

Infrastructure Footprint Reduction Program



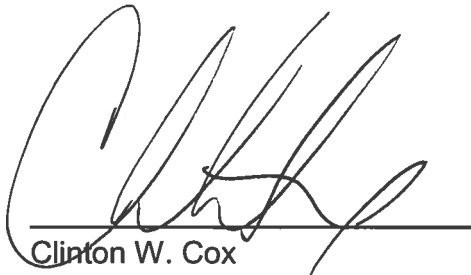
Environmental Assessment Fort Benning, Georgia

June 2018

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**INFRASTRUCTURE FOOTPRINT REDUCTION PROGRAM
ENVIRONMENTAL ASSESSMENT
FORT BENNING, GEORGIA**

Prepared by:
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JUN 07 2018

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SUMMARY

1 Introduction

Fort Benning has prepared this Environmental Assessment (EA) to examine the potential environmental consequences of implementing the Fiscal Year (FY) 19-23 Facility Reduction Program (FRP) in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 US Code [USC] 4321 et seq.), the Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Part 1500-1508), and the Army NEPA Regulation (*Environmental Analysis of Army Actions*; 32 CFR Part 651).

As a public document, the EA is used to determine and evaluate the potential environmental effects of the Proposed Action, identify possible/potential mitigation measures to lessen or eliminate adverse effects, and examine reasonable alternatives for the Proposed Action. The intended audience of the EA is Army decision-makers, interested government agencies, federally recognized Native American Tribes, and non-governmental organizations, and members of the public. The effects analyses in this EA are based on a variety of sources and the best available information at the time of preparation. The information contained in this EA will be reviewed and considered by the Army prior to the final decision on how to implement the Proposed Action, if at all.

2 Background

A US Army Training and Doctrine Command (TRADOC) memorandum dated 1 November 1996, directed Army installations to support the "Winning the Infrastructure War" initiative via implementation of the IFRP (Infrastructure Footprint Reduction Program) (Fort Benning, 1997). Rather than incur the expense of maintaining outdated or unusable buildings and other structures (i.e., concrete pads and former building foundations, antiquated training equipment, etc.), infrastructure would be demolished and their various functions relocated. The IFRP continues to be implemented on the Installation through the development of the FRP. The FRP is a dynamic Fort Benning initiative with infrastructure being added to or removed from the proposed demolition inventory on the basis of evolving mission demands, utilization priorities, and available funding. Appendix A contains a listing of infrastructure currently proposed for demolition and commonly referred to as the FRP list.

An initial EA and Finding of No Significant Impact (FNSI) for the IFRP on Fort Benning were completed in 1997. The EA analyzed the No Action (Status Quo) Alternative plus two Action Alternatives. Alternative 2 involved the construction and utilization of an on-Post facility for the disposal of demolition wastes. The Preferred Alternative (Alternative 3) involved the transport of demolition wastes to an off-Post commercial facility. The EA's Preferred Alternative offered the most flexibility in disposal methods for wastes generated by demolition and was the alternative selected as outlined in the FNSI.

As a result of infrastructure being demolished or being removed from the program's demolition inventory due to reuse and other infrastructure being added, Supplemental EAs were prepared in

2002 and again in 2008. Both determined that the demolition of infrastructure on the FRP lists would not result in significant adverse effects; instead, all adverse effects were considered minor and further minimized through mitigation and/or monitoring activities. All total, Fort Benning has demolished an estimated 1.4 million square feet of buildings and structures over the last 15 years through the FRP and under a variety of other improvement projects (Miller, S. personal communication, 2018).

More recent comprehensive and collaborative planning efforts by the Army have directed installations to continue optimizing land use and the management of existing facilities through site specific area development planning. Area Development Plans (ADPs) are developed from workshop style events guiding installation planning personnel and Army stakeholders through exercises which promotes short and long-term planning (Fort Benning, 2018). Key components of the ADPs include the repurposing of existing facilities for optimal use, demolition of excess infrastructure and unneeded facilities, and providing area specific plans from which the Real Property Master Plan can be updated (Fort Benning, 2016). An installation's Real Property Master Plan provides broad planning direction at the land use level for sustainable installation development that supports mission and environmental requirements. Fort Benning is currently in the process of updating its 2011 Real Property Master Plan.

3 Proposed Action

The Proposed Action is to implement the FY19-23 FRP at Fort Benning, Georgia. Implementation of the FRP could demolish, dispose, and remove from Real Property inventories approximately 150 buildings and structures equaling more than two million square feet. This tentative goal would occur over the next five years at various locations across Fort Benning's cantonment areas for an estimated cost of \$18 million (Figure 2-1). Ancillary structures would also be removed as part of the Proposed Action. Relocation of personnel, supplies, and/or equipment may include renovations and/or adaptive reuse of existing structures. Details of relocation and renovation are uncertain at this time, and those types of future actions will be subject to appropriate NEPA documentation as required.

4 Proposed Action Alternatives

Fort Benning developed a screening criteria to measure which alternatives are reasonable for further analysis. Any alternatives that failed to meet the criteria were eliminated from full consideration within this EA. Alternatives proposed must:

- Comply with the Army TRADOC's IFRP and Army directives instructing optimized facility management through footprint reduction efforts (DoD, 2016a and b);
- Be economically feasible (e.g., facility conversion or extensive renovation and reuse of buildings and structures on the FRP list would be less cost effective than new construction/replacement or use of other facility); and
- Be consistent with Installation master planning and support mission requirements.

Alternatives carried forward for analysis in this EA include:

- **No Action Alternative**

Under the No Action Alternative, Fort Benning would continue to utilize approximately 150 building and structures considered cost prohibitive to sustain, in excess of Army utilization needs, and in some cases may contain potential human health and safety concerns associated with older and ageing infrastructure (e.g., lead based paints (LBPs), asbestos containing materials (ACMs), and/or structural deterioration). Occupied buildings would continue to incur excessive maintenance costs until new replacement facilities can be afforded to relocate current occupying activities and personnel. Currently under-utilized and unoccupied or abandoned buildings or structures would be demolished only as new projects requiring their removal are scheduled in the future. Note that the No Action Alternative does not meet the purpose and need for the Proposed Action but provides a baseline for comparison of other alternatives.

- **Alternative 1: Full Demolition**

Under Alternative 1, Fort Benning would implement the FY19-23 FRP by demolishing all of the structures identified in the FRP's proposed demolition list (Appendix A). Full demolition would preclude the expenditure of excessive maintenance and/or adaptive reuse/renovation costs associated with the utilization of older facilities. Personnel and activities currently occupying facilities to be demolished would relocate to available facilities. Demolished buildings and structures would become open space and in most circumstances the area would be available to be utilized in future projects.

- **Alternative 2: Selective Demolition**

Alternative 2 is similar to Alternative 1; however, Fort Benning would retain the 17 historic buildings identified on the FRP's proposed demolition list. Those 17 buildings are historic properties that are eligible for listing on the National Register of Historic Places per the National Historic Preservation Act. Fort Benning would implement the FY19-23 FRP by demolishing approximately 133 buildings and other structures and continue utilizing the historic structures as best as possible. As outlined in Appendix B, a considerable expenditure of funds to utilize and maintain the historic buildings would continue and many of these facilities would need adaptive reuse and other substantial renovations to sustain adequate and safe working conditions as they continue to age.

5 Environmental Consequences

The analysis contained in this EA indicates that the Proposed Action could have long-term, minor adverse impacts to Cultural Resources, under Alternative 1, and short-term, minor adverse impacts under Alternative 2. Other short-term, minor adverse impacts resulting from demolition activities would occur to Hazardous Materials and Waste, Soils, Water Resources, and Air Quality. Both Air Quality and Utilities would result in long-term, minor adverse impacts as a result of the No Action Alternative. VECs with negligible effects under the Action Alternatives includes Biological Resources, Land Use, and Noise. Additionally, long-term, beneficial impacts to Air Quality and Utilities would result from implementing the Action Alternatives due to

reductions in emissions and energy demands. Environmental consequences of the VECs fully analyzed are summarized in Table ES-1 below.

As discussed in Section 4, these negligible effects to minor adverse direct/indirect impacts do not result in significant adverse cumulative effects when considering other past, present, and reasonably foreseeable future activities at Fort Benning. Adherence to Federal and State laws and regulations, as well as Installation management plans, and Army Regulations would minimize impacts of demolition and disposal activities to Air Quality, Cultural Resources, Hazardous Materials and Waste, Soils, and Water Resources.

6 Conclusions

Implementation of either Action Alternative or the No Action Alternative would have no significant impact on the quality of human life or the natural environment. Alternative 1 is, however, more desirable in comparison due to its proficiency to further comply with the US Army TRADOC's IFRP and more recent Army efforts to optimize facility management through reductions to buildings and structures. A FNSI is warranted for this Proposed Action and does not require the preparation of an EIS.

Table ES.1: Summary of Direct and Indirect Environmental Consequences for Alternatives

VEC	No Action	Alternative 1: Full Demolition	Alternative 2: Selective Demolition
Air Quality	Long-term, minor adverse impacts as a result of existing emission levels and use of existing emission sources.	Long-term, beneficial impacts due to the reduction of air emissions equipment/Title V Permit. Short-term, minor adverse impacts from fugitive dust emissions during demolition.	Same as Alternative 1.
Biological Resources	No impacts	Negligible effects as a result of potential soil disturbances, removal of vegetation and possible habitat, vehicle traffic, etc.	Same as Alternative 1.
Cultural Resources	No impacts	Long-term, minor resulting from altering the historic landscapes.	Short-term, minor adverse impacts resulting from temporally altering the historic viewsheds.
Hazardous Materials and Waste	No impacts	Short-term, minor adverse impacts from an increase in hazardous materials and disposal of waste.	Same as Alternative 1.
Land Use	No impacts	Negligible effects from changes in land utilization.	Same as Alternative 1.
Noise	No impacts	Negligible effects as a result temporary demolition activity.	Same as Alternative 1.
Soils	No impacts	Short-term, minor adverse impacts as a result of ground disturbances.	Same as Alternative 1.
Utilities	Long-term, minor adverse impacts as a result of energy usage by facilities on the FY19-23 FRP list.	Long-term, beneficial impacts from reductions to Fort Benning's total energy demand.	Same as Alternative 1.
Water Resources	No impacts	Short-term, minor adverse impacts as a result of ground disturbances or accidental spills.	Same as Alternative 1.

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1 PURPOSE, NEED, AND SCOPE

1.1 Introduction

Fort Benning has prepared this Environmental Assessment (EA) to examine the potential environmental consequences of implementing the Fiscal Year (FY) 19-23 Facility Reduction Program (FRP) in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 US Code [USC] 4321 et seq.), the Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Part 1500-1508), and the Army NEPA Regulation (*Environmental Analysis of Army Actions*; 32 CFR Part 651).

The EA is used to determine and evaluate the potential environmental effects of the Proposed Action, identify possible/potential mitigation measures to lessen or eliminate adverse effects, and examine reasonable alternatives for the Proposed Action. The intended audience of the EA is Army decision-makers, interested government agencies, federally recognized Native American Tribes, and non-governmental organizations, and members of the public. The effects analyses in this EA are based on a variety of sources and the best available information at the time of preparation. The information contained in this EA will be reviewed and considered by the Army prior to the final decision on how to implement the Proposed Action, if at all.

1.2 Study Location

Initially founded in 1918 as Camp Benning, Fort Benning is an Army Installation located near Columbus, Georgia (GA) and serves as the home to numerous deployable Army units and other tenants. The Installation supports more than 120,000 Active Duty Military, Family Members, Reserve Component Soldiers, Retirees, and Army Civilian Employees on a daily basis (Figure 1-1).

The Installation is located on approximately 182,000 acres in southwest GA's Chattahoochee and Muscogee Counties and east Alabama's Russell County and contains four cantonment areas: Main Post, Kelley Hill, Sand Hill, and Harmony Church. Within these cantonment areas, Fort Benning has its own offices, schools, shopping malls, medical facilities, housing, and churches. Multiple training facilities, firing ranges, and maneuver training areas exist across the Installation. The cantonment areas on-Post provide a centralized location for community facilities and support services for Soldiers and their Families.

Fort Benning plays a pivotal role in supporting the Army's overarching mission by providing the institutional training of Infantry and Armor Soldiers and leaders, basic and advanced individual training of new enlistees, and functional training in special skills needed to support the operating forces. Fort Benning became the home of the Maneuver Center of Excellence (MCoE) following the 2005 Base Closure and Realignment Commission's recommendations to consolidate the Armor and Infantry Centers and Schools. This transformation in force structure was completed in 2011 and sustained Fort Benning's role as an invaluable military readiness training platform that develops the capabilities of the maneuver force and individual Soldier. In 2016, Fort Benning's force structure was once again transformed with the deactivation of the 3rd Heavy Brigade

Combat Team (3rd HBCT) of the 3rd Infantry Division (3ID) and activation of the 1st Battalion, 28th Infantry Regiment Task Force (1-28th IBFT). To support the Army's mission, Fort Benning must continue to possess the infrastructure and facilities necessary to support the military training occurring there and support the quality of life of the Soldiers and their Families.

1.3 Background

A US Army Training and Doctrine Command (TRADOC) memorandum dated 1 November 1996, directed Army installations to support the "Winning the Infrastructure War" initiative via implementation of the Infrastructure Footprint Reduction Program (IFRP) (Fort Benning, 1997). Rather than incur the expense of maintaining outdated or unusable buildings and other structures (i.e., concrete pads and former building foundations, antiquated training equipment, etc.), infrastructure would be demolished and their various functions relocated. The IFRP continues to be implemented on the Installation through the development of the FRP. The FRP is a dynamic Fort Benning initiative with infrastructure being added to or removed from the proposed demolition inventory on the basis of evolving mission demands, utilization priorities, and available funding. Appendix A contains a listing of infrastructure currently proposed for demolition and commonly referred to as the FRP list.

An initial EA and Finding of No Significant Impact (FNSI) for the IFRP on Fort Benning were completed in 1997. The EA analyzed the No Action (Status Quo) Alternative plus two Action Alternatives. Alternative 2 involved the construction and utilization of an on-Post facility for the disposal of demolition wastes. The Preferred Alternative (Alternative 3) involved the transport of demolition wastes to an off-Post commercial facility. The EA's Preferred Alternative offered the most flexibility in disposal methods for wastes generated by demolition and was the alternative selected as outlined in the FNSI.

As a result of infrastructure being demolished or being removed from the program's demolition inventory due to reuse and other infrastructure being added, Supplemental EAs were prepared in 2002 and again in 2008. Both determined that the demolition of infrastructure on the FRP lists would not result in significant adverse effects; instead, all adverse effects were considered minor and further minimized through mitigation and/or monitoring activities. All total, Fort Benning has demolished an estimated 1.4 million square feet of buildings and structures over the last 15 years through the FRP and under a variety of other improvement projects (Miller, S. personal communication, 2018).

More recent comprehensive and collaborative planning efforts by the Army have directed installations to continue optimizing land use and the management of existing facilities through site specific area development planning. Area Development Plans (ADPs) are developed from workshop style events guiding installation planning personnel and Army stakeholders through exercises which promotes short and long-term planning (Fort Benning, 2018). Key components of the ADPs include the repurposing of existing facilities for optimal use, demolition of excess infrastructure and unneeded facilities, and providing area specific plans from which the Real Property Master Plan can be updated (Fort Benning, 2016). An installation's Real Property Master Plan provides broad planning direction at the land use level for sustainable installation

development that supports mission and environmental requirements. Fort Benning is currently in the process of updating its 2011 Real Property Master Plan.

1.4 Purpose and Need

The purpose of the Proposed Action is to optimize facility management through reducing buildings and structures. As a result of ongoing Army force structure transformations and modernization efforts at Fort Benning (Section 1.2), facility utilization priorities have again changed requiring an up-to-date FRP list to define which facilities are identified for demolition for FY19-23. The Proposed Action is necessary to continue the Installation's ongoing FRP and support compliance with the US Army TRADOC's IFRP and more recent Army strategies (DoA, 2016a and b). Implementing the Proposed Action would facilitate the identification/selection, demolition, and disposal of infrastructure considered obsolete/outdated, cost prohibitive to sustain, in excess of Army utilization needs, and in some cases contain potential human health and safety concerns. Other benefits include decreasing fixed facility costs (i.e., utilities and saving energy, reducing risks from structural deterioration, and making idle areas of an installation available for productive reuse. Upon completion of the FY19-23 FRP, Fort Benning will have eliminated more than two million square feet of space and made available millions of dollars in operations and maintenance funds for use in other areas annually.

1.5 Decision to Be Made

The Army decision to be made, supported by information contained in this EA, is whether to, and if so, how to implement the FY19-23 FRP at Fort Benning, GA or choose another alternative. The Action Alternatives entail the identification/selection, demolition, and disposal of buildings and other structures. This EA studies two Action Alternatives in detail, as described in Chapter 2, along with the No Action Alternative. The final decision of which Alternative to implement will be documented in either a FNSI, if no significant environmental impacts are expected, or a Notice of Intent (NOI) to prepare an EIS, if significant environmental impacts are expected to occur. A FNSI will identify the Army's Preferred Alternative and mitigation measures that are essential to the reduction of identified impacts.

1.6 Scope of the EA

The National Environmental Policy Act (NEPA) of 1969, as amended, requires federal agencies to consider environmental consequences in the decision-making process. This EA identifies, documents, and evaluates the potential environmental effects of the proposed implementation of the FY19-23 FRP at Fort Benning, GA in accordance with NEPA regulations issued by the President's CEQ (40 CFR Parts 1500-1508) and the Army's *Environmental Analysis of Army Actions* (32 CFR Part 651). These federal regulations establish the content, administrative process, and substantive scope of the environmental analysis to ensure that decision-makers have a proper understanding of the potential environmental consequences of a Proposed Action and reasonable alternative options along with associated mitigation. At its essence, the EA's analysis is an evaluation (qualitatively) and/or measurement (quantitatively) of the environmental and socioeconomic effects anticipated resulting from the decision to be made. Under NEPA, this analysis of environmental and socioeconomic conditions only addresses those geographic

locations, or region of influence (ROI), and environmental resources with the potential to be affected by the Proposed Action. Environmental resources and locations beyond the possibility of being affected by the Proposed Action are not analyzed. Consequently, the ROI, which includes all areas and lands with the potential to be affected, may vary between environmental resources.

The Army's NEPA regulation (32 CFR 651) warrants that the environmental analysis presented is proportionate to the nature and scope of the action, the complexity and level of anticipated effects on environmental resources, and the capacity of Army decisions to influence those effects in a productive, meaningful way from the standpoint of environmental quality. This EA analyzes both a) infrastructure previously analyzed within preceding Fort Benning IFRP EAs and/or RECs and b) infrastructure more recently added to the FRP list and not analyzed in previous NEPA documents. Although the EA incorporates, wherein possible, by reference the analysis of the previous Fort Benning IFRP EAs (Section 1.2), time and changing environmental conditions merit that infrastructure previously analyzed, but yet to be demolished, is re-analyzed herein. Furthermore, infrastructure previously analyzed within preceding Fort Benning IFRP EAs but absent from the current FY19-23 FRP list (Appendix A) would require being evaluated on a case-by-case basis prior to demolition to determine if the prior NEPA analysis remains appropriate or if additional NEPA documentation is required.

Project footprints, demolition activities, and timeframes for each of the Alternatives have been identified to the fullest extent possible at this time. As mentioned, the FRP is dynamic in nature with infrastructure being added to or removed from the proposed demolition list and ensuing demolition executed on the basis of evolving mission demands, utilization priorities, and available funding. Relocation of personnel, supplies, and/or equipment may include renovations and/or adaptive reuse of existing structures. Details of involving relocation and renovation are uncertain at this time; therefore, those type of future actions will be subject to separate NEPA documentation as required.

In the absence of specific information, the EA's analysis conservatively estimates the environmental effects of the Proposed Action and addresses potential broad-level environmental impacts. This EA serves as a foundation for the NEPA process for each facility identified in the FRP list (Appendix A). Unless unforeseen changes occur to the environmental conditions, pertaining to the buildings and structures described by this EA, a Record of Environmental Consideration could be tiered from this EA to complete the NEPA documentation. If a facility has circumstances not covered by this EA, those circumstance would be handled in accordance with applicable regulations and policy before the facility would be demolished.

1.7 Public Involvement

Fort Benning invites public participation in their Federal decision-making through the NEPA process as required by CEQ and Army NEPA Regulations. Consideration of the views and information of all interested persons promotes open communication, provides additional information and public concerns to decision-makers, and enables better decision making. The Notice of Availability (NOA) was posted in the Columbus Ledger-Enquirer, The Journal, and Benning News (online) in accordance with the Army NEPA Regulation. The EA and Draft FNSI

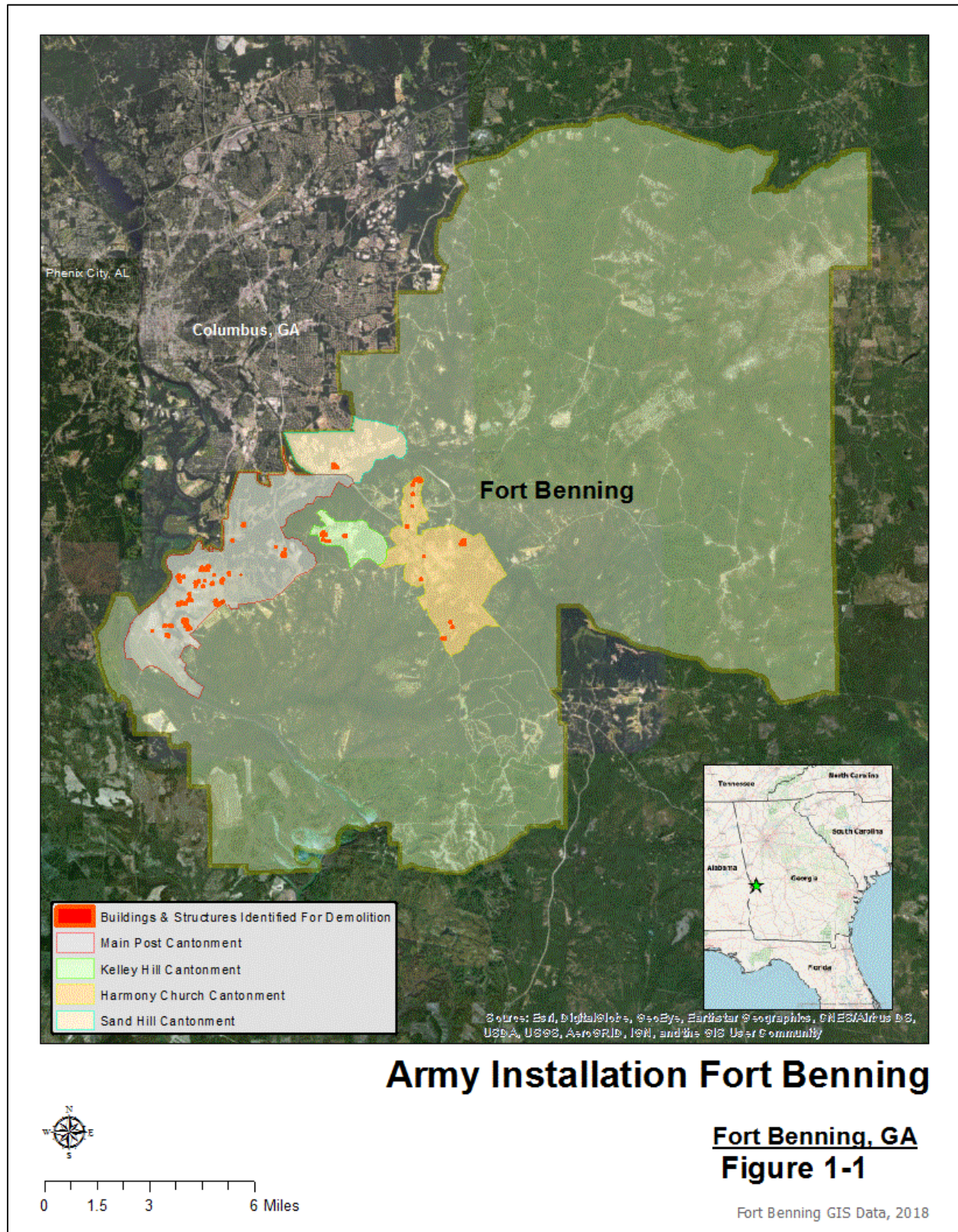
(Appendix C) were distributed to individuals and organizations on the distribution list in Chapter 8.0 for a 30-day public comment period from June 21 – July 23, 2018. These documents are also available at several local libraries and are posted on the Fort Benning website (<http://www.benning.army.mil/Garrison/DPW/EMD/Legal.html>). Written comments must be received by July 24, 2018 to ensure consideration prior to reaching any decision.

Written comments should be forwarded to:

Fort Benning Environmental Management Division
Attn.: NEPA Program Manager
6650 Meloy Drive
Building 6, Room 309
Fort Benning, GA 31905-5122

Electronic comments should be submitted to the NEPA Program Manager: Mr. John Brown (john.e.brown12.civ@mail.mil).

The CEQ and Army NEPA regulations also require that an EA provides evidence through analysis to determine whether the Proposed Action might have significant adverse effects on the environment. Based on evidence and analyses presented within this EA and with consideration given to public and agency comments, the Army will make a determination as to whether implementation of the Proposed Action or Alternatives would have significant effects on the environment. If it is determined that the Proposed Action or Alternatives would have significant, adverse effects, a NOI to prepare an EIS may be issued. If it is determined that the Proposed Action would not have significant adverse effects, the Army may select an Alternative for implementation.



2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

This section describes the Proposed Action, the Alternatives Screening Criteria, and proposed Alternatives used in the development of the EA. The No Action Alternative, as required by NEPA (40 CFR 1502.14[d]), is described to provide a benchmark for comparison of the environmental impacts of other alternatives.

2.2 Proposed Action

The Proposed Action is to implement the FY19-23 FRP at Fort Benning, GA. Implementation of the FRP could demolish, dispose, and remove from Real Property inventories approximately 150 buildings and structures equaling more than two million square feet. This tentative goal would occur over the next five years at various locations across Fort Benning's cantonment areas for an estimated cost of \$18 million (Figure 2-1). Ancillary structures such as boiler room equipment, storage tanks, foundations, and the piping and infrastructure that serve buildings and structures would also be removed as part of the Proposed Action. The demolition actions would be accomplished primarily by contract and include the demolition and disposal of hazardous and nonhazardous material from the Installation.

Relocation of personnel, supplies, and/or equipment may include renovations and/or adaptive reuse of existing structures. Details of relocation and renovation are uncertain at this time, and those types of future actions will be subject to appropriate NEPA documentation as required.

The types of facilities that would be demolished vary generally categorized as either maintenance, administrative/operational, training, and other facilities. Funding for the demolition and disposal of buildings and structures identified in this EA is anticipated to be made available over the next five years; FY19 to FY23. Fort Benning will prioritize the order in which the buildings and structures are demolished based on varying factors that may include but are not limited to utilization and occupancy, structural condition, completion of historic building mitigation, hazardous material abatement, etc. Coordination among Fort Benning's Directorates would occur to curtail any potential nuisances concerning traffic flow and/or road infrastructure. The demolition and removal of buildings and structures identified would return the sites to open space or a more natural green space where possible. Appendix A provides an inventory of facilities affected by this proposal and reflects planning and decision making status as of March 2018. This information is subject to change based on funding and operational requirements.

The Army has traditionally removed buildings and structures from its real property inventory through conventional demolition and landfilling of the disposal debris; with little if any salvageable material reused or recycled. Installations often face diminishing landfill capacities and the landfilling of recyclable building materials represents a costly waste of natural resources. Consequently, deconstruction and the diversion of landfill debris has become an option the Army continues to explore. Deconstruction is the disassembly of building components specifically for re-use, repurposing, recycling, and waste stream reduction. Although it's the Army's intent to

manage waste with the goal of Net Zero waste disposal in landfills, DoD Issuance (DoDI) 4715.23 and the DoD Strategic Sustainability Performance Plan has a goal to divert a minimum of 60 percent of construction and demolition debris from the waste stream (US Army, 2014a). Therefore, the Proposed Action includes the deconstruction and salvage, where possible, rather than focusing only on conventional demolition.

As noted in the USACE's Engineer Construction Bulletin 2015-19, not every building or structure slated for demolition is suited for deconstruction. This could be due to its disrepair or condition, construction type and materials, the presence of contamination, and/or the efforts to recover the materials may greatly exceed its market or reuse value. Since deconstructed infrastructure seldom yields 100 percent reusable components or recyclable materials, this EA generally assumes for analysis purposes that every building and structure on the FRP list will generate some reusable components, recyclable materials, and also require some disposal of waste. Under the FY19-23 FRP, each individual project's unique design will determine the extent of potential deconstruction efforts with the goal to divert a minimum of 60 percent of debris from the waste stream. How Fort Benning accomplishes the deconstruction activity may vary but options include:

- Fort Benning contracting the deconstruction work and retaining ownership of the salvaged materials;
- The contractor receiving salvaged materials as in-kind payment in exchange for a reduced contract cost;
- The deconstruction contractor retaining all salvaged material and charged a price based on the revenues to be received from resale of the materials; or
- A nonprofit contractor performing the deconstruction and Fort Benning, in effect, donating the salvaged material to the nonprofit organization.

2.3 Alternatives Screening Criteria

Fort Benning developed a screening criteria to measure which alternatives are reasonable for further analysis. Any alternatives that failed to meet the criteria were eliminated from full consideration within this EA. Alternatives proposed must:

- Comply with the Army TRADOC's IFRP and Army directives instructing optimized facility management through footprint reduction efforts (DoD, 2016a and b);
- Be economically feasible (e.g., facility conversion or extensive renovation and reuse of buildings and structures on the FRP list would be less cost effective than new construction/replacement or use of other facility); and
- Be consistent with Installation master planning and support mission requirements.

2.4 Alternatives Proposed

This section describes the three alternatives carried forward for analysis in this EA. Alternatives proposed include the No Action Alternative and two Action Alternatives.

2.4.1 No Action Alternative

Under the No Action Alternative, Fort Benning would continue to utilize or maintain approximately 150 building and structures considered cost prohibitive to sustain, in excess of Army utilization needs, and in some cases may contain potential human health and safety concerns associated with older and ageing infrastructure (e.g., lead based paints (LBPs), asbestos containing materials (ACMs), and/or structural deterioration). Occupied buildings would continue to incur excessive maintenance costs until new replacement facilities can be afforded to relocate current occupying activities and personnel. Currently utilized and unoccupied or abandoned buildings or structures would be demolished only as new projects requiring their removal are scheduled in the future. Note that the No Action Alternative does not meet the purpose and need for the Proposed Action but provides a baseline for comparison of other alternatives.

2.4.2 Alternative 1: Full Demolition

Under Alternative 1, Fort Benning would continue its implementation of the FY19-23 FRP by demolishing all of the structures identified in the FRP's proposed demolition list (Appendix A). Full demolition would preclude the expenditure of excessive maintenance and adaptive reuse/renovation costs associated with the utilization of older facilities. Personnel and activities currently occupying facilities to be demolished would relocate to available facilities. Demolished buildings and structures would become open space and in most circumstances the area would be available to be utilized in future projects.

2.4.3 Alternative 2: Selective Demolition

Alternative 2 is similar to Alternative 1; however, Fort Benning would retain the 17 historic buildings identified on the FRP's proposed demolition list. The 17 historic structures either are eligible or considered eligible for listing on the National Register of Historic Places per the National Historic Preservation Act; therefore reuse must be considered prior to demolition. Fort Benning would implement the FY19-23 FRP by demolishing approximately 133 buildings and other structures and continue utilizing the historic structures as best as possible. As outlined in Appendix B, a considerable expenditure of funds to utilize and maintain the historic buildings would continue and many of these facilities would need adaptive reuse and other substantial renovations to sustain adequate and safe working conditions as they continue to age.

2.5 Alternatives Considered but Eliminated from Full Study

The following alternatives were considered but eliminated from further analysis during the development of this EA since none comply with the US Army TRADOC's IFRP and Army directives to optimize facility management through footprint reduction efforts nor are considered practicable economically. Other limitations of the alternatives eliminated from full study include their inability to apply to many facilities on the FRP list. For example, renovation, reuse, or conversion would not be applicable to some structures such as remaining concrete foundations and other components of former training equipment.

2.5.1 Renovation and Reuse of Historic Buildings on the FRP List

Renovation and reuse of only historic buildings on the FRP list was not carried forward for analysis as it would not comply with the US Army TRADOC's IFRP and more recent Army directives instructing optimized facility management through footprint reduction efforts. As well, renovation and reuse of the historic buildings identified in the FRP would entail an immense number of upgrades to meet current facility standards of each building's present use. Upgrade considerations would include the probable need for new mechanical, electrical, heating, air conditioning, life safety systems and the inclusion of other systems that are needed to support the selected reuse of the facility. When compared to the cost of demolition, renovation is not economically practical. Appendix B provides an economic analysis report containing cost estimates on renovation and reuse for each historic building listed the FRP. Consequently, this was not considered to be a reasonable alternative.

2.5.2 Conversion of Historic Buildings on the FRP List

As defined by Army Real Property regulations, Installation facilities are assigned Category Codes based on the functional use (Army Regulation 405-45). The conversion of Army buildings for an alternate use would require a change from an existing facility code to a different facility code that reflects the newly assigned functional use. Prior to the conversion of a facility for an alternate use, the building would require renovation and upgrades to meet the facility standards. As mentioned, renovation/reuse considerations include the probable need for new mechanical, electrical, heating, air conditioning, life safety systems, etc. Only after renovation was completed would the facility be converted to meet its new functional use. Similar to the renovation and reuse of buildings, conversion of a buildings use would not be economically practical and also was not considered to be an alternative that warrants further study. See Appendix B for economic analysis and estimated conversion costs.

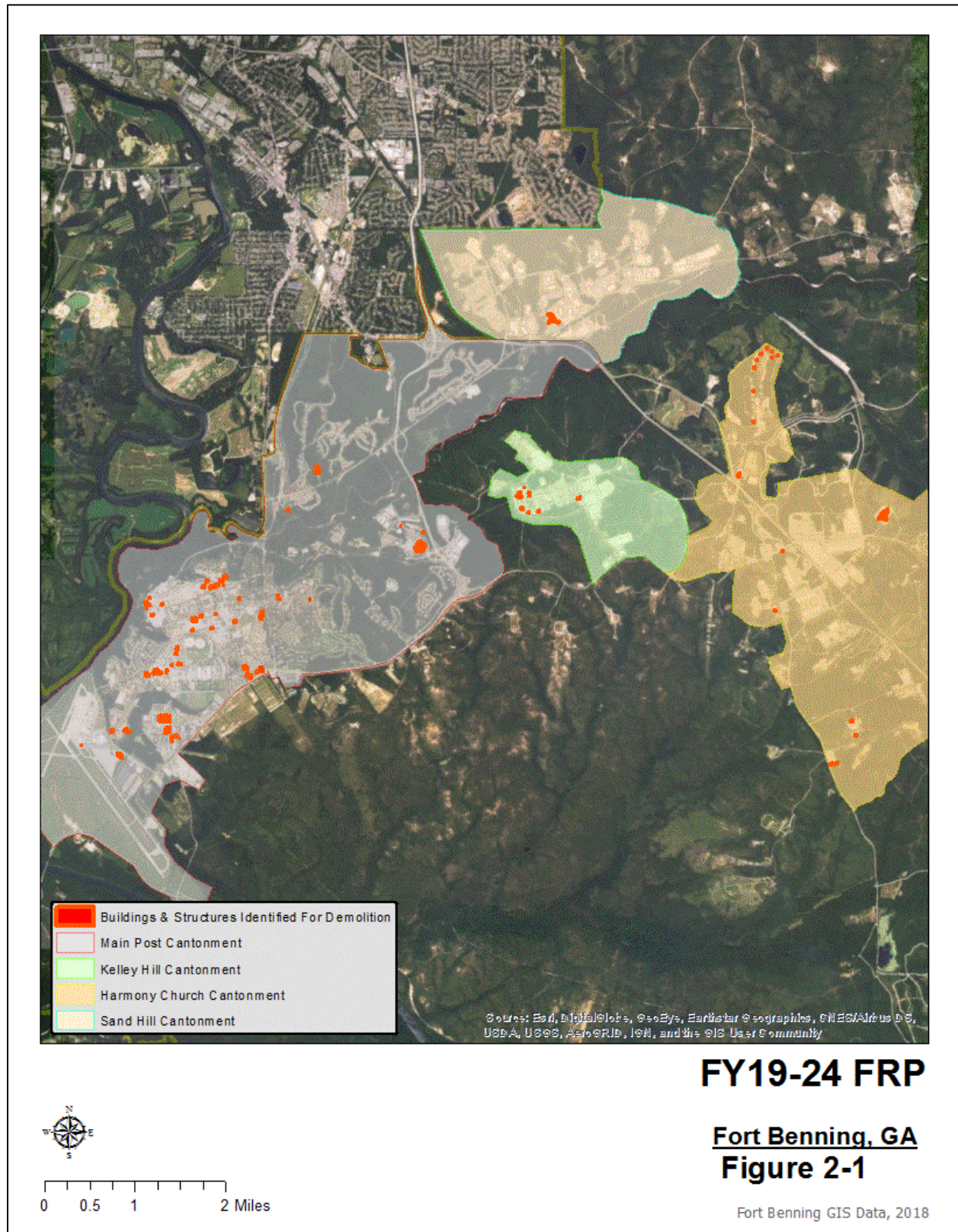
2.5.3 Mothballing of Historic Buildings for Future Use

The Alternative would include the mothballing or placing in caretaker status the historic buildings listed within the FRP. Mothballing refers to the process and non-operating condition associated with both securing and preserving real property and its features for "de-activation" and potential future renovation and reuse. Renovation and reuse of historic buildings are previously described in Section 2.5.1 and does not include the additional costs of ongoing utility services and maintenance associated with the mothballing period until future reuse decisions are made. Based on the costs of de-activation, utility and maintenance costs, and economic impracticability for indefinite reuse of facilities (Appendix B); this action was not considered a reasonable alternative that warrants further study.

2.5.4 Sale and Relocation of Buildings or Structures Off-Post

An additional Alternative eliminated from further analysis includes the sale of an entire building or structure for its relocation and potential reassembly off-Post. Once common practice among installations, the coordination and time required to sale and transfer whole buildings and structures is often an involved and lengthy process; from market to sale. Other common challenges and delays involve the buyer's expertise to safely salvage an entire facility and the

preparation of building components for transportation to avoid obstacles along the transportation routes. Accordingly, deconstruction (described in Section 2.2) provides many of the same benefits as sale and relocation off-Post but with a more streamlined process utilizing the experience and expertise of qualified contractors.



3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

Chapter 3 describes the affected environment and the potential environmental consequences as a result of implementing the Proposed Action. The affected environment portrays the current environmental setting at Fort Benning and forms a reference for analyzing and understanding the intensity of potential environmental impacts for each alternative.

Environmental consequences are characterized by their duration (i.e., short-term or long-term) and by the nature of their effects as being direct, indirect, and/or cumulative. The CEQ defines direct effects as those that are caused by the Proposed Action and occur at the same time and place; indirect effects are caused later in time or farther removed in distance but still reasonably foreseeable; cumulative effects are incremental impacts of the Alternatives when added to other past, present, and reasonably foreseeable future actions (40 CFR Part 1508.7-8).

The affected environment and environmental consequences are described in each section as it applies to valued environmental components (VECs). VECs are fundamental elements of the physical, biological, or economic environment, and include air, water, soil, terrain, vegetation, wildlife, fish, birds and land use that may be affected by a proposed project. Each VEC also has a defined ROI to describe the geographic extent or area that potential impacts could occur as a result of the Proposed Action.

Based on the results of the environmental analyses, this EA identifies whether a particular potential effect would be adverse or beneficial and to what extent. The following terms are used throughout this EA as a convention to indicate the relative degree of severity of potential impacts:

- **Beneficial.** A positive environmental impact.
- **Adverse.** A negative environmental impact.
- **Negligible.** An environmental impact that could occur but the effects would be less than minor and possibly imperceptible.
- **Minor.** An environmental impact that clearly would not be significant.
- **Moderate.** An environmental impact that is not significant but is readily apparent. Instances include actions where the potential consequences of the Proposed Action requires additional precautionary measures in following standard procedures to minimize adverse effects.
- **Significant.** An environmental impact which violates or exceeds regulatory or policy standards or exceeds the identified threshold. A significant impact may; however, be mitigated to less than significant.

A significance threshold is the stated level at which an impact is determined to become significant. Quantitative and qualitative analyses have been used in determining whether a threshold would be exceeded. Significance thresholds are also described for each VEC in the

discussions regarding environmental consequences. Thresholds have been developed in consideration of CEQ's guidance for determining significance (40 CFR Part 1508.27).

3.2 VECs

Army Environmental Command's NEPA Analysis Guidance Manual provides information on identifying VECs, which are those environmental resources that are considered to be important by society and potentially at risk from human activities or natural hazards. After consideration of the anticipated impacts associated with the proposed alternatives and information gathered during the EA's development, the following VECs were selected to be carried forward for detailed analysis in this EA:

- Air Quality
- Biological Resources
- Cultural Resources
- Hazardous Materials and Waste
- Land Use
- Noise
- Soils
- Utilities
- Water Resources

3.2.1 VECs Not Carried Forward for Analysis

In an effort to focus on relevant environmental analysis and issues, the CEQ encourages concentrating on relevant environmental analysis in EA. Similarly, CFR 200-1 §651.14 promotes minimizing unnecessary analysis and discussion of minor issues that have little or no measurable environmental effect. Of the VECs considered, three were dismissed from full analysis as there is no potential for the Proposed Action or Alternatives to have impacts to them. These include Airspace, Socioeconomics and Environmental Justice, and Traffic and Transportation.

▪ Airspace

There would be no effects to Airspace under the Proposed Action. Demolition activities would not affect the current Airspace designations and all flights and associated activities would occur on other parts of the Installation. Therefore, no further discussion of Airspace is warranted in this EA.

▪ Socioeconomics and Environmental Justice

The Proposed Action would have limited beneficial effect on the local economy but only short-term during demolition. This includes the potential for additional jobs and subsequent increased local spending by the workforce. None of the Action Alternatives would induce long-term population growth within the Installation or the surrounding communities, nor have an adverse effect on housing. The effects on socioeconomics from this proposed action would be negligible. Therefore, socioeconomics have been eliminated from further discussion in this EA.

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, directs each federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations.” As the Proposed Action is limited to Fort Benning, there would be no effects to minority or low-income populations. Therefore, there are no effects to environmental justice issues and are not further discussed in this EA.

Children may suffer disproportionately, more so than adults, due to physiological and behavioral differences from environmental health risks and safety risks. EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, requires Federal agencies to identify disproportionately high and adverse impacts to children. The intent of EO 13045 was to prioritize the identification and assessment of environmental health and safety risks that may affect children, and to ensure that federal agencies’ policies, programs, activities, and standards address these environmental and safety risks to children. The potential of the Proposed Action to cause environmental and safety risks to children is negligible. All demolition activities areas would be carefully monitored and controlled for only authorized access, (e.g., construction workers, project managers, mitigation monitors, etc.); therefore, no effects to children would occur.

▪ **Traffic and Transportation**

Only the Main Post Cantonment Area routinely experiences some minor traffic congestion, which is limited to peak traffic periods. No road closures are anticipated as a result of the Proposed Action. Although a slight increase in traffic flow could occur nearby facilities and structures to be demolished as a result of transporting equipment and vehicles, the overall level of Installation-wide traffic would still remain similar to current levels. Demolition design and coordination with Fort Benning’s Directorate of Public Safety would assist in identifying problematic areas and further minimize issues involving traffic flow and/or road infrastructure. Overall, the Proposed Action’s impact on Traffic and Transportation would result only in negligible effects. Therefore, no further discussion regarding the potential effects to traffic and transportation is warranted in this EA.

3.3 Air Quality

The quality of air in a given location is generally described by the concentrations of various pollutants in the atmosphere. The Clean Air Act (CAA) (42 USC 7401–7671q), as amended, gives the US Environmental Protection Agency (EPA) the responsibility to establish acceptable Air Quality standards to protect public health and welfare, including the National Ambient Air Quality Standards (NAAQS) that determine acceptable concentration levels for six criteria pollutants. These pollutants include: carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM₁₀ or PM_{2.5}), ozone (O₃), nitrogen dioxide (NO₂) and lead (Pb). A region with Air Quality better than the NAAQS is designated as being in attainment; areas with substandard Air Quality are classified as nonattainment areas. A nonattainment designation generally is given to a region if the primary NAAQS for any criteria pollutant are exceeded at any point in the region for more than three days during a three year period.

3.3.1 Affected Environment

The ROI for Air Quality encompasses Fort Benning and the multi-county region including Muscogee, Chattahoochee, Harris, Talbot, and Marion Counties of GA and Russell and Lee Counties of Alabama (AL). The buildings and structures identified with the FY19-23 FRP exist inside the Installation's cantonment areas as part of the ROI and within the State of GA. The EPA Region 4, the AL Department of Environmental Management, and the GA Department of Natural Resources regulate Air Quality within this airshed and on Fort Benning. This region has been classified by the EPA as an attainment area for all criteria pollutants; therefore, general conformity Air Quality regulations do not apply to federal actions within this region and is not discussed further in this EA.

3.3.1.1 Title V Permit

Fort Benning is designated as a major stationary source of air pollutants and operates under a CAA Title V Operating Permit (No. 9711-215-0021-V-03-0). The latest Title V permit was issued in March 2014 and is in effect for five years. The permit includes a list of emission sources, applicable regulations, emissions limits, and monitoring and record-keeping requirements. The permit is modified on a routine basis to account for the addition or removal of stationary and area pollutant sources.

Fort Benning currently has 11 boilers firing natural gas or liquefied petroleum gas that are greater than 10 million British thermal units per hour (MMBtu/Hr), and hundreds of smaller boilers or heaters. Three substantial air emission boilers, H008 (36 MMBtu/Hr), H010 (16.8 MMBtu/Hr), and H011 (16.8 MMBtu/Hr), and two 1035 kilowatt diesel generators are associated with the former Martin Army Hospital (Buildings 9200 and 9202), which is on the FRP's proposed demolition list. Also, 19 boilers, each less than five MMBtu/Hr, five generators, and an estimated 36 refrigerant (difluoromono-chloromethane or R-22) containing units accompany other buildings proposed for demolition. Since the Proposed Action does not involve the construction of new facilities or addition of new generators or boilers, no new emission sources would be added to the Title V Operating Permit.

3.3.1.2 Fugitive Dust

Fugitive dust refers to particulate matter suspended in the air from any source other than a stack, vent, or chimney. Common sources capable of generating fugitive dust include earth-moving activities, construction/demolition activities, disturbed surface areas, and vehicular movement. The State of GA requires compliance with its Fugitive Dust Rule (Rule 391-3-1-.02[n]), which stipulates the use of reasonable precautions (e.g., application of water, paving roads, covering truck beds transporting dusty materials, etc.) to prevent fugitive dust from becoming airborne and that fugitive dust opacity remain below 20 percent.

3.3.1.3 Prescribed Fire

Fort Benning also generates emissions from prescribed fire activities as part of its ongoing ecosystem management program, as the area is historically a fire-based ecosystem. Prescribed burning is the largest single source of criteria pollutant emissions on the Installation (US Army,

2013). It is also a critical management tool for fire-dependent natural communities, Red-cockaded Woodpecker (RCW) habitat, and training area management.

The GA and AL Forestry Commissions administer each state's Smoke Management Plan, which details the basic framework of procedures and requirements for managing smoke from prescribed fires. The goal of each Smoke Management Plan is to minimize the public health and environmental impacts of smoke intrusion into populated areas from fires, avoid significant deterioration of Air Quality and potential CAA violations, and avoid visibility impacts in Class I prevention of significant deterioration (PSD) areas (US Army, 2013). The closest PSD Class I areas are the Sipsey Wilderness Area, AL, as well as Cohotta, Wolf Island, and Okefenokee Wilderness Areas, GA. All of these Class I areas are located more than 200 miles away, and unlikely to be affected by emissions generated at Fort Benning. Therefore, PSD is not further considered in this EA.

3.3.1.4 Greenhouse Gases

Routine societal and developmental activities such as fuel combustion, deforestation, and other changes in land use, have the potential to result in the accumulation of trace greenhouse gases (GHGs), in the atmosphere. GHGs include water vapor, CO₂, methane, nitrous oxide, O₃, and several hydrocarbons and chlorofluorocarbons. An increase in GHG emissions is said to result in an increase in the earth's average surface temperature, which is commonly referred to as global warming. Global warming is expected, in turn, to affect weather patterns, the average sea level, ocean acidification, chemical reaction rates, and precipitation rates, all of which is commonly referred to as climate change.

Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface. A gas's global warming potential provides a relative basis for calculating its carbon dioxide equivalent (CO₂e), which is a metric measure used to compare the emissions from various GHGs based on their global warming potential. CO₂ has a global warming potential of 1 and is therefore the standard to which all other GHGs are measured.

Water vapor is a naturally occurring GHG and accounts for the largest percentage of the greenhouse effect. Next to water vapor, CO₂ is the second-most abundant GHG. Uncontrolled CO₂ emissions from power plants, heating sources, and mobile sources are a function of the power rating of each source, the feedstock (fuel) consumed, and the source's net efficiency at converting the energy in the feedstock into other useful forms of energy (e.g., electricity, heat, etc.). Because CO₂ and the other GHGs are relatively stable and essentially uniformly mixed throughout atmosphere, the climatic impact of these emissions does not depend on the source location on the earth (i.e., regional climatic impacts/changes will be a function of global emissions).

Overall, federal agencies address emissions of GHGs by reporting and meeting reductions mandated in laws, EOs, and policies. The more recent include EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, of October 2009 and EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, January 2007,

which introduced GHG emissions management and improvements that address waste reduction and efficiency for the federal government. These executive orders were revoked in March 2015 with the publication of EO 13693, *Planning for Federal Sustainability in the Next Decade*, which retained the goal to maintain federal leadership in sustainability and GHG emissions.

EO 13783 of March 2017, *Promoting Energy Independence and Economic Growth* ordered the rescission of the August 2016 CEQ directive; *Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*. As a result, the requirement for analyzing the effects of GHGs resulting from a proposed action was eliminated. Nevertheless, EO 13783 did not remove the requirement for assessing a proposed action's potential impact to Air Quality; which includes GHGs as required under NEPA. Therefore, the effects of climate change are to be included and addressed to; furthermore, document an informed decision-making process was followed.

GHG emission sources at Fort Benning include vehicle use, boilers, chillers, water heaters, and emergency generators. The Proposed Action would reduce GHG emissions through demolition of older inefficient facilities and associated emission emitting infrastructure. Since there would not be an increase of GHG, this will not be evaluated further in this EA.

3.3.2 Environmental Consequences

Impacts to Air Quality would be considered significant if emission would increase ambient air pollution concentrations above the NAAQS.

3.3.2.1 No Action Alternative

Under the No Action Alternative, demolition and disposal of buildings and other facilities on the FRP list and as directed by the Army would not occur. There would be no reduction in facilities deemed inefficient and cost prohibitive to sustain, and no reduction in stationary emission sources identified within Fort Benning's CAA Title V Operating Permit. Existing emission levels would remain unchanged and the No Action Alternative would have a long term, minor impact on Air Quality.

3.3.2.2 Alternative 1: Full Demolition

The Proposed Action would result in increases in air emissions during demolition activities from work and vehicles onsite. All applicable federal and state Air Quality protection requirements would be implemented to mitigate any generation of fugitive dust due to minor earth disturbances. An increase in emissions and fugitive dust during demolition would be short-term, and would not result in an increase of criteria pollutants at Fort Benning or its surrounding area in the long-term.

Fort Benning would reassess the estimated annual emissions from all stationary sources (e.g., boilers, heating, ventilation, and air conditioning [HVAC], etc.), in the Installation's Title V permit following the demolition and disposal of each building and structure. As applicable, stationary source emissions estimated for each demolished facility would be removed from the

Title V permit and contribute to long-term beneficial effects to the existing emissions levels and the local and regional Air Quality. Upon completion of this Alternative, three substantial boilers (greater than 10 MMBtu/Hr) and 19 lesser boilers (less than five MMBtu/Hr), along with two 1035 kilowatt diesel generators, five generators of varying size, and 36 refrigerant (difluoromonochloromethane or R-22) containing units captured under the Title VI of the Clean Air Act would be removed..

During demolition activities, potential effects under Alternative 1 to Air Quality may include short-term, minor adverse impacts due to an increase in air emissions and fugitive dust. Also, long-term, beneficial impacts are anticipated for Air Quality resulting from a reduction of stationary source emissions and to the Installation's Title V Permit.

3.3.2.3 Alternative 2: Selective Demolition

Under Alternative 2, the Proposed Action would demolish 17 fewer buildings than Alternative 1. These historic buildings would be retained and adapted as necessary for use. Short-term, minor adverse impacts resulting from an increase in air emissions could occur onsite during demolition activities, but no increase of criteria pollutants at Fort Benning or its surrounding area are expected as a result of following federal and state Air Quality protection requirements. Stationary emission sources supporting each demolished facility would also be demolished and removed from the Title V Permit. Alternative 2 would result in a reduction to units captured under Title IV of the CAA by removing the same boilers, generators and refrigerant containing units as in Alternative 1. Overall, long-term beneficial impacts are also anticipated for Air Quality as a result of Alternative 2; although less advantageous than Alternative 1.

3.3.3 Mitigation

No mitigation measures other than following applicable laws and regulations are warranted for Air Quality.

3.4 Biological Resources

Biological Resources include native or naturalized plants and animals and the habitats in which they occur. The dominant plant species make up plant communities, which in turn define the vegetation of an area. Habitat is known as the area or environment where resources and conditions are present that allow a plant or animal to survive.

3.4.1 Affected Environment

The ROI for Biological Resources is the area contained within the boundaries of Fort Benning. Fort Benning manages and conserves its Biological Resources through its Integrated Natural Resources Management Plan (INRMP). All proposed actions on the Installation are considered for their potential effects through the NEPA process, and in accordance with various EOs, US Fish and Wildlife Service (USFWS) Biological Opinions, Memorandums of Understanding, and State and Federal Endangered Species Acts. Biological Resources discussed in this EA include Vegetation, Fish and Wildlife, Migratory Birds, and Threatened and Endangered Species, which

could potentially be affected by demolition, disposal, or operational activities associated with the Alternatives.

3.4.1.1 Vegetation

According to Fort Benning's INRMP, there are more than 1,275 species of plants on Fort Benning located within approximately 29,000 acres of unforested areas and 150,000 acres of woodland. Loblolly and longleaf pine are the predominant conifers within the Installation, comprising approximately 80,000 acres of the woodland; the remaining 70,000 acres of woodland consist of approximately 15,000 acres of forested restricted access areas and 55,000 acres of hardwood forest (Fort Benning, 2015).

Fort Benning is located within the Longleaf Pine Ecosystem with vegetative cover distributed along two broadly defined ecological units or subsections; the Sand Hills and Upper Loam Hills. The northern portion of the Installation is part of the Sand Hills subsection characterized by well-drained soils and Longleaf pines (*Pinus palustris*). The Upper Loam Hills cover most of the southwestern area of Fort Benning and is characterized by heavier soils containing higher amounts of organic matter and increased water holding capacities. Natural vegetation is characterized as an Oak-hickory forest (e.g., Post Oak [*Quercus stellate*], White Oak [*Quercus alba*], Pignut Hickory [*Carya glabra*], Mockernut Hickory [*Carya tomentosa*]) (Fort Benning, 2015).

The undeveloped areas of Fort Benning generally consists of hardwood and pine trees, and are heavily wooded. The more developed cantonment areas consists primarily of hardwood tree species, decorative shrubs around buildings, and open grassed areas for green space and training facilities. The cantonment areas contain mature sycamore, oak, and other tree species lining many of the Installation's main streets and historic districts. The developed areas generally do not provide good habitat for wildlife. Development and human activity have forced native animal populations to less disturbed and less active areas of the Installation, such as training areas.

3.4.1.2 Wildlife

Fort Benning is inhabited by more than 350 species of fish and wildlife, including 154 species of birds, 47 species of mammals, 48 species of reptiles, 25 species of amphibians, 67 species of fish, and nine species of mussels, as well as numerous insect and other invertebrate species (Fort Benning, 2015). Commonly encountered animals include American alligators, turtles, water snakes, wading birds, migratory waterfowl, American beaver, white-tailed deer (*Odocoileus virginiana*), feral swine (*Sus scrofa*), eastern wild turkey (*Meleagris gallopavo*), eastern gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), rabbits (*Sylvilagus spp.*), other small mammals, and a wide variety of songbirds. Reptiles and amphibians found on the Installation includes eastern coachwhip (*Masticophis flagellum flagellum*), eastern diamondback rattlesnake (*Crotalus adamanteus*) Florida pinesnake (*Pituophis melanoleucus mugitus*), southern hognose snake (*Heterodon simus*), eastern tiger salamander (*Ambystoma tigrinum*), and other species of the Longleaf Pine Ecosystem (Fort Benning, 2015).

Fort Benning supports a high diversity of native freshwater fishes, including both game and non-game species. Native non-game fishes include many species of shiners, darters, shad, and minnows, as well as the southern brook lamprey (*Ichthyomyzon gagei*). Popular game fish species include: largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), redear or shellcracker (*Lepomis microlophus*), black crappie (*Pomoxis nigromaculatus*), channel catfish (*Ictalurus punctatus*), white bass (*Morone chrysops*), and hybrid white bass (*Morone chrysops saxatilis*) (Fort Benning 2014).

The Fort Benning region is rich in invertebrate biodiversity. Common insects in stream systems include larval and adult stages of stoneflies, mayflies, midges, and caddis flies. As well, a wide variety of crustaceans such as crayfish, mussels, isopods, snails, and amphipods occur within the regional habitat. Mussels in particular are sensitive indicators of water quality and ecological integrity. At least four mussel species of conservation concern occur within Uchee Creek in AL (Fort Benning 2014). Water bodies on Fort Benning commonly containing mussels include the Chattahoochee River, Victory Pond and Uchee, Cox, Shell, and Oswichee Creeks (Fort Benning, 2015).

Some of the species discussed herein provide outdoor recreational value in the form of hunting, fishing, and wildlife viewing. Management of these species includes ensuring adequate enforcement of hunting and fishing regulations. During training exercises, Fort Benning limits access for hunting and fishing inside the boundaries of the Installation because of safety and security concerns.

Due to their habitat preference and utilization of structural voids for roosting and/or propagation of young, bats may occur within the proposed demolition footprints. The Seminole bat (*Lasiurus seminolu*), southeastern myotis (*Myotis austroriparius*), and Brazilian free-tailed bat (*Tadarida brasiliensis*) are known to occur at Fort Benning and commonly make use of man-made structures. Building or structures would, however, be inspected for the presence of bats prior to demolition activities. In the event bats are detected within the building or structure, demolition could be delayed until the reproductive season has lapsed. Outside of the reproductive season, bats would be removed from the building using exclusion techniques, enabling the bats to relocate themselves prior to demolition. Since demolition would only occur to facilities without the presence of bats, bats and their management is not analyzed further beyond mitigation measures.

3.4.1.3 Migratory Birds

According to Fort Benning's INRMP there are approximately 150 species of birds protected under the Migratory Bird Treaty Act that may occur on Fort Benning either seasonally or year round. Most of these species are breeding residents or neotropical migrants for which the typical breeding season is spring through summer.

Section 315 of the 2003 National Defense Authorization Act provided that the Secretary of the Interior prescribe regulations to exempt the Armed Forces from the incidental taking of migratory birds during military readiness activities. Military readiness activity includes all training and operations of the Armed Forces that relate to combat. In accordance with 50 CFR

21.15 (Authorization Of Take Incidental To Military Readiness Activities), the regulation does not allow an installation to take migratory birds indiscriminately during readiness activities but requires that installations consider the protection of migratory birds when planning and executing military readiness activities. In addition, Fort Benning manages and conserves migratory bird species through its INRMP and considers effects to migratory birds in any proposed action via the NEPA process.

The Migratory Bird Treaty Act grants the Secretary of the Interior the authority to establish hunting seasons for species the USFWS has determined that hunting is appropriate; species for which there is a long tradition of hunting; and species for which hunting is consistent with their population status and long-term conservation. Two species of resident game birds at Fort Benning include the northern bobwhite quail (*Colinus virginianus*) and eastern wild turkey. Nineteen species of migratory game birds (at least 16 of which are waterfowl) include the mourning dove, common snipe (*Gallinago gallinago*), American woodcock (*Scolopax minor*), Canada goose (*Branta canadensis*), mallard duck (*Anas platyrhynchos*), wood duck (*Aix sponsa*), ring-necked duck (*Aythya collaris*), gadwall (*Anas strepera*), American wigeon (*Anas americana*), northern pintail (*Anas acuta*), American black duck (*Anas rubripes*), green-winged teal (*Anas crecca*), blue-winged teal (*Anas discors*), canvasback (*Aythya valisineria*), redhead (*Aythya americana*), bufflehead (*Bucephala albeola*), hooded merganser (*Lophodytes cucullatus*), northern shoveler (*Anas clypeata*), and lesser scaup (*Aythya affinis*) (Fort Benning, 2015).

3.4.1.4 Invasive Species

In 1999, EO 13112 began requiring federal agencies to prevent the introduction of invasive species; to provide for their control; and to minimize the economic, ecological, and human health impacts that invasive species cause.

Common invasive plant species identified on Fort Benning include the tree species of Chinese Tallowtree (*Triadica sebifera*) and Mimosa (*Albizia julibrissin*), and shrubs such as Chinese Privet (*Ligustrum sinense*) and Multiflora Rose (*Rosa multiflora*). Invasive vine species include Kudzu (*Pueraria montana* var. *lobata*) and English Ivy (*Hedera helix*). Invasive grasses include Cogongrass (*Imperata cylindrical*) and Japanese Knotweed (*Fallopia japonica*) (Fort Benning, 2015). All are extremely aggressive invaders with the capability of forming dense assemblages and/or extensive root systems that displaces native vegetation.

Fort Benning utilizes an integrated pest management approach to control invasive plant species. Integrated pest management involves using targeted, sustainable control methods that can include a variety of measures, such as habitat modification, biological control, mechanical control, physical control and the judicious use of pesticides. Specific procedures related to the control of invasive plant species are outlined in Fort Benning's Integrated Pest Management Plan (Fort Benning, 2013). The Proposed Action would occur within areas routinely maintained (e.g., mowed, sodded/seeded, weeded, pruned, etc.). The means used for the maintenance of the cantonment areas are largely effective in managing invasive species as well. Accordingly, invasive plants will not be discussed further in this EA.

Feral swine are widespread across the Installation and considered a pest species for many reasons. The primary concern is the extensive damage to vegetation and soil surfaces that occurs due to their characteristic “rooting” habits, which jeopardizes the establishment of ground cover and native vegetation. Other impacts of feral swine include direct mortality of pine and hardwood trees, competition with native wildlife species, habitat disturbance, and direct mortality of threatened and endangered species. Additionally, feral swine can also uproot and damage cables, wiring, targetry, bivouac sites, and other military assets. Fort Benning’s management of this species focuses on controlling the population by establishing liberal hunting regulations such as no bag limits and expanded season lengths. In addition, trapping is conducted at specific locations to minimize damage to military assets and sensitive plants (USACE, 2009). Specific procedures related to the control of feral swine are outlined in Fort Benning’s Integrated Pest Management Plan (Fort Benning, 2013). The presence of urban areas, communities, and control methods for feral swine are effective in maintaining and managing populations within Fort Benning’s cantonment areas. The Proposed Action and Alternatives would only occur in developed areas and would not have an effect on feral swine. Therefore, feral swine will not be discussed further in this EA.

3.4.1.5 Endangered, Threatened, and Rare Species

As described in the INRMP, there are 96 species (four amphibians, eight birds, seven fishes, four mammals, four mussels, nine reptiles, and 60 plants) of conservation concern found on Fort Benning. Plant and animal species listed as threatened, endangered, or proposed as such by the USFWS, the State of GA or the State of AL are recognized as special-status species. The Endangered Species Act (ESA) only protects federally listed species. State listed species are protected in the State of GA by the GA Wildflower Preservation Act or GA’s Endangered Wildlife Act. The State of AL likewise protects a number of species through the Nongame Species Regulation (AL Administrative Code 220-2-.92). Although state listed species are not protected by the ESA, they may be considered for federal listing in the future and may be afforded special management attention by Fort Benning.

Army Regulation (AR) 200-1 (Environmental Protection and Enhancement) guides Army compliance with the ESA. The regulation requires ESMCs for listed and proposed species and critical habitat, a 100 percent inventory of suitable habitat for listed and proposed species that may occur on the Installation, and an initial thorough inventory of plants, fish, wildlife, and habitats on the Installation lands. Five federally listed or candidate species occur on Fort Benning. These are the Red-cockaded Woodpecker (*Picoides borealis*) (Endangered), American Alligator (*Alligator mississippiensis*) (Threatened for similarity in appearance), Wood Stork (*Mycteria Americana*) (Endangered), Relict Trillium (*Trillium reliquum*) (Endangered), Georgia Rockcress (*Arabis Georgiana*) (Candidate), and Gopher Tortoise (*Gopherus polyphemus*) (Candidate). Accordingly, the Bald Eagle (*Haliaeetus leucocephalus*) has been delisted but remains protected under the Bald and Golden Eagle Protection Act (Fort Benning, 2014).

3.4.1.6 Unique Ecological Areas (UEAs)

Fort Benning has identified several areas that have unique or rare ecological characteristics or that represent the best example of a particular habitat or plant community type. UEAs were chosen based on characteristics of their soil type, topography, slope, aspect, elevation, hydrology, flora, fauna, and other biotic and abiotic features. Many areas apparently contain remnant native plant communities that have experienced minimal disturbance relative to other similar communities. To conserve the ecological integrity of these areas, Fort Benning will use their designation as UEAs to ensure that current and future land-use planning and training activities take into consideration their presence and their preservation. The Proposed Action and Alternatives would not occur within or have any effects on UEAs. Therefore, UEAs are not discussed further in this EA.

3.4.1.7 Habitat Conservation and Enhancement

The Sikes Act authorizes the Department of Defense (DoD) to partner with non-federal governments or private organizations to establish buffers around military installations. The Army implements this authority through the Army Compatible Use Buffer (ACUB) program, which provides funding for the Army to work with state and local governments, non-governmental organizations, and willing land owners to help prevent encroachment of training areas and promote regional conservation efforts.

Through Fort Benning's partnership with The Nature Conservancy, off-Post conservation measures both buffer the Installation boundary from land uses incompatible with military training and promotes land management to protect and restore habitat for listed, imperiled, or at-risk species that impact Fort Benning's mission. Properties enlisted under the ACUB program are either placed into conservation easements or purchased fee simple later those properties may be sold to conservation buyers and encumbered with permanent conservation easements. ACUB lands are not federally owned; the Army holds only a contingency right to ensure that training buffer and conservation purposes are met. As of 2018, the ACUB program at Fort Benning encompasses over 20,000 acres around Fort Benning with a goal of protecting up to 40,000 acres by 2020 (Fort Benning, 2015). The Proposed Action would not occur within or have any effects on Fort Benning's ACUB Plan. Therefore, these areas are not discussed further in this EA.

3.4.2 Environmental Consequences

Impacts would be considered significant if one of more of the following conditions would result:

- Substantial loss or degradation of habitat or ecosystem functions (natural features and processes) essential to the persistence of native plant and animal populations;
- Substantial loss or degradation of a sensitive habitat, including surface waters and UEAs that support high concentrations of special status species or migratory birds;
- Disruption of a federally listed species, its normal behavior patterns, or its habitat that substantially impedes the Installation's ability to either avoid jeopardy or conserve and recover the species; or
- Substantial loss of population or habitat for a state-protected species increasing the likelihood of federal listing action to protect the species in the future.

3.4.2.1 No Action Alternative

Under this alternative, no demolition and disposal of facilities and structures would occur. As well, no impacts to Biological Resources would be expected as a result of the No Action Alternative.

3.4.2.2 Alternative 1: Full Demolition

The Proposed Action has the potential to affect terrestrial wildlife through nominal displacement as a result of soil disturbance, removal of vegetation and possible habitat, vehicle traffic, and incidental human activity. Demolition activities would; however, be limited to individual project areas and adhere to applicable federal and state laws, regulations, and permit requirements. Following demolition, areas previously occupied by facilities and structures would be returned to open/green spaces.

No adverse effects to any federal or state-listed species, their habitat, or migratory birds are expected. Although vegetation removal is anticipated from demolition activity, these disturbances would occur within the project areas and be temporary resulting in negligible effects. Construction/demolition activities are the norm within and around cantonment areas. Demolition under the IFRP would occur over the next five year and would not occur within a concerted area. Demolition would be dispersed among developed cantonment areas, which generally do not contain exceptional habitat for most wildlife. Overall, GA National Pollutant Discharge Elimination System (NPDES) and Air Quality Rules for construction would preclude potential adverse effects to Biological Resources. Therefore, impacts to Biological Resources as a result of this Alternative are anticipated to be negligible.

3.4.2.3 Alternative 2: Selective Demolition

Alternative 2 would retain the 17 historic buildings identified on the FRP's proposed demolition list (Appendix A). Potential adverse impacts to Biological Resources resulting from the implementation of Alternative 2 would be the same as those described under Alternative 1. Therefore, impacts to Biological Resources as a result of this Alternative are anticipated to be negligible.

