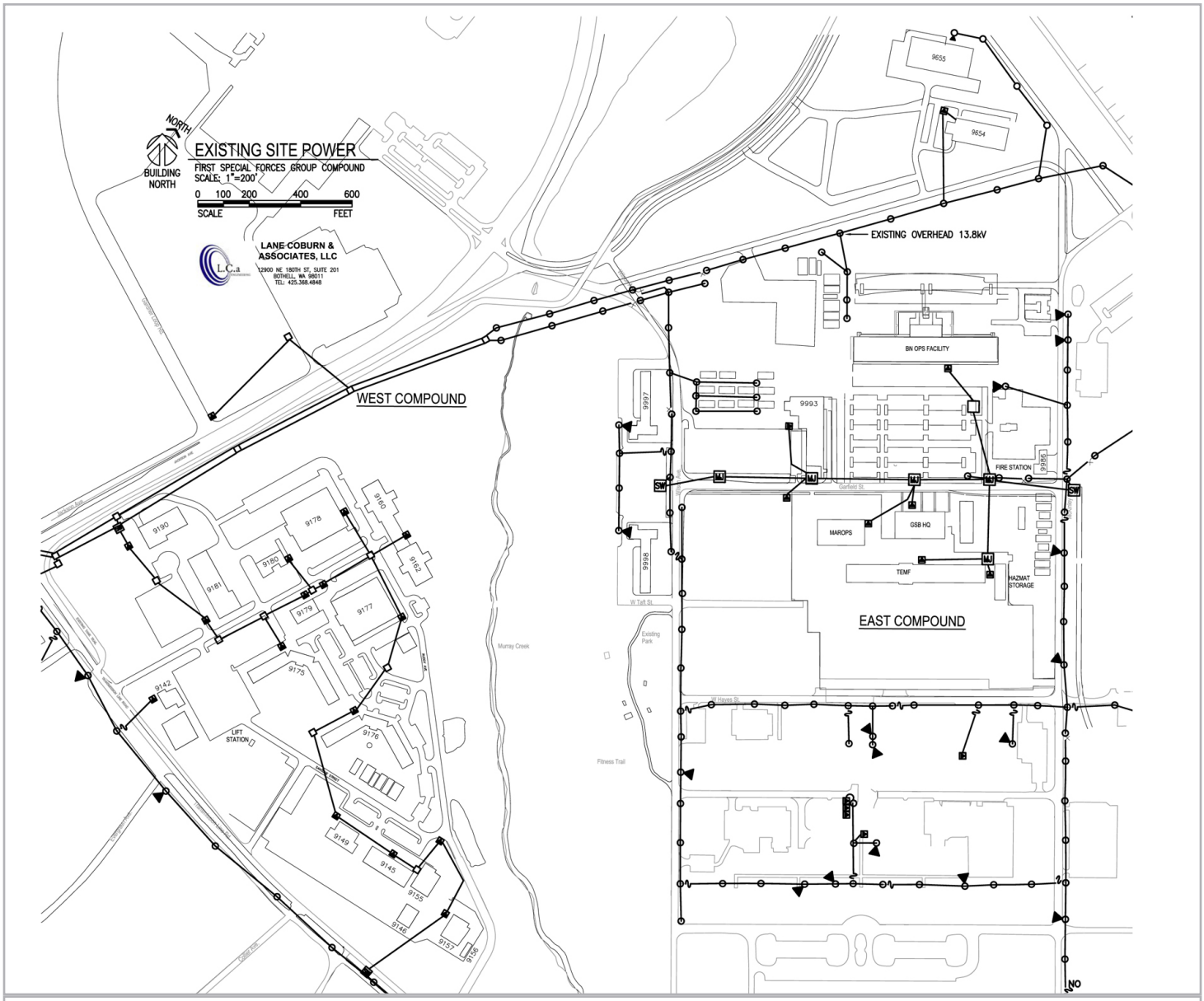
During future phases of the master plan, existing buildings near Transmission Line Road in the West Compound will be demolished (Figure 47). Service to new buildings will be taken from the UG primary system. The existing gym in the East Compound will be removed.

A new bridge will be constructed to connect the West and East compounds. To prevent impacts to wildlife in the Murray Creek area below, lighting along the bridge roadway must be provided in a manner that does not project beyond the limits of the bridge (see tables 7 and 8 for a summary of power and telcom requirements).

Existing Telcom

Army copper and fiber to the West Compound is currently served from Madigan via the underground telecommunications duct bank and manhole system. Record documentation is not conclusive regarding the size of cables, source, and destination, or the number of empty ducts available for use throughout the compound. It is assumed that the existing underground duct bank system will support modifications required within this compound during the first four phases of the master plan.

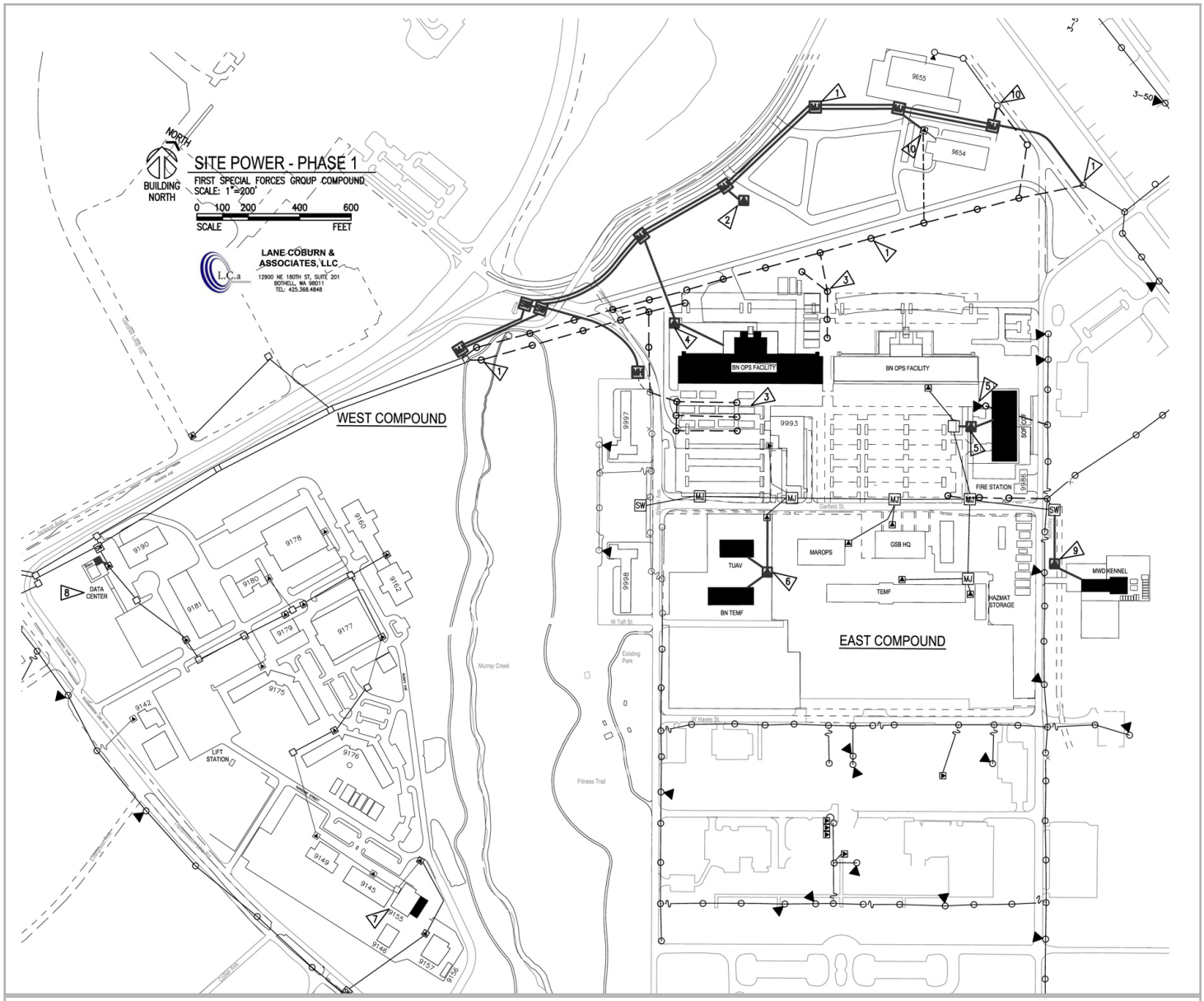
Army copper and fiber is provided to the East Compound from Madigan (Figure 48). An 1,800-pair cable from Comm Hut 9581 in the Logistics Center was recently installed in the FY08 Battalion Complex project to provide additional army copper telephone service to the East Compound through the underground telecommunications duct bank and manhole system. 144 strands of single-mode fiber were also routed from Comm Hut 9633 in the Logistics Center for data. In addition, 144 strands of single-mode fiber were routed between buildings in the East Compound and Building 9190 in the West Compound.



GENERAL NOTES:

1. EXISTING CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.
2. THE EXISTING PRIMARY DISTRIBUTION SYSTEM IS 13.8kV 3-PHASE FED FROM THE ARMY CENTRAL SUBSTATION. SERVICE IN THE WEST COMPOUND IS UNDERGROUND THROUGH A DUCT BANK AND MANHOLE SYSTEM. SERVICE TO THE EAST COMPOUND IS PRIMARILY OVERHEAD, WITH THE EXCEPTION OF THE UNDERGROUND SYSTEM THAT WAS RECENTLY INSTALLED IN THE FY08 BATTALION COMPLEX PROJECT ON GARFIELD STREET BETWEEN WILSON AVENUE AND McKINLEY AVENUE.

Figure 42. Existing Site Power



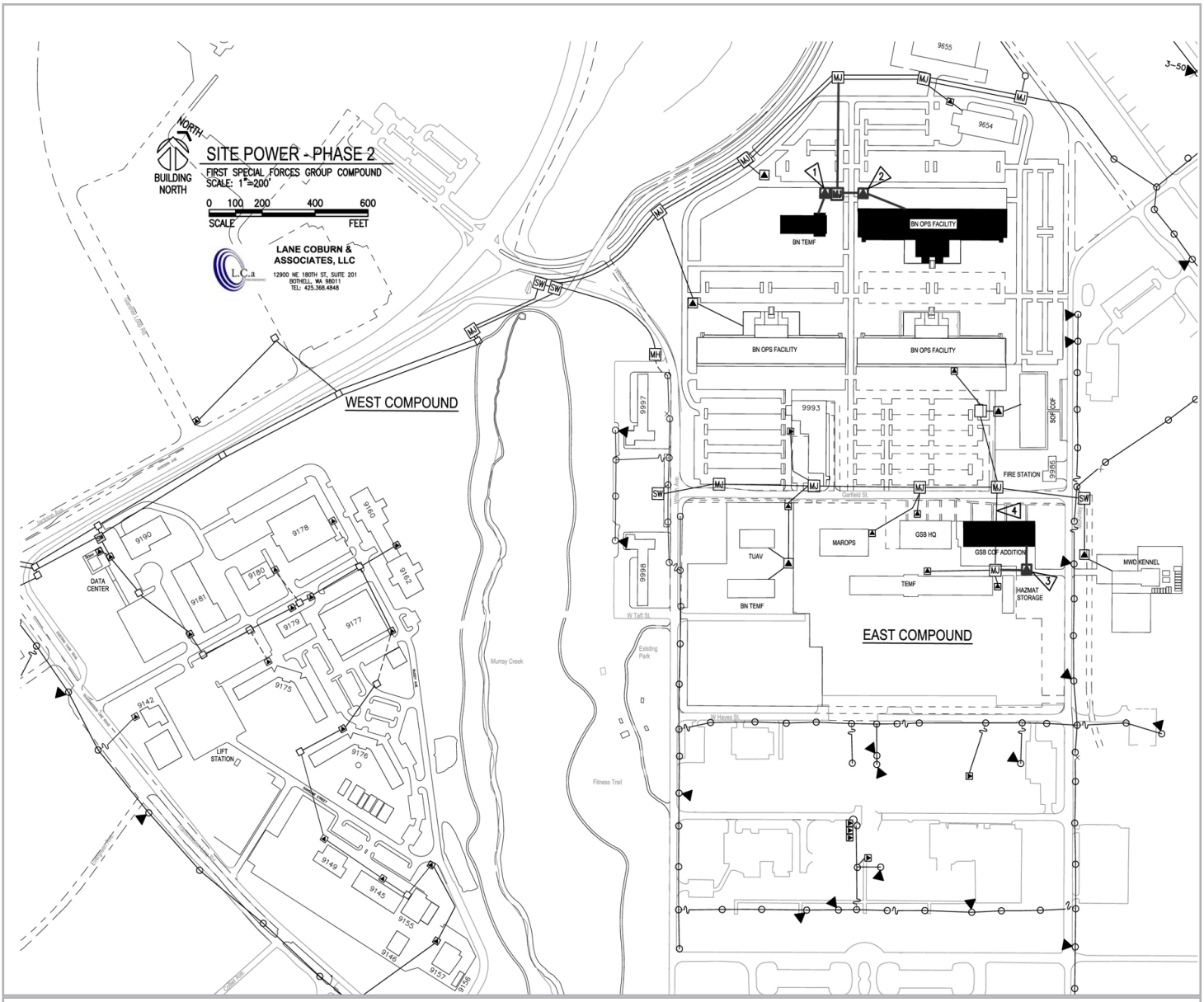
GENERAL NOTES:

1. CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.

REFERENCE NOTES:

1. THE EXISTING OVERHEAD PRIMARY SYSTEM ALONG THE MADIGAN BYPASS ROADWAY WILL BE REMOVED AND AN UNDERGROUND PRIMARY SYSTEM WILL BE PROVIDED. IT WILL BE NECESSARY TO DETERMINE THE BEST WAY TO CROSS MURRAY CREEK WITH THE NEW UNDERGROUND PRIMARY DUCT BANK SYSTEM DURING DESIGN.
2. A STREET LIGHTING TRANSFORMER WILL BE PROVIDED FOR THE NEW MADIGAN BYPASS ROADWAY, COORDINATED WITH THE WORK OF FUTURE PHASES.
3. OVERHEAD POWER TO PORTABLE BUILDINGS WILL BE REMOVED IN THE AREA OF THE BATTALION OPERATIONS FACILITY TO ALLOW BUILDING AND PARKING LOT CONSTRUCTION.
4. THE BATTALION OPERATIONS FACILITY WILL BE FED FROM THE NEW UNDERGROUND PRIMARY SYSTEM.
5. EXISTING OVERHEAD PRIMARY SERVING BUILDINGS WILL BE REMOVED AND A NEW PADMOUNT TRANSFORMER WILL BE INSTALLED TO SERVE A 2-COMPANY OPERATIONS FACILITY FROM THE EXISTING UNDERGROUND PRIMARY SYSTEM ON GARFIELD STREET.
6. THE TUAV AND BATTALION TACTICAL EQUIPMENT MAINTENANCE FACILITY WILL BE FED FROM THE EXISTING UNDERGROUND PRIMARY SYSTEM ON GARFIELD STREET. PRIMARY WILL BE EXTENDED FROM THE EXISTING TRANSFORMER SERVING THE GUARD SHACK TO A NEW TRANSFORMER SIZED FOR THE COMBINED BUILDING LOADS.
7. NO MODIFICATIONS TO THE BUILDING SERVICE ARE ANTICIPATED FOR THE EXPANSION OF THE EXISTING RIGGING FACILITY.
8. A DEDICATED TRANSFORMER WILL BE PROVIDED FOR THE DATA CENTER BUILDING FED FROM THE EXISTING UNDERGROUND PRIMARY SYSTEM. FINAL LOCATION OF THE BUILDING WILL REQUIRE CONFIRMATION.
9. A PADMOUNT TRANSFORMER WILL BE PROVIDED AT THE NEW LOCATION FOR THE MILITARY WORKING DOG KENNEL.
10. SERVICE TO EXISTING BUILDINGS WILL BE CUT OVER TO THE NEW UNDERGROUND PRIMARY SYSTEM.

Figure 43. Phase 1 Site Power



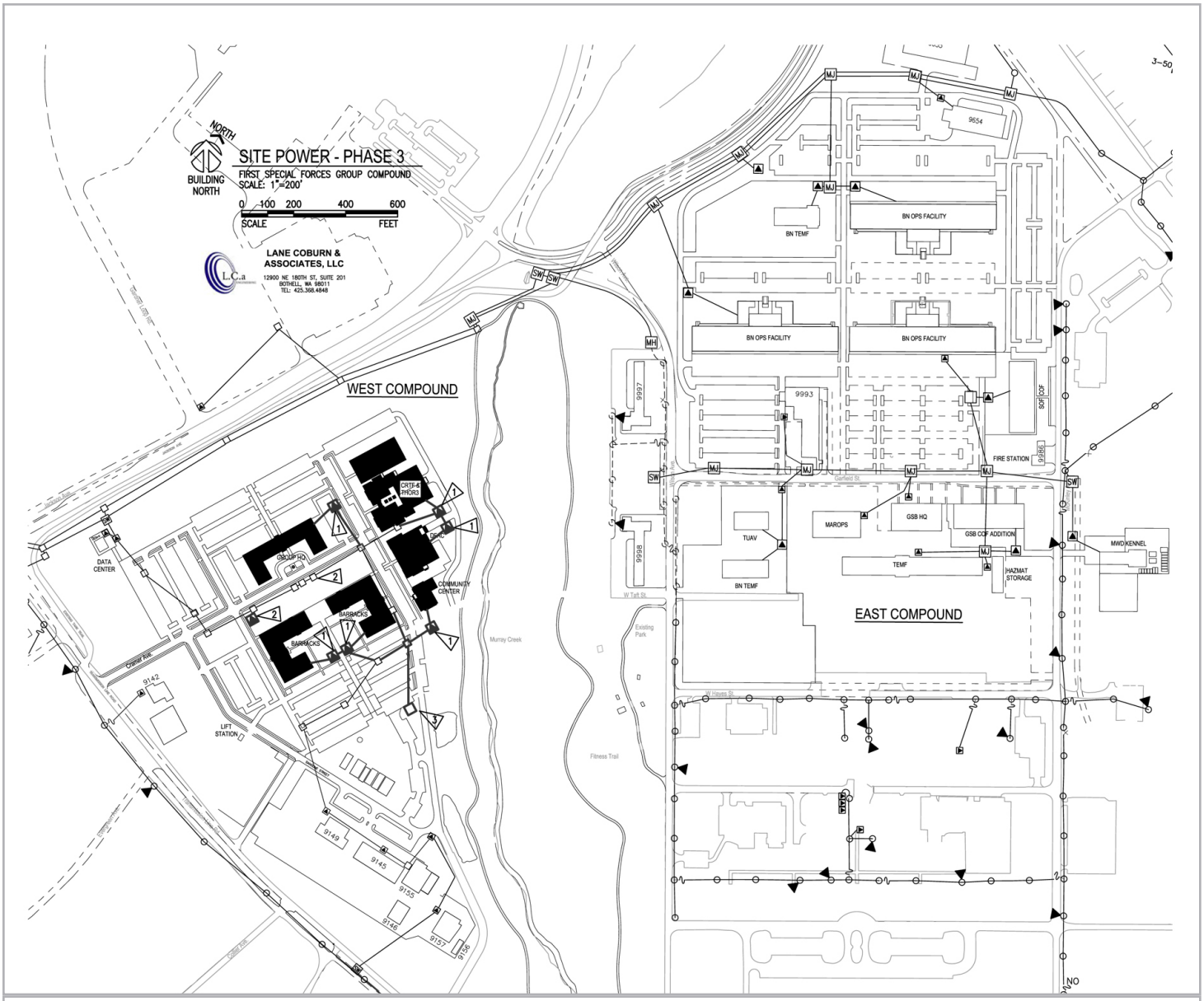
GENERAL NOTES:

1. CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.

REFERENCE NOTES:

1. A PADMOUNT TRANSFORMER WILL BE PROVIDED FOR THE BATTALION TACTICAL EQUIPMENT MAINTENANCE FACILITY FED FROM THE UNDERGROUND PRIMARY DISTRIBUTION SYSTEM.
2. A PADMOUNT TRANSFORMER WILL BE PROVIDED FOR THE BATTALION OPERATIONS FACILITY FED FROM THE UNDERGROUND PRIMARY DISTRIBUTION SYSTEM.
3. A PADMOUNT TRANSFORMER WILL BE PROVIDED FOR THE BATTALION HEADQUARTERS COMPANY OPERATIONS ADDITION FED FROM THE UNDERGROUND PRIMARY DISTRIBUTION SYSTEM.
4. EXISTING UG PRIMARY SERVICE TO THE TEMF AND HAZMAT STORAGE BUILDING WILL NEED TO BE REROUTED AROUND THE BNHQ/COF ADDITION BASED ON THE BUILDING FOOTPRINT SHOWN.

Figure 44. Phase 2 Site Power



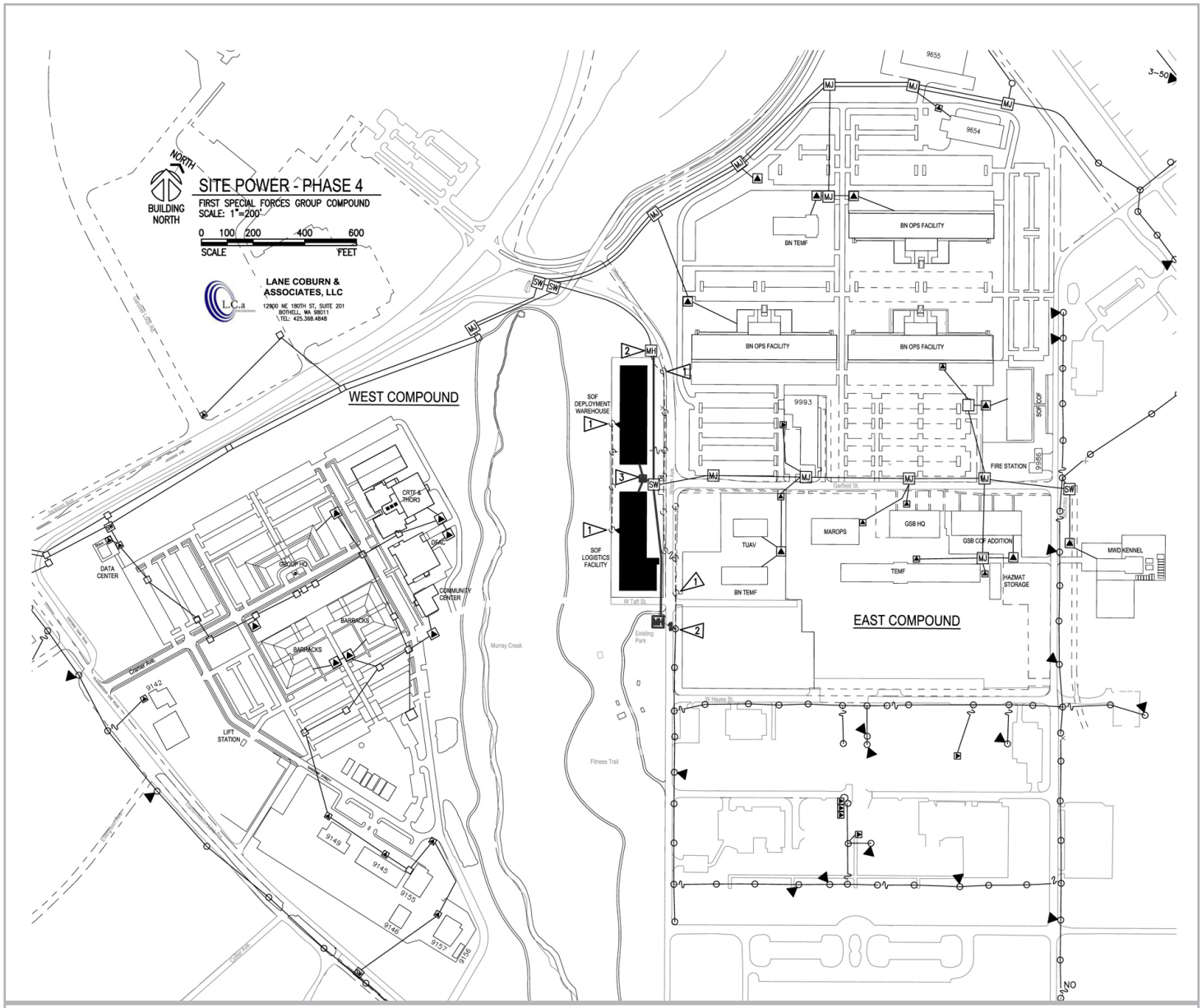
GENERAL NOTES:

1. CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.

REFERENCE NOTES:

1. A PADMOUNT TRANSFORMER WILL BE PROVIDED FOR EACH BUILDING SIZED FOR THE FACILITY LOAD, FED FROM THE UNDERGROUND PRIMARY DISTRIBUTION SYSTEM.
2. THE EXISTING TRANSFORMER AND STREET LIGHTING CONTROLS FOR THE WEST COMPOUND WILL BE REPLACED AND WILL SERVE NEW AND EXISTING STREET LIGHTING.
3. EXTEND UG PRIMARY TO MH BEYOND PARKING AREA FOR FUTURE EXPANSION.

Figure 45. Phase 3 Site Power



GENERAL NOTES:

1. CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.

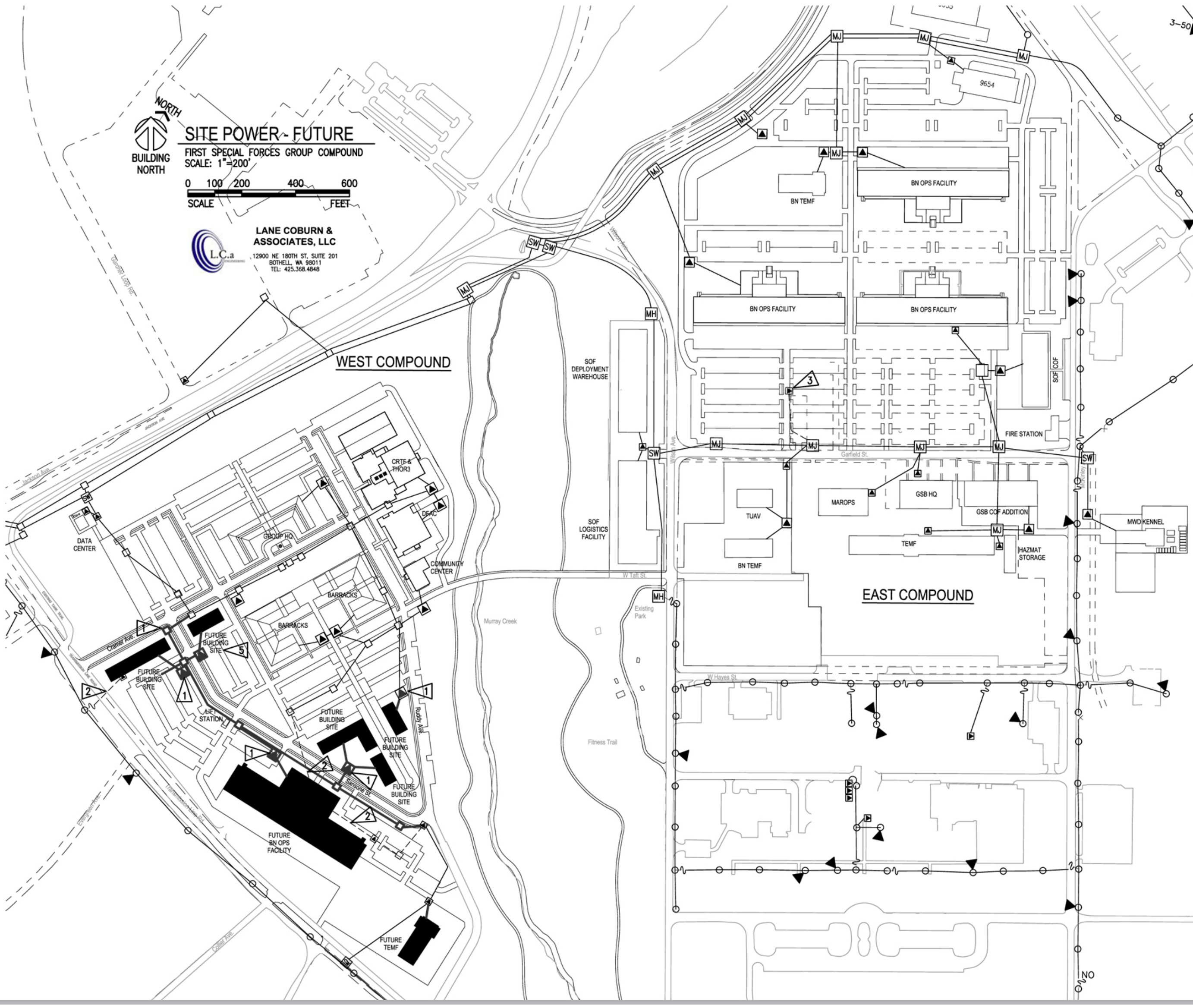
REFERENCE NOTES:

1. THE EXISTING OVERHEAD PRIMARY SYSTEM ALONG THE EAST AND WEST SIDE OF WILSON AVE WILL BE REMOVED TO WEST TAFT STREET AND TO THE OVERHEAD SYSTEM SERVING THE EXISTING BARRACKS BUILDINGS.

2. UNDERGROUND PRIMARY WILL BE EXTENDED FROM THE MANHOLE PROVIDED IN PHASE 1 TO THE EXISTING SWITCH AT THE EAST END OF GARFIELD STREET AND WILL CONTINUE TO A NEW MANHOLE JUNCTION SOUTH OF TAFT STREET WHERE A CONNECTION WILL BE PROVIDED TO THE OVERHEAD SYSTEM ON THE WEST SIDE OF WILSON AVE.

3. A SERVICE TRANSFORMER WILL BE PROVIDED TO SERVE BOTH DEPLOYMENT WAREHOUSE BUILDINGS FED FROM THE EXISTING PRIMARY SWITCH.

Figure 46. Phase 4 Site Power



GENERAL NOTES:

1. CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.

REFERENCE NOTES:

1 THE EXISTING UNDERGROUND PRIMARY SYSTEM WILL BE EXTENDED ALONG SANSONE STREET TO PROVIDE SERVICE TO FUTURE BUILDINGS AND WILL INTERCEPT THE EXISTING SYSTEM NEAR THE RIGGING FACILITY. BUILDING SERVICE TRANSFORMERS WILL BE LOCATED BASED ON BUILDING CONFIGURATION, LOCATION AND FORCE PROTECTION SETBACKS.

2 THE EXISTING UNDERGROUND PRIMARY SYSTEM SOUTH OF CRAMER AVE AND SANSONE STREET WILL BE REMOVED AS NECESSARY WHERE THE LOCATION INTERFERES WITH NEW BUILDING FOUNDATIONS.

3 KEELER GYM WILL BE DEMOLISHED AND REPLACED WITH ADDITIONAL PARKING.

Figure 47. Future Site Power

Power & Telcom Requirements - West Compound

WEST Compound					
Description	**NEC Copper**	**NEC Fiber**	**Fiber to Data**	**Xfmr kVA**	**notes**
Group HQ	150 pair	24-strand SM	24-strand SM	750/3	build phase 3
CRFT & THOR 3	50 pair	12-strand SM	12-strand SM	500/3	build phase 3
Barracks	25 pair	6-strand SM	-	500/3	build phase 3
Barracks	25 pair	6-strand SM	-	500/3	build phase 3
DFAC	50 pair	6-strand SM	12-strand SM	500/3	build phase 3
Community Center	50 pain	6-strand SM	-	112.5/3	build phase 3
SOF Deployment Warehouse	25 pair	6-strand SM	-	225/3	build phase 4
SOF Logistics Facility	25 pair	6-strand SM	-	225/3	build phase 4

Notes:

Anticipated sizes of service transformers are based on the facility type and square foot totals and are for estimating purposes only. Actual service transformer sizes will be based on NEC calculated loads for each facility with the option to serve multiple facilities from one transformer.

There is insufficient information available to determine the current cable counts for copper and fiber to each of the existing buildings without a survey of the underground telecommunications system.

Table 7. Power & Telcom Requirements – West

Power & Telcom Requirements - East Compound

EAST Compound					
Description	**NEC Copper**	**NEC Fiber**	**Fiber to Data**	**Xfmr kVA**	**notes**
FY13 BN Ops Fac (BOF)	600 pair	24 - strand SM	48-strand SM	1500/3	Building Phase 1
FY12 SOF COF	200 pair	24-strand SM	24-strand SM	500/3	Building Phase 1
MWD Kennel	50 pair	12-strand SM	12-strand SM	112.5/3	Building Phase 1
BN TEMF	150 pair	12-strand SM	12-strand SM	500/3	Building Phase 1
TUAV	100 pair	12-strand SM	12-strand SM	500/3	Building Phase 1
BN Ops Fac (GSTB)	600 pair	24-strand SM	48-strand SM	1500/3	building Phase 2
BN TEMF (GSTB)	150 pair	12-strand SM	12-strand SM	500/3	building Phase 2
GSB BN COF	400 pair	12-strand SM	24-strand SM	500/3	building Phase 2

Notes:

Anticipated sizes of service transformers are based on the facility type and square foot totals and are for estimating purposes only. Actual service transformer sizes will be based on NEC calculated loads for each facility with the option to serve multiple facilities from one transformer.

There is insufficient information available to determine the current cable counts for copper and fiber to each of the existing buildings without a survey of the underground telecommunications system.

Table 8. Power & Telcom Requirements – East

Future Telcom

Phase 1

In the first phase of the master plan, a BOF will be constructed adjacent to the existing BOF in the East Compound. The existing BOF is provided with 600-pair CU and 24 strands of fiber from the Network Enterprise Center (NEC) system. In addition, 48 strands of fiber are taken to Building 9190 in the West Compound. It is anticipated that requirements for the new BOF will be the same, with the interconnecting fiber taken to Building 9190 in the West Compound.

The existing FY08 SOF BOF project provided copper and fiber from the Logistics Center to the East Compound, and fiber from Building 9190 to buildings in the East Compound. Spare capacity at the communications huts, however, is inadequate to support all of the buildings included in the Phase 1 work. A new NEC telephone switch will be required in Comm Hut 9633 in order to provide dial tone.

As discussed in Phase 1 Electrical, a two-company FY12 COF will be constructed to the southeast of the existing BOF in the East Compound. It is anticipated that 200-pair CU and 12 strands of fiber from the NEC system will be required, plus 24 strands of fiber to Building 9190 in the West Compound.

Complex Communication
(Photo Credit: DJ Montoya 1st Space Brigade Public Affairs)

Also as discussed above, a TUAV and TEMF will be located south of Garfield Street. An existing duct bank previously installed across the roadway from the manhole system will be extended to the new buildings via a new telecommunications manhole. It is anticipated that 100-pair CU and 12 strands of fiber from the NEC system will be required to each building, plus 12 strands of fiber from each building to Building 9190 in the West Compound.

The existing MWD Kennel on McKinley Avenue near the existing Madigan Bypass road will be removed upon completion of the new MWD Kennel located on the east side of McKinley Avenue south of Garfield Street. It is anticipated that 50-pair CU and 12 strands of fiber from the NEC system will be required, plus 12 strands of fiber to Building 9190 in the West Compound.

Existing overhead telecommunications cables routed on the power poles on the south side of the Madigan Bypass roadway will need to be identified and relocated underground for services that are to remain. Services to relocatable buildings will be demolished.

A Data Center will be constructed near existing Building 9190 in the West Compound (Figure 49). This will allow the user to relocate rack-mounted equipment from Building 9190 to the Data Center building in advance of the headquarters demolition in Phase 3 of the master plan, and to reduce cutover time when the new headquarters building is constructed. The building will be designed as a sensitive compartmented information facility (SCIF) due to the installed networks, and will include offices and workstations for six to eight people. Redundant air conditioning systems will be provided, and a standby generator will provide full backup power to the facility.

The existing Rigging Facility will be expanded during Phase 1, but no modifications are anticipated to its telecommunications service.

Phase 2

In Phase 2 of the master plan, a third BOF will be constructed north of the existing BOF using the same design as the other two BOFs (Figure 50).

For the TEMF that will be constructed to the west of the

BOF, it is anticipated that 100-pair CU and 12 strands of fiber from the NEC system will be required, plus 12 strands of fiber to the Data Center in the West Compound.

For the BNHQ/COF Addition that will be located south of Garfield Street, it is anticipated that 200-pair CU and 12 strands of fiber from the NEC system will be required, plus 12 strands of fiber to the Data Center in the West Compound. Underground telcom service to the Hazmat Storage building will need to be relocated based on the conceptual footprint of the new building.

Phase 3

In Phase 3, existing buildings in the north area of the West Compound will be removed and replaced with a new Group HQ, barracks, DFAC, CRTF/THOR3, and Community Center (Figure 51).

A separate duct bank system will be provided between the Phase 1 Data Center and the HQ building for fiber inter-building connections. It is anticipated that 400-pair CU and 48 strands of fiber will be required from the NEC system, plus 48 strands of fiber to the Data Center.

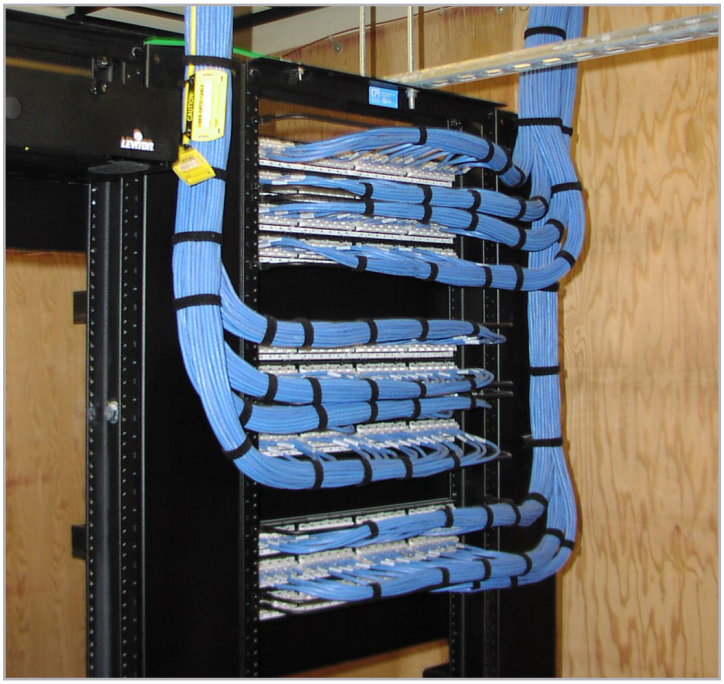
The existing underground duct bank and manhole system will be extended down Ruddy Drive for service to the new barracks, DFAC, and Community Center. Each building will require 25-pair CU and 6-strands of fiber. It is anticipated that the DFAC will require 50-pair CU and 6-strands of fiber. For the CRTF/THOR3 building, it is anticipated that 200-pair CU and 12 strands of fiber from the NEC system will be required, plus 12 strands of fiber to the Data Center.

Phase 4

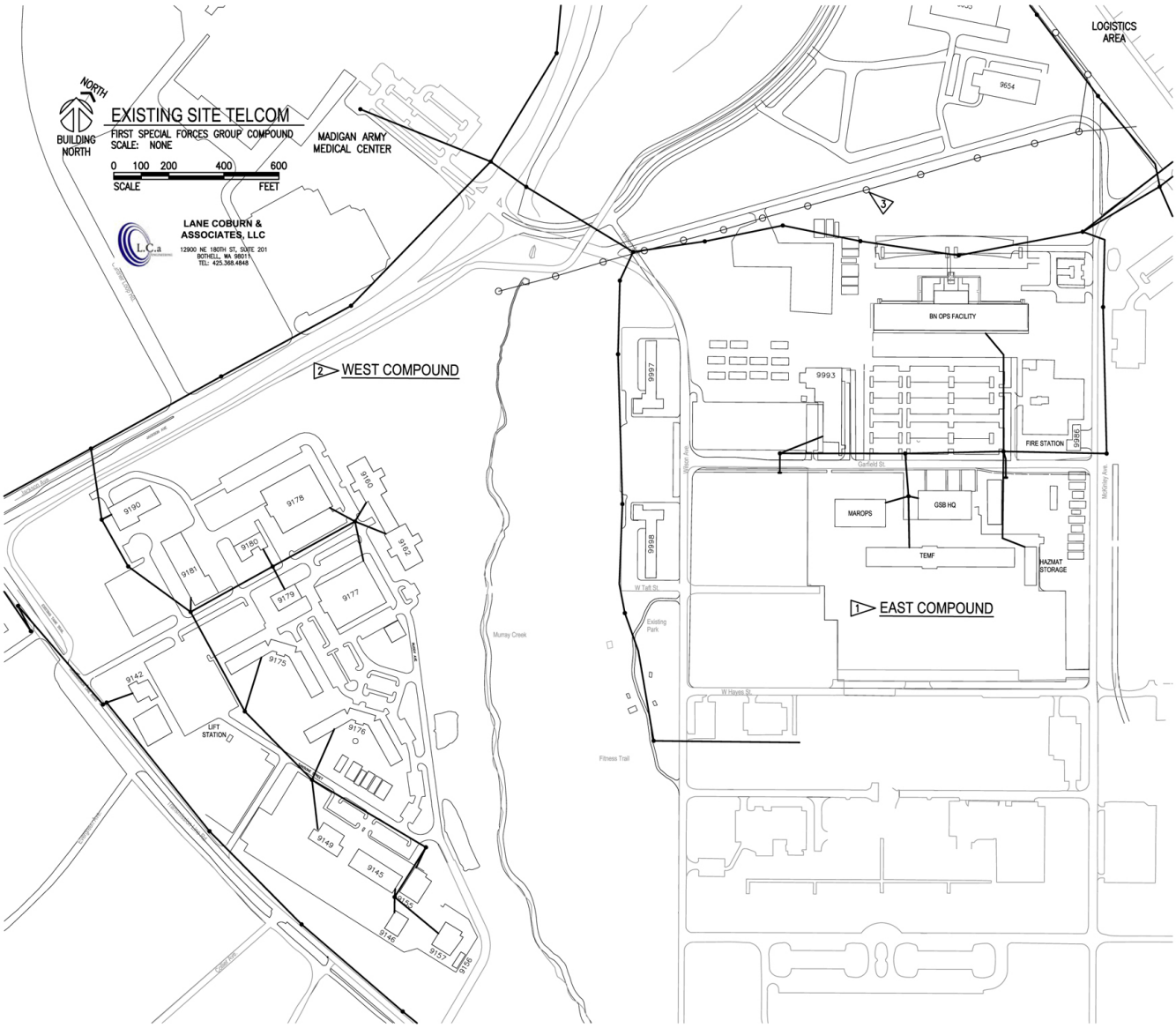
In Phase 4, two Deployment / Logistics warehouses will be constructed in the East Compound (Figure 52). The existing underground duct bank and manhole system will be extended for service to the buildings. It is anticipated that 25-pair CU and 6 strands of fiber will be required to each building from the NEC system.

Future

During future phases of the master plan, existing buildings near Transmission Line Road in the West Compound will be demolished (Figure 53). The underground telecommunications duct bank and manhole system will be extended as required to provide service to the new buildings with copper and fiber counts determined by the building use. Confirmation with NEC on the availability of copper and fiber in the underground system will be required.



Well Organized Server Room Helps Communication



GENERAL NOTES:

1. EXISTING CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.

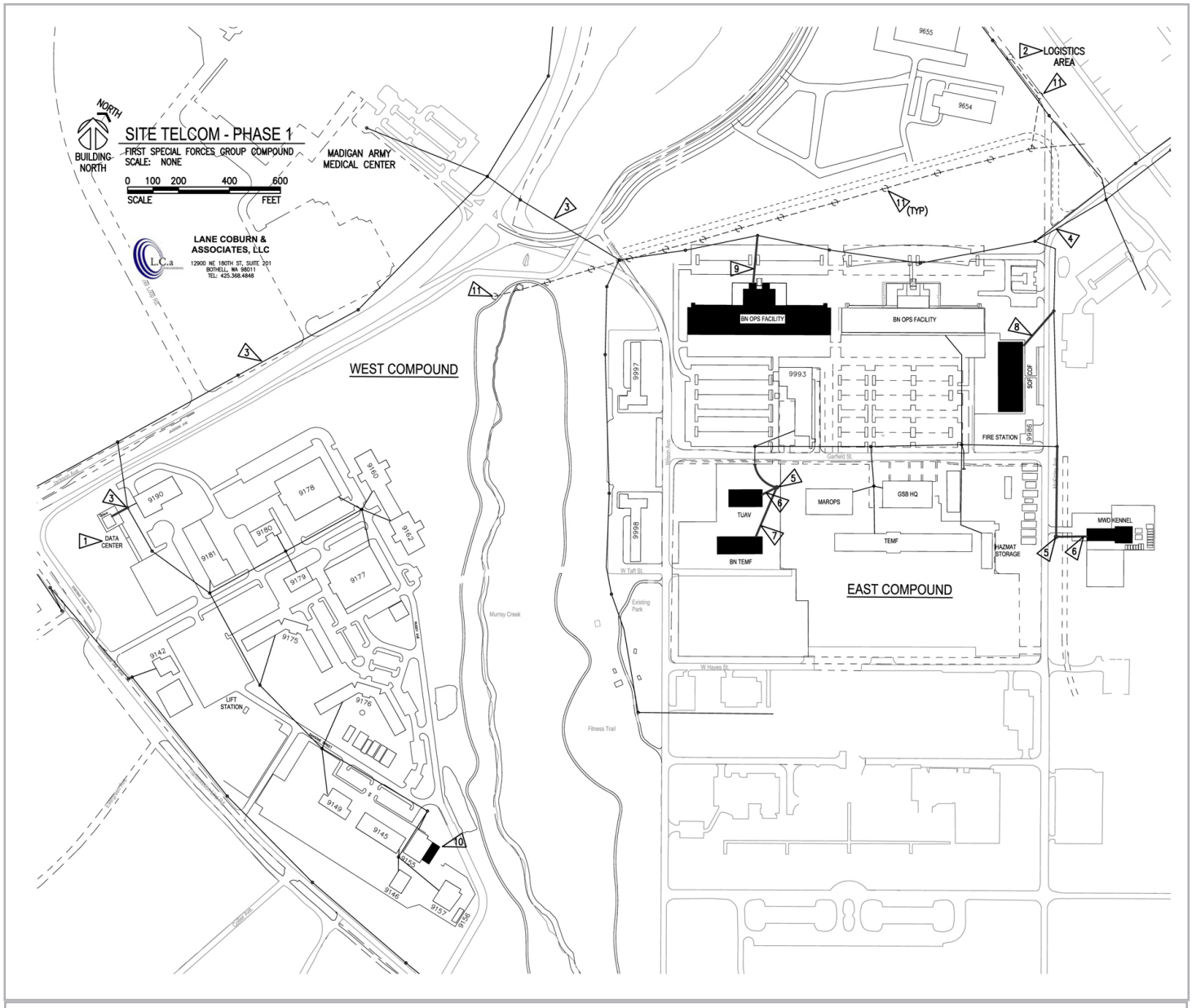
REFERENCE NOTES:

1 ARMY COPPER AND FIBER IS PROVIDED TO THE EAST COMPOUND FROM MADIGAN. AN 1800–PAIR CABLE FROM COMM HUT 9581 IN THE LOGISTICS CENTER WAS RECENTLY INSTALLED IN THE FY08 BATTALION OPERATIONS PROJECT TO PROVIDE ADDITIONAL ARMY COPPER TELEPHONE SERVICE TO THE EAST COMPOUND THROUGH THE UNDERGROUND TELECOMMUNICATIONS DUCT BANK AND MANHOLE SYSTEM. 144–STRANDS OF SINGLE–MODE FIBER WERE ALSO ROUTED FROM COMM HUT 9633 IN THE LOGISTICS CENTER FOR DATA. IN ADDITION, 144–STRANDS OF SINGLE–MODE FIBER WERE ROUTED BETWEEN BUILDINGS IN THE EAST COMPOUND AND HEADQUARTERS BUILDING 9190 IN THE WEST COMPOUND.

2 ARMY COPPER AND FIBER TO THE WEST COMPOUND IS CURRENTLY SERVED FROM MADIGAN VIA THE UNDERGROUND TELECOMMUNICATIONS DUCT BANK AND MANHOLE SYSTEM. RECORD DOCUMENTATION IS NOT CONCLUSIVE REGARDING THE SIZE OF CABLES, SOURCE AND DESTINATION, OR THE NUMBER OF EMPTY DUCTS AVAILABLE FOR USE THROUGHOUT THE COMPOUND. A FIELD SURVEY WILL BE REQUIRED TO DETERMINE THIS INFORMATION. IT IS ASSUMED THAT THE EXISTING UNDERGROUND DUCT BANK SYSTEM WILL SUPPORT MODIFICATIONS REQUIRED WITHIN THIS COMPOUND DURING THE FIRST FOUR PHASES OF THE MASTER PLAN.

3 OVERHEAD TELECOMMUNICATIONS CABLES ARE CURRENTLY ROUTED ON THE POWER POLES ALONG THE MADIGAN BYPASS ROADWAY AND CONTINUE INTO THE LOGISTICS AREA.

Figure 48. Existing Site Telcom



GENERAL NOTES:

1. CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.

REFERENCE NOTES:

1. A DATA CENTER WILL BE CONSTRUCTED NEAR THE EXISTING HEADQUARTERS BUILDING TO PROVIDE FOR NEW INFRASTRUCTURE AND TO ALLOW EXISTING SYSTEMS TO BE RELOCATED FROM THE HEADQUARTERS BUILDING EQUIPMENT ROOM TO THIS BUILDING. THIS WILL REDUCE SYSTEM CUTOVER TIME IN PHASE 3 WHEN THE NEW GROUP HEADQUARTERS BUILDING WILL BE CONSTRUCTED.

2. THE FY08 BATTALION COMPLEX PROJECT PROVIDED COPPER AND FIBER FROM THE LOGISTICS CENTER TO THE EAST COMPOUND, AND FIBER FROM BUILDING 9190 TO BUILDINGS IN THE EAST COMPOUND. SPARE CAPACITY IS INADEQUATE TO SUPPORT THE BUILDINGS INCLUDED IN THE PHASE 1 WORK.

3. 144 STRANDS OF SINGLE-MODE FIBER WILL BE INSTALLED IN THE EXISTING UNDERGROUND SYSTEM FROM THE NEW DATA CENTER FOR USE IN PHASE 1 AND PHASE 2. FIBER COUNTS TO EACH BUILDING WILL NEED TO BE CONFIRMED.

4. 1800 PAIR COPPER AND 144 STRAND FIBER WILL BE PROVIDED FROM THE NEC COMM HUTS IN THE LOGISTICS CENTER TO SUPPORT IMPROVEMENTS IN PHASE 1. SPARE CAPACITY IN THE COMM HUT IS INADEQUATE TO SUPPORT ALL OF THE BUILDINGS INCLUDED IN THE PHASE 1 WORK, AND A NEW NEC SWITCH WILL BE REQUIRED IN BUILDING 9633.

5. TELECOMMUNICATIONS MANHOLE.

6. 6-WAY DUCT BANK WITH 12 STRAND FOC AND 50 PAIR CU (NEC), AND 12 STRAND FOC TO THE DATA CENTER IN THE WEST COMPOUND.

7. 6-WAY DUCT BANK WITH 12 STRAND FOC AND 100 PAIR CU (NEC), AND 12 STRAND FOC TO THE DATA CENTER IN THE WEST COMPOUND.

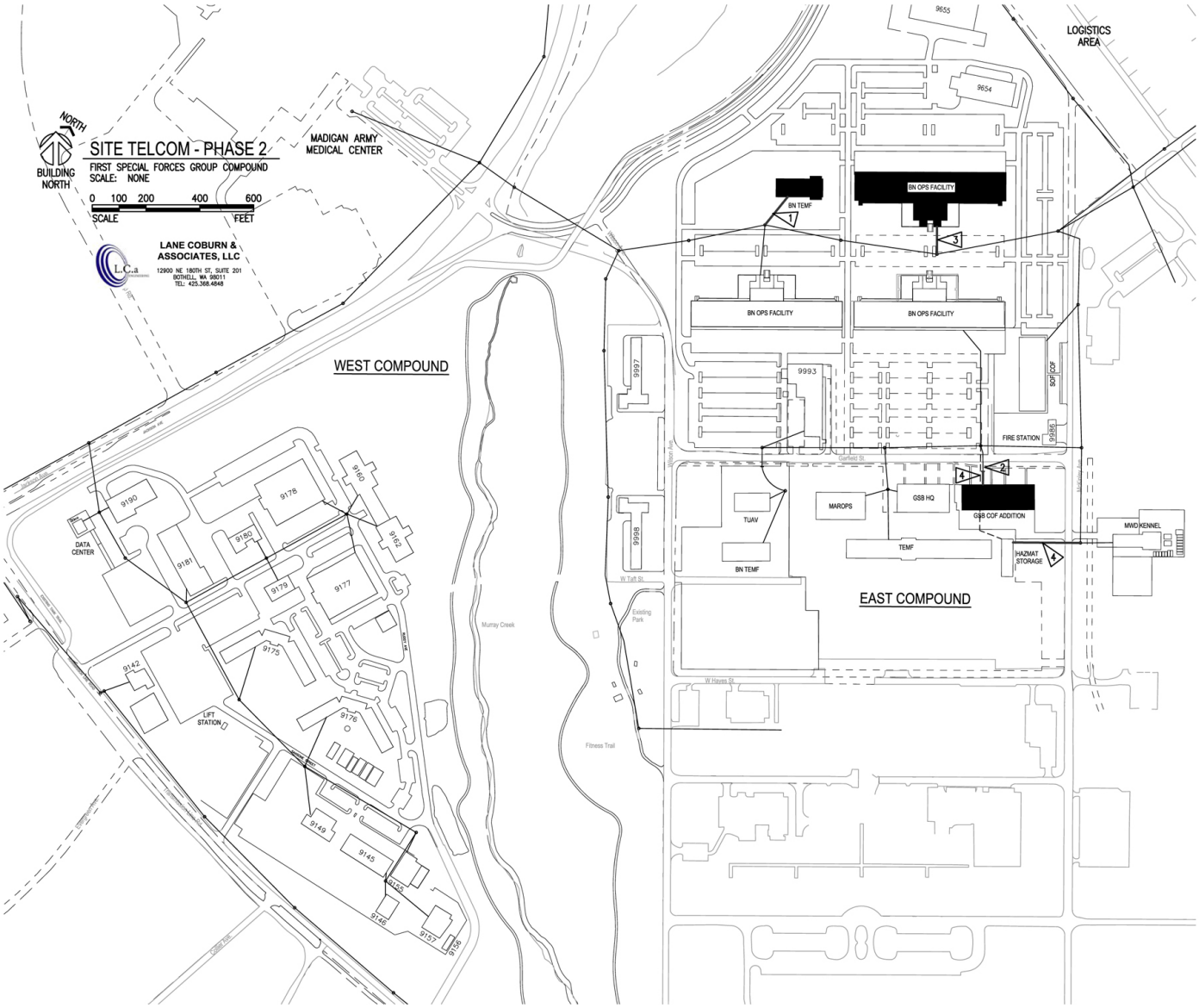
8. 6-WAY DUCT BANK WITH 12 STRAND FOC AND 200 PAIR CU (NEC), AND 24 STRAND FOC TO THE DATA CENTER IN THE WEST COMPOUND.

