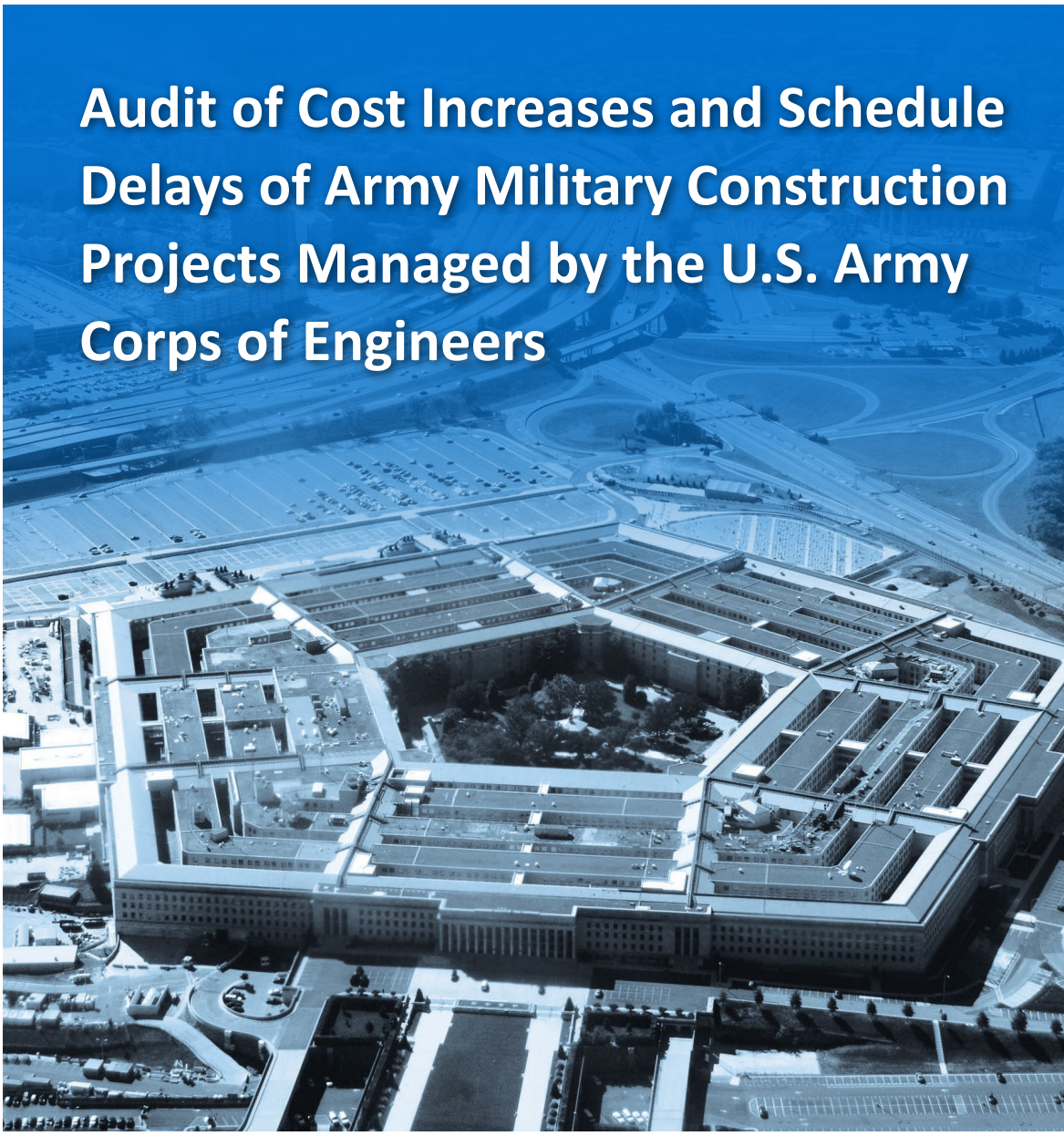
Report No. DODIG-2025-057

INSPECTOR GENERAL

U.S. Department of Defense

JANUARY 8, 2025

Audit of Cost Increases and Schedule Delays of Army Military Construction Projects Managed by the U.S. Army Corps of Engineers



INDEPENDENCE ★ INTEGRITY ★ EXCELLENCE ★ TRANSPARENCY


INSPECTOR GENERAL
INTEGRITY
EFFICIENCY
DEPARTMENT OF DEFENSE

Results in Brief

Audit of Cost Increases and Schedule Delays of Army Military Construction Projects Managed by the U.S. Army Corps of Engineers

January 8, 2025

Objective

The objective of this audit was to determine why the U.S. Army Corps of Engineers (USACE) had cost increases or schedule delays for Army military construction (MILCON) projects performed in the continental United States and what actions USACE took to mitigate future cost increases and schedule delays.

Background

The Department of the Army uses the services of USACE for the design and construction of military facilities. USACE is the DoD-designated construction agent with responsibility for delivery of facilities and infrastructure supporting the Army, Air Force, and Defense agencies. In addition, USACE provides programmatic policy and management of the worldwide MILCON programs assigned to USACE. We selected a nonstatistical sample of four Army MILCON projects from the following four different USACE districts: Baltimore, Louisville, Savannah, and Seattle.

Finding

USACE officials faced challenges on several MILCON projects. We reviewed a nonstatistical sample of four MILCON projects originally valued at a total of $248.5 million from four USACE districts. Specifically, USACE officials experienced—and continue to experience—cost increases and schedule delays because of:

- challenges with construction of the foundation, incorrect funding type for a built-in kitchen equipment contract option, and the under-floor power distribution system installation at the USACE Baltimore District project, General Instruction Building;
- unsuitable soil and weather conditions at the USACE Louisville District project, General Purpose Maintenance Shop;
- privatized utilities and unexpected debris during site preparation and deficient concrete quality at the USACE Savannah District project, Cyber Instructional Facility and Network Center; and
- design errors, engineering and technical requirements changes related to the building's security system, and elevator re-work at the USACE Seattle District project, Information Systems Facility.

USACE officials attempted to mitigate additional cost increases and schedule delays by implementing corrective actions during the execution of the MILCON projects. In some instances, USACE officials adjusted processes to mitigate potential cost increases and delays for future MILCON projects. However, USACE officials did not always share lessons learned across USACE districts.

As a result of the issues encountered, USACE officials incurred $19.6 million (8 percent) in total increased contract costs and schedule delays ranging from 120 to 847 days for the four MILCON projects we reviewed. Delays in Army MILCON projects, such as the construction of maintenance shops and training and information facilities, hinder the Army's ability to perform necessary maintenance of vehicles and tactical equipment or train future leaders and critical cybersecurity specialists.

Recommendations

We recommend that the USACE Chief of Engineering and Construction review the planning and mitigating actions of USACE District officials to determine if USACE personnel can use these actions as lessons learned when planning and managing other MILCON projects and issue a memorandum to USACE personnel with the results of these reviews. We recommend that the USACE Baltimore District Commander complete an after-action review for MILCON project 88077.

Recommendations (cont'd)

We further recommend that the USACE Seattle District Commander review the design process for previous MILCON projects to use as lessons learned to prevent design errors and omissions from occurring in future MILCON projects.

Management Comments and Our Response

The Acting USACE Director of Military Programs agreed with and provided planned actions for all seven recommendations in our report that required management comments, including endorsement of actions planned by USACE Baltimore District management. The Acting Director discussed planned actions, including completing lessons learned, conducting training, developing guidelines, and reviewing mitigating actions taken by the USACE districts on the projects reviewed. The USACE Acting Director planned to complete these actions by September 30, 2025.

We will close these seven recommendations once we verify that USACE management has implemented the agreed-upon actions. Additionally, USACE Seattle District personnel took corrective actions during the audit to address two other recommendations; these recommendations are closed on issuance of the report. Please see the Recommendations Table on the next page for the status of recommendations.

Recommendations Table

Management	Recommendations Unresolved	Recommendations Resolved	Recommendations Closed
USACE Chief of Engineering and Construction	None	1.a, 1.b, 1.c, 1.d, 1.e	None
USACE Baltimore District Commander	None	2.a, 2.b	None
USACE Seattle District Commander	None	None	3.a, 3.b

Note: The following categories are used to describe agency management's comments to individual recommendations.

- **Unresolved** – Management has not agreed to implement the recommendation or has not proposed actions that will address the recommendation.
- **Resolved** – Management agreed to implement the recommendation or has proposed actions that will address the underlying finding that generated the recommendation.
- **Closed** – The DoD OIG verified that the agreed upon corrective actions were implemented.


INSPECTOR GENERAL
INTEGRITY
EFFICIENCY
DEPARTMENT OF DEFENSE

OFFICE OF INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500

January 8, 2025

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT
COMMANDING GENERAL, U.S. ARMY CORPS OF ENGINEERS
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

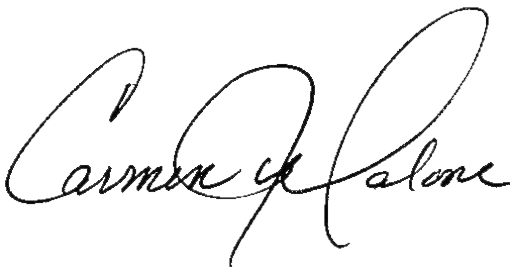
SUBJECT: Audit of Cost Increases and Schedule Delays of Army Military Construction Projects Managed by the U.S. Army Corps of Engineers (Report No. DODIG-2025-057)

This final report provides the results of the DoD Office of Inspector General's audit. We previously provided copies of the draft report and requested written comments on the recommendations. We considered management's comments on the draft report when preparing the final report. These comments are included in the report.

The U.S. Army Corps of Engineers Acting Director for Military Programs agreed to address seven recommendations presented in the report; therefore, we consider the recommendations resolved and open. We will close the recommendations when you provide us documentation showing that all agreed-upon actions to implement the recommendations are completed. We also closed two recommendations after U.S. Army Corps of Engineers Seattle District management completed actions during the audit. Therefore, please provide us within 90 days your response concerning specific actions in process or completed on the recommendations. Send your response to either followup@dodig.mil if unclassified or rfunet@dodig.smil.mil if classified SECRET.

If you have any questions, please contact me at [redacted]

FOR THE INSPECTOR GENERAL:



Carmen J. Malone
Assistant Inspector General for Audit
Acquisition, Contracting, and Sustainment

Contents

Introduction

Objective

The objective of this audit was to determine why the U.S. Army Corps of Engineers (USACE) had cost increases or schedule delays for Army military construction (MILCON) projects performed in the continental United States and what actions USACE took to mitigate future cost increases and schedule delays. See Appendix A for scope and methodology and prior coverage.

Background

The Department of the Army uses the services of USACE for the design and construction of military facilities. USACE is the DoD-designated construction agent with responsibility for delivery of facilities and infrastructure supporting the Army, Air Force, and Defense agencies.[1] In addition, USACE provides programmatic policy and management of the worldwide MILCON programs assigned to USACE.

MILCON includes any construction, development, transformation, or extension of a military installation, whether to meet requirements, acquire land, or construct a defense access road.[2] Generally, MILCON includes the:

- erection, installation, or assembly of a new facility;
- addition, expansion, extension, alteration, relocation, or replacement of an existing facility;
- site preparation, excavation, filling, landscaping, land improvements, utility connections, and installation of equipment; and
- related real property requirements, such as land acquisitions.

The Department of the Army submits to Congress the support for authorization and funding requests for construction projects that must be funded by MILCON appropriations.[3]

[1] Department of Defense Directive 4270.5, "Military Construction," February 12, 2005 (Incorporating Change 1, August 31, 2018), assigns USACE as one of the DoD construction agents responsible for the design or construction execution associated with a MILCON program.

[2] According to title 10, section 2801, United States Code (10 U.S.C. § 2801), "Scope of the chapter; definitions," military installations include a base, camp, post, stations, yard, center, or other activity under the jurisdiction of the Secretary of a Military Department.

[3] DoD Financial Management Regulation Volume 2B, Chapter 6, "Military Construction/Family Housing Appropriations," states that construction projects should normally be justified and funded through the planning, programming, and budgeting process.

According to DoD Financial Management Regulation Volume 2B, Chapter 6, "Military Construction/Family Housing Appropriations," construction projects should normally be justified and funded through the planning, programming, and budgeting process.

The DoD uses DD Form 1391, "FY _____ Military Construction Project Data," to submit requirements and justification to Congress to support authorization and funding requests for construction projects that must be funded by MILCON appropriations. The Army is required to prepare a DD Form 1391 for each proposed construction project and include on the form the project's cost estimate, a description of proposed construction, the project's requirements, the current facility or site conditions, the impact on operations if Congress does not approve the project, and any supplemental data.

Public works personnel at the military installation where the construction will occur draft the DD Form 1391 for the installation commander to review and prioritize with other potential MILCON projects, and then forward the request through the chain of command. Once approved by the commands, the DD Form 1391 is forwarded to the Office of the Secretary of Defense, which reviews and consolidates MILCON projects across the DoD for inclusion in the defense portion of the President's Budget. The Office of Management and Budget and the President make final revisions to the President's Budget and submit it to Congress, which reviews the budget and authorizes projects and appropriates funds.

Key DoD Organizations Involved with MILCON

Key DoD organizations involved in the planning, budgeting, execution, and management of USACE Army MILCON projects we reviewed included the Office of the Deputy Assistant Secretary of Defense (Infrastructure Modernization and Resilience); the Assistant Secretary of the Army (Installations, Energy, and Environment); and the Army Deputy Chief of Staff for G-9 Installations.[4]

Office of Deputy Assistant Secretary of Defense for Infrastructure Modernization and Resilience

As a component of the Office of the Assistant Secretary of Defense for Energy, Installations, and Environment, the Office of Deputy Assistant Secretary of Defense for Infrastructure Modernization and Resilience is responsible for the stewardship of DoD real property on behalf of the Secretary of Defense.

[4] The Office of the Assistant Secretary of Defense for Energy, Installations, and Environment reorganized and renamed the Office of the Deputy Assistant Secretary of Defense (Construction) as the Office of the Deputy Assistant Secretary of Defense (Infrastructure Modernization and Resilience).