3.4.3 Mitigation

Mitigation measures for Biological Resources would include compliance with Federal and State erosion control measures and NPDES permitting requirements as further discussed in Section 3.8 (Soils). Additional mitigation would include inspecting buildings or structures for bats, as applicable, and excluded them prior to demolition activities. Other sound project practices to incorporate where possible include:

- Limiting disturbed areas through design as feasible;
- Site rehabilitation through the planting of native trees and sowing of other vegetation to more quickly establish green spaces, especially around storm water management structures;
- Employing tree protection devices at the sites of demolition.

3.5 Cultural Resources

Cultural Resources include archaeological sites, buildings, structures, objects, historic landscapes and districts, sacred sites, and properties of traditional religious and cultural importance. A historic property, as defined on the National Historic Preservation Act of 1966 (NHPA), is a Cultural Resource that is included or eligible for inclusion in the National Register of Historic Places (NRHP). Under Section 106 of the NHPA and its implementing regulations in Protection of Historic and Cultural Properties (36 CFR Part 800), federal agencies must take into account the effects of their undertakings on historic properties. These regulations require that federal agencies consult with the State Historic Preservation Office (SHPO) on their undertakings and that they afford the Advisory Council on Historic Preservation the opportunity to comment on their undertakings. Section 110 of the NHPA further requires federal agencies to assume responsibility for the identification and preservation of historic properties on land owned or controlled by the agency. Consultation with federally recognized Native American Tribes is required. Other laws and regulations also apply to Cultural Resources, such as the Native American Graves and Protection and Repatriation Act and the Archaeological Resource Protection Act.

3.5.1 Affected Environment

The ROI for Cultural Resources is the area within the Installation's boundary. Fort Benning's Cultural Resources include: archaeological sites, buildings, historic districts, and Native American resources.

3.5.1.1 History

The earliest settlers of the area were the Paleoindians who arrived between 14,000 and 11,500 years ago. By the 1790s, settlement by European and African descent began. For almost 80 years the area was intensively farmed under plantations and farmsteads until 1918 when Camp Benning was purchased for the establishment of a temporary 50-acre tent encampment. Camp Benning was selected as the new home for the US Army Infantry School of Arms; later renamed the US Army Infantry School. On 9 January 1922, Congress issued War Department General Order Number 1, authorizing the retention of Camp Benning as a permanent military post, and re-designating it as Fort Benning. Construction of Family housing, Soldiers' quarters, a hospital, athletic fields, and mess facilities occurred during the 1920s. By 1930, aviation activities had begun at Fort Benning and the Works Project Administration programs, created during the Great Depression, provided the impetus for construction of the first runways and hangars at Lawson Army Airfield, the first airstrip at Fort Benning.

The 1940s witnessed significant changes to Fort Benning as a result of World War II, the birth of the airborne infantry concept, and establishment of the Parachute School in 1942. As well, mobilization facilities were constructed over much of Fort Benning including two new cantonment areas known as Sand Hill and Harmony Church. Kelley Hill was added in the 1950s along with the establishment of several new units.

The escalation of the Vietnam Conflict transformed the US Army Infantry School's focus towards combined-arms training. The cessation of the military's involvement in Vietnam was

followed by the re-direction of the American military to an all-volunteer army. At Kelley Hill, the Modern Volunteer Army Program was initiated in 1973 with the 197th Infantry Brigade becoming the Army's first all-volunteer unit and first combined-arms team under the Strategic Army Forces concept. This was soon followed by the Army's announcement of Advanced Individual Training for infantry personnel, the addition of a major training complex on Sand Hill, and modernization of on-Post living facilities.

In 2005, Fort Benning was selected by the Base Realignment and Closure Commission (BRAC) to be the home of the new MCoE. The realignment consisted of a billions in renovation and construction to unify the Infantry School and Armor School, formerly located at Fort Knox, Kentucky, at a single location. This transformation was completed September 2011. Today, Fort Benning continues to train all Infantry, Armor, and Scout Soldiers in basic and advanced combat maneuver skills and remains a critical training venue that plays a pivotal role in supporting the Army's evolving mission.

3.5.1.2 Resource Management and Consultation

Management of Cultural Resources on Fort Benning is accomplished through the Installation's Integrated Cultural Resources Management Plan (ICRMP). Additionally, Fort Benning has adopted the Army Alternate Procedures (AAP) for implementing Section 106 NHPA consultation to improve efficiency in the Installation's Cultural Resources management. The Historic Properties Component (HPC) of the ICRMP: 1) provides Standard Operating Procedures (SOPs) for assessing the Proposed Action and the potential effects on the Installation's historic properties; 2) replaces the NHPA Section 106 procedures (Fort Benning, 2015); and 3) uses NEPA documentation to satisfy most consultation requirements with the Tribes and State Historical Preservation Offices.

Thirteen federally recognized Tribes are affiliated with the Fort Benning area. Consultations with the Tribes also follow AAP for compliance with Section 106 of the NHPA, and the consultation procedures prescribed within the HPC of the ICRMP. Under these procedures, Fort Benning holds consultation meetings with the federally recognized Tribes on a biannual, face-to-face basis; provides Tribes with copies of relevant documentation concerning existing and proposed actions (e.g., this EA); and solicits Tribal input into the Garrison Commander of Fort Benning's decision making. As part of an on-going process and dialogue, concerns expressed by the Tribes will be incorporated into the Federal decision-making process.

In the event mitigation is required as a result of an action, consultation with the appropriate SHPO and Tribes (i.e., stakeholders), as needed, will be conducted through the process required by NEPA. At this stage, all stakeholders can formally submit comments, and Fort Benning must take into account such comments prior to deciding how to proceed. It should be noted that Memoranda of Agreement between Fort Benning and other stakeholders are no longer used to document consultation and mitigation, instead NEPA documentation and the HPC process is used. Thus, a time-consuming effort normally found under NHPA regulations (36 CFR 800) has been streamlined, while appropriate coordination with stakeholders occurs. Only NHPA Section 106 is covered by the AAP. Other legal requirements such as the NAGPRA, Archaeological Resources Protection Act, NHPA Section 110, and other mandates are unaffected by the AAP.

Fort Benning's ICRMP will address compliance with these requirements. Informal contacts between Installation Cultural Resource Managers, SHPO staff, and Tribal representatives are maintained to ensure appropriate alternatives are explored and considered early in the process to achieve the highest level of historic preservation commensurate with mission requirements.

3.5.1.3 Site-specific Resources

The impact analysis for Cultural Resources focuses on the properties that are listed on or considered eligible for the NRHP, and properties that are considered to be contributing resources to a historic district. Under the NHPA, only Cultural Resources included in or eligible for inclusion on the NRHP, defined as 'historic properties', warrant consideration with regard to adverse impacts from a Proposed Action. Historic properties generally must be more than 50 years old to be considered for protection under the NHPA. To be considered eligible for the NRHP, Cultural Resources must meet one or more criteria as defined in 36 CFR 60.4. These criteria include association with an important event, association with a famous person, embodiment of the characteristics of an important period in history, or the ability to contribute to scientific research. Historic properties may be buildings, structures, historic districts, sites, or objects.

Fort Benning has two primary NRHP-eligible historic districts: Main Post and Lawson Army Airfield. These districts include more than 575 historic properties that are contributing to the districts, of which 15 buildings are individually eligible for listing. Riverside (Quarters 1) has been individually listed in the NRHP. Open spaces are a significant part of the Main Post Historic District and historically have set Fort Benning apart from other installations of this age and type.

Of approximately 150 building and structures identified for demolition on the FRP list, 17 are considered historic buildings (Figure 3-1). All but four of the historic buildings exist within the Main Post Historic District. Buildings 328 and 330 are located nearby the Main Post Historic District. Building 328 is considered independently eligible and Building 330 is a contributor to the Main Post Historic District's viewshed. Additionally, Building 319 is located within the Lawson Army Airfield District. Only Building 3716, located within the Sand Hill Cantonment Area, is not contained by or neighboring a historic district.

Since 2003, all of Fort Benning has been inventoried for archaeological Cultural Resources per section 110 of the National Historic Preservation Act (NHPA), with the exception of permanent dud areas (15,591 acres), inundated areas (683 acres) and areas where survey could not be completed due to live fire training schedules (2,469 acres). As a result of these surveys, 3,555 archaeological sites and 68 historic cemeteries have been recorded. 214 of these sites have been determined eligible for the National Register of Historic Places (NRHP) including Yuchi Town (1RU63) which is also designated as a National Historic Landmark. The NRHP eligibility status of 534 sites could not be determined at the Phase I survey level and will require Phase II testing as funding allows, or as required for an undertaking per section 106 of the NHPA. The remaining 2807 sites have been determined "not eligible" for inclusion in the NRHP. An additional 359 isolated artifact finds were previously given state site numbers, but do not qualify as archaeological sites under current standards (Ecks, M. personal communication, 2018).

There are no known archaeological sites or cemeteries located within or adjoining facilities or structures identified for demolition, and no Tribe has identified a property of traditional religious or cultural importance on Fort Benning managed lands. As there will be no effects to archaeological sites, cemeteries, or Tribal religious or Cultural Resources as a result of the Proposed Action or Alternatives. Therefore, these topics are not discussed further in this EA.

3.5.2 Environmental Consequences

Impacts to Cultural Resources would be considered significant if they meet one or more of the following criteria:

- The activity would cause irretrievable or irreversible damage to historic property and measures mitigating the adverse effect of the resource are not available and cannot be implemented;
- The activity would restrict access to a cultural resource of significance to the Tribes associated with the Fort Benning area without resolution through consultation.

Direct effects generally involve physical damage or destruction to all or part of a resource through ground-disturbing activities or deterioration or destruction of a resource brought about through neglect. Indirect effects generally result from alterations to the characteristics of the surrounding environment or setting that contribute to a resource's significance, and increased use of or access to an area containing historic properties.

3.5.2.1 No Action Alternative

Under the No Action Alternative, demolition and disposal of buildings and other structures on the FRP list as directed by the US Army would not occur. To avoid noncompliance with the NHPA and demolition by neglect, historic structures would continue to be repaired and maintained as a contributing element of the Fort Benning Historical Districts. In some instances, structural deterioration would continue to take place involving unoccupied or underutilized non-historic facilities or structures. Nonetheless, the No Action Alternative is not expected to result in impacts to Cultural Resources.

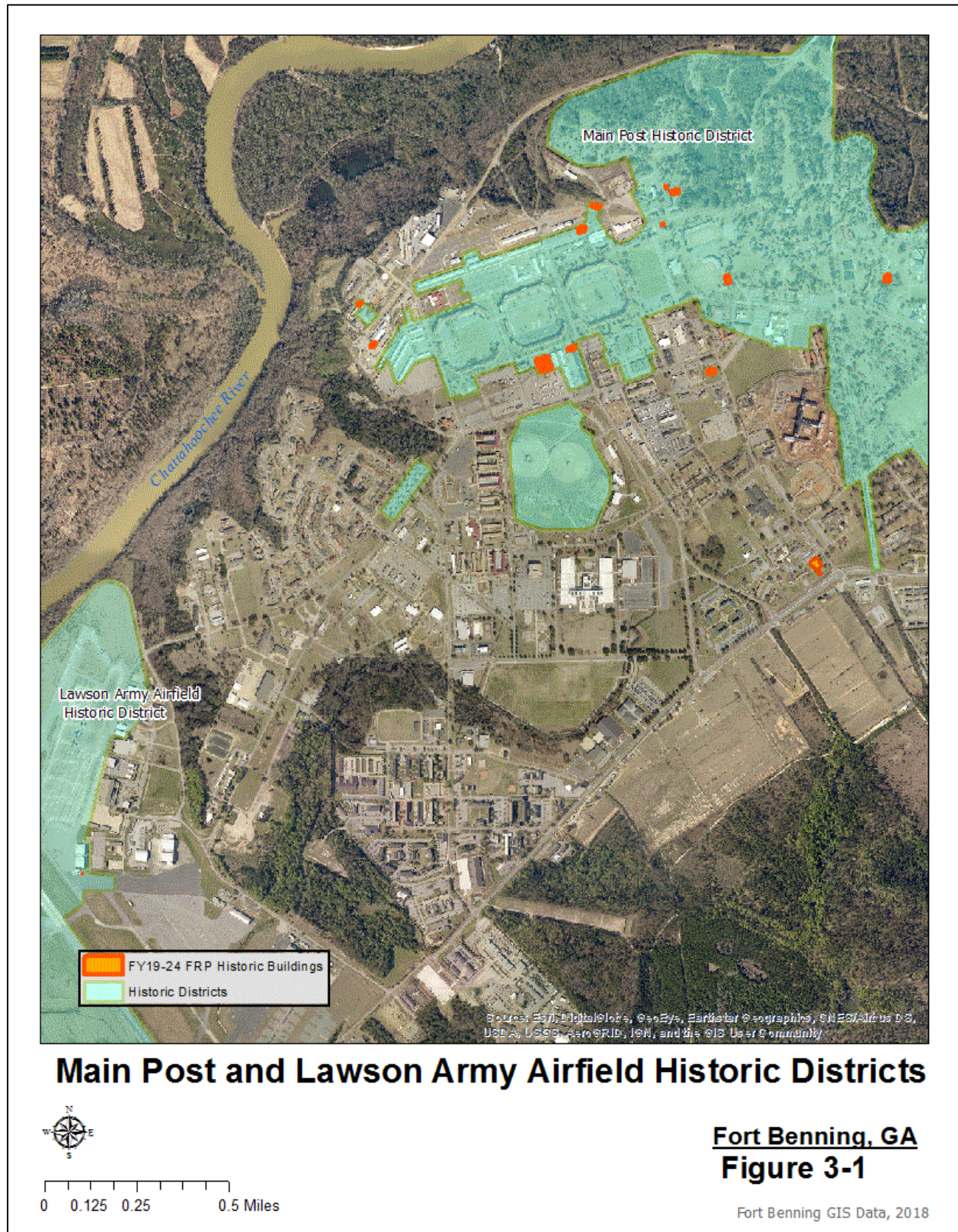
3.5.2.2 Alternative 1: Full Demolition

Under Alternative 1, Fort Benning would demolish and dispose of approximately 150 buildings and other structures including the demolition of 17 historic buildings that exists within or adjacent to one of Fort Benning's historic districts (Figure 3-1).

The demolition of historic buildings has the potential to result in adverse impacts to Cultural Resources. As well, the demolition and removal of buildings and structures, both historic and non-historic, within and near the boundary of Fort Benning's historic districts have the potential to adversely affect the viewshed of the Main Post and Lawson Army Airfield. Under Alternative 1, short-term, minor adverse impacts to the historic visual setting would be expected during demolition activities as a result of personnel, equipment, and partially demolished infrastructure within the project areas.

Following demolition and disposal, the removal of buildings and structures that are inconsistent with a historic district may enrich that district, whereas removal of contributing historic buildings or properties from a historic district may detract from that district. Similarly, removal may change the character of historical landscapes by disrupting or enhancing spatial relationships between other features (e.g., buildings, streetscapes, etc.). This, however, would not occur to the extent of changing the Main Post or Lawson Army Airfield's historic setting. Although returning demolition to open/green space could, in some instances, complement the surrounding historic landscapes, the overall adverse impact to Cultural Resources under this alternative could be significant without adequate mitigation. Implementing the required mitigation measures listed in section 3.6.2.4 will offset the adverse effect to the historic districts to a negligible level.

Earth-moving activities and the use of heavy equipment could potentially encounter previously undiscovered historic properties and prehistoric artifacts. The potential to discover artifacts is low as the project areas for demolition have previously been subjected to disturbance. Therefore, the Proposed Action would have negligible effects on undiscovered Cultural Resources. Nevertheless, if Cultural Resources are unexpectedly encountered during demolition, operations would cease in the immediate area of the discovery until the site is investigated by Fort Benning and necessary remedial actions are completed.



3.5.2.3 Alternative 2: Selective Demolition

Under Alternative 2, Fort Benning would demolish and dispose of approximately 133 buildings and other structures but continue to maintain and, where possible, utilize the 17 historic structures identified within the FRP list.

The demolition of building and structures would result in the temporary presence of personnel, equipment, and partially demolished infrastructure within the project areas. Some buildings and their project areas exist within or adjacent to Fort Benning's historic districts and have the potential to adversely affect the viewshed of the Main Post and Lawson Army Airfield Historic Districts. Removal of buildings, utilities, asphalt, and other items associated with the buildings and structures in a few instances could reduce intrusions and complement the surrounding historic landscapes as the properties would be returned to open/green space. As a result, the Proposed Action would not be expected to change the character of the physical features that contribute to its historic setting. Therefore, only short-term, minor adverse impacts to Cultural Resources would be expected during demolition activities.

Similar to what was described under Alternative 1, the Proposed Action has a low probability to discover artifacts as the project areas for demolition have previously been subjected to disturbance. Nevertheless, in the event cultural materials are unexpectedly encountered, operations would cease in the immediate area of the discovery until the site is investigated by Fort Benning and necessary remedial actions are completed.

3.5.3 Mitigation

Mitigation would include adhering to the HPC in place at Fort Benning. Through the HPC, this EA will be used for consultation between Fort Benning, the Tribes and the SHPO. Fort Benning would prepare a Historic American Building Survey (HABS) for each historic property, or other suitable mitigation, prior to its demolition and disposal. Adverse impacts to historic districts would be mitigated prior to demolition activities.

3.6 Hazardous Materials and Waste

Hazardous materials are comprised of any material or agent (biological, chemical, physical) that has the potential to cause harm to humans, animals, or the environment, either on its own or through interaction with other factors. Hazardous substances are defined and regulated in the US primarily by laws and regulations administered by the US Occupational Safety and Health Administration (OSHA), EPA, and the US Department of Transportation. Various state laws also regulate the management and disposal of Hazardous Materials and Waste. Army policy is to ensure that use, handling, and management of Hazardous Materials and Waste is in compliance with all applicable federal, state, or local laws and/or regulations. This section evaluates the use, handling and storage, transport, and disposal of Hazardous Materials and Waste at Fort Benning as a result of the Proposed Action.

3.6.1 Affected Environment

The ROI for Hazardous Materials and Waste includes the entirety of Fort Benning. Programs have been established at Fort Benning to:

- Control the entry of hazardous substances to the Installation;
- Safely manage hazardous waste and material handling and transportation within the Installation;
- Inform military and civilian employees of Hazardous Materials and Waste dangers;
- Minimize the risk of human exposure and release into the environment associated with these substances;
- Dispose of these substances in an environmentally sound manner when they are no longer useful.

3.6.1.1 Hazardous Materials Use, Handling, and Storage

Army Regulation 200-1 requires Army installations to minimize the use of hazardous materials, as well as establish management procedures to ensure proper handling throughout their life cycle including procurement, storage, use, and disposal. In addition, installations are required to implement a Hazardous Waste Management Plan to ensure that hazardous waste is managed in compliance with applicable laws and regulations. AR 200-1 also includes requirements for the management of toxic substances in a manner that minimizes human exposure and environmental risk.

Routine operations on Fort Benning require the use of a variety of hazardous materials, including petroleum products, solvents, cleaning agents, paints, adhesives, and other products necessary to perform vehicle and equipment maintenance, military training activities, and training area upkeep. Batteries, petroleum, oil, and lubricants (POL) are used to power both military and civilian equipment and vehicles, and pesticides are used to control plant and animal pests throughout the Installation. When not in use, these materials are generally stored at maintenance facilities in a cantonment area.

3.6.1.2 Solid Waste Management

Solid waste (that is not hazardous or toxic) at the Installation includes waste generated from Family housing, administrative areas, troop units, and contractors. Two separate solid waste haulers operate under contract on Fort Benning. All of Fort Benning's solid waste goes to a transfer station and then to permitted sanitary landfills located in Phenix City or Tallassee, AL. Both landfills have projected current and future capacity of more than 30 years (Fort Benning, 2017, Advanced Disposal, 2018)

Fort Benning's policy on recycling is governed by the October 2007, Policy Memorandum #200-1-8, entitled "Qualified Recycling Program." Under this policy, Army personnel and contractors are required to actively participate in the recycling program, and all of the proceeds from the program are retained by the Installation. One recycling center processes recyclable items from industrial work areas, barracks, and Family housing areas. Recyclable items include paper (approximately 420 tpy), cardboard (approximately 1,500 tpy), aluminum and scrap metal

(approximately 3,000 tpy), glass (approximately 200 tpy), and plastic (approximately 100 tpy). Also, about 91 tons of tires, 92 tons of oil, and 300 tons of ammunition-related recycling (i.e., brass, links, shells, fuzeheads) are processed annually (Fort Benning, 2017).

Family housing waste is collected curb-side from housing units located on the Installation and generally consists of food wastes, metal, plastics, paper, glass, etc. Fort Benning has a recycling program in place as outlined in its Integrated Solid Waste Program.

Administration area waste is collected from various sized storage containers located on the Installation. Administration area waste generally consists of office paper products, food wastes (from mess halls and restaurants), and cardboard and cans from receiving, mess halls, motor pools, etc. Cardboard dumpsters for recycling are located near many offices, mess-halls, and motor pools. Recyclable material is collected from the recycling trailers, administration areas, and the cardboard dumpsters delivered to the Fort Benning Material Recovery Facility to be packaged and sold. Yard waste material consists of leaves, limbs, grass clippings, etc., and it is composted, mulched, and recycled as much as possible. Contractors and other users do not have permission to dispose of waste on Fort Benning. All construction and demolition wastes are taken off-Post by the contractor to a permitted recycling or disposal facility (Fort Benning, 2017).

3.6.1.3 Toxic Substances Management

Toxic substances that commonly occur on Army installations include asbestos-containing materials (ACM), lead-based paint (LBP), polychlorinated biphenyls (PCBs), and radon.

Asbestos

Once a common ingredient in construction materials, asbestos is a group of naturally occurring fibrous minerals that has been linked to a variety of diseases. Asbestos is generally not harmful when encapsulated within building materials. ACM materials fall into two broad categories; friable and non-friable. Friable refers to ACM that can be rendered airborne by hand. Although non-friable ACM are not easily released into the air, they can become friable by disturbance (i.e., sanded, sawed, drilled, torn, etc.) and/or resulting from demolition or renovation activities (EPA, 2018).

Routinely, all Fort Benning facilities scheduled for maintenance, renovation, remodeling, and demolition are inspected for presence of ACM. When required by law (40 CFR 61.145) or as a precautionary measure, ACM is removed by licensed, specialized firms. Once removed, ACM is transported off the Installation by licensed transporters and disposed in appropriately permitted landfill facilities in accordance with applicable federal, state, local, and DoD regulations (USACE, 2009). Employer requirements for limiting employee exposure to asbestos, found in OSHA's standard for asbestos in construction (29 CFR 1926.1101), also apply to demolition where an employee may be occupationally exposed to asbestos through the disturbance of previously-installed construction materials.

Lead-based Paint

The likelihood for buildings constructed prior to 1978 to contain LBP/coatings is high. Several buildings and structures are known or suspected to contain LBP on the Installation, and the LBP in these areas is generally managed in-place in accordance with industry guidelines and practices (e.g., National Institute for Building Sciences) to minimize the potential for creation of respirable dust, direct contact with the LBP surfaces, and contamination of the surrounding environment.

Surfaces painted after the Consumer Product Safety Commission LBP ban (16 CFR 1303) went into effect may nonetheless contain traces of Pb at levels below the threshold defined by the ban and disturbance of such paint may potentially expose workers to Pb. Accordingly, all construction work, including demolition, where an employee may be occupationally exposed to any level of Pb through the disturbance of existing painted surfaces must comply with the OSHA Standard for Lead in Construction (29 CFR 1926.62). Fort Benning's LBP Management Plan addresses LBP risk assessment and disposal procedures for LBP, coatings, and LBP-contaminated soils. All construction contractors are required to follow plan procedures. The Proposed Action involves buildings and structures constructed prior to 1978 that are presumed to contain LBP/coatings (USACE, 2009).

Pesticides

US Army installations have managed pests for decades using pesticides. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) mandates that the EPA regulates the use and sale of pesticides. Some of these chemicals historically used were banned under the FIFRA in the 1970s and 1980s; however, pesticide compounds often still endure within the environment today. Some of the most long-lasting and frequently used pesticides in the US that are now banned include organochlorinated insecticides more commonly known or branded as DDT (dichloro-diphenyl-trichloroethane), heptachlor, endosulfan, chlordane, aldrin, dieldrin, and endrin. Since many of the buildings and structures proposed for demolition were constructed and maintained before such pesticides were banned, the pesticides could have been applied or stored within the facilities.

Polychlorinated Biphenyls

PCBs are highly stable organic chemical compounds with a low flammability (i.e., they do not readily burn), high-heat capacity, and low electrical conductivity. In the past, PCBs were extensively used as a component of many materials, most notably as heat insulating materials (e.g., hydraulic fluid in vehicles, lifts, elevators) and as dielectric fluids in electrical transformers and capacitors. Under the authority of the Toxic Substances Control Act (TSCA), the EPA banned the continued manufacture of PCBs after 1978. In addition, the EPA imposed controls related to existing PCB-containing electrical equipment that remain in use or that are removed from service for reuse or disposal.

In 1998, Fort Benning developed a PCB Inventory Report, which indicated that of the 2,157 transformers surveyed on the Installation, 1,166 were assumed to be PCB transformers (i.e., they contained equal to or greater than 500 parts-per-million PCBs). Also in 1998, Fort Benning developed a PCB Management Plan to formally establish the program for compliance with TSCA and other relevant regulatory requirements. Since the utilities privatization initiative was implemented in 1999, the ownership of the electrical distribution system, including most of the

PCB-containing electrical equipment on Fort Benning has been transferred to Flint Electric. One exception is the electrical system at Lawson Army Airfield, which continues to be government owned and managed by a contractor (USACE, 2009).

The non-federal owners of the electric system on the Installation are responsible for management of those systems, including any PCB spills (Fort Benning, 2004). The Proposed Action is anticipated to have no facility changes that would affect PCBs or their management; therefore, PCBs are not studied further.

Radon

Radon is a naturally occurring, colorless, odorless, radioactive gas produced by the decay of uranium in rock and soil. Radon is a known carcinogen, capable of causing direct damage to lung tissues and increasing the risk of lung cancer when inhaled. If present, radon gas will typically concentrate in airtight buildings and particularly in basements. Although no federal regulations define an acceptable level of radon exposure, the EPA recommends the voluntary, consensus-based mitigation of radon based on the standard developed and issued by the American Society for Testing and Materials (ASTM) International, Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings, ASTM E-2121. The Army and EPA recommend an action level of 4 picocuries per liter (EPA, 2013).

The Army Policy for Radon as outlined in Army Regulation 200-1, Radon Policy Reduction Program, requires measurement of radon in newly constructed Army facilities and use of US Army Corps of Engineers (USACE) design criteria for radon reduction in new construction. Radon information provided by EPA, Region IV, and statistics maintained by the GA Environmental Protection Division suggest that radon is not an issue of concern in the region (USACE, 2009). The Proposed Action is anticipated to have no facility changes that would affect radon or its management; therefore, radon is not studied further.

3.6.1.4 Hazardous Waste Generation, Storage, and Disposal

A variety of operations across Fort Benning produce hazardous wastes. Common waste generated include various solvents; paints; antifreeze; aerosols; contaminated filters, rags and absorbents; weapon cleaning patches and sludges; and some items managed as universal wastes, such as used batteries and fluorescent light tubes.

The Fort Benning Environmental Management Division oversees the management of hazardous waste by assisting military units and activities that generate the waste. The Centralized Accumulation Areas and Satellite Accumulation Areas are maintained in various locations across the Installation to facilitate the collection of hazardous wastes and to ensure that the wastes are transported off of the Installation in accordance with applicable federal, state, and DoD regulations.

Hazardous wastes generated by Installation and tenant activities are collected and transferred to a central accumulation area where they may be accumulate for no longer than 90 days before being transported offsite for treatment or disposal since Fort Benning is classified as a Resource Conservation and Recovery Act (RCRA) Large Quantity Generator of Hazardous Waste. Fort

Benning arranges for the transport and disposal of its hazardous waste by appropriately licensed waste management and transportation companies through a Defense Logistics Agency contract.

Fort Benning trains workers, inspects approximately 200 waste accumulation areas annually, and provides program oversight for the disposal of approximately 200,000 pounds of hazardous and toxic waste generated each year (Fort Benning, 2006). Fort Benning currently operates under Corrective Action Permit Number HW-021(CA) and Facility I.D. No. GA3210020084. Also, Fort Benning manages compliance with the relevant regulations through its Hazardous Waste Management Plan.

3.6.1.5 Existing Contaminated Sites

Past resource and waste management practices at DoD facilities have resulted in the presence of toxic and hazardous waste contamination at some installations, including Fort Benning. In response, Fort Benning has undertaken mitigation and cleanup activities under its Installation Restoration Program to manage these sites, which are referred to as Solid Waste Management Units (SWMUs) (Fort Benning 2005a and b). The Fort Benning Environmental Management Division actively manages programs for addressing contaminated sites in compliance with RCRA and the National Oil and Hazardous Substances Pollution Contingency Plan.

These sites are designated either as 1) Operation and Maintenance, Army-SWMUs, which are being managed under the 2005 Fort Benning Environmental Action Plan (EAP) or as 2) Environmental Restoration, which are Army-SWMUs managed under 2005 Fort Benning Installation Action Plan (IAP). The cleanup activities initiated under the EAP are directed at contamination primarily resulting from current operations, and the contaminants of concern include POLs; trichloroethylene (TCE); metals; volatile organic compounds; pesticides; and leachate. The IAP is specifically focused on contamination resulting from past activities, and the contaminants of concern include gasoline (including its constituents, benzene, toluene, ethylbenzene, and xylenes), paint, TCE, and leachate. Both the EAP and the IAP have been developed through consultation and coordination with USAEC, EPA, GA Environmental Protection Division, and the public. Two active contaminated sites include the Closed Landfill No. Six and former Above Ground Storage Tank (Pump House and Dispenser System) are located in the Fort Benning training areas. Neither of the contaminated sites is located within or nearby the Fort Benning cantonment areas.

Consistent with DoD policy, it is Fort Benning's policy to include a review process to identify any involvement of known or potentially contaminated sites that may be affected by proposed construction to prevent the spread of any contamination and to ensure that construction workers and personnel who use the project areas are not exposed to unsafe conditions. SMWUs that need corrective action have been identified, surveyed, and are reviewed by Fort Benning, prior to any proposed construction projects. Those sites requiring corrective action have recorded land use controls that allow the project planners and engineers to evaluate the nature of the contamination and take proper action to prevent the spread of contaminants to the environment or expose personnel as a result of proposed construction. The nature of exposure protection includes the potential for subsurface vapor intrusion below buildings. For locations where contamination has occurred in the past but a determination of No Further Action has been made, this determination

is based upon the documentation that all contaminant exposure avenues have been identified and that all exposure levels of any contaminants are below all EPA and GA Environmental Protection Division screening levels, and no protective measures or additional clean-up or land use controls are necessary.

3.6.2 Environmental Consequences

Potential impacts of the No Action Alternative and the Action Alternatives have been assessed with regard to changes in the volume of Hazardous Materials and Waste managed by the Installation. An Alternative would be considered to have a significant adverse impact if:

- It resulted in noncompliance with applicable local, state, and federal regulations;
- Increased the amount of hazardous waste generated or procured beyond the waste management capacity of the Installation;
- Contaminated sites are disturbed causing adverse effects on ecological and human health by creating exposure pathways; or if
- Established management policies, procedures, and handling capacities for fuel management could not accommodate the activities associated with the Proposed Action.

3.6.2.1 No Action Alternative

The No Action Alternative would not change the baseline conditions for management of hazardous materials, toxic substances, hazardous waste, or contaminated sites at Fort Benning. Fort Benning would continue to minimize any adverse impacts resulting from hazardous materials by following all applicable laws, regulations, and Fort Benning plans. Therefore, negligible impacts are anticipated.

3.6.2.2 Alternative 1: Full Demolition

Prior to demolition and disposal activities, each structure would be assessed for the presence of hazardous materials or wastes prior to demolition and disposal activities. The assessment may include reviews of records related to the structure's historic use and historic pesticide application, surveys for ACM and LBP, and targeted sampling of parts of the structure. Structures with environmental hazards would not be demolished until regulated hazardous substances or wastes are properly abated in accordance with the environmental statutes and regulations that govern hazardous substance and hazardous waste management activities at DoD installations. All abatement activities would be conducted in accordance with Army policies and procedures.

Demolition activities would temporarily increase the amount of solid waste generated. This waste would include building materials such as concrete, insulation, nails, electrical wiring, and rebar, as well as potential yard waste originating from site preparation. There would also be a minor increase in the storage and use of hazardous materials such as POL, cleaning agents, paints, adhesives, herbicides and pesticides. Minor POL spills from engines and equipment operation could occur during demolition operations. Appropriate NPDES Best Management Practices (BMPs) that apply to construction and demolition (Section 3.8), including preparing

and adhering to a Spill Prevention, Control, and Countermeasure Plan, would be implemented during all demolitions to ensure that any leaks or spills would have only negligible environmental effects. Contractors would be responsible for handling all regulated materials in accordance with federal and state regulations. Over the long-term, demolition would reduce the quantities of hazardous materials that may be contained within the infrastructure composition, as well as those utilized in the operation; repair; and maintenance of these buildings and structures.

In summary, Alternative 1 would ensue in short-term, minor adverse impacts from an increase in Hazardous Materials and Waste disposal due to demolition activities. Long-term beneficial impacts would be expected by 1) disposing of and reducing the presence of hazardous materials that may remain within the infrastructure's composition, and 2) by reducing the quantity of Hazardous Materials and Waste required for ongoing operation, repair, and maintenance of those facilities.

3.6.2.3 Alternative 2: Selective Demolition

Although fewer buildings and structures would be demolished and disposed of under Alternative 2, potential impacts involving Hazardous Materials and Waste would be similar to those occurring under Alternative 1. Therefore, short-term minor adverse effects would be expected from hazardous material disposal as a result of demolition activities, and long-term beneficial impacts as a result of reducing the presence and quantity of Hazardous Materials and Waste required for ongoing operation, repair, and maintenance. Both adverse and beneficial impacts involving Hazardous Materials and Waste would occur to a lesser degree under Alternative 2 as compared with Alternative 1.

3.6.3 Mitigation

Adherence to applicable federal, state, Army laws and regulation, and Fort Benning plans mentioned in this section would minimize impacts due to demolition, construction, and maintenance operations activities. No additional mitigation measures are warranted.

3.7 Land Use

Land Use involves the utilization or modification of land for agricultural, industrial, training, residential, recreational, or other purposes. Land uses are frequently regulated by management plans, policies, ordinances, and regulations that determine the types of uses that are allowable or to protect specially designated or environmentally sensitive uses.

3.7.1 Affected Environment

The ROI for Land Use includes the land within Fort Benning's cantonment areas and other adjacent cantonment or training lands that could potentially be affected due to changes in land utilization as a result of the Proposed Action. Fort Benning's land is utilized primarily for support of cantonment functions (e.g., residential, recreational, commercial, administrative, etc.) or operational training. Land utilization and management within the cantonment areas are planned in accordance with the Real Property Master Plan and provide orderly development of

the Installation. Impacts to the Land Use and environment are minimized by using proper management plans to guide land utilization planning decisions.

3.7.2 Environmental Consequences

Impacts to Land Use would be considered significant if the Proposed Action was:

- Incompatible with surrounding land uses;
- Resulted in incompatible land uses that degraded mission-essential training or necessary functions within the cantonment areas.

3.7.2.1 No Action Alternative

Under the No Action Alternative, demolition and disposal of buildings and other structures on the FRP list as directed by the US Army would not occur. Therefore, no changes to land utilization would occur and no impacts to Land Use are anticipated.

3.7.2.2 Alternative 1: Full Demolition

Under Alternative 1, no conflicts are anticipated to Land Use compatibility. Negligible changes to Land Use would occur during demolition activities but limited to the project's demolition site. These effects would be temporary in nature and within areas accustomed to construction related activities. Following demolition, changes to Land Use from the absence or return to open/green space of buildings and other structures on the FRP list would not adversely affect the overall Land Use or management of the surrounding areas. As a result, no impacts are anticipated.

3.7.2.3 Alternative 2: Selective Demolition

The potential impacts resulting from the implementation of Alternative 2 would be the same as those described under Alternative 1. Therefore, no impacts are expected to Land Use resulting from the implementation of Alternative 2.

3.7.3 Mitigation

The Action Alternatives would result in no adverse effects to Land Use and no mitigation would be necessary.

3.8 Noise

Noise is described as unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. Noise levels are measured in decibels (dB), which represent the acoustical energy present. A point of reception or receptors have a wide diversity in responses that not only vary according to the type of noise and the characteristics of the sound source but also according to the sensitivity and expectations of the receptor, time of day, and distance between the noise source and the type of receptor (e.g., a person or animal).

Sound intensity is measured in units called decibels (dB). The dB system of measuring sound provides a simplified relationship between the physical intensity of sound and its perceived loudness to the human ear. The dB scale is logarithmic; therefore, sound intensity increases or decreases exponentially with each dB of change. For example, 10 dB yields a sound level 10 times more intense than one dB, while a 20 dB level equates to 100 times more intense.

Noise associated with military installations is a factor in Land Use planning both on and off the Installation, and is referred to as operational noise as it occurs during the day-to-day, long-term operation of Fort Benning. Operational noise can be generated by a variety of sources including mobile sources (e.g., trucks), stationary sources (e.g., construction sites, machinery, or industrial operations), and natural sources (e.g., wind, streams, and wildlife).

Table 3.1: Comparative Noise Levels

Noise Source	Noise Level (dB)	dB Effect
Jet take-off (at 25 meters)	150	Eardrum rupture
Thunderclap, chain saw	120	Painful
Lawn mower, motorcycle, garbage truck	100	Hearing damage likely from 8 hour exposure.
Freight train (at 15 meters), food blender	80	Possible hearing damage from 8 hour exposure.
Office, background music	60	Soft
Library, bird calls, lowest limit of urban ambient sound	40	Discreet
Whisper, rustling leaves	20	Barely noticeable

Source: Modified from IAC Acoustics accessed online 17 May 2018 at <http://www.industrialnoisecontrol.com/comparative-noise-examples.htm>.

3.8.1 Affected Environment

The ROI for Noise encompasses the land within Fort Benning's cantonment areas. Noise within the cantonment areas are typical of most residential communities and includes construction activities, vehicle traffic, children playing, mowing grass, aircraft, etc. Other activities that contributes to the noise environment of the cantonment areas includes Soldier physical fitness training, equipment maintenance, and small- and large-caliber weapon fire.

Fort Benning's Installation Operation Noise Management Plan (IONMP) describe and assess the Installation's existing noise environment and offers strategies for noise management through policies and procedures to on-post and neighboring communities. The noise exposure on communities is translated into Noise Zones. Noise-sensitive land uses range from acceptable to not recommended within the Noise Zones. These include:

- Zone III areas where the noise level is incompatible with noise sensitive receptors;
- Zone II areas where the noise level is normally incompatible with sensitive receptors;

- Zone I/Land Use Planning Zone (LUPZ) areas where the noise level is compatible with noise sensitive receptors (e.g. residential communities, schools, churches, etc.).

Note that LUPZ is a subdivision of Zone I. The LUPZ is five dB lower than the Zone II where most noise-sensitive land uses are still generally acceptable. This zone acts as a transition between the relatively unrestrictive Zone I and more restrictive Zone II. The LUPZ shows areas normally considered Zone I on an average basis may experience a level of annoyance during increased operations.

Buildings and structures identified for demolition under the FY19-23 FRP exists within Zone I and Zone II. Figure 3-2 illustrates the noise contours as they apply to the FRP.

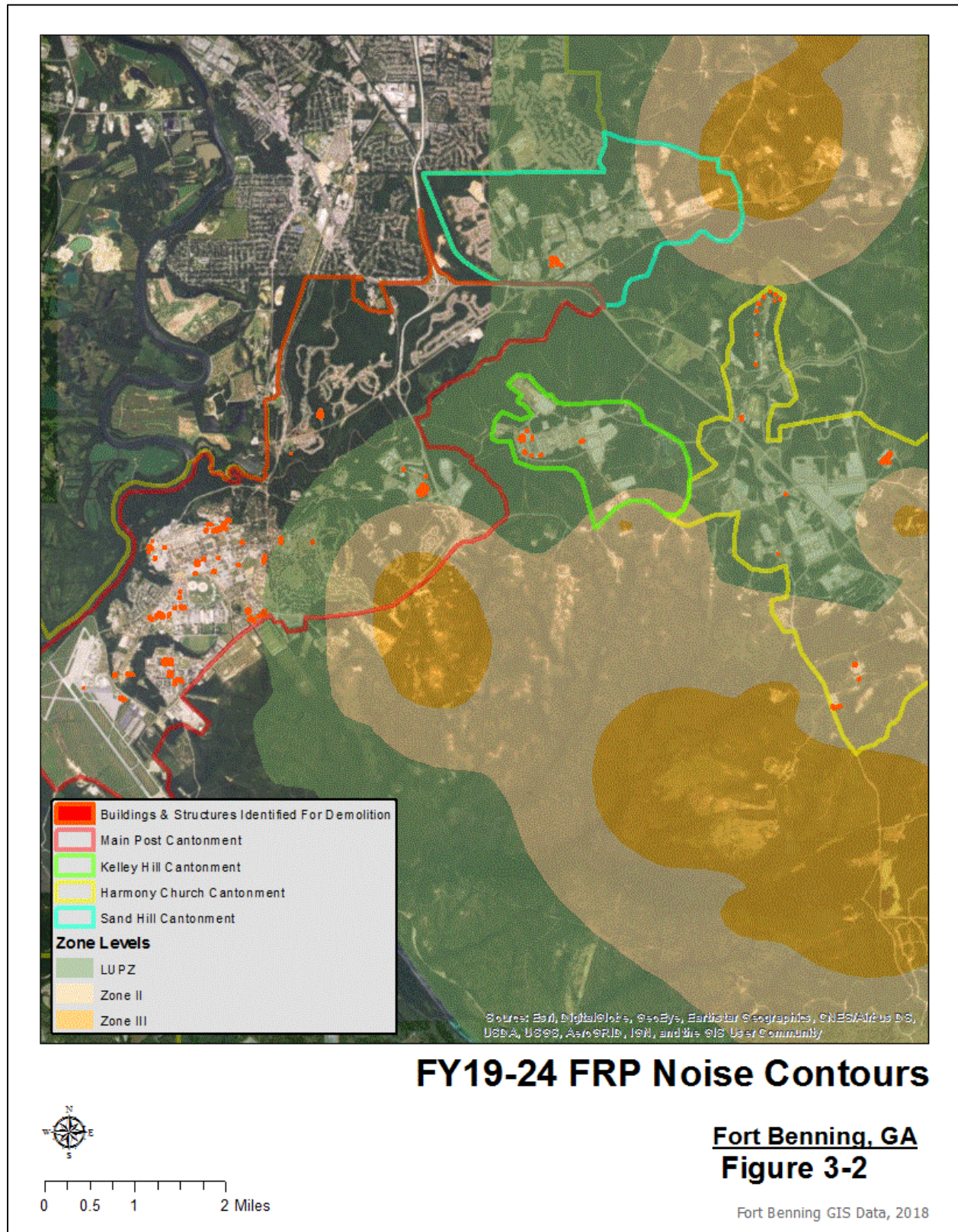
3.8.2 Environmental Consequences

Impacts as a result of Noise would be considered significant if the Proposed Action was:

- Incompatible with surrounding land use;
- Resulted in incompatible changes involving land use that degraded mission-essential training or necessary functions within the cantonment areas.

3.8.2.1 No Action Alternative

Under the No Action Alternative, demolition and disposal of buildings and other structures on the FRP list as directed by the US Army would not occur. Therefore, no changes to Land Use would occur and no impacts due to increased noise levels are anticipated.



3.8.2.2 Alternative 1: Full Demolition

Noise resulting from the use of vehicles and equipment for the demolition of would be short-term and localized resulting in negligible effects. Demolition would occur over a brief time period and occur during normal business hours. Although there are sensitive noise receptors (e.g., residential areas) adjacent to the sites of demolition, no long-term effects would occur from these activities. Temporary increased levels of noise would terminate upon completion of construction and demolition, and the noise environment would return to pre-demolition conditions. Range training and aviation activities within the cantonment areas would continue in the similar manner as is found under existing conditions and will be accounted for in the Installation Operational Noise Management Plan. Noise producing activities from demolition would not permanently change or adversely affect the current noise environment.

3.8.2.3 Alternative 2: Selective Demolition

The potential impacts resulting from the implementation of Alternative 2 would be the same as those described under Alternative 1. Therefore, no adverse impacts to the current noise environment are expected resulting from the implementation of Alternative 2.

3.8.3 Mitigation

The Action Alternatives would result in no adverse effects due to increased noise levels and no mitigation would be necessary.

3.9 Soils

Soils are most often described in terms of their type, slope, physical characteristics, and relative compatibility or limitations with regard to particular activities. Two basic soil provinces make up Fort Benning: the GA Sand Hills and the Southern Coastal Plains. Based on the US Department of Agriculture, Natural Resource Conservation Service's soil survey "K factor," most of the soils found at Fort Benning, with the exception of southern portions of the Installation, are identified as low to moderately erodible when undisturbed. The degree of erodibility is determined by physical factors such as drainage, permeability, texture, structure, and percent slope. The rate of erodibility is based on the amount of vegetative cover, climate, precipitation, proximity to water bodies, and Land Use. Soil disturbing activities accelerate the erosion process by exposing soils to precipitation and surface runoff. Activities that disturb or remove vegetation are likely to increase the erosion hazard, particularly on slopes.

Prime farmland soils, protected under the Farmland Protection Policy Act (FPPA) (7 USC 4201; FPPA of 1981, as amended) are not discussed in this EA, as no lands within Fort Benning have been classified as prime farmland. Therefore, there is no further discussion of prime farmland in this EA.

To prevent soil erosion during construction, consequent damage to endangered species habitat, or sedimentation of streams and wetland areas, the Army employs NPDES BMPs as defined by the GA Department Natural Resources (DNR), and GA Soil and Water Conservation Commission for all construction projects. (Note: In the context of stormwater permit requirements,

construction refers to ground-disturbing activities, including facility demolition.) Pursuant to that requirement, state and county regulations require construction projects involving one acre of land disturbance or more—including smaller sites that are part of a larger common plan of development that collectively disturbs one acre or more—to obtain an approved Erosion Sedimentation Pollution Control Plan (ESPCP), fee submittal for the disturbed acreage, and Notice of Intent (NOI) to meet the requirements of the federal NPDES construction permit program and GA Erosion and Sedimentation Control Act. The ESPCP prescribes activities to limit erosion and sedimentation from the site and includes a site description, list of BMPs to be used, BMP inspection procedures to be performed by qualified personnel, procedures for timely BMP maintenance, requirements for sampling of discharges or receiving streams for turbidity, and reporting requirements to the GA DNR Environmental Protection Division (EPD).

3.9.1 Affected Environment

The ROI for Soils includes Fort Benning's cantonment areas that could be directly and/or indirectly impacted by soil erosion and sedimentation from the Proposed Action. Common soil types found within the cantonment areas consists of the Nankin, Troup, Bibb, Lucy, Fuquay, Orangeburg, Uchee, Troup, Ruston, Norfolk, Udorthents, Lakeland, and the Cowarts-Ailey series. Generally, soils on Fort Benning are highly susceptible to erosion if vegetation is removed, especially on steep slopes. The establishment and maintenance of appropriate vegetation and proper drainage systems is the fundamental means of addressing and avoiding extensive erosion of soils. Figures 3-2 and 3-3 illustrate the soils associated with buildings and structures identified for demolition.

Minor earth disturbances are expected from demolition activities. Demolition will include the removal of buildings, supporting facilities, site improvements (such as parking lots and walkways), and underground structures and utilities. The total amount of earth disturbance for the proposed demolition will be analyzed individually and determined prior to final site design and contingent upon topographical features, utility tie-ins, and the final architectural and engineering facility design for each project site.

3.9.2 Environmental Consequences

Impacts would be considered significant if they would:

- Violate applicable federal or state laws and regulations, and/or fail to receive applicable state permits (e.g., NPDES construction permit) prior to initiating the Proposed Action;
- Substantially degrade soils, soil fertility, or soil productivity;
- Have substantial, highly noticeable influences on the rate of soil erosion or the ability of the soil to support vegetation expected to be present in the area;
- Involve the loss of vegetation at a level that would substantially reduce the occurrence of a plant species or degrade the habitat of a dependent animal species at a population level on the Installation.

3.9.2.1 No Action Alternative

No effect on Soils would be expected under the No Action Alternative. Under the No Action Alternative, no facilities would be removed and no ground disturbance would occur, and therefore no soils would be disturbed or changed.

3.9.2.2 Alternative 1: Full Demolition

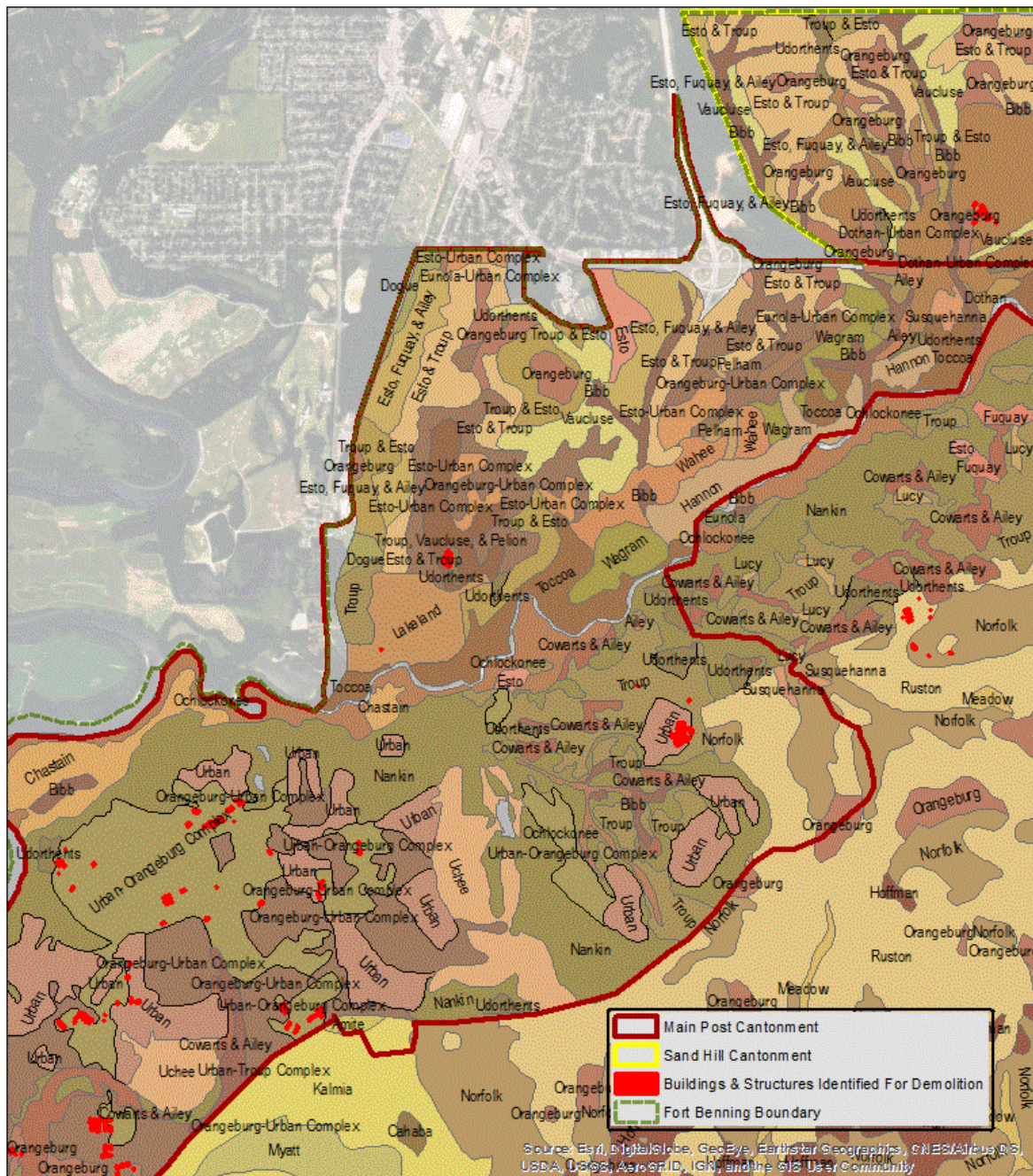
Under Alternative 1, soil erosion and sedimentation controls will be put in place, per the Clean Water Act (CWA) and the GA Erosion and Sedimentation Control Act, and appropriate NPDES permits will be obtained in prior to any land disturbing activities. Short-term, minor adverse impacts to Soils within the ROI may occur during the demolition; however, no long-term effects would be anticipated as all ground disturbances at the proposed sites, would be re-vegetated and stabilized.

3.9.2.3 Alternative 2: Selective Demolition

The potential impacts to resulting from the implementation of Alternative 2 would be the same as those described under Alternative 1. Short-term, minor adverse effects to Soils within the ROI could occur during demolition and disposal; however, no long-term effects would be anticipated.

3.9.3 Mitigation

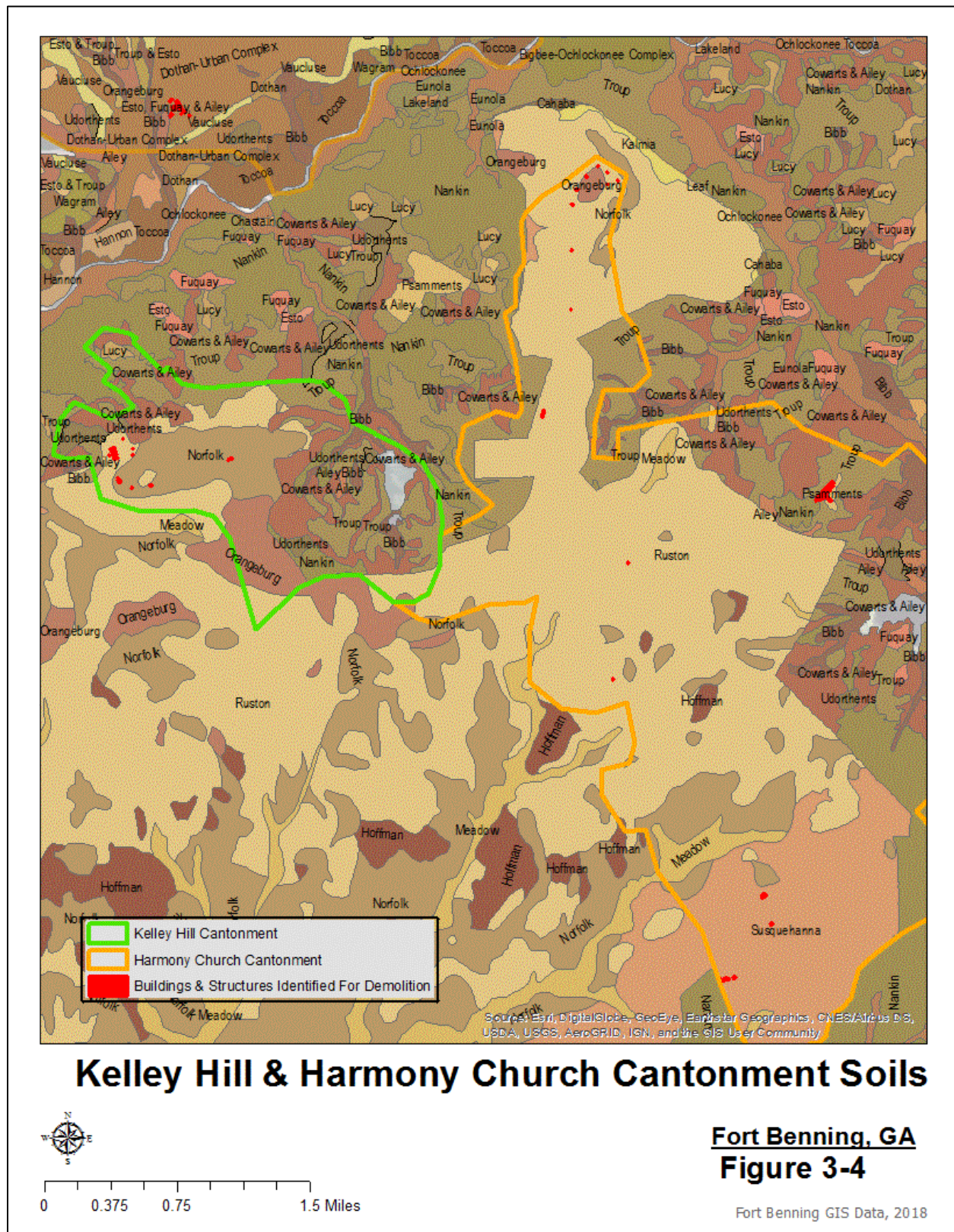
For either Action Alternative, mitigation measures would be implemented as part of federal and state permitting requirements to minimize the effects to soil resources during demolition and disposal activities. Application of federal and state erosion control measures and NPDES permitting requirements to include preparation of an Erosion, Sedimentation and Pollution Control Plan (ESPCP) detailing erosion and sedimentation control BMPs, and a minimum 25-foot surface water setback to minimize soil impacts during construction are required prior to land disturbing activities. Additionally, adherence to federal and state laws and regulations would minimize impacts due to operations and maintenance activities in the long-term. Therefore, no additional mitigation measures are warranted.



Main Post & Sand Hill Cantonment Soils

Fort Benning, GA
Figure 3-3

Fort Benning GIS Data, 2018



3.10 Utilities

The term utility refers to a basic set of services (e.g., electricity, natural gas, water, sewage, communications, and transportation) provided by an organization who generates, distributes, and maintains the infrastructure necessary.

3.10.1 Affected Environment

Utilities involved with the Proposed Action include electricity (energy/power), natural gas, water (potable), and wastewater (sewage). The ROI for Utilities is Fort Benning. All of Fort Benning's utilities are privatized. Potable water and wastewater systems are privatized to Columbus Water Works (CWW), energy/electricity systems to Flint Energy, and gas to Liberty Utilities. Under the privatization of utilities agreements, each respective entity would manage the systems for Fort Benning's needs.

3.10.2 Environmental Consequences

Impacts to Utilities could be significant if the Proposed Action reduced the capacity of a utility system to the extent of becoming impractical for the privatized entities to continue providing the service.

3.10.2.1 No Action Alternative

Under the No Action Alternative, demolition and disposal of buildings and other structures on the FRP list as directed by the US Army would not occur. There would be no reduction in facilities deemed inefficient and cost prohibitive to sustain. The use and demand for utilities would not change and service to these structures would remain unchanged. The No Action Alternative would have a long term, minor impact as related to energy usage and continuing efforts to reduce Fort Benning's total energy demand.

3.10.2.2 Alternative 1: Full Demolition

Under Alternative 1, the Proposed Action would gradually reduce demands on energy and utilities. The demolition of infrastructure would contribute to efforts in reducing Fort Benning's energy usage resulting in a long-term, beneficial impact to Fort Benning's total energy demand.

3.10.2.3 Alternative 2: Selective Demolition

Under Alternative 2, the Proposed Action would demolish 17 fewer buildings than Alternative 1. These historic buildings would be retained and adapted as necessary for use. Overall, long-term beneficial impacts are also anticipated as a result of Alternative 2; although less advantageous than Alternative 1.

3.10.3 Mitigation

Since the Action Alternatives would result only in beneficial impacts, no mitigation measures are warranted pertaining to Utilities.

3.11 Water Resources

Water Resources include surface water and floodplains, groundwater and aquifers, and wetland resources. Activities that affects water quality, quantity, or rate of movement at one location within a watershed has the potential to affect the characteristics of the resource. The CWA of 1972 is the primary federal law that protects the nation's waters. The CWA prohibits the discharge of any pollutant to waters of the US unless the discharge is authorized by a NPDES permit.

The ROI for Water Resources includes the Fort Benning cantonment areas and associated drainage basins that could be directly and/or indirectly impacted by the Proposed Action. The primary water quality concerns at Fort Benning are sedimentation from highly erodible soils, fecal coliform bacteria, storm water runoff from impervious areas, and loss of wetlands (USACE, 2007).

3.11.1 Affected Environment

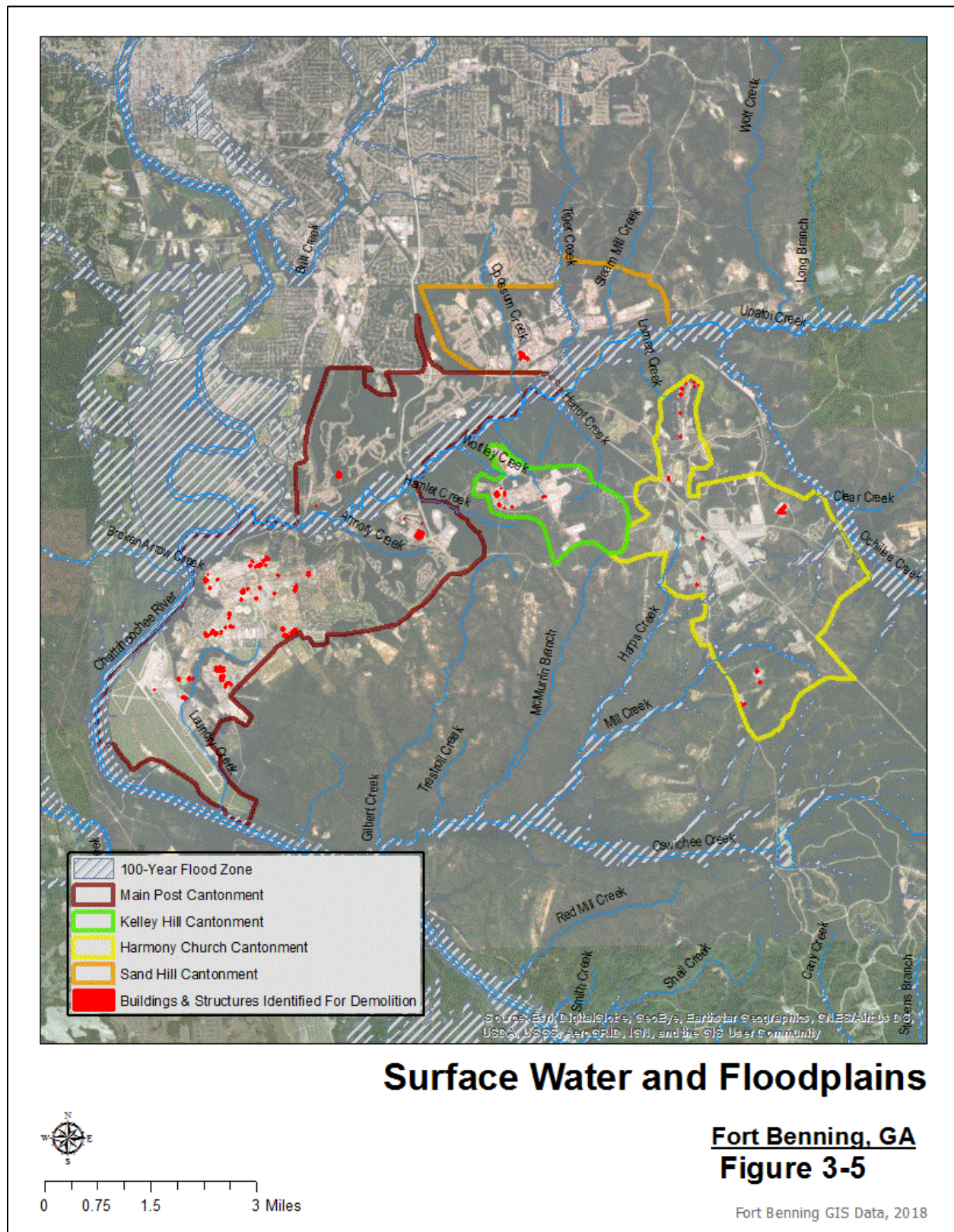
Surface water systems are typically defined in terms of watersheds. Watersheds are delineated into hydrologic units by the US Geological Survey using a nationwide system based on surface hydrologic features. Each hydrologic unit is identified by a unique hydrologic unit code (HUC).

3.11.1.1 Surface Water

The Chattahoochee River arises as a cold-water mountain stream in the Blue Ridge Province. Fort Benning is located within the Chattahoochee River basin (HUC 03130003), and the river flows adjacent and through approximately 15 miles of the Installation on its southwestern side, close to the cantonment areas. As illustrated in Figure 3-4, all surface waters within the ROI drain toward the Chattahoochee River, which includes 15 streams and their tributaries. Armory, Hamlet, Wortley, Daugherty, Castin, Heriot, Lumert, Opossum, Tiger, Steam Mill, and Ochillee Creek drain into Upatoi Creek before flowing into the Chattahoochee River. While McMurrin Branch, Mill, Harps, and Gilbert Creek drain into Oswichee Creek before flowing into the Chattahoochee River. Laundry Creek drains south directly into the Chattahoochee River.

3.11.1.2 Stormwater

Stormwater on the Installation drains via culverts, ditches, swales, and natural seepage and overland flow. Many of the soils at Fort Benning are characterized as susceptible to erosion, and many of the water quality issues for the streams in and around Fort Benning are related to high levels of sedimentation, particularly after storm events.



3.11.1.3 Wetlands and Surface Waters

Wetlands constitute approximately 17,000 acres of the Installation's 182,000 acres (Fort Benning 2015). Wetlands are considered transitional areas between aquatic and terrestrial environments where the recurring presence of water, at or near the soil surface, drives the natural system; which includes the soils that form and wildlife communities that use these areas. Jurisdictional wetlands, which the USACE regulates, are defined under the CWA as areas that are saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, etc. (EPA, 2018). Wetlands within the ROI are almost exclusively riparian and associated with the stream systems. Preliminary site planning information, (i.e., the National Wetlands Inventory, previously delineated wetlands) did not identify any known wetlands or streams within 50 feet of proposed demolition sites. The Proposed Action would have no effect upon wetlands or surface waters; therefore, such resources are not discussed further in Section 3.9.2.

3.11.1.4 Groundwater

Fort Benning is located within the Coastal Plain hydrogeologic province of GA and AL. The principal groundwater source for Fort Benning is the Cretaceous Aquifer System. The regional groundwater flow in the area is from north to south, and the aquifers in the Coastal Plain consist of porous sands and carbonates and include alternating units of sand, clay, sandstone, dolomite, and limestone that dip gently and thicken to the southeast. The Proposed Action would not affect groundwater; therefore, groundwater is not discussed further.

3.11.1.5 Floodplains

A floodplain is an area of land adjacent to a stream or river that experiences flooding during periods of high water flows, usually a result of rain events. EO 11988, Floodplain Management, instructs federal agencies to consider the risks, danger, and potential impacts of locating projects within floodplains, and requires agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the modification of floodplains whenever there is a practicable alternative. The Federal Emergency Management Agency (FEMA) is the federal agency having lead responsibility for flood hazard assessment and mitigation. FEMA has adopted the 100-year floodplain as the base flood standard for areas subject to a one percent or greater chance of flooding in any given year.

The Chattahoochee River floodplain, and its associated black water and tupelo swamps, is located in the southwestern portion of the Installation, adjacent west of Fort Benning's Main Post Cantonment Area as illustrated in Figure 3-4. As well, Figure 3-4 illustrates the 100-year floodplain associated with Upatoi, Ochillee, Harps, Mill, and Oswichee Creek (Federal Emergency Management Agency [FEMA] 2017, Fort Benning Geographic Information Systems [GIS], 2018). The building and structures proposed for demolition and associated with this Proposed Action are located beyond the flood zones and would have no effect upon areas considered to have a one percent or greater annual chance of flooding. Therefore, such resources are not discussed further.

3.11.2 Environmental Consequences

A significant adverse impact would occur to Water Resources if implementation of the Proposed Action resulted in an unpermitted impacts to surface waters.

Surface water within Fort Benning could be adversely impacted from contamination from fuel/oil spills, pesticide residue, fired munitions residue, and untreated sewage bypass. These potential contamination sources are controlled and minimized by the implementation of Fort Benning Spill, Prevention, Control, and Countermeasure Plan, Fort Benning Installation Spill Contingency Plan, Storage Tank Management Plan, Stormwater Pollution Prevention Plan, and the NPDES permit requirements to prevent sewage bypasses. Nonpoint sources, more specifically sedimentation are the primary pollutant sources of concern for surface water at Fort Benning. Consequently, much of the Installation's water resource management is closely related to minimizing and repairing erosion caused primarily by ground disturbing activities.

3. 11.2.1 No Action Alternative

Under the No Action Alternative, demolition and disposal of buildings and other structures on the FRP list as directed by the Army would not occur. Therefore, the No Action Alternative would have no effect on Water Resources and no adverse impact would be anticipated.

3.11.2.2 Alternative 1: Full Demolition

Under Alternative 1, short-term, minor adverse effects to surface waters could occur during the demolition as a result of ground disturbances. No long-term effects to Water Resources would be anticipated as the sites would be re-vegetated, where possible, and stabilized upon completion of demolition activities. Potential impacts to Water Resources as a result of POL spills from vehicle and equipment failures would be precluded by compliance with applicable regulations to minimize the risks of minor spills occurring. In the event of an accidental POL spill, Fort Benning personnel will follow spill response procedures and an accident response team would be available immediately to minimize any adverse effects.

3.11.2.3 Alternative 2: Selective Demolition

The potential impacts to Water Resources resulting from the implementation of Alternative 2 would be the same as those described under Alternative 1.

3.11.3 Mitigation

Adherence to regulatory requirements by implementation of the Proposed Action would avoid or minimize adverse impacts to Water Resources. A GA NPDES Construction Permit would be required prior to construction that involves more than one acre of land disturbing activity. Furthermore, Fort Benning requires vegetative and structural BMPs for all construction associated land disturbances, and additionally an ESPCP for projects that disturb 0.1 acre or greater to ensure smaller land disturbances do not negatively impact Water Resources.