9. 6-WAY DUCT BANK WITH 24 STRAND FOC AND 600 PAIR CU (NEC), AND 48 STRAND FOC TO THE DATA CENTER IN THE WEST COMPOUND.

10. NO OSP TELECOMMUNICATION SYSTEM MODIFICATIONS ARE ANTICIPATED FOR THE RIGGING FACILITY BUILDING EXPANSION.

11. OVERHEAD TELECOMMUNICATIONS CABLING ALONG THE MADIGAN BYPASS ROADWAY WILL NEED TO BE IDENTIFIED AND RELOCATED TO THE UNDERGROUND SYSTEM, INCLUDING SERVICES TO BUILDINGS, AS REQUIRED FOR REMOVAL OF POLES.

Figure 49. Phase 1 Site Telcom



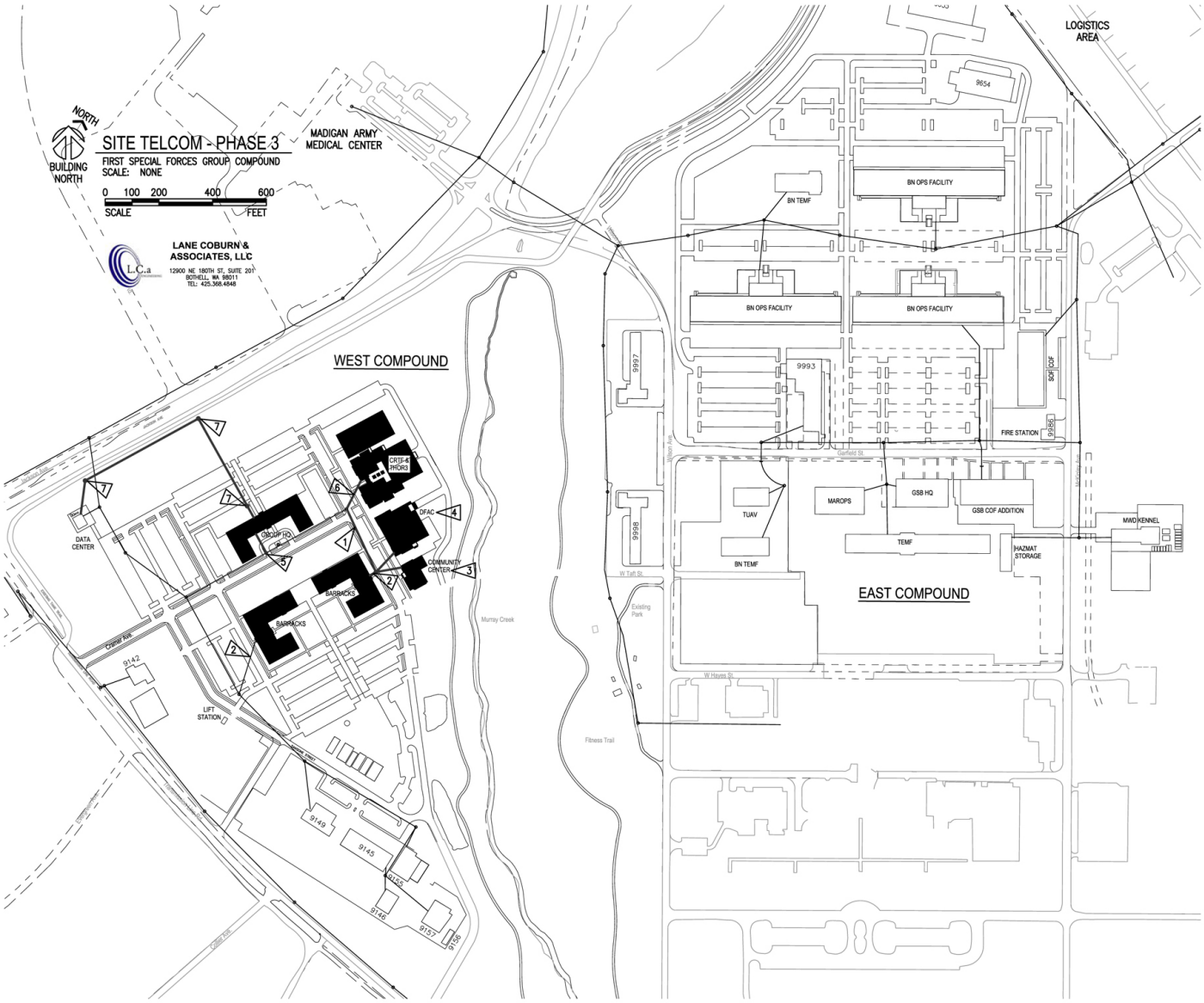
GENERAL NOTES:

1. CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.
2. SPARE CABLES IN THE UNDERGROUND SYSTEM FROM THE 1800 PAIR COPPER AND 144 STRAND FIBER INSTALLED IN PHASE 1 WILL BE AVAILABLE TO SUPPORT IMPROVEMENTS IN PHASE 2. HOWEVER, THE AVAILABLE SWITCH CAPACITY IN THE EXISTING NEC COMM HUTS WILL NOT BE ADEQUATE AND WILL REQUIRE UPGRADES.

REFERENCE NOTES:

1. 6-WAY DUCT BANK WITH 12 STRAND FOC AND 100 PAIR CU (NEC), AND 12 STRAND FOC TO THE DATA CENTER IN THE WEST COMPOUND.
2. 6-WAY DUCT BANK WITH 12 STRAND FOC AND 200 PAIR CU (NEC), AND 24 STRAND FOC TO THE DATA CENTER IN THE WEST COMPOUND.
3. 6-WAY DUCT BANK WITH 24 STRAND FOC AND 600 PAIR CU (NEC), AND 48 STRAND FOC TO THE DATA CENTER IN THE WEST COMPOUND.
4. EXISTING UG TELCOM SERVICE TO THE HAZMAT STORAGE BUILDING WILL NEED TO BE REMOVED BASED ON THE BNHQ/COF ADDITION BUILDING FOOTPRINT SHOWN AND SERVED FROM A DIFFERENT POINT IN THE UNDERGROUND SYSTEM.

Figure 50. Phase 2 Site Telcom



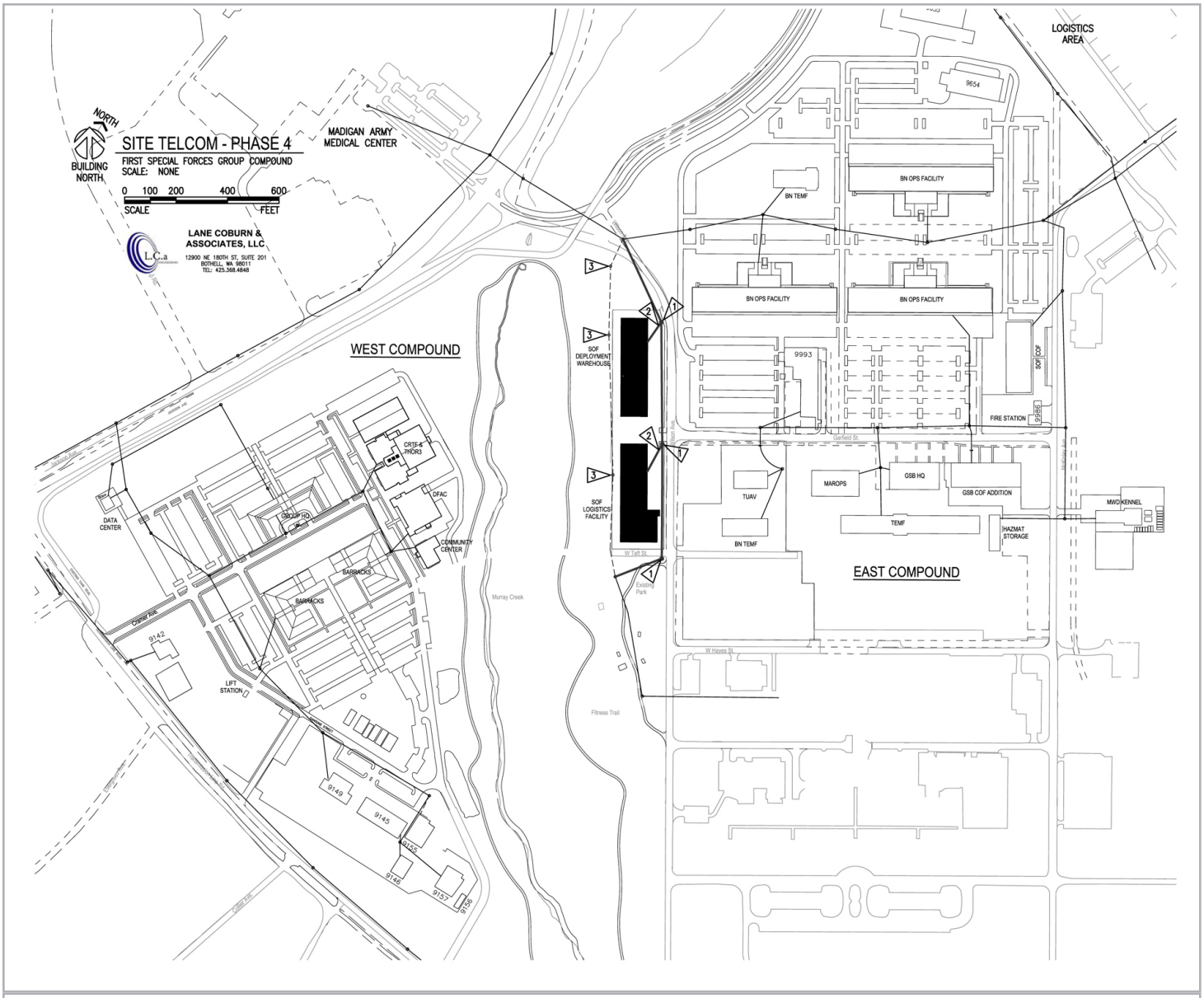
GENERAL NOTES:

1. CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.

REFERENCE NOTES:

1. 6-WAY DUCT BANK FROM EXISTING MANHOLE TO NEW TELECOMMUNICATIONS MANHOLE.
2. 4-WAY DUCT BANK WITH 6 STRAND FOC AND 25 PAIR CU.
3. 6-WAY DUCT BANK WITH 6 STRAND FOC AND 50 PAIR CU.
4. 6-WAY DUCT BANK WITH 6 STRAND FOC AND 50 PAIR CU (NEC), AND 12 STRAND FOC TO THE DATA CENTER.
5. 6-WAY DUCT BANK WITH 48 STRAND FOC AND 400 PAIR CU (NEC), AND 48 STRAND FOC TO THE DATA CENTER.
6. 6-WAY DUCT BANK WITH 12 STRAND FOC AND 200 PAIR CU (NEC), AND 12 STRAND FOC TO THE DATA CENTER.
7. TELECOMMUNICATIONS MANHOLE AND 6-WAY DUCT BANK WITH INNERDUCTS FOR FIBER BETWEEN HEADQUARTERS BUILDING AND DATA CENTER.

Figure 51. Phase 3 Site Telcom



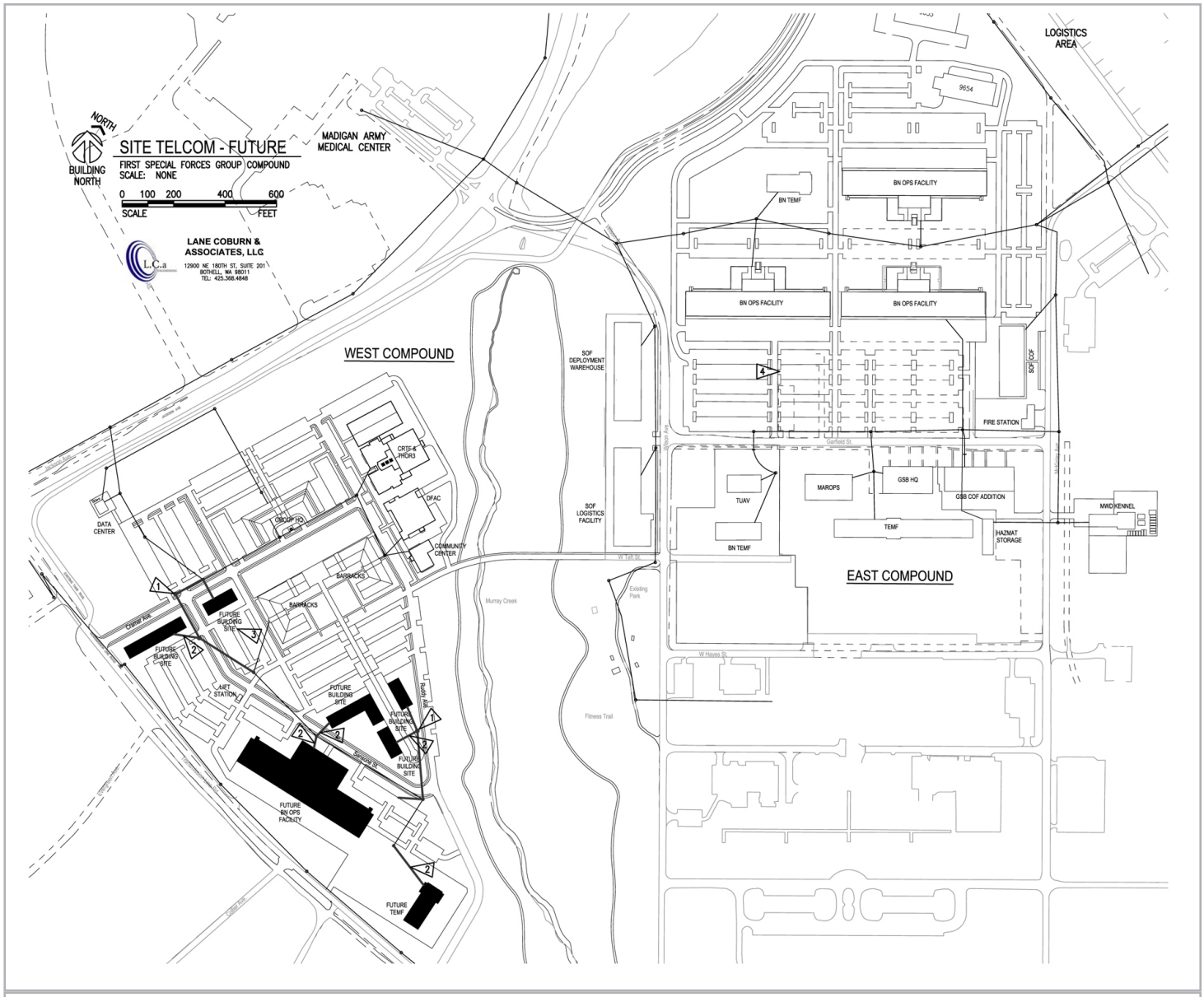
GENERAL NOTES:

1. CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.

REFERENCE NOTES:

1. THE UNDERGROUND SYSTEM WILL BE EXTENDED WITH 6–WAY DUCT BANKS AND TELECOMMUNICATIONS MANHOLES ALONG THE WEST SIDE OF WILSON AVE AND A RISER WILL BE PROVIDED AT THE EXISTING POLE SOUTH OF TAFT STREET FOR SERVICE TO THE HOUSING AREA.
2. 4–WAY DUCT BANK WITH 6 STRAND FOC AND 25 PAIR CU FROM NEW MANHOLE.
3. POLES ON THE WEST SIDE OF THE EXISTING BARRACKS WILL BE REMOVED ONCE SERVICES ARE CUT OVER.

Figure 52. Phase 4 Site Telcom



GENERAL NOTES:

1. CONDITIONS SHOWN WERE TAKEN FROM AVAILABLE RECORD DOCUMENT INFORMATION.

REFERENCE NOTES:

1. TELECOMMUNICATIONS MANHOLE AND 6-WAY DUCT BANK TO FUTURE BUILDINGS FROM EXISTING MANHOLE.
2. COPPER AND FIBER TO BUILDING AS REQUIRED FOR BUILDING FUNCTION.
3. BUILDING FOOTPRINT SHOWN WOULD REQUIRE RELOCATION OF THE EXISTING UG TELCOM SERVICE AND DISRUPTION OF SERVICE TO BUILDINGS SOUTH OF THIS LOCATION.
4. TELCOM SERVICE TO THE GYM WILL BE REMOVED.

Figure 53. Future Site Telcom

Master Plan Conclusions

Today, many SFG facilities in the West and East compounds are outdated or do not meet life safety requirements. Over the next few fiscal years, the 1st SFG expects to receive 21 new projects.

Today, many SFG facilities in the West and East compounds are outdated or do not meet life safety requirements. Over the next several fiscal years, the 1st SFG expects to receive funding for 21 new projects. The end goal of the master plan is to make the 1st SFG self-contained and supply what is needed for 1st SFG mobility and functioning within the site itself. The development of the 1st SFG master plan included input from the 1st SFG, USASOC, JBLM DPW, USACE, and engineering and planning consultants in an iterative process, identifying opportunities and challenges and analyzing and evaluating concepts based on an overall vision statement and a list of goals and objectives. The master plan concludes with a framework for long-range land use planning and phasing, conceptual site development, and requirements for construction, and discusses the capital needed to make the plan a reality.

The master plan addresses the four critical success factors identified at the beginning of the process: a flexible plan that will work in the long term and respond to changing needs, priorities, and phasing; a compact plan and strategy that will accommodate growth; a plan that is aligned with US Army standards; and a plan that satisfies the needs of JBLM as well as the mission of the 1st SFG.

The master plan developed by the team enhances functional relationships between buildings in a framework of qualitative improvements that meet sustainability mandates. It reserves space for future growth and is set in a walkable campus environment with a network of open spaces and trails. The master plan increases capacity at the site while relocating and consolidating functions addressing practical challenges, such as finding space for staff and indentifying when buildings and infrastructure are first demolished and then constructed. At the same time, because most 1st SFG personnel live off base, the plan includes improved access to the facility and accommodates parking to reduce conflicts between vehicles, pedestrians, and site functions. The plan

The SFG Master Plan Design Team

is sensitive to the surrounding environmental landscape and elements such as Murray Creek wetlands, clusters of white oak trees, and an archaeological site. While master plans typically do not include utility maps, the development of the phasing strategies that are part of this master plan necessitated a utility review.

The plan allows 1st SFG to identify when projects are desired so that funding can be secured and development can occur as demanded by mission needs. Four phases that begin in FY12 identify the planned development of the new projects. The plan for the West Compound includes eight new buildings clustered around the group headquarters and a ceremonial drop-off area. This central

The SFG Master Plan Design Process

core is intended to encourage walking and build a sense of community. Existing support buildings will remain at the south end of the West Compound unless the land is needed for future uses or parking. The program for the East Compound includes ten new buildings in which most battalion operations and maintenance and support facilities for four battalions are consolidated. East Compound buildings are organized to maximize efficient use of land area and provide functional adjacencies between uses.

Madigan Bypass, a JBLM roadway heavily used by civilian and military traffic, bisects the upper section of the East Compound. To improve the security of the 1st SFG perimeter, the realignment of the roadway is under review, and SFG will work closely with JBLM to negotiate a new alignment that suits JBLM needs and SFG security. 1st SFG also will continue to work with JBLM regarding the relocation of installation buildings such as relocatables, the Keeler Gym, and the Madigan woodshop. Before the master plan can be fully developed, any outstanding items will be addressed and details worked out.

The land available for development and the timing of funding create challenges for phasing strategies. When a project comes online for design and development, everything from the building and utilities to parking and infrastructure must be constructed at one time. The plan enunciates the clear understanding of the goal and the roadmap to it that is required to develop the site logically and maximize its use, locate facilities next to related uses, and provide adequate facilities for SFG missions and training. The united compound that ultimately will result from the development of the master plan will be self-contained, support operations and training, accommodate SFG personnel safely as they perform their duties, and have room for expansion.

1st Special Forces Group

Joint Base Lewis-McChord

Appendices

September 2011

Appendix A

Kickoff Meeting Summary

Meeting Minutes

Date: November 3, 2010
Meeting: Kickoff Meeting, Day 1
Location: JBLM
Project: 1st Special Forces Group Master Plan,
BergerABAM Project Number FABLD-10-966

Meeting Attendees

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Project Overview (Sandy)

1. **Day 1 Agenda**
   - First day is meant to be fact-finding and to clarify programming for buildings, open space, and parking, and approximately how much space is necessary for future development.
   - Discussions will include general site context, site issues, utilities, building program, preliminary concepts, site tour (if time allows), and goal setting.
2. **Day 2 Agenda**

- Expectations of the day, recap project program/drivers, drop-in meetings (DPW, fire, environment, security, sustainability, etc), concept brainstorming, summary/next steps, and schedule design charrette in December.

Fort Lewis Master Plan Review (Lee)
Next phase of discussions is a fact-finding phase (Q&A), where we will look at the overall Fort Lewis Master Plan and compare what is desired for the 1ST SFG Master Plan.

Capacity
Currently there are 1700 personnel in the 1ST SFG. 235 of these are housed in the barracks and the remainder commutes. This number does not include contractors.
Future growth of 289 is anticipated by 2014. 80% of these will be housed in barracks.

Circulation & Access
Overall master plan deals with regional transportation issues, including vehicular circulation such as bus routes and transit stops, streets types, and gateways. Would there be a need for connection to bus routes? No special needs for a transit stop because travel throughout the base is limited or personal use vehicles.

What is the primary access, or where are people coming from? Most personnel live off site and would be entering off Interstate 5 exit 120 or exit 122 entrance gates. The key destination points on/off site include the Logistic Center, PX/Commissary, gym (McVay or Soldier's Field House), ammo holding area, Transmission Line Road to McChord when deployed, and North Fort at North American Lake for water jumps.

Transmission Line road will be improved to be a 4 lane road in the future.

What is the best location for gateways? entry gates and control points

- East Compound – Either side of Garfield
- West Compound – Primary one is at Transmission Line Road and Cramer, and secondary one at Ruddy and Transmission Line Road. Note that the gate at Ruddy and Transmission Line Road may be developed in the future due to the potential for traffic back-ups at the Cramer gate.

Traffic challenges to address include congestion on I-5 during commute time and site access and cueing required to accommodate a site lockdown should that occur in the future for security reasons.

Land Use
1ST SFG study area is designated special use/ non-regulated, except for one area on East Compound which is designated car park. Why is the car park located here? Is the intent for this location a parking garage? Original thought was this site was only suitable for parking lot due to high water table, which currently floods the basement of the barracks. Master plan intends for the Madigan company barracks to be removed (long time). A structure, such as a parking garage, would require approval from environmental team. Perhaps the space just gets restored as open space.

Parking
What future project can they add funding for a parking structure? A big challenge for a parking structure is the ATFP/physical security. However, because 1ST SFG is a secure site, then they could monitor system and manage themselves. They would maintain security and would not be a DPW issue. PDW would not be required to provide security.

Would the best location for a parking garage be in a central location or on the perimeter? Best location for parking garage would be on the east side. East Compound would be more feasible (1,700 people) vs. West Compound (200-300 people). Location would also depend on funding, timing, and phasing of projects. Structured parking is very costly. Desire to have a parking structure; however, at this time it is not very feasible. Building program also needs to satisfy parking requirements. What is the number of parking spaces needed per building program? Need to clarify parking distribution from 1ST SFG (East Compound vs. West Compound) which will be dependent on program/facility sitting.

Action Item #1: Major Sierakowski will confirm the total number of personnel, the projected growth, and the number of personnel that will need to be housed in barracks. He will also provide a number of contractors that accommodated on site as this will impact the total parking requirement.

Streets

Street plan per master plan is pretty consistent, with the one exception of Madigan bypass.
Traffic hot spot would be Jackson and Transmission Line Road during a lockdown due to vehicles being searched entering the compound. Typically, they lock the first gate at Cramer and make main access gate to site at Ruddy allowing for more queuing of vehicles. This could be improved with new Transmission Road which widens roadway and possible pull-over areas.

Trails & Pathways

Bikes and pedestrian trails are mainly for recreational use and not for commuting. Most of the time, personnel are in their personal vehicles. The overall Fort Lewis Master Plan incorporates these in the Family Plan, but not complete. Fort Lewis Master Plan indicates a trail system. However, no formal trails are identified within the 1ST SFG site, only along perimeter.

What is the need for trails? Are running trails desired? Trails internal to compound are desired mainly for pedestrian circulation within the site especially to/from dining facility (DFAC). 1ST SFG trails could connect to base trails, but a secure gate (with swipe card) would be needed to maintain security. Desire a PT trail (2-mile minimum) within the 1ST SFG site and could connect with larger system of base.

For personnel who live on site in barracks, it is a long walk out the main gate and walk around perimeter to other compound. Is there a desire for bikes to be used within the site? Unit is physically fit and usually run and cross train. Currently, they just jump in a car to get from one place to another however parking is a challenge. Having a pedestrian bridge connecting the two sites is seen as the best solution.

Bridge Location (Garfield to Cramer vs. Taft)

Location would depend on shallow foundation and hydrology of Murray Creek. West Compound is higher than East Compound. Bridge would need to span approximately 500 feet using 3-5 spans. A 160 foot span is required to span the creek zone.

Would cost approximately $5 to 6 million for two-way vehicle bridge, 41 feet wide (two car lanes, bike lane, and 6-foot pedestrian path), precast concrete. A pedestrian bridge would be a good solution for accommodating daily travel at much less cost.

An evaluation of Murray Creek and environmental conditions would be necessary to identify best location for bridge. One option could be to reduce scope of bridge and make it wide enough only for one-way traffic, or limit the bridge to pedestrian and bicycle use only. Estimated cost of a pedestrian bridge is $750,000.

Preferred solution: Use the north bridge (old tank trail) to provide connection between the sites within the security fence, and plan for a pedestrian bridge across Murray Creek. Pedestrian bridge should be located in the proximity of the new barracks.

An important benefit of the bridge is connection of both sites during a lockdown situation. Could both East Compound and West Compound be secured as one site during time of lockdown? On east side, Wilson Avenue is open to traffic. Could Wilson be locked down? Wilson cannot be locked down because of Madigan housing, Hayes/Johnson, and Fisher House, which gets a lot of off-base financing for family visiting loved ones at hospital. Fisher House needs access to the hospital by way of Wilson Avenue. Bridge will provide connection between the two sites, but there will still need to be security gates on east side at Garfield Road.

Open Space

What degree do you want to conserve open space and other areas of landscape? Large wooded (oaks) area along Murray Creek is to be protected. Preserve surround landscape along perimeter of site to restrict visibility and large trees within the site.

Desired Landscape

- East Compound not very green and needs mostly landscaping around perimeter and in parking areas.
- West Compound should be very green, especially around the Group Headquarters, DFAC, and barracks. 1ST SFG Master Plan should incorporate green pedestrian pathways for both circulation and PT training, have a grand entrance to Group HQ and need more screened plantings along perimeter of site, especially along Transmission Line Road.

Sustainability

Mandate is LEED Silver for measuring compliance with sustainability goals. The master plan process could look at sustainable design opportunities on the compound as a whole and develop guidelines that can be addressed on individual projects. This is a promising idea however design/build delivery poses a challenge to integrated planning because projects are delivered individually. Strategies discussed include:

- Stormwater management is well integrated into the design requirements.
- Water collection and reuse could be of value because no potable water is permitted for landscape irrigation. Maintenance of cisterns and water treatment devices (if needed) will need to be considered carefully. This strategy will be most beneficial on the west campus.
- Permeable paving can be considered in parking areas; however rain gardens and bioswales may be more cost effective. Permeable paving has a cleaning requirement which must be considered.
- Preserve green buffer
- Support pedestrian and bicycle
- District energy system could be considered. Look at co-generation projects already underway. Fuel source is a security issue as all fuel needs to be trucked in. Consider possible partnership with the hospital. There was discussion about the west compound being the ideal location and the plants would have to be located to support underground connections between buildings.

Renewable energy should be considered. Currently solar is being used only for hot water. ***Water Collection and Reuse***

Water collection and reuse is desirable because no potable water can be used for irrigation. Consider using recycled gray water for flushing toilets and irrigation. Holding tank could go under pavement or above

ground, integrated within buildings. West side would be more feasible due to increased use of vegetation and need for irrigation. DPW has concerns about issues such as maintenance and making sure the design would work properly.

Stormwater Management
Groundwater and Murray Creek impact stormwater. All stormwater needs to be treated and managed on site. An existing development at JBLM would be the new medical/dental buildings, which have good examples of the use of rain gardens.

Utilities
East Compound
Most utilities are located along Wilson and McKinley and were built in the 1940s.
Cast iron 16-inch mainline to remain "pressure system." Keep utilities within the road rights-of-way. Main issue would be the sewer main line which runs in the middle of the open space and future development areas. No building on main sewer line, so one solution would be to relocate along Wilson Avenue. There needs to be a more thorough study of existing conditions to ascertain whether the main sewer line could be moved. How is it tied into other system, depth, invert elevations, etc.? Another issue is the high water table near Murray Creek that could impact utilities and depth. Steam plant was for old Madigan. New development would not use steam, mainly due to cost and LEED requirements. Instead, they will use gas boilers for new system. This should be reconsidered as the LEED standard when applied to individual buildings is not recognizing the larger benefit of district energy. Realign Madigan bypass and remove overhead along existing old Madigan and replace underground. Provide connection points.

West Compound
Need to keep utility system along main roadways. There is an existing lift station for Madigan Hospital that must remain. The 1ST SFG study area will not be looked at as part of JBLM sewer system. JBLM will provide model and we will run the scenarios so we can look at future projects that are being built at end of line with roadway projects. Need to estimate load and projected demand. Need to discuss with COE in regards to electrical. Puget Sound natural gas available. No propane.

Will need to flow test for new facilities to ensure proper fire pressure. Test at different times to get accurate readings.

No spare capacity for fiber/copper for future beyond FY12/13. Add new fiber hut (RSU) near Main HQ (bldg 09190). Believe there is enough duct space and have availability within hut. Will need to look into at East Compound due to additional seven buildings proposed. Communications along two roadways in West Compound.

Buildings
The information received to date on the building program raises a number of questions. The overall requirements provided to the design team do not align with tally of existing and new building requirements. Overall requirement: 770,610 square feet (SF); total square footage requirement is for 1ST SFG only and does not include DFAC/Barracks.

West Compound
- Group Headquarters
- Barracks
- DFAC
- Combat Readiness Training Facility (CRTF) – (THOR3)

- Rigger facility and airborne training area
- SOF Eng. Ops facility
- Other miscellaneous development:
  - Motorcycle training course (on hold) – design available
  - Open space and PT fields

East Compound

- (2) BH Ops Facility (BOF)
- SOF Company Operations Facility (COF)
- Dog kennel
- BN HQ/Company Ops addition
- GTSB SSA warehouse
- (2) BN TEMF
- SOF deployment warehouse
- SOF logistic warehouse
- TUAV/TSU/RSD
- Language facility
- (2) buildings to north (remain)
- (3) warehouses at Logistic Center

Action Item #2: Mithun to create a new building program based on information at meeting and revise.

Dining Facility (DFAC)

Army standards normally size a DFAC based on the number of personnel in barracks (500 personnel – small, 800 personnel – medium, and 1,200 personnel – large), but 1ST SFG all used it (on/off site personnel and contractors approx. 2,000). DFAC is funded by Army; it would it be difficult to justify a larger DFAC for funding. For planning purposes, refer to Ranger DFAC footprint and size to use?

Action Item #3: Major Sierakowski will provide footprint for DFAC.

Barracks

The barracks currently has about 235 personnel and the total number of personnel in 1st Special Forces Group is approximately 1,700 persons. Projected future growth expects 289 additional personnel by 2014 and 75-80% will be living in the barracks. Size new barracks accordingly.

Typically, barracks are 2-3 stories; however, would like to have four stories (need to confirm with Gary Stedman) if it can be approve with freight elevator. This will decrease the footprint and allow for a more compact design. How to size need for barracks? There is a ratio of square feet per person x head count. Design needs to keep in mind there is only one point of entry for check in for all barracks. Build barracks and DFAC in one phase as a complete project. FY17/18 at the earliest. Parking ration = 70%.

Action Item #4: Major Sierakowski will get numbers of square feet per person for needed building size.

DFAC and barracks should be located together and close to bridge to East Compound. The DFAC should also be located near the Group Compound (provide a nice facility for family of deployed) incorporating outdoor sitting area with DFAC.

Warehouses

Deployment/logistic facility and hardstand, fenced off with controlled access along Wilson at old Madigan Barracks. No ATFP needed. Not currently part of the site, but would like to have Madigan Barracks on east side once they are no longer in use to include as part of 1ST SFG site area.

ATFP Setback Requirements

- 50 occupants or more = primary gathering (82-foot setback)
- 11-49 people = habitable (10M /33-foot setback)
- 10-below = uninhabitable (no setback)
- Consider the possibility that buildings will be designed and then adapted for other uses. For example, convert warehouse to habitable building.

Hardening

- Reduces 82 foot building setback to a 33-foot setback. This assumption could be problematic based on recent conversations Morgan has had with the Center for Protective Design in Omaha. According to the experts, 50′ is the threshold between what is cost effective and what is aesthetically pleasing. When the buildings get closer to the street than 50′ the buildings start to look more like bunkers with very thick walls and small windows. We will need to discuss this further .Requires use of a higher construction type (steel and concrete)
- Adds 10% to project cost

Phasing

Project success will be based on the phasing to build facilities on East Compound to transfer these currently located on west side to East Compound and free up space on West Compound for new buildings. What buildings are considered part of Phase 1?

- 1ST SFG HQ – existing HQ to remain until new HQ is built. Currently, the best location for new HQ is in North corner on West Compound.
- FY12 – 2 COF
- FY14 – 4th Company moves out of FY08 COF and this building will get used by 1st, 2nd, and 3rd from West Compound.
- FY13 – BN Ops
- FY14 – BN TEMF
- FY16 – Dog kennel (moved to FY12)
- FY13 – TUAV
- FY13 – Sewer relocated
- Dog kennel
- Language facility (10,000 SF) – location of dog kennel
- FY17 – Reallocation of motor pool to East Compound (xtg motor pool supports 2nd and 3rd BN)
- Buildings to remove/relocate – Keiler Gym (long range), fire department, Madigan maintenance wood shop (FY12)

Future Facilities for West Compound

- BN Ops facility (122,000 SF) with motor pool and hardstand
- SOF Rigging Facility – replace existing or renovate; life and safety issues, keep existing functioning.

- SOF Eng Ops

Lunch Break

Conceptual Plans:
Quick overview of some preliminary conceptual ideas (Jeff)

- Option 1:
    - North Bridge
    - Green area around perimeter
    - Green area and recreation area near living area/DFAC
    - Streetscapes (along existing roads)
    - Road/pedestrian bridge from Cramer to Garfield
- Option2:
    - Large football field area
    - Fenced barracks/DFAC/Gym
    - HQ at head of space – prominent position in complex
    - Space available along perimeter
    - Relocate access to middle of site
    - Feedback: MAJ Sierakowski – rotate east/west from access space memorial wall and flag. Likes the HQ at head and overlooking open space (parade grounds).
- Option 3:
    - Building to front of streetscape and parking at back
    - Barracks close to the road
    - Running track
    - Parade field (helicopter)
    - Use Historic District standard for parade field
    - Parade field /memorial wall – orient toward Mt. Rainer
    - Organize pedestrian circulation to be separate from cars
    - Direct line to other site

Planning goals & Planning Objectives:
The participants engaged in an exercise to evaluate the planning objectives that were developed for the overall Fort Lewis Master Plan, to determine how applicable those goals are to the 1ST SFG master plan.

This exercise is to have the group use dots to identify what they think is important and then modify planning goals specific for 1ST SFG (see image below for results). Blue = Desired, and Orange = Not Desired

Planning Objectives:
Rangeland Preservation
Close-In-Training
Public Transit
Street Cafes
Regional Character
On-Street Parking
Aligned Entries
Bulb-Outs
Parkways
Planting Strips
Great Views
Efficient Transportatio
Affordable Development
Clear Edges
Bikeable/Bike Paths
Linear Parks
Focal Points
Street Grid
Visible Entries
Car Parks
Connected Sidewalks
Hidden Parking
Sidewalk Buildings
Main Street
Five-Minute Walk
Large Park Blocks
Narrow Buildings
Street Trees
Town Square
Mixed-Use Facilities
Multi-Story Buildings
Compact Development
Multi-Way Boulevard
Shop Fronts
Low-Impact Development
Neighborhood Parks
HELICOPTER LZ
RUNNING PATHS
ORG STORAGE
PARKING
LOW MAINTENANCE
JBLM 1st SFG Master Plan
Planning Objectives
MITHÜN

BergerABAM

Meeting Minutes

Date: November 4, 2010
Meeting: Kickoff Meeting, Day 2
Location: JBLM
Project: 1st Special Forces Group Master Plan,
BergerABAM Project Number FABLD-10-966

Meeting Attendees

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Recap Project Program/Drivers

Next phase of discussions is feedback from the group about project programs and drivers. At the end of the day (project), what did we accomplish? What are the most important things we must do to make sure the project succeeds?

Morgan - Allow sufficient room for the unanticipated to happen. Compact development will allow flexibility for future development (i.e., Language Building).

Gray - Clear defensible site plan, and agrees with Morgan's comments. Define utilities by the project to which they are attached …details to build 1391 (DOD Program) for funding. Would be nice to see the sequencing of the plan.

Ruba – Solid master plan with clear utility program concept per project. Is it a smaller project or lumped into a larger project? What project should fund utility and infrastructure improvements?

Lee - Need to see what the consequences/benefits would be as a project moves forward or back. If Project 'x' happens, then it would allow us to see this improvement's trickle effect as it moves due to funding.

Laura - "Long-term perspective." Be able to oversize utilities to allow for future growth.

Ed – Would like to plan for future use. Sometimes challenging because they look at what is current use. Buildings need to be flexible. Add extras, such as utilities, to make buildings malleable and co-use, i.e., flexible floor plans and open trays to run wire.

Fred – Plan needs to be realistic and actionable. Time/cost/quality. For example, the Fort Lewis Master Plan shows barracks a certain way on the site. Then when it is time to start the design, they are not realistic and a lot of time and paperwork are required to deviate from the plan. Design to be compatible with standards, roadways, setbacks. Needs buy-in from multiple people to make it work, such as Garrison Commander and Public Works.

Gray – Agrees with Fred. A pretty master plan with all these added features isn't always feasible. Site improvements (extras) need to be lumped into a project. Sequencing of facilities. Realistic scale of buildings and site considerations such as topography.

Ruba – With barracks, you are allowed large gathering areas, training areas, picnic shelters, etc. Key to success: this is a 'tenant'-based post (approval from landlord). The master plan should not jeopardize JBLM or DPW within the project. Sensitive to that and provide best opportunity for 1st SFG. A good example of a win/win is the Madigan bypass where the improvement works for both sides. A bad example or win/lose would be closing Wilson Avenue. Although this works best for 1st SFG, it doesn't work for JBLM. Another key component would be flexibility of site use. 1st SFG has a higher demand for communications (i.e., fiber hut) than others.

Laura – Cost perspective. Construct buildings to minimize disturbances while we construct buildings (sequencing). How do we affect circulation?

Major Sierakowski – Agrees with all comments stated previously. Master plan needs to have flexibility because things change.

Drop-in Meetings

Cultural Resources / Environmental Analysis - Dale Sadler and Carol McAdams

Blends well with historic district. Prehistoric campsite (Nisqually Native American) located near Murray Creek where proposed FY13 has been sited. Would like to do a data collection to clear the site. Must preserve oaks. Is it possible to do mitigation? If oaks are removed, then they must be replaced 6:1 on another site. Oaks have a buffer surrounding them at 1.5x canopy. GIS data only showing canopy and not the buffer. Dave Klouse would be the person to contact in regards to bridge crossing creek. Do not want to have footings within the creek buffer (pink hatch on environmental map) Another concern would be for road alignment and widening of Madigan Bypass due to location of oaks and culture site.

Action Item #5: Carol to provide contact information for David Klouse.

Fire - John Hoorba, Jim Gustin, Tom Boudreau (fire alarm), Bob Lack (sprinklers)

Provided checklist for project review. Main concerns would be accessibility to buildings such as turn space and hardpan. 100-foot ladder truck would be the largest used and need a 20-foot access road and within 33 feet of the building and access to more than one side of building. FDC location is where fire department needs to be close to building. Fire connection is very important to locate for access and make sure it is in the right location. Courtyards inside of barracks are ok to have 12-foot walks and 8-foot pavers if turning radius is good and trees, boulders, benches, etc., are kept out of the area of trucks. Distance between hydrants is 150 feet minimum. Refer to Uniform Fire Code for a 4-story building and locations for FDC.

Action Item #6: Juanita to scan fire department checklist and put in project file.

Physical Security – Dave Horne
Area of input is with security fencing, inner access control, and alarms. They get involved once a project has been built and help to secure the building. Maintain fence and control access at 20-foot standoff (no vegetation) on outside perimeter and 30 feet inside (no buildings, stacking, etc). This will allow a vehicle to drive the perimeter. A containment fence is required at motor pool as seen at West Compound. If we can accommodate by moving fence with program, then make it as a security fence. If it impedes layout, then leave fence as is. Unable to join fence through Murray Creek because it is not part of the 1st SFG site. Who controls Murray Creek? Installation or NR? Security lighting no less than 5 feet from fence.

Action Item #7: Morgan to confirm which department controls issues about Murray Creek.

Life Security – Cecil Ramsey
During heightened security, need a better solution for vehicle area for searching and queuing along Transmission Line Road such as a center lane or pull off area.

Sustainability – Lana Lerding

Air quality	Energy
Sustainable training lands	Sustainable community
Air/land/water	Products and materials

Has a sustainability document called Guide to Green Procurement, October 25, DOD Sustainability and an optional neighborhood checklist and will email to those interested. LEED Silver is mandatory but are shooting for LEED Gold (this is not the same as green procurement).

Action Item #8: Lana to email sustainability documents mentioned at meeting.

Conceptual Layouts
The second half of the meeting was spent around aerial photo with building blocks working on conceptual ideas for layout. Pro/cons were discussed and photographs taken to document each layout.

Design Charrette – December 8-9, 2010
- Conceptual layouts will be entered into the computer and will be reviewed and discussed.
- Refine planning statement and key components.

Appendix B

Design Charrette 1 Summary

Meeting Minutes

Date: December 8, 2010
Meeting: Design Charrette, Day 1
Location: JBLM
Project: 1st Special Forces Group Master Plan
BergerABAM Project Number FABLD-10-966

Meeting Attendees

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Day 1 Agenda

1. Goals and expectation for the next two days
2. Site constraints / opportunities review
3. Site utilities
4. Building program review
   - Confirmation of program
   - Phasing
   - Future growth
5. Scheme review
   - Presentation of multiple scheme options
   - Evaluation based on project objectives
   - Narrow to three most promising options

1. Goals: Modify the existing Fort Lewis master plan to fit 1st SFG master planning vision and goals

Planning Vision

In support of the mission, Soldiers, and Families, we will create a sustainable ~~community of~~ **compound with a** walkable **campus environment** ~~neighborhoods with identifiable town centers connected by great streets~~ **that is a great place to live, work and train**.

Planning Goals

- Enhance Mission Capabilities
- Sustainable ~~Communities~~ **Compound**
- Walkable ~~Neighborhoods~~ **Campus**
- Identifiable ~~Town~~ **Center; with clear wayfinding**
- Great ~~Streets~~ **Places to live, work and train**

Planning Objectives

- Close-in-training
- Great views
- Efficient transportation
- Focal points
- Car parks
- Narrow buildings
- Street trees
- Multi-story buildings
- Compact development
- Low-impact development
- Helicopter landing pad
- Running paths
- Low maintenance
- Org. storage

Critical Success Factors

- Long-term perspective: site plan must be flexible, adaptable, malleable without reworking roadways and utilities; buildings must be planned to accommodate future uses
- Room to grow: compact development that allows for future undefined needs
- Clear "actionable" site plan: aligns with standards, has buy-in from the Garrison, phasing strategy for buildings and utilities that works
- Win-win strategy: must support needs of JBLM and 1st SFG

2. Site Constraints / Opportunities Review

Bridge and Environmental Input

Carol and Bill discussed environmental concerns and constraints for building the bridge between the west and east compound. Two options were considered for potential bridge location, but preliminary costs assumed the construction of a pedestrian footbridge, not a vehicle bridge. Both designs would avoid disturbance to wetland and place the piers in the buffer, rather than in the wetland. Any piers in wetland would require mitigation and the project hopes to avoid that situation.

The bridge would use shallow foundation piers. The groundwater table fluctuates significantly, but the hydrology of the creek is fairly slow moving thus allowing for use of shallow foundation.

Pedestrian Bridge Opt. 1: Would require 235-foot clear span from Cramer Ave to Garfield. A longer span is needed to clear the wetlands and this location would have greater impacts to existing oaks. Better connection for pedestrians on east compound to center core (approximate cost $1.3 million).

Pedestrian Bridge Opt. 2: Would require 105-foot clear span from Ruddy to Taft. Existing grades between either side of Murray Creek are more even, making for better connections with the bridge. Span would be much shorter than the other bridge location and would lower overall construction costs substantially (approximate cost $700,000).

Would a vehicle bridge between west and east compound be acceptable? A vehicle bridge would be a key element in the design connection of the east and west compound, and would be money well spent. Associated costs would be $300 to $800 SF. Could consider options for reducing the bridge design to help lower the cost, such as locating off Taft for a shorter span and making the bridge one lane vs. two lanes.

Further discussion with the 1st SFG to evaluate whether the pedestrian bridge would be used by the soldiers, they indicated that it will be mainly used for exercise and not for pedestrian traffic. This would be a long walk and the soldiers may not be walking since they will have limited lunch break, they will probably drive their vehicles. So a vehicular bridge would be the best option either one way or two way depending on budget with a pedestrian/bicycle lane.

In regard to environmental concerns, there has been some bad PR in the past with construction close to Murray Creek. Garrison policy is that everyone needs to know what is going on with Murray Creek. The creek is connected to American Lake, which has fish species such as kokanee salmon and cutthroat trout. The Department of Public Works (DPW) would like to see the master plan maintain vegetation and habitat along the creek and even outside the buffer. While there is no real concern for trees along site perimeter, the oaks need to be preserved. The project area has a couple of stormwater outfalls and a couple of basins that do not screen oil from the parking area. Master planning efforts will improve existing conditions.

Any work in the area would require a letter to the USACE for a Corps 404 permit and to the Washington State Department of Ecology for 401certification to confirm what permits would be needed. Piers in the buffer would not be a problem, but piers in the wetland would trigger the need for a Joint Aquatic Resources Permit Application (JARPA) and all permits.

In addition to permitting, DPW would desire a commitment from 1st SFG to manage clean up (trash debris, etc.) underneath the pedestrian bridge.

A bridge allowing internal traffic flow between east and west compounds would help relieve traffic congestion on Jackson Avenue. A bridge connection at Ruddy and Taft would provide an ideal connection for military vehicles between motor pools.

What is the timeline for the review process? Time differs based on requirements. Environmental assessment (EA), 30-day review process, permitting done in-house, National Environmental Policy Act (NEPA) assessing water, air, species, traffic, etc.

Action Item #1: Morgan will look into the timelines for environmental permits.

3. Site Utilities

Communication: On the west compound, there is a communication vault near the existing Group Headquarters (HQ) that ties all other 1st SFG facilities to the HQ building. There is also a duct bank constructed in FY-08 that runs along Cramer and connects to the BOF s on the west compound, this duct back should be maintained and the spare duct would be used to connect future facility including the new HQ building to the existing communication vault to reduce the interruption in communication connection. The new communication building currently programmed in the FY12 COF project will be located at the northwest corner of the building in HQ parking, and will be used to provide the needed fiber connection

to existing and new buildings. The current FY12 project will locate and build for future connection. NEC indicated that they have in the existing communication infrastructure enough capacity to handle FY12 and possibly FY13 project for fiber and copper. However, for future growth NEC will have to upgrade and add capacity to the existing communications buildings to handle new facilities for copper connection

Power: Overhead power along the Madigan bypass will be taken underground when the roadway is realigned. The west compound is maintaining existing uses and has enough power capacity.

Other Utilities: Proposed building footprints could affect the main sewer line located on the east compound. Relocation along Wilson Avenue or running north/south between buildings will need to be explored. Wilson and McKinley will be used as utility corridors. Existing 16-inch duct iron water line in Garfield will be used to tie in for future buildings. The existing lift station on the west compound will remain (supports Madigan). Steam will not be used. There has been a lot of discussion around the use of steam. It is easier to maintain and work with power outages, but hard to meet DoD requirements of energy savings (40% energy savings above Ashrea baseline). Design/build contractor would use gas boilers because they have least initial cost. A life cycle cost analysis has to be performed by the USACE to select a mechanical system and require it in the RFP would need to look into options for propane for backup heat. JBLM has good soils for stormwater facilities.

4. Building Program Review, Confirmation and Phasing

Existing facilities on site

Madigan Barracks: to be demolished unknown timeline.

The Gym: The existing gym is a base facility and cannot be demolished until JBLM builds a new one elsewhere in that area on main Fort Lewis. Currently, no replacement gym is funded. The 1st SFG CRTF/THOR3 is not a replacement; it is a training facility for the 1st SFG.

Fire Department: to be demolished unknown timeline.

Maintenance Facility: to be demolished unknown timeline.

The SSA storage warehouse, indoor rifle range and mil van yard (containers) located in north, are to remain.

Phase 1 (currently funded): Build proposed FY12 two-Company Ops Facilities (COF) and FY13 Battalion Operations Facility (BOF) on east compound. Is it possible to build bridge under FY12 or FY13 projects if budget allows

Phase 2 (East): 4th Battalion currently occupies the FY08 BOF facility. It is expected that the 4th Battalion function will be change to a GSTB function. Future program will construct a GTSB facility (mirror of FY08 BOF). Once the future GSTB is constructed and occupied, the 2nd and 3rd Battalion currently occupy facility on the west side will relocated to the FY08 and FY13 BOFs. The four buildings (currently occupied by 2nd and 3rd BTN) and administration building (in front of HQ) can be demolished at the same time (estimated schedule after FY18/19).

Phase 3 (West): Group Headquarters can be built and old HQ can be demolished.

Phase 4 Build DFAC, Barracks and CRTF/Thor3 Facility, and demo existing barracks. Barracks and DFAC buildings are big army MILCON funded; it is not known when these will be funded. The CRTF/THOR3 facility is funded by SOCOM.

Future Phasing: SOF Eng. Ops. and rigging tower

5. Scheme Review—Evaluation Criteria WEST

Scheme 1:

West Compound—large parking area located near main entrance. HQ north of Cramer Avenue with long parade field running northwest/southeast with THOR3 and Barracks on either side. DFAC and community facility at end of Cramer near Murray Creek. Pedestrian bridge connects Cramer Avenue to Garfield Street. Compact layout with connected parking lots, and free flow through compound with exterior roadway. Tied together relationship wise….THOR3, DFAC, and Barracks located together. This helps provide ADA accessibility to these areas. Open views facing Mt. Rainer. Challenges: One point of access from barracks (staff duty desk) would be difficult with this layout. Location of THOR3 and barracks conflicts with phasing. Enough parking for barracks? Looks too far to walk from parking to barracks.

East Compound—FY08/FY12 BOFs side by side. Challenges: north and south connection—only have 33 feet between buildings and the road would be unable to meet the 82-foot setback requirements. If realignment of Madigan does not happen, then what does this plan look like?