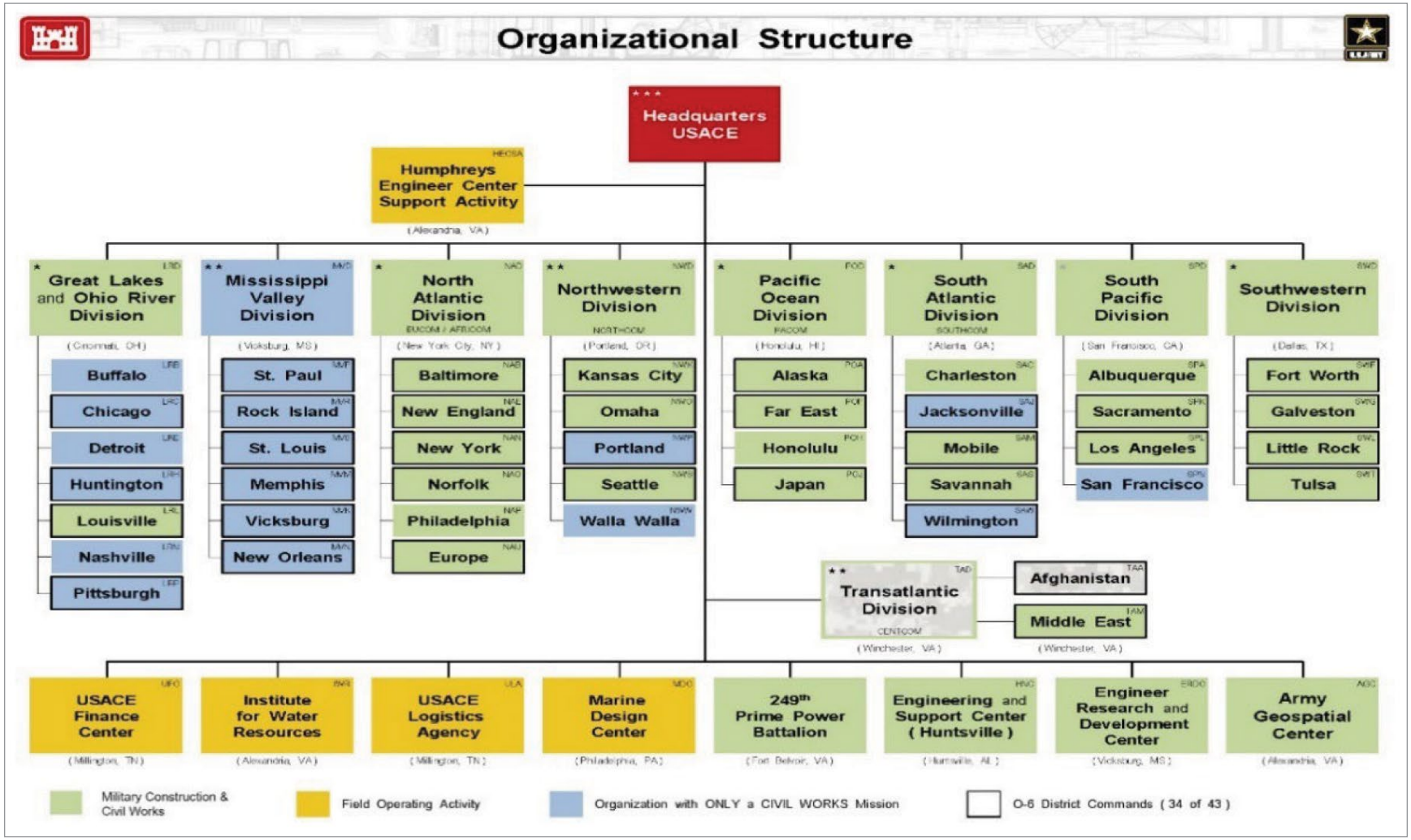
The Office of the Deputy Assistant Secretary of Defense for Infrastructure Modernization and Resilience's real property portfolio includes over 555,000 facilities worldwide, including buildings and linear and vertical structures, located at over 5,000 sites covering more than 28 million acres. The Deputy Assistant Secretary of Defense for Infrastructure Modernization and Resilience supports the DoD's global security mission by ensuring that facility assets and services are made available whenever and wherever needed, using all necessary capabilities and capacities, through methods that are cost effective, safe, and environmentally responsible.

USACE

The Chief of Engineering and Construction provides executive leadership for all technical engineering activities during planning, design, and construction for the military, civil works, environmental, support to others, and international programs. USACE serves as the design and construction agent for Army MILCON. USACE responsibilities related to MILCON include strategic planning, mission-area policy, management of a program that shares the best project management practices, and integration of resources and policies for all military programs. The USACE organization has nine divisions that are further broken down into districts. Figure 1 shows USACE's organizational structure, including the divisions and districts and their missions.[5]

[5] Except for the Mississippi Valley Division, each USACE division has at least one district with MILCON programs. These districts are shown in Figure 1 under their respective divisions as "Military Construction and Civil Works."

Figure 1. USACE Organizational Structure



Source: USACE.

The supporting USACE districts and divisions manage the MILCON and improvement projects as well as their costs. The USACE districts and divisions report progress and costs variations through their channels to both Headquarters, USACE, and Headquarters, Department of the Army. MILCON project contract management requirements for USACE officials include maintaining detailed construction schedules, managing project costs, and assessing impacts of changes. In addition, USACE officials are required to ensure that construction complies with project drawings and specifications, and they must provide appropriate quality assurance during the execution of the MILCON project.

Army MILCON Projects Reviewed

To determine our audit universe, we reviewed the September 2022 USACE Military Construction Status Report (2851 monthly report) for Army MILCON projects performed in the continental United States that had cost increases or were delayed.[6] In addition, we excluded any Army Reserve MILCON projects and Military Family Housing projects from our review. The report contained 36 Army MILCON projects that met our criteria. From the 36 Army MILCON projects, we nonstatistically sampled the following four Army MILCON projects from four different USACE districts.[7] See Appendix A for the universe and sample information. Figure 2 shows the four MILCON projects we selected to review.

[6] As provided under 10 U.S.C. § 2851, the Office of the Secretary of Defense generates a monthly online report detailing the status of the DoD's MILCON projects.

[7] The September 2022, 2851 monthly report included an error in the original contract amount for the USACE Savannah District MILCON project, Cyber Instructional Facility and Network Center at Fort Eisenhower, Georgia. See the "Incorrect Contract Amount Reported on the 2851 Monthly Report" section in Appendix B for more information. In October 2023, Fort Gordon was redesignated as Fort Eisenhower.

Figure 2. MILCON Projects Selected for Review

Source: USACE.

DoD OIG Audit of U.S. Navy MILCON Projects

In conjunction with this project, the DoD OIG also performed an audit of the Naval Facilities Engineering Systems Command management of MILCON projects.[8] The DoD OIG reviewed five Naval Facilities Engineering Systems Command-managed MILCON projects from four different Component Commands under the Naval Facilities Engineering Systems Command.

[8] On November 5, 2024, the DoD OIG issued the "Audit of Cost Increases and Schedule Delays of Military Construction Projects Managed by Naval Facilities Engineering Systems Command," Report No. DODIG-2025-017.

Finding

USACE Officials Experienced Cost Increases and Schedule Delays While Executing Army MILCON Projects

USACE officials faced challenges in planning and managing the four Army MILCON projects we reviewed, originally valued at $248.5 million, in four USACE districts. Specifically, USACE officials experienced—and continue to experience—cost increases and schedule delays because of:

- challenges with construction of the foundation, incorrect funding type for a built-in kitchen equipment contract option, and the under-floor power distribution system installation for the USACE Baltimore District project, General Instruction Building;
- unsuitable soil and weather conditions at the USACE Louisville District project, General Purpose Maintenance Shop;
- privatized utilities and unexpected debris during site preparation and deficient concrete quality for the USACE Savannah District project, Cyber Instructional Facility and Network Center; and
- design errors, engineering and technical requirements changes related to the building's security system, and elevator design and construction re-work for the USACE Seattle District project, Information Systems Facility.

USACE officials attempted to mitigate additional cost increases and schedule delays by implementing corrective actions during the execution of the MILCON projects. In some instances, USACE officials adjusted processes to mitigate potential cost increases and delays for future MILCON projects. However, USACE officials did not always share lessons learned across USACE districts.

As a result of the issues described above, USACE officials incurred $19.6 million in total increased contract costs and schedule delays ranging from 120 to 847 days on the four MILCON projects we reviewed.[9] Delays in Army MILCON projects, such as the construction of maintenance shops and training and information facilities, hinder the Army's ability to perform necessary maintenance of vehicles and tactical equipment or train future leaders and critical cybersecurity specialists.

[9] As of November 2023, USACE officials had construction changes that resulted in cost increases, schedule delays, or both.

USACE Officials Faced Challenges in Planning and Managing MILCON Projects

USACE officials at each of the four USACE districts experienced challenges in planning and managing four MILCON projects originally valued at $248.5 million. As of November 2023, USACE officials had a total of $19.6 million in cost increases and schedule delays ranging from 120 to 847 days. Table 1 summarizes the cost increases and schedule delays that USACE officials had, as of November 2023, on the four MILCON projects we reviewed.

Table 1. Contract Cost Increases and Delays of MILCON Projects as of November 2023

USACE District	MILCON Project Description	Original Contract Value (in Millions)	Cost Increase (in Millions)	Contract Value (in Millions)	Original Contract Days	Days Delayed	Total Days
Baltimore District	General Instruction Building for the U.S. Army War College	$76.4	$7.9	$84.3	1,095	120	1,215
Louisville District	General Purpose Maintenance Shop	37.1	4.2	41.3	760	157	917
Savannah District	Cyber Instructional Facility and Network Center	96.9[1]	2.9	99.8	720	847[2]	1,567
Seattle District	Information Systems Facility	38.0	4.6	42.6	900	332	1,232
Total[3]		**$248.5**	**$19.6**	**$268.1**			

[1] We included the correct original contract value for the Cyber Instructional Facility and Network Center. The September 2022, 2851 monthly report included an error in the original contract value for this project. See the "Incorrect Contract Amount Reported on the 2851 Monthly Report" section in Appendix B for more information.

[2] USACE Savannah District contracting officials issued modifications that extended the construction contract completion date (CCD) by 200 days for the Cyber Instructional Facility and Network Center project. However, as of November 2023, contracting officials estimated a total of at least 847 days to complete the project.

[3] Totals for the original contract amount and contract value do not equal the actual sum because of rounding.

Source: The DoD OIG.

USACE Baltimore District Officials Experienced Cost Increases and Schedule Delays for the General Instruction Building

As of November 2023, USACE Baltimore District contracting officials issued modifications that increased the total contract cost by $7.9 million (9 percent) and extended the construction contract completion date (CCD) by 120 days (11 percent).[10] The General Instruction Building at the U.S. Army War College was a 3-year project with an approved programmed amount of $98 million.[11] USACE Baltimore District officials awarded a $76.4 million construction contract on March 9, 2020. Figure 3 shows the construction of the General Instruction Building at the U.S. Army War College and a description of the project.

Figure 3. The General Instruction Building Under Construction at the U.S. Army War College

Source: USACE Baltimore District.

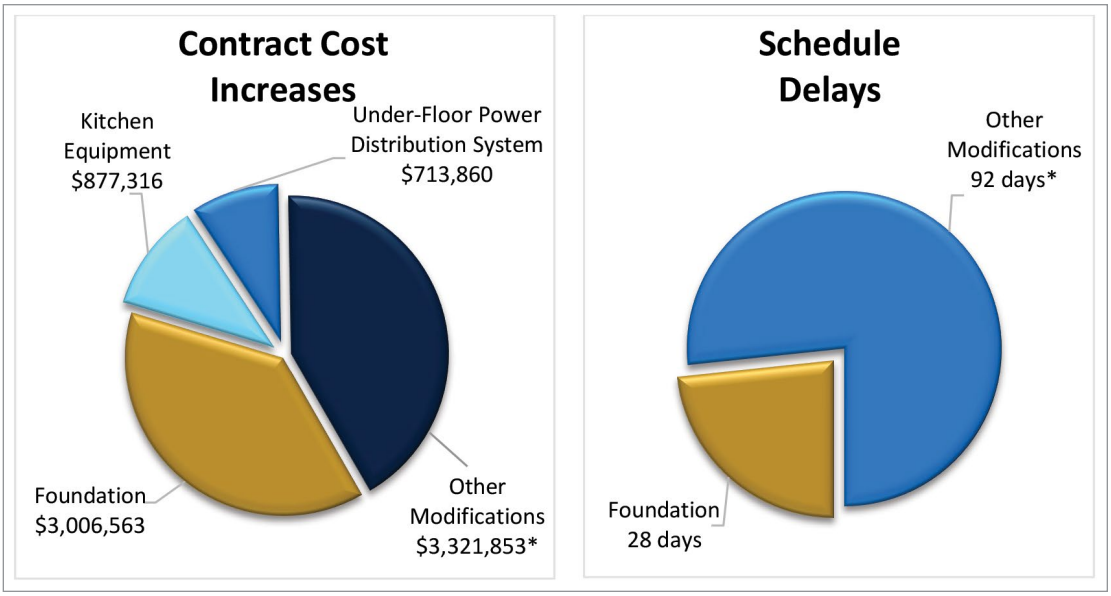
USACE Baltimore District officials experienced challenges with the construction of the foundation, identifying the correct funding type for a built-in kitchen equipment contract option and the under-floor power distribution system installation for the

[10] USACE Baltimore District officials issued modifications that extended the CCD from April 1, 2023, to July 30, 2023. USACE Baltimore District officials completed the final inspection and acceptance of the building on July 31, 2023, and the U.S. Army War College began using the building the next day as originally scheduled on August 1, 2023. Army War College personnel needed to concurrently furnish the building while conducting classes because of the construction delay. Substantial completion occurs when the contractor has performed to the terms of the contract and the owner can occupy and use the building. The contractor may continue to make minor corrective actions and warranty work at the site.

[11] The U.S. Army War College prepares selected military, civilian, and international leaders for the responsibilities of strategic leadership; educates current and future leaders on the development and employment of land power in a joint, multinational, and interagency environment; conducts research and publishes on national security and military strategy; and engages in activities in support of the Army's strategic communication efforts.

General Instruction Building. Figure 4 shows the modifications USACE Baltimore District officials issued for contract cost increases and schedule delays for the General Instruction Building, as of November 2023.

Figure 4. General Instruction Building Project Cost Increases and Schedule Delays



* As of November 2023, USACE Baltimore District contracting officials included other modifications to provide temporary offices at the construction site, provide a construction access road, perform additional drainage grading, and demolish a nearby building.

Source: The DoD OIG.

USACE Baltimore District Officials Experienced Challenges Constructing the Building's Foundation

USACE Baltimore District contracting officials experienced challenges with the construction of the building's foundation, specifically the process of drilling piers and estimating the amount of excavation needed for three contract line items unrelated to the drilled piers. As a result of these two challenges, USACE Baltimore District contracting officials issued modifications that increased the total contract cost by $3 million and extended the CCD by 28 days. Figure 5 shows construction of the structural steel for the General Instruction Building as of July 2021.

Figure 5. Construction of the Structural Steel for the General Instruction Building Project
Source: USACE Baltimore District.

USACE Baltimore District contracting officials modified the contract to address the challenges associated with the drilled piers by adding 28 days to the contract. USACE Baltimore District contracting officials also increased the total contract cost by a net amount of $351,000 after adding the additional work and deducting other drilling work in the original contract that was unnecessary after the modification. According to reports from a USACE contract administration official, schedule delays were largely due to additional drilling for deep foundation. USACE Baltimore District contracting officials included drilling for three different diameters of piers in the original contract, each with an associated excavation contract line item that was based on the depth and size of the drilled pier.

USACE personnel stated that, as a standard practice, contracting officers modify the contract's quantities once drilling begins because the full extent of soil conditions and the exact elevations where rock is located are unknown until drilling occurs. USACE Baltimore District contracting officials included estimated amounts based on boring data and calculations in the original contract for this excavation and made contract modifications based on the adjusted drilling depths.

Additionally, USACE Baltimore District contracting officials also included three contract line items in the contract for 20 cubic yards each related to mass rock excavation, rock excavation for utilities, and neat rock excavation that significantly

increased during construction.[12] USACE Baltimore District officials responsible for determining the estimated quantities in the construction contract had Federal, Army, and USACE regulations available for preparing more accurate estimates.[13] However, the USACE Baltimore District contracting official used the 20 cubic yards for each line item to establish prices per unit instead of attempting to accurately estimate the needed quantities. As a result, USACE Baltimore District contracting officers modified the contract for the amount of rock excavation on these three contract line items during the construction and increased the contract cost by $2.2 million to obtain these additional quantities. Specifically, USACE Baltimore District contracting officials modified the contract to a total 1,620 cubic yards for mass rock excavation, 2,700 cubic yards for rock excavation for utilities, and 1,605 cubic yards of neat rock excavation.

USACE Baltimore District contracting personnel should reduce potential cost increases and schedule delays related to adjustment of contract estimates on future MILCON projects by working with engineers to determine the estimated quantities in the construction contract when preparing contract estimates. Therefore, to ensure USACE personnel have the most updated guidance and avoid similar cost increases and delays in future MILCON projects, the USACE chief of engineering and construction should issue a memorandum and provide training to USACE personnel emphasizing the requirement to use the guidance to develop accurate construction-related estimates on future MILCON contract solicitations.