Adherence to federal and state requirements and NPDES permitting requirements to include preparation of an ESPCP detailing erosion and sedimentation control BMPs for implementation would minimize any potential effects to Water Resources. Consequently, no additional mitigation measures are warranted.

3.12 Environmental Impact Summary

A summation of the direct and indirect impacts to the VECs carried forward for analysis are presented in Table 3.2.

Table 3.2: Summary of Direct and Indirect Environmental Consequences for Alternatives

VEC	No Action	Alternative 1: Full Demolition	Alternative 2: Selective Demolition
Air Quality	Long-term, minor adverse impacts as a result of existing emission levels and use of existing emission sources.	Long-term, beneficial impacts due to the reduction of air emissions equipment/Title V Permit. Short-term, minor adverse impacts from fugitive dust emissions during demolition.	Same as Alternative 1.
Biological Resources	No impacts	Negligible effects as a result of potential soil disturbances, removal of vegetation and possible habitat, vehicle traffic, etc.	Same as Alternative 1.
Cultural Resources	No impacts	Long-term, minor adverse impacts resulting from altering the historic landscapes.	Short-term, minor adverse impacts resulting from temporally altering the historic viewsheds.
Hazardous Materials and Waste	No impacts	Short-term, minor adverse impacts from an increase in hazardous materials and disposal of waste.	Same as Alternative 1.
Land Use	No impacts	Negligible effects from changes in land utilization.	Same as Alternative 1.
Noise	No impacts	Negligible effects as a result temporary demolition activity.	Same as Alternative 1.
Soils	No impacts	Short-term, minor adverse impacts as a result of ground disturbances.	Same as Alternative 1.
Utilities	Long-term, minor adverse impacts as a result of energy usage by facilities on the FY19-23 FRP list.	Long-term, beneficial impacts from reductions to Fort Benning's total energy demand.	Same as Alternative 1.
Water Resources	No impacts	Short-term, minor adverse impacts as a result of ground disturbances or accidental spills.	Same as Alternative 1.

4 CUMULATIVE IMPACTS

4.1 Introduction

In addition to identifying the direct and indirect environmental impacts of their actions, the CEQ's NEPA regulations require federal agencies to address cumulative impacts related to their proposals. A cumulative impact is defined in the CEQ Cumulative Impact regulations as: "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR §1508.7)." This section describes the process used to identify potential cumulative impacts related to the Proposed Action at Fort Benning and discusses those impacts for each of the resources addressed in Chapter 3.

4.1.1 Identifying Cumulative Impacts

Guidance for assessing cumulative impacts has been provided by CEQ in *Considering Cumulative Effects under the National Environmental Policy Act* (CEQ 1997b). The process involves identifying significant cumulative effects issues; establishing the relevant geographic and temporal extent (time frame) of the cumulative effects analysis; identifying other actions affecting the resources of concern; establishing the cause-and-effect relationship between the Proposed Action and the cumulative impacts; determining the magnitude and significance of the cumulative effects; and identifying ways in which the agency's proposal might be modified to avoid, minimize, or mitigate adverse, cumulative impacts.

CEQ regulations specify that cumulative impacts analyses encompass past, present, and reasonably foreseeable future actions. Past actions are generally included in the baseline described in the affected environment and No Action Alternative in Chapter 3; therefore, past actions that are part of the baseline are not included. Only in unique circumstances are past actions not included in the baseline and addressed in the cumulative impacts analysis. As appropriate and feasible, Chapter 3 notes past activities that may have contributed to the current affected environment and baseline conditions.

An ROI was defined for each VEC in Chapter 3 under its Affected Environment. The ROI or geographic extent of the cumulative impacts analysis generally coincides with the ROI of each VEC and is described in Section 4.3. In addition, significance thresholds defined for each resource in Chapter 3 also apply to the assessment of cumulative impacts.

4.1.2 Past, Present and Reasonably Foreseeable Actions

This section identifies past, present, and reasonably foreseeable future actions considered. The analysis considers present and reasonably foreseeable future actions as those actions that are currently under way, approved, and/or have identified funding. Actions beyond that become increasingly speculative and difficult to assess. The cumulative projects numbered below correspond with Figure 4-1 and illustrate their location on Fort Benning.

- 1) **Army 2020 Force Structure Realignment (FY13 – FY2020):** In 2013, the Army prepared a Programmatic EA to analyze the potential environmental and socioeconomic impacts associated with a proposed action consisting of a reduction in active Army end-strength from 562,000 to 490,000. Since the 2013 Programmatic EA was completed, DoD fiscal guidance has continued to change, and the future end-strength of the Army must be reduced even further than the 490,000 considered in the 2013 Programmatic EA. This came about primarily because the second part of the 2011 Budget Control Act, commonly referred to as sequestration, came into effect. Army Force Structure Realignment decision for Fort Benning included the inactivation of the 3rd Armored Brigade Combat Team (a loss of approximately 3,400 Soldiers), and the activation of the 1-28th Infantry Brigade Task Force that consists of approximately 1,080 Soldiers. Although a task force is usually considered a temporary organization, the Infantry Brigade Task Force proposed for conversion at Fort Benning is actually a permanent part of Army force structure. In 2016, a Record of Environmental Consideration was completed in consideration of the environmental effects and consequences of the realignment specific to Fort Benning. Accordingly, no significant environmental impacts were anticipated to occur. Note that Army 2020 Force Structure Realignment is not identified in Figure 4-1 due to its post-wide implications.
- 2) **Artillery Firing Points Expansion and Maintenance of the Open Field Training Environment (FY16–18):** Improvements and long-term maintenance activities to existing training assets needed to support the missions of the Airborne and Ranger Training Brigade, 75th Rangers, and the Field Artillery units of the Infantry School and the 1-28th Infantry Battalion Task Force, as well as other tenant and/or visiting units' training requirements. These assets include Drop Zones, Helicopter Landing Zones/Pick-up Zones, and Firing Points for Mortars and Howitzer guns, and are generally referred to as "open field training environments". Fort Benning expects to complete an EA by summer of 2018.
- 3) **Naval Operation Support Center (FY16–18):** Construction on approximately six acres on Main Post, south of Custer Road. The facility will consist of an administration building and a parking lot for up to 140 Navy drill Reservists and support staff.
- 4) **Benning Technology Park and Custer Road Improvements (FY15–18):** The GA Department of Transportation is implementing road improvements project of US Route 27 (Victory Drive) and Custer Road in Muscogee County. Following completion, the project will improve the existing security checkpoint interchange system in the Sand Hill Cantonment Area by providing civilians access to a proposed commercial development off the Installation without having to pass through the Fort Benning security checkpoint. The commercial development, to be known as Benning Technology Park, borders Fort Benning directly west of the Patton Place military housing area. Benning Technology Park, a private/public joint venture between Columbus State University, Flournoy Development Company, and the Development Authority of Columbus, will include offices, retail services, and educational facilities.
- 5) **Implementation of a 30-Megawatt (MW) Photovoltaic (PV) Solar Facility (FY15) and Additional 15MW Capacity (FY18):** In 2014, Fort Benning prepared an EA for the construction, operation, and maintenance of a 30-MW PV solar system on approximately 250

acres of land on Fort Benning located at the Dove Field near the western boundary of Fort Benning within Russell County, AL. Final design of the PV system did not require use of the entire 250 acre parcel, and approximately 80 acres of the originally evaluated site are being considered for the construction, operation, and maintenance of an addition to the existing solar array to produce an supplementary 15-MW of renewable energy for the Installation to contribute to compliance with the Energy Policy Act of 2005.

- 6) **Fielding of the Enhanced Performance Round (FY15 and beyond):** A DoD initiative to improve munitions performance, as well as satisfy a component of the Army's "Green Ammunition" program to create environmentally friendly, small arms ammunition to reduce lead accumulation at training ranges. The current lead-core 5.56mm and 7.62mm ball ammunition will be replaced with a copper-core, which has fewer adverse environmental impacts and concurrently provides better shooting accuracy, consistency, and increased penetrating capability. Note that Fielding of the Enhanced Performance Round is not identified in Figure 4-1 due to its post-wide implications.
- 7) **Tactical Unmanned Aerial Vehicle Hanger (FY17):** To support the 75th Ranger Regiment's Tactical Unmanned Aerial Vehicle Platoon, this 10,340 square foot facility would consist of maintenance bays, classrooms, storage, and administrative areas. Other ancillary support facilities will include hazardous materials storage, a Tactical Unmanned Aerial Vehicle Hanger runway, and personnel parking. This facility is to be constructed alongside other support facilities currently used for operations at Lawson Army Airfield.
- 8) **Bridge 27 Replacement (FY15):** Approximately four acres of disturbance connecting the Sand Hill Cantonment Area to First Division Road, including demolition of the existing bridge.

Past, present and reasonably foreseeable actions that range beyond Fort Benning include:

- **Tri-State Water Wars (ongoing):** Legal challenge by the states of Florida and AL against GA and the USACE that contests the reallocation of water supply from the Chattahoochee River to support population growth in Atlanta, GA, and surrounding suburban areas. This lawsuit filed in 1990 argues that the USACE dam construction favors the interests of GA over environmental impacts to endangered aquatic species downstream due to decreased water levels and flow rates, as well as affecting freshwater input to the eastern Gulf of Mexico, which increases salinity levels that impact marine life.

4.2 Cumulative Impacts by Resource

Projects to be addressed in this cumulative impacts analysis correspond to resources that the alternatives have potential to affect. Biological Resources, Land Use, and Noise as analyzed in Chapter 3, would not be affected by the Proposed Action Alternatives. Therefore, these VECs are not discussed further in Chapter 4 as there were no anticipated adverse impacts and contributions to cumulative impacts would be considered unattainable.

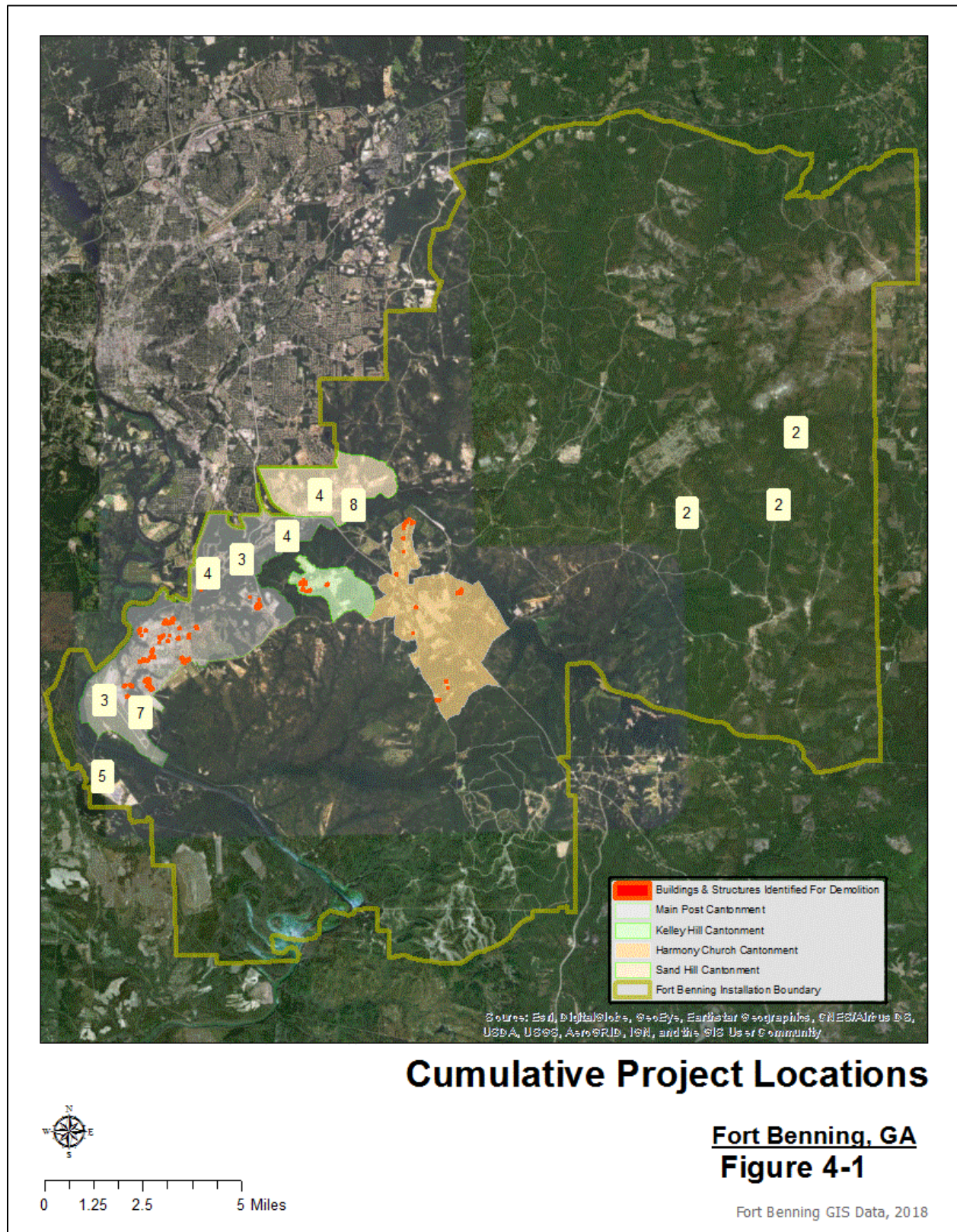


Table 3.2 provides a summary of direct and indirect environmental consequences for each Alternative as a result of the Proposed Action. As presented in the analysis below, the adverse impacts do not result in significant adverse cumulative effects when considering all other past, present, and reasonably foreseeable future construction and/or maintenance activities at Fort Benning.

4.2.1 Air Quality

Present and reasonably foreseeable future cumulative projects that could affect Air Quality include each of those listed in Section 4.1.2. The addition of considerable stationary source emissions would be unlikely under any Alternative and under the Action Alternatives long-term, beneficial impacts are expected due to reduced emissions. The generation of fugitive dust due to minor earth disturbances is the primary concern when considering construction and demolition cumulative impacts to Air Quality. Accordingly, an increase of fugitive dust resulting from minor earth disturbances would be confined to small areas of the project sites and temporary; occurring only during project activities. All applicable federal and state Air Quality protection requirements would be implemented to mitigate any generation of fugitive dust due to minor earth disturbances and no significant cumulative impacts to Air Quality would be anticipated.

4.2.2 Cultural Resources

Present and reasonably foreseeable actions that could adversely affect Cultural Resources include Custer Road Improvements and Tactical Unmanned Aerial Vehicle Hanger. The concern involves Fort Benning's historic districts and is a potential cumulative effect to the viewshed within the Main Post, and Lawson Army Airfield Historic Districts (Figures 3-1 and 4-1).

Under the Action Alternatives, potential demolition sites are located within the Main Post, and Lawson Army Airfield Historic Districts. The cumulative impacts, when considering all actions have the potential to affect the integrity of the historic districts; however, Fort Benning has been successful at implementing construction activities while keeping negative effects within the historic districts to a minimum (Fort Benning, 2011). The HPC would be followed, including coordination/consultation between Fort Benning, the Tribes, and the SHPO to ensure impacts to historic properties and districts are mitigated and no significant cumulative impacts to Cultural Resources occurs.

4.2.3 Hazardous Materials and Waste

Present and reasonably foreseeable future cumulative projects that could adversely affect Hazardous Materials and Waste include those listed in Section 4.1.2 that will occur within the boundary of Fort Benning. Minor increases in the use, handling, and storage of Hazardous Materials and Waste are associated with construction, renovation, and demolition activities. There would be short-term, minor adverse impacts resulting from demolition and disposal activities associated with the Action Alternatives. This temporary increase in Hazardous Materials and Waste would not lead to a cumulative increase in hazardous waste generation beyond the capacity of local or regional disposal facilities, even in combination with other projects.

All future operations and maintenance, and construction and renovation projects would follow all applicable regulatory requirements for the use, storage, and handling of hazardous material and waste. Therefore, when considering the past, present, and reasonably foreseeable projects listed, short-term, minor cumulative effects could be anticipated due to an increase of Hazardous Materials and Waste generated.

4.2.4 Soils

Cumulative projects that could adversely affect vegetation and soils include those listed in Section 4.1.2. These projects would affect Soils through disturbance, compaction, creation of impervious surfaces, and possible removal of impervious surfaces during the construction/demolition period.

Under the Action Alternatives, training and other construction activities across the Installation would continue to affect Soils. Each of the buildings and structures proposed for demolition and disposal are located in previously disturbed or highly developed areas and when combined with appropriate mitigation measures would result in negligible to short-term, minor cumulative impacts to Soils. Since the Alternatives and cumulative projects listed on Fort Benning lands would be required to follow to existing Fort Benning management practices as well as applicable federal, state and local laws and regulations, including NPDES requirements that mitigate adverse impacts to Soils, only short-term, minor cumulative impacts would be anticipated.

4.2.5 Utilities

Present and reasonably foreseeable future cumulative projects that could affect Utilities include the Army 2020 Force Structure Realignment, Naval Operation Support Center, Benning Technology Park and Custer Road Improvements, Implementation of a 30MW PV Solar Facility and Additional 15MW Capacity, and Tactical Unmanned Aerial Vehicle Hanger. Although the 30MW PV Solar Facility and Additional 15MW projects would generate electricity (beneficial impact), an increase in utility demand would occur as a result the projects mentioned.

Under the No Action Alternative, long-term, minor adverse impacts when considered with other projects mentioned would not result in significant cumulative impacts since privatized utility service capacities are anticipated to far handle increased demands (USACE, 2009). Furthermore, the Action Alternatives' long-term, beneficial impacts are expected reduced Fort Benning's total energy demands. Therefore the Action Alternatives would have no cumulative impacts on Utilities.

4.2.6 Water Resources

Cumulative projects that could affect Water Resources include all the Fort Benning projects that occur within or nearby the cantonment areas. This would exclude the Artillery Firing Points Expansion and Maintenance of the Open Field Training Environment project and Tri-State Water Wars. The remaining projects have the potential to result in adverse effects on Water Resources (including water quality).

The Action Alternatives and cumulative projects listed would contribute to soil erosion, runoff, and surface contamination from pollutants such as hazardous materials and/or waste. Adverse impacts to water are most likely to occur during rain events on active construction/demolition sites. Proactive mitigation measures either already in place or incorporated through construction design would ensure cumulative impacts would be short-term, minor and no significant cumulative impacts to Air Quality would be anticipated.

5 CONCLUSIONS

The Action Alternatives would comply with Army TRADOC's IFRP and Army directives instructing optimized facility management through footprint reduction efforts, minimize adverse environmental impacts, and facilitate the mission requirements of Fort Benning. The No Action Alternative would have no impacts to Biological Resources, Cultural Resources, Hazardous Materials and Waste, Land Use, Noise, Soils, and Water Resources. The No Action Alternative would result in long-term, minor adverse impacts to both Air Quality and Utilities as a result of continued use of existing emission sources and facilities on the FY19-23 FRP list.

VECs with negligible effects under the Action Alternatives includes Biological Resources, Land Use, and Noise. Long-term, beneficial impacts would occur to Air Quality and Utilities from implementation of the Action Alternatives due to reductions in emissions and energy demands. Air Quality would also have short-term, minor adverse impacts from fugitive dust, but only during demolition activities. Other short-term, minor adverse impacts resulting from demolition activities would occur to Hazardous Materials and Waste, Soils, and Water Resources under the Action Alternatives and under Alternative 2 to Cultural Resources. The removal of historic buildings under Alternative 1 is expected to result in long-term, minor adverse impacts to Cultural Resources.

As discussed in Section 4, these negligible effects to minor adverse impacts do not result in significant adverse cumulative effects when considering all other past, present, and reasonably foreseeable future activities. Adherence to Federal and State laws and regulations, as well as Installation management plans, and Army Regulations would minimize impacts of demolition and disposal activities to the VECs (i.e., Air Quality, Biological Resources, Cultural Resources, Utilities, Hazardous Materials and Waste, Land Use, Noise, Soils, and Water Resources).

Implementation of either Action Alternative would have no significant impact on the quality of human life or the natural environment. Alternative 1, however, is more desirable in comparison due to its proficiency to further comply with the US Army TRADOC's IFRP and more recent Army efforts to optimize facility management through reductions to buildings and structures. A FNSI is warranted for this Proposed Action and it does not require the preparation of an EIS.

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7 ACRONYMS AND ABBREVIATIONS

AAP	Army Alternate Procedures
ACUB	Army Compatible Use Buffer
ACM	Asbestos-containing Materials
ACUB	Army Compatible Use Buffer
ADP	Area Development Plan
AL	Alabama
AR	Army Regulation
ARC	Army Reconnaissance Course
Army	U.S. Department of the Army
ASTM	American Society for Testing and Materials
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO _{2e}	Carbon Dioxide Equivalent
CWA	Clean Water Act
DoD	Department of Defense
DODI	Department of Defense Instruction
DPW	Directorate of Public Works
EA	Environmental Assessment

EAP	Environmental Action Plan
EIS	Environmental Impact Statement
EMD	Environmental Management Division
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FNSI	Finding of No Significant Impact
FRP	Facility Reduction Program
FY	Fiscal Year
GA	Georgia
GHG	Greenhouse Gas
HABS	Historic American Building Survey
HPC	Historical Properties Component
HVAC	Heating, ventilation, and air conditioning
IAP	Installation Action Plan
ICRMP	Integrated Cultural Resources Management Plan
IFRP	Infrastructure Footprint Reduction Program
INRMP	Integrated Natural Resources Management Plan
LBP	Lead-based Paint
LUPZ	Land Use Planning Zone
MCoE	Maneuver Center of Excellence

MMBtu/Hr	Million British thermal units per hour
MRF	Material Recycling Facility
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves and Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen Dioxide
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	Ozone
Pb	Lead
PCB	polychlorinated biphenyl
PM _{2.5}	Particulate Matter with a Diameter Less Than or Equal to 2.5 Micrometers
PM ₁₀	Particulate Matter with a Diameter Less Than or Equal to 10 Micrometers
POL	Petroleum, oil, and lubricants
PSD	Prevention of Significant Deterioration
PV	Photovoltaic
RCRA	Resource Conservation and Recovery Act
RCW	Red-cockaded Woodpecker
ROI	Region of Influence
SHPO	State Historic Preservation Office

SO ₂	Sulfur Dioxide
SOP	Standard Operating Procedures
SWMU	Solid Waste Management Unit
TCE	Trichloroethylene
TRADOC	Army Training and Doctrine Command
TSCA	Toxic Substances Control Act
USC	US Code
UEA	Unique Ecological Area
US	United States
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USFWS	US Fish and Wildlife Service
VEC	Valued Environmental Component

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Cusseta-Chattahoochee Public Library 262 Broad St Cusseta, GA 31805		

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APPENDIX A

FORT BENNING FACILITIES REDUCTION PROGRAM DEMOLITION LIST

Fort Benning Facilities Reduction Program List

Building No.	Year Constructed	HABS/HAER	Building Description	Square Feet	Location	Proposed Demolition FY
65	1930	REQUIRED	GEN PURP ADMIN	3610	Wold Ave	2019
77	1934	REQUIRED	HEAT PL BLDG	998	Gillespie St	2019
92	1939	REQUIRED	DET FIRE ST SPT	853	Vibbert Ave	2019
100	1941	NA	COLD STR INST	32891	Upton Ave	2019
221	1934	COMPLETED	VEH STOR INST	12205	Wold Ave	2019
222	1934	COMPLETED	VEH STOR INST	7625	Wold Ave	2019
229	1923	NA	PVT/ORG CLUB	19793	Ingersoll St	2019
233	1923	REQUIRED	STORAGE GP INST	3840	Upton Ave	2019
235	1921	NA	ADMIN GEN PURP	4390	Gillespie St	2019
239	1923	REQUIRED	FAM LIFE CTR	2817	Wold Ave	2019
249	1940	COMPLETED	VEH STG INST	2750	Bill St	2019
267	1935	COMPLETED	VETERINARY FACILITY	1175	10th Div Ct	2019
281	1991	NA	STORAGE GP INST	192	Towne St	2019
305	1929	Draft	RECREATION CTR	4083	Ingersoll St	2019
319	1941	REQUIRED	STORAGE GP INST	919	Bradshaw Rd	2019
328	1949	REQUIRED	GEN PURP ADMIN	7495	Ingersoll St	2019
330	1935	REQUIRED	ENG/HOUSING MNT	2000	10th Div Rd	2019
357	1935	NA	PWR PLT BLDG	480	Ingersoll St	2019
381	1926	REQUIRED	HEAT PL BLDG	704	Ingersoll St	2019
491	1976	NA	ENG/HOUSING MNT	3720	Anderson St	2019
960	1957	NA	CO HQ BLDG	11110	Michael St	2019
961	1957	NA	ENLIST UPH, WTU	11110	Michael St	2019
966	1957	NA	ENLIST UPH, WTU	11110	Dixie Rd	2019
973	1953	NA	UOQ MILITARY	14240	Lincoln St	2019
976	1953	NA	UOQ MILITARY	13879	Lincoln St	2019
977	1992	NA	REF/A-C BLDG	784	Lincoln St	2019
1045	1958	COMPLETED	DEPENDENT SCHOOL	SF	First Div Rd	2019
1049	1966	COMPLETED	MNT SHP, GEN PURP	2198	First Div Rd	2019
1367	1967	NA	PRINT PLANT BLDG	5519	Compton St	2019
1369	1967	NA	GEN INST BLDG	5519	Compton St	2019

Building No.	Year Constructed	HABS/HAER	Building Description	Square Feet	Location	Proposed Demolition FY
1695	1974	NA	DISPATCH BLDG	2400	Marchant St	2019
1705	1967	NA	MNT STORAGE DOL	215	10th Div Ct	2019
1720	1967	NA	STR SHED GP INS	2068	10th Div Ct	2020
1721	1967	NA	STR SHED GP INS	1904	10th Div Ct	2020
1722	2006	NA	STR SHED GP INS	1680	Gillespie St	2020
1725	1956	NA	OIL STR BLD DOL	246	10th Div Ct	2020
1792	1942	NA	STORAGE GP INST	10200	Upton Ave	2019
1835	2004	NA	STORAGE GP INST	192	Mitchell Ave	2019
1836	1938	REQUIRED	GEN PURP ADMIN	2998	Mitchell Ave	2019
2291	1985	NA	GAS CHAMBER	1152	Alekno St	2019
2294	1967	NA	ORG CLASSROOM	5614	Alekno St	2019
2296	1979	NA	SEP TOIL/SHOWER	468	Indianhead & Alekno Rd	2019
2394	2005	NA	BN HQ BLDG	8119	Goltra Ct	2019
2486	1964	NA	AC MAINT HANGAR	25817	Jacelin St	2019
2580	1963	NA	ORG STR BLDG	1943	Indianhead Rd	2019
2593	1941	NA	ABN EQ/PARA REP	13644	Indianhead Rd	2019
2665	1951	NA	GEN PURP ADMIN	2244	Custer Rd	2020
2666	1951	NA	ORG STR BLDG	2886	Custer Rd	2020
2667	1951	NA	GEN PURP ADMIN	8421	Custer Rd	2020
2668	1951	NA	GEN PURP ADMIN	3824	Custer Rd	2020
2669	1951	NA	GEN PURP ADMIN	5757	Custer Rd	2020
2670	1951	NA	GEN PURP ADMIN	5844	Custer Rd	2020
2680	1947	NA	ORG STR BLDG	302	Benning Blvd	2020
2746	1977	NA	REF/A-C BLDG	2660	Benjamin St	2019
2759	1954	NA	BN HQ BLDG	2578	Sightseeing Rd	2020
2767	1958	NA	ORG CLASSROOM	3555	Riordon St	2020
2768	1958	NA	BN HQ BLDG	3555	Burr St	2020
2769	1958	NA	ORG CLASSROOM	3555	Burr St	2020
2773	1954	NA	DISPATCH BLDG	192	Lavoie Ave	2019
2774	1954	NA	FUEL/POL BLDG	192	Lavoie Ave	2019
2775	1954	NA	VEH MAINT SHOP	5038	Indianhead Rd	2019

Building No.	Year Constructed	HABS/HAER	Building Description	Square Feet	Location	Proposed Demolition FY
2778	2005	NA	COMP ITEM REP	121	Indianhead Rd	2019
2779	1957	NA	VEH MAINT SHOP	5038	Indianhead Rd	2019
2780	1957	NA	VEH MAINT SHOP	5038	Indianhead Rd	2019
2781	1957	NA	VEH MAINT SHOP	5038	Indianhead Rd	2019
2782	1957	NA	FLAM MAT STR IN	120	Indianhead Rd	2019
2824	1957	NA	ADMIN/SHOP DOL	3555	Sightseeing Rd	2019
2825	1958	NA	BN HQ BLDG	3555	Sightseeing Rd	2019
2830	1954	NA	GEN PURP ADMIN	2578	Sightseeing Rd & 1st Inf BDE Lp	2019
2831	1954	NA	ENLISTED UPH	40536	1st Inf BDE Lp	2019
2835	1954	NA	BN HQ BLDG TT	2578	Way Ave	2019
2836	1954	NA	ENLISTED UPH	40536	1st Inf BDE Lp	2019
2837	1954	NA	TRANS UPH AST	40536	1st Inf BDE Lp	2019
2838	1954	NA	TRANS UPH AST	40536	1st Inf BDE Lp	2019
2849	1954	NA	ORG STR BLDG	200	Way Ave	2019
2850	1952	NA	ADMIN GEN PURP	2419	Sightseeing Rd	2019
2901	1947	NA	ORG STR BLDG	11136	Sightseeing Rd	2019
2902	1947	NA	ORG STR BLDG	1650	Sightseeing Rd	2019
2903	1947	NA	ADMIN GEN PURP	2128	Sightseeing Rd	2019
3708	2005	NA	STR SHED GP INS	1845	75th Inf Reg St	2021
3716	1941	NA	REPAIR BAY, DOL	20770	75th Inf Reg St	2021
3733	1942	NA	HEAT PLT BLDG	660	75th Inf Reg St	2021
3739	1976	NA	MNT STORAGE DOL	1552	75th Inf Reg St	2021
3742	1941	NA	MNT STORAGE DOL	1748	75th Inf Reg St	2021
3744	1941	NA	MNT STORAGE DOL	3166	187th Inf Reg St	2021
3745	1941	NA	VEH PHT/PREP DEL	2740	11th Abn Div	2021
3746	1941	NA	ADMIN/SHOP DOL	7083	75th Inf Reg St	2019
4218	1998	NA	EXCHANGE BRANCH	485	8th Div Rd	2017
4219	2005	NA	ORG STR BLDG	577	8th Div Rd	2017
4883	1967	NA	CO HQ BLDG	2600	Duke Ave	2019
4960	1981	NA	VEH MAINT SHOP	3335	Jamestown Rd	2020
4965	1968	NA	CO HQ BLDG	7703	Jamestown Rd	2019

Building No.	Year Constructed	HABS/HAER	Building Description	Square Feet	Location	Proposed Demolition FY
4977	1967	NA	VEH MAINT SHOP	192	Crosbie Rd	2019
4978	2004	NA	HAZ MAT STR INS	630	Crosbie Rd	2019
4979	1967	NA	VEH MAINT SHOP	400	Crosbie Rd	2019
5500	1988	NA	VEH MAINT INST	93559	Bradley Dr	2019
5879	1972	NA	STR SHED GP INS	7488	Rykus Ave	2019
5967	1943	NA	IGLOO STR INST	2421	1st Div Rd	2019
5968	1943	NA	IGLOO STR INST	1813	1st Div Rd	2019
5969	1943	NA	IGLOO STR INST	1813	1st Div Rd	2019
5971	1943	NA	IGLOO STR INST	1813	1st Div Rd	2019
5974	1945	NA	IGLOO STR INST	400	1st Div Rd	2020
5975	1945	NA	IGLOO STR INST	400	1st Div Rd	2020
5976	1945	NA	IGLOO STR INST	400	1st Div Rd	2020
5977	1945	NA	IGLOO STR INST	400	1st Div Rd	2020
5993	1967	NA	STORAGE GP INST	960	1st Div Rd-	2019
8552	2008	NA	RNG OPNS BLDG	108	Hourglass Rd	2021
8593	1976	NA	RANGE OPNS BLDG	800	Jamestown Rd	2019
8718	1980	NA	SEP TOIL/SHOWER	192	Steam Mill Rd	2021
8730	1979	NA	RANGE OPNS BLDG	800	2nd Armored Div Rd	2021
8780	1965	NA	RANGE OPNS BLDG	1007	Orion Rd	2021
8782	1965	NA	RANGE OPNS BLDG	1007	Orion Rd	2021
8787	1969	NA	RANGE OPNS BLDG	1007	Orion Rd	2021
9003	1957	NA	BN HQ BLDG	2578	Watkins Ave	2019
9030	1957	NA	DISPATCH BLDG	192	Marne Rd	2019
9031	1957	NA	FUEL/POL BLDG	192	Marne Rd	2019
9032	1959	NA	VEH MAINT SHOP	5038	Marne Rd	2019
9033	1959	NA	VEH MAINT SHOP	5038	Marne Rd	2019
9034	1957	NA	VEH MAINT SHOP	5038	Marne Rd	2019
9035	1957	NA	VEH MAINT SHOP	5038	Marne Rd	2019
9037	1957	NA	OIL STR BLDG	120	Marne Rd	2019
9038	1959	NA	OIL STR BLDG	120	Marne Rd	2019
9042	1964	NA	DISPATCH BLDG	192	Marne Rd	2019

Building No.	Year Constructed	HABS/HAER	Building Description	Square Feet	Location	Proposed Demolition FY
9064	1975	NA	AUTO SKILL CTR	16556	Marne Rd	2020
9105	1976	NA	ADMIN/SHOP CONT	3691	Ivy Rd	2019
9200	1939	NA	MED CTR/HOSP	393077	Marne Rd	2019
9201	1958	NA	REF/A-C BLDG	1721	Ireland Rd	2019
9202	1958	NA	HEAT PLT BLDG	6590	Ireland Rd	2019
9208	2004	NA	ADMIN GEN PURP	2442	Marne Rd	2019
9211	2005	NA	ADMIN GEN PURP	8856	Bass Rd	2019
9223	1967	NA	FLAM MAT STR IN	336	Bass Rd	2020
M6362	2010	NA	STR SHED GP INS	1000	Spangler Plaza	2020
M6644	2007	NA	MISC SHED	113	Spangler Plaza	2020
M6647	1976	NA	STR SHED GP INS	2000	10th Div Rd	2019
M6705	1977	NA	COOLING TOWER	867	Benjamin St	2019
M7085	2008	NA	OVERHEAD GAS PUMP	1015	1st Div Rd	2019
M9313	1957	NA	GREASE RACK	NA	Marne Rd	2019
M9314	1957	NA	GREASE RACK	NA	Marne Rd	2019
M9741	2010	NA	UNDG STG TANK WASTE POL	2500	Marne Rd	2020
M9742	2010	NA	COVERED STG AREA	1050	Marne Rd	2020
M9749	2014	NA	WASH PLAT ORG	NA	Buena Vista Rd	2020
P8044	c.1993	NA	BATTLE LAB	800	1st Div Rd	2019
M6172	1967	NA	CONFIDENCE CSE	NA	Way Ave	2019
PUMPS	c.1993	NA	GAS PUMPS	NA	Lovoie Ave	2019
SIREN	1978	NA	SIREN	NA	8th Div & Jamestown Rd	2019

APPENDIX B

**FORT BENNING FACILITIES REDUCTION PROGRAM
ECONOMIC ANALYSIS**

Building 65 Disposal Economic Analysis Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 65 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 65 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $3,610 \times 10 = \$36,100$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for something in the Category Code Group 214. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $3,610 \times 55 = \$198,550$. However, there currently is an excess of space in most of these category codes and converting into this category would violate the intent of the Exord. This is a viable alternative This is a viable alternative.

Other DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 3,610 = \$198,550$. Due to the location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable. This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 3,610 = \$1191/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost.

This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 35,657
Renovation/Conversion	\$ 196,114
Other DOD or Federal Agency	\$ 196,114
Caretaker Status	\$ 145,367

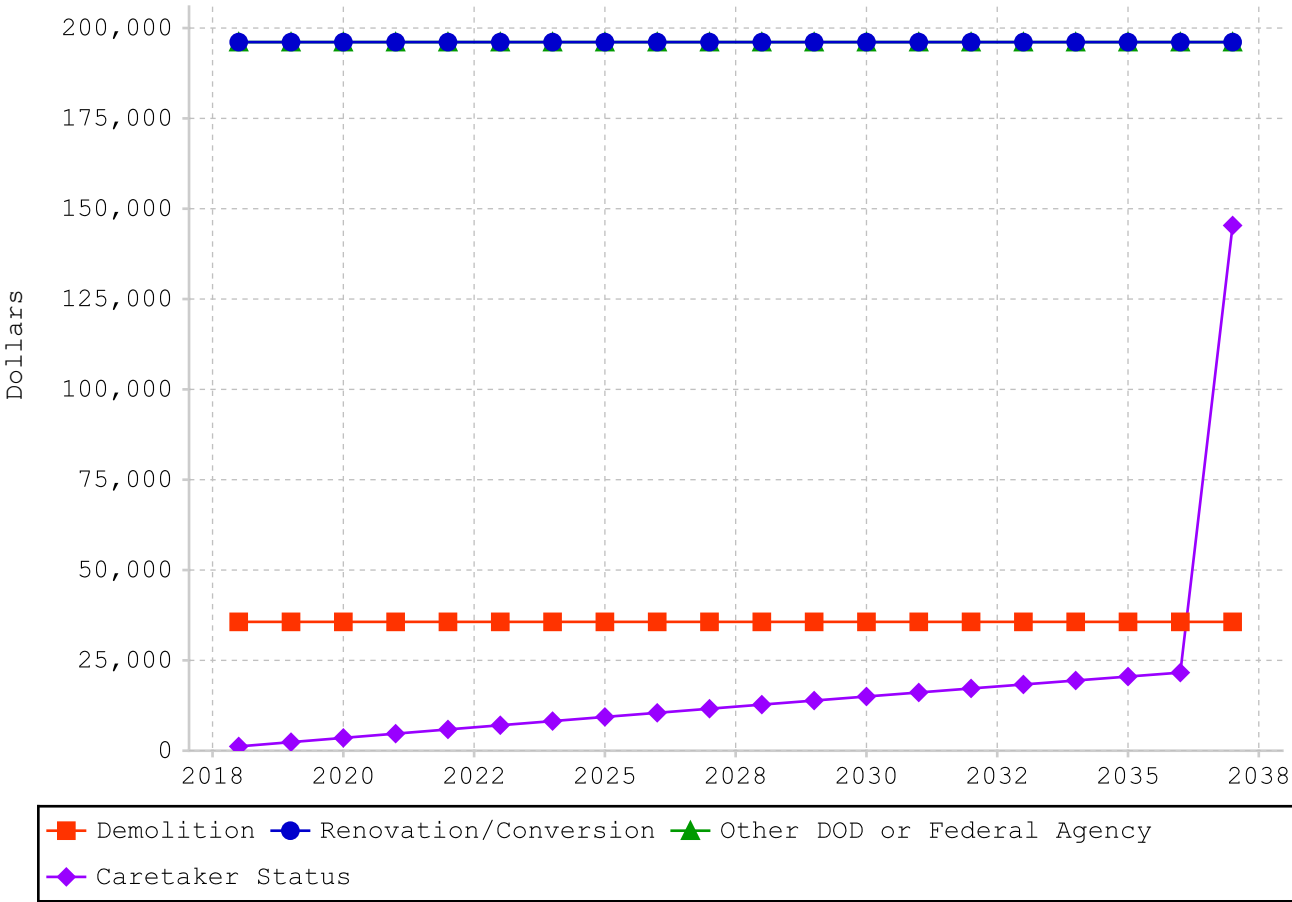
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 65 is the most economical alternative for the Army.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$36,100	\$36,100	0.988	\$35,657	\$35,657
2019	\$0	\$0	0.964	\$0	\$35,657
2020	\$0	\$0	0.94	\$0	\$35,657
2021	\$0	\$0	0.917	\$0	\$35,657
2022	\$0	\$0	0.895	\$0	\$35,657
2023	\$0	\$0	0.873	\$0	\$35,657
2024	\$0	\$0	0.852	\$0	\$35,657
2025	\$0	\$0	0.831	\$0	\$35,657
2026	\$0	\$0	0.811	\$0	\$35,657
2027	\$0	\$0	0.791	\$0	\$35,657
2028	\$0	\$0	0.772	\$0	\$35,657
2029	\$0	\$0	0.753	\$0	\$35,657
2030	\$0	\$0	0.734	\$0	\$35,657
2031	\$0	\$0	0.717	\$0	\$35,657
2032	\$0	\$0	0.699	\$0	\$35,657
2033	\$0	\$0	0.682	\$0	\$35,657
2034	\$0	\$0	0.665	\$0	\$35,657
2035	\$0	\$0	0.649	\$0	\$35,657
2036	\$0	\$0	0.633	\$0	\$35,657
2037	\$0	\$0	0.618	\$0	\$35,657
%NPV	100.00%				
\$35,657					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$198,550	\$198,550	0.988	\$196,114	\$196,114
2019	\$0	\$0	0.964	\$0	\$196,114
2020	\$0	\$0	0.94	\$0	\$196,114
2021	\$0	\$0	0.917	\$0	\$196,114
2022	\$0	\$0	0.895	\$0	\$196,114
2023	\$0	\$0	0.873	\$0	\$196,114
2024	\$0	\$0	0.852	\$0	\$196,114
2025	\$0	\$0	0.831	\$0	\$196,114
2026	\$0	\$0	0.811	\$0	\$196,114
2027	\$0	\$0	0.791	\$0	\$196,114
2028	\$0	\$0	0.772	\$0	\$196,114
2029	\$0	\$0	0.753	\$0	\$196,114
2030	\$0	\$0	0.734	\$0	\$196,114
2031	\$0	\$0	0.717	\$0	\$196,114
2032	\$0	\$0	0.699	\$0	\$196,114
2033	\$0	\$0	0.682	\$0	\$196,114
2034	\$0	\$0	0.665	\$0	\$196,114
2035	\$0	\$0	0.649	\$0	\$196,114
2036	\$0	\$0	0.633	\$0	\$196,114
2037	\$0	\$0	0.618	\$0	\$196,114
%NPV	100.00%				
\$196,114					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency

Year	Other DOD or Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$198,550	\$198,550	0.988	\$196,114	\$196,114
2019	\$0	\$0	0.964	\$0	\$196,114
2020	\$0	\$0	0.94	\$0	\$196,114
2021	\$0	\$0	0.917	\$0	\$196,114
2022	\$0	\$0	0.895	\$0	\$196,114
2023	\$0	\$0	0.873	\$0	\$196,114
2024	\$0	\$0	0.852	\$0	\$196,114
2025	\$0	\$0	0.831	\$0	\$196,114
2026	\$0	\$0	0.811	\$0	\$196,114
2027	\$0	\$0	0.791	\$0	\$196,114
2028	\$0	\$0	0.772	\$0	\$196,114
2029	\$0	\$0	0.753	\$0	\$196,114
2030	\$0	\$0	0.734	\$0	\$196,114
2031	\$0	\$0	0.717	\$0	\$196,114
2032	\$0	\$0	0.699	\$0	\$196,114
2033	\$0	\$0	0.682	\$0	\$196,114
2034	\$0	\$0	0.665	\$0	\$196,114
2035	\$0	\$0	0.649	\$0	\$196,114
2036	\$0	\$0	0.633	\$0	\$196,114
2037	\$0	\$0	0.618	\$0	\$196,114
%NPV	100.00%				
	\$196,114				
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status	Renovation/Con version	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$1,203	\$0	\$1,203	0.988	\$1,188
2019	\$1,227	\$0	\$1,227	0.964	\$1,182
2020	\$1,251	\$0	\$1,251	0.94	\$1,177
2021	\$1,276	\$0	\$1,276	0.917	\$1,171
2022	\$1,302	\$0	\$1,302	0.895	\$1,165
2023	\$1,328	\$0	\$1,328	0.873	\$1,159
2024	\$1,355	\$0	\$1,355	0.852	\$1,154
2025	\$1,382	\$0	\$1,382	0.831	\$1,148
2026	\$1,409	\$0	\$1,409	0.811	\$1,143
2027	\$1,438	\$0	\$1,438	0.791	\$1,137
2028	\$1,466	\$0	\$1,466	0.772	\$1,131
2029	\$1,496	\$0	\$1,496	0.753	\$1,126
2030	\$1,526	\$0	\$1,526	0.734	\$1,120
2031	\$1,556	\$0	\$1,556	0.717	\$1,115
2032	\$1,587	\$0	\$1,587	0.699	\$1,109
2033	\$1,619	\$0	\$1,619	0.682	\$1,104
2034	\$1,651	\$0	\$1,651	0.665	\$1,099
2035	\$1,684	\$0	\$1,684	0.649	\$1,093
2036	\$1,718	\$0	\$1,718	0.633	\$1,088
2037	\$1,752	\$198,550	\$200,302	0.618	\$123,757
%NPV	15.61%	84.39%			
	\$22,692	\$122,675			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	2017 General	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$1,188
2019	\$2,370
2020	\$3,547
2021	\$4,718
2022	\$5,883
2023	\$7,042
2024	\$8,196
2025	\$9,344
2026	\$10,487
2027	\$11,623
2028	\$12,755
2029	\$13,881
2030	\$15,001
2031	\$16,116
2032	\$17,226
2033	\$18,330
2034	\$19,428
2035	\$20,522
2036	\$21,610
2037	\$145,367

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\text{\$10} \times 3610 = \text{\$36,100}$$

2. Renovation/Conversion

a. Renovation/ Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.

Estimated cost is \$55/sf or $55 \times 3,610 = \text{\$198,550}$

3. Other DOD or Federal Agency

a. Other DOD or Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\text{\$55} \times 3,610 = \text{\$198,550}$.

Due to the relatively small size of this building (3,610 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Status

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

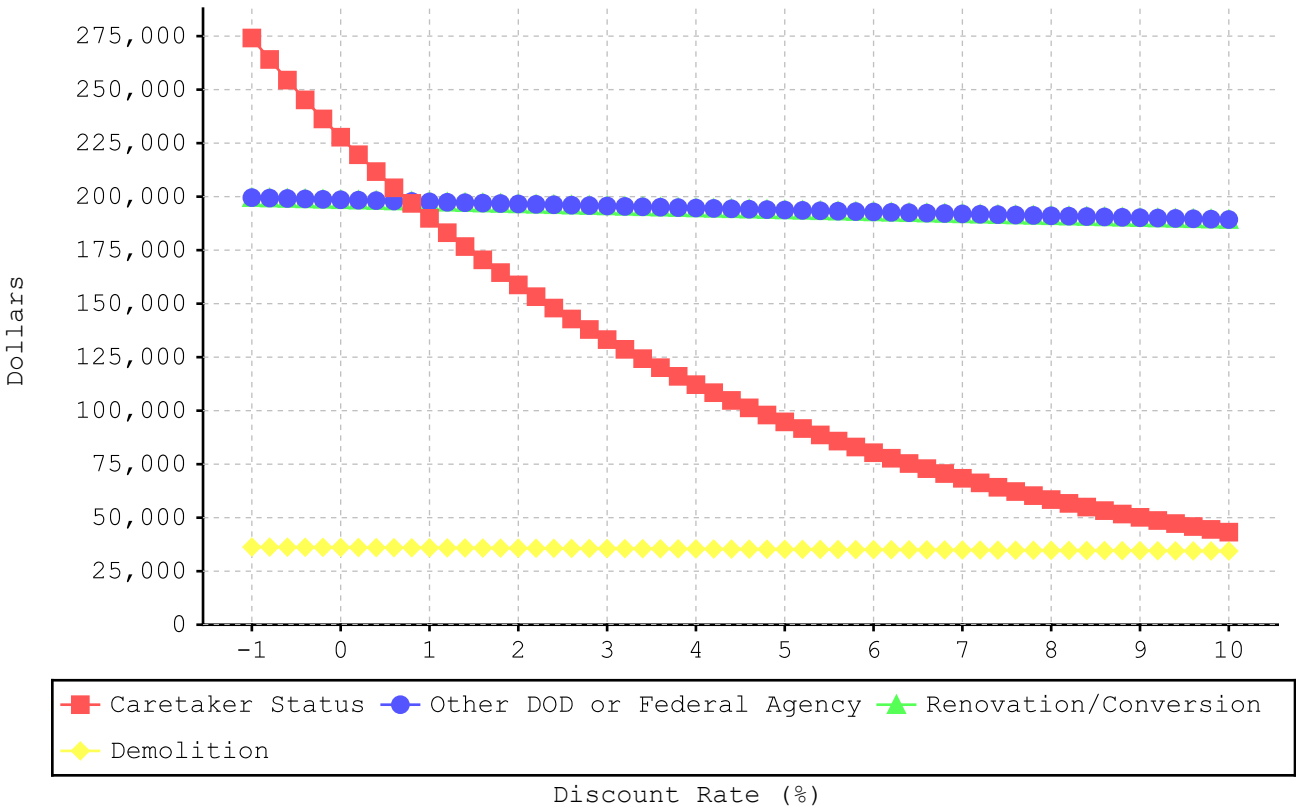
b. Renovation/Conversion

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 36,282	Demolition	\$ 35,992
Other DOD or Federal Agency	\$ 199,550	Other DOD or Federal Agency	\$ 197,957
Renovation/Conversion	\$ 199,550	Renovation/Conversion	\$ 197,957
Caretaker Status	\$ 274,121	Caretaker Status	\$ 204,126
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 36,245	Demolition	\$ 35,956
Other DOD or Federal Agency	\$ 199,349	Caretaker Status	\$ 196,852
Renovation/Conversion	\$ 199,349	Other DOD or Federal Agency	\$ 197,761
Caretaker Status	\$ 264,088	Renovation/Conversion	\$ 197,761
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 36,209	Demolition	\$ 35,921
Other DOD or Federal Agency	\$ 199,148	Caretaker Status	\$ 189,861
Renovation/Conversion	\$ 199,148	Other DOD or Federal Agency	\$ 197,565
Caretaker Status	\$ 254,453	Renovation/Conversion	\$ 197,565
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 36,172	Demolition	\$ 35,885
Other DOD or Federal Agency	\$ 198,948	Caretaker Status	\$ 183,142
Renovation/Conversion	\$ 198,948	Other DOD or Federal Agency	\$ 197,369
Caretaker Status	\$ 245,200	Renovation/Conversion	\$ 197,369
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 36,136	Demolition	\$ 35,850
Other DOD or Federal Agency	\$ 198,749	Caretaker Status	\$ 176,684
Renovation/Conversion	\$ 198,749	Other DOD or Federal Agency	\$ 197,175
Caretaker Status	\$ 236,313	Renovation/Conversion	\$ 197,175
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 36,100	Demolition	\$ 35,815
Other DOD or Federal Agency	\$ 198,550	Caretaker Status	\$ 170,475
Renovation/Conversion	\$ 198,550	Other DOD or Federal Agency	\$ 196,980
Caretaker Status	\$ 227,776	Renovation/Conversion	\$ 196,980
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 36,064	Demolition	\$ 35,779
Other DOD or Federal Agency	\$ 198,352	Caretaker Status	\$ 164,507
Renovation/Conversion	\$ 198,352	Other DOD or Federal Agency	\$ 196,787
Caretaker Status	\$ 219,575	Renovation/Conversion	\$ 196,787
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 36,028	Demolition	\$ 35,744
Other DOD or Federal Agency	\$ 198,154	Caretaker Status	\$ 158,768
Renovation/Conversion	\$ 198,154	Other DOD or Federal Agency	\$ 196,594
Caretaker Status	\$ 211,696	Renovation/Conversion	\$ 196,594

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 35,709	Demolition	\$ 35,433
Caretaker Status	\$ 153,250	Caretaker Status	\$ 116,044
Other DOD or Federal Agency	\$ 196,401	Other DOD or Federal Agency	\$ 194,882
Renovation/Conversion	\$ 196,401	Renovation/Conversion	\$ 194,882
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 35,674	Demolition	\$ 35,399
Caretaker Status	\$ 147,943	Caretaker Status	\$ 112,149
Other DOD or Federal Agency	\$ 196,209	Other DOD or Federal Agency	\$ 194,694
Renovation/Conversion	\$ 196,209	Renovation/Conversion	\$ 194,694
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 35,640	Demolition	\$ 35,365
Caretaker Status	\$ 142,840	Caretaker Status	\$ 108,401
Other DOD or Federal Agency	\$ 196,018	Other DOD or Federal Agency	\$ 194,507
Renovation/Conversion	\$ 196,018	Renovation/Conversion	\$ 194,507
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 35,605	Demolition	\$ 35,331
Caretaker Status	\$ 137,931	Caretaker Status	\$ 104,793
Other DOD or Federal Agency	\$ 195,827	Other DOD or Federal Agency	\$ 194,321
Renovation/Conversion	\$ 195,827	Renovation/Conversion	\$ 194,321
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 35,570	Demolition	\$ 35,297
Caretaker Status	\$ 133,209	Caretaker Status	\$ 101,319
Other DOD or Federal Agency	\$ 195,637	Other DOD or Federal Agency	\$ 194,135
Renovation/Conversion	\$ 195,637	Renovation/Conversion	\$ 194,135
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 35,536	Demolition	\$ 35,264
Caretaker Status	\$ 128,667	Caretaker Status	\$ 97,975
Other DOD or Federal Agency	\$ 195,447	Other DOD or Federal Agency	\$ 193,950
Renovation/Conversion	\$ 195,447	Renovation/Conversion	\$ 193,950
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 35,502	Demolition	\$ 35,230
Caretaker Status	\$ 124,296	Caretaker Status	\$ 94,755
Other DOD or Federal Agency	\$ 195,258	Other DOD or Federal Agency	\$ 193,765
Renovation/Conversion	\$ 195,258	Renovation/Conversion	\$ 193,765
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 35,467	Demolition	\$ 35,196
Caretaker Status	\$ 120,091	Caretaker Status	\$ 91,655
Other DOD or Federal Agency	\$ 195,070	Other DOD or Federal Agency	\$ 193,581
Renovation/Conversion	\$ 195,070	Renovation/Conversion	\$ 193,581

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 35,163	Demolition	\$ 34,899
Caretaker Status	\$ 88,669	Caretaker Status	\$ 68,404
Other DOD or Federal Agency	\$ 193,397	Other DOD or Federal Agency	\$ 191,946
Renovation/Conversion	\$ 193,397	Renovation/Conversion	\$ 191,946
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 35,130	Demolition	\$ 34,867
Caretaker Status	\$ 85,793	Caretaker Status	\$ 66,267
Other DOD or Federal Agency	\$ 193,214	Other DOD or Federal Agency	\$ 191,766
Renovation/Conversion	\$ 193,214	Renovation/Conversion	\$ 191,766
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 35,097	Demolition	\$ 34,834
Caretaker Status	\$ 83,023	Caretaker Status	\$ 64,207
Other DOD or Federal Agency	\$ 193,031	Other DOD or Federal Agency	\$ 191,588
Renovation/Conversion	\$ 193,031	Renovation/Conversion	\$ 191,588
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 35,063	Demolition	\$ 34,802
Caretaker Status	\$ 80,355	Caretaker Status	\$ 62,222
Other DOD or Federal Agency	\$ 192,849	Other DOD or Federal Agency	\$ 191,410
Renovation/Conversion	\$ 192,849	Renovation/Conversion	\$ 191,410
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 35,030	Demolition	\$ 34,769
Caretaker Status	\$ 77,784	Caretaker Status	\$ 60,308
Other DOD or Federal Agency	\$ 192,667	Other DOD or Federal Agency	\$ 191,232
Renovation/Conversion	\$ 192,667	Renovation/Conversion	\$ 191,232
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 34,997	Demolition	\$ 34,737
Caretaker Status	\$ 75,307	Caretaker Status	\$ 58,462
Other DOD or Federal Agency	\$ 192,486	Other DOD or Federal Agency	\$ 191,055
Renovation/Conversion	\$ 192,486	Renovation/Conversion	\$ 191,055
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 34,965	Demolition	\$ 34,705
Caretaker Status	\$ 72,920	Caretaker Status	\$ 56,682
Other DOD or Federal Agency	\$ 192,305	Other DOD or Federal Agency	\$ 190,878
Renovation/Conversion	\$ 192,305	Renovation/Conversion	\$ 190,878
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 34,932	Demolition	\$ 34,673
Caretaker Status	\$ 70,620	Caretaker Status	\$ 54,965
Other DOD or Federal Agency	\$ 192,125	Other DOD or Federal Agency	\$ 190,702
Renovation/Conversion	\$ 192,125	Renovation/Conversion	\$ 190,702

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 34,641
Caretaker Status	\$ 53,309
Other DOD or Federal Agency	\$ 190,526
Renovation/Conversion	\$ 190,526

Discount Rate = 8.8%

Demolition	\$ 34,609
Caretaker Status	\$ 51,712
Other DOD or Federal Agency	\$ 190,351
Renovation/Conversion	\$ 190,351

Discount Rate = 9.0%

Demolition	\$ 34,578
Caretaker Status	\$ 50,171
Other DOD or Federal Agency	\$ 190,176
Renovation/Conversion	\$ 190,176

Discount Rate = 9.2%

Demolition	\$ 34,546
Caretaker Status	\$ 48,684
Other DOD or Federal Agency	\$ 190,002
Renovation/Conversion	\$ 190,002

Discount Rate = 9.4%

Demolition	\$ 34,514
Caretaker Status	\$ 47,250
Other DOD or Federal Agency	\$ 189,828
Renovation/Conversion	\$ 189,828

Discount Rate = 9.6%

Demolition	\$ 34,483
Caretaker Status	\$ 45,865
Other DOD or Federal Agency	\$ 189,655
Renovation/Conversion	\$ 189,655

Discount Rate = 9.8%

Demolition	\$ 34,451
Caretaker Status	\$ 44,530
Other DOD or Federal Agency	\$ 189,482
Renovation/Conversion	\$ 189,482

Discount Rate = 10.0%

Demolition	\$ 34,420
Caretaker Status	\$ 43,240
Other DOD or Federal Agency	\$ 189,310
Renovation/Conversion	\$ 189,310

Building 77 Disposal Economic Analysis Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 239 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 77 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $998 \times 10 = \$9,980$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 44224, Organizational Storage. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $998 \times 55 = \$54,890$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative This is a viable alternative.

Other DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 998 = \$54,890$. Due to the small size of this building (998 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 998 = \$329/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost.

This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 9,858
Renovation/Conversion	\$ 54,216
Other DOD or Federal Agency	\$ 54,216
Caretaker Status	\$ 40,182

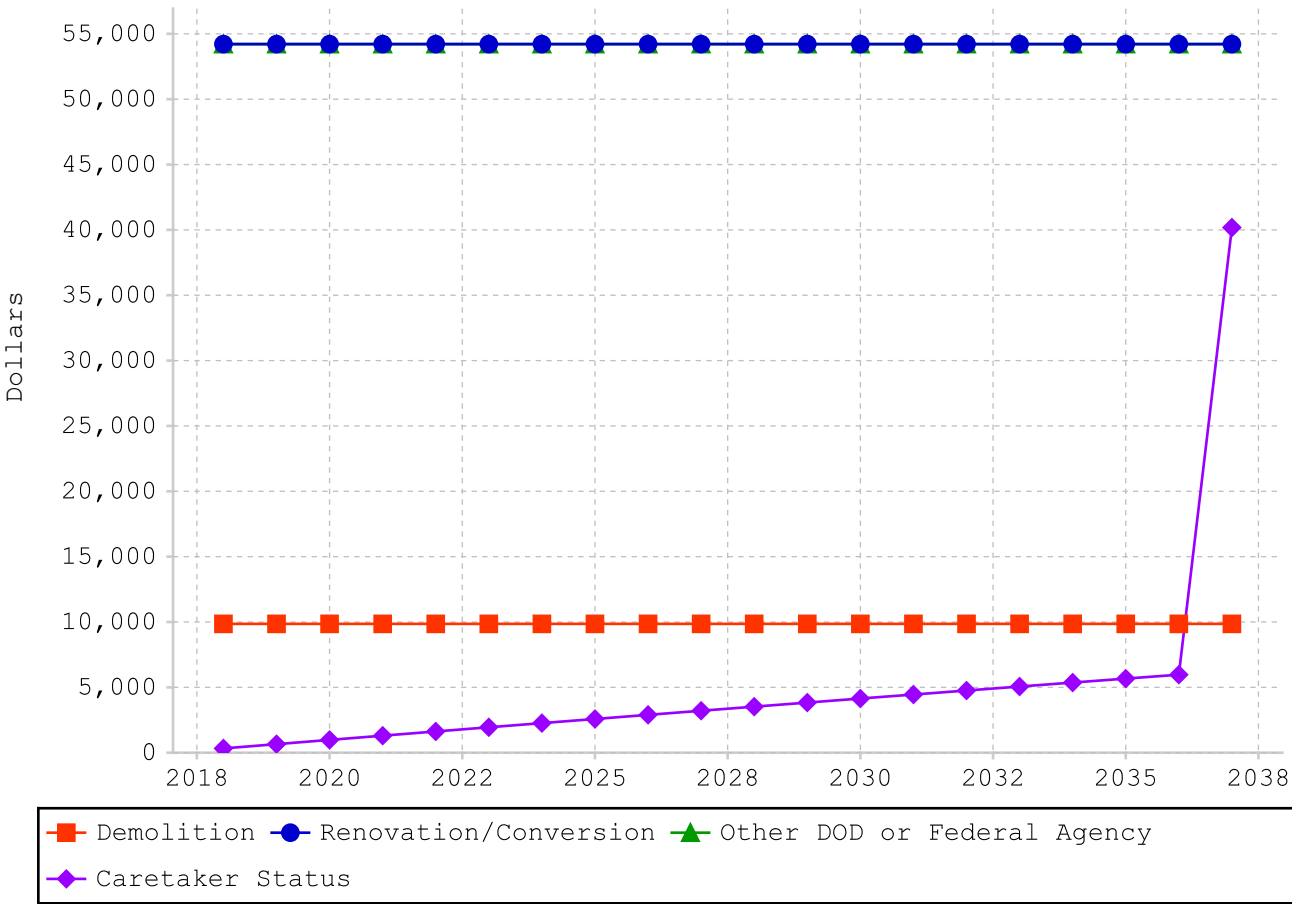
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 77 is the most economical alternative for the Army.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$9,980	\$9,980	0.988	\$9,858	\$9,858
2019	\$0	\$0	0.964	\$0	\$9,858
2020	\$0	\$0	0.94	\$0	\$9,858
2021	\$0	\$0	0.917	\$0	\$9,858
2022	\$0	\$0	0.895	\$0	\$9,858
2023	\$0	\$0	0.873	\$0	\$9,858
2024	\$0	\$0	0.852	\$0	\$9,858
2025	\$0	\$0	0.831	\$0	\$9,858
2026	\$0	\$0	0.811	\$0	\$9,858
2027	\$0	\$0	0.791	\$0	\$9,858
2028	\$0	\$0	0.772	\$0	\$9,858
2029	\$0	\$0	0.753	\$0	\$9,858
2030	\$0	\$0	0.734	\$0	\$9,858
2031	\$0	\$0	0.717	\$0	\$9,858
2032	\$0	\$0	0.699	\$0	\$9,858
2033	\$0	\$0	0.682	\$0	\$9,858
2034	\$0	\$0	0.665	\$0	\$9,858
2035	\$0	\$0	0.649	\$0	\$9,858
2036	\$0	\$0	0.633	\$0	\$9,858
2037	\$0	\$0	0.618	\$0	\$9,858
%NPV	100.00%				
	\$9,858				
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$54,890	\$54,890	0.988	\$54,216	\$54,216
2019	\$0	\$0	0.964	\$0	\$54,216
2020	\$0	\$0	0.94	\$0	\$54,216
2021	\$0	\$0	0.917	\$0	\$54,216
2022	\$0	\$0	0.895	\$0	\$54,216
2023	\$0	\$0	0.873	\$0	\$54,216
2024	\$0	\$0	0.852	\$0	\$54,216
2025	\$0	\$0	0.831	\$0	\$54,216
2026	\$0	\$0	0.811	\$0	\$54,216
2027	\$0	\$0	0.791	\$0	\$54,216
2028	\$0	\$0	0.772	\$0	\$54,216
2029	\$0	\$0	0.753	\$0	\$54,216
2030	\$0	\$0	0.734	\$0	\$54,216
2031	\$0	\$0	0.717	\$0	\$54,216
2032	\$0	\$0	0.699	\$0	\$54,216
2033	\$0	\$0	0.682	\$0	\$54,216
2034	\$0	\$0	0.665	\$0	\$54,216
2035	\$0	\$0	0.649	\$0	\$54,216
2036	\$0	\$0	0.633	\$0	\$54,216
2037	\$0	\$0	0.618	\$0	\$54,216
%NPV	100.00%				
\$54,216					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency

Year	Other DOD or Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$54,890	\$54,890	0.988	\$54,216	\$54,216
2019	\$0	\$0	0.964	\$0	\$54,216
2020	\$0	\$0	0.94	\$0	\$54,216
2021	\$0	\$0	0.917	\$0	\$54,216
2022	\$0	\$0	0.895	\$0	\$54,216
2023	\$0	\$0	0.873	\$0	\$54,216
2024	\$0	\$0	0.852	\$0	\$54,216
2025	\$0	\$0	0.831	\$0	\$54,216
2026	\$0	\$0	0.811	\$0	\$54,216
2027	\$0	\$0	0.791	\$0	\$54,216
2028	\$0	\$0	0.772	\$0	\$54,216
2029	\$0	\$0	0.753	\$0	\$54,216
2030	\$0	\$0	0.734	\$0	\$54,216
2031	\$0	\$0	0.717	\$0	\$54,216
2032	\$0	\$0	0.699	\$0	\$54,216
2033	\$0	\$0	0.682	\$0	\$54,216
2034	\$0	\$0	0.665	\$0	\$54,216
2035	\$0	\$0	0.649	\$0	\$54,216
2036	\$0	\$0	0.633	\$0	\$54,216
2037	\$0	\$0	0.618	\$0	\$54,216
%NPV	100.00%				
	\$54,216				
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
 Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status Maintenance	Renovation/Con version	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$332	\$0	\$332	0.988	\$328
2019	\$339	\$0	\$339	0.964	\$327
2020	\$346	\$0	\$346	0.94	\$325
2021	\$353	\$0	\$353	0.917	\$323
2022	\$360	\$0	\$360	0.895	\$322
2023	\$367	\$0	\$367	0.873	\$320
2024	\$374	\$0	\$374	0.852	\$319
2025	\$382	\$0	\$382	0.831	\$317
2026	\$389	\$0	\$389	0.811	\$316
2027	\$397	\$0	\$397	0.791	\$314
2028	\$405	\$0	\$405	0.772	\$313
2029	\$413	\$0	\$413	0.753	\$311
2030	\$421	\$0	\$421	0.734	\$309
2031	\$430	\$0	\$430	0.717	\$308
2032	\$438	\$0	\$438	0.699	\$306
2033	\$447	\$0	\$447	0.682	\$305
2034	\$456	\$0	\$456	0.665	\$303
2035	\$465	\$0	\$465	0.649	\$302
2036	\$475	\$0	\$475	0.633	\$301
2037	\$484	\$54,890	\$55,374	0.618	\$34,213
%NPV	15.60%	84.40%			
	\$6,268	\$33,914			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	2017 General	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$328
2019	\$655
2020	\$980
2021	\$1,303
2022	\$1,625
2023	\$1,945
2024	\$2,264
2025	\$2,581
2026	\$2,897
2027	\$3,211
2028	\$3,523
2029	\$3,834
2030	\$4,144
2031	\$4,452
2032	\$4,758
2033	\$5,063
2034	\$5,367
2035	\$5,669
2036	\$5,969
2037	\$40,182

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 2817 = \$28,170$$

2. Renovation/Conversion

a. Renovation/ Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.

Estimated cost is \$55/sf or $55 \times 998 = \$54,890$.

3. Other DOD or Federal Agency

a. Other DOD or Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 998 = \$54,80$.