Scheme 2:

West Compound—Group Headquarters is at end of Cramer Avenue, but shifted north of road axis next to the creek. Green space is north of Cramer Avenue and is surrounded by barrack with green space lining up with HQ axis. THOR3 is south of Cramer Avenue and DFAC is located between THOR3 and Group HQ. DFAC has nice views into creek area. Green space lines up with Mt Rainer. Areas to the west are reserved for future development. Challenges: Scheme works well with phasing as outlined earlier however it will not work if barracks occurs first. Need to add parking and access lanes to allow circulation between parking lots and to the back of HQ and DFAC.

East Compound—Same as scheme 1.

Scheme 3:

West Compound—Group Headquarters is at end of Cramer Avenue along road axis. Large area in front of HQ for courtyard and drop offs. Scheme separates HQ from main central green space. Barracks parking is connected and on perimeter along north end separating parking from main campus. Bridge at Taft Street has direct access to DFAC. Two separate green spaces. The whole section to left will be available for future expansion. Challenges: The location of the HQ building is not ideal for AT/FP since Cramer offers direct access to the building for a high speed vehicle. Also, not a very good layout because there is no back loop road access for the HQ. Phasing conflicts.

East Compound—Same as scheme 1.

Scheme 4:

West Compound—BOF has been rotated and is part of main central space. Move THOR3 to open area south of Cramer Avenue and add more parking. BOF works better in original location. Challenges: What about barracks? Do not look as large as other schemes. How would you add more in the future? Not much parking near THOR3 and barracks. This scheme didn't score well.

East Compound—Same as scheme 1.

Scheme 5:

West Compound—Barracks is separated from major space. Schemes 5 and 7 are similar, because they separate barracks from open space. Option works well for Communication tie-in. Challenges: Would be better to build both barracks at the same time – phasing conflicts. Need more parking near HQ. Difficult to locate HQ at end of Cramer Avenue because it needs service drive and hardstand in back.

East Compound—Same as scheme 1.

Scheme 6:

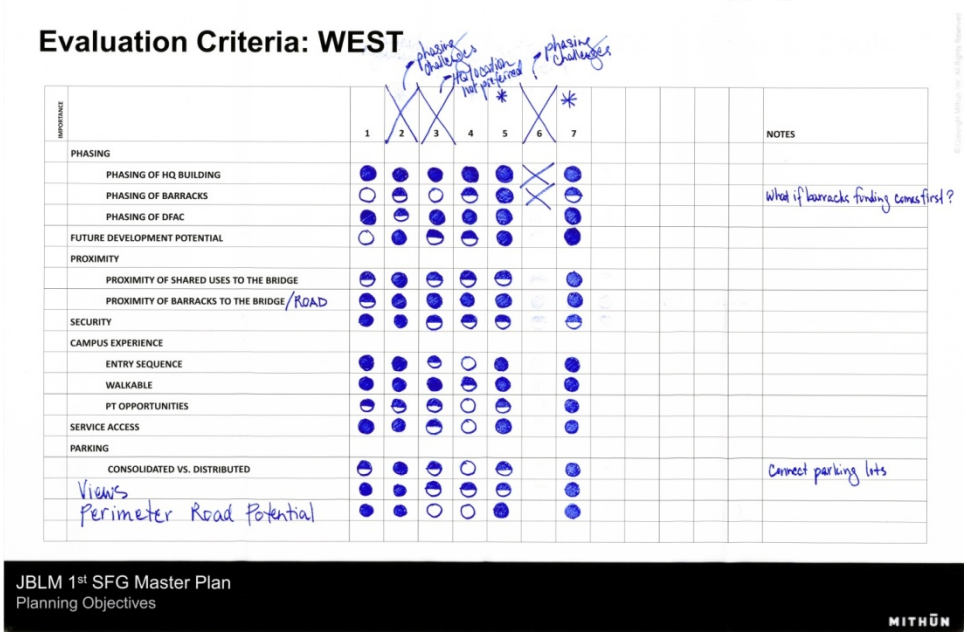
West Compound—HQ is on axis with space, but separate from Cramer Avenue. HQ is located in the middle of site. Challenges: Phasing conflict with Barracks and DFAC.

East Compound—Same as scheme 1.

Scheme 7:

West Compound—Most compact layout. Future growth in main area. Best layout. 1st SFG like the HQ layout and no blocked views of Mount Rainier. New DFAC can be built without disturbing existing building. DFAC and CRTF/THOR3 are close to east side with a good connection to proposed bridge. The 1st SFG requested combining this scheme with scheme 5 for the barracks location. Challenges: Would need to construct additional communications underground duct bank to HQ. Barracks is isolated and not preferred.

East Compound—FY12 BOF rotated to allow north/south movement, connectivity of hard stand is preferred.



Above matrix was developed during the review process of each scheme for the West Compound. No matrix was developed for the East Compound.

Scheme Review—Evaluation Criteria EAST

Scheme 1E:

East Compound—Provide opportunity for north/south connection by providing a road parallel to Wilson Avenue. This layout is what is currently planned and works well with phasing. Sanitary line would need to be relocated adjacent to Wilson Avenue.

Scheme 2E:

East Compound—Rotate FY13 BOF or relocate to existing parking to allow for roadway north/south through site. This might work without having to relocate sanitary line.

Action Item 2: Juanita to send CAD drawings to MITHUN for FY12 COF and FY13 BOF.

At the end of the day Scheme 5 & 7 were selected to develop further for the West Compound and Scheme E1 selected for East Compound.

Meeting Minutes

Date: December 9, 2010
Meeting: Design Charrette, Day 2
Location: JBLM
Project: 1st Special Forces Group Master Plan,
BergerABAM Project Number FABLD-10-966

Meeting Attendees

Name	Company	E-mail
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Day 2 Agenda

1. Detailed scheme evaluation and refinement
   - Detailed evaluation
   - Phasing Strategy
   - Future Growth
   - Development of Scheme Hybrids
2. Design refinement
   - Resolution of "good ideas" into a single scheme
   - What's missing? Identify issues not yet discussed
   - How will we make this a great place?

1. Detailed Scheme Evaluation and Refinement

The purpose of the meeting is to narrow schemes to a single approach to be refined into a draft plan. The master plan will be helpful when there is change in the chain of command and planning for future development.

East Compound—Scheme E1

Looking at scheme 3 for the east compound, attendees started to massage the layout a little bit and came up with two additional schemes for consideration:

- *Option E1*—Concept shows FY08 and FY13 are side by side with GSTB and future BOF mirror image to the north. This layout is what is currently planned and works well with phasing.
- *Option E2*—Concept looks at the idea of relocating proposed FY13 to be a mirror of FY08 to the south on the existing parking area (no sketch). This puts the building closer to the FY12 two–company COF which supports both the FY08 and the FY13. Parking would be relocated west of FY08 next to the existing gym. This alignment works well in providing a north/south connection through the site with nice compact development. Existing parking that would be disrupted during construction supports buildings south of Garfield. How would this layout affect existing functions during construction? Negative—demo parking lot which was just built last year and placing further away from buildings south of Garfield.

Action Item 2: Juanita to send CAD drawings to MITHUN for FY12 COF and FY13 BOF.

West Compound—Schemes 5 and 7

- Option 5 – Prefer location of barracks in this concept and communication tie-in works well. No access to back of buildings for service.
- *Option 7*—HQ provides best location for back access to the hardstand. Room to relocate housing near existing barracks. Lower area opens for future development. DFAC and community building to creek for best views. Would like perimeter road to monitor and patrol site.

What should barracks be sized to for future growth? Currently 235 personnel live in barracks and future 1st SFG growth of 284 personnel—75% in barracks = 213. For the master plan purposes, design for maximum 500 personnel living in the barracks. (366 SF per personnel is required.).

Discussion followed regarding bridge locations and which way to show them on the master plan to allow the most flexibility.

Bridge Location Option A—2-lane vehicle bridge at Taft

- *Advantages*
  - Shorter bridge due to narrower wetland corridor which will reduce construction cost.
  - Less impact to wetlands and existing oaks. Lessened environmental concerns might help the approval process and minimize mitigation needs.
  - Less impact to Madigan Barracks parking area by moving bridge connection point to outside edge of parking area rather than cutting through the middle.
  - Grades are similar on both sides of the creek, providing a better location for crossing.
  - Better connection between motor pools.
- *Disadvantages*
  - Potential conflict with existing park.
  - Separates users on west compound from main pedestrian center (DFAC, Barracks, CRTF, etc.) on east compound.

Bridge Location Option B—2-lane vehicle bridge at Garfield vs. pedestrian footbridge

- *Advantages*
  - Best location for connection to barracks and DFAC.
- *Disadvantages*
  - If left as a pedestrian bridge, unsure if just the pedestrian bridge would be used heavily by personnel or would they continue to drive between sites?

Keep all bridge options alive for flexibility while exploring environmental issues and costs. Another factor to be considered is the location of the bridge landing in relationship to the existing trail. Does it cross over or would the existing trail have to cross the roadway?

For planning purposes, should the master plan identify a roadway and bridge crossing adjacent to the tank trail in case all other bridge options do not work out? Use the existing tank trail with some improvements to allow the SFG to access between the two compounds without using Jackson. Do not construct an access road within the compound along Jackson.

Action Item 1: Sam Adams to coordinate with Environmental to identify what will be required for bridge.

2. Design Refinement

Second half of the day was spent sketching up modified schemes for commander review and a site visit to walk the stream area to identify best location for a vehicular bridge.

Site Visit Observations

During the site walkthrough it became apparent that vehicular bridge which would accommodate pedestrians and bicycles should be sited in line with W. Taft because it is substantially a more economical alignment. This location appears to have very little impact on the environment and relatively easily accessed by a road from both directions similar to an existing road. The topography does not seem formidable.

SFG Commander's Decision

After the Charrette, all schemes were presented to the SFG commander and he selected the following schemes: Option E-1 for the east compound, and for the West Compound Option 7 with the barracks south of the HQs building and in line with Mt Rainer similar to Option 5. CRTF/THOR3 and DFAC Building go east of HQs and along the tree line/creek as seen in scheme 7.

Appendix C

Design Charrette 2 Summary

BergerABAM

Meeting Minutes

Date: January 12, 2011
Meeting: Design Charrette #2, Day 1
Location: JBLM
Project: 1st Special Forces Group Master Plan
BergerABAM Project Number FABLD-10-966

Meeting Attendees

Name	Company	E-mail
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Morgan Ennis Fred Brown LTC Michael Sierakowski SFC Ed Antanavage Vince Bozick Keith Elefson David Schmidt	USACE USACE 1st SFG Group engineer 1st SFG DPW - Planning DPW – Planning USACE	Morgan.E.Ennis@usace.army.mil Fredrick.Brown@usace.army.mil michael.sierakowski@soc.mil eantanavage@hotmail.com Vincent.m.bozick@us.army.mil Keith.m.elefson@us.army.mil David.w.schmidt@usace.army.mil

Project Overview and Meeting Agenda

1. Draft master plan review.
2. Phasing issues and strategies
3. Bridge review
4. 3d model and images
5. Draft master plan report
6. Summary of next steps

Originally, the design charrette meeting was scheduled for two days; however, we are going to split it into two 1-day meetings. This allows time to review the draft master plan and phasing plans prior to producing the draft report.

1. Draft Master Plan Review

What's missing? Identify issues not yet discussed. Review criteria and process on draft master plan.

Criteria for West Compound

- Phasing (primary driver)
- Barracks
- DFAC
- Group HQ
- Future development potential
- Proximity
- Campus experience (2nd driver)
- Entry
- Walkability (cohesive)
- PT/running trail
- Parking
- Security – gates, lock down, fencing?

Criteria for East Compound

- Phasing
- Madigan bypass
- Madigan storage yard
- Existing barracks site
- Future development

Anything new that needs to be considered for the Draft Master Plan?

- Draft plan is based on 33-foot setbacks (hardening of buildings). However, there are new criteria coming out with revised setback requirements.
- Does the plan include a running track for PT? Soldiers are no longer able to run on JBLM roads, and would like to have a location inside the site to run. The design allows for running along the perimeter fence line, and the interior roads also can be used for running. Would like to add the option of a fitness trail (par course) along creek for additional training opportunities. This trail would be available for JBLM.
- Would like to create access gate off Jackson Avenue that would align with roadway that runs in front of the CRTF and DFAC.
- Transmission Line Road is a main thoroughfare between Ft. Lewis/McChord and is under design for improvements. What does this look like and how does it affect the Master Plan.

A1: Proposed design of Transmission Line Road—Morgan to get copy to LTC Sierakowski

Draft Master Plan (revised per meeting comments)

West Compound

Plan has a compact design to reserve significant space for future development. Commuter car park and future building footprints are located near entrance. HQ at north end of site along Cramer Avenue with a formal drop-off area, and can be used for mass formation. Parking for the HQ is provided to side and back of the building, with adjacent open space on the south side of Cramer Avenue which could be used for formal gatherings. Formal tree plantings at the ends of open space, approximately 100′ x 400′ in size.

A visual axis runs from HQ through the barracks and connects with future development on the south end of the site; future development would respect this connection. Open space between the barracks will be used for recreation by the soldiers living in the facility and would include sand courts, BBQ area, and other facilities. CRTF/Thor 3 and DFAC are located at the

end of Cramer Avenue. When buildings are designed, they can have an element of transparency and openness toward Murray Creek. Large areas on south side of site are shown for future development (approximately 345,000 SF for three-story buildings or 250,000 SF for two-story buildings). Existing rigging facility will remain in west compound until able to relocate near the Deployment/Logistics warehouses on the east compound. Existing buildings and parking currently located in future build-out areas will remain until new facilities are needed.

Parking requirements for West Compound (sufficient parking shown on plan, approximately 875 vehicles): Group HQ = 480 PN, Barracks = 500 PN—need more parking, Thor 3 and DFAC —shows 85 users (35+60), plus on-street parking. Show parking in future growth areas instead of building footprints (land banking).

East Compound

Draft design has not changed much from the last meeting. A few changes were suggested. Plan needs to show connection to whole site with interior circulation roads. Access should be independent from the public roads, but can be a part of the parking/driveway circulation. Add an access gate off Wilson near Madigan bypass to access hardstand. Draft plan currently shows Keeler Gym and fire station remaining. When the gym is removed, then the parking can expand and connect with the existing FY08 parking area. Show hardstand around the Logistic/Deployment warehouses.

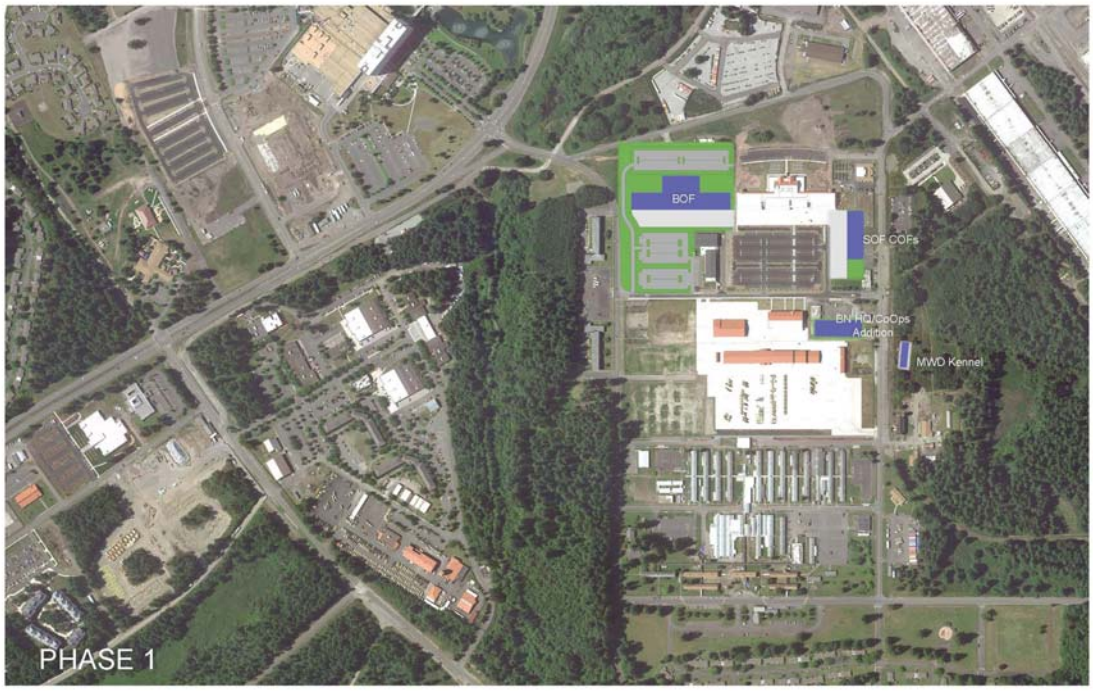
Parking requirements for East Compound: FY08/FY13 = 522PN (each building), GSTB = 450 PN, GSB – (future exp BN HQ) = 822 PN, and TEMF = approx 70 PN. Plan currently shows approximately 1200 plus parking. Parking is insufficient for number of personnel that will be on East Compound. Revise to allow for additional spaces. Mil Van Yard could eventually be on west side to accommodate parking for GSTB. When Madigan barracks come down, and become a part of 1st SFG site, then the rigging tower would relocate there. If Madigan barracks do not become part of the 1st SFG site, then the warehouses planned for this area would have to locate on West Compound near the existing rigging facility.

2. Phasing Issues and Strategies

The phasing plans are set up to show major phases and, within each phase, there are individual projects/breakdown of phasing (i.e., Phase 2 = 2A, 2B, 2C, etc.).

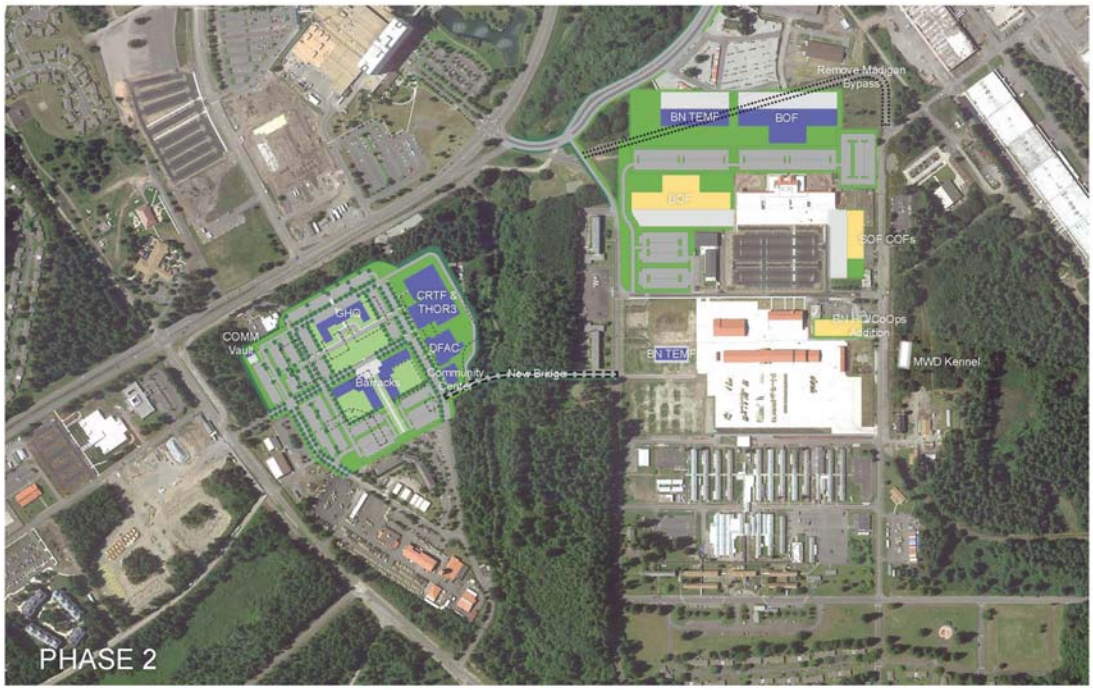
Phase 1 (FY12/13 projects): Dog Kennel (might pull forward to FY12, currently FY15) BOF (FY13), and SOF COF (FY12)

- Add – RSU/communications hut (FY12)
- Add – Madigan bypass (FY12)
- Add – TUAV/RST/TSC
- Add – BN TEMF (FY13)
- Add – modifications/upgrades to existing rigging tower
- Add – vehicle bridge between West and East compounds
- Add – PT trail within West Compound and par course (gravel trail) along Murray Creek
- Remove – BN HQ/Co Ops addition from this phase and add to 2nd phase



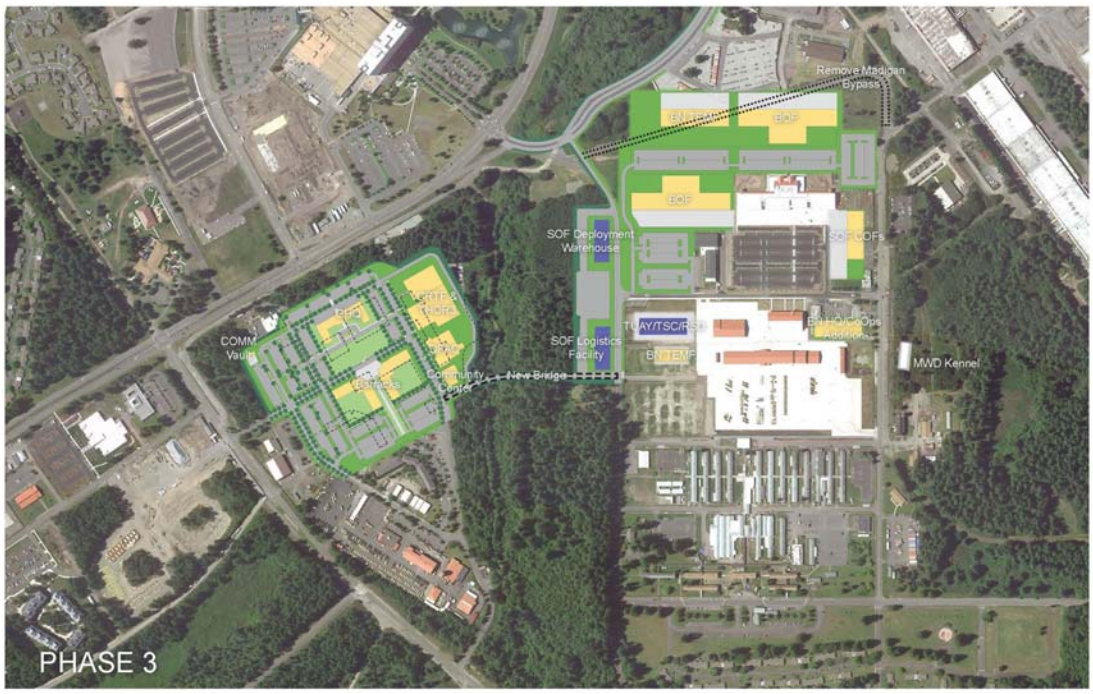
Phase 2: GSTB and TEMF (add motor pool around smaller building)

- Add – BN HQ/COF addition



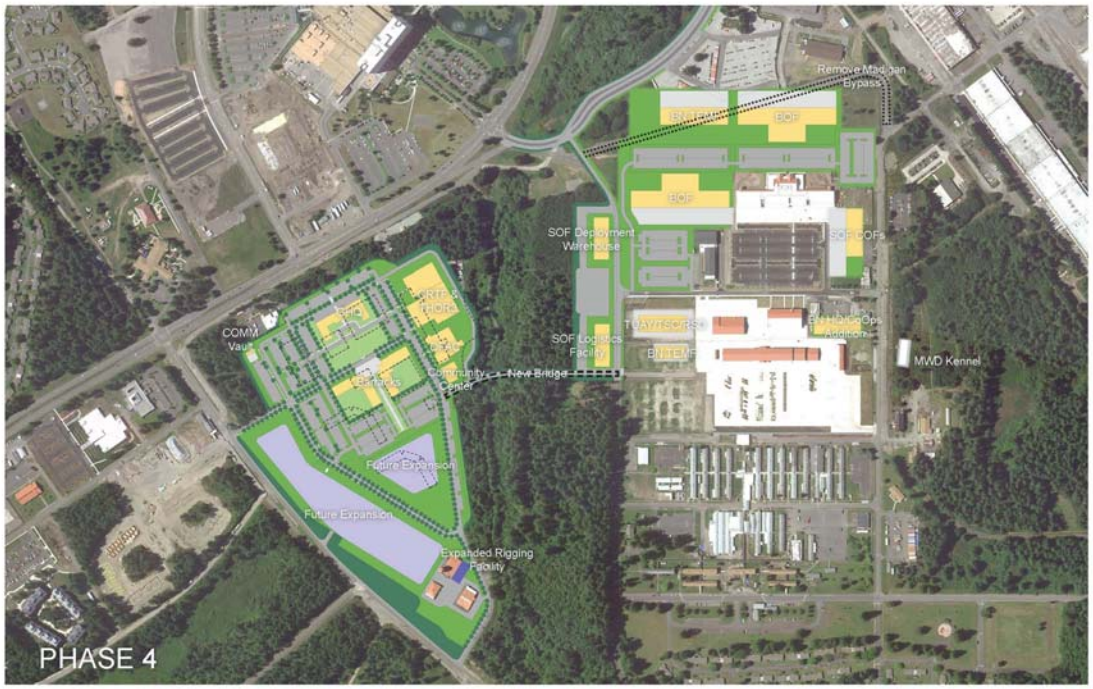
Phase 3 (West Compound): Group HQ and CRTF, Barracks (MILCON), DFAC (MILCON)

- Remove – Deployment/Logistic warehouses and add to Phase 4
- Remove – TUAV/TSC/RSD



Phase 4

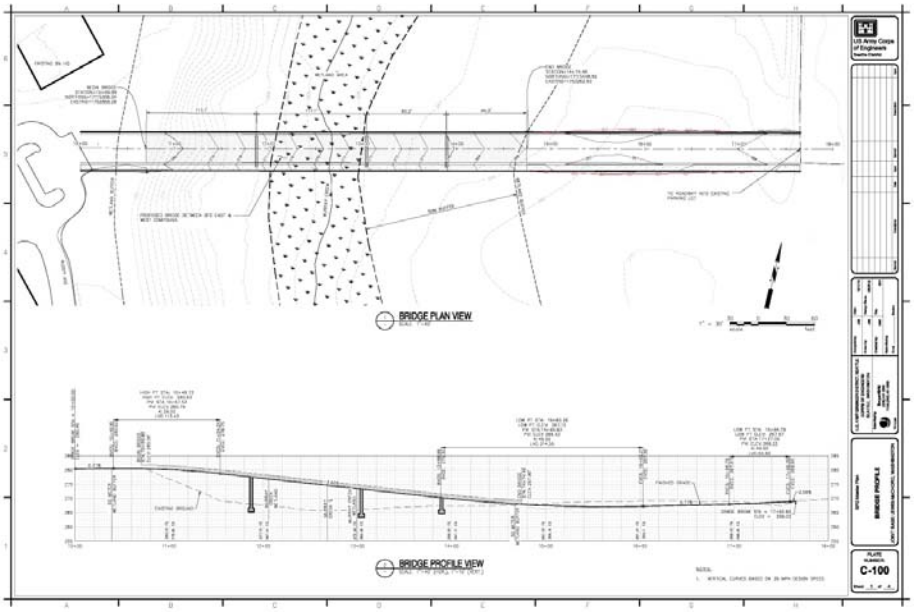
- Remove – Keeler Gym
- Add – Deployment/Logistic Warehouses and add hardstand around for load out area



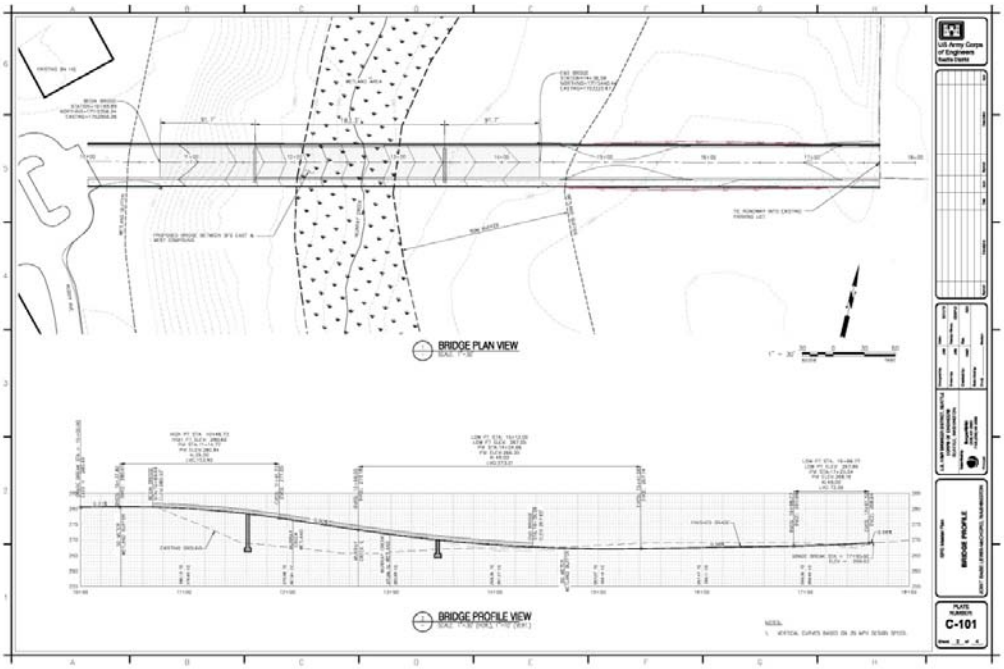
3. Bridge Review: Location, Design, Construction Cost and Environmental Issues

Note: Cost estimates are for bridge construction only and do not include approaches.

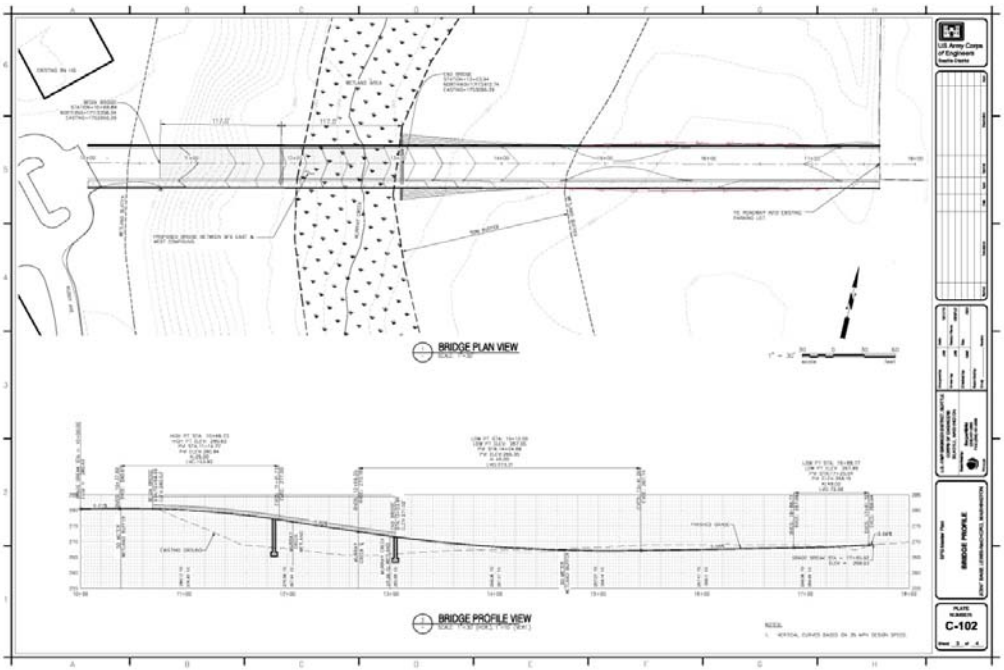
Bridge 1: Bridge is designed to keep a consistent length between piers. Width: 15′ lanes, 6′ sidewalk, shoulders at 41′ wide. Overall span 117. Construction cost: $4.2 million and one lane at 26′ width would be $2.9 million.



Bridge 2: Design will fill within buffer and be same width as previous design. Overall span 183 feet. Construction cost: $3.6 million, and one lane $2.5 million.



Bridge 3: This design will have much more fill within buffer compared to the other designs. Construction cost: $2.4 million, and one lane $1.7 million.



4. Environmental Concerns

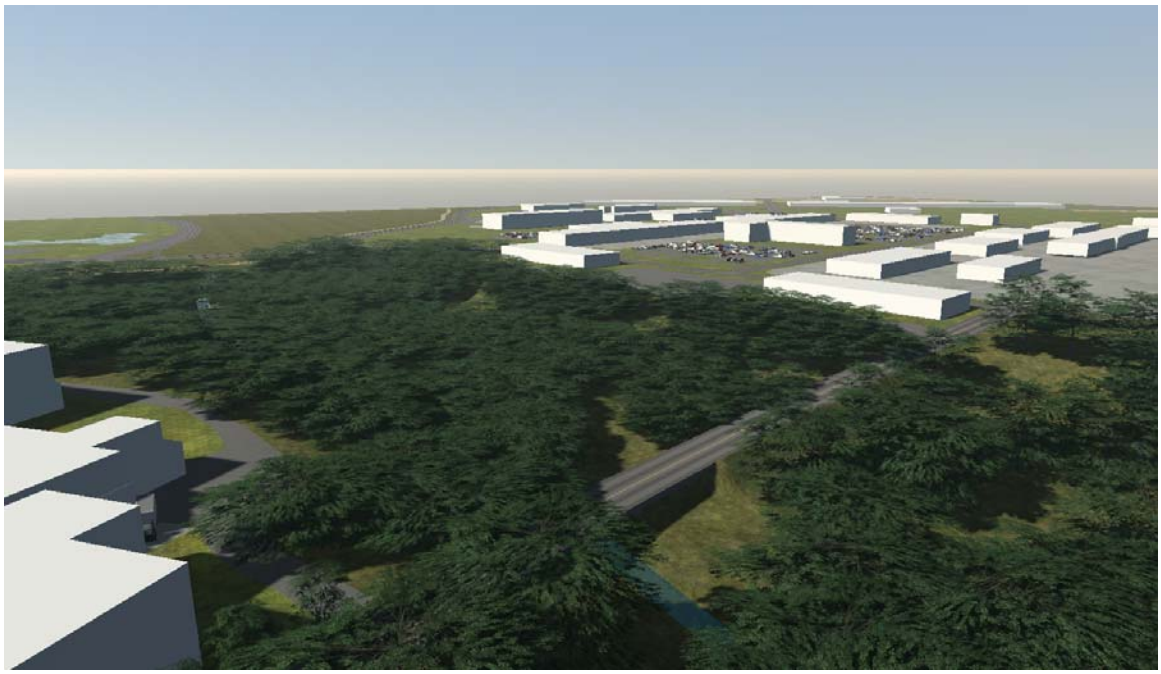
If construction does not impact creek or wetland, then a 404 permit would probably not be necessary. However, for agency RV, they would need 30% design drawings prior to making a decision. Mitigation for filling in the buffer will be at 4:1 and, based on design, project impacts are estimated to need approximately 1 acre for mitigation.

In addition to a potential 404 permit (depending on design), other environmental documents will be necessary. Permitting can take up to a year and planning needs to allow sufficient time for design and review based on targeted year for funding.

- Geotech report – evaluate soils for bridge piers
- Joint Aquatic Resources Permit Application (JARPA) will be required by all agencies
- Wetland delineation/floodplain and ordinary high water mark (OHWM) evaluations

Next step would be to present design to Commander to get buy-in and then move forward with any design or studies that would be needed based on funding. For planning purposes, would like to keep bridge within master plan and include a simple write up within the report discussing all the options in a decision matrix.

5. 3D Model and Images: Presentation of 3D model simulation



Open Space at Murray Creek: Looking at bridge between West and East Compounds

East Compound: Looking south from the rifle range toward GSTB and COFs

East Compound: Looking west at FY08 COF across hardstand and parking

West Compound: Looking south from tree grove along Cramer Ave

West Compound: Looking south over Group HQ toward Barracks

West Compound: Looking east along Cramer Avenue toward Group HQ and barracks

West Compound: Looking north from barracks toward the Group HQ and CRTF

West Compound: Looking east near the barracks at open space adjacent to Cramer Avenue

West Compound: Looking south from Group HQ flagpole look toward barracks

West Compound: Looking north between barracks toward Group HQ

West Compound: Looking northwest between barracks toward Group HQ

Add Details to 3D Model:

- Pitched roofs
- Main entries to buildings
- Windows
- Color surface
- Add Mt. Rainer in the distance

6. Draft Master Plan Report: Report Format and Deliverables

Master Plan Report (11x17 format) would include:

- Executive summary
- Site analysis diagrams
- Planning goals and objectives
- Project constraints
- Description of master plan design
- Basis of design (all disciplines)
- Phasing issues and strategy
- Sustainability strategies
- Inventory of facilities and recommendations list
- Meeting minutes and correspondence
- Any other supporting documentation

Drawings: (11x17 and full size format, color)

- Illustrative site master plan
- Site and building layout
- Utility connection plan
- Functional diagram/adjacencies
- Future land use expansion opportunities
- Regulatory plans

7. Summary of Next Steps and Confirmation of Project Schedule

The next step would be to present the design to the Commander to get buy-in and then move forward with draft master plan. The tentative project timeline below will be adjusted 3 weeks from acceptance of the plan and shift as necessary.

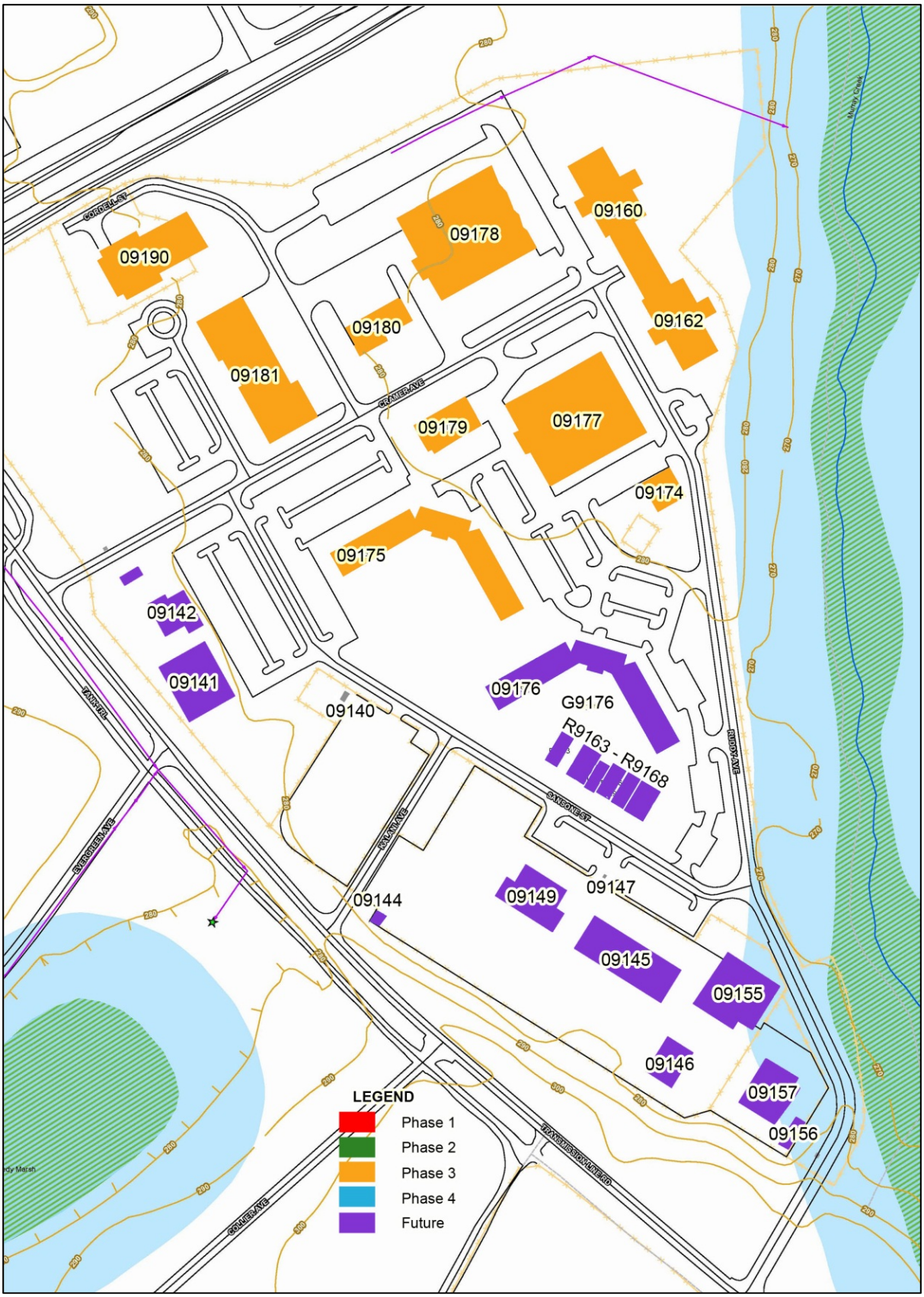
February 4	- Draft master plan report
February 25	- Review
March 4	- Respond to Dr. Checks
March 9	- Design charrette meeting 2b (review draft report)
March 9–March 30	- Final Draft Report
April 13	- Review/Dr. Checks
May 4	- Final Deliverables

AI: Schedule meeting to debrief with Commander the Draft Master Plan.

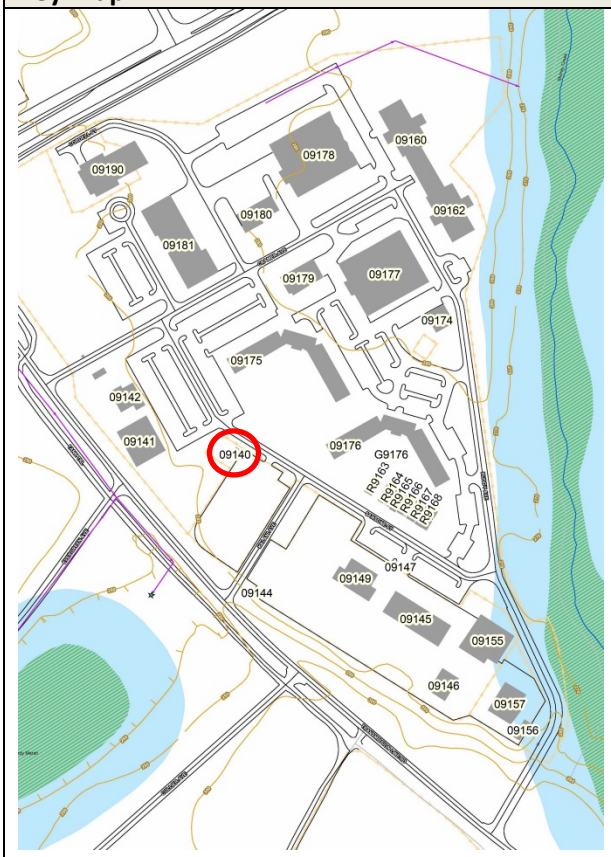
Appendix D

Inventory of Facilities

West Compound Existing Building Facility Map

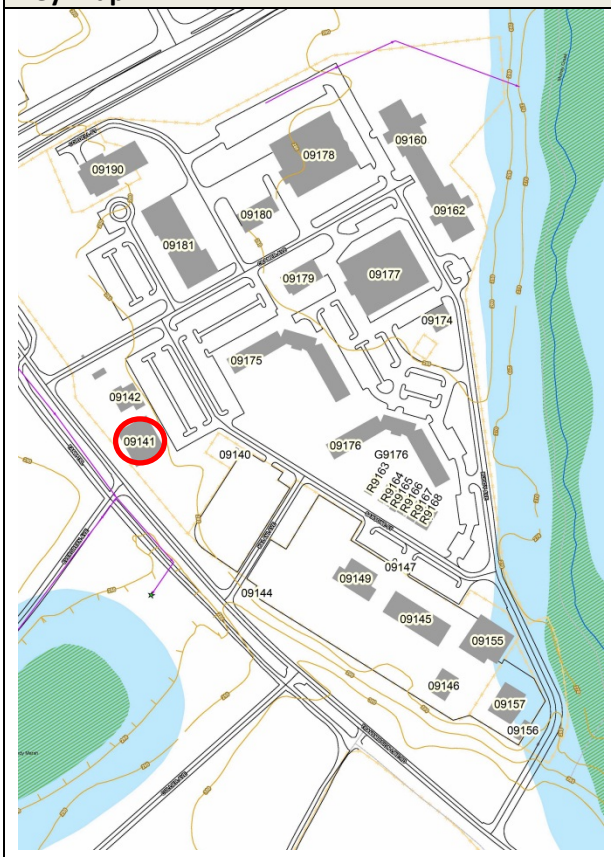


West Compound: BN 09140

Key Map:	Building Photo:
	

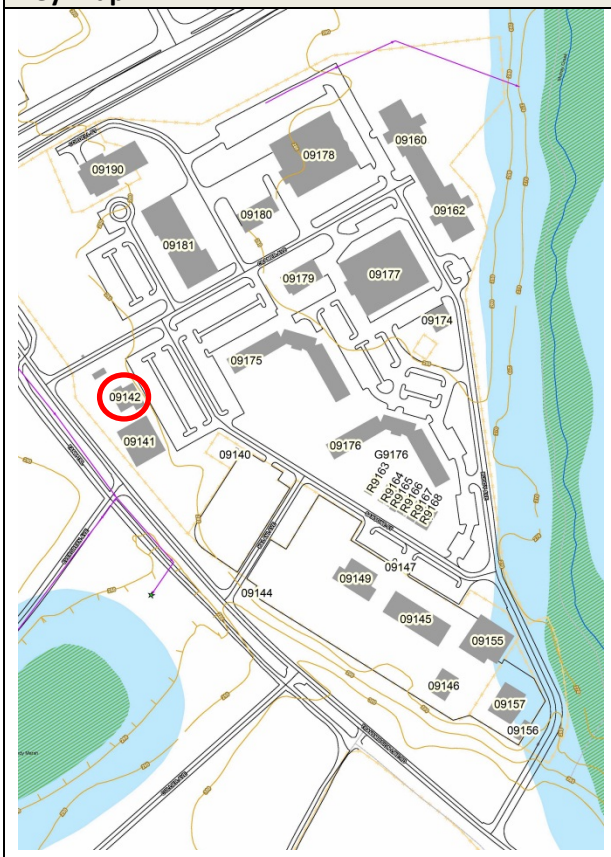
Building Information:	
Year Built:	1984
Square Footage (SF):	unknown
Building Use:	Lift Station
Who Occupies:	Madigan Hospital/1st SFG
Construction Type:	CMU Construction with Steel Roof
Recommendation:	Existing Building to Remain, Utility Building for JBLM

West Compound: BN 09141

Key Map:	Building Photo:
	

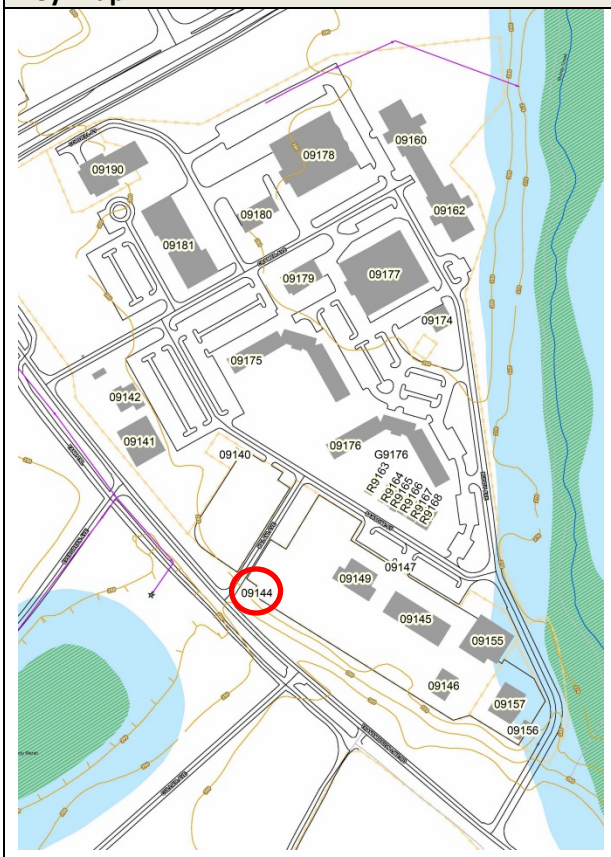
Building Information:	
Year Built:	2008
Square Footage (SF):	12,345
Building Use:	Storage, SSA Warehouse
Who Occupies:	1st SFG
Construction Type:	Steel Siding Construction with Steel Roof
Recommendation:	Future Demo Anticipated

West Compound: BN 09142

Key Map:	Building Photo:
	

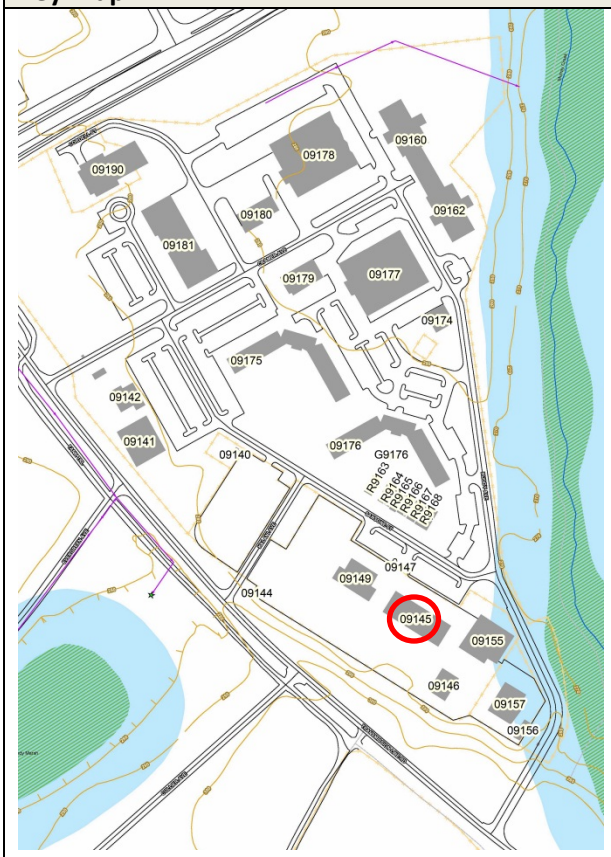
Building Information:	
Year Built:	2006
Square Footage (SF):	5,183
Building Use:	Language Facility
Who Occupies:	1st SFG
Construction Type:	Brick Construction with Steel Roof
Recommendation:	Future Demo Anticipated

West Compound: BN 09144

Key Map:	Building Photo:
	

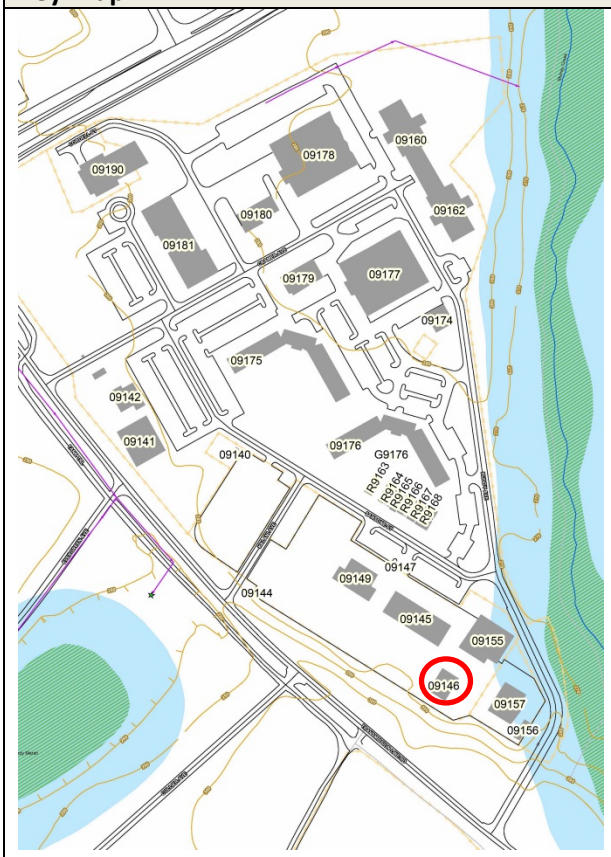
Building Information:	
Year Built:	1987
Square Footage (SF):	2,934
Building Use:	Oil Storage/ Hazmat
Who Occupies:	1st SFG
Construction Type:	CMU Construction with Steel Roof
Recommendation:	Future Demo Anticipated

West Compound: BN 09145

Key Map:	Building Photo:
	

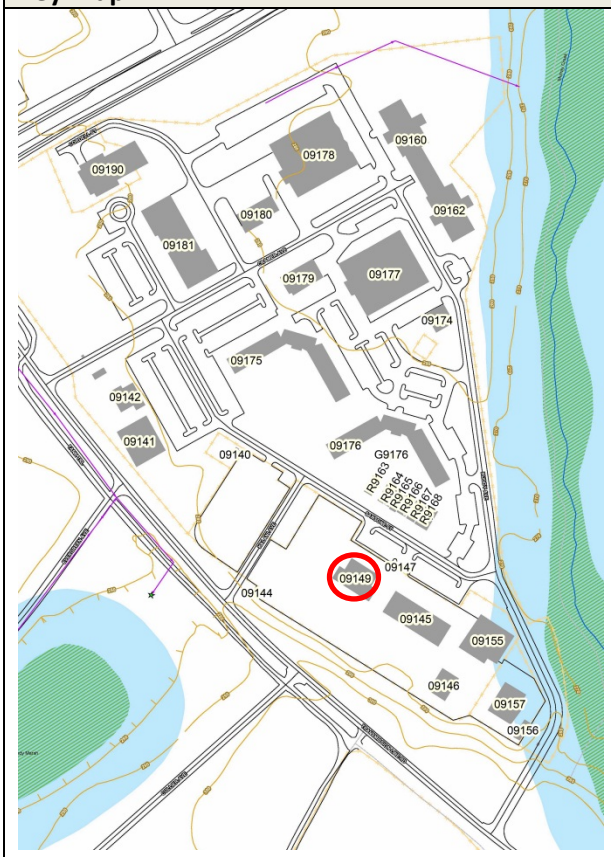
Building Information:	
Year Built:	1987
Square Footage (SF):	16,910
Building Use:	TEMF (Group Motor Pool)
Who Occupies:	2nd BN & 3rd BN, 1st SFG
Construction Type:	CMU Construction with Steel Siding and Flat roof (partial two story)
Recommendation:	Future Demo Anticipated