USACE Baltimore District Officials Exercised a Contract Option and Corrected the Funding Type for Kitchen Equipment

A USACE Baltimore District contracting officer added $877,316 to the contract when they exercised a contract option with the corrected funding type for built-in kitchen equipment. Contracting officials originally included the equipment as an option on the contract using the incorrect funding type. According to an Army Regulation, the construction cost estimate for MILCON projects includes the cost of built-in kitchen equipment, such as refrigeration equipment, because this equipment is an integral part of the facility construction.[14] However, USACE Baltimore District officials initially misclassified the built-in kitchen as if it needed Operation and Maintenance funds rather than MILCON funds. USACE Baltimore District officials

[12] The various types of excavation included in the contract were based on the types of materials being removed, special equipment needed, and methods for removal. The contracting official established different pricing structures for the various types of excavation. Neat rock is rock in a natural state that has not been disturbed through previous excavation.

[13] Federal, Army, and USACE guidance includes, but is not limited to, Federal Acquisition Regulation (FAR) 36.203, "Government Estimate of Construction Costs;" Army Technical Manual 3-34.41, "Construction Estimating;" and USACE Engineer Regulation 1110-3-1300, "Military Programs Cost Engineering."

[14] Army Regulation 420-1, "Army Facilities Management," Chapter 4, Section VI, "Equipment Installation," August 24, 2012.

stated that they originally planned to install the built-in kitchen equipment using non-MILCON funding but realized that the equipment needed to be MILCON-funded after awarding the contract. The USACE Baltimore District Commander should provide training to USACE personnel reinforcing how the costs of the various types of installed building equipment under MILCON projects should be included in construction contracts for future Army MILCON projects in accordance with Army Regulation 420-1, "Army Facilities Management."

USACE Baltimore District Officials Increased Contract Costs for an Under-Floor Power Distribution System

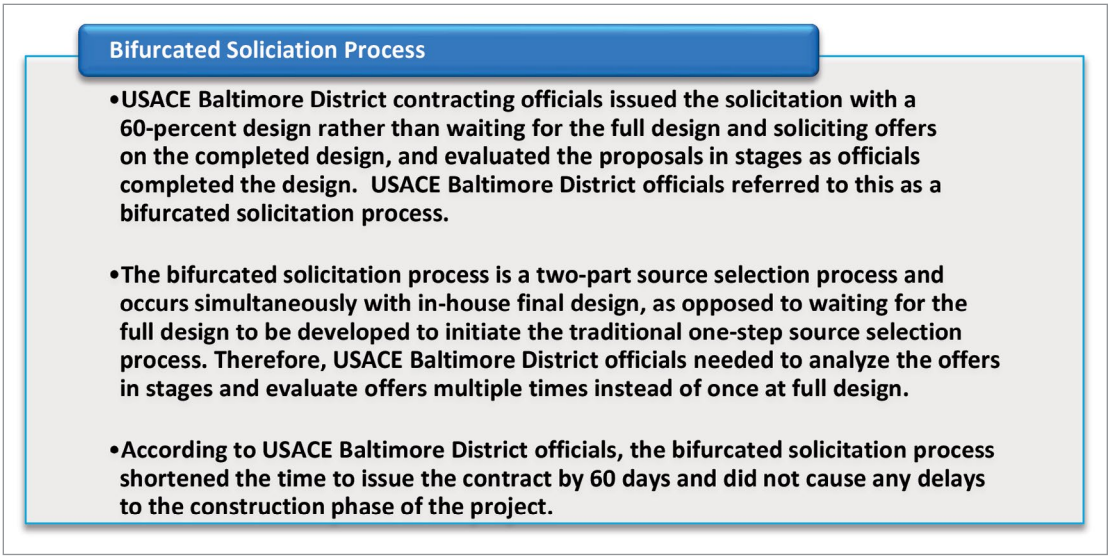
A USACE Baltimore District contracting official modified the contract to upgrade the building with an under-floor power distribution system that increased the contract costs by $713,860. The USACE Baltimore District contracting officer originally included the under-floor power distribution system on the contract as an option for the purchase and installation of furniture, fixture, and equipment on the original contract. However, the time period to exercise the option expired and USACE engineers recognized that MILCON funding should be used instead of another type of funding. Therefore, the USACE Baltimore District contracting official issued a modification to add the under-floor power distribution system using MILCON funding after the construction contract was awarded.

Our recommendation to the USACE Baltimore District Commander to provide training to USACE personnel reinforcing the guidance on the various types of installed building equipment under MILCON projects will also address the circumstances related to the distribution system. Therefore, we are not making an additional recommendation.

USACE Baltimore District Officials' Mitigating Actions and After-Action Review for the General Instruction Building

USACE Baltimore District officials shortened the solicitation process to meet the U.S. Army War College schedule and have the building available for use, as originally scheduled, by August 1, 2023. Figure 6 describes the actions that USACE Baltimore District officials took during planning and execution of the General Instruction Building project to mitigate schedule delays.

Figure 6. USACE Baltimore District Actions to Mitigate Schedule Delays



Source: The DoD OIG.

Other USACE personnel may benefit from lessons learned that USACE Baltimore District obtained during planning and execution of the General Instruction Building project. However, USACE Baltimore District officials did not complete an after-action review (AAR) of the project because they generally perceived the project as successful. USACE Baltimore District officials stated that they completed the project within the programmed amount and in time to transfer the building to the U.S. Army War College.

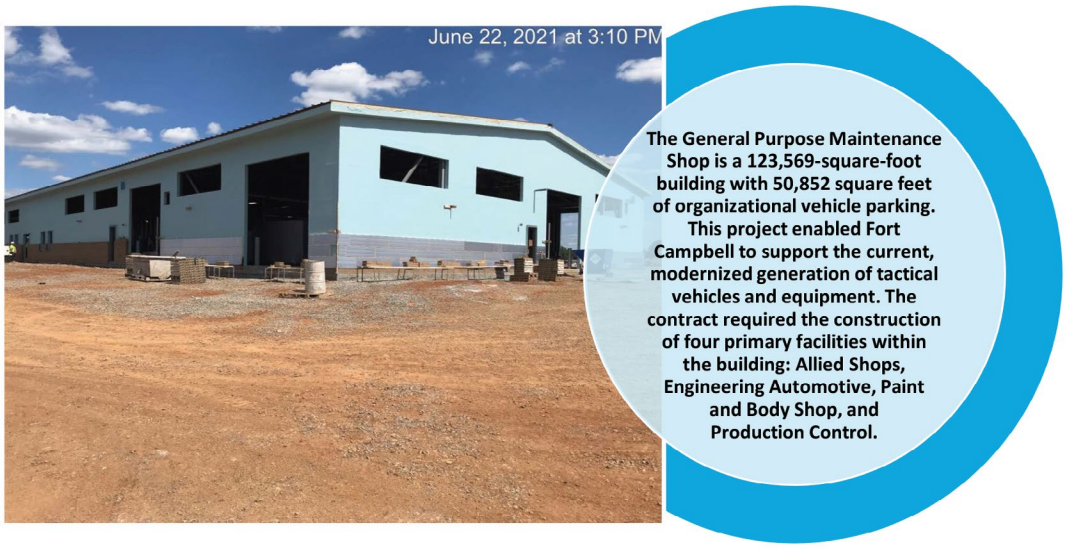
USACE policy states that USACE personnel must perform an AAR for continual improvements when different phases of military projects, such as construction, are completed.[15] In addition, AARs help USACE personnel develop and share lessons learned for continuous improvement and process optimization in future MILCON projects. Therefore, the USACE Baltimore District Commander should complete an AAR for the General Instruction Building project in accordance with USACE Engineer Regulations, including the benefits and additional efforts required for the bifurcated solicitation process, and make the review available for USACE personnel to consider when planning and executing future MILCON projects. In addition, the USACE Chief of Engineering and Construction should review the benefits and limitations of USACE Baltimore District officials using the bifurcated solicitation process to determine guidelines and the circumstances in which USACE contracting personnel can use the bifurcated solicitation process on future MILCON projects.

[15] USACE Engineer Regulation 1110-3-12, "Military Engineering Design Quality Management," March 25, 2021.

USACE Louisville District Officials Experienced Cost Increases and Schedule Delays for the General Purpose Maintenance Shop

As of November 2023, USACE Louisville District contracting officials issued modifications that increased the total contract cost by $4.2 million (11 percent) and extended the construction CCD by 157 days (21 percent).[16] The General Purpose Maintenance Shop was a 2-year project with an approved programmed amount of $51 million for FY 2020. USACE Louisville District officials awarded a $37.1 million construction contract on May 20, 2020. Figure 7 shows the construction of the General Purpose Maintenance Shop at Fort Campbell and a description of the project.

Figure 7. General Purpose Maintenance Shop at Fort Campbell

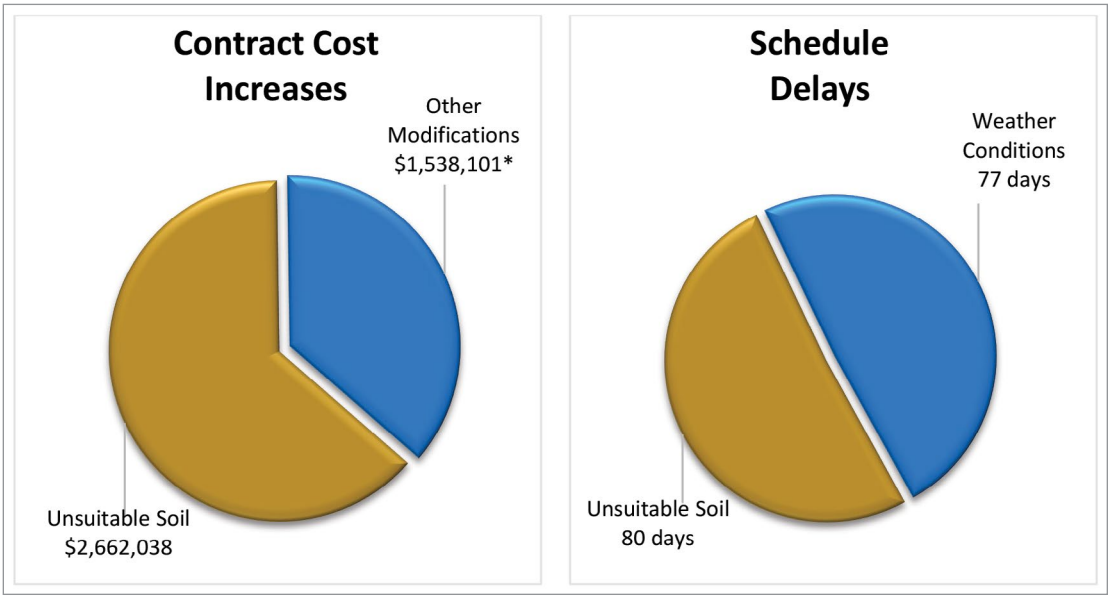


Source: USACE Louisville District.

USACE Louisville District officials experienced challenges with soft soil that was unsuitable for meeting the bearing capacity requirement for the foundation of the four buildings and unexpected weather conditions. In addition, USACE Louisville District officials issued other modifications to the contract for other changes to the project. Figure 8 shows the modifications USACE Louisville District officials issued for contract cost increases and schedule delays for the General Purpose Maintenance Shop, as of November 2023.

[16] USACE Louisville District extended the CCD from July 11, 2022, through December 15, 2022, and transferred the building to Fort Campbell's Logistics Readiness Center on January 20, 2023.

Figure 8. General Purpose Maintenance Shop Cost Increases and Schedule Delays



* As of November 2023, USACE Louisville District contracting officials included other modifications for the relocation of exhaust discharge, code compliance, drainage grading, demolition of subsurface concrete, and Leadership in Energy and Environmental Design certification.

Source: The DoD OIG.

USACE Louisville District Officials Experienced Unsuitable Soil

USACE Louisville District officials experienced challenges with soil that was unsuitable for meeting the bearing capacity requirement of the buildings' foundations.[17] Therefore, the USACE Louisville District contracting officer issued modifications that increased the contract's cost by $2.66 million and extended the CCD by 80 days. USACE Louisville District officials encountered the soft soil at all four building sites: the Allied Shops Building, Engineering Automotive Building, Paint and Body Shop Building, and Production Control Building. In addition to the buildings' foundations affected by the soft soil, the cost increase included other areas in this project site with unsuitable soil and the removal of additional excavated soil.[18] Figure 9 shows one of the four buildings in the construction of the General Purpose Maintenance Shop.

[17] Bearing capacity is the ability of soil to safely carry the pressure placed on the soil from any engineered structure without downward movement or collapse of the structure. Unsuitable soil in construction refers to soil conditions that make it difficult to construct a building on a particular site, such as soft soil. Unsuitable soil can lead to settling, cracking, and other types of structural damage.

[18] Cost increases and schedule delays for remediation of unsuitable soil included other areas, such as the secondary site entrance and the northwest area from the Production Control building.

Figure 9. Construction of the General Purpose Maintenance Shop at Fort Campbell
Source: USACE Louisville District.

USACE Louisville District contracting officials included the earthwork specifications for this project, along with the boring data plan from the geotechnical report that they completed in preparation for this project, in the construction contract. However, although Federal regulations and USACE guidance addressing the risk of differing site conditions was available for developing schedule and cost estimates, USACE Louisville District contracting officials did not include in the contract schedule or cost estimates for possible variations in the soil as explained in the geotechnical report.[19]

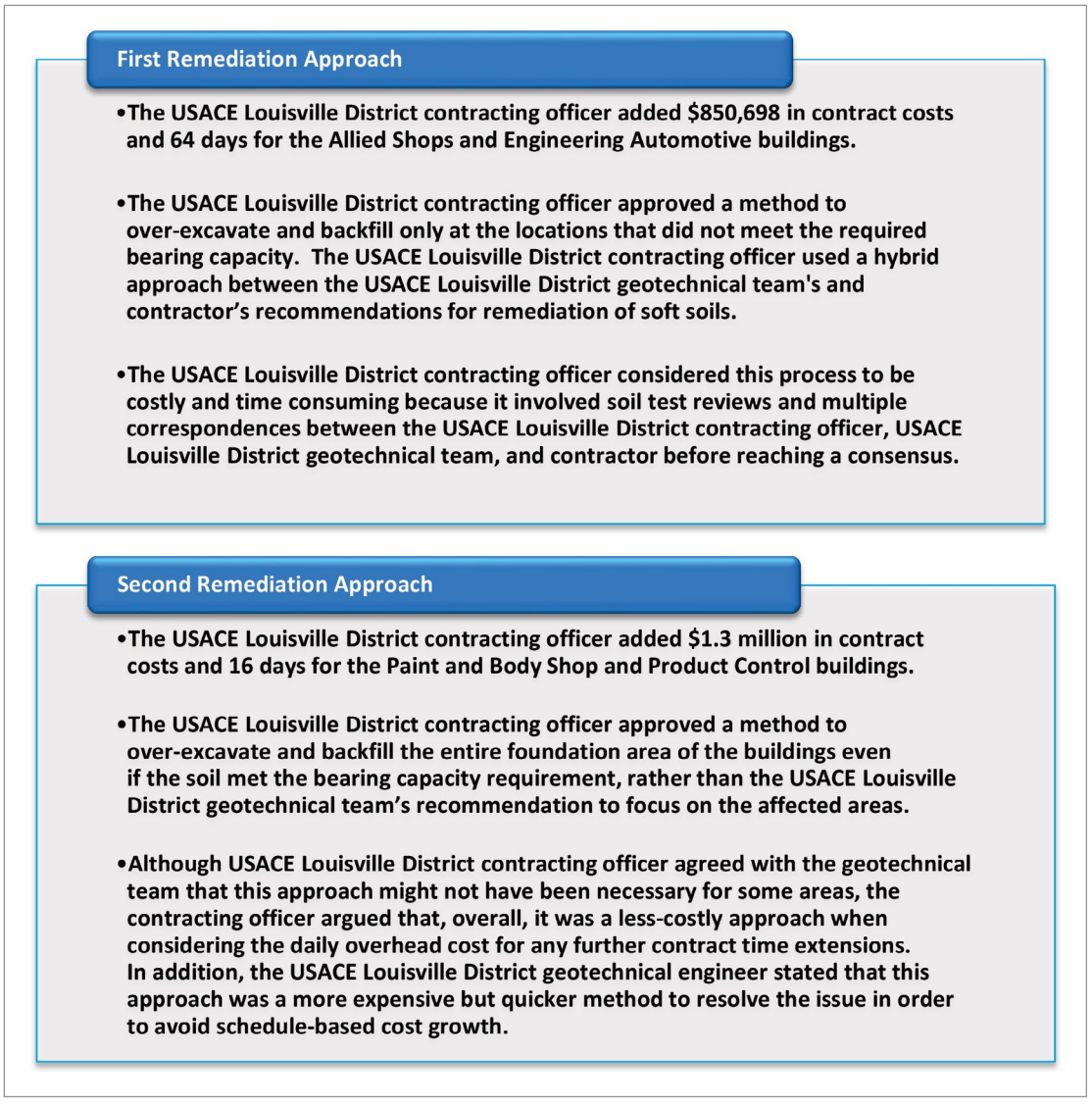
According to the USACE Louisville District geotechnical report, subsurface conditions during construction may vary from the levels identified by the geotechnical evaluation.[20] In addition, the geotechnical report stated that when possible, USACE personnel should schedule site work during drier, hotter months to reduce construction problems with wet soil and frozen ground conditions. However, USACE Louisville District personnel completed most of the site work for this project during the winter, when weather conditions were not optimal.