Due to the small size of this building (998 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Status Maintenance

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

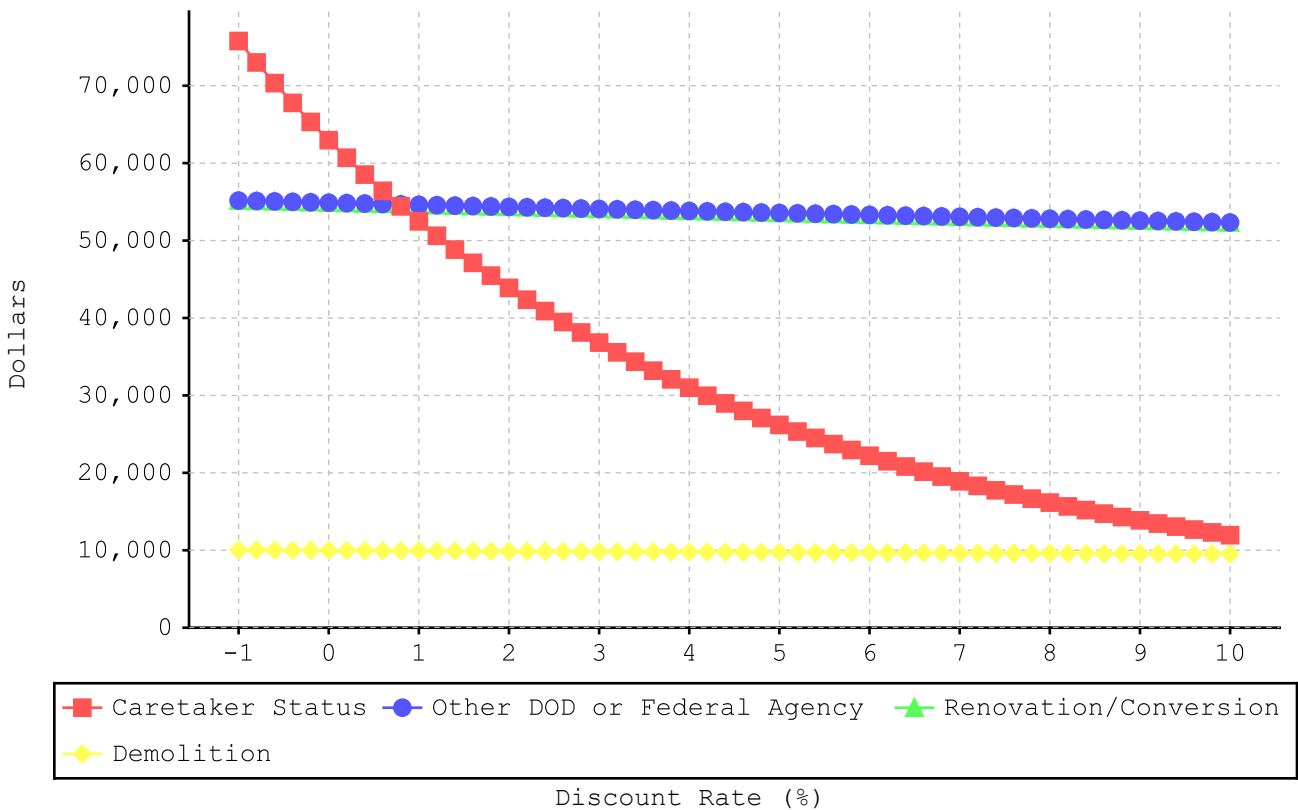
b. Renovation/Conversion

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 10,030	Demolition	\$ 9,950
Other DOD or Federal Agency	\$ 55,167	Other DOD or Federal Agency	\$ 54,726
Renovation/Conversion	\$ 55,167	Renovation/Conversion	\$ 54,726
Caretaker Status	\$ 75,775	Caretaker Status	\$ 56,426
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 10,020	Demolition	\$ 9,940
Other DOD or Federal Agency	\$ 55,111	Caretaker Status	\$ 54,415
Renovation/Conversion	\$ 55,111	Other DOD or Federal Agency	\$ 54,672
Caretaker Status	\$ 73,001	Renovation/Conversion	\$ 54,672
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 10,010	Demolition	\$ 9,930
Other DOD or Federal Agency	\$ 55,055	Caretaker Status	\$ 52,482
Renovation/Conversion	\$ 55,055	Other DOD or Federal Agency	\$ 54,618
Caretaker Status	\$ 70,338	Renovation/Conversion	\$ 54,618
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 10,000	Demolition	\$ 9,921
Other DOD or Federal Agency	\$ 55,000	Caretaker Status	\$ 50,625
Renovation/Conversion	\$ 55,000	Other DOD or Federal Agency	\$ 54,564
Caretaker Status	\$ 67,780	Renovation/Conversion	\$ 54,564
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 9,990	Demolition	\$ 9,911
Other DOD or Federal Agency	\$ 54,945	Caretaker Status	\$ 48,839
Renovation/Conversion	\$ 54,945	Other DOD or Federal Agency	\$ 54,510
Caretaker Status	\$ 65,323	Renovation/Conversion	\$ 54,510
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 9,980	Demolition	\$ 9,901
Other DOD or Federal Agency	\$ 54,890	Caretaker Status	\$ 47,123
Renovation/Conversion	\$ 54,890	Other DOD or Federal Agency	\$ 54,456
Caretaker Status	\$ 62,963	Renovation/Conversion	\$ 54,456
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 9,970	Demolition	\$ 9,891
Other DOD or Federal Agency	\$ 54,835	Caretaker Status	\$ 45,473
Renovation/Conversion	\$ 54,835	Other DOD or Federal Agency	\$ 54,403
Caretaker Status	\$ 60,696	Renovation/Conversion	\$ 54,403
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 9,960	Demolition	\$ 9,882
Other DOD or Federal Agency	\$ 54,781	Caretaker Status	\$ 43,887
Renovation/Conversion	\$ 54,781	Other DOD or Federal Agency	\$ 54,349
Caretaker Status	\$ 58,518	Renovation/Conversion	\$ 54,349

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 9,872	Demolition	\$ 9,796
Caretaker Status	\$ 42,362	Caretaker Status	\$ 32,077
Other DOD or Federal Agency	\$ 54,296	Other DOD or Federal Agency	\$ 53,876
Renovation/Conversion	\$ 54,296	Renovation/Conversion	\$ 53,876
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 9,862	Demolition	\$ 9,786
Caretaker Status	\$ 40,895	Caretaker Status	\$ 31,000
Other DOD or Federal Agency	\$ 54,243	Other DOD or Federal Agency	\$ 53,824
Renovation/Conversion	\$ 54,243	Renovation/Conversion	\$ 53,824
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 9,853	Demolition	\$ 9,777
Caretaker Status	\$ 39,484	Caretaker Status	\$ 29,964
Other DOD or Federal Agency	\$ 54,190	Other DOD or Federal Agency	\$ 53,772
Renovation/Conversion	\$ 54,190	Renovation/Conversion	\$ 53,772
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 9,843	Demolition	\$ 9,767
Caretaker Status	\$ 38,127	Caretaker Status	\$ 28,966
Other DOD or Federal Agency	\$ 54,137	Other DOD or Federal Agency	\$ 53,721
Renovation/Conversion	\$ 54,137	Renovation/Conversion	\$ 53,721
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 9,834	Demolition	\$ 9,758
Caretaker Status	\$ 36,822	Caretaker Status	\$ 28,006
Other DOD or Federal Agency	\$ 54,085	Other DOD or Federal Agency	\$ 53,669
Renovation/Conversion	\$ 54,085	Renovation/Conversion	\$ 53,669
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 9,824	Demolition	\$ 9,749
Caretaker Status	\$ 35,566	Caretaker Status	\$ 27,082
Other DOD or Federal Agency	\$ 54,032	Other DOD or Federal Agency	\$ 53,618
Renovation/Conversion	\$ 54,032	Renovation/Conversion	\$ 53,618
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 9,815	Demolition	\$ 9,739
Caretaker Status	\$ 34,358	Caretaker Status	\$ 26,192
Other DOD or Federal Agency	\$ 53,980	Other DOD or Federal Agency	\$ 53,567
Renovation/Conversion	\$ 53,980	Renovation/Conversion	\$ 53,567
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 9,805	Demolition	\$ 9,730
Caretaker Status	\$ 33,195	Caretaker Status	\$ 25,335
Other DOD or Federal Agency	\$ 53,928	Other DOD or Federal Agency	\$ 53,516
Renovation/Conversion	\$ 53,928	Renovation/Conversion	\$ 53,516

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 9,721	Demolition	\$ 9,648
Caretaker Status	\$ 24,509	Caretaker Status	\$ 18,907
Other DOD or Federal Agency	\$ 53,465	Other DOD or Federal Agency	\$ 53,064
Renovation/Conversion	\$ 53,465	Renovation/Conversion	\$ 53,064
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 9,712	Demolition	\$ 9,639
Caretaker Status	\$ 23,714	Caretaker Status	\$ 18,317
Other DOD or Federal Agency	\$ 53,415	Other DOD or Federal Agency	\$ 53,015
Renovation/Conversion	\$ 53,415	Renovation/Conversion	\$ 53,015
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 9,703	Demolition	\$ 9,630
Caretaker Status	\$ 22,948	Caretaker Status	\$ 17,747
Other DOD or Federal Agency	\$ 53,364	Other DOD or Federal Agency	\$ 52,965
Renovation/Conversion	\$ 53,364	Renovation/Conversion	\$ 52,965
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 9,693	Demolition	\$ 9,621
Caretaker Status	\$ 22,211	Caretaker Status	\$ 17,198
Other DOD or Federal Agency	\$ 53,314	Other DOD or Federal Agency	\$ 52,916
Renovation/Conversion	\$ 53,314	Renovation/Conversion	\$ 52,916
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 9,684	Demolition	\$ 9,612
Caretaker Status	\$ 21,500	Caretaker Status	\$ 16,669
Other DOD or Federal Agency	\$ 53,264	Other DOD or Federal Agency	\$ 52,867
Renovation/Conversion	\$ 53,264	Renovation/Conversion	\$ 52,867
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 9,675	Demolition	\$ 9,603
Caretaker Status	\$ 20,815	Caretaker Status	\$ 16,159
Other DOD or Federal Agency	\$ 53,214	Other DOD or Federal Agency	\$ 52,818
Renovation/Conversion	\$ 53,214	Renovation/Conversion	\$ 52,818
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 9,666	Demolition	\$ 9,594
Caretaker Status	\$ 20,156	Caretaker Status	\$ 15,667
Other DOD or Federal Agency	\$ 53,164	Other DOD or Federal Agency	\$ 52,769
Renovation/Conversion	\$ 53,164	Renovation/Conversion	\$ 52,769
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 9,657	Demolition	\$ 9,586
Caretaker Status	\$ 19,520	Caretaker Status	\$ 15,192
Other DOD or Federal Agency	\$ 53,114	Other DOD or Federal Agency	\$ 52,720
Renovation/Conversion	\$ 53,114	Renovation/Conversion	\$ 52,720

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 9,577
Caretaker Status	\$ 14,735
Other DOD or Federal Agency	\$ 52,672
Renovation/Conversion	\$ 52,672

Discount Rate = 8.8%

Demolition	\$ 9,568
Caretaker Status	\$ 14,293
Other DOD or Federal Agency	\$ 52,623
Renovation/Conversion	\$ 52,623

Discount Rate = 9.0%

Demolition	\$ 9,559
Caretaker Status	\$ 13,867
Other DOD or Federal Agency	\$ 52,575
Renovation/Conversion	\$ 52,575

Discount Rate = 9.2%

Demolition	\$ 9,550
Caretaker Status	\$ 13,456
Other DOD or Federal Agency	\$ 52,527
Renovation/Conversion	\$ 52,527

Discount Rate = 9.4%

Demolition	\$ 9,542
Caretaker Status	\$ 13,060
Other DOD or Federal Agency	\$ 52,479
Renovation/Conversion	\$ 52,479

Discount Rate = 9.6%

Demolition	\$ 9,533
Caretaker Status	\$ 12,677
Other DOD or Federal Agency	\$ 52,431
Renovation/Conversion	\$ 52,431

Discount Rate = 9.8%

Demolition	\$ 9,524
Caretaker Status	\$ 12,308
Other DOD or Federal Agency	\$ 52,383
Renovation/Conversion	\$ 52,383

Discount Rate = 10.0%

Demolition	\$ 9,516
Caretaker Status	\$ 11,951
Other DOD or Federal Agency	\$ 52,336
Renovation/Conversion	\$ 52,336

Building 92 Demolition Economic Analysis

Executive Summary Report

Project Title : Fort Benning Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 92 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 92 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Status Quo (Current Operations) - This option retains Building 92 as a Detached Fire Station Support Building (CC70311). This facility is currently unoccupied and no longer needed for this purpose because the adjoining fire station was closed when the new Dixie Rd fire station was opened in 2005. Therefore, maintaining this facility in its current category code is not a viable alternative. This alternative is nonviable.

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order NUMBER 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $853 \times 10 = \$8,530$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 61050, General Administration Building. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $853 \times 55 = \$46,915$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative. This is a viable alternative.

Other DOD or Federal Agency Facilities - This alternative offers the building

to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 853 = \$46,915$. Due to the small size of this building (853 sf) and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable. This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost. This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 8,425
Renovation/Conversion	\$ 45,209
Other DOD or Federal Agency Facilities	\$ 45,209
Caretaker Status	\$ 46,689

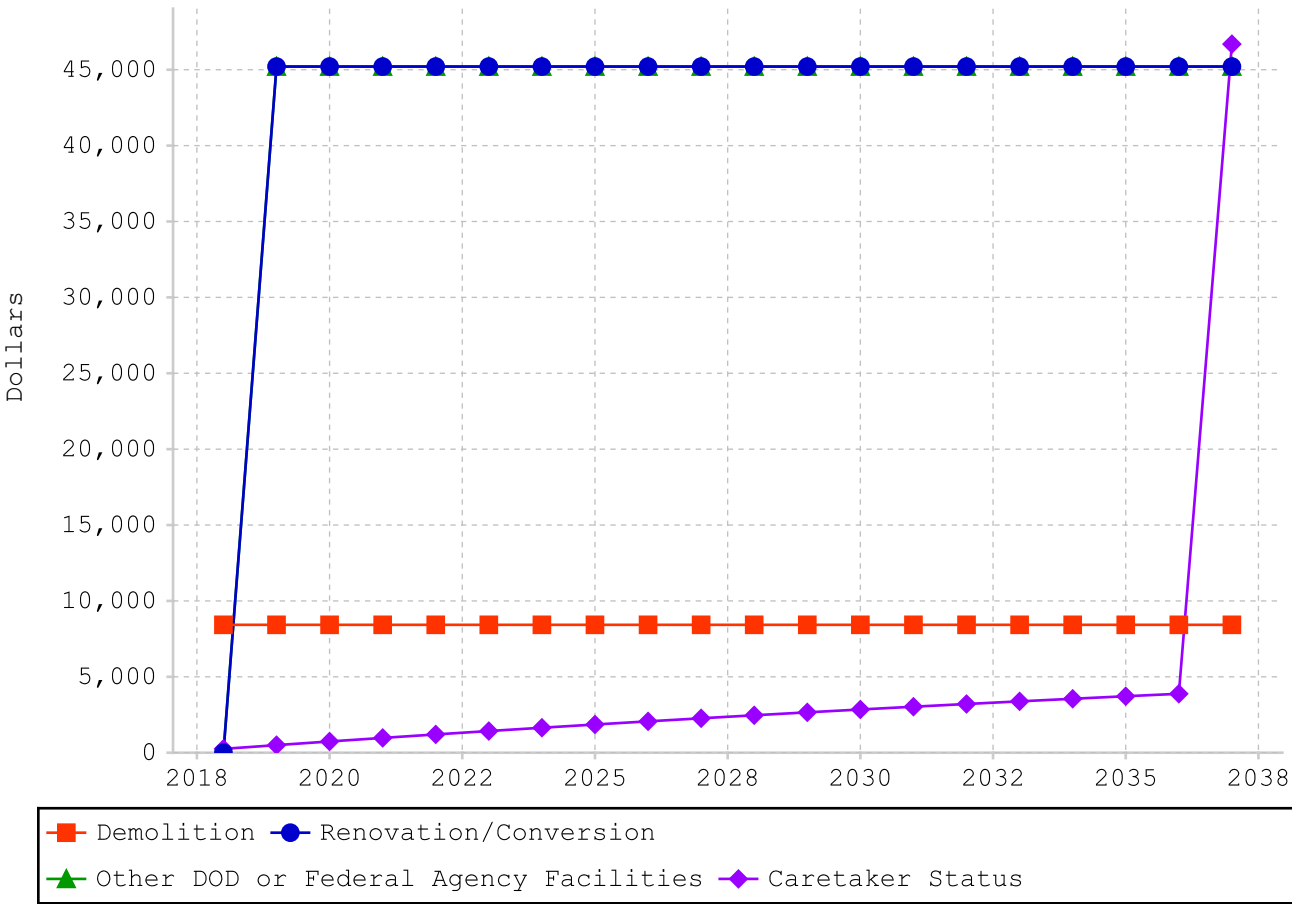
Results and Recommendations:

Based on the results of this analysis, the most economical alternative is demolition. Fort Benning does not have a practical use for this facility as is, or in a renovated condition.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$8,530	\$8,530	0.988	\$8,425	\$8,425
2019	\$0	\$0	0.964	\$0	\$8,425
2020	\$0	\$0	0.94	\$0	\$8,425
2021	\$0	\$0	0.917	\$0	\$8,425
2022	\$0	\$0	0.895	\$0	\$8,425
2023	\$0	\$0	0.873	\$0	\$8,425
2024	\$0	\$0	0.852	\$0	\$8,425
2025	\$0	\$0	0.831	\$0	\$8,425
2026	\$0	\$0	0.811	\$0	\$8,425
2027	\$0	\$0	0.791	\$0	\$8,425
2028	\$0	\$0	0.772	\$0	\$8,425
2029	\$0	\$0	0.753	\$0	\$8,425
2030	\$0	\$0	0.734	\$0	\$8,425
2031	\$0	\$0	0.717	\$0	\$8,425
2032	\$0	\$0	0.699	\$0	\$8,425
2033	\$0	\$0	0.682	\$0	\$8,425
2034	\$0	\$0	0.665	\$0	\$8,425
2035	\$0	\$0	0.649	\$0	\$8,425
2036	\$0	\$0	0.633	\$0	\$8,425
2037	\$0	\$0	0.618	\$0	\$8,425
%NPV	100.00%				
\$8,425					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$0	\$0	0.988	\$0	\$0
2019	\$46,915	\$46,915	0.964	\$45,209	\$45,209
2020	\$0	\$0	0.94	\$0	\$45,209
2021	\$0	\$0	0.917	\$0	\$45,209
2022	\$0	\$0	0.895	\$0	\$45,209
2023	\$0	\$0	0.873	\$0	\$45,209
2024	\$0	\$0	0.852	\$0	\$45,209
2025	\$0	\$0	0.831	\$0	\$45,209
2026	\$0	\$0	0.811	\$0	\$45,209
2027	\$0	\$0	0.791	\$0	\$45,209
2028	\$0	\$0	0.772	\$0	\$45,209
2029	\$0	\$0	0.753	\$0	\$45,209
2030	\$0	\$0	0.734	\$0	\$45,209
2031	\$0	\$0	0.717	\$0	\$45,209
2032	\$0	\$0	0.699	\$0	\$45,209
2033	\$0	\$0	0.682	\$0	\$45,209
2034	\$0	\$0	0.665	\$0	\$45,209
2035	\$0	\$0	0.649	\$0	\$45,209
2036	\$0	\$0	0.633	\$0	\$45,209
2037	\$0	\$0	0.618	\$0	\$45,209
%NPV	100.00%				
	\$45,209				
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency Facilities

Year	Renovation	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$0	\$0	0.988	\$0	\$0
2019	\$46,915	\$46,915	0.964	\$45,209	\$45,209
2020	\$0	\$0	0.94	\$0	\$45,209
2021	\$0	\$0	0.917	\$0	\$45,209
2022	\$0	\$0	0.895	\$0	\$45,209
2023	\$0	\$0	0.873	\$0	\$45,209
2024	\$0	\$0	0.852	\$0	\$45,209
2025	\$0	\$0	0.831	\$0	\$45,209
2026	\$0	\$0	0.811	\$0	\$45,209
2027	\$0	\$0	0.791	\$0	\$45,209
2028	\$0	\$0	0.772	\$0	\$45,209
2029	\$0	\$0	0.753	\$0	\$45,209
2030	\$0	\$0	0.734	\$0	\$45,209
2031	\$0	\$0	0.717	\$0	\$45,209
2032	\$0	\$0	0.699	\$0	\$45,209
2033	\$0	\$0	0.682	\$0	\$45,209
2034	\$0	\$0	0.665	\$0	\$45,209
2035	\$0	\$0	0.649	\$0	\$45,209
2036	\$0	\$0	0.633	\$0	\$45,209
2037	\$0	\$0	0.618	\$0	\$45,209
%NPV	100.00%				
\$45,209					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status	Renovation	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$256	\$0	\$256	0.988	\$253
2019	\$256	\$0	\$256	0.964	\$247
2020	\$256	\$0	\$256	0.94	\$241
2021	\$256	\$0	\$256	0.917	\$235
2022	\$256	\$0	\$256	0.895	\$229
2023	\$256	\$0	\$256	0.873	\$223
2024	\$256	\$0	\$256	0.852	\$218
2025	\$256	\$0	\$256	0.831	\$213
2026	\$256	\$0	\$256	0.811	\$208
2027	\$256	\$0	\$256	0.791	\$202
2028	\$256	\$0	\$256	0.772	\$198
2029	\$256	\$0	\$256	0.753	\$193
2030	\$256	\$0	\$256	0.734	\$188
2031	\$256	\$0	\$256	0.717	\$183
2032	\$256	\$0	\$256	0.699	\$179
2033	\$256	\$0	\$256	0.682	\$175
2034	\$256	\$0	\$256	0.665	\$170
2035	\$256	\$0	\$256	0.649	\$166
2036	\$256	\$0	\$256	0.633	\$162
2037	\$256	\$69,026	\$69,282	0.618	\$42,806
%NPV	8.65%	91.35%			
	\$4,040	\$42,648			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	No Inflation	2017 General			
Category / Residual Schedule	Recurring Costs	Non-Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$253
2019	\$500
2020	\$740
2021	\$975
2022	\$1,204
2023	\$1,428
2024	\$1,646
2025	\$1,858
2026	\$2,066
2027	\$2,268
2028	\$2,466
2029	\$2,659
2030	\$2,847
2031	\$3,030
2032	\$3,209
2033	\$3,384
2034	\$3,554
2035	\$3,720
2036	\$3,882
2037	\$46,689

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 853 = \$8,530$$

2. Renovation/Conversion

a. Renovation

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $55 \times 853 = \$46,915$

3. Other DOD or Federal Agency Facilities

a. Renovation

Similar to renovation for use by the Army, to be made practical for use by another government agency, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $55 \times 853 = \$46,915$.

4. Caretaker Status

a. Caretaker Status

The current cost of maintaining a facility in a caretaker status is \$0.33/sf.

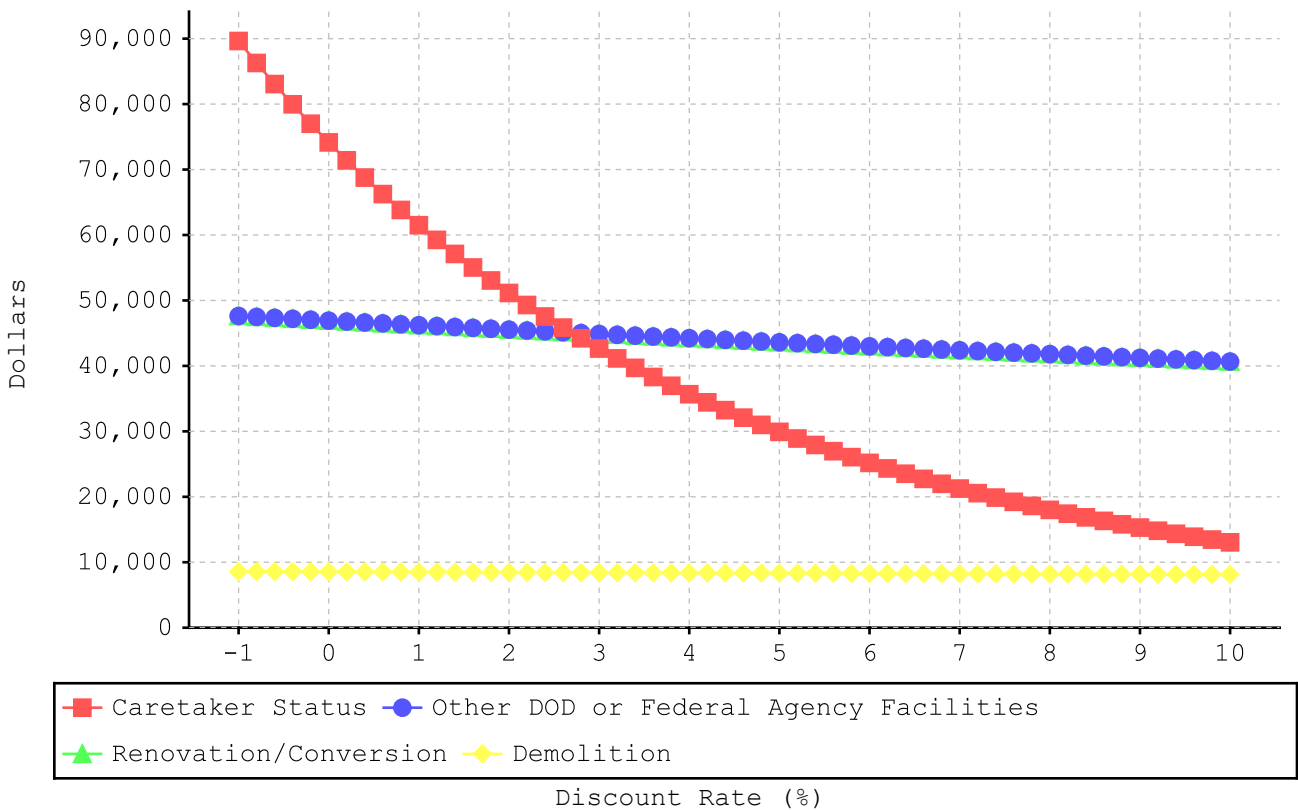
b. Renovation

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 2.6 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 2.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 8,573	Demolition	\$ 8,505
Other DOD or Federal Agency	\$ 47,628	Other DOD or Federal Agency	\$ 46,496
Renovation/Conversion	\$ 47,628	Renovation/Conversion	\$ 46,496
Caretaker Status	\$ 89,642	Caretaker Status	\$ 66,252
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 8,564	Demolition	\$ 8,496
Other DOD or Federal Agency	\$ 47,484	Other DOD or Federal Agency	\$ 46,358
Renovation/Conversion	\$ 47,484	Renovation/Conversion	\$ 46,358
Caretaker Status	\$ 86,285	Caretaker Status	\$ 63,826
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 8,556	Demolition	\$ 8,488
Other DOD or Federal Agency	\$ 47,340	Other DOD or Federal Agency	\$ 46,220
Renovation/Conversion	\$ 47,340	Renovation/Conversion	\$ 46,220
Caretaker Status	\$ 83,062	Caretaker Status	\$ 61,495
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 8,547	Demolition	\$ 8,479
Other DOD or Federal Agency	\$ 47,198	Other DOD or Federal Agency	\$ 46,083
Renovation/Conversion	\$ 47,198	Renovation/Conversion	\$ 46,083
Caretaker Status	\$ 79,968	Caretaker Status	\$ 59,256
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 8,539	Demolition	\$ 8,471
Other DOD or Federal Agency	\$ 47,056	Other DOD or Federal Agency	\$ 45,947
Renovation/Conversion	\$ 47,056	Renovation/Conversion	\$ 45,947
Caretaker Status	\$ 76,998	Caretaker Status	\$ 57,105
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 8,530	Demolition	\$ 8,463
Other DOD or Federal Agency	\$ 46,915	Other DOD or Federal Agency	\$ 45,811
Renovation/Conversion	\$ 46,915	Renovation/Conversion	\$ 45,811
Caretaker Status	\$ 74,146	Caretaker Status	\$ 55,038
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 8,521	Demolition	\$ 8,454
Other DOD or Federal Agency	\$ 46,775	Other DOD or Federal Agency	\$ 45,676
Renovation/Conversion	\$ 46,775	Renovation/Conversion	\$ 45,676
Caretaker Status	\$ 71,408	Caretaker Status	\$ 53,052
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 8,513	Demolition	\$ 8,446
Other DOD or Federal Agency	\$ 46,635	Other DOD or Federal Agency	\$ 45,542
Renovation/Conversion	\$ 46,635	Renovation/Conversion	\$ 45,542
Caretaker Status	\$ 68,778	Caretaker Status	\$ 51,143

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 2.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 8,438	Demolition	\$ 8,372
Other DOD or Federal Agency	\$ 45,408	Caretaker Status	\$ 36,964
Renovation/Conversion	\$ 45,408	Other DOD or Federal Agency	\$ 44,362
Caretaker Status	\$ 49,308	Renovation/Conversion	\$ 44,362
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 8,429	Demolition	\$ 8,364
Other DOD or Federal Agency	\$ 45,275	Caretaker Status	\$ 35,675
Renovation/Conversion	\$ 45,275	Other DOD or Federal Agency	\$ 44,235
Caretaker Status	\$ 47,544	Renovation/Conversion	\$ 44,235
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 8,421	Demolition	\$ 8,356
Other DOD or Federal Agency	\$ 45,143	Caretaker Status	\$ 34,435
Renovation/Conversion	\$ 45,143	Other DOD or Federal Agency	\$ 44,107
Caretaker Status	\$ 45,849	Renovation/Conversion	\$ 44,107
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 8,413	Demolition	\$ 8,348
Caretaker Status	\$ 44,220	Caretaker Status	\$ 33,242
Other DOD or Federal Agency	\$ 45,011	Other DOD or Federal Agency	\$ 43,981
Renovation/Conversion	\$ 45,011	Renovation/Conversion	\$ 43,981
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 8,405	Demolition	\$ 8,340
Caretaker Status	\$ 42,653	Caretaker Status	\$ 32,094
Other DOD or Federal Agency	\$ 44,880	Other DOD or Federal Agency	\$ 43,855
Renovation/Conversion	\$ 44,880	Renovation/Conversion	\$ 43,855
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 8,397	Demolition	\$ 8,332
Caretaker Status	\$ 41,146	Caretaker Status	\$ 30,990
Other DOD or Federal Agency	\$ 44,750	Other DOD or Federal Agency	\$ 43,729
Renovation/Conversion	\$ 44,750	Renovation/Conversion	\$ 43,729
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 8,389	Demolition	\$ 8,324
Caretaker Status	\$ 39,697	Caretaker Status	\$ 29,927
Other DOD or Federal Agency	\$ 44,620	Other DOD or Federal Agency	\$ 43,604
Renovation/Conversion	\$ 44,620	Renovation/Conversion	\$ 43,604
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 8,380	Demolition	\$ 8,317
Caretaker Status	\$ 38,304	Caretaker Status	\$ 28,904
Other DOD or Federal Agency	\$ 44,491	Other DOD or Federal Agency	\$ 43,480
Renovation/Conversion	\$ 44,491	Renovation/Conversion	\$ 43,480

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 2.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 8,309	Demolition	\$ 8,246
Caretaker Status	\$ 27,920	Caretaker Status	\$ 21,257
Other DOD or Federal Agency	\$ 43,356	Other DOD or Federal Agency	\$ 42,387
Renovation/Conversion	\$ 43,356	Renovation/Conversion	\$ 42,387
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 8,301	Demolition	\$ 8,239
Caretaker Status	\$ 26,972	Caretaker Status	\$ 20,557
Other DOD or Federal Agency	\$ 43,233	Other DOD or Federal Agency	\$ 42,269
Renovation/Conversion	\$ 43,233	Renovation/Conversion	\$ 42,269
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 8,293	Demolition	\$ 8,231
Caretaker Status	\$ 26,060	Caretaker Status	\$ 19,882
Other DOD or Federal Agency	\$ 43,111	Other DOD or Federal Agency	\$ 42,151
Renovation/Conversion	\$ 43,111	Renovation/Conversion	\$ 42,151
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 8,285	Demolition	\$ 8,223
Caretaker Status	\$ 25,182	Caretaker Status	\$ 19,232
Other DOD or Federal Agency	\$ 42,989	Other DOD or Federal Agency	\$ 42,033
Renovation/Conversion	\$ 42,989	Renovation/Conversion	\$ 42,033
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 8,277	Demolition	\$ 8,216
Caretaker Status	\$ 24,337	Caretaker Status	\$ 18,606
Other DOD or Federal Agency	\$ 42,867	Other DOD or Federal Agency	\$ 41,916
Renovation/Conversion	\$ 42,867	Renovation/Conversion	\$ 41,916
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 8,269	Demolition	\$ 8,208
Caretaker Status	\$ 23,523	Caretaker Status	\$ 18,003
Other DOD or Federal Agency	\$ 42,746	Other DOD or Federal Agency	\$ 41,800
Renovation/Conversion	\$ 42,746	Renovation/Conversion	\$ 41,800
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 8,262	Demolition	\$ 8,200
Caretaker Status	\$ 22,739	Caretaker Status	\$ 17,421
Other DOD or Federal Agency	\$ 42,626	Other DOD or Federal Agency	\$ 41,684
Renovation/Conversion	\$ 42,626	Renovation/Conversion	\$ 41,684
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 8,254	Demolition	\$ 8,193
Caretaker Status	\$ 21,984	Caretaker Status	\$ 16,861
Other DOD or Federal Agency	\$ 42,506	Other DOD or Federal Agency	\$ 41,569
Renovation/Conversion	\$ 42,506	Renovation/Conversion	\$ 41,569

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 2.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 8,185
Caretaker Status	\$ 16,321
Other DOD or Federal Agency	\$ 41,454
Renovation/Conversion	\$ 41,454

Discount Rate = 8.8%

Demolition	\$ 8,178
Caretaker Status	\$ 15,800
Other DOD or Federal Agency	\$ 41,340
Renovation/Conversion	\$ 41,340

Discount Rate = 9.0%

Demolition	\$ 8,170
Caretaker Status	\$ 15,299
Other DOD or Federal Agency	\$ 41,226
Renovation/Conversion	\$ 41,226

Discount Rate = 9.2%

Demolition	\$ 8,163
Caretaker Status	\$ 14,815
Other DOD or Federal Agency	\$ 41,113
Renovation/Conversion	\$ 41,113

Discount Rate = 9.4%

Demolition	\$ 8,155
Caretaker Status	\$ 14,348
Other DOD or Federal Agency	\$ 41,000
Renovation/Conversion	\$ 41,000

Discount Rate = 9.6%

Demolition	\$ 8,148
Caretaker Status	\$ 13,899
Other DOD or Federal Agency	\$ 40,888
Renovation/Conversion	\$ 40,888

Discount Rate = 9.8%

Demolition	\$ 8,140
Caretaker Status	\$ 13,465
Other DOD or Federal Agency	\$ 40,776
Renovation/Conversion	\$ 40,776

Discount Rate = 10.0%

Demolition	\$ 8,133
Caretaker Status	\$ 13,047
Other DOD or Federal Agency	\$ 40,665
Renovation/Conversion	\$ 40,665

Building 221 Disposal Economic Analysis Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 221 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 221 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $12,205 \times 10 = \$122,050$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building would be to another vehicle maintenance or storage type category code. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $12,205 \times 55 = \$671,275$. However, there currently is an excess of space in all of these category codes and converting into them would violate the intent of the Exord. This is a viable alternative. This is a viable alternative.

Other DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 12,205 = \$671,275$. Due to the relatively small size of this building (12,205 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable. This is a viable

alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 12,205 = \$4028/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost. This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 120,552
Renovation/Conversion	\$ 663,038
Other DOD or Federal Agency	\$ 663,038
Caretaker Status	\$ 418,767

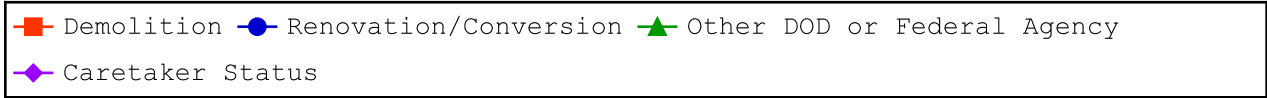
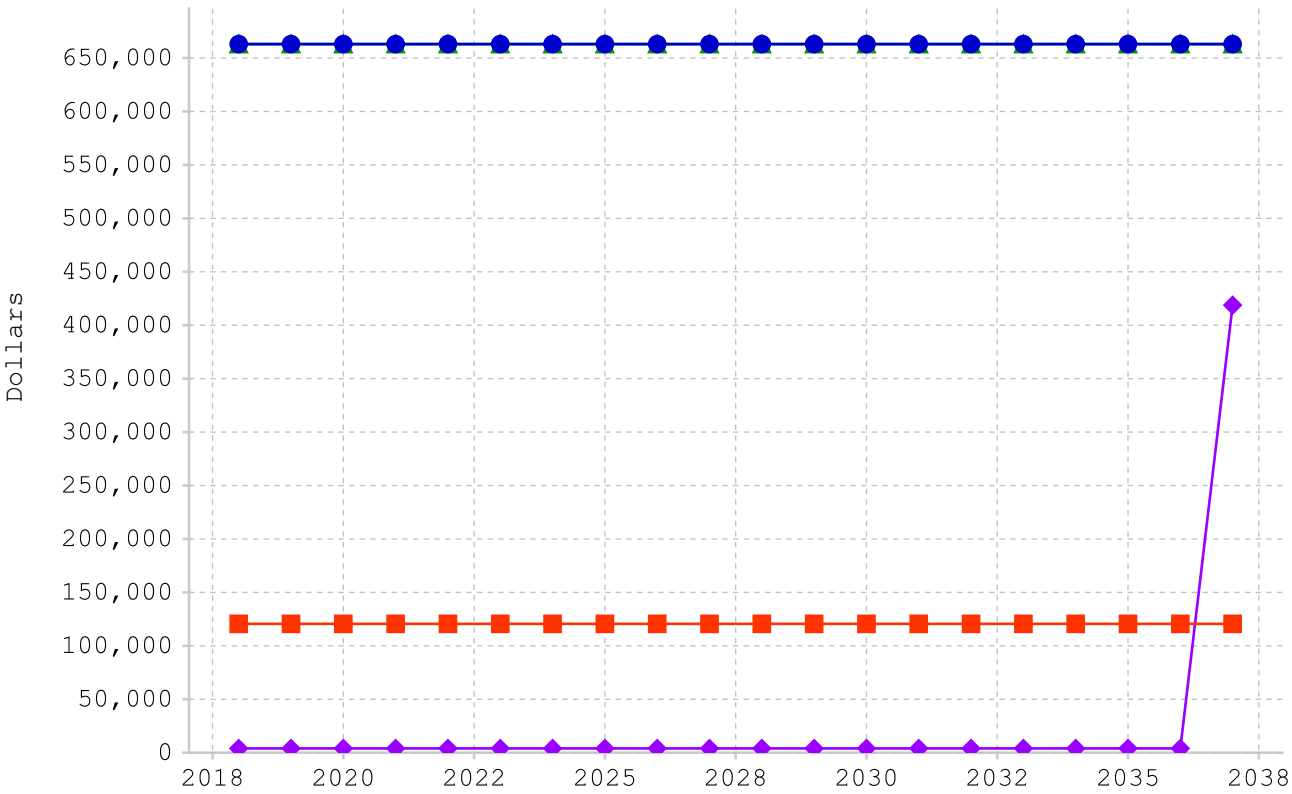
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 221 is the most economical alternative for the Army.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Year

Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$122,050	\$122,050	0.988	\$120,552	\$120,552
2019	\$0	\$0	0.964	\$0	\$120,552
2020	\$0	\$0	0.94	\$0	\$120,552
2021	\$0	\$0	0.917	\$0	\$120,552
2022	\$0	\$0	0.895	\$0	\$120,552
2023	\$0	\$0	0.873	\$0	\$120,552
2024	\$0	\$0	0.852	\$0	\$120,552
2025	\$0	\$0	0.831	\$0	\$120,552
2026	\$0	\$0	0.811	\$0	\$120,552
2027	\$0	\$0	0.791	\$0	\$120,552
2028	\$0	\$0	0.772	\$0	\$120,552
2029	\$0	\$0	0.753	\$0	\$120,552
2030	\$0	\$0	0.734	\$0	\$120,552
2031	\$0	\$0	0.717	\$0	\$120,552
2032	\$0	\$0	0.699	\$0	\$120,552
2033	\$0	\$0	0.682	\$0	\$120,552
2034	\$0	\$0	0.665	\$0	\$120,552
2035	\$0	\$0	0.649	\$0	\$120,552
2036	\$0	\$0	0.633	\$0	\$120,552
2037	\$0	\$0	0.618	\$0	\$120,552
%NPV	100.00%				
\$120,552					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$671,275	\$671,275	0.988	\$663,038	\$663,038
2019	\$0	\$0	0.964	\$0	\$663,038
2020	\$0	\$0	0.94	\$0	\$663,038
2021	\$0	\$0	0.917	\$0	\$663,038
2022	\$0	\$0	0.895	\$0	\$663,038
2023	\$0	\$0	0.873	\$0	\$663,038
2024	\$0	\$0	0.852	\$0	\$663,038
2025	\$0	\$0	0.831	\$0	\$663,038
2026	\$0	\$0	0.811	\$0	\$663,038
2027	\$0	\$0	0.791	\$0	\$663,038
2028	\$0	\$0	0.772	\$0	\$663,038
2029	\$0	\$0	0.753	\$0	\$663,038
2030	\$0	\$0	0.734	\$0	\$663,038
2031	\$0	\$0	0.717	\$0	\$663,038
2032	\$0	\$0	0.699	\$0	\$663,038
2033	\$0	\$0	0.682	\$0	\$663,038
2034	\$0	\$0	0.665	\$0	\$663,038
2035	\$0	\$0	0.649	\$0	\$663,038
2036	\$0	\$0	0.633	\$0	\$663,038
2037	\$0	\$0	0.618	\$0	\$663,038
%NPV	100.00%				
\$663,038					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency

Year	Other DOD or Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$671,275	\$671,275	0.988	\$663,038	\$663,038
2019	\$0	\$0	0.964	\$0	\$663,038
2020	\$0	\$0	0.94	\$0	\$663,038
2021	\$0	\$0	0.917	\$0	\$663,038
2022	\$0	\$0	0.895	\$0	\$663,038
2023	\$0	\$0	0.873	\$0	\$663,038
2024	\$0	\$0	0.852	\$0	\$663,038
2025	\$0	\$0	0.831	\$0	\$663,038
2026	\$0	\$0	0.811	\$0	\$663,038
2027	\$0	\$0	0.791	\$0	\$663,038
2028	\$0	\$0	0.772	\$0	\$663,038
2029	\$0	\$0	0.753	\$0	\$663,038
2030	\$0	\$0	0.734	\$0	\$663,038
2031	\$0	\$0	0.717	\$0	\$663,038
2032	\$0	\$0	0.699	\$0	\$663,038
2033	\$0	\$0	0.682	\$0	\$663,038
2034	\$0	\$0	0.665	\$0	\$663,038
2035	\$0	\$0	0.649	\$0	\$663,038
2036	\$0	\$0	0.633	\$0	\$663,038
2037	\$0	\$0	0.618	\$0	\$663,038
%NPV	100.00%				
\$663,038					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretakeer Status Maintenance	Renovation/Con struction	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$4,068	\$0	\$4,068	0.988	\$4,018
2019	\$0	\$0	\$0	0.964	\$0
2020	\$0	\$0	\$0	0.94	\$0
2021	\$0	\$0	\$0	0.917	\$0
2022	\$0	\$0	\$0	0.895	\$0
2023	\$0	\$0	\$0	0.873	\$0
2024	\$0	\$0	\$0	0.852	\$0
2025	\$0	\$0	\$0	0.831	\$0
2026	\$0	\$0	\$0	0.811	\$0
2027	\$0	\$0	\$0	0.791	\$0
2028	\$0	\$0	\$0	0.772	\$0
2029	\$0	\$0	\$0	0.753	\$0
2030	\$0	\$0	\$0	0.734	\$0
2031	\$0	\$0	\$0	0.717	\$0
2032	\$0	\$0	\$0	0.699	\$0
2033	\$0	\$0	\$0	0.682	\$0
2034	\$0	\$0	\$0	0.665	\$0
2035	\$0	\$0	\$0	0.649	\$0
2036	\$0	\$0	\$0	0.633	\$0
2037	\$0	\$671,275	\$671,275	0.618	\$414,749
%NPV	0.96%	99.04%			
	\$4,018	\$414,749			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	2017 General	No Inflation			
Category / Residual Schedule	Recurring Costs	Non-Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$4,018
2019	\$4,018
2020	\$4,018
2021	\$4,018
2022	\$4,018
2023	\$4,018
2024	\$4,018
2025	\$4,018
2026	\$4,018
2027	\$4,018
2028	\$4,018
2029	\$4,018
2030	\$4,018
2031	\$4,018
2032	\$4,018
2033	\$4,018
2034	\$4,018
2035	\$4,018
2036	\$4,018
2037	\$418,767

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.
 $\$10 \times 12,205 = \$122,050$

2. Renovation/Conversion

a. Renovation/ Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.
Estimated cost is \$55/sf or $55 \times 12,205 = \$671,275$.

3. Other DOD or Federal Agency

a. Other DOD or Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 12,205 = \$671,275$.

Due to the relatively small size of this building (12,205 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretakeer Status Maintenance

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

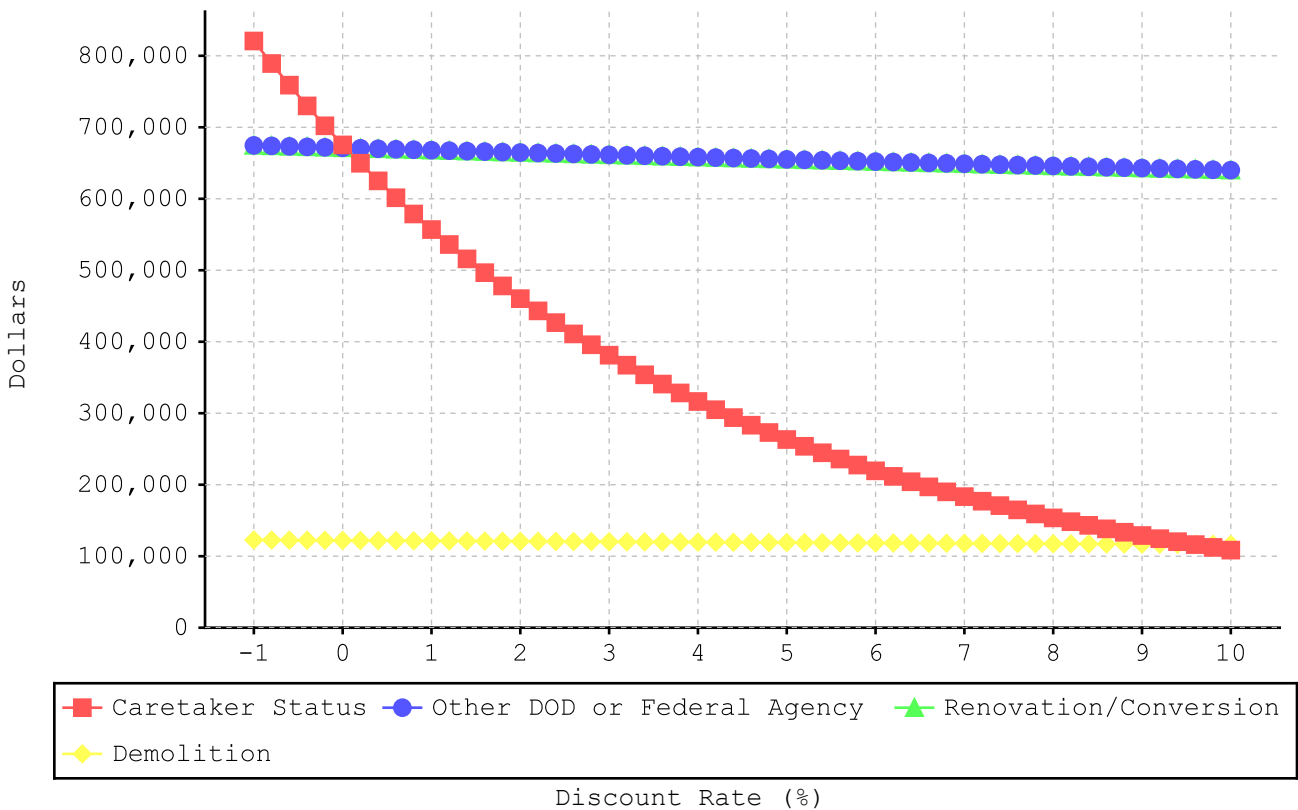
b. Renovation/Construction

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 9.5, 0.0 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 9.5, 0.0 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 122,665	Demolition	\$ 121,685
Other DOD or Federal Agency	\$ 674,657	Caretaker Status	\$ 601,421
Renovation/Conversion	\$ 674,657	Other DOD or Federal Agency	\$ 669,270
Caretaker Status	\$ 820,698	Renovation/Conversion	\$ 669,270
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 122,541	Demolition	\$ 121,565
Other DOD or Federal Agency	\$ 673,976	Caretaker Status	\$ 578,724
Renovation/Conversion	\$ 673,976	Other DOD or Federal Agency	\$ 668,606
Caretaker Status	\$ 789,181	Renovation/Conversion	\$ 668,606
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 122,418	Demolition	\$ 121,444
Other DOD or Federal Agency	\$ 673,298	Caretaker Status	\$ 556,931
Renovation/Conversion	\$ 673,298	Other DOD or Federal Agency	\$ 667,944
Caretaker Status	\$ 758,940	Renovation/Conversion	\$ 667,944
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 122,295	Demolition	\$ 121,324
Other DOD or Federal Agency	\$ 672,622	Caretaker Status	\$ 536,006
Renovation/Conversion	\$ 672,622	Other DOD or Federal Agency	\$ 667,283
Caretaker Status	\$ 729,920	Renovation/Conversion	\$ 667,283
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 122,172	Demolition	\$ 121,205
Other DOD or Federal Agency	\$ 671,947	Caretaker Status	\$ 515,911
Renovation/Conversion	\$ 671,947	Other DOD or Federal Agency	\$ 666,625
Caretaker Status	\$ 702,071	Renovation/Conversion	\$ 666,625
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 122,050	Demolition	\$ 121,085
Other DOD or Federal Agency	\$ 671,275	Caretaker Status	\$ 496,612
Renovation/Conversion	\$ 671,275	Other DOD or Federal Agency	\$ 665,968
Caretaker Status	\$ 675,343	Renovation/Conversion	\$ 665,968
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 121,928	Demolition	\$ 120,966
Caretaker Status	\$ 649,688	Caretaker Status	\$ 478,076
Other DOD or Federal Agency	\$ 670,605	Other DOD or Federal Agency	\$ 665,314
Renovation/Conversion	\$ 670,605	Renovation/Conversion	\$ 665,314
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 121,807	Demolition	\$ 120,848
Caretaker Status	\$ 625,062	Caretaker Status	\$ 460,272
Other DOD or Federal Agency	\$ 669,936	Other DOD or Federal Agency	\$ 664,661
Renovation/Conversion	\$ 669,936	Renovation/Conversion	\$ 664,661

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 9.5, 0.0 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 120,729	Demolition	\$ 119,795
Caretaker Status	\$ 443,169	Caretaker Status	\$ 328,371
Other DOD or Federal Agency	\$ 664,011	Other DOD or Federal Agency	\$ 658,873
Renovation/Conversion	\$ 664,011	Renovation/Conversion	\$ 658,873
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 120,611	Demolition	\$ 119,680
Caretaker Status	\$ 426,739	Caretaker Status	\$ 316,417
Other DOD or Federal Agency	\$ 663,362	Other DOD or Federal Agency	\$ 658,239
Renovation/Conversion	\$ 663,362	Renovation/Conversion	\$ 658,239
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 120,494	Demolition	\$ 119,565
Caretaker Status	\$ 410,953	Caretaker Status	\$ 304,925
Other DOD or Federal Agency	\$ 662,715	Other DOD or Federal Agency	\$ 657,607
Renovation/Conversion	\$ 662,715	Renovation/Conversion	\$ 657,607
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 120,376	Demolition	\$ 119,450
Caretaker Status	\$ 395,786	Caretaker Status	\$ 293,876
Other DOD or Federal Agency	\$ 662,070	Other DOD or Federal Agency	\$ 656,977
Renovation/Conversion	\$ 662,070	Renovation/Conversion	\$ 656,977
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 120,259	Demolition	\$ 119,336
Caretaker Status	\$ 381,211	Caretaker Status	\$ 283,253
Other DOD or Federal Agency	\$ 661,427	Other DOD or Federal Agency	\$ 656,349
Renovation/Conversion	\$ 661,427	Renovation/Conversion	\$ 656,349
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 120,143	Demolition	\$ 119,222
Caretaker Status	\$ 367,205	Caretaker Status	\$ 273,038
Other DOD or Federal Agency	\$ 660,786	Other DOD or Federal Agency	\$ 655,722
Renovation/Conversion	\$ 660,786	Renovation/Conversion	\$ 655,722
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 120,027	Demolition	\$ 119,109
Caretaker Status	\$ 353,744	Caretaker Status	\$ 263,214
Other DOD or Federal Agency	\$ 660,146	Other DOD or Federal Agency	\$ 655,097
Renovation/Conversion	\$ 660,146	Renovation/Conversion	\$ 655,097
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 119,911	Demolition	\$ 118,995
Caretaker Status	\$ 340,807	Caretaker Status	\$ 253,767
Other DOD or Federal Agency	\$ 659,509	Other DOD or Federal Agency	\$ 654,474
Renovation/Conversion	\$ 659,509	Renovation/Conversion	\$ 654,474

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 9.5, 0.0 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 118,882	Demolition	\$ 117,990
Caretaker Status	\$ 244,680	Caretaker Status	\$ 183,372
Other DOD or Federal Agency	\$ 653,853	Other DOD or Federal Agency	\$ 648,946
Renovation/Conversion	\$ 653,853	Renovation/Conversion	\$ 648,946
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 118,770	Demolition	\$ 117,880
Caretaker Status	\$ 235,941	Caretaker Status	\$ 176,951
Other DOD or Federal Agency	\$ 653,234	Other DOD or Federal Agency	\$ 648,340
Renovation/Conversion	\$ 653,234	Renovation/Conversion	\$ 648,340
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 118,657	Demolition	\$ 117,770
Caretaker Status	\$ 227,533	Caretaker Status	\$ 170,772
Other DOD or Federal Agency	\$ 652,616	Other DOD or Federal Agency	\$ 647,736
Renovation/Conversion	\$ 652,616	Renovation/Conversion	\$ 647,736
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 118,545	Demolition	\$ 117,661
Caretaker Status	\$ 219,446	Caretaker Status	\$ 164,824
Other DOD or Federal Agency	\$ 652,000	Other DOD or Federal Agency	\$ 647,134
Renovation/Conversion	\$ 652,000	Renovation/Conversion	\$ 647,134
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 118,434	Demolition	\$ 117,552
Caretaker Status	\$ 211,665	Caretaker Status	\$ 159,098
Other DOD or Federal Agency	\$ 651,386	Other DOD or Federal Agency	\$ 646,534
Renovation/Conversion	\$ 651,386	Renovation/Conversion	\$ 646,534
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 118,322	Demolition	\$ 117,443
Caretaker Status	\$ 204,178	Caretaker Status	\$ 153,585
Other DOD or Federal Agency	\$ 650,773	Other DOD or Federal Agency	\$ 645,935
Renovation/Conversion	\$ 650,773	Renovation/Conversion	\$ 645,935
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 118,211	Demolition	\$ 117,334
Caretaker Status	\$ 196,975	Caretaker Status	\$ 148,278
Other DOD or Federal Agency	\$ 650,162	Other DOD or Federal Agency	\$ 645,337
Renovation/Conversion	\$ 650,162	Renovation/Conversion	\$ 645,337
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 118,101	Demolition	\$ 117,226
Caretaker Status	\$ 190,043	Caretaker Status	\$ 143,168
Other DOD or Federal Agency	\$ 649,553	Other DOD or Federal Agency	\$ 644,742
Renovation/Conversion	\$ 649,553	Renovation/Conversion	\$ 644,742

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 9.5, 0.0 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 117,118
Caretaker Status	\$ 138,248
Other DOD or Federal Agency	\$ 644,148
Renovation/Conversion	\$ 644,148

Discount Rate = 8.8%

Demolition	\$ 117,010
Caretaker Status	\$ 133,510
Other DOD or Federal Agency	\$ 643,556
Renovation/Conversion	\$ 643,556

Discount Rate = 9.0%

Demolition	\$ 116,903
Caretaker Status	\$ 128,947
Other DOD or Federal Agency	\$ 642,965
Renovation/Conversion	\$ 642,965

Discount Rate = 9.2%

Demolition	\$ 116,796
Caretaker Status	\$ 124,552
Other DOD or Federal Agency	\$ 642,376
Renovation/Conversion	\$ 642,376

Discount Rate = 9.4%

Demolition	\$ 116,689
Caretaker Status	\$ 120,319
Other DOD or Federal Agency	\$ 641,788
Renovation/Conversion	\$ 641,788

Discount Rate = 9.6%

Caretaker Status	\$ 116,241
Demolition	\$ 116,582
Other DOD or Federal Agency	\$ 641,202
Renovation/Conversion	\$ 641,202

Discount Rate = 9.8%

Caretaker Status	\$ 112,314
Demolition	\$ 116,476
Other DOD or Federal Agency	\$ 640,618
Renovation/Conversion	\$ 640,618

Discount Rate = 10.0%

Caretaker Status	\$ 108,530
Demolition	\$ 116,370
Other DOD or Federal Agency	\$ 640,036
Renovation/Conversion	\$ 640,036

Building 222 Disposal Economic Analysis Executive Summary Report

Project Title : Facilities
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 222 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 222 has been identified as a facility for disposal per HQDA EXORD 164-15.1

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $7,625 \times 10 = \$76,250$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 44224, Organizational Storage. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $7,625 \times 55 = \$419,375$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative. This is a viable alternative.

Other DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 7,625 = \$419,375$. Due to the location within the TMP motor pool, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable. This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $0.33 \times 7,625 = \$2,516/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost.

This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 75,314
Renovation/Conversion	\$ 414,229
Other DOD or Federal Agency	\$ 414,229
Caretaker Status	\$ 307,049

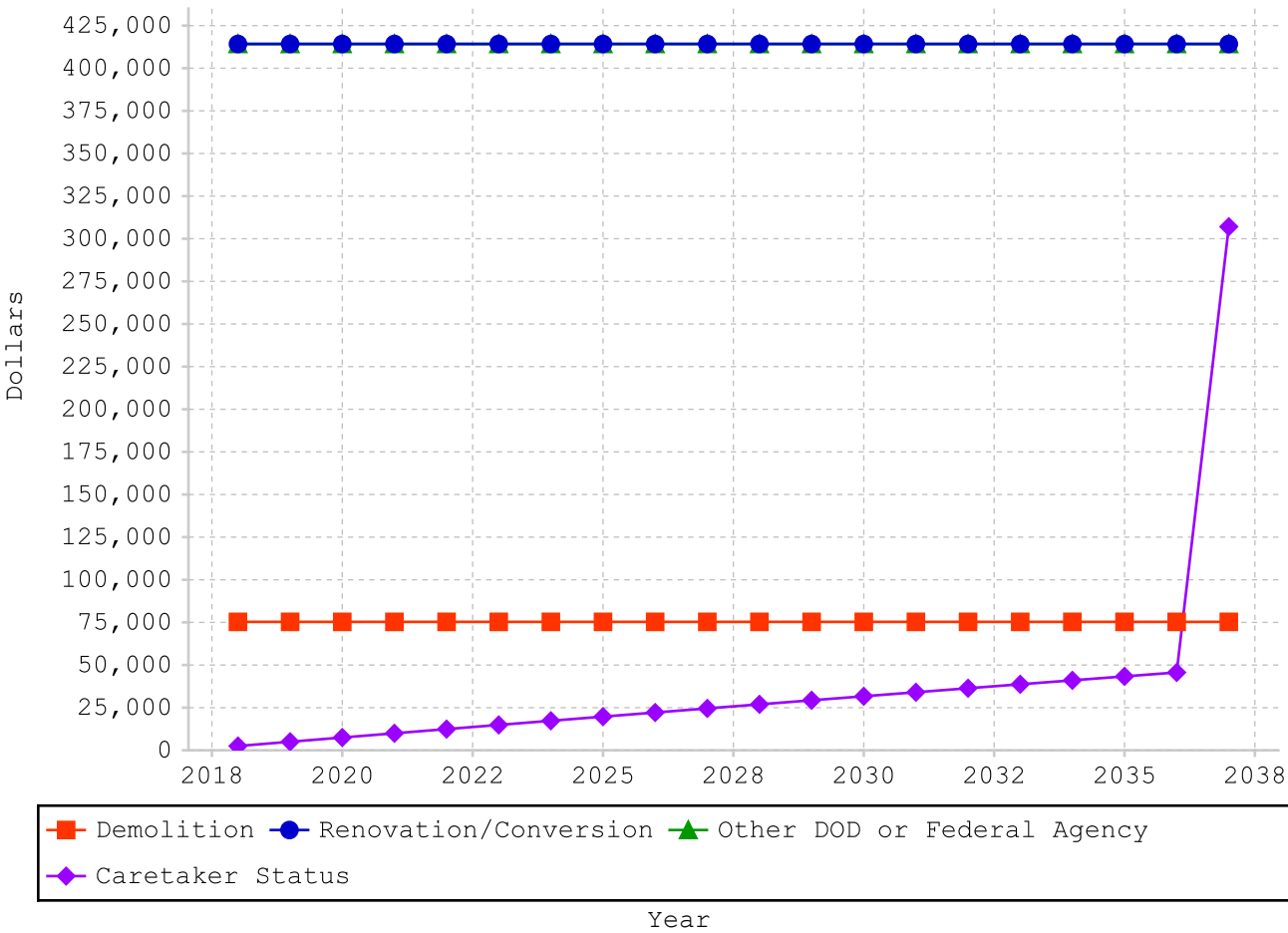
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 222 is the most economical alternative for the Army.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$76,250	\$76,250	0.988	\$75,314	\$75,314
2019	\$0	\$0	0.964	\$0	\$75,314
2020	\$0	\$0	0.94	\$0	\$75,314
2021	\$0	\$0	0.917	\$0	\$75,314
2022	\$0	\$0	0.895	\$0	\$75,314
2023	\$0	\$0	0.873	\$0	\$75,314
2024	\$0	\$0	0.852	\$0	\$75,314
2025	\$0	\$0	0.831	\$0	\$75,314
2026	\$0	\$0	0.811	\$0	\$75,314
2027	\$0	\$0	0.791	\$0	\$75,314
2028	\$0	\$0	0.772	\$0	\$75,314
2029	\$0	\$0	0.753	\$0	\$75,314
2030	\$0	\$0	0.734	\$0	\$75,314
2031	\$0	\$0	0.717	\$0	\$75,314
2032	\$0	\$0	0.699	\$0	\$75,314
2033	\$0	\$0	0.682	\$0	\$75,314
2034	\$0	\$0	0.665	\$0	\$75,314
2035	\$0	\$0	0.649	\$0	\$75,314
2036	\$0	\$0	0.633	\$0	\$75,314
2037	\$0	\$0	0.618	\$0	\$75,314
%NPV	100.00%				
	\$75,314				
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$419,375	\$419,375	0.988	\$414,229	\$414,229
2019	\$0	\$0	0.964	\$0	\$414,229
2020	\$0	\$0	0.94	\$0	\$414,229
2021	\$0	\$0	0.917	\$0	\$414,229
2022	\$0	\$0	0.895	\$0	\$414,229
2023	\$0	\$0	0.873	\$0	\$414,229
2024	\$0	\$0	0.852	\$0	\$414,229
2025	\$0	\$0	0.831	\$0	\$414,229
2026	\$0	\$0	0.811	\$0	\$414,229
2027	\$0	\$0	0.791	\$0	\$414,229
2028	\$0	\$0	0.772	\$0	\$414,229
2029	\$0	\$0	0.753	\$0	\$414,229
2030	\$0	\$0	0.734	\$0	\$414,229
2031	\$0	\$0	0.717	\$0	\$414,229
2032	\$0	\$0	0.699	\$0	\$414,229
2033	\$0	\$0	0.682	\$0	\$414,229
2034	\$0	\$0	0.665	\$0	\$414,229
2035	\$0	\$0	0.649	\$0	\$414,229
2036	\$0	\$0	0.633	\$0	\$414,229
2037	\$0	\$0	0.618	\$0	\$414,229
%NPV	100.00%				
\$414,229					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency

Year	Other DOD or Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$419,375	\$419,375	0.988	\$414,229	\$414,229
2019	\$0	\$0	0.964	\$0	\$414,229
2020	\$0	\$0	0.94	\$0	\$414,229
2021	\$0	\$0	0.917	\$0	\$414,229
2022	\$0	\$0	0.895	\$0	\$414,229
2023	\$0	\$0	0.873	\$0	\$414,229
2024	\$0	\$0	0.852	\$0	\$414,229
2025	\$0	\$0	0.831	\$0	\$414,229
2026	\$0	\$0	0.811	\$0	\$414,229
2027	\$0	\$0	0.791	\$0	\$414,229
2028	\$0	\$0	0.772	\$0	\$414,229
2029	\$0	\$0	0.753	\$0	\$414,229
2030	\$0	\$0	0.734	\$0	\$414,229
2031	\$0	\$0	0.717	\$0	\$414,229
2032	\$0	\$0	0.699	\$0	\$414,229
2033	\$0	\$0	0.682	\$0	\$414,229
2034	\$0	\$0	0.665	\$0	\$414,229
2035	\$0	\$0	0.649	\$0	\$414,229
2036	\$0	\$0	0.633	\$0	\$414,229
2037	\$0	\$0	0.618	\$0	\$414,229
%NPV	100.00%				
\$414,229					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status Maintenance	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$2,541	\$0	\$2,541	0.988	\$2,510
2019	\$2,592	\$0	\$2,592	0.964	\$2,498
2020	\$2,644	\$0	\$2,644	0.94	\$2,485
2021	\$2,697	\$0	\$2,697	0.917	\$2,473
2022	\$2,750	\$0	\$2,750	0.895	\$2,461
2023	\$2,806	\$0	\$2,806	0.873	\$2,449
2024	\$2,862	\$0	\$2,862	0.852	\$2,437
2025	\$2,919	\$0	\$2,919	0.831	\$2,425
2026	\$2,977	\$0	\$2,977	0.811	\$2,414
2027	\$3,037	\$0	\$3,037	0.791	\$2,402
2028	\$3,098	\$0	\$3,098	0.772	\$2,390
2029	\$3,159	\$0	\$3,159	0.753	\$2,378
2030	\$3,223	\$0	\$3,223	0.734	\$2,367
2031	\$3,287	\$0	\$3,287	0.717	\$2,355
2032	\$3,353	\$0	\$3,353	0.699	\$2,344
2033	\$3,420	\$0	\$3,420	0.682	\$2,332
2034	\$3,488	\$0	\$3,488	0.665	\$2,321
2035	\$3,558	\$0	\$3,558	0.649	\$2,310
2036	\$3,629	\$0	\$3,629	0.633	\$2,298
2037	\$3,702	\$419,375	\$423,077	0.618	\$261,399
%NPV	15.61%	84.39%			
	\$47,938	\$259,112			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	2017 General	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$2,510
2019	\$5,007
2020	\$7,493
2021	\$9,966
2022	\$12,427
2023	\$14,877
2024	\$17,314
2025	\$19,739
2026	\$22,153
2027	\$24,555
2028	\$26,945
2029	\$29,323
2030	\$31,690
2031	\$34,045
2032	\$36,389
2033	\$38,721
2034	\$41,042
2035	\$43,352
2036	\$45,650
2037	\$307,049

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 7,625 = \$76,250$$

2. Renovation/Conversion

a. Renovation/ Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.

Estimated cost is \$55/sf or $55 \times 7,625 = \$419,375$

3. Other DOD or Federal Agency

a. Other DOD or Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 7,625 = \$419,375$.