West Compound: BN 09146

Key Map:	Building Photo:
	

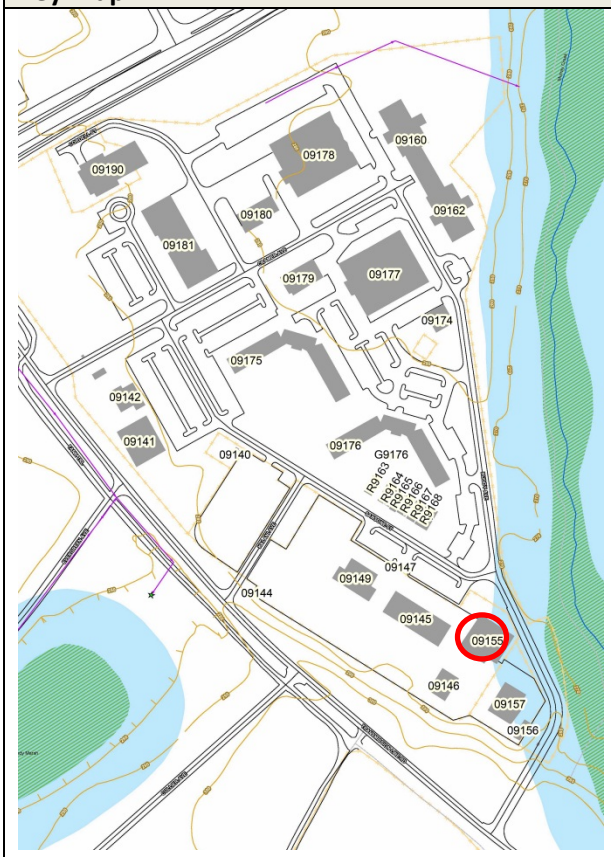
Building Information:	
Year Built:	1987
Square Footage (SF):	4,205
Building Use:	Cold Storage Facility/Organizational Storage
Who Occupies:	1st SFG
Construction Type:	CMU Construction with steel siding and flat roof
Recommendation:	Future Demo Anticipated

West Compound: BN 09149

Key Map:	Building Photo:
	

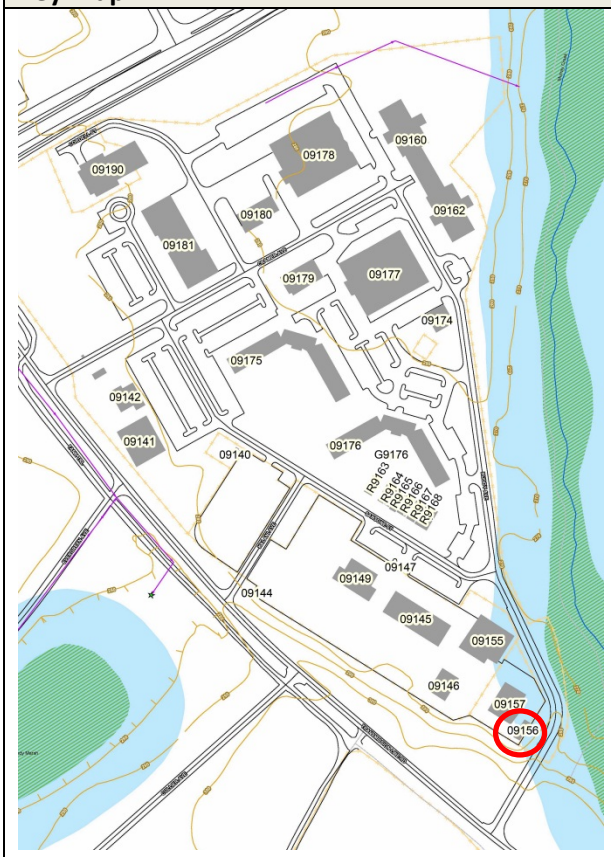
Building Information:	
Year Built:	1987
Square Footage (SF):	8,638
Building Use:	Comm Elex Shop (Signal Detachment)
Who Occupies:	1st SFG
Construction Type:	CMU Construction with Steel Siding and Steel Roof
Recommendation:	Future Demo Anticipated

West Compound: BN 09155

Key Map:	Building Photo:
	

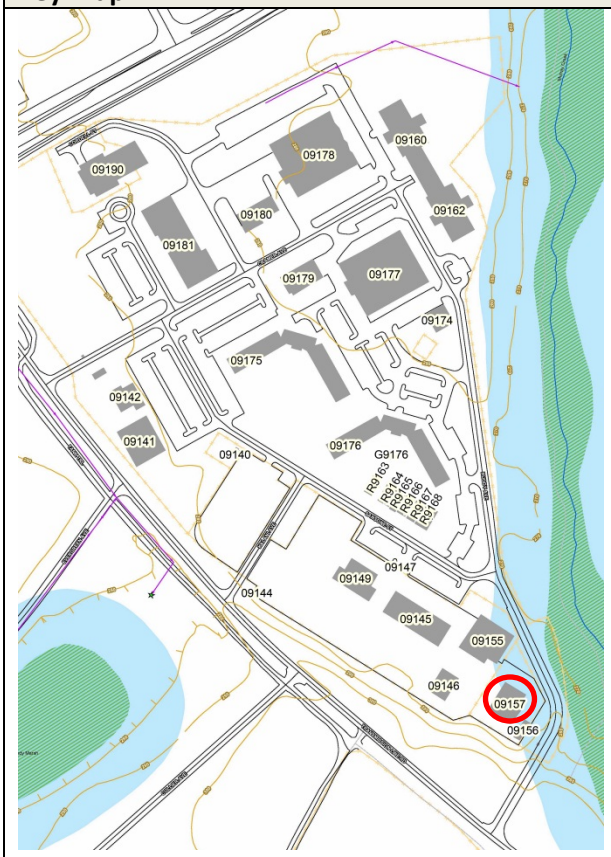
Building Information:	
Year Built:	1987
Square Footage (SF):	12,564
Building Use:	Parachute Rigging Facility
Who Occupies:	1st SFG
Construction Type:	CMU Construction with Steel Siding and Steel Roof
Recommendation:	Future Demo Anticipated

West Compound: BN 09156

Key Map:	Building Photo:
	

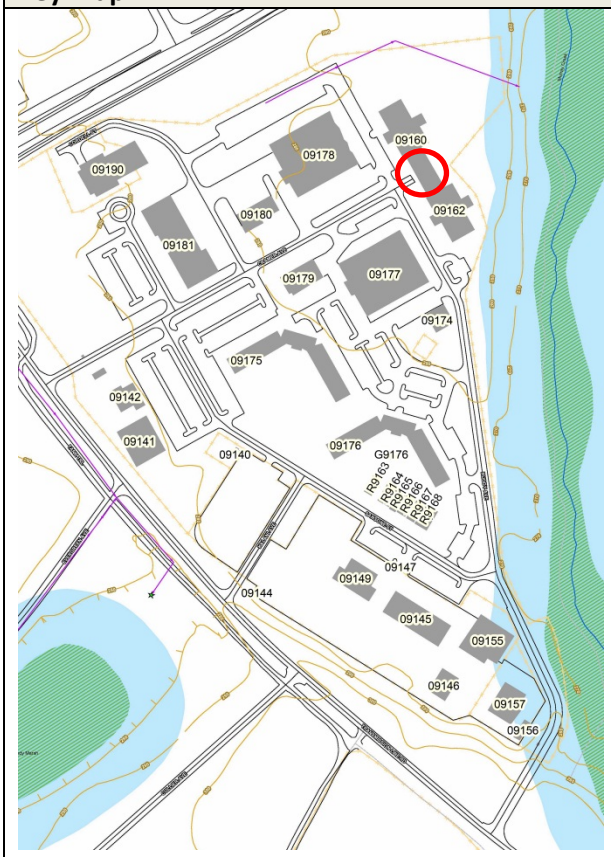
Building Information:	
Year Built:	1987
Square Footage (SF):	1,254
Building Use:	General Purpose Warehouse
Who Occupies:	1st SFG
Construction Type:	Steel Siding and Steel Roof
Recommendation:	Future Demo Anticipated

West Compound: BN 09157

Key Map:	Building Photo:
	

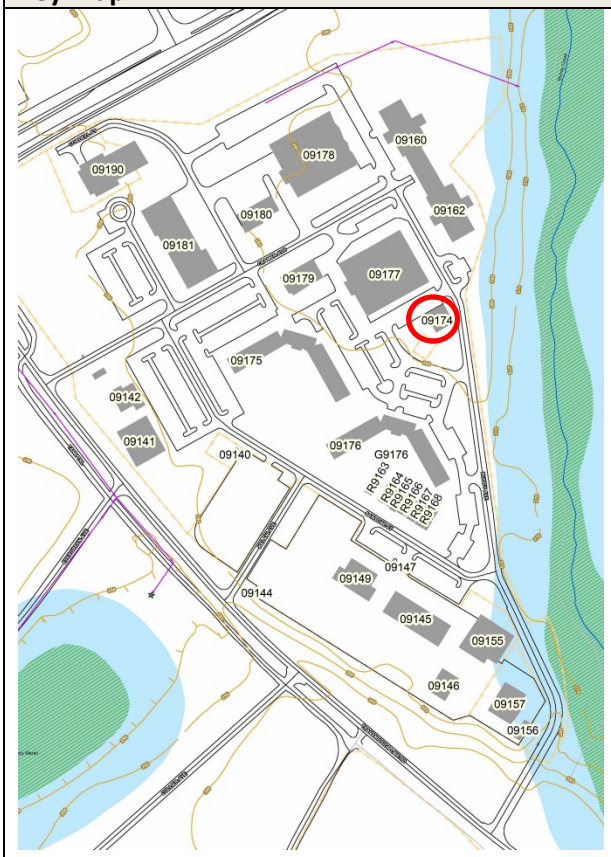
Building Information:	
Year Built:	1987
Square Footage (SF):	7,983
Building Use:	MAROPS
Who Occupies:	1st SFG
Construction Type:	CMU and Steel Siding Construction and Steel Roof
Recommendation:	Future Demo Anticipated

West Compound: BN 09160 and 09162

Key Map:	Building Photo:
	

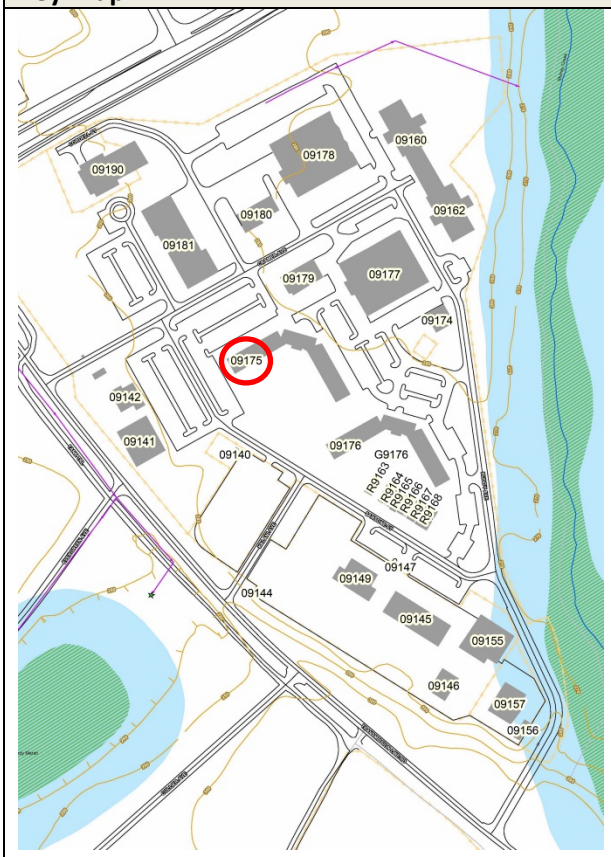
Building Information:	
Year Built:	1987 – New construction in 2006 joined buildings
Square Footage (SF):	34,352
Building Use:	Headquarters
Who Occupies:	2nd BN & 3rd BN, 1st SFG
Construction Type:	Brick Construction and a flat roof
Recommendation:	Phase 3 Demo

West Compound: BN 09174

Key Map:	Building Photo:
	

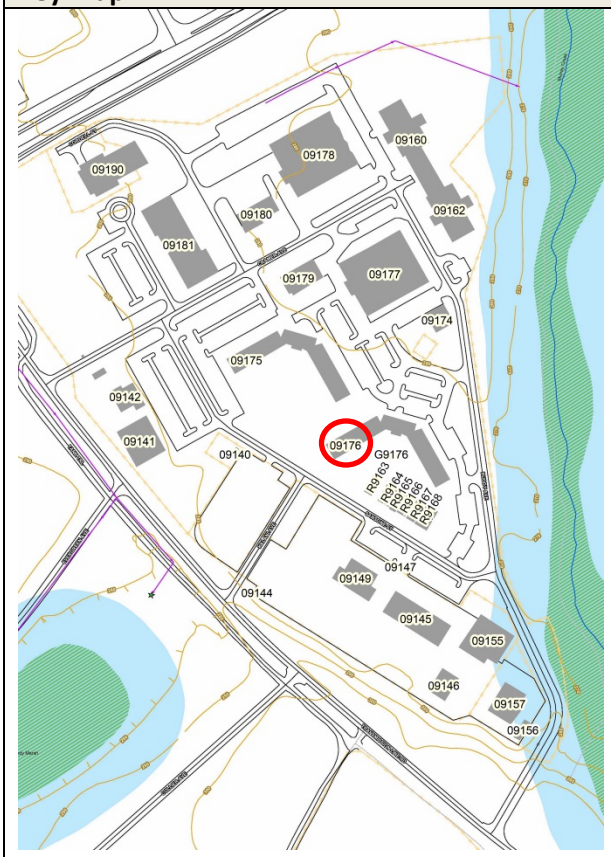
Building Information:	
Year Built:	2006
Square Footage (SF):	3,768
Building Use:	Covered Combative Pit
Who Occupies:	1st SFG
Construction Type:	Pole Construction with Steel Roof
Recommendation:	Demo Phase 3

West Compound: BN 09175

Key Map:	Building Photo:
	

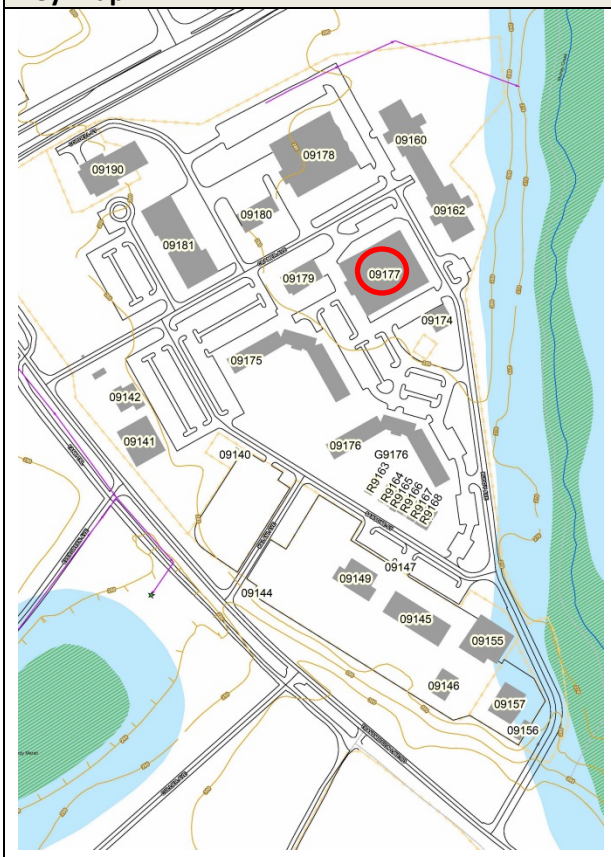
Building Information:	
Year Built:	1987
Square Footage (SF):	58,120
Building Use:	Barracks
Who Occupies:	1st SFG
Construction Type:	3 story brick construction with steel roof
Recommendation:	Demo Phase 3

West Compound: BN 09176

Key Map:	Building Photo:
	

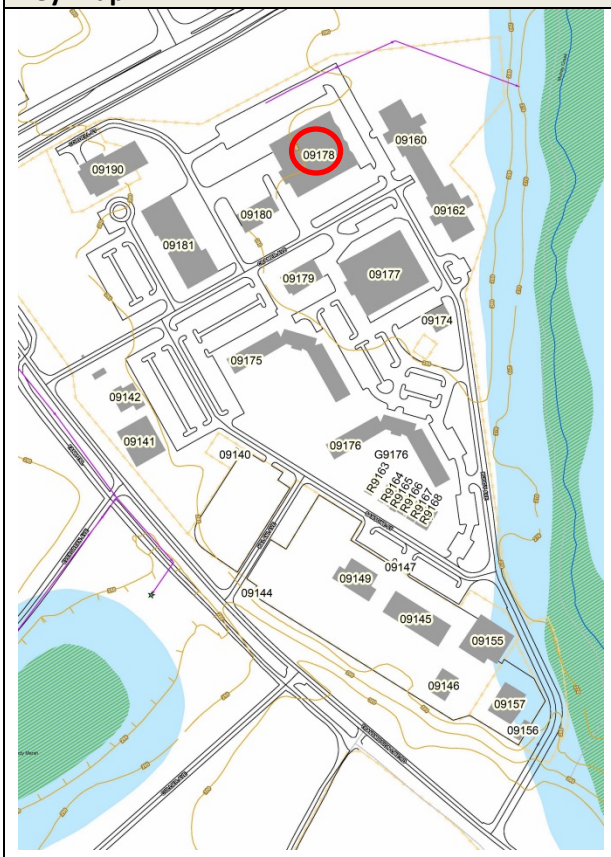
Building Information:	
Year Built:	1987
Square Footage (SF):	58,120
Building Use:	Barracks
Who Occupies:	1st SFG
Construction Type:	3 story brick building with steel roof
Recommendation:	Demo Phase 3

West Compound: BN 09177

Key Map:	Building Photo:
	

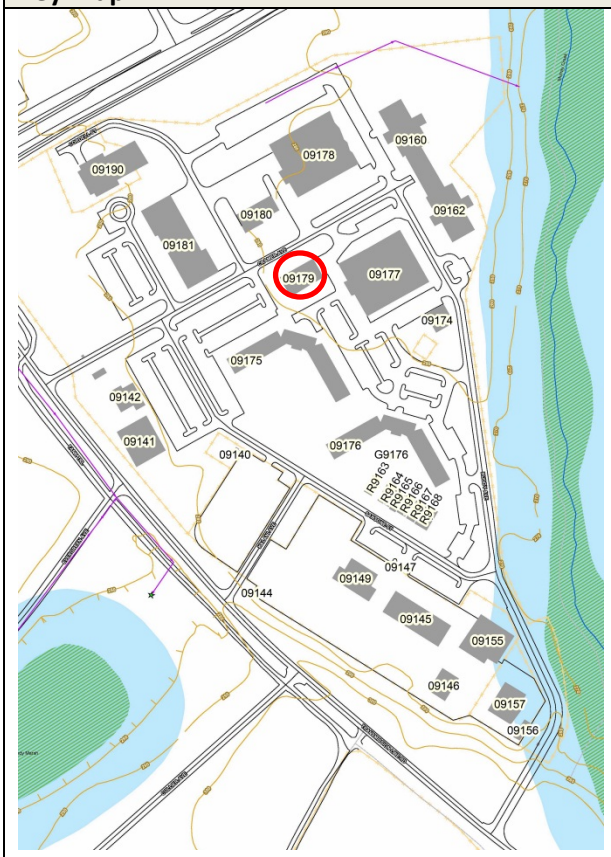
Building Information:	
Year Built:	1987 (add on construction in 2006)
Square Footage (SF):	45,596 (original footprint was 19,882 SF)
Building Use:	Company Operations Facility (COF)
Who Occupies:	1st SFG
Construction Type:	Brick construction with steel roof.
Recommendation:	Demo Phase 3

West Compound: BN 09178

Key Map:	Building Photo:
	

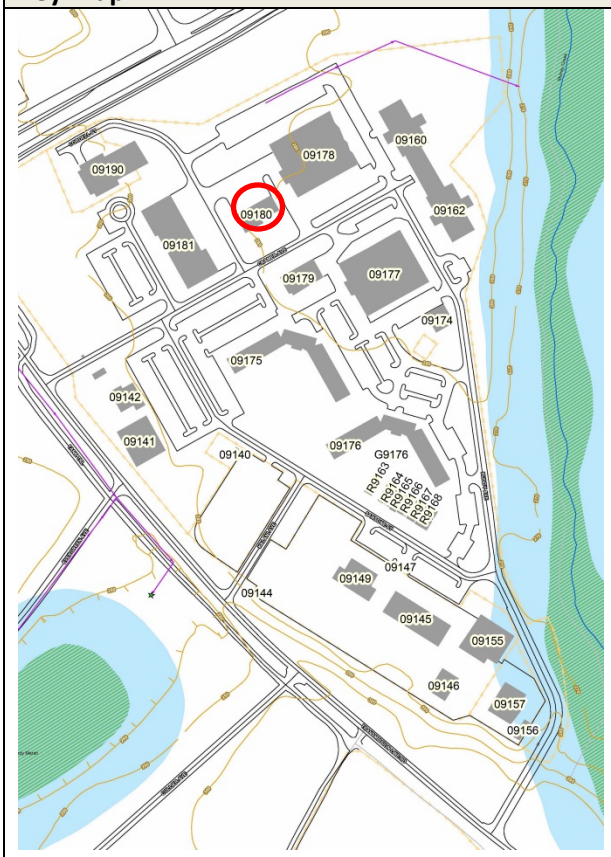
Building Information:	
Year Built:	1987 (add on construction in 2006)
Square Footage (SF):	45,596 (original footprint was 19,882 SF)
Building Use:	Company Operations Facility (COF)
Who Occupies:	1st SFG
Construction Type:	Brick Construction with steel roof.
Recommendation:	Demo Phase 3

West Compound: BN 09179

Key Map:	Building Photo:
	

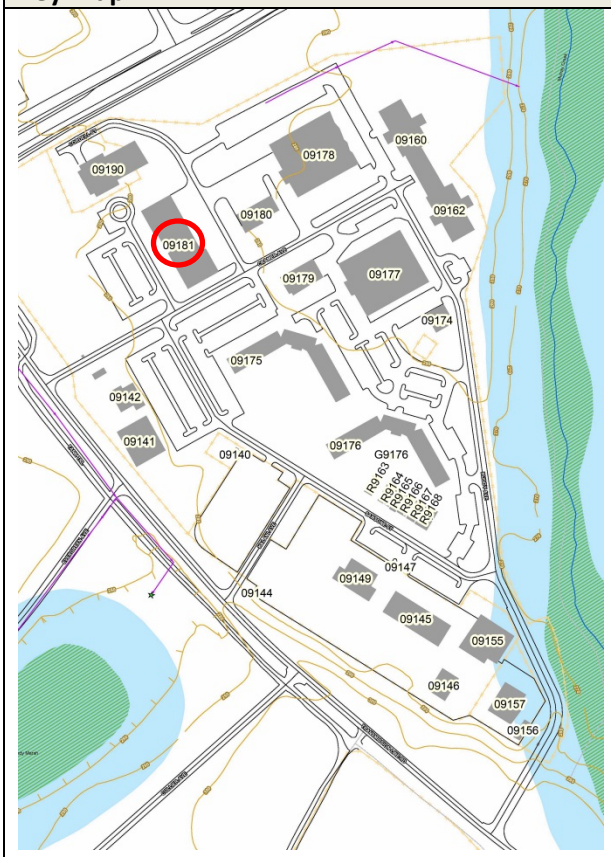
Building Information:	
Year Built:	1987
Square Footage (SF):	6,747
Building Use:	Dining Facility (DFAC)
Who Occupies:	1st SFG
Construction Type:	Brick Construction with Steel Roof
Recommendation:	Demo Phase 3

West Compound: BN 09180

Key Map:	Building Photo:
	

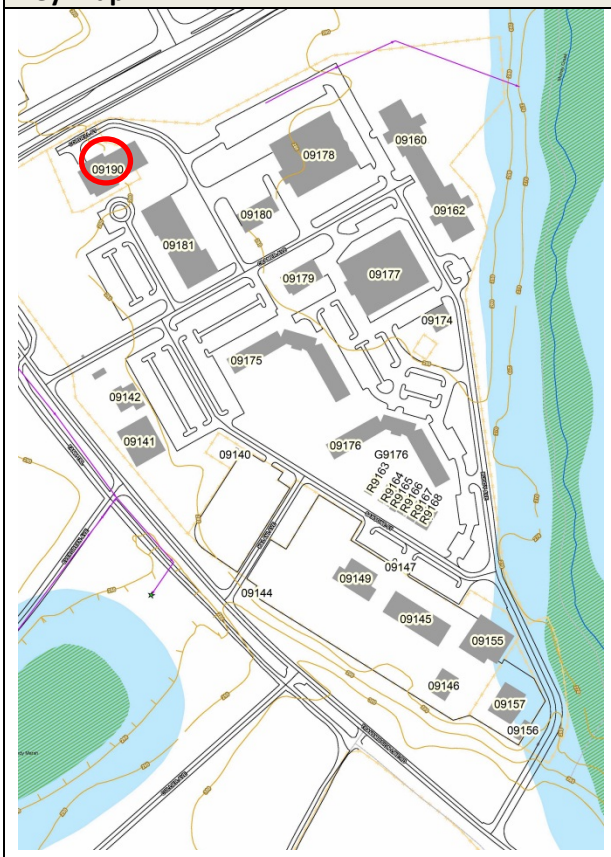
Building Information:	
Year Built:	1987
Square Footage (SF):	6,553
Building Use:	Medical Building
Who Occupies:	1st SFG
Construction Type:	Brick Construction with Flat Roof
Recommendation:	Demo Phase 3

West Compound: BN 09181

Key Map:	Building Photo:
	

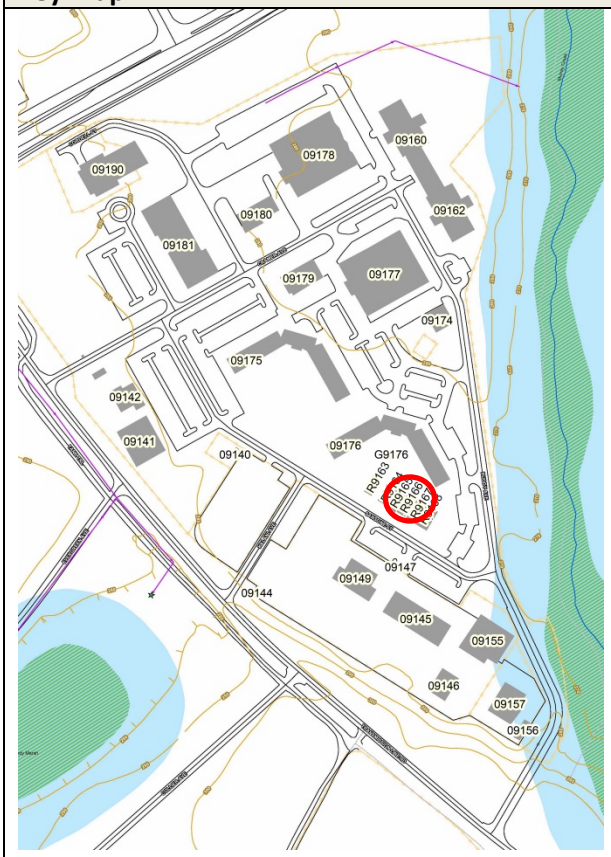
Building Information:	
Year Built:	1987
Square Footage (SF):	24,460 SF
Building Use:	Administration/HSC/RSD/2nd and 3rd BN Mid
Who Occupies:	1st SFG
Construction Type:	Brick construction with steel roof
Recommendation:	Demo Phase 3

West Compound: BN 09190

Key Map:	Building Photo:
	

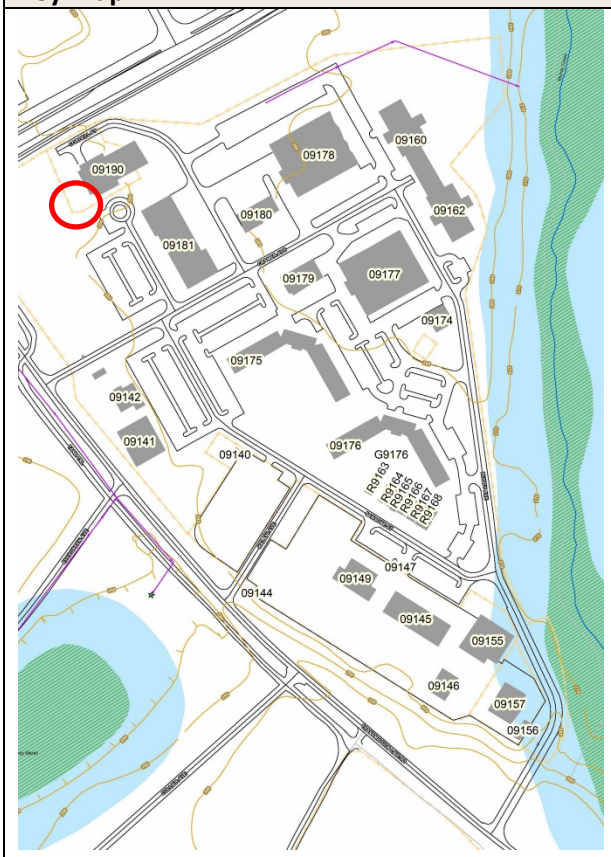
Building Information:	
Year Built:	1987 (addition in 2006)
Square Footage (SF):	33,667 (original footprint was 20,066 SF)
Building Use:	Administration/Group HQ
Who Occupies:	1st SFG
Construction Type:	Brick construction w steel roof. 1 story w basement
Recommendation:	Demo Phase 3

West Compound: BN R9163-9168

Key Map:	Building Photo:
	

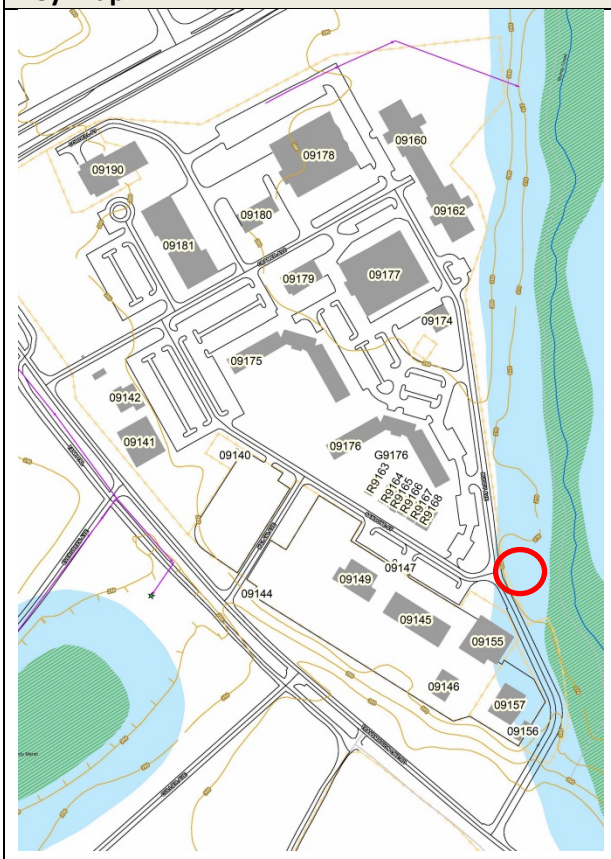
Building Information:	
Year Built:	unknown
Square Footage (SF):	1630-2560 SF x 6 buildings
Building Use:	Operations Detachment
Who Occupies:	1st SFG
Construction Type:	Portable units/relocatables
Recommendation:	Future Demo Anticipated

West Compound: Memorial

Key Map:	Building Photo:
	

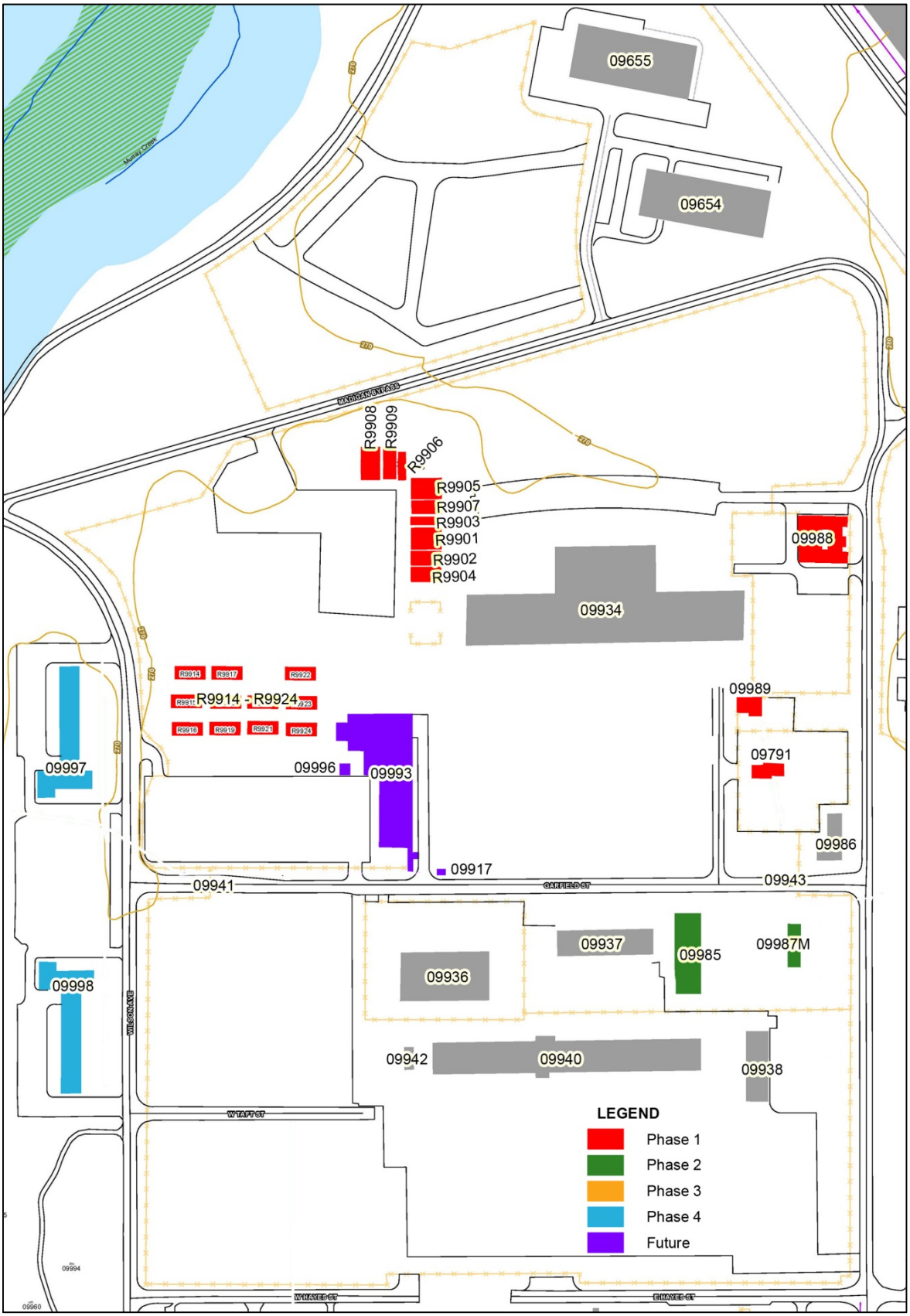
Building Information:	
Year Built:	2006/2007
Square Footage (SF):	n/a
Building Use:	Memorial
Who Occupies:	1st SFG
Construction Type:	Monolithic stone monument installation
Recommendation:	Relocate Phase 3 next to new group HQ building

West Compound:
Storm Water Facility & Oil Water Separator

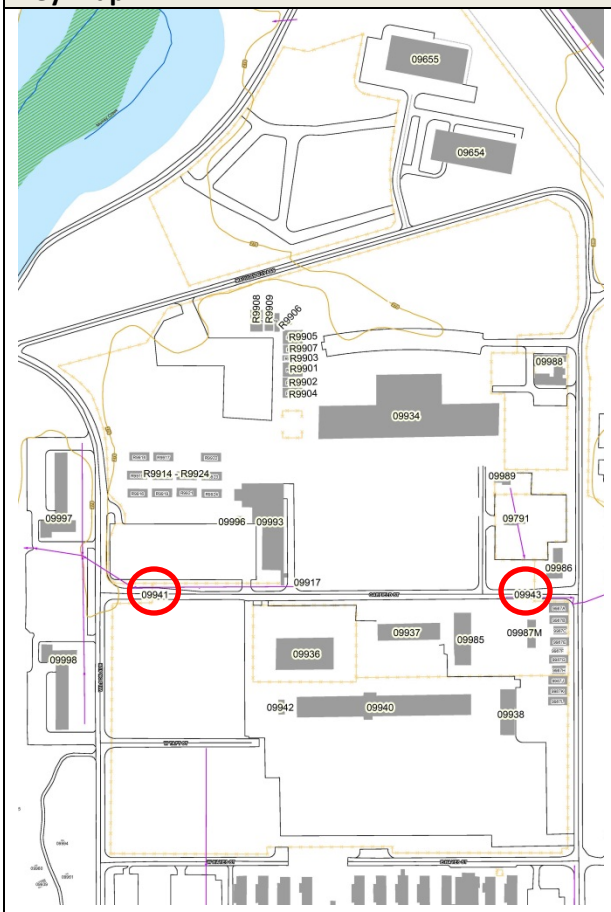
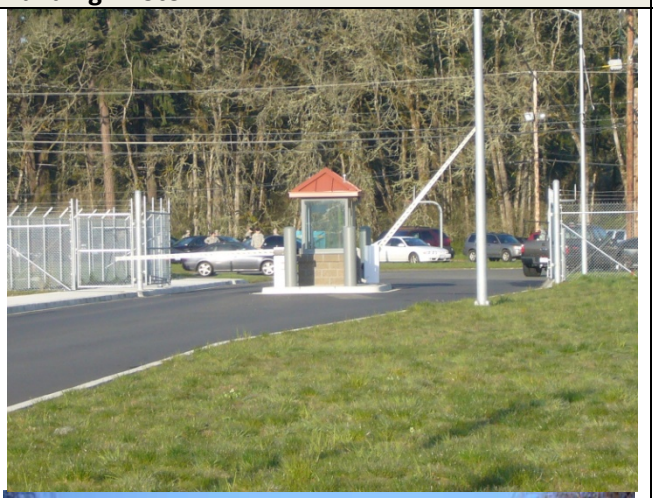
Key Map:	Building Photo:
	

Building Information:	
Year Built:	1987
Square Footage (SF):	n/a
Building Use:	Storm water facility/oil water separator
Who Occupies:	1st SFG
Construction Type:	
Recommendation:	Existing Facility to Remain

East Compound Existing Building Facility Map

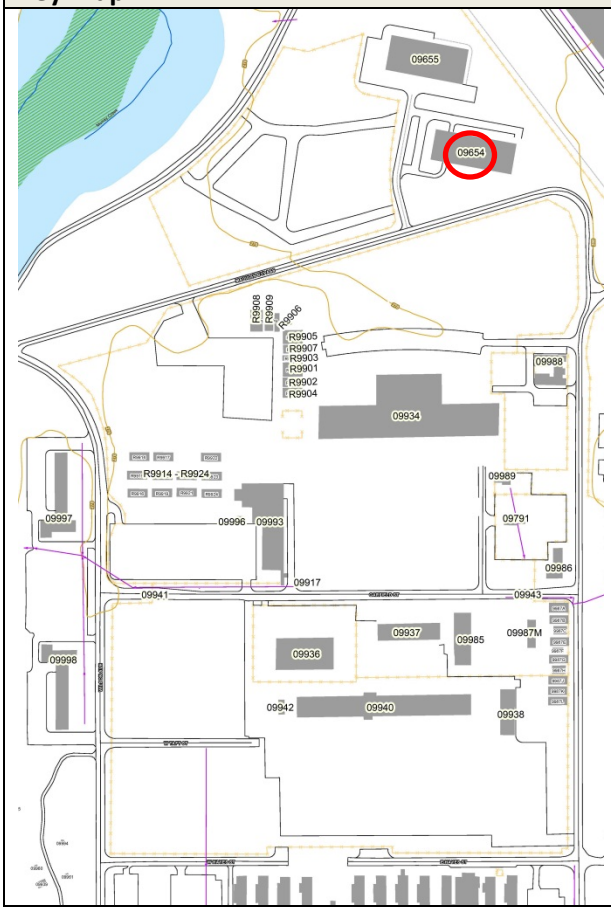


East Compound: BN 9941 & 9943

Key Map:	Building Photo:
	

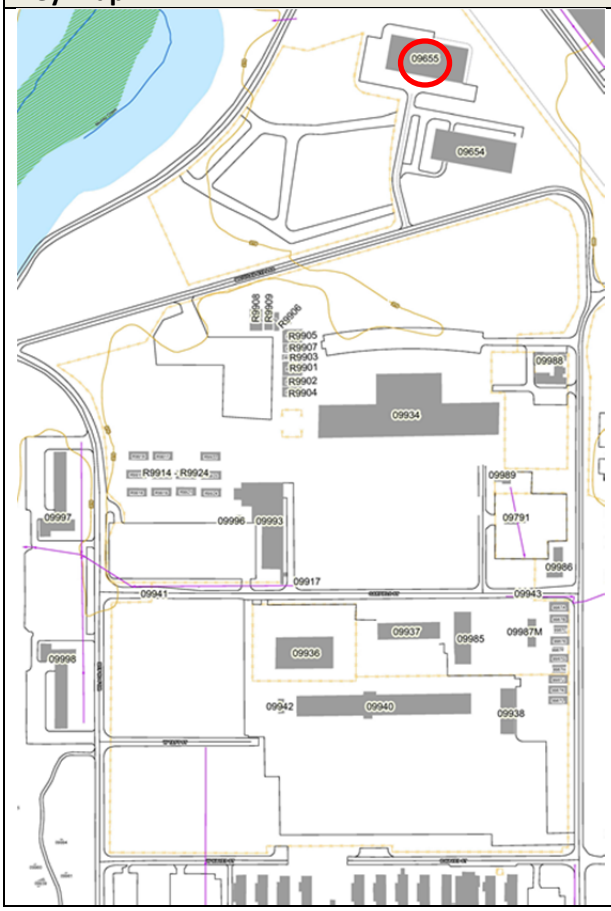
Building Information:	
Year Built:	unknown
Square Footage (SF):	unknown
Building Use:	Security Guard Stations
Who Occupies:	1st SFG
Construction Type:	CMU construction with steel roof
Recommendation:	Existing Buildings to Remain

East Compound: BN 9654

Key Map:	Building Photo:
	

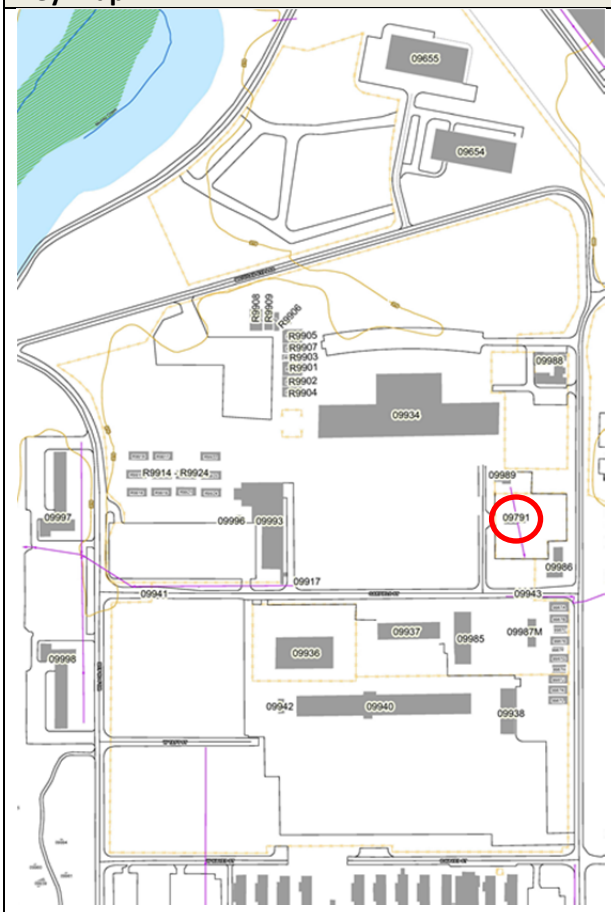
Building Information:	
Year Built:	2010
Square Footage (SF):	25,860
Building Use:	Indoor Firing Range
Who Occupies:	1st SFG
Construction Type:	Reinforced concrete construction with shingle roof
Recommendation:	Existing Building to Remain

East Compound: BN 9655

Key Map:	Building Photo:
	

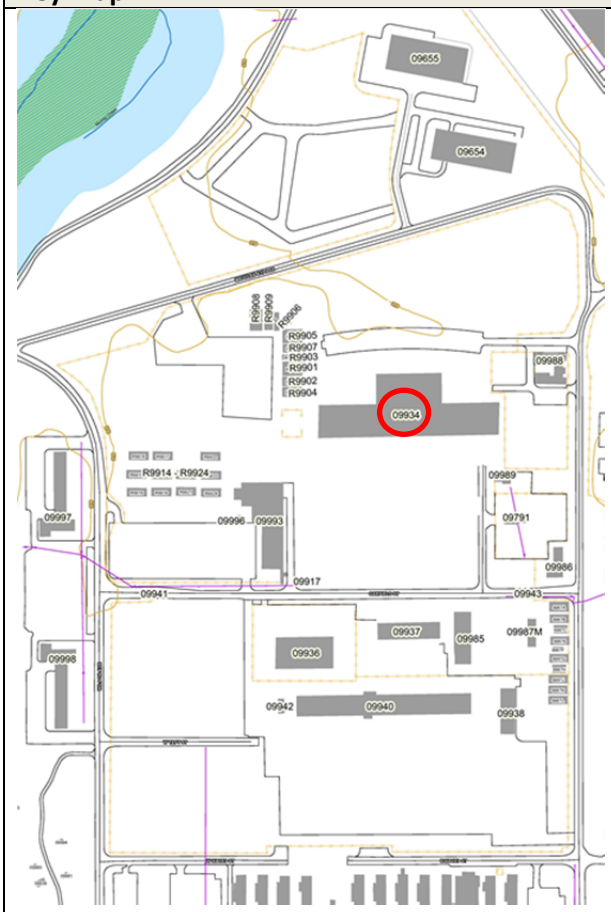
Building Information:	
Year Built:	2008
Square Footage (SF):	28,793
Building Use:	Warehouse
Who Occupies:	1st SFG
Construction Type:	Steel siding construction with steel roof
Recommendation:	Existing Building to Remain

East Compound: BN 9791

Key Map:	Building Photo:
	

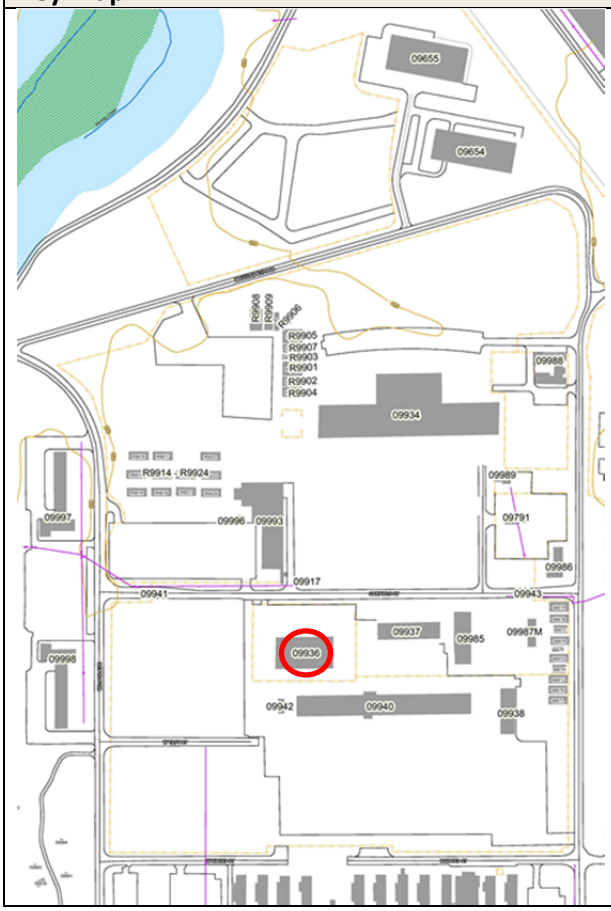
Building Information:	
Year Built:	1943
Square Footage (SF):	1,861
Building Use:	Alternate Fuel Point (Propane)
Who Occupies:	JBLM
Construction Type:	Brick construction with steel roof
Recommendation:	Demo Phase 1

East Compound: BN 9934

Key Map:	Building Photo:
	

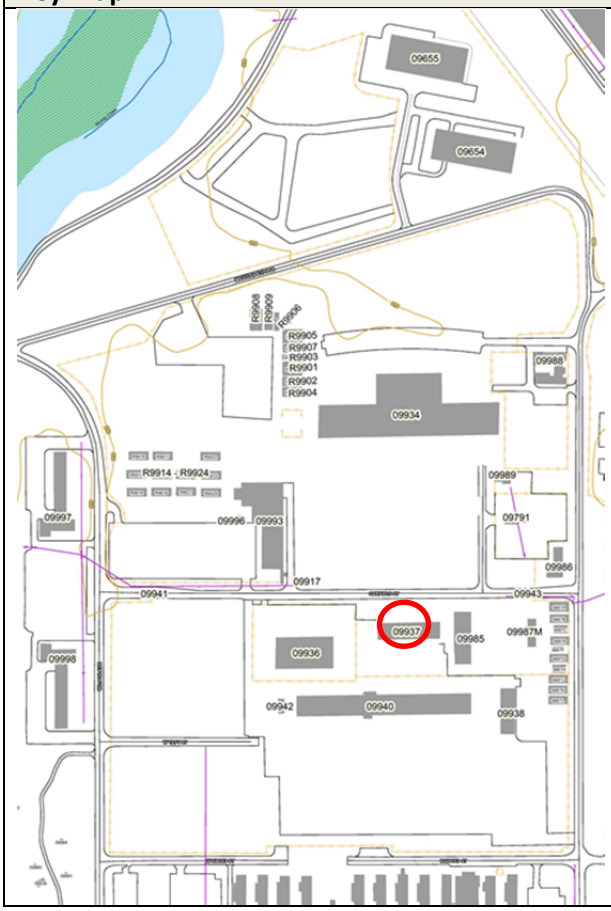
Building Information:	
Year Built:	FY08 (move in 2010)
Square Footage (SF):	120,000 SF
Building Use:	Battalion Operations Facility (BOF)
Who Occupies:	4th BN, 1st SFG
Construction Type:	Brick and CMU construction with steel roof. 2-Story
Recommendation:	Existing Building to Remain

East Compound: BN 9936

Key Map:	Building Photo:
	

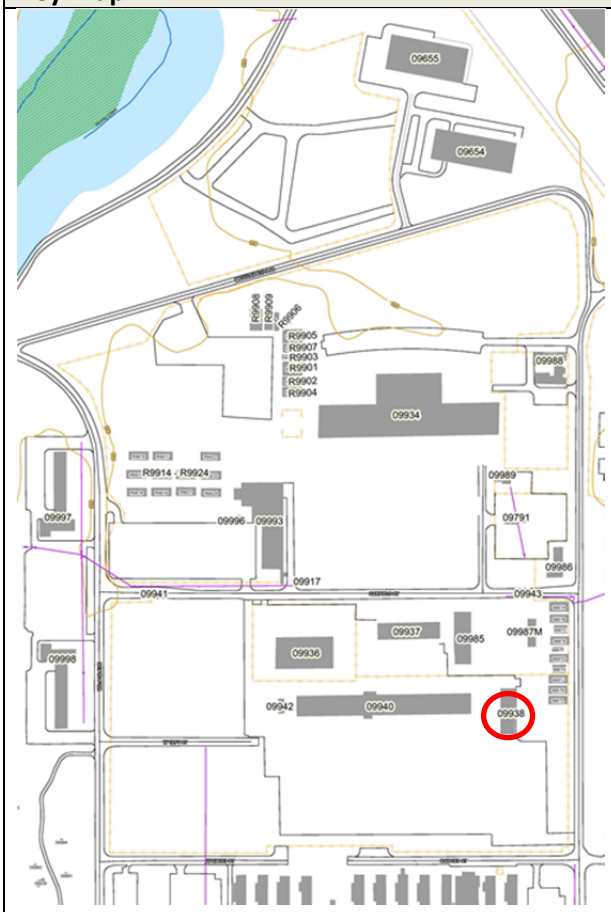
Building Information:	
Year Built:	2010
Square Footage (SF):	15,509
Building Use:	Maritime Operations Building (MAROPS)
Who Occupies:	MAROPS, 1st SFG
Construction Type:	Steel siding and CMU construction with steel roof
Recommendation:	Existing Building to Remain