[19] Federal Acquisition Regulation 36.203, "Government Estimate of Construction Costs." USACE Engineering and Construction Bulletin 2012-21, "Construction Contract Duration and Beneficial Occupancy Date," July 23, 2012. USACE Engineer Regulation 1110-1-8155, "Specifications," October 30, 2015.

[20] On July 17, 2019, USACE Louisville District's geotechnical team completed the Geotechnical Evaluation Report for the General Purpose Maintenance Shop project before the construction contract award on May 20, 2020.

USACE Louisville District contracting officers used two remediation approaches to address the soil issue and continue the construction of the buildings' foundations before weather conditions further affected earthwork. See Figure 10 for more information about the remediation approaches that USACE Louisville District officials approved to address the unsuitable soil and meet the required bearing capacity.

Figure 10. First and Second Remediation Approaches for Unsuitable Soil



Source: The DoD OIG.

In comparing the different remediation approaches for each building, the USACE Louisville District contracting officer stated that they considered time, quality, cost, and whether the approach was technically acceptable. However, USACE Louisville District officials should be proactive when preparing contract specifications,

schedules, and cost estimates for future projects and incorporate remediation actions for possible soft soil based on the geotechnical recommendations as soil conditions could vary between different locations within the construction site. In addition, USACE Louisville District guidance requires USACE officials to incorporate applicable requirements into the specifications about standard construction techniques related to foundations and earthwork.[21] Therefore, if the geotechnical data obtained before contract award indicates soft soil conditions, USACE officials should be proactive and modify the solicitation package to avoid modifications with cost increases and delays to the CCD because of differing site conditions. Therefore, the USACE Chief of Engineering and Construction should issue a memorandum and provide training to USACE personnel emphasizing the guidance to estimate costs and schedule for possible variations in the soil conditions based on a geotechnical report and weather conditions of the location of future MILCON projects.

USACE Louisville District Officials Extended the Construction Contract Schedule for Unexpected Weather Conditions

USACE Louisville District officials encountered unexpected weather conditions that extended the CCD by 77 days. The USACE Louisville District contracting officer stated that a lot of the work was weather dependent, and the contract performance period included multiple winter seasons and tornadoes at Fort Campbell. Actual conditions, such as rain and snow, were beyond the expected weather conditions USACE personnel anticipated when originally planning the project, justifying additional delays. For example, the contracting officer anticipated winter weather conditions in January 2022 to delay the construction schedule by 6 days, but the actual weather conditions affected site work for a total of 19 days.

According to USACE policy and contract specifications, the USACE Louisville District contracting officer awards time extensions if the number of actual adverse weather delay days exceeds the number of days anticipated for the project location during any given month and affects a weather-dependent activity.[22] We discuss in the next section other mitigating actions that USACE Louisville District officials follow for developing construction schedules for future projects; therefore, we have no additional recommendations related to unexpected weather conditions.

[21] The Louisville District Military Design Guide, Chapter 12, "Geotechnical," provides guidance regarding criteria, submittals, review processes, and other requirements applicable to military projects executed for the USACE Louisville District.

[22] Engineers Regulation 415-1-15, "Construction Time Extensions for Weather," October 31, 1989, defines adverse weather as atmospheric conditions at a definite time and place that are unfavorable to construction activities.

USACE Louisville District Officials Mitigating Actions and After-Action Reviews of the General Purpose Maintenance Shop

USACE Louisville District officials remediated the unsuitable soil affecting the bearing capacity needed for the foundation and weather conditions to mitigate cost increases and schedule delays for the General Purpose Maintenance Shop project. In addition, USACE Louisville District officials conducted an initial and final AAR to identify lessons learned based on challenges they experienced during the construction of the General Purpose Maintenance Shop project.

USACE Louisville District Mitigating Actions Related to Unsuitable Soil: USACE Louisville District officials included lessons learned related to the unsuitable soil condition in their AAR for this project. Specifically, USACE Louisville District officials included in their AAR the need to improve the geotechnical scope in the contract language to better inform the contractors ahead of their proposals of the risk related to the site conditions and to better align the variable estimates with the results of the geotechnical analysis. In addition, USACE Louisville District officials included in the AAR that, in response to the soft soil conditions they encountered for this project, USACE officials could have better clarified the report findings from the geotechnical analysis in the contract.

USACE Mitigating Action Related to Unexpected Weather Conditions: USACE officials issued an Engineering and Construction Bulletin in August 2023 to establish best practices and a checklist for developing realistic construction contract schedules and durations. Specifically, as part of USACE Louisville District officials' development of the schedule, officials use the new checklist to verify whether the schedule contained an accurate number of weather days in accordance with the specific anticipated adverse weather data provided in the contract and appropriate seasonal work periods based on location.

USACE Louisville District AARs and Lessons Learned Accessibility: USACE Louisville District officials conducted an initial and final AAR to identify lessons learned based on challenges experienced during the construction of the MILCON project. According to USACE Louisville District personnel, they used a quality management system to upload their AARs; however, they rarely used the quality management system to get information from previous construction projects when starting the construction of a new project. In addition, USACE Louisville District personnel described the quality management system as overwhelming and not user-friendly because of the volume of data in the system.

Along with USACE policy, guidance, templates, and specifications, USACE Louisville District personnel would benefit from being able to easily access and identify lessons learned from previous MILCON projects to improve future projects.

In addition, sharing lessons learned promotes collaboration and ensures that the information is accessible to the team and stakeholders to use for future MILCON projects. Therefore, the USACE Chief of Engineering and Construction should issue a memorandum and provide training to USACE personnel emphasizing the guidance to use the quality management system, including how to categorize and access lessons learned from previous MILCON projects, and the importance of reviewing AARs to identify lessons learned from previous MILCON projects in preparation for future MILCON project.

USACE Savannah District Officials Experienced Contract Cost Increases and Schedule Delays for the Cyber Instructional Facility and Network Center

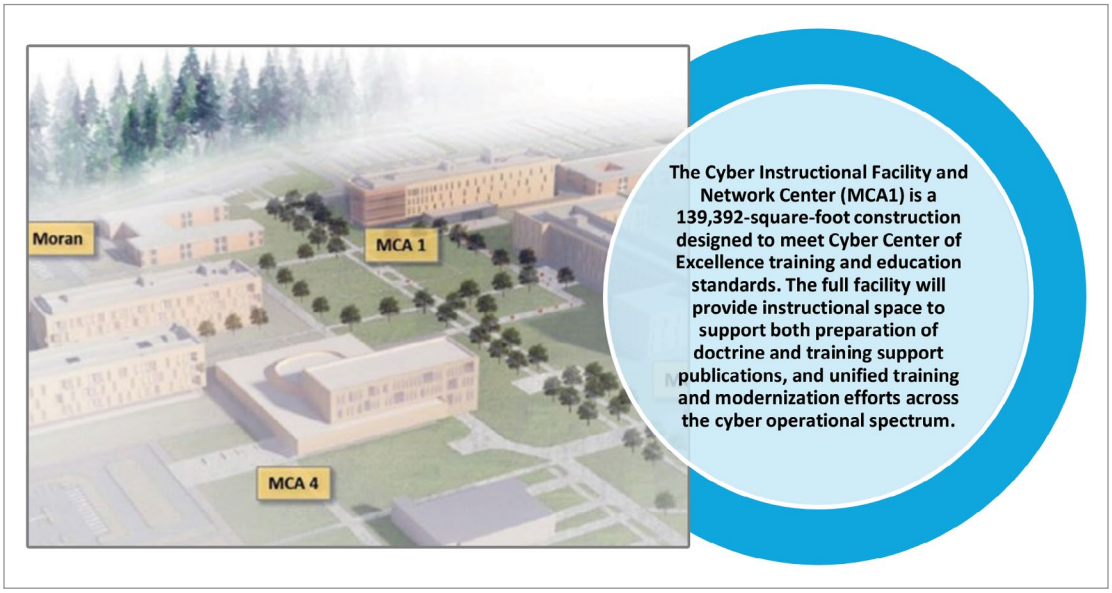
As of November 2023, USACE Savannah District contracting officials issued modifications that increased the total contract cost by $2.9 million (3 percent) and extended the construction CCD by 200 days (28 percent).[23] However, as of November 2023, USACE Savannah District officials estimated they would complete the MILCON project in November 2024, a total schedule delay of 847 days (118 percent).[24] The Cyber Instructional Facility and Network Center was originally a 2-year project with an approved programmed amount of $99 million. USACE Savannah District officials awarded a $96.9 million construction contract on June 19, 2020. Figure 11 shows the Cyber Instructional Facility and Network Center at Fort Eisenhower, labeled as Military Construction Army (MCA) 1, and a description of the project.[25]

[23] As of November 2023, USACE Savannah District officials continued with the construction of the Cyber Instructional Facility and Network Center at Fort Eisenhower and anticipate completion of the project and transfer of the facility to the Cyber Center of Excellence in November 2024 with a total delay of at least 847 days. According to USACE Savannah District officials, the contractor expected project completion in February 2024. USACE officials had originally scheduled to transfer the Cyber Instructional Facility and Network Center at Fort Eisenhower on March 4, 2023.

[24] The MILCON project completion date is not equivalent to or earlier than the CCD. The CCD does not always correspond with completion of a facility when contractor performance deficiencies cause delays in a MILCON project. USACE determines the CCD through the awarded contract terms for the duration of the construction, including any modifications for excusable delays.

[25] In October 2023, Fort Gordon was redesignated as Fort Eisenhower.

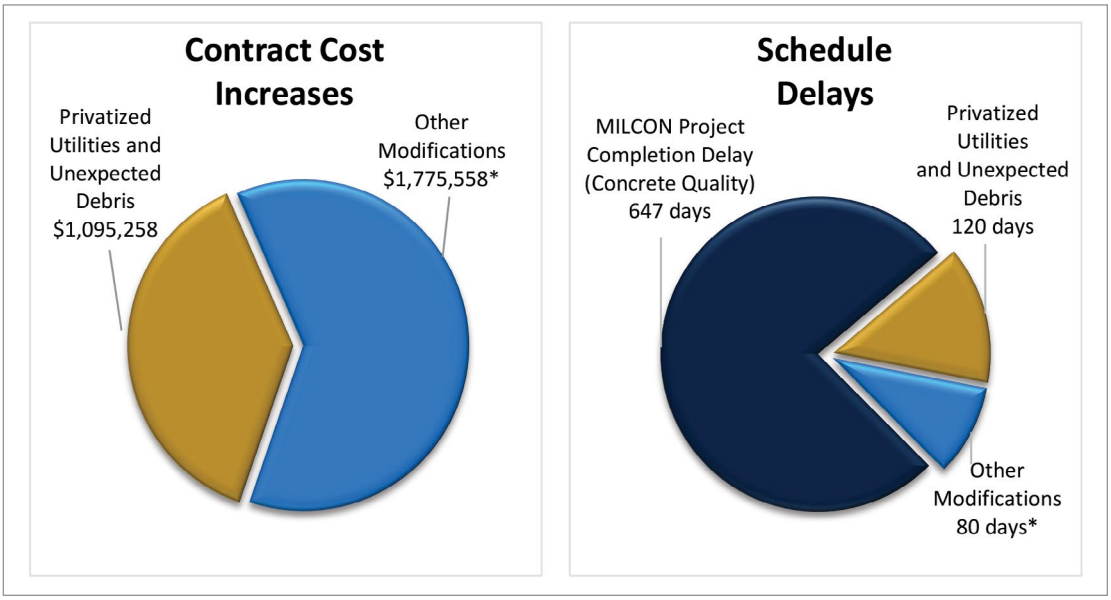
Figure 11. Cyber Instructional Facility and Network Center (MCA 1) at Fort Eisenhower



Source: USACE Savannah District.

USACE Savannah District officials experienced challenges working with privatized utilities and unexpected debris during site preparation, as well as deficient concrete quality. In addition, USACE Savannah District officials issued other modifications to the contract for other changes to the project. Figure 12 shows the modifications USACE Savannah District officials issued for contract cost increases and schedule delays for the Cyber Instructional Facility and Network Center, as of November 2023.

Figure 12. Cyber Instructional Facility and Network Center Cost Increases and Schedule Delays



* As of November 2023, USACE Savannah District contracting officials included other modifications for unexpected weather delays, rerouting gas lines, installing cables and telecom server tacks, changing bathroom accessories, creating a storage area, upgrading the USACE office trailer, modifying the room walls, installing lights and finishes, miscellaneous electrical changes, and Qualified Elevator Inspector acceptance testing.

Source: The DoD OIG.

USACE Savannah District Officials Experienced Challenges with Privatized Utilities and Unexpected Debris During Site Preparation

USACE Savannah District officials experienced challenges during site preparation related to privatized utilities and unexpected debris from abandoned steam lines and old foundations from a previous building. In total, these two items increased the contract cost by $1.09 million and extended the construction CCD by 120 days.

Privatized Utilities. USACE Savannah District officials obtained estimates from the privatized utility companies before the award of the construction contract. However, the privatized utility companies work through MILCON contractors rather than directly with the DoD. USACE Savannah District officials stated that after the MILCON contract award, the privatized utility provider increased its estimate for the required utilities installation for this MILCON project. According to USACE Savannah District officials, the privatized utility companies managed most of the utility installation on the project site and were not always responsive to requests for collaborating with the Government or construction contractor, leading to further delays in the project.

Unexpected Debris. USACE Savannah District officials stated that debris from abandoned steam lines and an old foundation found onsite were not in the records maintained by the Fort Eisenhower Directorate of Public Works. USACE Savannah District and Fort Eisenhower Directorate of Public Works officials explained that they removed previously demolished structures down to only 5 feet below the surface and left the rest in place. To reduce the chance of unexpectedly encountering debris during other MILCON projects scheduled at Fort Eisenhower, USACE Savannah District officials required a ground-penetrating radar test that identified the abandoned steam lines located across the planned construction site. USACE Savannah District officials then modified the contract to require the contractor to remove any abandoned foundations from a previous building as part of site preparation for the project.