Due to the location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Status Maintenance

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

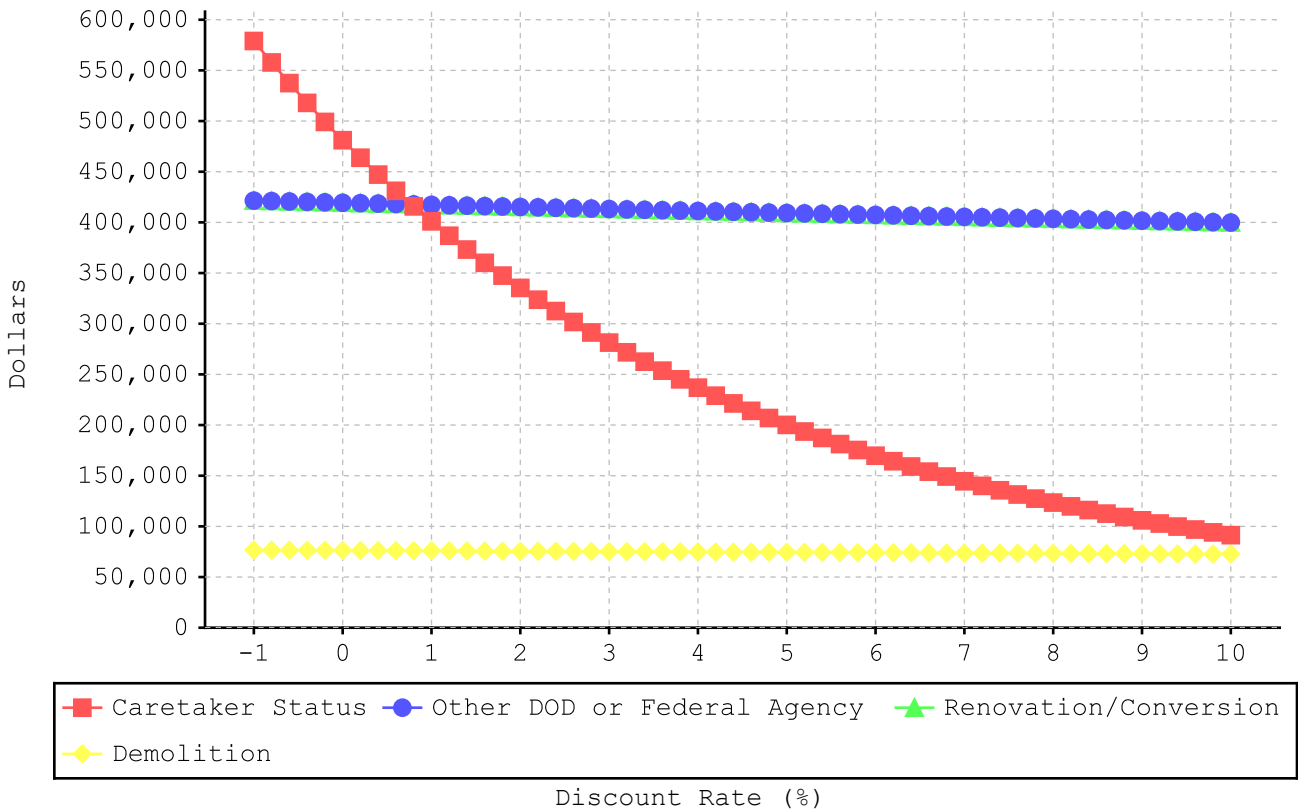
b. Renovation/ Conversion

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 76,634	Demolition	\$ 76,022
Other DOD or Federal Agency	\$ 421,488	Other DOD or Federal Agency	\$ 418,123
Renovation/Conversion	\$ 421,488	Renovation/Conversion	\$ 418,123
Caretaker Status	\$ 579,006	Caretaker Status	\$ 431,162
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 76,557	Demolition	\$ 75,947
Other DOD or Federal Agency	\$ 421,063	Caretaker Status	\$ 415,797
Renovation/Conversion	\$ 421,063	Other DOD or Federal Agency	\$ 417,707
Caretaker Status	\$ 557,814	Renovation/Conversion	\$ 417,707
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 76,480	Demolition	\$ 75,872
Other DOD or Federal Agency	\$ 420,639	Caretaker Status	\$ 401,030
Renovation/Conversion	\$ 420,639	Other DOD or Federal Agency	\$ 417,294
Caretaker Status	\$ 537,463	Renovation/Conversion	\$ 417,294
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 76,403	Demolition	\$ 75,797
Other DOD or Federal Agency	\$ 420,216	Caretaker Status	\$ 386,838
Renovation/Conversion	\$ 420,216	Other DOD or Federal Agency	\$ 416,881
Caretaker Status	\$ 517,918	Renovation/Conversion	\$ 416,881
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 76,326	Demolition	\$ 75,722
Other DOD or Federal Agency	\$ 419,795	Caretaker Status	\$ 373,197
Renovation/Conversion	\$ 419,795	Other DOD or Federal Agency	\$ 416,470
Caretaker Status	\$ 499,147	Renovation/Conversion	\$ 416,470
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 76,250	Demolition	\$ 75,647
Other DOD or Federal Agency	\$ 419,375	Caretaker Status	\$ 360,084
Renovation/Conversion	\$ 419,375	Other DOD or Federal Agency	\$ 416,060
Caretaker Status	\$ 481,115	Renovation/Conversion	\$ 416,060
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 76,174	Demolition	\$ 75,573
Other DOD or Federal Agency	\$ 418,956	Caretaker Status	\$ 347,477
Renovation/Conversion	\$ 418,956	Other DOD or Federal Agency	\$ 415,651
Caretaker Status	\$ 463,794	Renovation/Conversion	\$ 415,651
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 76,098	Demolition	\$ 75,499
Other DOD or Federal Agency	\$ 418,539	Caretaker Status	\$ 335,356
Renovation/Conversion	\$ 418,539	Other DOD or Federal Agency	\$ 415,243
Caretaker Status	\$ 447,152	Renovation/Conversion	\$ 415,243

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 75,425	Demolition	\$ 74,841
Caretaker Status	\$ 323,700	Caretaker Status	\$ 245,113
Other DOD or Federal Agency	\$ 414,837	Other DOD or Federal Agency	\$ 411,627
Renovation/Conversion	\$ 414,837	Renovation/Conversion	\$ 411,627
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 75,351	Demolition	\$ 74,769
Caretaker Status	\$ 312,492	Caretaker Status	\$ 236,887
Other DOD or Federal Agency	\$ 414,431	Other DOD or Federal Agency	\$ 411,231
Renovation/Conversion	\$ 414,431	Renovation/Conversion	\$ 411,231
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 75,278	Demolition	\$ 74,697
Caretaker Status	\$ 301,712	Caretaker Status	\$ 228,969
Other DOD or Federal Agency	\$ 414,027	Other DOD or Federal Agency	\$ 410,836
Renovation/Conversion	\$ 414,027	Renovation/Conversion	\$ 410,836
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 75,204	Demolition	\$ 74,626
Caretaker Status	\$ 291,344	Caretaker Status	\$ 221,348
Other DOD or Federal Agency	\$ 413,624	Other DOD or Federal Agency	\$ 410,442
Renovation/Conversion	\$ 413,624	Renovation/Conversion	\$ 410,442
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 75,131	Demolition	\$ 74,555
Caretaker Status	\$ 281,370	Caretaker Status	\$ 214,011
Other DOD or Federal Agency	\$ 413,222	Other DOD or Federal Agency	\$ 410,050
Renovation/Conversion	\$ 413,222	Renovation/Conversion	\$ 410,050
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 75,059	Demolition	\$ 74,483
Caretaker Status	\$ 271,775	Caretaker Status	\$ 206,948
Other DOD or Federal Agency	\$ 412,822	Other DOD or Federal Agency	\$ 409,658
Renovation/Conversion	\$ 412,822	Renovation/Conversion	\$ 409,658
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 74,986	Demolition	\$ 74,412
Caretaker Status	\$ 262,543	Caretaker Status	\$ 200,147
Other DOD or Federal Agency	\$ 412,422	Other DOD or Federal Agency	\$ 409,268
Renovation/Conversion	\$ 412,422	Renovation/Conversion	\$ 409,268
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 74,913	Demolition	\$ 74,342
Caretaker Status	\$ 253,661	Caretaker Status	\$ 193,598
Other DOD or Federal Agency	\$ 412,024	Other DOD or Federal Agency	\$ 408,879
Renovation/Conversion	\$ 412,024	Renovation/Conversion	\$ 408,879

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 74,271	Demolition	\$ 73,714
Caretaker Status	\$ 187,291	Caretaker Status	\$ 144,486
Other DOD or Federal Agency	\$ 408,491	Other DOD or Federal Agency	\$ 405,425
Renovation/Conversion	\$ 408,491	Renovation/Conversion	\$ 405,425
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 74,201	Demolition	\$ 73,645
Caretaker Status	\$ 181,217	Caretaker Status	\$ 139,973
Other DOD or Federal Agency	\$ 408,104	Other DOD or Federal Agency	\$ 405,047
Renovation/Conversion	\$ 408,104	Renovation/Conversion	\$ 405,047
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 74,131	Demolition	\$ 73,576
Caretaker Status	\$ 175,366	Caretaker Status	\$ 135,623
Other DOD or Federal Agency	\$ 407,718	Other DOD or Federal Agency	\$ 404,669
Renovation/Conversion	\$ 407,718	Renovation/Conversion	\$ 404,669
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 74,061	Demolition	\$ 73,508
Caretaker Status	\$ 169,729	Caretaker Status	\$ 131,429
Other DOD or Federal Agency	\$ 407,333	Other DOD or Federal Agency	\$ 404,293
Renovation/Conversion	\$ 407,333	Renovation/Conversion	\$ 404,293
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 73,991	Demolition	\$ 73,440
Caretaker Status	\$ 164,300	Caretaker Status	\$ 127,386
Other DOD or Federal Agency	\$ 406,949	Other DOD or Federal Agency	\$ 403,918
Renovation/Conversion	\$ 406,949	Renovation/Conversion	\$ 403,918
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 73,921	Demolition	\$ 73,372
Caretaker Status	\$ 159,068	Caretaker Status	\$ 123,487
Other DOD or Federal Agency	\$ 406,567	Other DOD or Federal Agency	\$ 403,544
Renovation/Conversion	\$ 406,567	Renovation/Conversion	\$ 403,544
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 73,852	Demolition	\$ 73,304
Caretaker Status	\$ 154,027	Caretaker Status	\$ 119,727
Other DOD or Federal Agency	\$ 406,185	Other DOD or Federal Agency	\$ 403,171
Renovation/Conversion	\$ 406,185	Renovation/Conversion	\$ 403,171
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 73,783	Demolition	\$ 73,236
Caretaker Status	\$ 149,168	Caretaker Status	\$ 116,101
Other DOD or Federal Agency	\$ 405,805	Other DOD or Federal Agency	\$ 402,799
Renovation/Conversion	\$ 405,805	Renovation/Conversion	\$ 402,799

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 73,169
Caretaker Status	\$ 112,603
Other DOD or Federal Agency	\$ 402,427
Renovation/Conversion	\$ 402,427

Discount Rate = 8.8%

Demolition	\$ 73,101
Caretaker Status	\$ 109,229
Other DOD or Federal Agency	\$ 402,057
Renovation/Conversion	\$ 402,057

Discount Rate = 9.0%

Demolition	\$ 73,034
Caretaker Status	\$ 105,975
Other DOD or Federal Agency	\$ 401,688
Renovation/Conversion	\$ 401,688

Discount Rate = 9.2%

Demolition	\$ 72,967
Caretaker Status	\$ 102,834
Other DOD or Federal Agency	\$ 401,320
Renovation/Conversion	\$ 401,320

Discount Rate = 9.4%

Demolition	\$ 72,901
Caretaker Status	\$ 99,805
Other DOD or Federal Agency	\$ 400,953
Renovation/Conversion	\$ 400,953

Discount Rate = 9.6%

Demolition	\$ 72,834
Caretaker Status	\$ 96,881
Other DOD or Federal Agency	\$ 400,587
Renovation/Conversion	\$ 400,587

Discount Rate = 9.8%

Demolition	\$ 72,768
Caretaker Status	\$ 94,059
Other DOD or Federal Agency	\$ 400,222
Renovation/Conversion	\$ 400,222

Discount Rate = 10.0%

Demolition	\$ 72,702
Caretaker Status	\$ 91,335
Other DOD or Federal Agency	\$ 399,858
Renovation/Conversion	\$ 399,858

Building 233 Disposal Economic Analysis

Executive Summary Report

Project Title : Fort Benning Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 233 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 233 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $3,840 \times 10 = \$38,400$. This is a viable alternative.
This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 44224, Organizational Storage. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $3,840 \times 55 = \$211,200$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative. This is a viable alternative.

Other DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 3,840 = \$211,200$. Due to the relatively small size of this building (3,840 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable. This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current

condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost. This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 37,929
Renovation/Conversion	\$ 208,608
Other DOD or Federal Agency	\$ 208,608
Caretaker Status	\$ 154,631

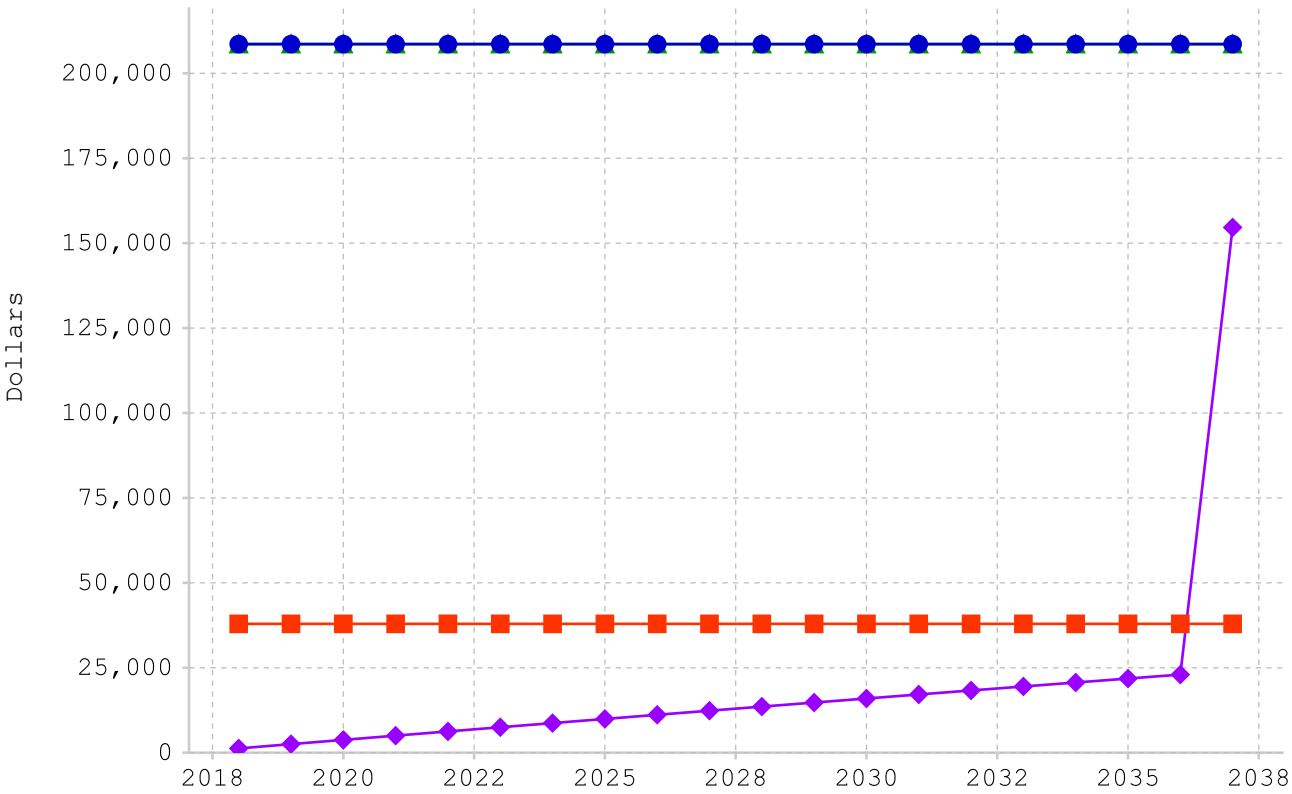
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 233 is the most economical alternative for the Army.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Year

Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$38,400	\$38,400	0.988	\$37,929	\$37,929
2019	\$0	\$0	0.964	\$0	\$37,929
2020	\$0	\$0	0.94	\$0	\$37,929
2021	\$0	\$0	0.917	\$0	\$37,929
2022	\$0	\$0	0.895	\$0	\$37,929
2023	\$0	\$0	0.873	\$0	\$37,929
2024	\$0	\$0	0.852	\$0	\$37,929
2025	\$0	\$0	0.831	\$0	\$37,929
2026	\$0	\$0	0.811	\$0	\$37,929
2027	\$0	\$0	0.791	\$0	\$37,929
2028	\$0	\$0	0.772	\$0	\$37,929
2029	\$0	\$0	0.753	\$0	\$37,929
2030	\$0	\$0	0.734	\$0	\$37,929
2031	\$0	\$0	0.717	\$0	\$37,929
2032	\$0	\$0	0.699	\$0	\$37,929
2033	\$0	\$0	0.682	\$0	\$37,929
2034	\$0	\$0	0.665	\$0	\$37,929
2035	\$0	\$0	0.649	\$0	\$37,929
2036	\$0	\$0	0.633	\$0	\$37,929
2037	\$0	\$0	0.618	\$0	\$37,929
%NPV	100.00%				
\$37,929					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$211,200	\$211,200	0.988	\$208,608	\$208,608
2019	\$0	\$0	0.964	\$0	\$208,608
2020	\$0	\$0	0.94	\$0	\$208,608
2021	\$0	\$0	0.917	\$0	\$208,608
2022	\$0	\$0	0.895	\$0	\$208,608
2023	\$0	\$0	0.873	\$0	\$208,608
2024	\$0	\$0	0.852	\$0	\$208,608
2025	\$0	\$0	0.831	\$0	\$208,608
2026	\$0	\$0	0.811	\$0	\$208,608
2027	\$0	\$0	0.791	\$0	\$208,608
2028	\$0	\$0	0.772	\$0	\$208,608
2029	\$0	\$0	0.753	\$0	\$208,608
2030	\$0	\$0	0.734	\$0	\$208,608
2031	\$0	\$0	0.717	\$0	\$208,608
2032	\$0	\$0	0.699	\$0	\$208,608
2033	\$0	\$0	0.682	\$0	\$208,608
2034	\$0	\$0	0.665	\$0	\$208,608
2035	\$0	\$0	0.649	\$0	\$208,608
2036	\$0	\$0	0.633	\$0	\$208,608
2037	\$0	\$0	0.618	\$0	\$208,608
%NPV	100.00%				
\$208,608					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$211,200	\$211,200	0.988	\$208,608	\$208,608
2019	\$0	\$0	0.964	\$0	\$208,608
2020	\$0	\$0	0.94	\$0	\$208,608
2021	\$0	\$0	0.917	\$0	\$208,608
2022	\$0	\$0	0.895	\$0	\$208,608
2023	\$0	\$0	0.873	\$0	\$208,608
2024	\$0	\$0	0.852	\$0	\$208,608
2025	\$0	\$0	0.831	\$0	\$208,608
2026	\$0	\$0	0.811	\$0	\$208,608
2027	\$0	\$0	0.791	\$0	\$208,608
2028	\$0	\$0	0.772	\$0	\$208,608
2029	\$0	\$0	0.753	\$0	\$208,608
2030	\$0	\$0	0.734	\$0	\$208,608
2031	\$0	\$0	0.717	\$0	\$208,608
2032	\$0	\$0	0.699	\$0	\$208,608
2033	\$0	\$0	0.682	\$0	\$208,608
2034	\$0	\$0	0.665	\$0	\$208,608
2035	\$0	\$0	0.649	\$0	\$208,608
2036	\$0	\$0	0.633	\$0	\$208,608
2037	\$0	\$0	0.618	\$0	\$208,608
%NPV	100.00%				
\$208,608					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status	Renovation	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$1,280	\$0	\$1,280	0.988	\$1,264
2019	\$1,305	\$0	\$1,305	0.964	\$1,258
2020	\$1,331	\$0	\$1,331	0.94	\$1,252
2021	\$1,358	\$0	\$1,358	0.917	\$1,245
2022	\$1,385	\$0	\$1,385	0.895	\$1,239
2023	\$1,413	\$0	\$1,413	0.873	\$1,233
2024	\$1,441	\$0	\$1,441	0.852	\$1,227
2025	\$1,470	\$0	\$1,470	0.831	\$1,221
2026	\$1,499	\$0	\$1,499	0.811	\$1,215
2027	\$1,529	\$0	\$1,529	0.791	\$1,209
2028	\$1,560	\$0	\$1,560	0.772	\$1,204
2029	\$1,591	\$0	\$1,591	0.753	\$1,198
2030	\$1,623	\$0	\$1,623	0.734	\$1,192
2031	\$1,655	\$0	\$1,655	0.717	\$1,186
2032	\$1,688	\$0	\$1,688	0.699	\$1,180
2033	\$1,722	\$0	\$1,722	0.682	\$1,175
2034	\$1,757	\$0	\$1,757	0.665	\$1,169
2035	\$1,792	\$0	\$1,792	0.649	\$1,163
2036	\$1,828	\$0	\$1,828	0.633	\$1,157
2037	\$1,864	\$211,200	\$213,064	0.618	\$131,642
%NPV	15.61%	84.39%			
	\$24,140	\$130,490			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	2017 General	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$1,264
2019	\$2,522
2020	\$3,773
2021	\$5,019
2022	\$6,258
2023	\$7,492
2024	\$8,719
2025	\$9,940
2026	\$11,156
2027	\$12,365
2028	\$13,569
2029	\$14,767
2030	\$15,958
2031	\$17,144
2032	\$18,325
2033	\$19,499
2034	\$20,668
2035	\$21,831
2036	\$22,989
2037	\$154,631

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\text{\$10} \times 3840 = \text{\$38,400}$$

2. Renovation/Conversion

a. Renovation/ Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.

Estimated cost is \$55/sf or $55 \times 3,840 = \text{\$211,200}$.

3. Other DOD or Federal Agency

a. Renovation/ Conversion

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\text{\$55} \times 3,840 = \text{\$211,200}$.

Due to the relatively small size of this building (3,840 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Status

The current cost of maintaining a facility in a caretaker status is \$0.33/sf.

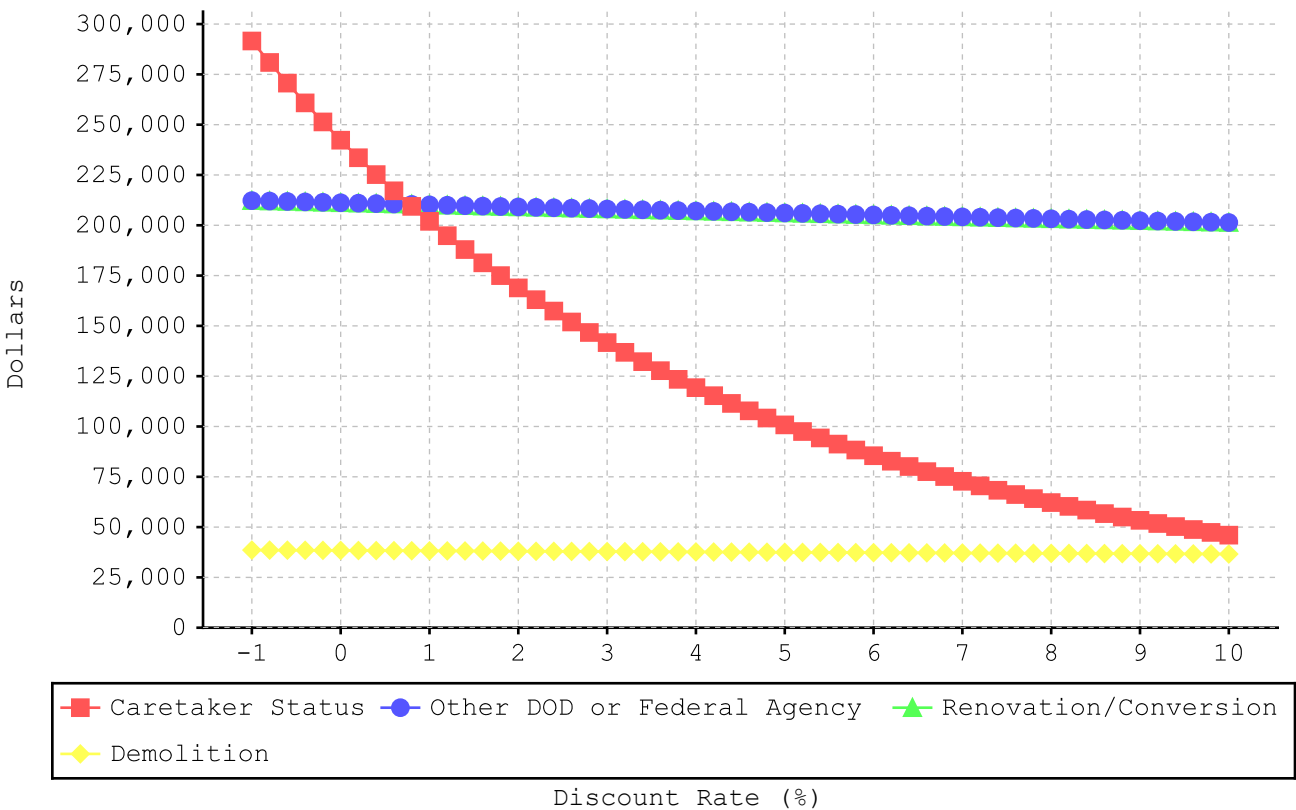
b. Renovation

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 38,593	Demolition	\$ 38,285
Other DOD or Federal Agency	\$ 212,264	Other DOD or Federal Agency	\$ 210,569
Renovation/Conversion	\$ 212,264	Renovation/Conversion	\$ 210,569
Caretaker Status	\$ 291,589	Caretaker Status	\$ 217,134
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 38,555	Demolition	\$ 38,247
Other DOD or Federal Agency	\$ 212,050	Caretaker Status	\$ 209,396
Renovation/Conversion	\$ 212,050	Other DOD or Federal Agency	\$ 210,360
Caretaker Status	\$ 280,917	Renovation/Conversion	\$ 210,360
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 38,516	Demolition	\$ 38,209
Other DOD or Federal Agency	\$ 211,836	Caretaker Status	\$ 201,960
Renovation/Conversion	\$ 211,836	Other DOD or Federal Agency	\$ 210,152
Caretaker Status	\$ 270,668	Renovation/Conversion	\$ 210,152
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 38,477	Demolition	\$ 38,172
Other DOD or Federal Agency	\$ 211,624	Caretaker Status	\$ 194,813
Renovation/Conversion	\$ 211,624	Other DOD or Federal Agency	\$ 209,944
Caretaker Status	\$ 260,825	Renovation/Conversion	\$ 209,944
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 38,438	Demolition	\$ 38,134
Other DOD or Federal Agency	\$ 211,412	Caretaker Status	\$ 187,943
Renovation/Conversion	\$ 211,412	Other DOD or Federal Agency	\$ 209,737
Caretaker Status	\$ 251,372	Renovation/Conversion	\$ 209,737
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 38,400	Demolition	\$ 38,096
Other DOD or Federal Agency	\$ 211,200	Caretaker Status	\$ 181,339
Renovation/Conversion	\$ 211,200	Other DOD or Federal Agency	\$ 209,530
Caretaker Status	\$ 242,291	Renovation/Conversion	\$ 209,530
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 38,362	Demolition	\$ 38,059
Other DOD or Federal Agency	\$ 210,989	Caretaker Status	\$ 174,990
Renovation/Conversion	\$ 210,989	Other DOD or Federal Agency	\$ 209,324
Caretaker Status	\$ 233,568	Renovation/Conversion	\$ 209,324
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 38,323	Demolition	\$ 38,022
Other DOD or Federal Agency	\$ 210,779	Caretaker Status	\$ 168,886
Renovation/Conversion	\$ 210,779	Other DOD or Federal Agency	\$ 209,119
Caretaker Status	\$ 225,187	Renovation/Conversion	\$ 209,119

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 37,984	Demolition	\$ 37,691
Caretaker Status	\$ 163,016	Caretaker Status	\$ 123,439
Other DOD or Federal Agency	\$ 208,914	Other DOD or Federal Agency	\$ 207,298
Renovation/Conversion	\$ 208,914	Renovation/Conversion	\$ 207,298
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 37,947	Demolition	\$ 37,654
Caretaker Status	\$ 157,371	Caretaker Status	\$ 119,297
Other DOD or Federal Agency	\$ 208,710	Other DOD or Federal Agency	\$ 207,099
Renovation/Conversion	\$ 208,710	Renovation/Conversion	\$ 207,099
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 37,910	Demolition	\$ 37,618
Caretaker Status	\$ 151,943	Caretaker Status	\$ 115,309
Other DOD or Federal Agency	\$ 208,507	Other DOD or Federal Agency	\$ 206,900
Renovation/Conversion	\$ 208,507	Renovation/Conversion	\$ 206,900
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 37,873	Demolition	\$ 37,582
Caretaker Status	\$ 146,721	Caretaker Status	\$ 111,471
Other DOD or Federal Agency	\$ 208,304	Other DOD or Federal Agency	\$ 206,702
Renovation/Conversion	\$ 208,304	Renovation/Conversion	\$ 206,702
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 37,837	Demolition	\$ 37,546
Caretaker Status	\$ 141,698	Caretaker Status	\$ 107,776
Other DOD or Federal Agency	\$ 208,102	Other DOD or Federal Agency	\$ 206,504
Renovation/Conversion	\$ 208,102	Renovation/Conversion	\$ 206,504
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 37,800	Demolition	\$ 37,510
Caretaker Status	\$ 136,866	Caretaker Status	\$ 104,219
Other DOD or Federal Agency	\$ 207,900	Other DOD or Federal Agency	\$ 206,307
Renovation/Conversion	\$ 207,900	Renovation/Conversion	\$ 206,307
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 37,763	Demolition	\$ 37,475
Caretaker Status	\$ 132,217	Caretaker Status	\$ 100,794
Other DOD or Federal Agency	\$ 207,699	Other DOD or Federal Agency	\$ 206,110
Renovation/Conversion	\$ 207,699	Renovation/Conversion	\$ 206,110
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 37,727	Demolition	\$ 37,439
Caretaker Status	\$ 127,744	Caretaker Status	\$ 97,496
Other DOD or Federal Agency	\$ 207,498	Other DOD or Federal Agency	\$ 205,914
Renovation/Conversion	\$ 207,498	Renovation/Conversion	\$ 205,914

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 37,403	Demolition	\$ 37,123
Caretaker Status	\$ 94,320	Caretaker Status	\$ 72,763
Other DOD or Federal Agency	\$ 205,719	Other DOD or Federal Agency	\$ 204,175
Renovation/Conversion	\$ 205,719	Renovation/Conversion	\$ 204,175
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 37,368	Demolition	\$ 37,088
Caretaker Status	\$ 91,261	Caretaker Status	\$ 70,491
Other DOD or Federal Agency	\$ 205,524	Other DOD or Federal Agency	\$ 203,984
Renovation/Conversion	\$ 205,524	Renovation/Conversion	\$ 203,984
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 37,333	Demolition	\$ 37,053
Caretaker Status	\$ 88,314	Caretaker Status	\$ 68,300
Other DOD or Federal Agency	\$ 205,329	Other DOD or Federal Agency	\$ 203,794
Renovation/Conversion	\$ 205,329	Renovation/Conversion	\$ 203,794
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 37,297	Demolition	\$ 37,019
Caretaker Status	\$ 85,476	Caretaker Status	\$ 66,188
Other DOD or Federal Agency	\$ 205,136	Other DOD or Federal Agency	\$ 203,605
Renovation/Conversion	\$ 205,136	Renovation/Conversion	\$ 203,605
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 37,262	Demolition	\$ 36,985
Caretaker Status	\$ 82,741	Caretaker Status	\$ 64,151
Other DOD or Federal Agency	\$ 204,942	Other DOD or Federal Agency	\$ 203,416
Renovation/Conversion	\$ 204,942	Renovation/Conversion	\$ 203,416
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 37,227	Demolition	\$ 36,950
Caretaker Status	\$ 80,107	Caretaker Status	\$ 62,188
Other DOD or Federal Agency	\$ 204,750	Other DOD or Federal Agency	\$ 203,227
Renovation/Conversion	\$ 204,750	Renovation/Conversion	\$ 203,227
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 37,192	Demolition	\$ 36,916
Caretaker Status	\$ 77,568	Caretaker Status	\$ 60,294
Other DOD or Federal Agency	\$ 204,557	Other DOD or Federal Agency	\$ 203,039
Renovation/Conversion	\$ 204,557	Renovation/Conversion	\$ 203,039
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 37,157	Demolition	\$ 36,882
Caretaker Status	\$ 75,121	Caretaker Status	\$ 58,468
Other DOD or Federal Agency	\$ 204,366	Other DOD or Federal Agency	\$ 202,852
Renovation/Conversion	\$ 204,366	Renovation/Conversion	\$ 202,852

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 36,848
Caretaker Status	\$ 56,707
Other DOD or Federal Agency	\$ 202,665
Renovation/Conversion	\$ 202,665

Discount Rate = 8.8%

Demolition	\$ 36,814
Caretaker Status	\$ 55,008
Other DOD or Federal Agency	\$ 202,479
Renovation/Conversion	\$ 202,479

Discount Rate = 9.0%

Demolition	\$ 36,781
Caretaker Status	\$ 53,369
Other DOD or Federal Agency	\$ 202,293
Renovation/Conversion	\$ 202,293

Discount Rate = 9.2%

Demolition	\$ 36,747
Caretaker Status	\$ 51,787
Other DOD or Federal Agency	\$ 202,108
Renovation/Conversion	\$ 202,108

Discount Rate = 9.4%

Demolition	\$ 36,713
Caretaker Status	\$ 50,261
Other DOD or Federal Agency	\$ 201,923
Renovation/Conversion	\$ 201,923

Discount Rate = 9.6%

Demolition	\$ 36,680
Caretaker Status	\$ 48,789
Other DOD or Federal Agency	\$ 201,738
Renovation/Conversion	\$ 201,738

Discount Rate = 9.8%

Demolition	\$ 36,646
Caretaker Status	\$ 47,368
Other DOD or Federal Agency	\$ 201,555
Renovation/Conversion	\$ 201,555

Discount Rate = 10.0%

Demolition	\$ 36,613
Caretaker Status	\$ 45,996
Other DOD or Federal Agency	\$ 201,371
Renovation/Conversion	\$ 201,371

Building 239 Disposal Economic Analysis Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 239 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 239 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $2,817 \times 10 = \$28,170$. This is a viable alternative.

This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 44224, Organizational Storage. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $2,817 \times 55 = \$154,935$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative
This is a viable alternative.

Other DOD or Federal Agency Facilities - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 2,817 = \$154,935$. Due to the relatively small size of this building (2,817 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $0.33 \times 2817 = \$929.61/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost.

This is a viable alternative.

Assumptions of the Analysis:

1. This building cannot be used in its current state due to its condition.
2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 27,824
Renovation/Conversion	\$ 153,034
Other DOD or Federal Agency Facilities	\$ 144,144
Caretaker Status	\$ 110,405

Results and Recommendations:

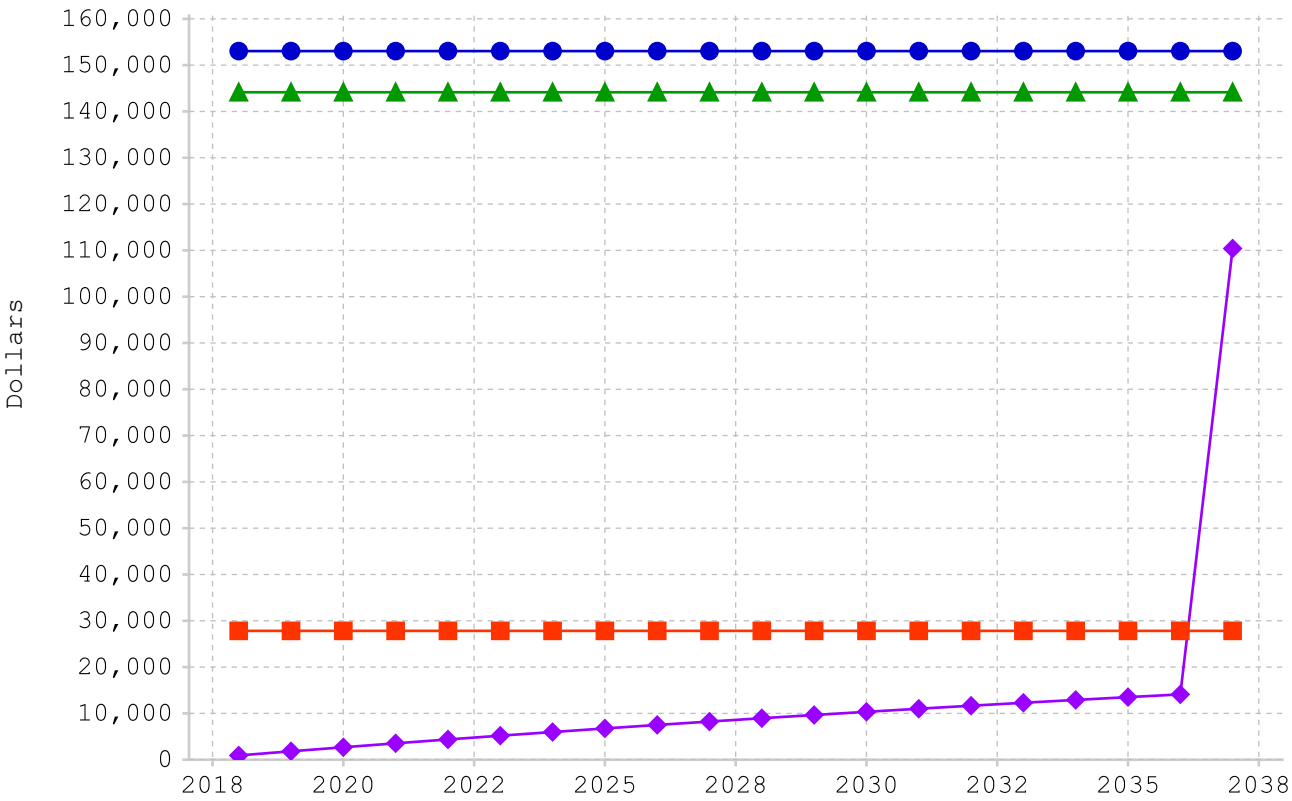
Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units.

No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 239 is the most economical alternative for the Army.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Year

Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$28,170	\$28,170	0.988	\$27,824	\$27,824
2019	\$0	\$0	0.964	\$0	\$27,824
2020	\$0	\$0	0.94	\$0	\$27,824
2021	\$0	\$0	0.917	\$0	\$27,824
2022	\$0	\$0	0.895	\$0	\$27,824
2023	\$0	\$0	0.873	\$0	\$27,824
2024	\$0	\$0	0.852	\$0	\$27,824
2025	\$0	\$0	0.831	\$0	\$27,824
2026	\$0	\$0	0.811	\$0	\$27,824
2027	\$0	\$0	0.791	\$0	\$27,824
2028	\$0	\$0	0.772	\$0	\$27,824
2029	\$0	\$0	0.753	\$0	\$27,824
2030	\$0	\$0	0.734	\$0	\$27,824
2031	\$0	\$0	0.717	\$0	\$27,824
2032	\$0	\$0	0.699	\$0	\$27,824
2033	\$0	\$0	0.682	\$0	\$27,824
2034	\$0	\$0	0.665	\$0	\$27,824
2035	\$0	\$0	0.649	\$0	\$27,824
2036	\$0	\$0	0.633	\$0	\$27,824
2037	\$0	\$0	0.618	\$0	\$27,824
%NPV	100.00%				
\$27,824					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$154,935	\$154,935	0.988	\$153,034	\$153,034
2019	\$0	\$0	0.964	\$0	\$153,034
2020	\$0	\$0	0.94	\$0	\$153,034
2021	\$0	\$0	0.917	\$0	\$153,034
2022	\$0	\$0	0.895	\$0	\$153,034
2023	\$0	\$0	0.873	\$0	\$153,034
2024	\$0	\$0	0.852	\$0	\$153,034
2025	\$0	\$0	0.831	\$0	\$153,034
2026	\$0	\$0	0.811	\$0	\$153,034
2027	\$0	\$0	0.791	\$0	\$153,034
2028	\$0	\$0	0.772	\$0	\$153,034
2029	\$0	\$0	0.753	\$0	\$153,034
2030	\$0	\$0	0.734	\$0	\$153,034
2031	\$0	\$0	0.717	\$0	\$153,034
2032	\$0	\$0	0.699	\$0	\$153,034
2033	\$0	\$0	0.682	\$0	\$153,034
2034	\$0	\$0	0.665	\$0	\$153,034
2035	\$0	\$0	0.649	\$0	\$153,034
2036	\$0	\$0	0.633	\$0	\$153,034
2037	\$0	\$0	0.618	\$0	\$153,034
%NPV	100.00%				
\$153,034					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency Facilities

Year	Other DOD Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$145,935	\$145,935	0.988	\$144,144	\$144,144
2019	\$0	\$0	0.964	\$0	\$144,144
2020	\$0	\$0	0.94	\$0	\$144,144
2021	\$0	\$0	0.917	\$0	\$144,144
2022	\$0	\$0	0.895	\$0	\$144,144
2023	\$0	\$0	0.873	\$0	\$144,144
2024	\$0	\$0	0.852	\$0	\$144,144
2025	\$0	\$0	0.831	\$0	\$144,144
2026	\$0	\$0	0.811	\$0	\$144,144
2027	\$0	\$0	0.791	\$0	\$144,144
2028	\$0	\$0	0.772	\$0	\$144,144
2029	\$0	\$0	0.753	\$0	\$144,144
2030	\$0	\$0	0.734	\$0	\$144,144
2031	\$0	\$0	0.717	\$0	\$144,144
2032	\$0	\$0	0.699	\$0	\$144,144
2033	\$0	\$0	0.682	\$0	\$144,144
2034	\$0	\$0	0.665	\$0	\$144,144
2035	\$0	\$0	0.649	\$0	\$144,144
2036	\$0	\$0	0.633	\$0	\$144,144
2037	\$0	\$0	0.618	\$0	\$144,144
%NPV	100.00%				
\$144,144					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
 Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status Maintenance	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$930	\$0	\$930	0.988	\$919
2019	\$930	\$0	\$930	0.964	\$896
2020	\$930	\$0	\$930	0.94	\$874
2021	\$930	\$0	\$930	0.917	\$853
2022	\$930	\$0	\$930	0.895	\$832
2023	\$930	\$0	\$930	0.873	\$812
2024	\$930	\$0	\$930	0.852	\$792
2025	\$930	\$0	\$930	0.831	\$773
2026	\$930	\$0	\$930	0.811	\$754
2027	\$930	\$0	\$930	0.791	\$736
2028	\$930	\$0	\$930	0.772	\$718
2029	\$930	\$0	\$930	0.753	\$700
2030	\$930	\$0	\$930	0.734	\$683
2031	\$930	\$0	\$930	0.717	\$666
2032	\$930	\$0	\$930	0.699	\$650
2033	\$930	\$0	\$930	0.682	\$634
2034	\$930	\$0	\$930	0.665	\$619
2035	\$930	\$0	\$930	0.649	\$604
2036	\$930	\$0	\$930	0.633	\$589
2037	\$930	\$154,935	\$155,865	0.618	\$96,302
%NPV	13.29%	86.71%			
	\$14,678	\$95,727			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	No Inflation	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$919
2019	\$1,815
2020	\$2,689
2021	\$3,542
2022	\$4,374
2023	\$5,186
2024	\$5,978
2025	\$6,751
2026	\$7,505
2027	\$8,241
2028	\$8,958
2029	\$9,658
2030	\$10,341
2031	\$11,008
2032	\$11,658
2033	\$12,292
2034	\$12,911
2035	\$13,514
2036	\$14,103
2037	\$110,405

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 2817 = \$28,170$$

2. Renovation/Conversion

a. Renovation/ Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $55 \times 2,817 = \$154,935$

3. Other DOD or Federal Agency Facilities

a. Other DOD Agency

Similar to renovation for use by the Army, to be made practical for use by another government agency, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $55 \times 2,817 = \$154,9135$.

4. Caretaker Status

a. Caretaker Status Maintenance

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

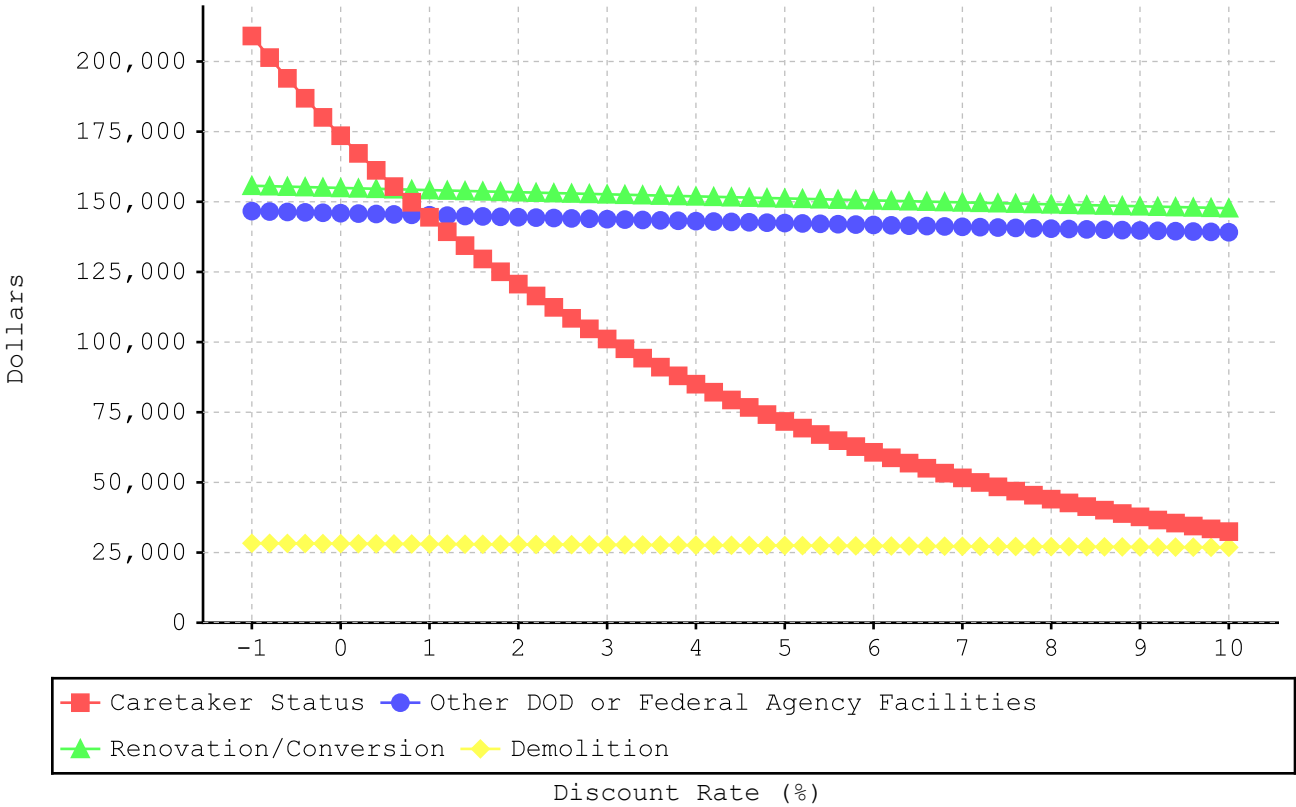
b. Renovation/ Conversion

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.9, 0.6 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.9, 0.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 28,312	Demolition	\$ 28,086
Other DOD or Federal Agency	\$ 146,670	Other DOD or Federal Agency	\$ 145,499
Renovation/Conversion	\$ 155,716	Renovation/Conversion	\$ 154,472
Caretaker Status	\$ 209,080	Caretaker Status	\$ 155,406
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 28,283	Demolition	\$ 28,058
Other DOD or Federal Agency	\$ 146,522	Other DOD or Federal Agency	\$ 145,355
Renovation/Conversion	\$ 155,558	Caretaker Status	\$ 149,832
Caretaker Status	\$ 201,383	Renovation/Conversion	\$ 154,319
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 28,255	Demolition	\$ 28,030
Other DOD or Federal Agency	\$ 146,375	Caretaker Status	\$ 144,475
Renovation/Conversion	\$ 155,402	Other DOD or Federal Agency	\$ 145,211
Caretaker Status	\$ 193,992	Renovation/Conversion	\$ 154,166
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 28,227	Demolition	\$ 28,002
Other DOD or Federal Agency	\$ 146,228	Caretaker Status	\$ 139,328
Renovation/Conversion	\$ 155,246	Other DOD or Federal Agency	\$ 145,067
Caretaker Status	\$ 186,896	Renovation/Conversion	\$ 154,014
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 28,198	Demolition	\$ 27,975
Other DOD or Federal Agency	\$ 146,081	Caretaker Status	\$ 134,381
Renovation/Conversion	\$ 155,090	Other DOD or Federal Agency	\$ 144,924
Caretaker Status	\$ 180,081	Renovation/Conversion	\$ 153,862
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 28,170	Demolition	\$ 27,947
Other DOD or Federal Agency	\$ 145,935	Caretaker Status	\$ 129,627
Renovation/Conversion	\$ 154,935	Other DOD or Federal Agency	\$ 144,781
Caretaker Status	\$ 173,535	Renovation/Conversion	\$ 153,710
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 28,142	Demolition	\$ 27,920
Other DOD or Federal Agency	\$ 145,789	Caretaker Status	\$ 125,056
Renovation/Conversion	\$ 154,780	Other DOD or Federal Agency	\$ 144,639
Caretaker Status	\$ 167,248	Renovation/Conversion	\$ 153,559
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 28,114	Demolition	\$ 27,892
Other DOD or Federal Agency	\$ 145,644	Caretaker Status	\$ 120,662
Renovation/Conversion	\$ 154,626	Other DOD or Federal Agency	\$ 144,497
Caretaker Status	\$ 161,209	Renovation/Conversion	\$ 153,409

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.9, 0.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 27,865	Demolition	\$ 27,650
Caretaker Status	\$ 116,438	Caretaker Status	\$ 87,977
Other DOD or Federal Agency	\$ 144,356	Other DOD or Federal Agency	\$ 143,239
Renovation/Conversion	\$ 153,258	Renovation/Conversion	\$ 152,073
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 27,838	Demolition	\$ 27,623
Caretaker Status	\$ 112,377	Caretaker Status	\$ 85,000
Other DOD or Federal Agency	\$ 144,215	Other DOD or Federal Agency	\$ 143,101
Renovation/Conversion	\$ 153,109	Renovation/Conversion	\$ 151,926
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 27,811	Demolition	\$ 27,596
Caretaker Status	\$ 108,471	Caretaker Status	\$ 82,135
Other DOD or Federal Agency	\$ 144,074	Other DOD or Federal Agency	\$ 142,964
Renovation/Conversion	\$ 152,959	Renovation/Conversion	\$ 151,780
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 27,784	Demolition	\$ 27,570
Caretaker Status	\$ 104,715	Caretaker Status	\$ 79,378
Other DOD or Federal Agency	\$ 143,934	Other DOD or Federal Agency	\$ 142,827
Renovation/Conversion	\$ 152,810	Renovation/Conversion	\$ 151,635
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 27,757	Demolition	\$ 27,544
Caretaker Status	\$ 101,103	Caretaker Status	\$ 76,725
Other DOD or Federal Agency	\$ 143,794	Other DOD or Federal Agency	\$ 142,690
Renovation/Conversion	\$ 152,662	Renovation/Conversion	\$ 151,490
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 27,730	Demolition	\$ 27,517
Caretaker Status	\$ 97,628	Caretaker Status	\$ 74,170
Other DOD or Federal Agency	\$ 143,655	Other DOD or Federal Agency	\$ 142,554
Renovation/Conversion	\$ 152,514	Renovation/Conversion	\$ 151,345
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 27,703	Demolition	\$ 27,491
Caretaker Status	\$ 94,286	Caretaker Status	\$ 71,711
Other DOD or Federal Agency	\$ 143,516	Other DOD or Federal Agency	\$ 142,418
Renovation/Conversion	\$ 152,366	Renovation/Conversion	\$ 151,201
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 27,676	Demolition	\$ 27,465
Caretaker Status	\$ 91,071	Caretaker Status	\$ 69,344
Other DOD or Federal Agency	\$ 143,377	Other DOD or Federal Agency	\$ 142,283
Renovation/Conversion	\$ 152,219	Renovation/Conversion	\$ 151,057

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.9, 0.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 27,439	Demolition	\$ 27,233
Caretaker Status	\$ 67,065	Caretaker Status	\$ 51,607
Other DOD or Federal Agency	\$ 142,147	Other DOD or Federal Agency	\$ 141,081
Renovation/Conversion	\$ 150,914	Renovation/Conversion	\$ 149,781
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 27,413	Demolition	\$ 27,208
Caretaker Status	\$ 64,870	Caretaker Status	\$ 49,979
Other DOD or Federal Agency	\$ 142,013	Other DOD or Federal Agency	\$ 140,949
Renovation/Conversion	\$ 150,771	Renovation/Conversion	\$ 149,642
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 27,387	Demolition	\$ 27,182
Caretaker Status	\$ 62,756	Caretaker Status	\$ 48,410
Other DOD or Federal Agency	\$ 141,879	Other DOD or Federal Agency	\$ 140,818
Renovation/Conversion	\$ 150,628	Renovation/Conversion	\$ 149,502
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 27,361	Demolition	\$ 27,157
Caretaker Status	\$ 60,720	Caretaker Status	\$ 46,897
Other DOD or Federal Agency	\$ 141,745	Other DOD or Federal Agency	\$ 140,687
Renovation/Conversion	\$ 150,486	Renovation/Conversion	\$ 149,363
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 27,335	Demolition	\$ 27,132
Caretaker Status	\$ 58,759	Caretaker Status	\$ 45,440
Other DOD or Federal Agency	\$ 141,611	Other DOD or Federal Agency	\$ 140,556
Renovation/Conversion	\$ 150,344	Renovation/Conversion	\$ 149,225
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 27,310	Demolition	\$ 27,107
Caretaker Status	\$ 56,870	Caretaker Status	\$ 44,034
Other DOD or Federal Agency	\$ 141,478	Other DOD or Federal Agency	\$ 140,426
Renovation/Conversion	\$ 150,203	Renovation/Conversion	\$ 149,086
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 27,284	Demolition	\$ 27,082
Caretaker Status	\$ 55,050	Caretaker Status	\$ 42,679
Other DOD or Federal Agency	\$ 141,345	Other DOD or Federal Agency	\$ 140,296
Renovation/Conversion	\$ 150,062	Renovation/Conversion	\$ 148,948
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 27,258	Demolition	\$ 27,057
Caretaker Status	\$ 53,297	Caretaker Status	\$ 41,373
Other DOD or Federal Agency	\$ 141,213	Other DOD or Federal Agency	\$ 140,167
Renovation/Conversion	\$ 149,921	Renovation/Conversion	\$ 148,811

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.9, 0.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 27,032
Caretaker Status	\$ 40,113
Other DOD or Federal Agency	\$ 140,038
Renovation/Conversion	\$ 148,674

Discount Rate = 8.8%

Demolition	\$ 27,007
Caretaker Status	\$ 38,898
Other DOD or Federal Agency	\$ 139,909
Renovation/Conversion	\$ 148,537

Discount Rate = 9.0%

Demolition	\$ 26,982
Caretaker Status	\$ 37,726
Other DOD or Federal Agency	\$ 139,780
Renovation/Conversion	\$ 148,401

Discount Rate = 9.2%

Demolition	\$ 26,957
Caretaker Status	\$ 36,595
Other DOD or Federal Agency	\$ 139,652
Renovation/Conversion	\$ 148,265

Discount Rate = 9.4%

Demolition	\$ 26,933
Caretaker Status	\$ 35,505
Other DOD or Federal Agency	\$ 139,525
Renovation/Conversion	\$ 148,129

Discount Rate = 9.6%

Demolition	\$ 26,908
Caretaker Status	\$ 34,453
Other DOD or Federal Agency	\$ 139,397
Renovation/Conversion	\$ 147,994

Discount Rate = 9.8%

Demolition	\$ 26,883
Caretaker Status	\$ 33,438
Other DOD or Federal Agency	\$ 139,270
Renovation/Conversion	\$ 147,859

Discount Rate = 10.0%

Demolition	\$ 26,859
Caretaker Status	\$ 32,458
Other DOD or Federal Agency	\$ 139,144
Renovation/Conversion	\$ 147,725

Building 249 Disposal Economic Analysis Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 249 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 249 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $2,750 \times 10 = \$27,500$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 44224, Organizational Storage. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $2,750 \times 55 = \$151,250$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative. This is a viable alternative.

Other DOD or Federal Agency Facilities - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 2,750 = \$151,250$. Due to the relatively small size and odd shape of this building (2,750 sf), location - in the Western Hemisphere Institute for Security Cooperation (WHINSEC) complex, lack of access, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable. This is a

viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 2,750 = \$907.50/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost. This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 27,163
Renovation/Conversion	\$ 149,394
Other DOD or Federal Agency Facilities	\$ 149,394
Caretaker Status	\$ 110,750

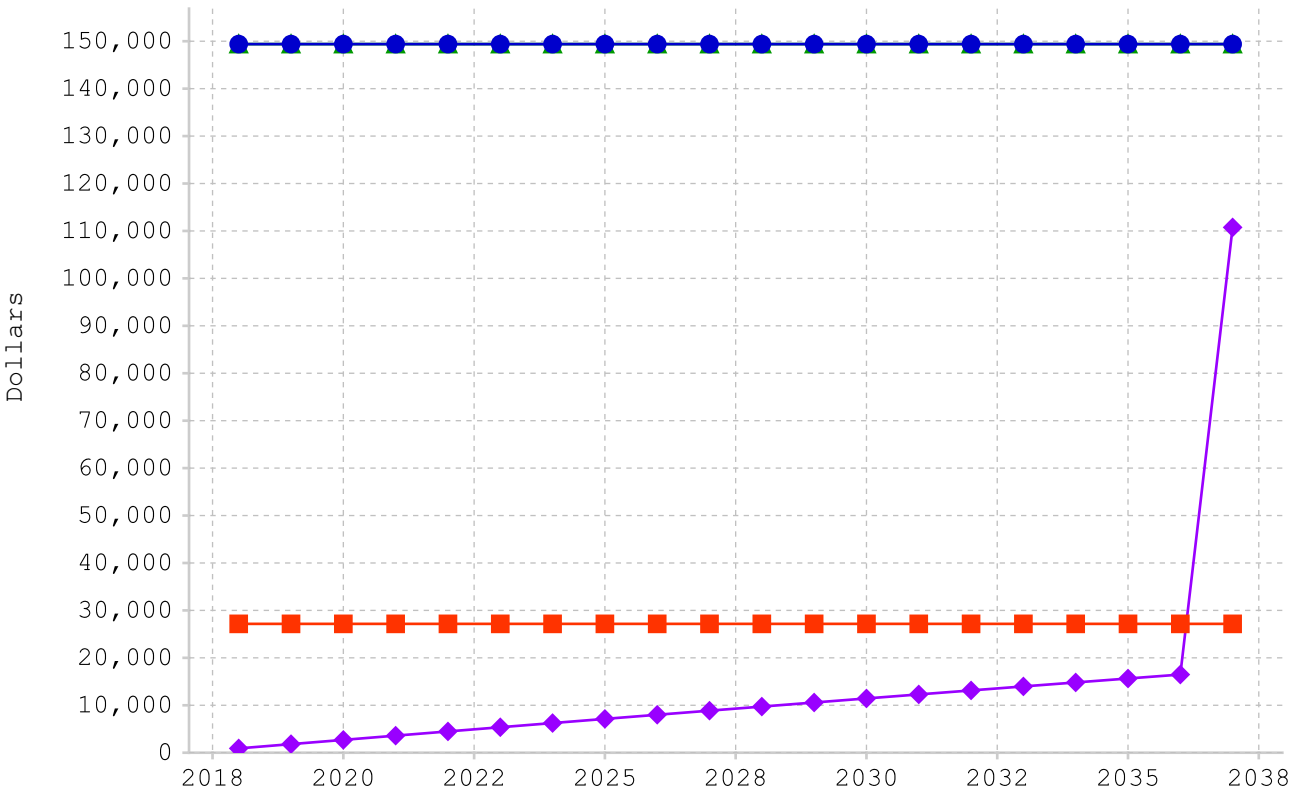
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 249 is the most economical alternative for the Army.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Year

Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$27,500	\$27,500	0.988	\$27,163	\$27,163
2019	\$0	\$0	0.964	\$0	\$27,163
2020	\$0	\$0	0.94	\$0	\$27,163
2021	\$0	\$0	0.917	\$0	\$27,163
2022	\$0	\$0	0.895	\$0	\$27,163
2023	\$0	\$0	0.873	\$0	\$27,163
2024	\$0	\$0	0.852	\$0	\$27,163
2025	\$0	\$0	0.831	\$0	\$27,163
2026	\$0	\$0	0.811	\$0	\$27,163
2027	\$0	\$0	0.791	\$0	\$27,163
2028	\$0	\$0	0.772	\$0	\$27,163
2029	\$0	\$0	0.753	\$0	\$27,163
2030	\$0	\$0	0.734	\$0	\$27,163
2031	\$0	\$0	0.717	\$0	\$27,163
2032	\$0	\$0	0.699	\$0	\$27,163
2033	\$0	\$0	0.682	\$0	\$27,163
2034	\$0	\$0	0.665	\$0	\$27,163
2035	\$0	\$0	0.649	\$0	\$27,163
2036	\$0	\$0	0.633	\$0	\$27,163
2037	\$0	\$0	0.618	\$0	\$27,163
%NPV	100.00%				
	\$27,163				
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/Con version	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$151,250	\$151,250	0.988	\$149,394	\$149,394
2019	\$0	\$0	0.964	\$0	\$149,394
2020	\$0	\$0	0.94	\$0	\$149,394
2021	\$0	\$0	0.917	\$0	\$149,394
2022	\$0	\$0	0.895	\$0	\$149,394
2023	\$0	\$0	0.873	\$0	\$149,394
2024	\$0	\$0	0.852	\$0	\$149,394
2025	\$0	\$0	0.831	\$0	\$149,394
2026	\$0	\$0	0.811	\$0	\$149,394
2027	\$0	\$0	0.791	\$0	\$149,394
2028	\$0	\$0	0.772	\$0	\$149,394
2029	\$0	\$0	0.753	\$0	\$149,394
2030	\$0	\$0	0.734	\$0	\$149,394
2031	\$0	\$0	0.717	\$0	\$149,394
2032	\$0	\$0	0.699	\$0	\$149,394
2033	\$0	\$0	0.682	\$0	\$149,394
2034	\$0	\$0	0.665	\$0	\$149,394
2035	\$0	\$0	0.649	\$0	\$149,394
2036	\$0	\$0	0.633	\$0	\$149,394
2037	\$0	\$0	0.618	\$0	\$149,394
%NPV	100.00%				
\$149,394					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency Facilities

Year	Renovation for DOD or Other Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$151,250	\$151,250	0.988	\$149,394	\$149,394
2019	\$0	\$0	0.964	\$0	\$149,394
2020	\$0	\$0	0.94	\$0	\$149,394
2021	\$0	\$0	0.917	\$0	\$149,394
2022	\$0	\$0	0.895	\$0	\$149,394
2023	\$0	\$0	0.873	\$0	\$149,394
2024	\$0	\$0	0.852	\$0	\$149,394
2025	\$0	\$0	0.831	\$0	\$149,394
2026	\$0	\$0	0.811	\$0	\$149,394
2027	\$0	\$0	0.791	\$0	\$149,394
2028	\$0	\$0	0.772	\$0	\$149,394
2029	\$0	\$0	0.753	\$0	\$149,394
2030	\$0	\$0	0.734	\$0	\$149,394
2031	\$0	\$0	0.717	\$0	\$149,394
2032	\$0	\$0	0.699	\$0	\$149,394
2033	\$0	\$0	0.682	\$0	\$149,394
2034	\$0	\$0	0.665	\$0	\$149,394
2035	\$0	\$0	0.649	\$0	\$149,394
2036	\$0	\$0	0.633	\$0	\$149,394
2037	\$0	\$0	0.618	\$0	\$149,394
%NPV	100.00%				
\$149,394					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Maintenance	Renovation/ Construction	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$917	\$0	\$917	0.988	\$906
2019	\$935	\$0	\$935	0.964	\$901
2020	\$954	\$0	\$954	0.94	\$897
2021	\$973	\$0	\$973	0.917	\$893
2022	\$993	\$0	\$993	0.895	\$888
2023	\$1,012	\$0	\$1,012	0.873	\$884
2024	\$1,033	\$0	\$1,033	0.852	\$880
2025	\$1,053	\$0	\$1,053	0.831	\$875
2026	\$1,074	\$0	\$1,074	0.811	\$871
2027	\$1,096	\$0	\$1,096	0.791	\$867
2028	\$1,118	\$0	\$1,118	0.772	\$863
2029	\$1,140	\$0	\$1,140	0.753	\$858
2030	\$1,163	\$0	\$1,163	0.734	\$854
2031	\$1,186	\$0	\$1,186	0.717	\$850
2032	\$1,210	\$0	\$1,210	0.699	\$846
2033	\$1,234	\$0	\$1,234	0.682	\$842
2034	\$1,259	\$0	\$1,259	0.665	\$838
2035	\$1,284	\$0	\$1,284	0.649	\$834
2036	\$1,310	\$0	\$1,310	0.633	\$829
2037	\$1,336	\$151,250	\$152,586	0.618	\$94,276
%NPV	15.62%	84.38%			
	\$17,300	\$93,450			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	2017 General	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$906
2019	\$1,807
2020	\$2,704
2021	\$3,597
2022	\$4,485
2023	\$5,369
2024	\$6,248
2025	\$7,124
2026	\$7,995
2027	\$8,862
2028	\$9,724
2029	\$10,582
2030	\$11,437
2031	\$12,287
2032	\$13,132
2033	\$13,974
2034	\$14,812
2035	\$15,645
2036	\$16,475
2037	\$110,750

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 2750 = \$27,750$$

2. Renovation/Conversion

a. Renovation/Conversion

To be made practical for conversion, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $55 \times 2,750 = \$151,250$.

3. Other DOD or Federal Agency Facilities

a. Renovation for DOD or Other Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 2,750 = \$151,250$.