East Compound: BN 9937

Key Map:	Building Photo:
	

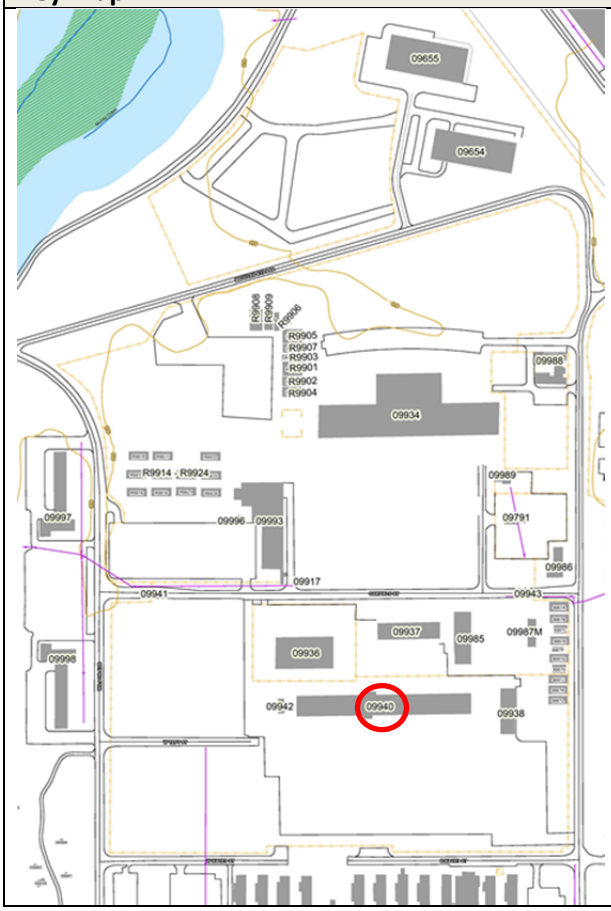
Building Information:	
Year Built:	Completed 2010
Square Footage (SF):	38,994
Building Use:	FSC/GSB Headquarters
Who Occupies:	GSB, 1st SFG
Construction Type:	Steel siding, brick and CMU construction with steel roof. 2-Story
Recommendation:	Existing Building to Remain

East Compound: BN 9938

Key Map:	Building Photo:
	

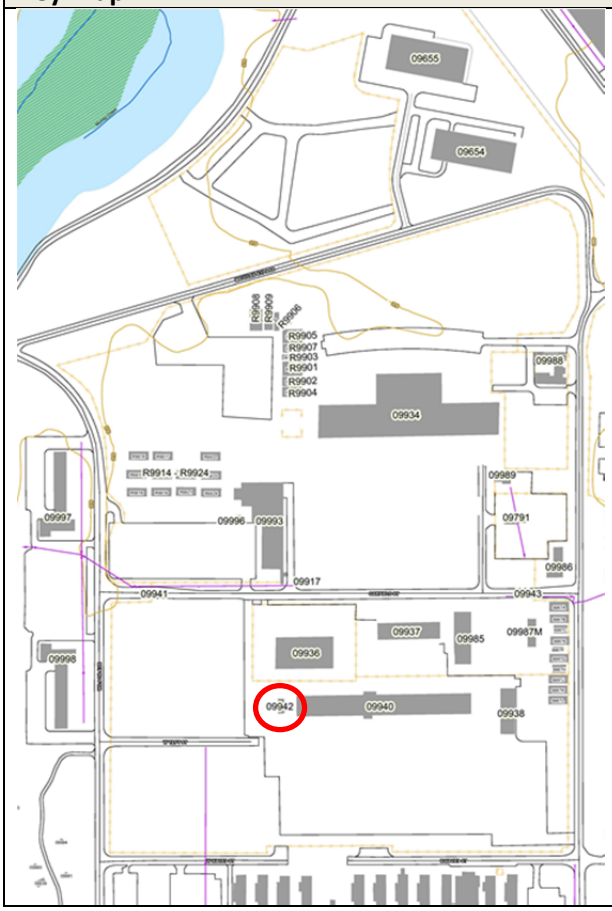
Building Information:	
Year Built:	2010
Square Footage (SF):	6,615
Building Use:	Hazardous Materials Storage
Who Occupies:	1st SFG
Construction Type:	Steel siding and CMU construction with steel roof
Recommendation:	Existing Building to Remain

East Compound: BN 9940

Key Map:	Building Photo:
	

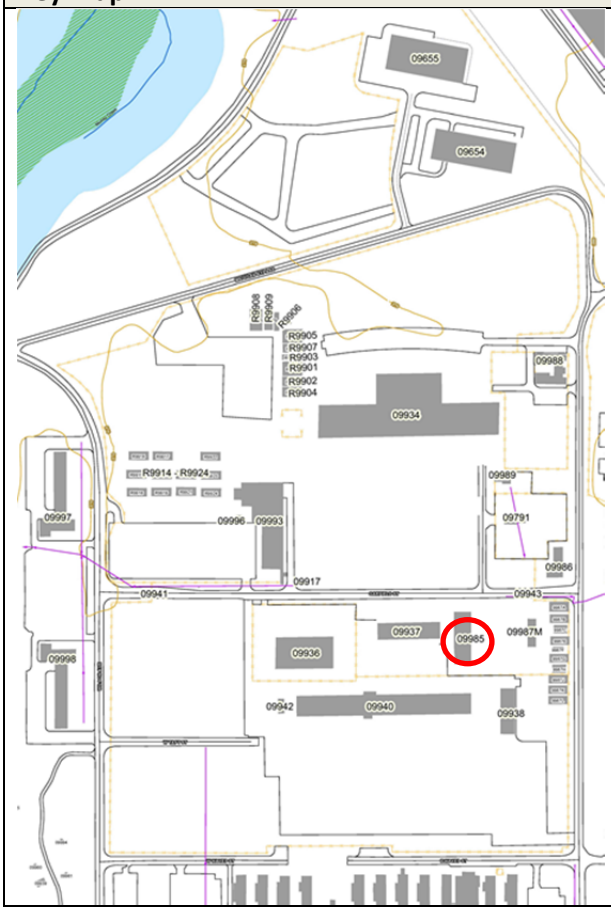
Building Information:	
Year Built:	2010
Square Footage (SF):	45,088
Building Use:	Tactical Equipment Maintenance Facility (TEMF)
Who Occupies:	GSB/4th BN, 1st SFG
Construction Type:	Steel siding and CMU construction with steel roof
Recommendation:	Existing Building to Remain

East Compound: BN 9942

Key Map:	Building Photo:
	

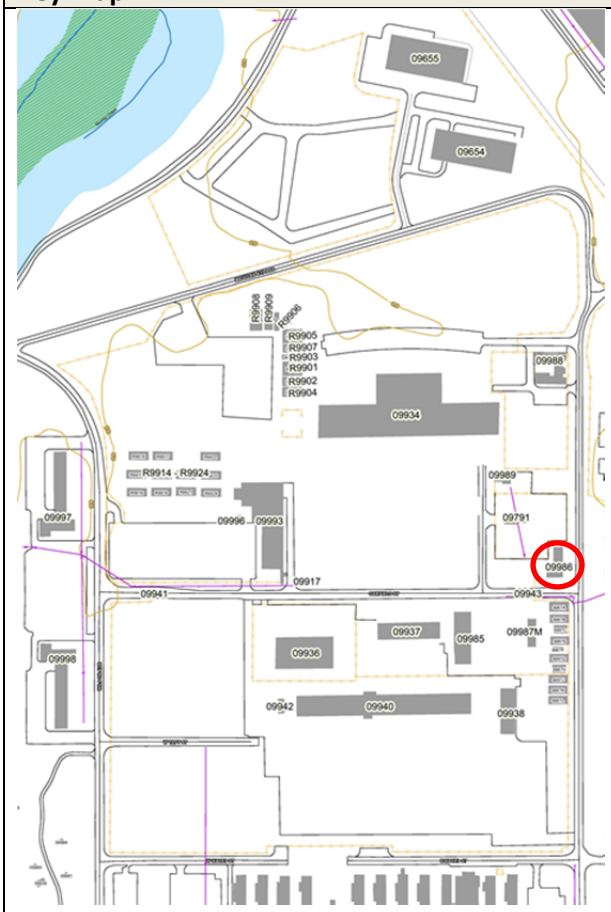
Building Information:	
Year Built:	2010
Square Footage (SF):	1,009
Building Use:	Oil Storage Building
Who Occupies:	GSB , 1st SFG
Construction Type:	Steel siding and CMU construction with steel roof
Recommendation:	Existing Building to Remain

East Compound: BN 9985

Key Map:	Building Photo:
	

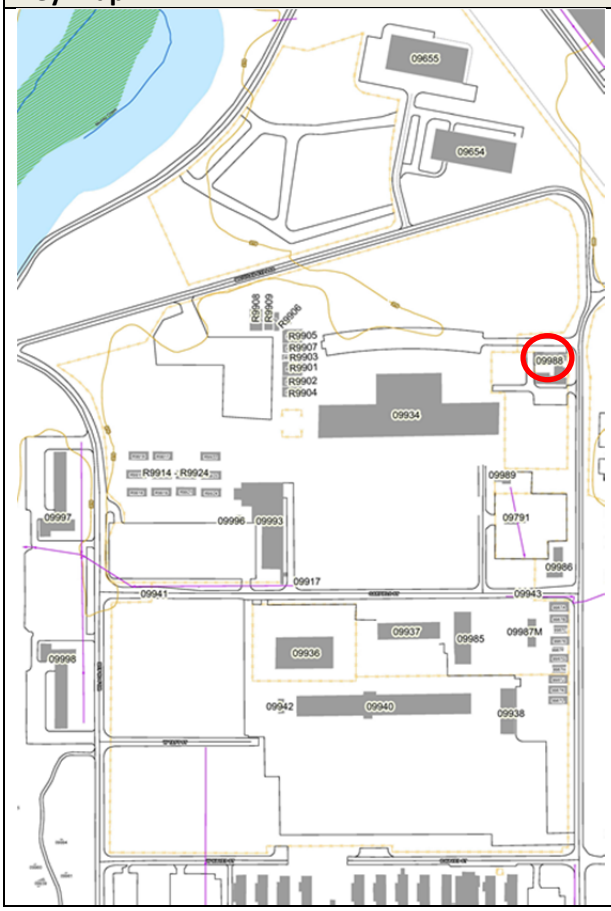
Building Information:	
Year Built:	1943
Square Footage (SF):	7,956
Building Use:	FE Facility - Madigan Woodshop
Who Occupies:	Madigan
Construction Type:	Brick construction with steel roof.
Recommendation:	Demo. Relocation not identified on plan.

East Compound: BN 9986

Key Map:	Building Photo:
	

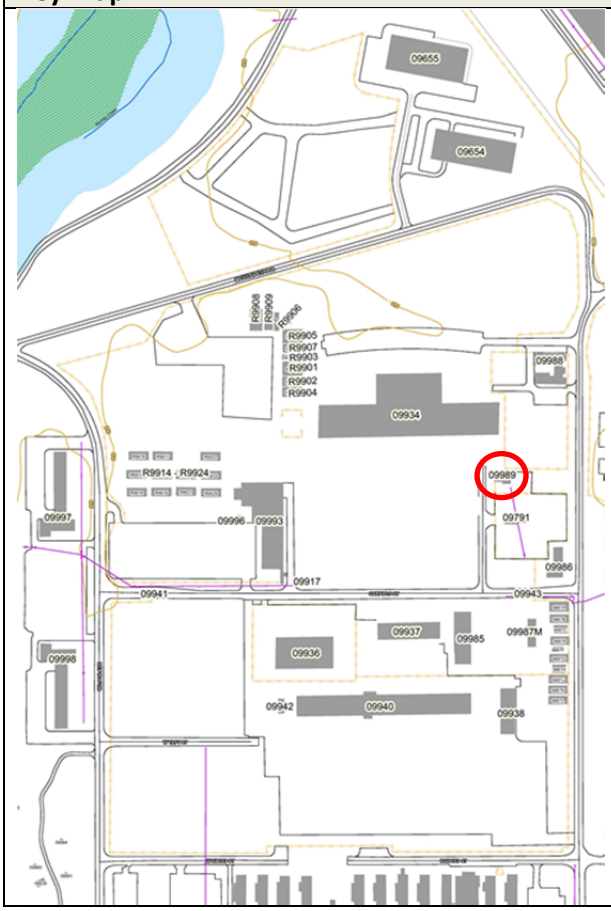
Building Information:	
Year Built:	1943
Square Footage (SF):	3,763
Building Use:	Fire Station
Who Occupies:	JBLM
Construction Type:	Brick Construction
Recommendation:	Future demo anticipated. Relocation not identified in plan.

East Compound: BN 9988

Key Map:	Building Photo:
	

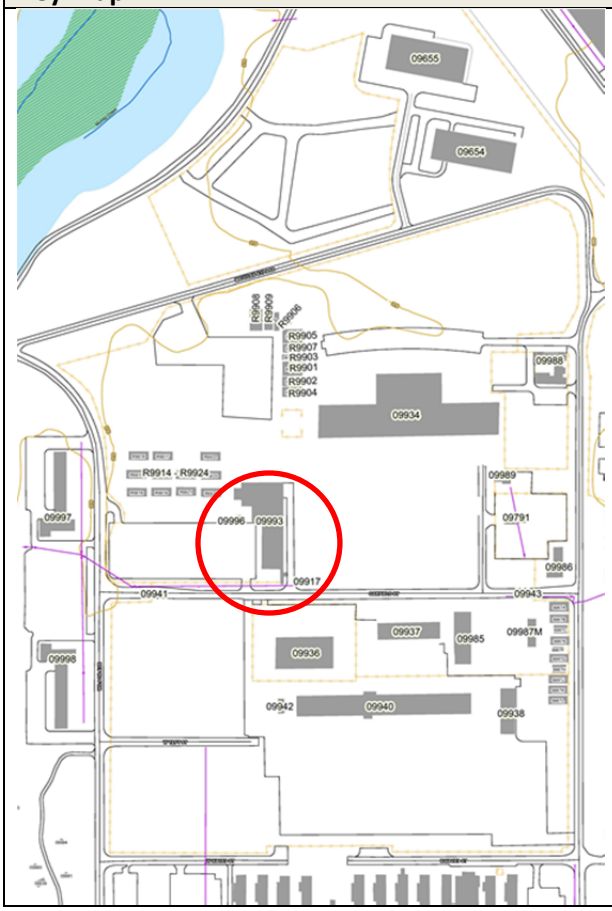
Building Information:	
Year Built:	1943
Square Footage (SF):	5,440
Building Use:	Veterinary Facility/Working Dog Kennel
Who Occupies:	1st SFG
Construction Type:	Wood Siding Construction
Recommendation:	Demo Phase 1

East Compound: BN 9989

Key Map:	Building Photo:
	

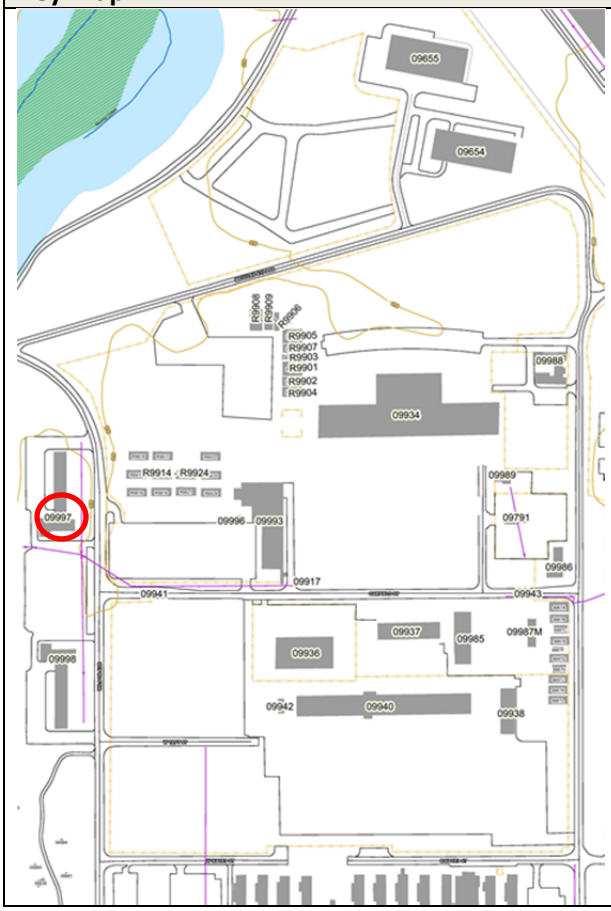
Building Information:	
Year Built:	unknown
Square Footage (SF):	1,786
Building Use:	Equipment Storage
Who Occupies:	JBLM
Construction Type:	Steel Siding Construction
Recommendation:	Demo Phase 1

East Compound: BN 9993, 9996 and 9917

Key Map:	Building Photo:
	

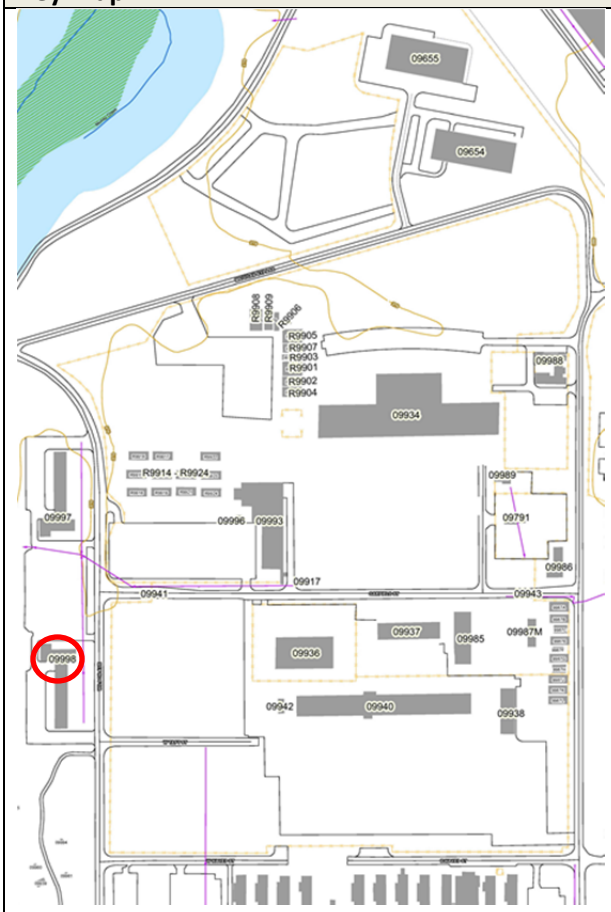
Building Information:	
Year Built:	1943
Square Footage (SF):	27,268
Building Use:	Keeler Gym
Who Occupies:	JBLM MWR
Construction Type:	Brick Construction
Recommendation:	Future Demo Anticipated. Relocation not Identified on Plan.

East Compound: BN 9997

Key Map:	Building Photo:
	

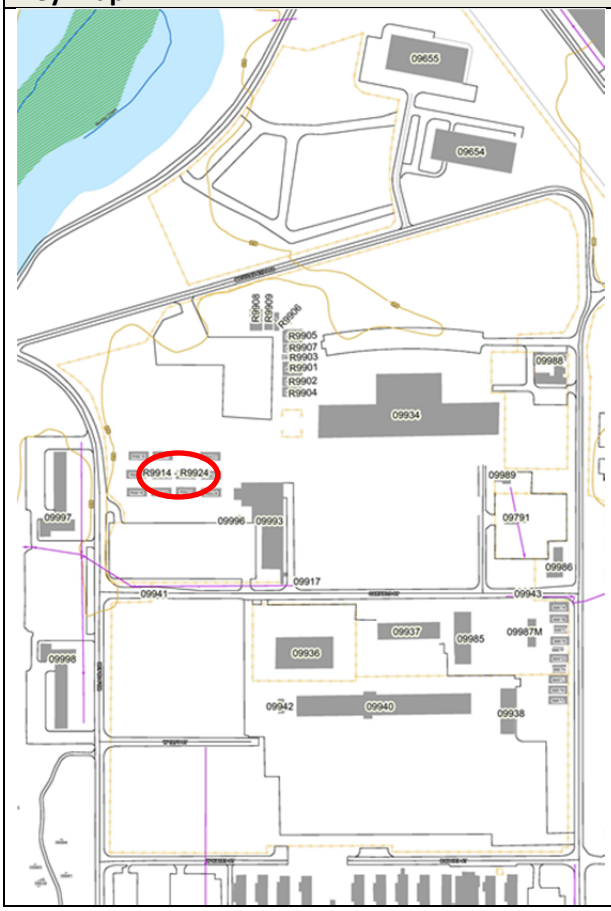
Building Information:	
Year Built:	unknown
Square Footage (SF):	13,776
Building Use:	Madigan Barracks
Who Occupies:	Madigan Hospital
Construction Type:	CMU Construction
Recommendation:	Demo Phase 4

East Compound: BN 9998

Key Map:	Building Photo:
	

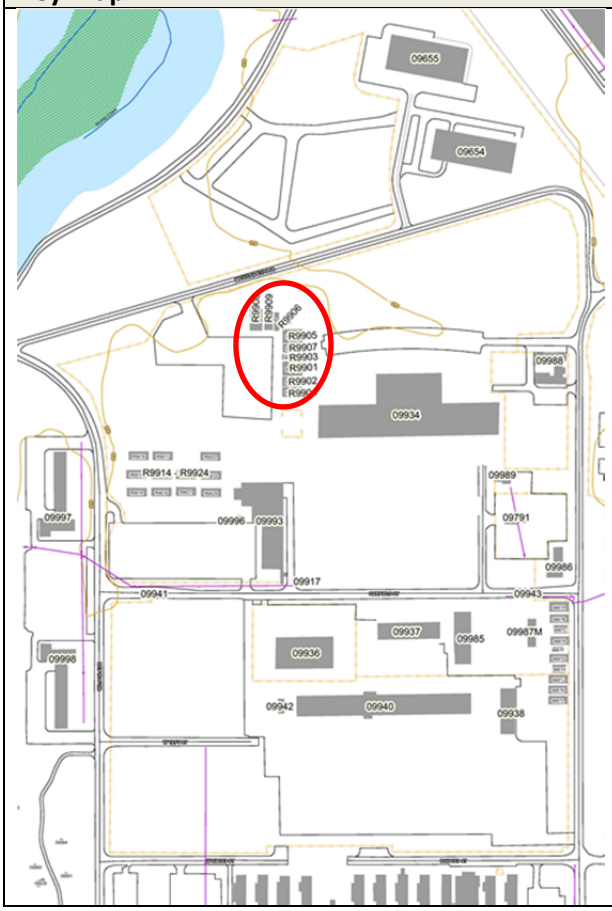
Building Information:	
Year Built:	unknown
Square Footage (SF):	13,727
Building Use:	Madigan Barracks
Who Occupies:	Madigan Hospital
Construction Type:	CMU Construction
Recommendation:	Demo Phase 4

East Compound: BNR9914-9924

Key Map:	Building Photo:
	

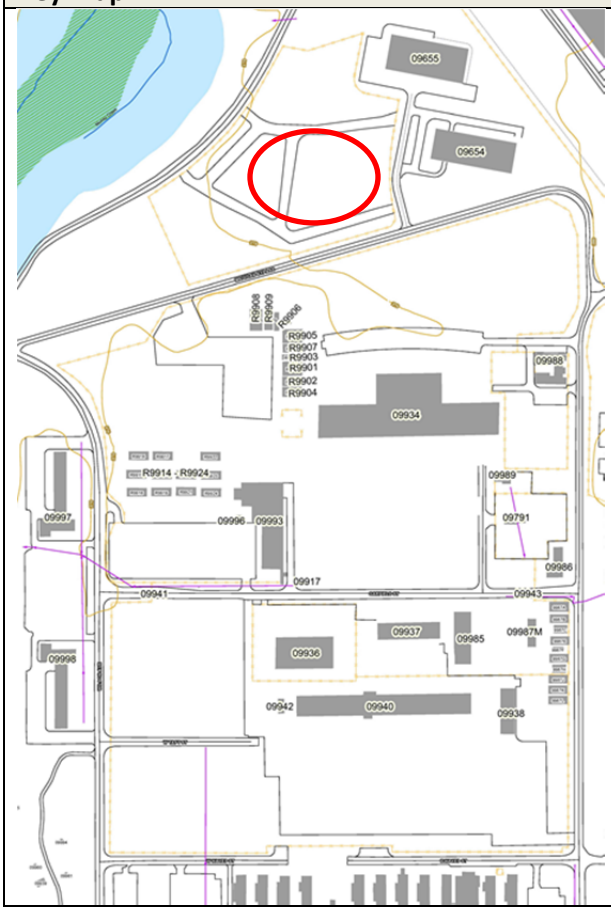
Building Information:	
Year Built:	2005
Square Footage (SF):	1744 each – 11 buildings
Building Use:	unknown
Who Occupies:	JBLM
Construction Type:	Portable Buildings - Relocatables
Recommendation:	Demo Phase 1. Relocation not Identified on Plan.

East Compound: BNR9901-9909

Key Map:	Building Photo:
	

Building Information:	
Year Built:	unknown
Square Footage (SF):	SF varies each – 9 buildings
Building Use:	unknown
Who Occupies:	JBLM
Construction Type:	Portable Buildings - Relocatables
Recommendation:	Demo Phase 1. Relocation not Identified on Plan.

East Compound: Mil Van Yard

Key Map:	Building Photo:
	

Building Information:	
Year Built:	unknown
Square Footage (SF):	unknown
Building Use:	Storage yard with containers
Who Occupies:	1st SFG
Construction Type:	Gravel
Recommendation:	Relocate as needed per phasing

Appendix E

Correspondence

Rogers, Juanita

From: Ennis, Morgan E NWS <Morgan.E.Ennis@usace.army.mil>
Sent: Friday, September 16, 2011 2:31 PM
To: Rogers, Juanita
Cc: Brown, Fredrick NWS; Zumut, Ruba
Subject: RE: 1st SFG Master Plan review (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Juanita,

The changes look great - particularly the storm water write up. Thank you for your hard work on this!

Just as a reminder, when you mail the final deliverables to the USACE office, please include copies of all drawings used to create the report. This includes all CAD drawings, packaged InDesign files with all referenced images, 3-D model files, etc.

Fred - Unless you have any objections, we are ready to go to print and will mail the final posters, reports, and cd's to the distribution list.

Thanks again,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Friday, September 16, 2011 9:45 AM
To: Ennis, Morgan E NWS
Cc: Brown, Fredrick NWS; Zumut, Ruba
Subject: RE: 1st SFG Master Plan review (UNCLASSIFIED)

Morning Morgan,

Attached revised sections (parking, stormwater, and conclusions) and maps of the SFG Master Plan for your review and approval. In order to save time in the download process, I sent you just the edited sections. I will be doing a final review prior to printing to make sure all pages and figures are correct since we added a couple things. Let me know if you have any questions.

Juanita

-----Original Message-----
From: Ennis, Morgan E NWS [mailto:Morgan.E.Ennis@usace.army.mil]
Sent: Wednesday, September 14, 2011 3:10 PM
To: Rogers, Juanita
Cc: Brown, Fredrick NWS; Zumut, Ruba
Subject: RE: 1st SFG Master Plan review (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Thanks Juanita. Just a few things:

1) Parking - Please ensure that each phase has at least the minimum number of stalls required planned to be built in that phase. If 26 more stalls are required for phase 4 for example, they should be included in phase 4 and not a future phase.

2) Distribution list -

John Graf (Air Traffic & Airspace, not DES or AT&T) has been replaced by Robert Bright Lana Leiding is the Sustainability Advocate (Not Fire) Lou Feller (NWAO) has been replaced by Jason Ritter

Thanks for your help,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Tuesday, September 13, 2011 5:54 PM
To: Ennis, Morgan E NWS
Cc: Brown, Fredrick NWS; Zumut, Ruba
Subject: 1st SFG Master Plan review

Morgan,

My comments are below in red in response to your review of the 1st SFG Master Plan. I will provide you with clarification of stormwater tomorrow and have Mithun work on map edits. A final electronic copy will be available Friday morning for approval prior to production. Let me know if you have additional questions.

Juanita

Morgan's Review comments:

1) Page 11 - There is a big space at the top of the page. Please make the formatting on this page consistent. Will adjust formatting.

2) Page 23 - There is a primary gate at the intersection of Jackson Ave and Wilson Ave. In its' current location, wouldn't that gate restrict access to the Madigan Bypass for non SF folks trying to get to the Logistics Center, Family Housing, etc? No a gate at this location. Will modify.

3) Page 25 - Are round a bouts planned on Jackson Ave at the intersections with Transmission Line Rd and the New Madigan Bypass? These intersections are outside of the project area and were meant to show conditions proposed as part of the Fort Lewis Master Plan. Per that plan, a roundabout is shown at Jackson Ave and Transmission Line Road, however the roundabout shown at Madigan Bypass is a mistake and will be modified.

4) Page 35 - In the west compound are we 26 parking spaces short? Will adjust the future parking to include these parking spaces.

5) Page 63 - The discussion on stormwater is still a bit confusing to me.

It says a hydrologic analysis was completed for the worst case scenario. How many infiltration ponds did that study determine would be required, how big are they, and where are they needed? Please clarify. Sam Adams to provide clarification.

6) Pages 151 and 175 - Is the color coding for demolition? Yes the color indicated which phase for building demolition, will clarify on map.

Distribution list (#/#) represents number of CDs/Hardcopy:

(2/2) LTC Michael Sierakowski, 1st SFG

(2/2) Eric Paulson, USASOC

(2/1) Tom Tolman, DPW (Public Works)

(1) John Timmers, DPW (HVAC)

(1) Lyle Fogg, DPW (Water)

(1) Larry Mickel, DPW (Transportation)

(1) Marilyn Eleno, DPW (Structural)

(2) Bill VanHoesen (NEPA)

(1) Michael Pope, NEC

(1) IMWE-LEW-ESPM, DES (Physical Security)

(1) Tom Rudd, DPW (ATFP)

(1) Lee Jung, DPW (Interior Electrical)

(1) Jose Solis, DPW (Exterior Electrical)

(1) Lana Leiding, Fire

(1) John Graf, DES (AT&T)

(1) Jim Gustin, DPW (Emergency Services)

(1) Schrader, DPW (JBLM Safety)

(1) Velez, DPW (Public Works)

(1) Ramsey, DPW (Life Safety)

(1) Joe Gibbens, DPW (Stormwater)

(1) Ron Hernandez, DPW (Barracks Furniture)

(1) Mike Clidas, DPTMS

(1) Tom Nevares, DOL

(1) Robert Wind, DPW (Residential Communities)

(1) Denis Senftner/Scott Ballentine, FMWR

(1) Mark Brown, DHR

(1) Mike Carico, MAMC

(3/3) Lou Feller, NWAO

(2/2) Victor Ramos/Fred Brown/Morgan Ennis, Seattle District

(1) John Sly Jr., DPW (Operations)

Total = 37 CDs and 10 Hardcopies

_____

Juanita Rogers
Associate Planner/Landscape Designer
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http://www.abam.com

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Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Rogers, Juanita

From: Ennis, Morgan E NWS <Morgan.E.Ennis@usace.army.mil>
Sent: Friday, August 26, 2011 2:51 PM
To: Rogers, Juanita
Cc: Zumut, Ruba; Brown, Fredrick NWS
Subject: RE: 1st SFG Master Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Juanita,

Sounds good. If a revised final report is required due to changes, I request that an electronic copy be available by 8 am on 16 Sept. I will review it and get it back to you by the end of the day so production can begin.
Otherwise I will be back 4 Oct.

Thanks,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Friday, August 26, 2011 1:01 PM
To: Ennis, Morgan E NWS
Cc: Zumut, Ruba; Brown, Fredrick NWS
Subject: RE: 1st SFG Master Plan (UNCLASSIFIED)

Morgan,

I will have the electronic copy to everyone the morning of the Sept. 9th and any revisions to the graphics will be complete and ready for review by the 16th. The following week will be mainly for production of documents and CDs.

Juanita

-----Original Message-----
From: Ennis, Morgan E NWS [mailto:Morgan.E.Ennis@usace.army.mil]
Sent: Friday, August 26, 2011 12:54 PM
To: Rogers, Juanita
Cc: Zumut, Ruba; Brown, Fredrick NWS
Subject: RE: 1st SFG Master Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Juanita,

Sounds good to me, as long as we receive the electronic copy first thing in the morning on 9 Sept.

The only snag is I will be out of the office 19 Sept - 3 Oct. If there are additional changes to the graphics, I will not be able to review them until I get back.

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Friday, August 26, 2011 12:42 PM
To: Ennis, Morgan E NWS
Cc: Zumut, Ruba; Brown, Fredrick NWS
Subject: RE: 1st SFG Master Plan (UNCLASSIFIED)

Hi Morgan,

Now that we have confirmation on the plan from LTC Sierakowski, I would like to request a slight adjustment to the review schedule prior to final deliverable. I would like to send an electronic copy to you, Fred Brown, LTC Sierakowski, Grey Linzel, and Gary Stedman on Friday, Sept 9th and ask that you review and provide comments back by Tuesday, Sept. 13th. If there are no changes to the graphics, we can finalize the document and submit per original schedule with Sept. 16th for final deliverable. Changes to the graphics would shift final submittal to the following week.

Does this work for you?

Thanks
Juanita

-----Original Message-----
From: Ennis, Morgan E NWS [mailto:Morgan.E.Ennis@usace.army.mil]
Sent: Tuesday, August 23, 2011 10:07 AM
To: Rogers, Juanita
Cc: Brown, Fredrick NWS; Zumut, Ruba
Subject: RE: 1st SFG Master Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Juanita,

I've got confirmation from Grey Linzel, but not LTC Sierakowski. I want to give him time to respond since he's the project proponent. I will continue to call/email until I get an answer.

Regarding Dr Checks comments from Deborah Johnston: If Bill Van Hoesen from DPW has responded in Dr Checks with a contrary statement to what Deborah has said, please disregard Deborah's comment. Bill is the lead Environmental POC at JBLM and we need to implement an environmental plan at his direction, not Deborah's.

I will be in touch soon,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Monday, August 22, 2011 10:21 AM
To: Ennis, Morgan E NWS
Subject: RE: 1st SFG Master Plan (UNCLASSIFIED)

Morning Morgan,

Any word for LTC Sierakowski regarding the revised base drawing? If not, could you please confirm and let me know if it is ok to proceed with graphic revisions?

Also, I was able to discuss DrCheck comments with Ruba and have worked out my questions. I wanted to let you know that I would not be sending over a list for your review as I previously mentioned.

Thanks
Juanita

-----Original Message-----
From: Ennis, Morgan E NWS [mailto:Morgan.E.Ennis@usace.army.mil]
Sent: Wednesday, August 17, 2011 3:07 PM
To: Rogers, Juanita
Cc: Zumut, Ruba; Brown, Fredrick NWS
Subject: RE: 1st SFG Master Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Juanita,

I have forwarded your email below to LTC Sierakowski and am awaiting his response. As soon as I hear back I will let you know.

Could you submit a revised schedule at your earliest convenience? Prior to printing and mailing the final deliverables, please submit an electronic copy to Fred Brown, LTC Sierakowski, Grey Linzel, Gary Stedman, and myself and allow at least three business days for a final review.

Thank you for your help with this,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Wednesday, August 17, 2011 1:28 PM
To: Ennis, Morgan E NWS
Cc: Zumut, Ruba
Subject: 1st SFG Master Plan

Hi Morgan,

I have attached revised graphics for 1st SFG Master Plan for review and approval. I would like to get buy-off on the revisions prior to finalizing the graphics and narratives. Could you please forward for LTC Sierakowski's feedback? Text below summarizes changes to the plan and will be added to final report for clarification.

The final recommended Master Plan is intended to be flexible, capable of responding to future, changing needs, priorities and phasing. The Master Plan report includes a preferred plan and alternative plan demonstrating the flexibility of the plan. The essential structure of the plan is the same in both plans and the differences between the preferred plan and alternative plan are described below.

In the Preferred Plan, the future Battalion Operations (BnOps) complex is sited on the West Compound and the SOF Logistics Facility and the SOF Deployment Warehouse are sited on the East Compound on the existing Madigan Barracks site. The Madigan Barracks site is somewhat constrained by the proximity of wetlands on the western edge of the site. The size of hardstand serving the proposed Logistics Facility and the Deployment Warehouse may be restricted. The site must be carefully evaluated at the time the two facilities come on-line for construction. Program, building sizes and configuration should be confirmed; setbacks and security fencing, impacts on open space and wetlands, required maneuvering of vehicles, and parking needs along with other issues should be considered.

In the Alternate Plan, the future BnOps complex is sited on the East Compound near the existing FY08 BnOps and the SOF Logistics Facility and the SOF Deployment Warehouse is sited on the West Compound. The alternative plan will be considered if the Madigan Barracks site does not become available for new development. This plan would likely require the addition of a parking structure to meet POV parking needs. The parking structure site envelope illustrated east of Wilson Avenue could accommodate 1020 cars at 3 levels,
1360 at 4 levels and 1700 at 5 levels.

If everything looks good with the graphics attached, we can make the edits and submit the final document on Sept 12th. Is this expectable?

Thanks

Juanita

_____

Juanita Rogers
Associate Planner/Landscape Designer
Voice 360/823-6118
Fax 360/823-6101
Email juanita.rogers@abam.com

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Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Rogers, Juanita

From: Ennis, Morgan E NWS <Morgan.E.Ennis@usace.army.mil>
Sent: Thursday, August 25, 2011 8:11 AM
To: Rogers, Juanita
Cc: Zumut, Ruba; Brown, Fredrick NWS
Subject: FW: 1st SFG Master Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Juanita,

I got confirmation from LTC Sierakowski this morning. Please press ahead with the changes to the 1SFG master plan.

Regards,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Sierakowski Michael R LTC (1SFG) [mailto:michael.sierakowski@soc.mil]
Sent: Wednesday, August 24, 2011 3:41 PM
To: Ennis, Morgan E NWS
Subject: RE: 1st SFG Master Plan (UNCLASSIFIED)

Ennis,

The plans look good and I appreciate all your efforts.

MICHAEL R. SIERAKOWSKI
LTC, EN
Group Engineer
1st Special Forces Group (Airborne)
Box 339502
Fort Lewis, WA 98433-9500
michael.sierakowski@soc.mil
michael.sierakowski@us.army.mil
Office: 253-967-8670

-----Original Message-----
From: Ennis, Morgan E NWS [mailto:Morgan.E.Ennis@usace.army.mil]
Sent: Wednesday, August 17, 2011 3:09 PM
To: Sierakowski Michael R LTC (1SFG)
Cc: Brown, Fredrick NWS; Linzel Jesse G MR (USASOC)
Subject: FW: 1st SFG Master Plan (UNCLASSIFIED)
Importance: High

Classification: UNCLASSIFIED
Caveats: NONE

LTC Sierakowski,

Please see the email below from Juanita Rogers regarding the mod to the 1SFG master plan. They are providing a preferred "future phase" as well as an alternative plan in case the Madigan barrack site does not become available (see attached graphics.) Please review and confirm that these plans are the way you'd like to see them, before the team revises the report graphics. The A-E is hoping to deliver the final report 12 Sept and is hoping to get confirmation from you as soon as possible so they can move forward.

Please let me know if you have any questions.

Regards,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Wednesday, August 17, 2011 1:28 PM
To: Ennis, Morgan E NWS
Cc: Zumut, Ruba
Subject: 1st SFG Master Plan

Hi Morgan,

I have attached revised graphics for 1st SFG Master Plan for review and approval. I would like to get buy-off on the revisions prior to finalizing the graphics and narratives. Could you please forward for LTC Sierakowski's feedback? Text below summarizes changes to the plan and will be added to final report for clarification.

The final recommended Master Plan is intended to be flexible, capable of responding to future, changing needs, priorities and phasing. The Master Plan report includes a preferred plan and alternative plan demonstrating the flexibility of the plan. The essential structure of the plan is the same in both plans and the differences between the preferred plan and alternative plan are described below.

In the Preferred Plan, the future Battalion Operations (BnOps) complex is sited on the West Compound and the SOF Logistics Facility and the SOF Deployment Warehouse are sited on the East Compound on the existing Madigan Barracks site. The Madigan Barracks site is somewhat constrained by the proximity of wetlands on the western edge of the site. The size of hardstand serving the proposed Logistics Facility and the Deployment Warehouse may be restricted. The site must be carefully evaluated at the time the two facilities come on-line for construction. Program, building sizes and configuration should be confirmed; setbacks and security fencing, impacts on open space and wetlands, required maneuvering of vehicles, and parking needs along with other issues should be considered.

In the Alternate Plan, the future BnOps complex is sited on the East Compound near the existing FY08 BnOps and the SOF Logistics Facility and the SOF Deployment Warehouse is sited on the West Compound. The alternative plan will be considered if the Madigan Barracks site does not become available for new development. This plan would likely require the addition of a parking structure to meet POV parking needs. The parking structure site envelope illustrated east of Wilson Avenue could accommodate 1020 cars at 3 levels, 1360 at 4 levels and 1700 at 5 levels.

If everything looks good with the graphics attached, we can make the edits and submit the final document on Sept 12th. Is this expectable?

Thanks

Juanita

_____

Juanita Rogers
Associate Planner/Landscape Designer
Voice 360/823-6118
Fax 360/823-6101
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Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Rogers, Juanita

From: Ennis, Morgan E NWS <Morgan.E.Ennis@usace.army.mil>
Sent: Wednesday, June 01, 2011 11:23 AM
To: Zumut, Ruba
Cc: Rogers, Juanita
Subject: Mod to 1SFG Master plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Ruba,

LTC Sierakowski wants to go ahead with the mod to the 1SFG master plan. Fred is checking on capacity with Anil as we speak. As soon as we hear from him I will let you know.

Regards,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

Classification: UNCLASSIFIED
Caveats: NONE

Rogers, Juanita

From: Ennis, Morgan E NWS <Morgan.E.Ennis@usace.army.mil>
Sent: Tuesday, May 17, 2011 11:13 AM
To: Rogers, Juanita; Zumut, Ruba
Cc: Brown, Fredrick NWS
Subject: RE: 1st SFG insignia (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Juanita,

My apologies for not getting back to you sooner. I was TDY last week and did not have much access to email.

Since LTC Sierakowski's decision will require a bit of work to make the changes to all of the drawings, would your team require a mod to the contract? If so I will need to see if additional funds are available.

Regards,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Monday, May 16, 2011 8:16 AM
To: Zumut, Ruba; Ennis, Morgan E NWS
Subject: Fwd: 1st SFG insignia

Morning Ruba and Morgan,

Email below is feedback from LTC Sierakowski regarding the location of future BOF and Logistic/Deployment warehouses. Please review and let me know if and how we should change plans.

We originally showed the warehouses at the Madigan barracks site but then shifted to be on the West compound due to the unknown timing of demo for barracks. The report does address the desire to have them at the Madigan site.

However, with the larger footprint for the warehouses, we cannot show both the warehouses and future BOF on West Compound on plan as currently shown.
Please advise.

Thx

Juanita

Sent from my HTC on the Now Network from Sprint!

----- Forwarded message -----
From: "Sierakowski Michael R LTC (1SFG)" <michael.sierakowski@soc.mil>
Date: Thu, May 12, 2011 4:57 pm
Subject: 1st SFG insignia
To: "Rogers, Juanita" <Juanita.Rogers@abam.com>

Juanita,

I prefer Option1_FutureBOF_West as the primary course of action, however I think we need to write in the masterplan a contingency incase the installation reneges on their promise to give me the old hammer head barracks.

Coarse of Action 2 would be to use Option 2 with the Logistics facility and Deployment Warehouse on the West Compound and the Additional BOF, TEMF and Parking Structure on the East Compound. Switch the location of the Log Fac with the Deploy Warehouse.

Thanks,

MICHAEL R. SIERAKOWSKI

LTC, EN

Group Engineer

1st Special Forces Group (Airborne)

Box 339502

Fort Lewis, WA 98433-9500

michael.sierakowski@soc.mil

michael.sierakowski@us.army.mil

Office: 253-967-8670

From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Thursday, May 05, 2011 2:21 PM
To: Sierakowski Michael R LTC (1SFG)
Cc: Ennis, Morgan E NWS; Zumut, Ruba
Subject: RE: 1st SFG insignia

LTC Sierakowski,

Please forgive the rough sketches, but I wanted to lay out the options that were discussed before for your review. In order to have the larger footprints for the Deployment and Logistic facilities, it becomes an 'either or' on the West Compound between the two warehouse buildings and the Future BOF/TEMF. I have sketched two options which are outlined below and attached.

Option 1:

* Future BOF on West Compound

* Deployment and Logistic Facility to the East Compound where the existing Madigan Barracks are currently located. I am not sure this option has sufficient space to accommodate outdoor storage and work space.

Option 2:

* Deployment and Logistic Facilities on West Compound

* Future BOF on the East Compound located at existing FY08 BOF parking. This option does require a shift in the FY12 COF toward McKinley to allow sufficient room for hardstand. If this option is preferred, we would need to incorporate this shift in the current planning efforts to make sure the future layout would work.

* A future parking structure would most likely be needed for this scenario to handle parking requirements.

* Question: Would both the GSTB and the Future BOF would require a TEMF? If so, with the added parking structure, flat surface parking can be converted to make space for an additional TEMF (only one shown).

* I am not sure how we would show this option on the final plan

because it requires a shift in uses. It might be best to have a separate sketch from the Final Master Plan showing the development needed for Future BOF.

I know you have been gone the last couple of weeks and unable to review the plan and provide comments. Let me know if you need additional time to review.
The Final Master Plan should reflect what you need to be shown for future development. However, please understand that additional time and effort would be needed if we change from the plan as it is shown currently. Please review and then we can discuss further.

Morgan and Ruba, please review and provide your feedback.

Juanita

From: Sierakowski Michael R LTC (1SFG) [mailto:michael.sierakowski@soc.mil]
Sent: Thursday, May 05, 2011 9:58 AM
To: Rogers, Juanita
Subject: RE: 1st SFG insignia

Is there space on the east compound to adequately site another BOF and TEMF on the East Side?

Sizing of the logistics facility and deployment warehouse should be shown at the larger footprint. Another option might be to provide 5 - 10,000sf Deployment Warehouses near each BOF. One for each Battalion. I will have to do some sand table exercises to see what will fit.

MICHAEL R. SIERAKOWSKI

LTC, EN

Group Engineer

1st Special Forces Group (Airborne)

Box 339502

Fort Lewis, WA 98433-9500

michael.sierakowski@soc.mil

michael.sierakowski@us.army.mil

Office: 253-967-8670

From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Thursday, May 05, 2011 9:43 AM
To: Sierakowski Michael R LTC (1SFG)
Subject: RE: 1st SFG insignia

Nice to have you back. J Let me know if you would like additional time to review prior to me finalizing the plan.

No resolution was made on the location for the Deployment Warehouse and Logistic Facility. Currently the plan shows them on the West Compound (approx. 20,000 SF ea). This is inconsistent to the footprint you provided for this building, but is approx. the footprint size we were originally using for the Madigan barracks location. Can these buildings be multi-story? If these two facilities need to be shown at the larger footprint (50,000 SF and
54,000 SF) and on the West Compound, it would be necessary to relocate the Future BOF and BN TEMF to another location on the East Compound. Please advise.

Thank you for the insignia.

Juanita

From: Sierakowski Michael R LTC (1SFG) [mailto:michael.sierakowski@soc.mil]
Sent: Thursday, May 05, 2011 9:26 AM
To: Rogers, Juanita
Subject: RE: 1st SFG insignia

Juanita,

Graphics attached as requested. Have not had a chance to review, as I was on emergency leave the last two weeks.

Were we able to get resolution on location of the Logistics Facility and Deployment Ware house?

MICHAEL R. SIERAKOWSKI

LTC, EN

Group Engineer

1st Special Forces Group (Airborne)

Box 339502

Fort Lewis, WA 98433-9500

michael.sierakowski@soc.mil

michael.sierakowski@us.army.mil

Office: 253-967-8670

From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Thursday, May 05, 2011 9:12 AM
To: Sierakowski Michael R LTC (1SFG)
Subject: 1st SFG insignia

Morning LTC Sierakowski,

I would like to include the 1st SFG insignia on the Master Plan document, could you provide?

Also, last week I sent the updated draft plan to Morgan to distribute for internal review. Do you have any comments or feedback for me to incorporate in final plan?

Thanks

Juanita

_____

Juanita Rogers
Associate Planner/Landscape Designer
Voice 360/823-6118
Fax 360/823-6101
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Classification: UNCLASSIFIED
Caveats: NONE

Rogers, Juanita

From: Zumut, Ruba
Sent: Tuesday, April 19, 2011 3:01 PM
To: Ennis, Morgan E NWS; Brown, Fredrick NWS
Cc: Rogers, Juanita
Subject: FW: SFG MP - changes

Morgan and Fred,

LTC Sierakowski sent us new information regarding the sizes of the SOF Logistics Facilities (53,000SF) and SOF Deployment Warehouse (50,000 SF). The plans he sent show significantly larger footprint for these two facilities than currently shown on the master plan based on previous guidance.

If we are to accommodate the new footprints, the site as shown now will not accommodate all three facilities (when you add the BOF) at their full built-out in addition to the associated parking and hardstand required to support these facilities

I think we should step back and decide how to proceed with this, since we followed a systematic approach to evaluating the scope, program and master plan. The options are:

1- Stay with the developed plan using the smaller footprints and finalize the master plan
2- Allow more time to investigate the impact of these changes on the master plan and how to accommodate it. (this will require time extension and possible scope modification).

Please advise

Ruba

Ruba Zumut, PE
Senior Project Manager
Voice 206/431-2397
Cell 253/332-9897
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Rogers, Juanita

From: Ennis, Morgan E NWS <Morgan.E.Ennis@usace.army.mil>
Sent: Friday, February 18, 2011 3:06 PM
To: Rogers, Juanita
Cc: Zumut, Ruba; Brown, Fredrick NWS
Subject: RE: Schedule updates (UNCLASSIFIED)
Attachments: SFGCharrette2_draft_Ennis Comments.doc

Classification: UNCLASSIFIED
Caveats: NONE

Juanita,

Moving the draft submittal date from 2 March to 4 March is acceptable. As I mentioned in my last email, I will be out of the office 21 - 25 March so I will not be able to attend the meeting on Friday the 25th and would like to reschedule. I have also still not heard back with LTC Sierakowski, so I cannot yet confirm whether or not they can attend the review meetings.

Sorry for the delay on the meeting minutes. Attached are my comments.

Regards,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Rogers, Juanita [mailto:Juanita.Rogers@abam.com]
Sent: Friday, February 18, 2011 12:15 PM
To: Ennis, Morgan E NWS
Cc: Zumut, Ruba
Subject: Schedule updates

Hi Morgan,

Given that next week is a short week, I would like to request to stretch the submittal date from March 2nd to March 4th. This will give us a little more time to coordinate document production. If we look at the impacts to the schedule, we would shift the March 23rd date to the March 25th to allow a three weeks for the review process (Dr. Check comments) and the March 30th to April 1st for the design team to respond to comments. The Design Charrette meeting 2b would

still be scheduled for April 6th and everything else would stay the same. Can you check to make sure this will work for everyone's schedules?

Also, have you and Fred had a chance to review the meeting minutes from the Jan. 12th meeting? I would like to incorporate all the changes and get it finalized for the draft report.

Thanks

Juanita

Per Jan. 12th mtg

Adj. Schedule

Deliverables

February 4

March 4

- Draft master plan report

February 25

March 25

- Review

March 4

April 1

- Respond to Dr. Checks

March 9

April 6

- Design charrette meeting 2b (review draft report)

March 30

April 27

- Final Draft Report

April 13

May 11

- Review/Dr. Checks

May 4

June 2

- Final Deliverables

_____

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Meeting Minutes

Date: February 18, 2011
Subject: Minutes from the February 16, 2011 meeting at Fort Lewis regarding utilities at the Special Forces Compound at Old Madigan

Attendees: Sam Adams, BergerABAM
Doug Stotler, DPW
Stephanie Smith, DPW
Shawnte Anderson, PSE
Joan Bates, PSE

From: Sam Adams

To: Ruba Zumut, BergerABAM
Lyle Fogg, DPW
Stephanie Smith, DPW
Doug Stotler, DPW

Route to: Project Folder

The meeting was held at building 2012, room 116, at 9:00 AM.

1. Received maps from Stephanie Smith which showed water and sewer utilities in the East Compound that must be removed and replaced if they are disrupted by any construction activities, including making connection to any of these systems at these locations. The maps indicated areas where waterlines are asbestos concrete and sewer lines are clay. Currently, the proposed building locations will not impact any asbestos waterline piping. The proposed SOF COF may impact clay sewer lines, but many of those have been abandoned by the FY08 SOF project in the same vicinity. Will note in the Master Plan documents.

2. PSE has an 8-inch gas force main located in existing Madigan Bypass roadway. This line is a pressure main for the base, and cannot be shut down and removed. If Madigan is relocated, then PSE will need substantial lead time to plan and construct new gas main. Sam Adams will send Shawnte a map of the Madigan relocation. She will coordinate with Dana Kaul at PSE who is in charge of major gas line relocations. Will note in Master Plan documents.