In response to the challenges experienced during site preparation, USACE Savannah District officials implemented weekly meetings with privatized utility teams. They determined that costs for future utility work would be pre-priced contract line items in the Independent Government Estimate for potential contractors to include in their bids, and they conducted more comprehensive utility assessment for construction sites at Fort Eisenhower.

- ***Weekly Meetings with Privatized Utility Team:*** USACE Savannah District officials established weekly meetings with the privatized utility team until the issues were resolved on this project. According to USACE Savannah District officials, the meetings with the privatized utility companies mitigated some of the areas related to coordination.
- ***Pre-Priced Contract Line Items in the Solicitation and Resulting Contract:*** USACE Savannah District officials stated that the Government now uses pre-priced contract line items in the solicitation and resulting contract to guide the contractor on pricing utilities. According to USACE Savannah District personnel, the pre-priced contract line items were not included in the Cyber Instructional Facility and Network Center contract documentation and instead, the general construction contractor determined the unit price. USACE Savannah District officials explained that when a private utility provider submitted an estimate to the Government, the USACE project management team confirmed that the information was within the bid scope to better validate costs.
- ***More Comprehensive Utility Assessment on Fort Eisenhower:*** USACE Savannah District officials stated that they would use a more comprehensive utility assessment for future projects after their challenges with differing site conditions during site preparation for the Cyber Instructional Facility and Network Center. For future MILCON projects on Fort Eisenhower, USACE Savannah District personnel decided to conduct

ground-penetrating radar scans at the project site to determine whether items were below the surface instead of relying on maps and records to determine site conditions.

Other USACE personnel planning future MILCON project may benefit from the corrective actions that USACE Savannah District officials in response to its challenges during site preparation. Therefore, the USACE Chief of Engineering and Construction should review the actions of USACE Savannah District officials for site preparation to determine whether USACE personnel can use these actions in preparation for future MILCON projects and issue a memorandum to USACE personnel with the results of the review to use as lessons learned.

USACE Savannah District Officials Experienced Delays Related to Concrete Quality and Other Contractor Performance Deficiencies

USACE Savannah District officials identified several concrete quality deficiencies during construction and attributed most of the delayed MILCON project completion date to the contractor's performance deficiencies, including lack of qualified labor onsite and deficient work.

The concrete quality deficiencies included cold joints, honeycombing, raindrop and footprint impressions, and construction equipment found in the concrete, issues that needed rework to meet quality requirements for the project.[26] The contractor had to complete work to address the concrete quality deficiencies, which further delayed the MILCON project schedule. As a result, USACE Savannah District officials estimated that the MILCON project completion would not occur until November 2024, with a total delay of at least 847 days. Although we could not determine the final number of days delayed before construction completion, we calculated this estimate using information from USACE's scheduling tool, which reflected the estimated days for the completion of the project.

Throughout the construction, USACE Savannah District officials monitored the contractor's quality control and management of concrete activities closely because of poor contractor performance. For example, USACE Savannah District personnel addressed concrete deficiencies related to honeycombing. To avoid further delays, USACE Savannah District personnel advised the contractor to reconsider the methods for placing concrete columns before the next placement and provided guidance for repairing and testing the columns. Additionally, the USACE Savannah

[26] A cold joint in concrete occurs when one section of concrete starts to harden before an adjoining section is poured, preventing proper joining of the sections. Honeycombing occurs when voids or air pockets are present in the concrete slab, leading to a rough texture and weakened support.

District contracting officer stated they were withholding 10 percent of the progress payments on the contract to address the schedule concerns. See Figure 13 for examples of honeycombing in new concrete and honeycombing with exposed rebar.

Figure 13. Honeycombing in New Concrete and Honeycombing with Exposed Rebar
Source: USACE Savannah District.

USACE Savannah District personnel sent at least 14 letters of concern, logged 13 contractor status sheets, and issued at least 3 clarifications to address the concrete quality deficiencies and the subsequent schedule delays.

Contractor Performance Assessment on Concrete Quality Deficiencies. USACE Savannah District personnel completed a contractor performance assessment report stating that the contractor had not taken corrective actions to improve the quality of the concrete or to address the project's time growth or the contractor's poor project management. Ultimately, the USACE Savannah District assessing official that completed the assessment report recommended not using the contractor for similar projects in the future.

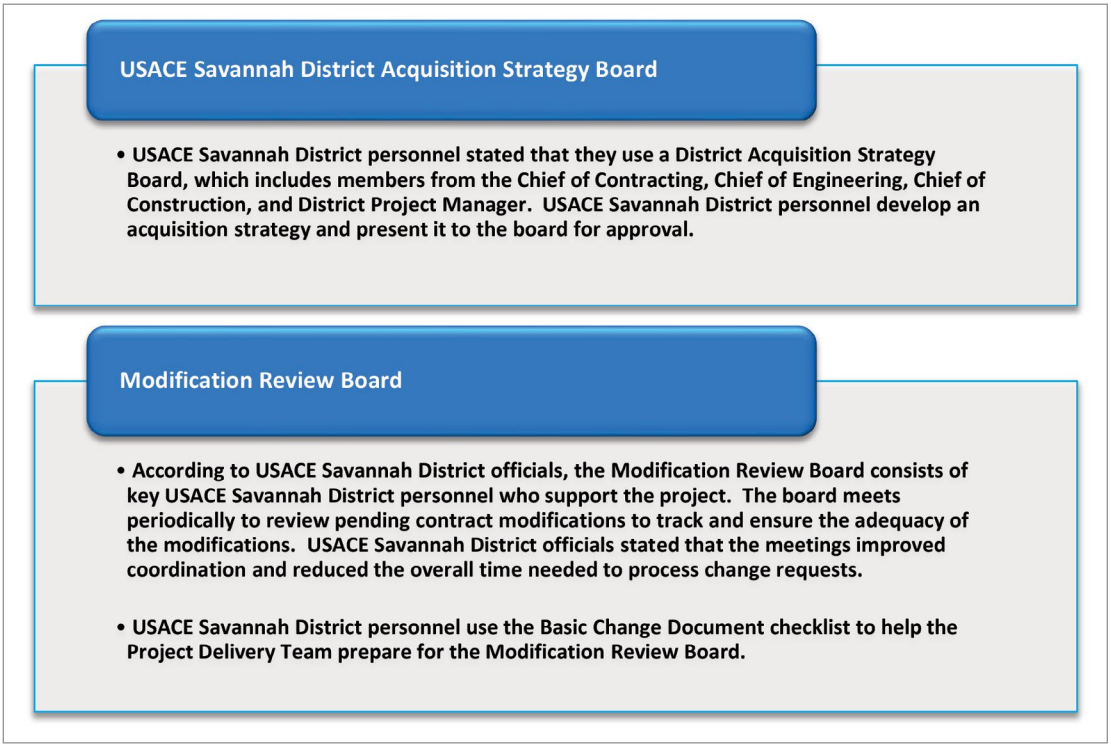
Changed to Steel as Preferred Material for Construction. In addition to the actions taken to address the concrete deficiencies, USACE Savannah District personnel changed to structural steel as the preferred material for the remaining facilities on the Cyber Center of Excellence campus as a cost savings and to avoid the reoccurrence of concrete deficiencies. Because USACE Savannah District officials required the contractor to correct the concrete quality deficiency

throughout the construction and changed to structural steel for the remaining facilities to build the campus, we are not making any recommendations to USACE Savannah District officials related to concrete quality deficiencies.

USACE Savannah District Actions to Mitigate Cost Increases and Schedule Delays on MILCON Projects

USACE Savannah District officials developed mitigating actions to improve performance on MILCON projects. USACE Savannah District officials changed various communication and review processes to incorporate changes in future MILCON projects, including three other MILCON projects scheduled for the Cyber Instructional Facility and Network Center. These mitigating actions included developing an acquisition strategy board, starting a modification review board, and developing a basic change document checklist in their modification review process. Figure 14 summarizes other general improvements in communication and review processes USACE Savannah District officials incorporated in the management of projects.

Figure 14. USACE Savannah District General Communication and Review Process Changes



Source: The DoD OIG.

Other USACE personnel may benefit from the communication and review process changes that USACE Savannah District officials implemented, including mitigating actions related to challenges with site preparation and contractor performance management. Therefore, the USACE Chief of Engineering and Construction should review the actions USACE Savannah District officials took to determine if USACE contracting personnel can use these actions when planning and managing MILCON projects and issue guidance for USACE contracting personnel on how to incorporate these actions for other MILCON projects.

USACE Seattle District Officials Experienced Contract Cost Increases and Schedule Delays for the Information Systems Facility

As of November 2023, USACE Seattle District contracting officials issued modifications that increased the total contract cost by $4.6 million (12 percent) and extended the construction CCD by 332 days (37 percent).[27] The Information Systems Facility was originally a 2 ½-year project with an approved programmed

[27] As of November 2023, USACE Seattle District officials extended the CCD from December 31, 2022, to November 28, 2023, as construction of the Information Systems Facility at JBLM continued and estimated that they would transfer the Information Systems Facility to the U.S. Army Network Enterprise Technology Command in March 2024.

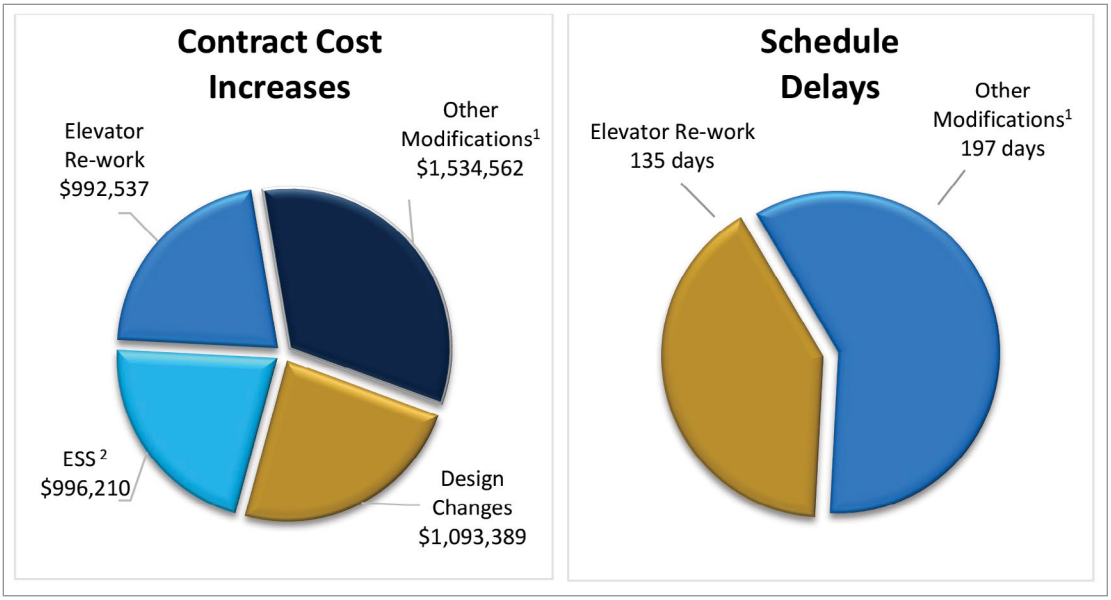
amount of $46 million. USACE Seattle District officials awarded a $38 million construction contract on June 26, 2020. Figure 15 shows the Information Systems Facility at Joint Base Lewis–McChord (JBLM) and a description of the project.

Figure 15. Information Systems Facility at JBLM

Source: USACE Seattle District.

USACE Seattle District officials experienced design errors, engineering and technical requirement changes for the electronic security system (ESS), and elevator design and construction re-work. In addition, USACE Seattle District officials issued other modifications to the contract for other changes to the project. Figure 16 shows the modifications USACE Seattle District officials issued for contract cost increases and schedule delays for the Information Systems Facility as of November 2023.

Figure 16. Information Systems Facility Cost Increases and Schedule Delays



[1] As of November 2023, USACE Seattle District contracting officials included other modifications for contaminated soil removal, weather and power outage delays, and removal of a concrete object found onsite; making changes related to rebar, steel, and the generator; installing additional sections of the catwalk and sprinkler system; and making onsite structural changes.

[2] The contract cost increase for the ESS included a modification valued at $650,926 for the ESS rough-in and other unrelated ESS changes to wall and corner guards. According to the USACE Seattle District contracting officer, 85 percent of the $650,926 was associated with the ESS rough-in changes.

Source: The DoD OIG.

USACE Seattle District's 80-20 Strategy Contributed to Cost Increases Through Design Changes and Contract Options

USACE Seattle District contracting officers addressed multiple design errors and omissions during construction and exercised contract options through modifications that increased the contract cost by $1.1 million because the USACE Seattle District design team used a process that required multiple designs.

The USACE Seattle District design team used a design process for projects, including the Information Systems Facility project, in which the goal was to design a usable facility starting with 80 percent of the required scope. If funds were available after obtaining 80 percent of the project scope in the basic contract, USACE Seattle District contracting officers would obtain pieces of the other 20 percent of the project scope by exercising contract options. USACE Seattle District officials referred to this as the 80-20 strategy and stated that the USACE Seattle District was the only USACE district using this process.

According to USACE Seattle District officials, the primary purpose of the process was to reduce bids coming in above the programmed amount. The USACE Seattle District design team needed to complete a set of designs for 80 percent of the project scope and a second set of designs with the fully scoped project, including the options.[28] For this MILCON project, the user agreed to reprioritize the facility's design because of reduced funding. Therefore, the USACE Seattle District design team reduced the design by about 11,000 square feet for the user to afford the full scope, rather than 80 percent of the required scope. As a result:

- the USACE Seattle District design team had to redo the full 35–percent of the design effort because of the layout change; and
- design errors and omissions became apparent after contract award when construction began.[29] For example, the USACE Seattle design officials omitted updates to the designs to adjust the mechanical systems, parking lot, and lighting based on the evolving capabilities and size of the building as it was being designed by the 80-20 strategy. The USACE Seattle District contracting official issued contract modifications to correctly adjust these items to the constructed facility.

According to USACE Seattle District officials, they used the 80-20 strategy when there were budget concerns and the project had to progress. However, the officials also stated that the 80-20 strategy played a role in the cost increase and schedule delays because the process increased the risk of missing information in the designs that resulted in construction modifications.

USACE Seattle District should reduce cost increases and schedule delays related to design errors and omissions resulting from the 80-20 strategy for future MILCON projects. Therefore, the USACE Seattle District Commander should determine the benefits and limitations of the 80-20 strategy and provide guidance to USACE contracting officials for coordinating with USACE technical support personnel during planning and design of MILCON projects to prevent cost increases or schedule delays related to design errors and omissions in future MILCON projects. In addition, the USACE Seattle District Commander should review USACE Seattle District MILCON projects that used the 80-20 strategy, identify design errors and omissions, and issue a memorandum outlining design errors and omissions from previous MILCON projects to USACE contracting officials for their use as lessons learned and to prevent these design errors and omissions from occurring in future MILCON projects.

[28] The additional scope can be increased square footage, but it can also be additional capabilities, higher quality components, or more robust mechanical capabilities of the constructed facility.

[29] USACE personnel identified the various design stages as a percentage of completion. The 35-percent design stage is a conceptual design that includes sufficient detail to demonstrate that the design complies with applicable codes and standards.

After we briefed these audit results, USACE Seattle District officials took corrective action to better assess how the 80-20 strategy is used. The USACE Seattle District Chief for the Military, Environmental, and Interagency & International Support Branch updated the USACE Seattle District MILCON Program Management Plan to include a risk management strategy related to base and option strategies and management for projects. Specifically, project managers will now attempt to maintain a standard 90-10 strategy but have authority to adjust that strategy as necessary based on market risks and input from cost engineers. This corrective action met the intent of our recommendations. Therefore, the recommendations was resolved and will be closed upon report issuance.