Due to the relatively small size of this building (2,750 sf), location, lack of parking/ access, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Maintenance

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

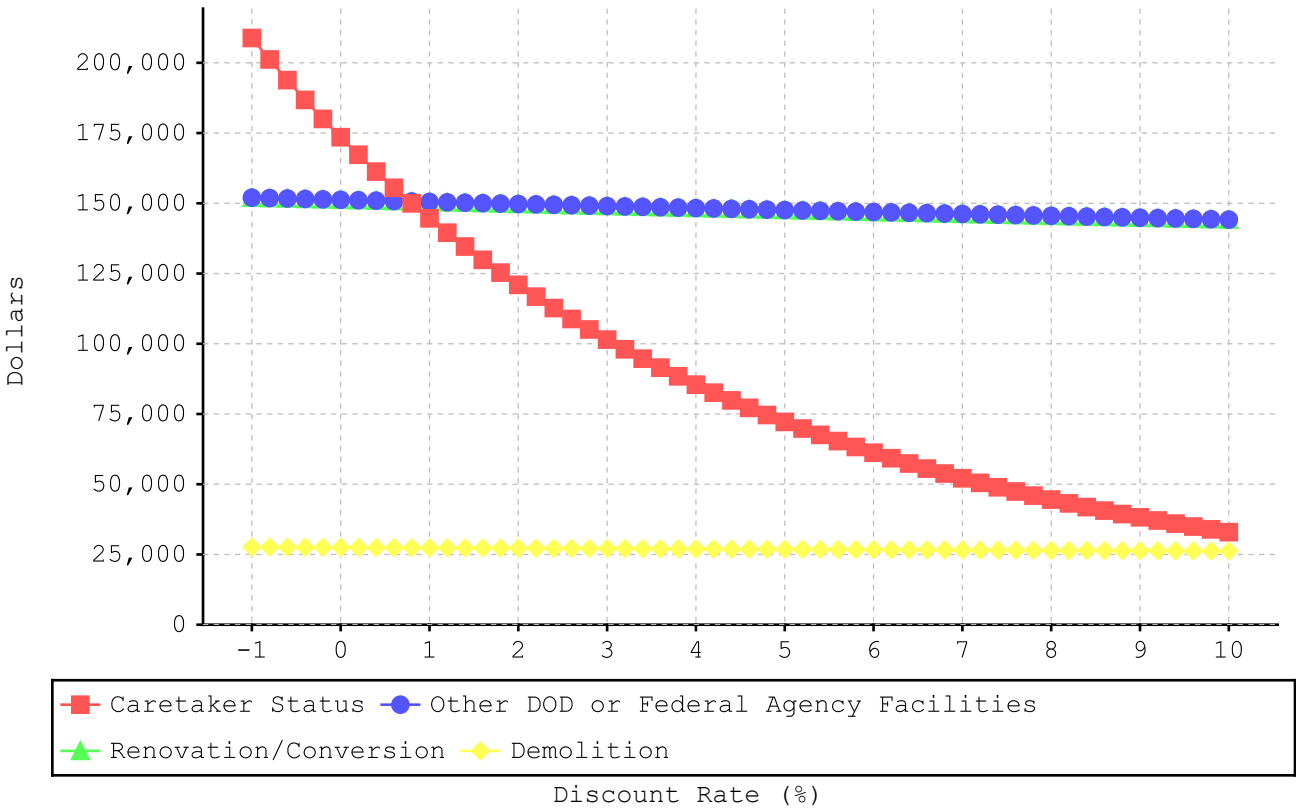
b. Renovation/ Construction

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 27,639	Demolition	\$ 27,418
Other DOD or Federal Agency	\$ 152,012	Other DOD or Federal Agency	\$ 150,798
Renovation/Conversion	\$ 152,012	Renovation/Conversion	\$ 150,798
Caretaker Status	\$ 208,838	Caretaker Status	\$ 155,515
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 27,611	Demolition	\$ 27,391
Other DOD or Federal Agency	\$ 151,859	Caretaker Status	\$ 149,973
Renovation/Conversion	\$ 151,859	Other DOD or Federal Agency	\$ 150,649
Caretaker Status	\$ 201,194	Renovation/Conversion	\$ 150,649
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 27,583	Demolition	\$ 27,364
Other DOD or Federal Agency	\$ 151,706	Caretaker Status	\$ 144,647
Renovation/Conversion	\$ 151,706	Other DOD or Federal Agency	\$ 150,499
Caretaker Status	\$ 193,855	Renovation/Conversion	\$ 150,499
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 27,555	Demolition	\$ 27,336
Other DOD or Federal Agency	\$ 151,553	Caretaker Status	\$ 139,528
Renovation/Conversion	\$ 151,553	Other DOD or Federal Agency	\$ 150,351
Caretaker Status	\$ 186,805	Renovation/Conversion	\$ 150,351
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 27,528	Demolition	\$ 27,309
Other DOD or Federal Agency	\$ 151,401	Caretaker Status	\$ 134,608
Renovation/Conversion	\$ 151,401	Other DOD or Federal Agency	\$ 150,202
Caretaker Status	\$ 180,035	Renovation/Conversion	\$ 150,202
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 27,500	Demolition	\$ 27,283
Other DOD or Federal Agency	\$ 151,250	Caretaker Status	\$ 129,879
Renovation/Conversion	\$ 151,250	Other DOD or Federal Agency	\$ 150,054
Caretaker Status	\$ 173,532	Renovation/Conversion	\$ 150,054
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 27,473	Demolition	\$ 27,256
Other DOD or Federal Agency	\$ 151,099	Caretaker Status	\$ 125,332
Renovation/Conversion	\$ 151,099	Other DOD or Federal Agency	\$ 149,907
Caretaker Status	\$ 167,284	Renovation/Conversion	\$ 149,907
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 27,445	Demolition	\$ 27,229
Other DOD or Federal Agency	\$ 150,948	Caretaker Status	\$ 120,960
Renovation/Conversion	\$ 150,948	Other DOD or Federal Agency	\$ 149,760
Caretaker Status	\$ 161,282	Renovation/Conversion	\$ 149,760

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 27,202	Demolition	\$ 26,992
Caretaker Status	\$ 116,756	Caretaker Status	\$ 88,411
Other DOD or Federal Agency	\$ 149,613	Other DOD or Federal Agency	\$ 148,456
Renovation/Conversion	\$ 149,613	Renovation/Conversion	\$ 148,456
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 27,176	Demolition	\$ 26,966
Caretaker Status	\$ 112,713	Caretaker Status	\$ 85,444
Other DOD or Federal Agency	\$ 149,467	Other DOD or Federal Agency	\$ 148,313
Renovation/Conversion	\$ 149,467	Renovation/Conversion	\$ 148,313
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 27,149	Demolition	\$ 26,940
Caretaker Status	\$ 108,825	Caretaker Status	\$ 82,589
Other DOD or Federal Agency	\$ 149,321	Other DOD or Federal Agency	\$ 148,170
Renovation/Conversion	\$ 149,321	Renovation/Conversion	\$ 148,170
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 27,123	Demolition	\$ 26,914
Caretaker Status	\$ 105,086	Caretaker Status	\$ 79,840
Other DOD or Federal Agency	\$ 149,176	Other DOD or Federal Agency	\$ 148,028
Renovation/Conversion	\$ 149,176	Renovation/Conversion	\$ 148,028
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 27,097	Demolition	\$ 26,889
Caretaker Status	\$ 101,488	Caretaker Status	\$ 77,194
Other DOD or Federal Agency	\$ 149,031	Other DOD or Federal Agency	\$ 147,887
Renovation/Conversion	\$ 149,031	Renovation/Conversion	\$ 147,887
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 27,070	Demolition	\$ 26,863
Caretaker Status	\$ 98,028	Caretaker Status	\$ 74,646
Other DOD or Federal Agency	\$ 148,887	Other DOD or Federal Agency	\$ 147,746
Renovation/Conversion	\$ 148,887	Renovation/Conversion	\$ 147,746
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 27,044	Demolition	\$ 26,837
Caretaker Status	\$ 94,698	Caretaker Status	\$ 72,193
Other DOD or Federal Agency	\$ 148,743	Other DOD or Federal Agency	\$ 147,605
Renovation/Conversion	\$ 148,743	Renovation/Conversion	\$ 147,605
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 27,018	Demolition	\$ 26,812
Caretaker Status	\$ 91,494	Caretaker Status	\$ 69,831
Other DOD or Federal Agency	\$ 148,599	Other DOD or Federal Agency	\$ 147,465
Renovation/Conversion	\$ 148,599	Renovation/Conversion	\$ 147,465

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 26,786	Demolition	\$ 26,585
Caretaker Status	\$ 67,556	Caretaker Status	\$ 52,117
Other DOD or Federal Agency	\$ 147,325	Other DOD or Federal Agency	\$ 146,219
Renovation/Conversion	\$ 147,325	Renovation/Conversion	\$ 146,219
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 26,761	Demolition	\$ 26,560
Caretaker Status	\$ 65,365	Caretaker Status	\$ 50,490
Other DOD or Federal Agency	\$ 147,185	Other DOD or Federal Agency	\$ 146,082
Renovation/Conversion	\$ 147,185	Renovation/Conversion	\$ 146,082
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 26,736	Demolition	\$ 26,536
Caretaker Status	\$ 63,255	Caretaker Status	\$ 48,921
Other DOD or Federal Agency	\$ 147,046	Other DOD or Federal Agency	\$ 145,946
Renovation/Conversion	\$ 147,046	Renovation/Conversion	\$ 145,946
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 26,710	Demolition	\$ 26,511
Caretaker Status	\$ 61,222	Caretaker Status	\$ 47,408
Other DOD or Federal Agency	\$ 146,907	Other DOD or Federal Agency	\$ 145,811
Renovation/Conversion	\$ 146,907	Renovation/Conversion	\$ 145,811
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 26,685	Demolition	\$ 26,486
Caretaker Status	\$ 59,264	Caretaker Status	\$ 45,949
Other DOD or Federal Agency	\$ 146,769	Other DOD or Federal Agency	\$ 145,675
Renovation/Conversion	\$ 146,769	Renovation/Conversion	\$ 145,675
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 26,660	Demolition	\$ 26,462
Caretaker Status	\$ 57,377	Caretaker Status	\$ 44,543
Other DOD or Federal Agency	\$ 146,631	Other DOD or Federal Agency	\$ 145,540
Renovation/Conversion	\$ 146,631	Renovation/Conversion	\$ 145,540
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 26,635	Demolition	\$ 26,437
Caretaker Status	\$ 55,558	Caretaker Status	\$ 43,187
Other DOD or Federal Agency	\$ 146,493	Other DOD or Federal Agency	\$ 145,406
Renovation/Conversion	\$ 146,493	Renovation/Conversion	\$ 145,406
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 26,610	Demolition	\$ 26,413
Caretaker Status	\$ 53,806	Caretaker Status	\$ 41,879
Other DOD or Federal Agency	\$ 146,356	Other DOD or Federal Agency	\$ 145,272
Renovation/Conversion	\$ 146,356	Renovation/Conversion	\$ 145,272

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 26,389
Caretaker Status	\$ 40,618
Other DOD or Federal Agency	\$ 145,138
Renovation/Conversion	\$ 145,138

Discount Rate = 8.8%

Demolition	\$ 26,364
Caretaker Status	\$ 39,401
Other DOD or Federal Agency	\$ 145,004
Renovation/Conversion	\$ 145,004

Discount Rate = 9.0%

Demolition	\$ 26,340
Caretaker Status	\$ 38,227
Other DOD or Federal Agency	\$ 144,871
Renovation/Conversion	\$ 144,871

Discount Rate = 9.2%

Demolition	\$ 26,316
Caretaker Status	\$ 37,094
Other DOD or Federal Agency	\$ 144,738
Renovation/Conversion	\$ 144,738

Discount Rate = 9.4%

Demolition	\$ 26,292
Caretaker Status	\$ 36,001
Other DOD or Federal Agency	\$ 144,606
Renovation/Conversion	\$ 144,606

Discount Rate = 9.6%

Demolition	\$ 26,268
Caretaker Status	\$ 34,947
Other DOD or Federal Agency	\$ 144,474
Renovation/Conversion	\$ 144,474

Discount Rate = 9.8%

Demolition	\$ 26,244
Caretaker Status	\$ 33,929
Other DOD or Federal Agency	\$ 144,342
Renovation/Conversion	\$ 144,342

Discount Rate = 10.0%

Demolition	\$ 26,220
Caretaker Status	\$ 32,947
Other DOD or Federal Agency	\$ 144,211
Renovation/Conversion	\$ 144,211

Building 267 Disposal
Economic Analysis
Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 267 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 267 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $1,175 \times 10 = \$11,750$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 44224, Organizational Storage. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $1,175 \times 55 = \$64,625$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative This is a viable alternative.

Other DOD or Federal Agency Facilities - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 1,175 = \$64,625$. Due to the relatively small size of this building (1,175 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 1,175 = \$388/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost. This is a viable alternative.

Assumptions of the Analysis:

1. This building cannot be used in its current state due to its condition.
2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 11,606
Renovation/Conversion	\$ 63,832
Other DOD or Federal Agency Facilities	\$ 63,832
Caretaker Status	\$ 47,321

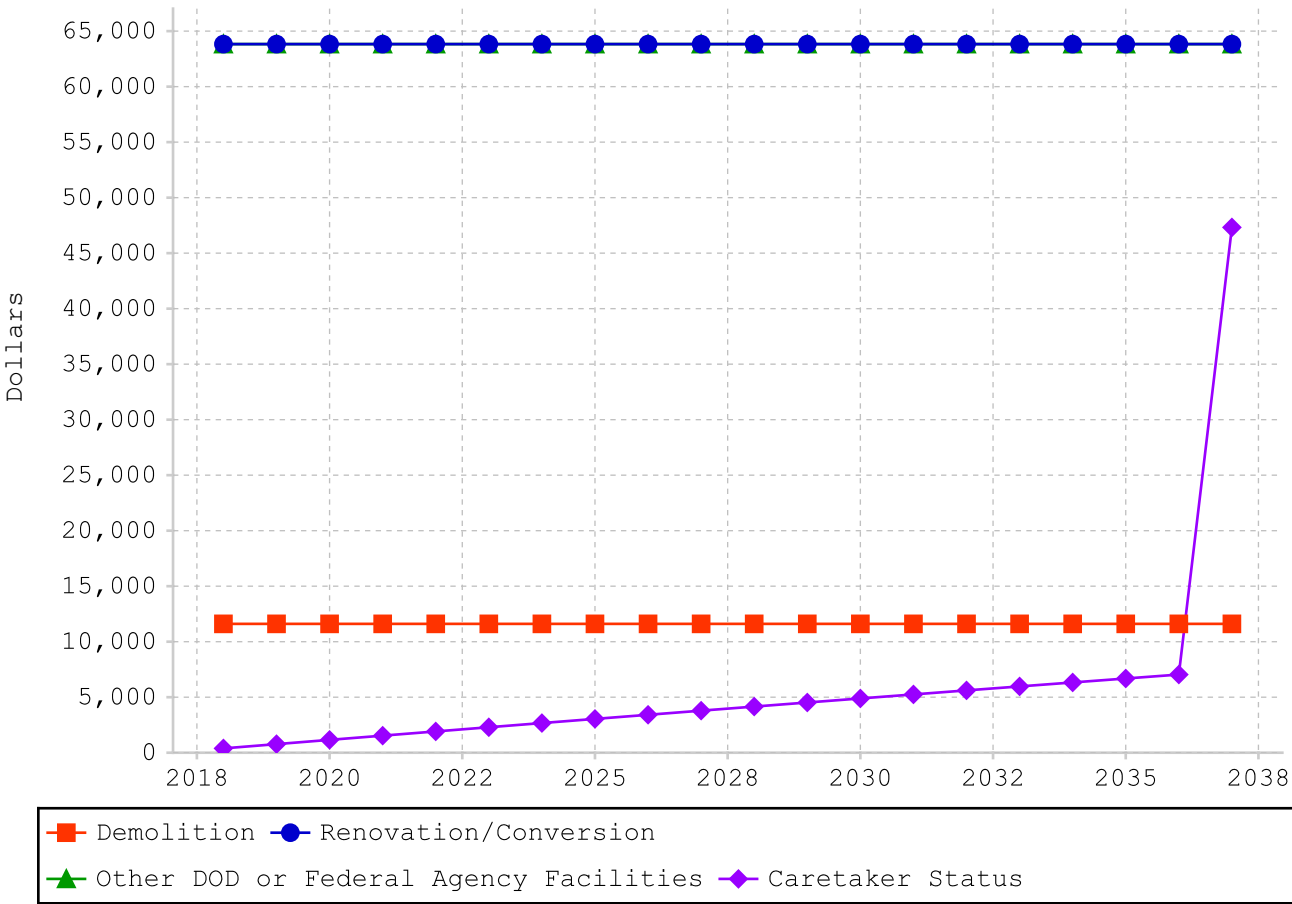
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 267 is the most economical alternative for the Army.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$11,750	\$11,750	0.988	\$11,606	\$11,606
2019	\$0	\$0	0.964	\$0	\$11,606
2020	\$0	\$0	0.94	\$0	\$11,606
2021	\$0	\$0	0.917	\$0	\$11,606
2022	\$0	\$0	0.895	\$0	\$11,606
2023	\$0	\$0	0.873	\$0	\$11,606
2024	\$0	\$0	0.852	\$0	\$11,606
2025	\$0	\$0	0.831	\$0	\$11,606
2026	\$0	\$0	0.811	\$0	\$11,606
2027	\$0	\$0	0.791	\$0	\$11,606
2028	\$0	\$0	0.772	\$0	\$11,606
2029	\$0	\$0	0.753	\$0	\$11,606
2030	\$0	\$0	0.734	\$0	\$11,606
2031	\$0	\$0	0.717	\$0	\$11,606
2032	\$0	\$0	0.699	\$0	\$11,606
2033	\$0	\$0	0.682	\$0	\$11,606
2034	\$0	\$0	0.665	\$0	\$11,606
2035	\$0	\$0	0.649	\$0	\$11,606
2036	\$0	\$0	0.633	\$0	\$11,606
2037	\$0	\$0	0.618	\$0	\$11,606
%NPV	100.00%				
\$11,606					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/Con version	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$64,625	\$64,625	0.988	\$63,832	\$63,832
2019	\$0	\$0	0.964	\$0	\$63,832
2020	\$0	\$0	0.94	\$0	\$63,832
2021	\$0	\$0	0.917	\$0	\$63,832
2022	\$0	\$0	0.895	\$0	\$63,832
2023	\$0	\$0	0.873	\$0	\$63,832
2024	\$0	\$0	0.852	\$0	\$63,832
2025	\$0	\$0	0.831	\$0	\$63,832
2026	\$0	\$0	0.811	\$0	\$63,832
2027	\$0	\$0	0.791	\$0	\$63,832
2028	\$0	\$0	0.772	\$0	\$63,832
2029	\$0	\$0	0.753	\$0	\$63,832
2030	\$0	\$0	0.734	\$0	\$63,832
2031	\$0	\$0	0.717	\$0	\$63,832
2032	\$0	\$0	0.699	\$0	\$63,832
2033	\$0	\$0	0.682	\$0	\$63,832
2034	\$0	\$0	0.665	\$0	\$63,832
2035	\$0	\$0	0.649	\$0	\$63,832
2036	\$0	\$0	0.633	\$0	\$63,832
2037	\$0	\$0	0.618	\$0	\$63,832
%NPV	100.00%				
\$63,832					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency Facilities

Year	Other DOD/Agency Reno	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$64,625	\$64,625	0.988	\$63,832	\$63,832
2019	\$0	\$0	0.964	\$0	\$63,832
2020	\$0	\$0	0.94	\$0	\$63,832
2021	\$0	\$0	0.917	\$0	\$63,832
2022	\$0	\$0	0.895	\$0	\$63,832
2023	\$0	\$0	0.873	\$0	\$63,832
2024	\$0	\$0	0.852	\$0	\$63,832
2025	\$0	\$0	0.831	\$0	\$63,832
2026	\$0	\$0	0.811	\$0	\$63,832
2027	\$0	\$0	0.791	\$0	\$63,832
2028	\$0	\$0	0.772	\$0	\$63,832
2029	\$0	\$0	0.753	\$0	\$63,832
2030	\$0	\$0	0.734	\$0	\$63,832
2031	\$0	\$0	0.717	\$0	\$63,832
2032	\$0	\$0	0.699	\$0	\$63,832
2033	\$0	\$0	0.682	\$0	\$63,832
2034	\$0	\$0	0.665	\$0	\$63,832
2035	\$0	\$0	0.649	\$0	\$63,832
2036	\$0	\$0	0.633	\$0	\$63,832
2037	\$0	\$0	0.618	\$0	\$63,832
%NPV	100.00%				
\$63,832					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status Maintenance	Renovation after Caretaker	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$392	\$0	\$392	0.988	\$387
2019	\$400	\$0	\$400	0.964	\$385
2020	\$408	\$0	\$408	0.94	\$383
2021	\$416	\$0	\$416	0.917	\$381
2022	\$424	\$0	\$424	0.895	\$380
2023	\$433	\$0	\$433	0.873	\$378
2024	\$441	\$0	\$441	0.852	\$376
2025	\$450	\$0	\$450	0.831	\$374
2026	\$459	\$0	\$459	0.811	\$372
2027	\$468	\$0	\$468	0.791	\$370
2028	\$478	\$0	\$478	0.772	\$369
2029	\$487	\$0	\$487	0.753	\$367
2030	\$497	\$0	\$497	0.734	\$365
2031	\$507	\$0	\$507	0.717	\$363
2032	\$517	\$0	\$517	0.699	\$361
2033	\$527	\$0	\$527	0.682	\$360
2034	\$538	\$0	\$538	0.665	\$358
2035	\$549	\$0	\$549	0.649	\$356
2036	\$560	\$0	\$560	0.633	\$354
2037	\$571	\$64,625	\$65,196	0.618	\$40,281
%NPV	15.62%	84.38%			
	\$7,393	\$39,929			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	2017 General	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$387
2019	\$772
2020	\$1,156
2021	\$1,537
2022	\$1,916
2023	\$2,294
2024	\$2,670
2025	\$3,044
2026	\$3,416
2027	\$3,787
2028	\$4,155
2029	\$4,522
2030	\$4,887
2031	\$5,250
2032	\$5,612
2033	\$5,971
2034	\$6,329
2035	\$6,685
2036	\$7,040
2037	\$47,321

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 1175 = \$11,750$$

2. Renovation/Conversion

a. Renovation/Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.

Estimated cost is \$55/sf or $55 \times 1,175 = \$64,625$.

3. Other DOD or Federal Agency Facilities

a. Other DOD/Agency Reno

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 1,175 = \$64,625$.

Due to the relatively small size of this building (1,175 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Status Maintenance

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

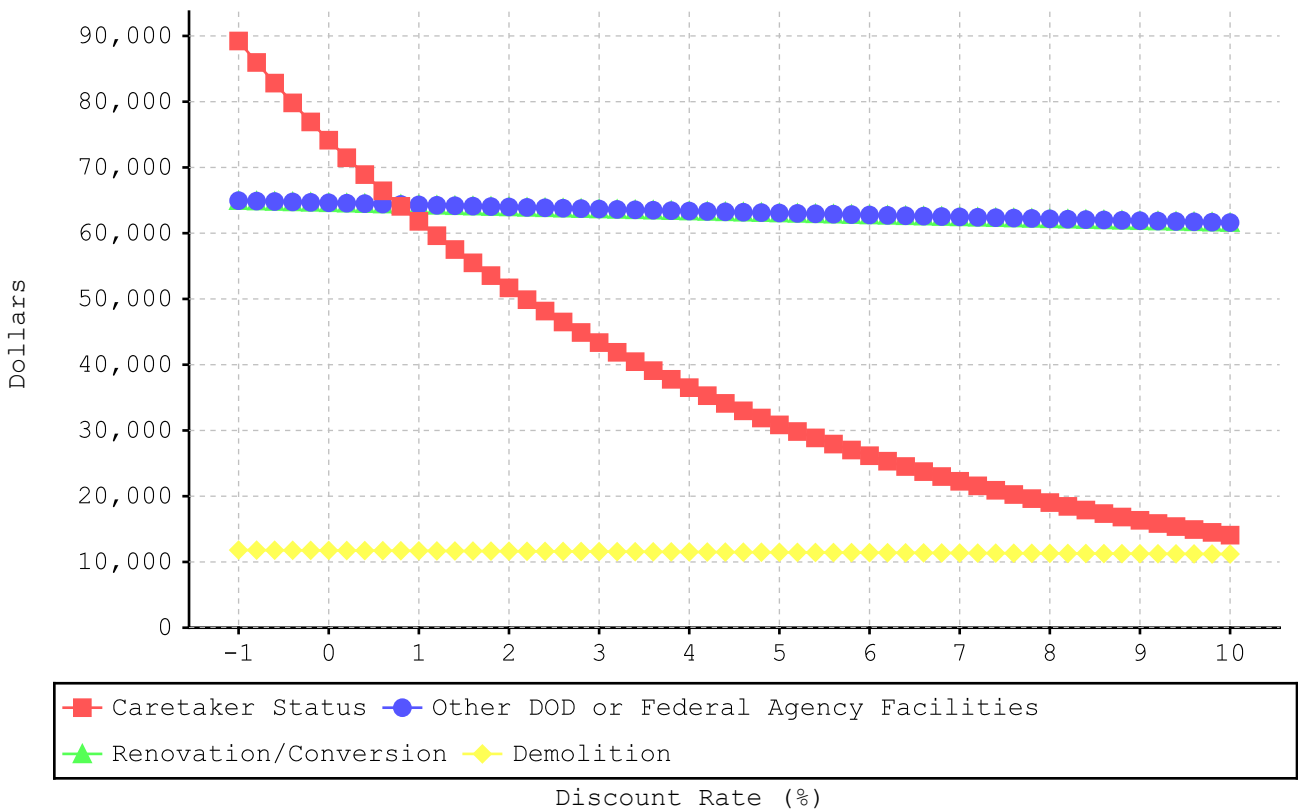
b. Renovation after Caretaker

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 11,809	Demolition	\$ 11,715
Other DOD or Federal Agency	\$ 64,951	Other DOD or Federal Agency	\$ 64,432
Renovation/Conversion	\$ 64,951	Renovation/Conversion	\$ 64,432
Caretaker Status	\$ 89,232	Caretaker Status	\$ 66,448
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 11,797	Demolition	\$ 11,703
Other DOD or Federal Agency	\$ 64,885	Caretaker Status	\$ 64,080
Renovation/Conversion	\$ 64,885	Other DOD or Federal Agency	\$ 64,368
Caretaker Status	\$ 85,966	Renovation/Conversion	\$ 64,368
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 11,785	Demolition	\$ 11,692
Other DOD or Federal Agency	\$ 64,820	Caretaker Status	\$ 61,805
Renovation/Conversion	\$ 64,820	Other DOD or Federal Agency	\$ 64,304
Caretaker Status	\$ 82,830	Renovation/Conversion	\$ 64,304
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 11,774	Demolition	\$ 11,680
Other DOD or Federal Agency	\$ 64,755	Caretaker Status	\$ 59,617
Renovation/Conversion	\$ 64,755	Other DOD or Federal Agency	\$ 64,241
Caretaker Status	\$ 79,818	Renovation/Conversion	\$ 64,241
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 11,762	Demolition	\$ 11,669
Other DOD or Federal Agency	\$ 64,690	Caretaker Status	\$ 57,515
Renovation/Conversion	\$ 64,690	Other DOD or Federal Agency	\$ 64,177
Caretaker Status	\$ 76,925	Renovation/Conversion	\$ 64,177
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 11,750	Demolition	\$ 11,657
Other DOD or Federal Agency	\$ 64,625	Caretaker Status	\$ 55,494
Renovation/Conversion	\$ 64,625	Other DOD or Federal Agency	\$ 64,114
Caretaker Status	\$ 74,146	Renovation/Conversion	\$ 64,114
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 11,738	Demolition	\$ 11,646
Other DOD or Federal Agency	\$ 64,560	Caretaker Status	\$ 53,552
Renovation/Conversion	\$ 64,560	Other DOD or Federal Agency	\$ 64,051
Caretaker Status	\$ 71,477	Renovation/Conversion	\$ 64,051
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 11,727	Demolition	\$ 11,634
Other DOD or Federal Agency	\$ 64,496	Caretaker Status	\$ 51,684
Renovation/Conversion	\$ 64,496	Other DOD or Federal Agency	\$ 63,988
Caretaker Status	\$ 68,912	Renovation/Conversion	\$ 63,988

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 11,623	Demolition	\$ 11,533
Caretaker Status	\$ 49,887	Caretaker Status	\$ 37,776
Other DOD or Federal Agency	\$ 63,926	Other DOD or Federal Agency	\$ 63,431
Renovation/Conversion	\$ 63,926	Renovation/Conversion	\$ 63,431
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 11,611	Demolition	\$ 11,522
Caretaker Status	\$ 48,160	Caretaker Status	\$ 36,509
Other DOD or Federal Agency	\$ 63,863	Other DOD or Federal Agency	\$ 63,370
Renovation/Conversion	\$ 63,863	Renovation/Conversion	\$ 63,370
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 11,600	Demolition	\$ 11,511
Caretaker Status	\$ 46,499	Caretaker Status	\$ 35,288
Other DOD or Federal Agency	\$ 63,801	Other DOD or Federal Agency	\$ 63,309
Renovation/Conversion	\$ 63,801	Renovation/Conversion	\$ 63,309
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 11,589	Demolition	\$ 11,500
Caretaker Status	\$ 44,901	Caretaker Status	\$ 34,114
Other DOD or Federal Agency	\$ 63,739	Other DOD or Federal Agency	\$ 63,249
Renovation/Conversion	\$ 63,739	Renovation/Conversion	\$ 63,249
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 11,578	Demolition	\$ 11,489
Caretaker Status	\$ 43,364	Caretaker Status	\$ 32,983
Other DOD or Federal Agency	\$ 63,677	Other DOD or Federal Agency	\$ 63,188
Renovation/Conversion	\$ 63,677	Renovation/Conversion	\$ 63,188
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 11,566	Demolition	\$ 11,478
Caretaker Status	\$ 41,885	Caretaker Status	\$ 31,895
Other DOD or Federal Agency	\$ 63,615	Other DOD or Federal Agency	\$ 63,128
Renovation/Conversion	\$ 63,615	Renovation/Conversion	\$ 63,128
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 11,555	Demolition	\$ 11,467
Caretaker Status	\$ 40,463	Caretaker Status	\$ 30,847
Other DOD or Federal Agency	\$ 63,554	Other DOD or Federal Agency	\$ 63,068
Renovation/Conversion	\$ 63,554	Renovation/Conversion	\$ 63,068
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 11,544	Demolition	\$ 11,456
Caretaker Status	\$ 39,094	Caretaker Status	\$ 29,837
Other DOD or Federal Agency	\$ 63,492	Other DOD or Federal Agency	\$ 63,008
Renovation/Conversion	\$ 63,492	Renovation/Conversion	\$ 63,008

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 11,445	Demolition	\$ 11,359
Caretaker Status	\$ 28,865	Caretaker Status	\$ 22,269
Other DOD or Federal Agency	\$ 62,948	Other DOD or Federal Agency	\$ 62,475
Renovation/Conversion	\$ 62,948	Renovation/Conversion	\$ 62,475
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 11,434	Demolition	\$ 11,349
Caretaker Status	\$ 27,929	Caretaker Status	\$ 21,573
Other DOD or Federal Agency	\$ 62,888	Other DOD or Federal Agency	\$ 62,417
Renovation/Conversion	\$ 62,888	Renovation/Conversion	\$ 62,417
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 11,423	Demolition	\$ 11,338
Caretaker Status	\$ 27,028	Caretaker Status	\$ 20,903
Other DOD or Federal Agency	\$ 62,829	Other DOD or Federal Agency	\$ 62,359
Renovation/Conversion	\$ 62,829	Renovation/Conversion	\$ 62,359
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 11,413	Demolition	\$ 11,327
Caretaker Status	\$ 26,159	Caretaker Status	\$ 20,257
Other DOD or Federal Agency	\$ 62,769	Other DOD or Federal Agency	\$ 62,301
Renovation/Conversion	\$ 62,769	Renovation/Conversion	\$ 62,301
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 11,402	Demolition	\$ 11,317
Caretaker Status	\$ 25,322	Caretaker Status	\$ 19,633
Other DOD or Federal Agency	\$ 62,710	Other DOD or Federal Agency	\$ 62,243
Renovation/Conversion	\$ 62,710	Renovation/Conversion	\$ 62,243
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 11,391	Demolition	\$ 11,306
Caretaker Status	\$ 24,516	Caretaker Status	\$ 19,033
Other DOD or Federal Agency	\$ 62,651	Other DOD or Federal Agency	\$ 62,185
Renovation/Conversion	\$ 62,651	Renovation/Conversion	\$ 62,185
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 11,380	Demolition	\$ 11,296
Caretaker Status	\$ 23,739	Caretaker Status	\$ 18,453
Other DOD or Federal Agency	\$ 62,592	Other DOD or Federal Agency	\$ 62,128
Renovation/Conversion	\$ 62,592	Renovation/Conversion	\$ 62,128
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 11,370	Demolition	\$ 11,286
Caretaker Status	\$ 22,990	Caretaker Status	\$ 17,894
Other DOD or Federal Agency	\$ 62,534	Other DOD or Federal Agency	\$ 62,071
Renovation/Conversion	\$ 62,534	Renovation/Conversion	\$ 62,071

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 11,275
Caretaker Status	\$ 17,355
Other DOD or Federal Agency	\$ 62,013
Renovation/Conversion	\$ 62,013

Discount Rate = 8.8%

Demolition	\$ 11,265
Caretaker Status	\$ 16,835
Other DOD or Federal Agency	\$ 61,956
Renovation/Conversion	\$ 61,956

Discount Rate = 9.0%

Demolition	\$ 11,254
Caretaker Status	\$ 16,334
Other DOD or Federal Agency	\$ 61,900
Renovation/Conversion	\$ 61,900

Discount Rate = 9.2%

Demolition	\$ 11,244
Caretaker Status	\$ 15,850
Other DOD or Federal Agency	\$ 61,843
Renovation/Conversion	\$ 61,843

Discount Rate = 9.4%

Demolition	\$ 11,234
Caretaker Status	\$ 15,383
Other DOD or Federal Agency	\$ 61,786
Renovation/Conversion	\$ 61,786

Discount Rate = 9.6%

Demolition	\$ 11,224
Caretaker Status	\$ 14,932
Other DOD or Federal Agency	\$ 61,730
Renovation/Conversion	\$ 61,730

Discount Rate = 9.8%

Demolition	\$ 11,213
Caretaker Status	\$ 14,497
Other DOD or Federal Agency	\$ 61,674
Renovation/Conversion	\$ 61,674

Discount Rate = 10.0%

Demolition	\$ 11,203
Caretaker Status	\$ 14,078
Other DOD or Federal Agency	\$ 61,618
Renovation/Conversion	\$ 61,618

Building 319 Disposal Economic Analysis

Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 319 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 319 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $919 \times 10 = \$9,190$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 44224, Organizational Storage. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $919 \times 55 = \$50,545$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative This is a viable alternative.

DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 919 = \$50,545$. Due to the small size of this building (919 sf), location - inside the Lawson Army Airfield (LAAF) fence line, and the cost and time required for renovation, it's unlikely that another agency would

select it. This alternative is viable.
This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 919 = \$303/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost. This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 9,077
Renovation/Conversion	\$ 49,925
DOD or Federal Agency	\$ 49,925
Caretaker Status	\$ 37,002

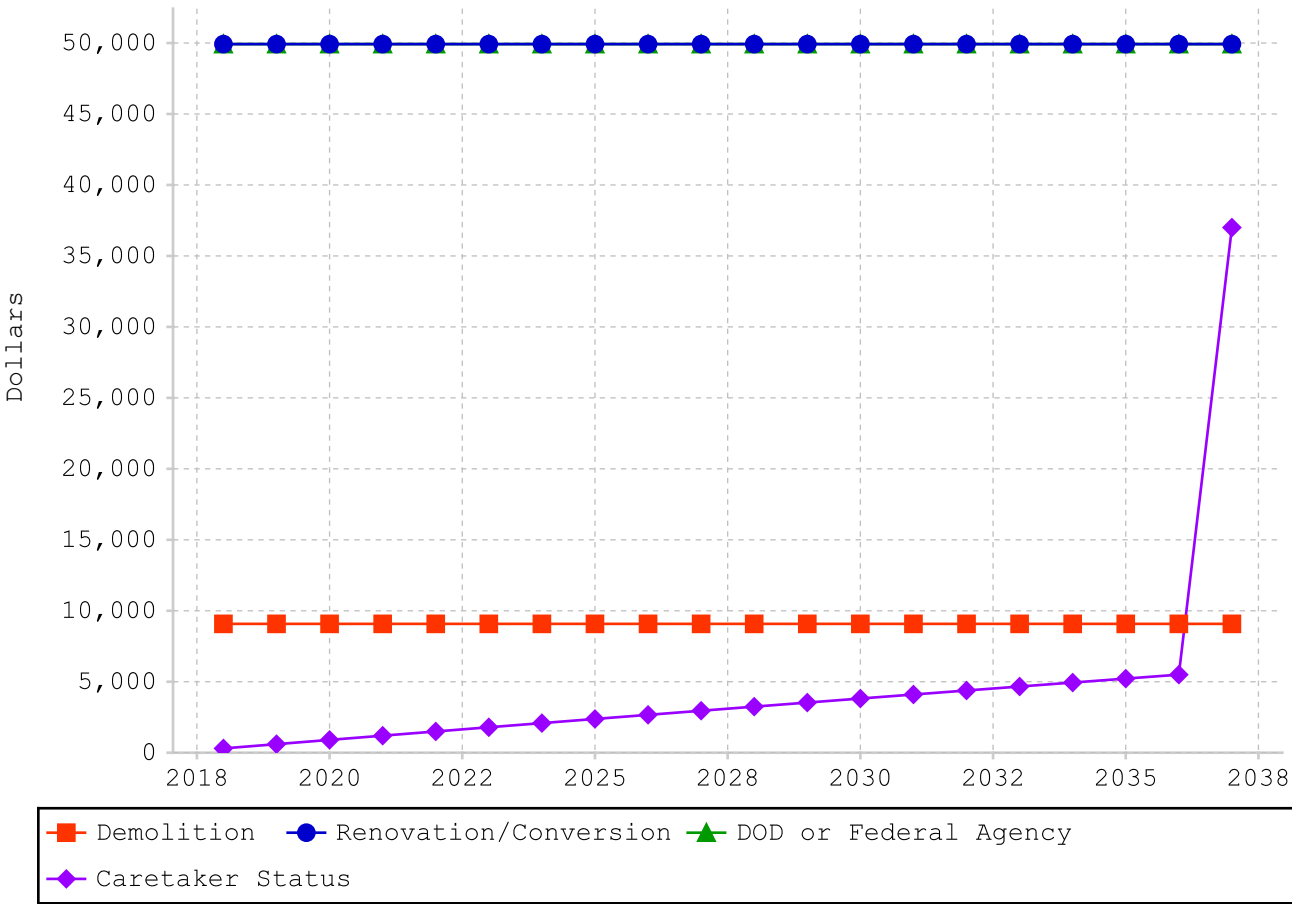
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location (within Lawson Army Airfield fence line) and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 319 is the most economical alternative for the Army.

Action Officer : Dean Miller
Phone Number : 706-545-3229
Email Address : sherman.d.miller.civ@mail.mil
Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$9,190	\$9,190	0.988	\$9,077	\$9,077
2019	\$0	\$0	0.964	\$0	\$9,077
2020	\$0	\$0	0.94	\$0	\$9,077
2021	\$0	\$0	0.917	\$0	\$9,077
2022	\$0	\$0	0.895	\$0	\$9,077
2023	\$0	\$0	0.873	\$0	\$9,077
2024	\$0	\$0	0.852	\$0	\$9,077
2025	\$0	\$0	0.831	\$0	\$9,077
2026	\$0	\$0	0.811	\$0	\$9,077
2027	\$0	\$0	0.791	\$0	\$9,077
2028	\$0	\$0	0.772	\$0	\$9,077
2029	\$0	\$0	0.753	\$0	\$9,077
2030	\$0	\$0	0.734	\$0	\$9,077
2031	\$0	\$0	0.717	\$0	\$9,077
2032	\$0	\$0	0.699	\$0	\$9,077
2033	\$0	\$0	0.682	\$0	\$9,077
2034	\$0	\$0	0.665	\$0	\$9,077
2035	\$0	\$0	0.649	\$0	\$9,077
2036	\$0	\$0	0.633	\$0	\$9,077
2037	\$0	\$0	0.618	\$0	\$9,077
%NPV	100.00%				
\$9,077					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/Con version	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$50,545	\$50,545	0.988	\$49,925	\$49,925
2019	\$0	\$0	0.964	\$0	\$49,925
2020	\$0	\$0	0.94	\$0	\$49,925
2021	\$0	\$0	0.917	\$0	\$49,925
2022	\$0	\$0	0.895	\$0	\$49,925
2023	\$0	\$0	0.873	\$0	\$49,925
2024	\$0	\$0	0.852	\$0	\$49,925
2025	\$0	\$0	0.831	\$0	\$49,925
2026	\$0	\$0	0.811	\$0	\$49,925
2027	\$0	\$0	0.791	\$0	\$49,925
2028	\$0	\$0	0.772	\$0	\$49,925
2029	\$0	\$0	0.753	\$0	\$49,925
2030	\$0	\$0	0.734	\$0	\$49,925
2031	\$0	\$0	0.717	\$0	\$49,925
2032	\$0	\$0	0.699	\$0	\$49,925
2033	\$0	\$0	0.682	\$0	\$49,925
2034	\$0	\$0	0.665	\$0	\$49,925
2035	\$0	\$0	0.649	\$0	\$49,925
2036	\$0	\$0	0.633	\$0	\$49,925
2037	\$0	\$0	0.618	\$0	\$49,925
%NPV	100.00%				
\$49,925					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: DOD or Federal Agency

Year	Renovation for Other DOD or Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$50,545	\$50,545	0.988	\$49,925	\$49,925
2019	\$0	\$0	0.964	\$0	\$49,925
2020	\$0	\$0	0.94	\$0	\$49,925
2021	\$0	\$0	0.917	\$0	\$49,925
2022	\$0	\$0	0.895	\$0	\$49,925
2023	\$0	\$0	0.873	\$0	\$49,925
2024	\$0	\$0	0.852	\$0	\$49,925
2025	\$0	\$0	0.831	\$0	\$49,925
2026	\$0	\$0	0.811	\$0	\$49,925
2027	\$0	\$0	0.791	\$0	\$49,925
2028	\$0	\$0	0.772	\$0	\$49,925
2029	\$0	\$0	0.753	\$0	\$49,925
2030	\$0	\$0	0.734	\$0	\$49,925
2031	\$0	\$0	0.717	\$0	\$49,925
2032	\$0	\$0	0.699	\$0	\$49,925
2033	\$0	\$0	0.682	\$0	\$49,925
2034	\$0	\$0	0.665	\$0	\$49,925
2035	\$0	\$0	0.649	\$0	\$49,925
2036	\$0	\$0	0.633	\$0	\$49,925
2037	\$0	\$0	0.618	\$0	\$49,925
%NPV	100.00%				
\$49,925					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status	Renovation	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$306	\$0	\$306	0.988	\$302
2019	\$312	\$0	\$312	0.964	\$301
2020	\$318	\$0	\$318	0.94	\$299
2021	\$325	\$0	\$325	0.917	\$298
2022	\$331	\$0	\$331	0.895	\$296
2023	\$338	\$0	\$338	0.873	\$295
2024	\$345	\$0	\$345	0.852	\$294
2025	\$352	\$0	\$352	0.831	\$292
2026	\$359	\$0	\$359	0.811	\$291
2027	\$366	\$0	\$366	0.791	\$289
2028	\$373	\$0	\$373	0.772	\$288
2029	\$380	\$0	\$380	0.753	\$286
2030	\$388	\$0	\$388	0.734	\$285
2031	\$396	\$0	\$396	0.717	\$284
2032	\$404	\$0	\$404	0.699	\$282
2033	\$412	\$0	\$412	0.682	\$281
2034	\$420	\$0	\$420	0.665	\$280
2035	\$428	\$0	\$428	0.649	\$278
2036	\$437	\$0	\$437	0.633	\$277
2037	\$446	\$50,545	\$50,991	0.618	\$31,505
%NPV	15.60%	84.40%			
	\$5,773	\$31,229			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	2017 General	No Inflation			
Category / Residual Schedule	Recurring Costs	Non-Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$302
2019	\$603
2020	\$902
2021	\$1,200
2022	\$1,497
2023	\$1,792
2024	\$2,085
2025	\$2,377
2026	\$2,668
2027	\$2,957
2028	\$3,245
2029	\$3,531
2030	\$3,816
2031	\$4,100
2032	\$4,382
2033	\$4,663
2034	\$4,943
2035	\$5,221
2036	\$5,498
2037	\$37,002

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 919 = \$9,190$$

2. Renovation/Conversion

a. Renovation/Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $55 \times 919 = \$50,545$

3. DOD or Federal Agency

a. Renovation for Other DOD or Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 919 = \$50,545$.

Due to the relatively small size of this building (919 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Status

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

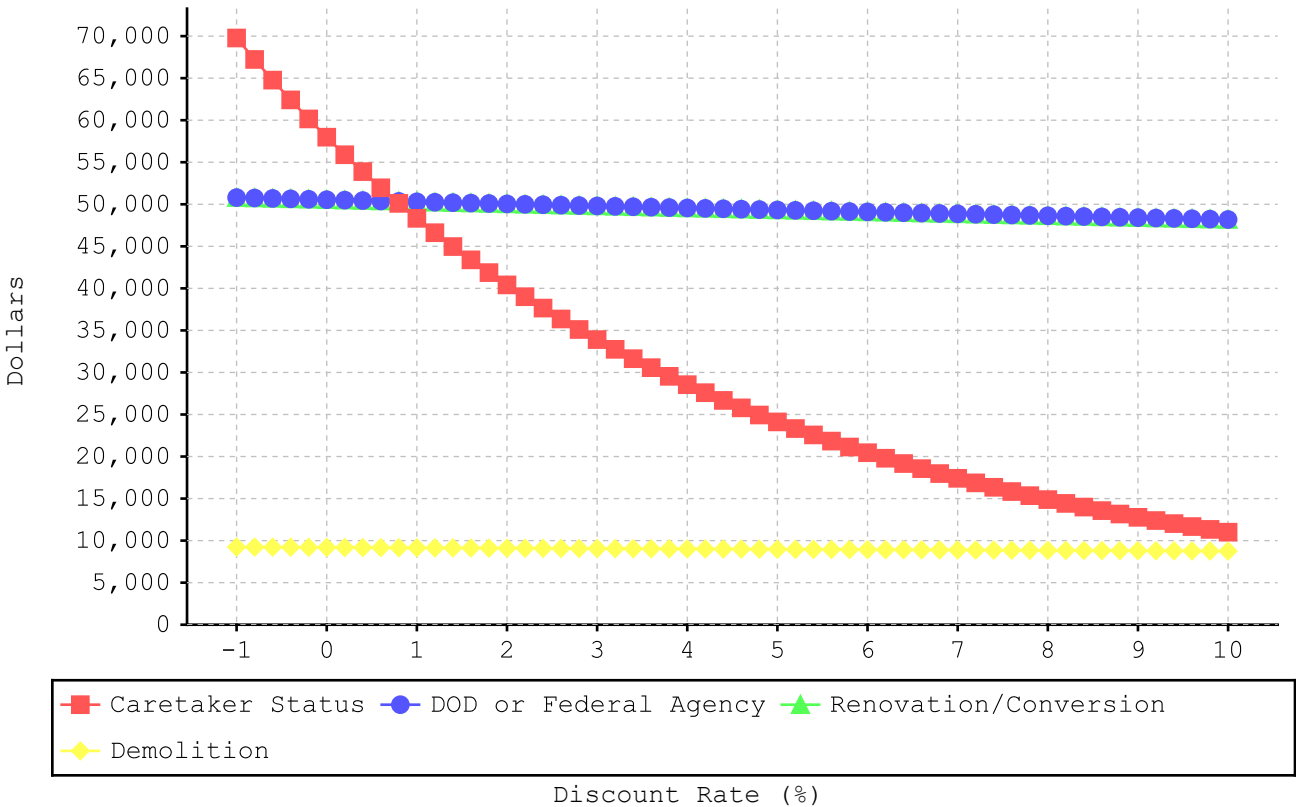
b. Renovation

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 9,236	Demolition	\$ 9,163
DOD or Federal Agency	\$ 50,800	DOD or Federal Agency	\$ 50,394
Renovation/Conversion	\$ 50,800	Renovation/Conversion	\$ 50,394
Caretaker Status	\$ 69,778	Caretaker Status	\$ 51,960
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 9,227	Demolition	\$ 9,153
DOD or Federal Agency	\$ 50,748	Caretaker Status	\$ 50,108
Renovation/Conversion	\$ 50,748	DOD or Federal Agency	\$ 50,344
Caretaker Status	\$ 67,224	Renovation/Conversion	\$ 50,344
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 9,218	Demolition	\$ 9,144
DOD or Federal Agency	\$ 50,697	Caretaker Status	\$ 48,329
Renovation/Conversion	\$ 50,697	DOD or Federal Agency	\$ 50,294
Caretaker Status	\$ 64,771	Renovation/Conversion	\$ 50,294
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 9,208	Demolition	\$ 9,135
DOD or Federal Agency	\$ 50,646	Caretaker Status	\$ 46,618
Renovation/Conversion	\$ 50,646	DOD or Federal Agency	\$ 50,244
Caretaker Status	\$ 62,416	Renovation/Conversion	\$ 50,244
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 9,199	Demolition	\$ 9,126
DOD or Federal Agency	\$ 50,596	Caretaker Status	\$ 44,974
Renovation/Conversion	\$ 50,596	DOD or Federal Agency	\$ 50,195
Caretaker Status	\$ 60,153	Renovation/Conversion	\$ 50,195
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 9,190	Demolition	\$ 9,117
DOD or Federal Agency	\$ 50,545	Caretaker Status	\$ 43,394
Renovation/Conversion	\$ 50,545	DOD or Federal Agency	\$ 50,145
Caretaker Status	\$ 57,980	Renovation/Conversion	\$ 50,145
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 9,181	Demolition	\$ 9,108
DOD or Federal Agency	\$ 50,495	Caretaker Status	\$ 41,875
Renovation/Conversion	\$ 50,495	DOD or Federal Agency	\$ 50,096
Caretaker Status	\$ 55,893	Renovation/Conversion	\$ 50,096
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 9,172	Demolition	\$ 9,099
DOD or Federal Agency	\$ 50,444	Caretaker Status	\$ 40,414
Renovation/Conversion	\$ 50,444	DOD or Federal Agency	\$ 50,047
Caretaker Status	\$ 53,887	Renovation/Conversion	\$ 50,047

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 9,091	Demolition	\$ 9,020
Caretaker Status	\$ 39,009	Caretaker Status	\$ 29,538
DOD or Federal Agency	\$ 49,998	DOD or Federal Agency	\$ 49,611
Renovation/Conversion	\$ 49,998	Renovation/Conversion	\$ 49,611
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 9,082	Demolition	\$ 9,012
Caretaker Status	\$ 37,658	Caretaker Status	\$ 28,547
DOD or Federal Agency	\$ 49,949	DOD or Federal Agency	\$ 49,563
Renovation/Conversion	\$ 49,949	Renovation/Conversion	\$ 49,563
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 9,073	Demolition	\$ 9,003
Caretaker Status	\$ 36,359	Caretaker Status	\$ 27,593
DOD or Federal Agency	\$ 49,900	DOD or Federal Agency	\$ 49,516
Renovation/Conversion	\$ 49,900	Renovation/Conversion	\$ 49,516
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 9,064	Demolition	\$ 8,994
Caretaker Status	\$ 35,110	Caretaker Status	\$ 26,674
DOD or Federal Agency	\$ 49,852	DOD or Federal Agency	\$ 49,468
Renovation/Conversion	\$ 49,852	Renovation/Conversion	\$ 49,468
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 9,055	Demolition	\$ 8,986
Caretaker Status	\$ 33,908	Caretaker Status	\$ 25,790
DOD or Federal Agency	\$ 49,803	DOD or Federal Agency	\$ 49,421
Renovation/Conversion	\$ 49,803	Renovation/Conversion	\$ 49,421
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 9,046	Demolition	\$ 8,977
Caretaker Status	\$ 32,751	Caretaker Status	\$ 24,939
DOD or Federal Agency	\$ 49,755	DOD or Federal Agency	\$ 49,374
Renovation/Conversion	\$ 49,755	Renovation/Conversion	\$ 49,374
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 9,038	Demolition	\$ 8,969
Caretaker Status	\$ 31,639	Caretaker Status	\$ 24,119
DOD or Federal Agency	\$ 49,707	DOD or Federal Agency	\$ 49,327
Renovation/Conversion	\$ 49,707	Renovation/Conversion	\$ 49,327
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 9,029	Demolition	\$ 8,960
Caretaker Status	\$ 30,568	Caretaker Status	\$ 23,330
DOD or Federal Agency	\$ 49,659	DOD or Federal Agency	\$ 49,280
Renovation/Conversion	\$ 49,659	Renovation/Conversion	\$ 49,280

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 8,951	Demolition	\$ 8,884
Caretaker Status	\$ 22,570	Caretaker Status	\$ 17,411
DOD or Federal Agency	\$ 49,233	DOD or Federal Agency	\$ 48,864
Renovation/Conversion	\$ 49,233	Renovation/Conversion	\$ 48,864
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 8,943	Demolition	\$ 8,876
Caretaker Status	\$ 21,838	Caretaker Status	\$ 16,867
DOD or Federal Agency	\$ 49,187	DOD or Federal Agency	\$ 48,818
Renovation/Conversion	\$ 49,187	Renovation/Conversion	\$ 48,818
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 8,935	Demolition	\$ 8,868
Caretaker Status	\$ 21,132	Caretaker Status	\$ 16,343
DOD or Federal Agency	\$ 49,140	DOD or Federal Agency	\$ 48,773
Renovation/Conversion	\$ 49,140	Renovation/Conversion	\$ 48,773
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 8,926	Demolition	\$ 8,860
Caretaker Status	\$ 20,453	Caretaker Status	\$ 15,837
DOD or Federal Agency	\$ 49,094	DOD or Federal Agency	\$ 48,727
Renovation/Conversion	\$ 49,094	Renovation/Conversion	\$ 48,727
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 8,918	Demolition	\$ 8,851
Caretaker Status	\$ 19,799	Caretaker Status	\$ 15,350
DOD or Federal Agency	\$ 49,047	DOD or Federal Agency	\$ 48,682
Renovation/Conversion	\$ 49,047	Renovation/Conversion	\$ 48,682
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 8,909	Demolition	\$ 8,843
Caretaker Status	\$ 19,168	Caretaker Status	\$ 14,880
DOD or Federal Agency	\$ 49,001	DOD or Federal Agency	\$ 48,637
Renovation/Conversion	\$ 49,001	Renovation/Conversion	\$ 48,637
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 8,901	Demolition	\$ 8,835
Caretaker Status	\$ 18,561	Caretaker Status	\$ 14,427
DOD or Federal Agency	\$ 48,955	DOD or Federal Agency	\$ 48,592
Renovation/Conversion	\$ 48,955	Renovation/Conversion	\$ 48,592
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 8,893	Demolition	\$ 8,827
Caretaker Status	\$ 17,975	Caretaker Status	\$ 13,990
DOD or Federal Agency	\$ 48,909	DOD or Federal Agency	\$ 48,547
Renovation/Conversion	\$ 48,909	Renovation/Conversion	\$ 48,547

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 8,819
Caretaker Status	\$ 13,569
DOD or Federal Agency	\$ 48,502
Renovation/Conversion	\$ 48,502

Discount Rate = 8.8%

Demolition	\$ 8,811
Caretaker Status	\$ 13,162
DOD or Federal Agency	\$ 48,458
Renovation/Conversion	\$ 48,458

Discount Rate = 9.0%

Demolition	\$ 8,802
Caretaker Status	\$ 12,770
DOD or Federal Agency	\$ 48,413
Renovation/Conversion	\$ 48,413

Discount Rate = 9.2%

Demolition	\$ 8,794
Caretaker Status	\$ 12,391
DOD or Federal Agency	\$ 48,369
Renovation/Conversion	\$ 48,369

Discount Rate = 9.4%

Demolition	\$ 8,786
Caretaker Status	\$ 12,026
DOD or Federal Agency	\$ 48,325
Renovation/Conversion	\$ 48,325

Discount Rate = 9.6%

Demolition	\$ 8,778
Caretaker Status	\$ 11,674
DOD or Federal Agency	\$ 48,281
Renovation/Conversion	\$ 48,281

Discount Rate = 9.8%

Demolition	\$ 8,770
Caretaker Status	\$ 11,334
DOD or Federal Agency	\$ 48,237
Renovation/Conversion	\$ 48,237

Discount Rate = 10.0%

Demolition	\$ 8,762
Caretaker Status	\$ 11,006
DOD or Federal Agency	\$ 48,193
Renovation/Conversion	\$ 48,193

Building 328 Economic Analysis Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 328 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 328 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $7,495 \times 10 = \$74,950$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 17120, General Instruction Building. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $7,495 \times 55 = \$415,225$. However, there currently is an extreme excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative This is a viable alternative.

Other DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 7,495 = \$412,225$. Due to the unique design of this building - a sloped and terraced floor, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 7,495 = \$2,473/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost.

This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 74,030
Renovation/Conversion	\$ 407,167
Other DOD or Federal Agency	\$ 407,167
Caretaker Status	\$ 301,812

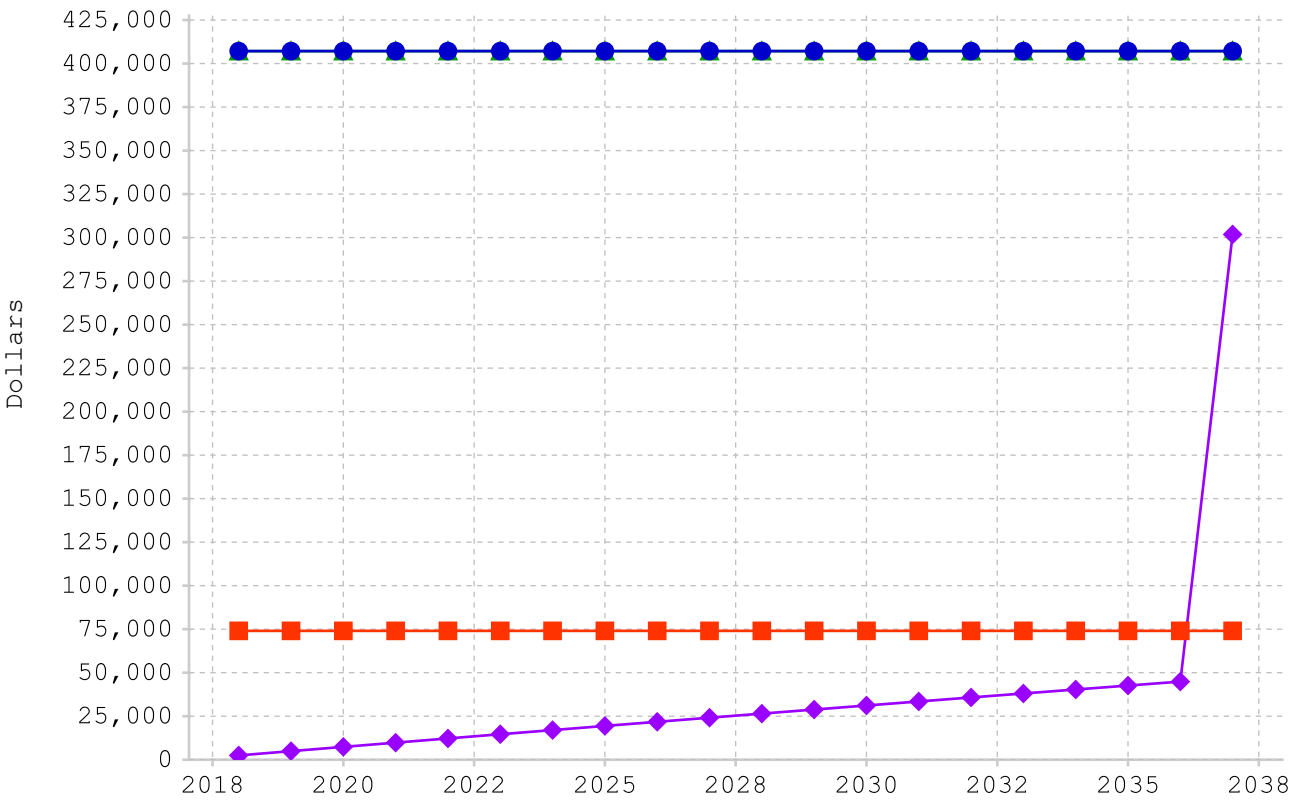
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its Current configuration or converted into another category code. Therefore, demolition of Building 328 is the most economical alternative for the Army.

Action Officer : Dean Miller
Phone Number : 706-545-3229
Email Address : sherman.d.miller.civ@mail.mil
Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Year

Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$74,950	\$74,950	0.988	\$74,030	\$74,030
2019	\$0	\$0	0.964	\$0	\$74,030
2020	\$0	\$0	0.94	\$0	\$74,030
2021	\$0	\$0	0.917	\$0	\$74,030
2022	\$0	\$0	0.895	\$0	\$74,030
2023	\$0	\$0	0.873	\$0	\$74,030
2024	\$0	\$0	0.852	\$0	\$74,030
2025	\$0	\$0	0.831	\$0	\$74,030
2026	\$0	\$0	0.811	\$0	\$74,030
2027	\$0	\$0	0.791	\$0	\$74,030
2028	\$0	\$0	0.772	\$0	\$74,030
2029	\$0	\$0	0.753	\$0	\$74,030
2030	\$0	\$0	0.734	\$0	\$74,030
2031	\$0	\$0	0.717	\$0	\$74,030
2032	\$0	\$0	0.699	\$0	\$74,030
2033	\$0	\$0	0.682	\$0	\$74,030
2034	\$0	\$0	0.665	\$0	\$74,030
2035	\$0	\$0	0.649	\$0	\$74,030
2036	\$0	\$0	0.633	\$0	\$74,030
2037	\$0	\$0	0.618	\$0	\$74,030
%NPV	100.00%				
\$74,030					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/Con version	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$412,225	\$412,225	0.988	\$407,167	\$407,167
2019	\$0	\$0	0.964	\$0	\$407,167
2020	\$0	\$0	0.94	\$0	\$407,167
2021	\$0	\$0	0.917	\$0	\$407,167
2022	\$0	\$0	0.895	\$0	\$407,167
2023	\$0	\$0	0.873	\$0	\$407,167
2024	\$0	\$0	0.852	\$0	\$407,167
2025	\$0	\$0	0.831	\$0	\$407,167
2026	\$0	\$0	0.811	\$0	\$407,167
2027	\$0	\$0	0.791	\$0	\$407,167
2028	\$0	\$0	0.772	\$0	\$407,167
2029	\$0	\$0	0.753	\$0	\$407,167
2030	\$0	\$0	0.734	\$0	\$407,167
2031	\$0	\$0	0.717	\$0	\$407,167
2032	\$0	\$0	0.699	\$0	\$407,167
2033	\$0	\$0	0.682	\$0	\$407,167
2034	\$0	\$0	0.665	\$0	\$407,167
2035	\$0	\$0	0.649	\$0	\$407,167
2036	\$0	\$0	0.633	\$0	\$407,167
2037	\$0	\$0	0.618	\$0	\$407,167
%NPV	100.00%				
\$407,167					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency

Year	Renovation for other DOD or Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$412,225	\$412,225	0.988	\$407,167	\$407,167
2019	\$0	\$0	0.964	\$0	\$407,167
2020	\$0	\$0	0.94	\$0	\$407,167
2021	\$0	\$0	0.917	\$0	\$407,167
2022	\$0	\$0	0.895	\$0	\$407,167
2023	\$0	\$0	0.873	\$0	\$407,167
2024	\$0	\$0	0.852	\$0	\$407,167
2025	\$0	\$0	0.831	\$0	\$407,167
2026	\$0	\$0	0.811	\$0	\$407,167
2027	\$0	\$0	0.791	\$0	\$407,167
2028	\$0	\$0	0.772	\$0	\$407,167
2029	\$0	\$0	0.753	\$0	\$407,167
2030	\$0	\$0	0.734	\$0	\$407,167
2031	\$0	\$0	0.717	\$0	\$407,167
2032	\$0	\$0	0.699	\$0	\$407,167
2033	\$0	\$0	0.682	\$0	\$407,167
2034	\$0	\$0	0.665	\$0	\$407,167
2035	\$0	\$0	0.649	\$0	\$407,167
2036	\$0	\$0	0.633	\$0	\$407,167
2037	\$0	\$0	0.618	\$0	\$407,167
%NPV	100.00%				
\$407,167					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
 Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status Maintenance	Construction	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$2,498	\$0	\$2,498	0.988	\$2,467
2019	\$2,548	\$0	\$2,548	0.964	\$2,455
2020	\$2,599	\$0	\$2,599	0.94	\$2,443
2021	\$2,650	\$0	\$2,650	0.917	\$2,431
2022	\$2,703	\$0	\$2,703	0.895	\$2,419
2023	\$2,758	\$0	\$2,758	0.873	\$2,407
2024	\$2,813	\$0	\$2,813	0.852	\$2,396
2025	\$2,869	\$0	\$2,869	0.831	\$2,384
2026	\$2,926	\$0	\$2,926	0.811	\$2,372
2027	\$2,985	\$0	\$2,985	0.791	\$2,361
2028	\$3,045	\$0	\$3,045	0.772	\$2,349
2029	\$3,105	\$0	\$3,105	0.753	\$2,338
2030	\$3,168	\$0	\$3,168	0.734	\$2,326
2031	\$3,231	\$0	\$3,231	0.717	\$2,315
2032	\$3,296	\$0	\$3,296	0.699	\$2,304
2033	\$3,361	\$0	\$3,361	0.682	\$2,292
2034	\$3,429	\$0	\$3,429	0.665	\$2,281
2035	\$3,497	\$0	\$3,497	0.649	\$2,270
2036	\$3,567	\$0	\$3,567	0.633	\$2,259
2037	\$3,639	\$412,225	\$415,864	0.618	\$256,942
%NPV	15.61%	84.39%			
	\$47,118	\$254,694			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	2017 General	No Inflation			
Category / Residual Schedule	Recurring Costs	Non-Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$2,467
2019	\$4,922
2020	\$7,365
2021	\$9,796
2022	\$12,215
2023	\$14,622
2024	\$17,018
2025	\$19,402
2026	\$21,774
2027	\$24,135
2028	\$26,484
2029	\$28,822
2030	\$31,148
2031	\$33,463
2032	\$35,767
2033	\$38,060
2034	\$40,341
2035	\$42,611
2036	\$44,870
2037	\$301,812

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 7495 = \$74,950$$

2. Renovation/Conversion

a. Renovation/Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.

Estimated cost is \$55/sf or $55 \times 7,495 = \$412,225$.

3. Other DOD or Federal Agency

a. Renovation for other DOD or Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 7,495 = \$412,225$.

Due to the unique design of this building – a sloped and terraced floor, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Status Maintenance

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

b. Construction

This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 7495 = \$2473/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly

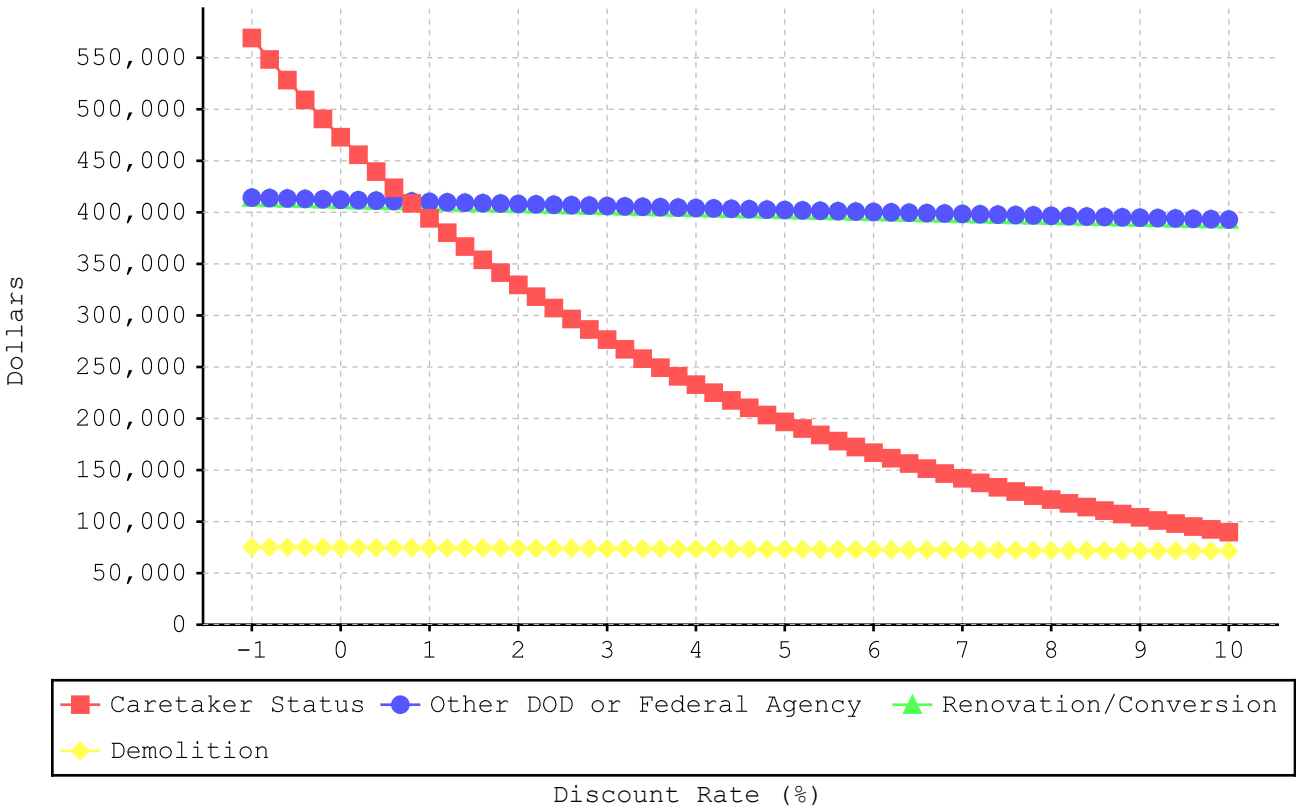
Life Cycle Cost Report

likely at a much higher cost.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 75,328	Demolition	\$ 74,726
Other DOD or Federal Agency	\$ 414,302	Other DOD or Federal Agency	\$ 410,994
Renovation/Conversion	\$ 414,302	Renovation/Conversion	\$ 410,994
Caretaker Status	\$ 569,132	Caretaker Status	\$ 423,809
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 75,252	Demolition	\$ 74,652
Other DOD or Federal Agency	\$ 413,884	Caretaker Status	\$ 408,705
Renovation/Conversion	\$ 413,884	Other DOD or Federal Agency	\$ 410,586
Caretaker Status	\$ 548,301	Renovation/Conversion	\$ 410,586
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 75,176	Demolition	\$ 74,578
Other DOD or Federal Agency	\$ 413,467	Caretaker Status	\$ 394,191
Renovation/Conversion	\$ 413,467	Other DOD or Federal Agency	\$ 410,179
Caretaker Status	\$ 528,297	Renovation/Conversion	\$ 410,179
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 75,100	Demolition	\$ 74,504
Other DOD or Federal Agency	\$ 413,052	Caretaker Status	\$ 380,241
Renovation/Conversion	\$ 413,052	Other DOD or Federal Agency	\$ 409,774
Caretaker Status	\$ 509,086	Renovation/Conversion	\$ 409,774
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 75,025	Demolition	\$ 74,431
Other DOD or Federal Agency	\$ 412,638	Caretaker Status	\$ 366,832
Renovation/Conversion	\$ 412,638	Other DOD or Federal Agency	\$ 409,369
Caretaker Status	\$ 490,634	Renovation/Conversion	\$ 409,369
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 74,950	Demolition	\$ 74,358
Other DOD or Federal Agency	\$ 412,225	Caretaker Status	\$ 353,943
Renovation/Conversion	\$ 412,225	Other DOD or Federal Agency	\$ 408,966
Caretaker Status	\$ 472,910	Renovation/Conversion	\$ 408,966
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 74,875	Demolition	\$ 74,284
Other DOD or Federal Agency	\$ 411,813	Caretaker Status	\$ 341,551
Renovation/Conversion	\$ 411,813	Other DOD or Federal Agency	\$ 408,564
Caretaker Status	\$ 455,884	Renovation/Conversion	\$ 408,564
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 74,801	Demolition	\$ 74,212
Other DOD or Federal Agency	\$ 411,403	Caretaker Status	\$ 329,636
Renovation/Conversion	\$ 411,403	Other DOD or Federal Agency	\$ 408,164
Caretaker Status	\$ 439,526	Renovation/Conversion	\$ 408,164

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 74,139	Demolition	\$ 73,565
Caretaker Status	\$ 318,179	Caretaker Status	\$ 240,932
Other DOD or Federal Agency	\$ 407,764	Other DOD or Federal Agency	\$ 404,609
Renovation/Conversion	\$ 407,764	Renovation/Conversion	\$ 404,609
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 74,066	Demolition	\$ 73,495
Caretaker Status	\$ 307,162	Caretaker Status	\$ 232,846
Other DOD or Federal Agency	\$ 407,366	Other DOD or Federal Agency	\$ 404,220
Renovation/Conversion	\$ 407,366	Renovation/Conversion	\$ 404,220
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 73,994	Demolition	\$ 73,424
Caretaker Status	\$ 296,566	Caretaker Status	\$ 225,064
Other DOD or Federal Agency	\$ 406,968	Other DOD or Federal Agency	\$ 403,832
Renovation/Conversion	\$ 406,968	Renovation/Conversion	\$ 403,832
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 73,922	Demolition	\$ 73,354
Caretaker Status	\$ 286,374	Caretaker Status	\$ 217,573
Other DOD or Federal Agency	\$ 406,572	Other DOD or Federal Agency	\$ 403,445
Renovation/Conversion	\$ 406,572	Renovation/Conversion	\$ 403,445
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 73,850	Demolition	\$ 73,283
Caretaker Status	\$ 276,571	Caretaker Status	\$ 210,361
Other DOD or Federal Agency	\$ 406,177	Other DOD or Federal Agency	\$ 403,059
Renovation/Conversion	\$ 406,177	Renovation/Conversion	\$ 403,059
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 73,779	Demolition	\$ 73,213
Caretaker Status	\$ 267,139	Caretaker Status	\$ 203,418
Other DOD or Federal Agency	\$ 405,784	Other DOD or Federal Agency	\$ 402,674
Renovation/Conversion	\$ 405,784	Renovation/Conversion	\$ 402,674
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 73,707	Demolition	\$ 73,144
Caretaker Status	\$ 258,065	Caretaker Status	\$ 196,733
Other DOD or Federal Agency	\$ 405,391	Other DOD or Federal Agency	\$ 402,290
Renovation/Conversion	\$ 405,391	Renovation/Conversion	\$ 402,290
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 73,636	Demolition	\$ 73,074
Caretaker Status	\$ 249,334	Caretaker Status	\$ 190,296
Other DOD or Federal Agency	\$ 404,999	Other DOD or Federal Agency	\$ 401,908
Renovation/Conversion	\$ 404,999	Renovation/Conversion	\$ 401,908

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 73,005	Demolition	\$ 72,457
Caretaker Status	\$ 184,096	Caretaker Status	\$ 142,022
Other DOD or Federal Agency	\$ 401,526	Other DOD or Federal Agency	\$ 398,513
Renovation/Conversion	\$ 401,526	Renovation/Conversion	\$ 398,513
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 72,936	Demolition	\$ 72,389
Caretaker Status	\$ 178,126	Caretaker Status	\$ 137,586
Other DOD or Federal Agency	\$ 401,146	Other DOD or Federal Agency	\$ 398,141
Renovation/Conversion	\$ 401,146	Renovation/Conversion	\$ 398,141
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 72,867	Demolition	\$ 72,322
Caretaker Status	\$ 172,374	Caretaker Status	\$ 133,309
Other DOD or Federal Agency	\$ 400,767	Other DOD or Federal Agency	\$ 397,770
Renovation/Conversion	\$ 400,767	Renovation/Conversion	\$ 397,770
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 72,798	Demolition	\$ 72,255
Caretaker Status	\$ 166,834	Caretaker Status	\$ 129,187
Other DOD or Federal Agency	\$ 400,388	Other DOD or Federal Agency	\$ 397,400
Renovation/Conversion	\$ 400,388	Renovation/Conversion	\$ 397,400
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 72,729	Demolition	\$ 72,188
Caretaker Status	\$ 161,497	Caretaker Status	\$ 125,213
Other DOD or Federal Agency	\$ 400,011	Other DOD or Federal Agency	\$ 397,031
Renovation/Conversion	\$ 400,011	Renovation/Conversion	\$ 397,031
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 72,661	Demolition	\$ 72,121
Caretaker Status	\$ 156,354	Caretaker Status	\$ 121,380
Other DOD or Federal Agency	\$ 399,635	Other DOD or Federal Agency	\$ 396,664
Renovation/Conversion	\$ 399,635	Renovation/Conversion	\$ 396,664
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 72,593	Demolition	\$ 72,054
Caretaker Status	\$ 151,399	Caretaker Status	\$ 117,684
Other DOD or Federal Agency	\$ 399,260	Other DOD or Federal Agency	\$ 396,297
Renovation/Conversion	\$ 399,260	Renovation/Conversion	\$ 396,297
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 72,525	Demolition	\$ 71,987
Caretaker Status	\$ 146,624	Caretaker Status	\$ 114,120
Other DOD or Federal Agency	\$ 398,886	Other DOD or Federal Agency	\$ 395,931
Renovation/Conversion	\$ 398,886	Renovation/Conversion	\$ 395,931

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 71,921
Caretaker Status	\$ 110,682
Other DOD or Federal Agency	\$ 395,566
Renovation/Conversion	\$ 395,566

Discount Rate = 8.8%

Demolition	\$ 71,855
Caretaker Status	\$ 107,366
Other DOD or Federal Agency	\$ 395,203
Renovation/Conversion	\$ 395,203

Discount Rate = 9.0%

Demolition	\$ 71,789
Caretaker Status	\$ 104,167
Other DOD or Federal Agency	\$ 394,840
Renovation/Conversion	\$ 394,840

Discount Rate = 9.2%

Demolition	\$ 71,723
Caretaker Status	\$ 101,080
Other DOD or Federal Agency	\$ 394,478
Renovation/Conversion	\$ 394,478

Discount Rate = 9.4%

Demolition	\$ 71,658
Caretaker Status	\$ 98,102
Other DOD or Federal Agency	\$ 394,117
Renovation/Conversion	\$ 394,117

Discount Rate = 9.6%

Demolition	\$ 71,592
Caretaker Status	\$ 95,228
Other DOD or Federal Agency	\$ 393,758
Renovation/Conversion	\$ 393,758

Discount Rate = 9.8%

Demolition	\$ 71,527
Caretaker Status	\$ 92,454
Other DOD or Federal Agency	\$ 393,399
Renovation/Conversion	\$ 393,399

Discount Rate = 10.0%

Demolition	\$ 71,462
Caretaker Status	\$ 89,777
Other DOD or Federal Agency	\$ 393,041
Renovation/Conversion	\$ 393,041

Building 330 Economic Analysis Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 330 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 330 has been identified as a facility for disposal per HQDA EXORD 164-15. HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $2,000 \times 10 = \$20,000$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 21925, Engineering Maintenance Facility. To be made practical, this building would require extensive and total repair and renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$75/sf or $2,000 \times 55 = \$150,00$. However, there currently is not an RPLANS allowance for this category code and converting into this category would violate the intent of the Exord. This is a viable alternative This is a viable alternative.