3. There is a 4 inch gas line in Garfield Street. The East Compound can be fed from this line. There are no other gas line issues in the East Compound unless steam is extended into the complex; then, gas must meet separation requirements from steam, which is 50 feet. Currently, steam will not be used by new buildings.

4. There is a 4-inch gas line that extends from Transmission Line Road into Cramer Avenue and down Sansone Avenue in the West Compound. There should not be any gas line issues in the West Compound since the roadway system will remain. Any gas line removal and replacement will take place with building construction.

5. In general, West Compound utilities are newer and located in existing streets. The Master Plan keeps the existing street system, so there are no overriding issues with the Master Plan concept in the West Compound.

6. General discussion regarding gas and all the projects occurring now and in the future at JBLM. Stephanie will discuss with JBLM staff the coordination needs of PSE and projects.

7. Moving and relocating the sewer main which bisects the East Compound in the vicinity of the FY13 BOF should not be a problem. However, there is limited manhole invert elevation data in this vicinity to actually assess if the sewer line would have enough drop to be able to move the line. Sam Adams has a request into Doug Stotler to see if someone from DPW can obtain more manhole invert data, so we can verify.

The meeting ended at 10:30AM.

Rogers, Juanita

From: Ennis, Morgan E NWS <Morgan.E.Ennis@usace.army.mil>
Sent: Thursday, February 10, 2011 10:59 AM
To: Brown, Fredrick NWS; Zumut, Ruba
Cc: Rogers, Juanita; Adams, Sam
Subject: RE: Due Outs/Notes from SOF Master Plan / JB Connector Road Meeting with GC (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Ruba,

At the meeting with the GC the following things were discussed:

1) A 2 lane vehicle bridge should be shown on the master plan. Both Col Brittain and Col Weldon thought it was a good idea.

2) The realignment of the Madigan Bypass should be shown on the master plan.
Col Brittain and Col Weldon were amenable to the change as long as 1SFG agreed to pay for moving the relocatables on the East Compound, near the cultural site that is to be excavated. 1SFG is looking into procuring funding for this.

3) The deployment warehouse and logistics facility should be moved to the West Compound, near the existing TEMF. There are no plans to vacate the old Madigan barracks any time in the near future.

4) There was some discussion of 1SFG paying to build a new Fire Station and a new Gym to replace the two facilities in 1SFG's East Compound. This would potentially be funded with the additional funds in the FY13 project, but needs to be approved by USASOC first. Realistic costs need to be developed in order to see if the FY13 project can afford to absorb some or all of those costs. If the fire station and/or gym is programmed in the FY13 project, those changes will need to be included in the master plan.

5) The E-hut/RSU needs to be relocated. DPW Master Planning (Nate Harber) is looking at a new site and will provide guidance.

As Fred mentioned, LTC Sierakowski has directed us to continue working on the initial concept, and modify as required. Based on the $65 million renovation, LTC Sierakowski does not anticipate that 1SFG will receive the Old Madigan facility. Please also discuss with your team and propose a new schedule for meetings and deliverables based on the delay we encountered waiting for the meeting with the GC.

Regards,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil

206.406.3104 (Mobile)

-----Original Message-----
From: Brown, Fredrick NWS
Sent: Wednesday, February 09, 2011 3:14 PM
To: Zumut, Ruba; Ennis, Morgan E NWS
Cc: Rogers, Juanita; Adams, Sam
Subject: RE: Due Outs/Notes from SOF Master Plan / JB Connector Road Meeting with GC

Ruba,

Per discussion with LTC Sierakowski the plan is to move ahead with the original concept and include the changes as discussed at the meeting January.

Fred

-----Original Message-----
From: Zumut, Ruba [mailto:Ruba.Zumut@abam.com]
Sent: Wednesday, February 09, 2011 9:25 AM
To: Brown, Fredrick NWS; Ennis, Morgan E NWS
Cc: Rogers, Juanita; Adams, Sam
Subject: FW: Due Outs/Notes from SOF Master Plan / JB Connector Road Meeting with GC

Fred and Morgan,

Please send an email with your understanding of the next steps for the SFG master plan for the GC meeting. What would you like our team to do next?

Regards

Ruba

Ruba Zumut, PE
Senior Project Manager
Voice 206/431-2397
Cell 253/332-9897
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_____
From: Jimenez, Jilma
Sent: Tuesday, February 08, 2011 1:15 PM
To: Adams, Sam
Cc: Zumut, Ruba
Subject: FW: Due Outs/Notes from SOF Master Plan / JB Connector Road Meeting with GC

Sam,

Just got your phone message. Below is Nate Harber's recap of what was discussed yesterday regarding the SF compound.

Regards,

Jilma

Jilma Jiménez, PE
Senior Project Manager
Voice 206/357-5627
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-----Original Message-----
From: Harber, Nathan J CIV USA IMCOM [mailto:nathan.j.harber@us.army.mil]
Sent: Monday, February 07, 2011 4:44 PM
To: Elefson, Keith M CIV US USA IMCOM; Brown, Fredrick NWS; Ennis, Morgan E NWS; michael.sierakowski@soc.mil; Sutton, Jeffrey L Mr CIV USA FORSCOM; Jimenez, Jilma; Reynolds, Gena L CIV US USA IMCOM
Subject: Due Outs/Notes from SOF Master Plan / JB Connector Road Meeting with GC

All,

Below are my notes. Please comment if something needs to be added or corrected.

SOF Master Plan:
1. Need to find an alternate location for planned RSU. (Master Planning) 2.
Need to identify new locations for organizations in relocatables in the footprint of FY13 SOF MILCON. (Master Planning)
3. Need to identify funding to move relocatables. Can 1SFG pay for it
(FY12 funds)? (1SFG)
4. Could 1SFG build a new fire station and physical fitness center with

FY13 MILON? Could we combine funds with MEDCOM/IMCOM/1SFG?
(1SFG/CoE/MPD)
5. What are the requirements for the replacement fire station (size/response area)? (Master Planning/CoE) 6. COL Weldon stated that the Master Plan presented at the meeting isolates old Madigan from new Madigan. GC is going to meet with Madigan Cdr to discuss the possibility of moving them out of Old Madigan long-term.
7. Discussed returning some 1SFG future expansion land to Garrison.
Contingent on 1SFG using Old Madigan barracks.

JB Connector Road:
1. Working with Alt 5, discussed phasing options that start with McChord first (Alt 5A). Is it possible to build 2-lanes from the McChord Commercial Gate over the county road and connecting to Lincoln Ave in order to provide unimpeded access in the first phase (BergerABAM)?
2. How much does cantonment fencing cost (CoE)?

Attendees:
COL Brittain
COL Weldon
Jeff Sutton, CoE
Fred Brown, CoE
Morgan Ennis, CoE
Keith Elefson, MPD
Nathan Harber, MPD
Gena Reynolds, PW
LTC Sierakowski, 1SFG
SFC Ed Antanavage, 1SFG
Jilma Jimenez, BergerABAM
Jose Suazo, BergerABAM

Thanks,

Nathan Harber
Community Planner
Planning Division
Joint Base Lewis-McChord Public Works
O: (253) 966-1659
F: (253) 966-4985
nathan.j.harber@us.army.mil

Classification: UNCLASSIFIED
Caveats: NONE

Rogers, Juanita

From: Ennis, Morgan E NWS [Morgan.E.Ennis@usace.army.mil]
Sent: Tuesday, February 01, 2011 4:53 PM
To: Adams, Sam
Cc: Zumut, Ruba; Rogers, Juanita; Brown, Fredrick NWS
Subject: RE: Environmental Review - Bridge (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sam,

Let me know if you'd still like a meeting set up. We should document all of the different approaches in the master plan report and include a decision matrix including cost, permits required, level of coordination required, time line, etc.

After we get a decision from the Garrison Commander on the bridge, we should discuss further. FYI Nate tentatively has a meeting set up for 7 Feb, but is awaiting confirmation from the GC's office.

Regards,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Adams, Sam [mailto:Sam.Adams@abam.com]
Sent: Tuesday, February 01, 2011 4:36 PM
To: Ennis, Morgan E NWS
Cc: Zumut, Ruba; Rogers, Juanita; Brown, Fredrick NWS
Subject: RE: Environmental Review - Bridge (UNCLASSIFIED)

Morgan,

This is very good information. Jim Green is correct that conducting a survey of the creek, OHWM, wetland delineation and establishing the actual buffer zone are needed to flush out regulatory issues and set the boundaries for the bridge. I don't know how far we should take that type of work in the Master Plan process. However, when we complete the Master Plan our group will be moving forward with other projects that may have funding for the bridge. That may be the time to conduct the survey.

I will discuss with Ruba and get back to you about meeting with JBLM staff.
Thanks for tracking down this information.

Sam

Rogers, Juanita

From: Ennis, Morgan E NWS <Morgan.E.Ennis@usace.army.mil>
Sent: Monday, January 31, 2011 4:09 PM
To: Adams, Sam
Cc: Zumut, Ruba; Rogers, Juanita; Brown, Fredrick NWS
Subject: RE: Environmental Review - Bridge (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sam,

I sat down with Jim Green today from Regulatory and showed him the plans for the SF bridge. Here's what he had to say:

1) Sooner rather than later a survey will need to be done confirming the boundaries of the creek and the associated buffer, the high water mark, etc.

2) Once those boundaries are confirmed, a plan/section/proposal of the bridge needs to be emailed to Jim for review (our Regulatory branch is the authority on the matter). If the piers stay out of the designated creek zone, the bridge most likely will not need a permit. If a permit is needed, it will trigger a Biological Evaluation of threatened species as well as a Cultural Resources survey in addition to the permit.

3) Although culverts are not ideal, a culvert option might want to be explored since it is much cheaper than the bridge.

Jim is available Monday - Thursday in person or via teleconference to discuss the process in more detail. What works best for you? The week of Feb 7th, I
am available Monday, 7 Feb or Thursday 10 Feb.

Would it be helpful to invite the JBLM folks too (fish and wildlife, cultural resources, NEPA)?

Regards,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Adams, Sam [mailto:Sam.Adams@abam.com]
Sent: Friday, January 28, 2011 2:43 PM
To: Ennis, Morgan E NWS

Cc: Zumut, Ruba; Rogers, Juanita; Brown, Fredrick NWS
Subject: RE: Environmental Review - Bridge (UNCLASSIFIED)

Erin,

I can't make next Friday. What works for you and staff the following week. I am currently available every day of the week of February 7th except Wednesday the 9th.

Thanks
Sam

-----Original Message-----
From: Ennis, Morgan E NWS [mailto:Morgan.E.Ennis@usace.army.mil]
Sent: Thursday, January 27, 2011 2:38 PM
To: Adams, Sam
Cc: Zumut, Ruba; Rogers, Juanita; Brown, Fredrick NWS
Subject: RE: Environmental Review - Bridge (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sam,

Our Regulatory folks are available to meet on Friday next week 4 Feb or the following week. Are you available? Would it be helpful to invite Bill Van Hoesen and David Clouse as well?

Regards,

Morgan

Morgan Ennis, Assoc. AIA
Project Manager - Military Branch
Army Corps of Engineers
Seattle District
morgan.e.ennis@usace.army.mil
206.406.3104 (Mobile)

-----Original Message-----
From: Adams, Sam [mailto:Sam.Adams@abam.com]
Sent: Tuesday, January 25, 2011 10:47 AM
To: Ennis, Morgan E NWS
Cc: Zumut, Ruba; Rogers, Juanita
Subject: Environmental Review - Bridge

Erin,

Just checking in regarding the proposed bridge crossing over Murray Creek for the master plan. Have you had any further discussions with DPW environmental staff?

I have had some correspondence with Bill Van Hoesen regarding NEPA requirements and some follow up with David Clouse on mitigation. I don't have much to report and we may want to sit down with them to discuss and come to some conclusions.

Sam

_____

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Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Rogers, Juanita

From: Zumut, Ruba
Sent: Thursday, January 27, 2011 11:42 AM
To: Ennis, Morgan E NWS
Cc: Rogers, Juanita; Sandy Mendler (sandym@Mithun.com); Lee Copeland (LeeC@Mithun.com); Adams, Sam; Jeff Benesi (JeffB@Mithun.com); Bruce Williams (BruceW@Mithun.com); Brown, Fredrick NWS
Subject: Update - SFG master plan - Meeting with Mr Perrenot

Morgan,

I wanted to brief you on the meeting with Mr Perrenot.

Mr Perrenot wanted to ensure that compact development is planned and discuss with the SFG if the installation can get some of the land on the west compound at the corner of Jackson and transmission line to place a medical facility .

He did not object to or approve the bridge nor the realignment of Madigan Bypass. He wanted to set up a debrief with the commander for the final decision. Nate is arranging for the meeting.

The options presented lead us to believe that the access corridor will use transmission line. SFG did not object to the widening towards their compound as long as we can accommodate the left turn radius for WB70 vehicle into the west compound at Ruddy gate and allow for stacking pockets for vehicles in case of a lock down. In addition maintain a minimum of 33 feet setback from the Language Training Facility along transmission line.

Regards

Ruba

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Senior Project Manager
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Appendix F

Dr. Check Comments

Comment Report: All Comments
Project: NWS 331454 JBLM 1st SFG Master Plan
Review: 1st SFG Master Plan Draft Review++
Displaying 116 comments for the criteria specified in this report.

Id	Discipline	DocType	Spec	Sheet	Detail
3827704	Program Management	Master Plan	n/a'	n/a	n/a

(Document Reference: Page 32, Roadway Analysis)
Coordinating Discipline(s): Cost Engineering

Please provide an estimated cost for the preferred alternate 3, Madigan bypass realignment.

Submitted By: Jesse Linzel ((910)432-1278). Submitted On: 11-Mar-11

1-0 Evaluation **Concurred**
Will add estimated costs for Madigan bypass

Submitted By: sam adams (360-823-6126) Submitted On: 30-Mar-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jesse Linzel ((910)432-1278) Submitted On: 02-Jun-11
Current Comment Status: **Comment Closed**

3836900	Civil	Master Plan	n/a'	n/a	n/a

Phase 2 shows Madigan Bypass road being relocated to the north with no mention of construction or funding in the Roadway and Parking Phasing. If the Phase 2 construction displaces Madigan Bypass it should also construct the new bypass.

Submitted By: Larry Mickel (253-966-1887). Submitted On: 15-Mar-11

1-0 Evaluation **Concurred**
The funding and construction of a new Madigan bypass was under review by base command and JBLM staff during the development of the Master Plan. Will add discussion regarding this issue.

Submitted By: sam adams (360-823-6126) Submitted On: 30-Mar-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Larry Mickel (253-966-1887) Submitted On: 11-Apr-11
Current Comment Status: **Comment Closed**

3847720	Utilities Engineering	Master Plan	n/a'	n/a	n/a

(Document Reference: page 49)

Clarify the meaning of the first sentence under "Propane Air-All Phases". What is meant by "propane limited to both compounds".

Submitted By: Mark Ortner (206-766-6475). Submitted On: 18-Mar-11

1-0 Evaluation **Concurred**
Will revise page 49 - propane air discussion per comment.

Submitted By: sam adams (360-823-6126) Submitted On: 30-Mar-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11

Current Comment Status: **Comment Closed**

3847732	Utilities Engineering	Master Plan	n/a'	n/a	n/a

(Document Reference: page 49)

The paragraph discussing Propane Air is not clear as to whether it is recommending that the provision for propane air systems be installed in any future construction. Has the study team coordinated with DPW staff as to whether propane air is planned for developement in the SOF complex?

Submitted By: Mark Ortner (206-766-6475). Submitted On: 18-Mar-11

1-0 Evaluation **Concurred**
Will revise propane air paragraph per comment. Will coordinate with DPW staff.

Submitted By: sam adams (360-823-6126) Submitted On: 30-Mar-11

1-1 Backcheck Recommendation **Open Comment**
Paragraph has been revised to state that there is no propane in either compound a is not programmed for installation in the future. However, on page 57 Site Utiliti it states propane is existing. Page 59 states the same thing again, that propane is used as back up on East compound. Please be consistent in description of whethe propane is existing/available. Please revise accordingly.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11

Current Comment Status: **Comment Open**

3850675	Master Planning	Master Plan	n/a'	n/a	n/a

(Document Reference: p9,11,29,30,31,50,51,52)

There are various photos throughout the report that are not labeled indicating what they are or how the reference back to the written narrative. Please provide photo discriptions.

Submitted By: Mark Ortner (206-766-6475). Submitted On: 21-Mar-11

Revised 21-Mar-11.

1-0 Evaluation **Concurred**
We will add captions to all photos in the final report.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11
Current Comment Status: **Comment Closed**

3850752 Master Plan Master Plan n/a' n/a n/a

(Document Reference: p10)

Page 10 references figures 2-6. However the next page starts a new topic heading which is then followed by figures 3-6. I would suggest re-arranging the order of pages such that figures 2-6 are in succession then start "Project Constraints" (which is currently page 11).

Submitted By: Mark Ortner (206-766-6475). Submitted On: 21-Mar-11

1-0 Evaluation **Concurred**
Concur. Format will be adjusted.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11
Current Comment Status: **Comment Closed**

3850790 Master Plan Master Plan n/a' n/a n/a

(Document Reference: p14)

Provide a Key/Legend to identify the yellow and orange bldg outline.

Submitted By: Mark Ortner (206-766-6475). Submitted On: 21-Mar-11

1-0 Evaluation **Concurred**
Legend, scale and north arrow will be added to all maps

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11
Current Comment Status: **Comment Closed**

3850799	Master Plan	Master Plan	n/a'	n/a	n/a

(Document Reference: p15)

Identify what the red brackets signify.

Submitted By: Mark Ortner (206-766-6475). Submitted On: 21-Mar-11

1-0 Evaluation **Concurred**
Legend, scale and north arrow will be added to all maps.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11
Backcheck not conducted

2-0 Evaluation **Concurred**
The red brackets represent entry gates. These will be identified on the legend in tl final report.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

2-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11
Current Comment Status: **Comment Closed**

3850992	Master Plan	Master Plan	n/a'	n/a	n/a

(Document Reference: Sustainable Strategies p30)

The brief discussion on Energy Efficiency gave no specific information regarding identifiable HVAC strategies that are preferred or highly recommended based on proven energy savings and simple payback. Please provided more detailed information regarding viable means or strategies to achieve LEED Energy Efficiency points.

Submitted By: Mark Ortner (206-766-6475). Submitted On: 21-Mar-11

1-0 Evaluation **Check and Resolve**

The scope of this study is master planning only. Detailed building strategies will l developed during the design of individual projects. Many strategies are commonl available and their use will vary depending on the building type.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**

Closed without comment.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11

Current Comment Status: **Comment Closed**

3851373 Master Plan Master Plan n/a' n/a n/a

The Master Plan Scope of Work Section 2.1 sites "Application of standard designs" amoung the most critical elements of the master plan project. I could not find any discussion in the Master Plan docume regarding the use, recommendation, or applicability of Army standard designs for the various propose buildings. Please address this issue.

Submitted By: Mark Ortner (206-766-6475). Submitted On: 21-Mar-11

1-0 Evaluation **Concurred**

Standard designs have been incorporated to the greatest extent possible. In some cases standard designs will be modified to create a more compact campus.The discussion will be modified to describe this.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Open Comment**

I only found brief discussion of the implementation and/or use of "standard designs" on page 13 for barracks and DFAC. However, in the first paragraph, it states, "In many cases, standard designs were used...". Please provide further discussion as to which type of buildings are most likely to be considered to be implemented using standard designs and which buildings will not likely use standard designs.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11

Current Comment Status: **Comment Open**

3851482 Master Plan Master Plan n/a' n/a n/a

Master Plan Scope of Work section 2.1 and 2.3.1.3.1 requires design narratives from all engineering, architectural, and urban planning design disciplines as well as information unique to Ft Lewis for the application of standard designs. Please review the SOW requirements and address accordingly in the Master Plan Report.

Submitted By: Mark Ortner (206-766-6475). Submitted On: 21-Mar-11

1-0 Evaluation **Concurred**
Standard designs have been incorporated to the greatest extent possible. In some cases standard designs will be modified to create a more compact campus.The discussion will be modified to describe this.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Please cite specifically where in the Master Plannig document the comment requirements have been incorporated.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11

Current Comment Status: **Comment Open**

3851591 Master Plan Master Plan n/a' n/a n/a

Master Plan Scope of Work Section 2.3.1.3.3 requires parking counts to be listed in a table within the master plan report. I could not find such a table. Please provide.

Submitted By: Mark Ortner (206-766-6475). Submitted On: 21-Mar-11

1-0 Evaluation **Concurred**
Parking counts will be provided in a table format.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11

Current Comment Status: **Comment Closed**

3851824 Master Plan Master Plan n/a' n/a n/a

(Document Reference: P31)

Please verify the viability of co-generation at Ft Lewis. Currently I am unaware of any plans for co-ge
The existing Steam plant is not a co-gen plant. Using district steam for bldg heating is not life cycle cc
effective compared to a bldg boiler.

Submitted By: Mark Ortner (206-766-6475). Submitted On: 21-Mar-11

1-0 Evaluation Potential Scope Impact Potential Time Impact **Check and Resolve**
An engineering study would be required to evaluate the cost effectiveness of co-generation at Ft. Lewis.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11
Current Comment Status: **Comment Closed**

3851896 Master Plan Master Plan n/a' n/a n/a

Master Plan Scope of Work Section 2.3.1.6 addresses the criteria required of the 3D Massing Model. The only 3D model images I found were in Appendix C which do not meet the full requirements of th SOW. Please verify and provide the 3D model and images as required.

Submitted By: Mark Ortner (206-766-6475). Submitted On: 21-Mar-11

1-0 Evaluation **Concurred**
The 3D massing models were not complete at the time the document was submitted. Completed 3D images will be included in the final report.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Please clearly state which figures in the Master Plan are the 3D massing models. is not clear as there are only a few 3D images and they do not meet the requirements of 2.3.1.6.

Submitted By: Mark Ortner (206-766-6475) Submitted On: 25-May-11
Current Comment Status: **Comment Open**

3854656 Site Master Plan n/a' n/a n/a

Regarding Phase 4, Fig. 13 shows the SOF warehouse and logistics buildings on the West Compound, while Fig. 21 shows the same buildings on the East Compound. Please coordinate all of your diagrams so that they are all showing the current proposed scheme.

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**
We will coordinate all drawings in final report to show same proposed scheme.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11
Current Comment Status: **Comment Closed**

3854659 Site Master Plan n/a' n/a n/a

Figs 6 & 9 showing circulation - please provide a legend showing what all the different linetypes and colors indicate.

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**
Legend, scale and north arrow will be added to all maps

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11

Current Comment Status: **Comment Closed**

3854665	Site	Master Plan	n/a'	n/a	n/a

Fig. 9 showing proposed circulation doesn't match up with the plan in Fig. 7 - confirm if there is intended to be circulation from Cramer to Jackson at the north corner of the site.

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**
Figure 9 is correct. Figure 7 will be updated to match Figure 9.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11

Current Comment Status: **Comment Closed**

3854680	Site	Master Plan	n/a'	n/a	n/a

Given the emphasis on walkability, is it really necessary for the bridge connecting the East and West compounds to accomodate vehicles? Was a traffic study done to determine the need, and if so, can you provide it? Please consider if the vehicular mobility needs between the two compounds could be better addressed by improving the circulation path along Jackson Avenue. A pedestrian/bike bridge would encourage more non-vehicular circulation and reduce impact on the sensitive wetlands.

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Check and Resolve**
A traffic study was not conducted. The vehicular bridge was proposed to limit traffic generated by SFG between the compounds from having to use Jackson Avenue plus provide direct access during lock down situations.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

2-0 Evaluation **Concurred**

We have included a discussion of the white oak mitigation area which is located just north of Madigan and Wilson Avenue. Protection of white oak is preferred ar mitigation required if disturbed.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

2-1 Backcheck Recommendation **Close Comment**

Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11

Current Comment Status: **Comment Closed**

3854687 Site Master Plan n/a' n/a n/a

It appears that a heavily treed area is proposed to be removed for the CRTF and THOR3 buildings. Ar there any other options on site to put these buildings on previously cleared areas?

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**

The planning process put a high priority on compact planning to allow for high utilization of the site area. The reason for the selected location for the CRTF and THOR3 will be more fully explained in the final report.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**

Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11

Current Comment Status: **Comment Closed**

3854691 Site Master Plan n/a' n/a n/a

Please identify the two unidentified buildings on the north end of the East Compound. What are the us and access requirements?

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**

Existing buildings will be identified.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11
Current Comment Status: **Comment Closed**

3854704 Site Master Plan n/a' n/a n/a

On the West Compound, almost all of the existing buildings are being removed. There might be environmental benefits to orienting the new buildings along the north/south grid instead of orienting them to the existing buildings. It appears that your proposed building locations are overlapping existin utilities anyways.

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**
The existed roadways Cramer, Rudy and Sansome are retained to maintain existi utilities within those zones. This provides significant cost savings and supports phasing requirements. Within the roadway network, the building footprints have been developed to support passive solar design to the greatest extent possible.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11
Current Comment Status: **Comment Closed**

3854706 Site Master Plan n/a' n/a n/a

Please discuss ATFP intentions. At this scale it is difficult to see which buildings will be required to b hardened.

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**
Will be clarified in the document.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11
Current Comment Status: **Comment Closed**

3854709 Environmental Master Plan n/a' n/a n/a

On p.29, the report lists documents applicable to this project regarding sustainable design. Shouldn't tl also list other USACE criteria documents, such as UFCs, ECBs, Army Policy letters, EISA...

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**

A list of design criteria documents will be added.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**

Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11

Current Comment Status: **Comment Closed**

3854711	Environmental	Master Plan	n/a'	n/a	n/a

The Sustainability Strategies section states that ATFP and Security pose a challenge for daylighting. It should be noted that daylighting is a priority for the base when possible. Past projects on base have be able to incorporate enhanced daylighting even with balst-resistant glass.

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**

Text will be modified to more clearly reflect the commitment to daylighting.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**

Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11

Current Comment Status: **Comment Closed**

3854712	Environmental	Master Plan	n/a'	n/a	n/a

Report emphasizes generous street trees, and also the requirement for zero-potable water use for irrigation. Please address how to achieve both.

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**

The master plan supports the use of native and naturalized tree species that thrive on available rainwater. This will be clarified in the final document.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11
Current Comment Status: **Comment Closed**

3854714	Site	Master Plan	n/a'	n/a	n/a

Please discuss the opportunities to use the materials in demolished buildings as reclaimed material or fill for new buildings.

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**
Will add this to the narrative.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11
Current Comment Status: **Comment Closed**

3854721	Site	Master Plan	n/a'	n/a	n/a

Please confirm - are all of the building footprints shown on your site plans based on the number of stories shown on the tables in Appendix G?

Submitted By: Emma Chen (206-764-3803). Submitted On: 22-Mar-11

1-0 Evaluation **Concurred**
Yes, the footprints are developed based on the number of stories shown in the charts, however the CRTF and THOR3 has only a partial 2nd floor.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Emma Chen (206-764-3803) Submitted On: 20-May-11
Current Comment Status: **Comment Closed**

3856925	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 11 Text states "oak trees should be preserved" which needs to be changed to "oak trees will be preserved unless mitigated at a 6:1 ratio." All landscaping must be Pacific Northwest native species ar approved by Environmental Division Fish & Wildlife Section. The PAR course may need to be constructed by hand since it appears to be located within the wetland area IAW FTL 420-5.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Will amend narrative according.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Open Comment**
The text reflects the mitigation ration of 6:1 but does not mention that landscape vegetation must be PNW natives.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
Landscaping with PNW species is not required, only recommended. And does no need to be approved by ED F&W section. I do not know what a PAR course is. "Constructed by hand" and "wetland area" are not mutually inclusive. I believe I was told no construction would occur in any wetlands. Has this changed?

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

Current Comment Status: **Comment Open**

3856942	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 12 Figure 3 - add legend and N arrow

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Legend, scale and north arrow will be added to all maps

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
completed

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

Current Comment Status: **Comment Closed**

3856945	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 14 Figure 5 - add legend and N arrow

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Legend, scale and north arrow will be added to all maps

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
completed

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11
Current Comment Status: **Comment Closed**

3856948	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 15 Figure 6 - add legend and N arrow

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Legend, scale and north arrow will be added to all maps

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
completed

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11
Current Comment Status: **Comment Closed**

3856959	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 17 - There is no discussion about upgrading the existing kennel (a sustainable goal) instead of building a new kennel.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation Potential Time Impact **Check and Resolve**
The desire to upgrade the existing kennel did not come up during the master planning process. A discussion of the pros and cons of doing so is needed prior to making this decision.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Open Comment**
A major goal of "reuse of existing facilities and/or additions and upgrades to the existinf facilities are the preferred approach..." (page 13) is in conflict with building a new kennel. The document does not provide adequate information as to why a new building is necessary (no costs analysis for example) and just stating it doesn't meet current standards does not provide justification for meeting the goal of reuse and upgrade.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
The 1391 should have a discussion of the justification.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

1-3 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 17-Jun-11
Current Comment Status: **Comment Closed**

3856972	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Throughout the document there are plans to demolish existing infrastructure and disturb soil for new infrastructure. There is no discussion of the need to conduct a hazardous and toxic wast assessment screening for all areas where soil will be disturbed. Since many of the areas have the potential to be contaminanted by current or past practices, a screening is highly advisable.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Concur. We will include a paragraph to address

Submitted By: Ruba Zumut (206-431-2397) Submitted On: 04-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Page 39 only discusses stopping work if contamination is found. It does not discuss what training is required for construction staff to recognize contaminated soil. From a safety standpoint, it would be better to conduct a survey first and if contamination is suspected it could be appropriately cleaned up minimizing construction down time due to an inadvertant discovery. Depending on the

contamination found, cleanup could be quite lengthy.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**

The installation will/does a contamination assessment for every MILCON project as required by AR 420, Appendix E-2. All known contamination sources on or near the site are identified. This information is compiled in the "Environmental Survey" attached with every NEPA document. JBLM has "screened" the entire installation.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

Current Comment Status: **Comment Open**

3856993	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 19 and throughout the document where the relocation of Madigan bypass road occurs - The proposed relocation(s) all pass through an area that was set aside as mitigation for the building of the Mil-Van yard. Placing a road and building infrastructure in a mitigation area is not acceptable. Recommend leaving the road in its current configuration.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Check and Resolve**

We were not aware of the mitigation area and requirements. Please provide more information or direct us to materials or staff with mitigation information.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Open Comment**

The information was previously provided. The new layout enroaches into the mitigation area which provides a connection to the vegetated area of Murray Cree that is not impacted by daily vehicle usage. A heavily utilized roadway will result in significant impacts to the ecological value of the mitigation area.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**

There is/was no mitigation for the MIL-Van yard. Preserving Oregon White Oak a best management practice and the term mitigation should not be used as it is no in our NEPA documents where you would find it.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

2-0 Evaluation **Concurred**

We have included a discussion of the white oak mitigation area located north of Madigan and Wilson Avenue. Protection of white oak is preferred and mitigation required if disturbed.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3857006	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 19 - preservation of oak habitat is critical. Need to discuss the mitigation for the loss of riparian habitat that will occur due to shading beneath the bridge, construction of bridge, and development of PAR course.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Check and Resolve**

Please see page 45 "Bridge Conclusions" for discussion of environmental issues regarding the bridge. The bridge designs and layouts are very preliminary. A mor detailed environmental analysis will need to be conducted if a bridge option move forward. Environment impacts can only be assessed with further studies which wa not part of the Master Plan process. PAR course will require the same developme and review. Will include oak tree discussion.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Open Comment**

Did not see an oak tree discussion in the bridge analysis section. A paragraph should be added about the impact if no bridge is built.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**

Preservation of oak habitat is not critical. We are growing more oak habitat on thi installation than we are removing. We do however attempt to preserve stands or individual trees where it is feasible and justifiable. The oak stands within the master plan should be preserved and any stands or individual trees identified as conflicting with the plan will be assessed by Public Works for preservation or removal. "Shading" is not an issue.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

2-0 Evaluation **Concurred**
We have added a new section to the document called "Environmental Constraints which includes a discussion of white oak and the need to protect if possible.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11
Backcheck not conducted
Current Comment Status: **Comment Open**

3857013	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 19 - recommend adding a discussion of another bridge location alternative that moves the bridge further north using the existing road and crossing eastward to the open area where the volleyball court located.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Will add discussion regarding north bridge location and why it wasn't selected during the master planning process

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Open Comment**
It seems that the small paragraph dimissing a more northerly location as having tl highest costs was not properly vetted. This location would not include the cost of bridge as the existing road and bridge would be used and only aproaches would b built.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
Alternatives were already assessed and the present location and configuration is acceptable to PW. This is a Planning Div call.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

1-3 Backcheck Recommendation **Open Comment**
will planning review this northern location that does not include a new bridge?

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 17-Jun-11
Current Comment Status: **Comment Open**

3857020	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 20 Fig 7 - revise figure to show infrastructure outside the mitigation area and the kennel in its current location.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Check and Resolve**
We were unaware of the mitigation area. Need to address this issue.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Open Comment**
comment not addressed

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
There is no "mitigation area" and the master plan figure, if approved by the Planning Div, is acceptable. Do not call anything in the master plan as mitigation unless the NEPA document says so. (And we are still working on the EA for this action.) There is a 50 meter buffer zone where the installation does not want any construction to occur. There is no legal backing for this buffer.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

1-3 Backcheck Recommendation **Open Comment**
the master plan is not a NEPA document

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 17-Jun-11

2-0 Evaluation **Concurred**
We have revised the document to include a discussion of the mitigation area. The kennel needs to be relocated per master plan.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3857027	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 22 Fig 8 - bioswales/stormwater detention areas need to indicate they are designed to retain all generated stormwater on-site and not connect into the existing discharge locations to Murray Creek. The tree lined streets need to be indicated as native trees only that have been approved by ED FW section.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Non-concurred**
Please see page 49 - Stormwater General - All Phases for discussion on onsite stormwater retention.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Page 59 has one sentence that recommends removing the stormwater system in th West Compound. Later on it recommends that the existing system should be used for emergency overflows This should be looked at again so the the new system ca handle emergency overflows as they should not be discharged to wetlands (high probabality of contaminants). If the marsh to the west of Transmission Line Road is Kennedy marsh, discharges should be coordinated with DPW FW to minimize loading of contaminants. Comment on trees not addressed.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
The SWPPP will be approved by PW-ED Stormwater and will dictate the method of stormwater management. Native trees are recommended but not required. Approval by ED FW section is not required.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

2-0 Evaluation **Concurred**
We have added a new section called "Environmental Constraints" which discusse stormwater and retention requirements. Also, expanded existing sections throughout the document regarding stormwater requirements.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3857038	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 23 Fig 9 - need to relocate the proposed road alignment outside the mitigation area. Need to rename the "pedestrian" bridge to "2-lane road, bicycle and pedistrian road" to be consistent with text on page 19.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Check and Resolve**
Need more information on mitigation area. We were not made aware of this durir the development of the master plan.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Open Comment**
SF was aware of the mitigation area as they agreed to its creation. All figures showing the bridge across Murray Creek need to be labled "Potential Future Bridge" for consistency between figures (figs 7 and 11 do, figs 8-10 do not).

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
Again, there is no mitigation area. SF does not approve mitigation. This is purely the installations call.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

2-0 Evaluation **Concurred**
We have added a discussion in the document regarding the mitigation area and protection of white oak. Will revise bridge naming nomenclature.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3857042	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 25 Fig 11 - relocate infrastructure and travel routes outside mitigation area. Revise kennel locatic to current site.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Check and Resolve**
Need information on mitigations area.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Open Comment**
comment not addressed

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
There is no mitigation area. There is the wetland and the 50 meter buffer zone.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

2-0 Evaluation **Concurred**
We have added a discussion regarding the mitigation area and the need to protect white oak. The kennel will be moving per master plan.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

2-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 17-Jun-11
Current Comment Status: **Comment Closed**

3857074	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 26 - The document needs to discuss when a complete and through archaeological investigation o the entire site (to include at a minimum: Murray Creek from bank to bank and the prehistoric site) wil be conducted (some must be conducted before any construction starts). A discussion of the impacts to the national register eligible historic district in compliance with Section 106 of the NHPA needs to be included in the document.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Language will be added to report to address environmental and archaeological concerns.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 04-Apr-11

1-1 Backcheck Recommendation **Open Comment**
The language included on page 11 is not completely accurate. No other sites were identified because no surveys have been conducted. Recommend changing the las sentence to read "prior to any ground disturbance (dig permit) an archaeological survey of the entire compound proposed in this Master Plan will be reviewed for the potential of historic and prehistoric occupancy. If the review indicates a high probabality of occupancy or usage, a field survey will be conducted to validate th report's findings. Should the field survey find archaeological material, the area wi be delineated as to the extent of the find and prepare a report with recommendations for the preservation or documentation of the find prior to construction begins."

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
This will occur as part of the NEPA analysis and will be completed prior to the start of construction.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11
Current Comment Status: **Comment Open**

3857094	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 26 - the document needs a discussion about compliance with FTL 420-5 based on a professional wetland delineation of the entire Murray Creek alignment within the plan's boundaries. All trees proposed to be removed/trimmed from the Murray Creek corridor must be identified and a mitigation plan developed for review and approval by PW ED FW section prior to construction.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Language will be added to report to address environmental concerns.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 04-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Remove the reference to the "approved plant list" on page 11. Replace the word "or" with "and" and replace "USACE" with DPW ED FW (environmental divisio fish and wildlife section) in the last paragraph. Remove the word "should" and replace with "will". The sentence would then read ..... "native plant materials will be used in site development." Page 10 Wetlands section: replace the word "shoul with "will" to indicate that a wetland delineation will be conducted.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
All requirements will be identified in the NEPA document. We will be working with the Corps Section 404 office that handles permits.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

Current Comment Status: **Comment Open**

3857102	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 26 - the discussion of the bridge alignment/alternative locations is missing information on trash removal from the bridge and below the bridge, prevention of pollution from reaching Murray Creek corridor, and the eliminate all lighting proposed on the bridge.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Non-concurred**
Please see page 49, Bridge Conclusions. Currently, no lighting is proposed on the bridge. Trash maintenance can be addressed when bridge is under design in the future.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Lighting is proposed for the bridge on pages 52 and 56. Trash design includes ensuring that stormwater runoff generated on the bridge is not released into the Murray Creek watershed.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
Where is the regulation that requires "trash maintenance" for a bridge? This is ne to me.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

2-0 Evaluation **Concurred**
JBLM has adopted the 2005 DOE Stormwater manual which has maintenance requirements for stormwater systems, and street sweeping. Trash under the bridge will need to be monitored by the Special Forces.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3857114	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 26 - recommend replacing all hardscaped areas with permeable materials to reduce potential hydrological impacts to Murray Creek. A hydrological study of the proposed plan needs to be completed to ensure that this expansion will not further excaberate the problems currently experiencec by Camp Murray regarding the loss of flow in Murray Creek. The study should include a through discussion on the loss of recharge potential due to significance increase in hardscape in the Murray Creek watershed.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Non-concurred**
Please see page 49 - Stormwater General. A hydrological study of Murray Creek and development is outside scope of Master Plan effort and not included in the SOW.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

2-0 Evaluation **Concurred**
We have included a section called "Environmental Constraints" which discusses recharge of Murray Creek in regards to stormwater.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

2-1 Backcheck Recommendation **Open Comment**
This section states that groundwater infiltration of stormwater will eliminate high peak runoff from entering Murray Creek which is in conflict with later sections which state that emergency overflows (same as high peak runoff) will be continue to both Murray Creek and Kennedy Marsh.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11
Current Comment Status: **Comment Open**

3857120	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 28 - need to ensure that the development proposed does not negatively impact the historic distric at Madigan barracks.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation Potential Time Impact **Check and Resolve**
We are not aware of the historic district at Madigan barracks. This constraint nee to be fully understood and integrated into the planning.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Open Comment**
DPW staff is fully aware of the historic district designation

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
Will be addressed in the NEPA document.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

1-3 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 17-Jun-11
Current Comment Status: **Comment Closed**

3857123	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 30 - document needs to indicate that all landscaping plants will be Pacific Northwest natives and approved by PW ED FW section.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Concur, Will add.

Submitted By: Ruba Zumut (206-431-2397) Submitted On: 04-Apr-11

1-1 Backcheck Recommendation **Open Comment**
The document states that the "approved" plant list will be used. The "approved" plant list contains non-native plants which is why the document needs to specify that only PNW native species will be planted.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
PNW species can be used where appropriate. There is no requirement to use PNW species.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

Current Comment Status: **Comment Open**

3857127	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 32 - all three alternatives are proposed to be in part located in the mitigation area and pre-historic site. The alternatives need to alter the road configuration or reject all three proposals.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Check and Resolve**
Please provide mitigation area mapping. We were unaware of mitigation site and requirements.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Alternative 3 Madigan Bypass provides the least disruption to the mitigation area and the archaeological site. Recommend using this as the preferred location and keeping the mil-van yard in it's current usage so "splitting the compound" would minimized due to the small number of staff located at the yard (only during work hours).

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

2-0 Evaluation **Concurred**
Under the new "Environmental Constraints" there is discussion of the mitigation area and pre-historic site.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

2-1 Backcheck Recommendation **Open Comment**
Remove all text referring to a "mitigation area" as there is none. There is a 50 meter buffer area that the installation prefers not to see construction in but it is no a legal condition.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11
Current Comment Status: **Comment Open**

3857130	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 38 - Phase 2 infrastructure encroaches into the mitigation area. Recommend reconfiguring plan t eliminate the encroachment.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Check and Resolve**
Please provide mitigation area map and requirements. We were unaware of mitigation area and need to resolve.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Open Comment**
recommend that alternative 3 configuration of the road be used

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

2-0 Evaluation **Concurred**
Please see new "Environmental Constraints" section.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11
Backcheck not conducted
Current Comment Status: **Comment Open**

3857138	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 40 - Phase 4 encroaches into the area that floods during high flows in Murray Creek. This is further detailed in Appx A. Recommend structures placed in the floodplain be suitable for frequent water submersion.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Madigan Barracks will not be impacted as part of this Master Plan process.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 04-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Comment not addressed. Old Madigan barracks are not the issue but the two buildings on the east side that do flood and are proposed to be occupied (as per th original plan).

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

Current Comment Status: **Comment Open**

3857145	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 42 - Since the wetlands have not been professionally delineated, putting the peirs in the "existing buffer" may not be outside the Corps of Engineers 404 jurisdiction and mitigation may still be necessary. Mitigation for the buffer impacts (piers, PAR course) should first occur within the Murray Creek watershed and the mitigation must be completed before construction starts on any part of the sit

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Please see page 45 "Bridge Conclusions" for discussion on wetland delineation requirements.

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Open Comment**
A statement needs to be added into the document that mitigation will be complete prior to construction begins.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
Coordination with the Corps for any 404 permitting will occur under the NEPA process.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

Current Comment Status: **Comment Open**

3857146	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 42 Fig 23 - need to show all four bridge options.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Will show the 4 pedestrian bridge cross sections. There are only 2 pedestrian bridge locations with the only variation being span widths.

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
completed

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11
Current Comment Status: **Comment Closed**

3857157	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 43 - The bridge design needs to include features that eliminate street runoff and debris which could enter Murray Creek and the PAR course located below the bridge.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Will expand on the existing stormwater language in Bridge Conclusions on page 45

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Open Comment**
recommend adding the following after .....stormwater controls "to eliminate stormwater from discharging off the structure into the Murray Creek watershed."

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11
Current Comment Status: **Comment Open**

3857162	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 49 - recommend that a hydrological study and model be completed to determine the impact of th proposed infrastructure on the recharge capability of Murray Creek.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Will expand on Bridge Conclusions on page 45 and discuss need for hydraulic analysis of Murray Creek

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Open Comment**
There is no discussion of the need for a hydraulic study in the Bridge Conclusion (investigate the floodplain and floodway are not the equivalent of a hydraulic study).

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

Current Comment Status: **Comment Open**

3857169	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 50 Fig 31 - remove lights from the bridge to eliminate impacts to wildlife (bats, migrating birds, etc.). All lights should be shielded to keep light from spilling into the Murray Creek corridor.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
Phase 1 and 3 paragraphs will be modified to indicate no street lighting on the bridge and shielded near Murray Creek to eliminate impacts to wildlife.

Submitted By: Bill Waldrop (425 368 4246) Submitted On: 25-Mar-11

1-1 Backcheck Recommendation **Open Comment**
Page 52 lists "low level bridge lighting" for the vehicle analysis. Page 56 indicate other types of lighting on the bridge. Comment not addressed.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
There is no statutory requirement to adjust lighting on the bridge for bats, migratory birds, or for any other wildlife.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

Current Comment Status: **Comment Open**

3857179	Program Management	Master Plan	n/a'	n/a	n/a

Coordinating Discipline(s): Master Plan

Page 51 - A section 106 clearance is recommended for all relocation of utility lines. Before removing existing transformers, recommend conducting a survey to determine if PCB contamination exists and needs to be removed (hazardous material). Document needs to add description of surveys needed to be completed before construction begins.

Submitted By: Deborah Johnston (206.439.4532). Submitted On: 23-Mar-11

1-0 Evaluation **Concurred**
A note will be added under the Existing Electrical narrative.

Submitted By: Bill Waldrop (425 368 4246) Submitted On: 25-Mar-11

1-1 Backcheck Recommendation **Open Comment**
Hazardous sentence adequate but no mention of the need for a Section 106 clearance.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 24-May-11

1-2 Backcheck Recommendation **Open Comment**
Section 106 compliance will occur during the NEPA process. The PW exterior electrical shop will identify any PCB transformers.

Submitted By: William Van Hoesen (253-966-1780) Submitted On: 08-Jun-11

1-3 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Deborah Johnston (206.439.4532) Submitted On: 17-Jun-11

Current Comment Status: **Comment Closed**

3858618	Master Plan	Master Plan	n/a'	n/a	n/a

No site for possible? return of 1/1SFG.

Submitted By: Jesse Linzel ((910)432-1278). Submitted On: 24-Mar-11

1-0 Evaluation **Concurred**
This possiblity will be addressed more clearly in the narrative. A number of futur building sites have been identified in the master plan.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jesse Linzel ((910)432-1278) Submitted On: 02-Jun-11

Current Comment Status: **Comment Closed**

3858634	Master Plan	Master Plan	n/a'	Page 17	n/a

Why is TEMF shown as 11,000SF. Standard is 12,500SF. Need explaination of which unit the BN HQ/Cof addition: 78,500SF is for. Deployment and logistics warehouses should be noted as requested but not authorized. CRTF: 57,000SF should be noted as requested but not authorized. This part of the post requirements and should be worked through installation. Include personnel count for the two barracks at 91,500 SF each. Size of DFAC is related to personnel in barracks. Note community center as requested but not authorized.

Submitted By: Jesse Linzel ((910)432-1278). Submitted On: 24-Mar-11

1-0 Evaluation **Concurred**
Will amend narrative accordingly.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jesse Linzel ((910)432-1278) Submitted On: 02-Jun-11

Current Comment Status: **Comment Closed**

3858641 Master Plan Master Plan n/a' Page 25 n/a

TUAV / RSD/ TSC The 9,200SF if only for the TUAV

Submitted By: Jesse Linzel ((910)432-1278). Submitted On: 24-Mar-11

1-0 Evaluation **Concurred**
Will amend narrative accordingly.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jesse Linzel ((910)432-1278) Submitted On: 02-Jun-11

Current Comment Status: **Comment Closed**

3858643 Master Plan Master Plan n/a' Page 26 n/a

BN HQ/COF paragraph clairify

Submitted By: Jesse Linzel ((910)432-1278). Submitted On: 24-Mar-11

1-0 Evaluation **Check and Resolve**
Will clarify that this is an addition to an existing building.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jesse Linzel ((910)432-1278) Submitted On: 02-Jun-11

Current Comment Status: **Comment Closed**

3858646 Master Plan Master Plan n/a' Page 27 n/a

Barracks. Need calulation for justification of 500 personnel. DFAC. Can the installation support this new DFAC. If not this is requested but not authorized.

Submitted By: Jesse Linzel ((910)432-1278). Submitted On: 24-Mar-11

1-0 Evaluation **Concurred**
Will provide calcuation.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jesse Linzel ((910)432-1278) Submitted On: 02-Jun-11

Current Comment Status: **Comment Closed**

3858648	Master Plan	Master Plan	n/a'	Page 27	n/a

SOF Logistics Warehouse. Is this the SSA warehouse?

Submitted By: Jesse Linzel ((910)432-1278). Submitted On: 24-Mar-11

1-0 Evaluation **For Information Only**
Yes, this is the SSA warehouse

Submitted By: Ruba Zumut (206-431-2397) Submitted On: 04-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jesse Linzel ((910)432-1278) Submitted On: 02-Jun-11

Current Comment Status: **Comment Closed**

3858649	Master Plan	Master Plan	n/a'	Page 39	n/a

Change title to match other sheets

Submitted By: Jesse Linzel ((910)432-1278). Submitted On: 24-Mar-11

1-0 Evaluation **Concurred**
Will revise titles to match

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jesse Linzel ((910)432-1278) Submitted On: 02-Jun-11

Current Comment Status: **Comment Closed**

3858662	Master Plan	Master Plan	n/a'	Page 43	n/a

Last sentence. Shouldn't it read four options were prepared as shown on next pages

Submitted By: Jesse Linzel ((910)432-1278). Submitted On: 24-Mar-11

1-0 Evaluation **Concurred**
Will revise to four

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jesse Linzel ((910)432-1278) Submitted On: 02-Jun-11

Current Comment Status: **Comment Closed**

3858672	Master Plan	Master Plan	n/a'	General Comment	n/a

The GSTB and GSB not clearly shown on site layouts.

Submitted By: Jesse Linzel ((910)432-1278). Submitted On: 24-Mar-11

1-0 Evaluation **Concurred**
The building labels on the diagrams will be revised to clearly show the GSTB and GSB locations.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jesse Linzel ((910)432-1278) Submitted On: 02-Jun-11

Current Comment Status: **Comment Closed**

3859904	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: List of Figures and Appendices)

Figure 6 is on page 15, but is listed as being on page 18.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
List of Figures and Appendices will be updated.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11
Current Comment Status: **Comment Closed**

3859909	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 7)

Second to last paragraph reads, "Phase 4 includes two new buildings..." The location provided for thes facilities is not correct. The Deployment Warehouse and Logistics Warehouse will not be on the East Compound where the existing barracks are. They will be on the West Compound where the existing motor pool is.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will amend document.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11
Current Comment Status: **Comment Closed**

3859915	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 8)

Typo in first paragraph that begins, "The 1st SFG..." The Long Range Component Plan is listed twice.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Text will be corrected.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11
Current Comment Status: **Comment Closed**

3859926	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 10)

Please include labels on Fig. 2 for the Logistics Center, Madigan Medical Center, Murray Creek, Old Madigan, Family Housing, Garfield Street, Jackson Ave, and Transmission Line Road.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Map will be updated to show labels.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3859934	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 11)

Under Program Constraints the Madigan Medical Center Warehouse should be referred to as the Woodshop. The dog existing dog kennel should also be referenced.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will amend document.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3859937	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 11)

Provide a reference/UFC for the AT/FP guidance discussed and where future designers can find information about what they will need to do to harden a building with a 33' stand off distance.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will amend document accordingly.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Please provide a specific UFC reference that can be refered to for guidance on what constitutes "hardening" of a building.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11
Current Comment Status: **Comment Open**

3859938	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 12)

Call out the wetland buffer along Murray Creek.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Labels will be added to map.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11
Current Comment Status: **Comment Closed**

3859942	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 13)

Please label the Warehouse, and Kennel on the East Compound. Storage Yard should be labeled as Mi Van Yard. The Indoor Gun Range is incorrectly labeled (it is the building with the question mark to th east). On the West Compound, please confirm the use of the 4 buildings labeled with a question mark. Also provide a legend indicating which icon refers to the major and minor access gates.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Legend and labels will be added as noted.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11
Current Comment Status: **Comment Closed**

3859945	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 14)

On the East Compound, the Madigan barracks will not be demo'd. Also add the 2 sets of relocatables that need to be demo'd. The CRTF/THOR 3 is incorrectly labeled and should be Keeler Gym.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Maps will be updated.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Open Comment**
This figure was not included in the final report. Can it be added back into the report?

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11
Current Comment Status: **Comment Open**

3859947	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 21)

Note the Group Headquarters is assuming a 3 story design, instead of the 2 story standard design.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will amend document accordingly.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 23-May-11
Current Comment Status: **Comment Closed**

3859950	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 22)

Text is difficult to read on the East Compound. Please enlarge text or use numbers and list facilities below.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Maps will be updated as noted.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3859951	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 25)

Break the list of work to be completed in Phase 1 into "East" and "West" sub headings. Fig. 11 also incorrectly shows that hardstand will be added to the existing BOF. Also the RSU should be referred t as a Comm Hut.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will amend document accordingly.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3859954	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 28)

Be consistent with labeling. "Phase 5" and "Future" are used interchangeably throughout the documen Please pick one or the other.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will update throughout the document.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3859957	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 29)

In the discussion on LEED, provide a list of which LEED points are required for all Army projects.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will amend document accordingly.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3859960	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 31)

Construction Wate Management - Discuss the construction waste recycling available on post.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Check and Resolve**
We are not aware of construction waste recycling available on post. Please provic
information for our use.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3859965	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 32)

Include a sketch of the JBLM "District Street" as a reference. What type of street section is being developed for Transmission Line Road?