USACE Seattle District officials took corrective action to better assess how the 80-20 strategy is used.

USACE Seattle District Officials Incorporated Engineering and Technical Requirements Changes for the ESS

USACE Seattle District officials incorporated changes to the ESS engineering and technical requirements to meet the level of protection for the building. As a result, the contracting officer issued modifications that increased the contract cost by $996,210.[30]

A USACE Huntsville ESS MILCON support technical lead informed the USACE Seattle District design team of increases to the technical requirements for security boundaries of the facility based on a coordination about ESS criteria with a JBLM physical security specialist. The support technical lead and JBLM physical security specialists coordinated during the construction phase, rather than early in the design process. According to the USACE Seattle District design official, they were aware of the USACE MILCON support technical availability for early engagement on ESS and access control and would engage on a project-by-project basis to review technical requirements to support design development. However, the early engagement did not occur on this project.

According to the USACE MILCON support technical lead, the area of secured operations for the Network Enterprise Center needed to extend the original boundaries for the controlled access area to SECRET open storage. Therefore, the operations required a classification that expanded the area initially identified in the contract. The USACE MILCON support technical lead communicated to USACE Seattle District personnel that the original ESS design would have likely caused electrical code conflicts. In addition, the USACE MILCON support

[30] The contract cost increase for the ESS includes a contract modification of $650,926 for ESS rough-in and other changes to wall and corner guards.

technical lead communicated with the USACE Seattle District design team about incorporating additional ESS criteria based on a Government coordination meeting in August 2022.

As a result of the increased security boundaries, USACE Seattle District contracting officials updated the:

- contract for ESS rough-in changes, which included additional conduit systems and changes to interior assemblies; and
- contract specifications to increase the quantity of devices needed for security measures.[31]

USACE Seattle District Officials Reworked the Elevator Design and Construction to Meet System Requirements

USACE Seattle District officials experienced challenges meeting the system requirements for the facility's elevator using the initial elevator design completed by the USACE Seattle District design team. Therefore, the USACE Seattle District contracting officer issued modifications that increased the contract cost by $992,537 and extended the CCD by 135 days because of the redesign and reconstruction of the elevator.

The USACE Seattle District quality assurance officer and project engineer noted during construction that the original elevator manufacturer and design did not meet JBLM's requirements for a hydraulic in-ground plunger elevator and open software system. The USACE Seattle District architect considered the users requirements and designed the project incorporating an elevator using a manufacturer that refused to allow the open software system without knowing that JBLM officials required the open software system. As a result, the USACE Seattle District design team redesigned the elevator during construction to meet user requirements, without consideration for the landowner requirements. Figure 17 shows the in-ground plunger elevator USACE Seattle District officials redesigned for the Information Systems Facility.

[31] USACE contracting officials used Operation and Maintenance funds for ESS devices.

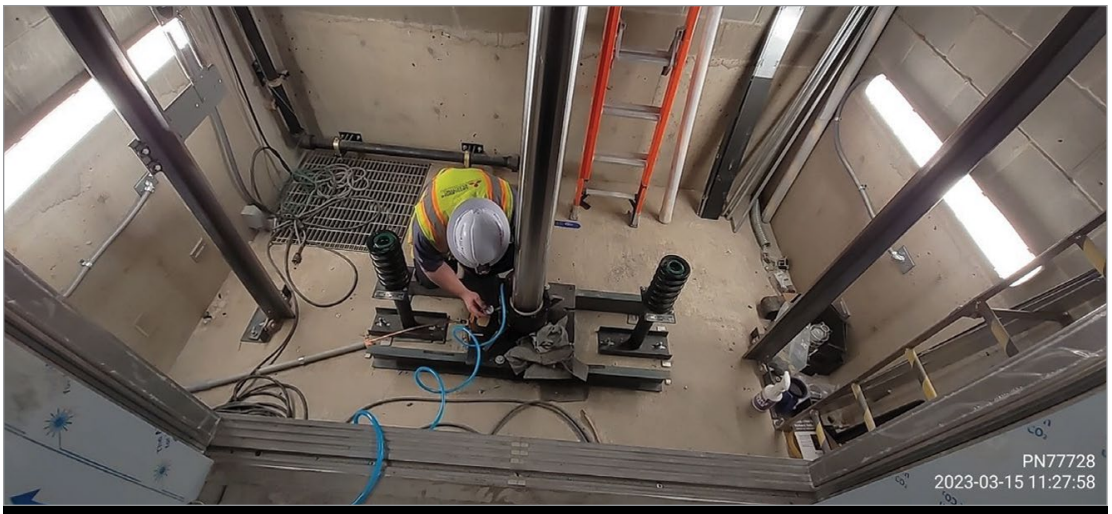


Figure 17. Construction of the In-Ground Plunger Elevator in the Information Systems Facility at JBLM
Source: USACE Seattle District.

The JBLM elevator specifications required the manufacturer to provide complete open software that would enable unlimited and unrestricted access to the elevator's controller.[32] The USACE Seattle District architect included an elevator design in the original construction based on the requirements of the user; however, the architect did not consider the JBLM requirements for the maintenance of the elevator. In addition, the architect communicated with an elevator manufacturer about the design requirements for a different elevator type that did not meet JBLM's requirements. USACE Seattle District personnel stated that the software requirement was the main factor causing the delay with the elevator.

As remediation, the USACE Seattle District contracting officer issued a stop work order for all work associated with the elevator while the USACE Seattle District design team revised the design for an elevator shaft to fit a different elevator with an in-ground plunger that met JBLM's requirements.[33] The USACE Seattle District contracting officer updated the scope of work based on the re-design for an in-ground plunger elevator. As a result, the new manufacturer of nonproprietary controls installed an elevator with an open software system, which would allow the Network Enterprise Technology Command to choose the installer and source for maintenance and repairs.

[32] Open software systems engage with systems from other manufacturers, while closed systems are proprietary. The use of open source software reduces the reliance on a particular software vendor due to proprietary restrictions, and it allows for operation and maintenance by multiple vendors, making it easier to replace and update components as technology and mission needs change.

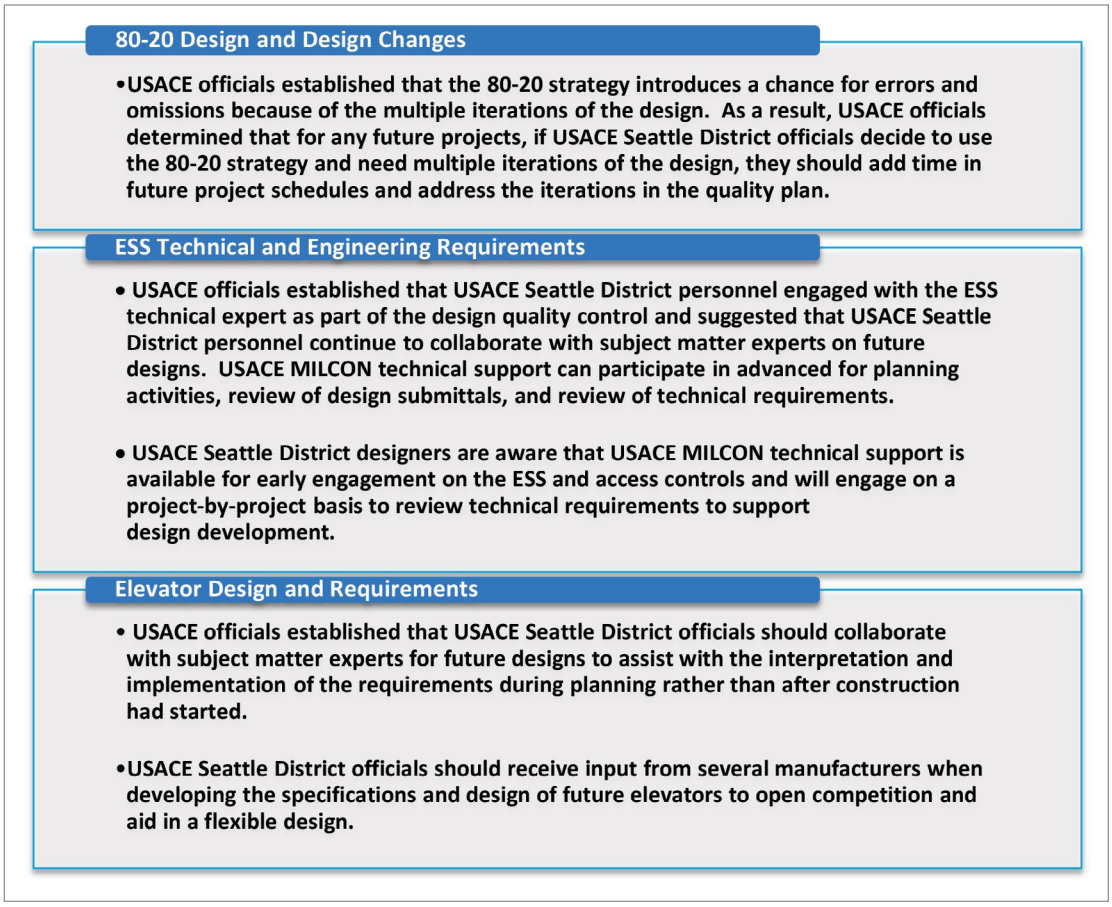
[33] Unified Facilities Criteria 3-490-06, "Elevator," June 8, 2018 (Incorporating Change 1, January 13, 2021), defines the types of hydraulic elevator as an in-ground and hole-less direct plunger. The in-ground type has the cylinder and plunger installed in the ground, while the hole-less type has either one or two hydraulic cylinders and plungers installed vertically in the elevator hoistway, supported by the hoistway pit floor.

USACE Seattle District Officials' Mitigating Actions and After-Action Review for the Information Systems Facility

USACE Seattle District officials took corrective action to mitigate additional cost increases and schedule delays related to design changes, ESS engineering and technical requirements changes, and elevator re-work during construction. In addition, USACE Seattle District officials conducted an internal evaluation and a high-level AAR for the Information Systems Facility project to identify lessons learned based on challenges they experienced during construction.

Figure 18 summarizes the mitigating actions and lessons learned identified by USACE officials during USACE Seattle District's execution of the Information Systems Facility project to improve future performance.

Figure 18. USACE Seattle District Lessons Learned and Actions to Mitigate Cost Increases and Delays for Future MILCON Projects



Source: The DoD OIG.

Other USACE personnel may benefit from lessons learned that USACE Seattle District obtained during planning and execution of the Information Systems Facility project, including collaboration with an ESS technical expert to review ESS

boundaries and requirements before contract award. Therefore, the USACE Chief of Engineering and Construction should review the mitigating actions and lessons learned that USACE Seattle District officials had for challenges with design changes, security boundaries, and software systems to determine if USACE contracting personnel should use these actions when managing other MILCON projects.

Conclusion

USACE officials incurred an additional $19.6 million in total increased contract costs and at least 120 to 847 days in schedule extensions on the four MILCON projects we reviewed. As a result, USACE officials had $268.1 million in total contract costs as of November 2023 for these projects. For each MILCON project, USACE officials explained the various reasons, such as weather delays, challenges with site preparation, design errors, contract options issuance, differing site conditions, and contractor performance challenges, for the cost increases and schedule extensions.

USACE officials may avoid millions of dollars of cost increases and schedule delays for future MILCON projects by sharing lessons learned across USACE that can improve mitigation efforts for similar MILCON challenges. The MILCON projects cost increases and schedule extensions for constructing maintenance shops and training facilities hinder the Army's ability to perform necessary maintenance of vehicles and tactical equipment or train future leaders and critical cybersecurity specialists.

USACE officials may avoid millions of dollars of cost increases and schedule delays for future MILCON projects by sharing lessons learned across USACE that can improve mitigation efforts for similar MILCON challenges.

Recommendations, Management Comments, and Our Response

Recommendation 1

We recommend that the U.S. Army Corps of Engineers Chief of Engineering and Construction:

a. Issue a memorandum and provide training to U.S. Army Corps of Engineers personnel emphasizing guidance to:

1. Develop accurate construction-related estimates on future military construction contract solicitations.

2. **Estimate cost and schedule for possible variations in the soil conditions based on a geotechnical report and weather conditions of the location of future military construction projects.**
3. **Use the quality management system, including how to categorize and access lessons learned from previous military construction projects, and the importance of reviewing after-action reviews to identify lessons learned from previous military construction projects in preparation for future military construction projects.**

USACE Acting Director of Military Programs Comments

The Acting Director agreed with the recommendation, stating that the USACE Commander will issue a memorandum and conduct training during FY 2025 to emphasize the importance of detailed cost estimates on construction solicitations and how and when to capture risk for variable soil conditions. Additionally, USACE will use a quality management system to share lessons learned from previous MILCON projects in preparation for future MILCON projects. The Acting Director planned to complete this action by September 30, 2025.

Our Response

Comments from the Acting Director addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once we receive documentation verifying that the Acting Director has completed the stated actions.

b. Review the benefits and limitations of U.S. Army Corps of Engineers Baltimore District officials using the bifurcated solicitation process to determine guidelines for the circumstances in which U.S. Army Corps of Engineers contracting personnel can use the bifurcated solicitation process in future military construction projects.

USACE Acting Director of Military Programs Comments

The Acting Director agreed with the recommendation, stating that the USACE Commander will work with the USACE Baltimore District to better define the bifurcated solicitation process and determine guidelines for the circumstances in which USACE contracting personnel can use the bifurcated solicitation process in future MILCON projects. The Acting Director planned to complete this action by September 30, 2025.

Our Response

Comments from the Acting Director addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once we receive documentation verifying that the Acting Director has completed the stated actions.

c. Review the actions of U.S. Army Corps of Engineers Savannah District officials for site preparation to determine whether U.S. Army Corps of Engineers personnel can use these actions in preparation for future military construction projects and issue a memorandum to U.S. Army Corps of Engineers personnel with the results of the review to use as lessons learned.

USACE Acting Director of Military Programs Comments

The Acting Director agreed with the recommendation, stating that the USACE Commander will issue a memorandum to use a quality management system to share lessons learned from previous MILCON projects in preparation for future MILCON projects related to site preparation. The Acting Director planned to complete this action by September 30, 2025.

Our Response

Comments from the Acting Director addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once we receive documentation verifying that the Acting Director has completed the stated actions.

d. Review the actions U.S. Army Corps of Engineers Savannah District officials took to determine if U.S. Army Corps of Engineers contracting personnel can use these actions when managing military construction projects and issue guidance for U.S. Army Corps of Engineers contracting personnel on how to incorporate these actions for other military construction projects.

USACE Acting Director of Military Programs Comments

The Acting Director agreed with the recommendation, stating that the USACE Commander will work with the USACE Savannah District to review the mitigating actions discussed in the report that have been developed and used for effectiveness and consistency and determine guidelines for the circumstances in which USACE contracting personnel can use these processes in future MILCON projects, if found to be effective. The Acting Director planned to complete this action by September 30, 2025.

Our Response

Comments from the Acting Director addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once we receive documentation verifying that the Acting Director has completed the stated actions.

e. Review the mitigating actions and lessons learned that U.S. Army Corps of Engineers Seattle District officials had for challenges with design changes, security boundaries, and software systems to determine if U.S. Army Corps of Engineers contracting personnel should use these actions when managing other military construction projects.

USACE Acting Director of Military Programs Comments

The Acting Director agreed with the recommendation, stating that the USACE Commander will work with the USACE Seattle District to review the mitigating actions and lessons learned and determine guidelines for the circumstances in which USACE personnel will document and share these lessons learned in preparation for future MILCON projects. The Acting Director planned to complete this action by September 30, 2025.

Our Response

Comments from the Director addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once we receive documentation verifying that the Acting Director has completed the stated actions.