Other DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$75 \times 2,000 = \$150,000$. Due to the relatively small size of this building (2,000 sf), location - inside the DPW Maintenance fence line, lack of parking, and the extensive cost and time required for renovation, it's unlikely that another agency would select it. This

alternative is viable. This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 2,000 = \$660/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost.

This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 19,755
Renovation/Conversion	\$ 148,159
Other DOD or Federal Agency	\$ 148,159
Caretaker Status	\$ 103,094

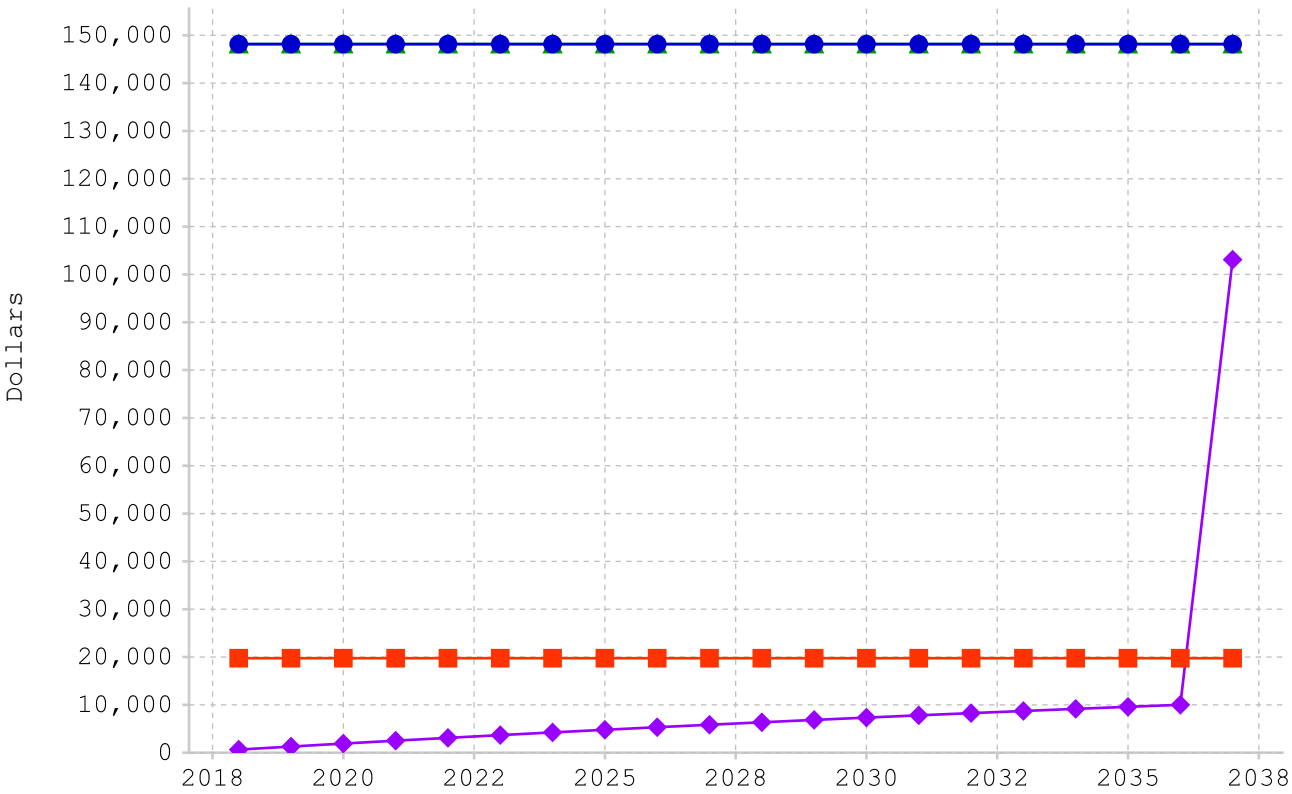
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 330 is the most economical alternative for the Army.

Action Officer : Dean Miller
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Email Address : sherman.d.miller.civ@mail.mil
Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Year

Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$20,000	\$20,000	0.988	\$19,755	\$19,755
2019	\$0	\$0	0.964	\$0	\$19,755
2020	\$0	\$0	0.94	\$0	\$19,755
2021	\$0	\$0	0.917	\$0	\$19,755
2022	\$0	\$0	0.895	\$0	\$19,755
2023	\$0	\$0	0.873	\$0	\$19,755
2024	\$0	\$0	0.852	\$0	\$19,755
2025	\$0	\$0	0.831	\$0	\$19,755
2026	\$0	\$0	0.811	\$0	\$19,755
2027	\$0	\$0	0.791	\$0	\$19,755
2028	\$0	\$0	0.772	\$0	\$19,755
2029	\$0	\$0	0.753	\$0	\$19,755
2030	\$0	\$0	0.734	\$0	\$19,755
2031	\$0	\$0	0.717	\$0	\$19,755
2032	\$0	\$0	0.699	\$0	\$19,755
2033	\$0	\$0	0.682	\$0	\$19,755
2034	\$0	\$0	0.665	\$0	\$19,755
2035	\$0	\$0	0.649	\$0	\$19,755
2036	\$0	\$0	0.633	\$0	\$19,755
2037	\$0	\$0	0.618	\$0	\$19,755
%NPV	100.00%				
\$19,755					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$150,000	\$150,000	0.988	\$148,159	\$148,159
2019	\$0	\$0	0.964	\$0	\$148,159
2020	\$0	\$0	0.94	\$0	\$148,159
2021	\$0	\$0	0.917	\$0	\$148,159
2022	\$0	\$0	0.895	\$0	\$148,159
2023	\$0	\$0	0.873	\$0	\$148,159
2024	\$0	\$0	0.852	\$0	\$148,159
2025	\$0	\$0	0.831	\$0	\$148,159
2026	\$0	\$0	0.811	\$0	\$148,159
2027	\$0	\$0	0.791	\$0	\$148,159
2028	\$0	\$0	0.772	\$0	\$148,159
2029	\$0	\$0	0.753	\$0	\$148,159
2030	\$0	\$0	0.734	\$0	\$148,159
2031	\$0	\$0	0.717	\$0	\$148,159
2032	\$0	\$0	0.699	\$0	\$148,159
2033	\$0	\$0	0.682	\$0	\$148,159
2034	\$0	\$0	0.665	\$0	\$148,159
2035	\$0	\$0	0.649	\$0	\$148,159
2036	\$0	\$0	0.633	\$0	\$148,159
2037	\$0	\$0	0.618	\$0	\$148,159
%NPV	100.00%				
\$148,159					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency

Year	Other DOD or Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$150,000	\$150,000	0.988	\$148,159	\$148,159
2019	\$0	\$0	0.964	\$0	\$148,159
2020	\$0	\$0	0.94	\$0	\$148,159
2021	\$0	\$0	0.917	\$0	\$148,159
2022	\$0	\$0	0.895	\$0	\$148,159
2023	\$0	\$0	0.873	\$0	\$148,159
2024	\$0	\$0	0.852	\$0	\$148,159
2025	\$0	\$0	0.831	\$0	\$148,159
2026	\$0	\$0	0.811	\$0	\$148,159
2027	\$0	\$0	0.791	\$0	\$148,159
2028	\$0	\$0	0.772	\$0	\$148,159
2029	\$0	\$0	0.753	\$0	\$148,159
2030	\$0	\$0	0.734	\$0	\$148,159
2031	\$0	\$0	0.717	\$0	\$148,159
2032	\$0	\$0	0.699	\$0	\$148,159
2033	\$0	\$0	0.682	\$0	\$148,159
2034	\$0	\$0	0.665	\$0	\$148,159
2035	\$0	\$0	0.649	\$0	\$148,159
2036	\$0	\$0	0.633	\$0	\$148,159
2037	\$0	\$0	0.618	\$0	\$148,159
%NPV	100.00%				
	\$148,159				
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status Maintenance	Renovation/Con version	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$660	\$0	\$660	0.988	\$652
2019	\$660	\$0	\$660	0.964	\$636
2020	\$660	\$0	\$660	0.94	\$620
2021	\$660	\$0	\$660	0.917	\$605
2022	\$660	\$0	\$660	0.895	\$591
2023	\$660	\$0	\$660	0.873	\$576
2024	\$660	\$0	\$660	0.852	\$562
2025	\$660	\$0	\$660	0.831	\$548
2026	\$660	\$0	\$660	0.811	\$535
2027	\$660	\$0	\$660	0.791	\$522
2028	\$660	\$0	\$660	0.772	\$509
2029	\$660	\$0	\$660	0.753	\$497
2030	\$660	\$0	\$660	0.734	\$485
2031	\$660	\$0	\$660	0.717	\$473
2032	\$660	\$0	\$660	0.699	\$461
2033	\$660	\$0	\$660	0.682	\$450
2034	\$660	\$0	\$660	0.665	\$439
2035	\$660	\$0	\$660	0.649	\$428
2036	\$660	\$0	\$660	0.633	\$418
2037	\$660	\$150,000	\$150,660	0.618	\$93,086
%NPV	10.10%	89.90%			
	\$10,417	\$92,678			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	No Inflation	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$652
2019	\$1,288
2020	\$1,908
2021	\$2,514
2022	\$3,104
2023	\$3,681
2024	\$4,243
2025	\$4,791
2026	\$5,326
2027	\$5,848
2028	\$6,357
2029	\$6,854
2030	\$7,339
2031	\$7,812
2032	\$8,273
2033	\$8,723
2034	\$9,162
2035	\$9,591
2036	\$10,009
2037	\$103,094

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition
 - a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 2000 = \$20,000$$

2. Renovation/Conversion
 - a. Renovation/ Conversion

To be made practical, this building would require total and extensive renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.

$$\text{Estimated cost is } \$55/\text{sf or } 55 \times 2,817 = \$150,000$$

3. Other DOD or Federal Agency
 - a. Other DOD or Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$75 \times 2,000 = \$150,000$.

Due to the relatively small size of this building (2,000 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status
 - a. Caretaker Status Maintenance

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

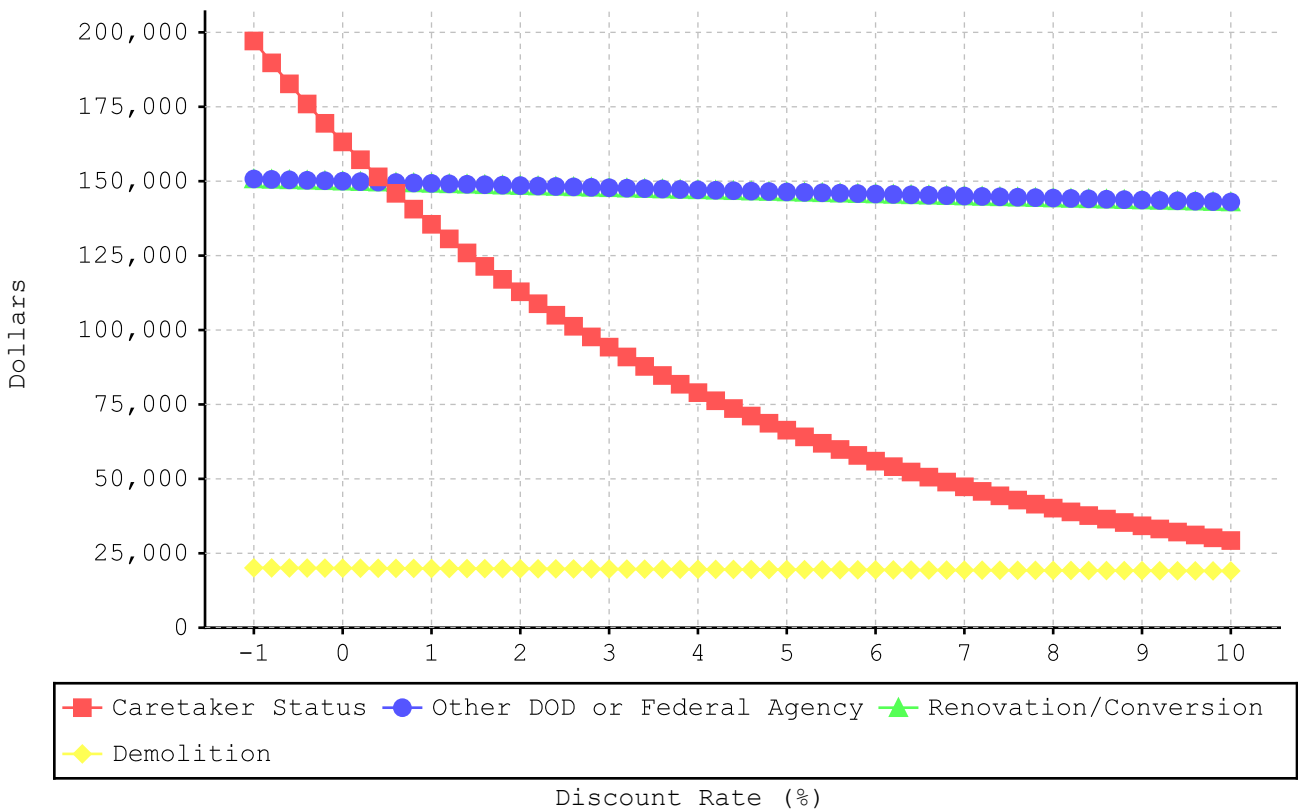
- b. Renovation/Conversion

The estimated renovation/conversion cost of this alternative is \$75/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.4 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.4 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 20,101	Demolition	\$ 19,940
Other DOD or Federal Agency	\$ 150,756	Caretaker Status	\$ 145,925
Renovation/Conversion	\$ 150,756	Other DOD or Federal Agency	\$ 149,552
Caretaker Status	\$ 197,096	Renovation/Conversion	\$ 149,552
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 20,080	Demolition	\$ 19,920
Other DOD or Federal Agency	\$ 150,604	Caretaker Status	\$ 140,615
Renovation/Conversion	\$ 150,604	Other DOD or Federal Agency	\$ 149,404
Caretaker Status	\$ 189,753	Renovation/Conversion	\$ 149,404
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 20,060	Demolition	\$ 19,901
Other DOD or Federal Agency	\$ 150,452	Caretaker Status	\$ 135,514
Renovation/Conversion	\$ 150,452	Other DOD or Federal Agency	\$ 149,256
Caretaker Status	\$ 182,705	Renovation/Conversion	\$ 149,256
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 20,040	Demolition	\$ 19,881
Other DOD or Federal Agency	\$ 150,301	Caretaker Status	\$ 130,613
Renovation/Conversion	\$ 150,301	Other DOD or Federal Agency	\$ 149,108
Caretaker Status	\$ 175,937	Renovation/Conversion	\$ 149,108
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 20,020	Demolition	\$ 19,861
Other DOD or Federal Agency	\$ 150,150	Caretaker Status	\$ 125,904
Renovation/Conversion	\$ 150,150	Other DOD or Federal Agency	\$ 148,961
Caretaker Status	\$ 169,439	Renovation/Conversion	\$ 148,961
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 20,000	Demolition	\$ 19,842
Other DOD or Federal Agency	\$ 150,000	Caretaker Status	\$ 121,379
Renovation/Conversion	\$ 150,000	Other DOD or Federal Agency	\$ 148,814
Caretaker Status	\$ 163,200	Renovation/Conversion	\$ 148,814
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 19,980	Demolition	\$ 19,822
Other DOD or Federal Agency	\$ 149,850	Caretaker Status	\$ 117,029
Renovation/Conversion	\$ 149,850	Other DOD or Federal Agency	\$ 148,668
Caretaker Status	\$ 157,208	Renovation/Conversion	\$ 148,668
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 19,960	Demolition	\$ 19,803
Other DOD or Federal Agency	\$ 149,701	Caretaker Status	\$ 112,849
Renovation/Conversion	\$ 149,701	Other DOD or Federal Agency	\$ 148,522
Caretaker Status	\$ 151,453	Renovation/Conversion	\$ 148,522

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.4 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 19,784	Demolition	\$ 19,630
Caretaker Status	\$ 108,832	Caretaker Status	\$ 81,787
Other DOD or Federal Agency	\$ 148,377	Other DOD or Federal Agency	\$ 147,229
Renovation/Conversion	\$ 148,377	Renovation/Conversion	\$ 147,229
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 19,764	Demolition	\$ 19,612
Caretaker Status	\$ 104,969	Caretaker Status	\$ 78,961
Other DOD or Federal Agency	\$ 148,232	Other DOD or Federal Agency	\$ 147,087
Renovation/Conversion	\$ 148,232	Renovation/Conversion	\$ 147,087
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 19,745	Demolition	\$ 19,593
Caretaker Status	\$ 101,256	Caretaker Status	\$ 76,243
Other DOD or Federal Agency	\$ 148,087	Other DOD or Federal Agency	\$ 146,946
Renovation/Conversion	\$ 148,087	Renovation/Conversion	\$ 146,946
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 19,726	Demolition	\$ 19,574
Caretaker Status	\$ 97,686	Caretaker Status	\$ 73,627
Other DOD or Federal Agency	\$ 147,943	Other DOD or Federal Agency	\$ 146,805
Renovation/Conversion	\$ 147,943	Renovation/Conversion	\$ 146,805
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 19,707	Demolition	\$ 19,555
Caretaker Status	\$ 94,253	Caretaker Status	\$ 71,110
Other DOD or Federal Agency	\$ 147,799	Other DOD or Federal Agency	\$ 146,665
Renovation/Conversion	\$ 147,799	Renovation/Conversion	\$ 146,665
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 19,687	Demolition	\$ 19,537
Caretaker Status	\$ 90,952	Caretaker Status	\$ 68,689
Other DOD or Federal Agency	\$ 147,656	Other DOD or Federal Agency	\$ 146,525
Renovation/Conversion	\$ 147,656	Renovation/Conversion	\$ 146,525
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 19,668	Demolition	\$ 19,518
Caretaker Status	\$ 87,777	Caretaker Status	\$ 66,358
Other DOD or Federal Agency	\$ 147,513	Other DOD or Federal Agency	\$ 146,385
Renovation/Conversion	\$ 147,513	Renovation/Conversion	\$ 146,385
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 19,649	Demolition	\$ 19,499
Caretaker Status	\$ 84,724	Caretaker Status	\$ 64,114
Other DOD or Federal Agency	\$ 147,371	Other DOD or Federal Agency	\$ 146,246
Renovation/Conversion	\$ 147,371	Renovation/Conversion	\$ 146,246

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.4 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 19,481	Demolition	\$ 19,335
Caretaker Status	\$ 61,955	Caretaker Status	\$ 47,329
Other DOD or Federal Agency	\$ 146,107	Other DOD or Federal Agency	\$ 145,010
Renovation/Conversion	\$ 146,107	Renovation/Conversion	\$ 145,010
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 19,462	Demolition	\$ 19,317
Caretaker Status	\$ 59,876	Caretaker Status	\$ 45,791
Other DOD or Federal Agency	\$ 145,969	Other DOD or Federal Agency	\$ 144,875
Renovation/Conversion	\$ 145,969	Renovation/Conversion	\$ 144,875
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 19,444	Demolition	\$ 19,299
Caretaker Status	\$ 57,874	Caretaker Status	\$ 44,309
Other DOD or Federal Agency	\$ 145,831	Other DOD or Federal Agency	\$ 144,740
Renovation/Conversion	\$ 145,831	Renovation/Conversion	\$ 144,740
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 19,426	Demolition	\$ 19,281
Caretaker Status	\$ 55,947	Caretaker Status	\$ 42,881
Other DOD or Federal Agency	\$ 145,693	Other DOD or Federal Agency	\$ 144,606
Renovation/Conversion	\$ 145,693	Renovation/Conversion	\$ 144,606
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 19,407	Demolition	\$ 19,263
Caretaker Status	\$ 54,092	Caretaker Status	\$ 41,505
Other DOD or Federal Agency	\$ 145,556	Other DOD or Federal Agency	\$ 144,471
Renovation/Conversion	\$ 145,556	Renovation/Conversion	\$ 144,471
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 19,389	Demolition	\$ 19,245
Caretaker Status	\$ 52,305	Caretaker Status	\$ 40,179
Other DOD or Federal Agency	\$ 145,419	Other DOD or Federal Agency	\$ 144,338
Renovation/Conversion	\$ 145,419	Renovation/Conversion	\$ 144,338
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 19,371	Demolition	\$ 19,227
Caretaker Status	\$ 50,584	Caretaker Status	\$ 38,901
Other DOD or Federal Agency	\$ 145,282	Other DOD or Federal Agency	\$ 144,204
Renovation/Conversion	\$ 145,282	Renovation/Conversion	\$ 144,204
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 19,353	Demolition	\$ 19,209
Caretaker Status	\$ 48,926	Caretaker Status	\$ 37,669
Other DOD or Federal Agency	\$ 145,146	Other DOD or Federal Agency	\$ 144,071
Renovation/Conversion	\$ 145,146	Renovation/Conversion	\$ 144,071

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.4 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 19,192
Caretaker Status	\$ 36,482
Other DOD or Federal Agency	\$ 143,938
Renovation/Conversion	\$ 143,938

Discount Rate = 8.8%

Demolition	\$ 19,174
Caretaker Status	\$ 35,337
Other DOD or Federal Agency	\$ 143,806
Renovation/Conversion	\$ 143,806

Discount Rate = 9.0%

Demolition	\$ 19,157
Caretaker Status	\$ 34,233
Other DOD or Federal Agency	\$ 143,674
Renovation/Conversion	\$ 143,674

Discount Rate = 9.2%

Demolition	\$ 19,139
Caretaker Status	\$ 33,169
Other DOD or Federal Agency	\$ 143,542
Renovation/Conversion	\$ 143,542

Discount Rate = 9.4%

Demolition	\$ 19,121
Caretaker Status	\$ 32,143
Other DOD or Federal Agency	\$ 143,411
Renovation/Conversion	\$ 143,411

Discount Rate = 9.6%

Demolition	\$ 19,104
Caretaker Status	\$ 31,153
Other DOD or Federal Agency	\$ 143,280
Renovation/Conversion	\$ 143,280

Discount Rate = 9.8%

Demolition	\$ 19,087
Caretaker Status	\$ 30,199
Other DOD or Federal Agency	\$ 143,150
Renovation/Conversion	\$ 143,150

Discount Rate = 10.0%

Demolition	\$ 19,069
Caretaker Status	\$ 29,278
Other DOD or Federal Agency	\$ 143,019
Renovation/Conversion	\$ 143,019

Building 381 Disposal Economic Analysis Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 381 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 381 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $704 \times 10 = \$7,040$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 44224, Organizational Storage. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $704 \times 55 = \$38,720$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative This is a viable alternative.

Other DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 704 = \$38,720$. Due to the relatively small size of this building (704 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would

select it. This alternative is viable This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 704 = \$232.32/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost. This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 6,954
Renovation/Conversion	\$ 38,245
Other DOD or Federal Agency	\$ 38,245
Caretaker Status	\$ 28,344

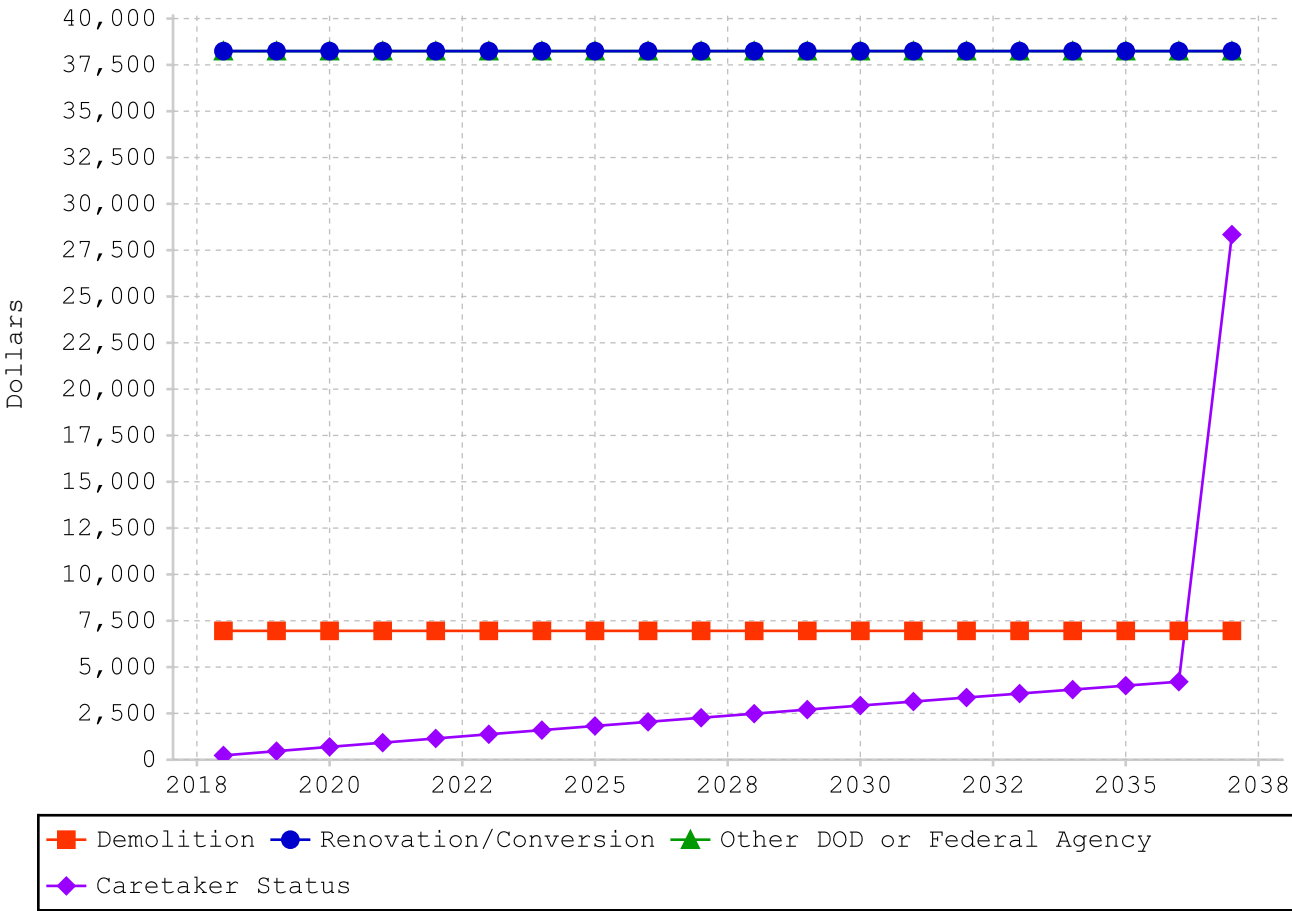
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 381 is the most economical alternative for the Army.

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Phone Number : 706-545-3229
Email Address : sherman.d.miller.civ@mail.mil
Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$7,040	\$7,040	0.988	\$6,954	\$6,954
2019	\$0	\$0	0.964	\$0	\$6,954
2020	\$0	\$0	0.94	\$0	\$6,954
2021	\$0	\$0	0.917	\$0	\$6,954
2022	\$0	\$0	0.895	\$0	\$6,954
2023	\$0	\$0	0.873	\$0	\$6,954
2024	\$0	\$0	0.852	\$0	\$6,954
2025	\$0	\$0	0.831	\$0	\$6,954
2026	\$0	\$0	0.811	\$0	\$6,954
2027	\$0	\$0	0.791	\$0	\$6,954
2028	\$0	\$0	0.772	\$0	\$6,954
2029	\$0	\$0	0.753	\$0	\$6,954
2030	\$0	\$0	0.734	\$0	\$6,954
2031	\$0	\$0	0.717	\$0	\$6,954
2032	\$0	\$0	0.699	\$0	\$6,954
2033	\$0	\$0	0.682	\$0	\$6,954
2034	\$0	\$0	0.665	\$0	\$6,954
2035	\$0	\$0	0.649	\$0	\$6,954
2036	\$0	\$0	0.633	\$0	\$6,954
2037	\$0	\$0	0.618	\$0	\$6,954
%NPV	100.00%				
\$6,954					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$38,720	\$38,720	0.988	\$38,245	\$38,245
2019	\$0	\$0	0.964	\$0	\$38,245
2020	\$0	\$0	0.94	\$0	\$38,245
2021	\$0	\$0	0.917	\$0	\$38,245
2022	\$0	\$0	0.895	\$0	\$38,245
2023	\$0	\$0	0.873	\$0	\$38,245
2024	\$0	\$0	0.852	\$0	\$38,245
2025	\$0	\$0	0.831	\$0	\$38,245
2026	\$0	\$0	0.811	\$0	\$38,245
2027	\$0	\$0	0.791	\$0	\$38,245
2028	\$0	\$0	0.772	\$0	\$38,245
2029	\$0	\$0	0.753	\$0	\$38,245
2030	\$0	\$0	0.734	\$0	\$38,245
2031	\$0	\$0	0.717	\$0	\$38,245
2032	\$0	\$0	0.699	\$0	\$38,245
2033	\$0	\$0	0.682	\$0	\$38,245
2034	\$0	\$0	0.665	\$0	\$38,245
2035	\$0	\$0	0.649	\$0	\$38,245
2036	\$0	\$0	0.633	\$0	\$38,245
2037	\$0	\$0	0.618	\$0	\$38,245
%NPV	100.00%				
\$38,245					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency

Year	Other DOD or Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$38,720	\$38,720	0.988	\$38,245	\$38,245
2019	\$0	\$0	0.964	\$0	\$38,245
2020	\$0	\$0	0.94	\$0	\$38,245
2021	\$0	\$0	0.917	\$0	\$38,245
2022	\$0	\$0	0.895	\$0	\$38,245
2023	\$0	\$0	0.873	\$0	\$38,245
2024	\$0	\$0	0.852	\$0	\$38,245
2025	\$0	\$0	0.831	\$0	\$38,245
2026	\$0	\$0	0.811	\$0	\$38,245
2027	\$0	\$0	0.791	\$0	\$38,245
2028	\$0	\$0	0.772	\$0	\$38,245
2029	\$0	\$0	0.753	\$0	\$38,245
2030	\$0	\$0	0.734	\$0	\$38,245
2031	\$0	\$0	0.717	\$0	\$38,245
2032	\$0	\$0	0.699	\$0	\$38,245
2033	\$0	\$0	0.682	\$0	\$38,245
2034	\$0	\$0	0.665	\$0	\$38,245
2035	\$0	\$0	0.649	\$0	\$38,245
2036	\$0	\$0	0.633	\$0	\$38,245
2037	\$0	\$0	0.618	\$0	\$38,245
%NPV	100.00%				
\$38,245					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status	Renovation/Construction	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$234	\$0	\$234	0.988	\$231
2019	\$239	\$0	\$239	0.964	\$230
2020	\$244	\$0	\$244	0.94	\$229
2021	\$249	\$0	\$249	0.917	\$228
2022	\$254	\$0	\$254	0.895	\$227
2023	\$259	\$0	\$259	0.873	\$226
2024	\$264	\$0	\$264	0.852	\$225
2025	\$269	\$0	\$269	0.831	\$224
2026	\$275	\$0	\$275	0.811	\$223
2027	\$280	\$0	\$280	0.791	\$221
2028	\$286	\$0	\$286	0.772	\$220
2029	\$291	\$0	\$291	0.753	\$219
2030	\$297	\$0	\$297	0.734	\$218
2031	\$303	\$0	\$303	0.717	\$217
2032	\$309	\$0	\$309	0.699	\$216
2033	\$315	\$0	\$315	0.682	\$215
2034	\$322	\$0	\$322	0.665	\$214
2035	\$328	\$0	\$328	0.649	\$213
2036	\$335	\$0	\$335	0.633	\$212
2037	\$341	\$38,720	\$39,061	0.618	\$24,134
%NPV	15.60%	84.40%			
	\$4,420	\$23,923			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	2017 General	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$231
2019	\$462
2020	\$691
2021	\$919
2022	\$1,146
2023	\$1,372
2024	\$1,597
2025	\$1,820
2026	\$2,043
2027	\$2,264
2028	\$2,485
2029	\$2,704
2030	\$2,922
2031	\$3,139
2032	\$3,355
2033	\$3,570
2034	\$3,785
2035	\$3,997
2036	\$4,209
2037	\$28,344

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 704 = \$7,040$$

2. Renovation/Conversion

a. Renovation/ Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.

Estimated cost is \$55/sf or $55 \times 704 = \$38,720$.

3. Other DOD or Federal Agency

a. Other DOD or Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 704 = \$38,720$.

Due to the relatively small size of this building (704 sf), location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Status

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

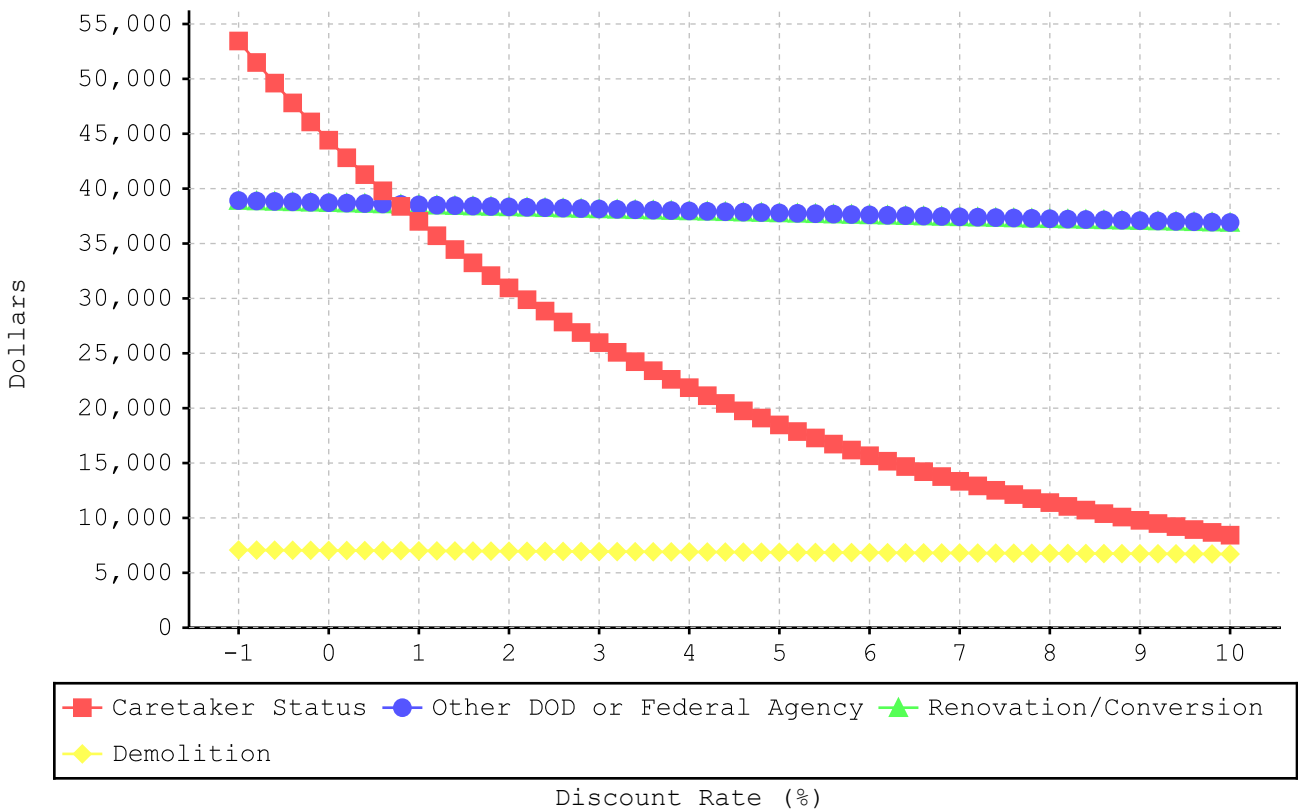
b. Renovation/Construction

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 7,075	Demolition	\$ 7,019
Other DOD or Federal Agency	\$ 38,915	Other DOD or Federal Agency	\$ 38,604
Renovation/Conversion	\$ 38,915	Renovation/Conversion	\$ 38,604
Caretaker Status	\$ 53,450	Caretaker Status	\$ 39,801
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 7,068	Demolition	\$ 7,012
Other DOD or Federal Agency	\$ 38,876	Caretaker Status	\$ 38,383
Renovation/Conversion	\$ 38,876	Other DOD or Federal Agency	\$ 38,566
Caretaker Status	\$ 51,494	Renovation/Conversion	\$ 38,566
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 7,061	Demolition	\$ 7,005
Other DOD or Federal Agency	\$ 38,837	Caretaker Status	\$ 37,020
Renovation/Conversion	\$ 38,837	Other DOD or Federal Agency	\$ 38,528
Caretaker Status	\$ 49,615	Renovation/Conversion	\$ 38,528
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 7,054	Demolition	\$ 6,998
Other DOD or Federal Agency	\$ 38,798	Caretaker Status	\$ 35,710
Renovation/Conversion	\$ 38,798	Other DOD or Federal Agency	\$ 38,490
Caretaker Status	\$ 47,811	Renovation/Conversion	\$ 38,490
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 7,047	Demolition	\$ 6,991
Other DOD or Federal Agency	\$ 38,759	Caretaker Status	\$ 34,450
Renovation/Conversion	\$ 38,759	Other DOD or Federal Agency	\$ 38,452
Caretaker Status	\$ 46,078	Renovation/Conversion	\$ 38,452
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 7,040	Demolition	\$ 6,984
Other DOD or Federal Agency	\$ 38,720	Caretaker Status	\$ 33,240
Renovation/Conversion	\$ 38,720	Other DOD or Federal Agency	\$ 38,414
Caretaker Status	\$ 44,413	Renovation/Conversion	\$ 38,414
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 7,033	Demolition	\$ 6,977
Other DOD or Federal Agency	\$ 38,681	Caretaker Status	\$ 32,076
Renovation/Conversion	\$ 38,681	Other DOD or Federal Agency	\$ 38,376
Caretaker Status	\$ 42,814	Renovation/Conversion	\$ 38,376
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 7,026	Demolition	\$ 6,971
Other DOD or Federal Agency	\$ 38,643	Caretaker Status	\$ 30,957
Renovation/Conversion	\$ 38,643	Other DOD or Federal Agency	\$ 38,339
Caretaker Status	\$ 41,278	Renovation/Conversion	\$ 38,339

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 6,964	Demolition	\$ 6,910
Caretaker Status	\$ 29,881	Caretaker Status	\$ 22,626
Other DOD or Federal Agency	\$ 38,301	Other DOD or Federal Agency	\$ 38,005
Renovation/Conversion	\$ 38,301	Renovation/Conversion	\$ 38,005
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 6,957	Demolition	\$ 6,903
Caretaker Status	\$ 28,846	Caretaker Status	\$ 21,866
Other DOD or Federal Agency	\$ 38,264	Other DOD or Federal Agency	\$ 37,968
Renovation/Conversion	\$ 38,264	Renovation/Conversion	\$ 37,968
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 6,950	Demolition	\$ 6,897
Caretaker Status	\$ 27,851	Caretaker Status	\$ 21,135
Other DOD or Federal Agency	\$ 38,226	Other DOD or Federal Agency	\$ 37,932
Renovation/Conversion	\$ 38,226	Renovation/Conversion	\$ 37,932
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 6,943	Demolition	\$ 6,890
Caretaker Status	\$ 26,894	Caretaker Status	\$ 20,432
Other DOD or Federal Agency	\$ 38,189	Other DOD or Federal Agency	\$ 37,895
Renovation/Conversion	\$ 38,189	Renovation/Conversion	\$ 37,895
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 6,937	Demolition	\$ 6,883
Caretaker Status	\$ 25,973	Caretaker Status	\$ 19,755
Other DOD or Federal Agency	\$ 38,152	Other DOD or Federal Agency	\$ 37,859
Renovation/Conversion	\$ 38,152	Renovation/Conversion	\$ 37,859
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 6,930	Demolition	\$ 6,877
Caretaker Status	\$ 25,087	Caretaker Status	\$ 19,102
Other DOD or Federal Agency	\$ 38,115	Other DOD or Federal Agency	\$ 37,823
Renovation/Conversion	\$ 38,115	Renovation/Conversion	\$ 37,823
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 6,923	Demolition	\$ 6,870
Caretaker Status	\$ 24,235	Caretaker Status	\$ 18,475
Other DOD or Federal Agency	\$ 38,078	Other DOD or Federal Agency	\$ 37,787
Renovation/Conversion	\$ 38,078	Renovation/Conversion	\$ 37,787
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 6,917	Demolition	\$ 6,864
Caretaker Status	\$ 23,415	Caretaker Status	\$ 17,870
Other DOD or Federal Agency	\$ 38,041	Other DOD or Federal Agency	\$ 37,751
Renovation/Conversion	\$ 38,041	Renovation/Conversion	\$ 37,751

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 6,857	Demolition	\$ 6,806
Caretaker Status	\$ 17,288	Caretaker Status	\$ 13,336
Other DOD or Federal Agency	\$ 37,715	Other DOD or Federal Agency	\$ 37,432
Renovation/Conversion	\$ 37,715	Renovation/Conversion	\$ 37,432
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 6,851	Demolition	\$ 6,799
Caretaker Status	\$ 16,727	Caretaker Status	\$ 12,920
Other DOD or Federal Agency	\$ 37,679	Other DOD or Federal Agency	\$ 37,397
Renovation/Conversion	\$ 37,679	Renovation/Conversion	\$ 37,397
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 6,844	Demolition	\$ 6,793
Caretaker Status	\$ 16,187	Caretaker Status	\$ 12,518
Other DOD or Federal Agency	\$ 37,644	Other DOD or Federal Agency	\$ 37,362
Renovation/Conversion	\$ 37,644	Renovation/Conversion	\$ 37,362
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 6,838	Demolition	\$ 6,787
Caretaker Status	\$ 15,667	Caretaker Status	\$ 12,131
Other DOD or Federal Agency	\$ 37,608	Other DOD or Federal Agency	\$ 37,328
Renovation/Conversion	\$ 37,608	Renovation/Conversion	\$ 37,328
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 6,831	Demolition	\$ 6,781
Caretaker Status	\$ 15,165	Caretaker Status	\$ 11,758
Other DOD or Federal Agency	\$ 37,573	Other DOD or Federal Agency	\$ 37,293
Renovation/Conversion	\$ 37,573	Renovation/Conversion	\$ 37,293
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 6,825	Demolition	\$ 6,774
Caretaker Status	\$ 14,682	Caretaker Status	\$ 11,398
Other DOD or Federal Agency	\$ 37,537	Other DOD or Federal Agency	\$ 37,258
Renovation/Conversion	\$ 37,537	Renovation/Conversion	\$ 37,258
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 6,819	Demolition	\$ 6,768
Caretaker Status	\$ 14,217	Caretaker Status	\$ 11,051
Other DOD or Federal Agency	\$ 37,502	Other DOD or Federal Agency	\$ 37,224
Renovation/Conversion	\$ 37,502	Renovation/Conversion	\$ 37,224
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 6,812	Demolition	\$ 6,762
Caretaker Status	\$ 13,769	Caretaker Status	\$ 10,716
Other DOD or Federal Agency	\$ 37,467	Other DOD or Federal Agency	\$ 37,190
Renovation/Conversion	\$ 37,467	Renovation/Conversion	\$ 37,190

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.7 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 6,756
Caretaker Status	\$ 10,393
Other DOD or Federal Agency	\$ 37,155
Renovation/Conversion	\$ 37,155

Discount Rate = 8.8%

Demolition	\$ 6,749
Caretaker Status	\$ 10,082
Other DOD or Federal Agency	\$ 37,121
Renovation/Conversion	\$ 37,121

Discount Rate = 9.0%

Demolition	\$ 6,743
Caretaker Status	\$ 9,781
Other DOD or Federal Agency	\$ 37,087
Renovation/Conversion	\$ 37,087

Discount Rate = 9.2%

Demolition	\$ 6,737
Caretaker Status	\$ 9,491
Other DOD or Federal Agency	\$ 37,053
Renovation/Conversion	\$ 37,053

Discount Rate = 9.4%

Demolition	\$ 6,731
Caretaker Status	\$ 9,212
Other DOD or Federal Agency	\$ 37,019
Renovation/Conversion	\$ 37,019

Discount Rate = 9.6%

Demolition	\$ 6,725
Caretaker Status	\$ 8,942
Other DOD or Federal Agency	\$ 36,985
Renovation/Conversion	\$ 36,985

Discount Rate = 9.8%

Demolition	\$ 6,718
Caretaker Status	\$ 8,681
Other DOD or Federal Agency	\$ 36,952
Renovation/Conversion	\$ 36,952

Discount Rate = 10.0%

Demolition	\$ 6,712
Caretaker Status	\$ 8,430
Other DOD or Federal Agency	\$ 36,918
Renovation/Conversion	\$ 36,918

Building 1045 Disposal Economic Analysis Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 1045 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 1045 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $8,156 \times 10 = \$81,560$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 17120, General Instruction Building. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $8,156 \times 55 = \$448,580$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative This is a viable alternative.

Other DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 8,156 = \$448,580$. Due to the location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable This is a

viaible alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 8,156 = \$2,691/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost.

This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 80,559
Renovation/Conversion	\$ 443,076
Other DOD or Federal Agency	\$ 443,076
Caretaker Status	\$ 42,472

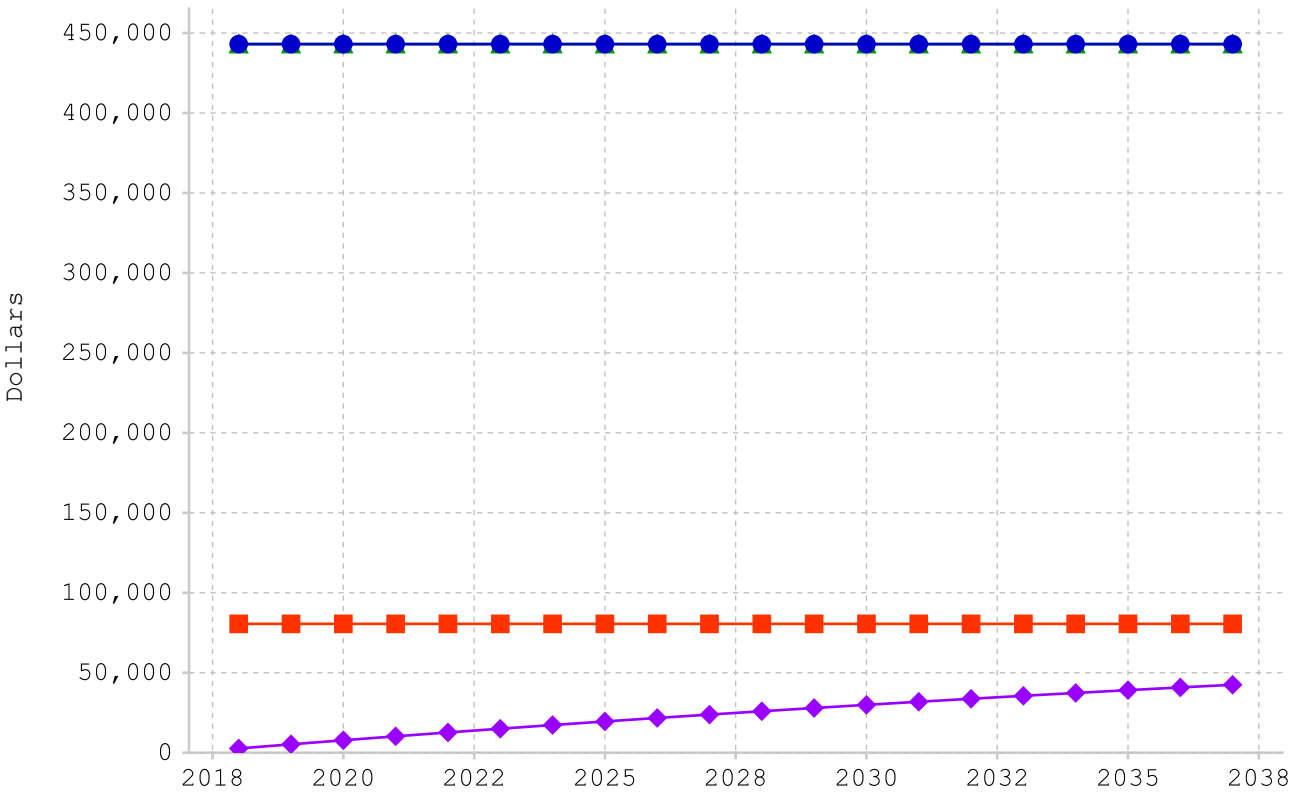
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility In its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 1045 is the most economical alternative for the Army.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Year

Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$81,560	\$81,560	0.988	\$80,559	\$80,559
2019	\$0	\$0	0.964	\$0	\$80,559
2020	\$0	\$0	0.94	\$0	\$80,559
2021	\$0	\$0	0.917	\$0	\$80,559
2022	\$0	\$0	0.895	\$0	\$80,559
2023	\$0	\$0	0.873	\$0	\$80,559
2024	\$0	\$0	0.852	\$0	\$80,559
2025	\$0	\$0	0.831	\$0	\$80,559
2026	\$0	\$0	0.811	\$0	\$80,559
2027	\$0	\$0	0.791	\$0	\$80,559
2028	\$0	\$0	0.772	\$0	\$80,559
2029	\$0	\$0	0.753	\$0	\$80,559
2030	\$0	\$0	0.734	\$0	\$80,559
2031	\$0	\$0	0.717	\$0	\$80,559
2032	\$0	\$0	0.699	\$0	\$80,559
2033	\$0	\$0	0.682	\$0	\$80,559
2034	\$0	\$0	0.665	\$0	\$80,559
2035	\$0	\$0	0.649	\$0	\$80,559
2036	\$0	\$0	0.633	\$0	\$80,559
2037	\$0	\$0	0.618	\$0	\$80,559
%NPV	100.00%				
\$80,559					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$448,580	\$448,580	0.988	\$443,076	\$443,076
2019	\$0	\$0	0.964	\$0	\$443,076
2020	\$0	\$0	0.94	\$0	\$443,076
2021	\$0	\$0	0.917	\$0	\$443,076
2022	\$0	\$0	0.895	\$0	\$443,076
2023	\$0	\$0	0.873	\$0	\$443,076
2024	\$0	\$0	0.852	\$0	\$443,076
2025	\$0	\$0	0.831	\$0	\$443,076
2026	\$0	\$0	0.811	\$0	\$443,076
2027	\$0	\$0	0.791	\$0	\$443,076
2028	\$0	\$0	0.772	\$0	\$443,076
2029	\$0	\$0	0.753	\$0	\$443,076
2030	\$0	\$0	0.734	\$0	\$443,076
2031	\$0	\$0	0.717	\$0	\$443,076
2032	\$0	\$0	0.699	\$0	\$443,076
2033	\$0	\$0	0.682	\$0	\$443,076
2034	\$0	\$0	0.665	\$0	\$443,076
2035	\$0	\$0	0.649	\$0	\$443,076
2036	\$0	\$0	0.633	\$0	\$443,076
2037	\$0	\$0	0.618	\$0	\$443,076
%NPV	100.00%				
\$443,076					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency

Year	Other DOD or Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$448,580	\$448,580	0.988	\$443,076	\$443,076
2019	\$0	\$0	0.964	\$0	\$443,076
2020	\$0	\$0	0.94	\$0	\$443,076
2021	\$0	\$0	0.917	\$0	\$443,076
2022	\$0	\$0	0.895	\$0	\$443,076
2023	\$0	\$0	0.873	\$0	\$443,076
2024	\$0	\$0	0.852	\$0	\$443,076
2025	\$0	\$0	0.831	\$0	\$443,076
2026	\$0	\$0	0.811	\$0	\$443,076
2027	\$0	\$0	0.791	\$0	\$443,076
2028	\$0	\$0	0.772	\$0	\$443,076
2029	\$0	\$0	0.753	\$0	\$443,076
2030	\$0	\$0	0.734	\$0	\$443,076
2031	\$0	\$0	0.717	\$0	\$443,076
2032	\$0	\$0	0.699	\$0	\$443,076
2033	\$0	\$0	0.682	\$0	\$443,076
2034	\$0	\$0	0.665	\$0	\$443,076
2035	\$0	\$0	0.649	\$0	\$443,076
2036	\$0	\$0	0.633	\$0	\$443,076
2037	\$0	\$0	0.618	\$0	\$443,076
%NPV	100.00%				
\$443,076					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$2,691	\$0	\$2,691	0.988	\$2,658
2019	\$2,691	\$0	\$2,691	0.964	\$2,593
2020	\$2,691	\$0	\$2,691	0.94	\$2,530
2021	\$2,691	\$0	\$2,691	0.917	\$2,468
2022	\$2,691	\$0	\$2,691	0.895	\$2,408
2023	\$2,691	\$0	\$2,691	0.873	\$2,349
2024	\$2,691	\$0	\$2,691	0.852	\$2,292
2025	\$2,691	\$0	\$2,691	0.831	\$2,236
2026	\$2,691	\$0	\$2,691	0.811	\$2,182
2027	\$2,691	\$0	\$2,691	0.791	\$2,128
2028	\$2,691	\$0	\$2,691	0.772	\$2,076
2029	\$2,691	\$0	\$2,691	0.753	\$2,026
2030	\$2,691	\$0	\$2,691	0.734	\$1,976
2031	\$2,691	\$0	\$2,691	0.717	\$1,928
2032	\$2,691	\$0	\$2,691	0.699	\$1,881
2033	\$2,691	\$0	\$2,691	0.682	\$1,835
2034	\$2,691	\$0	\$2,691	0.665	\$1,790
2035	\$2,691	\$0	\$2,691	0.649	\$1,747
2036	\$2,691	\$0	\$2,691	0.633	\$1,704
2037	\$2,691	\$0	\$2,691	0.618	\$1,663
%NPV	100.00%	0.00%			
	\$42,472	\$0			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	No Inflation	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$2,658
2019	\$5,251
2020	\$7,781
2021	\$10,249
2022	\$12,657
2023	\$15,007
2024	\$17,298
2025	\$19,535
2026	\$21,716
2027	\$23,844
2028	\$25,921
2029	\$27,947
2030	\$29,923
2031	\$31,851
2032	\$33,732
2033	\$35,567
2034	\$37,358
2035	\$39,105
2036	\$40,809
2037	\$42,472

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 8,156 = \$81,560$$

2. Renovation/Conversion

a. Renovation/ Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.

Estimated cost is \$55/sf or $55 \times 8,156 = \$448,580$.

3. Other DOD or Federal Agency

a. Other DOD or Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 8,156 = \$448,580$.

Due to the location, lack of parking, and the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Status

The current cost of maintaining a facility in a caretaker status is \$0.33/sf.

This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

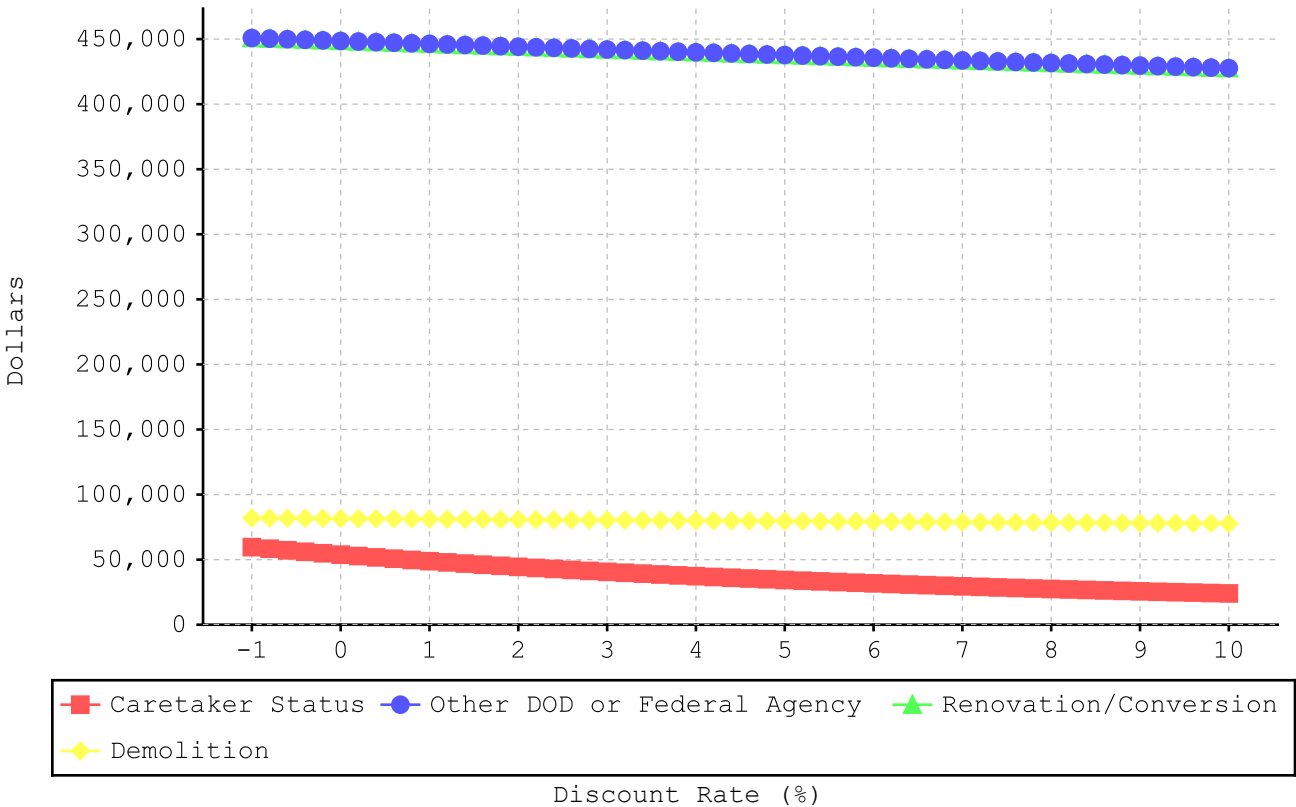
b. Renovation/ Conversion

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: No changes

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: No changes

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Caretaker Status	\$ 59,610	Caretaker Status	\$ 50,725
Demolition	\$ 81,971	Demolition	\$ 81,316
Other DOD or Federal Agency	\$ 450,840	Other DOD or Federal Agency	\$ 447,240
Renovation/Conversion	\$ 450,840	Renovation/Conversion	\$ 447,240
Discount Rate = -0.8%		Discount Rate = 0.8%	
Caretaker Status	\$ 58,384	Caretaker Status	\$ 49,750
Demolition	\$ 81,888	Demolition	\$ 81,236
Other DOD or Federal Agency	\$ 450,385	Other DOD or Federal Agency	\$ 446,796
Renovation/Conversion	\$ 450,385	Renovation/Conversion	\$ 446,796
Discount Rate = -0.6%		Discount Rate = 1.0%	
Caretaker Status	\$ 57,193	Caretaker Status	\$ 48,803
Demolition	\$ 81,806	Demolition	\$ 81,155
Other DOD or Federal Agency	\$ 449,932	Other DOD or Federal Agency	\$ 446,354
Renovation/Conversion	\$ 449,932	Renovation/Conversion	\$ 446,354
Discount Rate = -0.4%		Discount Rate = 1.2%	
Caretaker Status	\$ 56,036	Caretaker Status	\$ 47,881
Demolition	\$ 81,724	Demolition	\$ 81,075
Other DOD or Federal Agency	\$ 449,480	Other DOD or Federal Agency	\$ 445,913
Renovation/Conversion	\$ 449,480	Renovation/Conversion	\$ 445,913
Discount Rate = -0.2%		Discount Rate = 1.4%	
Caretaker Status	\$ 54,912	Caretaker Status	\$ 46,985
Demolition	\$ 81,642	Demolition	\$ 80,995
Other DOD or Federal Agency	\$ 449,029	Other DOD or Federal Agency	\$ 445,473
Renovation/Conversion	\$ 449,029	Renovation/Conversion	\$ 445,473
Discount Rate = -0.0%		Discount Rate = 1.6%	
Caretaker Status	\$ 53,820	Caretaker Status	\$ 46,113
Demolition	\$ 81,560	Demolition	\$ 80,915
Other DOD or Federal Agency	\$ 448,580	Other DOD or Federal Agency	\$ 445,034
Renovation/Conversion	\$ 448,580	Renovation/Conversion	\$ 445,034
Discount Rate = 0.2%		Discount Rate = 1.8%	
Caretaker Status	\$ 52,759	Caretaker Status	\$ 45,265
Demolition	\$ 81,479	Demolition	\$ 80,836
Other DOD or Federal Agency	\$ 448,132	Other DOD or Federal Agency	\$ 444,596
Renovation/Conversion	\$ 448,132	Renovation/Conversion	\$ 444,596
Discount Rate = 0.4%		Discount Rate = 2.0%	
Caretaker Status	\$ 51,728	Caretaker Status	\$ 44,440
Demolition	\$ 81,397	Demolition	\$ 80,756
Other DOD or Federal Agency	\$ 447,686	Other DOD or Federal Agency	\$ 444,160
Renovation/Conversion	\$ 447,686	Renovation/Conversion	\$ 444,160

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: No changes

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Caretaker Status	\$ 43,636	Caretaker Status	\$ 37,929
Demolition	\$ 80,677	Demolition	\$ 80,053
Other DOD or Federal Agency	\$ 443,726	Other DOD or Federal Agency	\$ 440,292
Renovation/Conversion	\$ 443,726	Renovation/Conversion	\$ 440,292
Discount Rate = 2.4%		Discount Rate = 4.0%	
Caretaker Status	\$ 42,855	Caretaker Status	\$ 37,296
Demolition	\$ 80,599	Demolition	\$ 79,976
Other DOD or Federal Agency	\$ 443,292	Other DOD or Federal Agency	\$ 439,869
Renovation/Conversion	\$ 443,292	Renovation/Conversion	\$ 439,869
Discount Rate = 2.6%		Discount Rate = 4.2%	
Caretaker Status	\$ 42,094	Caretaker Status	\$ 36,679
Demolition	\$ 80,520	Demolition	\$ 79,899
Other DOD or Federal Agency	\$ 442,860	Other DOD or Federal Agency	\$ 439,447
Renovation/Conversion	\$ 442,860	Renovation/Conversion	\$ 439,447
Discount Rate = 2.8%		Discount Rate = 4.4%	
Caretaker Status	\$ 41,353	Caretaker Status	\$ 36,078
Demolition	\$ 80,442	Demolition	\$ 79,823
Other DOD or Federal Agency	\$ 442,429	Other DOD or Federal Agency	\$ 439,025
Renovation/Conversion	\$ 442,429	Renovation/Conversion	\$ 439,025
Discount Rate = 3.0%		Discount Rate = 4.6%	
Caretaker Status	\$ 40,631	Caretaker Status	\$ 35,492
Demolition	\$ 80,363	Demolition	\$ 79,746
Other DOD or Federal Agency	\$ 441,999	Other DOD or Federal Agency	\$ 438,605
Renovation/Conversion	\$ 441,999	Renovation/Conversion	\$ 438,605
Discount Rate = 3.2%		Discount Rate = 4.8%	
Caretaker Status	\$ 39,929	Caretaker Status	\$ 34,921
Demolition	\$ 80,286	Demolition	\$ 79,670
Other DOD or Federal Agency	\$ 441,571	Other DOD or Federal Agency	\$ 438,187
Renovation/Conversion	\$ 441,571	Renovation/Conversion	\$ 438,187
Discount Rate = 3.4%		Discount Rate = 5.0%	
Caretaker Status	\$ 39,245	Caretaker Status	\$ 34,364
Demolition	\$ 80,208	Demolition	\$ 79,594
Other DOD or Federal Agency	\$ 441,143	Other DOD or Federal Agency	\$ 437,769
Renovation/Conversion	\$ 441,143	Renovation/Conversion	\$ 437,769
Discount Rate = 3.6%		Discount Rate = 5.2%	
Caretaker Status	\$ 38,578	Caretaker Status	\$ 33,821
Demolition	\$ 80,130	Demolition	\$ 79,519
Other DOD or Federal Agency	\$ 440,717	Other DOD or Federal Agency	\$ 437,353
Renovation/Conversion	\$ 440,717	Renovation/Conversion	\$ 437,353

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: No changes

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Caretaker Status	\$ 33,291	Caretaker Status	\$ 29,489
Demolition	\$ 79,443	Demolition	\$ 78,847
Other DOD or Federal Agency	\$ 436,938	Other DOD or Federal Agency	\$ 433,659
Renovation/Conversion	\$ 436,938	Renovation/Conversion	\$ 433,659
Discount Rate = 5.6%		Discount Rate = 7.2%	
Caretaker Status	\$ 32,774	Caretaker Status	\$ 29,064
Demolition	\$ 79,368	Demolition	\$ 78,773
Other DOD or Federal Agency	\$ 436,524	Other DOD or Federal Agency	\$ 433,254
Renovation/Conversion	\$ 436,524	Renovation/Conversion	\$ 433,254
Discount Rate = 5.8%		Discount Rate = 7.4%	
Caretaker Status	\$ 32,270	Caretaker Status	\$ 28,648
Demolition	\$ 79,293	Demolition	\$ 78,700
Other DOD or Federal Agency	\$ 436,111	Other DOD or Federal Agency	\$ 432,850
Renovation/Conversion	\$ 436,111	Renovation/Conversion	\$ 432,850
Discount Rate = 6.0%		Discount Rate = 7.6%	
Caretaker Status	\$ 31,778	Caretaker Status	\$ 28,242
Demolition	\$ 79,218	Demolition	\$ 78,627
Other DOD or Federal Agency	\$ 435,699	Other DOD or Federal Agency	\$ 432,448
Renovation/Conversion	\$ 435,699	Renovation/Conversion	\$ 432,448
Discount Rate = 6.2%		Discount Rate = 7.8%	
Caretaker Status	\$ 31,298	Caretaker Status	\$ 27,845
Demolition	\$ 79,143	Demolition	\$ 78,554
Other DOD or Federal Agency	\$ 435,289	Other DOD or Federal Agency	\$ 432,047
Renovation/Conversion	\$ 435,289	Renovation/Conversion	\$ 432,047
Discount Rate = 6.4%		Discount Rate = 8.0%	
Caretaker Status	\$ 30,829	Caretaker Status	\$ 27,457
Demolition	\$ 79,069	Demolition	\$ 78,481
Other DOD or Federal Agency	\$ 434,880	Other DOD or Federal Agency	\$ 431,646
Renovation/Conversion	\$ 434,880	Renovation/Conversion	\$ 431,646
Discount Rate = 6.6%		Discount Rate = 8.2%	
Caretaker Status	\$ 30,372	Caretaker Status	\$ 27,078
Demolition	\$ 78,995	Demolition	\$ 78,409
Other DOD or Federal Agency	\$ 434,472	Other DOD or Federal Agency	\$ 431,247
Renovation/Conversion	\$ 434,472	Renovation/Conversion	\$ 431,247
Discount Rate = 6.8%		Discount Rate = 8.4%	
Caretaker Status	\$ 29,925	Caretaker Status	\$ 26,708
Demolition	\$ 78,921	Demolition	\$ 78,336
Other DOD or Federal Agency	\$ 434,065	Other DOD or Federal Agency	\$ 430,849
Renovation/Conversion	\$ 434,065	Renovation/Conversion	\$ 430,849

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: No changes

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Caretaker Status	\$ 26,346
Demolition	\$ 78,264
Other DOD or Federal Agency	\$ 430,452
Renovation/Conversion	\$ 430,452

Discount Rate = 8.8%

Caretaker Status	\$ 25,992
Demolition	\$ 78,192
Other DOD or Federal Agency	\$ 430,056
Renovation/Conversion	\$ 430,056

Discount Rate = 9.0%

Caretaker Status	\$ 25,647
Demolition	\$ 78,120
Other DOD or Federal Agency	\$ 429,662
Renovation/Conversion	\$ 429,662

Discount Rate = 9.2%

Caretaker Status	\$ 25,308
Demolition	\$ 78,049
Other DOD or Federal Agency	\$ 429,268
Renovation/Conversion	\$ 429,268

Discount Rate = 9.4%

Caretaker Status	\$ 24,978
Demolition	\$ 77,977
Other DOD or Federal Agency	\$ 428,876
Renovation/Conversion	\$ 428,876

Discount Rate = 9.6%

Caretaker Status	\$ 24,654
Demolition	\$ 77,906
Other DOD or Federal Agency	\$ 428,484
Renovation/Conversion	\$ 428,484

Discount Rate = 9.8%

Caretaker Status	\$ 24,338
Demolition	\$ 77,835
Other DOD or Federal Agency	\$ 428,094
Renovation/Conversion	\$ 428,094

Discount Rate = 10.0%

Caretaker Status	\$ 24,028
Demolition	\$ 77,764
Other DOD or Federal Agency	\$ 427,704
Renovation/Conversion	\$ 427,704

Building 1836
Economic Analysis
Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 1836 that meets the EXORD requirement to reduce excess installation square footage.