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will add District Street secion. Transmission Line Road section is not known, currently under analysis.

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

1-2 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3859967	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 36)

A diagram is required showing where parking is provided on the master plan and what the stall counts are for each area.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
A diagram with stall counts will be provided.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3859972	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 37 - 41)

It is difficult to determine what new work is being done to the utilities versus what is old from this set of diagrams.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will review and clarify drawings

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3859977	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 37 - 41)

Verify that the area's shown for storm water retention are large enough to service the proposed faciliti

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Non-concurred**
The areas highlighted for stormwater are general and used to indicate that stormwater must remain onsite. The Design Build contractor can select from a number of stormwater management option (pervious pavement, rain gardens, infiltration trenches, etc.)

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Given the amount of hardstand for the proposed TEMFs and the BOFs on the eas compound, is there enough land to accomodate all of the run off? It appears there less area available for bioswales/infiltration in Fig. 8 on page 22 in the final repor compared to Fig. 18-22 on pages 37-41 in the draft report.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 23-May-11

2-0 Evaluation **Concurred**
We will run a quick hydraulic model of the potential runoff from buildings and impervious surfaces and check needed area for stormwater facilities. Will add general note in the documents that stormwater management can be handled by many types of systems such as pervious pavement, etc.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3859979	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 44-45)

Enlarge text on Fig 24 - 27. It is too small to read.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**

Will revise

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Open Comment**

Text is too small to read in Figure 27. Text is readable, but dimension strings/topo elevations are still too small on Figures 29 - 32.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Open**

3859980	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 45)

Provide cost information for Vehicle Bridge - Option 4.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**

Will provide cost estimate

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Open Comment**

Please ensure the cost data on pages 51-52 correspond with the cost data on pages 54 -55. For example on page 51, Bridge option 1 is costed out at $1.3 million, but on page 54 Bridge option 1 is listed at $4.2 million. Which is correct?

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Open**

3859985	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 48)

Propose a method to clean stormwater being discharged to Murray Creek.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will include discussion about DOE Western Washington Manual for stormwater quality and quantity designs for new construction on page 49 "Stormwater General"

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 23-May-11

Current Comment Status: **Comment Closed**

3859992	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 48)

Provide information on when the utilities in the West Compound (from the 1980's) are expected to nee to be replaced.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will add discussion

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 23-May-11

Current Comment Status: **Comment Closed**

3860008	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 48 - 49)

Do any utilities need to be upgraded in the West Compound between now and 2030?

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **For Information Only**
Will re-review existing utilities in the West Compound. They should not need to l
upgraded for many decades, but waterline sizes may need to be increased to
provide fire flow for new facilities.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 23-May-11

2-0 Evaluation **Concurred**
We will assess utilities in the West Compound and discuss in document and
include in utilities table if needed.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Closed**

3860012	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 49)

Phase 4 - The Deployment Warehouse and Logistics Warehouse will not be located on Wilson Ave. Please revise.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will revise

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3860019	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Page 51)

Provide a diagram of the Comm Hut location in relation to the Group Headquarters.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
The Comm Hut location is shown on the site plan, figure 31 & 37, in Phase 1 nea the current HQ Bldg 9190. In Phase 3, Figure 33 & 39, the new HQ building is shown with note 5 indicating the duct bank connection. This was the original proposed location, but Nate had indicated that he would prefer a different locatio but has not provided this information. Will a diagram also be required?

Submitted By: Bill Waldrop (425 368 4246) Submitted On: 25-Mar-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3860032	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Appendix D)

There are buildings missing from the inventory list. Please include building 9941, 9943, 9917, 9996, 9987M.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will include

Submitted By: Ruba Zumut (206-431-2397) Submitted On: 04-Apr-11

1-1 Backcheck Recommendation **Open Comment**
Could not verify because Appendix D was not included in the last submittal.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 23-May-11

Current Comment Status: **Comment Open**

3860038	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Appendix D)

For all building info sheets, provide building use, square footage and year built.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will revise to include information.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 04-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 23-May-11

2-0 Evaluation **Concurred**
Will Add

Submitted By: Ruba Zumut (206-431-2397) Submitted On: 04-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Closed**

3860042	Project Management	Planning Report	n/a'	n/a	n/a

(Document Reference: Appendix G)

Please provide utility upgrade information in a table in this appendix. Provide quantities, sizes, etc. for water, sewer, gas, copper, fiber, etc. This information will be used to develop the cost estimate.

Submitted By: Morgan Ennis (206.766.6448). Submitted On: 25-Mar-11

1-0 Evaluation **Concurred**
Will add table

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Morgan Ennis (206.766.6448) Submitted On: 19-May-11

Current Comment Status: **Comment Closed**

3862016	Site	Master Plan	n/a'	Figure 4, Figure 54	n/a

(Document Reference: page 13, page 54)
Coordinating Discipline(s): Electrical

Figure 4 shows the tank trail to be located on the "north" side of the MBW Warehouse and the Indoor Range. The location shown for the new underground in Figure 54 does not follow the tank trail. The underground runs through the new SFG compound. Was the UG to located so that it did not run through the compound? Also, there is no indication that power is re-established for the Warehouse or the Range.

Submitted By: Cynthia Masten (206-764-6595). Submitted On: 25-Mar-11

1-0 Evaluation **Check and Resolve**

Intent was for the underground alignment to follow exiting location of overhead. Current overhead to existing buildings will be reestablished with underground system.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 04-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862081	Civil	Master Plan	Existing Site Conditions - Page 9	n/a	n/a

The second to last paragraph on this page indicates that soils SHOULD BE adequate for infiltrating storm water. Has any preliminary investigation been completed to verify soil type and depth?

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Check and Resolve**

We have soils information from the FY09 BN Ops facility in the East Compound and they are infiltrating stormwater generated from the development. No information was available for the West Compound, but most areas of JBLM have suitable soils for infiltration.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

2-0 Evaluation **Concurred**

We have not done a formal geotechnical analysis of soils in the area. Please see discussion in Evaluation 1. We will add language in the plan that states geotechnical evaluations will be required prior to any building.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862082	Civil	Master Plan	Existing Site Conditions - Page 9	n/a	n/a

Last sentence, second to last paragraph states thet the East compound has a seasonally high water table How high and what is the effect on the proposed infiltration of stormwater in these areas?

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Check and Resolve**
Discussions with DPW staff indicate that seasonal groundwater table can be 10 fe below ground surface. Will add this information to page 9. The FY09 BN Ops us fairly deep infiltration trenches for stormwater infiltration and it does not appear t be a problem. Any new development would require a geotechnical analysis.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11
Backcheck not conducted

2-0 Evaluation **Concurred**
Discussions with DPW staff indicate that seasonal groundwater table can be 10 fe below ground surface. Will add this information to page 9. The FY09 BN Ops us fairly deep infiltration trenches for stormwater infiltration and it does not appear t be a problem. Any new development would require a geotechnical analysis.

Submitted By: sam adams (360-823-6126) Submitted On: 15-Apr-11
Backcheck not conducted
Current Comment Status: **Comment Open**

3862083	Civil	Master Plan	Parking - Page 21	n/a	n/a

Last sentence on this page states that parking will include berms and trees tto collect and partially cleanse stormwater. Explain how the "berm" will collect stormwater.

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Concurred**
Text will be revised to reference bio-swales for stormwater pre-treatment.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11
Backcheck not conducted
Current Comment Status: **Comment Open**

3862086	Civil	Master Plan	Phasing Issues and Strategies - Page 24	n/a	n/a

How is the fire station affected/handled during construction? How will response times be affected/mitigated?

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Concurred**
Will add language to report identifying existing fire station and that future construction should not impede operations.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 04-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862089	Civil	Master Plan	Sustainability Strategies - Page 30	n/a	n/a

Second bullet states that permeable pavement is acceptable for parking areas. Provide quatities and construction cost data.

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Check and Resolve**

This will be very difficult. The design building contractor can select to use pervious pavement or not. The DB may use rain gardens, infiltration trenchs and other methods of stormwater managment.

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**

Closed without comment.

Submitted By: Kim May ((206) 764-6506) Submitted On: 13-Apr-11

Current Comment Status: **Comment Closed**

3862090	Civil	Master Plan	Roadway and parking Phasing - Page 36	n/a	n/a

What pahse includes the construction of the Madigan Bypass?

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Concurred**

Will add language that Madigan bypass relocation if approved would occur in Phase I

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862091	Civil	Master Plan	Vehicle Bridge Analysis - Page 43	n/a	n/a

Explain the reason for 15' travel lanes

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Concurred**

Will revise to state 12 foot travel lanes with 3 foot shoulders.

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862093	Civil	Master Plan	Site utilities	n/a	n/a

Explain what utilities will need to be relocated and/or upgraded to support this project.

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Concurred**

Will expand utilities section in civil narrative

Submitted By: sam adams (360-823-6126) Submitted On: 04-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862094	Civil	Master Plan	future utilities - Page 49	n/a	n/a

Will lift stations be required to re-route/maintain exisitng sanitary sewer lines? Need cost information for preliminary estimate.

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Check and Resolve**

There are no lift stations proposed in the master plan. We can discuss at review meeting.

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862096	Civil	Master Plan	Stormwater General	n/a	n/a

Report should indicate that all Stormwater BMP's will mee the requirements of the Washington State Department of Ecology's Stormwater Management Manual for Western Washington.

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Concurred**

Will add that language to this section

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862098	Civil	Master Plan	Stormwater General - Page 49	n/a	n/a

Explain how the proposed stormwater mitigation BMP's/strategies will maintain current wetland hydrology

Submitted By: Kim May ((206) 764-6506). Submitted On: 26-Mar-11

1-0 Evaluation **Check and Resolve**

Maintaining all stormwater onsite and infiltrating will benefit groundwater conditions which should have a positive affect on wetland hydrology in the area. can add this language if this is what you mean.

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862676	Electrical	Master Plan	n/a'	n/a	n/a

(Document Reference: page 50)

Phase 2 paragraph refers to Figure 33 but Figure 33 is titled Phase 3 Electrical. Figure 32 is titled Existing Utility Map. Relabel Figure 32 and coordinate paragraph.

Submitted By: Cynthia Masten (206-764-6595). Submitted On: 27-Mar-11

1-0 Evaluation **Concurred**

The figure title will be updated to 'Phase 2 Electrical' and the reference will be revised to Figure 32.

Submitted By: Bill Waldrop (425 368 4246) Submitted On: 31-Mar-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862686	Communications	Master Plan	n/a'	n/a	n/a

(Document Reference: page 51)

Phase 1 description indicates that a new Comm Hut will be constructed for the West compound to allo the user to relocate their data from Bldg 9190. But, the paragraph also indicates the need for a telepho switch. Where will this switch be located?

Submitted By: Cynthia Masten (206-764-6595). Submitted On: 27-Mar-11

Revised 27-Mar-11.

1-0 Evaluation **Concurred**

Last sentence will be updated to include Comm Hut 9633 as the location for the new NEC switch

Submitted By: Bill Waldrop (425 368 4246) Submitted On: 31-Mar-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862690 Communications Master Plan n/a' n/a n/a

(Document Reference: page 59, Figure 36)

Position of Flag Note 2 needs to be adjusted to align with the note at the lower left of the sheet.

Submitted By: Cynthia Masten (206-764-6595). Submitted On: 27-Mar-11

1-0 Evaluation **Concurred**

Flag note location will be adjusted and the scale bar moved to show the drawing scale

Submitted By: Bill Waldrop (425 368 4246) Submitted On: 31-Mar-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3862693 Communications Master Plan n/a' n/a n/a

(Document Reference: Page 60, Figure 37)

Flag Note 4 indicates an 1800 pair CU and 144 strand fiber will come from NEC huts at the Log Cent Due to recent projects at the Log Center, does this capacilty still exist?

Submitted By: Cynthia Masten (206-764-6595). Submitted On: 27-Mar-11

1-0 Evaluation **Concurred**

Based on my last conversation with NEC, there is capacity in the comm huts for the FY12 COF, but as mentioned in the narrative, spare capacity in the comm hut is inadequate to support all of the buildings included in the Phase 1 work, and a new NEC switch will be required in 9633

Submitted By: Bill Waldrop (425 368 4246) Submitted On: 31-Mar-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3868047 Environmental Master Plan n/a' n/a n/a

In figure 3, Existing Vegetation and Topography, there is a "native camp site" highlighted and one white oak tree highlighted near the intersection of Wilson Ave and the Madigan Bypass. The item marked as white oak is just a bush, we are not interested in protecting this bush in any way. There are actual white oaks surrounding the 1SFG Compound that are not shown, however. I have attached a ma showing where these areas of oak are (shown in pink dots). The "native camp site" is incorrectly locat on this map, as well. The map that I attached showing the areas of white oak will also include the correct location and size of the actual "native camp site" (outlined in yellow). This camp site should b fully excavated and documented prior to construction start, but still thought it would be a good idea to have the correct location for your master plan figure 3.

(Attachment: 1SFG_Oak-Native_Site.JPG)

Submitted By: Carol McAdams (2539661763). Submitted On: 30-Mar-11

1-0 Evaluation **Concurred**

Thank you for the updated information. We will update our document accordingl

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3868272 Master Plan Master Plan n/a' n/a n/a

Coordinating Discipline(s): General

Concerned about sprawl. Please complete the JBLM Neighborhood Checklist for Sustainable Design. Score against listed criteria; add comments as needed. Checklist attached; also mentioned on page 29. Submit to PW Master Planning, ATTN: Tom Tolman or Lana Leiding.

(Attachment: BLANK_LIST_for_charrettes.xls)

Submitted By: Lana Leiding (253-966-6461). Submitted On: 30-Mar-11

1-0 Evaluation **Check and Resolve**

While the JBLM Neighborhood Checklist is an excellent tool, its usefulness is limited for the SFG compound. Please confirm that completion of this checklist is required.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Open Comment**
I pass along this response from Tom Tolman, PW Master Planner: "Yes. Please complete the checklist; it will be useful to JBLM Master Planning and the Sustainability Program. For the design principles that are not applicable to the SF compound or you discern as limited usefulness, a brief explanation in the comments section is all that is required."

Submitted By: Lana Leiding (253-966-6461) Submitted On: 05-Apr-11

1-2 Backcheck Recommendation **Close Comment**
Was checklist done? (Sustainability Program didn't get a copy.) LLL

Submitted By: Lana Leiding (253-966-6461) Submitted On: 01-Jun-11

Current Comment Status: **Comment Closed**

3868659	Construction Phasing	Planning Report	n/a'	n/a	n/a

(Document Reference: Planning Report Fig 5) [**This item is flagged as a critical issue.**]
Coordinating Discipline(s): Planning - Plan Formulation

Fig 5 of the existing building to remain or be removed indicates that bldg 9985 is to be removed as pa of phase 1. This building belongs to Madigan Army Medical Center and currently utilized as the Structural Shop for Facility Management Divsion. There is no indication as to where the replacement facility will be located. In addition there is no narritive in the report to indicate what needs to happen t replace this facility since it is impacted by the SF Master Plan

Submitted By: Mike Carico ((253) 968-0382). Submitted On: 30-Mar-11

1-0 Evaluation **Check and Resolve**
Please provide additional information about plans for the replacement facility.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

Backcheck not conducted

Current Comment Status: **Comment Open**

3871770	Environmental	Master Plan	Appendix A / pg 11	n/a	n/a

Comment by Jennifer Smith: Please add the Clean Water Act to required regulations.

Submitted By: Flossie McQueen (206-409-2327). Submitted On: 31-Mar-11

1-0 Evaluation **Concurred**
Will include.

Submitted By: Juanita Rogers (360-823-6118) Submitted On: 04-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jennifer Smith (253-966-1795) Submitted On: 24-May-11
Current Comment Status: **Comment Closed**

3871775	Environmental	Master Plan	Sustainability Strategies / pg 30	n/a	n/a

[**This item is flagged as a critical issue.**]

Comment by Jennifer Smith: Water Collection and Reuse is not recommended on JBLM, please remove this section.

Submitted By: Flossie McQueen (206-409-2327). Submitted On: 31-Mar-11

1-0 Evaluation **Check and Resolve**
There was quite a lot of discussion during the master planning process on this top and many participants thought that water collection and reuse has merit as a potential strategy. Please clarify the JBLM / SFG position on this issue.

Submitted By: Sandra Mendler (415 489-4833) Submitted On: 03-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Due to the high infiltration rates other low impact development options are more desirable. Also due to the lack of water collection in summer months when the water is actually needed for irrigation water collection is not a good option.

Submitted By: Jennifer Smith (253-966-1795) Submitted On: 24-May-11
Current Comment Status: **Comment Closed**

3871784	Environmental	Master Plan	Site Utilities / pg 48	n/a	n/a

Comment by Jennifer Smith: Please revisit and verify the existing drainage system. The storm line traveling across Transmission Line Road is an overflow for the marsh, not a discharge point for the SF compound. Marsh water travel from the marsh to SFG compound if marsh waters reach a certain level

Submitted By: Flossie McQueen (206-409-2327). Submitted On: 31-Mar-11

1-0 Evaluation **Concurred**
Will revise per comment

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jennifer Smith (253-966-1795) Submitted On: 24-May-11

Current Comment Status: **Comment Closed**

3871791	Environmental	Master Plan	Site Utilities / pg 48	n/a	n/a

Comment by Jennifer Smith: Please revisit and verify the existing drainage system. The stormwater discharging to the detention ponds on the west group compound does not discharge to Murray Creek. Discharge outlets from these ponds go to the woods behind ponds. Most ponds are extremely over ground and not easily accessible for inspection.

Submitted By: Flossie McQueen (206-409-2327). Submitted On: 31-Mar-11

1-0 Evaluation **Concurred**
Will revise per comment

Submitted By: sam adams (360-823-6126) Submitted On: 01-Apr-11

1-1 Backcheck Recommendation **Close Comment**
Closed without comment.

Submitted By: Jennifer Smith (253-966-1795) Submitted On: 24-May-11

Current Comment Status: **Comment Closed**

Appendix G

Supporting Documentation

LEED 2009 for New Construction and Major Renovation
Project Scorecard

Project Name: Joint Base Lewis-McChord 1st Special Forces Command
Project Address: Ft. Lewis, Washington

Yes	?	No			
9	1	16	SUSTAINABLE SITES		26 Points
Y			Prereq 1	Construction Activity Pollution Prevention	Required
1			Credit 1	Site Selection	1
		5	Credit 2	Development Density and Community Connectivity	5
		1	Credit 3	Brownfield Redevelopment	1
		6	Credit 4.1	Alternative Transportation - Public Transportation Access	6
1			Credit 4.2	Alternative Transportation - Bicycle Storage and Changing Rooms	1
3			Credit 4.3	Alternative Transportation - Low-Emitting and Fuel-Efficient Vehicles	3
		2	Credit 4.4	Alternative Transportation - Parking Capacity	2
		1	Credit 5.1	Site Development - Protect or Restore Habitat	1
		1	Credit 5.2	Site Development - Maximize Open Space	1
1			Credit 6.1	Stormwater Design - Quantity Control	1
1			Credit 6.2	Stormwater Design - Quality Control	1
	1		Credit 7.1	Heat Island Effect - Nonroof	1
1			Credit 7.2	Heat Island Effect - Roof	1
1			Credit 8	Light Pollution Reduction	1

Yes	?	No			
8	2		WATER EFFICIENCY		10 Points
					4
Y			Prereq 1	Water Use Reduction	Required
4			Credit 1	Water Efficient Landscaping	2 to 4
				Reduce by 50%	2
				No Potable Water Use or Irrigation	4
	2		Credit 2	Innovative Wastewater Technologies	2
4			Credit 3	Water Use Reduction	2 to 4
				Reduce by 30%	2
				Reduce by 35%	3
				Reduce by 40%	4

17	18		ENERGY & ATMOSPHERE		35 Points
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	Required
Y			Prereq 2	Minimum Energy Performance	Required
Y			Prereq 3	Fundamental Refrigerant Management	Required
12	7		Credit 1	Optimize Energy Performance	1 to 19
				Improve by 12% for New Buildings or 8% for Existing Building Renovations	1
				Improve by 14% for New Buildings or 10% for Existing Building Renovations	2
				Improve by 16% for New Buildings or 12% for Existing Building Renovations	3
				Improve by 18% for New Buildings or 14% for Existing Building Renovations	4
				Improve by 20% for New Buildings or 16% for Existing Building Renovations	5
				Improve by 22% for New Buildings or 18% for Existing Building Renovations	6
				Improve by 24% for New Buildings or 20% for Existing Building Renovations	7
				Improve by 26% for New Buildings or 22% for Existing Building Renovations	8
				Improve by 28% for New Buildings or 24% for Existing Building Renovations	9
				Improve by 30% for New Buildings or 26% for Existing Building Renovations	10
				Improve by 32% for New Buildings or 28% for Existing Building Renovations	11
				Improve by 34% for New Buildings or 30% for Existing Building Renovations	12
				Improve by 36% for New Buildings or 32% for Existing Building Renovations	13
				Improve by 38% for New Buildings or 34% for Existing Building Renovations	14
				Improve by 40% for New Buildings or 36% for Existing Building Renovations	15
				Improve by 42% for New Buildings or 38% for Existing Building Renovations	16
				Improve by 44% for New Buildings or 40% for Existing Building Renovations	17
				Improve by 46% for New Buildings or 42% for Existing Building Renovations	18
				Improve by 48%+ for New Buildings or 44%+ for Existing Building Renovations	19
	7		Credit 2	On-Site Renewable Energy	1 to 7
				1% Renewable Energy	1
				3% Renewable Energy	2
				5% Renewable Energy	3
				7% Renewable Energy	4
				9% Renewable Energy	5
				11% Renewable Energy	6
				13% Renewable Energy	7
2			Credit 3	Enhanced Commissioning	2
	2		Credit 4	Enhanced Refrigerant Management	2
3			Credit 5	Measurement and Verification	3
	2		Credit 6	Green Power	2

LEED 2009 for New Construction and Major Renovation
Project Scorecard

Project Name: Joint Base Lewis-McChord 1st Special Forces Command
Project Address: Ft. Lewis, Washington

Yes	?	No				
6	2	6	MATERIALS & RESOURCES			14 Points
Y			Prereq 1	Storage and Collection of Recyclables		Required
		3	Credit 1.1	Building Reuse - Maintain Existing Walls, Floors and Roof		1 to 3
					Reuse 55%	1
					Reuse 75%	2
					Reuse 95%	3
		1	Credit 1.2	Building Reuse - Maintain Interior Nonstructural Elements		1
2			Credit 2	Construction Waste Management		1 to 2
					50% Recycled or Salvaged	1
					75% Recycled or Salvaged	2
		2	Credit 3	Materials Reuse		1 to 2
					Reuse 5%	1
					Reuse 10%	2
2			Credit 4	Recycled Content		1 to 2
					10% of Content	1
					20% of Content	2
2			Credit 5	Regional Materials		1 to 2
					10% of Materials	1
					20% of Materials	2
	1		Credit 6	Rapidly Renewable Materials		1
	1		Credit 7	Certified Wood		1
Yes	?	No				
9	6		INDOOR ENVIRONMENTAL QUALITY			15 Points
Y			Prereq 1	Minimum Indoor Air Quality Performance		Required
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control		Required
	1		Credit 1	Outdoor Air Delivery Monitoring		1
	1		Credit 2	Increased Ventilation		1
1			Credit 3.1	Construction Indoor Air Quality Management Plan - During Construction		1
1			Credit 3.2	Construction Indoor Air Quality Management Plan - Before Occupancy		1
1			Credit 4.1	Low-Emitting Materials - Adhesives and Sealants		1
1			Credit 4.2	Low-Emitting Materials - Paints and Coatings		1
1			Credit 4.3	Low-Emitting Materials - Flooring Systems		1
1			Credit 4.4	Low-Emitting Materials - Composite Wood and Agrifiber Products		1
1			Credit 5	Indoor Chemical and Pollutant Source Control		1
	1		Credit 6.1	Controllability of Systems - Lighting		1
	1		Credit 6.2	Controllability of Systems - Thermal Comfort		1
1			Credit 7.1	Thermal Comfort - Design		1
1			Credit 7.2	Thermal Comfort - Verification		1
	1		Credit 8.1	Daylight and Views - Daylight		1
	1		Credit 8.2	Daylight and Views - Views		1
Yes	?	No				
1	5		INNOVATION IN DESIGN			6 Points
	5		Credit 1	Innovation in Design		1 to 5
					Innovation or Exemplary Performance	1
					Innovation or Exemplary Performance	1
					Innovation or Exemplary Performance	1
					Innovation	1
					Innovation	1
1			Credit 2	LEED® Accredited Professional		1
Yes	?	No				
	4		REGIONAL PRIORITY			4 Points
	4		Credit 1	Regional Priority		1 to 4
					Regionally Defined Credit Achieved	1
					Regionally Defined Credit Achieved	1
					Regionally Defined Credit Achieved	1
					Regionally Defined Credit Achieved	1
Yes	?	No				
50	38	22	PROJECT TOTALS (Certification Estimates)			110 Points

Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points

Neighborhood Checklist: Sustainable Design

	Neighborhood/Project Name:		SFG Master Plan	SEE: MODEL ARMY INSTALLATION DESIGN GUIDE (IDG) at http://designstandards.lewis.army.mil/Ref%20Manuals%2FInst%20Design%20Guide%2FFt%5FLewis%5FIDG%2Epdf	
	Date:		20-Apr-11	Triple Bottom Line Plus: Mission, Community, Environment, and Business Transformation**	
	By:		Sandy Mendler, Mithun		
			Scoring Criteria:		
			1.0 Intent and criteria have been met completely		
			0.9 Everything has been done that can be done; circumstances beyond our control prevent full score		
			0.5 Intent and criteria met about halfway (If less or more than halfway, then it gets a .25 or .75)		
			0.25 Intent and criteria parially met		
			0 Nothing contributes to meeting the principal		
Planning Design Goal	Proj Complete (.25,.50,.75,.9,1)	DESIGN PRINCIPLE	INTENT	CRITERIA	COMMENTS
Enhanced Mission Capabilities	**0.9**	Compact Development	Ensures critical resources (ex: land, money and time) are not used unnecessarily for facilities and infrastructure. They can then be applied to mission enhancing pursuits.	Residential components have an average density of seven or more dwelling units per acre of buildable land AND Non-residential components have a density of 0.50 FAR or greater per acre of buildable land available for non-residential uses. The specified average density must be achieved within five years of the date that the first building is occupied.	Criteria met in the core campus areas. Industrial areas have specific functional requirements that limit density
	0.25	Job & housing proximity	Encourage balanced neighborhoods with a diversity of uses (residences, recreation/services and work areas within a 10 minute walk). Reduce energy consumption and pollution from motor vehicles by providing opportunities for shorter vehicle trips and/or use of alternative modes of transportation.	Provide housing for 50% of the workspaces in the neighborhood, all within a 10-minute walk of the neighborhood center.	Criteria met partially in the core campus areas. Job / work balance will improve with development of new barracks on the west compound.
	0	Efficient Transportation	Makes the commute less frustrating; enables less time in cars; improves safety, force protection and facilitates rapid deployment of people and equipment.	Provide high frequency transit within a 5 minute walk of 75% of the neighborhood population. All roads score "C" or better for transportation level of service.	High dependence on the automobile.
	0.9	Affordable Development	Minimizes initial infrastructure costs and future maintenance costs of roads, utilities and stormwater management; careful analysis choosing building materials to ensure proper balance between cost and long-lasting construction.	Score full point if neighborhood buildout does not require roads through greenfield areas and all streets contain utility corridors. Build on infill sites .	Primarily infill development on previously built sites.
	0.75	Visible Entries (including site layout)	Makes finding the front door easy. Entries should be visible from all directions and lines of sight.	Score full point if all unit facilities are laid out to maximize unit effectiveness.	Standard buildings have limited entries however planning is developed to support wayfinding.
	0.9	Close-In Training	Appropriate training areas located within the cantonment area; open areas for PT and other daily outdoor training close to company operations	All units are within 10 minute walk of an adequately sized CIT.	Rifle range in the East Compound. PT trails integrated throughout natural buffer areas.
	1	Rangeland Preservation	Mission critical activity; no encroachment acceptable	Neighborhood has not expanded beyond 2008 cantonment area boundaries. (Similar to urban growth boundary.)	yes.

			0 Nothing contributes to meeting the principal		
Planning Design Goal	Proj Complete (.25,.50,.75,.9,1)	DESIGN PRINCIPLE	INTENT	CRITERIA	COMMENTS
	0.9	Mixed-Use	Economically and environmentally sustainable, use land more efficiently, and support vertical construction and compact development. Jobs and housing proximity.	Score full point if all facilities on main street and around Town Square are multiple-story, mixed use **AND** 75% of residents are within 10 minute walk of 10 diverse uses (per list.)	Criteria met in the core campus areas. Industrial areas have specific functional requirements that limit density and mixed use opportunity.
Sustainable Community		LEED facilities	US Green Building Council's Leadership in Energy and Environmental Design green building rating system	Base score on percentage of buildings that are LEED certified (Silver minimum - NC, EB, ND)	Commitment to LEED for new and renovated buldings.
	0.9	Low-Impact Development	The built environment must incorporate low-impact development standards all the way from planning to construction to daily use of facilities and open spaces. From a planning perspective, design areas to minimize sprawl, greenfield development and stormwater runoff. Maximize infill, compact development, and transit-oriented design. Reduce roof area and internally contain stormwater within parking areas and greenspaces.	Base score on percentage of buildings (and their immediate surroundings) that meet the intent for LID	compact development to the greatest extent possible given the use; good stormwater integration.
	0.5	Linear Parks	Contributes to the overall well being by providing a wide variety of year round recreational opportunities and convenient access to natural space; part of an overall non-motorized transportation system that provides connectivity throughout the community.	System of neighborhood green spaces within a 10-minute walk for 90% of residents that connects with similar green spaces throughout the installation.	Successful on the west compound. East is more challenging.
	0.9	Hidden Parking	Parking behind, rather than in front of facilities allows buildings to be at or near the sidewalk's edge—more welcoming and pedestrian friendly; creates pleasing streetscapes, shares ATFP standoff distances and encourages walking in the clustered building areas.	Percentage of buildings with entries from the street and parking available behind the facility.	Accomodated as much as possible given ATFP criteria.
	0.5	Multi-Story Buildings	Increase density and community and define the street; provide a feeling of protection to pedestrians.	All buildings are 2-story or higher (except for industrial areas).	Successful on the west compound. East is more challenging.
	0	Public Transit	Enable sustainable communities by reducing traffic, decreasing emissions, and providing opportunities to easily and efficiently commute within the installation and also connect to the surrounding community.	The neighborhood has transit service of 20 or more easily accessible transit rides per weekday. Bus stops should be within 1/4 mile walk distance of at least 50% of the dwellings/businesses.	Missed opportunity at the time being. An internal campus shuttle at lunch time could be highly valuable for transporation to and from the DFAC.
	1	Bike-Able / Bike Paths	Enhances connections, and serves to tie communities together; reduce congestion by reducing trip generation. (Benefits cyclists, pedestrians and motorists.)	50% of the dwelling units and business entrances are within 3 miles of at least four or more of the places on the "Diverse Uses" list AND bicycle racks/parking spaces or storage are provided. Bike Paths as identified in the Real Property Master Plan are constructed.	Bike paths, walking paths and PAR course has been developed.
	1	Car Parks	Pleasant to view, comfortable to walk through, include adequate lighting. Plant the trees so they eventually form a canopy over the parking aisles. Allows drainage from the paved area to pass through the curbs and into the landscaped areas.	Base score on percentage of parking lots meeting intent.	Parking lots planned with generous medians for treees and biorentaion
	0.75	Narrow Buildings	Pleasant work environments, easy to navigate. Longer and taller buildings allow natural light on both sides of the building. Help define exterior spaces and allow "eyes on the street" for AT/FP measures.	Percentage of buildings meeting intent (no wider than 60 feet) and utilizing natural ventilation and daylighting.	Successful on the west compound. East is more challenging.

			0 Nothing contributes to meeting the principal		
Planning Design Goal	Proj Complete (.25,.50,.75,.9,1)	DESIGN PRINCIPLE	INTENT	CRITERIA	COMMENTS
Walkable Neighborhoods	**0.75**	Planting Strips	A buffer between the pedestrian and vehicles, creating a safer, less noisy and healthier walk; reduce storm water run-off	Base score on percentage of streets meeting the intent.	Successful on the west compound. East is more challenging.
	0.25	Sidewalk Buildings	Defines streets, provide attractive pedestrian ways, and slows vehicle traffic; bringing buildings close to the street saves land resources and minimizes sprawl.	Percentage of facilities that meet the Regulating Plan requirements for "build-to lines". (see definitions)	Fairly successful on the west compound. East is more challenging.
	0.5	Connected Sidewalks	Provides pleasant, safe walkways with clear destination points.	Base score on percentage of sidewalks meeting intent.	compound. East is more challenging.
	0.5	Five-Minute Walk	Workplaces, schools, homes, and shopping located in mixed-use neighborhoods within a five to ten minute radius support a pedestrian-focused environment. However, if this walk is across parking lots, along disconnected sidewalks, or unprotected from the hot sun, people won't walk even for five minutes.	Determine the five to ten minute walk radius and ensure schools, workplaces, shopping and other conveniences are located within this arc. To be attractive to pedestrians the walk must be shaded by street trees, along connected sidewalks, past buildings with front porches and storefront glazing, and made safer with hidden parking so that buildings are closer to the sidewalk and pedestrians do not have to walk across parking lots to get to building entries. Base score on percentage of neighborhood that meets the intent.	No schools or shopping nearby. Walkways on the west campus are protected.
	0.75	Neighborhood Parks	Parks are placed, roughly 1800 feet apart so that every resident is within 900 feet of a park that has places to sit, open places to play, and playgrounds for children of various ages. Note: If parks are too close together, the total number of parks will disperse the energy (people like to go where there are other people). But if they are too far apart they will not be used either.	95% of neighborhood homes and occupied facilities are within a 5 minute walk of a neighborhood park. (Note: Parks should have space and equipment appropriate for a range of ages – a smaller, fenced area for toddlers; age-appropriate equipment for school-aged children from elementary through middle school; and a grassy open area for free play for older children and adults.)	Fairly successful on the west compound. East is more challenging.
	0.25	Aligned Entries	Helps with wayfinding, reduces pedestrian travel time, aids goal of defining entries.	Base score on percentage meeting the intent.	Difficult to achieve with multiple different builiding types.
	0	Shop Fronts	Create an interesting entry; brings more natural light into the work/sales area and affords views out.	Base score on percentage of streets that are fronted with "shop front buildings" (see definitions).	No buildings with "shop fronts" currently planned.
	0.5	Great Views	Incorporate whenever possible to terminate a road, provide a refreshing look out of an important building or a clear view from a public green space.	Key public places in each neighborhhod, feature great views. Score full point when public spaces exist with prominent views to neighborhood view assets. All new facilities meet LEED views criteria with a majority of building views focused on green pride areas with ornamentals, courtyard, park, parade field, water feature (MAMC), Mount Rainier, dense tree stand/forest, or lake, etc.	Fairly successful on the west compound. East is more challenging.
	0.5	Main Street	Create a pleasant community connector with multi-story buildings, storefront windows, wide sidewalks, and street trees.	Score full point when there is an appropriate length meeting the intent. (Desired length based on population.)	Fairly successful on the west compound. East is more challenging.
	0.25	Clear Edges	Preserve strong natural boundaries	Subjective assessment - Key natural features of neighborhood are identified and protected (e.g. large stands of mature trees, Miller Hill, Man made edges, such as primary roads are attractive with appropriate landscape and well-maintained. Focus development into neighborhood centers and maintain clear boundaries between developed and undeveloped land.	Somewhat successful on the west compound. East is more challenging.
nters	**1**	Town Square	A unifying element, a place where people can gather to create a sense of community.	Score full point if neighborhood has at least one Town Square	Entry drop off area by new HQ Building.

			0 Nothing contributes to meeting the principal		
Planning Design Goal	Proj Complete (.25,.50,.75,.9,1)	DESIGN PRINCIPLE	INTENT	CRITERIA	COMMENTS
Identifiable Town Ce	1	Regional Character	Architecturally compatible buildings that help create a unique and unified environment.	Base score on percentage of buildings following the Area Design Guide.	Not developed yet. Intent is to follow up as projects are developed.
	0.25	Large Park Blocks	A network of greenspace which forms an interconnected park system; a town square, village green or central park should be part of a park block system that links larger areas. These park blocks, which are linear in nature, can be as narrow as 80 feet or as wide as several blocks. They may contain a larger central park; they can also double as accessible neighborhood parks.	Criteria: Percentage of parks in this neighborhood that are connected to the overall Fort Lewis park system. (Note: The best parks are framed by stately trees and contain mostly open lawns for a variety of uses. They can have playgrounds and ballfields dispersed throughout; they have numerous places to sit. These parks can also serve as stormwater catchment and recharge areas for entire districts.)	Somewhat successful on the west compound. East is more challenging.
	0.25	Historic Preservation	Create a sense of unique place / character by maintaining our connection to the past. Encourage use of historic buildings and districts in a manner that preserves their historic materials and character.	Design the neighborhood such that all historic buildings and districts are rehabilitated to meet current mission needs.	Not much oringinal fabric will remiain.
	0.5	Focal Points	(Important Command buildings and memorials.) Draw interest and terminate paths; goals to walk to.	Are the most important buildings in the neighborhood located in prominent locations?	Quite successful on the west compound. East is more challenging.
Great Streets	0.25	Multi-Way Boulevard	Provide unimpeded public transit, lanes for thru traffic, and side access lanes for local traffic, bicyclists, and on-street parking.	Score full point when there are two multi-way blvds (one north-south and one east-west) fully transecting this neighborhood and joining to adjacent neighborhoods.	Limited planning for mulit-modal transporation.
	0.5	On-Street Parking	Crucial in benefiting activity centers; is more convenient, uses less space, slows traffic down so safer for pedestrians, and encourages more walking, biking, and use of public transportation making a healthier, busier downtown.	Score full point if all roads in the neighborhood with speed limits of 25 MPH or less have on-street parking	On street parking used throughout.
	0	Street Cafes	Encourage local street cafes in each neighborhood, open to a busy path where people can sit.	Score full point if at least one outdoor dining area in a Neighborhood Center is open for lunch and dinner service 5 days per week	Security conflict.
	0.5	Bulb-Outs	A traffic calming measure, intended to slow the speed of traffic and increase driver awareness.	All roads with speeds in excess of 20 MPH have bulb-outs at pedestrian crossings	Not developed yet. Intent is to follow up as projects are developed on the west side.
	0.9	Street Trees	Provide shelter from the elements, clean the air, reduce noise, provide street definition, buffer pedestrians, reduce vehicle speeds and create an attractive environment. In addition, create cost savings by reducing storm drainage infrastructure and improving pavement life through temperature regulation.	Score full point when all streets meet the Regulating Plan requirements.	Quite successful on the west compound. East is more challenging.
	0	Parkways	Incorporates two sidewalks and the roadway, separated from each other by a broad landscaped median with trees.	Score full point when all parkways (as identified in the Regulatory Plan) are built.	Not part of currently planning.
	0.5	Street Grid	Simplified traffic patterns; safe and convenient. Two-way streets, street grid patterns and 90 degree T intersections.	Base score on average street grid density (centerline miles/sq mi). Score full point if compliant with LEED-ND (grid density within a 1/4 mile radius from the center of the neighborhood is greater than 30); score .50 if between 20-29; score zero if less than 20.	Traffic patterns determined from previous work.
	21.05	TOTAL POINTS			
Ver. 3.6					
21Apr09					

HIGH PERFORMANCE and SUSTAINABLE BUILDINGS GUIDANCE

Final (12/1/08)

PURPOSE

The Interagency Sustainability Working Group (ISWG), as a subcommittee of the Steering Committee established by Executive Order (E.O.) 13423, initiated development of the following guidance to assist agencies in meeting the high performance and sustainable buildings goals of E.O. 13423, section 2(f).[1]

E.O. 13423, sec. 2(f) states "In implementing the policy set forth in section 1 of this order, the head of each agency shall: ensure that (i) new construction and major renovations of agency buildings comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings* set forth in the *Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding* (2006)[2], and (ii) 15-percent of the existing Federal capital asset building inventory of the agency as of the end of fiscal year 2015 incorporates the sustainable practices in the *Guiding Principles*."

This guidance accomplishes the following: (1) Updates the *Guiding Principles for Sustainable New Construction and Major Renovations,* (2) establishes a separate *Guiding Principles for Sustainable Existing Buildings,* 3) clarifies reporting guidelines for entering information on Sustainability Data Element #25 in the Federal Real Property Profile (FRPP) database, and (4) explains how to calculate the percentage of buildings/square footage that are compliant with the *Guiding Principles*.

Legislation enacted subsequent to the issuance of E.O. 13423 was considered in drafting both sets of *Guiding Principles* described herein. This guidance shall be reviewed every two years, at a minimum, for potential revisions to keep pace with evolving sustainable building practices and new regulations and/or legislation.

For a set of answers to frequently asked questions (FAQs) on this guidance, please visit: <www.wbdg.org/references/sustainable_eo.php>. These FAQs are based on comments received during the development of this guidance, and will be updated as necessary.

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[1] Additional Federal guidance on the sustainability aspects of Executive Order 13423 can be found at: http://www1.eere.energy.gov/femp/controlledaccess/sustainable_E.O.13423.html
Additional Technical Guidance on requirements and strategies for meeting the *Guiding Principles* is available at www.wbdg.org/sustainableE.O..

[2] In 2006, the Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding outlined *Guiding Principles* for Federal Leadership in High Performance and Sustainable Buildings. http://www.wbdg.org/pdfs/sustainable_mou.pdf

REPORTING REQUIREMENTS

To ensure accuracy and consistency in reporting across agencies and to leverage existing resources dedicated to agency real property management, data on compliance with E.O. 13423, sec. 2(f), is to be reported to the Federal Real Property Profile (FRPP) database managed by the Federal Real Property Council (FRPC).[3] All Executive agencies are already required to report annual inventory and performance data at the individual asset level on all real property assets: including land, buildings, and structures.

As part of the Fiscal Year 2008 reporting, the FRPC, in consultation with ISWG, established a "sustainability" data element to be reported on all building assets (optional for land assets and structures) to capture agency progress toward meeting the Executive Order goal in section 2(f). The guidance issued by the FRPC reads as follows:

Sustainability Data Element (#25)	**Required Information**
Sustainability	Reflects whether or not an asset meets the sustainability goals set forth in Section 2 (f) of Executive Order 13423. Options are: • Yes (1) – asset has been assessed and meets guidelines set forth in Section 2 (f) of Executive Order 13423 • No (2) – asset has been assessed and does not meet guidelines set forth in Section 2 (f) of Executive Order 13423 • Not yet evaluated (3) – asset has not yet been evaluated on whether or not it meets guidelines set forth in Section 2 (f) of Executive Order 13423 • Not applicable (4) – guidelines set forth in Section 2 (f) of Executive Order 13423 do not apply to the asset

The FRPC issued the Fiscal Year 2008 reporting instructions on June 23, 2008.[4] All agency data is to be reported to the FRPP database no later than December 15th of each year. Reporting of all inventory and performance data is to be coordinated with the agency's Senior Real Property Officer. The reporting of data for the "sustainability" data element is **optional** for FY 2008 and **required** for FY 2009 and beyond.

[3] The Federal Real Property Council was established under EO 13327, Federal Real Property Asset Managed, issued February 4, 2004.
[4] The FRPC annual guidance and FRPP reporting instructions can be found at: http://www.whitehouse.gov/omb/financial/fia_asset.html

In order to select "Yes (1)" for a sustainable building, an agency must verify that it meets the sustainability requirements for new, existing, or leased buildings as defined in this document.

The "Not applicable (4)" option is only appropriate for structures and land assets. Information on the "sustainability" data element is required on all buildings reported to the FRPP.

CRITERIA FOR DETERMINING COMPLIANCE WITH THE GUIDING PRINCIPLES BASED UPON TYPE OF BUILDING

New construction and major renovations can be considered compliant with the Guiding Principles and reported 'Yes (1)' under the sustainability data element when either Option New Construction 1 (NC-1) or Option NC-2 is met:

OPTION NC-1
An agency can demonstrate that a building is compliant with each of the five *Guiding Principles for Sustainable New Construction and Major Renovations* (provided in this document), or

OPTION NC-2
A documented commitment to third-party certification was made (e.g., registering a project) for projects with a design contract that was awarded prior to October 1, 2008 **AND** the building has been third-party certified to meet the requirements of a multi-attribute green building standard or rating system developed by an ANSI-accredited organization.

Existing buildings can be considered compliant with the Guiding Principles and reported 'Yes (1)' under the sustainability data element when either Option Existing Buildings 1 (EB-1) or Option EB-2 is met:

OPTION EB-1
An agency can demonstrate that a building is compliant with each of the five *Guiding Principles for Sustainable Existing Buildings* (provided in this document), or

OPTION EB-2
A documented commitment to third-party existing building certification was made (e.g., registering a project) prior to October 1, 2008 **AND** the building is third-party certified to meet the requirements of a multi-attribute green building standard or rating system developed by an ANSI-accredited organization.

Agency-leased buildings can be considered compliant with the Guiding Principles and reported 'Yes (1)' under the sustainability data element when Option Leases 1 (L-1) or Option L-2 is met:

OPTION L-1
An agency can demonstrate that a building is compliant with the appropriate set of *Guiding Principles*, or

OPTION L-2
At any point, the building has been third-party certified to meet the requirements of a multi-attribute green building standard or rating system developed by an ANSI-accredited organization.

SUSTAINABLE BUILDING IMPLEMENTATION PLANS

Progress and status regarding compliance with E.O. 13423, sec. 2(f) shall be documented in the agency's Sustainable Building Implementation Plan (SBIP).

- Agencies should include a discussion of the independent validation and verification (IV&V) process established to ensure compliance with the *Guiding Principles* and accuracy of the data reported to the FRPP.
- If the previous version of the *Guiding Principles* (dated 1/24/06) was used to assess a building, document which version is applicable in the agency's SBIP.
- For sustainable buildings leased by another Federal entity (e.g., General Services Administration) on an agency's behalf, information and characterization of the buildings, or spaces within, may be identified in the annual SBIP of the agency occupying the building, even though it is not included in that Agency's FRPP submission.
- Agencies should describe the strategies (including disposition) and key milestones for evaluating buildings reported to the FRPP as "Not yet evaluated (3)".
- It is recognized that agency-owned and leased facilities have different challenges in meeting the *Guiding Principles*. Therefore, agencies are encouraged to separately analyze its agency-owned and leased buildings portfolio in the SBIP.
- Along with the total number of buildings and total square footage, agencies shall report their capital asset threshold[5], and the percentage of buildings and square footage above and below the threshold.

[5] OMB Circular A-11 Part 7 Supplemental & EO 13227 define what constitutes the capital asset building inventory.

CALCULATION OF PERCENTAGE OF EACH AGENCY'S BUILDING INVENTORY THAT COMPLIES WITH THE GUIDING PRINCIPLES

The percentage of each agency's building inventory meeting the Criteria for Compliance with the *Guiding Principles* shall be calculated in two ways: (1) by square footage of buildings and (2) by number of buildings. All buildings, including those below the agency's capital asset threshold, must be reported in the FRPP.

The equations to calculate the percentage (%) of buildings meeting the *Guiding Principles* based on the entries in the Sustainability Data Element are as follows:

<u>By Square Feet</u>
Sustainability % = [(square feet of buildings reporting "Yes (1)") / (square feet of buildings reporting "Yes (1)," "No (2)," and "Not yet evaluated (3)")] x 100

<u>By Number of Buildings</u>
Sustainability % = [(number of buildings reporting "Yes (1)") / (number of buildings reporting "Yes (1)," "No (2)," and "Not yet evaluated (3)")] x 100

NOTE: The total square footage of buildings reporting "Yes (1)," "No (2)," and "Not yet evaluated (3)" should be equal to the square footage of all buildings on which an agency reports in their FRPP submission.

GUIDING PRINCIPLES FOR SUSTAINABLE NEW CONSTRUCTION AND MAJOR RENOVATIONS

I. Employ Integrated Design Principles

Integrated Design. Use a collaborative, integrated planning and design process that

- Initiates and maintains an integrated project team as described on the Whole Building Design Guide <http://www.wbdg.org/design/engage_process.php> in all stages of a project's planning and delivery
- Integrates the use of OMB's A-11, Section 7, Exhibit 300: *Capital Asset Plan and Business Case Summary*
- Establishes performance goals for siting, energy, water, materials, and indoor environmental quality along with other comprehensive design goals and ensures incorporation of these goals throughout the design and lifecycle of the building
- Considers all stages of the building's lifecycle, including deconstruction.

Commissioning. Employ commissioning practices tailored to the size and complexity of the building and its system components in order to verify performance of building components and systems and help ensure that design requirements are met. This should include an experienced commissioning provider, inclusion of commissioning requirements in construction documents, a commissioning plan, verification of the installation and performance of systems to be commissioned, and a commissioning report.

II. Optimize Energy Performance

Energy Efficiency. Establish a whole building performance target that takes into account the intended use, occupancy, operations, plug loads, other energy demands, and design to earn the ENERGY STAR® targets for new construction and major renovation where applicable. For new construction, reduce the energy use by 30 percent compared to the baseline building performance rating per the American National Standards Institute (ANSI)/American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., (ASHRAE)/Illuminating Engineering Society of North America (IESNA) Standard 90.1-2007, Energy Standard for Buildings Except Low-Rise Residential. For major renovations, reduce the energy use by 20 percent below pre-renovations 2003 baseline. Laboratory spaces may use the Labs21 Laboratory Modeling Guidelines. Use ENERGY STAR® and FEMP-designated Energy Efficient Products, where available.

On-Site Renewable Energy. Per the Energy Independence and Security Act (EISA) Section 523, meet at least 30% of the hot water demand through the installation of solar hot water heaters, when lifecycle cost effective.

Per Executive Order 13423, implement renewable energy generation projects on agency property for agency use, when lifecycle cost effective.

Measurement and Verification. Per the Energy Policy Act of 2005 (EPAct) Section 103, install building level electricity meters in new major construction and renovation projects to track and continuously optimize performance. Per EISA Section 434, include equivalent meters for natural gas and steam, where natural gas and steam are used.

Benchmarking. Compare actual performance data from the first year of operation with the energy design target, preferably by using ENERGY STAR® Portfolio Manager for building and space types covered by ENERGY STAR®. Verify that the building performance meets or exceeds the design target, or that actual energy use is within 10% of the design energy budget for all other building types. For other building and space types, use an equivalent benchmarking tool such as the Labs21 benchmarking tool for laboratory buildings.

III. Protect and Conserve Water

Indoor Water. Employ strategies that in aggregate use a minimum of 20 percent less potable water than the indoor water use baseline calculated for the building, after meeting the EPAct 1992, Uniform Plumbing Codes 2006, and the International Plumbing Codes 2006 fixture performance requirements. The installation of water meters is encouraged to allow for the management of water use during occupancy. The use of harvested rainwater, treated wastewater, and air conditioner condensate should also be considered and used where feasible for nonpotable use and potable use where allowed.

Outdoor Water. Use water efficient landscape and irrigation strategies, such as water reuse, recycling, and the use of harvested rainwater, to reduce outdoor potable water consumption by a minimum of 50 percent over that consumed by conventional means (plant species and plant densities). The installation of water meters for locations with significant outdoor water use is encouraged.

Employ design and construction strategies that reduce storm water runoff and discharges of polluted water offsite. Per EISA Section 438, to the maximum extent technically feasible, maintain or restore the predevelopment hydrology of the site with regard to temperature, rate, volume, and duration of flow using site planning, design, construction, and maintenance strategies.

Process Water. Per the Energy Policy Act of 2005 Section 109, when potable water is used to improve a building's energy efficiency, deploy lifecycle cost effective water conservation measures.

Water-Efficient Products. Specify EPA's WaterSense-labeled products or other water conserving products, where available. Choose irrigation contractors who are certified through a WaterSense labeled program.

IV. Enhance Indoor Environmental Quality

Ventilation and Thermal Comfort. Meet ASHRAE Standard 55-2004, Thermal Environmental Conditions for Human Occupancy, including continuous humidity control within established ranges per climate zone, and ASHRAE Standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality.

Moisture Control. Establish and implement a moisture control strategy for controlling moisture flows and condensation to prevent building damage, minimize mold contamination, and reduce health risks related to moisture.

Daylighting. Achieve a minimum daylight factor of 2 percent (excluding all direct sunlight penetration) in 75 percent of all space occupied for critical visual tasks. Provide automatic dimming controls or accessible manual lighting controls, and appropriate glare control.

Low-Emitting Materials. Specify materials and products with low pollutant emissions, including composite wood products, adhesives, sealants, interior paints and finishes, carpet systems, and furnishings.

Protect Indoor Air Quality during Construction. Follow the recommended approach of the Sheet Metal and Air Conditioning Contractor's National Association Indoor Air Quality Guidelines for Occupied Buildings under Construction, 2007. After construction and prior to occupancy, conduct a minimum 72-hour flush-out with maximum outdoor air consistent with achieving relative humidity no greater than 60 percent. After occupancy, continue flush-out as necessary to minimize exposure to contaminants from new building materials.

Environmental Tobacco Smoke Control. Implement a policy and post signage indicating that smoking is prohibited within the building and within 25 feet of all building entrances, operable windows, and building ventilation intakes during building occupancy.