Recommendation 2

We recommend that the Commander of the U.S. Army Corps of Engineers Baltimore District:

a. Provide training to U.S. Army Corps of Engineers personnel reinforcing how the costs of the various types of installed building equipment under military construction projects should be included in construction contracts for future Army military construction projects in accordance with Army Regulation 420-1, "Army Facilities Management."

USACE Acting Director of Military Programs Comments

The Acting Director endorsed and enclosed comments from the USACE Baltimore District agreeing with the recommendation. The Baltimore District Commander will ensure training is provided to all Construction, Contracting, Engineering, and Programs and Project Management Division personnel to reinforce how costs of the various types of installed building equipment under MILCON projects

should be included in construction contracts for future Army MILCON projects in accordance with Army Regulation 420-1, "Army Facilities Management." The training will include the various types of construction funding available for use on MILCON projects to highlight the importance of knowing which types of funds must be used. The Baltimore District Commander plans to complete the training by January 31, 2025.

Our Response

Comments from the Acting Director addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once we receive documentation verifying that the USACE Baltimore District Commander has completed the stated actions.

b. Complete an after-action review for the General Instruction Building project, including the benefits and additional efforts required for the bifurcated solicitation process in accordance with U.S. Army Corps of Engineers Engineer Regulations, and make the review available for U.S. Army Corps of Engineers personnel to consider when planning and executing future military construction projects.

USACE Acting Director of Military Programs Comments

The Acting Director endorsed and enclosed comments from the USACE Baltimore District agreeing with the recommendation. The Baltimore District Commander will ensure an AAR for the General Instruction Building project is scheduled and completed. The AAR will cover the benefits, limitations, and any additional efforts required when using a bifurcated solicitation process. All appropriate personnel from Contracting, Construction, Engineering, and Programs and Project Management Division will be required to participate in the AAR. The Baltimore District Commander will ensure the USACE Chief of Engineering and Construction receives the AAR report to review the benefits and limitations of the bifurcated solicitation process. The Baltimore District Commander plans to complete this action by January 31, 2025.

Our Response

Comments from the Acting Director addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation once we receive documentation verifying that the USACE Baltimore District Commander has completed the stated actions.

Recommendation 3

We recommend that the Commander of the U.S. Army Corps of Engineers Seattle District:

a. **Determine the benefits and limitations of the 80-20 strategy and provide guidance to U.S. Army Corps of Engineers contracting officials for coordinating with U.S. Army Corps of Engineers technical support personnel during planning and design of military construction projects to prevent cost increases or schedule delays related to design errors and omissions in future military construction projects.**

b. **Review previous military construction projects that used the 80-20 strategy, identify design errors and omissions, and issue a memorandum outlining design errors and omissions from military construction projects to U.S. Army Corps of Engineers contracting officials for their use as lessons learned and prevent these design errors and omissions from occurring in future military construction projects.**

Management Actions Taken and Our Response

As discussed earlier in the report, USACE Seattle District officials took corrective action during the audit. Specifically, USACE Seattle District officials updated their MILCON Program Management Plan to allow Project Managers flexibility to better assess risks and determine a risk management strategy. Therefore, Recommendations 3.a and 3.b have been resolved and will be closed upon report issuance.

Appendix A

Scope and Methodology

We conducted this performance audit from October 2022 through September 2024 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The announced objective of this audit was to determine whether the U.S. Army Corps of Engineers managed the schedules and costs of Army military construction projects performed in the continental United States in accordance with Federal and DoD policies. However, in May 2023, we revised our audit objective to determine why the U.S. Army Corps of Engineers had cost increases or schedule delays for Army MILCON projects performed in the continental United States and what actions the U.S. Army Corps of Engineers took to mitigate future cost increases and schedule delays.

Universe and Sample Information

To determine our audit universe, we reviewed the September 2022, 2851 monthly report for Army MILCON projects performed in the continental United States that had cost increases or were delayed.[34] In addition, we excluded any Army Reserve projects and Military Family Housing projects from our review. The September 2022, 2851 monthly report contained 36 Army MILCON projects performed in the continental United States, valued at $1.6 billion, that met our criteria. From the 36 Army MILCON projects, we nonstatistically sampled four Army MILCON projects, valued at $361.09 million, from four different USACE districts.[35] Table 2 lists the MILCON projects selected for review, the USACE district managing the project, the original contract amount, the obligated amount, the cost increase, and the days delayed, as stated in the 2851 monthly report for September 2022.

[34] 10 U.S.C. §2851. No later than March 1st of each year, the Office of the Secretary of Defense must submit a report to Congress on each MILCON project for which the estimated completion date is more than 1 year later than the completion date proposed at the time the contract for the project was awarded. The Office of the Secretary of Defense is also required to update, at least once a month, its website with the latest 2851 monthly report on schedule delays for authorized MILCON projects reported to Congress.

[35] USACE officials included the four Army MILCON projects that added up to $361.09 million in contract value as of September 30, 2022, in the 2851 monthly report. The 2851 monthly report included an error in the original contract amount for USACE Savannah District MILCON project 88724. See the "Incorrect Contract Amount Reported on the 2851 Monthly Report" section in Appendix B of this report for more information.

Table 2. USACE Army MILCON Projects Selected for Review from the 2851 Monthly Report as of September 2022

	USACE District	MILCON Project No.	Project Description	Original Contract Amount (in Millions)	Cost Increase (in Millions)	Days Delayed[1]
1	Baltimore District	88077	General Instruction Building for the U.S. Army War College in Carlisle Barracks, Pennsylvania	$76.40	$7.04	118
2	Louisville District	69347	General Purpose Maintenance Shop at Fort Campbell, Kentucky	37.14	3.54	128
3	Savannah District	88724	Cyber Instructional Facility and Network Center at Fort Eisenhower, Georgia	193.81[2]	2.23	511
4	Seattle District	77728	Information Systems Facility at Joint Base Lewis–McChord, Washington	38.03	2.91	146

[1] The days delayed are as of September 30, 2022, based on the original contract amount and CCD USACE officials reported in the 2851 monthly report. The days delayed in this table are from the 2851 monthly report and may be different from days that USACE officials extended the construction CCD through modifications. Construction completion is the date USACE accepts the work as complete. For the Cyber Instructional Facility and Network Center project, we discussed both types of days delayed, as there was a significant difference between the days delayed that USACE Savannah District officials estimated for the project and the modifications they issued to extend the CCD.

[2] The 2851 monthly report included an error in the original contract amount for the Cyber Instructional Facility and Network Center project. See the "Incorrect Contract Amount Reported on the 2851 Monthly Report" section in Appendix B of this report for more information.

Source: The DoD OIG.

For each of the four Army MILCON projects, we selected for review all modifications that extended the contract schedule and modifications over $100,000 for significant issues that increased contract cost. In addition, for each Army MILCON project, we reviewed the modifications USACE contracting officials issued as of the date of our site visit. Although we did not analyze any modifications issued after each of our site visits, we continued to monitor contracting actions on each of the contracts and included cost increases and extensions to the CCD in our report.

- **Project 88077, General Instruction Building.** We conducted a site visit to the USACE Baltimore District on December 5, 2022. The last contract modification we analyzed for this project was A00024, signed on November 22, 2022.
- **Project 69347, General Purpose Maintenance Shop.** We conducted a site visit to the USACE Louisville District from February 6 through February 9, 2023. The last contract modification we analyzed for this project was A00047, signed on November 3, 2022.
- **Project 88724, Cyber Instructional Facility and Network Center.** We conducted a site visit to the USACE Savannah District from February 13 through February 16, 2023. The last contract modification we analyzed for this project was A00021, signed on February 3, 2023.
- **Project 77728, Information Systems Facility.** We conducted a site visit to the USACE Seattle District from March 20 through March 23, 2023. We also visited the construction site on March 22, 2023. The last contract modification we analyzed for this project was P00006, signed on March 10, 2023.

Review of Documentation and Interviews

We reviewed contracts and documentation that USACE contracting officials issued for four Army MILCON projects. We reviewed documents for programming and reprogramming, solicitation, the acquisition plan, source selection, contracts, modifications, contract specifications, design sheets, contract status sheets, contractor performance reporting system assessments reports, contracting officer representative evaluations, and design change reports.

We interviewed program and contracting officials from USACE Headquarters, USACE Baltimore District, USACE Louisville District, USACE Seattle District, and USACE Savannah District. We interviewed the Deputy Director for MILCON, Army MILCON Planning and Programming Program Manager, Army Program Integration Chief, Geotechnical Design Chief, Military and Interagency and International Services Branch Chief, Chiefs of Construction, and Quality Assurance Chief.

We also reviewed the following criteria and guidance.

- FAR Part 7, “Acquisition Planning”
- FAR Part 36, “Construction Contracting”
- FAR Part 42, “Contract Administration and Audit Services”
- FAR Part 43, “Contract Modifications”
- FAR Part 52, “Solicitations, Provisions, and Contract Clauses”
- Unified Facilities Criteria 3-490-06, “Elevators”

- Unified Facilities Criteria 3-220-01, "Geotechnical Engineering"
- DoD Directive 4270.5, "Military Construction"
- Defense Federal Acquisition Regulation Supplement (DFARS) 252.201-7000, "Contracting Officer's Representatives"
- DFARS 201.602-2, "Responsibilities"
- DFARS Procedures, Guidance, and Information 201.602-2, "Responsibilities"
- Army Regulation 420-1, Chapter 4, "Army Military Construction and Nonappropriated-Funded Construction Program Development and Execution"
- Army Technical Manual 3-34.41, "Construction Estimating"
- USACE Acquisition Instruction 5136, "Construction and Architect-Engineer Contracts"
- USACE Engineer Regulations and Manuals
- USACE Louisville District Military Design Guide

Internal Control Assessment and Compliance

We assessed internal controls and compliance with laws and regulations necessary to satisfy the audit objective. In particular, we interviewed USACE personnel to assess the control environment, monitoring activity, and control activity internal control that was in place. We considered that each USACE district was different from the other and no two entities would have an identical internal control system. We gathered information from key personnel to examine whether USACE captured lessons learned from the four MILCON projects we reviewed. We also verified whether USACE officials prepared any AARs to mitigate schedule delays and cost increases from reoccurring on future MILCON projects. However, because our review was limited to these internal control components and underlying principles, the review may not have disclosed all internal control deficiencies that may have existed at the time of this audit.

Use of Computer-Processed Data

We relied on computer-processed data that USACE personnel provided in their 2851 monthly report, which contained MILCON project information as of September 30, 2022. As a basis for our nonstatistical sample, we used the original contract amount, current contract obligation amount as of September 2022, original contract completion date, and contract completion date as of September 2022 that USACE officials included in the 2851 monthly report.

We identified a duplicate contract value in the 2851 monthly report for one MILCON project in our sample. The duplication occurred to the original contract value and the current contract values (as of September 2022). We selected this particular MILCON project based on the extension reported on the 2851; therefore, this duplication in the contract value did not affect our sample selection. Additionally, we relied on other contract documents in addition to the 2851 monthly report to report the actual contract value except when we specifically discuss the duplicate reporting. Therefore, we determined that this duplication did not affect our audit scope or conclusions.

Prior Coverage

During the last 7 years, the Government Accountability Office (GAO) issued three reports and the DoD Office of Inspector General (DoD OIG) issued three reports discussing DoD military construction.

Unrestricted GAO reports can be accessed at http://www.gao.gov. Unrestricted DoD OIG reports can be accessed at http://www.dodig.mil/reports.html/.

GAO

Report No. GAO-24-106499, "Military Construction: Better Information Sharing Would Improve DOD's Oversight," September 16, 2024

> The GAO had three findings related to the DoD's implementation of the Unified Facilities Criteria program and related standards. The GAO found that the DoD largely incorporated relevant FY 2018-2022 NDAA provisions for the Unified Facilities Criteria; however, it also found that the DoD does not fully monitor the execution of its MILCON programs and projects and that Army and Navy construction agents do not consistently document and share lessons learned. The GAO made seven recommendations to the DoD, Army, and Navy management to address deficiencies in these areas. The GAO concluded that better guidance, training, and processes for sharing lessons learned could help prevent future mistakes, such as insufficient quality control, and save resources.

Report No. GAO-20-261R, "Military Construction: Cost Increase Reports Submitted in Fiscal Year 2018 and 2019," January 23, 2020

> The GAO found that the DoD submitted five cost increase reports during FYs 2018 and 2019, all from the Air Force. Three of the five cost increase reports for Air Force MILCON projects did not address the reporting element requiring that the senior engineer authorized to supervise MILCON projects and military housing projects under 10 U.S.C. § 2851(a) must co-sign

submitted reports. In addition, one of the five reports did not address the required reporting element to submit reports identifying cost increases to the congressional defense committees and the GAO no later than 180 days after the Secretary notifies the appropriate congressional committees of the cost increase.

Report No. GAO-18-101, "Action Needed to Increase the Reliability of Construction Cost Estimates," March 27, 2018

The GAO found that the DoD's guidance did not fully incorporate the steps needed for developing reliable estimates, and the estimates for three projects that the GAO reviewed were not reliable. The GAO determined that DoD cost estimators did not follow all of the best practices associated with the four characteristics (comprehensive, well-documented, accurate, and credible) of a reliable estimate for these projects. The GAO's Cost Estimating and Assessment Guide identified 12 steps that, if used, were more likely to result in reliable and valid cost estimates. However, the DoD's construction guidance, the Unified Facilities Criteria, did not include all these steps. Until the DoD incorporates these steps, the DoD and congressional decision-makers may not have reliable estimates to inform their decisions regarding appropriations and the oversight of projects.

DoD OIG

Report No. DODIG 2020-040, "Audit of Cost Increase and Schedule Delays for Military Construction Projects at Joint Region Marianas," December 11, 2019

The DoD OIG determined that Deputy Assistant Secretary of Defense for Facilities Management, Naval Facilities Engineering Systems Command, Air Force, and Defense Logistics Agency officials experienced schedule delays and cost increases for nine MILCON projects, valued at $574.4 million, at Joint Region Marianas; however, Guam's unique characteristics and environment presented challenges in planning and managing MILCON in the region.

Report No. DODIG-2018-125, "The Fort Bliss Hospital Replacement Military Construction Project," June 6, 2018

The DoD OIG determined that, as of March 2018, the Fort Bliss Hospital Replacement project had 978 contract change requests, including 132 canceled change requests that occurred during construction. The change requests included 453 engineering changes, including design errors and omissions.

Report No. DODIG 2018-122, "U.S. Strategic Command Facility Construction Project," May 31, 2018

The DoD OIG determined that USACE Omaha District personnel experienced multiple delays and cost increases to the U.S. Strategic Command Facility replacement facility at Offutt Air Force Base, Nebraska, because of the lack of expert involvement in the requirements development, inaccurate cost estimates, design deficiencies, contract modifications, fire, floods, mold, and challenges related to the execution of contract modifications. As of February 2018, project costs had increased the programmed amount of $564 million to $617.1 million and construction completion was delayed 29 months.

Appendix B

USACE Savannah District Project 88724 – Cyber Instructional Facility and Network Center

The following sections provide additional details related to the 2851 monthly report duplicates and the above threshold reprogramming (ATR) for the Cyber Instructional Facility and Network Center project.

Incorrect Contract Amount Reported on the 2851 Monthly Report. USACE officials inadvertently used inaccurate data in the September 2022, 2851 monthly report for Project 88724, Cyber Instructional Facility and Network Center. Specifically, the correct contract value for the project was $96.9 million, while the September 2022, 2851 monthly report showed $193.8 million. Table 3 summarizes the differences between the original contract amount and the contract amount USACE officials added in the 2851 monthly report.

Table 3. Cyber Instructional Facility and Network Center Project Differences in the 2851 Report Amounts for Contract Value

Cyber Instructional Facility and Network Center MILCON Project 88724	Contract Cost
Original Contract Value in 2851 Report	$193,807,000
Difference - Duplicate Entry	96,903,667
Original Contract Value (Actual Amount)	$96,903,333

Source: The DoD OIG.