Background:

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Building 1836 has been identified as a facility for disposal per HQDA EXORD 164-15. This building is 2,998 square feet and the current Design Category Code is 61050, General Administration Facility. For the installation, there is currently an excess of 500K sf for this category code.

Alternatives Considered for this Analysis:

Status Quo (Current Operations) - This option retains Building 1836 as a General Admin building (CC6150). This facility is currently unoccupied and no longer needed for this purpose because of the excess in general admin space. Maintaining this facility in its current category code does not meet the intent of EXORD 164-15 and therefore is not a viable alternative.

This alternative is nonviable.

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - 2,998*10=\$29,880. This is a viable alternative.

This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 17120, General Instruction Building. To be made practical, this building would require renovation/ conversion to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and/or other systems. Estimated cost for the alternative is \$55/sf or 2,998*55 = \$164,890. Conversion of this facility into CC 17120 would meet the intent of the Exord since there is currently a deficit in the General Instruction Building category code. This is a viable alternative.

This is a viable alternative.

Other DOD or Federal Agency Use - This alternative offers the building to another DOD or federal agency. With this alternative the building can remain in its current configuration as a general purpose admin facility or be converted for another use. This alternative would meet the intent of the Exord by removing the building from Fort Benning's inventory. However, it will still require renovation/repair to systems such as roofing, flooring, plumbing, electrical, communications, and/or other systems. The agency taking control of the building would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative for use by the army - $\$55 \times 853 = \$164,890$. This alternative is viable.

This is a viable alternative.

Care Taker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost.

This is a viable alternative.

Assumptions of the Analysis:

1. This building cannot be used in its current state due to its condition.
2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<u>Alternative</u>	<u>NPV</u>
Demolition	\$ 29,612
Renovation/Conversion	\$ 162,867
Other DOD or Federal Agency Use	\$ 162,867
Care Taker Status	\$ 116,066

Results and Recommendations:

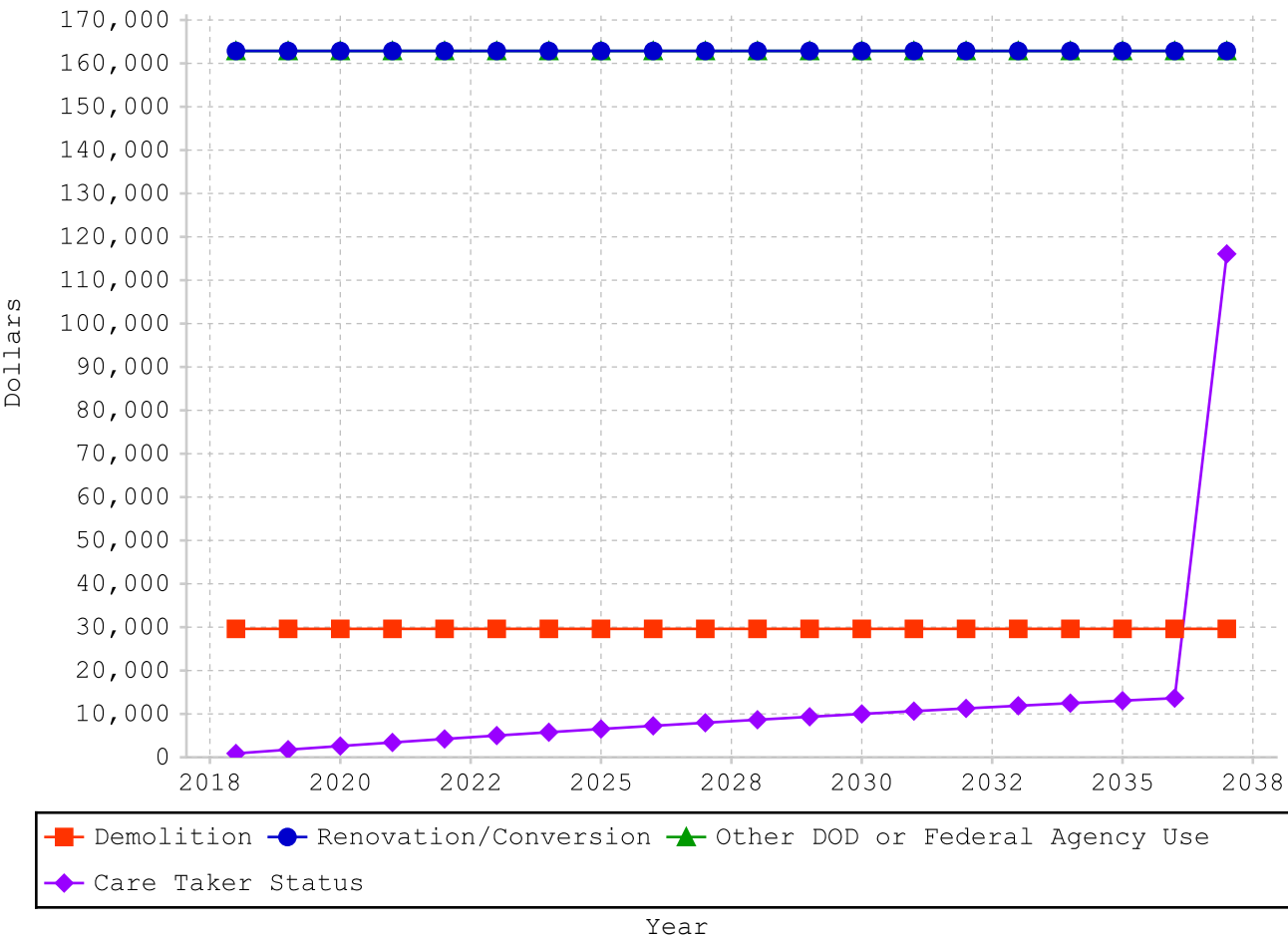
Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units.

However, another Federal Agency has expressed interest in using the building for training and/or admin purposes. This alternative is viable and is being pursued. This course of action will be implemented if details such as lease terms and renovation requirements can be agreed upon. Otherwise, since there are no other DOD or federal agencies interested in the facility, demolition will be the most economical alternative.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$29,980	\$29,980	0.988	\$29,612	\$29,612
2019	\$0	\$0	0.964	\$0	\$29,612
2020	\$0	\$0	0.94	\$0	\$29,612
2021	\$0	\$0	0.917	\$0	\$29,612
2022	\$0	\$0	0.895	\$0	\$29,612
2023	\$0	\$0	0.873	\$0	\$29,612
2024	\$0	\$0	0.852	\$0	\$29,612
2025	\$0	\$0	0.831	\$0	\$29,612
2026	\$0	\$0	0.811	\$0	\$29,612
2027	\$0	\$0	0.791	\$0	\$29,612
2028	\$0	\$0	0.772	\$0	\$29,612
2029	\$0	\$0	0.753	\$0	\$29,612
2030	\$0	\$0	0.734	\$0	\$29,612
2031	\$0	\$0	0.717	\$0	\$29,612
2032	\$0	\$0	0.699	\$0	\$29,612
2033	\$0	\$0	0.682	\$0	\$29,612
2034	\$0	\$0	0.665	\$0	\$29,612
2035	\$0	\$0	0.649	\$0	\$29,612
2036	\$0	\$0	0.633	\$0	\$29,612
2037	\$0	\$0	0.618	\$0	\$29,612
%NPV	100.00%				
\$29,612					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$164,890	\$164,890	0.988	\$162,867	\$162,867
2019	\$0	\$0	0.964	\$0	\$162,867
2020	\$0	\$0	0.94	\$0	\$162,867
2021	\$0	\$0	0.917	\$0	\$162,867
2022	\$0	\$0	0.895	\$0	\$162,867
2023	\$0	\$0	0.873	\$0	\$162,867
2024	\$0	\$0	0.852	\$0	\$162,867
2025	\$0	\$0	0.831	\$0	\$162,867
2026	\$0	\$0	0.811	\$0	\$162,867
2027	\$0	\$0	0.791	\$0	\$162,867
2028	\$0	\$0	0.772	\$0	\$162,867
2029	\$0	\$0	0.753	\$0	\$162,867
2030	\$0	\$0	0.734	\$0	\$162,867
2031	\$0	\$0	0.717	\$0	\$162,867
2032	\$0	\$0	0.699	\$0	\$162,867
2033	\$0	\$0	0.682	\$0	\$162,867
2034	\$0	\$0	0.665	\$0	\$162,867
2035	\$0	\$0	0.649	\$0	\$162,867
2036	\$0	\$0	0.633	\$0	\$162,867
2037	\$0	\$0	0.618	\$0	\$162,867
%NPV	100.00%				
\$162,867					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency Use

Year	Renovation for another DOD or Federal Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$164,890	\$164,890	0.988	\$162,867	\$162,867
2019	\$0	\$0	0.964	\$0	\$162,867
2020	\$0	\$0	0.94	\$0	\$162,867
2021	\$0	\$0	0.917	\$0	\$162,867
2022	\$0	\$0	0.895	\$0	\$162,867
2023	\$0	\$0	0.873	\$0	\$162,867
2024	\$0	\$0	0.852	\$0	\$162,867
2025	\$0	\$0	0.831	\$0	\$162,867
2026	\$0	\$0	0.811	\$0	\$162,867
2027	\$0	\$0	0.791	\$0	\$162,867
2028	\$0	\$0	0.772	\$0	\$162,867
2029	\$0	\$0	0.753	\$0	\$162,867
2030	\$0	\$0	0.734	\$0	\$162,867
2031	\$0	\$0	0.717	\$0	\$162,867
2032	\$0	\$0	0.699	\$0	\$162,867
2033	\$0	\$0	0.682	\$0	\$162,867
2034	\$0	\$0	0.665	\$0	\$162,867
2035	\$0	\$0	0.649	\$0	\$162,867
2036	\$0	\$0	0.633	\$0	\$162,867
2037	\$0	\$0	0.618	\$0	\$162,867
%NPV	100.00%				
\$162,867					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Care Taker Status

Year	Caretaker Status	Renovation	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$899	\$0	\$899	0.988	\$888
2019	\$899	\$0	\$899	0.964	\$866
2020	\$899	\$0	\$899	0.94	\$845
2021	\$899	\$0	\$899	0.917	\$825
2022	\$899	\$0	\$899	0.895	\$804
2023	\$899	\$0	\$899	0.873	\$785
2024	\$899	\$0	\$899	0.852	\$766
2025	\$899	\$0	\$899	0.831	\$747
2026	\$899	\$0	\$899	0.811	\$729
2027	\$899	\$0	\$899	0.791	\$711
2028	\$899	\$0	\$899	0.772	\$694
2029	\$899	\$0	\$899	0.753	\$677
2030	\$899	\$0	\$899	0.734	\$660
2031	\$899	\$0	\$899	0.717	\$644
2032	\$899	\$0	\$899	0.699	\$628
2033	\$899	\$0	\$899	0.682	\$613
2034	\$899	\$0	\$899	0.665	\$598
2035	\$899	\$0	\$899	0.649	\$584
2036	\$899	\$0	\$899	0.633	\$569
2037	\$899	\$164,890	\$165,789	0.618	\$102,433
%NPV	12.22%	87.78%			
	\$14,189	\$101,878			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	No Inflation	No Inflation			
Category / Residual Schedule	Recurring Costs	Non-Recurring Costs			

Life Cycle Cost Report

Alternative: Care Taker Status

Year	Cumulative Net Present Value
2018	\$888
2019	\$1,754
2020	\$2,599
2021	\$3,424
2022	\$4,228
2023	\$5,013
2024	\$5,779
2025	\$6,526
2026	\$7,255
2027	\$7,966
2028	\$8,660
2029	\$9,336
2030	\$9,997
2031	\$10,641
2032	\$11,269
2033	\$11,882
2034	\$12,480
2035	\$13,064
2036	\$13,633
2037	\$116,066

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$2,998 * 10 = \$29,980$$

2. Renovation/Conversion

a. Renovation/ Conversion

The estimated renovation/conversion cost of this alternative is \$55/sf.

3. Other DOD or Federal Agency Use

a. Renovation for another DOD or Federal Agency

The estimated renovation/conversion cost of this alternative is \$55/sf.

4. Care Taker Status

a. Caretaker Status

The current cost of maintaining a facility in a caretaker status is \$0.33/sf.

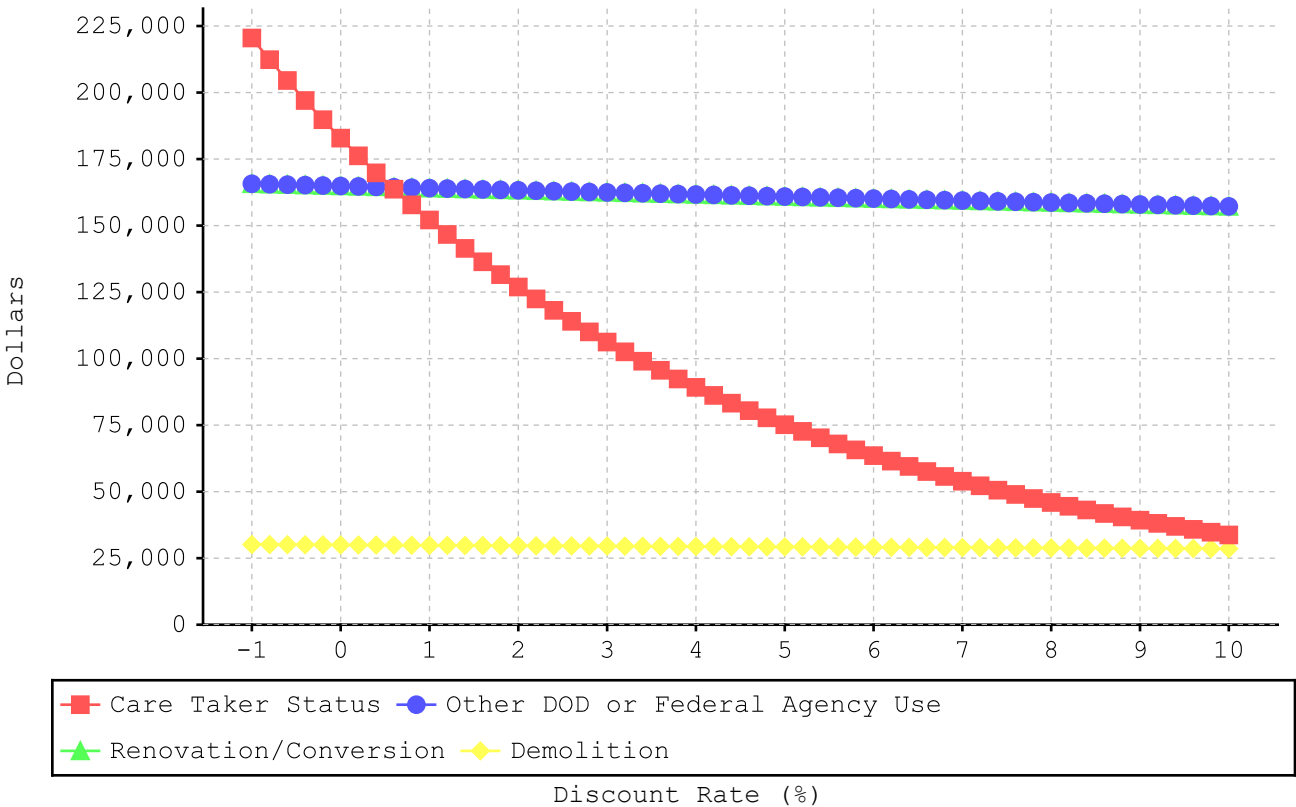
b. Renovation

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.5 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.5 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 30,131	Demolition	\$ 29,890
Other DOD or Federal Agency	\$ 165,721	Care Taker Status	\$ 163,681
Renovation/Conversion	\$ 165,721	Other DOD or Federal Agency	\$ 164,398
Care Taker Status	\$ 220,504	Renovation/Conversion	\$ 164,398
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 30,101	Demolition	\$ 29,861
Other DOD or Federal Agency	\$ 165,554	Care Taker Status	\$ 157,781
Renovation/Conversion	\$ 165,554	Other DOD or Federal Agency	\$ 164,234
Care Taker Status	\$ 212,353	Renovation/Conversion	\$ 164,234
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 30,070	Demolition	\$ 29,831
Other DOD or Federal Agency	\$ 165,387	Care Taker Status	\$ 152,113
Renovation/Conversion	\$ 165,387	Other DOD or Federal Agency	\$ 164,072
Care Taker Status	\$ 204,528	Renovation/Conversion	\$ 164,072
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 30,040	Demolition	\$ 29,802
Other DOD or Federal Agency	\$ 165,221	Care Taker Status	\$ 146,666
Renovation/Conversion	\$ 165,221	Other DOD or Federal Agency	\$ 163,909
Care Taker Status	\$ 197,014	Renovation/Conversion	\$ 163,909
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 30,010	Demolition	\$ 29,772
Other DOD or Federal Agency	\$ 165,055	Care Taker Status	\$ 141,431
Renovation/Conversion	\$ 165,055	Other DOD or Federal Agency	\$ 163,748
Care Taker Status	\$ 189,799	Renovation/Conversion	\$ 163,748
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 29,980	Demolition	\$ 29,743
Other DOD or Federal Agency	\$ 164,890	Care Taker Status	\$ 136,400
Renovation/Conversion	\$ 164,890	Other DOD or Federal Agency	\$ 163,587
Care Taker Status	\$ 182,870	Renovation/Conversion	\$ 163,587
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 29,950	Demolition	\$ 29,714
Other DOD or Federal Agency	\$ 164,725	Care Taker Status	\$ 131,565
Renovation/Conversion	\$ 164,725	Other DOD or Federal Agency	\$ 163,426
Care Taker Status	\$ 176,215	Renovation/Conversion	\$ 163,426
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 29,920	Demolition	\$ 29,685
Other DOD or Federal Agency	\$ 164,561	Care Taker Status	\$ 126,917
Renovation/Conversion	\$ 164,561	Other DOD or Federal Agency	\$ 163,265
Care Taker Status	\$ 169,822	Renovation/Conversion	\$ 163,265

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.5 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 29,656	Demolition	\$ 29,426
Care Taker Status	\$ 122,448	Care Taker Status	\$ 92,350
Other DOD or Federal Agency	\$ 163,106	Other DOD or Federal Agency	\$ 161,844
Renovation/Conversion	\$ 163,106	Renovation/Conversion	\$ 161,844
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 29,627	Demolition	\$ 29,398
Care Taker Status	\$ 118,152	Care Taker Status	\$ 89,204
Other DOD or Federal Agency	\$ 162,946	Other DOD or Federal Agency	\$ 161,688
Renovation/Conversion	\$ 162,946	Renovation/Conversion	\$ 161,688
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 29,598	Demolition	\$ 29,370
Care Taker Status	\$ 114,021	Care Taker Status	\$ 86,176
Other DOD or Federal Agency	\$ 162,787	Other DOD or Federal Agency	\$ 161,533
Renovation/Conversion	\$ 162,787	Renovation/Conversion	\$ 161,533
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 29,569	Demolition	\$ 29,341
Care Taker Status	\$ 110,049	Care Taker Status	\$ 83,262
Other DOD or Federal Agency	\$ 162,629	Other DOD or Federal Agency	\$ 161,378
Renovation/Conversion	\$ 162,629	Renovation/Conversion	\$ 161,378
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 29,540	Demolition	\$ 29,313
Care Taker Status	\$ 106,229	Care Taker Status	\$ 80,457
Other DOD or Federal Agency	\$ 162,471	Other DOD or Federal Agency	\$ 161,224
Renovation/Conversion	\$ 162,471	Renovation/Conversion	\$ 161,224
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 29,512	Demolition	\$ 29,285
Care Taker Status	\$ 102,555	Care Taker Status	\$ 77,758
Other DOD or Federal Agency	\$ 162,313	Other DOD or Federal Agency	\$ 161,070
Renovation/Conversion	\$ 162,313	Renovation/Conversion	\$ 161,070
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 29,483	Demolition	\$ 29,257
Care Taker Status	\$ 99,021	Care Taker Status	\$ 75,160
Other DOD or Federal Agency	\$ 162,156	Other DOD or Federal Agency	\$ 160,916
Renovation/Conversion	\$ 162,156	Renovation/Conversion	\$ 160,916
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 29,455	Demolition	\$ 29,230
Care Taker Status	\$ 95,621	Care Taker Status	\$ 72,659
Other DOD or Federal Agency	\$ 162,000	Other DOD or Federal Agency	\$ 160,763
Renovation/Conversion	\$ 162,000	Renovation/Conversion	\$ 160,763

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.5 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 29,202	Demolition	\$ 28,983
Care Taker Status	\$ 70,251	Care Taker Status	\$ 53,929
Other DOD or Federal Agency	\$ 160,611	Other DOD or Federal Agency	\$ 159,405
Renovation/Conversion	\$ 160,611	Renovation/Conversion	\$ 159,405
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 29,174	Demolition	\$ 28,956
Care Taker Status	\$ 67,932	Care Taker Status	\$ 52,210
Other DOD or Federal Agency	\$ 160,458	Other DOD or Federal Agency	\$ 159,256
Renovation/Conversion	\$ 160,458	Renovation/Conversion	\$ 159,256
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 29,147	Demolition	\$ 28,929
Care Taker Status	\$ 65,700	Care Taker Status	\$ 50,554
Other DOD or Federal Agency	\$ 160,307	Other DOD or Federal Agency	\$ 159,108
Renovation/Conversion	\$ 160,307	Renovation/Conversion	\$ 159,108
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 29,119	Demolition	\$ 28,902
Care Taker Status	\$ 63,550	Care Taker Status	\$ 48,958
Other DOD or Federal Agency	\$ 160,155	Other DOD or Federal Agency	\$ 158,960
Renovation/Conversion	\$ 160,155	Renovation/Conversion	\$ 158,960
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 29,092	Demolition	\$ 28,875
Care Taker Status	\$ 61,479	Care Taker Status	\$ 47,420
Other DOD or Federal Agency	\$ 160,004	Other DOD or Federal Agency	\$ 158,813
Renovation/Conversion	\$ 160,004	Renovation/Conversion	\$ 158,813
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 29,064	Demolition	\$ 28,848
Care Taker Status	\$ 59,484	Care Taker Status	\$ 45,937
Other DOD or Federal Agency	\$ 159,854	Other DOD or Federal Agency	\$ 158,665
Renovation/Conversion	\$ 159,854	Renovation/Conversion	\$ 158,665
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 29,037	Demolition	\$ 28,822
Care Taker Status	\$ 57,563	Care Taker Status	\$ 44,508
Other DOD or Federal Agency	\$ 159,704	Other DOD or Federal Agency	\$ 158,519
Renovation/Conversion	\$ 159,704	Renovation/Conversion	\$ 158,519
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 29,010	Demolition	\$ 28,795
Care Taker Status	\$ 55,712	Care Taker Status	\$ 43,130
Other DOD or Federal Agency	\$ 159,554	Other DOD or Federal Agency	\$ 158,372
Renovation/Conversion	\$ 159,554	Renovation/Conversion	\$ 158,372

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.5 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 28,768
Care Taker Status	\$ 41,802
Other DOD or Federal Agency	\$ 158,227
Renovation/Conversion	\$ 158,227

Discount Rate = 8.8%

Demolition	\$ 28,742
Care Taker Status	\$ 40,520
Other DOD or Federal Agency	\$ 158,081
Renovation/Conversion	\$ 158,081

Discount Rate = 9.0%

Demolition	\$ 28,716
Care Taker Status	\$ 39,285
Other DOD or Federal Agency	\$ 157,936
Renovation/Conversion	\$ 157,936

Discount Rate = 9.2%

Demolition	\$ 28,689
Care Taker Status	\$ 38,093
Other DOD or Federal Agency	\$ 157,791
Renovation/Conversion	\$ 157,791

Discount Rate = 9.4%

Demolition	\$ 28,663
Care Taker Status	\$ 36,944
Other DOD or Federal Agency	\$ 157,647
Renovation/Conversion	\$ 157,647

Discount Rate = 9.6%

Demolition	\$ 28,637
Care Taker Status	\$ 35,835
Other DOD or Federal Agency	\$ 157,503
Renovation/Conversion	\$ 157,503

Discount Rate = 9.8%

Demolition	\$ 28,611
Care Taker Status	\$ 34,765
Other DOD or Federal Agency	\$ 157,360
Renovation/Conversion	\$ 157,360

Discount Rate = 10.0%

Demolition	\$ 28,585
Care Taker Status	\$ 33,733
Other DOD or Federal Agency	\$ 157,216
Renovation/Conversion	\$ 157,216

Building 3716 Economic Analysis Executive Summary Report

Project Title : Facilities Reduction Program
Type of Analysis : Mission Requirement - Full
Discount Rate : 2.5%
Period of Analysis : 20 years
Start Year : 2018
Base Year : 2018
Dollar Analysis : Current Dollars
Project Objective : To determine the most economical course of action for Building 3716 that meets the EXORD requirement to reduce excess square footage.

Background:

Building 3716 has been identified as a facility for disposal per HQDA EXORD 164-15.

HQDA EXORD 164-15, "Reduce the Installation Facility Footprint," published March 2015, holds commanders and planners accountable for making all reasonable efforts to maximize space utilization, consolidate units into our best facilities, and dispose of excess assets. Although the Reduce the Footprint (RtF) acronym has taken hold, the EXORD is really about the efficient management of our real property assets. Significant cost reductions can only be achieved with transformational changes that enable us to reduce our expenditures on facilities and services.

Alternatives Considered for this Analysis:

Demolition - This alternative will demolish the building and restore the site to a grassed area. This alternative meets the requirements of the Executive Order Number 164-15 to dispose of excess facilities. Demolition cost is estimated to be \$10/sf - $20,770 \times 10 = \$207,700$. This is a viable alternative. This is a viable alternative.

Renovation/Conversion - Conversion/Alternate Use - This alternative renovates the facility for use for another Category Code. The best option for conversion of building, based on its current configuration, is to use it for Category Code 21410, Vehicle Maintenance Shop. To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems. Estimated cost is \$55/sf or $20,770 \times 55 = \$1,142,350$. However, there currently is an excess of space in this category code and converting into this category would violate the intent of the Exord. This is a viable alternative This is a viable alternative.

Other DOD or Federal Agency - This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 20,770 = \$1,142,350$. Due to the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable This is a viable alternative.

Caretaker Status - This alternative maintains the facility in its current condition to be used later in its current category code or after conversion into a different category code. A facility in caretaker status is maintained to the point of preventing problems from developing or to keep existing problems from worsening. The cost is based on an annual, per square foot expense of \$0.33 or $\$0.33 \times 20,770 = \$6854/\text{yr}$. This would be a reoccurring annual expense until the facility is put back into use. With this alternative, renovation/repair would still be required prior to re-use and mostly likely at a much higher cost. This is a viable alternative.

Assumptions of the Analysis:

- 1. This building cannot be used in its current state due to its condition.
- 2. Renovation and/or conversion is necessary for the building to be reutilized in another Category Code.

Economic Indicators:

<i>Alternative</i>	<i>NPV</i>
Demolition	\$ 205,151
Renovation/Conversion	\$ 1,128,333
Other DOD or Federal Agency	\$ 1,128,333
Caretaker Status	\$ 813,979

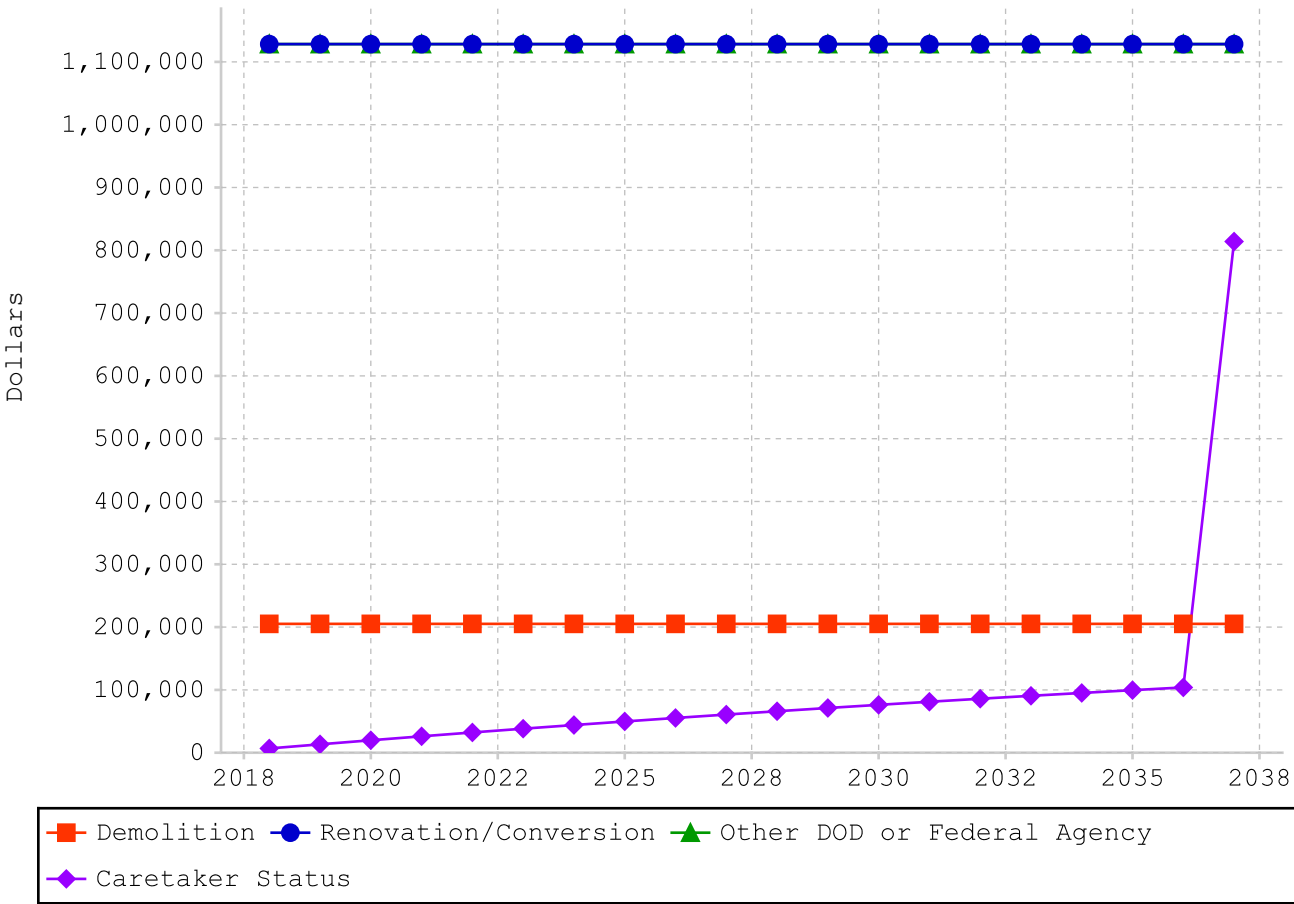
Results and Recommendations:

Based on the results of this analysis, the most economical alternative that meets the intent of Exord 164-15 is demolition. Fort Benning does not have a need for the facility in its current design use category code. Conversion to another category code for Fort Benning use is undesired due to its size, layout, location and lack of interested units. No other Federal Agency has expressed interest in using the building, either in its current configuration or converted into another category code. Therefore, demolition of Building 3716 is the most economical alternative for the Army.

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Organization : Master Planning Division, DPW

Economic Analysis Graph

Net Present Value



Life Cycle Cost Report

Alternative: Demolition

Year	Demolition	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$207,700	\$207,700	0.988	\$205,151	\$205,151
2019	\$0	\$0	0.964	\$0	\$205,151
2020	\$0	\$0	0.94	\$0	\$205,151
2021	\$0	\$0	0.917	\$0	\$205,151
2022	\$0	\$0	0.895	\$0	\$205,151
2023	\$0	\$0	0.873	\$0	\$205,151
2024	\$0	\$0	0.852	\$0	\$205,151
2025	\$0	\$0	0.831	\$0	\$205,151
2026	\$0	\$0	0.811	\$0	\$205,151
2027	\$0	\$0	0.791	\$0	\$205,151
2028	\$0	\$0	0.772	\$0	\$205,151
2029	\$0	\$0	0.753	\$0	\$205,151
2030	\$0	\$0	0.734	\$0	\$205,151
2031	\$0	\$0	0.717	\$0	\$205,151
2032	\$0	\$0	0.699	\$0	\$205,151
2033	\$0	\$0	0.682	\$0	\$205,151
2034	\$0	\$0	0.665	\$0	\$205,151
2035	\$0	\$0	0.649	\$0	\$205,151
2036	\$0	\$0	0.633	\$0	\$205,151
2037	\$0	\$0	0.618	\$0	\$205,151
%NPV	100.00%				
\$205,151					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Renovation/Conversion

Year	Renovation/ Conversion	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$1,142,350	\$1,142,350	0.988	\$1,128,333	\$1,128,333
2019	\$0	\$0	0.964	\$0	\$1,128,333
2020	\$0	\$0	0.94	\$0	\$1,128,333
2021	\$0	\$0	0.917	\$0	\$1,128,333
2022	\$0	\$0	0.895	\$0	\$1,128,333
2023	\$0	\$0	0.873	\$0	\$1,128,333
2024	\$0	\$0	0.852	\$0	\$1,128,333
2025	\$0	\$0	0.831	\$0	\$1,128,333
2026	\$0	\$0	0.811	\$0	\$1,128,333
2027	\$0	\$0	0.791	\$0	\$1,128,333
2028	\$0	\$0	0.772	\$0	\$1,128,333
2029	\$0	\$0	0.753	\$0	\$1,128,333
2030	\$0	\$0	0.734	\$0	\$1,128,333
2031	\$0	\$0	0.717	\$0	\$1,128,333
2032	\$0	\$0	0.699	\$0	\$1,128,333
2033	\$0	\$0	0.682	\$0	\$1,128,333
2034	\$0	\$0	0.665	\$0	\$1,128,333
2035	\$0	\$0	0.649	\$0	\$1,128,333
2036	\$0	\$0	0.633	\$0	\$1,128,333
2037	\$0	\$0	0.618	\$0	\$1,128,333
%NPV	100.00%				
\$1,128,333					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Other DOD or Federal Agency

Year	Other DOD or Agency	Total Annual Outlays	Middle of Year Discount Factors	Present Value	Cumulative Net Present Value
2018	\$1,142,350	\$1,142,350	0.988	\$1,128,333	\$1,128,333
2019	\$0	\$0	0.964	\$0	\$1,128,333
2020	\$0	\$0	0.94	\$0	\$1,128,333
2021	\$0	\$0	0.917	\$0	\$1,128,333
2022	\$0	\$0	0.895	\$0	\$1,128,333
2023	\$0	\$0	0.873	\$0	\$1,128,333
2024	\$0	\$0	0.852	\$0	\$1,128,333
2025	\$0	\$0	0.831	\$0	\$1,128,333
2026	\$0	\$0	0.811	\$0	\$1,128,333
2027	\$0	\$0	0.791	\$0	\$1,128,333
2028	\$0	\$0	0.772	\$0	\$1,128,333
2029	\$0	\$0	0.753	\$0	\$1,128,333
2030	\$0	\$0	0.734	\$0	\$1,128,333
2031	\$0	\$0	0.717	\$0	\$1,128,333
2032	\$0	\$0	0.699	\$0	\$1,128,333
2033	\$0	\$0	0.682	\$0	\$1,128,333
2034	\$0	\$0	0.665	\$0	\$1,128,333
2035	\$0	\$0	0.649	\$0	\$1,128,333
2036	\$0	\$0	0.633	\$0	\$1,128,333
2037	\$0	\$0	0.618	\$0	\$1,128,333
%NPV	100.00%				
\$1,128,333					
Discounting Convention	M-O-Y				
Inflation Schedule	No Inflation				
Category / Residual Schedule	Non-Recurring Costs				

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Caretaker Status	Renovation/ Construction	Total Annual Outlays	Middle of Year Discount Factors	Present Value
2018	\$6,854	\$0	\$6,854	0.988	\$6,770
2019	\$6,854	\$0	\$6,854	0.964	\$6,605
2020	\$6,854	\$0	\$6,854	0.94	\$6,444
2021	\$6,854	\$0	\$6,854	0.917	\$6,287
2022	\$6,854	\$0	\$6,854	0.895	\$6,133
2023	\$6,854	\$0	\$6,854	0.873	\$5,984
2024	\$6,854	\$0	\$6,854	0.852	\$5,838
2025	\$6,854	\$0	\$6,854	0.831	\$5,695
2026	\$6,854	\$0	\$6,854	0.811	\$5,556
2027	\$6,854	\$0	\$6,854	0.791	\$5,421
2028	\$6,854	\$0	\$6,854	0.772	\$5,289
2029	\$6,854	\$0	\$6,854	0.753	\$5,160
2030	\$6,854	\$0	\$6,854	0.734	\$5,034
2031	\$6,854	\$0	\$6,854	0.717	\$4,911
2032	\$6,854	\$0	\$6,854	0.699	\$4,791
2033	\$6,854	\$0	\$6,854	0.682	\$4,674
2034	\$6,854	\$0	\$6,854	0.665	\$4,560
2035	\$6,854	\$0	\$6,854	0.649	\$4,449
2036	\$6,854	\$0	\$6,854	0.633	\$4,341
2037	\$6,854	\$1,142,350	\$1,149,204	0.618	\$710,038
%NPV	13.29%	86.71%			
	\$108,175	\$705,803			
Discounting Convention	M-O-Y	M-O-Y			
Inflation Schedule	No Inflation	No Inflation			
Category / Residual Schedule	Recurring Costs	Recurring Costs			

Life Cycle Cost Report

Alternative: Caretaker Status

Year	Cumulative Net Present Value
2018	\$6,770
2019	\$13,375
2020	\$19,818
2021	\$26,105
2022	\$32,238
2023	\$38,222
2024	\$44,059
2025	\$49,755
2026	\$55,311
2027	\$60,732
2028	\$66,020
2029	\$71,180
2030	\$76,214
2031	\$81,125
2032	\$85,916
2033	\$90,591
2034	\$95,151
2035	\$99,600
2036	\$103,941
2037	\$813,979

Discount Rate: 2.5%
Period of Analysis: 20 years

Life Cycle Cost Report

Sources and Derivations:

1. Demolition

a. Demolition

Estimated demolition cost is \$10/sf.

$$\$10 \times 20,770 = \$207,700.$$

2. Renovation/Conversion

a. Renovation/ Conversion

To be made practical, this building would require total renovation to include repairing or replacing roofing, flooring, plumbing, electrical, communications, and other systems.

$$\text{Estimated cost is } \$55/\text{sf or } 55 \times 20,770 = \$1,142,350$$

3. Other DOD or Federal Agency

a. Other DOD or Agency

This alternative offers the building to another DOD or federal agency. The agency would be responsible for the renovation/conversion of the facility. Cost would be the same as the renovation/conversion alternative - $\$55 \times 20,770 = \$1,142,350$.

Due to the cost and time required for renovation, it's unlikely that another agency would select it. This alternative is viable.

4. Caretaker Status

a. Caretaker Status

The current cost of maintaining a facility in a caretaker status is \$0.33/sf. This alternative provides the minimum facility maintenance necessary to keep the building from deteriorating from lack of use and to prevent existing conditions from worsening. When the decision to bring the building back on line is made, the facility will still require major renovation to be made functional.

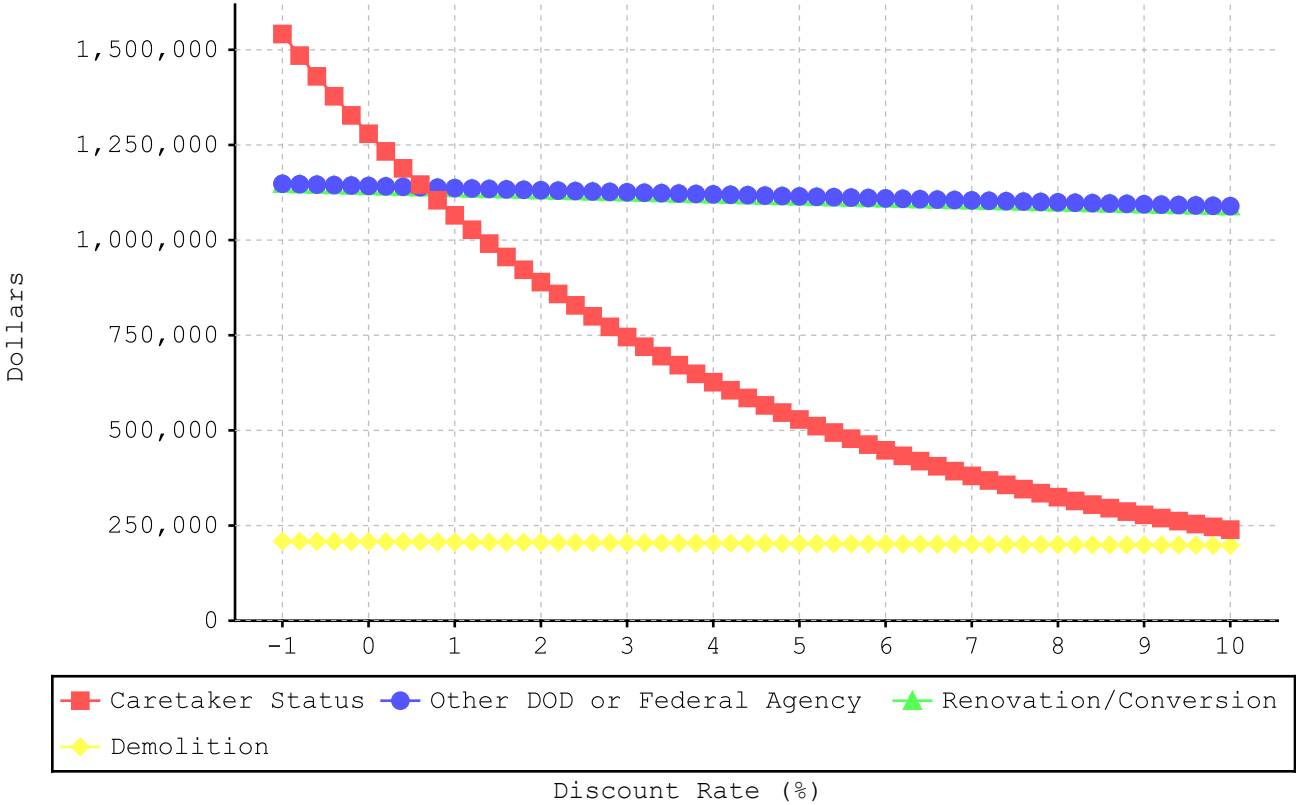
b. Renovation/ Construction

The estimated renovation/conversion cost of this alternative is \$55/sf. In the caretaker status alternative, this cost (or the cost of demolition) would be incurred at the end of the caretaker status period. This cost will need to be adjusted for inflation based on the year that the facility is brought out of Caretaker Status and renovated.

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.6 %

Graph of Net Present Value vs. Discount Rate



Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = -1.0%		Discount Rate = 0.6%	
Demolition	\$ 208,746	Demolition	\$ 207,080
Other DOD or Federal Agency	\$ 1,148,105	Other DOD or Federal Agency	\$ 1,138,938
Renovation/Conversion	\$ 1,148,105	Renovation/Conversion	\$ 1,138,938
Caretaker Status	\$ 1,541,502	Caretaker Status	\$ 1,145,770
Discount Rate = -0.8%		Discount Rate = 0.8%	
Demolition	\$ 208,536	Demolition	\$ 206,874
Other DOD or Federal Agency	\$ 1,146,947	Caretaker Status	\$ 1,104,670
Renovation/Conversion	\$ 1,146,947	Other DOD or Federal Agency	\$ 1,137,808
Caretaker Status	\$ 1,484,751	Renovation/Conversion	\$ 1,137,808
Discount Rate = -0.6%		Discount Rate = 1.0%	
Demolition	\$ 208,326	Demolition	\$ 206,669
Other DOD or Federal Agency	\$ 1,145,793	Caretaker Status	\$ 1,065,177
Renovation/Conversion	\$ 1,145,793	Other DOD or Federal Agency	\$ 1,136,681
Caretaker Status	\$ 1,430,261	Renovation/Conversion	\$ 1,136,681
Discount Rate = -0.4%		Discount Rate = 1.2%	
Demolition	\$ 208,117	Demolition	\$ 206,465
Other DOD or Federal Agency	\$ 1,144,642	Caretaker Status	\$ 1,027,226
Renovation/Conversion	\$ 1,144,642	Other DOD or Federal Agency	\$ 1,135,557
Caretaker Status	\$ 1,377,938	Renovation/Conversion	\$ 1,135,557
Discount Rate = -0.2%		Discount Rate = 1.4%	
Demolition	\$ 207,908	Demolition	\$ 206,261
Other DOD or Federal Agency	\$ 1,143,494	Caretaker Status	\$ 990,753
Renovation/Conversion	\$ 1,143,494	Other DOD or Federal Agency	\$ 1,134,437
Caretaker Status	\$ 1,327,690	Renovation/Conversion	\$ 1,134,437
Discount Rate = -0.0%		Discount Rate = 1.6%	
Demolition	\$ 207,700	Demolition	\$ 206,058
Other DOD or Federal Agency	\$ 1,142,350	Caretaker Status	\$ 955,697
Renovation/Conversion	\$ 1,142,350	Other DOD or Federal Agency	\$ 1,133,319
Caretaker Status	\$ 1,279,430	Renovation/Conversion	\$ 1,133,319
Discount Rate = 0.2%		Discount Rate = 1.8%	
Demolition	\$ 207,493	Demolition	\$ 205,856
Other DOD or Federal Agency	\$ 1,141,209	Caretaker Status	\$ 922,000
Renovation/Conversion	\$ 1,141,209	Other DOD or Federal Agency	\$ 1,132,206
Caretaker Status	\$ 1,233,076	Renovation/Conversion	\$ 1,132,206
Discount Rate = 0.4%		Discount Rate = 2.0%	
Demolition	\$ 207,286	Demolition	\$ 205,654
Other DOD or Federal Agency	\$ 1,140,072	Caretaker Status	\$ 889,606
Renovation/Conversion	\$ 1,140,072	Other DOD or Federal Agency	\$ 1,131,095
Caretaker Status	\$ 1,188,548	Renovation/Conversion	\$ 1,131,095

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = 2.2%		Discount Rate = 3.8%	
Demolition	\$ 205,452	Demolition	\$ 203,863
Caretaker Status	\$ 858,462	Caretaker Status	\$ 648,619
Other DOD or Federal Agency	\$ 1,129,988	Other DOD or Federal Agency	\$ 1,121,245
Renovation/Conversion	\$ 1,129,988	Renovation/Conversion	\$ 1,121,245
Discount Rate = 2.4%		Discount Rate = 4.0%	
Demolition	\$ 205,252	Demolition	\$ 203,667
Caretaker Status	\$ 828,517	Caretaker Status	\$ 626,671
Other DOD or Federal Agency	\$ 1,128,884	Other DOD or Federal Agency	\$ 1,120,166
Renovation/Conversion	\$ 1,128,884	Renovation/Conversion	\$ 1,120,166
Discount Rate = 2.6%		Discount Rate = 4.2%	
Demolition	\$ 205,051	Demolition	\$ 203,471
Caretaker Status	\$ 799,722	Caretaker Status	\$ 605,550
Other DOD or Federal Agency	\$ 1,127,783	Other DOD or Federal Agency	\$ 1,119,091
Renovation/Conversion	\$ 1,127,783	Renovation/Conversion	\$ 1,119,091
Discount Rate = 2.8%		Discount Rate = 4.4%	
Demolition	\$ 204,852	Demolition	\$ 203,276
Caretaker Status	\$ 772,030	Caretaker Status	\$ 585,223
Other DOD or Federal Agency	\$ 1,126,685	Other DOD or Federal Agency	\$ 1,118,018
Renovation/Conversion	\$ 1,126,685	Renovation/Conversion	\$ 1,118,018
Discount Rate = 3.0%		Discount Rate = 4.6%	
Demolition	\$ 204,653	Demolition	\$ 203,082
Caretaker Status	\$ 745,397	Caretaker Status	\$ 565,659
Other DOD or Federal Agency	\$ 1,125,591	Other DOD or Federal Agency	\$ 1,116,949
Renovation/Conversion	\$ 1,125,591	Renovation/Conversion	\$ 1,116,949
Discount Rate = 3.2%		Discount Rate = 4.8%	
Demolition	\$ 204,454	Demolition	\$ 202,888
Caretaker Status	\$ 719,780	Caretaker Status	\$ 546,827
Other DOD or Federal Agency	\$ 1,124,500	Other DOD or Federal Agency	\$ 1,115,883
Renovation/Conversion	\$ 1,124,500	Renovation/Conversion	\$ 1,115,883
Discount Rate = 3.4%		Discount Rate = 5.0%	
Demolition	\$ 204,257	Demolition	\$ 202,694
Caretaker Status	\$ 695,137	Caretaker Status	\$ 528,697
Other DOD or Federal Agency	\$ 1,123,412	Other DOD or Federal Agency	\$ 1,114,819
Renovation/Conversion	\$ 1,123,412	Renovation/Conversion	\$ 1,114,819
Discount Rate = 3.6%		Discount Rate = 5.2%	
Demolition	\$ 204,059	Demolition	\$ 202,502
Caretaker Status	\$ 671,429	Caretaker Status	\$ 511,243
Other DOD or Federal Agency	\$ 1,122,327	Other DOD or Federal Agency	\$ 1,113,759
Renovation/Conversion	\$ 1,122,327	Renovation/Conversion	\$ 1,113,759

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = 5.4%		Discount Rate = 7.0%	
Demolition	\$ 202,309	Demolition	\$ 200,791
Caretaker Status	\$ 494,437	Caretaker Status	\$ 380,472
Other DOD or Federal Agency	\$ 1,112,702	Other DOD or Federal Agency	\$ 1,104,351
Renovation/Conversion	\$ 1,112,702	Renovation/Conversion	\$ 1,104,351
Discount Rate = 5.6%		Discount Rate = 7.2%	
Demolition	\$ 202,118	Demolition	\$ 200,604
Caretaker Status	\$ 478,254	Caretaker Status	\$ 368,468
Other DOD or Federal Agency	\$ 1,111,648	Other DOD or Federal Agency	\$ 1,103,321
Renovation/Conversion	\$ 1,111,648	Renovation/Conversion	\$ 1,103,321
Discount Rate = 5.8%		Discount Rate = 7.4%	
Demolition	\$ 201,927	Demolition	\$ 200,417
Caretaker Status	\$ 462,669	Caretaker Status	\$ 356,899
Other DOD or Federal Agency	\$ 1,110,597	Other DOD or Federal Agency	\$ 1,102,293
Renovation/Conversion	\$ 1,110,597	Renovation/Conversion	\$ 1,102,293
Discount Rate = 6.0%		Discount Rate = 7.6%	
Demolition	\$ 201,736	Demolition	\$ 200,231
Caretaker Status	\$ 447,659	Caretaker Status	\$ 345,748
Other DOD or Federal Agency	\$ 1,109,548	Other DOD or Federal Agency	\$ 1,101,268
Renovation/Conversion	\$ 1,109,548	Renovation/Conversion	\$ 1,101,268
Discount Rate = 6.2%		Discount Rate = 7.8%	
Demolition	\$ 201,546	Demolition	\$ 200,045
Caretaker Status	\$ 433,201	Caretaker Status	\$ 335,000
Other DOD or Federal Agency	\$ 1,108,503	Other DOD or Federal Agency	\$ 1,100,246
Renovation/Conversion	\$ 1,108,503	Renovation/Conversion	\$ 1,100,246
Discount Rate = 6.4%		Discount Rate = 8.0%	
Demolition	\$ 201,357	Demolition	\$ 199,859
Caretaker Status	\$ 419,274	Caretaker Status	\$ 324,638
Other DOD or Federal Agency	\$ 1,107,461	Other DOD or Federal Agency	\$ 1,099,227
Renovation/Conversion	\$ 1,107,461	Renovation/Conversion	\$ 1,099,227
Discount Rate = 6.6%		Discount Rate = 8.2%	
Demolition	\$ 201,168	Demolition	\$ 199,675
Caretaker Status	\$ 405,856	Caretaker Status	\$ 314,647
Other DOD or Federal Agency	\$ 1,106,421	Other DOD or Federal Agency	\$ 1,098,210
Renovation/Conversion	\$ 1,106,421	Renovation/Conversion	\$ 1,098,210
Discount Rate = 6.8%		Discount Rate = 8.4%	
Demolition	\$ 200,979	Demolition	\$ 199,490
Caretaker Status	\$ 392,929	Caretaker Status	\$ 305,015
Other DOD or Federal Agency	\$ 1,105,385	Other DOD or Federal Agency	\$ 1,097,197
Renovation/Conversion	\$ 1,105,385	Renovation/Conversion	\$ 1,097,197

Discount Rate Sensitivity Analysis

NPV rankings change at the following discount rates: 0.6 %

Table of Net Present Values for each Discount Rate

Discount Rate = 8.6%

Demolition	\$ 199,307
Caretaker Status	\$ 295,726
Other DOD or Federal Agency	\$ 1,096,186
Renovation/Conversion	\$ 1,096,186

Discount Rate = 8.8%

Demolition	\$ 199,123
Caretaker Status	\$ 286,767
Other DOD or Federal Agency	\$ 1,095,178
Renovation/Conversion	\$ 1,095,178

Discount Rate = 9.0%

Demolition	\$ 198,941
Caretaker Status	\$ 278,127
Other DOD or Federal Agency	\$ 1,094,173
Renovation/Conversion	\$ 1,094,173

Discount Rate = 9.2%

Demolition	\$ 198,758
Caretaker Status	\$ 269,793
Other DOD or Federal Agency	\$ 1,093,170
Renovation/Conversion	\$ 1,093,170

Discount Rate = 9.4%

Demolition	\$ 198,576
Caretaker Status	\$ 261,753
Other DOD or Federal Agency	\$ 1,092,171
Renovation/Conversion	\$ 1,092,171

Discount Rate = 9.6%

Demolition	\$ 198,395
Caretaker Status	\$ 253,997
Other DOD or Federal Agency	\$ 1,091,174
Renovation/Conversion	\$ 1,091,174

Discount Rate = 9.8%

Demolition	\$ 198,214
Caretaker Status	\$ 246,513
Other DOD or Federal Agency	\$ 1,090,180
Renovation/Conversion	\$ 1,090,180

Discount Rate = 10.0%

Demolition	\$ 198,034
Caretaker Status	\$ 239,291
Other DOD or Federal Agency	\$ 1,089,188
Renovation/Conversion	\$ 1,089,188

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APPENDIX C

FORT BENNING FACILITIES REDUCTION PROGRAM DRAFT FINDING OF NO SIGNIFICANT IMPACT

DRAFT FINDING OF NO SIGNIFICANT IMPACT

1 Introduction

Fort Benning has prepared this Environmental Assessment (EA) to examine the potential environmental consequences of implementing the Fiscal Year (FY) 19-23 Facility Reduction Program (FRP) in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 US Code [USC] 4321 et seq.), the Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Part 1500-1508), and the Army NEPA Regulation (*Environmental Analysis of Army Actions*; 32 CFR Part 651).

The EA is used to determine and evaluate the potential environmental effects of the Proposed Action, identify possible/potential mitigation measures to lessen or eliminate adverse effects, and examine reasonable alternatives for the Proposed Action. The intended audience of the EA is Army decision-makers, interested government agencies, federally recognized Native American Tribes, and non-governmental organizations, and members of the public. The effects analyses in this EA are based on a variety of sources and the best available information at the time of preparation. The information contained in this EA will be reviewed and considered by the Army prior to the final decision on how to implement the Proposed Action, if at all.

2 Background

A US Army Training and Doctrine Command (TRADOC) memorandum dated 1 November 1996, directed Army installations to support the "Winning the Infrastructure War" initiative via implementation of the IFRP (Infrastructure Footprint Reduction Program). Rather than incur the expense of maintaining outdated or unusable buildings and other structures (i.e., concrete pads and former building foundations, antiquated training equipment, etc.), infrastructure would be demolished and their various functions relocated. The IFRP continues to be implemented on the Installation through the development of the FRP. The FRP is a dynamic Fort Benning initiative with infrastructure being added to or removed from the proposed demolition inventory on the basis of evolving mission demands, utilization priorities, and available funding. Appendix A contains a listing of infrastructure currently proposed for demolition and commonly referred to as the FRP list.

An initial EA and Finding of No Significant Impact (FNSI) for the IFRP on Fort Benning were completed in 1997. The EA analyzed the No Action (Status Quo) Alternative plus two Action Alternatives. Alternative 2 involved the construction and utilization of an on-Post facility for the disposal of demolition wastes. The Preferred Alternative (Alternative 3) involved the transport of demolition wastes to an off-Post commercial facility. The EA's Preferred Alternative offered the most flexibility in disposal methods for wastes generated by demolition and was the alternative selected as outlined in the FNSI.

As a result of infrastructure being demolished or being removed from the program's demolition inventory due to reuse and other infrastructure being added, Supplemental EAs were prepared in 2002 and again in 2008. Both determined that the demolition of infrastructure on the FRP lists

would not result in significant adverse effects; instead, all adverse effects were considered minor and further minimized through mitigation and/or monitoring activities. All total, Fort Benning has demolished an estimated 1.4 million square feet of buildings and structures over the last 15 years through the FRP and under a variety of other improvement projects.

More recent comprehensive and collaborative planning efforts by the Army have directed installations to continue optimizing land use and the management of existing facilities through site specific area development planning. Area Development Plans (ADPs) are developed from workshop style events guiding installation planning personnel and Army stakeholders through exercises which promotes short and long-term planning. Key components of the ADPs include the repurposing of existing facilities for optimal use, demolition of excess infrastructure and unneeded facilities, and providing area specific plans from which the Real Property Master Plan can be updated. An installation's Real Property Master Plan provides broad planning direction at the land use level for sustainable installation development that supports mission and environmental requirements. Fort Benning is currently in the process of updating its 2011 Real Property Master Plan.

3 Purpose and Need

The purpose of the Proposed Action is to optimize facility management through reducing buildings and structures. As a result of ongoing Army force structure transformations and modernization efforts at Fort Benning (Section 1.2), facility utilization priorities have again changed requiring an up-to-date FRP list to define which facilities are identified for demolition for FY19-23. The Proposed Action is necessary to continue the Installation's ongoing FRP and support compliance with the US Army TRADOC's IFRP and more recent Army strategies (DoA, 2016a and b). Implementing the Proposed Action would facilitate the identification/selection, demolition, and disposal of infrastructure considered obsolete/outdated, cost prohibitive to sustain, in excess of Army utilization needs, and in some cases contain potential human health and safety concerns. Other benefits include decreasing fixed facility costs (i.e., utilities and saving energy, reducing risks from structural deterioration, and making idle areas of an installation available for productive reuse. Upon completion of the FY19-23 FRP, Fort Benning will have eliminated more than two million square feet of space and made available millions of dollars in operations and maintenance funds for use in other areas annually.

4 Description of the Proposed Action

The Proposed Action is to implement the FY19-23 FRP at Fort Benning, GA. Implementation of the FRP could demolish, dispose, and remove from Real Property inventories approximately 150 buildings and structures equaling more than two million square feet. This tentative goal would occur over the next five years at various locations across Fort Benning's cantonment areas for an estimated cost of \$18 million. Ancillary structures would also be removed as part of the Proposed Action. Relocation of personnel, supplies, and/or equipment may include renovations and/or adaptive reuse of existing structures. Details of relocation and renovation are uncertain at this time, and those types of future actions will be subject to appropriate NEPA documentation as required.

5 Description of the Alternatives

Fort Benning developed a screening criteria to measure which alternatives are reasonable for further analysis. Any alternatives that failed to meet the criteria were eliminated from full consideration within this EA. Alternatives proposed must:

- Comply with the Army TRADOC's IFRP and Army directives instructing optimized facility management through footprint reduction efforts;
- Be economically feasible (e.g., facility conversion or extensive renovation and reuse of buildings and structures on the FRP list would be less cost effective than new construction/replacement.

Alternatives carried forward for analysis in this EA include:

▪ **No Action Alternative**

Under the No Action Alternative, Fort Benning would continue to utilize approximately 150 building and structures considered cost prohibitive to sustain, in excess of Army utilization needs, and in some cases may contain potential human health and safety concerns associated with older and ageing infrastructure (e.g., lead based paints (LBPs), asbestos containing materials (ACMs), and/or structural deterioration). Occupied buildings would continue to incur excessive maintenance costs until new replacement facilities can be afforded to relocate current occupying activities and personnel. Currently utilized and unoccupied or abandoned buildings or structures would be demolished only as new projects requiring their removal are scheduled in the future. Note that the No Action Alternative does not meet the purpose and need for the Proposed Action but provides a baseline for comparison of other alternatives.

▪ **Alternative 1: Full Demolition**

Under Alternative 1, Fort Benning would implement the FY19-23 FRP by demolishing all of the structures identified in the FRP's proposed demolition list. Full demolition would preclude the expenditure of excessive maintenance and/or adaptive reuse/renovation costs associated with the utilization of older facilities. Personnel and activities currently occupying facilities to be demolished would relocate to available facilities. Demolished buildings and structures would become open space and in most circumstances the area would be available to be utilized in future projects.

▪ **Alternative 2: Selective Demolition**

Alternative 2 is similar to Alternative 1; however, Fort Benning would retain the 17 historic buildings identified on the FRP's proposed demolition list. Those 17 buildings are historic properties that are eligible for listing on the National Register of Historic Places per the National Historic Preservation Act. Fort Benning would implement the FY19-23 FRP by demolishing approximately 133 buildings and other structures and continue utilizing the historic structures as best as possible. As outlined in Appendix B, a considerable expenditure of funds to utilize and maintain the historic buildings would continue and many of these facilities would need adaptive reuse and other substantial renovations to sustain adequate and safe working conditions as they continue to age.

6 Anticipated Environmental Effects

The analysis contained in this EA indicates that the Proposed Action could have long-term, minor adverse impacts to Cultural Resources, under Alternative 1, and short-term, minor adverse impacts under Alternative 2. Other short-term, minor adverse impacts resulting from demolition activities would occur to Hazardous Materials and Waste, Soils, Water Resources, and Air Quality. Both Air Quality and Utilities would result in long-term, minor adverse impacts as a result of the No Action Alternative. VECs with negligible effects under the Action Alternatives includes Biological Resources, Land Use, and Noise. Additionally, long-term, beneficial impacts to Air Quality and Utilities would result from implementing the Action Alternatives due to reductions in emissions and energy demands.

As discussed in Section 4, these negligible effects to minor adverse direct/indirect impacts do not result in significant adverse cumulative effects when considering other past, present, and reasonably foreseeable future activities at Fort Benning. Adherence to Federal and State laws and regulations, as well as Installation management plans, and Army Regulations would minimize impacts of demolition and disposal activities to Air Quality, Cultural Resources, Hazardous Materials and Waste, Soils, and Water Resources.

7 Mitigation Measures

No mitigation measures, beyond compliance with applicable laws and regulations and indicated Fort Benning Plans, are required to avoid significant impacts under any of the Proposed Action alternatives. Additional mitigations identified within the EA are recommended to mitigate minor adverse impacts.

8 Public Availability

The Final EA and Draft FNSI were made available to the public for a 30-day public comment period from June 21 – July 23, 2018. An announcement that these documents are available was published via a Notice of Availability (NOA) in The Columbus Ledger-Enquirer, The Journal, and Benning News (online) in accordance with the Army NEPA Regulation. These documents are also available at several local libraries and are posted on the Fort Benning website at <http://www.benning.army.mil/garrison/dpw/emd/Legal.html>.

The NOA of the Final EA and Draft FNSI has been mailed to all agencies, individuals, and organizations on the Fort Benning NEPA distribution (mailing) list for the Proposed Action. As part of Fort Benning's on-going, established process and dialogue with the Federally recognized Native American Tribes affiliated with the Fort Benning area, the Army has provided each Tribe with a copy of these documents for consultation via review and comment.

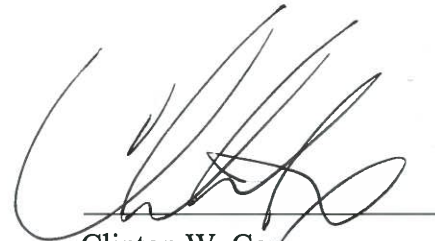
9 Conclusions

In consideration of the analysis in the EA, I have decided to implement Alternative 1: Full Demolition at Fort Benning. Implementation of the Alternative will not have a significant impact on the quality of human life or natural environment. Implementation of Alternative 2: Selective Demolition or the No Action Alternative also would not have a significant impact on the quality of human life or the natural environment. Notwithstanding, Alternative 2 and the No Action Alternative are less desirable in comparison with Alternative 1's to comply with the US Army TRADOC's IFRP and more recent Army efforts to optimize facility management through reductions to buildings and structures.

This analysis fulfills the requirements of the NEPA of 1969, as implemented by the Council on Environmental Quality regulations (40 CFR 1500–1508), as well as the requirements of the Environmental Analysis of Army Actions (32 CFR 651). Therefore, issuance of a FNSI for the Action Alternatives is warranted and an EIS is not necessary.

FINDING OF NO SIGNIFICANT
IMPACT REVIEWED AND APPROVED
BY:

7 June 2018
Date


Clinton W. Cox
Colonel, U.S. Army
Garrison Commander