V. Reduce Environmental Impact of Materials

Recycled Content. Per Section 6002 of the Resource Conservation and Recovery Act (RCRA), for EPA-designated products, specify products meeting or exceeding EPA's recycled content recommendations. For other products, specify materials with recycled content when practicable. If EPA-designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitations relevant to construction, operation, maintenance of or use in the building. EPA's recycled content product designations and recycled content recommendations are available on EPA's Comprehensive Procurement Guideline web site at <www.epa.gov/cpg>.

Biobased Content. Per Section 9002 of the Farm Security and Rural Investment Act (FSRIA), for USDA-designated products, specify products with the highest content level per USDA's biobased content recommendations. For other products, specify biobased products made from rapidly renewable resources and certified sustainable wood products. If these designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitations relevant to construction, operation, maintenance of or use in the building. USDA's biobased product designations and biobased content recommendations are available on USDA's BioPreferred web site at <www.usda.gov/biopreferred>.

Environmentally Preferable Products. Use products that have a lesser or reduced effect on human health and the environment over their lifecycle when compared with competing products or services that serve the same purpose. A number of standards and ecolabels are available in the marketplace to assist specifiers in making environmentally preferable decisions. For recommendations, consult the Federal Green Construction Guide for Specifiers at <www.wbdg.org/design/greenspec.php>.

Waste and Materials Management. Incorporate adequate space, equipment, and transport accommodations for recycling in the building design. During a project's planning stage, identify local recycling and salvage operations that could process site-related construction and demolition materials. During construction, recycle or salvage at least 50 percent of the non-hazardous construction, demolition and land clearing materials, excluding soil, where markets or onsite recycling opportunities exist. Provide salvage, reuse and recycling services for waste generated from major renovations, where markets or onsite recycling opportunities exist.

Ozone Depleting Compounds. Eliminate the use of ozone depleting compounds during and after construction where alternative environmentally preferable products are available, consistent with either the Montreal Protocol and Title VI of the Clean Air Act Amendments of 1990, or equivalent overall air quality benefits that take into account lifecycle impacts.

GUIDING PRINCIPLES FOR SUSTAINABLE EXISTING BUILDINGS

I. Employ Integrated Assessment, Operation, and Management Principles

Integrated Assessment, Operation, and Management. Use an integrated team to develop and implement policy regarding sustainable operations and maintenance.

- Incorporate sustainable operations and maintenance practices within the appropriate Environmental Management System (EMS)
- Assess existing condition and operational procedures of the building and major building systems and identify areas for improvement
- Establish operational performance goals for energy, water, material use and recycling, and indoor environmental quality, and ensure incorporation of these goals throughout the remaining lifecycle of the building
- Incorporate a building management plan to ensure that operating decisions and tenant education are carried out with regard to integrated, sustainable building operations and maintenance
- Augment building operations and maintenance as needed using occupant feedback on work space satisfaction.

Commissioning. Employ recommissioning, tailored to the size and complexity of the building and its system components, in order to optimize and verify performance of fundamental building systems. Commissioning must be performed by an experienced commissioning provider. When building commissioning has been performed, the commissioning report, summary of actions taken, and schedule for recommissioning must be documented. In addition, meet the requirements of EISA 2007, Section 432 and associated FEMP guidance.

Building recommissioning must have been performed within four years prior to reporting a building as meeting the *Guiding Principles*.

II. Optimize Energy Performance

Energy Efficiency. Three options can be used to measure energy efficiency performance:

- Option 1: Receive an ENERGY STAR® rating of 75 or higher or an equivalent Labs21 Benchmarking Tool score for laboratory buildings,
- Option 2: Reduce measured building energy use by 20% compared to building energy use in 2003 or a year thereafter with quality energy use data, or

- Option 3: Reduce energy use by 20% compared to the ASHRAE 90.1-2007 baseline building design if design information is available.

Use ENERGY STAR® and FEMP-designated Energy Efficient Products, where available.

On-Site Renewable Energy. Per Executive Order 13423, implement renewable energy generation projects on agency property for agency use, when lifecycle cost effective.

Measurement and Verification. Per the Energy Policy Act of 2005 (EPAct2005) Section 103, install building level electricity meters to track and continuously optimize performance. Per the Energy Independence and Security Act (EISA) 2007, the utility meters must also include natural gas and steam, where natural gas and steam are used.

Benchmarking. Compare annual performance data with previous years' performance data, preferably by entering annual performance data into the ENERGY STAR® Portfolio Manager. For building and space types not available in ENERGY STAR®, use an equivalent benchmarking tool such as the Labs21 benchmarking tool for laboratory buildings.

III. Protect and Conserve Water

Indoor Water. Two options can be used to measure indoor potable water use performance:

- Option 1: Reduce potable water use by 20% compared to a water baseline calculated for the building. The water baseline, for buildings with plumbing fixtures installed in 1994 or later, is 120% of the Uniform Plumbing Codes 2006 or the International Plumbing Codes 2006 fixture performance requirements. The water baseline for plumbing fixtures older than 1994 is 160% of the Uniform Plumbing Codes 2006 or the International Plumbing Codes 2006 fixture performance requirements, or

- Option 2: Reduce building measured potable water use by 20% compared to building water use in 2003 or a year thereafter with quality water data.

Outdoor Water. Three options can be used to measure outdoor potable water use performance:

- Option 1: Reduce potable irrigation water use by 50% compared to conventional methods, or

- Option 2: Reduce building related potable irrigation water use by 50% compared to measured irrigation water use in 2003 or a year thereafter with quality water data, or

- Option 3: Use no potable irrigation water.

Measurement of Water Use. The installation of water meters for building sites with significant indoor and outdoor water use is encouraged. If only one meter is installed,

reduce potable water use (indoor and outdoor combined) by at least 20% compared to building water use in 2003 or a year thereafter with quality water data.

Employ strategies that reduce storm water runoff and discharges of polluted water offsite. Per EISA Section 438, where redevelopment affects site hydrology, use site planning, design, construction, and maintenance strategies to maintain hydrologic conditions during development, or to restore hydrologic conditions following development, to the maximum extent that is technically feasible.

Process Water. Per EPAct 2005 Section 109, when potable water is used to improve a building's energy efficiency, deploy lifecycle cost effective water conservation measures.

Water-Efficient Products. Where available, use EPA's WaterSense-labeled products or other water conserving products. Choose irrigation contractors who are certified through a WaterSense-labeled program.

IV. Enhance Indoor Environmental Quality

Ventilation and Thermal Comfort. Meet ASHRAE Standard 55-2004 Thermal Environmental Conditions for Human Occupancy and ASHRAE Standard 62.1-2007: Ventilation for Acceptable Indoor Air Quality.

Moisture Control. Provide policy and illustrate the use of an appropriate moisture control strategy to prevent building damage, minimize mold contamination, and reduce health risks related to moisture. For façade renovations, Dew Point analysis and a plan for cleanup or infiltration of moisture into building materials are required.

Daylighting and Lighting Controls. Automated lighting controls (occupancy/vacancy sensors with manual-off capability) are provided for appropriate spaces including restrooms, conference and meeting rooms, employee lunch and break rooms, training classrooms, and offices. Two options can be used to meet additional daylighting and lighting controls performance expectations:

- Option 1: Achieve a minimum daylight factor of 2 percent (excluding all direct sunlight penetration) in 50 percent of all space occupied for critical visual tasks, or

- Option 2: Provide occupant controlled lighting, allowing adjustments to suit individual task needs, for 50% of regularly occupied spaces.

Low-Emitting Materials. Use low emitting materials for building modifications, maintenance, and cleaning. In particular, specify the following materials and products to have low pollutant emissions: composite wood products, adhesives, sealants, interior paints and finishes, solvents, carpet systems, janitorial supplies, and furnishings.

Integrated Pest Management. Use integrated pest management techniques as appropriate to minimize pesticide usage. Use EPA-registered pesticides only when needed.

Environmental Tobacco Smoke Control. Prohibit smoking within the building and within 25 feet of all building entrances, operable windows, and building ventilation intakes.

V. Reduce Environmental Impact of Materials

Recycled Content. Per section 6002 of RCRA, for EPA-designated products, use products meeting or exceeding EPA's recycled content recommendations for building modifications, maintenance, and cleaning. For other products, use materials with recycled content such that the sum of postconsumer recycled content plus one-half of the pre-consumer content constitutes at least 10% (based on cost or weight) of the total value of the materials in the project. If EPA-designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitations relevant to construction, operation, maintenance of or use in the building. EPA's recycled content product designations and recycled content recommendations are available on EPA's Comprehensive Procurement Guideline web site at <www.epa.gov/cpg>.

Biobased Content. Per section 9002 of FSRIA, for USDA-designated products, use products with the highest content level per USDA's biobased content recommendations. For other products, use biobased products made from rapidly renewable resources and certified sustainable wood products. If these designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them should be included in all solicitations relevant to construction, operation, maintenance of or use in the building. USDA's biobased product designations and biobased content recommendations are available on USDA's BioPreferred web site at <www.usda.gov/biopreferred>.

Environmentally Preferable Products. Use products that have a lesser or reduced effect on human health and the environment over their lifecycle when compared with competing products or services that serve the same purpose. A number of standards and ecolabels are available in the marketplace to assist specifiers in making environmentally preferable decisions. For recommendations, consult the Federal Green Construction Guide for Specifiers at <www.wbdg.org/design/greenspec.php>.

Waste and Materials Management. Provide reuse and recycling services for building occupants, where markets or on-site recycling exist. Provide salvage, reuse and recycling services for waste generated from building operations, maintenance, repair and minor renovations, and discarded furnishings, equipment and property. This could include such things as beverage containers and paper from building occupants,

batteries, toner cartridges, outdated computers from an equipment update, and construction materials from a minor renovation.

Ozone Depleting Compounds. Eliminate the use of ozone depleting compounds where alternative environmentally preferable products are available, consistent with either the Montreal Protocol and Title VI of the Clean Air Act Amendments of 1990, or equivalent overall air quality benefits that take into account lifecycle impacts.

Joint Base Lewis-McChord Guide to Green Procurement for Construction

Chapter 1
Introduction

1-1. Purpose
This Guide serves as a broad overview of green procurement requirements relevant to Joint Base Lewis-McChord (JBLM) and is intended to aid construction designers, specification writers, and contractors. For specific requirements, refer to your organizational procedures and the applicable design standards/ specifications or other language of the contract.

1-2. Background
Various laws and Executive Orders direct federal agencies to purchase environmentally preferable products to the maximum extent practicable. Collectively, these legal requirements are referred to as "green procurement." Department of Defense (DoD), Department of the Army (DA), and Department of the Air Force (AF) policies require JBLM to maintain a Green Procurement Program in accordance with these laws.

1-3. Applicability
This Guide is informational in nature and intended for projects on JBLM, WA. JBLM is working to incorporate green procurement requirements into its own construction, renovation, and repair contracts and design standards. The U.S. Army Corps of Engineers and other federal organizations also include various green procurement requirements in their contracts. Construction designers and contract writers working on JBLM projects shall ensure all applicable green procurement requirements are incorporated into their project designs and contracts. Contractors and subcontractors shall ensure that all green procurement requirements stated in their contract, construction specifications, and/or request for proposal are met, including the submission of green procurement records and information. Note that FAR clause 52.236-7 requires compliance with Federal laws, including green procurement laws.

1-4. References
A complete listing of referenced publications can be found in Appendix A.

1-5. Acronyms and Terms
Acronyms and special terms used in this document are explained in Appendix B.

1-6. Questions/Points of Contact
Questions regarding this document or green procurement in general may be directed to the following:

JBLM Green Procurement Program Coordinator
Phone: (253) 966-6466
Email: LEWISPWGreenProcurement@conus.army.mil
PUBLIC WORKS
ATTN: IMWE-LEW-PWE (Green Procurement Program Coordinator)
BUILDING 1210 MANN AVE
BOX 339500 MS 17
JOINT BASE LEWIS-MCCHORD, WA 98433-9500

The JBLM Green Procurement Program Manager can also be reached at (253) 966-6463.

Chapter 2
Green Procurement Requirements

2-1. Recycled/Recovered Materials

The Resource Conservation and Recovery Act (RCRA), Section 6002, requires federal construction, renovation, and repair contracts to incorporate recycled/recovered materials to the maximum extent practicable. Under this regulation, the Environmental Protection Agency (EPA) establishes Comprehensive Procurement Guidelines (CPG) that designate product categories included in this requirement and Recovered Materials Advisory Notices (RMAN) that provide the acceptable level of recovered material and postconsumer content for each product category. When using designated CPG items, construction, renovation, and repair projects are required to incorporate the highest recovered material content level practicable and should, at a minimum, meet the total recovered material and postconsumer content levels stated in the RMAN. When using items not designated by the EPA, construction, renovation, and repair projects should incorporate recycled content products to the maximum extent practicable in accordance with Executive Orders 13423 (PL 111-8) and 13514 as well as the Federal Acquisition Regulation (Part 23.4). Such items should have the highest recovered material content level practicable in accordance with the requirements of the design standards or contract.

More information can be found at:
http://www.epa.gov/epawaste/conserve/tools/cpg/products/index.htm.

The following list includes the CPG categories most likely to be associated with construction, renovation, and repair:

- Building insulation products
- Carpet (polyester)
- Carpet cushion
- Cement and concrete containing:
  - -Coal fly ash
  - -Ground granulated blast furnace slag
  - -Cenospheres
  - -Silica fume
- Consolidated and reprocessed latex paint
- Floor tiles
- Laminated paperboard
- Modular threshold ramps
- Nonpressure pipe
- Patio blocks
- Roofing materials
- Shower and restroom dividers/partitions
- Structural fiberboard
- Park benches and picnic tables
- Plastic fencing
- Playground equipment
- Playground surfaces
- Running tracks
- Bike racks
- Blasting grit
- Signage
- Compost and fertilizer made from recovered organic materials
- Garden and soaker hoses
- Hydraulic mulch
- Lawn and garden edging
- Plastic lumber landscaping timbers and posts

2-1-1. Exceptions

Specific exceptions to the EPA requirements are allowed if NO CPG compliant item:

- Is available within a reasonable period of time;
- Is available at a reasonable price; or
- Can meet the applicable performance standards

JBLM is working to incorporate exception documentation requirements within its construction, renovation, and repair contracts. If your contract requires exception documentation, ensure it is

submitted for every case in which an exception is claimed. Designers and requirements generators should check the applicable design standards/specifications (including the JBLM Design Standards, where appropriate) to determine exception justification and submission procedures.

2-1-2. Associated UFGS Specifications

The main recycled-content specification is UFGS 01 62 35 "Recycled/Recovered Materials." Many individual specifications, however, contain explicit CPG guidance. Furthermore, several specifications contain additional recycled product requirements if the project is seeking the applicable LEED credit. The following are some of the specifications that pertain to recycled materials:

- **03 30 00** Cast-in-Place Concrete
- **03 30 53** Miscellaneous Cast-in-Place Concrete
- **03 31 00.00 10** Cast-in-Place Structural Concrete
- **03 33 00** Cast-in-Place Architectural Concrete
- **03 37 23** Roller-Compacted Concrete for Mass Concrete Construction
- **03 45 00** Precast Architectural Concrete
- **03 47 13** Tilt-Up Concrete
- **03 70 00** Mass Concrete
- **04 20 00** Masonry
- **04 21 13.13** Nonbearing Masonry Veneer/Steel Stud Walls
- **06 10 00** Rough Carpentry
- **07 21 13** Board and Block Insulation
- **07 21 16** Mineral Fiber Blanket Insulation
- **07 21 23** Loose Fill Thermal Insulation
- **07 22 00** Roof and Deck Insulation
- **07 24 00** Exterior Insulation and Finish System
- **07 31 13** Asphalt Shingles
- **07 32 13** Roof Tiles
- **07 41 13** Metal Roof Panels
- **07 41 63** Fabricated Roof Panel Assemblies
- **07 51 13** Built-Up Asphalt Roofing
- **07 52 00** Modified Bituminous Membrane Roofing
- **07 53 23** Ethylene-Propylene-Diene-Monomer Roofing
- **07 54 19** PVC Roofing
- **07 55 00** Protected Membrane Roofing
- **07 61 14.00 20** Steel Standing Seam Roofing
- **07 61 15.00 20** Aluminum Standing Seam Roofing
- **08 11 13** Steel Doors and Frames
- **08 11 16** Aluminum Doors and Frames
- **08 36 13** Sectional Overhead Doors
- **08 53 00** Plastic Windows
- **09 51 00** Acoustical Ceilings
- **09 64 29** Wood Strip Flooring
- **09 65 00** Resilient Flooring
- **09 68 00** Carpet
- **09 69 13** Rigid Grid Access Flooring
- **09 69 19** Stringerless Access Flooring
- **09 83 13** Acoustical Wall Treatment
- **09 90 00** Paints and Coating
- **10 10 00** Visual Communications Specialties
- **10 14 01** Exterior Signage
- **10 14 02** Interior Signage
- **10 21 13** Toilet Compartments
- **10 22 19** Demountable Movable Partitions
- **10 22 26.33** Folding Panel Partitions
- **10 22 26.43** Sliding Partitions
- **12 32 00** Manufactured Wood Casework
- **12 36 00** Countertops
- **12 48 13 13** Entrance Floor Mats
- **12 50 00** Furniture Systems
- **12 65 00** Fixed Seating
- **12 93 00** Site Furnishings
- **13 34 19** Metal Building Systems
- **22 00 00** Plumbing, General Purpose
- **22 07 19** Plumbing Piping Insulation
- **23 07 00** Thermal Insulation for Mechanical Systems
- **23 35 00.00 10** Overhead Vehicle Tailpipe and [and Welding Fume] Exhaust Removal System(s)
- **23 52 00** Heating Boilers
- **23 57 10.00 10** Forced Hot Water Heating Systems Using Water and Steam Heat Exchangers

- **26 20 00** Interior Distribution
- **32 10 00** [Pervious] Bituminous Concrete Pavement
- **32 18 16.13** Playground Protective Surfacing
- **32 84 24** Irrigation Sprinkler Systems
- **32 92 19** Seeding
- **32 92 23** Sodding
- **32 92 26** Sprigging
- **32 93 00** Exterior Plants
- **32 96 00** Transplanting Exterior Plants
- **33 60 01** Valves, Piping, and Equipment in Valve Manholes
- **33 70 02.00 10** Electrical Distribution System, Underground
- **34 11 00** Railroad Track and Accessories

2-1-3. Associated Federal Acquisition Regulation (FAR) Clauses
52.223-17 "Affirmative Procurement of EPA-designated Items in Service and Construction Contracts"; 52.223-9 "Estimate of Percentage of Recovered Material Content for EPA-Designated Item"; 52.236-7 "Permits and Responsibilities."

2-1-4. Associated Legal Requirements and Policy
RCRA, Section 6002; Executive Order 13423; Executive Order 13514; Federal Acquisition Regulation, Parts 23.4 and 36.601-3; and DoD/DA/AF policy.

2-2. Biobased Materials
The Farm Security and Rural Investment Act of 2002, Section 9002, requires federal construction, renovation, and repair contracts to incorporate designated biobased products. When using items designated under the BioPreferred Program established by the U.S. Department of Agriculture (USDA), construction, renovation, and repair projects should use products meeting the minimum biobased content percentage established by USDA. When using items not designated by the USDA, construction, renovation, and repair projects should incorporate rapidly renewable and certified sustainable wood products to the maximum extent practicable per Executive Orders 13423 and 13514 and the Federal Acquisition Regulation (Parts 23.4 and 23.7) and in accordance with the requirements of the design standards or contract.

More information can be found at:
http://www.biopreferred.gov/ProposedAndFinalItemDesignations.aspx

The following list includes the designated biobased categories most likely to be associated with construction, renovation, and repair:

- Acoustical Composite Panels
- Interior Composite Panels
- Plastic Lumber Composite Panels
- Structural Interior Composite Panels
- Structural Wall Composite Panels
- Concrete and Asphalt Release Fluids
- Dust Suppressants
- Wood and Concrete Sealers
- Carpet
- Spray-In-Place Plastic Insulating Foam
- Roof Coatings
- Adhesive and Mastic Removers
- Fertilizer
- Transformer Dielectric Fluid
- Water Tank Coating
- Graffiti and Grease Removers
- Cable and Chain Lubricants
- Corrosion Preventatives

2-2-1. Exceptions
Specific exceptions to USDA requirements are allowed if NO compliant biobased item:

- Is available within a reasonable period of time;
- Is available at a reasonable price; or
- Can meet the applicable performance standards

JBLM is working to incorporate exception documentation requirements within its construction, renovation, and repair contracts. If your contract requires exception documentation, ensure it is submitted for every case in which an exception is claimed. Designers and requirements generators should check the applicable design standards/specifications (including the JBLM Design Standards, where appropriate) to determine exception justification and submission procedures.

2-2-2. Overlap with CPG Requirements
Per federal guidance, whenever an item falls under both the EPA recovered materials requirements and USDA biobased requirements, the product should, at a minimum, meet the EPA recovered materials requirement.

2-2-3. Associated UFGS Specifications
The following are some of the specifications that may relate to biobased requirements:

- **02 82 14.00 10** Asbestos Hazard Control Activities
- **03 11 13.00 10** Structural Concrete Formwork
- **03 11 14.00 10** Formwork for Concrete
- **03 30 00** Cast-in-Place Concrete
- **03 30 53** Miscellaneous Cast-in-Place Concrete
- **03 33 00** Cast-in-Place Architectural Concrete
- **03 01 30** Restoration of Concrete in Historic Structures
- **03 47 13** Tilt-Up Concrete
- **06 10 00** Rough Carpentry
- **06 20 00** Finish Carpentry
- **06 41 16.00 10** Laminate Clad Architectural Casework
- **08 14 00** Wood Doors
- **09 65 00** Resilient Flooring
- **09 68 00** Carpet
- **09 69 13** Rigid Grid Access Flooring
- **09 69 19** Stringerless Access Flooring
- **09 90 00** Paints and Coating
- **10 10 00** Visual Communications Specialties
- **10 14 01** Exterior Signage
- **10 21 13** Toilet Compartments
- **10 22 19** Demountable Movable Partitions
- **10 22 26.33** Folding Panel Partitions
- **10 22 26.43** Sliding Partitions
- **12 32 00** Manufactured Wood Casework
- **12 36 00** Countertops
- **12 50 00** Furniture Systems
- **12 65 00** Fixed Seating
- **12 93 00** Site Furnishings
- **32 16 13** Concrete Sidewalks and Curbs and Gutters
- **32 92 19** Seeding
- **32 92 23** Sodding
- **32 92 26** Sprigging
- **32 93 00** Exterior Plants
- **33 70 02.00 10** Electrical Distribution System, Underground
- **33 71 01** Overhead Transmission and Distribution

2-2-4. Associated Federal Acquisition Regulation (FAR) Clauses
52.223-1 “Biobased Product Certification”; 52.223-2 “Affirmative Procurement of Biobased Products Under Service and Construction Contracts”; 52.236-7 “Permits and Responsibilities.”

2-2-5. Associated Legal Requirements and Policy
Farm Security and Rural Investment Act of 2002, Section 9002; Energy Policy Act of 2005, Section 943; Executive Order 13423; Executive Order 13514; Federal Acquisition Regulations, Parts 23.4 and 36.601-3; and DoD/DA/AF policy.

2-3. Energy Efficient Materials
The Energy Policy Act of 2005, Section 104, requires federal construction, renovation, and repair contracts to incorporate designated energy efficient materials to the maximum extent practicable.

When using energy-consuming items that fall under an Energy Star or Federal Energy Management Program (FEMP) product category, construction, renovation, and repair projects are required to use Energy Star or FEMP qualified products. In addition, AR 420-1 contains metering requirements for Army construction and renovation.

More information and a listing of qualified products or standards can be found at:
http://www.energystar.gov/
http://www1.eere.energy.gov/femp/technologies/eep_purchasingspecs.html

The following list includes the Energy Star categories most likely to be associated with construction, renovation, and repair:

- Room Air Conditioning
- Central Air Conditioning
- Boilers
- Ceiling Fans
- Furnaces
- Air-source Heat Pumps
- Geothermal Heat Pumps
- Light Commercial Heating and Cooling
- Programmable Thermostats
- Ventilating Fans
- Water Heaters
- Roof Products
- Compact Fluorescent Light Bulbs (CFLs)
- Fluorescent Light Fixtures
- LED Lighting

The following list includes the FEMP categories most likely to be associated with construction, renovation, and repair:

- Compact Fluorescent Lamps
- Fluorescent Tube Lamps
- Fluorescent Ballasts
- Fluorescent Luminaires
- Downlight Luminaires
- Industrial HID Luminaires
- Lighting Controls
- Commercial Unitary Air Conditioners
- Air-Cooled Chillers
- Water-Cooled Chillers
- Commercial Heat Pumps
- Ground-Source Heat Pumps
- Boilers
- Distribution Transformers (Medium)
- Electric Motors
- Centrifugal Pumping System
- Room Air Conditioners
- Central Air Conditioners
- Air Source Heat Pumps
- Ground-Source Heat Pumps
- Gas Furnaces
- Electric Water Heaters
- Gas Water Heaters
- Faucets
- Showerheads
- Urinals
- Roof Products
- Low Standby Power (for products that can operate in a standby power mode)

2-3-1. Exceptions
Specific exceptions are allowed if NO Energy Star or FEMP qualified item:

- Has a lower or equal life cycle cost compared to a non-compliant option; or
- Can meet the applicable functional requirements

Per Department of Energy guidance, life cycle cost determination shall rely on the life cycle cost analysis method in 10 CFR 436, subpart A or another method determined to be equivalent by the Department of Defense.

JBLM is working to incorporate exception documentation requirements within its construction, renovation, and repair contracts. If your contract requires exception documentation, ensure it is submitted for every case in which an exception is claimed. Designers and requirements generators

should check the applicable design standards/specifications (including the JBLM Design Standards, where appropriate) to determine exception justification and submission procedures.

2-3-2. Roofing
Roofing is not classified as an energy-consuming product by the Department of Energy and is thus not covered under the Energy Policy Act of 2005. However, Executive Orders 13423 and 13514 direct federal new construction, major renovation, and repair and alteration to incorporate Energy Star or FEMP qualified products to the maximum extent practicable without restricting the applicability to energy-consuming products. Thus, federal projects should utilize Energy Star qualified roofing whenever life cycle cost effective and permissible under the requirements and cost structure of the contract.

2-3-3. Solar Hot Water Heaters
The Energy Independence and Security Act of 2007 and Executive Orders 13423 and 13514 require new construction and major renovation of federal buildings to provide at least 30% of a building's hot water requirements through solar heating methodologies unless the results of a life cycle cost analysis demonstrate that no solar hot water system is life cycle cost effective in comparison with other reasonably available hot water heating technologies.

2-3-4. Additional Lighting Guidance
Army Regulation 420-1, paragraph 22-12(d)(1), states that interior lighting fixtures for new construction, remodeling, and modular office furniture shall use either the T-8 lamp with instant start electronic ballast or the T-5 lamp. Day-lighting and occupancy controls shall be used when determined to be cost-effective.

In addition, consideration should be given to LED lighting when it meets other requirements such as performance and cost. LED lighting can offer additional efficiency and life cycle cost benefits.

2-3-5. Ground Source Heat Pumps
Per Executive Orders 13423 and 13514, renewable energy features such as ground source heat pumps should be used when lifecycle cost effective. Thus, JBLM projects should give full consideration to such features. Note that Energy Star requirements apply to smaller geothermal heat pumps.

2-3-6. Associated UFGS Specifications

- **07 31 13** Asphalt Shingles
- **07 32 13** Roof Tiles
- **07 41 13** Metal Roof Panels
- **07 51 13** Built-Up Asphalt Roofing
- **07 52 00** Modified Bituminous Membrane Roofing
- **07 53 23** Ethylene-Propylene-Diene-Monomer Roofing
- **07 54 19** PVC Roofing
- **07 55 00** Protected Membrane Roofing
- **22 00 00** Plumbing, General Purpose
- **22 14 29** Sump Pumps
- **22 22 30.00 10** Solar Water Heating Equipment
- **23 00 00** Air Supply, Distribution, Ventilation, and Exhaust Systems
- **23 03 00.00 20** Basic Mechanical Materials and Methods
- **23 05 15** Common Piping for HVAC
- **23 09 23** Direct Digital Control for HVAC and Other Local Building Systems
- **23 35 00.00 10** Overhead Vehicle Tailpipe and [and Welding Fume] Exhaust Removal System(s)
- **23 52 00** Heating Boilers
- **23 57 10.00 10** Forced Hot Water Heating Systems Using Water and Steam Heat Exchangers
- **23 70 03.00 10** Heating and Utilities Systems, Central Steam
- **23 81 47** Water-Loop and Ground-Loop Heat Pump Systems
- **23 82 01.00 10** Warm Air Heating Systems

- **23 82 02.00 10** Unitary Heating and Cooling Equipment
- **26 20 00** Interior Distribution System
- **26 51 00** Interior Lighting
- **26 51 00.00 40** Interior Lighting
- **26 56 00** Exterior Lighting
- **33 71 01** Overhead Transmission and Distribution

2-3-6. Associated Federal Acquisition Regulation (FAR) Clauses
52.223-15 "Energy Efficiency in Energy-Consuming Products"; 52.236-7 "Permits and Responsibilities."

2-3-7. Associated Legal Requirements and Policy
Executive Order 13423; Executive Order 13514; Executive Order 13221; Energy Policy Act of 2005, Section 104; Energy Independence and Security Act of 2007, Sections 523-525; 74 FR 10830 "Federal Procurement of Energy Efficient Products – Final Rule"; Federal Acquisition Regulation, Parts 23.2 and 36.601-3, Army Regulation 420-1; DoD Electronics Stewardship Implementation Plan; and DoD/DA/AF Policy.

2-4. EPEAT Computers
Executive Order 13423 and the Federal Acquisition Regulation require federal purchasers to buy computing equipment that is Electronic Products Environmental Assessment Tool (EPEAT) registered. When including desktop computers, laptops, workstation computers, integrated desktop computers, or monitors as part of the contract (e.g. as part of a Direct Digital Control System), construction and renovation contracts should specify EPEAT registered products. Per federal guidance, such equipment shall be EPEAT registered at a minimum Bronze level, but preferably at Silver or above. Computers and monitors must also meet the FEMP standard for standby power efficiency.

More information and a listing of qualified products or standards can be found at:
http://www.epeat.net/
http://www1.eere.energy.gov/femp/technologies/eep_standby_power.html

2-4-1. Associated Federal Acquisition Regulation (FAR) Clauses
52.223-15 "Energy Efficiency in Energy-Consuming Products" and 52.223-16 "IEEE 1680 Standard for the Environmental Assessment of Personal Computer Products"; 52.236-7 "Permits and Responsibilities."

2-4-2. Associated Legal Requirements and Policy
Executive Order 13423; Executive Order 13514; Executive Order 13221; Energy Policy Act of 2005, Section 104; Federal Acquisition Regulation, Parts 23.2, 23.7, and 36.601-3; DoD Electronics Stewardship Implementation Plan.

2-5. Water Efficient Materials and Services
Executive Orders 13423 and 13514 direct federal agencies to implement water efficiency measures, including a preference for WaterSense products and services. Thus, when using items or services that fall under a designated EPA WaterSense efficiency standard, construction, renovation, and repair projects should incorporate products and services that, at a minimum, meet the WaterSense standard. This includes a preference for irrigation designers and contractors certified by a WaterSense qualified program. If an item is not within a WaterSense category but does fall under a FEMP category, it should meet the associated FEMP efficiency standard. In addition, AR 420-1 contains metering requirements for Army construction and renovation.

More information can be found at:
http://www.epa.gov/watersense/
http://www1.eere.energy.gov/femp/technologies/eep_purchasingspecs.html

The following list includes the WaterSense and FEMP categories most likely to be associated with construction, renovation, and renovation:

- Bathroom Sink Faucets
- Urinals, Flush Type
- Showerheads
- Toilets, Flush Tank Type
- Landscape Irrigation Services
- Pre-Rinse Spray Valves

Note: Medical and other sanitary facilities should utilize appropriate conservation fixtures (e.g., laminar flow faucets rather than aerators) in accordance with medical/sanitary requirements.

2-5-1. Exceptions
Specific exceptions may be allowed if NO WaterSense or FEMP-designated item:

- Is reasonably available that meets the performance requirements; or
- Is cost effective over the life of the product taking energy and water cost savings into account

JBLM is working to incorporate exception documentation requirements within its construction, renovation, and repair contracts. If your contract requires exception documentation, ensure it is submitted for every case in which an exception is claimed. Designers and requirements generators should check the applicable design standards/specifications (including the JBLM Design Standards, where appropriate) to determine exception justification and submission procedures.

2-5-2. Associated Federal Acquisition Regulation (FAR) Clauses
52.236-7 "Permits and Responsibilities."

2-5-3. Associated Legal Requirements and Policy
Executive Order 13423; Federal Acquisition Regulation, Parts 23.2 and 36.601-3; and DoD/DA/AF policy.

2-6. Low Emitting Materials
Executive Orders 13423 and 13514 instruct federal new construction, major renovation, and repair contracts to incorporate low emitting interior products to the maximum extent practicable. Thus, such projects should specify interior materials and products with low emissions, including composite wood products, adhesives, sealants, interior paints and finishes, carpet systems, and furnishings. Guidance for low emission composite wood, adhesives, sealants, interior paints and finishes, carpet systems, and furnishings can be found in LEED NC credits IEQ 4.1 through 4.4 and LEED CI credit IEQ 4.5. Additional guidance is offered by third-party certifiers such as Greenguard and the Carpet and Rug Institute.

More information can be found at:
http://www.usgbc.org/ShowFile.aspx?DocumentID=5546 (LEED NC)
http://www.usgbc.org/ShowFile.aspx?DocumentID=5543 (LEED CI)
http://www.carpet-rug.org/commercial-customers/green-building-and-the-environment/index.cfm
http://www.greenguard.org

2-6-1. Associated UFGS Specifications
The following specifications may pertain to low emitting materials:

- **03 30 00** Cast-in-Place Concrete
- **04 20 00** Masonry
- **06 10 00** Rough Carpentry
- **06 18 00** Glue-Laminated Construction
- **06 41 16.00 10** Laminate Clad Architectural Casework
- **07 21 13** Board and Block Insulation
- **08 11 16** Aluminum Doors and Frames
- **08 14 00** Wood Doors
- **08 51 13** Aluminum Windows
- **08 52 00** Wood Windows
- **08 53 00** Plastic Windows
- **08 62 00** Skylights
- **09 29 00** Gypsum Board

- **09 30 00** Ceramic Tile, Quarry Tile and Paver Tile
- **09 51 00** Acoustical Ceilings
- **09 64 23** Wood Parquet Flooring
- **09 64 66** Wood Athletic Flooring
- **09 65 00** Resilient Flooring
- **09 65 33** Conductive Vinyl Flooring
- **09 65 66** Resilient Athletic Flooring
- **09 66 16** Terrazzo Tile
- **09 68 00** Carpet
- **09 69 13** Rigid Grid Access Flooring
- **09 69 19** Stringerless Access Flooring
- **09 72 00** Wallcoverings
- **09 83 13** Acoustical Wall Treatment
- **09 90 00** Paints and Coatings
- **10 14 02** Interior Signage
- **10 26 13** Wall and Corner Guards
- **12 31 00** Manufactured Metal Casework
- **12 32 00** Manufactured Wood Casework
- **12 34 00** Manufactured Plastic Casework
- **12 36 00** Countertops
- **12 50 00** Furnishings
- **12 65 00** Fixed Seating
- **23 35 19.00 20** Industrial Ventilation and Exhaust
- **23 36 00** Air Terminal Units

2-6-2. Associated Legal Requirements and Policy
Executive Order 13423; Federal Acquisition Regulation, Part 36.601-3; and DoD/DA/AF policy.

2-7. Ozone Depleting Chemical (ODC) Alternatives
The Clean Air Act Amendments of 1990 instituted a production and importation phase-out of ozone depleting chemicals (ODC) within the United States. Army, Air Force, and JBLM policy is to eliminate dependency on ODCs. Thus, JBLM construction, renovation, and repair projects should eliminate the use of ODCs before and after construction to the maximum extent practicable whenever alternative environmentally preferable products are available. EPA-designated acceptable alternatives can be found at the Significant New Alternatives Policy (SNAP) Program website: http://www.epa.gov/ozone/snap/.

Use of ODCs on JBLM is restricted. Any use of ODC or ODC-containing products requires written approval from the installation Pollution Prevention Program (Bldg 1210). ODC operations shall follow the applicable requirements stated in the installation ODC Management Plan, available from the JBLM Air Quality Program (Bldg 2012).

2-7-1. Associated Federal Acquisition Regulation (FAR) Clauses
52.223-11, "Ozone-Depleting Substances" and 52.223-12, "Refrigeration Equipment and Air Conditioners."

2-7-2. Associated Legal Requirements and Policy
Clean Air Act Amendments of 1990; Executive Order 13423; Executive Order 13514; Federal Acquisition Regulation, Parts 23.8 and 36.601-3; and DoD/DA/AF policy.

2-8. Additional Environmentally Preferable Products
Certain specifications may include additional environmental performance requirements such as the use of less hazardous or non-toxic materials. Consult applicable contracts or design standards for specific requirements.

2-9. Guiding Principles for High Performance and Sustainable Buildings
Note that Executive Orders 13423 and 13514 require federal new construction, major renovation, and repair and alteration to comply with the *Guiding Principles for High Performance and Sustainable Buildings* to the maximum practicable extent. Consult http://www.wbdg.org/references/fhpsb.php and applicable guidance.

Appendix A
REFERENCED LAWS AND APPLICABLE POLICY

- **74 FR 10830** "Federal Procurement of Energy Efficient Products – Final Rule) http://edocket.access.gpo.gov/2009/pdf/E9-5459.pdf
- **Clean Air Act Amendments** of 1990 (Clean Air Act, Title VI) (http://www.epa.gov/air/caa/title6.html)
- **Energy Independence and Security Act** of 2007 (http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h6enr.txt.pdf)
- **Energy Policy Act** of 2005 (http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_bills&docid=f:h6enr.txt.pdf)
- **Executive Order 13221**, "Energy Efficient Standby Power Devices," 2 August 2001 (http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2001_register&docid=fr02au01-128.pdf)
- **Executive Order 13423**, "Strengthening Federal Environmental, Energy, and Transportation Management," 24 January 2007 (http://edocket.access.gpo.gov/2007/pdf/07-374.pdf), (http://www.fedcenter.gov/_kd/Items/actions.cfm?action=Show&item_id=6825&destination=ShowItem), and (http://www.wbdg.org/references/fhpsb.php)
- **Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance,"** 8 October 2009 (http://edocket.access.gpo.gov/2009/pdf/E9-24518.pdf)
- **Farm Security and Rural Investment Act** of 2002 (http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=107_cong_public_laws&docid=f:publ171.107.pdf)
- **Federal Acquisition Regulation** (http://www.acquisition.gov/far/)
- **Resource Conservation and Recovery Act**, Section 6002 (http://www.ornl.gov/adm/ornlp2/sec6002.htm)
- **Army Regulation 200-1**, "Environmental Protection and Enhancement" (13 December 2007)
- **Army Regulation 420-1**, "Army Facilities Management" (12 February 2008)
- **Air Force Instruction (AFI) 32-7080**, "Pollution Prevention Program" (12 May 1994).
- **Air Force Instruction (AFI) 32-7086**, "Hazardous Materials Management" (1 November 2004)
- Memorandum, OUSD (AT&L), 27 August 2004, subject: **Establishment of the DoD Green Procurement Program**
- **DoD Green Procurement Strategy**
- Memorandum, OUSD (AT&L), 17 August 2006, subject: **Department of Defense Biobased Products and Green Procurement Program**
- Memorandum, DA, 22 November 2006, subject: **Establishment of the Army Green Procurement Program**
- **Army Green Procurement Guide**, Version 1, August 2006
- Memorandum, AF Office of the Assistant Secretary, 29 September 2006, subject: **Policy to Establish the Air Force Green Procurement Program**
- **Air Force Guide to Green Purchasing**, January 2005
- **DoD Electronics Stewardship Implementation Plan** (http://www.fedcenter.gov/_kd/Items/actions.cfm?action=Show&item_id=6825&destination=ShowItem)
- **U.S. Army Energy Strategy for Installations**, 8 July 2005
- **Army Strategy for the Environment**: Sustain the Mission, Secure the Future, 1 October 2004
- Memorandum, ACSIM, 7 January 2003, subject: **Change in Army Policy for the Elimination of Ozone Depleting Chemicals**
- Memorandum, ASA (I&E), 22 November 2002, subject: **Elimination of Ozone-Depleting Chemicals (ODCs) in Army Facilities**
- **Fort Lewis Regulation 200-1**, "Environmental Protection and Enhancement"
- **Fort Lewis ODC Management Plan**

- Memorandum, Fort Lewis Garrison Command, 5 May 2009, subject: **Fort Lewis Environmental Policy**
- Memorandum, HQ I Corps and Fort Lewis, 28 September 2007, subject: **I Corps Environmental Policy**

Appendix B
ACRONYMS AND TERMS

AF – Department of the Air Force
AFI – Air Force Instruction
AR – Army Regulation
CFR – Code of Federal Regulations
CPG – Comprehensive Procurement Guidelines
DA – Department of the Army
DoD – Department of Defense
EPA – Environmental Protection Agency
EPEAT – Electronic Product Environmental Assessment Tool
IEQ – Indoor Environmental Quality
FAR – Federal Acquisition Regulation
FEMP – Federal Energy Management Program
HM – Hazardous Material(s)
LED – Light Emitting Diode
LEED – (U.S. Green Building Council's) Leadership in Energy and Environmental Design (Rating System)
LEED CI – LEED Commercial Interiors (Rating System)
LEED NC – LEED New Construction (Rating System)
ODC – Ozone Depleting Chemical
PL – Public Law
PW – Directorate of Public Works, JBLM
RCRA – Resource Conservation and Recovery Act
RMAN – Recovered Materials Advisory Notice
RUL – Restricted Use List
SNAP – Significant New Alternatives Policy
UFGS – Unified Facilities Guide Specifications
USDA – U.S. Department of Agriculture

PROHIBITED AND ACCEPTABLE PLANTS LISTS

PROHIBITED TREES

BOTANICAL NAME	COMMON NAME
ACER MACROPHYLLUM	BIGLEAF MAPLE
ACER NEGUNDO	BOX ELDER
ACER SACCHARINUM	SILVER MAPLE
ALNUS SP.	ALDER
ARAUCARIA ARAVCANA	MONKEY PUZZLE
ARBUTUS MENZIESSI	MADRONE
BETULA PENDULA	WHITE BIRCH
CATALPA SP.	CATALPA
CRATAEGUS SP.	HAWTHORN
ELAEAGNUS ANGUSTIFOLIA	RUSSIAN OLIVE
LABURNUM SP.	GOLDEN CHAIN TREE
PICEA PUNGENS	COLORADO SPRUCE
PLATANUS X ACERIFOLIA	LONDON PLANE TREE
PLATANUS OCCIDENTALIS	SYCAMORE
POPULUS TRICHOCARPA	BLACK COTTONWOOD
POPULUS SP.	POPLARS
ROBINIA PSEUDOACACIA	BLACK LOCUST
SALIX SP.	WILLOW
SOPHORA JAPONICA	PAGODA TREE
SORBUS AUCUPARIA	MOUNTAIN ASH
ULMUS AMERICANA	AMERICAN ELM
ULMUS PARVIFOLIA	CHINESE ELM
ULMUS PUMILA	SIBERIAN ELM

ACCEPTABLE PLANTS (DTN are drought tolerant natives)

BOTANICAL NAME	COMMON NAME	DTN
TREES		
ACER CIRCINATUM	VINE MAPLE	X
ACER GINNALA 'FLAME'	AMUR MAPLE	
ACER PALMATUM	JAPANESE MAPLE	
ACER RUBRUM ‘FRANKS RED'	SUNSET RED MAPLE	
ACER RUBRUM 'SCARLET SENTINEL'	RED MAPLE SENTINEL	
ACER SACCHRUM ‘BONFIRE’	BONFIRE SUGAR MAPLE	
ACER SACCHRUM 'GREEN MOUNTAIN	GREEN MOUNTAIN SUGAR MAPLE	
CALOCEDRUS DECURRENS	INCENSE CEDAR	
CARPINUS BETULUS 'FASTIGIATA'	COLUMNAR HORNBEAM	
CERCIS OCCIDENTALIS	WESTERN REDBUD	
COTINUS COGGYGRIA 'PURPUREUS'	SMOKE TREE	
CUPRESSOCYPARIS LEYLANDII	LEYLAND CYPRESS	
FRAXINUS PENNSYLVANICA 'PATMORE,' 'MARSHALL'S SEEDLESS', ‘CIMMZAM’	PATMORE ASH, SEEDLESS GREEN ASH, CIMMARON ASH	
GINKGO BILOBA (plant male trees only)	MAIDENHAIR TREE	
GLEDITSIA TRICANTHOS 'SKYCOLE'	SKYLINE HONEY LOCUST	
JUNIPERUS CHINENSIS ‘ROBUSTA GREEN’	ROBUSTA GREEN CHINESE JUNIPER	
JUNIPERUS SCOPULORUM 'BLUE HEAVEN'	ROCKY MOUNTAIN JUNIPER	
LARIX OCCIDENTALIS	WESTERN LARCH	X
LIRIODENDRON TULIPIFERA	TULIPTREE	
MALUS 'PRAIRIEFIRE'	PRAIRIEFIRE CRABAPPLE	
MALUS 'SUGARTYME'	SUGARTYME CRABAPPLE	
MALUS TRANSITORIA 'SCHMIDTCUTLEAF'	GOLDEN RAINDROPS CRABABPPLE	
PARROTIA PERSICA	PERSIAN PARROTIA	
PINUS CONTORTA	SHORE PINE	X
PINUS FLEXILIS ‘VANDERWOLFS PYRAMID’	LIMBER PINE	
PINUS NIGRA	AUSTRIAN PINE	
PINUS PONDEROSA	PONDEROSA PINE	X
PINUS SYLVESTRUS	SCOTCH PINE	
PSEUDOTSUGA MENZIESII	DOUGLAS FIR	X
PYRUS CALLERYANA 'CHANTICLEER'	FLOWERING PEAR	
QUERCUS GARRYANA	OREGON OAK	X
QUERCUS ROBUR ‘FASTIGIATA’	COLUMNAR ENGLISH OAK	
SEQUOIA SEMPERVIRENS	COAST REDWOOD	X
STYRAX OBASSIA	FRAGRANT SNOWBELL	
THUJA PLICATA	WESTERN RED CEDAR	X
THUJA PLICATA 'HOGAN'	HOGAN CEDAR	
TILIA TOMENTOSA 'STERLING SILVER'	STERLING SILVER LINDEN	
TSUGA HETEROPHYLLA	WESTERN HEMLOCK	X
TSUGA CANADENSIS	CANADA HEMLOCK	X
ULMUS PARVIFOLIA ‘FRONTIER’	FRONTIER ELM	

SHRUBS		
AMELANCHIER ALNIFOLIA	SASKATOON	X
ARBUTUS UNEDO	STRAWBERRY TREE	
ARBUTUS UNEDO 'COMPACTA'	COMPACT STRAWBERRY TREE	
BUXUS SEMPERVIRENS ‘SUFFRUTICOSA’	TRUE DWARF BOXWOOD	
CARYOPTERIS X CLANDONENSIS	BLUEBEARD	
CISTUS HYBRIDUS	WHITE ROCKROSE	
CISTIS X PURPUREUS	PURPLE ROCKROSE	
CORNUS SERICEA ‘ISANTI’	ISANTI DOGWOOD	
CORNUS SERICEA ‘FLAVIRAMEA’	YELLOW-TWIG DOGWOOD	
CORNUS STOLONIFERA ‘OCCIDENTALIS’	REDOSIER DOGWOOD	X
CORNUS STOLONIFERA 'KELSEYII'	DWARF REDOSIER DOGWOOD	
CORNUS STOLONIFERA 'SILVER AND GOLD'	SILVER AND GOLD DOGWOOD	
DAPHNE CNEORUM 'RUBY GLOW'	RUBY GLOW GARLAND DAPHNE	
ELEAGNUS PUNGENS ‘MACULATA’	GOLDEN ELEAGNUS	
EUONYMUS ALATA 'COMPACTA'	COMPACT BURNING BUSH	
HEBE 'AUTUMN GLORY', 'PATTY'S PURPLE,' etc..	HEBE	
HELICTOTRICHON SEMERVIRENS	BLUE OAT GRASS	
HOLODISCUS DISCOLOR	OCEAN SPRAY	X
LONICERA PILEATA	PRIVET HONEYSUCKLE	
MAHONIA AQUIFOLIUM	TALL OREGON GRAPE	X
MAHONIA AQUIFOLIUM 'COMPACTUM'	COMPACT OREGON GRAPE	X
MYRICA CALIFORNICA	WAXMYRTLE	
NANDINA DOMESTICA many varieties	HEAVENLY BAMBOO	
OEMLERIA CERASIFORMIS	INDIAN PLUM	X
OSMANTHUS DELAVAYI	OSMANTHUS	
PACHISTIMA MYRSINITES	OREGON BOX	X
PHILADELPHUS LEWISII	MOCK ORANGE	X
PICEA ABIES 'NIDIFORMIS'	BIRD'S NEST SPRUCE	
POLYSTICHUM MUNITUM	SWORDFERN	X
POTENTILLA FRUTICOSA	SHRUBBY CINQUEFOIL	X
RHUS GLABRA	SMOOTH SUMAC	X
RIBES AUREUM	GOLDEN CURRENT	X
RIBES SANGUINEUM	RED FLOWERING CURRANT	X
ROSA RUGOSA (many varieties)	RAMANAS ROSE	
ROSA WOODSII	WOOD’S ROSE	X
SENECIO GREYI	SENECIO	
SKIMMIA JAPONICA	JAPANESE SKIMMIA	
SKIMMIA REEVESIANA	REEVES SKIMMIA	
SPIRAEA BETULIFOLIA	BIRCH-LEAF SPIRAEA	X
SYMPHORICARPUS ALBUS	SNOWBERRY	X
SYRINGA MEYERI ‘PALIBAN’	DWARF KOREAN LILAC	
TAXUS BACCATA 'REPANDENS'	SPREADING ENGLISH YEW	
VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	X
VIBURNUM DAVIDII	DAVID VIBURNUM	

GROUND COVERS		
BOTANICAL NAME	**COMMON NAME**	**DTN**
AJUGA REPTANS 'BURGANDY GLOW', GAIETY, etc.	CARPET BUGLE	
ARCTOSTAPHYLOS UVA URSI	KINNIKINNIK	X
ARCTOSTAPHYLOS UVA URSI 'VANCOUVER JADE'	KINNIKINNIK VANCOUVER JADE	
ARCTOSTAPHYLOS X MEDIA	MANZANITA	X
COTONEASTER DAMMERI 'LOWFAST'	BEARBERRY COTONEASTER	
EPIMEDIUM 'ROSE QUEEN,' 'NIVIUM,' etc.	BISHOP'S HAT	
EUONYMUS FORTUNEI ‘COLORATA’	PURPLE-LEAF WINTER CREEPER	
FRAGARIA CHILOENSIS 'LIPSTICK,' 'PINK PANDA'	BEACH STRAWBERRY	X
GAULTHERIA SHALLON	SALAL	X
HYPERICUM CALYCINUM	ST. JOHNSWORT	
JUNIPERUS CONFERTA 'BLUE PACIFIC'	SHORE JUNIPER	
JUNIPERUS HORIZONTALIS 'BLUE CHIP'	BLUE CHIP JUNIPER	
JUNIPERUS HORIZONTALIS 'PRINCE OF WALES'	PRINCE OF WALES JUNIPER	
JUNIPERUS HORIZONTALIS 'WILTONII'	WILTON JUNIPER	
JUNIPERUS PROCUMBENS 'NANA'	COMPACT GARDEN JUNIPER	
JUNIPERUS SABINA "BROADMOOR’	BROADMOOR JUNIPER	
LITHODORA DIFFUSA 'GRACE WARD,' 'HEAVENLY BLUE'	LITHODORA	
MAHONIA NERVOSA	LONGLEAF MAHONIA	X
MAHONIA REPENS	CREEPING MAHONIA	X
OPHIOPOGON JAPONICUS 'NANA'	DWARF MONDO GRASS	
RUBUS CALYCINOIDES 'EMERALD CARPET'	CREEPING RUBUS	
THYMUS PSEUODOLANUGINOSUS	WOOLY THYME	
THYMUS SERPHYLLUM	WILD THYME	
VERONICA PEDUNCULARIS ‘GEORGIA BLUE’	GEORGIA BLUE SPEEDWELL	
VINCA MINOR 'ATROPURPPUREA'	BURGANDY DWARF PERIWINKLE	

GRASSES		
BOTANICAL NAME	**COMMON NAME**	**DTN**
Seed MIX A: use at lawn areas		
LOLIUM PERENNE (see note 1)	TURF TYPE PERENNIAL RYEGRASS	
Sod MIX B: use at biofiltration, infiltration and lawn areas.		
FESTUCA ARUNDINACEA	TALL FESCUE	
AGROSTIC TENIUS	COLONIAL BENTGRASS	
AGROSTIS ALBA	REDTOP	
Seed MIX C: use at field grass areas		
FESTUCA TRACHYPHYLLA	HARD FESCUE	
FESTUCA OVINA L.	SHEEP FESCUE	
FESTUCA RUBRA L.	RED FESCUE	

Note 1: Use a three way sports blend of improved varieties