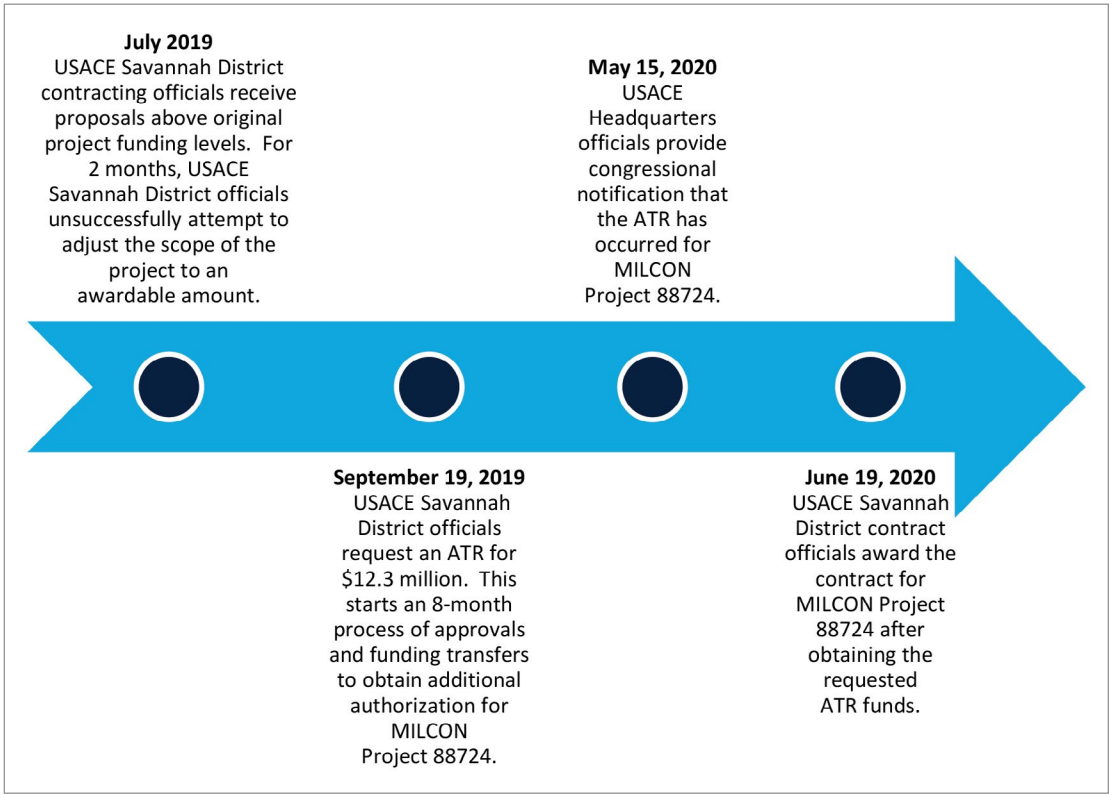
USACE Savannah District personnel added the project data twice in their management system, which USACE Headquarters personnel used to produce the 2851 monthly report. USACE Savannah District personnel explained that they initiated an entry in the system when the project started, then replaced the entry shortly after. By doing this, USACE Savannah District officials created two entries in the management system for the same project. Ultimately, USACE Headquarters officials compiled the entries for the same project number, which captured the amounts from both entries.

USACE officials corrected the amounts in the 2851 monthly report for the project once we identified the duplicate value for the same project number in USACE's management system. In addition, the incorrect amount in the 2851 monthly report did not affect the actual cost increases and schedule delays that USACE Savannah

District personnel experienced during construction. USACE officials corrected this duplication and coordinated with staff to address the reason for the duplication; therefore, we are not making recommendations related to the duplicate reporting.

Reprogramming Request Delayed the Construction Contract Award and Increased Contract Price. USACE Savannah District officials received proposals for the project but delayed the award of the contract for almost 1 year while they obtained $12.3 million in additional funding needed for the project. USACE Savannah District personnel received multiple proposals; however, all were in excess of the programmed amount. An ATR action requires prior approval because the dollar value of the change exceeded any of the thresholds specified by DoD regulation.[36] During the delay, the lowest bidder for the lowest price, technically-acceptable solicitation withdrew their bid. The bidder did not provide a reason for the withdrawal. See Figure 19 for a timeline of the ATR process for MILCON Project 88724.

Figure 19. Timeline to process ATR for MILCON Project 88724



Source: The DoD OIG.

[36] DoD Financial Management Regulation Volume 3, Chapter 7, "When Prior Approval Reprogramming is Required," April 2021. If a DoD Component desires to realign funding from projects with excess funding to projects with shortfalls, the Component must request approval from Congress if the amount needed is more than 25 percent of the amount appropriated for the MILCON project, or $2 million, whichever is less. This is referred to as an ATR request.

Management Comments

U.S. Army Corps of Engineers

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
441 G STREET, NW
WASHINGTON, DC 20314-1000

CEMP-ZB 06 November 2024

MEMORANDUM FOR [redacted], Program Director for Audit, Acquisition, Contracting, and Sustainment, Department of Defense Office of Inspector General, 4800 Mark Center Drive, Alexandria, VA 22350-1500

SUBJECT: Response for the DoDIG Draft Report "Audit of Cost Increases and Schedule Delays of Army Military Construction Projects Managed by the U.S. Army Corps of Engineers", (Project No. D2023-D000AV-0018.000), 30 September 2024.

1. Reference draft Department of Defense Office of Inspector General (DoDIG) Report, 30 September 2024, Subject: Audit of Cost Increases and Schedule Delays of Army Military Construction Projects Managed by the U.S. Army Corps of Engineers.

2. Enclosed is the U.S. Army Corps of Engineers (USACE) reply for Recommendations 1a-1e, and 2.a-2b. Recommendations 3a and 3b are complete.

3. We appreciate the opportunity to review the DoDIG draft report. We also value the professionalism and insights of the audit team throughout this project.

4. USACE concurs with comment to the recommendations.

5. USACE is committed to delivering vital engineering solutions and we welcome DoDIG's recommendations as we continue to innovate.

6. My point of contact is [redacted] Sr. Construction Engineer, [redacted]

Digitally signed by MORROW.DAVID [redacted]
Date: 2024.11.05

Encl.

David B. Morrow
Director (Acting) of Military Programs

USACE (cont'd)

CEMP-ZB
SUBJECT: Response for the DoDIG Draft Report "Audit of Cost Increases and Schedule Delays of Army Military Construction Projects Managed by the U.S. Army Corps of Engineers", (Project No. D2023-D000AV-0018.000), 30 September 2024.

Enclosure

Draft Report: D2023-D000AV-0018
Title: Audit of Cost Increases and Schedule Delays of Army Military Construction Projects Managed by the U.S. Army Corps of Engineers

Objective of Audit:
The objective of this audit was to determine why the U.S. Army Corps of Engineers (USACE) had cost increases or schedule delays for Army military construction (MILCON) projects performed in the continental United States and what actions USACE took to mitigate future cost increases and schedule delays.

The original objective was: To determine whether the U.S. Army Corps of Engineers managed the schedules and costs of Army military construction projects performed in the continental United States in accordance with Federal and DoD policies.

Conclusion:
USACE officials incurred an additional $19.6 million in total increased contract costs and at least 120 to 847 days in schedule extensions on the four MILCON projects we reviewed. As a result, USACE officials had $268.1 million in total contract costs as of November 2023 for these projects. For each MILCON project, USACE officials explained the various reasons, such as weather delays, challenges with site preparation, design errors, contract options issuance, differing site conditions, and contractor performance challenges for the cost increases and schedule extensions.

USACE officials may avoid millions of dollars of cost increases and schedule delays for future MILCON projects by sharing lessons learned across USACE that can improve mitigation efforts for similar MILCON challenges. The MILCON projects cost increases and schedule extensions for constructing maintenance shops and training facilities hinder the Army's ability to perform necessary maintenance of vehicles and tactical equipment or train future leaders and critical cybersecurity specialists.

DoD OIG Recommendation 1a:
Issue a memorandum and provide training to U.S. Army Corps of Engineers personnel emphasizing guidance to:

1. Develop accurate construction-related estimates on future military construction contract solicitations.

2

USACE (cont'd)

CEMP-ZB
SUBJECT: Response for the DoDIG Draft Report "Audit of Cost Increases and Schedule Delays of Army Military Construction Projects Managed by the U.S. Army Corps of Engineers", (Project No. D2023-D000AV-0018.000), 30 September 2024.

2. Estimate cost and schedule for possible variations in the soil conditions based on a geotechnical report and weather conditions of the location of future military construction projects.
3. Use the quality management system, including how to categorize and access lessons learned from previous military construction projects, and the importance of reviewing after-action reviews to identify lessons learned from previous military construction projects in preparation for future military construction projects.

Action Taken or Planned:
USACE concurs with comment to the DoD OIG's recommendation. The Commander of the U.S. Army Corps of Engineers will issue a memorandum and conduct training during FY25 to emphasize the importance of detailed cost estimates on construction solicitations, how and when to capture risk for variable soil conditions and use a quality management system to share lessons learned from previous military construction projects in preparation for future military construction projects.

Actions to be completed by 30 September 2025.

DoD OIG Recommendation 1b:
Review the benefits and limitations of U.S. Army Corps of Engineers Baltimore District officials using the bifurcated solicitation process to determine guidelines for the circumstances in which U.S. Army Corps of Engineers contracting personnel can use the bifurcated solicitation process in future military construction projects.

Action Taken or Planned:
USACE concurs with comment to the DoD OIG's recommendation. The Commander of the U.S. Army Corps of Engineers will work with the Baltimore district to better define the bifurcated solicitation process and determine guidelines for the circumstances in which U.S. Army Corps of Engineers contracting personnel can use the bifurcated solicitation process in future military construction projects.

Actions to be completed by 30 September 2025.

DoD OIG Recommendation 1c:
Review the actions of U.S. Army Corps of Engineers Savannah District officials for site preparation to determine whether U.S. Army Corps of Engineers personnel can use these actions in preparation for future military construction projects and issue a memorandum to U.S. Army Corps of Engineers personnel with the results of the review to use as lessons learned.

Action Taken or Planned:

3

USACE (cont'd)

CEMP-ZB
SUBJECT: Response for the DoDIG Draft Report "Audit of Cost Increases and Schedule Delays of Army Military Construction Projects Managed by the U.S. Army Corps of Engineers", (Project No. D2023-D000AV-0018.000), 30 September 2024.

USACE concurs with comment to the DoD OIG's recommendation. The Commander of the U.S. Army Corps of Engineers will issue a memorandum to use a quality management system to share lessons learned from previous military construction projects in preparation for future military construction projects related to site preparation.

Actions to be completed by 30 September 2025.

DoD OIG Recommendation 1d:
Review the actions U.S. Army Corps of Engineers Savannah District officials took to determine if U.S. Army Corps of Engineers contracting personnel can use these actions when managing military construction projects and issue guidance for U.S. Army Corps of Engineers contracting personnel on how to incorporate these actions for other military construction projects.

Action Taken or Planned:
USACE concurs with comment to the DoD OIG's recommendation. The Commander of the U.S. Army Corps of Engineers will work with the Savannah district to review the mitigating actions discussed in the report (ie. Acquisition strategy board, etc) that have been developed and utilized for effectiveness and consistency and determine guidelines for the circumstances in which U.S. Army Corps of Engineers contracting personnel can use these processes in future military construction projects if found to be effective.

Actions to be completed by 30 September 2025.

DoD OIG Recommendation 1e:
Review the mitigating actions and lessons learned that U.S. Army Corps of Engineers Seattle District officials had for challenges with design changes, security boundaries, and software systems to determine if U.S. Army Corps of Engineers contracting personnel should use these actions when managing other military construction projects.

Action Taken or Planned:
USACE concurs with comment to the DoD OIG's recommendation. The Commander of the U.S. Army Corps of Engineers will work with the Seattle district to review the mitigating actions and lessons learned and determine guidelines for the circumstances in which U.S. Army Corps of Engineers will document and share these lessons learned in preparation for future military construction projects.

Actions to be completed by 30 September 2025.

DoD OIG Recommendation 2a and 2b:
Headquarter U.S. Army Corps of Engineers endorses the response provided by the Baltimore District. See enclosure 2.

4

USACE (cont'd)

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MD 21201-2930

Enclosure 2

Draft Report: D2023-D000AV-0018
Title: Audit of Cost Increases and Schedule Delays of Army Military Construction Projects Managed by the U.S. Army Corps of Engineers

DoD OIG Recommendation 2:
We recommend that the Commander of the U.S. Army Corps of Engineers Baltimore District:

a. Provide training to U.S. Army Corps of Engineers personnel reinforcing how the costs of the various types of installed building equipment under military construction projects should be included in construction contracts for future Army military construction projects in accordance with Army Regulation 420-1, "Army Facilities Management."

Action Planned:
USACE Baltimore District concurs with the comment to the DoD OIG's recommendation. The District Commander will ensure training is provided to all Construction, Contracting, Engineering, and Programs and Project Management Division personnel to reinforce how costs of the various types of installed building equipment under military construction (MILCON) projects should be included in construction contracts for future Army MILCON projects in accordance with Army Regulation 420-1, "Army Facilities Management." The training will include the various types of construction funding available for use on MILCON projects to highlight the importance of knowing which types of funds must be used. The training will be completed by 31 January 2025.

b. Complete an after-action review for the General Instruction Building project, including the benefits and additional efforts required for the bifurcated solicitation process in accordance with U.S. Army Corps of Engineers Engineer Regulations, and make the review available for U.S. Army Corps of Engineers personnel to consider when planning and executing future military construction projects.

Action Planned:
USACE Baltimore District concurs with the DoD OIG's recommendation. The District Commander will ensure an After-Action Review (AAR) for the General Instruction Building project is scheduled and completed. The AAR will cover the benefits, limitations, and any additional efforts required when using a bifurcated solicitation process. All appropriate personnel from Contracting, Construction, Engineering, and Programs and Project Management Division will be required to participate in the AAR. The Action will be completed by 31 January 2025. The Baltimore District Commander will ensure the USACE Chief of Engineering and Construction receives the AAR report to review the benefits and limitations of the bifurcated solicitation process.

1/2

Acronyms and Abbreviations

AAR	After-Action Review
ATR	Above Threshold Reprogramming
CCD	Contract Completion Date
DFARS	Defense Federal Acquisition Regulation Supplement
ESS	Electronic Security System
FAR	Federal Acquisition Regulation
GAO	Government Accountability Office
JBLM	Joint Base Lewis–McChord
MCA	Military Construction Army
MILCON	Military Construction
USACE	U.S. Army Corps of Engineers

Whistleblower Protection
U.S. Department of Defense

Whistleblower Protection safeguards DoD employees against retaliation for protected disclosures that expose possible fraud, waste, and abuse in Government programs. For more information, please visit the Whistleblower webpage at www.dodig.mil/Components/Administrative-Investigations/Whistleblower-Reprisal-Investigations/Whistleblower-Reprisal/ or contact the Whistleblower Protection Coordinator at Whistleblowerprotectioncoordinator@dodig.mil

For more information about DoD OIG reports or activities, please contact us:

Congressional Liaison
703.604.8324

Media Contact
public.affairs@dodig.mil; 703.604.8324

www.twitter.com/DoD_IG

LinkedIn
www.linkedin.com/company/dod-inspector-general/

DoD Hotline
www.dodig.mil/hotline

DEPARTMENT OF DEFENSE | OFFICE OF INSPECTOR GENERAL

4800 Mark Center Drive
Alexandria, Virginia 22350-1500
www.dodig.mil
DoD Hotline 1.800.424.9098